

Cloud Container Engine

API Reference

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1 Before You Start

Cloud Container Engine (CCE) is a container service that allows you to run containers efficiently in the cloud. CCE provides highly scalable, high-performance, enterprise-class Kubernetes clusters and supports Docker containers. With CCE, you can easily deploy, manage, and scale containerized applications in the cloud.

This document describes how to use APIs for performing operations on CCE, such as creating or deleting CCE resources, modifying resource specifications, or adding NICs. For details about all supported operations, see [API Overview](#).

If you plan to access CCE resources through an API, ensure that you are familiar with CCE concepts. For details, see [Service Overview](#).

CCE supports both Kubernetes-native APIs and proprietary APIs. With these APIs, you can use all functions of CCE.

- CCE has opened APIs through API gateways to support operations on cloud service infrastructures (for example, creating a node). Operations on cluster resources (such as [creating a workload](#)) are also supported.
- Kubernetes-native APIs: You can perform operations on cluster resources (such as [creating a workload](#)) using the Kubernetes-native API server. However, operations on cloud service infrastructures (such as creating a node) are not supported.

For details about Kubernetes-native API versions, see <https://kubernetes.io/docs/concepts/overview/kubernetes-api/>.

NOTE

- The Kubernetes-native APIs called in the current version do not support HTTP persistent connections.
- The Kubernetes-native APIs in the current version include Beta APIs, whose version names include **beta**, for example, **v1beta1**. This type of APIs varies according to Kubernetes-native APIs. Therefore, you are advised to use this type of APIs in unimportant scenarios, for example, short-term test clusters.

Endpoints

An endpoint is the **request address** for calling an API. Endpoints vary depending on services and regions. An endpoint can be obtained from [Regions and Endpoints](#).

You need to select an endpoint based on your service requirements.

- The URL format for cluster, node, node pool, add-on, and quota management is **https://Endpoint/uri**. *uri* indicates the resource path, that is, the API access path.
- The URL format for Kubernetes APIs, storage management, and add-on management is **https://{clusterid}.Endpoint/uri**. In the URL, *{clusterid}* indicates the cluster ID, and *uri* indicates the resource path, that is, the path for API access.

 **NOTE**

- The format of the URL called by the add-on management APIs is **https://{clusterid}.Endpoint/uri**. However, *{clusterid}* is used only for the domain name and is not verified or used by the APIs. Set *{clusterid}* in the query or body. For details about *{clusterid}*, see the add-on management sections.
- *{clusterid}* is required for Kubernetes APIs and storage management, which indicates the cluster that needs to be accessed by calling the API.

Table 1-1 URL parameters

Parameter	Description
{clusterid}	Cluster ID. After a cluster is created, call the API for obtaining a cluster in a specified project to obtain the cluster ID.
Endpoint	Entry (URL) for a web service. Endpoints vary depending on services and regions.
uri	Access path of an API for performing an operation. Obtain the path from the URI of an API. For example, the resource-path of the API used to obtain a user token is v3/auth/tokens .

Notes and Constraints

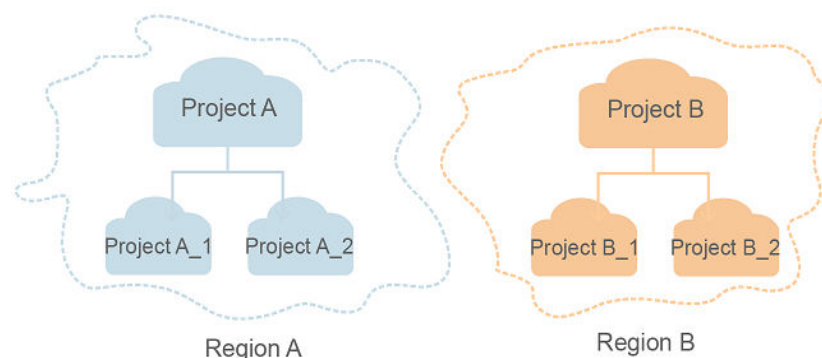
- CCE imposes a quota on the number and capacity of resources that a user can access. By default, you can create a maximum of five clusters in each region and a cluster can have a maximum of 50 nodes. To create more clusters or add more nodes, [submit a service ticket](#) to increase the quota. For more details about quotas, see [Quotas](#).
- For more constraints, see API description.

Concepts

- Account
An account is created upon successful registration. The account has full access permissions for all of its cloud services and resources. It can be used to reset user passwords and grant user permissions. The account is a payment entity, which should not be used directly to perform routine management. For security purposes, create Identity and Access Management (IAM) users and grant them permissions for routine management.

- **User**
An IAM user is created using an account to use cloud services. Each IAM user has their own identity credentials (password and access keys).
The account name, username, and password will be required for API authentication.
- **Region**
Regions are divided based on geographical location and network latency. Public services, such as Elastic Cloud Server (ECS), Elastic Volume Service (EVS), Object Storage Service (OBS), Virtual Private Cloud (VPC), Elastic IP (EIP), and Image Management Service (IMS), are shared within the same region. Regions are classified into universal regions and dedicated regions. A universal region provides universal cloud services for common tenants. A dedicated region provides specific services for specific tenants.
For details, see [Region and AZ](#).
- **AZ**
An AZ comprises of one or more physical data centers equipped with independent ventilation, fire, water, and electricity facilities. Computing, network, storage, and other resources in an AZ are logically divided into multiple clusters. AZs within a region are interconnected using high-speed optical fibers to allow you to build cross-AZ high-availability systems.
- **Project**
A project corresponds to a region. Default projects are defined to group and physically isolate resources (including compute, storage, and network resources) across regions. Users can be granted permissions in a default project to access all resources under their accounts in the region associated with the project. If you need more refined access control, create subprojects under a default project and create resources in subprojects. Then you can assign users the permissions required to access only the resources in the specific subprojects.

Figure 1-1 Project isolation model



- **Enterprise project**
Enterprise projects group and manage resources across regions. Resources in different enterprise projects are logically isolated. An enterprise project can contain resources of multiple regions, and resources can be added to or removed from enterprise projects.

For details about enterprise projects and about how to obtain enterprise project IDs, see [Enterprise Management User Guide](#).

2 API Overview

APIs provided by CCE are classified into two types: proprietary APIs and Kubernetes-native APIs. By using these two types of APIs, you can use all functions provided by CCE, including creating clusters and nodes, using the Kubernetes-native APIs to create workloads, and using the proprietary CCE APIs to monitor application data.

Type	Subtype	Description
Proprietary CCE APIs	Cluster-related APIs	Manage clusters, including creating and deleting clusters. You can use APIs in this category to create clusters and obtain information about created clusters.
	Node-related APIs	Manage nodes, including creating and deleting nodes. You can use these APIs in this category to add nodes to clusters and obtain information about created nodes.
	Node Pool-related APIs	Manage node pools, including creating and deleting node pools. You can use APIs in this category to create node pools and obtain information about created node pools.
	Add-on-related APIs	Manage add-ons, including querying AddonTemplates and creating, updating, deleting, and obtaining AddonInstances.
	Quota-related API	Query quotas of CCE resources.
Kubernetes-native APIs	None	For details about how to call Kubernetes-native APIs, see Kubernetes APIs .

Cluster-related APIs

Table 2-1 Cluster-related APIs

API	Description
Creating a Cluster	Create an empty cluster, which has only master nodes but do not have worker nodes.
Reading a Specified Cluster	Obtain details about a specified cluster.
Listing Clusters in a Specified Project	Obtain details about all clusters in a specified project.
Updating a Specified Cluster	Update information about a specified cluster.
Deleting a Cluster	Delete a specified cluster.
Hibernate a Cluster	Hibernate a specified cluster.
Waking Up a Cluster	Wake up a hibernated cluster.
Obtaining Cluster Certificates	Obtain certificates of a specified cluster.
Obtaining Job Information	Obtain the progress of a job with a specified job ID returned after a job request is issued.

Node-related APIs

Table 2-2 Node-related APIs

API	Description
Creating a Node	Create a node in a specified cluster.
Reading a Specified Node	Obtain details about a node with a specified node ID.
Reading all Nodes in a Cluster	Obtain details about all nodes in a cluster with a specified cluster ID.
Updating a Specified Node	Update information about a specified node.
Deleting a Node	Delete a specified node
Accepting a Node	Accept a node into a specified cluster.
Resetting a Node	Reset a node in a specified cluster.

API	Description
Removing a Node	Remove a node from a specified cluster.
Migrating a Node	Migrate a node from a specified cluster to another cluster.

Node Pool-related APIs

Table 2-3 Node pool-related APIs

API	Description
Creating a Node Pool	Create a node pool in a specified cluster.
Reading a Specified Node Pool	Obtain details about a node with a specified node ID.
Listing All Node Pools in a Specified Cluster	Obtain details about all node pools in a cluster with a specified cluster ID.
Updating a Specified Node Pool	Update information about a specified node pool.
Deleting a Node Pool	Delete a specified node pool.

Add-on-related APIs

Table 2-4 Add-on-related APIs

API	Description
Installing an Add-on Instance	Install an add-on by using the add-on template.
Listing Add-on Templates	Query add-on information.
Updating an Add-on Instance	Update an add-on instance.
Deleting an Add-on Instance	Delete an add-on instance.
Reading an Add-on Instance	Obtain details about an add-on instance.
Listing Add-on Instances	List all add-on instances in the cluster.

Quota-related API

Table 2-5 Quota-related API

API	Description
Querying Resource Quotas	Query resource quotas.

Kubernetes APIs

API	Function	URI
Node	Reading a specified node	GET /api/v1/nodes/{name}
	Listing all nodes	GET /api/v1/nodes
	Updating a specified node	PATCH /api/v1/nodes/{name}
Namespace	Creating a namespace	POST /api/v1/namespaces
	Deleting a namespace	DELETE /api/v1/namespaces/{name}
	Querying a specified namespace	GET /api/v1/namespaces/{name}
	Replacing a specified namespace	PUT /api/v1/namespaces/{name}
	Replacing the status of a specified namespace	PUT /api/v1/namespaces/{name}/status
	Replacing the finalize values of a specified namespace	PUT /api/v1/namespaces/{name}/finalize
	Listing namespaces	GET /api/v1/namespaces
	Updating a specified namespace	PATCH /api/v1/namespaces/{name}
Resource quotas	Querying resource quotas	GET /api/v1/resourcequotas
	Creating a resource quota	POST /api/v1/namespaces/{namespace}/resourcequotas
	Updating a resource quota	PUT /api/v1/namespaces/{namespace}/resourcequotas/{name}
	Deleting a resource quota	DELETE /api/v1/namespaces/{namespace}/resourcequotas/{name}

API	Function	URI
Pod	Creating a pod	POST /api/v1/namespaces/{namespace}/pods
	Deleting a pod	DELETE /api/v1/namespaces/{namespace}/pods/{name}
	Deleting all pods	DELETE /api/v1/namespaces/{namespace}/pods
	Reading a specified pod	GET /api/v1/namespaces/{namespace}/pods/{name}
	Replacing a specified pod	PUT /api/v1/namespaces/{namespace}/pods/{name}
	Replacing the status of a specified pod	PUT /api/v1/namespaces/{namespace}/pods/{name}/status
	Listing all pods in a specified namespace	GET /api/v1/namespaces/{namespace}/pods
	Listing pods	GET /api/v1/pods
	Updating a specified pod	PATCH /api/v1/namespaces/{namespace}/pods/{name}
Deploy ment	Creating a Deployment	POST /apis/apps/v1/namespaces/{namespace}/deployments
	Rolling back a Deployment	PATCH /apis/apps/v1/namespaces/{namespace}/deployments/{name} (for clusters of v1.17 or later) POST /apis/apps/v1beta1/namespaces/{namespace}/deployments/{name}/rollback (for clusters of v1.15 and earlier) POST /apis/extensions/v1beta1/namespaces/{namespace}/deployments/{name}/rollback (for clusters of v1.15 and earlier)
	Deleting a Deployment	DELETE /apis/apps/v1/namespaces/{namespace}/deployments/{name}
	Deleting all Deployments	DELETE /apis/apps/v1/namespaces/{namespace}/deployments
	Reading a specified Deployment	GET /apis/apps/v1/namespaces/{namespace}/deployments/{name}
	Reading the status of a specified Deployment	GET /apis/apps/v1/namespaces/{namespace}/deployments/{name}/status

API	Function	URI
	Reading the scaling operation of a specified Deployment	GET /apis/apps/v1/namespaces/{namespace}/deployments/{name}/scale
	Replacing a specified Deployment	PUT /apis/apps/v1/namespaces/{namespace}/deployments/{name}
	Replacing the status of a specified Deployment	PUT /apis/apps/v1/namespaces/{namespace}/deployments/{name}/status
	Replacing the scaling operation of a specified Deployment	PUT /apis/apps/v1/namespaces/{namespace}/deployments/{name}/scale
	Listing Deployments in a specified namespace	GET /apis/apps/v1/namespaces/{namespace}/deployments
	Listing all Deployments	GET /apis/apps/v1/deployments
	Updating a specified Deployment	PATCH /apis/apps/v1/namespaces/{namespace}/deployments/{name}
	Updating the status of a specified Deployment	PATCH /apis/apps/v1/namespaces/{namespace}/deployments/{name}/status
	Updating the scaling operation of a specified Deployment	PATCH /apis/apps/v1/namespaces/{namespace}/deployments/{name}/scale
StatefulSet	Creating a StatefulSet	POST /apis/apps/v1/namespaces/{namespace}/statefulsets
	Deleting a specified StatefulSet	DELETE /apis/apps/v1/namespaces/{namespace}/statefulsets/{name}
	Deleting all StatefulSets	DELETE /apis/apps/v1/namespaces/{namespace}/statefulsets
	Reading a specified StatefulSet	GET /apis/apps/v1/namespaces/{namespace}/statefulsets/{name}
	Reading the status of a specified StatefulSet	GET /apis/apps/v1/namespaces/{namespace}/statefulsets/{name}/status
	Replacing a specified StatefulSet	PUT /apis/apps/v1/namespaces/{namespace}/statefulsets/{name}
	Replacing the status of a specified StatefulSet	PUT /apis/apps/v1/namespaces/{namespace}/statefulsets/{name}/status
	Listing StatefulSets in a specified namespace	GET /apis/apps/v1/namespaces/{namespace}/statefulsets
	Listing all StatefulSets	GET /apis/apps/v1/statefulsets

API	Function	URI
	Updating a specified StatefulSet	PATCH /apis/apps/v1/namespaces/{namespace}/statefulsets/{name}
	Updating the status of a specified StatefulSet	PATCH /apis/apps/v1/namespaces/{namespace}/statefulsets/{name}/status
Daemon Set	Creating a DaemonSet	POST /apis/apps/v1/namespaces/{namespace}/daemonsets
	Deleting a specified DaemonSet	DELETE /apis/apps/v1/namespaces/{namespace}/daemonsets/{name}
	Deleting all DaemonSets	DELETE /apis/apps/v1/namespaces/{namespace}/daemonsets
	Reading a specified DaemonSet	GET /apis/apps/v1/namespaces/{namespace}/daemonsets/{name}
	Reading the status of a specified DaemonSet	GET /apis/apps/v1/namespaces/{namespace}/daemonsets/{name}/status
	Updating a specified DaemonSet	PATCH /apis/apps/v1/namespaces/{namespace}/daemonsets/{name}
	Updating the status of a specified DaemonSet	PATCH /apis/apps/v1/namespaces/{namespace}/daemonsets/{name}/status
	Listing all DaemonSets	GET /apis/apps/v1/daemonsets
	Listing DaemonSets in a specified namespace	GET /apis/apps/v1/namespaces/{namespace}/daemonsets
	Replacing a specified DaemonSet	PUT /apis/apps/v1/namespaces/{namespace}/daemonsets/{name}
	Replacing the status of a specified DaemonSet	PUT /apis/apps/v1/namespaces/{namespace}/daemonsets/{name}/status
	Job	Creating a job
Deleting a job		DELETE /apis/batch/v1/namespaces/{namespace}/jobs/{name}
Deleting all jobs		DELETE /apis/batch/v1/namespaces/{namespace}/jobs
Reading a specified job		GET /apis/batch/v1/namespaces/{namespace}/jobs/{name}
Reading the status of a specified job		GET /apis/batch/v1/namespaces/{namespace}/jobs/{name}/status
Replacing a specified job		PUT /apis/batch/v1/namespaces/{namespace}/jobs/{name}

API	Function	URI
	Replacing the status of a specified job	PUT /apis/batch/v1/namespaces/{namespace}/jobs/{name}/status
	Listing jobs in a specified namespace	GET /apis/batch/v1/namespaces/{namespace}/jobs
	Listing all jobs	GET /apis/batch/v1/jobs
	Updating the status of a specified job	PATCH /apis/batch/v1/namespaces/{namespace}/jobs/{name}/status
	Updating a specified job	PATCH /apis/batch/v1/namespaces/{namespace}/jobs/{name}
CronJob	Creating a cron job	POST /apis/batch/v1/namespaces/{namespace}/cronjobs (only for clusters of v1.25 or later) POST /apis/batch/v1beta1/namespaces/{namespace}/cronjobs (only for clusters of v1.23 or earlier)
	Deleting a cron job	DELETE /apis/batch/v1/namespaces/{namespace}/cronjobs/{name} (only to clusters of v1.25 or later) DELETE /apis/batch/v1beta1/namespaces/{namespace}/cronjobs/{name} (only for clusters of v1.23 or earlier)
	Deleting all cron jobs	DELETE /apis/batch/v1/namespaces/{namespace}/cronjobs (only for clusters of v1.25 or later) DELETE /apis/batch/v1beta1/namespaces/{namespace}/cronjobs (only for clusters of v1.23 or earlier)
	Reading a specified cron job	GET /apis/batch/v1/namespaces/{namespace}/cronjobs/{name} (only for clusters of v1.25 or later) GET /apis/batch/v1beta1/namespaces/{namespace}/cronjobs/{name} (only for clusters of v1.23 or earlier)
	Reading the status of a specified cron job	GET /apis/batch/v1/namespaces/{namespace}/cronjobs/{name}/status (only for clusters of v1.25 or later) GET /apis/batch/v1beta1/namespaces/{namespace}/cronjobs/{name}/status (only for clusters of v1.23 or earlier)

API	Function	URI
	Replacing a specified cron job	PUT /apis/batch/v1/namespaces/{namespace}/cronjobs/{name} (only for clusters of v1.25 or later) PUT /apis/batch/v1beta1/namespaces/{namespace}/cronjobs/{name} (only for clusters of v1.23 or earlier)
	Replacing the status of a specified cron job	PUT /apis/batch/v1/namespaces/{namespace}/cronjobs/{name}/status (only for clusters of v1.25 or later) PUT /apis/batch/v1beta1/namespaces/{namespace}/cronjobs/{name}/status (only for clusters of v1.23 or earlier)
	Listing cron jobs under a specified namespace	GET /apis/batch/v1/namespaces/{namespace}/cronjobs (only for clusters of v1.25 or later) GET /apis/batch/v1beta1/namespaces/{namespace}/cronjobs (only for clusters of v1.23 or earlier)
	Listing all cron jobs	GET /apis/batch/v1/cronjobs (only for clusters of v1.25 or later) GET /apis/batch/v1beta1/cronjobs (only for clusters of v1.23 or earlier)
	Updating the status of a specified cron job	PATCH /apis/batch/v1/namespaces/{namespace}/cronjobs/{name}/status (only for clusters of v1.25 or later) PATCH /apis/batch/v1beta1/namespaces/{namespace}/cronjobs/{name}/status (only for clusters of v1.23 or earlier)
	Updating a specified cron job	PATCH /apis/batch/v1/namespaces/{namespace}/cronjobs/{name} (only for clusters of v1.25 or later) PATCH /apis/batch/v1beta1/namespaces/{namespace}/cronjobs/{name} (only for clusters of v1.23 or earlier)
ReplicaSet	Listing ReplicaSets	GET /apis/apps/v1/namespaces/{namespace}/replicasets
	Reading a specified ReplicaSet	GET /apis/apps/v1/namespaces/{namespace}/replicasets/{name}
	Listing all ReplicaSets	GET /apis/apps/v1/replicasets
ReplicationController	Creating a ReplicationController	POST /api/v1/namespaces/{namespace}/replicationcontrollers

API	Function	URI
	Deleting a ReplicationController	DELETE /api/v1/namespaces/{namespace}/replicationcontrollers/{name}
	Deleting all ReplicationControllers	DELETE /api/v1/namespaces/{namespace}/replicationcontrollers
	Reading a ReplicationController under a specified namespace	GET /api/v1/namespaces/{namespace}/replicationcontrollers/{name}
	Replacing a ReplicationController under a specified namespace	PUT /api/v1/namespaces/{namespace}/replicationcontrollers/{name}
	Replacing the status of a ReplicationController under a specified namespace	PUT /api/v1/namespaces/{namespace}/replicationcontrollers/{name}/status
	Listing ReplicationControllers in a specified namespace	GET /api/v1/namespaces/{namespace}/replicationcontrollers
	Listing ReplicationControllers	GET /api/v1/replicationcontrollers
	Updating a specified ReplicationController	PATCH /api/v1/namespaces/{namespace}/replicationcontrollers/{name}
Endpoints	Creating an endpoint	POST /api/v1/namespaces/{namespace}/endpoints
	Deleting an endpoint	DELETE /api/v1/namespaces/{namespace}/endpoints/{name}
	Deleting all endpoints	DELETE /api/v1/namespaces/{namespace}/endpoints
	Querying a specified endpoint	GET /api/v1/namespaces/{namespace}/endpoints/{name}
	Replacing a specified endpoint	PUT /api/v1/namespaces/{namespace}/endpoints/{name}
	Listing endpoints	GET /api/v1/endpoints
	Listing endpoints in a specified namespace	GET /api/v1/namespaces/{namespace}/endpoints
	Updating a specified endpoint	PATCH /api/v1/namespaces/{namespace}/endpoints/{name}

API	Function	URI
Service	Creating a Service	POST /api/v1/namespaces/{namespace}/services
	Deleting a specified Service	DELETE /api/v1/namespaces/{namespace}/services/{name}
	Obtaining a specified Service	GET /api/v1/namespaces/{namespace}/services/{name}
	Replacing a specified Service	PUT /api/v1/namespaces/{namespace}/services/{name}
	Listing Services in a specified namespace	GET /api/v1/namespaces/{namespace}/services
	Listing Services	GET /api/v1/services
	Updating a specified Service	PATCH /api/v1/namespaces/{namespace}/services/{name}
Ingress	Creating an ingress	POST /apis/networking.k8s.io/v1/namespaces/{namespace}/ingresses (for clusters of v1.21 and later) POST /apis/networking.k8s.io/v1beta1/namespaces/{namespace}/ingresses (for clusters from v1.15 to v1.21) POST /apis/extensions/v1beta1/namespaces/{namespace}/ingresses (for clusters earlier than v1.15)
	Updating a specified ingress	PATCH /apis/networking.k8s.io/v1/namespaces/{namespace}/ingresses/{name} (for clusters of v1.21 and later) PATCH /apis/networking.k8s.io/v1beta1/namespaces/{namespace}/ingresses/{name} (for clusters from v1.15 to v1.21) PATCH /apis/extensions/v1beta1/namespaces/{namespace}/ingresses/{name} (for clusters earlier than v1.15)
	Replacing a specified ingress	PUT /apis/networking.k8s.io/v1/namespaces/{namespace}/ingresses/{name} (for clusters of v1.21 and later) PUT /apis/networking.k8s.io/v1beta1/namespaces/{namespace}/ingresses/{name} (for clusters from v1.15 to v1.21) PUT /apis/extensions/v1beta1/namespaces/{namespace}/ingresses/{name} (for clusters earlier than v1.15)

API	Function	URI
	Deleting an ingress	DELETE /apis/networking.k8s.io/v1/namespaces/{namespace}/ingresses/{name} (for clusters of v1.21 and later) DELETE /apis/networking.k8s.io/v1beta1/namespaces/{namespace}/ingresses/{name} (for clusters from v1.15 to v1.21) DELETE /apis/extensions/v1beta1/namespaces/{namespace}/ingresses/{name} (for clusters earlier than v1.15)
	Deleting all ingresses	DELETE /apis/networking.k8s.io/v1/namespaces/{namespace}/ingresses (for clusters of v1.21 and later) DELETE /apis/networking.k8s.io/v1beta1/namespaces/{namespace}/ingresses (for clusters from v1.15 to v1.21) DELETE /apis/extensions/v1beta1/namespaces/{namespace}/ingresses (for clusters earlier than v1.15)
	Obtaining a specified ingress	GET /apis/networking.k8s.io/v1/namespaces/{namespace}/ingresses/{name} (for clusters of v1.21 and later) GET /apis/networking.k8s.io/v1beta1/namespaces/{namespace}/ingresses/{name} (for clusters from v1.15 to v1.21) GET /apis/extensions/v1beta1/namespaces/{namespace}/ingresses/{name} (for clusters earlier than v1.15)
	Listing ingresses in a specified namespace	GET /apis/networking.k8s.io/v1/namespaces/{namespace}/ingresses (for clusters of v1.21 and later) GET /apis/networking.k8s.io/v1beta1/namespaces/{namespace}/ingresses (for clusters from v1.15 to v1.21) GET /apis/extensions/v1beta1/namespaces/{namespace}/ingresses (for clusters earlier than v1.15)
	Listing ingresses	GET /apis/networking.k8s.io/v1/ingresses (for clusters of v1.21 and later) GET /apis/networking.k8s.io/v1beta1/ingresses (for clusters from v1.15 to v1.21) GET /apis/extensions/v1beta1/ingresses (for clusters earlier than v1.15)

API	Function	URI
	Obtaining the status of an ingress in a specified namespace	<p>GET /apis/networking.k8s.io/v1/namespaces/{namespace}/ingresses/{name}/status (for clusters of v1.21 and later)</p> <p>GET /apis/networking.k8s.io/v1beta1/namespaces/{namespace}/ingresses/{name}/status (for clusters from v1.15 to v1.21)</p> <p>GET /apis/extensions/v1beta1/namespaces/{namespace}/ingresses/{name}/status (for clusters earlier than v1.15)</p>
	Replacing the status of an ingress in a specified namespace	<p>PUT /apis/networking.k8s.io/v1/namespaces/{namespace}/ingresses/{name}/status (for clusters of v1.21 and later)</p> <p>PUT /apis/networking.k8s.io/v1beta1/namespaces/{namespace}/ingresses/{name}/status (for clusters from v1.15 to v1.21)</p> <p>PUT /apis/extensions/v1beta1/namespaces/{namespace}/ingresses/{name}/status (for clusters earlier than v1.15)</p>
	Updating the status of an ingress in a specified namespace	<p>PATCH /apis/networking.k8s.io/v1/namespaces/{namespace}/ingresses/{name}/status (for clusters of v1.21 and later)</p> <p>PATCH /apis/networking.k8s.io/v1beta1/namespaces/{namespace}/ingresses/{name}/status (for clusters from v1.15 to v1.21)</p> <p>PATCH /apis/extensions/v1beta1/namespaces/{namespace}/ingresses/{name}/status (for clusters earlier than v1.15)</p>
Network Policy	Creating a network policy	POST /apis/networking.k8s.io/v1/namespaces/{namespace}/networkpolicies
	Updating a specified network policy	PATCH /apis/networking.k8s.io/v1/namespaces/{namespace}/networkpolicies/{name}
	Replacing a specified network policy	PUT /apis/networking.k8s.io/v1/namespaces/{namespace}/networkpolicies/{name}

API	Function	URI
	Deleting a specified network policy	DELETE /apis/networking.k8s.io/v1/namespaces/{namespace}/networkpolicies/{name}
	Deleting network policies in batches	DELETE /apis/networking.k8s.io/v1/namespaces/{namespace}/networkpolicies
	Reading a specified network policy	GET /apis/networking.k8s.io/v1/namespaces/{namespace}/networkpolicies/{name}
	Listing network policies in a specified namespace	GET /apis/networking.k8s.io/v1/namespaces/{namespace}/networkpolicies
	Listing all network policies	GET /apis/networking.k8s.io/v1/networkpolicies
PersistentVolume	Creating a PersistentVolume	POST /api/v1/persistentvolumes
	Deleting a specified PersistentVolume	DELETE /api/v1/persistentvolumes/{name}
	Deleting all PersistentVolumes	DELETE /api/v1/persistentvolumes
	Reading a specified PersistentVolume	GET /api/v1/persistentvolumes/{name}
	Replacing a specified PersistentVolume	PUT /api/v1/persistentvolumes/{name}
	Replacing the status of a specified PersistentVolume	PUT /api/v1/persistentvolumes/{name}/status
	Listing all PersistentVolumes	GET /api/v1/persistentvolumes
	Updating a specified PersistentVolume	PATCH /api/v1/persistentvolumes/{name}
PersistentVolumeClaim	Creating a PersistentVolumeClaim	POST /api/v1/namespaces/{namespace}/persistentvolumeclaims
	Deleting a specified PersistentVolumeClaim	DELETE /api/v1/namespaces/{namespace}/persistentvolumeclaims/{name}
	Deleting all PersistentVolume-Claims	DELETE /api/v1/namespaces/{namespace}/persistentvolumeclaims
	Reading a specified PersistentVolumeClaim	GET /api/v1/namespaces/{namespace}/persistentvolumeclaims/{name}

API	Function	URI
	Replacing a specified PersistentVolumeClaim	PUT /api/v1/namespaces/{namespace}/persistentvolumeclaims/{name}
	Replacing the status of a specified PersistentVolumeClaim	PUT /api/v1/namespaces/{namespace}/persistentvolumeclaims/{name}/status
	Listing PersistentVolumeClaims in a specified namespace	GET /api/v1/namespaces/{namespace}/persistentvolumeclaims
	Listing all PersistentVolumeClaims	GET /api/v1/persistentvolumeclaims
	Updating a specified PersistentVolumeClaim	PATCH /api/v1/namespaces/{namespace}/persistentvolumeclaims/{name}
ConfigMap	Creating a ConfigMap	POST /api/v1/namespaces/{namespace}/configmaps
	Deleting a ConfigMap	DELETE /api/v1/namespaces/{namespace}/configmaps/{name}
	Deleting all ConfigMaps	DELETE /api/v1/namespaces/{namespace}/configmaps
	Reading a specified ConfigMap	GET /api/v1/namespaces/{namespace}/configmaps/{name}
	Replacing a specified ConfigMap	PUT /api/v1/namespaces/{namespace}/configmaps/{name}
	Listing ConfigMaps in a specified namespace	GET /api/v1/namespaces/{namespace}/configmaps
	Listing all ConfigMaps	GET /api/v1/configmaps
	Updating a specified ConfigMap	PATCH /api/v1/namespaces/{namespace}/configmaps/{name}
Secret	Creating a secret	POST /api/v1/namespaces/{namespace}/secrets
	Deleting a secret	DELETE /api/v1/namespaces/{namespace}/secrets/{name}
	Deleting all secrets in a specified namespace	DELETE /api/v1/namespaces/{namespace}/secrets
	Reading a specified secret	GET /api/v1/namespaces/{namespace}/secrets/{name}
	Replacing a specified secret	PUT /api/v1/namespaces/{namespace}/secrets/{name}

API	Function	URI
	Listing the secrets in a namespace	GET /api/v1/namespaces/{namespace}/secrets
	Listing secrets in a cluster	GET /api/v1/secrets
RBAC/ ClusterRole	Creating a ClusterRole	POST /apis/rbac.authorization.k8s.io/v1/clusterroles
	Updating a specified ClusterRole	PATCH /apis/rbac.authorization.k8s.io/v1/clusterroles/{name}
	Replacing a specified ClusterRole	PUT /apis/rbac.authorization.k8s.io/v1/clusterroles/{name}
	Deleting a specified ClusterRole	DELETE /apis/rbac.authorization.k8s.io/v1/clusterroles/{name}
	Deleting ClusterRoles in batches	DELETE /apis/rbac.authorization.k8s.io/v1/clusterroles
	Reading a specified ClusterRole	GET /apis/rbac.authorization.k8s.io/v1/clusterroles/{name}
	Listing ClusterRoles	GET /apis/rbac.authorization.k8s.io/v1/clusterroles
RBAC/ ClusterRoleBinding	Creating a ClusterRoleBinding	POST /apis/rbac.authorization.k8s.io/v1/clusterrolebindings
	Updating a specified ClusterRoleBinding	PATCH /apis/rbac.authorization.k8s.io/v1/clusterrolebindings/{name}
	Replacing a specified ClusterRoleBinding	PUT /apis/rbac.authorization.k8s.io/v1/clusterrolebindings/{name}
	Deleting a specified ClusterRoleBinding	DELETE /apis/rbac.authorization.k8s.io/v1/clusterrolebindings/{name}
	Deleting ClusterRoleBindings in batches	DELETE /apis/rbac.authorization.k8s.io/v1/clusterrolebindings
	Reading a specified ClusterRoleBinding	GET /apis/rbac.authorization.k8s.io/v1/clusterrolebindings/{name}
	Listing ClusterRoleBindings	GET /apis/rbac.authorization.k8s.io/v1/clusterrolebindings
RBAC/ Role	Creating a Role	POST /apis/rbac.authorization.k8s.io/v1/namespaces/{namespace}/roles
	Updating a specified Role	PATCH /apis/rbac.authorization.k8s.io/v1/namespaces/{namespace}/roles/{name}

API	Function	URI
	Replacing a specified Role	PUT /apis/rbac.authorization.k8s.io/v1/namespaces/{namespace}/roles/{name}
	Deleting a specified Role	DELETE /apis/rbac.authorization.k8s.io/v1/namespaces/{namespace}/roles/{name}
	Deleting Roles in batches	DELETE /apis/rbac.authorization.k8s.io/v1/namespaces/{namespace}/roles
	Reading a specified Role	GET /apis/rbac.authorization.k8s.io/v1/namespaces/{namespace}/roles/{name}
	Listing Roles in a specified namespace	GET /apis/rbac.authorization.k8s.io/v1/namespaces/{namespace}/roles
	Listing all Roles	GET /apis/rbac.authorization.k8s.io/v1/roles
RBAC/ RoleBin ding	Creating a RoleBinding	POST /apis/rbac.authorization.k8s.io/v1/namespaces/{namespace}/rolebindings
	Updating a specified RoleBinding	PATCH /apis/rbac.authorization.k8s.io/v1/namespaces/{namespace}/rolebindings/{name}
	Replacing a specified RoleBinding	PUT /apis/rbac.authorization.k8s.io/v1/namespaces/{namespace}/rolebindings/{name}
	Deleting a specified RoleBinding	DELETE /apis/rbac.authorization.k8s.io/v1/namespaces/{namespace}/rolebindings/{name}
	Deleting RoleBindings in batches	DELETE /apis/rbac.authorization.k8s.io/v1/namespaces/{namespace}/rolebindings
	Reading a specified RoleBinding	GET /apis/rbac.authorization.k8s.io/v1/namespaces/{namespace}/rolebindings/{name}
	Listing RoleBindings in a specified namespace	GET /apis/rbac.authorization.k8s.io/v1/namespaces/{namespace}/rolebindings
	Listing all RoleBindings	GET /apis/rbac.authorization.k8s.io/v1/rolebindings
API groups	Listing APIVersions	GET /api
	Listing APIGroups	GET /apis
	listing APIResources of GroupVersion apiregistration.k8s.io/ v1beta1	GET /apis/apiregistration.k8s.io/v1beta1

API	Function	URI
	listing APIResources of GroupVersion extensions/v1beta1	GET /apis/extensions/v1beta1
	listing APIResources of GroupVersion apps/v1&apps/v1beta1	GET /apis/apps/v1 (for clusters later than v1.15) GET /apis/apps/v1beta1 (for clusters of v1.15 and earlier)
	listing APIResources of GroupVersion authentication.k8s.io/v1	GET /apis/authentication.k8s.io/v1
	listing APIResources of GroupVersion authentication.k8s.io/v1beta1	GET /apis/authentication.k8s.io/v1beta1
	listing APIResources of GroupVersion authorization.k8s.io/v1	GET /apis/authorization.k8s.io/v1
	listing APIResources of GroupVersion authorization.k8s.io/v1beta1	GET /apis/authorization.k8s.io/v1beta1
	listing APIResources of GroupVersion autoscaling/v1	GET /apis/autoscaling/v1
	listing APIResources of GroupVersion batch/v1	GET /apis/batch/v1
	listing APIResources of GroupVersion certificates.k8s.io/v1beta1	GET /apis/certificates.k8s.io/v1beta1
	listing APIResources of GroupVersion networking.k8s.io/v1	GET /apis/networking.k8s.io/v1
	listing APIResources of GroupVersion policy/v1beta1	GET /apis/policy/v1beta1
	listing APIResources of GroupVersion rbac.authorization.k8s.io/v1beta1	GET /apis/rbac.authorization.k8s.io/v1beta1

API	Function	URI
	listing APIResources of GroupVersion storage.k8s.io/v1	GET /apis/storage.k8s.io/v1
	listing APIResources of GroupVersion storage.k8s.io/v1beta1	GET /apis/storage.k8s.io/v1beta1
	listing APIResources of GroupVersion apiextensions.k8s.io/v1beta1	GET /apis/apiextensions.k8s.io/v1beta1
	listing APIResources of GroupVersion v1	GET /api/v1
Event	Reading events	GET /api/v1/events
	Listing events in a specified namespace	GET /api/v1/namespaces/{namespace}/events

3 Calling APIs

3.1 Making an API Request

This section describes the structure of a REST API request, and uses the IAM API for **obtaining a user token** as an example to demonstrate how to call an API. The obtained token can then be used to authenticate the calling of other APIs.

Request URI

A request URI is in the following format:

{URI-scheme}://{Endpoint}/{resource-path}?{query-string}

Although a request URI is included in the request header, most programming languages or frameworks require the request URI to be transmitted separately.

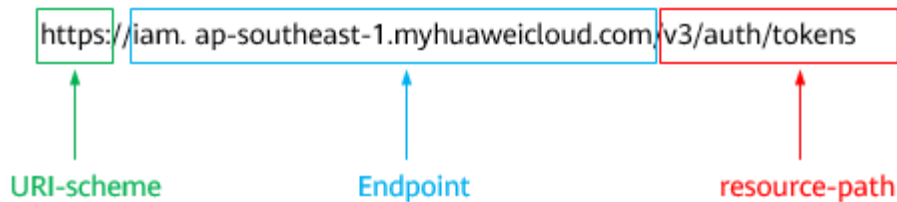
Table 3-1 URI parameters

Parameter	Description
URI-scheme	Protocol used to transmit requests. All APIs use HTTPS.
Endpoint	Domain name or IP address of the server bearing the REST service. The endpoint varies between services in different regions. It can be obtained from Regions and Endpoints . For example, the endpoint of IAM in region CN-Hong Kong is iam.ap-southeast-1.myhuaweicloud.com .
resource-path	Access path of an API for performing an operation. Obtain the path from the URI of an API. For example, the resource-path of the API used to obtain a user token is /v3/auth/tokens .
query-string	Query parameter, which is optional. Ensure that a question mark (?) is included before each query parameter that is in the format of <i>Parameter name=Parameter value</i> . For example, ?limit=10 indicates that a maximum of 10 data records will be displayed.

For example, to obtain an IAM token in the **CN-Hong Kong** region, obtain the endpoint of IAM (**iam.ap-southeast-1.myhuaweicloud.com**) for this region and the **resource-path (/v3/auth/tokens)** in the URI of the API used to **obtain a user token**. Then, construct the URI as follows:

```
https://iam.ap-southeast-1.myhuaweicloud.com/v3/auth/tokens
```

Figure 3-1 Example URI



NOTE

To simplify the URI display in this document, each API is provided only with a **resource-path** and a request method. The **URI-scheme** of all APIs is **HTTPS**, and the endpoints of all APIs in the same region are identical.

Request Methods

The HTTP protocol defines the following request methods that can be used to send a request to the server.

Table 3-2 HTTP methods

Method	Description
GET	Requests the server to return specified resources.
PUT	Requests the server to update specified resources.
POST	Requests the server to add resources or perform special operations.
DELETE	Requests the server to delete specified resources, for example, an object.
HEAD	Requests the server to return the response header.
PATCH	Requests the server to update partial content of a specified resource. If the resource does not exist, a new resource will be created.

For example, in the case of the API used to **obtain a user token**, the request method is **POST**. The request is as follows:

```
POST https://iam.ap-southeast-1.myhuaweicloud.com/v3/auth/tokens
```

Request Header

You can also add additional header fields to a request, such as the fields required by a specified URI or HTTP method. For example, to request for the authentication information, add **Content-Type**, which specifies the request body type.

Common request header fields are as follows.

Table 3-3 Common request header fields

Parameter	Description	Mandatory	Example Value
Host	Specifies the server domain name and port number of the resources being requested. The value can be obtained from the URL of the service API. The value is in the format of <i>Hostname:Port number</i> . If the port number is not specified, the default port is used. The default port number for https is 443 .	No This field is mandatory for AK/SK authentication.	code.test.com or code.test.com:443
Content-Type	Specifies the type (or format) of the message body. The default value application/json is recommended. Other values of this field will be provided for specific APIs if any.	Yes	application/json
Content-Length	Specifies the length of the request body. The unit is byte.	No	3495

Parameter	Description	Mandatory	Example Value
X-Project-Id	Specifies the project ID. Obtain the project ID by following the instructions in Obtaining a Project ID .	No This field is mandatory for requests that use AK/SK authentication in the Dedicated Cloud (DeC) scenario or multi-project scenario.	e9993fc787d94b6c886cb aa340f9c0f4
X-Auth-Token	Specifies the user token. It is a response to the API for obtaining a user token (This is the only API that does not require authentication). After the request is processed, the value of X-Subject-Token in the response header is the token value.	No This field is mandatory for token authentication.	The following is part of an example token: MIIPAgYJKoZIhvcNAQc- Co...ggg1BBIINPXsidG9rZ

 **NOTE**

In addition to supporting authentication using tokens, APIs support authentication using AK/SK, which uses SDKs to sign a request. During the signature, the **Authorization** (signature authentication) and **X-Sdk-Date** (time when a request is sent) headers are automatically added in the request.

For more details, see "Authentication Using AK/SK" in [Authentication](#).

The API used to [obtain a user token](#) does not require authentication. Therefore, only the **Content-Type** field needs to be added to requests for calling the API. An example of such requests is as follows:

```
POST https://iam.ap-southeast-1.myhuaweicloud.com/v3/auth/tokens
Content-Type: application/json
```

(Optional) Request Body

This part is optional. The body of a request is often sent in a structured format as specified in the **Content-Type** header field. The request body transfers content except the request header.

The request body varies between APIs. Some APIs do not require the request body, such as the APIs requested using the GET and DELETE methods.

In the case of the API used to [obtain a user token](#), the request parameters and parameter description can be obtained from the API request. The following provides an example request with a body included. Replace *username*, *domainname*, ******* (login password), and *xxxxxxxxxxxxxxxxxxxx* (project name) with the actual values. Obtain a project name from [Regions and Endpoints](#).

 **NOTE**

The **scope** parameter specifies where a token takes effect. You can set **scope** to an account or a project under an account. In the following example, the token takes effect only for the resources in a specified project. For more information about this API, see [Obtaining a User Token](#).

```
POST https://iam.ap-southeast-1.myhuaweicloud.com/v3/auth/tokens
Content-Type: application/json
{
  "auth": {
    "identity": {
      "methods": [
        "password"
      ],
      "password": {
        "user": {
          "name": "username",
          "password": "*****",
          "domain": {
            "name": "domainname"
          }
        }
      }
    },
    "scope": {
      "project": {
        "name": "xxxxxxxxxxxxxxxxxxxx"
      }
    }
  }
}
```

If all data required for the API request is available, you can send the request to call the API through [curl](#), [Postman](#), or coding. In the response to the API used to obtain a user token, **x-subject-token** is the desired user token. This token can then be used to authenticate the calling of other APIs.

3.2 Authentication

Requests for calling an API can be authenticated using either of the following methods:

- Token authentication: Requests are authenticated using tokens.
- AK/SK authentication: Requests are encrypted using an AK/SK. AK/SK-based authentication is recommended because it is more secure than token-based authentication.

Token-based Authentication

NOTE

The validity period of a token is 24 hours. When using a token for authentication, cache it to prevent frequently calling the IAM API used to obtain a user token.

A token specifies temporary permissions in a computer system. During API authentication using a token, the token is added to requests to get permissions for calling the API.

You can obtain a token by calling the [Obtaining a User Token](#) API. When you call the API, set **auth.scope** in the request body to **project**.

```
{
  "auth": {
    "identity": {
      "methods": [
        "password"
      ],
      "password": {
        "user": {
          "name": "username",
          "password": "*****",
          "domain": {
            "name": "domainname"
          }
        }
      }
    },
    "scope": {
      "project": {
        "name": "xxxxxxx"
      }
    }
  }
}
```

After a token is obtained, the **X-Auth-Token** header field must be added to requests to specify the token when calling other APIs. For example, if the token is **ABCDEFJ....**, **X-Auth-Token: ABCDEFJ....** can be added to a request as follows:

```
POST https://iam.ap-southeast-1.myhuaweicloud.com/v3/auth/projects
Content-Type: application/json
X-Auth-Token: ABCDEFJ....
```

AK/SK Authentication

NOTE

AK/SK authentication supports API requests with a body not larger than 12 MB. For API requests with a larger body, token authentication is recommended.

In AK/SK authentication, AK/SK is used to sign requests and the signature is then added to the requests for authentication.

- AK: access key ID, which is a unique identifier used in conjunction with a secret access key to sign requests cryptographically.
- SK: secret access key, which is used in conjunction with an AK to sign requests cryptographically. It identifies a request sender and prevents the request from being modified.

In AK/SK authentication, you can use an AK/SK to sign requests based on the signature algorithm or using the signing SDK. For details about how to sign requests and use the signing SDK, see [API Request Signing Guide](#).

 **NOTE**

The signing SDK is only used for signing requests and is different from the SDKs provided by services.

3.3 Response

Status Code

After sending a request, you will receive a response, including a status code, response header, and response body.

A status code is a group of digits, ranging from 1xx to 5xx. It indicates the status of a request. For more information, see [Status Code](#).

For example, if status code **201** is returned for calling the API used to [obtain a user token](#), the request is successful.

Response Header

Similar to a request, a response also has a header, for example, **Content-Type**.

[Figure 3-2](#) shows the response header fields for the API used to [obtain a user token](#). The **x-subject-token** header field is the desired user token. This token can then be used to authenticate the calling of other APIs.

Figure 3-2 Header fields of the response to the request for obtaining a user token

```
connection -- keep-alive
content-type -- application/json
date -- Tue, 12 Feb 2019 06:52:13 GMT
server -- Web Server
strict-transport-security -- max-age=31536000; includeSubdomains;
transfer-encoding -- chunked
via -- proxy A
x-content-type-options -- nosniff
x-download-options -- noopen
x-frame-options -- SAMEORIGIN
x-iam-trace-id -- 218d45ab-d674-4995-af3a-2d0255ba41b5
x-subject-token -- [REDACTED]
x-xss-protection -- 1; mode=block
```

Response Body

The body of a response is often returned in structured format as specified in the **Content-Type** header field. The response body transfers content except the response header.

The following is part of the response body for the API used to **obtain a user token**.

```
{
  "token": {
    "expires_at": "2019-02-13T06:52:13.855000Z",
    "methods": [
      "password"
    ],
    "catalog": [
      {
        "endpoints": [
          {
            "region_id": "ap-southeast-1",
            .....

```

If an error occurs during API calling, an error code and a message will be displayed. The following shows an error response body.

```
{
  "error_msg": "The format of message is error",
  "error_code": "AS.0001"
}
```

In the response body, **error_code** is an error code, and **error_msg** provides information about the error.

4 APIs

4.1 API URL

- The URL format for cluster, node, node pool, add-on, and quota management is **https://Endpoint/uri**. *uri* indicates the resource path, that is, the API access path.
- The URL format for Kubernetes APIs, storage management, and add-on management is **https://{clusterid}.Endpoint/uri**. In the URL, *{clusterid}* indicates the cluster ID, and *uri* indicates the resource path, that is, the path for API access.

 NOTE

- The format of the URL called by the add-on management APIs is **https://{clusterid}.Endpoint/uri**. However, *{clusterid}* is used only for the domain name and is not verified or used by the APIs. Set *{clusterid}* in the query or body. For details about *{clusterid}*, see the add-on management sections.
- *{clusterid}* is required for Kubernetes APIs and storage management, which indicates the cluster that needs to be accessed by calling the API.

Table 4-1 URL parameters

Parameter	Description
{clusterid}	Cluster ID. After a cluster is created, call the API for obtaining a cluster in a specified project to obtain the cluster ID.
Endpoint	URL that is the entry point for a web service. You can obtain it from Endpoints .
uri	Access path of an API for performing an operation. Obtain the path from the URI of an API. For example, the resource-path of the API used to obtain a user token is v3/auth/tokens .

4.2 Cluster Management

4.2.1 Creating a Cluster

Function

This API is used to create an empty cluster, which has only master nodes but no worker nodes. After creating a cluster by calling this API, you can add nodes by [creating nodes](#).

NOTE

- The URL for cluster management is in the format of **https://Endpoint/uri**, in which *uri* indicates the resource path, that is, the path for API access.
- By default, ICAgent is not installed when you call this API to create a cluster. If you need to install ICAgent, add "cluster.install.addons.external/install":{"addonTemplateName":"icagent"}" to **annotations** in the request body. ICAgent will be automatically installed during cluster creation. ICAgent is an O&M data collection agent used by Application Performance Management (APM). It runs on each server to collect data from probes in real time. ICAgent is the prerequisite for achieving application O&M. If ICAgent is not installed, the application O&M functions cannot be used.

Constraints

Before calling the CCE API to create a cluster, ensure that the following conditions are met:

- A VPC is available. Otherwise, the cluster cannot be created. If a VPC is available, you do not need to create a new one. A VPC provides an isolated, configurable, manageable virtual network environment for CCE clusters. If no VPC is available, you need to create one first. For details, see [Creating a VPC](#).
- Before creating a cluster, you should properly plan the container and Service CIDR blocks. After a cluster using a container tunnel network is created, you cannot modify the CIDR blocks. After a cluster using a VPC network or Cloud Native 2.0 network is created, you can only add CIDR blocks or subnet CIDR blocks to the cluster but cannot modify the existing CIDR blocks or subnet CIDR blocks. To modify the existing CIDR blocks, you need to create a new cluster. Exercise caution when performing this operation.
- An agency has been correctly created and is not deleted. If the agency verification fails, the cluster fails to be created. You can log in to the CCE console to see if there is any agency. If no agency is created, the system prompts you to create one. If an agency has been created, no message is displayed.
- By default, an account can create up to five clusters in each region. If you need to create more clusters, you can submit an application to increase the quota. For details, see [How Do I Increase My Quota?](#)

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters

Table 4-2 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>

Request Parameters

Table 4-3 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-4 Request body parameters

Parameter	Mandatory	Type	Description
kind	Yes	String	<p>Details: API type</p> <p>Constraints: The value cannot be changed.</p> <p>Options:</p> <ul style="list-style-type: none"> • Cluster • cluster <p>Default value: N/A</p>
apiVersion	Yes	String	<p>Details: API version</p> <p>Constraints: The value cannot be changed.</p> <p>Options:</p> <ul style="list-style-type: none"> • v3 <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
metadata	Yes	ClusterMetadata object	<p>Details: Basic information about a cluster. Metadata is a collection of attributes.</p> <p>Constraints: None</p>
spec	Yes	ClusterSpec object	<p>Details: Detailed description of a cluster. CCE creates or updates objects by defining or updating spec.</p> <p>Constraints: None</p>

Table 4-5 ClusterMetadata

Parameter	Mandatory	Type	Description
name	Yes	String	<p>Details: Cluster name</p> <p>Constraints: None</p> <p>Options: Enter 4 to 128 characters starting with a lowercase letter and not ending with a hyphen (-). Only lowercase letters, digits, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
uid	No	String	<p>Details: Cluster ID, which identifies a cluster</p> <p>Constraints: The value is automatically generated after the object is created. A user-defined value will not take effect. When you create a yearly/monthly cluster, no cluster ID will be returned in the response body.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alias	No	String	<p>Details: Alias of a cluster name displayed on the CCE console. The name can be changed. A cluster alias must be unique.</p> <p>Constraints: In the request body for creating or updating a cluster, if the cluster alias is not specified or set to null, the cluster name will be used as the cluster alias. In the response body for creating a cluster or other response bodies, if the cluster alias is not configured, no value will be returned.</p> <p>Options: Enter 4 to 128 characters starting with a letter and not starting or ending with a hyphen (-). Only digits, letters, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
annotations	No	Map<String,String>	<p>Details: Cluster annotations, in the format of key-value pairs</p> <pre>"annotations": { "key1" : "value1", "key2" : "value2" }</pre> <p>Constraints: This field is not stored in the database and is used only to specify the add-ons to be installed in the cluster.</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>NOTE</p> <ul style="list-style-type: none"> • annotations are not used to identify or select objects. The metadata in annotations may be small or large, structured or unstructured, and may include characters that are not allowed in labels. • You can install ICAGENT during cluster creation by adding the key-value pair "cluster.install.addons.external / install":[{"addonTemplateName":"icagent"}]".
labels	No	Map<String,String>	<p>Details: Cluster labels, in the format of key-value pairs</p> <p>Constraints: The value of this field is automatically generated by the system and is used by the frontend to identify the features supported by the cluster during the upgrade. Custom values are invalid.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
creationTimes tamp	No	String	<p>Details: Time when a cluster was created</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
updateTimest amp	No	String	<p>Details: Time when a cluster was updated</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
timezone	No	String	<p>Details: Cluster time zone</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-6 ClusterSpec

Parameter	Mandatory	Type	Description
category	No	String	<p>Details: Cluster type</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • CCE: CCE cluster. CCE clusters support hybrid deployment of VMs and BMSs, and heterogeneous nodes such as GPU and NPU nodes, allowing you to run your containers in a secure, stable container runtime environment based on a high-performance network model. • Turbo: CCE Turbo cluster. CCE Turbo clusters run on the cloud native 2.0 infrastructure that features hardware and software synergy to support passthrough networking, high security and reliability, and intelligent scheduling. <p>Default value: CCE when the container network is not set to eni Turbo when the container network is set to eni</p>

Parameter	Mandatory	Type	Description
type	No	String	Details: Master node architecture Constraints: None Options: <ul style="list-style-type: none">• VirtualMachine: The master node is an x86 server.• ARM64: The master node is an Arm-based Kunpeng server. Default value: VirtualMachine

Parameter	Mandatory	Type	Description
flavor	Yes	String	<p>Details: Cluster specifications. Specifications of clusters v1.15 and later versions can be changed after they are created. For details, see Changing Cluster Scale. Configure this parameter based on actual service requirements.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • cce.s1.small: a small-scale CCE cluster with one master node and a maximum of 50 worker nodes • cce.s1.medium: a medium-scale CCE cluster with one master node and a maximum of 200 worker nodes • cce.s2.small: a small-scale CCE cluster with three master nodes and a maximum of 50 worker nodes • cce.s2.medium: a medium-scale CCE cluster with three master nodes and a maximum of 200 worker nodes • cce.s2.large: a large-scale CCE cluster with three master nodes and a maximum of 1000 worker nodes • cce.s2.xlarge: an ultra-large-scale CCE cluster with three master nodes and a maximum of 2000 worker nodes <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
			<p>NOTE The fields in the parameters are described as follows:</p> <ul style="list-style-type: none"> • s1: specifies a cluster with one master node. If the master node is faulty, the cluster will become unavailable, but running workloads in the cluster are not affected. • s2: specifies an HA cluster with three master nodes. If one of the master nodes is faulty, the cluster is still available. • dec: specifies a DeC CCE cluster. For example, cce.dec.s1.small specifies a small-scale, DeC CCE cluster with one master node and a maximum of 50 worker nodes. • small: specifies that a cluster can manage a maximum of 50 worker nodes. • medium: specifies that a cluster can manage a maximum of 200 worker nodes. • large: specifies that a cluster can manage a maximum of 1000 worker nodes. • xlarge: specifies that a cluster can manage a maximum of 2000 worker nodes.

Parameter	Mandatory	Type	Description
version	No	String	<p>Details:</p> <p>Version of a cluster, which mirrors the baseline version of the Kubernetes community. The latest version is recommended.</p> <p>You can create clusters of three latest versions on the CCE console. To learn which cluster versions are available, log in to the CCE console, create a cluster, and check the Cluster Version parameter.</p> <p>You can call APIs to create clusters of other versions. However, these cluster versions will be gradually terminated. For details about the support policy, see the CCE announcement.</p> <p>Constraints:</p> <p>None</p> <p>Options:</p> <p>N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • If this parameter is left blank, a cluster of the latest version is created by default. • If a baseline cluster version is specified but the R version is not specified, a cluster of the latest R version will be created by default. It is a good practice not to specify the R version. <p>NOTE</p> <ul style="list-style-type: none"> • CCE Turbo clusters of v1.19 or later are commercially available.

Parameter	Mandatory	Type	Description
platformVersion	No	String	<p>Details: CCE cluster platform version, which is an internal version under the cluster version (version). Platform versions are used to trace iterations in a major cluster version. They are unique within a major cluster version and recounted when the major cluster version changes.</p> <p>Constraints: This parameter cannot be customized, and when you create a cluster, the latest corresponding platform version is selected automatically.</p> <p>Options: The format of platformVersion is cce.X.Y.</p> <ul style="list-style-type: none"> • X: internal feature version, which indicates changes in features, patches, or OS support in the cluster version. The value starts from 1 and increases monotonically. • Y: patch version of an internal feature version. It is used only for software package update after the feature version is released. No other modification is involved. The value starts from 0 and increases monotonically. <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
legacyVersion	No	String	<p>Details: (Discarded) Outdated version of CCE clusters, which serves no practical purpose and is only used to showcase the cluster version and platform version combination. The version number is globally unique. For example, if the cluster version is va.b and the platformVersion is cce.X.Y, the value of legacyVersion is va.b.X-rY.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
description	No	String	<p>Details: Cluster description, for example, which purpose the cluster is intended to serve. By default, this field is left blank. To modify cluster description after a cluster is created, call the API for updating a specified cluster or go to the cluster details page on the CCE console.</p> <p>Constraints: Only UTF-8 encoding is supported.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
customSan	No	Array of strings	<p>Details: Custom Subject Alternative Name (SAN) in the server certificate of a cluster API server, which must comply with the SSL and X509 standard formats</p> <p>Constraints: Duplicate names are not allowed.</p> <p>Options: Values in the IP address or domain name format</p> <p>Default value: N/A</p> <p>Example: SAN 1: DNS Name=example.com SAN 2: DNS Name=www.example.com SAN 3: DNS Name=example.net SAN 4: IP Address=93.184.216.34</p>
ipv6enable	No	Boolean	<p>Details: Whether a cluster supports IPv6 addresses. It is supported by clusters v1.15 and later.</p> <p>Constraints: After IPv6 is enabled, iptables is not supported. The VPC network model does not support IPv4/IPv6 dual-stack.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: IPv4/IPv6 dual-stack is enabled. • false: Only IPv4 is used. <p>Default value: false</p>
hostNetwork	Yes	HostNetwork object	<p>Details: Node network parameters, including VPC and subnet ID. This field is mandatory because nodes in a cluster communicate with each other using a VPC.</p> <p>Constraints: None</p>

Parameter	Mandatory	Type	Description
containerNetwork	Yes	ContainerNetwork object	<p>Details: Container network parameters, including the container network model and container CIDR block</p> <p>Constraints: None</p>
eniNetwork	No	EniNetwork object	<p>Details: Configuration of the Cloud Native 2.0 network model. You need to specify this field when creating a CCE Turbo cluster.</p> <p>Constraints: None</p>
serviceNetwork	No	ServiceNetwork object	<p>Details: Service CIDR block, including IPv4 CIDR block</p> <p>Constraints: None</p>
publicAccess	No	PublicAccess object	<p>Details: Cluster API access control</p> <p>Constraints: None</p>
authentication	No	Authentication object	<p>Details: Configurations of the cluster authentication mode</p> <p>Constraints: None</p>
billingMode	No	Integer	<p>Details: Cluster billing mode</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> 0: pay-per-use 1: yearly/monthly <p>Default value: 0</p>

Parameter	Mandatory	Type	Description
masters	No	Array of MasterSpec objects	<p>Details: Advanced configurations of master nodes</p> <p>Constraints: If this parameter is not specified, no value is returned.</p>
kubernetesSvcIpRange	No	String	<p>Details: Service CIDR blocks which kubernetes clusterIP must fall within. This field is available only for clusters of v1.11.7 and later. If this parameter is not specified during cluster creation, the default value 10.247.0.0/16 is used. This parameter is being discarded, so you can use serviceNetwork instead. The new field contains the IPv4 CIDR blocks.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
clusterTags	No	Array of ResourceTag objects	<p>Details: Cluster resource tags</p> <p>Constraints: None</p>

Parameter	Mandatory	Type	Description
kubeProxyMode	No	String	<p>Details: Service forwarding mode</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • iptables: traditional kube-proxy mode, which uses iptables rules to implement Service load balancing. In this mode, too many iptables rules will be generated when many Services are deployed. Additionally, non-incremental updates will cause latency and obvious performance issues in the case of heavy service traffic. • ipvs: optimized kube-proxy mode with higher throughput and faster speed. This mode supports incremental updates and can keep connections uninterrupted during Service updates. It is suitable for large-sized clusters. <p>Default value: iptables is used by default.</p>
az	No	String	<p>Details: AZ. This field is returned only for a query. For details about AZs supported by CCE, see Regions and Endpoints.</p> <p>Constraints: None</p>

Parameter	Mandatory	Type	Description
extendParam	No	ClusterExtendedParam object	<p>Details: Extended field to decide whether a cluster will span across AZs or belong to a specified enterprise project, or whether a dedicated CCE cluster is to be created</p> <p>Constraints: None</p>
supportIstio	No	Boolean	<p>Details: Whether Istio is supported</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Istio is supported. • false: Istio is not supported. <p>Default value: true</p>
enableDistMgmt	No	Boolean	<p>Details: Whether to enable support for remote clouds</p> <p>Constraints: Only CCE Turbo clusters support this function.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Support for remote clouds is enabled. • false: Support for remote clouds is not enabled. <p>Default value: false</p>

Parameter	Mandatory	Type	Description
deletionProtection	No	Boolean	<p>Details: Cluster deletion protection, which prevents the deletion of a cluster when this function is enabled</p> <p>Constraints: N/A</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Cluster deletion protection is enabled. • false: Cluster deletion protection is disabled. <p>Default value: false</p>
configurationsOverride	No	Array of PackageConfiguration objects	<p>Details: Cluster default component configuration override. For details about the supported components and their parameters, see Modifying Cluster Configurations.</p> <p>Constraints: If you specify a component or parameter that is not supported, the configuration item will be ignored.</p>
clusterOps	No	ClusterOps object	<p>Details: Cluster O&M settings</p> <p>Constraints: None</p>

Parameter	Mandatory	Type	Description
enableAutopilot	No	Boolean	<p>Details: Whether the cluster is an Autopilot cluster</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Create an Autopilot cluster. • false: Create a CCE standard or a Turbo cluster. <p>Default value: false</p>
encryptionConfig	No	EncryptionConfig object	<p>Details: Configuration of secret encryption. Only one encryption mode can be configured. By default, the CCE-managed key is used for encryption. (Users are not aware of the key being used.)</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-7 HostNetwork

Parameter	Mandatory	Type	Description
vpc	Yes	String	<p>Details: ID of the VPC used to create a master node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> • Method 1: Log in to the VPC console and view the VPC ID on the VPC details page. • Method 2: Use the VPC API. For details, see Querying VPCs.
subnet	Yes	String	<p>Details: Network ID of the subnet used to create a master node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> • Method 1: Log in to the VPC console, click the target subnet on the Subnets page, and view the network ID on the displayed page. • Method 2: Use the VPC API. For details, see Querying Subnets.

Parameter	Mandatory	Type	Description
SecurityGroup	No	String	<p>Details: ID of the default node security group in a cluster</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • If this parameter is not specified, the system automatically creates a default node security group. • If this parameter is specified, the cluster will be bound to the specified security group. <p>NOTE To ensure proper communication, allow traffic from certain ports to the specified node security group. For details, see How Can I Configure a Security Group Rule in a Cluster?</p>
controlPlaneSecurityGroup	No	String	<p>Details: ID of the master node security group in a cluster</p> <p>Constraints: The value is automatically generated after the object is created. A user-defined value will not take effect.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-8 ContainerNetwork

Parameter	Mandatory	Type	Description
mode	Yes	String	<p>Details: Container network type</p> <p>Constraints: Only one container network type can be selected.</p> <p>Options:</p> <ul style="list-style-type: none"> • overlay_l2: an overlay_l2 network (container tunnel network) built for containers by using OpenVSwitch (OVS). • vpc-router: an underlay_l2 network built for containers by using IPvlan and custom VPC routes. • eni*: a Cloud Native 2.0 network. This model has integrated cloud native elastic network interfaces (ENIs), uses VPC CIDR blocks to allocate container IP addresses, and supports passthrough networking. You can use this model when creating a CCE Turbo cluster. <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
cidr	No	String	<p>Details: Container CIDR block. 10.0.0.0/12-19, 172.16.0.0/16-19, or 192.168.0.0/16-19 is recommended. If the selected CIDR block conflicts with existing ones, an error will be reported.</p> <p>Constraints: This parameter cannot be modified after the cluster is created. (It has been discarded. If cidrs has been configured, the specified CIDR blocks will be ignored.) Once you have created a cluster that uses a VPC network, you can add new CIDR blocks, but you are unable to modify the existing ones. If you need to adjust the CIDR blocks, you will have to create a new cluster.</p> <p>Options: Values in IPv4 CIDR format</p> <p>Default value: If this parameter is left blank, a unique CIDR block is randomly allocated from 172.(16-31).0.0/16 and 10.(0 16 32 48 64 80 96 112).0.0/12.</p>

Parameter	Mandatory	Type	Description
cidrs	No	Array of ContainerCIDR objects	<p>Details: List of container CIDR blocks. In clusters of v1.21 or later, the cidrs field is used. When the cluster network type is vpc-router, you can configure a maximum of 20 container CIDR blocks. In clusters of versions earlier than v1.21, if the cidrs field is used, the first CIDR element in the array is used as the container CIDR block.</p> <p>Constraints: Once you have created a cluster that uses a container tunnel network, you cannot modify the CIDR blocks. Once you have created a cluster that uses a VPC network, you can add new CIDR blocks, but you are unable to modify the existing ones. If you need to adjust the CIDR blocks, you will have to create a new cluster.</p>

Table 4-9 ContainerCIDR

Parameter	Mandatory	Type	Description
cidr	Yes	String	<p>Details: Container CIDR block. 10.0.0.0/12-19, 172.16.0.0/16-19, or 192.168.0.0/16-19 is recommended.</p> <p>Constraints: If a CIDR block conflict occurs, an error will be reported.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-10 EniNetwork

Parameter	Mandatory	Type	Description
eniSubnetId	Yes	String	<p>Details: IPv4 subnet ID list of the subnet where an ENI resides</p> <p>Constraints: IPv6 is not supported. This parameter is being discarded, and the new field subnets is recommended.</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> Method 1: Log in to the VPC console, click the target subnet on the Subnets page, and view the IPv4 subnet ID on the displayed page. Method 2: Use the VPC API. For details, see Querying Subnets.
eniSubnetCIDR	No	String	<p>Details: ENI subnet CIDR block</p> <p>Constraints: This parameter is being discarded. The new field subnets is recommended.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
subnets	Yes	Array of NetworkSubnet objects	<p>Details: List of IPv4 subnet IDs</p> <p>Constraints: None</p>

Table 4-11 NetworkSubnet

Parameter	Mandatory	Type	Description
subnetID	Yes	String	<p>Details: IPv4 subnet ID of the subnet used to create a master node</p> <p>Constraints: IPv6 is not supported.</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> Method 1: Log in to the VPC console, click the target subnet on the Subnets page, and view the IPv4 subnet ID on the displayed page. Method 2: Use the VPC API. For details, see Querying Subnets.

Table 4-12 ServiceNetwork

Parameter	Mandatory	Type	Description
IPv4CIDR	No	String	<p>Details: Value range of the Kubernetes clusterIP IPv4 CIDR block</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: 10.247.0.0/16</p>

Parameter	Mandatory	Type	Description
IPv6CIDR	No	String	<p>Details: Value range of the Kubernetes clusterIP IPv6 CIDR block</p> <p>Constraints: IPv6 Service CIDR blocks can be configured only for CCE Turbo clusters with IPv6 dual stack enabled.</p> <p>Options: N/A</p> <p>Default value: Default value for a CCE Turbo cluster: fc00::/112 Default value for a CCE standard cluster: fd00:1234::/120</p>

Table 4-13 PublicAccess

Parameter	Mandatory	Type	Description
cidrs	No	Array of strings	<p>Details: Trustlist of network CIDRs that are allowed to access cluster APIs. You are advised to allow the traffic from VPC and container network CIDRs.</p> <p>Constraints: This parameter is valid only when a cluster is created.</p> <p>Options: N/A</p> <p>Default value: By default, no trustlist is configured, and the value is 0.0.0.0/0.</p>

Table 4-14 Authentication

Parameter	Mandatory	Type	Description
mode	No	String	<p>Details: Cluster authentication mode</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Clusters of Kubernetes 1.11 or earlier support x509, rbac, and authenticating_proxy. The parameter defaults to x509. • Clusters of Kubernetes 1.13 or later support rbac and authenticating_proxy. The parameter defaults to rbac. <p>Default value:</p> <ul style="list-style-type: none"> • Clusters of Kubernetes 1.11 or earlier: x509 • Clusters of Kubernetes 1.13 or later: rbac
authenticatingProxy	No	AuthenticatingProxy object	<p>Details: Configuration related to the <code>authenticating_proxy</code> mode</p> <p>Constraints: This field is mandatory when the authentication mode is authenticating_proxy.</p>

Table 4-15 AuthenticatingProxy

Parameter	Mandatory	Type	Description
ca	No	String	<p>Details: X509 CA certificate (Base64-encoded) configured in authenticating_proxy mode</p> <p>Constraints: This field is mandatory when the cluster authentication mode is authenticating_proxy.</p> <p>Options: Maximum size: 1 MB</p> <p>Default value: N/A</p>
cert	No	String	<p>Details: Client certificate issued by the X509 CA certificate configured in authenticating_proxy mode, which is used for authentication from kube-apiserver to the extended API server. (The value must be Base64-encoded.)</p> <p>Constraints: This field is mandatory when the cluster authentication mode is authenticating_proxy.</p> <p>Options: Maximum size: 1 MB</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
privateKey	No	String	<p>Details: Private key of the client certificate issued by the X509 CA certificate configured in <code>authenticating_proxy</code> mode, which is used for authentication from kube-apiserver to the extended API server. The private key used by the Kubernetes cluster does not support password encryption. Use an unencrypted private key. (The value must be Base64-encoded.)</p> <p>Constraints: This field is mandatory when the cluster authentication mode is <code>authenticating_proxy</code>.</p> <p>Options: Maximum size: 1 MB</p> <p>Default value: N/A</p>

Table 4-16 MasterSpec

Parameter	Mandatory	Type	Description
availabilityZone	No	String	<p>Details: AZ</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-17 ResourceTag

Parameter	Mandatory	Type	Description
key	No	String	<p>Details: Key</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • The value cannot be empty and cannot start or end with spaces. A maximum of 128 characters are supported. • Letters, digits, and spaces in UTF-8 format are supported. • The value can contain the following special characters: <code>_:+=-@</code> • The value cannot start with <code>_sys_</code>. <p>Default value: N/A</p>
value	No	String	<p>Details: Value</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • The value can be null but not the default. Max characters: 255 • Letters, digits, and spaces in UTF-8 format are supported. • The value can contain the following special characters: <code>_:/=+-@</code> <p>Default value: N/A</p>

Table 4-18 ClusterExtendParam

Parameter	Mandatory	Type	Description
clusterAZ	No	String	<p>Details: AZs of master nodes in a cluster</p> <p>For details about AZs supported by CCE, see Regions and Endpoints.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • AZs supported by a specified region • multi_az: (Optional) multiple AZs, which can be configured only when a cluster with multiple master nodes is used • <i>AZs of the dedicated cloud computing pool:</i> Master nodes will be deployed in the DeC AZs. It is mandatory for dedicated CCE clusters. <p>Default value: If no AZ is specified, an AZ is randomly allocated by default.</p>

Parameter	Mandatory	Type	Description
dssMasterVolumes	No	String	<p>Details: Whether the system and data disks of a master node use DSS storage pools. If this parameter is unspecified or left blank, EVS disks are used by default.</p> <p>Constraints: This parameter is mandatory for dedicated CCE clusters. It is in the following format: <rootVol.dssPoolID>.<rootVol.volType>;<dataVol.dssPoolID>.<dataVol.volType></p> <p>Specifically:</p> <ul style="list-style-type: none"> • rootVol specifies the system disk. dataVol specifies a data disk. • dssPoolID specifies the ID of a DSS storage pool. • volType specifies the storage volume type of the DSS storage pool, such as SAS, SSD, SATA, ESSD, GPSSD, ESSD2, and GPSSD2. <p>Options: N/A</p> <p>Default value: N/A</p> <p>Example: c950ee97-587c-4f24-8a74-3367e3da570f.sas;6edbc2f4-1507-44f8-ac0d-eed1d2608d38.ssd</p> <p>NOTE This field cannot be configured for non-dedicated CCE clusters.</p>

Parameter	Mandatory	Type	Description
enterpriseProjectId	No	String	Details: ID of the enterprise project that a cluster belongs to Constraints: An enterprise project can be configured only after the enterprise project function is enabled. Options: N/A Default value: N/A

Parameter	Mandatory	Type	Description
kubeProxyMode	No	String	<p>Details: Service forwarding mode</p> <p>Constraints: This parameter has been discarded. If both this parameter and kubeProxyMode in ClusterSpec are specified, the latter is used.</p> <p>Options:</p> <ul style="list-style-type: none"> • iptables: traditional kube-proxy mode, which uses iptables rules to implement Service load balancing. In this mode, too many iptables rules will be generated when many Services are deployed. Additionally, non-incremental updates will cause latency and obvious performance issues in the case of heavy service traffic. • ipvs: optimized kube-proxy mode with higher throughput and faster speed. This mode supports incremental updates and can keep connections uninterrupted during Service updates. It is suitable for large-sized clusters. <p>Default value: iptables</p>
clusterExternalIP	No	String	<p>Details: EIP of the master node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
alpha.cce/ fixPoolMask	No	String	<p>Details: Number of mask bits of the fixed IP address pool of the container networks. This parameter determines the maximum number of IP addresses that can be assigned to containers on a node. This, along with the maxPods setting during node creation, determines the maximum number of pods that can be created on a node. For details, see Maximum Number of Pods That Can Be Created on a Node.</p> <p>Constraints: Only the vpc-router networks support this function.</p> <p>Options: Integers from 24 to 28</p> <p>Default value: 24</p>
decMasterFlavor	No	String	<p>Details: Master node flavor in a dedicated CCE cluster</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
dockerUmaskMode	No	String	<p>Details: Default UmaskMode configuration of Docker in a cluster</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • secure • normal <p>Default value: normal</p>
kubernetes.io/cpuManagerPolicy	No	String	<p>Details: Cluster CPU management policy</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • none or null: disables pods from exclusively occupying CPUs. Select this option if you want a large pool of shareable CPU cores. • static: enables pods to exclusively occupy CPUs. Select this option if your workload is sensitive to CPU cache and scheduling latency. In a CCE Turbo cluster, this setting is valid only for nodes where common containers, not secure containers, run. <p>Default value: none</p>

Parameter	Mandatory	Type	Description
orderID	No	String	<p>Details: Order ID</p> <p>Constraints: This parameter is returned in the response when the cluster is billed on a yearly/monthly basis with auto payment enabled (only in creation scenarios).</p> <p>Options: N/A</p> <p>Default value: N/A</p>
periodType	No	String	<p>Details: The subscription term unit</p> <p>Constraints: As a request parameter, it is valid and mandatory when billingMode is set to 1, which is, the yearly/monthly billing mode is configured. As a response parameter, it is returned only when a yearly/monthly cluster is created.</p> <p>Options:</p> <ul style="list-style-type: none"> • month • year <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
periodNum	No	Integer	<p>Details: Number of subscription periods</p> <p>Constraints: As a request parameter, it is valid and mandatory when billingMode is set to 1. As a response parameter, it is returned only when a yearly/monthly cluster is created.</p> <p>Options:</p> <ul style="list-style-type: none"> • If periodType is month, the value ranges from 1 to 9. • If periodType is year, the value ranges from 1 to 3. <p>Default value: N/A</p>
isAutoRenew	No	String	<p>Details: Whether to enable auto renewal</p> <p>Constraints: This field is valid only when billingMode is set to 1.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto renewal is enabled. • false: Auto renewal is not enabled. <p>Default value: false</p>

Parameter	Mandatory	Type	Description
isAutoPay	No	String	<p>Details: Whether to enable auto payment</p> <p>Constraints: This field is valid only when billingMode is set to 1.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto payment is enabled. • false: Auto payment is not enabled. <p>Default value: false</p>
upgradefrom	No	String	<p>Details: Records of how a cluster is upgraded to its current version</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-19 PackageConfiguration

Parameter	Mandatory	Type	Description
name	No	String	<p>Details: Component name</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
configurations	No	Array of ConfigurationItem objects	<p>Details: Component configuration items</p> <p>Constraints: None</p>

Table 4-20 ConfigurationItem

Parameter	Mandatory	Type	Description
name	No	String	<p>Details: Configuration overrides of the default components in a cluster.</p> <p>For details about the supported components and their parameters, see Configuration Management.</p> <p>Constraints: If you specify a component or parameter that is not supported, this configuration item will be ignored.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
value	No	AnyType	<p>Details: Configuration overrides of the default components in a cluster.</p> <p>For details about the supported components and their parameters, see Configuration Management.</p> <p>Constraints: If you specify a component or parameter that is not supported, this configuration item will be ignored.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-21 ClusterOps

Parameter	Mandatory	Type	Description
alarm	Yes	AlarmInfo object	<p>Details: Alarm assistant settings. CCE is integrated with AOM, which enables alarm functionality, allowing for easy search and configuration of alarms. The Cloud Native Cluster Monitoring add-on sends metric rule data in CCE alarm center to AOM instances.</p> <p>Constraints: None</p>

Table 4-22 AlarmInfo

Parameter	Mandatory	Type	Description
topics	Yes	Array of strings	<p>Details: Contact group list. You can enter SMN topic names and configure contact groups to manage endpoints that have subscribed to alarm messages.</p> <p>Constraints: None</p>
alarmRuleTemplateId	No	String	<p>Details: Alarm rule template ID transferred when the alarm assistant is enabled. By default, the alarm rule template in the container scenario is used.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
promInstanceId	No	String	<p>Details: ID of the AOM Prometheus instance transferred when the alarm assistant is enabled. If the Prometheus add-on is not installed or the AOM instance is not connected, there is no need to specify this parameter. In this case, the alarm center will not generate metric alarm rules.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
promEnterpriseProjectID	No	String	<p>Details: Enterprise project ID of the AOM Prometheus instance transferred when the alarm assistant is enabled. If the Prometheus add-on is not installed or the AOM instance is not connected, there is no need to specify this parameter. In this case, the alarm center will not generate metric alarm rules.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-23 EncryptionConfig

Parameter	Mandatory	Type	Description
mode	No	String	<p>Details: Encryption mode. Either encryption using the CCE-managed key or KMS key can be configured.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Default: Encryption is performed using the CCE-managed key. • KMS: KMS encryption is used. <p>Default value: Default</p>

Parameter	Mandatory	Type	Description
kmsKeyID	No	String	<p>Details: KMS key ID</p> <ul style="list-style-type: none"> In the API for creating a cluster, if the mode field is set to Default, there is no need to specify this field. If the mode field is set to KMS, you can specify a value for this field. If this parameter is left blank, the default KMS key is used by default. If the default key does not exist, DEW will automatically create a default key (cce/default) for the user. To ensure proper cluster functionality, it is important to use a valid KMS key. Refrain from deleting or disabling the key before the cluster lifecycle is complete, as this may cause exceptions. Once a key has been configured for a cluster, it cannot be modified. In the cluster query API, if the mode field is set to Default, the returned value of this field is empty. If the mode field is set to KMS, the specific key ID will be returned. <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 201

Table 4-24 Response body parameters

Parameter	Type	Description
kind	String	<p>Details: API type</p> <p>Constraints: The value cannot be changed.</p> <p>Options:</p> <ul style="list-style-type: none"> • Cluster • cluster <p>Default value: N/A</p>
apiVersion	String	<p>Details: API version</p> <p>Constraints: The value cannot be changed.</p> <p>Options:</p> <ul style="list-style-type: none"> • v3 <p>Default value: N/A</p>
metadata	ClusterMetadata object	<p>Details: Basic information about a cluster. Metadata is a collection of attributes.</p> <p>Constraints: None</p>
spec	ClusterSpec object	<p>Details: Detailed description of a cluster. CCE creates or updates objects by defining or updating spec.</p> <p>Constraints: None</p>
status	ClusterStatus object	<p>Details: Cluster status and ID of a cluster deletion job</p> <p>Constraints: None</p>

Table 4-25 ClusterMetadata

Parameter	Type	Description
name	String	<p>Details: Cluster name</p> <p>Constraints: None</p> <p>Options: Enter 4 to 128 characters starting with a lowercase letter and not ending with a hyphen (-). Only lowercase letters, digits, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>
uid	String	<p>Details: Cluster ID, which identifies a cluster</p> <p>Constraints: The value is automatically generated after the object is created. A user-defined value will not take effect. When you create a yearly/monthly cluster, no cluster ID will be returned in the response body.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
alias	String	<p>Details: Alias of a cluster name displayed on the CCE console. The name can be changed. A cluster alias must be unique.</p> <p>Constraints: In the request body for creating or updating a cluster, if the cluster alias is not specified or set to null, the cluster name will be used as the cluster alias. In the response body for creating a cluster or other response bodies, if the cluster alias is not configured, no value will be returned.</p> <p>Options: Enter 4 to 128 characters starting with a letter and not starting or ending with a hyphen (-). Only digits, letters, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>

Parameter	Type	Description
annotations	Map<String,String>	<p>Details: Cluster annotations, in the format of key-value pairs</p> <pre>"annotations": { "key1" : "value1", "key2" : "value2" }</pre> <p>Constraints: This field is not stored in the database and is used only to specify the add-ons to be installed in the cluster.</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>NOTE</p> <ul style="list-style-type: none"> • annotations are not used to identify or select objects. The metadata in annotations may be small or large, structured or unstructured, and may include characters that are not allowed in labels. • You can install ICAgent during cluster creation by adding the key-value pair "cluster.install.addons.external/install":[{"addonTemplateName":"icagent"}]".
labels	Map<String,String>	<p>Details: Cluster labels, in the format of key-value pairs</p> <p>Constraints: The value of this field is automatically generated by the system and is used by the frontend to identify the features supported by the cluster during the upgrade. Custom values are invalid.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
creationTimestamp	String	<p>Details: Time when a cluster was created</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
updateTimestamp	String	<p>Details: Time when a cluster was updated</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
timezone	String	<p>Details: Cluster time zone</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-26 ClusterSpec

Parameter	Type	Description
category	String	<p>Details: Cluster type</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • CCE: CCE cluster. CCE clusters support hybrid deployment of VMs and BMSs, and heterogeneous nodes such as GPU and NPU nodes, allowing you to run your containers in a secure, stable container runtime environment based on a high-performance network model. • Turbo: CCE Turbo cluster. CCE Turbo clusters run on the cloud native 2.0 infrastructure that features hardware and software synergy to support passthrough networking, high security and reliability, and intelligent scheduling. <p>Default value: CCE when the container network is not set to eni Turbo when the container network is set to eni</p>
type	String	<p>Details: Master node architecture</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • VirtualMachine: The master node is an x86 server. • ARM64: The master node is an Arm-based Kunpeng server. <p>Default value: VirtualMachine</p>

Parameter	Type	Description
flavor	String	<p>Details: Cluster specifications. Specifications of clusters v1.15 and later versions can be changed after they are created. For details, see Changing Cluster Scale. Configure this parameter based on actual service requirements.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> ● cce.s1.small: a small-scale CCE cluster with one master node and a maximum of 50 worker nodes ● cce.s1.medium: a medium-scale CCE cluster with one master node and a maximum of 200 worker nodes ● cce.s2.small: a small-scale CCE cluster with three master nodes and a maximum of 50 worker nodes ● cce.s2.medium: a medium-scale CCE cluster with three master nodes and a maximum of 200 worker nodes ● cce.s2.large: a large-scale CCE cluster with three master nodes and a maximum of 1000 worker nodes ● cce.s2.xlarge: an ultra-large-scale CCE cluster with three master nodes and a maximum of 2000 worker nodes <p>Default value: N/A</p>

Parameter	Type	Description
		<p>NOTE The fields in the parameters are described as follows:</p> <ul style="list-style-type: none"> • s1: specifies a cluster with one master node. If the master node is faulty, the cluster will become unavailable, but running workloads in the cluster are not affected. • s2: specifies an HA cluster with three master nodes. If one of the master nodes is faulty, the cluster is still available. • dec: specifies a DeC CCE cluster. For example, cce.dec.s1.small specifies a small-scale, DeC CCE cluster with one master node and a maximum of 50 worker nodes. • small: specifies that a cluster can manage a maximum of 50 worker nodes. • medium: specifies that a cluster can manage a maximum of 200 worker nodes. • large: specifies that a cluster can manage a maximum of 1000 worker nodes. • xlarge: specifies that a cluster can manage a maximum of 2000 worker nodes.

Parameter	Type	Description
version	String	<p>Details:</p> <p>Version of a cluster, which mirrors the baseline version of the Kubernetes community. The latest version is recommended.</p> <p>You can create clusters of three latest versions on the CCE console. To learn which cluster versions are available, log in to the CCE console, create a cluster, and check the Cluster Version parameter.</p> <p>You can call APIs to create clusters of other versions. However, these cluster versions will be gradually terminated. For details about the support policy, see the CCE announcement.</p> <p>Constraints:</p> <p>None</p> <p>Options:</p> <p>N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • If this parameter is left blank, a cluster of the latest version is created by default. • If a baseline cluster version is specified but the R version is not specified, a cluster of the latest R version will be created by default. It is a good practice not to specify the R version. <p>NOTE</p> <ul style="list-style-type: none"> • CCE Turbo clusters of v1.19 or later are commercially available.

Parameter	Type	Description
platformVersion	String	<p>Details: CCE cluster platform version, which is an internal version under the cluster version (version). Platform versions are used to trace iterations in a major cluster version. They are unique within a major cluster version and recounted when the major cluster version changes.</p> <p>Constraints: This parameter cannot be customized, and when you create a cluster, the latest corresponding platform version is selected automatically.</p> <p>Options: The format of platformVersion is cce.X.Y.</p> <ul style="list-style-type: none"> • X: internal feature version, which indicates changes in features, patches, or OS support in the cluster version. The value starts from 1 and increases monotonically. • Y: patch version of an internal feature version. It is used only for software package update after the feature version is released. No other modification is involved. The value starts from 0 and increases monotonically. <p>Default value: N/A</p>

Parameter	Type	Description
legacyVersion	String	<p>Details: (Discarded) Outdated version of CCE clusters, which serves no practical purpose and is only used to showcase the cluster version and platform version combination. The version number is globally unique. For example, if the cluster version is va.b and the platformVersion is cce.X.Y, the value of legacyVersion is va.b.X-rY.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
description	String	<p>Details: Cluster description, for example, which purpose the cluster is intended to serve. By default, this field is left blank. To modify cluster description after a cluster is created, call the API for updating a specified cluster or go to the cluster details page on the CCE console.</p> <p>Constraints: Only UTF-8 encoding is supported.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
customSan	Array of strings	<p>Details: Custom Subject Alternative Name (SAN) in the server certificate of a cluster API server, which must comply with the SSL and X509 standard formats</p> <p>Constraints: Duplicate names are not allowed.</p> <p>Options: Values in the IP address or domain name format</p> <p>Default value: N/A</p> <p>Example: SAN 1: DNS Name=example.com SAN 2: DNS Name=www.example.com SAN 3: DNS Name=example.net SAN 4: IP Address=93.184.216.34</p>
ipv6enable	Boolean	<p>Details: Whether a cluster supports IPv6 addresses. It is supported by clusters v1.15 and later.</p> <p>Constraints: After IPv6 is enabled, iptables is not supported. The VPC network model does not support IPv4/IPv6 dual-stack.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: IPv4/IPv6 dual-stack is enabled. • false: Only IPv4 is used. <p>Default value: false</p>
hostNetwork	HostNetwork object	<p>Details: Node network parameters, including VPC and subnet ID. This field is mandatory because nodes in a cluster communicate with each other using a VPC.</p> <p>Constraints: None</p>

Parameter	Type	Description
containerNetwork	ContainerNetwork object	<p>Details: Container network parameters, including the container network model and container CIDR block</p> <p>Constraints: None</p>
eniNetwork	EniNetwork object	<p>Details: Configuration of the Cloud Native 2.0 network model. You need to specify this field when creating a CCE Turbo cluster.</p> <p>Constraints: None</p>
serviceNetwork	ServiceNetwork object	<p>Details: Service CIDR block, including IPv4 CIDR block</p> <p>Constraints: None</p>
publicAccess	PublicAccess object	<p>Details: Cluster API access control</p> <p>Constraints: None</p>
authentication	Authentication object	<p>Details: Configurations of the cluster authentication mode</p> <p>Constraints: None</p>
billingMode	Integer	<p>Details: Cluster billing mode</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • 0: pay-per-use • 1: yearly/monthly <p>Default value: 0</p>

Parameter	Type	Description
masters	Array of MasterSpec objects	<p>Details: Advanced configurations of master nodes</p> <p>Constraints: If this parameter is not specified, no value is returned.</p>
kubernetesSvcIpRange	String	<p>Details: Service CIDR blocks which kubernetes clusterIP must fall within. This field is available only for clusters of v1.11.7 and later. If this parameter is not specified during cluster creation, the default value 10.247.0.0/16 is used. This parameter is being discarded, so you can use serviceNetwork instead. The new field contains the IPv4 CIDR blocks.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
clusterTags	Array of ResourceTag objects	<p>Details: Cluster resource tags</p> <p>Constraints: None</p>

Parameter	Type	Description
kubeProxyMode	String	<p>Details: Service forwarding mode</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • iptables: traditional kube-proxy mode, which uses iptables rules to implement Service load balancing. In this mode, too many iptables rules will be generated when many Services are deployed. Additionally, non-incremental updates will cause latency and obvious performance issues in the case of heavy service traffic. • ipvs: optimized kube-proxy mode with higher throughput and faster speed. This mode supports incremental updates and can keep connections uninterrupted during Service updates. It is suitable for large-sized clusters. <p>Default value: iptables is used by default.</p>
az	String	<p>Details: AZ. This field is returned only for a query. For details about AZs supported by CCE, see Regions and Endpoints.</p> <p>Constraints: None</p>
extendParam	ClusterExtendParam object	<p>Details: Extended field to decide whether a cluster will span across AZs or belong to a specified enterprise project, or whether a dedicated CCE cluster is to be created</p> <p>Constraints: None</p>

Parameter	Type	Description
supportIstio	Boolean	<p>Details: Whether Istio is supported</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Istio is supported. • false: Istio is not supported. <p>Default value: true</p>
enableDistMgt	Boolean	<p>Details: Whether to enable support for remote clouds</p> <p>Constraints: Only CCE Turbo clusters support this function.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Support for remote clouds is enabled. • false: Support for remote clouds is not enabled. <p>Default value: false</p>
deletionProtection	Boolean	<p>Details: Cluster deletion protection, which prevents the deletion of a cluster when this function is enabled</p> <p>Constraints: N/A</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Cluster deletion protection is enabled. • false: Cluster deletion protection is disabled. <p>Default value: false</p>

Parameter	Type	Description
configurationsO- verride	Array of PackageConfiguration objects	<p>Details: Cluster default component configuration override. For details about the supported components and their parameters, see Modifying Cluster Configurations.</p> <p>Constraints: If you specify a component or parameter that is not supported, the configuration item will be ignored.</p>
clusterOps	ClusterOps object	<p>Details: Cluster O&M settings</p> <p>Constraints: None</p>
enableAutopilot	Boolean	<p>Details: Whether the cluster is an Autopilot cluster</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Create an Autopilot cluster. • false: Create a CCE standard or a Turbo cluster. <p>Default value: false</p>
encryptionConfig	EncryptionConfig object	<p>Details: Configuration of secret encryption. Only one encryption mode can be configured. By default, the CCE-managed key is used for encryption. (Users are not aware of the key being used.)</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-27 HostNetwork

Parameter	Type	Description
vpc	String	<p>Details: ID of the VPC used to create a master node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> • Method 1: Log in to the VPC console and view the VPC ID on the VPC details page. • Method 2: Use the VPC API. For details, see Querying VPCs.
subnet	String	<p>Details: Network ID of the subnet used to create a master node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> • Method 1: Log in to the VPC console, click the target subnet on the Subnets page, and view the network ID on the displayed page. • Method 2: Use the VPC API. For details, see Querying Subnets.

Parameter	Type	Description
SecurityGroup	String	<p>Details: ID of the default node security group in a cluster</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • If this parameter is not specified, the system automatically creates a default node security group. • If this parameter is specified, the cluster will be bound to the specified security group. <p>NOTE To ensure proper communication, allow traffic from certain ports to the specified node security group. For details, see How Can I Configure a Security Group Rule in a Cluster?</p>
controlPlaneSecurityGroup	String	<p>Details: ID of the master node security group in a cluster</p> <p>Constraints: The value is automatically generated after the object is created. A user-defined value will not take effect.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-28 ContainerNetwork

Parameter	Type	Description
mode	String	<p>Details: Container network type</p> <p>Constraints: Only one container network type can be selected.</p> <p>Options:</p> <ul style="list-style-type: none"> • overlay_l2: an overlay_l2 network (container tunnel network) built for containers by using OpenVSwitch (OVS). • vpc-router: an underlay_l2 network built for containers by using IPvlan and custom VPC routes. • eni*: a Cloud Native 2.0 network. This model has integrated cloud native elastic network interfaces (ENIs), uses VPC CIDR blocks to allocate container IP addresses, and supports passthrough networking. You can use this model when creating a CCE Turbo cluster. <p>Default value: N/A</p>

Parameter	Type	Description
cidr	String	<p>Details: Container CIDR block. 10.0.0.0/12-19, 172.16.0.0/16-19, or 192.168.0.0/16-19 is recommended. If the selected CIDR block conflicts with existing ones, an error will be reported.</p> <p>Constraints: This parameter cannot be modified after the cluster is created. (It has been discarded. If cidrs has been configured, the specified CIDR blocks will be ignored.) Once you have created a cluster that uses a VPC network, you can add new CIDR blocks, but you are unable to modify the existing ones. If you need to adjust the CIDR blocks, you will have to create a new cluster.</p> <p>Options: Values in IPv4 CIDR format</p> <p>Default value: If this parameter is left blank, a unique CIDR block is randomly allocated from 172.(16-31).0.0/16 and 10.(0 16 32 48 64 80 96 112).0.0/12.</p>
cidrs	Array of ContainerCIDR objects	<p>Details: List of container CIDR blocks. In clusters of v1.21 or later, the cidrs field is used. When the cluster network type is vpc-router, you can configure a maximum of 20 container CIDR blocks. In clusters of versions earlier than v1.21, if the cidrs field is used, the first CIDR element in the array is used as the container CIDR block.</p> <p>Constraints: Once you have created a cluster that uses a container tunnel network, you cannot modify the CIDR blocks. Once you have created a cluster that uses a VPC network, you can add new CIDR blocks, but you are unable to modify the existing ones. If you need to adjust the CIDR blocks, you will have to create a new cluster.</p>

Table 4-29 ContainerCIDR

Parameter	Type	Description
cidr	String	<p>Details: Container CIDR block. 10.0.0.0/12-19, 172.16.0.0/16-19, or 192.168.0.0/16-19 is recommended.</p> <p>Constraints: If a CIDR block conflict occurs, an error will be reported.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-30 EniNetwork

Parameter	Type	Description
eniSubnetId	String	<p>Details: IPv4 subnet ID list of the subnet where an ENI resides</p> <p>Constraints: IPv6 is not supported. This parameter is being discarded, and the new field subnets is recommended.</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> Method 1: Log in to the VPC console, click the target subnet on the Subnets page, and view the IPv4 subnet ID on the displayed page. Method 2: Use the VPC API. For details, see Querying Subnets.

Parameter	Type	Description
eniSubnetCIDR	String	<p>Details: ENI subnet CIDR block</p> <p>Constraints: This parameter is being discarded. The new field subnets is recommended.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
subnets	Array of NetworkSubnet objects	<p>Details: List of IPv4 subnet IDs</p> <p>Constraints: None</p>

Table 4-31 NetworkSubnet

Parameter	Type	Description
subnetID	String	<p>Details: IPv4 subnet ID of the subnet used to create a master node</p> <p>Constraints: IPv6 is not supported.</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> Method 1: Log in to the VPC console, click the target subnet on the Subnets page, and view the IPv4 subnet ID on the displayed page. Method 2: Use the VPC API. For details, see Querying Subnets.

Table 4-32 ServiceNetwork

Parameter	Type	Description
IPv4CIDR	String	<p>Details: Value range of the Kubernetes clusterIP IPv4 CIDR block</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: 10.247.0.0/16</p>
IPv6CIDR	String	<p>Details: Value range of the Kubernetes clusterIP IPv6 CIDR block</p> <p>Constraints: IPv6 Service CIDR blocks can be configured only for CCE Turbo clusters with IPv6 dual stack enabled.</p> <p>Options: N/A</p> <p>Default value: Default value for a CCE Turbo cluster: fc00::/112 Default value for a CCE standard cluster: fd00:1234::/120</p>

Table 4-33 PublicAccess

Parameter	Type	Description
cidrs	Array of strings	<p>Details: Trustlist of network CIDRs that are allowed to access cluster APIs. You are advised to allow the traffic from VPC and container network CIDRs.</p> <p>Constraints: This parameter is valid only when a cluster is created.</p> <p>Options: N/A</p> <p>Default value: By default, no trustlist is configured, and the value is 0.0.0.0/0.</p>

Table 4-34 Authentication

Parameter	Type	Description
mode	String	<p>Details: Cluster authentication mode</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> Clusters of Kubernetes 1.11 or earlier support x509, rbac, and authenticating_proxy. The parameter defaults to x509. Clusters of Kubernetes 1.13 or later support rbac and authenticating_proxy. The parameter defaults to rbac. <p>Default value:</p> <ul style="list-style-type: none"> Clusters of Kubernetes 1.11 or earlier: x509 Clusters of Kubernetes 1.13 or later: rbac

Parameter	Type	Description
authenticatingProxy	AuthenticatingProxy object	<p>Details: Configuration related to the authenticating_proxy mode</p> <p>Constraints: This field is mandatory when the authentication mode is authenticating_proxy.</p>

Table 4-35 AuthenticatingProxy

Parameter	Type	Description
ca	String	<p>Details: X509 CA certificate (Base64-encoded) configured in authenticating_proxy mode</p> <p>Constraints: This field is mandatory when the cluster authentication mode is authenticating_proxy.</p> <p>Options: Maximum size: 1 MB</p> <p>Default value: N/A</p>
cert	String	<p>Details: Client certificate issued by the X509 CA certificate configured in authenticating_proxy mode, which is used for authentication from kube-apiserver to the extended API server. (The value must be Base64-encoded.)</p> <p>Constraints: This field is mandatory when the cluster authentication mode is authenticating_proxy.</p> <p>Options: Maximum size: 1 MB</p> <p>Default value: N/A</p>

Parameter	Type	Description
privateKey	String	<p>Details: Private key of the client certificate issued by the X509 CA certificate configured in <code>authenticating_proxy</code> mode, which is used for authentication from kube-apiserver to the extended API server. The private key used by the Kubernetes cluster does not support password encryption. Use an unencrypted private key. (The value must be Base64-encoded.)</p> <p>Constraints: This field is mandatory when the cluster authentication mode is authenticating_proxy.</p> <p>Options: Maximum size: 1 MB</p> <p>Default value: N/A</p>

Table 4-36 MasterSpec

Parameter	Type	Description
availabilityZone	String	<p>Details: AZ</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-37 ResourceTag

Parameter	Type	Description
key	String	<p>Details: Key</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • The value cannot be empty and cannot start or end with spaces. A maximum of 128 characters are supported. • Letters, digits, and spaces in UTF-8 format are supported. • The value can contain the following special characters: <code>._:=+@</code> • The value cannot start with <code>_sys_</code>. <p>Default value: N/A</p>
value	String	<p>Details: Value</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • The value can be null but not the default. Max characters: 255 • Letters, digits, and spaces in UTF-8 format are supported. • The value can contain the following special characters: <code>._:/=+@</code> <p>Default value: N/A</p>

Table 4-38 ClusterExtendParam

Parameter	Type	Description
clusterAZ	String	<p>Details: AZs of master nodes in a cluster For details about AZs supported by CCE, see Regions and Endpoints.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • AZs supported by a specified region • multi_az: (Optional) multiple AZs, which can be configured only when a cluster with multiple master nodes is used • <i>AZs of the dedicated cloud computing pool:</i> Master nodes will be deployed in the DeC AZs. It is mandatory for dedicated CCE clusters. <p>Default value: If no AZ is specified, an AZ is randomly allocated by default.</p>

Parameter	Type	Description
dssMasterVolume s	String	<p>Details: Whether the system and data disks of a master node use DSS storage pools. If this parameter is unspecified or left blank, EVS disks are used by default.</p> <p>Constraints: This parameter is mandatory for dedicated CCE clusters. It is in the following format: <rootVol.dssPoolID>.<rootVol.volType>;<dataVol.dssPoolID>.<dataVol.volType></p> <p>Specifically:</p> <ul style="list-style-type: none"> • rootVol specifies the system disk. dataVol specifies a data disk. • dssPoolID specifies the ID of a DSS storage pool. • volType specifies the storage volume type of the DSS storage pool, such as SAS, SSD, SATA, ESSD, GPSSD, ESSD2, and GPSSD2. <p>Options: N/A</p> <p>Default value: N/A</p> <p>Example: c950ee97-587c-4f24-8a74-3367e3da570f.sas;6edbc2f4-1507-44f8-ac0d-eed1d2608d38.ssd</p> <p>NOTE This field cannot be configured for non-dedicated CCE clusters.</p>
enterpriseProjectId	String	<p>Details: ID of the enterprise project that a cluster belongs to</p> <p>Constraints: An enterprise project can be configured only after the enterprise project function is enabled.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
kubeProxyMode	String	<p>Details: Service forwarding mode</p> <p>Constraints: This parameter has been discarded. If both this parameter and kubeProxyMode in ClusterSpec are specified, the latter is used.</p> <p>Options:</p> <ul style="list-style-type: none"> • iptables: traditional kube-proxy mode, which uses iptables rules to implement Service load balancing. In this mode, too many iptables rules will be generated when many Services are deployed. Additionally, non-incremental updates will cause latency and obvious performance issues in the case of heavy service traffic. • ipvs: optimized kube-proxy mode with higher throughput and faster speed. This mode supports incremental updates and can keep connections uninterrupted during Service updates. It is suitable for large-sized clusters. <p>Default value: iptables</p>
clusterExternalIP	String	<p>Details: EIP of the master node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
alpha.cce/ fixPoolMask	String	<p>Details: Number of mask bits of the fixed IP address pool of the container networks. This parameter determines the maximum number of IP addresses that can be assigned to containers on a node. This, along with the maxPods setting during node creation, determines the maximum number of pods that can be created on a node.</p> <p>For details, see Maximum Number of Pods That Can Be Created on a Node.</p> <p>Constraints: Only the vpc-router networks support this function.</p> <p>Options: Integers from 24 to 28</p> <p>Default value: 24</p>
decMasterFlavor	String	<p>Details: Master node flavor in a dedicated CCE cluster</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
dockerUmaskMode	String	<p>Details: Default UmaskMode configuration of Docker in a cluster</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • secure • normal <p>Default value: normal</p>

Parameter	Type	Description
kubernetes.io/ cpuManagerPolicy	String	<p>Details: Cluster CPU management policy</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • none or null: disables pods from exclusively occupying CPUs. Select this option if you want a large pool of shareable CPU cores. • static: enables pods to exclusively occupy CPUs. Select this option if your workload is sensitive to CPU cache and scheduling latency. In a CCE Turbo cluster, this setting is valid only for nodes where common containers, not secure containers, run. <p>Default value: none</p>
orderId	String	<p>Details: Order ID</p> <p>Constraints: This parameter is returned in the response when the cluster is billed on a yearly/monthly basis with auto payment enabled (only in creation scenarios).</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
periodType	String	<p>Details: The subscription term unit</p> <p>Constraints: As a request parameter, it is valid and mandatory when billingMode is set to 1, which is, the yearly/monthly billing mode is configured. As a response parameter, it is returned only when a yearly/monthly cluster is created.</p> <p>Options:</p> <ul style="list-style-type: none"> • month • year <p>Default value: N/A</p>
periodNum	Integer	<p>Details: Number of subscription periods</p> <p>Constraints: As a request parameter, it is valid and mandatory when billingMode is set to 1. As a response parameter, it is returned only when a yearly/monthly cluster is created.</p> <p>Options:</p> <ul style="list-style-type: none"> • If periodType is month, the value ranges from 1 to 9. • If periodType is year, the value ranges from 1 to 3. <p>Default value: N/A</p>
isAutoRenew	String	<p>Details: Whether to enable auto renewal</p> <p>Constraints: This field is valid only when billingMode is set to 1.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto renewal is enabled. • false: Auto renewal is not enabled. <p>Default value: false</p>

Parameter	Type	Description
isAutoPay	String	<p>Details: Whether to enable auto payment</p> <p>Constraints: This field is valid only when billingMode is set to 1.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto payment is enabled. • false: Auto payment is not enabled. <p>Default value: false</p>
upgradefrom	String	<p>Details: Records of how a cluster is upgraded to its current version</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-39 PackageConfiguration

Parameter	Type	Description
name	String	<p>Details: Component name</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
configurations	Array of ConfigurationItem objects	<p>Details: Component configuration items</p> <p>Constraints: None</p>

Table 4-40 ConfigurationItem

Parameter	Type	Description
name	String	<p>Details: Configuration overrides of the default components in a cluster. For details about the supported components and their parameters, see Configuration Management.</p> <p>Constraints: If you specify a component or parameter that is not supported, this configuration item will be ignored.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
value	AnyType	<p>Details: Configuration overrides of the default components in a cluster. For details about the supported components and their parameters, see Configuration Management.</p> <p>Constraints: If you specify a component or parameter that is not supported, this configuration item will be ignored.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-41 ClusterOps

Parameter	Type	Description
alarm	AlarmInfo object	<p>Details: Alarm assistant settings. CCE is integrated with AOM, which enables alarm functionality, allowing for easy search and configuration of alarms. The Cloud Native Cluster Monitoring add-on sends metric rule data in CCE alarm center to AOM instances.</p> <p>Constraints: None</p>

Table 4-42 AlarmInfo

Parameter	Type	Description
topics	Array of strings	<p>Details: Contact group list. You can enter SMN topic names and configure contact groups to manage endpoints that have subscribed to alarm messages.</p> <p>Constraints: None</p>
alarmRuleTemplated	String	<p>Details: Alarm rule template ID transferred when the alarm assistant is enabled. By default, the alarm rule template in the container scenario is used.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
promInstanceID	String	<p>Details: ID of the AOM Prometheus instance transferred when the alarm assistant is enabled. If the Prometheus add-on is not installed or the AOM instance is not connected, there is no need to specify this parameter. In this case, the alarm center will not generate metric alarm rules.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
promEnterpriseProjectID	String	<p>Details: Enterprise project ID of the AOM Prometheus instance transferred when the alarm assistant is enabled. If the Prometheus add-on is not installed or the AOM instance is not connected, there is no need to specify this parameter. In this case, the alarm center will not generate metric alarm rules.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-43 EncryptionConfig

Parameter	Type	Description
mode	String	<p>Details: Encryption mode. Either encryption using the CCE-managed key or KMS key can be configured.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Default: Encryption is performed using the CCE-managed key. • KMS: KMS encryption is used. <p>Default value: Default</p>
kmsKeyID	String	<p>Details: KMS key ID</p> <ul style="list-style-type: none"> • In the API for creating a cluster, if the mode field is set to Default, there is no need to specify this field. If the mode field is set to KMS, you can specify a value for this field. If this parameter is left blank, the default KMS key is used by default. If the default key does not exist, DEW will automatically create a default key (cce/default) for the user. To ensure proper cluster functionality, it is important to use a valid KMS key. Refrain from deleting or disabling the key before the cluster lifecycle is complete, as this may cause exceptions. Once a key has been configured for a cluster, it cannot be modified. • In the cluster query API, if the mode field is set to Default, the returned value of this field is empty. If the mode field is set to KMS, the specific key ID will be returned. <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-44 ClusterStatus

Parameter	Type	Description
phase	String	<p>Details: Cluster status</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> ● Available: The cluster is running properly. ● Unavailable: The cluster is exhibiting unexpected behavior and needs to be manually deleted. ● ScalingUp: Nodes are being added to the cluster. ● ScalingDown: The cluster is being downsized to fewer nodes. ● Creating: The cluster is being created. ● Deleting: The cluster is being deleted. ● Upgrading: The cluster is being upgraded. ● Resizing: Cluster specifications are being changed. ● ResizeFailed: Cluster specification changing is abnormal. ● RollingBack: The cluster is being rolled back. ● RollbackFailed: The cluster rollback is abnormal. ● Hibernating: The cluster is being hibernated. ● Hibernation: The cluster is in hibernation. ● Freezing: The cluster is being frozen. ● Frozen: The cluster has been frozen. ● UnFreezing: The cluster is being unfrozen. ● Awaking: The cluster is being woken up from hibernation.

Parameter	Type	Description
		<ul style="list-style-type: none"> • Empty: The cluster does not have any resources. This field has been discarded. • Error: Resources in the cluster are abnormal. You can manually delete the cluster.
jobID	String	<p>Details: ID of the job associated with the current cluster status. The system supports:</p> <ul style="list-style-type: none"> • ID of the associated job returned when creating a cluster. You can use it to obtain the auxiliary jobs for creating a cluster. • ID of the associated job returned when a cluster fails to be deleted or is being deleted. If this parameter is not empty, you can use the job ID to obtain the auxiliary jobs for deleting a cluster. <p>Constraints: None</p> <p>Options: N/A</p> <p>NOTE Jobs are short-lived. Do not use job information in scenarios such as cluster status determination.</p>
reason	String	<p>Details: Why a cluster changes to the current state. This parameter is returned if the cluster is not in the Available state.</p> <p>Constraints: None</p> <p>Options: N/A</p>

Parameter	Type	Description
message	String	<p>Details: Detailed information about why a cluster changes to the current state. This parameter is returned if the cluster is not in the Available state.</p> <p>Constraints: None</p> <p>Options: N/A</p>
endpoints	Array of ClusterEndpoints objects	<p>Details: Access address of kube-apiserver in a cluster</p> <p>Constraints: None</p>
isLocked	Boolean	<p>Details: CBC resource locked</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • true: The resource is locked by CBC. • false: The resource is not locked by CBC.
lockScene	String	<p>Details: CBC resource locking scenario</p> <p>Constraints: None</p> <p>Options: N/A</p>
lockSource	String	<p>Details: Resource locked</p> <p>Constraints: None</p> <p>Options: N/A</p>

Parameter	Type	Description
lockSourceId	String	<p>Details: ID of a locked resource</p> <p>Constraints: None</p> <p>Options: N/A</p>
deleteOption	Object	<p>Details: Status of the configuration to be deleted. This parameter is contained only in the response to the deletion request.</p> <p>Constraints: None</p> <p>Options: N/A</p>
deleteStatus	Object	<p>Details: Information of the status to be deleted. This parameter is contained only in the response to the deletion request.</p> <p>Constraints: None</p> <p>Options: N/A</p>

Table 4-45 ClusterEndpoints

Parameter	Type	Description
url	String	<p>Details: Access address of kube-apiserver in a cluster</p> <p>Constraints: None</p> <p>Options: N/A</p>

Parameter	Type	Description
type	String	<p>Details: Type of the cluster access address</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Internal: address for internal network access • External: address for external network access

Example Requests

- Create an HA CCE cluster of v1.29 that is billed on a pay-per-use basis and has three master nodes and a maximum of 50 worker nodes.

```
/api/v3/projects/{project_id}/clusters
{
  "kind": "Cluster",
  "apiVersion": "v3",
  "metadata": {
    "name": "cluster"
  },
  "spec": {
    "category": "CCE",
    "flavor": "cce.s2.small",
    "version": "v1.29",
    "hostNetwork": {
      "vpc": "030bfb19-5fa7-42ad-8a0d-c0721d268867",
      "subnet": "ca964acf-8468-4735-8229-97940ef6c881"
    },
    "containerNetwork": {
      "mode": "vpc-router",
      "cidr": "10.0.0.0/16"
    },
    "kubernetesSvcIprange": "10.247.0.0/16",
    "description": "",
    "billingMode": 0,
    "extendParam": {
      "kubeProxyMode": "iptables",
      "alpha.cce/fixPoolMask": "25",
      "enterpriseProjectId": "0"
    },
    "authentication": {
      "mode": "rbac"
    },
    "ipv6enable": false
  }
}
```

- Create an HA CCE cluster of v1.29 that is billed on a pay-per-use basis and has three master nodes and a maximum of 50 worker nodes and install ICAgent in the cluster.

```
/api/v3/projects/{project_id}/clusters
{
  "kind": "Cluster",
  "apiVersion": "v3",
```

```

"metadata" : {
  "name" : "cluster",
  "annotations" : {
    "cluster.install.addons.external/install" : "[{"addonTemplateName":"\icagent\"}]"}
  }
},
"spec" : {
  "category" : "CCE",
  "flavor" : "cce.s2.small",
  "version" : "v1.29",
  "hostNetwork" : {
    "vpc" : "030bfb19-5fa7-42ad-8a0d-c0721d268867",
    "subnet" : "ca964acf-8468-4735-8229-97940ef6c881"
  },
  "containerNetwork" : {
    "mode" : "vpc-router",
    "cidr" : "10.0.0.0/16"
  },
  "kubernetesSvclpRange" : "10.247.0.0/16",
  "description" : "",
  "billingMode" : 0,
  "extendParam" : {
    "kubeProxyMode" : "iptables",
    "alpha.cce/fixPoolMask" : "25",
    "enterpriseProjectId" : "0"
  },
  "authentication" : {
    "mode" : "rbac"
  },
  "ipv6enable" : false
}
}

```

- Create an HA CCE cluster of v1.29 that is billed on a pay-per-use basis and has three master nodes and a maximum of 50 worker nodes and configure the custom default security group for nodes in the cluster.

```

/api/v3/projects/{project_id}/clusters

{
  "kind" : "Cluster",
  "apiVersion" : "v3",
  "metadata" : {
    "name" : "cluster"
  },
  "spec" : {
    "category" : "CCE",
    "flavor" : "cce.s2.small",
    "version" : "v1.29",
    "hostNetwork" : {
      "vpc" : "030bfb19-5fa7-42ad-8a0d-c0721d268867",
      "subnet" : "ca964acf-8468-4735-8229-97940ef6c881",
      "SecurityGroup" : "a4ef108c-2ec6-492f-a6c4-7b64e25ae490"
    },
    "containerNetwork" : {
      "mode" : "vpc-router",
      "cidr" : "10.0.0.0/16"
    },
    "kubernetesSvclpRange" : "10.247.0.0/16",
    "description" : "",
    "billingMode" : 0,
    "extendParam" : {
      "kubeProxyMode" : "iptables",
      "alpha.cce/fixPoolMask" : "25",
      "enterpriseProjectId" : "0"
    },
    "authentication" : {
      "mode" : "rbac"
    },
    "ipv6enable" : false
  }
}

```

- Create an HA CCE cluster of v1.25 with three master nodes and a maximum of 50 worker nodes billed on a pay-per-use basis.

```
/api/v3/projects/{project_id}/clusters
{
  "kind": "Cluster",
  "apiVersion": "v3",
  "metadata": {
    "name": "cluster"
  },
  "spec": {
    "category": "Turbo",
    "flavor": "cce.s2.small",
    "version": "v1.25",
    "type": "VirtualMachine",
    "hostNetwork": {
      "vpc": "030bfb19-5fa7-42ad-8a0d-c0721d268867",
      "subnet": "ca964acf-8468-4735-8229-97940ef6c881"
    },
    "containerNetwork": {
      "mode": "eni"
    },
    "eniNetwork": {
      "eniSubnetId": "861fb11d-2f0e-4c10-a98a-166dc26e4ff7",
      "eniSubnetCIDR": "192.168.0.0/24",
      "subnets": [ {
        "subnetID": "861fb11d-2f0e-4c10-a98a-166dc26e4ff7"
      } ]
    },
    "serviceNetwork": {
      "IPv4CIDR": "10.247.0.0/16"
    },
    "description": "",
    "billingMode": 0,
    "extendParam": {
      "kubeProxyMode": "iptables",
      "enterpriseProjectId": "0"
    },
    "authentication": {
      "mode": "rbac"
    },
    "ipv6enable": false
  }
}
```

- Configure the trustlist network CIDR for accessing the cluster API when creating a cluster.

```
/api/v3/projects/{project_id}/clusters
{
  "kind": "Cluster",
  "apiVersion": "v3",
  "metadata": {
    "name": "cluster"
  },
  "spec": {
    "category": "CCE",
    "flavor": "cce.s2.small",
    "version": "v1.19",
    "hostNetwork": {
      "vpc": "030bfb19-5fa7-42ad-8a0d-c0721d268867",
      "subnet": "ca964acf-8468-4735-8229-97940ef6c881"
    },
    "publicAccess": {
      "cidrs": [ "192.168.0.0/16" ]
    },
  },
}
```

```

"containerNetwork" : {
  "mode" : "vpc-router",
  "cidr" : "10.0.0.0/16"
},
"serviceNetwork" : {
  "IPv4CIDR" : "10.247.0.0/16",
  "IPv6CIDR" : "fc00::/112"
},
"kubernetesSvcIprange" : "10.247.0.0/16",
"description" : "",
"billingMode" : 0,
"extendParam" : {
  "kubeProxyMode" : "iptables",
  "alpha.cce/fixPoolMask" : "25",
  "enterpriseProjectId" : "0"
},
"authentication" : {
  "mode" : "rbac"
},
"ipv6enable" : false
}

```

Example Responses

Status code: 201

The cluster creation job is successfully delivered.

```

{
  "kind" : "Cluster",
  "apiVersion" : "v3",
  "metadata" : {
    "name" : "cluster",
    "uid" : "1df09f9a-5b9e-11ef-8f52-0255ac10003e",
    "creationTimestamp" : "2024-08-16 07:06:53.704389459 +0000 UTC",
    "updateTimestamp" : "2024-08-16 07:06:53.704389529 +0000 UTC",
    "annotations" : {
      "jobid" : "1e50bfbe-5b9e-11ef-8f52-0255ac10003e",
      "resourceJobId" : "1df0ec6b-5b9e-11ef-8f52-0255ac10003e"
    }
  },
  "timezone" : "Asia/Shanghai"
},
"spec" : {
  "publicAccess" : { },
  "category" : "CCE",
  "type" : "VirtualMachine",
  "enableAutopilot" : false,
  "flavor" : "cce.s1.small",
  "version" : "v1.29",
  "platformVersion" : "cce.4.0",
  "configurationsOverride" : [ {
    "name" : "kube-apiserver",
    "configurations" : [ {
      "name" : "support-overload",
      "value" : true
    }
  ]
}
],
"hostNetwork" : {
  "vpc" : "0538a5d0-9a65-4c1d-a8bf-e9acee237980",
  "subnet" : "bc81be88-6e34-4b02-83bd-df0a1f7672c5"
},
"containerNetwork" : {
  "mode" : "vpc-router",
  "cidr" : "172.17.0.0/16",
  "cidrs" : [ {
    "cidr" : "172.17.0.0/16"
  }
]
}
}

```

```
"eniNetwork" : { },
"serviceNetwork" : {
  "IPv4CIDR" : "10.247.0.0/16"
},
"authentication" : {
  "mode" : "rbac",
  "authenticatingProxy" : { }
},
"billingMode" : 0,
"kubernetesSvcIpsRange" : "10.247.0.0/16",
"kubeProxyMode" : "iptables",
"extendParam" : {
  "alpha.cce/fixPoolMask" : "25",
  "enterpriseProjectId" : "0",
  "orderId" : ""
}
},
"status" : {
  "phase" : "Creating",
  "jobID" : "1e50bfbe-5b9e-11ef-8f52-0255ac10003e"
}
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

- Create an HA CCE cluster of v1.29 that is billed on a pay-per-use basis and has three master nodes and a maximum of 50 worker nodes.

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class CreateClusterSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before
        // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
        // environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        CreateClusterRequest request = new CreateClusterRequest();
        Cluster body = new Cluster();
```

```

ClusterExtendParam extendParamSpec = new ClusterExtendParam();
extendParamSpec.withEnterpriseProjectId("0")
    .withKubeProxyMode("iptables")
    .withAlphaCceFixPoolMask("25");
Authentication authenticationSpec = new Authentication();
authenticationSpec.withMode("rbac");
ContainerNetwork containerNetworkSpec = new ContainerNetwork();
containerNetworkSpec.withMode(ContainerNetwork.ModeEnum.fromValue("vpc-router"))
    .withCidr("10.0.0.0/16");
HostNetwork hostNetworkSpec = new HostNetwork();
hostNetworkSpec.withVpc("030bfb19-5fa7-42ad-8a0d-c0721d268867")
    .withSubnet("ca964acf-8468-4735-8229-97940ef6c881");
ClusterSpec specbody = new ClusterSpec();
specbody.withCategory(ClusterSpec.CategoryEnum.fromValue("CCE"))
    .withFlavor("cce.s2.small")
    .withVersion("v1.29")
    .withDescription("")
    .withIpv6enable(false)
    .withHostNetwork(hostNetworkSpec)
    .withContainerNetwork(containerNetworkSpec)
    .withAuthentication(authenticationSpec)
    .withBillingMode(0)
    .withKubernetesSvcIprange("10.247.0.0/16")
    .withExtendParam(extendParamSpec);
ClusterMetadata metadatabody = new ClusterMetadata();
metadatabody.withName("cluster");
body.withSpec(specbody);
body.withMetadata(metadatabody);
body.withApiVersion("v3");
body.withKind("Cluster");
request.withBody(body);
try {
    CreateClusterResponse response = client.createCluster(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
}

```

- Create an HA CCE cluster of v1.29 that is billed on a pay-per-use basis and has three master nodes and a maximum of 50 worker nodes and install ICAgent in the cluster.

```

package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.Map;
import java.util.HashMap;

public class CreateClusterSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great

```

security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.

// In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment

```
String ak = System.getenv("CLOUD_SDK_AK");
String sk = System.getenv("CLOUD_SDK_SK");
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
    .withProjectId(projectId)
    .withAk(ak)
    .withSk(sk);

CceClient client = CceClient.newBuilder()
    .withCredential(auth)
    .withRegion(CceRegion.valueOf("<YOUR REGION>"))
    .build();
CreateClusterRequest request = new CreateClusterRequest();
Cluster body = new Cluster();
ClusterExtendParam extendParamSpec = new ClusterExtendParam();
extendParamSpec.withEnterpriseProjectId("0")
    .withKubeProxyMode("iptables")
    .withAlphaCceFixPoolMask("25");
Authentication authenticationSpec = new Authentication();
authenticationSpec.withMode("rbac");
ContainerNetwork containerNetworkSpec = new ContainerNetwork();
containerNetworkSpec.withMode(ContainerNetwork.ModeEnum.fromValue("vpc-router"))
    .withCidr("10.0.0.0/16");
HostNetwork hostNetworkSpec = new HostNetwork();
hostNetworkSpec.withVpc("030bfb19-5fa7-42ad-8a0d-c0721d268867")
    .withSubnet("ca964acf-8468-4735-8229-97940ef6c881");
ClusterSpec specbody = new ClusterSpec();
specbody.withCategory(ClusterSpec.CategoryEnum.fromValue("CCE"))
    .withFlavor("cce.s2.small")
    .withVersion("v1.29")
    .withDescription("")
    .withIpv6enable(false)
    .withHostNetwork(hostNetworkSpec)
    .withContainerNetwork(containerNetworkSpec)
    .withAuthentication(authenticationSpec)
    .withBillingMode(0)
    .withKubernetesSvcIpRange("10.247.0.0/16")
    .withExtendParam(extendParamSpec);
Map<String, String> listMetadataAnnotations = new HashMap<>();
listMetadataAnnotations.put("cluster.install.addons.external/install",
"["addonTemplateName":"icagent"]");
ClusterMetadata metadatabody = new ClusterMetadata();
metadatabody.withName("cluster")
    .withAnnotations(listMetadataAnnotations);
body.withSpec(specbody);
body.withMetadata(metadatabody);
body.withApiVersion("v3");
body.withKind("Cluster");
request.withBody(body);
try {
    CreateClusterResponse response = client.createCluster(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
```


- Create an HA CCE cluster of v1.29 that is billed on a pay-per-use basis and has three master nodes and a maximum of 50 worker nodes and configure the custom default security group for nodes in the cluster.

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class CreateClusterSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before
        // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
        // environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        CreateClusterRequest request = new CreateClusterRequest();
        Cluster body = new Cluster();
        ClusterExtendParam extendParamSpec = new ClusterExtendParam();
        extendParamSpec.withEnterpriseProjectId("0")
            .withKubeProxyMode("iptables")
            .withAlphaCceFixPoolMask("25");
        Authentication authenticationSpec = new Authentication();
        authenticationSpec.withMode("rbac");
        ContainerNetwork containerNetworkSpec = new ContainerNetwork();
        containerNetworkSpec.withMode(ContainerNetwork.ModeEnum.fromValue("vpc-router"))
            .withCidr("10.0.0.0/16");
        HostNetwork hostNetworkSpec = new HostNetwork();
        hostNetworkSpec.withVpc("030bfb19-5fa7-42ad-8a0d-c0721d268867")
            .withSubnet("ca964acf-8468-4735-8229-97940ef6c881")
            .withSecurityGroup("a4ef108c-2ec6-492f-a6c4-7b64e25ae490");
        ClusterSpec specbody = new ClusterSpec();
        specbody.withCategory(ClusterSpec.CategoryEnum.fromValue("CCE"))
            .withFlavor("cce.s2.small")
            .withVersion("v1.29")
            .withDescription("")
            .withIpv6enable(false)
            .withHostNetwork(hostNetworkSpec)
            .withContainerNetwork(containerNetworkSpec)
            .withAuthentication(authenticationSpec)
            .withBillingMode(0)
            .withKubernetesSvcIpRange("10.247.0.0/16")
            .withExtendParam(extendParamSpec);
        ClusterMetadata metadatabody = new ClusterMetadata();
        metadatabody.withName("cluster");
    }
}
```

```
body.withSpec(specbody);
body.withMetadata(metadatabody);
body.withApiVersion("v3");
body.withKind("Cluster");
request.withBody(body);
try {
    CreateClusterResponse response = client.createCluster(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

- Create an HA CCE cluster of v1.25 with three master nodes and a maximum of 50 worker nodes billed on a pay-per-use basis.

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class CreateClusterSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before
        // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
        // environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        CreateClusterRequest request = new CreateClusterRequest();
        Cluster body = new Cluster();
        ClusterExtendParam extendParamSpec = new ClusterExtendParam();
        extendParamSpec.withEnterpriseProjectId("0")
            .withKubeProxyMode("iptables");
        Authentication authenticationSpec = new Authentication();
        authenticationSpec.withMode("rbac");
        ServiceNetwork serviceNetworkSpec = new ServiceNetwork();
        serviceNetworkSpec.withIpv4CIDR("10.247.0.0/16");
    }
}
```

```
List<NetworkSubnet> listEniNetworkSubnets = new ArrayList<>();
listEniNetworkSubnets.add(
    new NetworkSubnet()
        .withSubnetID("861fb11d-2f0e-4c10-a98a-166dc26e4ff7")
);
EniNetwork eniNetworkSpec = new EniNetwork();
eniNetworkSpec.withEniSubnetId("861fb11d-2f0e-4c10-a98a-166dc26e4ff7")
    .withEniSubnetCIDR("192.168.0.0/24")
    .withSubnets(listEniNetworkSubnets);
ContainerNetwork containerNetworkSpec = new ContainerNetwork();
containerNetworkSpec.withMode(ContainerNetwork.ModeEnum.fromValue("eni"));
HostNetwork hostNetworkSpec = new HostNetwork();
hostNetworkSpec.withVpc("030bfb19-5fa7-42ad-8a0d-c0721d268867")
    .withSubnet("ca964acf-8468-4735-8229-97940ef6c881");
ClusterSpec specbody = new ClusterSpec();
specbody.withCategory(ClusterSpec.CategoryEnum.fromValue("Turbo"))
    .withType(ClusterSpec.TypeEnum.fromValue("VirtualMachine"))
    .withFlavor("cce.s2.small")
    .withVersion("v1.25")
    .withDescription("")
    .withIpv6enable(false)
    .withHostNetwork(hostNetworkSpec)
    .withContainerNetwork(containerNetworkSpec)
    .withEniNetwork(eniNetworkSpec)
    .withServiceNetwork(serviceNetworkSpec)
    .withAuthentication(authenticationSpec)
    .withBillingMode(0)
    .withExtendParam(extendParamSpec);
ClusterMetadata metadatabody = new ClusterMetadata();
metadatabody.withName("cluster");
body.withSpec(specbody);
body.withMetadata(metadatabody);
body.withApiVersion("v3");
body.withKind("Cluster");
request.withBody(body);
try {
    CreateClusterResponse response = client.createCluster(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

- Configure the trustlist network CIDR for accessing the cluster API when creating a cluster.

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class CreateClusterSolution {

    public static void main(String[] args) {
```

```
// The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
environment variables and decrypted during use to ensure security.
// In this example, AK and SK are stored in environment variables for authentication. Before
running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
environment
String ak = System.getenv("CLOUD_SDK_AK");
String sk = System.getenv("CLOUD_SDK_SK");
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
    .withProjectId(projectId)
    .withAk(ak)
    .withSk(sk);

CceClient client = CceClient.newBuilder()
    .withCredential(auth)
    .withRegion(CceRegion.valueOf("<YOUR REGION>"))
    .build();
CreateClusterRequest request = new CreateClusterRequest();
Cluster body = new Cluster();
ClusterExtendParam extendParamSpec = new ClusterExtendParam();
extendParamSpec.withEnterpriseProjectId("0")
    .withKubeProxyMode("iptables")
    .withAlphaCceFixPoolMask("25");
Authentication authenticationSpec = new Authentication();
authenticationSpec.withMode("rbac");
ServiceNetwork serviceNetworkSpec = new ServiceNetwork();
serviceNetworkSpec.withIpv4CIDR("10.247.0.0/16");
ContainerNetwork containerNetworkSpec = new ContainerNetwork();
containerNetworkSpec.withMode(ContainerNetwork.ModeEnum.fromValue("vpc-router"))
    .withCidr("10.0.0.0/16");
HostNetwork hostNetworkSpec = new HostNetwork();
hostNetworkSpec.withVpc("030bfb19-5fa7-42ad-8a0d-c0721d268867")
    .withSubnet("ca964acf-8468-4735-8229-97940ef6c881");
ClusterSpec specbody = new ClusterSpec();
specbody.withCategory(ClusterSpec.CategoryEnum.fromValue("CCE"))
    .withFlavor("cce.s2.small")
    .withVersion("v1.19")
    .withDescription("")
    .withIpv6enable(false)
    .withHostNetwork(hostNetworkSpec)
    .withContainerNetwork(containerNetworkSpec)
    .withServiceNetwork(serviceNetworkSpec)
    .withAuthentication(authenticationSpec)
    .withBillingMode(0)
    .withKubernetesSvclpRange("10.247.0.0/16")
    .withExtendParam(extendParamSpec);
ClusterMetadata metadatabody = new ClusterMetadata();
metadatabody.withName("cluster");
body.withSpec(specbody);
body.withMetadata(metadatabody);
body.withApiVersion("v3");
body.withKind("Cluster");
request.withBody(body);
try {
    CreateClusterResponse response = client.createCluster(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
```

```
}  
}
```

Python

- Create an HA CCE cluster of v1.29 that is billed on a pay-per-use basis and has three master nodes and a maximum of 50 worker nodes.

```
# coding: utf-8  
  
import os  
from huaweicloudsdkcore.auth.credentials import BasicCredentials  
from huaweicloudsdkcce.v3.region.cce_region import CceRegion  
from huaweicloudsdkcore.exceptions import exceptions  
from huaweicloudsdkcce.v3 import *  
  
if __name__ == "__main__":  
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great  
    # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or  
    # environment variables and decrypted during use to ensure security.  
    # In this example, AK and SK are stored in environment variables for authentication. Before  
    # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local  
    # environment  
    ak = os.environ["CLOUD_SDK_AK"]  
    sk = os.environ["CLOUD_SDK_SK"]  
    projectId = "{project_id}"  
  
    credentials = BasicCredentials(ak, sk, projectId)  
  
    client = CceClient.new_builder() \  
        .with_credentials(credentials) \  
        .with_region(CceRegion.value_of("<YOUR REGION>")) \  
        .build()  
  
    try:  
        request = CreateClusterRequest()  
        extendParamSpec = ClusterExtendParam(  
            enterprise_project_id="0",  
            kube_proxy_mode="iptables",  
            alpha_cce_fix_pool_mask="25"  
        )  
        authenticationSpec = Authentication(  
            mode="rbac"  
        )  
        containerNetworkSpec = ContainerNetwork(  
            mode="vpc-router",  
            cidr="10.0.0.0/16"  
        )  
        hostNetworkSpec = HostNetwork(  
            vpc="030bfb19-5fa7-42ad-8a0d-c0721d268867",  
            subnet="ca964acf-8468-4735-8229-97940ef6c881"  
        )  
        specbody = ClusterSpec(  
            category="CCE",  
            flavor="cce.s2.small",  
            version="v1.29",  
            description="",  
            ipv6enable=False,  
            host_network=hostNetworkSpec,  
            container_network=containerNetworkSpec,  
            authentication=authenticationSpec,  
            billing_mode=0,  
            kubernetes_svc_ip_range="10.247.0.0/16",  
            extend_param=extendParamSpec  
        )  
        metadatabody = ClusterMetadata(  
            name="cluster"  
        )  
        request.body = Cluster(  

```

```
spec=specbody,  
metadata=metadatabody,  
api_version="v3",  
kind="Cluster"  
)  
response = client.create_cluster(request)  
print(response)  
except exceptions.ClientRequestException as e:  
print(e.status_code)  
print(e.request_id)  
print(e.error_code)  
print(e.error_msg)
```

- Create an HA CCE cluster of v1.29 that is billed on a pay-per-use basis and has three master nodes and a maximum of 50 worker nodes and install ICAgent in the cluster.

```
# coding: utf-8  
  
import os  
from huaweicloudsdkcore.auth.credentials import BasicCredentials  
from huaweicloudsdkcce.v3.region.cce_region import CceRegion  
from huaweicloudsdkcore.exceptions import exceptions  
from huaweicloudsdkcce.v3 import *  
  
if __name__ == "__main__":  
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great  
    # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or  
    # environment variables and decrypted during use to ensure security.  
    # In this example, AK and SK are stored in environment variables for authentication. Before  
    # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local  
    # environment  
    ak = os.environ["CLOUD_SDK_AK"]  
    sk = os.environ["CLOUD_SDK_SK"]  
    projectId = "{project_id}"  
  
    credentials = BasicCredentials(ak, sk, projectId)  
  
    client = CceClient.new_builder() \  
        .with_credentials(credentials) \  
        .with_region(CceRegion.value_of("<YOUR REGION>")) \  
        .build()  
  
    try:  
        request = CreateClusterRequest()  
        extendParamSpec = ClusterExtendParam(  
            enterprise_project_id="0",  
            kube_proxy_mode="iptables",  
            alpha_cce_fix_pool_mask="25"  
        )  
        authenticationSpec = Authentication(  
            mode="rbac"  
        )  
        containerNetworkSpec = ContainerNetwork(  
            mode="vpc-router",  
            cidr="10.0.0.0/16"  
        )  
        hostNetworkSpec = HostNetwork(  
            vpc="030bfb19-5fa7-42ad-8a0d-c0721d268867",  
            subnet="ca964acf-8468-4735-8229-97940ef6c881"  
        )  
        specbody = ClusterSpec(  
            category="CCE",  
            flavor="cce.s2.small",  
            version="v1.29",  
            description="",  
            ipv6enable=False,  
            host_network=hostNetworkSpec,  
            container_network=containerNetworkSpec,  
            authentication=authenticationSpec,
```

```

        billing_mode=0,
        kubernetes_svc_ip_range="10.247.0.0/16",
        extend_param=extendParamSpec
    )
    listAnnotationsMetadata = {
        "cluster.install.addons.external/install": "[{"addonTemplateName":"icagent"}]"
    }
    metadatabody = ClusterMetadata(
        name="cluster",
        annotations=listAnnotationsMetadata
    )
    request.body = Cluster(
        spec=specbody,
        metadata=metadatabody,
        api_version="v3",
        kind="Cluster"
    )
    response = client.create_cluster(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)

```

- Create an HA CCE cluster of v1.29 that is billed on a pay-per-use basis and has three master nodes and a maximum of 50 worker nodes and configure the custom default security group for nodes in the cluster.

```

# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    # environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before
    # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    # environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = CreateClusterRequest()
        extendParamSpec = ClusterExtendParam(
            enterprise_project_id="0",
            kube_proxy_mode="iptables",
            alpha_cce_fix_pool_mask="25"
        )
        authenticationSpec = Authentication(
            mode="rbac"
        )
        containerNetworkSpec = ContainerNetwork(
            mode="vpc-router",
            cidr="10.0.0.0/16"
        )
        hostNetworkSpec = HostNetwork(

```

```

        vpc="030bfb19-5fa7-42ad-8a0d-c0721d268867",
        subnet="ca964acf-8468-4735-8229-97940ef6c881",
        security_group="a4ef108c-2ec6-492f-a6c4-7b64e25ae490"
    )
    specbody = ClusterSpec(
        category="CCE",
        flavor="cce.s2.small",
        version="v1.29",
        description="",
        ipv6enable=False,
        host_network=hostNetworkSpec,
        container_network=containerNetworkSpec,
        authentication=authenticationSpec,
        billing_mode=0,
        kubernetes_svc_ip_range="10.247.0.0/16",
        extend_param=extendParamSpec
    )
    metadatabody = ClusterMetadata(
        name="cluster"
    )
    request.body = Cluster(
        spec=specbody,
        metadata=metadatabody,
        api_version="v3",
        kind="Cluster"
    )
    response = client.create_cluster(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)

```

- Create an HA CCE cluster of v1.25 with three master nodes and a maximum of 50 worker nodes billed on a pay-per-use basis.

coding: utf-8

```

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    # environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before
    # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    # environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = CreateClusterRequest()
        extendParamSpec = ClusterExtendParam(
            enterprise_project_id="0",
            kube_proxy_mode="iptables"
        )
        authenticationSpec = Authentication(

```



```
        mode="rbac"
    )
    serviceNetworkSpec = ServiceNetwork(
        i_pv4_cidr="10.247.0.0/16"
    )
    listSubnetsEniNetwork = [
        NetworkSubnet(
            subnet_id="861fb11d-2f0e-4c10-a98a-166dc26e4ff7"
        )
    ]
    eniNetworkSpec = EniNetwork(
        eni_subnet_id="861fb11d-2f0e-4c10-a98a-166dc26e4ff7",
        eni_subnet_cidr="192.168.0.0/24",
        subnets=listSubnetsEniNetwork
    )
    containerNetworkSpec = ContainerNetwork(
        mode="eni"
    )
    hostNetworkSpec = HostNetwork(
        vpc="030bfb19-5fa7-42ad-8a0d-c0721d268867",
        subnet="ca964acf-8468-4735-8229-97940ef6c881"
    )
    specbody = ClusterSpec(
        category="Turbo",
        type="VirtualMachine",
        flavor="cce.s2.small",
        version="v1.25",
        description="",
        ipv6enable=False,
        host_network=hostNetworkSpec,
        container_network=containerNetworkSpec,
        eni_network=eniNetworkSpec,
        service_network=serviceNetworkSpec,
        authentication=authenticationSpec,
        billing_mode=0,
        extend_param=extendParamSpec
    )
    metadatabody = ClusterMetadata(
        name="cluster"
    )
    request.body = Cluster(
        spec=specbody,
        metadata=metadatabody,
        api_version="v3",
        kind="Cluster"
    )
    response = client.create_cluster(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

- Configure the trustlist network CIDR for accessing the cluster API when creating a cluster.

```
# coding: utf-8
```

```
import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *
```

```
if __name__ == "__main__":
```

```
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    environment variables and decrypted during use to ensure security.
```

```
    # In this example, AK and SK are stored in environment variables for authentication. Before
```

running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment

```
ak = os.environ["CLOUD_SDK_AK"]
sk = os.environ["CLOUD_SDK_SK"]
projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = CceClient.new_builder() \
    .with_credentials(credentials) \
    .with_region(CceRegion.value_of("<YOUR REGION>")) \
    .build()

try:
    request = CreateClusterRequest()
    extendParamSpec = ClusterExtendParam(
        enterprise_project_id="0",
        kube_proxy_mode="iptables",
        alpha_cce_fix_pool_mask="25"
    )
    authenticationSpec = Authentication(
        mode="rbac"
    )
    serviceNetworkSpec = ServiceNetwork(
        i_pv4_cidr="10.247.0.0/16"
    )
    containerNetworkSpec = ContainerNetwork(
        mode="vpc-router",
        cidr="10.0.0.0/16"
    )
    hostNetworkSpec = HostNetwork(
        vpc="030bfb19-5fa7-42ad-8a0d-c0721d268867",
        subnet="ca964acf-8468-4735-8229-97940ef6c881"
    )
    specbody = ClusterSpec(
        category="CCE",
        flavor="cce.s2.small",
        version="v1.19",
        description="",
        ipv6enable=False,
        host_network=hostNetworkSpec,
        container_network=containerNetworkSpec,
        service_network=serviceNetworkSpec,
        authentication=authenticationSpec,
        billing_mode=0,
        kubernetes_svc_ip_range="10.247.0.0/16",
        extend_param=extendParamSpec
    )
    metadatabody = ClusterMetadata(
        name="cluster"
    )
    request.body = Cluster(
        spec=specbody,
        metadata=metadatabody,
        api_version="v3",
        kind="Cluster"
    )
    response = client.create_cluster(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

- Create an HA CCE cluster of v1.29 that is billed on a pay-per-use basis and has three master nodes and a maximum of 50 worker nodes.

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    // environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before
    // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    // environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.CreateClusterRequest{
        enterpriseProjectIdExtendParam:= "0"
        kubeProxyModeExtendParam:= "iptables"
        alphaCceFixPoolMaskExtendParam:= "25"
        extendParamSpec := &model.ClusterExtendParam{
            EnterpriseProjectId: &enterpriseProjectIdExtendParam,
            KubeProxyMode: &kubeProxyModeExtendParam,
            AlphaCceFixPoolMask: &alphaCceFixPoolMaskExtendParam,
        }
        modeAuthentication:= "rbac"
        authenticationSpec := &model.Authentication{
            Mode: &modeAuthentication,
        }
        cidrContainerNetwork:= "10.0.0.0/16"
        containerNetworkSpec := &model.ContainerNetwork{
            Mode: model.GetContainerNetworkModeEnum().VPC_ROUTER,
            Cidr: &cidrContainerNetwork,
        }
        hostNetworkSpec := &model.HostNetwork{
            Vpc: "030bfb19-5fa7-42ad-8a0d-c0721d268867",
            Subnet: "ca964acf-8468-4735-8229-97940ef6c881",
        }
        categorySpec:= model.GetClusterSpecCategoryEnum().CCE
        versionSpec:= "v1.29"
        descriptionSpec:= ""
        ipv6enableSpec:= false
        billingModeSpec:= int32(0)
        kubernetesSvcIpRangeSpec:= "10.247.0.0/16"
        specbody := &model.ClusterSpec{
            Category: &categorySpec,
            Flavor: "cce.s2.small",
            Version: &versionSpec,
            Description: &descriptionSpec,
            Ipv6enable: &ipv6enableSpec,
            HostNetwork: hostNetworkSpec,
            ContainerNetwork: containerNetworkSpec,
```

```

Authentication: authenticationSpec,
BillingMode: &billingModeSpec,
KubernetesSvcIprange: &kubernetesSvcIprangeSpec,
ExtendParam: extendParamSpec,
}
metadatabody := &model.ClusterMetadata{
    Name: "cluster",
}
request.Body = &model.Cluster{
    Spec: specbody,
    Metadata: metadatabody,
    ApiVersion: "v3",
    Kind: "Cluster",
}
response, err := client.CreateCluster(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}
}

```

- Create an HA CCE cluster of v1.29 that is billed on a pay-per-use basis and has three master nodes and a maximum of 50 worker nodes and install ICAgent in the cluster.

```

package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    // environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before
    // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    // environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.CreateClusterRequest{
        enterpriseProjectIdExtendParam:= "0"
        kubeProxyModeExtendParam:= "iptables"
        alphaCceFixPoolMaskExtendParam:= "25"
        extendParamSpec := &model.ClusterExtendParam{
            EnterpriseProjectId: &enterpriseProjectIdExtendParam,
            KubeProxyMode: &kubeProxyModeExtendParam,
            AlphaCceFixPoolMask: &alphaCceFixPoolMaskExtendParam,
        }
        modeAuthentication:= "rbac"
        authenticationSpec := &model.Authentication{

```

```

    Mode: &modeAuthentication,
  }
  cidrContainerNetwork:= "10.0.0.0/16"
  containerNetworkSpec := &model.ContainerNetwork{
    Mode: model.GetContainerNetworkModeEnum().VPC_ROUTER,
    Cidr: &cidrContainerNetwork,
  }
  hostNetworkSpec := &model.HostNetwork{
    Vpc: "030bfb19-5fa7-42ad-8a0d-c0721d268867",
    Subnet: "ca964acf-8468-4735-8229-97940ef6c881",
  }
  categorySpec:= model.GetClusterSpecCategoryEnum().CCE
  versionSpec:= "v1.29"
  descriptionSpec:= ""
  ipv6enableSpec:= false
  billingModeSpec:= int32(0)
  kubernetesSvclpRangeSpec:= "10.247.0.0/16"
  specbody := &model.ClusterSpec{
    Category: &categorySpec,
    Flavor: "cce.s2.small",
    Version: &versionSpec,
    Description: &descriptionSpec,
    Ipv6enable: &ipv6enableSpec,
    HostNetwork: hostNetworkSpec,
    ContainerNetwork: containerNetworkSpec,
    Authentication: authenticationSpec,
    BillingMode: &billingModeSpec,
    KubernetesSvclpRange: &kubernetesSvclpRangeSpec,
    ExtendParam: extendParamSpec,
  }
  var listAnnotationsMetadata = map[string]string{
    "cluster.install.addons.external/install": "[{"addonTemplateName":"icagent"}]",
  }
  metadatabody := &model.ClusterMetadata{
    Name: "cluster",
    Annotations: listAnnotationsMetadata,
  }
  request.Body = &model.Cluster{
    Spec: specbody,
    Metadata: metadatabody,
    ApiVersion: "v3",
    Kind: "Cluster",
  }
  response, err := client.CreateCluster(request)
  if err == nil {
    fmt.Printf("%+v\n", response)
  } else {
    fmt.Println(err)
  }
}
}

```

- Create an HA CCE cluster of v1.29 that is billed on a pay-per-use basis and has three master nodes and a maximum of 50 worker nodes and configure the custom default security group for nodes in the cluster.

```

package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    // environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before

```

running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment

```

ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
    WithAk(ak).
    WithSk(sk).
    WithProjectId(projectId).
    Build()

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.CreateClusterRequest{
    enterpriseProjectIdExtendParam:= "0"
    kubeProxyModeExtendParam:= "iptables"
    alphaCceFixPoolMaskExtendParam:= "25"
    extendParamSpec := &model.ClusterExtendParam{
        EnterpriseProjectId: &enterpriseProjectIdExtendParam,
        KubeProxyMode: &kubeProxyModeExtendParam,
        AlphaCceFixPoolMask: &alphaCceFixPoolMaskExtendParam,
    }
    modeAuthentication:= "rbac"
    authenticationSpec := &model.Authentication{
        Mode: &modeAuthentication,
    }
    cidrContainerNetwork:= "10.0.0.0/16"
    containerNetworkSpec := &model.ContainerNetwork{
        Mode: model.GetContainerNetworkModeEnum().VPC_ROUTER,
        Cidr: &cidrContainerNetwork,
    }
    securityGroupHostNetwork:= "a4ef108c-2ec6-492f-a6c4-7b64e25ae490"
    hostNetworkSpec := &model.HostNetwork{
        Vpc: "030bfb19-5fa7-42ad-8a0d-c0721d268867",
        Subnet: "ca964acf-8468-4735-8229-97940ef6c881",
        SecurityGroup: &securityGroupHostNetwork,
    }
    categorySpec:= model.GetClusterSpecCategoryEnum().CCE
    versionSpec:= "v1.29"
    descriptionSpec:= ""
    ipv6enableSpec:= false
    billingModeSpec:= int32(0)
    kubernetesSvcIprangeSpec:= "10.247.0.0/16"
    specbody := &model.ClusterSpec{
        Category: &categorySpec,
        Flavor: "cce.s2.small",
        Version: &versionSpec,
        Description: &descriptionSpec,
        Ipv6enable: &ipv6enableSpec,
        HostNetwork: hostNetworkSpec,
        ContainerNetwork: containerNetworkSpec,
        Authentication: authenticationSpec,
        BillingMode: &billingModeSpec,
        KubernetesSvcIprange: &kubernetesSvcIprangeSpec,
        ExtendParam: extendParamSpec,
    }
    metadatabody := &model.ClusterMetadata{
        Name: "cluster",
    }
}
request.Body = &model.Cluster{
    Spec: specbody,
    Metadata: metadatabody,
    ApiVersion: "v3",
    Kind: "Cluster",
}

```

```
}
response, err := client.CreateCluster(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}
```

- Create an HA CCE cluster of v1.25 with three master nodes and a maximum of 50 worker nodes billed on a pay-per-use basis.

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    // environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before
    // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    // environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.CreateClusterRequest{
        enterpriseProjectIdExtendParam:= "0"
        kubeProxyModeExtendParam:= "iptables"
        extendParamSpec := &model.ClusterExtendParam{
            EnterpriseProjectId: &enterpriseProjectIdExtendParam,
            KubeProxyMode: &kubeProxyModeExtendParam,
        }
        modeAuthentication:= "rbac"
        authenticationSpec := &model.Authentication{
            Mode: &modeAuthentication,
        }
        ipv4CIDRServiceNetwork:= "10.247.0.0/16"
        serviceNetworkSpec := &model.ServiceNetwork{
            IPv4CIDR: &ipv4CIDRServiceNetwork,
        }
        var listSubnetsEniNetwork = []model.NetworkSubnet{
            {
                SubnetID: "861fb11d-2f0e-4c10-a98a-166dc26e4ff7",
            },
        }
        eniSubnetCIDREniNetwork:= "192.168.0.0/24"
        eniNetworkSpec := &model.EniNetwork{
            EniSubnetId: "861fb11d-2f0e-4c10-a98a-166dc26e4ff7",
            EniSubnetCIDR: &eniSubnetCIDREniNetwork,
            Subnets: listSubnetsEniNetwork,
        }
    }
```

```

}
containerNetworkSpec := &model.ContainerNetwork{
    Mode: model.GetContainerNetworkModeEnum().ENI,
}
hostNetworkSpec := &model.HostNetwork{
    Vpc: "030bfb19-5fa7-42ad-8a0d-c0721d268867",
    Subnet: "ca964acf-8468-4735-8229-97940ef6c881",
}
categorySpec:= model.GetClusterSpecCategoryEnum().TURBO
typeSpec:= model.GetClusterSpecTypeEnum().VIRTUAL_MACHINE
versionSpec:= "v1.25"
descriptionSpec:= ""
ipv6enableSpec:= false
billingModeSpec:= int32(0)
specbody := &model.ClusterSpec{
    Category: &categorySpec,
    Type: &typeSpec,
    Flavor: "cce.s2.small",
    Version: &versionSpec,
    Description: &descriptionSpec,
    Ipv6enable: &ipv6enableSpec,
    HostNetwork: hostNetworkSpec,
    ContainerNetwork: containerNetworkSpec,
    EniNetwork: eniNetworkSpec,
    ServiceNetwork: serviceNetworkSpec,
    Authentication: authenticationSpec,
    BillingMode: &billingModeSpec,
    ExtendParam: extendParamSpec,
}
metadatabody := &model.ClusterMetadata{
    Name: "cluster",
}
}
request.Body = &model.Cluster{
    Spec: specbody,
    Metadata: metadatabody,
    ApiVersion: "v3",
    Kind: "Cluster",
}
response, err := client.CreateCluster(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}
}

```

- Configure the trustlist network CIDR for accessing the cluster API when creating a cluster.

```

package main

import (
    "fmt"
    "github.com/ HuaweiCloud/ HuaweiCloud-sdk-go-v3/core/auth/basic"
    cce "github.com/ HuaweiCloud/ HuaweiCloud-sdk-go-v3/services/cce/v3"
    "github.com/ HuaweiCloud/ HuaweiCloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/ HuaweiCloud/ HuaweiCloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before
    running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"
}

```



```

auth := basic.NewCredentialsBuilder().
    WithAk(ak).
    WithSk(sk).
    WithProjectId(projectId).
    Build()

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.CreateClusterRequest{
    enterpriseProjectIdExtendParam:= "0"
    kubeProxyModeExtendParam:= "iptables"
    alphaCceFixPoolMaskExtendParam:= "25"
    extendParamSpec := &model.ClusterExtendParam{
        EnterpriseProjectId: &enterpriseProjectIdExtendParam,
        KubeProxyMode: &kubeProxyModeExtendParam,
        AlphaCceFixPoolMask: &alphaCceFixPoolMaskExtendParam,
    }
    modeAuthentication:= "rbac"
    authenticationSpec := &model.Authentication{
        Mode: &modeAuthentication,
    }
    ipv4CIDRServiceNetwork:= "10.247.0.0/16"
    serviceNetworkSpec := &model.ServiceNetwork{
        IPv4CIDR: &ipv4CIDRServiceNetwork,
    }
    cidrContainerNetwork:= "10.0.0.0/16"
    containerNetworkSpec := &model.ContainerNetwork{
        Mode: model.GetContainerNetworkModeEnum().VPC_ROUTER,
        Cidr: &cidrContainerNetwork,
    }
    hostNetworkSpec := &model.HostNetwork{
        Vpc: "030bfb19-5fa7-42ad-8a0d-c0721d268867",
        Subnet: "ca964acf-8468-4735-8229-97940ef6c881",
    }
    categorySpec:= model.GetClusterSpecCategoryEnum().CCE
    versionSpec:= "v1.19"
    descriptionSpec:= ""
    ipv6enableSpec:= false
    billingModeSpec:= int32(0)
    kubernetesSvclpRangeSpec:= "10.247.0.0/16"
    specbody := &model.ClusterSpec{
        Category: &categorySpec,
        Flavor: "cce.s2.small",
        Version: &versionSpec,
        Description: &descriptionSpec,
        Ipv6enable: &ipv6enableSpec,
        HostNetwork: hostNetworkSpec,
        ContainerNetwork: containerNetworkSpec,
        ServiceNetwork: serviceNetworkSpec,
        Authentication: authenticationSpec,
        BillingMode: &billingModeSpec,
        KubernetesSvclpRange: &kubernetesSvclpRangeSpec,
        ExtendParam: extendParamSpec,
    }
    metadatabody := &model.ClusterMetadata{
        Name: "cluster",
    }
    }
    request.Body = &model.Cluster{
        Spec: specbody,
        Metadata: metadatabody,
        ApiVersion: "v3",
        Kind: "Cluster",
    }
    }
    response, err := client.CreateCluster(request)
    if err == nil {

```

```
    fmt.Printf("%+v\n", response)
  } else {
    fmt.Println(err)
  }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
201	The cluster creation job is successfully delivered.

Error Codes

See [Error Codes](#).

4.2.2 Reading a Specified Cluster

Function

This API is used to obtain details about a specified cluster.

NOTE

The URL for cluster management is in the format of `https://Endpoint/uri`. In the URL, **uri** indicates the resource path, that is, the path for API access.

Calling Method

For details, see [Calling APIs](#).

URI

GET `/api/v3/projects/{project_id}/clusters/{cluster_id}`

Table 4-46 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Table 4-47 Query Parameters

Parameter	Mandatory	Type	Description
detail	No	String	<p>Details: Whether the details of a cluster are obtained.</p> <p>Constraints: N/A</p> <p>Options: If this parameter is set to true, the total number of nodes (totalNodesNumber), number of functional nodes (activeNodesNumber), total CPUs (totalNodesCPU), total memory size (totalNodesMemory), and installed add-ons (installedAddonInstances) will be added to the annotation. The details of installed add-ons include the add-on name (addonTemplateName), version (version), and status (status).</p> <p>Default value: None</p>

Request Parameters

Table 4-48 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-49 Response body parameters

Parameter	Type	Description
kind	String	<p>Details: API type</p> <p>Constraints: The value cannot be changed.</p> <p>Options:</p> <ul style="list-style-type: none"> • Cluster • cluster <p>Default value: N/A</p>
apiVersion	String	<p>Details: API version</p> <p>Constraints: The value cannot be changed.</p> <p>Options:</p> <ul style="list-style-type: none"> • v3 <p>Default value: N/A</p>
metadata	ClusterMetadata object	<p>Details: Basic information about a cluster. Metadata is a collection of attributes.</p> <p>Constraints: N/A</p>
spec	ClusterSpec object	Detailed description of the cluster. CCE creates or updates objects by defining or updating spec .
status	ClusterStatus object	<p>Details: Status of a cluster</p> <p>Constraints: N/A</p>

Table 4-50 ClusterMetadata

Parameter	Type	Description
name	String	<p>Details: Cluster name</p> <p>Constraints: None</p> <p>Options: Enter 4 to 128 characters starting with a lowercase letter and not ending with a hyphen (-). Only lowercase letters, digits, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>
uid	String	<p>Details: Cluster ID, which identifies a cluster</p> <p>Constraints: The value is automatically generated after the object is created. A user-defined value will not take effect. When you create a yearly/monthly cluster, no cluster ID will be returned in the response body.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
alias	String	<p>Details: Alias of a cluster name displayed on the CCE console. The name can be changed. A cluster alias must be unique.</p> <p>Constraints: In the request body for creating or updating a cluster, if the cluster alias is not specified or set to null, the cluster name will be used as the cluster alias. In the response body for creating a cluster or other response bodies, if the cluster alias is not configured, no value will be returned.</p> <p>Options: Enter 4 to 128 characters starting with a letter and not starting or ending with a hyphen (-). Only digits, letters, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>

Parameter	Type	Description
annotations	Map<String,String>	<p>Details: Cluster annotations, in the format of key-value pairs</p> <pre>"annotations": { "key1" : "value1", "key2" : "value2" }</pre> <p>Constraints: This field is not stored in the database and is used only to specify the add-ons to be installed in the cluster.</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>NOTE</p> <ul style="list-style-type: none"> • annotations are not used to identify or select objects. The metadata in annotations may be small or large, structured or unstructured, and may include characters that are not allowed in labels. • You can install ICAgent during cluster creation by adding the key-value pair "cluster.install.addons.external/install":[{"addonTemplateName":"icagent"}]".
labels	Map<String,String>	<p>Details: Cluster labels, in the format of key-value pairs</p> <p>Constraints: The value of this field is automatically generated by the system and is used by the frontend to identify the features supported by the cluster during the upgrade. Custom values are invalid.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
creationTimestamp	String	<p>Details: Time when a cluster was created</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
updateTimestamp	String	<p>Details: Time when a cluster was updated</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
timezone	String	<p>Details: Cluster time zone</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-51 ClusterSpec

Parameter	Type	Description
category	String	<p>Details: Cluster type</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • CCE: CCE cluster. CCE clusters support hybrid deployment of VMs and BMSs, and heterogeneous nodes such as GPU and NPU nodes, allowing you to run your containers in a secure, stable container runtime environment based on a high-performance network model. • Turbo: CCE Turbo cluster. CCE Turbo clusters run on the cloud native 2.0 infrastructure that features hardware and software synergy to support passthrough networking, high security and reliability, and intelligent scheduling. <p>Default value: CCE when the container network is not set to eni Turbo when the container network is set to eni</p>
type	String	<p>Details: Master node architecture</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • VirtualMachine: The master node is an x86 server. • ARM64: The master node is an Arm-based Kunpeng server. <p>Default value: VirtualMachine</p>

Parameter	Type	Description
flavor	String	<p>Details: Cluster specifications. Specifications of clusters v1.15 and later versions can be changed after they are created. For details, see Changing Cluster Scale. Configure this parameter based on actual service requirements.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> ● cce.s1.small: a small-scale CCE cluster with one master node and a maximum of 50 worker nodes ● cce.s1.medium: a medium-scale CCE cluster with one master node and a maximum of 200 worker nodes ● cce.s2.small: a small-scale CCE cluster with three master nodes and a maximum of 50 worker nodes ● cce.s2.medium: a medium-scale CCE cluster with three master nodes and a maximum of 200 worker nodes ● cce.s2.large: a large-scale CCE cluster with three master nodes and a maximum of 1000 worker nodes ● cce.s2.xlarge: an ultra-large-scale CCE cluster with three master nodes and a maximum of 2000 worker nodes <p>Default value: N/A</p>

Parameter	Type	Description
		<p>NOTE The fields in the parameters are described as follows:</p> <ul style="list-style-type: none"> • s1: specifies a cluster with one master node. If the master node is faulty, the cluster will become unavailable, but running workloads in the cluster are not affected. • s2: specifies an HA cluster with three master nodes. If one of the master nodes is faulty, the cluster is still available. • dec: specifies a DeC CCE cluster. For example, cce.dec.s1.small specifies a small-scale, DeC CCE cluster with one master node and a maximum of 50 worker nodes. • small: specifies that a cluster can manage a maximum of 50 worker nodes. • medium: specifies that a cluster can manage a maximum of 200 worker nodes. • large: specifies that a cluster can manage a maximum of 1000 worker nodes. • xlarge: specifies that a cluster can manage a maximum of 2000 worker nodes.

Parameter	Type	Description
version	String	<p>Details:</p> <p>Version of a cluster, which mirrors the baseline version of the Kubernetes community. The latest version is recommended.</p> <p>You can create clusters of three latest versions on the CCE console. To learn which cluster versions are available, log in to the CCE console, create a cluster, and check the Cluster Version parameter.</p> <p>You can call APIs to create clusters of other versions. However, these cluster versions will be gradually terminated. For details about the support policy, see the CCE announcement.</p> <p>Constraints:</p> <p>None</p> <p>Options:</p> <p>N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • If this parameter is left blank, a cluster of the latest version is created by default. • If a baseline cluster version is specified but the R version is not specified, a cluster of the latest R version will be created by default. It is a good practice not to specify the R version. <p>NOTE</p> <ul style="list-style-type: none"> • CCE Turbo clusters of v1.19 or later are commercially available.

Parameter	Type	Description
platformVersion	String	<p>Details: CCE cluster platform version, which is an internal version under the cluster version (version). Platform versions are used to trace iterations in a major cluster version. They are unique within a major cluster version and recounted when the major cluster version changes.</p> <p>Constraints: This parameter cannot be customized, and when you create a cluster, the latest corresponding platform version is selected automatically.</p> <p>Options: The format of platformVersion is cce.X.Y.</p> <ul style="list-style-type: none"> • X: internal feature version, which indicates changes in features, patches, or OS support in the cluster version. The value starts from 1 and increases monotonically. • Y: patch version of an internal feature version. It is used only for software package update after the feature version is released. No other modification is involved. The value starts from 0 and increases monotonically. <p>Default value: N/A</p>

Parameter	Type	Description
legacyVersion	String	<p>Details: (Discarded) Outdated version of CCE clusters, which serves no practical purpose and is only used to showcase the cluster version and platform version combination. The version number is globally unique. For example, if the cluster version is va.b and the platformVersion is cce.X.Y, the value of legacyVersion is va.b.X-rY.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
description	String	<p>Details: Cluster description, for example, which purpose the cluster is intended to serve. By default, this field is left blank. To modify cluster description after a cluster is created, call the API for updating a specified cluster or go to the cluster details page on the CCE console.</p> <p>Constraints: Only UTF-8 encoding is supported.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
customSan	Array of strings	<p>Details: Custom Subject Alternative Name (SAN) in the server certificate of a cluster API server, which must comply with the SSL and X509 standard formats</p> <p>Constraints: Duplicate names are not allowed.</p> <p>Options: Values in the IP address or domain name format</p> <p>Default value: N/A</p> <p>Example: SAN 1: DNS Name=example.com SAN 2: DNS Name=www.example.com SAN 3: DNS Name=example.net SAN 4: IP Address=93.184.216.34</p>
ipv6enable	Boolean	<p>Details: Whether a cluster supports IPv6 addresses. It is supported by clusters v1.15 and later.</p> <p>Constraints: After IPv6 is enabled, iptables is not supported. The VPC network model does not support IPv4/IPv6 dual-stack.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: IPv4/IPv6 dual-stack is enabled. • false: Only IPv4 is used. <p>Default value: false</p>
hostNetwork	HostNetwork object	<p>Details: Node network parameters, including VPC and subnet ID. This field is mandatory because nodes in a cluster communicate with each other using a VPC.</p> <p>Constraints: None</p>

Parameter	Type	Description
containerNetwork	ContainerNetwork object	<p>Details: Container network parameters, including the container network model and container CIDR block</p> <p>Constraints: None</p>
eniNetwork	EniNetwork object	<p>Details: Configuration of the Cloud Native 2.0 network model. You need to specify this field when creating a CCE Turbo cluster.</p> <p>Constraints: None</p>
serviceNetwork	ServiceNetwork object	<p>Details: Service CIDR block, including IPv4 CIDR block</p> <p>Constraints: None</p>
publicAccess	PublicAccess object	<p>Details: Cluster API access control</p> <p>Constraints: None</p>
authentication	Authentication object	<p>Details: Configurations of the cluster authentication mode</p> <p>Constraints: None</p>
billingMode	Integer	<p>Details: Cluster billing mode</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • 0: pay-per-use • 1: yearly/monthly <p>Default value: 0</p>

Parameter	Type	Description
masters	Array of MasterSpec objects	<p>Details: Advanced configurations of master nodes</p> <p>Constraints: If this parameter is not specified, no value is returned.</p>
kubernetesSvcIpRange	String	<p>Details: Service CIDR blocks which kubernetes clusterIP must fall within. This field is available only for clusters of v1.11.7 and later. If this parameter is not specified during cluster creation, the default value 10.247.0.0/16 is used. This parameter is being discarded, so you can use serviceNetwork instead. The new field contains the IPv4 CIDR blocks.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
clusterTags	Array of ResourceTag objects	<p>Details: Cluster resource tags</p> <p>Constraints: None</p>

Parameter	Type	Description
kubeProxyMode	String	<p>Details: Service forwarding mode</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • iptables: traditional kube-proxy mode, which uses iptables rules to implement Service load balancing. In this mode, too many iptables rules will be generated when many Services are deployed. Additionally, non-incremental updates will cause latency and obvious performance issues in the case of heavy service traffic. • ipvs: optimized kube-proxy mode with higher throughput and faster speed. This mode supports incremental updates and can keep connections uninterrupted during Service updates. It is suitable for large-sized clusters. <p>Default value: iptables is used by default.</p>
az	String	<p>Details: AZ. This field is returned only for a query. For details about AZs supported by CCE, see Regions and Endpoints.</p> <p>Constraints: None</p>
extendParam	ClusterExtendParam object	<p>Details: Extended field to decide whether a cluster will span across AZs or belong to a specified enterprise project, or whether a dedicated CCE cluster is to be created</p> <p>Constraints: None</p>

Parameter	Type	Description
supportIstio	Boolean	<p>Details: Whether Istio is supported</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Istio is supported. • false: Istio is not supported. <p>Default value: true</p>
enableDistMgt	Boolean	<p>Details: Whether to enable support for remote clouds</p> <p>Constraints: Only CCE Turbo clusters support this function.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Support for remote clouds is enabled. • false: Support for remote clouds is not enabled. <p>Default value: false</p>
deletionProtection	Boolean	<p>Details: Cluster deletion protection, which prevents the deletion of a cluster when this function is enabled</p> <p>Constraints: N/A</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Cluster deletion protection is enabled. • false: Cluster deletion protection is disabled. <p>Default value: false</p>

Parameter	Type	Description
configurationsO- verride	Array of PackageConfiguration objects	<p>Details: Cluster default component configuration override. For details about the supported components and their parameters, see Modifying Cluster Configurations.</p> <p>Constraints: If you specify a component or parameter that is not supported, the configuration item will be ignored.</p>
clusterOps	ClusterOps object	<p>Details: Cluster O&M settings</p> <p>Constraints: None</p>
enableAutopilot	Boolean	<p>Details: Whether the cluster is an Autopilot cluster</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Create an Autopilot cluster. • false: Create a CCE standard or a Turbo cluster. <p>Default value: false</p>
encryptionConfig	EncryptionConfig object	<p>Details: Configuration of secret encryption. Only one encryption mode can be configured. By default, the CCE-managed key is used for encryption. (Users are not aware of the key being used.)</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-52 HostNetwork

Parameter	Type	Description
vpc	String	<p>Details: ID of the VPC used to create a master node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> Method 1: Log in to the VPC console and view the VPC ID on the VPC details page. Method 2: Use the VPC API. For details, see Querying VPCs.
subnet	String	<p>Details: Network ID of the subnet used to create a master node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> Method 1: Log in to the VPC console, click the target subnet on the Subnets page, and view the network ID on the displayed page. Method 2: Use the VPC API. For details, see Querying Subnets.

Parameter	Type	Description
SecurityGroup	String	<p>Details: ID of the default node security group in a cluster</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • If this parameter is not specified, the system automatically creates a default node security group. • If this parameter is specified, the cluster will be bound to the specified security group. <p>NOTE To ensure proper communication, allow traffic from certain ports to the specified node security group. For details, see How Can I Configure a Security Group Rule in a Cluster?</p>
controlPlaneSecurityGroup	String	<p>Details: ID of the master node security group in a cluster</p> <p>Constraints: The value is automatically generated after the object is created. A user-defined value will not take effect.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-53 ContainerNetwork

Parameter	Type	Description
mode	String	<p>Details: Container network type</p> <p>Constraints: Only one container network type can be selected.</p> <p>Options:</p> <ul style="list-style-type: none"> • overlay_l2: an overlay_l2 network (container tunnel network) built for containers by using OpenVSwitch (OVS). • vpc-router: an underlay_l2 network built for containers by using IPvlan and custom VPC routes. • eni*: a Cloud Native 2.0 network. This model has integrated cloud native elastic network interfaces (ENIs), uses VPC CIDR blocks to allocate container IP addresses, and supports passthrough networking. You can use this model when creating a CCE Turbo cluster. <p>Default value: N/A</p>

Parameter	Type	Description
cidr	String	<p>Details: Container CIDR block. 10.0.0.0/12-19, 172.16.0.0/16-19, or 192.168.0.0/16-19 is recommended. If the selected CIDR block conflicts with existing ones, an error will be reported.</p> <p>Constraints: This parameter cannot be modified after the cluster is created. (It has been discarded. If cidrs has been configured, the specified CIDR blocks will be ignored.) Once you have created a cluster that uses a VPC network, you can add new CIDR blocks, but you are unable to modify the existing ones. If you need to adjust the CIDR blocks, you will have to create a new cluster.</p> <p>Options: Values in IPv4 CIDR format</p> <p>Default value: If this parameter is left blank, a unique CIDR block is randomly allocated from 172.(16-31).0.0/16 and 10.(0 16 32 48 64 80 96 112).0.0/12.</p>
cidrs	Array of ContainerCIDR objects	<p>Details: List of container CIDR blocks. In clusters of v1.21 or later, the cidrs field is used. When the cluster network type is vpc-router, you can configure a maximum of 20 container CIDR blocks. In clusters of versions earlier than v1.21, if the cidrs field is used, the first CIDR element in the array is used as the container CIDR block.</p> <p>Constraints: Once you have created a cluster that uses a container tunnel network, you cannot modify the CIDR blocks. Once you have created a cluster that uses a VPC network, you can add new CIDR blocks, but you are unable to modify the existing ones. If you need to adjust the CIDR blocks, you will have to create a new cluster.</p>

Table 4-54 ContainerCIDR

Parameter	Type	Description
cidr	String	<p>Details: Container CIDR block. 10.0.0.0/12-19, 172.16.0.0/16-19, or 192.168.0.0/16-19 is recommended.</p> <p>Constraints: If a CIDR block conflict occurs, an error will be reported.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-55 EniNetwork

Parameter	Type	Description
eniSubnetId	String	<p>Details: IPv4 subnet ID list of the subnet where an ENI resides</p> <p>Constraints: IPv6 is not supported. This parameter is being discarded, and the new field subnets is recommended.</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> Method 1: Log in to the VPC console, click the target subnet on the Subnets page, and view the IPv4 subnet ID on the displayed page. Method 2: Use the VPC API. For details, see Querying Subnets.

Parameter	Type	Description
eniSubnetCIDR	String	<p>Details: ENI subnet CIDR block</p> <p>Constraints: This parameter is being discarded. The new field subnets is recommended.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
subnets	Array of NetworkSubnet objects	<p>Details: List of IPv4 subnet IDs</p> <p>Constraints: None</p>

Table 4-56 NetworkSubnet

Parameter	Type	Description
subnetID	String	<p>Details: IPv4 subnet ID of the subnet used to create a master node</p> <p>Constraints: IPv6 is not supported.</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> Method 1: Log in to the VPC console, click the target subnet on the Subnets page, and view the IPv4 subnet ID on the displayed page. Method 2: Use the VPC API. For details, see Querying Subnets.

Table 4-57 ServiceNetwork

Parameter	Type	Description
IPv4CIDR	String	<p>Details: Value range of the Kubernetes clusterIP IPv4 CIDR block</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: 10.247.0.0/16</p>
IPv6CIDR	String	<p>Details: Value range of the Kubernetes clusterIP IPv6 CIDR block</p> <p>Constraints: IPv6 Service CIDR blocks can be configured only for CCE Turbo clusters with IPv6 dual stack enabled.</p> <p>Options: N/A</p> <p>Default value: Default value for a CCE Turbo cluster: fc00::/112 Default value for a CCE standard cluster: fd00:1234::/120</p>

Table 4-58 PublicAccess

Parameter	Type	Description
cidrs	Array of strings	<p>Details: Trustlist of network CIDRs that are allowed to access cluster APIs. You are advised to allow the traffic from VPC and container network CIDRs.</p> <p>Constraints: This parameter is valid only when a cluster is created.</p> <p>Options: N/A</p> <p>Default value: By default, no trustlist is configured, and the value is 0.0.0.0/0.</p>

Table 4-59 Authentication

Parameter	Type	Description
mode	String	<p>Details: Cluster authentication mode</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> Clusters of Kubernetes 1.11 or earlier support x509, rbac, and authenticating_proxy. The parameter defaults to x509. Clusters of Kubernetes 1.13 or later support rbac and authenticating_proxy. The parameter defaults to rbac. <p>Default value:</p> <ul style="list-style-type: none"> Clusters of Kubernetes 1.11 or earlier: x509 Clusters of Kubernetes 1.13 or later: rbac

Parameter	Type	Description
authenticatingProxy	AuthenticatingProxy object	<p>Details: Configuration related to the authenticating_proxy mode</p> <p>Constraints: This field is mandatory when the authentication mode is authenticating_proxy.</p>

Table 4-60 AuthenticatingProxy

Parameter	Type	Description
ca	String	<p>Details: X509 CA certificate (Base64-encoded) configured in authenticating_proxy mode</p> <p>Constraints: This field is mandatory when the cluster authentication mode is authenticating_proxy.</p> <p>Options: Maximum size: 1 MB</p> <p>Default value: N/A</p>
cert	String	<p>Details: Client certificate issued by the X509 CA certificate configured in authenticating_proxy mode, which is used for authentication from kube-apiserver to the extended API server. (The value must be Base64-encoded.)</p> <p>Constraints: This field is mandatory when the cluster authentication mode is authenticating_proxy.</p> <p>Options: Maximum size: 1 MB</p> <p>Default value: N/A</p>

Parameter	Type	Description
privateKey	String	<p>Details: Private key of the client certificate issued by the X509 CA certificate configured in <code>authenticating_proxy</code> mode, which is used for authentication from kube-apiserver to the extended API server. The private key used by the Kubernetes cluster does not support password encryption. Use an unencrypted private key. (The value must be Base64-encoded.)</p> <p>Constraints: This field is mandatory when the cluster authentication mode is <code>authenticating_proxy</code>.</p> <p>Options: Maximum size: 1 MB</p> <p>Default value: N/A</p>

Table 4-61 MasterSpec

Parameter	Type	Description
availabilityZone	String	<p>Details: AZ</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-62 ResourceTag

Parameter	Type	Description
key	String	<p>Details: Key</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • The value cannot be empty and cannot start or end with spaces. A maximum of 128 characters are supported. • Letters, digits, and spaces in UTF-8 format are supported. • The value can contain the following special characters: <code>._:=+@</code> • The value cannot start with <code>_sys_</code>. <p>Default value: N/A</p>
value	String	<p>Details: Value</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • The value can be null but not the default. Max characters: 255 • Letters, digits, and spaces in UTF-8 format are supported. • The value can contain the following special characters: <code>._:/=+@</code> <p>Default value: N/A</p>

Table 4-63 ClusterExtendParam

Parameter	Type	Description
clusterAZ	String	<p>Details: AZs of master nodes in a cluster For details about AZs supported by CCE, see Regions and Endpoints.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • AZs supported by a specified region • multi_az: (Optional) multiple AZs, which can be configured only when a cluster with multiple master nodes is used • <i>AZs of the dedicated cloud computing pool:</i> Master nodes will be deployed in the DeC AZs. It is mandatory for dedicated CCE clusters. <p>Default value: If no AZ is specified, an AZ is randomly allocated by default.</p>

Parameter	Type	Description
dssMasterVolume s	String	<p>Details: Whether the system and data disks of a master node use DSS storage pools. If this parameter is unspecified or left blank, EVS disks are used by default.</p> <p>Constraints: This parameter is mandatory for dedicated CCE clusters. It is in the following format: <rootVol.dssPoolID>.<rootVol.volType>;<dataVol.dssPoolID>.<dataVol.volType></p> <p>Specifically:</p> <ul style="list-style-type: none"> • rootVol specifies the system disk. dataVol specifies a data disk. • dssPoolID specifies the ID of a DSS storage pool. • volType specifies the storage volume type of the DSS storage pool, such as SAS, SSD, SATA, ESSD, GPSSD, ESSD2, and GPSSD2. <p>Options: N/A</p> <p>Default value: N/A</p> <p>Example: c950ee97-587c-4f24-8a74-3367e3da570f.sas;6edbc2f4-1507-44f8-ac0d-eed1d2608d38.ssd</p> <p>NOTE This field cannot be configured for non-dedicated CCE clusters.</p>
enterpriseProjectId	String	<p>Details: ID of the enterprise project that a cluster belongs to</p> <p>Constraints: An enterprise project can be configured only after the enterprise project function is enabled.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
kubeProxyMode	String	<p>Details: Service forwarding mode</p> <p>Constraints: This parameter has been discarded. If both this parameter and kubeProxyMode in ClusterSpec are specified, the latter is used.</p> <p>Options:</p> <ul style="list-style-type: none"> • iptables: traditional kube-proxy mode, which uses iptables rules to implement Service load balancing. In this mode, too many iptables rules will be generated when many Services are deployed. Additionally, non-incremental updates will cause latency and obvious performance issues in the case of heavy service traffic. • ipvs: optimized kube-proxy mode with higher throughput and faster speed. This mode supports incremental updates and can keep connections uninterrupted during Service updates. It is suitable for large-sized clusters. <p>Default value: iptables</p>
clusterExternalIP	String	<p>Details: EIP of the master node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
alpha.cce/ fixPoolMask	String	<p>Details: Number of mask bits of the fixed IP address pool of the container networks. This parameter determines the maximum number of IP addresses that can be assigned to containers on a node. This, along with the maxPods setting during node creation, determines the maximum number of pods that can be created on a node.</p> <p>For details, see Maximum Number of Pods That Can Be Created on a Node.</p> <p>Constraints: Only the vpc-router networks support this function.</p> <p>Options: Integers from 24 to 28</p> <p>Default value: 24</p>
decMasterFlavor	String	<p>Details: Master node flavor in a dedicated CCE cluster</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
dockerUmaskMode	String	<p>Details: Default UmaskMode configuration of Docker in a cluster</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • secure • normal <p>Default value: normal</p>

Parameter	Type	Description
kubernetes.io/ cpuManagerPolicy	String	<p>Details: Cluster CPU management policy</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • none or null: disables pods from exclusively occupying CPUs. Select this option if you want a large pool of shareable CPU cores. • static: enables pods to exclusively occupy CPUs. Select this option if your workload is sensitive to CPU cache and scheduling latency. In a CCE Turbo cluster, this setting is valid only for nodes where common containers, not secure containers, run. <p>Default value: none</p>
orderId	String	<p>Details: Order ID</p> <p>Constraints: This parameter is returned in the response when the cluster is billed on a yearly/monthly basis with auto payment enabled (only in creation scenarios).</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
periodType	String	<p>Details: The subscription term unit</p> <p>Constraints: As a request parameter, it is valid and mandatory when billingMode is set to 1, which is, the yearly/monthly billing mode is configured. As a response parameter, it is returned only when a yearly/monthly cluster is created.</p> <p>Options:</p> <ul style="list-style-type: none"> • month • year <p>Default value: N/A</p>
periodNum	Integer	<p>Details: Number of subscription periods</p> <p>Constraints: As a request parameter, it is valid and mandatory when billingMode is set to 1. As a response parameter, it is returned only when a yearly/monthly cluster is created.</p> <p>Options:</p> <ul style="list-style-type: none"> • If periodType is month, the value ranges from 1 to 9. • If periodType is year, the value ranges from 1 to 3. <p>Default value: N/A</p>
isAutoRenew	String	<p>Details: Whether to enable auto renewal</p> <p>Constraints: This field is valid only when billingMode is set to 1.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto renewal is enabled. • false: Auto renewal is not enabled. <p>Default value: false</p>

Parameter	Type	Description
isAutoPay	String	<p>Details: Whether to enable auto payment</p> <p>Constraints: This field is valid only when billingMode is set to 1.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto payment is enabled. • false: Auto payment is not enabled. <p>Default value: false</p>
upgradefrom	String	<p>Details: Records of how a cluster is upgraded to its current version</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-64 PackageConfiguration

Parameter	Type	Description
name	String	<p>Details: Component name</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
configurations	Array of ConfigurationItem objects	<p>Details: Component configuration items</p> <p>Constraints: None</p>

Table 4-65 ConfigurationItem

Parameter	Type	Description
name	String	<p>Details: Configuration overrides of the default components in a cluster. For details about the supported components and their parameters, see Configuration Management.</p> <p>Constraints: If you specify a component or parameter that is not supported, this configuration item will be ignored.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
value	AnyType	<p>Details: Configuration overrides of the default components in a cluster. For details about the supported components and their parameters, see Configuration Management.</p> <p>Constraints: If you specify a component or parameter that is not supported, this configuration item will be ignored.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-66 ClusterOps

Parameter	Type	Description
alarm	AlarmInfo object	<p>Details: Alarm assistant settings. CCE is integrated with AOM, which enables alarm functionality, allowing for easy search and configuration of alarms. The Cloud Native Cluster Monitoring add-on sends metric rule data in CCE alarm center to AOM instances.</p> <p>Constraints: None</p>

Table 4-67 AlarmInfo

Parameter	Type	Description
topics	Array of strings	<p>Details: Contact group list. You can enter SMN topic names and configure contact groups to manage endpoints that have subscribed to alarm messages.</p> <p>Constraints: None</p>
alarmRuleTemplated	String	<p>Details: Alarm rule template ID transferred when the alarm assistant is enabled. By default, the alarm rule template in the container scenario is used.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
promInstanceID	String	<p>Details: ID of the AOM Prometheus instance transferred when the alarm assistant is enabled. If the Prometheus add-on is not installed or the AOM instance is not connected, there is no need to specify this parameter. In this case, the alarm center will not generate metric alarm rules.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
promEnterpriseProjectID	String	<p>Details: Enterprise project ID of the AOM Prometheus instance transferred when the alarm assistant is enabled. If the Prometheus add-on is not installed or the AOM instance is not connected, there is no need to specify this parameter. In this case, the alarm center will not generate metric alarm rules.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-68 EncryptionConfig

Parameter	Type	Description
mode	String	<p>Details: Encryption mode. Either encryption using the CCE-managed key or KMS key can be configured.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Default: Encryption is performed using the CCE-managed key. • KMS: KMS encryption is used. <p>Default value: Default</p>
kmsKeyID	String	<p>Details: KMS key ID</p> <ul style="list-style-type: none"> • In the API for creating a cluster, if the mode field is set to Default, there is no need to specify this field. If the mode field is set to KMS, you can specify a value for this field. If this parameter is left blank, the default KMS key is used by default. If the default key does not exist, DEW will automatically create a default key (cce/default) for the user. To ensure proper cluster functionality, it is important to use a valid KMS key. Refrain from deleting or disabling the key before the cluster lifecycle is complete, as this may cause exceptions. Once a key has been configured for a cluster, it cannot be modified. • In the cluster query API, if the mode field is set to Default, the returned value of this field is empty. If the mode field is set to KMS, the specific key ID will be returned. <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-69 ClusterStatus

Parameter	Type	Description
phase	String	<p>Details: Cluster status</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> ● Available: The cluster is running properly. ● Unavailable: The cluster is exhibiting unexpected behavior and needs to be manually deleted. ● ScalingUp: Nodes are being added to the cluster. ● ScalingDown: The cluster is being downsized to fewer nodes. ● Creating: The cluster is being created. ● Deleting: The cluster is being deleted. ● Upgrading: The cluster is being upgraded. ● Resizing: Cluster specifications are being changed. ● ResizeFailed: Cluster specification changing is abnormal. ● RollingBack: The cluster is being rolled back. ● RollbackFailed: The cluster rollback is abnormal. ● Hibernating: The cluster is being hibernated. ● Hibernation: The cluster is in hibernation. ● Freezing: The cluster is being frozen. ● Frozen: The cluster has been frozen. ● UnFreezing: The cluster is being unfrozen. ● Awaking: The cluster is being woken up from hibernation.

Parameter	Type	Description
		<ul style="list-style-type: none"> • Empty: The cluster does not have any resources. This field has been discarded. • Error: Resources in the cluster are abnormal. You can manually delete the cluster.
jobID	String	<p>Details: ID of the job associated with the current cluster status. The system supports:</p> <ul style="list-style-type: none"> • ID of the associated job returned when creating a cluster. You can use it to obtain the auxiliary jobs for creating a cluster. • ID of the associated job returned when a cluster fails to be deleted or is being deleted. If this parameter is not empty, you can use the job ID to obtain the auxiliary jobs for deleting a cluster. <p>Constraints: None</p> <p>Options: N/A</p> <p>NOTE Jobs are short-lived. Do not use job information in scenarios such as cluster status determination.</p>
reason	String	<p>Details: Why a cluster changes to the current state. This parameter is returned if the cluster is not in the Available state.</p> <p>Constraints: None</p> <p>Options: N/A</p>

Parameter	Type	Description
message	String	<p>Details: Detailed information about why a cluster changes to the current state. This parameter is returned if the cluster is not in the Available state.</p> <p>Constraints: None</p> <p>Options: N/A</p>
endpoints	Array of ClusterEndpoints objects	<p>Details: Access address of kube-apiserver in a cluster</p> <p>Constraints: None</p>
isLocked	Boolean	<p>Details: CBC resource locked</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • true: The resource is locked by CBC. • false: The resource is not locked by CBC.
lockScene	String	<p>Details: CBC resource locking scenario</p> <p>Constraints: None</p> <p>Options: N/A</p>
lockSource	String	<p>Details: Resource locked</p> <p>Constraints: None</p> <p>Options: N/A</p>

Parameter	Type	Description
lockSourceId	String	<p>Details: ID of a locked resource</p> <p>Constraints: None</p> <p>Options: N/A</p>
deleteOption	Object	<p>Details: Status of the configuration to be deleted. This parameter is contained only in the response to the deletion request.</p> <p>Constraints: None</p> <p>Options: N/A</p>
deleteStatus	Object	<p>Details: Information of the status to be deleted. This parameter is contained only in the response to the deletion request.</p> <p>Constraints: None</p> <p>Options: N/A</p>

Table 4-70 ClusterEndpoints

Parameter	Type	Description
url	String	<p>Details: Access address of kube-apiserver in a cluster</p> <p>Constraints: None</p> <p>Options: N/A</p>

Parameter	Type	Description
type	String	<p>Details: Type of the cluster access address</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Internal: address for internal network access • External: address for external network access

Example Requests

None

Example Responses

Status code: 200

Information about the specified cluster is successfully obtained.

```
{
  "kind": "Cluster",
  "apiVersion": "v3",
  "metadata": {
    "alias": "mycluster",
    "name": "mycluster",
    "uid": "4d1ecb2c-229a-11e8-9c75-0255ac100ceb",
    "creationTimestamp": "2018-08-02 03:48:58.968214406 +0000 UTC",
    "updateTimestamp": "2018-08-02 04:05:29.386391813 +0000 UTC"
  },
  "spec": {
    "type": "VirtualMachine",
    "flavor": "cce.s1.small",
    "version": "v1.25",
    "platformVersion": "cce.6.0",
    "legacyVersion": "v1.25.6-r0",
    "description": "this is a demo cluster",
    "customSan": [ "192.168.1.0", "example.com" ],
    "hostNetwork": {
      "vpc": "4d1ecb2c-229a-11e8-9c75-0255ac100ceb",
      "subnet": "4d1ecb2c-229a-11e8-9c75-0255ac100ceb",
      "controlPlaneSecurityGroup": "14834251-ac69-460a-bfbd-7ac84274c52b"
    },
    "containerNetwork": {
      "mode": "overlay_l2",
      "cidr": "172.16.0.0/16"
    },
    "authentication": {
      "mode": "x509",
      "authenticatingProxy": { }
    },
    "billingMode": 0,
    "deletionProtection": false
  },
  "status": {
    "phase": "Available",
    "endpoints": [ {
```

```
"url" : "https://192.168.0.11:5443",  
"type" : "Internal"  
}]  
}  
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;  
  
import com.huaweicloud.sdk.core.auth.ICredential;  
import com.huaweicloud.sdk.core.auth.BasicCredentials;  
import com.huaweicloud.sdk.core.exception.ConnectionException;  
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;  
import com.huaweicloud.sdk.core.exception.ServiceResponseException;  
import com.huaweicloud.sdk.cce.v3.region.CceRegion;  
import com.huaweicloud.sdk.cce.v3.*;  
import com.huaweicloud.sdk.cce.v3.model.*;  
  
public class ShowClusterSolution {  
  
    public static void main(String[] args) {  
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great  
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or  
        // environment variables and decrypted during use to ensure security.  
        // In this example, AK and SK are stored in environment variables for authentication. Before running  
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment  
        String ak = System.getenv("CLOUD_SDK_AK");  
        String sk = System.getenv("CLOUD_SDK_SK");  
        String projectId = "{project_id}";  
  
        ICredential auth = new BasicCredentials()  
            .withProjectId(projectId)  
            .withAk(ak)  
            .withSk(sk);  
  
        CceClient client = CceClient.newBuilder()  
            .withCredential(auth)  
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))  
            .build();  
        ShowClusterRequest request = new ShowClusterRequest();  
        request.withClusterId("{cluster_id}");  
        try {  
            ShowClusterResponse response = client.showCluster(request);  
            System.out.println(response.toString());  
        } catch (ConnectionException e) {  
            e.printStackTrace();  
        } catch (RequestTimeoutException e) {  
            e.printStackTrace();  
        } catch (ServiceResponseException e) {  
            e.printStackTrace();  
            System.out.println(e.getHttpStatusCode());  
            System.out.println(e.getRequestId());  
            System.out.println(e.getErrorCode());  
            System.out.println(e.getErrorMsg());  
        }  
    }  
}
```

Python

```
# coding: utf-8
```

```
import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ShowClusterRequest()
        request.cluster_id = "{cluster_id}"
        response = client.show_cluster(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ShowClusterRequest{}
```

```
request.ClusterId = "{cluster_id}"
response, err := client.ShowCluster(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Information about the specified cluster is successfully obtained.

Error Codes

See [Error Codes](#).

4.2.3 Listing Clusters in a Specified Project

Function

This API is used to obtain details about all clusters in a specified project.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3/projects/{project_id}/clusters

Table 4-71 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>

Table 4-72 Query Parameters

Parameter	Mandatory	Type	Description
detail	No	String	<p>Details: Whether the details of a cluster are obtained</p> <p>Constraints: N/A</p> <p>Options: If this parameter is set to true, the total number of nodes (totalNodesNumber), number of functional nodes (activeNodesNumber), total CPUs (totalNodesCPU), total memory size (totalNodesMemory), and installed add-ons (installedAddonInstances) will be added to the annotation. The details of installed add-ons include the add-on name (addonTemplateName), version (version), status (status), and whether node pool scaling is supported (supportNodePoolScaleGroup).</p> <p>Default value: None</p>

Parameter	Mandatory	Type	Description
status	No	String	<p>Details: Cluster status</p> <p>Constraints: N/A</p> <p>Options:</p> <ul style="list-style-type: none"> ● Available: The cluster is running properly. ● Unavailable: An error occurred in the cluster, which made it unavailable and now requires manual deletion. ● ScalingUp: Nodes are being added to the cluster. ● ScalingDown: The cluster is being downsized to fewer nodes. ● Creating: The cluster is being created. ● Deleting: The cluster is being deleted. ● Upgrading: The cluster is being upgraded. ● Resizing: Cluster specifications are being modified. ● ResizeFailed: Modify cluster specifications failed. ● RollingBack: The cluster is being rolled back. ● RollbackFailed: Roll back the cluster failed. ● Hibernating: The cluster is being hibernated. ● Hibernation: The cluster is in hibernation. ● Freezing: The cluster is being frozen. ● Frozen: The cluster has been frozen. ● UnFreezing: The cluster is being unfrozen.

Parameter	Mandatory	Type	Description
			<ul style="list-style-type: none"> • Awaking: The cluster is being woken up from hibernation. • Empty: The cluster does not have any resources. This field has been deprecated. • Error: An error occurred in cluster resources, which require manual deletion. <p>Default value: N/A</p>
type	No	String	<p>Details: Cluster type</p> <p>Constraints: N/A</p> <p>Options:</p> <ul style="list-style-type: none"> • VirtualMachine: CCE cluster • ARM64: Kunpeng cluster <p>Default value: N/A</p>
version	No	String	<p>Details: Obtain cluster versions.</p> <p>Constraints: N/A</p> <p>Value range: Cluster versions</p> <p>Default value: None</p>

Request Parameters

Table 4-73 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-74 Response body parameters

Parameter	Type	Description
kind	String	<p>Details: API type</p> <p>Constraints: The value cannot be changed.</p> <p>Options: N/A</p> <p>Default value: Cluster</p>
apiVersion	String	<p>Details: API version</p> <p>Constraints: The value cannot be changed.</p> <p>Options: N/A</p> <p>Default value: v3</p>
items	Array of Cluster objects	<p>Details: Details of all clusters in the current project. You can find clusters based on the value of items.metadata.name.</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-75 Cluster

Parameter	Type	Description
kind	String	<p>Details: API type</p> <p>Constraints: The value cannot be changed.</p> <p>Options:</p> <ul style="list-style-type: none"> • Cluster • cluster <p>Default value: N/A</p>
apiVersion	String	<p>Details: API version</p> <p>Constraints: The value cannot be changed.</p> <p>Options:</p> <ul style="list-style-type: none"> • v3 <p>Default value: N/A</p>
metadata	ClusterMetadata object	<p>Details: Basic information about a cluster. Metadata is a collection of attributes.</p> <p>Constraints: None</p>
spec	ClusterSpec object	<p>Details: Detailed description of a cluster. CCE creates or updates objects by defining or updating spec.</p> <p>Constraints: None</p>
status	ClusterStatus object	<p>Details: Cluster status and ID of a cluster deletion job</p> <p>Constraints: None</p>

Table 4-76 ClusterMetadata

Parameter	Type	Description
name	String	<p>Details: Cluster name</p> <p>Constraints: None</p> <p>Options: Enter 4 to 128 characters starting with a lowercase letter and not ending with a hyphen (-). Only lowercase letters, digits, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>
uid	String	<p>Details: Cluster ID, which identifies a cluster</p> <p>Constraints: The value is automatically generated after the object is created. A user-defined value will not take effect. When you create a yearly/monthly cluster, no cluster ID will be returned in the response body.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
alias	String	<p>Details: Alias of a cluster name displayed on the CCE console. The name can be changed. A cluster alias must be unique.</p> <p>Constraints: In the request body for creating or updating a cluster, if the cluster alias is not specified or set to null, the cluster name will be used as the cluster alias. In the response body for creating a cluster or other response bodies, if the cluster alias is not configured, no value will be returned.</p> <p>Options: Enter 4 to 128 characters starting with a letter and not starting or ending with a hyphen (-). Only digits, letters, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>

Parameter	Type	Description
annotations	Map<String,String>	<p>Details: Cluster annotations, in the format of key-value pairs</p> <pre>"annotations": { "key1" : "value1", "key2" : "value2" }</pre> <p>Constraints: This field is not stored in the database and is used only to specify the add-ons to be installed in the cluster.</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>NOTE</p> <ul style="list-style-type: none"> • annotations are not used to identify or select objects. The metadata in annotations may be small or large, structured or unstructured, and may include characters that are not allowed in labels. • You can install ICAgent during cluster creation by adding the key-value pair "cluster.install.addons.external/install":[{"addonTemplateName":"icagent"}]".
labels	Map<String,String>	<p>Details: Cluster labels, in the format of key-value pairs</p> <p>Constraints: The value of this field is automatically generated by the system and is used by the frontend to identify the features supported by the cluster during the upgrade. Custom values are invalid.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
creationTimestamp	String	<p>Details: Time when a cluster was created</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
updateTimestamp	String	<p>Details: Time when a cluster was updated</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
timezone	String	<p>Details: Cluster time zone</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-77 ClusterSpec

Parameter	Type	Description
category	String	<p>Details: Cluster type</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • CCE: CCE cluster. CCE clusters support hybrid deployment of VMs and BMSs, and heterogeneous nodes such as GPU and NPU nodes, allowing you to run your containers in a secure, stable container runtime environment based on a high-performance network model. • Turbo: CCE Turbo cluster. CCE Turbo clusters run on the cloud native 2.0 infrastructure that features hardware and software synergy to support passthrough networking, high security and reliability, and intelligent scheduling. <p>Default value: CCE when the container network is not set to eni Turbo when the container network is set to eni</p>
type	String	<p>Details: Master node architecture</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • VirtualMachine: The master node is an x86 server. • ARM64: The master node is an Arm-based Kunpeng server. <p>Default value: VirtualMachine</p>

Parameter	Type	Description
flavor	String	<p>Details: Cluster specifications. Specifications of clusters v1.15 and later versions can be changed after they are created. For details, see Changing Cluster Scale. Configure this parameter based on actual service requirements.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> ● cce.s1.small: a small-scale CCE cluster with one master node and a maximum of 50 worker nodes ● cce.s1.medium: a medium-scale CCE cluster with one master node and a maximum of 200 worker nodes ● cce.s2.small: a small-scale CCE cluster with three master nodes and a maximum of 50 worker nodes ● cce.s2.medium: a medium-scale CCE cluster with three master nodes and a maximum of 200 worker nodes ● cce.s2.large: a large-scale CCE cluster with three master nodes and a maximum of 1000 worker nodes ● cce.s2.xlarge: an ultra-large-scale CCE cluster with three master nodes and a maximum of 2000 worker nodes <p>Default value: N/A</p>

Parameter	Type	Description
		<p>NOTE The fields in the parameters are described as follows:</p> <ul style="list-style-type: none"> • s1: specifies a cluster with one master node. If the master node is faulty, the cluster will become unavailable, but running workloads in the cluster are not affected. • s2: specifies an HA cluster with three master nodes. If one of the master nodes is faulty, the cluster is still available. • dec: specifies a DeC CCE cluster. For example, cce.dec.s1.small specifies a small-scale, DeC CCE cluster with one master node and a maximum of 50 worker nodes. • small: specifies that a cluster can manage a maximum of 50 worker nodes. • medium: specifies that a cluster can manage a maximum of 200 worker nodes. • large: specifies that a cluster can manage a maximum of 1000 worker nodes. • xlarge: specifies that a cluster can manage a maximum of 2000 worker nodes.

Parameter	Type	Description
version	String	<p>Details:</p> <p>Version of a cluster, which mirrors the baseline version of the Kubernetes community. The latest version is recommended.</p> <p>You can create clusters of three latest versions on the CCE console. To learn which cluster versions are available, log in to the CCE console, create a cluster, and check the Cluster Version parameter.</p> <p>You can call APIs to create clusters of other versions. However, these cluster versions will be gradually terminated. For details about the support policy, see the CCE announcement.</p> <p>Constraints:</p> <p>None</p> <p>Options:</p> <p>N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • If this parameter is left blank, a cluster of the latest version is created by default. • If a baseline cluster version is specified but the R version is not specified, a cluster of the latest R version will be created by default. It is a good practice not to specify the R version. <p>NOTE</p> <ul style="list-style-type: none"> • CCE Turbo clusters of v1.19 or later are commercially available.

Parameter	Type	Description
platformVersion	String	<p>Details: CCE cluster platform version, which is an internal version under the cluster version (version). Platform versions are used to trace iterations in a major cluster version. They are unique within a major cluster version and recounted when the major cluster version changes.</p> <p>Constraints: This parameter cannot be customized, and when you create a cluster, the latest corresponding platform version is selected automatically.</p> <p>Options: The format of platformVersion is cce.X.Y.</p> <ul style="list-style-type: none"> • X: internal feature version, which indicates changes in features, patches, or OS support in the cluster version. The value starts from 1 and increases monotonically. • Y: patch version of an internal feature version. It is used only for software package update after the feature version is released. No other modification is involved. The value starts from 0 and increases monotonically. <p>Default value: N/A</p>

Parameter	Type	Description
legacyVersion	String	<p>Details: (Discarded) Outdated version of CCE clusters, which serves no practical purpose and is only used to showcase the cluster version and platform version combination. The version number is globally unique. For example, if the cluster version is va.b and the platformVersion is cce.X.Y, the value of legacyVersion is va.b.X-rY.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
description	String	<p>Details: Cluster description, for example, which purpose the cluster is intended to serve. By default, this field is left blank. To modify cluster description after a cluster is created, call the API for updating a specified cluster or go to the cluster details page on the CCE console.</p> <p>Constraints: Only UTF-8 encoding is supported.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
customSan	Array of strings	<p>Details: Custom Subject Alternative Name (SAN) in the server certificate of a cluster API server, which must comply with the SSL and X509 standard formats</p> <p>Constraints: Duplicate names are not allowed.</p> <p>Options: Values in the IP address or domain name format</p> <p>Default value: N/A</p> <p>Example: SAN 1: DNS Name=example.com SAN 2: DNS Name=www.example.com SAN 3: DNS Name=example.net SAN 4: IP Address=93.184.216.34</p>
ipv6enable	Boolean	<p>Details: Whether a cluster supports IPv6 addresses. It is supported by clusters v1.15 and later.</p> <p>Constraints: After IPv6 is enabled, iptables is not supported. The VPC network model does not support IPv4/IPv6 dual-stack.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: IPv4/IPv6 dual-stack is enabled. • false: Only IPv4 is used. <p>Default value: false</p>
hostNetwork	HostNetwork object	<p>Details: Node network parameters, including VPC and subnet ID. This field is mandatory because nodes in a cluster communicate with each other using a VPC.</p> <p>Constraints: None</p>

Parameter	Type	Description
containerNetwork	ContainerNetwork object	<p>Details: Container network parameters, including the container network model and container CIDR block</p> <p>Constraints: None</p>
eniNetwork	EniNetwork object	<p>Details: Configuration of the Cloud Native 2.0 network model. You need to specify this field when creating a CCE Turbo cluster.</p> <p>Constraints: None</p>
serviceNetwork	ServiceNetwork object	<p>Details: Service CIDR block, including IPv4 CIDR block</p> <p>Constraints: None</p>
publicAccess	PublicAccess object	<p>Details: Cluster API access control</p> <p>Constraints: None</p>
authentication	Authentication object	<p>Details: Configurations of the cluster authentication mode</p> <p>Constraints: None</p>
billingMode	Integer	<p>Details: Cluster billing mode</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> 0: pay-per-use 1: yearly/monthly <p>Default value: 0</p>

Parameter	Type	Description
masters	Array of MasterSpec objects	<p>Details: Advanced configurations of master nodes</p> <p>Constraints: If this parameter is not specified, no value is returned.</p>
kubernetesSvcIpRange	String	<p>Details: Service CIDR blocks which kubernetes clusterIP must fall within. This field is available only for clusters of v1.11.7 and later. If this parameter is not specified during cluster creation, the default value 10.247.0.0/16 is used. This parameter is being discarded, so you can use serviceNetwork instead. The new field contains the IPv4 CIDR blocks.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
clusterTags	Array of ResourceTag objects	<p>Details: Cluster resource tags</p> <p>Constraints: None</p>

Parameter	Type	Description
kubeProxyMode	String	<p>Details: Service forwarding mode</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • iptables: traditional kube-proxy mode, which uses iptables rules to implement Service load balancing. In this mode, too many iptables rules will be generated when many Services are deployed. Additionally, non-incremental updates will cause latency and obvious performance issues in the case of heavy service traffic. • ipvs: optimized kube-proxy mode with higher throughput and faster speed. This mode supports incremental updates and can keep connections uninterrupted during Service updates. It is suitable for large-sized clusters. <p>Default value: iptables is used by default.</p>
az	String	<p>Details: AZ. This field is returned only for a query. For details about AZs supported by CCE, see Regions and Endpoints.</p> <p>Constraints: None</p>
extendParam	ClusterExtendParam object	<p>Details: Extended field to decide whether a cluster will span across AZs or belong to a specified enterprise project, or whether a dedicated CCE cluster is to be created</p> <p>Constraints: None</p>

Parameter	Type	Description
supportIstio	Boolean	<p>Details: Whether Istio is supported</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Istio is supported. • false: Istio is not supported. <p>Default value: true</p>
enableDistMgt	Boolean	<p>Details: Whether to enable support for remote clouds</p> <p>Constraints: Only CCE Turbo clusters support this function.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Support for remote clouds is enabled. • false: Support for remote clouds is not enabled. <p>Default value: false</p>
deletionProtection	Boolean	<p>Details: Cluster deletion protection, which prevents the deletion of a cluster when this function is enabled</p> <p>Constraints: N/A</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Cluster deletion protection is enabled. • false: Cluster deletion protection is disabled. <p>Default value: false</p>

Parameter	Type	Description
configurationsO- verride	Array of PackageConfiguration objects	<p>Details: Cluster default component configuration override. For details about the supported components and their parameters, see Modifying Cluster Configurations.</p> <p>Constraints: If you specify a component or parameter that is not supported, the configuration item will be ignored.</p>
clusterOps	ClusterOps object	<p>Details: Cluster O&M settings</p> <p>Constraints: None</p>
enableAutopilot	Boolean	<p>Details: Whether the cluster is an Autopilot cluster</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Create an Autopilot cluster. • false: Create a CCE standard or a Turbo cluster. <p>Default value: false</p>
encryptionConfig	EncryptionConfig object	<p>Details: Configuration of secret encryption. Only one encryption mode can be configured. By default, the CCE-managed key is used for encryption. (Users are not aware of the key being used.)</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-78 HostNetwork

Parameter	Type	Description
vpc	String	<p>Details: ID of the VPC used to create a master node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> Method 1: Log in to the VPC console and view the VPC ID on the VPC details page. Method 2: Use the VPC API. For details, see Querying VPCs.
subnet	String	<p>Details: Network ID of the subnet used to create a master node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> Method 1: Log in to the VPC console, click the target subnet on the Subnets page, and view the network ID on the displayed page. Method 2: Use the VPC API. For details, see Querying Subnets.

Parameter	Type	Description
SecurityGroup	String	<p>Details: ID of the default node security group in a cluster</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • If this parameter is not specified, the system automatically creates a default node security group. • If this parameter is specified, the cluster will be bound to the specified security group. <p>NOTE To ensure proper communication, allow traffic from certain ports to the specified node security group. For details, see How Can I Configure a Security Group Rule in a Cluster?</p>
controlPlaneSecurityGroup	String	<p>Details: ID of the master node security group in a cluster</p> <p>Constraints: The value is automatically generated after the object is created. A user-defined value will not take effect.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-79 ContainerNetwork

Parameter	Type	Description
mode	String	<p>Details: Container network type</p> <p>Constraints: Only one container network type can be selected.</p> <p>Options:</p> <ul style="list-style-type: none"> • overlay_l2: an overlay_l2 network (container tunnel network) built for containers by using OpenVSwitch (OVS). • vpc-router: an underlay_l2 network built for containers by using IPvlan and custom VPC routes. • eni*: a Cloud Native 2.0 network. This model has integrated cloud native elastic network interfaces (ENIs), uses VPC CIDR blocks to allocate container IP addresses, and supports passthrough networking. You can use this model when creating a CCE Turbo cluster. <p>Default value: N/A</p>

Parameter	Type	Description
cidr	String	<p>Details: Container CIDR block. 10.0.0.0/12-19, 172.16.0.0/16-19, or 192.168.0.0/16-19 is recommended. If the selected CIDR block conflicts with existing ones, an error will be reported.</p> <p>Constraints: This parameter cannot be modified after the cluster is created. (It has been discarded. If cidrs has been configured, the specified CIDR blocks will be ignored.) Once you have created a cluster that uses a VPC network, you can add new CIDR blocks, but you are unable to modify the existing ones. If you need to adjust the CIDR blocks, you will have to create a new cluster.</p> <p>Options: Values in IPv4 CIDR format</p> <p>Default value: If this parameter is left blank, a unique CIDR block is randomly allocated from 172.(16–31).0.0/16 and 10.(0 16 32 48 64 80 96 112).0.0/12.</p>
cidrs	Array of ContainerCIDR objects	<p>Details: List of container CIDR blocks. In clusters of v1.21 or later, the cidrs field is used. When the cluster network type is vpc-router, you can configure a maximum of 20 container CIDR blocks. In clusters of versions earlier than v1.21, if the cidrs field is used, the first CIDR element in the array is used as the container CIDR block.</p> <p>Constraints: Once you have created a cluster that uses a container tunnel network, you cannot modify the CIDR blocks. Once you have created a cluster that uses a VPC network, you can add new CIDR blocks, but you are unable to modify the existing ones. If you need to adjust the CIDR blocks, you will have to create a new cluster.</p>

Table 4-80 ContainerCIDR

Parameter	Type	Description
cidr	String	<p>Details: Container CIDR block. 10.0.0.0/12-19, 172.16.0.0/16-19, or 192.168.0.0/16-19 is recommended.</p> <p>Constraints: If a CIDR block conflict occurs, an error will be reported.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-81 EniNetwork

Parameter	Type	Description
eniSubnetId	String	<p>Details: IPv4 subnet ID list of the subnet where an ENI resides</p> <p>Constraints: IPv6 is not supported. This parameter is being discarded, and the new field subnets is recommended.</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> • Method 1: Log in to the VPC console, click the target subnet on the Subnets page, and view the IPv4 subnet ID on the displayed page. • Method 2: Use the VPC API. For details, see Querying Subnets.

Parameter	Type	Description
eniSubnetCIDR	String	<p>Details: ENI subnet CIDR block</p> <p>Constraints: This parameter is being discarded. The new field subnets is recommended.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
subnets	Array of NetworkSubnet objects	<p>Details: List of IPv4 subnet IDs</p> <p>Constraints: None</p>

Table 4-82 NetworkSubnet

Parameter	Type	Description
subnetID	String	<p>Details: IPv4 subnet ID of the subnet used to create a master node</p> <p>Constraints: IPv6 is not supported.</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> • Method 1: Log in to the VPC console, click the target subnet on the Subnets page, and view the IPv4 subnet ID on the displayed page. • Method 2: Use the VPC API. For details, see Querying Subnets.

Table 4-83 ServiceNetwork

Parameter	Type	Description
IPv4CIDR	String	<p>Details: Value range of the Kubernetes clusterIP IPv4 CIDR block</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: 10.247.0.0/16</p>
IPv6CIDR	String	<p>Details: Value range of the Kubernetes clusterIP IPv6 CIDR block</p> <p>Constraints: IPv6 Service CIDR blocks can be configured only for CCE Turbo clusters with IPv6 dual stack enabled.</p> <p>Options: N/A</p> <p>Default value: Default value for a CCE Turbo cluster: fc00::/112 Default value for a CCE standard cluster: fd00:1234::/120</p>

Table 4-84 PublicAccess

Parameter	Type	Description
cidrs	Array of strings	<p>Details: Trustlist of network CIDRs that are allowed to access cluster APIs. You are advised to allow the traffic from VPC and container network CIDRs.</p> <p>Constraints: This parameter is valid only when a cluster is created.</p> <p>Options: N/A</p> <p>Default value: By default, no trustlist is configured, and the value is 0.0.0.0/0.</p>

Table 4-85 Authentication

Parameter	Type	Description
mode	String	<p>Details: Cluster authentication mode</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> Clusters of Kubernetes 1.11 or earlier support x509, rbac, and authenticating_proxy. The parameter defaults to x509. Clusters of Kubernetes 1.13 or later support rbac and authenticating_proxy. The parameter defaults to rbac. <p>Default value:</p> <ul style="list-style-type: none"> Clusters of Kubernetes 1.11 or earlier: x509 Clusters of Kubernetes 1.13 or later: rbac

Parameter	Type	Description
authenticatingProxy	AuthenticatingProxy object	<p>Details: Configuration related to the authenticating_proxy mode</p> <p>Constraints: This field is mandatory when the authentication mode is authenticating_proxy.</p>

Table 4-86 AuthenticatingProxy

Parameter	Type	Description
ca	String	<p>Details: X509 CA certificate (Base64-encoded) configured in authenticating_proxy mode</p> <p>Constraints: This field is mandatory when the cluster authentication mode is authenticating_proxy.</p> <p>Options: Maximum size: 1 MB</p> <p>Default value: N/A</p>
cert	String	<p>Details: Client certificate issued by the X509 CA certificate configured in authenticating_proxy mode, which is used for authentication from kube-apiserver to the extended API server. (The value must be Base64-encoded.)</p> <p>Constraints: This field is mandatory when the cluster authentication mode is authenticating_proxy.</p> <p>Options: Maximum size: 1 MB</p> <p>Default value: N/A</p>

Parameter	Type	Description
privateKey	String	<p>Details: Private key of the client certificate issued by the X509 CA certificate configured in <code>authenticating_proxy</code> mode, which is used for authentication from kube-apiserver to the extended API server. The private key used by the Kubernetes cluster does not support password encryption. Use an unencrypted private key. (The value must be Base64-encoded.)</p> <p>Constraints: This field is mandatory when the cluster authentication mode is authenticating_proxy.</p> <p>Options: Maximum size: 1 MB</p> <p>Default value: N/A</p>

Table 4-87 MasterSpec

Parameter	Type	Description
availabilityZone	String	<p>Details: AZ</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-88 ResourceTag

Parameter	Type	Description
key	String	<p>Details: Key</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • The value cannot be empty and cannot start or end with spaces. A maximum of 128 characters are supported. • Letters, digits, and spaces in UTF-8 format are supported. • The value can contain the following special characters: <code>._:=+@</code> • The value cannot start with <code>_sys_</code>. <p>Default value: N/A</p>
value	String	<p>Details: Value</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • The value can be null but not the default. Max characters: 255 • Letters, digits, and spaces in UTF-8 format are supported. • The value can contain the following special characters: <code>._:/=+@</code> <p>Default value: N/A</p>

Table 4-89 ClusterExtendParam

Parameter	Type	Description
clusterAZ	String	<p>Details: AZs of master nodes in a cluster For details about AZs supported by CCE, see Regions and Endpoints.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • AZs supported by a specified region • multi_az: (Optional) multiple AZs, which can be configured only when a cluster with multiple master nodes is used • <i>AZs of the dedicated cloud computing pool:</i> Master nodes will be deployed in the DeC AZs. It is mandatory for dedicated CCE clusters. <p>Default value: If no AZ is specified, an AZ is randomly allocated by default.</p>

Parameter	Type	Description
dssMasterVolume s	String	<p>Details: Whether the system and data disks of a master node use DSS storage pools. If this parameter is unspecified or left blank, EVS disks are used by default.</p> <p>Constraints: This parameter is mandatory for dedicated CCE clusters. It is in the following format: <rootVol.dssPoolID>.<rootVol.volType>;<dataVol.dssPoolID>.<dataVol.volType></p> <p>Specifically:</p> <ul style="list-style-type: none"> • rootVol specifies the system disk. dataVol specifies a data disk. • dssPoolID specifies the ID of a DSS storage pool. • volType specifies the storage volume type of the DSS storage pool, such as SAS, SSD, SATA, ESSD, GPSSD, ESSD2, and GPSSD2. <p>Options: N/A</p> <p>Default value: N/A</p> <p>Example: c950ee97-587c-4f24-8a74-3367e3da570f.sas;6edbc2f4-1507-44f8-ac0d-eed1d2608d38.ssd</p> <p>NOTE This field cannot be configured for non-dedicated CCE clusters.</p>
enterpriseProjectId	String	<p>Details: ID of the enterprise project that a cluster belongs to</p> <p>Constraints: An enterprise project can be configured only after the enterprise project function is enabled.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
kubeProxyMode	String	<p>Details: Service forwarding mode</p> <p>Constraints: This parameter has been discarded. If both this parameter and kubeProxyMode in ClusterSpec are specified, the latter is used.</p> <p>Options:</p> <ul style="list-style-type: none"> • iptables: traditional kube-proxy mode, which uses iptables rules to implement Service load balancing. In this mode, too many iptables rules will be generated when many Services are deployed. Additionally, non-incremental updates will cause latency and obvious performance issues in the case of heavy service traffic. • ipvs: optimized kube-proxy mode with higher throughput and faster speed. This mode supports incremental updates and can keep connections uninterrupted during Service updates. It is suitable for large-sized clusters. <p>Default value: iptables</p>
clusterExternalIP	String	<p>Details: EIP of the master node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
alpha.cce/ fixPoolMask	String	<p>Details: Number of mask bits of the fixed IP address pool of the container networks. This parameter determines the maximum number of IP addresses that can be assigned to containers on a node. This, along with the maxPods setting during node creation, determines the maximum number of pods that can be created on a node.</p> <p>For details, see Maximum Number of Pods That Can Be Created on a Node.</p> <p>Constraints: Only the vpc-router networks support this function.</p> <p>Options: Integers from 24 to 28</p> <p>Default value: 24</p>
decMasterFlavor	String	<p>Details: Master node flavor in a dedicated CCE cluster</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
dockerUmaskMode	String	<p>Details: Default UmaskMode configuration of Docker in a cluster</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • secure • normal <p>Default value: normal</p>

Parameter	Type	Description
kubernetes.io/ cpuManagerPolicy	String	<p>Details: Cluster CPU management policy</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • none or null: disables pods from exclusively occupying CPUs. Select this option if you want a large pool of shareable CPU cores. • static: enables pods to exclusively occupy CPUs. Select this option if your workload is sensitive to CPU cache and scheduling latency. In a CCE Turbo cluster, this setting is valid only for nodes where common containers, not secure containers, run. <p>Default value: none</p>
orderId	String	<p>Details: Order ID</p> <p>Constraints: This parameter is returned in the response when the cluster is billed on a yearly/monthly basis with auto payment enabled (only in creation scenarios).</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
periodType	String	<p>Details: The subscription term unit</p> <p>Constraints: As a request parameter, it is valid and mandatory when billingMode is set to 1, which is, the yearly/monthly billing mode is configured. As a response parameter, it is returned only when a yearly/monthly cluster is created.</p> <p>Options:</p> <ul style="list-style-type: none"> • month • year <p>Default value: N/A</p>
periodNum	Integer	<p>Details: Number of subscription periods</p> <p>Constraints: As a request parameter, it is valid and mandatory when billingMode is set to 1. As a response parameter, it is returned only when a yearly/monthly cluster is created.</p> <p>Options:</p> <ul style="list-style-type: none"> • If periodType is month, the value ranges from 1 to 9. • If periodType is year, the value ranges from 1 to 3. <p>Default value: N/A</p>
isAutoRenew	String	<p>Details: Whether to enable auto renewal</p> <p>Constraints: This field is valid only when billingMode is set to 1.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto renewal is enabled. • false: Auto renewal is not enabled. <p>Default value: false</p>

Parameter	Type	Description
isAutoPay	String	<p>Details: Whether to enable auto payment</p> <p>Constraints: This field is valid only when billingMode is set to 1.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto payment is enabled. • false: Auto payment is not enabled. <p>Default value: false</p>
upgradefrom	String	<p>Details: Records of how a cluster is upgraded to its current version</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-90 PackageConfiguration

Parameter	Type	Description
name	String	<p>Details: Component name</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
configurations	Array of ConfigurationItem objects	<p>Details: Component configuration items</p> <p>Constraints: None</p>

Table 4-91 ConfigurationItem

Parameter	Type	Description
name	String	<p>Details: Configuration overrides of the default components in a cluster. For details about the supported components and their parameters, see Configuration Management.</p> <p>Constraints: If you specify a component or parameter that is not supported, this configuration item will be ignored.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
value	AnyType	<p>Details: Configuration overrides of the default components in a cluster. For details about the supported components and their parameters, see Configuration Management.</p> <p>Constraints: If you specify a component or parameter that is not supported, this configuration item will be ignored.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-92 ClusterOps

Parameter	Type	Description
alarm	AlarmInfo object	<p>Details: Alarm assistant settings. CCE is integrated with AOM, which enables alarm functionality, allowing for easy search and configuration of alarms. The Cloud Native Cluster Monitoring add-on sends metric rule data in CCE alarm center to AOM instances.</p> <p>Constraints: None</p>

Table 4-93 AlarmInfo

Parameter	Type	Description
topics	Array of strings	<p>Details: Contact group list. You can enter SMN topic names and configure contact groups to manage endpoints that have subscribed to alarm messages.</p> <p>Constraints: None</p>
alarmRuleTemplated	String	<p>Details: Alarm rule template ID transferred when the alarm assistant is enabled. By default, the alarm rule template in the container scenario is used.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
promInstanceID	String	<p>Details: ID of the AOM Prometheus instance transferred when the alarm assistant is enabled. If the Prometheus add-on is not installed or the AOM instance is not connected, there is no need to specify this parameter. In this case, the alarm center will not generate metric alarm rules.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
promEnterpriseProjectID	String	<p>Details: Enterprise project ID of the AOM Prometheus instance transferred when the alarm assistant is enabled. If the Prometheus add-on is not installed or the AOM instance is not connected, there is no need to specify this parameter. In this case, the alarm center will not generate metric alarm rules.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-94 EncryptionConfig

Parameter	Type	Description
mode	String	<p>Details: Encryption mode. Either encryption using the CCE-managed key or KMS key can be configured.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Default: Encryption is performed using the CCE-managed key. • KMS: KMS encryption is used. <p>Default value: Default</p>
kmsKeyID	String	<p>Details: KMS key ID</p> <ul style="list-style-type: none"> • In the API for creating a cluster, if the mode field is set to Default, there is no need to specify this field. If the mode field is set to KMS, you can specify a value for this field. If this parameter is left blank, the default KMS key is used by default. If the default key does not exist, DEW will automatically create a default key (cce/default) for the user. To ensure proper cluster functionality, it is important to use a valid KMS key. Refrain from deleting or disabling the key before the cluster lifecycle is complete, as this may cause exceptions. Once a key has been configured for a cluster, it cannot be modified. • In the cluster query API, if the mode field is set to Default, the returned value of this field is empty. If the mode field is set to KMS, the specific key ID will be returned. <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-95 ClusterStatus

Parameter	Type	Description
phase	String	<p>Details: Cluster status</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> ● Available: The cluster is running properly. ● Unavailable: The cluster is exhibiting unexpected behavior and needs to be manually deleted. ● ScalingUp: Nodes are being added to the cluster. ● ScalingDown: The cluster is being downsized to fewer nodes. ● Creating: The cluster is being created. ● Deleting: The cluster is being deleted. ● Upgrading: The cluster is being upgraded. ● Resizing: Cluster specifications are being changed. ● ResizeFailed: Cluster specification changing is abnormal. ● RollingBack: The cluster is being rolled back. ● RollbackFailed: The cluster rollback is abnormal. ● Hibernating: The cluster is being hibernated. ● Hibernation: The cluster is in hibernation. ● Freezing: The cluster is being frozen. ● Frozen: The cluster has been frozen. ● UnFreezing: The cluster is being unfrozen. ● Awaking: The cluster is being woken up from hibernation.

Parameter	Type	Description
		<ul style="list-style-type: none"> • Empty: The cluster does not have any resources. This field has been discarded. • Error: Resources in the cluster are abnormal. You can manually delete the cluster.
jobID	String	<p>Details: ID of the job associated with the current cluster status. The system supports:</p> <ul style="list-style-type: none"> • ID of the associated job returned when creating a cluster. You can use it to obtain the auxiliary jobs for creating a cluster. • ID of the associated job returned when a cluster fails to be deleted or is being deleted. If this parameter is not empty, you can use the job ID to obtain the auxiliary jobs for deleting a cluster. <p>Constraints: None</p> <p>Options: N/A</p> <p>NOTE Jobs are short-lived. Do not use job information in scenarios such as cluster status determination.</p>
reason	String	<p>Details: Why a cluster changes to the current state. This parameter is returned if the cluster is not in the Available state.</p> <p>Constraints: None</p> <p>Options: N/A</p>

Parameter	Type	Description
message	String	<p>Details: Detailed information about why a cluster changes to the current state. This parameter is returned if the cluster is not in the Available state.</p> <p>Constraints: None</p> <p>Options: N/A</p>
endpoints	Array of ClusterEndpoints objects	<p>Details: Access address of kube-apiserver in a cluster</p> <p>Constraints: None</p>
isLocked	Boolean	<p>Details: CBC resource locked</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • true: The resource is locked by CBC. • false: The resource is not locked by CBC.
lockScene	String	<p>Details: CBC resource locking scenario</p> <p>Constraints: None</p> <p>Options: N/A</p>
lockSource	String	<p>Details: Resource locked</p> <p>Constraints: None</p> <p>Options: N/A</p>

Parameter	Type	Description
lockSourceId	String	<p>Details: ID of a locked resource</p> <p>Constraints: None</p> <p>Options: N/A</p>
deleteOption	Object	<p>Details: Status of the configuration to be deleted. This parameter is contained only in the response to the deletion request.</p> <p>Constraints: None</p> <p>Options: N/A</p>
deleteStatus	Object	<p>Details: Information of the status to be deleted. This parameter is contained only in the response to the deletion request.</p> <p>Constraints: None</p> <p>Options: N/A</p>

Table 4-96 ClusterEndpoints

Parameter	Type	Description
url	String	<p>Details: Access address of kube-apiserver in a cluster</p> <p>Constraints: None</p> <p>Options: N/A</p>

Parameter	Type	Description
type	String	<p>Details: Type of the cluster access address</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Internal: address for internal network access • External: address for external network access

Example Requests

None

Example Responses

Status code: 200

The cluster list is successfully obtained.

```
{
  "kind": "Cluster",
  "apiVersion": "v3",
  "items": [ {
    "kind": "Cluster",
    "apiVersion": "v3",
    "metadata": {
      "alias": "mycluster",
      "name": "mycluster",
      "uid": "4d1ecb2c-229a-11e8-9c75-0255ac100ceb",
      "creationTimestamp": "2018-08-02 03:48:58.968214406 +0000 UTC",
      "updateTimestamp": "2018-08-02 04:05:29.386391813 +0000 UTC"
    },
    "spec": {
      "type": "VirtualMachine",
      "flavor": "cce.s1.small",
      "version": "v1.25",
      "platformVersion": "cce.6.0",
      "legacyVersion": "v1.25.6-r0",
      "description": "awesome cluster",
      "customSan": [ "192.168.1.0", "example.com" ],
      "hostNetwork": {
        "vpc": "f0c12911-4fdb-4284-9230-7ffb0860826a",
        "subnet": "ac274229-fd2e-4695-9f01-a0c1372b8006",
        "controlPlaneSecurityGroup": "14834251-ac69-460a-bfbd-7ac84274c52b"
      },
      "containerNetwork": {
        "mode": "overlay_l2",
        "cidr": "172.16.0.0/16"
      },
      "authentication": {
        "mode": "x509",
        "authenticatingProxy": { }
      },
      "billingMode": 0
    },
    "status": {
```



```
"phase" : "Available",
"endpoints" : [ {
  "url" : "https://192.168.0.11:5443",
  "type" : "Internal"
}]
}
}]
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ListClustersSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        ListClustersRequest request = new ListClustersRequest();
        try {
            ListClustersResponse response = client.listClusters(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ListClustersRequest()
        response = client.list_clusters(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
```

```
Build()  
  
request := &model.ListClustersRequest{}  
response, err := client.ListClusters(request)  
if err == nil {  
    fmt.Printf("%+v\n", response)  
} else {  
    fmt.Println(err)  
}  
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The cluster list is successfully obtained.

Error Codes

See [Error Codes](#).

4.2.4 Updating a Specified Cluster

Function

This API is used to update information about a specified cluster.

NOTE

The URL for cluster management is in the format of https://Endpoint/uri. In the URL, **uri** indicates the resource path, that is, the path for API access.

Calling Method

For details, see [Calling APIs](#).

URI

PUT /api/v3/projects/{project_id}/clusters/{cluster_id}

Table 4-97 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-98 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-99 Request body parameters

Parameter	Mandatory	Type	Description
spec	Yes	ClusterInformationSpec object	<p>Details: Detailed cluster parameters</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>
metadata	No	ClusterMetadataForUpdate object	<p>Details: Basic cluster information, including name-related fields</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-100 ClusterInformationSpec

Parameter	Mandatory	Type	Description
description	No	String	<p>Details: Description of a cluster</p> <p>Constraints: Only clusters in the Available, ScalingUp, or ScalingDown state can be modified.</p> <p>Value range: 0-200. The value cannot contain the following special characters: ~\$%^&*<>[]{}()'#</p> <p>Default value: None</p>

Parameter	Mandatory	Type	Description
customSan	No	Array of strings	<p>Details: Custom Subject Alternative Name (SAN) in the server certificate of a cluster API server, which must comply with the SSL and X509 standard formats</p> <p>Constraints: Duplicate names are not allowed.</p> <p>Options: Values in the IP address or domain name format</p> <p>Default value: N/A</p> <p>Example: SAN 1: DNS Name=example.com SAN 2: DNS Name=www.example.com SAN 3: DNS Name=example.net SAN 4: IP Address=93.184.216.34</p>
containerNetwork	No	ContainerNetworkUpdate object	<p>Details: Container networking parameters, including container CIDR blocks</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>
eniNetwork	No	EniNetworkUpdate object	<p>Details: Cloud native 2.0 network settings, including the container subnets of a CCE Turbo cluster</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
deletionProtection	No	Boolean	<p>Details: Cluster deletion protection, which prevents the deletion of a cluster when this function is enabled</p> <p>Constraints: N/A</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Cluster deletion protection is enabled. • false: Cluster deletion protection is disabled. <p>Default value: false</p>
hostNetwork	No	hostNetwork object	<p>Details: Node network parameters, including the default security group settings</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-101 ContainerNetworkUpdate

Parameter	Mandatory	Type	Description
cidrs	No	Array of ContainerCIDR objects	<p>Details: List of container CIDR blocks. If your cluster is of v1.21 or later and it uses a VPC network, you can add container CIDR blocks. Ensure that the total number of blocks does not exceed 20.</p> <p>Constraints: The configuration cannot be modified after the cluster is updated.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-102 ContainerCIDR

Parameter	Mandatory	Type	Description
cidr	Yes	String	<p>Details: Container CIDR block. 10.0.0.0/12-19, 172.16.0.0/16-19, or 192.168.0.0/16-19 is recommended.</p> <p>Constraints: If a CIDR block conflict occurs, an error will be reported.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-103 EniNetworkUpdate

Parameter	Mandatory	Type	Description
subnets	No	Array of NetworkSubnet objects	<p>Details: List of IPv4 subnet IDs CCE Turbo clusters of version 1.19.10 or later support multiple container subnets and allow for incremental updates to the subnet list.</p> <p>Constraints: The request body must contain all existing subnets.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-104 NetworkSubnet

Parameter	Mandatory	Type	Description
subnetID	Yes	String	<p>Details: IPv4 subnet ID of the subnet used to create a master node</p> <p>Constraints: IPv6 is not supported.</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> Method 1: Log in to the VPC console, click the target subnet on the Subnets page, and view the IPv4 subnet ID on the displayed page. Method 2: Use the VPC API. For details, see Querying Subnets.

Table 4-105 hostNetwork

Parameter	Mandatory	Type	Description
SecurityGroup	No	String	<p>Details: To ensure proper communication, the default security group of the cluster nodes needs to allow certain ports. For details, see How Can I Configure a Security Group Rule in a Cluster?</p> <p>Constraints: The modified security group applies only to nodes newly created or accepted. For existing nodes, you need to manually modify the security group rules for them.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-106 ClusterMetadataForUpdate

Parameter	Mandatory	Type	Description
alias	No	String	<p>Details: Alias of a cluster name</p> <p>Constraints: A cluster alias must be unique.</p> <p>Options: Enter 4 to 128 characters starting with a letter and not starting or ending with a hyphen (-). Only digits, letters, and hyphens (-) are allowed. If this parameter is left blank, the alias is not changed.</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-107 Response body parameters

Parameter	Type	Description
kind	String	<p>Details: API type</p> <p>Constraints: The value cannot be changed.</p> <p>Options:</p> <ul style="list-style-type: none"> • Cluster • cluster <p>Default value: N/A</p>
apiVersion	String	<p>Details: API version</p> <p>Constraints: The value cannot be changed.</p> <p>Options:</p> <ul style="list-style-type: none"> • v3 <p>Default value: N/A</p>
metadata	ClusterMetadata object	<p>Details: Basic information about a cluster. Metadata is a collection of attributes.</p> <p>Constraints: None</p>
spec	ClusterSpec object	<p>Details: Detailed description of a cluster. CCE creates or updates objects by defining or updating spec.</p> <p>Constraints: None</p>
status	ClusterStatus object	<p>Details: Cluster status and ID of a cluster deletion job</p> <p>Constraints: None</p>

Table 4-108 ClusterMetadata

Parameter	Type	Description
name	String	<p>Details: Cluster name</p> <p>Constraints: None</p> <p>Options: Enter 4 to 128 characters starting with a lowercase letter and not ending with a hyphen (-). Only lowercase letters, digits, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>
uid	String	<p>Details: Cluster ID, which identifies a cluster</p> <p>Constraints: The value is automatically generated after the object is created. A user-defined value will not take effect. When you create a yearly/monthly cluster, no cluster ID will be returned in the response body.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
alias	String	<p>Details: Alias of a cluster name displayed on the CCE console. The name can be changed. A cluster alias must be unique.</p> <p>Constraints: In the request body for creating or updating a cluster, if the cluster alias is not specified or set to null, the cluster name will be used as the cluster alias. In the response body for creating a cluster or other response bodies, if the cluster alias is not configured, no value will be returned.</p> <p>Options: Enter 4 to 128 characters starting with a letter and not starting or ending with a hyphen (-). Only digits, letters, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>

Parameter	Type	Description
annotations	Map<String,String>	<p>Details: Cluster annotations, in the format of key-value pairs</p> <pre>"annotations": { "key1" : "value1", "key2" : "value2" }</pre> <p>Constraints: This field is not stored in the database and is used only to specify the add-ons to be installed in the cluster.</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>NOTE</p> <ul style="list-style-type: none"> • annotations are not used to identify or select objects. The metadata in annotations may be small or large, structured or unstructured, and may include characters that are not allowed in labels. • You can install ICAgent during cluster creation by adding the key-value pair "cluster.install.addons.external/install":[{"addonTemplateName":"icagent"}]".
labels	Map<String,String>	<p>Details: Cluster labels, in the format of key-value pairs</p> <p>Constraints: The value of this field is automatically generated by the system and is used by the frontend to identify the features supported by the cluster during the upgrade. Custom values are invalid.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
creationTimestamp	String	<p>Details: Time when a cluster was created</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
updateTimestamp	String	<p>Details: Time when a cluster was updated</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
timezone	String	<p>Details: Cluster time zone</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-109 ClusterSpec

Parameter	Type	Description
category	String	<p>Details: Cluster type</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • CCE: CCE cluster. CCE clusters support hybrid deployment of VMs and BMSs, and heterogeneous nodes such as GPU and NPU nodes, allowing you to run your containers in a secure, stable container runtime environment based on a high-performance network model. • Turbo: CCE Turbo cluster. CCE Turbo clusters run on the cloud native 2.0 infrastructure that features hardware and software synergy to support passthrough networking, high security and reliability, and intelligent scheduling. <p>Default value: CCE when the container network is not set to eni Turbo when the container network is set to eni</p>
type	String	<p>Details: Master node architecture</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • VirtualMachine: The master node is an x86 server. • ARM64: The master node is an Arm-based Kunpeng server. <p>Default value: VirtualMachine</p>

Parameter	Type	Description
flavor	String	<p>Details: Cluster specifications. Specifications of clusters v1.15 and later versions can be changed after they are created. For details, see Changing Cluster Scale. Configure this parameter based on actual service requirements.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> ● cce.s1.small: a small-scale CCE cluster with one master node and a maximum of 50 worker nodes ● cce.s1.medium: a medium-scale CCE cluster with one master node and a maximum of 200 worker nodes ● cce.s2.small: a small-scale CCE cluster with three master nodes and a maximum of 50 worker nodes ● cce.s2.medium: a medium-scale CCE cluster with three master nodes and a maximum of 200 worker nodes ● cce.s2.large: a large-scale CCE cluster with three master nodes and a maximum of 1000 worker nodes ● cce.s2.xlarge: an ultra-large-scale CCE cluster with three master nodes and a maximum of 2000 worker nodes <p>Default value: N/A</p>

Parameter	Type	Description
		<p>NOTE The fields in the parameters are described as follows:</p> <ul style="list-style-type: none"> • s1: specifies a cluster with one master node. If the master node is faulty, the cluster will become unavailable, but running workloads in the cluster are not affected. • s2: specifies an HA cluster with three master nodes. If one of the master nodes is faulty, the cluster is still available. • dec: specifies a DeC CCE cluster. For example, cce.dec.s1.small specifies a small-scale, DeC CCE cluster with one master node and a maximum of 50 worker nodes. • small: specifies that a cluster can manage a maximum of 50 worker nodes. • medium: specifies that a cluster can manage a maximum of 200 worker nodes. • large: specifies that a cluster can manage a maximum of 1000 worker nodes. • xlarge: specifies that a cluster can manage a maximum of 2000 worker nodes.

Parameter	Type	Description
version	String	<p>Details:</p> <p>Version of a cluster, which mirrors the baseline version of the Kubernetes community. The latest version is recommended.</p> <p>You can create clusters of three latest versions on the CCE console. To learn which cluster versions are available, log in to the CCE console, create a cluster, and check the Cluster Version parameter.</p> <p>You can call APIs to create clusters of other versions. However, these cluster versions will be gradually terminated. For details about the support policy, see the CCE announcement.</p> <p>Constraints:</p> <p>None</p> <p>Options:</p> <p>N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • If this parameter is left blank, a cluster of the latest version is created by default. • If a baseline cluster version is specified but the R version is not specified, a cluster of the latest R version will be created by default. It is a good practice not to specify the R version. <p>NOTE</p> <ul style="list-style-type: none"> • CCE Turbo clusters of v1.19 or later are commercially available.

Parameter	Type	Description
platformVersion	String	<p>Details: CCE cluster platform version, which is an internal version under the cluster version (version). Platform versions are used to trace iterations in a major cluster version. They are unique within a major cluster version and recounted when the major cluster version changes.</p> <p>Constraints: This parameter cannot be customized, and when you create a cluster, the latest corresponding platform version is selected automatically.</p> <p>Options: The format of platformVersion is cce.X.Y.</p> <ul style="list-style-type: none"> • X: internal feature version, which indicates changes in features, patches, or OS support in the cluster version. The value starts from 1 and increases monotonically. • Y: patch version of an internal feature version. It is used only for software package update after the feature version is released. No other modification is involved. The value starts from 0 and increases monotonically. <p>Default value: N/A</p>

Parameter	Type	Description
legacyVersion	String	<p>Details: (Discarded) Outdated version of CCE clusters, which serves no practical purpose and is only used to showcase the cluster version and platform version combination. The version number is globally unique. For example, if the cluster version is va.b and the platformVersion is cce.X.Y, the value of legacyVersion is va.b.X-rY.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
description	String	<p>Details: Cluster description, for example, which purpose the cluster is intended to serve. By default, this field is left blank. To modify cluster description after a cluster is created, call the API for updating a specified cluster or go to the cluster details page on the CCE console.</p> <p>Constraints: Only UTF-8 encoding is supported.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
customSan	Array of strings	<p>Details: Custom Subject Alternative Name (SAN) in the server certificate of a cluster API server, which must comply with the SSL and X509 standard formats</p> <p>Constraints: Duplicate names are not allowed.</p> <p>Options: Values in the IP address or domain name format</p> <p>Default value: N/A</p> <p>Example: SAN 1: DNS Name=example.com SAN 2: DNS Name=www.example.com SAN 3: DNS Name=example.net SAN 4: IP Address=93.184.216.34</p>
ipv6enable	Boolean	<p>Details: Whether a cluster supports IPv6 addresses. It is supported by clusters v1.15 and later.</p> <p>Constraints: After IPv6 is enabled, iptables is not supported. The VPC network model does not support IPv4/IPv6 dual-stack.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: IPv4/IPv6 dual-stack is enabled. • false: Only IPv4 is used. <p>Default value: false</p>
hostNetwork	HostNetwork object	<p>Details: Node network parameters, including VPC and subnet ID. This field is mandatory because nodes in a cluster communicate with each other using a VPC.</p> <p>Constraints: None</p>

Parameter	Type	Description
containerNetwork	ContainerNetwork object	<p>Details: Container network parameters, including the container network model and container CIDR block</p> <p>Constraints: None</p>
eniNetwork	EniNetwork object	<p>Details: Configuration of the Cloud Native 2.0 network model. You need to specify this field when creating a CCE Turbo cluster.</p> <p>Constraints: None</p>
serviceNetwork	ServiceNetwork object	<p>Details: Service CIDR block, including IPv4 CIDR block</p> <p>Constraints: None</p>
publicAccess	PublicAccess object	<p>Details: Cluster API access control</p> <p>Constraints: None</p>
authentication	Authentication object	<p>Details: Configurations of the cluster authentication mode</p> <p>Constraints: None</p>
billingMode	Integer	<p>Details: Cluster billing mode</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> 0: pay-per-use 1: yearly/monthly <p>Default value: 0</p>

Parameter	Type	Description
masters	Array of MasterSpec objects	<p>Details: Advanced configurations of master nodes</p> <p>Constraints: If this parameter is not specified, no value is returned.</p>
kubernetesSvcIpRange	String	<p>Details: Service CIDR blocks which kubernetes clusterIP must fall within. This field is available only for clusters of v1.11.7 and later. If this parameter is not specified during cluster creation, the default value 10.247.0.0/16 is used. This parameter is being discarded, so you can use serviceNetwork instead. The new field contains the IPv4 CIDR blocks.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
clusterTags	Array of ResourceTag objects	<p>Details: Cluster resource tags</p> <p>Constraints: None</p>

Parameter	Type	Description
kubeProxyMode	String	<p>Details: Service forwarding mode</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • iptables: traditional kube-proxy mode, which uses iptables rules to implement Service load balancing. In this mode, too many iptables rules will be generated when many Services are deployed. Additionally, non-incremental updates will cause latency and obvious performance issues in the case of heavy service traffic. • ipvs: optimized kube-proxy mode with higher throughput and faster speed. This mode supports incremental updates and can keep connections uninterrupted during Service updates. It is suitable for large-sized clusters. <p>Default value: iptables is used by default.</p>
az	String	<p>Details: AZ. This field is returned only for a query. For details about AZs supported by CCE, see Regions and Endpoints.</p> <p>Constraints: None</p>
extendParam	ClusterExtendParam object	<p>Details: Extended field to decide whether a cluster will span across AZs or belong to a specified enterprise project, or whether a dedicated CCE cluster is to be created</p> <p>Constraints: None</p>

Parameter	Type	Description
supportIstio	Boolean	<p>Details: Whether Istio is supported</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Istio is supported. • false: Istio is not supported. <p>Default value: true</p>
enableDistMgt	Boolean	<p>Details: Whether to enable support for remote clouds</p> <p>Constraints: Only CCE Turbo clusters support this function.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Support for remote clouds is enabled. • false: Support for remote clouds is not enabled. <p>Default value: false</p>
deletionProtection	Boolean	<p>Details: Cluster deletion protection, which prevents the deletion of a cluster when this function is enabled</p> <p>Constraints: N/A</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Cluster deletion protection is enabled. • false: Cluster deletion protection is disabled. <p>Default value: false</p>

Parameter	Type	Description
configurationsO- verride	Array of PackageConfiguration objects	<p>Details: Cluster default component configuration override.</p> <p>For details about the supported components and their parameters, see Modifying Cluster Configurations.</p> <p>Constraints: If you specify a component or parameter that is not supported, the configuration item will be ignored.</p>
clusterOps	ClusterOps object	<p>Details: Cluster O&M settings</p> <p>Constraints: None</p>
enableAutopilot	Boolean	<p>Details: Whether the cluster is an Autopilot cluster</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Create an Autopilot cluster. • false: Create a CCE standard or a Turbo cluster. <p>Default value: false</p>
encryptionConfig	EncryptionConfig object	<p>Details: Configuration of secret encryption. Only one encryption mode can be configured. By default, the CCE-managed key is used for encryption. (Users are not aware of the key being used.)</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-110 HostNetwork

Parameter	Type	Description
vpc	String	<p>Details: ID of the VPC used to create a master node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> • Method 1: Log in to the VPC console and view the VPC ID on the VPC details page. • Method 2: Use the VPC API. For details, see Querying VPCs.
subnet	String	<p>Details: Network ID of the subnet used to create a master node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> • Method 1: Log in to the VPC console, click the target subnet on the Subnets page, and view the network ID on the displayed page. • Method 2: Use the VPC API. For details, see Querying Subnets.

Parameter	Type	Description
SecurityGroup	String	<p>Details: ID of the default node security group in a cluster</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • If this parameter is not specified, the system automatically creates a default node security group. • If this parameter is specified, the cluster will be bound to the specified security group. <p>NOTE To ensure proper communication, allow traffic from certain ports to the specified node security group. For details, see How Can I Configure a Security Group Rule in a Cluster?</p>
controlPlaneSecurityGroup	String	<p>Details: ID of the master node security group in a cluster</p> <p>Constraints: The value is automatically generated after the object is created. A user-defined value will not take effect.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-111 ContainerNetwork

Parameter	Type	Description
mode	String	<p>Details: Container network type</p> <p>Constraints: Only one container network type can be selected.</p> <p>Options:</p> <ul style="list-style-type: none"> • overlay_l2: an overlay_l2 network (container tunnel network) built for containers by using OpenVSwitch (OVS). • vpc-router: an underlay_l2 network built for containers by using IPvlan and custom VPC routes. • eni*: a Cloud Native 2.0 network. This model has integrated cloud native elastic network interfaces (ENIs), uses VPC CIDR blocks to allocate container IP addresses, and supports passthrough networking. You can use this model when creating a CCE Turbo cluster. <p>Default value: N/A</p>

Parameter	Type	Description
cidr	String	<p>Details: Container CIDR block. 10.0.0.0/12-19, 172.16.0.0/16-19, or 192.168.0.0/16-19 is recommended. If the selected CIDR block conflicts with existing ones, an error will be reported.</p> <p>Constraints: This parameter cannot be modified after the cluster is created. (It has been discarded. If cidrs has been configured, the specified CIDR blocks will be ignored.) Once you have created a cluster that uses a VPC network, you can add new CIDR blocks, but you are unable to modify the existing ones. If you need to adjust the CIDR blocks, you will have to create a new cluster.</p> <p>Options: Values in IPv4 CIDR format</p> <p>Default value: If this parameter is left blank, a unique CIDR block is randomly allocated from 172.(16–31).0.0/16 and 10.(0 16 32 48 64 80 96 112).0.0/12.</p>
cidrs	Array of ContainerCIDR objects	<p>Details: List of container CIDR blocks. In clusters of v1.21 or later, the cidrs field is used. When the cluster network type is vpc-router, you can configure a maximum of 20 container CIDR blocks. In clusters of versions earlier than v1.21, if the cidrs field is used, the first CIDR element in the array is used as the container CIDR block.</p> <p>Constraints: Once you have created a cluster that uses a container tunnel network, you cannot modify the CIDR blocks. Once you have created a cluster that uses a VPC network, you can add new CIDR blocks, but you are unable to modify the existing ones. If you need to adjust the CIDR blocks, you will have to create a new cluster.</p>

Table 4-112 ContainerCIDR

Parameter	Type	Description
cidr	String	<p>Details: Container CIDR block. 10.0.0.0/12-19, 172.16.0.0/16-19, or 192.168.0.0/16-19 is recommended.</p> <p>Constraints: If a CIDR block conflict occurs, an error will be reported.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-113 EniNetwork

Parameter	Type	Description
eniSubnetId	String	<p>Details: IPv4 subnet ID list of the subnet where an ENI resides</p> <p>Constraints: IPv6 is not supported. This parameter is being discarded, and the new field subnets is recommended.</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> Method 1: Log in to the VPC console, click the target subnet on the Subnets page, and view the IPv4 subnet ID on the displayed page. Method 2: Use the VPC API. For details, see Querying Subnets.

Parameter	Type	Description
eniSubnetCIDR	String	<p>Details: ENI subnet CIDR block</p> <p>Constraints: This parameter is being discarded. The new field subnets is recommended.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
subnets	Array of NetworkSubnet objects	<p>Details: List of IPv4 subnet IDs</p> <p>Constraints: None</p>

Table 4-114 NetworkSubnet

Parameter	Type	Description
subnetID	String	<p>Details: IPv4 subnet ID of the subnet used to create a master node</p> <p>Constraints: IPv6 is not supported.</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> • Method 1: Log in to the VPC console, click the target subnet on the Subnets page, and view the IPv4 subnet ID on the displayed page. • Method 2: Use the VPC API. For details, see Querying Subnets.

Table 4-115 ServiceNetwork

Parameter	Type	Description
IPv4CIDR	String	<p>Details: Value range of the Kubernetes clusterIP IPv4 CIDR block</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: 10.247.0.0/16</p>
IPv6CIDR	String	<p>Details: Value range of the Kubernetes clusterIP IPv6 CIDR block</p> <p>Constraints: IPv6 Service CIDR blocks can be configured only for CCE Turbo clusters with IPv6 dual stack enabled.</p> <p>Options: N/A</p> <p>Default value: Default value for a CCE Turbo cluster: fc00::/112 Default value for a CCE standard cluster: fd00:1234::/120</p>

Table 4-116 PublicAccess

Parameter	Type	Description
cidrs	Array of strings	<p>Details: Trustlist of network CIDRs that are allowed to access cluster APIs. You are advised to allow the traffic from VPC and container network CIDRs.</p> <p>Constraints: This parameter is valid only when a cluster is created.</p> <p>Options: N/A</p> <p>Default value: By default, no trustlist is configured, and the value is 0.0.0.0/0.</p>

Table 4-117 Authentication

Parameter	Type	Description
mode	String	<p>Details: Cluster authentication mode</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> Clusters of Kubernetes 1.11 or earlier support x509, rbac, and authenticating_proxy. The parameter defaults to x509. Clusters of Kubernetes 1.13 or later support rbac and authenticating_proxy. The parameter defaults to rbac. <p>Default value:</p> <ul style="list-style-type: none"> Clusters of Kubernetes 1.11 or earlier: x509 Clusters of Kubernetes 1.13 or later: rbac

Parameter	Type	Description
authenticatingProxy	AuthenticatingProxy object	<p>Details: Configuration related to the authenticating_proxy mode</p> <p>Constraints: This field is mandatory when the authentication mode is authenticating_proxy.</p>

Table 4-118 AuthenticatingProxy

Parameter	Type	Description
ca	String	<p>Details: X509 CA certificate (Base64-encoded) configured in authenticating_proxy mode</p> <p>Constraints: This field is mandatory when the cluster authentication mode is authenticating_proxy.</p> <p>Options: Maximum size: 1 MB</p> <p>Default value: N/A</p>
cert	String	<p>Details: Client certificate issued by the X509 CA certificate configured in authenticating_proxy mode, which is used for authentication from kube-apiserver to the extended API server. (The value must be Base64-encoded.)</p> <p>Constraints: This field is mandatory when the cluster authentication mode is authenticating_proxy.</p> <p>Options: Maximum size: 1 MB</p> <p>Default value: N/A</p>

Parameter	Type	Description
privateKey	String	<p>Details: Private key of the client certificate issued by the X509 CA certificate configured in <code>authenticating_proxy</code> mode, which is used for authentication from kube-apiserver to the extended API server. The private key used by the Kubernetes cluster does not support password encryption. Use an unencrypted private key. (The value must be Base64-encoded.)</p> <p>Constraints: This field is mandatory when the cluster authentication mode is authenticating_proxy.</p> <p>Options: Maximum size: 1 MB</p> <p>Default value: N/A</p>

Table 4-119 MasterSpec

Parameter	Type	Description
availabilityZone	String	<p>Details: AZ</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-120 ResourceTag

Parameter	Type	Description
key	String	<p>Details: Key</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • The value cannot be empty and cannot start or end with spaces. A maximum of 128 characters are supported. • Letters, digits, and spaces in UTF-8 format are supported. • The value can contain the following special characters: <code>._:=-@</code> • The value cannot start with <code>_sys_</code>. <p>Default value: N/A</p>
value	String	<p>Details: Value</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • The value can be null but not the default. Max characters: 255 • Letters, digits, and spaces in UTF-8 format are supported. • The value can contain the following special characters: <code>._:/=-@</code> <p>Default value: N/A</p>

Table 4-121 ClusterExtendParam

Parameter	Type	Description
clusterAZ	String	<p>Details: AZs of master nodes in a cluster For details about AZs supported by CCE, see Regions and Endpoints.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • AZs supported by a specified region • multi_az: (Optional) multiple AZs, which can be configured only when a cluster with multiple master nodes is used • <i>AZs of the dedicated cloud computing pool:</i> Master nodes will be deployed in the DeC AZs. It is mandatory for dedicated CCE clusters. <p>Default value: If no AZ is specified, an AZ is randomly allocated by default.</p>

Parameter	Type	Description
dssMasterVolume s	String	<p>Details: Whether the system and data disks of a master node use DSS storage pools. If this parameter is unspecified or left blank, EVS disks are used by default.</p> <p>Constraints: This parameter is mandatory for dedicated CCE clusters. It is in the following format: <rootVol.dssPoolID>.<rootVol.volType>;<dataVol.dssPoolID>.<dataVol.volType></p> <p>Specifically:</p> <ul style="list-style-type: none"> • rootVol specifies the system disk. dataVol specifies a data disk. • dssPoolID specifies the ID of a DSS storage pool. • volType specifies the storage volume type of the DSS storage pool, such as SAS, SSD, SATA, ESSD, GPSSD, ESSD2, and GPSSD2. <p>Options: N/A</p> <p>Default value: N/A</p> <p>Example: c950ee97-587c-4f24-8a74-3367e3da570f.sas;6edbc2f4-1507-44f8-ac0d-eed1d2608d38.ssd</p> <p>NOTE This field cannot be configured for non-dedicated CCE clusters.</p>
enterpriseProjectId	String	<p>Details: ID of the enterprise project that a cluster belongs to</p> <p>Constraints: An enterprise project can be configured only after the enterprise project function is enabled.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
kubeProxyMode	String	<p>Details: Service forwarding mode</p> <p>Constraints: This parameter has been discarded. If both this parameter and kubeProxyMode in ClusterSpec are specified, the latter is used.</p> <p>Options:</p> <ul style="list-style-type: none"> • iptables: traditional kube-proxy mode, which uses iptables rules to implement Service load balancing. In this mode, too many iptables rules will be generated when many Services are deployed. Additionally, non-incremental updates will cause latency and obvious performance issues in the case of heavy service traffic. • ipvs: optimized kube-proxy mode with higher throughput and faster speed. This mode supports incremental updates and can keep connections uninterrupted during Service updates. It is suitable for large-sized clusters. <p>Default value: iptables</p>
clusterExternalIP	String	<p>Details: EIP of the master node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
alpha.cce/ fixPoolMask	String	<p>Details: Number of mask bits of the fixed IP address pool of the container networks. This parameter determines the maximum number of IP addresses that can be assigned to containers on a node. This, along with the maxPods setting during node creation, determines the maximum number of pods that can be created on a node.</p> <p>For details, see Maximum Number of Pods That Can Be Created on a Node.</p> <p>Constraints: Only the vpc-router networks support this function.</p> <p>Options: Integers from 24 to 28</p> <p>Default value: 24</p>
decMasterFlavor	String	<p>Details: Master node flavor in a dedicated CCE cluster</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
dockerUmaskMode	String	<p>Details: Default UmaskMode configuration of Docker in a cluster</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • secure • normal <p>Default value: normal</p>

Parameter	Type	Description
kubernetes.io/ cpuManagerPolicy	String	<p>Details: Cluster CPU management policy</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • none or null: disables pods from exclusively occupying CPUs. Select this option if you want a large pool of shareable CPU cores. • static: enables pods to exclusively occupy CPUs. Select this option if your workload is sensitive to CPU cache and scheduling latency. In a CCE Turbo cluster, this setting is valid only for nodes where common containers, not secure containers, run. <p>Default value: none</p>
orderId	String	<p>Details: Order ID</p> <p>Constraints: This parameter is returned in the response when the cluster is billed on a yearly/monthly basis with auto payment enabled (only in creation scenarios).</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
periodType	String	<p>Details: The subscription term unit</p> <p>Constraints: As a request parameter, it is valid and mandatory when billingMode is set to 1, which is, the yearly/monthly billing mode is configured. As a response parameter, it is returned only when a yearly/monthly cluster is created.</p> <p>Options:</p> <ul style="list-style-type: none"> • month • year <p>Default value: N/A</p>
periodNum	Integer	<p>Details: Number of subscription periods</p> <p>Constraints: As a request parameter, it is valid and mandatory when billingMode is set to 1. As a response parameter, it is returned only when a yearly/monthly cluster is created.</p> <p>Options:</p> <ul style="list-style-type: none"> • If periodType is month, the value ranges from 1 to 9. • If periodType is year, the value ranges from 1 to 3. <p>Default value: N/A</p>
isAutoRenew	String	<p>Details: Whether to enable auto renewal</p> <p>Constraints: This field is valid only when billingMode is set to 1.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto renewal is enabled. • false: Auto renewal is not enabled. <p>Default value: false</p>

Parameter	Type	Description
isAutoPay	String	<p>Details: Whether to enable auto payment</p> <p>Constraints: This field is valid only when billingMode is set to 1.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto payment is enabled. • false: Auto payment is not enabled. <p>Default value: false</p>
upgradefrom	String	<p>Details: Records of how a cluster is upgraded to its current version</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-122 PackageConfiguration

Parameter	Type	Description
name	String	<p>Details: Component name</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
configurations	Array of ConfigurationItem objects	<p>Details: Component configuration items</p> <p>Constraints: None</p>

Table 4-123 ConfigurationItem

Parameter	Type	Description
name	String	<p>Details: Configuration overrides of the default components in a cluster. For details about the supported components and their parameters, see Configuration Management.</p> <p>Constraints: If you specify a component or parameter that is not supported, this configuration item will be ignored.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
value	AnyType	<p>Details: Configuration overrides of the default components in a cluster. For details about the supported components and their parameters, see Configuration Management.</p> <p>Constraints: If you specify a component or parameter that is not supported, this configuration item will be ignored.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-124 ClusterOps

Parameter	Type	Description
alarm	AlarmInfo object	<p>Details: Alarm assistant settings. CCE is integrated with AOM, which enables alarm functionality, allowing for easy search and configuration of alarms. The Cloud Native Cluster Monitoring add-on sends metric rule data in CCE alarm center to AOM instances.</p> <p>Constraints: None</p>

Table 4-125 AlarmInfo

Parameter	Type	Description
topics	Array of strings	<p>Details: Contact group list. You can enter SMN topic names and configure contact groups to manage endpoints that have subscribed to alarm messages.</p> <p>Constraints: None</p>
alarmRuleTemplated	String	<p>Details: Alarm rule template ID transferred when the alarm assistant is enabled. By default, the alarm rule template in the container scenario is used.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
promInstanceID	String	<p>Details: ID of the AOM Prometheus instance transferred when the alarm assistant is enabled. If the Prometheus add-on is not installed or the AOM instance is not connected, there is no need to specify this parameter. In this case, the alarm center will not generate metric alarm rules.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
promEnterpriseProjectID	String	<p>Details: Enterprise project ID of the AOM Prometheus instance transferred when the alarm assistant is enabled. If the Prometheus add-on is not installed or the AOM instance is not connected, there is no need to specify this parameter. In this case, the alarm center will not generate metric alarm rules.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-126 EncryptionConfig

Parameter	Type	Description
mode	String	<p>Details: Encryption mode. Either encryption using the CCE-managed key or KMS key can be configured.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Default: Encryption is performed using the CCE-managed key. • KMS: KMS encryption is used. <p>Default value: Default</p>
kmsKeyID	String	<p>Details: KMS key ID</p> <ul style="list-style-type: none"> • In the API for creating a cluster, if the mode field is set to Default, there is no need to specify this field. If the mode field is set to KMS, you can specify a value for this field. If this parameter is left blank, the default KMS key is used by default. If the default key does not exist, DEW will automatically create a default key (cce/default) for the user. To ensure proper cluster functionality, it is important to use a valid KMS key. Refrain from deleting or disabling the key before the cluster lifecycle is complete, as this may cause exceptions. Once a key has been configured for a cluster, it cannot be modified. • In the cluster query API, if the mode field is set to Default, the returned value of this field is empty. If the mode field is set to KMS, the specific key ID will be returned. <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-127 ClusterStatus

Parameter	Type	Description
phase	String	<p>Details: Cluster status</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Available: The cluster is running properly. • Unavailable: The cluster is exhibiting unexpected behavior and needs to be manually deleted. • ScalingUp: Nodes are being added to the cluster. • ScalingDown: The cluster is being downsized to fewer nodes. • Creating: The cluster is being created. • Deleting: The cluster is being deleted. • Upgrading: The cluster is being upgraded. • Resizing: Cluster specifications are being changed. • ResizeFailed: Cluster specification changing is abnormal. • RollingBack: The cluster is being rolled back. • RollbackFailed: The cluster rollback is abnormal. • Hibernating: The cluster is being hibernated. • Hibernation: The cluster is in hibernation. • Freezing: The cluster is being frozen. • Frozen: The cluster has been frozen. • UnFreezing: The cluster is being unfrozen. • Awaking: The cluster is being woken up from hibernation.

Parameter	Type	Description
		<ul style="list-style-type: none"> • Empty: The cluster does not have any resources. This field has been discarded. • Error: Resources in the cluster are abnormal. You can manually delete the cluster.
jobID	String	<p>Details: ID of the job associated with the current cluster status. The system supports:</p> <ul style="list-style-type: none"> • ID of the associated job returned when creating a cluster. You can use it to obtain the auxiliary jobs for creating a cluster. • ID of the associated job returned when a cluster fails to be deleted or is being deleted. If this parameter is not empty, you can use the job ID to obtain the auxiliary jobs for deleting a cluster. <p>Constraints: None</p> <p>Options: N/A</p> <p>NOTE Jobs are short-lived. Do not use job information in scenarios such as cluster status determination.</p>
reason	String	<p>Details: Why a cluster changes to the current state. This parameter is returned if the cluster is not in the Available state.</p> <p>Constraints: None</p> <p>Options: N/A</p>

Parameter	Type	Description
message	String	<p>Details: Detailed information about why a cluster changes to the current state. This parameter is returned if the cluster is not in the Available state.</p> <p>Constraints: None</p> <p>Options: N/A</p>
endpoints	Array of ClusterEndpoints objects	<p>Details: Access address of kube-apiserver in a cluster</p> <p>Constraints: None</p>
isLocked	Boolean	<p>Details: CBC resource locked</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • true: The resource is locked by CBC. • false: The resource is not locked by CBC.
lockScene	String	<p>Details: CBC resource locking scenario</p> <p>Constraints: None</p> <p>Options: N/A</p>
lockSource	String	<p>Details: Resource locked</p> <p>Constraints: None</p> <p>Options: N/A</p>

Parameter	Type	Description
lockSourceId	String	<p>Details: ID of a locked resource</p> <p>Constraints: None</p> <p>Options: N/A</p>
deleteOption	Object	<p>Details: Status of the configuration to be deleted. This parameter is contained only in the response to the deletion request.</p> <p>Constraints: None</p> <p>Options: N/A</p>
deleteStatus	Object	<p>Details: Information of the status to be deleted. This parameter is contained only in the response to the deletion request.</p> <p>Constraints: None</p> <p>Options: N/A</p>

Table 4-128 ClusterEndpoints

Parameter	Type	Description
url	String	<p>Details: Access address of kube-apiserver in a cluster</p> <p>Constraints: None</p> <p>Options: N/A</p>

Parameter	Type	Description
type	String	<p>Details: Type of the cluster access address</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Internal: address for internal network access • External: address for external network access

Example Requests

- Updating only the description of a cluster

```
{
  "spec": {
    "description": "new description"
  }
}
```

- Updating only the custom SAN of the cluster certificate

```
{
  "spec": {
    "customSan": [ "192.168.1.0", "example.com" ]
  }
}
```

- Updating both the cluster description and custom certificate SAN

```
{
  "spec": {
    "description": "new description",
    "customSan": [ "192.168.1.0", "example.com" ]
  }
}
```

- Configure a CIDR block for a cluster that uses VPCs and is of a version later than v1.21.

```
{
  "spec": {
    "containerNetwork": {
      "cidrs": [ {
        "cidr": "10.10.0.0/16"
      }, {
        "cidr": "10.11.0.0/16"
      } ]
    }
  }
}
```

- Modify the default security group of a node in a cluster.

```
/api/v3/projects/{project_id}/clusters/{cluster_id}

{
  "spec": {
    "hostNetwork": {
      "SecurityGroup": "6ee29825-8f49-4796-b33a-fc76f84a59ae"
    }
  }
}
```


Example Responses

Status code: 200

Information about the specified cluster is successfully updated.

```
{
  "kind": "Cluster",
  "apiVersion": "v3",
  "metadata": {
    "alias": "mycluster",
    "name": "mycluster",
    "uid": "4d1ecb2c-229a-11e8-9c75-0255ac100ceb",
    "creationTimestamp": "2018-08-02 03:48:58.968214406 +0000 UTC",
    "updateTimestamp": "2018-08-02 06:39:36.844676088 +0000 UTC"
  },
  "spec": {
    "type": "VirtualMachine",
    "flavor": "cce.s1.small",
    "version": "v1.7.3-r13",
    "description": "new description",
    "customSan": [ "192.168.1.0", "example.com" ],
    "hostNetwork": {
      "vpc": "4d1ecb2c-229a-11e8-9c75-0255ac100ceb",
      "subnet": "4d1ecb2c-229a-11e8-9c75-0255ac100ceb",
      "SecurityGroup": "6ee29825-8f49-4796-b33a-fc76f84a59ae"
    },
    "containerNetwork": {
      "mode": "overlay_l2",
      "cidr": "172.17.0.0/16"
    },
    "authentication": {
      "mode": "x509",
      "authenticatingProxy": { }
    },
    "billingMode": 0
  },
  "status": {
    "phase": "Available",
    "endpoints": [ {
      "url": "https://192.168.0.11:5443",
      "type": "Internal"
    } ]
  }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

- Updating only the description of a cluster

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class UpdateClusterSolution {
```

```
public static void main(String[] args) {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    // environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before
    // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    // environment
    String ak = System.getenv("CLOUD_SDK_AK");
    String sk = System.getenv("CLOUD_SDK_SK");
    String projectId = "{project_id}";

    ICredential auth = new BasicCredentials()
        .withProjectId(projectId)
        .withAk(ak)
        .withSk(sk);

    CceClient client = CceClient.newBuilder()
        .withCredential(auth)
        .withRegion(CceRegion.valueOf("<YOUR REGION>"))
        .build();
    UpdateClusterRequest request = new UpdateClusterRequest();
    request.withClusterId("{cluster_id}");
    ClusterInformation body = new ClusterInformation();
    ClusterInformationSpec specbody = new ClusterInformationSpec();
    specbody.withDescription("new description");
    body.withSpec(specbody);
    request.withBody(body);
    try {
        UpdateClusterResponse response = client.updateCluster(request);
        System.out.println(response.toString());
    } catch (ConnectionException e) {
        e.printStackTrace();
    } catch (RequestTimeoutException e) {
        e.printStackTrace();
    } catch (ServiceResponseException e) {
        e.printStackTrace();
        System.out.println(e.getHttpStatusCode());
        System.out.println(e.getRequestId());
        System.out.println(e.getErrorCode());
        System.out.println(e.getErrorMsg());
    }
}
```

- Updating only the custom SAN of the cluster certificate

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class UpdateClusterSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before
        // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
        // environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
```

```
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
    .withProjectId(projectId)
    .withAk(ak)
    .withSk(sk);

CceClient client = CceClient.newBuilder()
    .withCredential(auth)
    .withRegion(CceRegion.valueOf("<YOUR REGION>"))
    .build();

UpdateClusterRequest request = new UpdateClusterRequest();
request.withClusterId("{cluster_id}");
ClusterInformation body = new ClusterInformation();
List<String> listSpecCustomSan = new ArrayList<>();
listSpecCustomSan.add("192.168.1.0");
listSpecCustomSan.add("example.com");
ClusterInformationSpec specbody = new ClusterInformationSpec();
specbody.withCustomSan(listSpecCustomSan);
body.withSpec(specbody);
request.withBody(body);
try {
    UpdateClusterResponse response = client.updateCluster(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

- Updating both the cluster description and custom certificate SAN

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class UpdateClusterSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before
        // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
        // environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);
```

```
CceClient client = CceClient.newBuilder()
    .withCredential(auth)
    .withRegion(CceRegion.valueOf("<YOUR REGION>"))
    .build();
UpdateClusterRequest request = new UpdateClusterRequest();
request.withClusterId("{cluster_id}");
ClusterInformation body = new ClusterInformation();
List<String> listSpecCustomSan = new ArrayList<>();
listSpecCustomSan.add("192.168.1.0");
listSpecCustomSan.add("example.com");
ClusterInformationSpec specbody = new ClusterInformationSpec();
specbody.withDescription("new description")
    .withCustomSan(listSpecCustomSan);
body.withSpec(specbody);
request.withBody(body);
try {
    UpdateClusterResponse response = client.updateCluster(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

- Configure a CIDR block for a cluster that uses VPCs and is of a version later than v1.21.

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class UpdateClusterSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before
        // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
        // environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
```

```
        .withRegion(CceRegion.valueOf("<YOUR REGION>"))
        .build();
UpdateClusterRequest request = new UpdateClusterRequest();
request.withClusterId("{cluster_id}");
ClusterInformation body = new ClusterInformation();
List<ContainerCIDR> listContainerNetworkCidrs = new ArrayList<>();
listContainerNetworkCidrs.add(
    new ContainerCIDR()
        .withCidr("10.10.0.0/16")
);
listContainerNetworkCidrs.add(
    new ContainerCIDR()
        .withCidr("10.11.0.0/16")
);
ContainerNetworkUpdate containerNetworkSpec = new ContainerNetworkUpdate();
containerNetworkSpec.withCidrs(listContainerNetworkCidrs);
ClusterInformationSpec specbody = new ClusterInformationSpec();
specbody.withContainerNetwork(containerNetworkSpec);
body.withSpec(specbody);
request.withBody(body);
try {
    UpdateClusterResponse response = client.updateCluster(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

- **Modify the default security group of a node in a cluster.**

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class UpdateClusterSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before
        // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
        // environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
```

```
        .withRegion(CceRegion.valueOf("<YOUR REGION>"))
        .build();
        UpdateClusterRequest request = new UpdateClusterRequest();
        request.withClusterId("{cluster_id}");
        ClusterInformation body = new ClusterInformation();
        ClusterInformationSpecHostNetwork hostNetworkSpec = new
ClusterInformationSpecHostNetwork();
        hostNetworkSpec.withSecurityGroup("6ee29825-8f49-4796-b33a-fc76f84a59ae");
        ClusterInformationSpec specbody = new ClusterInformationSpec();
        specbody.withHostNetwork(hostNetworkSpec);
        body.withSpec(specbody);
        request.withBody(body);
        try {
            UpdateClusterResponse response = client.updateCluster(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

- Updating only the description of a cluster

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before
    running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = UpdateClusterRequest()
        request.cluster_id = "{cluster_id}"
        specbody = ClusterInformationSpec(
            description="new description"
        )
        request.body = ClusterInformation(
            spec=specbody
        )
        response = client.update_cluster(request)
        print(response)
```

```
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

- Updating only the custom SAN of the cluster certificate

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    # environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before
    # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    # environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = UpdateClusterRequest()
        request.cluster_id = "{cluster_id}"
        listCustomSanSpec = [
            "192.168.1.0",
            "example.com"
        ]
        specbody = ClusterInformationSpec(
            custom_san=listCustomSanSpec
        )
        request.body = ClusterInformation(
            spec=specbody
        )
        response = client.update_cluster(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

- Updating both the cluster description and custom certificate SAN

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    # environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before
    # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    # environment
```

```
ak = os.environ["CLOUD_SDK_AK"]
sk = os.environ["CLOUD_SDK_SK"]
projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = CceClient.new_builder() \
    .with_credentials(credentials) \
    .with_region(CceRegion.value_of("<YOUR REGION>")) \
    .build()

try:
    request = UpdateClusterRequest()
    request.cluster_id = "{cluster_id}"
    listCustomSanSpec = [
        "192.168.1.0",
        "example.com"
    ]
    specbody = ClusterInformationSpec(
        description="new description",
        custom_san=listCustomSanSpec
    )
    request.body = ClusterInformation(
        spec=specbody
    )
    response = client.update_cluster(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

- Configure a CIDR block for a cluster that uses VPCs and is of a version later than v1.21.

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    # environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before
    # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    # environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = UpdateClusterRequest()
        request.cluster_id = "{cluster_id}"
        listCidrsContainerNetwork = [
            ContainerCIDR(
                cidr="10.10.0.0/16"
            ),
            ContainerCIDR(
```



```

        cidr="10.11.0.0/16"
    )
]
containerNetworkSpec = ContainerNetworkUpdate(
    cidrs=listCidrsContainerNetwork
)
specbody = ClusterInformationSpec(
    container_network=containerNetworkSpec
)
request.body = ClusterInformation(
    spec=specbody
)
response = client.update_cluster(request)
print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)

```

- Modify the default security group of a node in a cluster.

```

# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    # environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before
    # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    # environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = UpdateClusterRequest()
        request.cluster_id = "{cluster_id}"
        hostNetworkSpec = ClusterInformationSpecHostNetwork(
            security_group="6ee29825-8f49-4796-b33a-fc76f84a59ae"
        )
        specbody = ClusterInformationSpec(
            host_network=hostNetworkSpec
        )
        request.body = ClusterInformation(
            spec=specbody
        )
        response = client.update_cluster(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)

```

Go

- Updating only the description of a cluster

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    // environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before
    // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    // environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.UpdateClusterRequest{
        request.ClusterId = "{cluster_id}"
        descriptionSpec:= "new description"
        specbody := &model.ClusterInformationSpec{
            Description: &descriptionSpec,
        }
        request.Body = &model.ClusterInformation{
            Spec: specbody,
        }
    }
    response, err := client.UpdateCluster(request)
    if err == nil {
        fmt.Printf("%v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

- Updating only the custom SAN of the cluster certificate

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    // environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before
```

running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment

```

ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
    WithAk(ak).
    WithSk(sk).
    WithProjectId(projectId).
    Build()

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.UpdateClusterRequest{}
request.ClusterId = "{cluster_id}"
var listCustomSanSpec = []string{
    "192.168.1.0",
    "example.com",
}
specbody := &model.ClusterInformationSpec{
    CustomSan: &listCustomSanSpec,
}
request.Body = &model.ClusterInformation{
    Spec: specbody,
}
response, err := client.UpdateCluster(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}

```

- Updating both the cluster description and custom certificate SAN

package main

```

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    // environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before
    // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    // environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).

```

```

Build()

request := &model.UpdateClusterRequest{}
request.ClusterId = "{cluster_id}"
var listCustomSanSpec = []string{
    "192.168.1.0",
    "example.com",
}
descriptionSpec:= "new description"
specbody := &model.ClusterInformationSpec{
    Description: &descriptionSpec,
    CustomSan: &listCustomSanSpec,
}
request.Body = &model.ClusterInformation{
    Spec: specbody,
}
response, err := client.UpdateCluster(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}

```

- Configure a CIDR block for a cluster that uses VPCs and is of a version later than v1.21.

```

package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    // environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before
    // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    // environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.UpdateClusterRequest{}
    request.ClusterId = "{cluster_id}"
    var listCidrsContainerNetwork = []model.ContainerCidr{
        {
            Cidr: "10.10.0.0/16",
        },
        {
            Cidr: "10.11.0.0/16",
        },
    }
}

```

```

containerNetworkSpec := &model.ContainerNetworkUpdate{
    Cidrs: &listCidrsContainerNetwork,
}
specbody := &model.ClusterInformationSpec{
    ContainerNetwork: containerNetworkSpec,
}
request.Body = &model.ClusterInformation{
    Spec: specbody,
}
response, err := client.UpdateCluster(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}

```

- Modify the default security group of a node in a cluster.

```

package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    // environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before
    // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    // environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.UpdateClusterRequest{}
    request.ClusterId = "{cluster_id}"
    securityGroupHostNetwork := "6ee29825-8f49-4796-b33a-fc76f84a59ae"
    hostNetworkSpec := &model.ClusterInformationSpecHostNetwork{
        SecurityGroup: &securityGroupHostNetwork,
    }
    specbody := &model.ClusterInformationSpec{
        HostNetwork: hostNetworkSpec,
    }
    request.Body = &model.ClusterInformation{
        Spec: specbody,
    }
    response, err := client.UpdateCluster(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Information about the specified cluster is successfully updated.

Error Codes

See [Error Codes](#).

4.2.5 Deleting a Cluster

Function

This API is used to delete a specified cluster.

NOTE

The URL for cluster management is in the format of `https://Endpoint/uri`. In the URL, **uri** indicates the resource path, that is, the path for API access.

Calling Method

For details, see [Calling APIs](#).

URI

DELETE `/api/v3/projects/{project_id}/clusters/{cluster_id}`

Table 4-129 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Table 4-130 Query Parameters

Parameter	Mandatory	Type	Description
delete_efs	No	String	<p>Details: Whether to delete an SFS Turbo volume</p> <p>Constraints: N/A</p> <p>Options:</p> <ul style="list-style-type: none"> • true or block: The system starts to delete the object. If the deletion fails, subsequent processes will be blocked. • try: The system starts to delete the object. If the deletion fails, no deletion will be retried, and subsequent processes will proceed. • false or skip: The deletion is skipped. This is the default option. <p>Default value: false</p>

Parameter	Mandatory	Type	Description
delete_eni	No	String	<p>Details: Whether to delete an ENI port (native ENI)</p> <p>Constraints: N/A</p> <p>Options:</p> <ul style="list-style-type: none"> • true or block: The system starts to delete the object. If the deletion fails, subsequent processes will be blocked. This is the default option. • try: The system starts to delete the object. If the deletion fails, no deletion will be retried, and subsequent processes will proceed. • false or skip: The deletion is skipped. <p>Default value: block</p>
delete_efs	No	String	<p>Details: Whether to delete an EFS disk</p> <p>Constraints: N/A</p> <p>Options:</p> <ul style="list-style-type: none"> • true or block: The system starts to delete the object. If the deletion fails, subsequent processes will be blocked. • try: The system starts to delete the object. If the deletion fails, no deletion will be retried, and subsequent processes will proceed. • false or skip: The deletion is skipped. This is the default option. <p>Default value: false</p>

Parameter	Mandatory	Type	Description
delete_net	No	String	<p>Details: Whether to delete cluster Service or ingress resources, such as a load balancer</p> <p>Constraints: N/A</p> <p>Options:</p> <ul style="list-style-type: none"> • true or block: The system starts to delete the object. If the deletion fails, subsequent processes will be blocked. This is the default option. • try: The system starts to delete the object. If the deletion fails, no deletion will be retried, and subsequent processes will proceed. • false or skip: The deletion is skipped. <p>Default value: block</p>

Parameter	Mandatory	Type	Description
delete_obs	No	String	<p>Details: Whether to delete an OBS volume</p> <p>Constraints: N/A</p> <p>Options:</p> <ul style="list-style-type: none"> • true or block: The system starts to delete the object. If the deletion fails, subsequent processes will be blocked. • try: The system starts to delete the object. If the deletion fails, no deletion will be retried, and subsequent processes will proceed. • false or skip: The deletion is skipped. This is the default option. <p>Default value: false</p>
delete_sfs	No	String	<p>Details: Whether to delete an SFS volume</p> <p>Constraints: N/A</p> <p>Options:</p> <ul style="list-style-type: none"> • true or block: The system starts to delete the object. If the deletion fails, subsequent processes will be blocked. • try: The system starts to delete the object. If the deletion fails, no deletion will be retried, and subsequent processes will proceed. • false or skip: The deletion is skipped. This is the default option. <p>Default value: false</p>

Parameter	Mandatory	Type	Description
delete_sfs30	No	String	<p>Details: Whether to delete an SFS 3.0 volume</p> <p>Constraints: N/A</p> <p>Options:</p> <ul style="list-style-type: none"> • true or block: The system starts to delete the object. If the deletion fails, subsequent processes will be blocked. • try: The system starts to delete the object. If the deletion fails, no deletion will be retried, and subsequent processes will proceed. • false or skip: The deletion is skipped. This is the default option. <p>Default value: false</p>

Parameter	Mandatory	Type	Description
lts_reclaim_policy	No	String	<p>Details: Whether to delete an LTS resource, such as a log group or a log stream</p> <p>Constraints: N/A</p> <p>Options:</p> <ul style="list-style-type: none"> • Delete_Log_Group: The system starts to delete a log group. If the deletion fails, no deletion will be retried, and subsequent processes will proceed. • Delete_Master_Log_Stream: The system starts to delete a master log stream. If the deletion fails, no deletion will be retried, and subsequent processes will proceed. This is the default option. • Retain: The deletion is skipped. <p>Default value: Delete_Master_Log_Stream</p>

Parameter	Mandatory	Type	Description
tobedeleted	No	String	<p>Details:</p> <p>Whether to use the preset deletion mode for yearly/ monthly clusters. This parameter is valid only for yearly/monthly clusters.</p> <p>If this parameter is used, the cluster does not delete resources. All query parameters of this request will be preset in the cluster database for identifying the resources to be deleted when a yearly/monthly cluster is unsubscribed from.</p> <p>This request can be executed for multiple times. Each request overwrites the deletion parameters preset last time.</p> <p>Constraints:</p> <p>This parameter must be used together with other deletion parameters. You can specify parameter values or the system uses the default ones.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: specifies the preset mode. Only the query parameters are preset and the deletion is not performed. <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
ondemand_node_policy	No	String	<p>Details: Policy for handling all pay-per-use nodes in a cluster</p> <p>Constraints: N/A</p> <p>Options:</p> <ul style="list-style-type: none"> • delete: The servers will be deleted. • reset: The servers will undergo a reset, which will result in the retention of the servers themselves, but not the data stored on them. • retain: The servers will be kept without undergoing a reset, and the data stored on them will also be retained. <p>Default value: NOTE If this parameter is not specified, pay-per-use nodes will be deleted by default and managed nodes will be retained.</p>
periodic_node_policy	No	String	<p>Details: Policy for handling all yearly/monthly nodes in a cluster</p> <p>Constraints: N/A</p> <p>Options:</p> <ul style="list-style-type: none"> • reset: The servers will undergo a reset, which will result in the retention of the servers themselves, but not the data stored on them. • retain: The servers will be kept without undergoing a reset, and the data stored on them will also be retained. <p>Default value: retain</p>

Request Parameters

Table 4-131 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-132 Response body parameters

Parameter	Type	Description
kind	String	<p>Details: API type</p> <p>Constraints: The value cannot be changed.</p> <p>Options:</p> <ul style="list-style-type: none"> • Cluster • cluster <p>Default value: N/A</p>
apiVersion	String	<p>Details: API version</p> <p>Constraints: The value cannot be changed.</p> <p>Options:</p> <ul style="list-style-type: none"> • v3 <p>Default value: N/A</p>
metadata	ClusterMetadata object	<p>Details: Basic information about a cluster. Metadata is a collection of attributes.</p> <p>Constraints: None</p>
spec	ClusterSpec object	<p>Details: Detailed description of a cluster. CCE creates or updates objects by defining or updating spec.</p> <p>Constraints: None</p>
status	ClusterStatus object	<p>Details: Cluster status and ID of a cluster deletion job</p> <p>Constraints: None</p>

Table 4-133 ClusterMetadata

Parameter	Type	Description
name	String	<p>Details: Cluster name</p> <p>Constraints: None</p> <p>Options: Enter 4 to 128 characters starting with a lowercase letter and not ending with a hyphen (-). Only lowercase letters, digits, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>
uid	String	<p>Details: Cluster ID, which identifies a cluster</p> <p>Constraints: The value is automatically generated after the object is created. A user-defined value will not take effect. When you create a yearly/monthly cluster, no cluster ID will be returned in the response body.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
alias	String	<p>Details: Alias of a cluster name displayed on the CCE console. The name can be changed. A cluster alias must be unique.</p> <p>Constraints: In the request body for creating or updating a cluster, if the cluster alias is not specified or set to null, the cluster name will be used as the cluster alias. In the response body for creating a cluster or other response bodies, if the cluster alias is not configured, no value will be returned.</p> <p>Options: Enter 4 to 128 characters starting with a letter and not starting or ending with a hyphen (-). Only digits, letters, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>

Parameter	Type	Description
annotations	Map<String,String>	<p>Details: Cluster annotations, in the format of key-value pairs</p> <pre>"annotations": { "key1" : "value1", "key2" : "value2" }</pre> <p>Constraints: This field is not stored in the database and is used only to specify the add-ons to be installed in the cluster.</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>NOTE</p> <ul style="list-style-type: none"> • annotations are not used to identify or select objects. The metadata in annotations may be small or large, structured or unstructured, and may include characters that are not allowed in labels. • You can install ICAgent during cluster creation by adding the key-value pair "cluster.install.addons.external/install":[{"addonTemplateName":"icagent"}]".
labels	Map<String,String>	<p>Details: Cluster labels, in the format of key-value pairs</p> <p>Constraints: The value of this field is automatically generated by the system and is used by the frontend to identify the features supported by the cluster during the upgrade. Custom values are invalid.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
creationTimestamp	String	<p>Details: Time when a cluster was created</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
updateTimestamp	String	<p>Details: Time when a cluster was updated</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
timezone	String	<p>Details: Cluster time zone</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-134 ClusterSpec

Parameter	Type	Description
category	String	<p>Details: Cluster type</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • CCE: CCE cluster. CCE clusters support hybrid deployment of VMs and BMSs, and heterogeneous nodes such as GPU and NPU nodes, allowing you to run your containers in a secure, stable container runtime environment based on a high-performance network model. • Turbo: CCE Turbo cluster. CCE Turbo clusters run on the cloud native 2.0 infrastructure that features hardware and software synergy to support passthrough networking, high security and reliability, and intelligent scheduling. <p>Default value: CCE when the container network is not set to eni Turbo when the container network is set to eni</p>
type	String	<p>Details: Master node architecture</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • VirtualMachine: The master node is an x86 server. • ARM64: The master node is an Arm-based Kunpeng server. <p>Default value: VirtualMachine</p>

Parameter	Type	Description
flavor	String	<p>Details: Cluster specifications. Specifications of clusters v1.15 and later versions can be changed after they are created. For details, see Changing Cluster Scale. Configure this parameter based on actual service requirements.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> ● cce.s1.small: a small-scale CCE cluster with one master node and a maximum of 50 worker nodes ● cce.s1.medium: a medium-scale CCE cluster with one master node and a maximum of 200 worker nodes ● cce.s2.small: a small-scale CCE cluster with three master nodes and a maximum of 50 worker nodes ● cce.s2.medium: a medium-scale CCE cluster with three master nodes and a maximum of 200 worker nodes ● cce.s2.large: a large-scale CCE cluster with three master nodes and a maximum of 1000 worker nodes ● cce.s2.xlarge: an ultra-large-scale CCE cluster with three master nodes and a maximum of 2000 worker nodes <p>Default value: N/A</p>

Parameter	Type	Description
		<p>NOTE The fields in the parameters are described as follows:</p> <ul style="list-style-type: none"> • s1: specifies a cluster with one master node. If the master node is faulty, the cluster will become unavailable, but running workloads in the cluster are not affected. • s2: specifies an HA cluster with three master nodes. If one of the master nodes is faulty, the cluster is still available. • dec: specifies a DeC CCE cluster. For example, cce.dec.s1.small specifies a small-scale, DeC CCE cluster with one master node and a maximum of 50 worker nodes. • small: specifies that a cluster can manage a maximum of 50 worker nodes. • medium: specifies that a cluster can manage a maximum of 200 worker nodes. • large: specifies that a cluster can manage a maximum of 1000 worker nodes. • xlarge: specifies that a cluster can manage a maximum of 2000 worker nodes.

Parameter	Type	Description
version	String	<p>Details:</p> <p>Version of a cluster, which mirrors the baseline version of the Kubernetes community. The latest version is recommended.</p> <p>You can create clusters of three latest versions on the CCE console. To learn which cluster versions are available, log in to the CCE console, create a cluster, and check the Cluster Version parameter.</p> <p>You can call APIs to create clusters of other versions. However, these cluster versions will be gradually terminated. For details about the support policy, see the CCE announcement.</p> <p>Constraints:</p> <p>None</p> <p>Options:</p> <p>N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • If this parameter is left blank, a cluster of the latest version is created by default. • If a baseline cluster version is specified but the R version is not specified, a cluster of the latest R version will be created by default. It is a good practice not to specify the R version. <p>NOTE</p> <ul style="list-style-type: none"> • CCE Turbo clusters of v1.19 or later are commercially available.

Parameter	Type	Description
platformVersion	String	<p>Details: CCE cluster platform version, which is an internal version under the cluster version (version). Platform versions are used to trace iterations in a major cluster version. They are unique within a major cluster version and recounted when the major cluster version changes.</p> <p>Constraints: This parameter cannot be customized, and when you create a cluster, the latest corresponding platform version is selected automatically.</p> <p>Options: The format of platformVersion is cce.X.Y.</p> <ul style="list-style-type: none"> • X: internal feature version, which indicates changes in features, patches, or OS support in the cluster version. The value starts from 1 and increases monotonically. • Y: patch version of an internal feature version. It is used only for software package update after the feature version is released. No other modification is involved. The value starts from 0 and increases monotonically. <p>Default value: N/A</p>

Parameter	Type	Description
legacyVersion	String	<p>Details: (Discarded) Outdated version of CCE clusters, which serves no practical purpose and is only used to showcase the cluster version and platform version combination. The version number is globally unique. For example, if the cluster version is va.b and the platformVersion is cce.X.Y, the value of legacyVersion is va.b.X-rY.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
description	String	<p>Details: Cluster description, for example, which purpose the cluster is intended to serve. By default, this field is left blank. To modify cluster description after a cluster is created, call the API for updating a specified cluster or go to the cluster details page on the CCE console.</p> <p>Constraints: Only UTF-8 encoding is supported.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
customSan	Array of strings	<p>Details: Custom Subject Alternative Name (SAN) in the server certificate of a cluster API server, which must comply with the SSL and X509 standard formats</p> <p>Constraints: Duplicate names are not allowed.</p> <p>Options: Values in the IP address or domain name format</p> <p>Default value: N/A</p> <p>Example: SAN 1: DNS Name=example.com SAN 2: DNS Name=www.example.com SAN 3: DNS Name=example.net SAN 4: IP Address=93.184.216.34</p>
ipv6enable	Boolean	<p>Details: Whether a cluster supports IPv6 addresses. It is supported by clusters v1.15 and later.</p> <p>Constraints: After IPv6 is enabled, iptables is not supported. The VPC network model does not support IPv4/IPv6 dual-stack.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: IPv4/IPv6 dual-stack is enabled. • false: Only IPv4 is used. <p>Default value: false</p>
hostNetwork	HostNetwork object	<p>Details: Node network parameters, including VPC and subnet ID. This field is mandatory because nodes in a cluster communicate with each other using a VPC.</p> <p>Constraints: None</p>

Parameter	Type	Description
containerNetwork	ContainerNetwork object	<p>Details: Container network parameters, including the container network model and container CIDR block</p> <p>Constraints: None</p>
eniNetwork	EniNetwork object	<p>Details: Configuration of the Cloud Native 2.0 network model. You need to specify this field when creating a CCE Turbo cluster.</p> <p>Constraints: None</p>
serviceNetwork	ServiceNetwork object	<p>Details: Service CIDR block, including IPv4 CIDR block</p> <p>Constraints: None</p>
publicAccess	PublicAccess object	<p>Details: Cluster API access control</p> <p>Constraints: None</p>
authentication	Authentication object	<p>Details: Configurations of the cluster authentication mode</p> <p>Constraints: None</p>
billingMode	Integer	<p>Details: Cluster billing mode</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> 0: pay-per-use 1: yearly/monthly <p>Default value: 0</p>

Parameter	Type	Description
masters	Array of MasterSpec objects	<p>Details: Advanced configurations of master nodes</p> <p>Constraints: If this parameter is not specified, no value is returned.</p>
kubernetesSvcIpRange	String	<p>Details: Service CIDR blocks which kubernetes clusterIP must fall within. This field is available only for clusters of v1.11.7 and later. If this parameter is not specified during cluster creation, the default value 10.247.0.0/16 is used. This parameter is being discarded, so you can use serviceNetwork instead. The new field contains the IPv4 CIDR blocks.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
clusterTags	Array of ResourceTag objects	<p>Details: Cluster resource tags</p> <p>Constraints: None</p>

Parameter	Type	Description
kubeProxyMode	String	<p>Details: Service forwarding mode</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • iptables: traditional kube-proxy mode, which uses iptables rules to implement Service load balancing. In this mode, too many iptables rules will be generated when many Services are deployed. Additionally, non-incremental updates will cause latency and obvious performance issues in the case of heavy service traffic. • ipvs: optimized kube-proxy mode with higher throughput and faster speed. This mode supports incremental updates and can keep connections uninterrupted during Service updates. It is suitable for large-sized clusters. <p>Default value: iptables is used by default.</p>
az	String	<p>Details: AZ. This field is returned only for a query. For details about AZs supported by CCE, see Regions and Endpoints.</p> <p>Constraints: None</p>
extendParam	ClusterExtendParam object	<p>Details: Extended field to decide whether a cluster will span across AZs or belong to a specified enterprise project, or whether a dedicated CCE cluster is to be created</p> <p>Constraints: None</p>

Parameter	Type	Description
supportIstio	Boolean	<p>Details: Whether Istio is supported</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Istio is supported. • false: Istio is not supported. <p>Default value: true</p>
enableDistMgt	Boolean	<p>Details: Whether to enable support for remote clouds</p> <p>Constraints: Only CCE Turbo clusters support this function.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Support for remote clouds is enabled. • false: Support for remote clouds is not enabled. <p>Default value: false</p>
deletionProtection	Boolean	<p>Details: Cluster deletion protection, which prevents the deletion of a cluster when this function is enabled</p> <p>Constraints: N/A</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Cluster deletion protection is enabled. • false: Cluster deletion protection is disabled. <p>Default value: false</p>

Parameter	Type	Description
configurationsO- verride	Array of PackageConfiguration objects	<p>Details: Cluster default component configuration override. For details about the supported components and their parameters, see Modifying Cluster Configurations.</p> <p>Constraints: If you specify a component or parameter that is not supported, the configuration item will be ignored.</p>
clusterOps	ClusterOps object	<p>Details: Cluster O&M settings</p> <p>Constraints: None</p>
enableAutopilot	Boolean	<p>Details: Whether the cluster is an Autopilot cluster</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Create an Autopilot cluster. • false: Create a CCE standard or a Turbo cluster. <p>Default value: false</p>
encryptionConfig	EncryptionConfig object	<p>Details: Configuration of secret encryption. Only one encryption mode can be configured. By default, the CCE-managed key is used for encryption. (Users are not aware of the key being used.)</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-135 HostNetwork

Parameter	Type	Description
vpc	String	<p>Details: ID of the VPC used to create a master node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> • Method 1: Log in to the VPC console and view the VPC ID on the VPC details page. • Method 2: Use the VPC API. For details, see Querying VPCs.
subnet	String	<p>Details: Network ID of the subnet used to create a master node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> • Method 1: Log in to the VPC console, click the target subnet on the Subnets page, and view the network ID on the displayed page. • Method 2: Use the VPC API. For details, see Querying Subnets.

Parameter	Type	Description
SecurityGroup	String	<p>Details: ID of the default node security group in a cluster</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • If this parameter is not specified, the system automatically creates a default node security group. • If this parameter is specified, the cluster will be bound to the specified security group. <p>NOTE To ensure proper communication, allow traffic from certain ports to the specified node security group. For details, see How Can I Configure a Security Group Rule in a Cluster?</p>
controlPlaneSecurityGroup	String	<p>Details: ID of the master node security group in a cluster</p> <p>Constraints: The value is automatically generated after the object is created. A user-defined value will not take effect.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-136 ContainerNetwork

Parameter	Type	Description
mode	String	<p>Details: Container network type</p> <p>Constraints: Only one container network type can be selected.</p> <p>Options:</p> <ul style="list-style-type: none"> • overlay_l2: an overlay_l2 network (container tunnel network) built for containers by using OpenVSwitch (OVS). • vpc-router: an underlay_l2 network built for containers by using IPvlan and custom VPC routes. • eni*: a Cloud Native 2.0 network. This model has integrated cloud native elastic network interfaces (ENIs), uses VPC CIDR blocks to allocate container IP addresses, and supports passthrough networking. You can use this model when creating a CCE Turbo cluster. <p>Default value: N/A</p>

Parameter	Type	Description
cidr	String	<p>Details: Container CIDR block. 10.0.0.0/12-19, 172.16.0.0/16-19, or 192.168.0.0/16-19 is recommended. If the selected CIDR block conflicts with existing ones, an error will be reported.</p> <p>Constraints: This parameter cannot be modified after the cluster is created. (It has been discarded. If cidrs has been configured, the specified CIDR blocks will be ignored.) Once you have created a cluster that uses a VPC network, you can add new CIDR blocks, but you are unable to modify the existing ones. If you need to adjust the CIDR blocks, you will have to create a new cluster.</p> <p>Options: Values in IPv4 CIDR format</p> <p>Default value: If this parameter is left blank, a unique CIDR block is randomly allocated from 172.(16-31).0.0/16 and 10.(0 16 32 48 64 80 96 112).0.0/12.</p>
cidrs	Array of ContainerCIDR objects	<p>Details: List of container CIDR blocks. In clusters of v1.21 or later, the cidrs field is used. When the cluster network type is vpc-router, you can configure a maximum of 20 container CIDR blocks. In clusters of versions earlier than v1.21, if the cidrs field is used, the first CIDR element in the array is used as the container CIDR block.</p> <p>Constraints: Once you have created a cluster that uses a container tunnel network, you cannot modify the CIDR blocks. Once you have created a cluster that uses a VPC network, you can add new CIDR blocks, but you are unable to modify the existing ones. If you need to adjust the CIDR blocks, you will have to create a new cluster.</p>

Table 4-137 ContainerCIDR

Parameter	Type	Description
cidr	String	<p>Details: Container CIDR block. 10.0.0.0/12-19, 172.16.0.0/16-19, or 192.168.0.0/16-19 is recommended.</p> <p>Constraints: If a CIDR block conflict occurs, an error will be reported.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-138 EniNetwork

Parameter	Type	Description
eniSubnetId	String	<p>Details: IPv4 subnet ID list of the subnet where an ENI resides</p> <p>Constraints: IPv6 is not supported. This parameter is being discarded, and the new field subnets is recommended.</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> • Method 1: Log in to the VPC console, click the target subnet on the Subnets page, and view the IPv4 subnet ID on the displayed page. • Method 2: Use the VPC API. For details, see Querying Subnets.

Parameter	Type	Description
eniSubnetCIDR	String	<p>Details: ENI subnet CIDR block</p> <p>Constraints: This parameter is being discarded. The new field subnets is recommended.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
subnets	Array of NetworkSubnet objects	<p>Details: List of IPv4 subnet IDs</p> <p>Constraints: None</p>

Table 4-139 NetworkSubnet

Parameter	Type	Description
subnetID	String	<p>Details: IPv4 subnet ID of the subnet used to create a master node</p> <p>Constraints: IPv6 is not supported.</p> <p>Options: N/A</p> <p>Default value: N/A</p> <p>You can obtain the value in either of the following ways:</p> <ul style="list-style-type: none"> • Method 1: Log in to the VPC console, click the target subnet on the Subnets page, and view the IPv4 subnet ID on the displayed page. • Method 2: Use the VPC API. For details, see Querying Subnets.

Table 4-140 ServiceNetwork

Parameter	Type	Description
IPv4CIDR	String	<p>Details: Value range of the Kubernetes clusterIP IPv4 CIDR block</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: 10.247.0.0/16</p>
IPv6CIDR	String	<p>Details: Value range of the Kubernetes clusterIP IPv6 CIDR block</p> <p>Constraints: IPv6 Service CIDR blocks can be configured only for CCE Turbo clusters with IPv6 dual stack enabled.</p> <p>Options: N/A</p> <p>Default value: Default value for a CCE Turbo cluster: fc00::/112 Default value for a CCE standard cluster: fd00:1234::/120</p>

Table 4-141 PublicAccess

Parameter	Type	Description
cidrs	Array of strings	<p>Details: Trustlist of network CIDRs that are allowed to access cluster APIs. You are advised to allow the traffic from VPC and container network CIDRs.</p> <p>Constraints: This parameter is valid only when a cluster is created.</p> <p>Options: N/A</p> <p>Default value: By default, no trustlist is configured, and the value is 0.0.0.0/0.</p>

Table 4-142 Authentication

Parameter	Type	Description
mode	String	<p>Details: Cluster authentication mode</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> Clusters of Kubernetes 1.11 or earlier support x509, rbac, and authenticating_proxy. The parameter defaults to x509. Clusters of Kubernetes 1.13 or later support rbac and authenticating_proxy. The parameter defaults to rbac. <p>Default value:</p> <ul style="list-style-type: none"> Clusters of Kubernetes 1.11 or earlier: x509 Clusters of Kubernetes 1.13 or later: rbac

Parameter	Type	Description
authenticatingProxy	AuthenticatingProxy object	<p>Details: Configuration related to the authenticating_proxy mode</p> <p>Constraints: This field is mandatory when the authentication mode is authenticating_proxy.</p>

Table 4-143 AuthenticatingProxy

Parameter	Type	Description
ca	String	<p>Details: X509 CA certificate (Base64-encoded) configured in authenticating_proxy mode</p> <p>Constraints: This field is mandatory when the cluster authentication mode is authenticating_proxy.</p> <p>Options: Maximum size: 1 MB</p> <p>Default value: N/A</p>
cert	String	<p>Details: Client certificate issued by the X509 CA certificate configured in authenticating_proxy mode, which is used for authentication from kube-apiserver to the extended API server. (The value must be Base64-encoded.)</p> <p>Constraints: This field is mandatory when the cluster authentication mode is authenticating_proxy.</p> <p>Options: Maximum size: 1 MB</p> <p>Default value: N/A</p>

Parameter	Type	Description
privateKey	String	<p>Details: Private key of the client certificate issued by the X509 CA certificate configured in <code>authenticating_proxy</code> mode, which is used for authentication from kube-apiserver to the extended API server. The private key used by the Kubernetes cluster does not support password encryption. Use an unencrypted private key. (The value must be Base64-encoded.)</p> <p>Constraints: This field is mandatory when the cluster authentication mode is <code>authenticating_proxy</code>.</p> <p>Options: Maximum size: 1 MB</p> <p>Default value: N/A</p>

Table 4-144 MasterSpec

Parameter	Type	Description
availabilityZone	String	<p>Details: AZ</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-145 ResourceTag

Parameter	Type	Description
key	String	<p>Details: Key</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • The value cannot be empty and cannot start or end with spaces. A maximum of 128 characters are supported. • Letters, digits, and spaces in UTF-8 format are supported. • The value can contain the following special characters: <code>._:=+@</code> • The value cannot start with <code>_sys_</code>. <p>Default value: N/A</p>
value	String	<p>Details: Value</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • The value can be null but not the default. Max characters: 255 • Letters, digits, and spaces in UTF-8 format are supported. • The value can contain the following special characters: <code>._:/=+@</code> <p>Default value: N/A</p>

Table 4-146 ClusterExtendParam

Parameter	Type	Description
clusterAZ	String	<p>Details: AZs of master nodes in a cluster For details about AZs supported by CCE, see Regions and Endpoints.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • AZs supported by a specified region • multi_az: (Optional) multiple AZs, which can be configured only when a cluster with multiple master nodes is used • <i>AZs of the dedicated cloud computing pool:</i> Master nodes will be deployed in the DeC AZs. It is mandatory for dedicated CCE clusters. <p>Default value: If no AZ is specified, an AZ is randomly allocated by default.</p>

Parameter	Type	Description
dssMasterVolumeS	String	<p>Details: Whether the system and data disks of a master node use DSS storage pools. If this parameter is unspecified or left blank, EVS disks are used by default.</p> <p>Constraints: This parameter is mandatory for dedicated CCE clusters. It is in the following format: <rootVol.dssPoolID>.<rootVol.volType>;<dataVol.dssPoolID>.<dataVol.volType></p> <p>Specifically:</p> <ul style="list-style-type: none"> • rootVol specifies the system disk. dataVol specifies a data disk. • dssPoolID specifies the ID of a DSS storage pool. • volType specifies the storage volume type of the DSS storage pool, such as SAS, SSD, SATA, ESSD, GPSSD, ESSD2, and GPSSD2. <p>Options: N/A</p> <p>Default value: N/A</p> <p>Example: c950ee97-587c-4f24-8a74-3367e3da570f.sas;6edbc2f4-1507-44f8-ac0d-eed1d2608d38.ssd</p> <p>NOTE This field cannot be configured for non-dedicated CCE clusters.</p>
enterpriseProjectId	String	<p>Details: ID of the enterprise project that a cluster belongs to</p> <p>Constraints: An enterprise project can be configured only after the enterprise project function is enabled.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
kubeProxyMode	String	<p>Details: Service forwarding mode</p> <p>Constraints: This parameter has been discarded. If both this parameter and kubeProxyMode in ClusterSpec are specified, the latter is used.</p> <p>Options:</p> <ul style="list-style-type: none"> • iptables: traditional kube-proxy mode, which uses iptables rules to implement Service load balancing. In this mode, too many iptables rules will be generated when many Services are deployed. Additionally, non-incremental updates will cause latency and obvious performance issues in the case of heavy service traffic. • ipvs: optimized kube-proxy mode with higher throughput and faster speed. This mode supports incremental updates and can keep connections uninterrupted during Service updates. It is suitable for large-sized clusters. <p>Default value: iptables</p>
clusterExternalIP	String	<p>Details: EIP of the master node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
alpha.cce/ fixPoolMask	String	<p>Details: Number of mask bits of the fixed IP address pool of the container networks. This parameter determines the maximum number of IP addresses that can be assigned to containers on a node. This, along with the maxPods setting during node creation, determines the maximum number of pods that can be created on a node.</p> <p>For details, see Maximum Number of Pods That Can Be Created on a Node.</p> <p>Constraints: Only the vpc-router networks support this function.</p> <p>Options: Integers from 24 to 28</p> <p>Default value: 24</p>
decMasterFlavor	String	<p>Details: Master node flavor in a dedicated CCE cluster</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
dockerUmaskMode	String	<p>Details: Default UmaskMode configuration of Docker in a cluster</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • secure • normal <p>Default value: normal</p>

Parameter	Type	Description
kubernetes.io/ cpuManagerPolicy	String	<p>Details: Cluster CPU management policy</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • none or null: disables pods from exclusively occupying CPUs. Select this option if you want a large pool of shareable CPU cores. • static: enables pods to exclusively occupy CPUs. Select this option if your workload is sensitive to CPU cache and scheduling latency. In a CCE Turbo cluster, this setting is valid only for nodes where common containers, not secure containers, run. <p>Default value: none</p>
orderId	String	<p>Details: Order ID</p> <p>Constraints: This parameter is returned in the response when the cluster is billed on a yearly/monthly basis with auto payment enabled (only in creation scenarios).</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
periodType	String	<p>Details: The subscription term unit</p> <p>Constraints: As a request parameter, it is valid and mandatory when billingMode is set to 1, which is, the yearly/monthly billing mode is configured. As a response parameter, it is returned only when a yearly/monthly cluster is created.</p> <p>Options:</p> <ul style="list-style-type: none"> • month • year <p>Default value: N/A</p>
periodNum	Integer	<p>Details: Number of subscription periods</p> <p>Constraints: As a request parameter, it is valid and mandatory when billingMode is set to 1. As a response parameter, it is returned only when a yearly/monthly cluster is created.</p> <p>Options:</p> <ul style="list-style-type: none"> • If periodType is month, the value ranges from 1 to 9. • If periodType is year, the value ranges from 1 to 3. <p>Default value: N/A</p>
isAutoRenew	String	<p>Details: Whether to enable auto renewal</p> <p>Constraints: This field is valid only when billingMode is set to 1.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto renewal is enabled. • false: Auto renewal is not enabled. <p>Default value: false</p>

Parameter	Type	Description
isAutoPay	String	<p>Details: Whether to enable auto payment</p> <p>Constraints: This field is valid only when billingMode is set to 1.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto payment is enabled. • false: Auto payment is not enabled. <p>Default value: false</p>
upgradefrom	String	<p>Details: Records of how a cluster is upgraded to its current version</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-147 PackageConfiguration

Parameter	Type	Description
name	String	<p>Details: Component name</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
configurations	Array of ConfigurationItem objects	<p>Details: Component configuration items</p> <p>Constraints: None</p>

Table 4-148 ConfigurationItem

Parameter	Type	Description
name	String	<p>Details: Configuration overrides of the default components in a cluster. For details about the supported components and their parameters, see Configuration Management.</p> <p>Constraints: If you specify a component or parameter that is not supported, this configuration item will be ignored.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
value	AnyType	<p>Details: Configuration overrides of the default components in a cluster. For details about the supported components and their parameters, see Configuration Management.</p> <p>Constraints: If you specify a component or parameter that is not supported, this configuration item will be ignored.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-149 ClusterOps

Parameter	Type	Description
alarm	AlarmInfo object	<p>Details: Alarm assistant settings. CCE is integrated with AOM, which enables alarm functionality, allowing for easy search and configuration of alarms. The Cloud Native Cluster Monitoring add-on sends metric rule data in CCE alarm center to AOM instances.</p> <p>Constraints: None</p>

Table 4-150 AlarmInfo

Parameter	Type	Description
topics	Array of strings	<p>Details: Contact group list. You can enter SMN topic names and configure contact groups to manage endpoints that have subscribed to alarm messages.</p> <p>Constraints: None</p>
alarmRuleTemplated	String	<p>Details: Alarm rule template ID transferred when the alarm assistant is enabled. By default, the alarm rule template in the container scenario is used.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
promInstanceID	String	<p>Details: ID of the AOM Prometheus instance transferred when the alarm assistant is enabled. If the Prometheus add-on is not installed or the AOM instance is not connected, there is no need to specify this parameter. In this case, the alarm center will not generate metric alarm rules.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
promEnterpriseProjectID	String	<p>Details: Enterprise project ID of the AOM Prometheus instance transferred when the alarm assistant is enabled. If the Prometheus add-on is not installed or the AOM instance is not connected, there is no need to specify this parameter. In this case, the alarm center will not generate metric alarm rules.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-151 EncryptionConfig

Parameter	Type	Description
mode	String	<p>Details: Encryption mode. Either encryption using the CCE-managed key or KMS key can be configured.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Default: Encryption is performed using the CCE-managed key. • KMS: KMS encryption is used. <p>Default value: Default</p>
kmsKeyID	String	<p>Details: KMS key ID</p> <ul style="list-style-type: none"> • In the API for creating a cluster, if the mode field is set to Default, there is no need to specify this field. If the mode field is set to KMS, you can specify a value for this field. If this parameter is left blank, the default KMS key is used by default. If the default key does not exist, DEW will automatically create a default key (cce/default) for the user. To ensure proper cluster functionality, it is important to use a valid KMS key. Refrain from deleting or disabling the key before the cluster lifecycle is complete, as this may cause exceptions. Once a key has been configured for a cluster, it cannot be modified. • In the cluster query API, if the mode field is set to Default, the returned value of this field is empty. If the mode field is set to KMS, the specific key ID will be returned. <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-152 ClusterStatus

Parameter	Type	Description
phase	String	<p>Details: Cluster status</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> ● Available: The cluster is running properly. ● Unavailable: The cluster is exhibiting unexpected behavior and needs to be manually deleted. ● ScalingUp: Nodes are being added to the cluster. ● ScalingDown: The cluster is being downsized to fewer nodes. ● Creating: The cluster is being created. ● Deleting: The cluster is being deleted. ● Upgrading: The cluster is being upgraded. ● Resizing: Cluster specifications are being changed. ● ResizeFailed: Cluster specification changing is abnormal. ● RollingBack: The cluster is being rolled back. ● RollbackFailed: The cluster rollback is abnormal. ● Hibernating: The cluster is being hibernated. ● Hibernation: The cluster is in hibernation. ● Freezing: The cluster is being frozen. ● Frozen: The cluster has been frozen. ● UnFreezing: The cluster is being unfrozen. ● Awaking: The cluster is being woken up from hibernation.

Parameter	Type	Description
		<ul style="list-style-type: none"> • Empty: The cluster does not have any resources. This field has been discarded. • Error: Resources in the cluster are abnormal. You can manually delete the cluster.
jobID	String	<p>Details: ID of the job associated with the current cluster status. The system supports:</p> <ul style="list-style-type: none"> • ID of the associated job returned when creating a cluster. You can use it to obtain the auxiliary jobs for creating a cluster. • ID of the associated job returned when a cluster fails to be deleted or is being deleted. If this parameter is not empty, you can use the job ID to obtain the auxiliary jobs for deleting a cluster. <p>Constraints: None</p> <p>Options: N/A</p> <p>NOTE Jobs are short-lived. Do not use job information in scenarios such as cluster status determination.</p>
reason	String	<p>Details: Why a cluster changes to the current state. This parameter is returned if the cluster is not in the Available state.</p> <p>Constraints: None</p> <p>Options: N/A</p>

Parameter	Type	Description
message	String	<p>Details: Detailed information about why a cluster changes to the current state. This parameter is returned if the cluster is not in the Available state.</p> <p>Constraints: None</p> <p>Options: N/A</p>
endpoints	Array of ClusterEndpoints objects	<p>Details: Access address of kube-apiserver in a cluster</p> <p>Constraints: None</p>
isLocked	Boolean	<p>Details: CBC resource locked</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • true: The resource is locked by CBC. • false: The resource is not locked by CBC.
lockScene	String	<p>Details: CBC resource locking scenario</p> <p>Constraints: None</p> <p>Options: N/A</p>
lockSource	String	<p>Details: Resource locked</p> <p>Constraints: None</p> <p>Options: N/A</p>

Parameter	Type	Description
lockSourceId	String	<p>Details: ID of a locked resource</p> <p>Constraints: None</p> <p>Options: N/A</p>
deleteOption	Object	<p>Details: Status of the configuration to be deleted. This parameter is contained only in the response to the deletion request.</p> <p>Constraints: None</p> <p>Options: N/A</p>
deleteStatus	Object	<p>Details: Information of the status to be deleted. This parameter is contained only in the response to the deletion request.</p> <p>Constraints: None</p> <p>Options: N/A</p>

Table 4-153 ClusterEndpoints

Parameter	Type	Description
url	String	<p>Details: Access address of kube-apiserver in a cluster</p> <p>Constraints: None</p> <p>Options: N/A</p>

Parameter	Type	Description
type	String	<p>Details: Type of the cluster access address</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Internal: address for internal network access • External: address for external network access

Example Requests

None

Example Responses

Status code: 200

The job for deleting a cluster is successfully delivered.

```
{
  "kind": "Cluster",
  "apiVersion": "v3",
  "metadata": {
    "alias": "mycluster",
    "name": "mycluster",
    "uid": "fc563b3c-9552-11e8-8beb-0255ac106311",
    "creationTimestamp": "2018-08-01 06:20:28.81667161 +0000 UTC",
    "updateTimestamp": "2018-08-01 09:23:38.944333282 +0000 UTC"
  },
  "spec": {
    "type": "VirtualMachine",
    "flavor": "cce.s1.small",
    "version": "v1.7.3-r13",
    "description": "new description",
    "hostNetwork": {
      "vpc": "cbcd56e8-03e7-4304-a477-b54bef0857c3",
      "subnet": "5de50062-2be2-4a52-893e-e0906e3e9c9d"
    },
    "containerNetwork": {
      "mode": "overlay_l2",
      "cidr": "172.16.0.0/16"
    },
    "authentication": {
      "mode": "x509",
      "authenticatingProxy": { }
    },
    "billingMode": 0
  },
  "status": {
    "phase": "Available",
    "jobID": "e8ebf96c-956d-11e8-a949-0255ac10575d",
    "endpoints": [ {
      "url": "https://192.168.0.16:5443",
      "type": "Internal"
    } ]
  }
}
```

```
}  
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;  
  
import com.huaweicloud.sdk.core.auth.ICredential;  
import com.huaweicloud.sdk.core.auth.BasicCredentials;  
import com.huaweicloud.sdk.core.exception.ConnectionException;  
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;  
import com.huaweicloud.sdk.core.exception.ServiceResponseException;  
import com.huaweicloud.sdk.cce.v3.region.CceRegion;  
import com.huaweicloud.sdk.cce.v3.*;  
import com.huaweicloud.sdk.cce.v3.model.*;  
  
public class DeleteClusterSolution {  
  
    public static void main(String[] args) {  
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great  
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or  
        // environment variables and decrypted during use to ensure security.  
        // In this example, AK and SK are stored in environment variables for authentication. Before running  
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment  
        String ak = System.getenv("CLOUD_SDK_AK");  
        String sk = System.getenv("CLOUD_SDK_SK");  
        String projectId = "{project_id}";  
  
        ICredential auth = new BasicCredentials()  
            .withProjectId(projectId)  
            .withAk(ak)  
            .withSk(sk);  
  
        CceClient client = CceClient.newBuilder()  
            .withCredential(auth)  
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))  
            .build();  
        DeleteClusterRequest request = new DeleteClusterRequest();  
        request.withClusterId("{cluster_id}");  
        try {  
            DeleteClusterResponse response = client.deleteCluster(request);  
            System.out.println(response.toString());  
        } catch (ConnectionException e) {  
            e.printStackTrace();  
        } catch (RequestTimeoutException e) {  
            e.printStackTrace();  
        } catch (ServiceResponseException e) {  
            e.printStackTrace();  
            System.out.println(e.getHttpStatusCode());  
            System.out.println(e.getRequestId());  
            System.out.println(e.getErrorCode());  
            System.out.println(e.getErrorMsg());  
        }  
    }  
}
```

Python

```
# coding: utf-8  
  
import os  
from huaweicloudsdkcore.auth.credentials import BasicCredentials
```

```
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = DeleteClusterRequest()
        request.cluster_id = "{cluster_id}"
        response = client.delete_cluster(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.DeleteClusterRequest{}
    request.ClusterId = "{cluster_id}"
    response, err := client.DeleteCluster(request)
```

```
if err == nil {  
    fmt.Printf("%+v\n", response)  
} else {  
    fmt.Println(err)  
}  
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The job for deleting a cluster is successfully delivered.

Error Codes

See [Error Codes](#).

4.2.6 Hibernating a Cluster

Function

This API is used to hibernate a running cluster. After a cluster is hibernated, master node resources stop being billed.

Constraints

1. After a cluster is hibernated, resources such as workloads cannot be created or managed in the cluster.
2. After a pay-per-use cluster is hibernated, master node resources are not billed. Other resources such as the nodes to which the cluster belongs, bound EIP, and bandwidth are billed based on their billing mode (yearly/monthly or pay-per-use).

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/hibernate

Table 4-154 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-155 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

None

Example Requests

None

Example Responses

None

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class HibernateClusterSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        HibernateClusterRequest request = new HibernateClusterRequest();
        request.withClusterId("{cluster_id}");
        try {
            HibernateClusterResponse response = client.hibernateCluster(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8
import os
```

```

from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = HibernateClusterRequest()
        request.cluster_id = "{cluster_id}"
        response = client.hibernate_cluster(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)

```

Go

```

package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.HibernateClusterRequest{}
    request.ClusterId = "{cluster_id}"

```

```
response, err := client.HibernateCluster(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The cluster hibernation job is successfully delivered. Keep querying the cluster status. When the cluster status changes to Hibernation , the cluster is hibernated.

Error Codes

See [Error Codes](#).

4.2.7 Waking Up a Cluster

Function

This API is used to wake up a hibernated cluster. After the cluster is woken up, master node resources continue to be billed.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/awake

Table 4-156 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-157 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

None

Example Requests

None

Example Responses

None

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class AwakeClusterSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        AwakeClusterRequest request = new AwakeClusterRequest();
        request.withClusterId("{cluster_id}");
        try {
            AwakeClusterResponse response = client.awakeCluster(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8
import os
```



```
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = AwakeClusterRequest()
        request.cluster_id = "{cluster_id}"
        response = client.awake_cluster(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.AwakeClusterRequest{}
    request.ClusterId = "{cluster_id}"
```

```
response, err := client.AwakeCluster(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The cluster wakeup job is successfully delivered. Keep querying the cluster status. When the cluster status changes to Available , the cluster is woken up successfully.

Error Codes

See [Error Codes](#).

4.2.8 Obtaining a Cluster Certificate

Function

This API is used to obtain a certificate of a specified cluster.

Constraints

This API is applicable to clusters of v1.13 and later.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/clustercert

Table 4-158 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-159 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-160 Request body parameters

Parameter	Mandatory	Type	Description
duration	Yes	Integer	Validity period of the cluster certificate. The minimum value is 1 day and the maximum value is 5 years. Therefore, the value ranges from 1 to 1827. (The unit is day. The actual limit depends on the number of leap years in the five years. For example, if there is a leap year in the five years, the upper limit is 1826 days.) If this parameter is set to -1, the maximum value is 5 years.

Response Parameters

Status code: 200

Table 4-161 Response header parameters

Parameter	Type	Description
Port-ID	String	Port ID of the cluster master node

Table 4-162 Response body parameters

Parameter	Type	Description
kind	String	API type. The value is fixed at Config and cannot be changed.
apiVersion	String	API version. The value is fixed at v1 .
preferences	Object	This field is not used currently and is left unspecified by default.
clusters	Array of Clusters objects	Cluster list
users	Array of Users objects	Certificate information and client key information of a specified user
contexts	Array of Contexts objects	Context list

Parameter	Type	Description
current-context	String	Current context. If publicIp (VM EIP) exists, the value is external . If publicIp does not exist, the value is internal .

Table 4-163 Clusters

Parameter	Type	Description
name	String	Cluster name. <ul style="list-style-type: none"> If publicIp does not exist (that is, no VM EIP exists), there is only one cluster in the cluster list, and the value of this parameter is internalCluster. If publicIp exists (that is, the EIP exists), there are at least two clusters in the cluster list, and the value of this parameter is externalCluster.
cluster	ClusterCert object	Cluster information

Table 4-164 ClusterCert

Parameter	Type	Description
server	String	Server IP address
certificate-authority-data	String	Certificate authorization data
insecure-skip-tls-verify	Boolean	Whether to skip the server certificate verification. If the cluster type is externalCluster , the value is true .

Table 4-165 Users

Parameter	Type	Description
name	String	The value is fixed at user .
user	User object	Certificate information and client key information of a specified user

Table 4-166 User

Parameter	Type	Description
client-certificate-data	String	Client certificate
client-key-data	String	PEM encoding data from the TLS client key file

Table 4-167 Contexts

Parameter	Type	Description
name	String	Context name. <ul style="list-style-type: none"> If publicIp does not exist (that is, no VM EIP exists), there is only one cluster in the cluster list, and the value of this parameter is internal. If publicIp exists (that is, the EIP exists), there are at least two clusters in the cluster list, and the value of this field for all extension contexts is external.
context	Context object	Context information

Table 4-168 Context

Parameter	Type	Description
cluster	String	Cluster context
user	String	User context

Example Requests

Applying for a cluster access certificate valid for 30 days

```
{
  "duration" : 30
}
```

Example Responses

Status code: 200

The certificate of the specified cluster is successfully obtained. For details about the certificate file format, see the Kubernetes v1.Config structure.

```
{
  "kind" : "Config",
```

```
"apiVersion" : "v1",
"preferences" : { },
"clusters" : [ {
  "name" : "internalCluster",
  "cluster" : {
    "server" : "https://192.168.1.7:5443",
    "certificate-authority-data" : "Q2VydGlmaWNhdGU6*****FTkQgQ0VSVEIGSUNBVEUtLS0tLQo="
  }
}],
"users" : [ {
  "name" : "user",
  "user" : {
    "client-certificate-data" : "LS0tLS1CRUdJTiBDR*****QVRFLS0tLS0K",
    "client-key-data" : "LS0tLS1CRUdJTi*****BLRVktLS0tLQo="
  }
}],
"contexts" : [ {
  "name" : "internal",
  "context" : {
    "cluster" : "internalCluster",
    "user" : "user"
  }
}],
"current-context" : "internal"
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

Applying for a cluster access certificate valid for 30 days

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class CreateKubernetesClusterCertSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
    }
}
```



```
CreateKubernetesClusterCertRequest request = new CreateKubernetesClusterCertRequest();
request.withClusterId("{cluster_id}");
CertDuration body = new CertDuration();
body.withDuration(30);
request.withBody(body);
try {
    CreateKubernetesClusterCertResponse response = client.createKubernetesClusterCert(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

Applying for a cluster access certificate valid for 30 days

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = CreateKubernetesClusterCertRequest()
        request.cluster_id = "{cluster_id}"
        request.body = CertDuration(
            duration=30
        )
        response = client.create_kubernetes_cluster_cert(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

Applying for a cluster access certificate valid for 30 days

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.CreateKubernetesClusterCertRequest{}
    request.ClusterId = "{cluster_id}"
    request.Body = &model.CertDuration{
        Duration: int32(30),
    }
    response, err := client.CreateKubernetesClusterCert(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The certificate of the specified cluster is successfully obtained. For details about the certificate file format, see the Kubernetes v1.Config structure.

Error Codes

See [Error Codes](#).

4.2.9 Revoking a Cluster Certificate of a User

Function

This API is used to revoke a certificate of a specified cluster.

NOTE

Once the cluster certificate is revoked, the certificate applicant will no longer be able to use the downloaded certificate and kubectl configuration files to access the cluster. However, the applicant can simply download the files again and use the newly downloaded ones to regain access.

Constraints

Before revoking a cluster certificate, you need to get the user ID, which can be obtained in either of the following ways:

- Method 1: Obtain the certificate downloaded by the applicant. The name (**CN - Common Name**) of the certificate is the required user ID.
- Method 2: If you cannot obtain the certificate downloaded by the applicant, use CTS to obtain the events of deleting a user (**deleteUser**) and deleting an agency (**deleteAgency**). The resource IDs of the events are the IDs of the deleted user and delegated account, respectively.

If the ID still cannot be obtained, submit a service ticket.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/clustercertrevoke

Table 4-169 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-170 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-171 Request body parameters

Parameter	Mandatory	Type	Description
userId	No	String	User ID
agencyId	No	String	Agency ID

Response Parameters

None

Example Requests

```
POST /api/v3/projects/{project_id}/clusters/{cluster_id}/clustercertrevoke
{
  "userId" : "537e7a3bd*****6c5657fd908ff"
}
```

Example Responses

None

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;
```

```
import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class RevokeKubernetesClusterCertSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();

        RevokeKubernetesClusterCertRequest request = new RevokeKubernetesClusterCertRequest();
        request.withClusterId("{cluster_id}");
        CertRevokeConfigRequestBody body = new CertRevokeConfigRequestBody();
        body.withUserId("537e7a3bd*****6c5657fd908ff");
        request.withBody(body);
        try {
            RevokeKubernetesClusterCertResponse response = client.revokeKubernetesClusterCert(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
```

```
ak = os.environ["CLOUD_SDK_AK"]
sk = os.environ["CLOUD_SDK_SK"]
projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = CceClient.new_builder() \
    .with_credentials(credentials) \
    .with_region(CceRegion.value_of("<YOUR REGION>")) \
    .build()

try:
    request = RevokeKubernetesClusterCertRequest()
    request.cluster_id = "{cluster_id}"
    request.body = CertRevokeConfigRequestBody(
        user_id="537e7a3bd*****6c5657fd908ff"
    )
    response = client.revoke_kubernetes_cluster_cert(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.RevokeKubernetesClusterCertRequest{}
    request.ClusterId = "{cluster_id}"
    request.UserIdCertRevokeConfigRequestBody := "537e7a3bd*****6c5657fd908ff"
    request.Body = &model.CertRevokeConfigRequestBody{
        UserId: &request.UserIdCertRevokeConfigRequestBody,
    }
    response, err := client.RevokeKubernetesClusterCert(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
```

```
    fmt.Println(err)
  }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	A user cluster certificate has been revoked.

Error Codes

See [Error Codes](#).

4.2.10 Modifying Cluster Specifications

Function

This API is used to modify the specifications of a cluster.

NOTE

- The URL for cluster management is in the format of **https://Endpoint/uri**, in which *uri* indicates the resource path, that is, the path for API access.
- For details about constraints, see [Changing Cluster Scale](#).

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/resize

Table 4-172 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-173 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-174 Request body parameters

Parameter	Mandatory	Type	Description
flavorResize	Yes	String	<p>The target flavor to be changed. You can only adjust the maximum number of worker nodes in a cluster. The number of master nodes is fixed and cannot be altered, and the cluster flavors cannot be downgraded. Suppose the original cluster flavor is cce.s2.medium. In that case, you can only upgrade it to cce.s2.large or higher, but you cannot downgrade it to cce.s2.small or cce.s1.medium.</p> <ul style="list-style-type: none"> • cce.s1.small: a small-scale CCE cluster with one master node and a maximum of 50 worker nodes • cce.s1.medium: a medium-scale CCE cluster with one master node and a maximum of 200 worker nodes • cce.s2.small: a small-scale CCE cluster with three master nodes and a maximum of 50 worker nodes • cce.s2.medium: a medium-scale CCE cluster with three master nodes and a maximum of 200 worker nodes • cce.s2.large: a large-scale CCE cluster with three master nodes and a maximum of 1,000 worker nodes • cce.s2.xlarge: an ultra-large-scale CCE cluster with three master nodes and a maximum of 2,000 worker nodes

Parameter	Mandatory	Type	Description
			<p>NOTE</p> <p>The fields in the parameters are described as follows:</p> <ul style="list-style-type: none"> • s1: specifies a cluster with one master node. If the master node is faulty, the cluster will become unavailable, but running workloads in the cluster are not affected. • s2: specifies an HA cluster with three master nodes. If one of the master nodes is faulty, the cluster is still available. • dec: specifies a DeC CCE cluster. For example, cce.dec.s1.small specifies a small-scale, DeC CCE cluster with one master node and a maximum of 50 worker nodes. • small: specifies that a cluster can manage a maximum of 50 worker nodes. • medium: specifies that a cluster can manage a maximum of 200 worker nodes. • large: specifies that a cluster can manage a maximum of 1,000 worker nodes. • xlarge: specifies that a cluster can manage a maximum of 2,000 worker nodes.
extendParam	No	extendParam object	Extended field for changing cluster specifications

Table 4-175 extendParam

Parameter	Mandatory	Type	Description
decMasterFlavor	No	String	Specifications of the master node in the dedicated hybrid cluster

Parameter	Mandatory	Type	Description
isAutoPay	No	String	Whether auto payment is enabled. <ul style="list-style-type: none"> • true: Auto payment is enabled. • false: Auto payment is not enabled. NOTE This field is valid for yearly/monthly clusters. If not specified, auto payment is not enabled.

Response Parameters

Status code: 201

Table 4-176 Response body parameters

Parameter	Type	Description
jobID	String	ID of the job
orderID	String	ID of the order for modifying the specifications of a yearly/monthly billed cluster

Example Requests

- Modifying the specifications of the yearly/monthly cluster (automatic payment)

```
POST /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/resize
```

```
{
  "flavorResize": "cce.s1.medium",
  "extendParam": {
    "isAutoPay": "true"
  }
}
```

- Modifying the specifications of the pay-per-use cluster

```
POST /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/resize
```

```
{
  "flavorResize": "cce.s1.medium"
}
```

Example Responses

Status code: 201

The job for modifying the specifications of the pay-per-use cluster is delivered.

```
{  
  "jobID" : "13b8d958-8fcf-11ed-ae3-0255ac1001bd"  
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

- Modifying the specifications of the yearly/monthly cluster (automatic payment)

```
package com.huaweicloud.sdk.test;  
  
import com.huaweicloud.sdk.core.auth.ICredential;  
import com.huaweicloud.sdk.core.auth.BasicCredentials;  
import com.huaweicloud.sdk.core.exception.ConnectionException;  
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;  
import com.huaweicloud.sdk.core.exception.ServiceResponseException;  
import com.huaweicloud.sdk.cce.v3.region.CceRegion;  
import com.huaweicloud.sdk.cce.v3.*;  
import com.huaweicloud.sdk.cce.v3.model.*;  
  
public class ResizeClusterSolution {  
    public static void main(String[] args) {  
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great  
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or  
        // environment variables and decrypted during use to ensure security.  
        // In this example, AK and SK are stored in environment variables for authentication. Before  
        // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local  
        // environment  
        String ak = System.getenv("CLOUD_SDK_AK");  
        String sk = System.getenv("CLOUD_SDK_SK");  
        String projectId = "{project_id}";  
  
        ICredential auth = new BasicCredentials()  
            .withProjectId(projectId)  
            .withAk(ak)  
            .withSk(sk);  
  
        CceClient client = CceClient.newBuilder()  
            .withCredential(auth)  
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))  
            .build();  
        ResizeClusterRequest request = new ResizeClusterRequest();  
        request.withClusterId("{cluster_id}");  
        ResizeClusterRequestBody body = new ResizeClusterRequestBody();  
        ResizeClusterRequestBodyExtendParam extendParambody = new  
        ResizeClusterRequestBodyExtendParam();  
        extendParambody.withIsAutoPay("true");  
        body.withExtendParam(extendParambody);  
        body.withFlavorResize("cce.s1.medium");  
        request.withBody(body);  
        try {  
            ResizeClusterResponse response = client.resizeCluster(request);  
            System.out.println(response.toString());  
        } catch (ConnectionException e) {  
            e.printStackTrace();  
        } catch (RequestTimeoutException e) {  
            e.printStackTrace();  
        } catch (ServiceResponseException e) {  
            e.printStackTrace();  
            System.out.println(e.getHttpStatusCode());  
            System.out.println(e.getRequestId());  
            System.out.println(e.getErrorCode());  
        }  
    }  
}
```

```
        System.out.println(e.getErrorMsg());
    }
}
}
```

- Modifying the specifications of the pay-per-use cluster

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ResizeClusterSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before
        // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
        // environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        ResizeClusterRequest request = new ResizeClusterRequest();
        request.withClusterId("{cluster_id}");
        ResizeClusterRequestBody body = new ResizeClusterRequestBody();
        body.withFlavorResize("cce.s1.medium");
        request.withBody(body);
        try {
            ResizeClusterResponse response = client.resizeCluster(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

- Modifying the specifications of the yearly/monthly cluster (automatic payment)

```
# coding: utf-8
```

```
import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    # environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before
    # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    # environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ResizeClusterRequest()
        request.cluster_id = "{cluster_id}"
        extendParambody = ResizeClusterRequestBodyExtendParam(
            is_auto_pay="true"
        )
        request.body = ResizeClusterRequestBody(
            extend_param=extendParambody,
            flavor_resize="cce.s1.medium"
        )
        response = client.resize_cluster(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

- **Modifying the specifications of the pay-per-use cluster**

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    # environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before
    # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    # environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
```



```
request = ResizeClusterRequest()
request.cluster_id = "{cluster_id}"
request.body = ResizeClusterRequestBody(
    flavor_resize="cce.s1.medium"
)
response = client.resize_cluster(request)
print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

- Modifying the specifications of the yearly/monthly cluster (automatic payment)

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    // environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before
    // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    // environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ResizeClusterRequest{}
    request.ClusterId = "{cluster_id}"
    isAutoPayExtendParam := "true"
    extendParambody := &model.ResizeClusterRequestBodyExtendParam{
        IsAutoPay: &isAutoPayExtendParam,
    }
    request.Body = &model.ResizeClusterRequestBody{
        ExtendParam: extendParambody,
        FlavorResize: "cce.s1.medium",
    }
    response, err := client.ResizeCluster(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

- Modifying the specifications of the pay-per-use cluster

```

package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    // environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before
    // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    // environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ResizeClusterRequest{}
    request.ClusterId = "{cluster_id}"
    request.Body = &model.ResizeClusterRequestBody{
        FlavorResize: "cce.s1.medium",
    }
    response, err := client.ResizeCluster(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
201	The job for modifying the specifications of the pay-per-use cluster is delivered.

Error Codes

See [Error Codes](#).

4.2.11 Querying a Job

Function

This API is used to obtain information about a job via the job ID returned after a query request is delivered.

NOTE

- The URL for cluster management is in the format of **https://Endpoint/uri**. In the URL, **uri** indicates the resource path, that is, the path for API access.
- You can call this API when:
 - Creating or deleting a cluster
 - Creating or deleting a node

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3/projects/{project_id}/jobs/{job_id}

Table 4-177 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
job_id	Yes	String	<p>Job ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p>

Request Parameters

Table 4-178 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-179 Response body parameters

Parameter	Type	Description
kind	String	API type. The value is fixed at Job and cannot be changed.
apiVersion	String	API version. The value is fixed at v3 and cannot be changed.
metadata	JobMetadata object	Job metadata
spec	JobSpec object	Detailed job parameters
status	JobStatus object	Job status

Table 4-180 JobSpec

Parameter	Type	Description
type	String	Job type. An example value is CreateCluster .
clusterUID	String	ID of the cluster where the job runs.
resourceID	String	ID of the resource on which the job is executed.
resourceName	String	Name of the resource on which the job is executed.
extendParam	Map<String,String>	Extended parameters
subJobs	Array of Job objects	Subjob list. <ul style="list-style-type: none"> The list contains details about all subjobs. Generally, a cluster/node creation job consists of multiple subjobs. The job is complete only after all subjobs are complete.

Table 4-181 Job

Parameter	Type	Description
kind	String	API type. The value is fixed at Job and cannot be changed.
apiVersion	String	API version. The value is fixed at v3 and cannot be changed.

Parameter	Type	Description
metadata	JobMetadata object	Job metadata
spec	JobSpec object	Detailed job parameters
status	JobStatus object	Job status

Table 4-182 JobMetadata

Parameter	Type	Description
uid	String	Job ID
creationTimestamp	String	Time when the job was created
updateTimestamp	String	Time when the job was updated

Table 4-183 JobStatus

Parameter	Type	Description
phase	String	Job status. Possible values: <ul style="list-style-type: none"> JobPhaseInitializing JobPhase = "Initializing" JobPhaseRunning JobPhase = "Running" JobPhaseFailed JobPhase = "Failed" JobPhaseSuccess JobPhase = "Success"
reason	String	Reason why the job is in the current state.

Example Requests

None

Example Responses

Status code: 200

The progress of the specified job is successfully obtained.

```
{
  "kind": "Job",
  "apiVersion": "v3",
  "metadata": {
```

```
"uid" : "354331b2c-229a-11e8-9c75-0255ac100ceb",
"creationTimestamp" : "2018-08-02 08:12:40.672772389 +0000 UTC",
"updateTimestamp" : "2018-08-02 08:21:50.478108569 +0000 UTC"
},
"spec" : {
  "type" : "CreateCluster",
  "clusterUID" : "4d1ecb2c-229a-11e8-9c75-0255ac100ceb",
  "resourceID" : "6f4dcb2c-229a-11e8-9c75-0255ac100ceb",
  "resourceName" : "cluster-name",
  "extendParam" : {
    "serverID" : "bc467e3a-2338-11e8-825b-0255ac100c13"
  },
  "subJobs" : [ {
    "kind" : "Job",
    "apiVersion" : "v3",
    "metadata" : {
      "uid" : "fd474fab-9606-11e8-baa9-0255ac10215d",
      "creationTimestamp" : "2018-08-02 03:52:34.615819618 +0000 UTC",
      "updateTimestamp" : "2018-08-02 04:05:29.196243031 +0000 UTC"
    },
    "spec" : {
      "type" : "InstallMaster",
      "clusterUID" : "fcc72de0-9606-11e8-baa8-0255ac10215d",
      "resourceID" : "fd3b4ac0-9606-11e8-baa8-0255ac10215d",
      "extendParam" : {
        "serverID" : "fd3b4ac0-9606-11e8-baa8-0255ac10215d"
      }
    },
    "status" : {
      "phase" : "Success"
    }
  }, {
    "kind" : "Job",
    "apiVersion" : "v3",
    "metadata" : {
      "uid" : "fd474f82-9606-11e8-baa8-0255ac10215d",
      "creationTimestamp" : "2018-08-02 03:52:33.859150791 +0000 UTC",
      "updateTimestamp" : "2018-08-02 03:52:34.615655429 +0000 UTC"
    },
    "spec" : {
      "type" : "CreatePSMCert",
      "clusterUID" : "fcc72de0-9606-11e8-baa8-0255ac10215d"
    },
    "status" : {
      "phase" : "Success"
    }
  }
]
},
"status" : {
  "phase" : "Running",
  "reason" : ""
}
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
```

```
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ShowJobSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        ShowJobRequest request = new ShowJobRequest();
        request.withJobId("{job_id}");
        try {
            ShowJobResponse response = client.showJob(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.getenv("CLOUD_SDK_AK")
    sk = os.getenv("CLOUD_SDK_SK")
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
```



```
.build()

try:
    request = ShowJobRequest()
    request.job_id = "{job_id}"
    response = client.show_job(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ShowJobRequest{}
    request.JobId = "{job_id}"
    response, err := client.ShowJob(request)
    if err == nil {
        fmt.Printf("%v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The progress of the specified job is successfully obtained.

Error Codes

See [Error Codes](#).

4.2.12 Binding/Unbinding Public API Server Address

Function

This API is used to bind or unbind the public API server address of the cluster by cluster ID.

 **NOTE**

The URL for cluster management is in the format of https://Endpoint/uri. In the URL, **uri** indicates the resource path, that is, the path for API access.

Calling Method

For details, see [Calling APIs](#).

URI

PUT /api/v3/projects/{project_id}/clusters/{cluster_id}/mastereip

Table 4-184 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-185 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-186 Request body parameters

Parameter	Mandatory	Type	Description
spec	Yes	MasterEIPRequestSpec object	Parameters in the request for binding or unbinding the public API Server address of a cluster

Table 4-187 MasterEIPRequestSpec

Parameter	Mandatory	Type	Description
action	No	String	<p>Binding or unbinding. Mandatory.</p> <ul style="list-style-type: none"> Binding: The value is fixed at {"action": "bind"}. Unbinding: The value is fixed at {"action": "unbind"}.
spec	No	spec object	Configuration attributes of the elastic IP address to be bound
bandwidth	No	String	Bandwidth (This field has expired and is not recommended.)
elasticip	No	String	ENI IP (This field has expired and is not recommended.)

Table 4-188 spec

Parameter	Mandatory	Type	Description
id	No	String	Specifies the ENI ID. This parameter is mandatory for binding an ENI and is invalid for unbinding an ENI.

Response Parameters

Status code: 200

Table 4-189 Response body parameters

Parameter	Type	Description
metadata	Metadata object	Basic information about the object. Metadata is a collection of attributes.
spec	MasterEIPResponseSpec object	Configuration of the bound public API Server address of a cluster
status	status object	Status information

Table 4-190 Metadata

Parameter	Type	Description
uid	String	Unique ID.
name	String	Resource name
labels	Map<String,String>	Resource labels in key-value pairs. This is a reserved field and does not take effect.
annotations	Map<String,String>	Resource annotations in the format of key-value pairs.
updateTimestamp	String	Update time.
creationTimestamp	String	Creation time.

Table 4-191 MasterEIPResponseSpec

Parameter	Type	Description
action	String	A binding operation

Parameter	Type	Description
spec	spec object	Configuration attributes of the elastic IP address to be bound
elasticIp	String	EIP

Table 4-192 spec

Parameter	Type	Description
id	String	ENI ID
eip	EipSpec object	EIP details
IsDynamic	Boolean	Dynamic provisioning or not

Table 4-193 EipSpec

Parameter	Type	Description
bandwidth	bandwidth object	Bandwidth information

Table 4-194 bandwidth

Parameter	Type	Description
size	Integer	Bandwidth size
sharetype	String	Bandwidth type

Table 4-195 status

Parameter	Type	Description
privateEndpoint	String	Private IP for accessing the cluster (VIP in the case of an HA cluster)
publicEndpoint	String	Public IP for accessing the cluster

Example Requests

Bind the public API server address to a cluster.

```
{
  "spec" : {
    "action" : "bind",
    "spec" : {
```

```
"id" : "a757a69e-f920-455a-b1ba-d7a22db0fd50"  
}  
}  
}
```

Example Responses

Status code: 200

This indicates that the public API server address of the cluster is successfully bound. No response body is returned if the unbinding is successful.

```
{  
  "metadata" : { },  
  "spec" : {  
    "action" : "bind",  
    "spec" : {  
      "id" : "a757a69e-f920-455a-b1ba-d7a22db0fd50",  
      "eip" : {  
        "bandwidth" : {  
          "size" : 5,  
          "sharetype" : "PER"  
        }  
      }  
    },  
    "IsDynamic" : false  
  },  
  "elasticip" : "8.8.8.8"  
},  
"status" : {  
  "privateEndpoint" : "https://192.168.3.238:5443",  
  "publicEndpoint" : "https://8.8.8.8:5443"  
}  
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

Bind the public API server address to a cluster.

```
package com.huaweicloud.sdk.test;  
  
import com.huaweicloud.sdk.core.auth.ICredential;  
import com.huaweicloud.sdk.core.auth.BasicCredentials;  
import com.huaweicloud.sdk.core.exception.ConnectionException;  
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;  
import com.huaweicloud.sdk.core.exception.ServiceResponseException;  
import com.huaweicloud.sdk.cce.v3.region.CceRegion;  
import com.huaweicloud.sdk.cce.v3.*;  
import com.huaweicloud.sdk.cce.v3.model.*;  
  
public class UpdateClusterEipSolution {  
  
    public static void main(String[] args) {  
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great  
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or  
        // environment variables and decrypted during use to ensure security.  
        // In this example, AK and SK are stored in environment variables for authentication. Before running  
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment  
        String ak = System.getenv("CLOUD_SDK_AK");  
        String sk = System.getenv("CLOUD_SDK_SK");  
        String projectId = "{project_id}";
```

```
ICredential auth = new BasicCredentials()
    .withProjectId(projectId)
    .withAk(ak)
    .withSk(sk);

CceClient client = CceClient.newBuilder()
    .withCredential(auth)
    .withRegion(CceRegion.valueOf("<YOUR REGION>"))
    .build();
UpdateClusterEipRequest request = new UpdateClusterEipRequest();
request.withClusterId("{cluster_id}");
MasterEIPRequest body = new MasterEIPRequest();
MasterEIPRequestSpecSpec specSpec = new MasterEIPRequestSpecSpec();
specSpec.withId("a757a69e-f920-455a-b1ba-d7a22db0fd50");
MasterEIPRequestSpec specbody = new MasterEIPRequestSpec();
specbody.withAction(MasterEIPRequestSpec.ActionEnum.fromValue("bind"))
    .withSpec(specSpec);
body.withSpec(specbody);
request.withBody(body);
try {
    UpdateClusterEipResponse response = client.updateClusterEip(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

Bind the public API server address to a cluster.

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = UpdateClusterEipRequest()
        request.cluster_id = "{cluster_id}"
        specSpec = MasterEIPRequestSpecSpec(
```



```
        id="a757a69e-f920-455a-b1ba-d7a22db0fd50"
    )
    specbody = MasterEIPRequestSpec(
        action="bind",
        spec=specSpec
    )
    request.body = MasterEIPRequest(
        spec=specbody
    )
    response = client.update_cluster_eip(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

Bind the public API server address to a cluster.

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.UpdateClusterEipRequest{}
    request.ClusterId = "{cluster_id}"
    idSpec := "a757a69e-f920-455a-b1ba-d7a22db0fd50"
    specSpec := &model.MasterEipRequestSpecSpec{
        Id: &idSpec,
    }
    actionSpec := model.GetMasterEipRequestSpecActionEnum().BIND
    specbody := &model.MasterEipRequestSpec{
        Action: &actionSpec,
        Spec: specSpec,
    }
    request.Body = &model.MasterEipRequest{
        Spec: specbody,
    }
    response, err := client.UpdateClusterEip(request)
    if err == nil {
```

```
    fmt.Printf("%+v\n", response)
  } else {
    fmt.Println(err)
  }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	This indicates that the public API server address of the cluster is successfully bound. No response body is returned if the unbinding is successful.

Error Codes

See [Error Codes](#).

4.2.13 Obtaining Cluster Access Address

Function

This API is used to obtain the cluster access addresses by cluster ID, including the private IP (VIP returned by an HA cluster) and public IP.

NOTE

The URL for cluster management is in the format of `https://Endpoint/uri`. In the URL, **uri** indicates the resource path, that is, the path for API access.

Calling Method

For details, see [Calling APIs](#).

URI

GET `/api/v3/projects/{project_id}/clusters/{cluster_id}/openapi`

Table 4-196 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-197 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-198 Response body parameters

Parameter	Type	Description
metadata	Metadata object	Basic information about the object. Metadata is a collection of attributes.
spec	OpenAPISpec object	Parameters for configuring the address for accessing the cluster
status	status object	Status information

Table 4-199 Metadata

Parameter	Type	Description
uid	String	Unique ID.
name	String	Resource name
labels	Map<String,String >	Resource labels in key-value pairs. This is a reserved field and does not take effect.
annotations	Map<String,String >	Resource annotations in the format of key-value pairs.
updateTimestamp	String	Update time.
creationTimestamp	String	Creation time.

Table 4-200 OpenAPISpec

Parameter	Type	Description
spec	spec object	Address for accessing the cluster

Table 4-201 spec

Parameter	Type	Description
eip	EipSpec object	EIP details
IsDynamic	Boolean	Dynamic provisioning or not

Table 4-202 EipSpec

Parameter	Type	Description
bandwidth	bandwidth object	Bandwidth information

Table 4-203 bandwidth

Parameter	Type	Description
size	Integer	Bandwidth size
sharetype	String	Bandwidth type

Table 4-204 status

Parameter	Type	Description
privateEndpoint	String	Private IP for accessing the cluster (VIP in the case of an HA cluster)
publicEndpoint	String	Public IP for accessing the cluster

Example Requests

None

Example Responses

Status code: 200

The cluster access address is obtained successfully.

```
{
  "metadata": { },
  "spec": {
    "spec": {
      "eip": {
        "bandwidth": { }
      },
      "isDynamic": false
    }
  },
  "status": {
    "privateEndpoint": "https://192.168.3.238:5443",
    "publicEndpoint": ""
  }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ShowClusterEndpointsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        ShowClusterEndpointsRequest request = new ShowClusterEndpointsRequest();
        request.withClusterId("{cluster_id}");
        try {
            ShowClusterEndpointsResponse response = client.showClusterEndpoints(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
```

```
example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
ak = os.environ["CLOUD_SDK_AK"]
sk = os.environ["CLOUD_SDK_SK"]
projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = CceClient.new_builder() \
    .with_credentials(credentials) \
    .with_region(CceRegion.value_of("<YOUR REGION>")) \
    .build()

try:
    request = ShowClusterEndpointsRequest()
    request.cluster_id = "{cluster_id}"
    response = client.show_cluster_endpoints(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ShowClusterEndpointsRequest{}
    request.ClusterId = "{cluster_id}"
    response, err := client.ShowClusterEndpoints(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```


More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The cluster access address is obtained successfully.

Error Codes

See [Error Codes](#).

4.2.14 Obtaining a Cluster's Logging Configurations

Function

This API is used to obtain LTS configurations reported by the cluster components.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3/projects/{project_id}/cluster/{cluster_id}/log-configs

Table 4-205 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Table 4-206 Query Parameters

Parameter	Mandatory	Type	Description
type	No	String	<p>Component type. Options: control, audit, and system-addon. If this parameter is not specified, all component types will be obtained.</p> <ul style="list-style-type: none"> • control: Logs of the components on the master nodes will be obtained. • audit: Audit logs of the master nodes will be obtained. • system-addon: Logs of system add-ons will be obtained.

Request Parameters

Table 4-207 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-208 Response body parameters

Parameter	Type	Description
ttl_in_days	Integer	Time for storage
log_configs	Array of log_configs objects	Log configuration items

Table 4-209 log_configs

Parameter	Type	Description
name	String	Log type
enable	Boolean	Whether to collect logs.

Example Requests

The following example describes how to obtain add-on log configurations.

```
/api/v3/projects/{project_id}/cluster/{cluster_id}/log-configs?system-addon
```

Example Responses

Status code: 200

Cluster log configurations are obtained successfully.

```
{
  "log_configs": [ {
    "name": "volcano",
    "enable": true
  }, {
    "name": "coredns",
    "enable": false
  }, {
    "name": "everest",
    "enable": false
  } ]
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
```

```
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ShowClusterConfigSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        ShowClusterConfigRequest request = new ShowClusterConfigRequest();
        request.withClusterId("{cluster_id}");
        try {
            ShowClusterConfigResponse response = client.showClusterConfig(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.getenv("CLOUD_SDK_AK")
    sk = os.getenv("CLOUD_SDK_SK")
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.valueOf("<YOUR REGION>")) \
```

```
.build()

try:
    request = ShowClusterConfigRequest()
    request.cluster_id = "{cluster_id}"
    response = client.show_cluster_config(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ShowClusterConfigRequest{}
    request.ClusterId = "{cluster_id}"
    response, err := client.ShowClusterConfig(request)
    if err == nil {
        fmt.Printf("%v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Cluster log configurations are obtained successfully.

Error Codes

See [Error Codes](#).

4.2.15 Configuring Cluster Logs

Function

This API is used to select the master node components whose logs are reported to LTS.

Calling Method

For details, see [Calling APIs](#).

URI

PUT /api/v3/projects/{project_id}/cluster/{cluster_id}/log-configs

Table 4-210 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-211 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-212 Request body parameters

Parameter	Mandatory	Type	Description
ttl_in_days	No	Integer	Time for storage
log_configs	No	Array of log_configs objects	Log configuration items

Table 4-213 log_configs

Parameter	Mandatory	Type	Description
name	No	String	Log type
enable	No	Boolean	Whether to collect logs.

Response Parameters

Status code: 200

Table 4-214 Response body parameters

Parameter	Type	Description
ttl_in_days	Integer	Time for storage

Parameter	Type	Description
log_configs	Array of log_configs objects	Log configuration items

Table 4-215 log_configs

Parameter	Type	Description
name	String	Log type
enable	Boolean	Whether to collect logs.

Example Requests

The following example describes how to configure cluster logs that are reported to LTS.

```
/api/v3/projects/{project_id}/cluster/{cluster_id}/log-configs
```

```
{
  "log_configs": [ {
    "name": "kube-apiserver",
    "enable": true
  }, {
    "name": "kube-controller-manager",
    "enable": false
  }, {
    "name": "kube-scheduler",
    "enable": false
  }, {
    "name": "volcano",
    "enable": true
  }, {
    "name": "coredns",
    "enable": false
  }, {
    "name": "everest",
    "enable": false
  } ]
}
```

Example Responses

Status code: 200

Cluster logs are configured successfully.

```
{
  "ttl_in_days": 7,
  "log_configs": [ {
    "name": "kube-controller-manager",
    "enable": true
  }, {
    "name": "kube-apiserver",
    "enable": true
  }, {
    "name": "kube-scheduler",
```

```
"enable" : true
}, {
  "name" : "audit",
  "enable" : true
}]
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

The following example describes how to configure cluster logs that are reported to LTS.

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class UpdateClusterLogConfigSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        UpdateClusterLogConfigRequest request = new UpdateClusterLogConfigRequest();
        request.withClusterId("{cluster_id}");
        ClusterLogConfig body = new ClusterLogConfig();
        List<ClusterLogConfigLogConfigs> listbodyLogConfigs = new ArrayList<>();
        listbodyLogConfigs.add(
            new ClusterLogConfigLogConfigs()
                .withName("kube-apiserver")
                .withEnable(true)
        );
        listbodyLogConfigs.add(
            new ClusterLogConfigLogConfigs()
                .withName("kube-controller-manager")
                .withEnable(false)
        );
        listbodyLogConfigs.add(
            new ClusterLogConfigLogConfigs()
```

```
        .withName("kube-scheduler")
        .withEnable(false)
    );
    listbodyLogConfigs.add(
        new ClusterLogConfigLogConfigs()
            .withName("volcano")
            .withEnable(true)
    );
    listbodyLogConfigs.add(
        new ClusterLogConfigLogConfigs()
            .withName("coredns")
            .withEnable(false)
    );
    listbodyLogConfigs.add(
        new ClusterLogConfigLogConfigs()
            .withName("everest")
            .withEnable(false)
    );
    body.withLogConfigs(listbodyLogConfigs);
    request.withBody(body);
    try {
        UpdateClusterLogConfigResponse response = client.updateClusterLogConfig(request);
        System.out.println(response.toString());
    } catch (ConnectionException e) {
        e.printStackTrace();
    } catch (RequestTimeoutException e) {
        e.printStackTrace();
    } catch (ServiceResponseException e) {
        e.printStackTrace();
        System.out.println(e.getHttpStatusCode());
        System.out.println(e.getRequestId());
        System.out.println(e.getErrorCode());
        System.out.println(e.getErrorMsg());
    }
}
}
```

Python

The following example describes how to configure cluster logs that are reported to LTS.

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = UpdateClusterLogConfigRequest()
```

```
request.cluster_id = "{cluster_id}"
listLogConfigsbody = [
    ClusterLogConfigLogConfigs(
        name="kube-apiserver",
        enable=True
    ),
    ClusterLogConfigLogConfigs(
        name="kube-controller-manager",
        enable=False
    ),
    ClusterLogConfigLogConfigs(
        name="kube-scheduler",
        enable=False
    ),
    ClusterLogConfigLogConfigs(
        name="volcano",
        enable=True
    ),
    ClusterLogConfigLogConfigs(
        name="coredns",
        enable=False
    ),
    ClusterLogConfigLogConfigs(
        name="everest",
        enable=False
    )
]
request.body = ClusterLogConfig(
    log_configs=listLogConfigsbody
)
response = client.update_cluster_log_config(request)
print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

The following example describes how to configure cluster logs that are reported to LTS.

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()
}
```

```
client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.UpdateClusterLogConfigRequest{}
request.ClusterId = "{cluster_id}"
nameLogConfigs:= "kube-apiserver"
enableLogConfigs:= true
nameLogConfigs1:= "kube-controller-manager"
enableLogConfigs1:= false
nameLogConfigs2:= "kube-scheduler"
enableLogConfigs2:= false
nameLogConfigs3:= "volcano"
enableLogConfigs3:= true
nameLogConfigs4:= "coredns"
enableLogConfigs4:= false
nameLogConfigs5:= "everest"
enableLogConfigs5:= false
var listLogConfigsbody = []model.ClusterLogConfigLogConfigs{
    {
        Name: &nameLogConfigs,
        Enable: &enableLogConfigs,
    },
    {
        Name: &nameLogConfigs1,
        Enable: &enableLogConfigs1,
    },
    {
        Name: &nameLogConfigs2,
        Enable: &enableLogConfigs2,
    },
    {
        Name: &nameLogConfigs3,
        Enable: &enableLogConfigs3,
    },
    {
        Name: &nameLogConfigs4,
        Enable: &enableLogConfigs4,
    },
    {
        Name: &nameLogConfigs5,
        Enable: &enableLogConfigs5,
    },
}
request.Body = &model.ClusterLogConfig{
    LogConfigs: &listLogConfigsbody,
}
response, err := client.UpdateClusterLogConfig(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Cluster logs are configured successfully.

Error Codes

See [Error Codes](#).

4.2.16 Obtaining the Partition List

Function

This API is used to obtain the partition list.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3/projects/{project_id}/clusters/{cluster_id}/partitions

Table 4-216 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

None

Response Parameters

Status code: 200

Table 4-217 Response body parameters

Parameter	Type	Description
kind	String	Resource type
apiVersion	String	API version
items	Array of Partition objects	Cluster partition information

Table 4-218 Partition

Parameter	Type	Description
kind	String	Resource type
apiVersion	String	API version
metadata	metadata object	Metadata of partitions
spec	spec object	Partition configurations

Table 4-219 metadata

Parameter	Type	Description
name	String	Partition name
creationTimestamp	String	Creation time

Table 4-220 spec

Parameter	Type	Description
hostNetwork	hostNetwork object	Partition subnet
containerNetwork	Array of containerNetwork objects	Container subnet in the partition
publicBorderGroup	String	Group
category	String	Category

Table 4-221 hostNetwork

Parameter	Type	Description
subnetID	String	Subnet ID

Table 4-222 containerNetwork

Parameter	Type	Description
subnetID	String	Subnet ID

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "kind": "List",
  "apiVersion": "v3",
```

```
"items" : [ {  
  "kind" : "Partition",  
  "apiVersion" : "v3",  
  "metadata" : {  
    "name" : "partitionName",  
    "creationTimestamp" : "2000-1-1 00:00:35.451967 +0000 UTC"  
  },  
  "spec" : {  
    "hostNetwork" : {  
      "subnetID" : "subnetID"  
    },  
    "containerNetwork" : [ {  
      "subnetID" : "subnetID"  
    } ],  
    "publicBorderGroup" : "publicBorderGroup",  
    "category" : "category"  
  }  
}  
]
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;  
  
import com.huaweicloud.sdk.core.auth.ICredential;  
import com.huaweicloud.sdk.core.auth.BasicCredentials;  
import com.huaweicloud.sdk.core.exception.ConnectionException;  
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;  
import com.huaweicloud.sdk.core.exception.ServiceResponseException;  
import com.huaweicloud.sdk.cce.v3.region.CceRegion;  
import com.huaweicloud.sdk.cce.v3.*;  
import com.huaweicloud.sdk.cce.v3.model.*;  
  
public class ListPartitionsSolution {  
  
    public static void main(String[] args) {  
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great  
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or  
        // environment variables and decrypted during use to ensure security.  
        // In this example, AK and SK are stored in environment variables for authentication. Before running  
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment  
        String ak = System.getenv("CLOUD_SDK_AK");  
        String sk = System.getenv("CLOUD_SDK_SK");  
        String projectId = "{project_id}";  
  
        ICredential auth = new BasicCredentials()  
            .withProjectId(projectId)  
            .withAk(ak)  
            .withSk(sk);  
  
        CceClient client = CceClient.newBuilder()  
            .withCredential(auth)  
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))  
            .build();  
        ListPartitionsRequest request = new ListPartitionsRequest();  
        request.withClusterId("{cluster_id}");  
        try {  
            ListPartitionsResponse response = client.listPartitions(request);  
            System.out.println(response.toString());  
        } catch (ConnectionException e) {  
            e.printStackTrace();  
        } catch (RequestTimeoutException e) {  
            e.printStackTrace();  
        }
```

```

    } catch (ServiceResponseException e) {
        e.printStackTrace();
        System.out.println(e.getHttpStatusCode());
        System.out.println(e.getRequestId());
        System.out.println(e.getErrorCode());
        System.out.println(e.getErrorMsg());
    }
}
}

```

Python

```

# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ListPartitionsRequest()
        request.cluster_id = "{cluster_id}"
        response = client.list_partitions(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)

```

Go

```

package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

```

```
auth := basic.NewCredentialsBuilder().
    WithAk(ak).
    WithSk(sk).
    WithProjectId(projectId).
    Build()

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.ListPartitionsRequest{}
request.ClusterId = "{cluster_id}"
response, err := client.ListPartitions(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.2.17 Creating a Partition

Function

This API is used to create a partition.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/partitions

Table 4-223 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-224 Request body parameters

Parameter	Mandatory	Type	Description
kind	No	String	Resource type
apiVersion	No	String	API version
metadata	No	metadata object	Metadata of partitions
spec	No	spec object	Partition configurations

Table 4-225 metadata

Parameter	Mandatory	Type	Description
name	No	String	Partition name

Table 4-226 spec

Parameter	Mandatory	Type	Description
hostNetwork	No	hostNetwork object	Partition subnet
containerNetwork	No	Array of containerNetwork objects	Container subnet in the partition
publicBorderGroup	No	String	Group
category	No	String	Category

Table 4-227 hostNetwork

Parameter	Mandatory	Type	Description
subnetID	No	String	Subnet ID

Table 4-228 containerNetwork

Parameter	Mandatory	Type	Description
subnetID	No	String	Subnet ID

Response Parameters

Status code: 200

Table 4-229 Response body parameters

Parameter	Type	Description
kind	String	Resource type
apiVersion	String	API version
metadata	metadata object	Metadata of partitions

Parameter	Type	Description
spec	spec object	Partition configurations

Table 4-230 metadata

Parameter	Type	Description
name	String	Partition name
creationTimestamp	String	Creation time

Table 4-231 spec

Parameter	Type	Description
hostNetwork	hostNetwork object	Partition subnet
containerNetwork	Array of containerNetwork objects	Container subnet in the partition
publicBorderGroup	String	Group
category	String	Category

Table 4-232 hostNetwork

Parameter	Type	Description
subnetID	String	Subnet ID

Table 4-233 containerNetwork

Parameter	Type	Description
subnetID	String	Subnet ID

Example Requests

```
POST /api/v3/projects/{project_id}/clusters/{cluster_id}/partitions
```

```
{
  "kind": "Partition",
  "apiVersion": "v3",
```

```
"metadata" : {
  "name" : "partitionName"
},
"spec" : {
  "hostNetwork" : {
    "subnetID" : "subnetID"
  },
  "containerNetwork" : [ {
    "subnetID" : "subnetID"
  } ],
  "publicBorderGroup" : "publicBorderGroup",
  "category" : "category"
}
}
```

Example Responses

Status code: 200

OK

```
{
  "kind" : "Partition",
  "apiVersion" : "v3",
  "metadata" : {
    "name" : "partitionName",
    "creationTimestamp" : "2000-1-1 00:00:35.451967 +0000 UTC"
  },
  "spec" : {
    "hostNetwork" : {
      "subnetID" : "subnetID"
    },
    "containerNetwork" : [ {
      "subnetID" : "subnetID"
    } ],
    "publicBorderGroup" : "publicBorderGroup",
    "category" : "category"
  }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class CreatePartitionSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
```


this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment

```
String ak = System.getenv("CLOUD_SDK_AK");
String sk = System.getenv("CLOUD_SDK_SK");
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
    .withProjectId(projectId)
    .withAk(ak)
    .withSk(sk);

CceClient client = CceClient.newBuilder()
    .withCredential(auth)
    .withRegion(CceRegion.valueOf("<YOUR REGION>"))
    .build();

CreatePartitionRequest request = new CreatePartitionRequest();
request.withClusterId("{cluster_id}");
PartitionReqBody body = new PartitionReqBody();
List<PartitionReqBodySpecContainerNetwork> listSpecContainerNetwork = new ArrayList<>();
listSpecContainerNetwork.add(
    new PartitionReqBodySpecContainerNetwork()
        .withSubnetID("subnetID")
);
PartitionReqBodySpecHostNetwork hostNetworkSpec = new PartitionReqBodySpecHostNetwork();
hostNetworkSpec.withSubnetID("subnetID");
PartitionReqBodySpec specbody = new PartitionReqBodySpec();
specbody.withHostNetwork(hostNetworkSpec)
    .withContainerNetwork(listSpecContainerNetwork)
    .withPublicBorderGroup("publicBorderGroup")
    .withCategory("category");
PartitionReqBodyMetadata metadatabody = new PartitionReqBodyMetadata();
metadatabody.withName("partitionName");
body.withSpec(specbody);
body.withMetadata(metadatabody);
body.withApiVersion("v3");
body.withKind("Partition");
request.withBody(body);
try {
    CreatePartitionResponse response = client.createPartition(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
```

```
ak = os.environ["CLOUD_SDK_AK"]
sk = os.environ["CLOUD_SDK_SK"]
projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = CceClient.new_builder() \
    .with_credentials(credentials) \
    .with_region(CceRegion.value_of("<YOUR REGION>")) \
    .build()

try:
    request = CreatePartitionRequest()
    request.cluster_id = "{cluster_id}"
    listContainerNetworkSpec = [
        PartitionReqBodySpecContainerNetwork(
            subnet_id="subnetID"
        )
    ]
    hostNetworkSpec = PartitionReqBodySpecHostNetwork(
        subnet_id="subnetID"
    )
    specbody = PartitionReqBodySpec(
        host_network=hostNetworkSpec,
        container_network=listContainerNetworkSpec,
        public_border_group="publicBorderGroup",
        category="category"
    )
    metadatabody = PartitionReqBodyMetadata(
        name="partitionName"
    )
    request.body = PartitionReqBody(
        spec=specbody,
        metadata=metadatabody,
        api_version="v3",
        kind="Partition"
    )
    response = client.create_partition(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
```

```

WithSk(sk).
WithProjectId(projectId).
Build()

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.CreatePartitionRequest{}
request.ClusterId = "{cluster_id}"
subnetIDContainerNetwork:= "subnetID"
var listContainerNetworkSpec = []model.PartitionReqBodySpecContainerNetwork{
    {
        SubnetID: &subnetIDContainerNetwork,
    },
}
subnetIDHostNetwork:= "subnetID"
hostNetworkSpec := &model.PartitionReqBodySpecHostNetwork{
    SubnetID: &subnetIDHostNetwork,
}
publicBorderGroupSpec:= "publicBorderGroup"
categorySpec:= "category"
specbody := &model.PartitionReqBodySpec{
    HostNetwork: hostNetworkSpec,
    ContainerNetwork: &listContainerNetworkSpec,
    PublicBorderGroup: &publicBorderGroupSpec,
    Category: &categorySpec,
}
nameMetadata:= "partitionName"
metadatabody := &model.PartitionReqBodyMetadata{
    Name: &nameMetadata,
}
apiVersionPartitionReqBody:= "v3"
kindPartitionReqBody:= "Partition"
request.Body = &model.PartitionReqBody{
    Spec: specbody,
    Metadata: metadatabody,
    ApiVersion: &apiVersionPartitionReqBody,
    Kind: &kindPartitionReqBody,
}
response, err := client.CreatePartition(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.2.18 Obtaining Partition Details

Function

This API is used to obtain partition details.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3/projects/{project_id}/clusters/{cluster_id}/partitions/{partition_name}

Table 4-234 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>
partition_name	Yes	String	Partition name

Request Parameters

None

Response Parameters

Status code: 200

Table 4-235 Response body parameters

Parameter	Type	Description
kind	String	Resource type
apiVersion	String	API version
metadata	metadata object	Metadata of partitions
spec	spec object	Partition configurations

Table 4-236 metadata

Parameter	Type	Description
name	String	Partition name
creationTimestamp	String	Creation time

Table 4-237 spec

Parameter	Type	Description
hostNetwork	hostNetwork object	Partition subnet
containerNetwork	Array of containerNetwork objects	Container subnet in the partition
publicBorderGroup	String	Group
category	String	Category

Table 4-238 hostNetwork

Parameter	Type	Description
subnetID	String	Subnet ID

Table 4-239 containerNetwork

Parameter	Type	Description
subnetID	String	Subnet ID

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "kind": "Partition",
  "apiVersion": "v3",
  "metadata": {
    "name": "partitionName",
    "creationTimestamp": "2000-1-1 00:00:35.451967 +0000 UTC"
  },
  "spec": {
    "hostNetwork": {
      "subnetID": "subnetID"
    }
  },
  "containerNetwork": [ {
    "subnetID": "subnetID"
  } ],
  "publicBorderGroup": "publicBorderGroup",
  "category": "category"
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ShowPartitionSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
```

```
String sk = System.getenv("CLOUD_SDK_SK");
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
    .withProjectId(projectId)
    .withAk(ak)
    .withSk(sk);

CceClient client = CceClient.newBuilder()
    .withCredential(auth)
    .withRegion(CceRegion.valueOf("<YOUR REGION>"))
    .build();
ShowPartitionRequest request = new ShowPartitionRequest();
request.withPartitionName("{partition_name}");
request.withClusterId("{cluster_id}");
try {
    ShowPartitionResponse response = client.showPartition(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.getenv("CLOUD_SDK_AK")
    sk = os.getenv("CLOUD_SDK_SK")
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ShowPartitionRequest()
        request.partition_name = "{partition_name}"
        request.cluster_id = "{cluster_id}"
        response = client.show_partition(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
```

```
print(e.error_code)
print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ShowPartitionRequest{}
    request.PartitionName = "{partition_name}"
    request.ClusterId = "{cluster_id}"
    response, err := client.ShowPartition(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.2.19 Updating a Partition

Function

This API is used to update a partition.

Calling Method

For details, see [Calling APIs](#).

URI

PUT /api/v3/projects/{project_id}/clusters/{cluster_id}/partitions/{partition_name}

Table 4-240 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>
partition_name	Yes	String	Partition name

Request Parameters

Table 4-241 Request body parameters

Parameter	Mandatory	Type	Description
kind	No	String	Resource type
apiVersion	No	String	API version
metadata	No	metadata object	Metadata of partitions
spec	No	spec object	Partition configurations

Table 4-242 metadata

Parameter	Mandatory	Type	Description
name	No	String	Partition name

Table 4-243 spec

Parameter	Mandatory	Type	Description
hostNetwork	No	hostNetwork object	Partition subnet
containerNetwork	No	Array of containerNetwork objects	Container subnet in the partition
publicBorderGroup	No	String	Group
category	No	String	Category

Table 4-244 hostNetwork

Parameter	Mandatory	Type	Description
subnetID	No	String	Subnet ID

Table 4-245 containerNetwork

Parameter	Mandatory	Type	Description
subnetID	No	String	Subnet ID

Response Parameters

Status code: 200

Table 4-246 Response body parameters

Parameter	Type	Description
kind	String	Resource type
apiVersion	String	API version
metadata	metadata object	Metadata of partitions
spec	spec object	Partition configurations

Table 4-247 metadata

Parameter	Type	Description
name	String	Partition name
creationTimestamp	String	Creation time

Table 4-248 spec

Parameter	Type	Description
hostNetwork	hostNetwork object	Partition subnet
containerNetwork	Array of containerNetwork objects	Container subnet in the partition
publicBorderGroup	String	Group
category	String	Category

Table 4-249 hostNetwork

Parameter	Type	Description
subnetID	String	Subnet ID

Table 4-250 containerNetwork

Parameter	Type	Description
subnetID	String	Subnet ID

Example Requests

```
PUT /api/v3/projects/{project_id}/clusters/{cluster_id}/partitions/{partition_name}
{
  "kind": "Partition",
  "apiVersion": "v3",
  "metadata": {
    "name": "partitionName"
  },
  "spec": {
    "hostNetwork": {
      "subnetID": "subnetID"
    },
    "containerNetwork": [ {
      "subnetID": "subnetID"
    } ],
    "publicBorderGroup": "publicBorderGroup",
    "category": "category"
  }
}
```

Example Responses

Status code: 200

OK

```
{
  "kind": "Partition",
  "apiVersion": "v3",
  "metadata": {
    "name": "partitionName",
    "creationTimestamp": "2000-1-1 00:00:35.451967 +0000 UTC"
  },
  "spec": {
    "hostNetwork": {
      "subnetID": "subnetID"
    },
    "containerNetwork": [ {
      "subnetID": "subnetID"
    } ],
    "publicBorderGroup": "publicBorderGroup",
    "category": "category"
  }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
```

```
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class UpdatePartitionSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();

        UpdatePartitionRequest request = new UpdatePartitionRequest();
        request.withPartitionName("{partition_name}");
        request.withClusterId("{cluster_id}");
        PartitionReqBody body = new PartitionReqBody();
        List<PartitionReqBodySpecContainerNetwork> listSpecContainerNetwork = new ArrayList<>();
        listSpecContainerNetwork.add(
            new PartitionReqBodySpecContainerNetwork()
                .withSubnetID("subnetID")
        );
        PartitionReqBodySpecHostNetwork hostNetworkSpec = new PartitionReqBodySpecHostNetwork();
        hostNetworkSpec.withSubnetID("subnetID");
        PartitionReqBodySpec specbody = new PartitionReqBodySpec();
        specbody.withHostNetwork(hostNetworkSpec)
            .withContainerNetwork(listSpecContainerNetwork)
            .withPublicBorderGroup("publicBorderGroup")
            .withCategory("category");
        PartitionReqBodyMetadata metadatabody = new PartitionReqBodyMetadata();
        metadatabody.withName("partitionName");
        body.withSpec(specbody);
        body.withMetadata(metadatabody);
        body.withApiVersion("v3");
        body.withKind("Partition");
        request.withBody(body);
        try {
            UpdatePartitionResponse response = client.updatePartition(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

```
}  
}
```

Python

```
# coding: utf-8  
  
import os  
from huaweicloudsdkcore.auth.credentials import BasicCredentials  
from huaweicloudsdkcce.v3.region.cce_region import CceRegion  
from huaweicloudsdkcore.exceptions import exceptions  
from huaweicloudsdkcce.v3 import *  
  
if __name__ == "__main__":  
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security  
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment  
    # variables and decrypted during use to ensure security.  
    # In this example, AK and SK are stored in environment variables for authentication. Before running this  
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment  
    ak = os.environ["CLOUD_SDK_AK"]  
    sk = os.environ["CLOUD_SDK_SK"]  
    projectId = "{project_id}"  
  
    credentials = BasicCredentials(ak, sk, projectId)  
  
    client = CceClient.new_builder() \  
        .with_credentials(credentials) \  
        .with_region(CceRegion.value_of("<YOUR REGION>")) \  
        .build()  
  
    try:  
        request = UpdatePartitionRequest()  
        request.partition_name = "{partition_name}"  
        request.cluster_id = "{cluster_id}"  
        listContainerNetworkSpec = [  
            PartitionReqBodySpecContainerNetwork(  
                subnet_id="subnetID"  
            )  
        ]  
        hostNetworkSpec = PartitionReqBodySpecHostNetwork(  
            subnet_id="subnetID"  
        )  
        specbody = PartitionReqBodySpec(  
            host_network=hostNetworkSpec,  
            container_network=listContainerNetworkSpec,  
            public_border_group="publicBorderGroup",  
            category="category"  
        )  
        metadatabody = PartitionReqBodyMetadata(  
            name="partitionName"  
        )  
        request.body = PartitionReqBody(  
            spec=specbody,  
            metadata=metadatabody,  
            api_version="v3",  
            kind="Partition"  
        )  
        response = client.update_partition(request)  
        print(response)  
    except exceptions.ClientRequestException as e:  
        print(e.status_code)  
        print(e.request_id)  
        print(e.error_code)  
        print(e.error_msg)
```

Go

```
package main
```

```
import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.UpdatePartitionRequest{}
    request.PartitionName = "{partition_name}"
    request.ClusterId = "{cluster_id}"
    subnetIDContainerNetwork:= "subnetID"
    var listContainerNetworkSpec = []model.PartitionReqBodySpecContainerNetwork{
        {
            SubnetID: &subnetIDContainerNetwork,
        },
    }
    subnetIDHostNetwork:= "subnetID"
    hostNetworkSpec := &model.PartitionReqBodySpecHostNetwork{
        SubnetID: &subnetIDHostNetwork,
    }
    publicBorderGroupSpec:= "publicBorderGroup"
    categorySpec:= "category"
    specbody := &model.PartitionReqBodySpec{
        HostNetwork: hostNetworkSpec,
        ContainerNetwork: &listContainerNetworkSpec,
        PublicBorderGroup: &publicBorderGroupSpec,
        Category: &categorySpec,
    }
    nameMetadata:= "partitionName"
    metadatabody := &model.PartitionReqBodyMetadata{
        Name: &nameMetadata,
    }
    apiVersionPartitionReqBody:= "v3"
    kindPartitionReqBody:= "Partition"
    request.Body = &model.PartitionReqBody{
        Spec: specbody,
        Metadata: metadatabody,
        ApiVersion: &apiVersionPartitionReqBody,
        Kind: &kindPartitionReqBody,
    }
    response, err := client.UpdatePartition(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

```
}  
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.3 Node Management

4.3.1 Creating a Node

Function

This API is used to create a node in a specified cluster.

NOTE

- If there is no cluster, [create one](#).
- The URL for cluster management is in the format of **https://Endpoint/uri**. In the URL, **uri** indicates the resource path, that is, the path for API access.

Constraints

Only KVM nodes can be created. Non-KVM nodes cannot be used after being created.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes

Table 4-251 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Table 4-252 Query Parameters

Parameter	Mandatory	Type	Description
nodepoolScaleUp	No	String	Whether the request is delivered by the node pool. If the value is not NodepoolScaleUp , the number of pods in the corresponding node pool is automatically updated.

Request Parameters

Table 4-253 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-254 Request body parameters

Parameter	Mandatory	Type	Description
kind	Yes	String	API type. The value is fixed at Node and cannot be changed.

Parameter	Mandatory	Type	Description
apiVersion	Yes	String	API version. The value is fixed at v3 and cannot be changed.
metadata	No	NodeMetadata object	Node metadata, which is a collection of attributes.
spec	Yes	NodeSpec object	Detailed description of the node. CCE creates or updates objects by defining or updating spec .

Table 4-255 NodeMetadata

Parameter	Mandatory	Type	Description
name	No	String	<p>Node name.</p> <p>NOTE Enter 1 to 56 characters starting with a lowercase letter and not ending with a hyphen (-). Only lowercase letters, digits, hyphens (-), and periods (.) are allowed.</p> <p>If name is not configured or is left blank, the node name is generated based on the default rule, which is <i>Cluster name-Random characters</i>. Only the first 36 characters are kept for a long cluster name.</p> <p>If the number of nodes (count) is greater than 1, some random characters are added to the end of the entered node name according to the default rule, which is <i>User-defined name-Random characters</i>. If the length of the entered node name exceeds 50 characters, the system uses the first 50 characters and adds a random character string to the end of the name.</p>
uid	No	String	Node ID, which is unique and automatically generated after the resource is created. A user-defined ID will not take effect.

Parameter	Mandatory	Type	Description
labels	No	Map<String,String>	<p>CCE node label (not the native Kubernetes label).</p> <p>Labels are used to select objects that meet certain criteria. A label is a key-value pair.</p> <p>Example:</p> <pre>"labels": { "key": "value" }</pre>
annotations	No	Map<String,String>	<p>CCE node annotations, in key-value pairs (not the native Kubernetes annotations).</p> <p>Example:</p> <pre>"annotations": { "key1": "value1", "key2": "value2" }</pre> <p>NOTE</p> <ul style="list-style-type: none"> • annotations are not used to identify or select objects. The metadata in annotations may be small or large, structured or unstructured, and may include characters that are not allowed in labels. • This parameter is used only for query and cannot be input through a request. Entered data of this parameter is invalid.
creationTimestamp	No	String	Time when the object was created. The value is automatically generated after the object is created. A user-defined value will not take effect.
updateTimestamp	No	String	Time when the object was updated. The value is automatically generated after the object is created. A user-defined value will not take effect.
ownerReference	No	ownerReference object	Owner object

Table 4-256 ownerReference

Parameter	Mandatory	Type	Description
nodepoolName	No	String	Node pool name
nodepoolID	No	String	Node pool UID

Table 4-257 NodeSpec

Parameter	Mandatory	Type	Description
flavor	Yes	String	<p>Details: Node flavors. For details about the node flavors supported by CCE clusters, see Node Specifications.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
az	Yes	String	<p>Details: AZ where the node to be created is located. You need to specify the AZ name. Random AZs will not be allocated to a node created using APIs. For details about AZs supported by CCE, see Regions and Endpoints.</p> <p>Constraints: When you are creating a node pool and configuring a scaling group, this parameter cannot be set to random.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
os	No	String	<p>Details: Node OS. For details about the supported OSs, see Node OSs.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If the selected OS is not supported by the current cluster version, it will be automatically replaced with a supported OS of the same series. • If alpha.cce/NodeImageID in extendParam is specified during node creation, you do not need to configure this parameter. • If this parameter is not specified, CCE automatically selects a supported OS version based on the cluster version. • This parameter is mandatory when creating a node pool. • If you are using shared disk space when creating a node, this parameter is mandatory. Specifically, the disk initialization configuration management parameter storage is used and the name field of virtualSpaces in StorageGroups is set to share. <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
login	Yes	Login object	<p>Details: Node login mode. Either the key pair or password must be used for login.</p> <p>Constraints: This parameter cannot be modified when a node pool is being updated.</p>
rootVolume	Yes	Volume object	<p>Details: Disk information of a node</p> <p>Constraints: None</p>
dataVolumes	No	Array of Volume objects	<p>Details: Data disk parameters of a node. For DeC nodes, the parameter details are the same as those in rootVolume.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • A VM can have up to 16 disks attached, while a BMS can only have up to 10 disks attached. The maximum number of disks that can be attached to either a VM or BMS is limited by their respective maximum disk limits. (You can add more data disks to each of your nodes through the CCE console or APIs.) • The data disk used by the container runtime and kubelet cannot be detached, or the node will become unavailable. • This parameter can be left blank only when a system disk is selected for the system components.

Parameter	Mandatory	Type	Description
storage	No	Storage object	<p>Details: Disk initialization management parameter. This parameter is complex to configure. For details, see Attaching Disks to a Node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This field is supported by clusters of v1.15.11-r0 and later versions. If the cluster version is not supported, this field will be ignored. • If a node has both local and EVS disks attached, make sure to not keep the default value for this parameter, or it may result in unexpected disk partitions. • If you want to change the value range of a data disk to 20 to 32768, do not use the default value. • If you want to use the shared disk space (with the runtime and Kubernetes partitions cancelled), do not retain the default value of this parameter. For details about the shared disk space, see Space Allocation of a Data Disk. • If you want to store system components in the system disk, do not use the default value.
publicIP	No	NodePublicIP object	<p>Details: EIP of a node</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>

Parameter	Mandatory	Type	Description
nodeNicSpec	No	NodeNicSpec object	<p>Details: ENI of a node</p> <p>Constraints: None</p>
count	No	Integer	<p>Details: Number of nodes to be created in batches</p> <p>Constraints: This parameter can be left blank when it is used for a node pool.</p> <p>Options: Positive integers that are greater than or equal to 1 and less than or equal to the maximum limit</p> <p>Default value: N/A</p>
billingMode	No	Integer	<p>Details: Billing mode of a node</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • 0: pay-per-use • 1: yearly/monthly • 2: (Discarded) yearly/monthly billing with auto payment enabled <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
taints	No	Array of Taint objects	<p>Details:</p> <p>Taints, which can be added to nodes for anti-affinity configuration. Each taint contains the following parameters:</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain can be prefixed to a key. • Value: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. • Effect: Available options are NoSchedule, PreferNoSchedule, and NoExecute. <p>When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example:</p> <pre>"taints": [{ "key": "status", "value": "unavailable", "effect": "NoSchedule" }, { "key": "looks", "value": "bad", "effect": "NoSchedule" }]</pre> <p>Constraints:</p> <p>A maximum of 20 taints can be configured.</p>

Parameter	Mandatory	Type	Description
k8sTags	No	Map<String,String>	<p>Details: Defined in key-value pairs.</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain containing a maximum of 253 characters (such as example.com/my-key) can be prefixed to a key. • Value: The value can be left blank or contain 1 to 63 characters that start and end with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. <p>When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example:</p> <pre>"k8sTags": { "key": "value" }</pre> <p>Constraints: A maximum of 20 key-value pairs are allowed.</p>

Parameter	Mandatory	Type	Description
ecsGroupId	No	String	<p>Details: ECS group ID. If this parameter is specified, nodes will be created in the specific ECS group.</p> <p>Constraints: This configuration does not take effect when a node pool is created. To ensure that all nodes in a node pool are in the same ECS group, configure nodeManagement in the node pool.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
dedicatedHostId	No	String	<p>Details: ID of the DeH to which nodes will be scheduled.</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>

Parameter	Mandatory	Type	Description
userTags	No	Array of UserTag objects	<p>Details: Cloud server tag (resource tag). When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The key of a tag must be unique. The maximum number of custom tags supported by CCE varies depending on regions and cannot exceed 8. • A tag key can have a maximum of 36 characters. It can only contain letters, digits, Unicode characters, and special characters (-_).
runtime	No	Runtime object	<p>Details: Container runtime</p> <ul style="list-style-type: none"> • Clusters earlier than v1.25: The default value is docker. • Clusters of v1.25 or later: The default value varies with the OSs. • For nodes running EulerOS 2.5 or EulerOS 2.8, the default container runtime is docker. For nodes running other OSs, the default container runtime is containerd. <p>Constraints: None</p>

Parameter	Mandatory	Type	Description
initializedConditions	No	Array of strings	<p>Details: Custom initialization flag, which is left blank by default. Before CCE nodes are initialized, they are tainted with node.cloudprovider.kubernetes.io/uninitialized to prevent pods from being scheduled to them. When creating a node, you can specify the initializedConditions parameter to control the taint removal time. By default, the timeout interval is not configured.</p> <p>Example:</p> <ol style="list-style-type: none"> 1. Create a node and add parameter <code>"initializedConditions": ["CCEInitial", "CustomedInitial"]</code>. 2. After custom initialization is complete, CCE will call a Kubernetes API (for example, PATCH /v1/nodes/{node_ip}/status) to update the node conditions by adding two labels of types CCEInitial and CustomedInitial and setting the status to True, as shown in the following: <pre>status: conditions: - type: CCEInitial status: 'True' - type: CustomedInitial status: 'True'</pre> <ol style="list-style-type: none"> 1. CCE polls status.Conditions of nodes to check whether there are conditions of types CCEInitial and CustomedInitial. If such conditions exist and the status is True, the node initialization is complete and the initialization taint is removed.

Parameter	Mandatory	Type	Description
			<p>2. initializedConditions allows you to configure a timeout period during node creation. For example, "initializedConditions": ["CCEInitial:15m", "CustomedInitial:15m"] indicates that the timeout period is 15 minutes. After the timeout period is reached, the initialization conditions will be automatically ignored and the initialization taint will be removed when CCE polls the node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The timeout interval in initializedConditions ranges from 1 to 99 seconds. • Each value has 1 to 20 characters, which must consist of letters and digits. • The maximum number of flags cannot exceed 2. • The unit of the timeout period is minute (m).
extendParam	No	NodeExtendParam object	<p>Details: Extended parameters for creating a node</p> <p>Constraints: None</p>
hostnameConfig	No	HostnameConfig object	<p>Details: Kubernetes node name configuration parameter</p> <p>Constraints: The supported cluster version is v1.23.6-r0 to v1.25 or v1.25.2-r0 or later.</p>

Parameter	Mandatory	Type	Description
serverEnterpriseProjectID	No	String	<p>Details: Enterprise project ID of a server. CCE does not support features provided by EPS. This field is used only for synchronizing enterprise project IDs of servers.</p> <p>Constraints: To create a node or node pool, you can specify an existing enterprise project for it. If this field is left blank, it inherits the enterprise project attributes of the cluster that runs the node or node pool. When updating a node pool, any configuration modifications you made will apply only to new nodes. You need to modify the enterprise projects of existing nodes on the EPS console.</p> <p>Options: N/A</p> <p>Default value: If no value is specified during update, this field will not be updated. If this parameter is left blank, the cluster enterprise project is returned.</p>

Table 4-258 Login

Parameter	Mandatory	Type	Description
sshKey	No	String	<p>Details: Name of the key pair used for login</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
userPassword	No	UserPassword object	<p>Details: Password used for node login</p> <p>Constraints: None</p>

Table 4-259 UserPassword

Parameter	Mandatory	Type	Description
username	No	String	<p>Details: Login account. The default value is root.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: root</p>

Parameter	Mandatory	Type	Description
password	Yes	String	<p>Details: Login password. If a username and password are used when a node is created, this field is shielded in the response body.</p> <p>Constraints: The password field must be salted during node creation. For details, see Adding a Salt in the password Field When Creating a Node.</p> <p>Options: A password must:</p> <ul style="list-style-type: none"> • Contain 8 to 26 characters. • Contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters !@\$%^_+=+[{ }];,./? • Not contain the username or the username spelled backwards. <p>Default value: N/A</p>

Table 4-260 Volume

Parameter	Mandatory	Type	Description
size	Yes	Integer	<p>Details: Disk size, in GiB</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • System disks: 40 to 1024 • The first data disk: 20 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) • Other data disks: 10 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) <p>Default value: N/A</p>
volumetype	Yes	String	<p>Details: Disk type. For details about possible values, see the root_volume parameter in the API used to create an ECS.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • SAS: high I/O SAS disks • SSD: ultra-high I/O SSD disks • SATA: common I/O SATA disks. SATA disks have been removed from EVS. You can find them attached only to existing nodes. <p>NOTE For details about disk types, see Disk Types and Performance.</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
extendParam	No	Map<String, Object>	<p>Details: Extended disk parameters, defined in extendparam in the API used to create an ECS. For details, see extendparam Field Description for Creating Disks.</p> <p>Constraints: None</p>
cluster_id	No	String	<p>Details: ID of the storage pool used by the ECS system disk. This field is used only for DeC clusters and functions as dssPoolID, that is, the ID of the DSS storage pool.</p> <p>To obtain the value, see the ID field in the API used to obtain details of a DSS storage pool.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
cluster_type	No	String	<p>Details: Storage class of the ECS system disk</p> <p>Constraints: None</p> <p>Options: This field is used only for DeC clusters, and the value is always dss.</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
hw:passthrough	No	Boolean	<p>Details:</p> <ul style="list-style-type: none"> • Pay attention to this field if your ECS is SDI-compliant. If the value of this field is true, the created disk is of SCSI type. • If the node pool type is ElasticBMS, this field must be set to true. • If the node specification involves both local and EVS disks, configure the disk initialization parameters. For details, see Attaching Disks to a Node. <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
metadata	No	VolumeMetadata object	<p>Details: EVS disk encryption information. This parameter is mandatory only when the system disk or data disk of the node to be created needs to be encrypted.</p> <p>Constraints: None</p>

Table 4-261 VolumeMetadata

Parameter	Mandatory	Type	Description
<code>__system__encrypted</code>	No	String	<p>Details: Whether an EVS disk is encrypted. The value 0 indicates that the EVS disk is not encrypted, and the value 1 indicates that the EVS disk is encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: If this parameter does not appear, the disk is not encrypted.</p>
<code>__system__cmkid</code>	No	String	<p>Details: CMK ID, which indicates encryption in metadata. This field is used with __system__encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-262 Storage

Parameter	Mandatory	Type	Description
<code>storageSelectors</code>	Yes	Array of StorageSelectors objects	<p>Details: Disk selection. Matched disks are managed based on matchLabels and storageType settings. Disks are matched in sequence. The matching rule in the front is matched first.</p> <p>Constraints: None</p>

Parameter	Mandatory	Type	Description
storageGroups	Yes	Array of StorageGroups objects	<p>Details: A storage group consisting of multiple storage devices, which are used to divide storage space.</p> <p>Constraints: None</p>

Table 4-263 StorageSelectors

Parameter	Mandatory	Type	Description
name	Yes	String	<p>Details: Name of a selector, which is used as the index of selectorNames in storageGroup.</p> <p>Constraints: The name of each selector must be unique.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
storageType	Yes	String	<p>Details: Storage type</p> <p>Constraints:</p> <ul style="list-style-type: none"> The local storage type does not support disk selection. All local disks form a VG. Therefore, only one local storage selector is allowed. The system storage type does not support disk selection. It is recommended that you use the system disk to store system components. As a result, only one storage selector of the system type is allowed, and the name must be cceUse. <p>Options: Only evs (EVS disks), local (local disks), and system (system disks) are supported.</p> <p>Default value: N/A</p>
matchLabels	No	matchLabels object	<p>Details: Matching field of an EVS disk</p> <p>Constraints: If storageType is set to system (system disk), you do not need to configure this parameter.</p> <p>Options: The size, volumeType, metadataEncrypted, metadataCmkid, and count fields in DataVolume are supported.</p> <p>Default value: N/A</p>

Table 4-264 matchLabels

Parameter	Mandatory	Type	Description
size	No	String	<p>Details: Matched disk size, for example, 100. If this parameter is left blank, the disk size is not limited.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
volumeType	No	String	<p>Details: EVS disk type</p> <p>Constraints: None</p> <p>Options: SSD, GPSSD, SAS, ESSD, and SATA are supported. If this parameter is left blank, there is no restriction on the disk type.</p> <p>Default value: N/A</p>
metadataEncrypted	No	String	<p>Details: Disk encryption identifier. If this parameter is set to 0, it specifies that the disk is not encrypted. If this parameter is set to 1, it specifies that the disk is encrypted. If this parameter is left blank, there is no restriction on the disk encryption identifier.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
metadataCmkid	No	String	<p>Details: CMK ID of an encrypted disk. The value is a string of 36 bytes. If this parameter is left blank, there is no restriction on the disk key ID.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
count	No	String	<p>Details: Number of disks to be selected. If this parameter is left blank, all disks of this type are selected.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-265 StorageGroups

Parameter	Mandatory	Type	Description
name	Yes	String	<p>Details: Name of a virtual storage group, which must be unique</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If cceManaged is set to true, the name field must be set to vgpaas. • If the data disk is used as a temporary storage volume, the name field must be set to vg-everest-localvolume-ephemeral. • If the data disk is used as a persistent storage volume, the name field must be set to vg-everest-localvolume-persistent. <p>Default value: N/A</p>
cceManaged	No	Boolean	<p>Details: Storage space to which Kubernetes and runtime belong. Only one group is set to true. If this parameter is left blank, the default value false is used.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
selectorNames	Yes	Array of strings	<p>Details: Corresponds to name in storageSelectors. One group can select multiple selectors, but one selector can be selected by only one group.</p> <p>Constraints: System components cannot be separately stored in the system disk and data disks. Therefore, when the selector type is set to system, only one selector can be selected for a group.</p>
virtualSpaces	Yes	Array of VirtualSpace objects	<p>Details: Detailed management of space configurations in a group</p> <p>Constraints: None</p>

Table 4-266 VirtualSpace

Parameter	Mandatory	Type	Description
name	Yes	String	<p>Details: Name of a virtualSpace. Only types of share, kubernetes, runtime, and user are supported.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • kubernetes: Kubernetes space configuration. lvmConfig needs to be configured. • runtime: runtime space configuration. runtimeConfig needs to be configured. • user: user space configuration. lvmConfig needs to be configured. <p>Default value: N/A</p>
size	Yes	String	<p>Details: Size of a virtualSpace. The value must be an integer in percentage, for example, 90%.</p> <p>Constraints: None</p> <p>Options: 10 to 90. The sum of percentages of all virtualSpaces in a group cannot exceed 100%.</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
lvmConfig	No	LVMConfig object	<p>Details: LVM configuration management, which is applicable to share, Kubernetes, and user space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>
runtimeConfig	No	RuntimeConfig object	<p>Details: Runtime configuration management, which is applicable to runtime space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>

Table 4-267 LVMConfig

Parameter	Mandatory	Type	Description
lvType	Yes	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
path	No	String	<p>Details: Disk mount path. This parameter only takes effect in user configuration. The value can be an absolute path containing digits, uppercase letters, lowercase letters, periods (.), hyphens (-), and underscores (_).</p> <p>Constraints: Do not leave the path empty or set it to a key OS path such as the root directory. Key OS paths that cannot be entered: /, /home, /home/, /bin, /bin/, /lib, /lib/, /root, /root/, /boot, /boot/, /dev, /dev/, /etc, /etc/, /lost+found, /lost+found/, /mnt, /mnt/, /proc, /proc/, /sbin, /sbin/, /srv, /srv/, /tmp, /tmp/, /var, /var/, /media, /media/, /opt, /opt/, /selinux, /selinux/, /sys, /sys/, /usr, /usr/, /opt/cloud/, /mnt/paas/, /home/paas/, /var/paas/, /var/lib/, /var/script/</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-268 RuntimeConfig

Parameter	Mandatory	Type	Description
lvType	Yes	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-269 NodePublicIP

Parameter	Mandatory	Type	Description
ids	No	Array of strings	<p>Details: IDs of existing EIPs</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The quantity cannot be greater than the number of nodes to be created. • If ids has been specified, you do not need to configure count and eip.
count	No	Integer	<p>Details: Number of EIPs to be dynamically created</p> <p>Constraints: count and eip must be configured simultaneously.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
eip	No	NodeEIPSpec object	<p>Details: EIP configuration</p> <p>Constraints: This parameter is not supported when creating a node pool.</p>

Table 4-270 NodeEIPSpec

Parameter	Mandatory	Type	Description
iptype	Yes	String	<p>Details: EIP type, specified in publicip.type in the API for assigning an EIP. For details, see Assigning an EIP.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
bandwidth	No	NodeBandwidth object	<p>Details: Bandwidth parameters of the EIP</p> <p>Constraints: None</p>

Table 4-271 NodeBandwidth

Parameter	Mandatory	Type	Description
chargemode	No	String	<p>Details: Bandwidth billing mode</p> <p>NOTE</p> <ul style="list-style-type: none"> • Billed by bandwidth: The billing will be based on the data transmission rate (in Mbps) of public networks. This billing mode is recommended if your bandwidth usage is higher than 10%. • Billed by traffic: The billing is based on the total amount of data (in GB) transmitted over the public network. This mode is available only when you are creating a pay-per-use node. This billing mode is recommended if your bandwidth usage is lower than 10%. <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If this field is not specified, the billing is based on bandwidth. • If the field value is empty, the billing is based on bandwidth. • If the field value is traffic, the billing is based on traffic. • If the value is out of the preceding options, the cloud server will fail to be created. <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
size	No	Integer	<p>Details: Bandwidth size, specified in bandwidth.size in the API for assigning an EIP. For details, see Assigning an EIP.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
sharetype	No	String	<p>Details: Bandwidth sharing type. Dedicated bandwidth is supported only. PER specifies dedicated bandwidth.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-272 NodeNicSpec

Parameter	Mandatory	Type	Description
primaryNic	No	NicSpec object	<p>Details: Description of the primary ENI</p> <p>Constraints: None</p>
extNics	No	Array of NicSpec objects	<p>Details: Extension ENI</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>

Table 4-273 NicSpec

Parameter	Mandatory	Type	Description
subnetId	No	String	<p>Details: Network ID of the subnet to which an ENI belongs. If subnetList is also configured for a node pool, the subnetList field is used for adding subnets to the node pool.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If subnetId is not specified when a primary ENI is creating, the cluster subnet will be used. • When creating an extension ENI, you must specify subnetId. <p>Options: N/A</p> <p>Default value: N/A</p>
fixedIps	No	Array of strings	<p>Details: The IP address of the primary ENI is specified using fixedIps. The number of IP addresses cannot be greater than the number of created nodes.</p> <p>Constraints: Either fixedIps or ipBlock can be specified. fiexdlps cannot be specified for extension ENIs.</p>

Parameter	Mandatory	Type	Description
ipBlock	No	String	<p>Details: CIDR format of the primary ENI IP address range. The IP address of the created node falls in this range.</p> <p>Constraints: Either fixedIps or ipBlock can be specified.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
subnetList	No	Array of strings	<p>Details: Network ID list of the subnet where the ENI resides. Multiple subnets can be configured for a node pool.</p> <p>Constraints: A maximum of 20 subnets can be configured.</p>

Table 4-274 Taint

Parameter	Mandatory	Type	Description
key	Yes	String	<p>Details: Key</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
value	No	String	<p>Details: Value</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
effect	Yes	String	<p>Details: Effect</p> <p>Constraints: None</p> <p>Options: Available options are NoSchedule, PreferNoSchedule, and NoExecute.</p> <p>Default value: N/A</p>

Table 4-275 UserTag

Parameter	Mandatory	Type	Description
key	No	String	<p>Details: Key of the cloud server tag</p> <p>Constraints: The value cannot start with CCE-, _type_baremetal, or sys.</p> <p>Options: The value contains a maximum of 128 characters. The tag key must be unique and cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, /</p> <p>Default value: N/A</p>
value	No	String	<p>Details: Value of the cloud server tag</p> <p>Constraints: None</p> <p>Options: The value contains a maximum of 255 characters. The tag value cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, </p> <p>Default value: N/A</p>

Table 4-276 Runtime

Parameter	Mandatory	Type	Description
name	No	String	<p>Details: Container runtime</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • Clusters earlier than v1.25: The default value is docker. • Clusters of v1.25 or later: The default value varies with the OSs. • For nodes running EulerOS 2.5 or EulerOS 2.8, the default value is docker. For nodes running other OSs, the default value is containerd.

Table 4-277 NodeExtendParam

Parameter	Mandatory	Type	Description
ecs:performancetype	No	String	<p>Details: ECS flavor types. This field is returned in the response.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
orderID	No	String	<p>Details: Order ID</p> <p>Constraints: This parameter is returned in the response when the node is billed on a yearly/monthly basis with auto payment enabled (only in creation scenarios).</p> <p>Options: N/A</p> <p>Default value: N/A</p>
productID	No	String	<p>Details: Product ID</p> <p>Constraints: This field is returned in the response when the node is billed on a yearly/monthly basis with auto payment enabled.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
maxPods	No	Integer	<p>Details: Maximum number of pods that can be created on a node, including the default system pods. This limit prevents the node from being overloaded with pods. The number of pods that can be created on a node is determined by multiple parameters. For details, see Maximum Number of Pods That Can Be Created on a Node.</p> <p>Constraints: None</p> <p>Options: 16 to 256</p> <p>Default value: N/A</p>
periodType	No	String	<p>Details: Subscription period type</p> <p>Constraints:</p> <ul style="list-style-type: none"> As a request parameter, it is valid and mandatory only when billingMode is set to 1 (yearly/monthly billing) or 2 (yearly/monthly billing with auto payment enabled) (This option has been discarded). As a response parameter, it is returned only when a yearly/monthly node is created. <p>Options:</p> <ul style="list-style-type: none"> month year <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
periodNum	No	Integer	<p>Details: Number of subscription periods</p> <p>Constraints:</p> <ul style="list-style-type: none"> As a request parameter, it is valid and mandatory only when billingMode is set to 1 (yearly/monthly billing) or 2 (yearly/monthly billing with auto payment enabled) (This option has been discarded). As a response parameter, it is returned only when a yearly/monthly node is created. <p>Options:</p> <ul style="list-style-type: none"> If periodType is month, the value ranges from 1 to 9. If periodType is year, the value ranges from 1 to 3. <p>Default value: N/A</p>
isAutoRenew	No	String	<p>Details: Whether auto-renewal is enabled</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified, auto-renewal is not enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> true: Auto-renewal is enabled. false: Auto-renewal is not enabled. <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
isAutoPay	No	String	<p>Details: Whether an order is automatically or manually paid</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified when billingMode is set to 1, auto payment is not enabled. (Discarded) If not specified when billingMode is set to 2, auto payment is enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto payment is enabled. • false: Auto payment is not enabled. <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
DockerLVMConfigOverride	No	String	<p>Details:</p> <p>Docker data disk configuration item. (This parameter has been discarded. Use the storage field instead.) Example of the default configuration:</p> <pre>"DockerLVMConfigOverride":"dockerThinpool=vgpaas/90%VG;kubernetesLV=vgpaas/10%VG;diskType=evs;lvType=linear"</pre> <p>By default, if no VD disk is available, an error occurs because the data disk fails to be found. Specify diskType based on the actual drive letter type.</p> <p>Constraints:</p> <p>None</p> <p>Options:</p> <p>The following fields are included:</p> <ul style="list-style-type: none"> • userLV: (Optional) size of the user space, for example, vgpaas/20%VG • userPath (Optional): mount path of the user space, for example, /home/wqt-test • diskType: disk type. Only evs, hdd, and ssd are supported. • lvType: type of a logic volume. The value can be linear or striped. • dockerThinpool: Docker space size, for example, vgpaas/60%VG • kubernetesLV: kubelet space size, for example, vgpaas/20%VG <p>Default value:</p> <p>N/A</p>

Parameter	Mandatory	Type	Description
dockerBaseSize	No	Integer	<p>Details: Available disk space of a single container on a node (unit: G). This parameter has been discarded. Use containerBaseSize.</p> <p>For details about how to allocate the space for the container runtime, see Space Allocation of a Data Disk.</p> <p>Constraints: When Device Mapper is used, it is recommended that dockerBaseSize be set to a value less than or equal to 80 GiB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device.</p> <ul style="list-style-type: none"> The dockerBaseSize setting takes effect only on nodes running EulerOS or Huawei Cloud EulerOS 2.0 in clusters of the new version. <p>Options: 10 to 500</p> <p>Default value: If the value is not specified or is set to 0, the default value is used.</p> <ul style="list-style-type: none"> The default value is 10 in Device Mapper mode. In OverlayFS mode, the available space of a single container is not limited by default.

Parameter	Mandatory	Type	Description
containerBaseSize	No	Integer	<p>Details: Available disk space of a single container on a node (unit: G). For details about how to allocate the space for the container runtime, see Space Allocation of a Data Disk.</p> <p>Constraints: When Device Mapper is used, it is recommended that containerBaseSize be set to a value less than or equal to 80 GiB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device. In new versions, the Device Mapper mode is used only by BMSs in the same resource pool and is being discarded.</p> <ul style="list-style-type: none"> The containerBaseSize setting takes effect only on nodes running EulerOS or Huawei Cloud EulerOS 2.0 in clusters of the new version (v1.23.14-r0, v1.25.9-r0, v1.27.6-r0, v1.28.4-r0 or later). This parameter cannot be updated when a node pool is being updated. <p>Options: 10 to 500</p> <p>Default value: If the value is not specified or is set to 0, the default value is used.</p> <ul style="list-style-type: none"> The default value is 10 in Device Mapper mode. In OverlayFS mode, the available space of a single

Parameter	Mandatory	Type	Description
			container is not limited by default.
publicKey	No	String	<p>Details: Public key of a node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/ preInstall	No	String	<p>Details: Pre-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>"*Content to be encoded*" base64</code></p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
alpha.cce/ postInstall	No	String	<p>Details: Post-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>"*Content to be encoded*" base64</code></p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/ NodeImageID	No	String	<p>Details: This parameter is required when a custom image is used to create a BMS node.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
nicMultiqueue	No	String	<p>Details:</p> <ul style="list-style-type: none"> Number of ENI queues. Example: <code>"[{\"queue\":4}]"</code> <p>The following fields are included:</p> <ul style="list-style-type: none"> queue: number of ENI queues Supported configurations: <code>{\"1\":128, \"2\":92, \"4\":92, \"8\":32, \"16\":16, \"28\":9}</code>, indicating that a maximum of 128 ENIs can be associated if there is one queue and a maximum of 92 ENIs if there are two queues. A larger number of ENI queues indicates higher performance but fewer ENIs can be associated. The queue settings cannot be changed after creation. <p>Constraints: This field can be configured only for BMS nodes in CCE Turbo clusters.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
nicThreshold	No	String	<p>Details:</p> <ul style="list-style-type: none"> ENI pre-binding thresholds. Example: "0.3:0.6" Low threshold (L): determines the minimum number of pre-bound ENIs (Min). Formula: $Min = Total\ number\ of\ ENIs\ of\ the\ node \times L$ High threshold (H): determines the maximum number of pre-bound ENIs (Max). Formula: $Max = Total\ number\ of\ ENIs\ of\ the\ node \times H$ Number of ENIs bound to a BMS node (B) and number of ENIs being used by pods (U): $U + Min < B < U + Max$ If the number of pre-bound ENIs on a BMS node is smaller than the minimum allowed, the system will bind more ENIs to make the numbers equal. If the number of pre-bound ENIs on a BMS node is larger than the maximum allowed, the system periodically unbinds ENIs (about every 2 minutes) to make the numbers equal. <p>Constraints:</p> <ul style="list-style-type: none"> This field can be configured only for BMS nodes in CCE Turbo clusters. Pre-binding ENIs can speed up workload creation but occupies IP addresses. <p>Options: Both the thresholds are one-decimal-place values ranging from 0.0 to 1.0. The low threshold must be smaller than or equal to the high one.</p> <p>Default value:</p>

Parameter	Mandatory	Type	Description
			N/A
chargingMode	No	Integer	<p>Details: Billing mode of a node. This parameter has been discarded. Use billingMode in NodeSpec instead.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
marketType	No	String	<p>Details: When creating a spot ECS, this parameter should be set to spot.</p> <p>Constraints: This parameter is valid only when billingMode is set to 0.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
spotPrice	No	String	<p>Details: The highest price per hour a user accepts for a spot ECS</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This parameter takes effect only when billingMode is set to 0 and marketType is set to spot. • When billingMode is set to 0 and marketType is set to spot, if spotPrice is not specified, the pay-per-use price is used by default. • The spotPrice value must be less than or equal to the pay-per-use price and greater than or equal to the ECS market price. <p>Options: N/A</p> <p>Default value: N/A</p>
agency_name	No	String	<p>Details: Agency name. An agency is created by a tenant administrator on Identity and Access Management (IAM) to provide temporary credentials for CCE nodes to access cloud servers. This parameter is returned only when it is transferred during node creation.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
kubeReservedMem	No	Integer	<p>Details: Reserved node memory, which is reserved for Kubernetes components.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
systemReservedMem	No	Integer	<p>Details: Reserved node memory, which is reserved for system components.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
init-node-password	No	String	<p>Details: Node password. If this parameter is used as a response parameter, asterisks (*) will be displayed.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
securityReinforcementType	No	String	<p>Details: Security hardening type of a node. Huawei Cloud EulerOS 2.0 images based on DJCP 2.0 level 3 security hardening are supported. DJCP checks identity authentication, access control, security audit, intrusion prevention, and malicious code prevention and hardens security.</p> <p>If this parameter is not specified, the original value is used. For example, If security hardening has been set up for a Huawei Cloud EulerOS 2.0 image and you do not specify this parameter when updating a node pool, the security hardening configuration will remain unchanged. To remove the security hardening configuration, set this parameter to null.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Empty: Security hardening is not enabled. • cybersecurity: Security hardening is enabled. <p>Default value: N/A</p>

Table 4-278 HostnameConfig

Parameter	Mandatory	Type	Description
type	Yes	String	<p>Details: Configuration type of the Kubernetes node name. The default value is privatelp.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The node names, Kubernetes node names, and VM names of the nodes configured with cceNodeName are the same. Node names cannot be changed. Once a VM name is altered on the ECS console, the node name cannot be modified accordingly during ECS synchronization. • To prevent conflicts between Kubernetes node names, a suffix is automatically added to the node name of a node configured with cceNodeName. The suffix consists of a hyphen (-) followed by five random lowercase letters and digits (0 to 9). <p>Options:</p> <ul style="list-style-type: none"> • privatelp: Use the private node IP address as the Kubernetes node name. • cceNodeName: Use the CCE node name as the Kubernetes node name. <p>Default value: privatelp</p>

Response Parameters

Status code: 201

Table 4-279 Response body parameters

Parameter	Type	Description
kind	String	API type. The value is fixed at Node and cannot be changed.
apiVersion	String	API version. The value is fixed at v3 and cannot be changed.
metadata	NodeMetadata object	Node metadata, which is a collection of attributes.
spec	NodeSpec object	Detailed description of the node. CCE creates or updates objects by defining or updating spec .
status	NodeStatus object	Node status, which is dynamically recorded. A user-defined value will not function when a node is being created or modified.

Table 4-280 NodeMetadata

Parameter	Type	Description
name	String	<p>Node name.</p> <p>NOTE Enter 1 to 56 characters starting with a lowercase letter and not ending with a hyphen (-). Only lowercase letters, digits, hyphens (-), and periods (.) are allowed.</p> <p>If name is not configured or is left blank, the node name is generated based on the default rule, which is <i>Cluster name-Random characters</i>. Only the first 36 characters are kept for a long cluster name.</p> <p>If the number of nodes (count) is greater than 1, some random characters are added to the end of the entered node name according to the default rule, which is <i>User-defined name-Random characters</i>. If the length of the entered node name exceeds 50 characters, the system uses the first 50 characters and adds a random character string to the end of the name.</p>
uid	String	Node ID, which is unique and automatically generated after the resource is created. A user-defined ID will not take effect.

Parameter	Type	Description
labels	Map<String,String >	CCE node label (not the native Kubernetes label). Labels are used to select objects that meet certain criteria. A label is a key-value pair. Example: <pre>"labels": { "key": "value" }</pre>
annotations	Map<String,String >	CCE node annotations, in key-value pairs (not the native Kubernetes annotations). Example: <pre>"annotations": { "key1": "value1", "key2": "value2" }</pre> NOTE <ul style="list-style-type: none"> • annotations are not used to identify or select objects. The metadata in annotations may be small or large, structured or unstructured, and may include characters that are not allowed in labels. • This parameter is used only for query and cannot be input through a request. Entered data of this parameter is invalid.
creationTimestamp	String	Time when the object was created. The value is automatically generated after the object is created. A user-defined value will not take effect.
updateTimestamp	String	Time when the object was updated. The value is automatically generated after the object is created. A user-defined value will not take effect.
ownerReference	ownerReference object	Owner object

Table 4-281 ownerReference

Parameter	Type	Description
nodepoolName	String	Node pool name
nodepoolID	String	Node pool UID

Table 4-282 NodeSpec

Parameter	Type	Description
flavor	String	<p>Details: Node flavors. For details about the node flavors supported by CCE clusters, see Node Specifications.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
az	String	<p>Details: AZ where the node to be created is located. You need to specify the AZ name. Random AZs will not be allocated to a node created using APIs. For details about AZs supported by CCE, see Regions and Endpoints.</p> <p>Constraints: When you are creating a node pool and configuring a scaling group, this parameter cannot be set to random.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
os	String	<p>Details: Node OS. For details about the supported OSs, see Node OSs.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If the selected OS is not supported by the current cluster version, it will be automatically replaced with a supported OS of the same series. • If alpha.cce/NodeImageID in extendParam is specified during node creation, you do not need to configure this parameter. • If this parameter is not specified, CCE automatically selects a supported OS version based on the cluster version. • This parameter is mandatory when creating a node pool. • If you are using shared disk space when creating a node, this parameter is mandatory. Specifically, the disk initialization configuration management parameter storage is used and the name field of virtualSpaces in StorageGroups is set to share. <p>Options: N/A</p> <p>Default value: N/A</p>
login	Login object	<p>Details: Node login mode. Either the key pair or password must be used for login.</p> <p>Constraints: This parameter cannot be modified when a node pool is being updated.</p>
rootVolume	Volume object	<p>Details: Disk information of a node</p> <p>Constraints: None</p>

Parameter	Type	Description
dataVolumes	Array of Volume objects	<p>Details: Data disk parameters of a node. For DeC nodes, the parameter details are the same as those in rootVolume.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • A VM can have up to 16 disks attached, while a BMS can only have up to 10 disks attached. The maximum number of disks that can be attached to either a VM or BMS is limited by their respective maximum disk limits. (You can add more data disks to each of your nodes through the CCE console or APIs.) • The data disk used by the container runtime and kubelet cannot be detached, or the node will become unavailable. • This parameter can be left blank only when a system disk is selected for the system components.

Parameter	Type	Description
storage	Storage object	<p>Details: Disk initialization management parameter. This parameter is complex to configure. For details, see Attaching Disks to a Node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This field is supported by clusters of v1.15.11-r0 and later versions. If the cluster version is not supported, this field will be ignored. • If a node has both local and EVS disks attached, make sure to not keep the default value for this parameter, or it may result in unexpected disk partitions. • If you want to change the value range of a data disk to 20 to 32768, do not use the default value. • If you want to use the shared disk space (with the runtime and Kubernetes partitions cancelled), do not retain the default value of this parameter. For details about the shared disk space, see Space Allocation of a Data Disk. • If you want to store system components in the system disk, do not use the default value.
publicIP	NodePublicIP object	<p>Details: EIP of a node</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>
nodeNicSpec	NodeNicSpec object	<p>Details: ENI of a node</p> <p>Constraints: None</p>

Parameter	Type	Description
count	Integer	<p>Details: Number of nodes to be created in batches</p> <p>Constraints: This parameter can be left blank when it is used for a node pool.</p> <p>Options: Positive integers that are greater than or equal to 1 and less than or equal to the maximum limit</p> <p>Default value: N/A</p>
billingMode	Integer	<p>Details: Billing mode of a node</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • 0: pay-per-use • 1: yearly/monthly • 2: (Discarded) yearly/monthly billing with auto payment enabled <p>Default value: N/A</p>

Parameter	Type	Description
taints	Array of Taint objects	<p>Details:</p> <p>Taints, which can be added to nodes for anti-affinity configuration. Each taint contains the following parameters:</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain can be prefixed to a key. • Value: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. • Effect: Available options are NoSchedule, PreferNoSchedule, and NoExecute. <p>When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example:</p> <pre>"taints": [{ "key": "status", "value": "unavailable", "effect": "NoSchedule" }, { "key": "looks", "value": "bad", "effect": "NoSchedule" }]</pre> <p>Constraints:</p> <p>A maximum of 20 taints can be configured.</p>

Parameter	Type	Description
k8sTags	Map<String,String>	<p>Details: Defined in key-value pairs.</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain containing a maximum of 253 characters (such as example.com/my-key) can be prefixed to a key. • Value: The value can be left blank or contain 1 to 63 characters that start and end with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. <p>When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example: <pre>"k8sTags": { "key": "value" }</pre> </p> <p>Constraints: A maximum of 20 key-value pairs are allowed.</p>

Parameter	Type	Description
ecsGroupId	String	<p>Details: ECS group ID. If this parameter is specified, nodes will be created in the specific ECS group.</p> <p>Constraints: This configuration does not take effect when a node pool is created. To ensure that all nodes in a node pool are in the same ECS group, configure nodeManagement in the node pool.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
dedicatedHostId	String	<p>Details: ID of the DeH to which nodes will be scheduled.</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>
userTags	Array of UserTag objects	<p>Details: Cloud server tag (resource tag). When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Constraints:</p> <ul style="list-style-type: none"> The key of a tag must be unique. The maximum number of custom tags supported by CCE varies depending on regions and cannot exceed 8. A tag key can have a maximum of 36 characters. It can only contain letters, digits, Unicode characters, and special characters (-_).

Parameter	Type	Description
runtime	Runtime object	Details: Container runtime <ul style="list-style-type: none">• Clusters earlier than v1.25: The default value is docker.• Clusters of v1.25 or later: The default value varies with the OSs.• For nodes running EulerOS 2.5 or EulerOS 2.8, the default container runtime is docker. For nodes running other OSs, the default container runtime is containerd. Constraints: None

Parameter	Type	Description
initializedConditions	Array of strings	<p>Details:</p> <p>Custom initialization flag, which is left blank by default.</p> <p>Before CCE nodes are initialized, they are tainted with node.cloudprovider.kubernetes.io/uninitialized to prevent pods from being scheduled to them. When creating a node, you can specify the initializedConditions parameter to control the taint removal time. By default, the timeout interval is not configured.</p> <p>Example:</p> <ol style="list-style-type: none"> 1. Create a node and add parameter "initializedConditions": ["CCEInitial", "CustomedInitial"]. 2. After custom initialization is complete, CCE will call a Kubernetes API (for example, PATCH /v1/nodes/{node_ip}/status) to update the node conditions by adding two labels of types CCEInitial and CustomedInitial and setting the status to True, as shown in the following: <pre>status: conditions: - type: CCEInitial status: 'True' - type: CustomedInitial status: 'True'</pre> <ol style="list-style-type: none"> 1. CCE polls status.Conditions of nodes to check whether there are conditions of types CCEInitial and CustomedInitial. If such conditions exist and the status is True, the node initialization is complete and the initialization taint is removed. 2. initializedConditions allows you to configure a timeout period during node creation. For example, "initializedConditions": ["CCEInitial:15m", "CustomedInitial:15m"] indicates that the timeout period is 15 minutes. After the timeout period is reached, the initialization conditions

Parameter	Type	Description
		<p>will be automatically ignored and the initialization taint will be removed when CCE polls the node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The timeout interval in initializedConditions ranges from 1 to 99 seconds. • Each value has 1 to 20 characters, which must consist of letters and digits. • The maximum number of flags cannot exceed 2. • The unit of the timeout period is minute (m).
extendParam	NodeExtendParam object	<p>Details: Extended parameters for creating a node</p> <p>Constraints: None</p>
hostnameConfig	HostnameConfig object	<p>Details: Kubernetes node name configuration parameter</p> <p>Constraints: The supported cluster version is v1.23.6-r0 to v1.25 or v1.25.2-r0 or later.</p>

Parameter	Type	Description
serverEnterprise-ProjectID	String	<p>Details: Enterprise project ID of a server. CCE does not support features provided by EPS. This field is used only for synchronizing enterprise project IDs of servers.</p> <p>Constraints: To create a node or node pool, you can specify an existing enterprise project for it. If this field is left blank, it inherits the enterprise project attributes of the cluster that runs the node or node pool.</p> <p>When updating a node pool, any configuration modifications you made will apply only to new nodes. You need to modify the enterprise projects of existing nodes on the EPS console.</p> <p>Options: N/A</p> <p>Default value: If no value is specified during update, this field will not be updated. If this parameter is left blank, the cluster enterprise project is returned.</p>

Table 4-283 Login

Parameter	Type	Description
sshKey	String	<p>Details: Name of the key pair used for login</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
userPassword	UserPassword object	<p>Details: Password used for node login</p> <p>Constraints: None</p>

Table 4-284 UserPassword

Parameter	Type	Description
username	String	<p>Details: Login account. The default value is root.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: root</p>
password	String	<p>Details: Login password. If a username and password are used when a node is created, this field is shielded in the response body.</p> <p>Constraints: The password field must be salted during node creation. For details, see Adding a Salt in the password Field When Creating a Node.</p> <p>Options: A password must:</p> <ul style="list-style-type: none"> • Contain 8 to 26 characters. • Contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters !@\$%^-_=+[{ }];:./? • Not contain the username or the username spelled backwards. <p>Default value: N/A</p>

Table 4-285 Volume

Parameter	Type	Description
size	Integer	<p>Details: Disk size, in GiB</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • System disks: 40 to 1024 • The first data disk: 20 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) • Other data disks: 10 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) <p>Default value: N/A</p>
volumetype	String	<p>Details: Disk type. For details about possible values, see the root volume parameter in the API used to create an ECS.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • SAS: high I/O SAS disks • SSD: ultra-high I/O SSD disks • SATA: common I/O SATA disks. SATA disks have been removed from EVS. You can find them attached only to existing nodes. <p>NOTE For details about disk types, see Disk Types and Performance.</p> <p>Default value: N/A</p>

Parameter	Type	Description
extendParam	Map<String, Object>	<p>Details: Extended disk parameters, defined in extendparam in the API used to create an ECS. For details, see extendparam Field Description for Creating Disks.</p> <p>Constraints: None</p>
cluster_id	String	<p>Details: ID of the storage pool used by the ECS system disk. This field is used only for DeC clusters and functions as dssPoolID, that is, the ID of the DSS storage pool. To obtain the value, see the ID field in the API used to obtain details of a DSS storage pool.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
cluster_type	String	<p>Details: Storage class of the ECS system disk</p> <p>Constraints: None</p> <p>Options: This field is used only for DeC clusters, and the value is always dss.</p> <p>Default value: N/A</p>

Parameter	Type	Description
hw:passthrough	Boolean	<p>Details:</p> <ul style="list-style-type: none"> Pay attention to this field if your ECS is SDI-compliant. If the value of this field is true, the created disk is of SCSI type. If the node pool type is ElasticBMS, this field must be set to true. If the node specification involves both local and EVS disks, configure the disk initialization parameters. For details, see Attaching Disks to a Node. <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
metadata	VolumeMetadata object	<p>Details: EVS disk encryption information. This parameter is mandatory only when the system disk or data disk of the node to be created needs to be encrypted.</p> <p>Constraints: None</p>

Table 4-286 VolumeMetadata

Parameter	Type	Description
<code>__system__encrypted</code>	String	<p>Details: Whether an EVS disk is encrypted. The value 0 indicates that the EVS disk is not encrypted, and the value 1 indicates that the EVS disk is encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: If this parameter does not appear, the disk is not encrypted.</p>
<code>__system__cmkid</code>	String	<p>Details: CMK ID, which indicates encryption in metadata. This field is used with __system__encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-287 Storage

Parameter	Type	Description
<code>storageSelectors</code>	Array of StorageSelectors objects	<p>Details: Disk selection. Matched disks are managed based on matchLabels and storageType settings. Disks are matched in sequence. The matching rule in the front is matched first.</p> <p>Constraints: None</p>

Parameter	Type	Description
storageGroups	Array of StorageGroups objects	<p>Details: A storage group consisting of multiple storage devices, which are used to divide storage space.</p> <p>Constraints: None</p>

Table 4-288 StorageSelectors

Parameter	Type	Description
name	String	<p>Details: Name of a selector, which is used as the index of selectorNames in storageGroup.</p> <p>Constraints: The name of each selector must be unique.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
storageType	String	<p>Details: Storage type</p> <p>Constraints:</p> <ul style="list-style-type: none"> The local storage type does not support disk selection. All local disks form a VG. Therefore, only one local storage selector is allowed. The system storage type does not support disk selection. It is recommended that you use the system disk to store system components. As a result, only one storage selector of the system type is allowed, and the name must be cceUse. <p>Options: Only evs (EVS disks), local (local disks), and system (system disks) are supported.</p> <p>Default value: N/A</p>
matchLabels	matchLabels object	<p>Details: Matching field of an EVS disk</p> <p>Constraints: If storageType is set to system (system disk), you do not need to configure this parameter.</p> <p>Options: The size, volumeType, metadataEncrypted, metadataCmkid, and count fields in DataVolume are supported.</p> <p>Default value: N/A</p>

Table 4-289 matchLabels

Parameter	Type	Description
size	String	<p>Details: Matched disk size, for example, 100. If this parameter is left blank, the disk size is not limited.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
volumeType	String	<p>Details: EVS disk type</p> <p>Constraints: None</p> <p>Options: SSD, GPSSD, SAS, ESSD, and SATA are supported. If this parameter is left blank, there is no restriction on the disk type.</p> <p>Default value: N/A</p>
metadataEncrypted	String	<p>Details: Disk encryption identifier. If this parameter is set to 0, it specifies that the disk is not encrypted. If this parameter is set to 1, it specifies that the disk is encrypted. If this parameter is left blank, there is no restriction on the disk encryption identifier.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
metadataCmkid	String	<p>Details: CMK ID of an encrypted disk. The value is a string of 36 bytes. If this parameter is left blank, there is no restriction on the disk key ID.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
count	String	<p>Details: Number of disks to be selected. If this parameter is left blank, all disks of this type are selected.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-290 StorageGroups

Parameter	Type	Description
name	String	<p>Details: Name of a virtual storage group, which must be unique</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If cceManaged is set to true, the name field must be set to vgpaas. • If the data disk is used as a temporary storage volume, the name field must be set to vg-everest-localvolume-ephemeral. • If the data disk is used as a persistent storage volume, the name field must be set to vg-everest-localvolume-persistent. <p>Default value: N/A</p>
cceManaged	Boolean	<p>Details: Storage space to which Kubernetes and runtime belong. Only one group is set to true. If this parameter is left blank, the default value false is used.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
selectorNames	Array of strings	<p>Details: Corresponds to name in storageSelectors. One group can select multiple selectors, but one selector can be selected by only one group.</p> <p>Constraints: System components cannot be separately stored in the system disk and data disks. Therefore, when the selector type is set to system, only one selector can be selected for a group.</p>

Parameter	Type	Description
virtualSpaces	Array of VirtualSpace objects	<p>Details: Detailed management of space configurations in a group</p> <p>Constraints: None</p>

Table 4-291 VirtualSpace

Parameter	Type	Description
name	String	<p>Details: Name of a virtualSpace. Only types of share, kubernetes, runtime, and user are supported.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • kubernetes: Kubernetes space configuration. lvmConfig needs to be configured. • runtime: runtime space configuration. runtimeConfig needs to be configured. • user: user space configuration. lvmConfig needs to be configured. <p>Default value: N/A</p>
size	String	<p>Details: Size of a virtualSpace. The value must be an integer in percentage, for example, 90%.</p> <p>Constraints: None</p> <p>Options: 10 to 90. The sum of percentages of all virtualSpaces in a group cannot exceed 100%.</p> <p>Default value: N/A</p>

Parameter	Type	Description
lvmConfig	LVMConfig object	<p>Details: LVM configuration management, which is applicable to share, Kubernetes, and user space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>
runtimeConfig	RuntimeConfig object	<p>Details: Runtime configuration management, which is applicable to runtime space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>

Table 4-292 LVMConfig

Parameter	Type	Description
lvType	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
path	String	<p>Details: Disk mount path. This parameter only takes effect in user configuration. The value can be an absolute path containing digits, uppercase letters, lowercase letters, periods (.), hyphens (-), and underscores (_).</p> <p>Constraints: Do not leave the path empty or set it to a key OS path such as the root directory. Key OS paths that cannot be entered: /, /home, /home/, /bin, /bin/, /lib, /lib/, /root, /root/, /boot, /boot/, /dev, /dev/, /etc, /etc/, /lost+found, /lost+found/, /mnt, /mnt/, /proc, /proc/, /sbin, /sbin/, /srv, /srv/, /tmp, /tmp/, /var, /var/, /media, /media/, /opt, /opt/, /selinux, /selinux/, /sys, /sys/, /usr, /usr/, /opt/cloud/, /mnt/paas/, /home/paas/, /var/paas/, /var/lib/, /var/script/</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-293 RuntimeConfig

Parameter	Type	Description
lvType	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-294 NodePublicIP

Parameter	Type	Description
ids	Array of strings	<p>Details: IDs of existing EIPs</p> <p>Constraints:</p> <ul style="list-style-type: none"> The quantity cannot be greater than the number of nodes to be created. If ids has been specified, you do not need to configure count and eip.
count	Integer	<p>Details: Number of EIPs to be dynamically created</p> <p>Constraints: count and eip must be configured simultaneously.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
eip	NodeEIPSpec object	<p>Details: EIP configuration</p> <p>Constraints: This parameter is not supported when creating a node pool.</p>

Table 4-295 NodeEIPSpec

Parameter	Type	Description
iptype	String	<p>Details: EIP type, specified in publicip.type in the API for assigning an EIP. For details, see Assigning an EIP.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
bandwidth	NodeBandwidth object	<p>Details: Bandwidth parameters of the EIP</p> <p>Constraints: None</p>

Table 4-296 NodeBandwidth

Parameter	Type	Description
chargemode	String	<p>Details: Bandwidth billing mode</p> <p>NOTE</p> <ul style="list-style-type: none"> • Billed by bandwidth: The billing will be based on the data transmission rate (in Mbps) of public networks. This billing mode is recommended if your bandwidth usage is higher than 10%. • Billed by traffic: The billing is based on the total amount of data (in GB) transmitted over the public network. This mode is available only when you are creating a pay-per-use node. This billing mode is recommended if your bandwidth usage is lower than 10%. <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If this field is not specified, the billing is based on bandwidth. • If the field value is empty, the billing is based on bandwidth. • If the field value is traffic, the billing is based on traffic. • If the value is out of the preceding options, the cloud server will fail to be created. <p>Default value: N/A</p>

Parameter	Type	Description
size	Integer	<p>Details: Bandwidth size, specified in bandwidth.size in the API for assigning an EIP. For details, see Assigning an EIP.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
sharetype	String	<p>Details: Bandwidth sharing type. Dedicated bandwidth is supported only. PER specifies dedicated bandwidth.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-297 NodeNicSpec

Parameter	Type	Description
primaryNic	NicSpec object	<p>Details: Description of the primary ENI</p> <p>Constraints: None</p>
extNics	Array of NicSpec objects	<p>Details: Extension ENI</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>

Table 4-298 NicSpec

Parameter	Type	Description
subnetId	String	<p>Details: Network ID of the subnet to which an ENI belongs. If subnetList is also configured for a node pool, the subnetList field is used for adding subnets to the node pool.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If subnetId is not specified when a primary ENI is creating, the cluster subnet will be used. • When creating an extension ENI, you must specify subnetId. <p>Options: N/A</p> <p>Default value: N/A</p>
fixedIps	Array of strings	<p>Details: The IP address of the primary ENI is specified using fixedIps. The number of IP addresses cannot be greater than the number of created nodes.</p> <p>Constraints: Either fixedIps or ipBlock can be specified. fiexdlps cannot be specified for extension ENIs.</p>
ipBlock	String	<p>Details: CIDR format of the primary ENI IP address range. The IP address of the created node falls in this range.</p> <p>Constraints: Either fixedIps or ipBlock can be specified.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
subnetList	Array of strings	<p>Details: Network ID list of the subnet where the ENI resides. Multiple subnets can be configured for a node pool.</p> <p>Constraints: A maximum of 20 subnets can be configured.</p>

Table 4-299 Taint

Parameter	Type	Description
key	String	<p>Details: Key</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
value	String	<p>Details: Value</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
effect	String	<p>Details: Effect</p> <p>Constraints: None</p> <p>Options: Available options are NoSchedule, PreferNoSchedule, and NoExecute.</p> <p>Default value: N/A</p>

Table 4-300 UserTag

Parameter	Type	Description
key	String	<p>Details: Key of the cloud server tag</p> <p>Constraints: The value cannot start with CCE-, _type_baremetal, or sys.</p> <p>Options: The value contains a maximum of 128 characters. The tag key must be unique and cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, /</p> <p>Default value: N/A</p>
value	String	<p>Details: Value of the cloud server tag</p> <p>Constraints: None</p> <p>Options: The value contains a maximum of 255 characters. The tag value cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, </p> <p>Default value: N/A</p>

Table 4-301 Runtime

Parameter	Type	Description
name	String	<p>Details: Container runtime</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • Clusters earlier than v1.25: The default value is docker. • Clusters of v1.25 or later: The default value varies with the OSs. • For nodes running EulerOS 2.5 or EulerOS 2.8, the default value is docker. For nodes running other OSs, the default value is containerd.

Table 4-302 NodeExtendParam

Parameter	Type	Description
ecs:performancety pe	String	<p>Details: ECS flavor types. This field is returned in the response.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
orderID	String	<p>Details: Order ID</p> <p>Constraints: This parameter is returned in the response when the node is billed on a yearly/monthly basis with auto payment enabled (only in creation scenarios).</p> <p>Options: N/A</p> <p>Default value: N/A</p>
productID	String	<p>Details: Product ID</p> <p>Constraints: This field is returned in the response when the node is billed on a yearly/ monthly basis with auto payment enabled.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
maxPods	Integer	<p>Details: Maximum number of pods that can be created on a node, including the default system pods. This limit prevents the node from being overloaded with pods. The number of pods that can be created on a node is determined by multiple parameters. For details, see Maximum Number of Pods That Can Be Created on a Node.</p> <p>Constraints: None</p> <p>Options: 16 to 256</p> <p>Default value: N/A</p>

Parameter	Type	Description
periodType	String	<p>Details: Subscription period type</p> <p>Constraints:</p> <ul style="list-style-type: none"> As a request parameter, it is valid and mandatory only when billingMode is set to 1 (yearly/monthly billing) or 2 (yearly/monthly billing with auto payment enabled) (This option has been discarded). As a response parameter, it is returned only when a yearly/monthly node is created. <p>Options:</p> <ul style="list-style-type: none"> month year <p>Default value: N/A</p>
periodNum	Integer	<p>Details: Number of subscription periods</p> <p>Constraints:</p> <ul style="list-style-type: none"> As a request parameter, it is valid and mandatory only when billingMode is set to 1 (yearly/monthly billing) or 2 (yearly/monthly billing with auto payment enabled) (This option has been discarded). As a response parameter, it is returned only when a yearly/monthly node is created. <p>Options:</p> <ul style="list-style-type: none"> If periodType is month, the value ranges from 1 to 9. If periodType is year, the value ranges from 1 to 3. <p>Default value: N/A</p>

Parameter	Type	Description
isAutoRenew	String	<p>Details: Whether auto-renewal is enabled</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified, auto-renewal is not enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto-renewal is enabled. • false: Auto-renewal is not enabled. <p>Default value: N/A</p>
isAutoPay	String	<p>Details: Whether an order is automatically or manually paid</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified when billingMode is set to 1, auto payment is not enabled. (Discarded) If not specified when billingMode is set to 2, auto payment is enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto payment is enabled. • false: Auto payment is not enabled. <p>Default value: N/A</p>

Parameter	Type	Description
<p>DockerLVMConfigOverride</p>	<p>String</p>	<p>Details: Docker data disk configuration item. (This parameter has been discarded. Use the storage field instead.) Example of the default configuration: "DockerLVMConfigOverride":"dockerThinpool=vgpaas/90%VG;kubernetesLV=vgpaas/10%VG;diskType=evs;lvType=linear" By default, if no VD disk is available, an error occurs because the data disk fails to be found. Specify diskType based on the actual drive letter type.</p> <p>Constraints: None</p> <p>Options: The following fields are included:</p> <ul style="list-style-type: none"> • userLV: (Optional) size of the user space, for example, vgpaas/20%VG • userPath (Optional): mount path of the user space, for example, /home/wqt-test • diskType: disk type. Only evs, hdd, and ssd are supported. • lvType: type of a logic volume. The value can be linear or striped. • dockerThinpool: Docker space size, for example, vgpaas/60%VG • kubernetesLV: kubelet space size, for example, vgpaas/20%VG <p>Default value: N/A</p>

Parameter	Type	Description
dockerBaseSize	Integer	<p>Details: Available disk space of a single container on a node (unit: G). This parameter has been discarded. Use containerBaseSize.</p> <p>For details about how to allocate the space for the container runtime, see Space Allocation of a Data Disk.</p> <p>Constraints: When Device Mapper is used, it is recommended that dockerBaseSize be set to a value less than or equal to 80 GiB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device.</p> <ul style="list-style-type: none"> The dockerBaseSize setting takes effect only on nodes running EulerOS or Huawei Cloud EulerOS 2.0 in clusters of the new version. <p>Options: 10 to 500</p> <p>Default value: If the value is not specified or is set to 0, the default value is used.</p> <ul style="list-style-type: none"> The default value is 10 in Device Mapper mode. In OverlayFS mode, the available space of a single container is not limited by default.

Parameter	Type	Description
containerBaseSize	Integer	<p>Details: Available disk space of a single container on a node (unit: G). For details about how to allocate the space for the container runtime, see Space Allocation of a Data Disk.</p> <p>Constraints: When Device Mapper is used, it is recommended that containerBaseSize be set to a value less than or equal to 80 GiB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device. In new versions, the Device Mapper mode is used only by BMSs in the same resource pool and is being discarded.</p> <ul style="list-style-type: none"> The containerBaseSize setting takes effect only on nodes running EulerOS or Huawei Cloud EulerOS 2.0 in clusters of the new version (v1.23.14-r0, v1.25.9-r0, v1.27.6-r0, v1.28.4-r0 or later). This parameter cannot be updated when a node pool is being updated. <p>Options: 10 to 500</p> <p>Default value: If the value is not specified or is set to 0, the default value is used.</p> <ul style="list-style-type: none"> The default value is 10 in Device Mapper mode. In OverlayFS mode, the available space of a single container is not limited by default.

Parameter	Type	Description
publicKey	String	<p>Details: Public key of a node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/ preInstall	String	<p>Details: Pre-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>"*Content to be encoded*" base64</code></p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/ postInstall	String	<p>Details: Post-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>"*Content to be encoded*" base64</code></p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
alpha.cce/ NodeImageID	String	<p>Details: This parameter is required when a custom image is used to create a BMS node.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
nicMultiqueue	String	<p>Details:</p> <ul style="list-style-type: none"> Number of ENI queues. Example: <code>"[{"queue":4}]"</code> <p>The following fields are included:</p> <ul style="list-style-type: none"> queue: number of ENI queues Supported configurations: {"1":128, "2":92, "4":92, "8":32, "16":16,"28":9}, indicating that a maximum of 128 ENIs can be associated if there is one queue and a maximum of 92 ENIs if there are two queues. A larger number of ENI queues indicates higher performance but fewer ENIs can be associated. The queue settings cannot be changed after creation. <p>Constraints: This field can be configured only for BMS nodes in CCE Turbo clusters.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
nicThreshold	String	<p>Details:</p> <ul style="list-style-type: none"> • ENI pre-binding thresholds. Example: "0.3:0.6" • Low threshold (L): determines the minimum number of pre-bound ENIs (Min). Formula: Min = Total number of ENIs of the node × L • High threshold (H): determines the maximum number of pre-bound ENIs (Max). Formula: Max = Total number of ENIs of the node × H • Number of ENIs bound to a BMS node (B) and number of ENIs being used by pods (U): $U + \text{Min} < B < U + \text{Max}$ • If the number of pre-bound ENIs on a BMS node is smaller than the minimum allowed, the system will bind more ENIs to make the numbers equal. • If the number of pre-bound ENIs on a BMS node is larger than the maximum allowed, the system periodically unbinds ENIs (about every 2 minutes) to make the numbers equal. <p>Constraints:</p> <ul style="list-style-type: none"> • This field can be configured only for BMS nodes in CCE Turbo clusters. • Pre-binding ENIs can speed up workload creation but occupies IP addresses. <p>Options: Both the thresholds are one-decimal-place values ranging from 0.0 to 1.0. The low threshold must be smaller than or equal to the high one.</p> <p>Default value: N/A</p>

Parameter	Type	Description
chargingMode	Integer	<p>Details: Billing mode of a node. This parameter has been discarded. Use billingMode in NodeSpec instead.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
marketType	String	<p>Details: When creating a spot ECS, this parameter should be set to spot.</p> <p>Constraints: This parameter is valid only when billingMode is set to 0.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
spotPrice	String	<p>Details: The highest price per hour a user accepts for a spot ECS</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This parameter takes effect only when billingMode is set to 0 and marketType is set to spot. • When billingMode is set to 0 and marketType is set to spot, if spotPrice is not specified, the pay-per-use price is used by default. • The spotPrice value must be less than or equal to the pay-per-use price and greater than or equal to the ECS market price. <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
agency_name	String	<p>Details: Agency name. An agency is created by a tenant administrator on Identity and Access Management (IAM) to provide temporary credentials for CCE nodes to access cloud servers. This parameter is returned only when it is transferred during node creation.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
kubeReservedMem	Integer	<p>Details: Reserved node memory, which is reserved for Kubernetes components.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
systemReservedMem	Integer	<p>Details: Reserved node memory, which is reserved for system components.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
init-node-password	String	<p>Details: Node password. If this parameter is used as a response parameter, asterisks (*) will be displayed.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
securityReinforcementType	String	<p>Details: Security hardening type of a node. Huawei Cloud EulerOS 2.0 images based on DJCP 2.0 level 3 security hardening are supported. DJCP checks identity authentication, access control, security audit, intrusion prevention, and malicious code prevention and hardens security.</p> <p>If this parameter is not specified, the original value is used. For example, If security hardening has been set up for a Huawei Cloud EulerOS 2.0 image and you do not specify this parameter when updating a node pool, the security hardening configuration will remain unchanged. To remove the security hardening configuration, set this parameter to null.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Empty: Security hardening is not enabled. • cybersecurity: Security hardening is enabled. <p>Default value: N/A</p>

Table 4-303 HostnameConfig

Parameter	Type	Description
type	String	<p>Details: Configuration type of the Kubernetes node name. The default value is privatelp.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The node names, Kubernetes node names, and VM names of the nodes configured with cceNodeName are the same. Node names cannot be changed. Once a VM name is altered on the ECS console, the node name cannot be modified accordingly during ECS synchronization. • To prevent conflicts between Kubernetes node names, a suffix is automatically added to the node name of a node configured with cceNodeName. The suffix consists of a hyphen (-) followed by five random lowercase letters and digits (0 to 9). <p>Options:</p> <ul style="list-style-type: none"> • privatelp: Use the private node IP address as the Kubernetes node name. • cceNodeName: Use the CCE node name as the Kubernetes node name. <p>Default value: privatelp</p>

Table 4-304 NodeStatus

Parameter	Type	Description
phase	String	Node status, which is the status of a node during its lifecycle (such as installation and uninstallation) and the status of a node in a Kubernetes cluster. Options: <ul style="list-style-type: none"> • Build: The node is being created. • Installing: The node is being installing. • Upgrading: The node is being upgraded. • Active: The node is running properly. • Abnormal: The node is abnormal. • Deleting: The node is being deleted. • Error: The node is faulty.
lastProbeTime	String	Last time when the node status was checked. If the cluster is in the abnormal, frozen, or intermediate state (for example, creating), the node status check may be affected. The node status that takes more than five minutes to check has no reference value.
jobID	String	ID of a creation or deletion job
serverId	String	ID of the underlying ECS or BMS node
privateIP	String	IP address in the private network segment of the primary NIC on the node
privateIPv6IP	String	IPv6 address in the private network segment of the primary NIC on the node
publicIP	String	Node EIP. If the ECS data is not synchronized in real time, you can click Sync Node Data on the console to manually update the data.
deleteStatus	DeleteStatus object	Resource status during resource deletion.

Parameter	Type	Description
configurationUpToDate	Boolean	Whether the node configuration is consistent with the latest configuration of the node template in the node pool to which the node belongs. When a node pool's OS or runtime is updated, the existing nodes may have a different OS or runtime, causing configurationUpToDate to be false . However, resetting the nodes will synchronize their OSs and runtimes with the node pool, setting configurationUpToDate to true

Table 4-305 DeleteStatus

Parameter	Type	Description
previous_total	Integer	Total number of existing cluster resource records when the cluster is deleted.
current_total	Integer	Latest number of resource records, which is generated based on the current cluster resource records.
updated	Integer	Total number of resource records updated when the cluster is deleted.
added	Integer	Total number of resource records updated when the cluster is deleted.
deleted	Integer	Total number of resource records deleted when the cluster is deleted.

Example Requests

- Create a yearly/monthly node with the flavor of 2 vCPUs and 4 GiB of memory. The node runs EulerOS 2.5 for Docker containers. The sizes of the system disk and data disk of the node are 50 GB and 100 GB, respectively. Both the disks are of the high I/O type.

```
POST /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes
```

```
{
  "kind": "Node",
  "apiVersion": "v3",
  "metadata": {
    "name": "test-67235"
  },
  "spec": {
    "flavor": "c7.large.2",
    "az": "*****",
    "os": "EulerOS 2.5",
```

```

"dataVolumes" : [ {
  "size" : 100,
  "volumetype" : "SAS"
} ],
"billingMode" : 1,
"extendParam" : {
  "maxPods" : 110,
  "periodType" : "month",
  "periodNum" : 1,
  "isAutoPay" : "false",
  "isAutoRenew" : "false"
},
"nodeNicSpec" : {
  "primaryNic" : {
    "subnetId" : "ca964acf-8468-4735-8229-97940ef6c881"
  }
},
"rootVolume" : {
  "size" : 50,
  "volumetype" : "SAS"
},
"runtime" : {
  "name" : "docker"
},
"login" : {
  "sshKey" : "KeyPair-001"
},
"storage" : {
  "storageSelectors" : [ {
    "name" : "cceUse",
    "storageType" : "evs",
    "matchLabels" : {
      "size" : "100",
      "volumeType" : "SAS",
      "count" : "1"
    }
  } ],
  "storageGroups" : [ {
    "name" : "vgpaas",
    "selectorNames" : [ "cceUse" ],
    "cceManaged" : true,
    "virtualSpaces" : [ {
      "name" : "runtime",
      "size" : "90%"
    }, {
      "name" : "kubernetes",
      "size" : "10%"
    } ]
  } ]
},
"count" : 1
}

```

- Create a pay-per-use node with the flavor of 2 vCPUs and 4 GiB of memory. The node runs EulerOS 2.5 for Docker containers. The sizes of the system disk and data disk of the node are 50 GB and 100 GB, respectively. Both the disks are of the high I/O type.

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes

```

{
  "kind" : "Node",
  "apiVersion" : "v3",
  "metadata" : {
    "name" : "test-83790"
  },
  "spec" : {
    "flavor" : "c7.large.2",
    "az" : "*****",

```

```

"os" : "EulerOS 2.5",
"dataVolumes" : [ {
  "size" : 100,
  "volumetype" : "SAS"
} ],
"billingMode" : 0,
"extendParam" : {
  "maxPods" : 110
},
"nodeNicSpec" : {
  "primaryNic" : {
    "subnetId" : "ca964acf-8468-4735-8229-97940ef6c881"
  }
},
"rootVolume" : {
  "size" : 50,
  "volumetype" : "SAS"
},
"runtime" : {
  "name" : "docker"
},
"login" : {
  "sshKey" : "KeyPair-001"
},
"storage" : {
  "storageSelectors" : [ {
    "name" : "cceUse",
    "storageType" : "evs",
    "matchLabels" : {
      "size" : "100",
      "volumeType" : "SAS",
      "count" : "1"
    }
  }
],
"storageGroups" : [ {
  "name" : "vgpaas",
  "selectorNames" : [ "cceUse" ],
  "cceManaged" : true,
  "virtualSpaces" : [ {
    "name" : "runtime",
    "size" : "90%"
  }, {
    "name" : "kubernetes",
    "size" : "10%"
  }
]
} ]
},
"count" : 1
}
}

```

- Create a pay-per-usenode with the flavor of 2 vCPUs and 4 GiB of memory. The node runs Huawei Cloud EulerOS 2.0 and uses Docker. The sizes of the system disk and data disk of the node are 50 GB and 100 GB, respectively. The data disk uses the shared disk space mode.

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes

```

{
  "kind" : "Node",
  "apiVersion" : "v3",
  "metadata" : {
    "name" : "test-66909"
  },
  "spec" : {
    "flavor" : "c7.large.2",
    "az" : "*****",
    "os" : "Huawei Cloud EulerOS 2.0",
    "dataVolumes" : [ {
      "size" : 100,

```

```
    "volumetype" : "SAS"
  } ],
  "billingMode" : 0,
  "extendParam" : {
    "maxPods" : 110
  },
  "nodeNicSpec" : {
    "primaryNic" : {
      "subnetId" : "ca964acf-8468-4735-8229-97940ef6c881"
    }
  },
  "rootVolume" : {
    "size" : 50,
    "volumetype" : "SAS"
  },
  "runtime" : {
    "name" : "docker"
  },
  "login" : {
    "sshKey" : "KeyPair-001"
  },
  "storage" : {
    "storageSelectors" : [ {
      "name" : "cceUse",
      "storageType" : "evs",
      "matchLabels" : {
        "size" : "100",
        "volumeType" : "SAS",
        "count" : "1"
      }
    }
  ],
  "storageGroups" : [ {
    "name" : "vgpaas",
    "selectorNames" : [ "cceUse" ],
    "cceManaged" : true,
    "virtualSpaces" : [ {
      "name" : "share",
      "size" : "100%"
    }
  ]
  } ]
},
"count" : 1
}
}
```

Example Responses

Status code: 201

The job for creating a node in a specified cluster is successfully delivered.

```
{
  "kind" : "Node",
  "apiVersion" : "v3",
  "metadata" : {
    "name" : "test-83790",
    "uid" : "5ecfddfe-87db-11ec-b5e5-0255ac101514",
    "annotations" : {
      "jobid" : "5ec1518c-87db-11ec-b5e5-0255ac101514",
      "resourceJobId" : "5ed0d692-87db-11ec-b5e5-0255ac101514"
    }
  },
  "spec" : {
    "flavor" : "c7.large.2",
    "az" : "*****",
    "os" : "EulerOS 2.5",
    "login" : {
      "sshKey" : "KeyPair-001"
    }
  },
}
```

```
"rootVolume" : {
  "volumetype" : "SAS",
  "size" : 50
},
"dataVolumes" : [ {
  "volumetype" : "SAS",
  "size" : 100
} ],
"storage" : {
  "storageSelectors" : [ {
    "name" : "cceUse",
    "storageType" : "evs",
    "matchLabels" : {
      "count" : "1",
      "size" : "100",
      "volumeType" : "SAS"
    }
  } ],
  "storageGroups" : [ {
    "name" : "vgpaas",
    "cceManaged" : true,
    "selectorNames" : [ "cceUse" ],
    "virtualSpaces" : [ {
      "name" : "runtime",
      "size" : "90%"
    }, {
      "name" : "kubernetes",
      "size" : "10%"
    } ]
  } ]
},
"publicIP" : {
  "eip" : {
    "bandwidth" : { }
  }
},
"nodeNicSpec" : {
  "primaryNic" : {
    "subnetId" : "ca964acf-8468-4735-8229-97940ef6c881"
  }
},
"count" : 1,
"billingMode" : 0,
"runtime" : {
  "name" : "docker"
},
"extendParam" : {
  "chargingMode" : 0,
  "ecs:performancetype" : "computingv3",
  "init-node-password" : "*****",
  "maxPods" : 110,
  "publicKey" : ""
}
},
"status" : {
  "jobID" : "5ec1518c-87db-11ec-b5e5-0255ac101514"
}
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

- Create a yearly/monthly node with the flavor of 2 vCPUs and 4 GiB of memory. The node runs EulerOS 2.5 for Docker containers. The sizes of the

system disk and data disk of the node are 50 GB and 100 GB, respectively. Both the disks are of the high I/O type.

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;
import com.huaweicloud.sdk.cce.v3.model.Runtime;

import java.util.List;
import java.util.ArrayList;

public class CreateNodeSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before
        // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
        // environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        CreateNodeRequest request = new CreateNodeRequest();
        request.withClusterId("{cluster_id}");
        NodeCreateRequest body = new NodeCreateRequest();
        NodeExtendParam extendParamSpec = new NodeExtendParam();
        extendParamSpec.withMaxPods(110)
            .withPeriodType("month")
            .withPeriodNum(1)
            .withIsAutoRenew("false")
            .withIsAutoPay("false");
        Runtime runtimeSpec = new Runtime();
        runtimeSpec.withName(Runtime.NameEnum.fromValue("docker"));
        NicSpec primaryNicNodeNicSpec = new NicSpec();
        primaryNicNodeNicSpec.withSubnetId("ca964acf-8468-4735-8229-97940ef6c881");
        NodeNicSpec nodeNicSpecSpec = new NodeNicSpec();
        nodeNicSpecSpec.withPrimaryNic(primaryNicNodeNicSpec);
        List<VirtualSpace> listStorageGroupsVirtualSpaces = new ArrayList<>();
        listStorageGroupsVirtualSpaces.add(
            new VirtualSpace()
                .withName("runtime")
                .withSize("90%")
        );
        listStorageGroupsVirtualSpaces.add(
            new VirtualSpace()
                .withName("kubernetes")
                .withSize("10%")
        );
        List<String> listStorageGroupsSelectorNames = new ArrayList<>();
        listStorageGroupsSelectorNames.add("cceUse");
        List<StorageGroups> listStorageStorageGroups = new ArrayList<>();
        listStorageStorageGroups.add(
```

```
        new StorageGroups()
            .withName("vgpaas")
            .withCceManaged(true)
            .withSelectorNames(listStorageGroupsSelectorNames)
            .withVirtualSpaces(listStorageGroupsVirtualSpaces)
        );
        StorageSelectorsMatchLabels matchLabelsStorageSelectors = new
StorageSelectorsMatchLabels();
        matchLabelsStorageSelectors.withSize("100")
            .withVolumeType("SAS")
            .withCount("1");
        List<StorageSelectors> listStorageStorageSelectors = new ArrayList<>();
        listStorageStorageSelectors.add(
            new StorageSelectors()
                .withName("cceUse")
                .withStorageType("evs")
                .withMatchLabels(matchLabelsStorageSelectors)
        );
        Storage storageSpec = new Storage();
        storageSpec.withStorageSelectors(listStorageStorageSelectors)
            .withStorageGroups(listStorageStorageGroups);
        List<Volume> listSpecDataVolumes = new ArrayList<>();
        listSpecDataVolumes.add(
            new Volume()
                .withSize(100)
                .withVolumetype("SAS")
        );
        Volume rootVolumeSpec = new Volume();
        rootVolumeSpec.withSize(50)
            .withVolumetype("SAS");
        Login loginSpec = new Login();
        loginSpec.withSshKey("KeyPair-001");
        NodeSpec specbody = new NodeSpec();
        specbody.withFlavor("c7.large.2")
            .withAz("*****")
            .withOs("EulerOS 2.5")
            .withLogin(loginSpec)
            .withRootVolume(rootVolumeSpec)
            .withDataVolumes(listSpecDataVolumes)
            .withStorage(storageSpec)
            .withNodeNicSpec(nodeNicSpecSpec)
            .withCount(1)
            .withBillingMode(1)
            .withRuntime(runtimeSpec)
            .withExtendParam(extendParamSpec);
        NodeMetadata metadatabody = new NodeMetadata();
        metadatabody.withName("test-67235");
        body.withSpec(specbody);
        body.withMetadata(metadatabody);
        body.withApiVersion("v3");
        body.withKind("Node");
        request.withBody(body);
        try {
            CreateNodeResponse response = client.createNode(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

- Create a pay-per-use node with the flavor of 2 vCPUs and 4 GiB of memory. The node runs EulerOS 2.5 for Docker containers. The sizes of the system disk and data disk of the node are 50 GB and 100 GB, respectively. Both the disks are of the high I/O type.

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;
import com.huaweicloud.sdk.cce.v3.model.Runtime;

import java.util.List;
import java.util.ArrayList;

public class CreateNodeSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before
        // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
        // environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();

        CreateNodeRequest request = new CreateNodeRequest();
        request.withClusterId("{cluster_id}");
        NodeCreateRequest body = new NodeCreateRequest();
        NodeExtendParam extendParamSpec = new NodeExtendParam();
        extendParamSpec.withMaxPods(110);
        Runtime runtimeSpec = new Runtime();
        runtimeSpec.withName(Runtime.NameEnum.fromValue("docker"));
        NicSpec primaryNicNodeNicSpec = new NicSpec();
        primaryNicNodeNicSpec.withSubnetId("ca964acf-8468-4735-8229-97940ef6c881");
        NodeNicSpec nodeNicSpecSpec = new NodeNicSpec();
        nodeNicSpecSpec.withPrimaryNic(primaryNicNodeNicSpec);
        List<VirtualSpace> listStorageGroupsVirtualSpaces = new ArrayList<>();
        listStorageGroupsVirtualSpaces.add(
            new VirtualSpace()
                .withName("runtime")
                .withSize("90%")
        );
        listStorageGroupsVirtualSpaces.add(
            new VirtualSpace()
                .withName("kubernetes")
                .withSize("10%")
        );
        List<String> listStorageGroupsSelectorNames = new ArrayList<>();
        listStorageGroupsSelectorNames.add("cceUse");
        List<StorageGroups> listStorageStorageGroups = new ArrayList<>();
        listStorageStorageGroups.add(
            new StorageGroups()
```



```

        .withName("vgpaas")
        .withCceManaged(true)
        .withSelectorNames(listStorageGroupsSelectorNames)
        .withVirtualSpaces(listStorageGroupsVirtualSpaces)
    );
    StorageSelectorsMatchLabels matchLabelsStorageSelectors = new
StorageSelectorsMatchLabels();
    matchLabelsStorageSelectors.withSize("100")
        .withVolumeType("SAS")
        .withCount("1");
    List<StorageSelectors> listStorageStorageSelectors = new ArrayList<>();
    listStorageStorageSelectors.add(
        new StorageSelectors()
            .withName("cceUse")
            .withStorageType("evs")
            .withMatchLabels(matchLabelsStorageSelectors)
    );
    Storage storageSpec = new Storage();
    storageSpec.withStorageSelectors(listStorageStorageSelectors)
        .withStorageGroups(listStorageStorageGroups);
    List<Volume> listSpecDataVolumes = new ArrayList<>();
    listSpecDataVolumes.add(
        new Volume()
            .withSize(100)
            .withVolumetype("SAS")
    );
    Volume rootVolumeSpec = new Volume();
    rootVolumeSpec.withSize(50)
        .withVolumetype("SAS");
    Login loginSpec = new Login();
    loginSpec.withSshKey("KeyPair-001");
    NodeSpec specbody = new NodeSpec();
    specbody.withFlavor("c7.large.2")
        .withAz("*****")
        .withOs("EulerOS 2.5")
        .withLogin(loginSpec)
        .withRootVolume(rootVolumeSpec)
        .withDataVolumes(listSpecDataVolumes)
        .withStorage(storageSpec)
        .withNodeNicSpec(nodeNicSpecSpec)
        .withCount(1)
        .withBillingMode(0)
        .withRuntime(runtimeSpec)
        .withExtendParam(extendParamSpec);
    NodeMetadata metadatabody = new NodeMetadata();
    metadatabody.withName("test-83790");
    body.withSpec(specbody);
    body.withMetadata(metadatabody);
    body.withApiVersion("v3");
    body.withKind("Node");
    request.withBody(body);
    try {
        CreateNodeResponse response = client.createNode(request);
        System.out.println(response.toString());
    } catch (ConnectionException e) {
        e.printStackTrace();
    } catch (RequestTimeoutException e) {
        e.printStackTrace();
    } catch (ServiceResponseException e) {
        e.printStackTrace();
        System.out.println(e.getHttpStatusCode());
        System.out.println(e.getRequestId());
        System.out.println(e.getErrorCode());
        System.out.println(e.getErrorMsg());
    }
}
}
}

```

- Create a pay-per-usenode with the flavor of 2 vCPUs and 4 GiB of memory. The node runs Huawei Cloud EulerOS 2.0 and uses Docker. The sizes of the

system disk and data disk of the node are 50 GB and 100 GB, respectively. The data disk uses the shared disk space mode.

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;
import com.huaweicloud.sdk.cce.v3.model.Runtime;

import java.util.List;
import java.util.ArrayList;

public class CreateNodeSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before
        // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
        // environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        CreateNodeRequest request = new CreateNodeRequest();
        request.withClusterId("{cluster_id}");
        NodeCreateRequest body = new NodeCreateRequest();
        NodeExtendParam extendParamSpec = new NodeExtendParam();
        extendParamSpec.withMaxPods(110);
        Runtime runtimeSpec = new Runtime();
        runtimeSpec.withName(Runtime.NameEnum.fromValue("docker"));
        NicSpec primaryNicNodeNicSpec = new NicSpec();
        primaryNicNodeNicSpec.withSubnetId("ca964acf-8468-4735-8229-97940ef6c881");
        NodeNicSpec nodeNicSpecSpec = new NodeNicSpec();
        nodeNicSpecSpec.withPrimaryNic(primaryNicNodeNicSpec);
        List<VirtualSpace> listStorageGroupsVirtualSpaces = new ArrayList<>();
        listStorageGroupsVirtualSpaces.add(
            new VirtualSpace()
                .withName("share")
                .withSize("100%")
        );
        List<String> listStorageGroupsSelectorNames = new ArrayList<>();
        listStorageGroupsSelectorNames.add("cceUse");
        List<StorageGroups> listStorageStorageGroups = new ArrayList<>();
        listStorageStorageGroups.add(
            new StorageGroups()
                .withName("vgpaas")
                .withCceManaged(true)
                .withSelectorNames(listStorageGroupsSelectorNames)
                .withVirtualSpaces(listStorageGroupsVirtualSpaces)
        );
        StorageSelectorsMatchLabels matchLabelsStorageSelectors = new
StorageSelectorsMatchLabels();
        matchLabelsStorageSelectors.withSize("100")
```

```
.withVolumeType("SAS")
.withCount("1");
List<StorageSelectors> listStorageStorageSelectors = new ArrayList<>();
listStorageStorageSelectors.add(
    new StorageSelectors()
        .WithName("cceUse")
        .withStorageType("evs")
        .withMatchLabels(matchLabelsStorageSelectors)
);
Storage storageSpec = new Storage();
storageSpec.withStorageSelectors(listStorageStorageSelectors)
    .withStorageGroups(listStorageStorageGroups);
List<Volume> listSpecDataVolumes = new ArrayList<>();
listSpecDataVolumes.add(
    new Volume()
        .withSize(100)
        .withVolumetype("SAS")
);
Volume rootVolumeSpec = new Volume();
rootVolumeSpec.withSize(50)
    .withVolumetype("SAS");
Login loginSpec = new Login();
loginSpec.withSshKey("KeyPair-001");
NodeSpec specbody = new NodeSpec();
specbody.withFlavor("c7.large.2")
    .withAz("*****")
    .withOs("Huawei Cloud EulerOS 2.0")
    .withLogin(loginSpec)
    .withRootVolume(rootVolumeSpec)
    .withDataVolumes(listSpecDataVolumes)
    .withStorage(storageSpec)
    .withNodeNicSpec(nodeNicSpecSpec)
    .withCount(1)
    .withBillingMode(0)
    .withRuntime(runtimeSpec)
    .withExtendParam(extendParamSpec);
NodeMetadata metadatabody = new NodeMetadata();
metadatabody.withName("test-66909");
body.withSpec(specbody);
body.withMetadata(metadatabody);
body.withApiVersion("v3");
body.withKind("Node");
request.withBody(body);
try {
    CreateNodeResponse response = client.createNode(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

- Create a yearly/monthly node with the flavor of 2 vCPUs and 4 GiB of memory. The node runs EulerOS 2.5 for Docker containers. The sizes of the system disk and data disk of the node are 50 GB and 100 GB, respectively. Both the disks are of the high I/O type.

```
# coding: utf-8
```

```
import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    # environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before
    # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    # environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = CreateNodeRequest()
        request.cluster_id = "{cluster_id}"
        extendParamSpec = NodeExtendParam(
            max_pods=110,
            period_type="month",
            period_num=1,
            is_auto_renew="false",
            is_auto_pay="false"
        )
        runtimeSpec = Runtime(
            name="docker"
        )
        primaryNicNodeNicSpec = NicSpec(
            subnet_id="ca964acf-8468-4735-8229-97940ef6c881"
        )
        nodeNicSpecSpec = NodeNicSpec(
            primary_nic=primaryNicNodeNicSpec
        )
        listVirtualSpacesStorageGroups = [
            VirtualSpace(
                name="runtime",
                size="90%"
            ),
            VirtualSpace(
                name="kubernetes",
                size="10%"
            )
        ]
        listSelectorNamesStorageGroups = [
            "cceUse"
        ]
        listStorageGroupsStorage = [
            StorageGroups(
                name="vgpaas",
                cce_managed=True,
                selector_names=listSelectorNamesStorageGroups,
                virtual_spaces=listVirtualSpacesStorageGroups
            )
        ]
        matchLabelsStorageSelectors = StorageSelectorsMatchLabels(
            size="100",
            volume_type="SAS",
            count="1"
        )
    
```

```

listStorageSelectorsStorage = [
    StorageSelectors(
        name="cceUse",
        storage_type="evs",
        match_labels=matchLabelsStorageSelectors
    )
]
storageSpec = Storage(
    storage_selectors=listStorageSelectorsStorage,
    storage_groups=listStorageGroupsStorage
)
listDataVolumesSpec = [
    Volume(
        size=100,
        volumetype="SAS"
    )
]
rootVolumeSpec = Volume(
    size=50,
    volumetype="SAS"
)
loginSpec = Login(
    ssh_key="KeyPair-001"
)
specbody = NodeSpec(
    flavor="c7.large.2",
    az="*****",
    os="EulerOS 2.5",
    login=loginSpec,
    root_volume=rootVolumeSpec,
    data_volumes=listDataVolumesSpec,
    storage=storageSpec,
    node_nic_spec=nodeNicSpecSpec,
    count=1,
    billing_mode=1,
    runtime=runtimeSpec,
    extend_param=extendParamSpec
)
metadatabody = NodeMetadata(
    name="test-67235"
)
request.body = NodeCreateRequest(
    spec=specbody,
    metadata=metadatabody,
    api_version="v3",
    kind="Node"
)
response = client.create_node(request)
print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)

```

- Create a pay-per-use node with the flavor of 2 vCPUs and 4 GiB of memory. The node runs EulerOS 2.5 for Docker containers. The sizes of the system disk and data disk of the node are 50 GB and 100 GB, respectively. Both the disks are of the high I/O type.

```

# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great

```

security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.

In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment

```
ak = os.environ["CLOUD_SDK_AK"]
sk = os.environ["CLOUD_SDK_SK"]
projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = CceClient.new_builder() \
    .with_credentials(credentials) \
    .with_region(CceRegion.value_of("<YOUR REGION>")) \
    .build()

try:
    request = CreateNodeRequest()
    request.cluster_id = "{cluster_id}"
    extendParamSpec = NodeExtendParam(
        max_pods=110
    )
    runtimeSpec = Runtime(
        name="docker"
    )
    primaryNicNodeNicSpec = NicSpec(
        subnet_id="ca964acf-8468-4735-8229-97940ef6c881"
    )
    nodeNicSpecSpec = NodeNicSpec(
        primary_nic=primaryNicNodeNicSpec
    )
    listVirtualSpacesStorageGroups = [
        VirtualSpace(
            name="runtime",
            size="90%"
        ),
        VirtualSpace(
            name="kubernetes",
            size="10%"
        )
    ]
    listSelectorNamesStorageGroups = [
        "cceUse"
    ]
    listStorageGroupsStorage = [
        StorageGroups(
            name="vgpaas",
            cce_managed=True,
            selector_names=listSelectorNamesStorageGroups,
            virtual_spaces=listVirtualSpacesStorageGroups
        )
    ]
    matchLabelsStorageSelectors = StorageSelectorsMatchLabels(
        size="100",
        volume_type="SAS",
        count="1"
    )
    listStorageSelectorsStorage = [
        StorageSelectors(
            name="cceUse",
            storage_type="evs",
            match_labels=matchLabelsStorageSelectors
        )
    ]
    storageSpec = Storage(
        storage_selectors=listStorageSelectorsStorage,
        storage_groups=listStorageGroupsStorage
    )
    listDataVolumesSpec = [
```

```
        Volume(
            size=100,
            volumetype="SAS"
        )
    ]
    rootVolumeSpec = Volume(
        size=50,
        volumetype="SAS"
    )
    loginSpec = Login(
        ssh_key="KeyPair-001"
    )
    specbody = NodeSpec(
        flavor="c7.large.2",
        az="*****",
        os="EulerOS 2.5",
        login=loginSpec,
        root_volume=rootVolumeSpec,
        data_volumes=listDataVolumesSpec,
        storage=storageSpec,
        node_nic_spec=nodeNicSpecSpec,
        count=1,
        billing_mode=0,
        runtime=runtimeSpec,
        extend_param=extendParamSpec
    )
    metadatabody = NodeMetadata(
        name="test-83790"
    )
    request.body = NodeCreateRequest(
        spec=specbody,
        metadata=metadatabody,
        api_version="v3",
        kind="Node"
    )
    response = client.create_node(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

- Create a pay-per-usenode with the flavor of 2 vCPUs and 4 GiB of memory. The node runs Huawei Cloud EulerOS 2.0 and uses Docker. The sizes of the system disk and data disk of the node are 50 GB and 100 GB, respectively. The data disk uses the shared disk space mode.

```
# coding: utf-8
```

```
import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    # environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before
    # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    # environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
```

```
.with_credentials(credentials) \  
.with_region(CceRegion.value_of("<YOUR REGION>")) \  
.build()  
  
try:  
    request = CreateNodeRequest()  
    request.cluster_id = "{cluster_id}"  
    extendParamSpec = NodeExtendParam(  
        max_pods=110  
    )  
    runtimeSpec = Runtime(  
        name="docker"  
    )  
    primaryNicNodeNicSpec = NicSpec(  
        subnet_id="ca964acf-8468-4735-8229-97940ef6c881"  
    )  
    nodeNicSpecSpec = NodeNicSpec(  
        primary_nic=primaryNicNodeNicSpec  
    )  
    listVirtualSpacesStorageGroups = [  
        VirtualSpace(  
            name="share",  
            size="100%"  
        )  
    ]  
    listSelectorNamesStorageGroups = [  
        "cceUse"  
    ]  
    listStorageGroupsStorage = [  
        StorageGroups(  
            name="vgpaas",  
            cce_managed=True,  
            selector_names=listSelectorNamesStorageGroups,  
            virtual_spaces=listVirtualSpacesStorageGroups  
        )  
    ]  
    matchLabelsStorageSelectors = StorageSelectorsMatchLabels(  
        size="100",  
        volume_type="SAS",  
        count="1"  
    )  
    listStorageSelectorsStorage = [  
        StorageSelectors(  
            name="cceUse",  
            storage_type="evs",  
            match_labels=matchLabelsStorageSelectors  
        )  
    ]  
    storageSpec = Storage(  
        storage_selectors=listStorageSelectorsStorage,  
        storage_groups=listStorageGroupsStorage  
    )  
    listDataVolumesSpec = [  
        Volume(  
            size=100,  
            volumetype="SAS"  
        )  
    ]  
    rootVolumeSpec = Volume(  
        size=50,  
        volumetype="SAS"  
    )  
    loginSpec = Login(  
        ssh_key="KeyPair-001"  
    )  
    specbody = NodeSpec(  
        flavor="c7.large.2",  
        az="*****",  
        os="Huawei Cloud EulerOS 2.0",
```



```
        login=loginSpec,  
        root_volume=rootVolumeSpec,  
        data_volumes=listDataVolumesSpec,  
        storage=storageSpec,  
        node_nic_spec=nodeNicSpecSpec,  
        count=1,  
        billing_mode=0,  
        runtime=runtimeSpec,  
        extend_param=extendParamSpec  
    )  
    metadatabody = NodeMetadata(  
        name="test-66909"  
    )  
    request.body = NodeCreateRequest(  
        spec=specbody,  
        metadata=metadatabody,  
        api_version="v3",  
        kind="Node"  
    )  
    response = client.create_node(request)  
    print(response)  
except exceptions.ClientRequestException as e:  
    print(e.status_code)  
    print(e.request_id)  
    print(e.error_code)  
    print(e.error_msg)
```

Go

- Create a yearly/monthly node with the flavor of 2 vCPUs and 4 GiB of memory. The node runs EulerOS 2.5 for Docker containers. The sizes of the system disk and data disk of the node are 50 GB and 100 GB, respectively. Both the disks are of the high I/O type.

```
package main  
  
import (  
    "fmt"  
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"  
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"  
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"  
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"  
)  
  
func main() {  
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great  
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or  
    // environment variables and decrypted during use to ensure security.  
    // In this example, AK and SK are stored in environment variables for authentication. Before  
    // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local  
    // environment  
    ak := os.Getenv("CLOUD_SDK_AK")  
    sk := os.Getenv("CLOUD_SDK_SK")  
    projectId := "{project_id}"  
  
    auth := basic.NewCredentialsBuilder().  
        WithAk(ak).  
        WithSk(sk).  
        WithProjectId(projectId).  
        Build()  
  
    client := cce.NewCceClient(  
        cce.CceClientBuilder().  
            WithRegion(region.ValueOf("<YOUR REGION>")).  
            WithCredential(auth).  
            Build())  
  
    request := &model.CreateNodeRequest{}  
    request.ClusterId = "{cluster_id}"
```

```
maxPodsExtendParam:= int32(110)
periodTypeExtendParam:= "month"
periodNumExtendParam:= int32(1)
isAutoRenewExtendParam:= "false"
isAutoPayExtendParam:= "false"
extendParamSpec := &model.NodeExtendParam{
    MaxPods: &maxPodsExtendParam,
    PeriodType: &periodTypeExtendParam,
    PeriodNum: &periodNumExtendParam,
    IsAutoRenew: &isAutoRenewExtendParam,
    IsAutoPay: &isAutoPayExtendParam,
}
nameRuntime:= model.GetRuntimeNameEnum().DOCKER
runtimeSpec := &model.Runtime{
    Name: &nameRuntime,
}
subnetIdPrimaryNic:= "ca964acf-8468-4735-8229-97940ef6c881"
primaryNicNodeNicSpec := &model.NicSpec{
    SubnetId: &subnetIdPrimaryNic,
}
nodeNicSpecSpec := &model.NodeNicSpec{
    PrimaryNic: primaryNicNodeNicSpec,
}
var listVirtualSpacesStorageGroups = []model.VirtualSpace{
    {
        Name: "runtime",
        Size: "90%",
    },
    {
        Name: "kubernetes",
        Size: "10%",
    },
}
var listSelectorNamesStorageGroups = []string{
    "cceUse",
}
cceManagedStorageGroups:= true
var listStorageGroupsStorage = []model.StorageGroups{
    {
        Name: "vgpaas",
        CceManaged: &cceManagedStorageGroups,
        SelectorNames: listSelectorNamesStorageGroups,
        VirtualSpaces: listVirtualSpacesStorageGroups,
    },
}
sizeMatchLabels:= "100"
volumeTypeMatchLabels:= "SAS"
countMatchLabels:= "1"
matchLabelsStorageSelectors := &model.StorageSelectorsMatchLabels{
    Size: &sizeMatchLabels,
    VolumeType: &volumeTypeMatchLabels,
    Count: &countMatchLabels,
}
var listStorageSelectorsStorage = []model.StorageSelectors{
    {
        Name: "cceUse",
        StorageType: "evs",
        MatchLabels: matchLabelsStorageSelectors,
    },
}
storageSpec := &model.Storage{
    StorageSelectors: listStorageSelectorsStorage,
    StorageGroups: listStorageGroupsStorage,
}
var listDataVolumesSpec = []model.Volume{
    {
        Size: int32(100),
        Volumetype: "SAS",
    },
}
```

```

}
rootVolumeSpec := &model.Volume{
    Size: int32(50),
    Volumetype: "SAS",
}
sshKeyLogin:= "KeyPair-001"
loginSpec := &model.Login{
    SshKey: &sshKeyLogin,
}
osSpec:= "EulerOS 2.5"
countSpec:= int32(1)
billingModeSpec:= int32(1)
specbody := &model.NodeSpec{
    Flavor: "c7.large.2",
    Az: "*****",
    Os: &osSpec,
    Login: loginSpec,
    RootVolume: rootVolumeSpec,
    DataVolumes: listDataVolumesSpec,
    Storage: storageSpec,
    NodeNicSpec: nodeNicSpecSpec,
    Count: &countSpec,
    BillingMode: &billingModeSpec,
    Runtime: runtimeSpec,
    ExtendParam: extendParamSpec,
}
nameMetadata:= "test-67235"
metadatabody := &model.NodeMetadata{
    Name: &nameMetadata,
}
request.Body = &model.NodeCreateRequest{
    Spec: specbody,
    Metadata: metadatabody,
    ApiVersion: "v3",
    Kind: "Node",
}
response, err := client.CreateNode(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}

```

- Create a pay-per-use node with the flavor of 2 vCPUs and 4 GiB of memory. The node runs EulerOS 2.5 for Docker containers. The sizes of the system disk and data disk of the node are 50 GB and 100 GB, respectively. Both the disks are of the high I/O type.

```

package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    // environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before
    // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    // environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"
}

```

```

auth := basic.NewCredentialsBuilder().
    WithAk(ak).
    WithSk(sk).
    WithProjectId(projectId).
    Build()

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.CreateNodeRequest{
    request.ClusterId = "{cluster_id}"
    maxPodsExtendParam:= int32(110)
    extendParamSpec := &model.NodeExtendParam{
        MaxPods: &maxPodsExtendParam,
    }
    nameRuntime:= model.GetRuntimeNameEnum().DOCKER
    runtimeSpec := &model.Runtime{
        Name: &nameRuntime,
    }
    subnetIdPrimaryNic:= "ca964acf-8468-4735-8229-97940ef6c881"
    primaryNicNodeNicSpec := &model.NicSpec{
        SubnetId: &subnetIdPrimaryNic,
    }
    nodeNicSpecSpec := &model.NodeNicSpec{
        PrimaryNic: primaryNicNodeNicSpec,
    }
}
var listVirtualSpacesStorageGroups = []model.VirtualSpace{
    {
        Name: "runtime",
        Size: "90%",
    },
    {
        Name: "kubernetes",
        Size: "10%",
    },
}
var listSelectorNamesStorageGroups = []string{
    "cceUse",
}
cceManagedStorageGroups:= true
var listStorageGroupsStorage = []model.StorageGroups{
    {
        Name: "vgpaas",
        CceManaged: &cceManagedStorageGroups,
        SelectorNames: listSelectorNamesStorageGroups,
        VirtualSpaces: listVirtualSpacesStorageGroups,
    },
}
sizeMatchLabels:= "100"
volumeTypeMatchLabels:= "SAS"
countMatchLabels:= "1"
matchLabelsStorageSelectors := &model.StorageSelectorsMatchLabels{
    Size: &sizeMatchLabels,
    VolumeType: &volumeTypeMatchLabels,
    Count: &countMatchLabels,
}
var listStorageSelectorsStorage = []model.StorageSelectors{
    {
        Name: "cceUse",
        StorageType: "evs",
        MatchLabels: matchLabelsStorageSelectors,
    },
}
storageSpec := &model.Storage{
    StorageSelectors: listStorageSelectorsStorage,
    StorageGroups: listStorageGroupsStorage,
}

```

```

}
var listDataVolumesSpec = []model.Volume{
    {
        Size: int32(100),
        Volumetype: "SAS",
    },
}
rootVolumeSpec := &model.Volume{
    Size: int32(50),
    Volumetype: "SAS",
}
sshKeyLogin:= "KeyPair-001"
loginSpec := &model.Login{
    SshKey: &sshKeyLogin,
}
osSpec:= "EulerOS 2.5"
countSpec:= int32(1)
billingModeSpec:= int32(0)
specbody := &model.NodeSpec{
    Flavor: "c7.large.2",
    Az: "*****",
    Os: &osSpec,
    Login: loginSpec,
    RootVolume: rootVolumeSpec,
    DataVolumes: listDataVolumesSpec,
    Storage: storageSpec,
    NodeNicSpec: nodeNicSpecSpec,
    Count: &countSpec,
    BillingMode: &billingModeSpec,
    Runtime: runtimeSpec,
    ExtendParam: extendParamSpec,
}
nameMetadata:= "test-83790"
metadatabody := &model.NodeMetadata{
    Name: &nameMetadata,
}
request.Body = &model.NodeCreateRequest{
    Spec: specbody,
    Metadata: metadatabody,
    ApiVersion: "v3",
    Kind: "Node",
}
response, err := client.CreateNode(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}

```

- Create a pay-per-usenode with the flavor of 2 vCPUs and 4 GiB of memory. The node runs Huawei Cloud EulerOS 2.0 and uses Docker. The sizes of the system disk and data disk of the node are 50 GB and 100 GB, respectively. The data disk uses the shared disk space mode.

```

package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    // environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before

```

running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment

```
ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
    WithAk(ak).
    WithSk(sk).
    WithProjectId(projectId).
    Build()

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.CreateNodeRequest{
    request.ClusterId = "{cluster_id}"
    maxPodsExtendParam:= int32(110)
    extendParamSpec := &model.NodeExtendParam{
        MaxPods: &maxPodsExtendParam,
    }
    nameRuntime:= model.GetRuntimeNameEnum().DOCKER
    runtimeSpec := &model.Runtime{
        Name: &nameRuntime,
    }
    subnetIdPrimaryNic:= "ca964acf-8468-4735-8229-97940ef6c881"
    primaryNicNodeNicSpec := &model.NicSpec{
        SubnetId: &subnetIdPrimaryNic,
    }
    nodeNicSpecSpec := &model.NodeNicSpec{
        PrimaryNic: primaryNicNodeNicSpec,
    }
}
var listVirtualSpacesStorageGroups = []model.VirtualSpace{
    {
        Name: "share",
        Size: "100%",
    },
}
var listSelectorNamesStorageGroups = []string{
    "cceUse",
}
cceManagedStorageGroups:= true
var listStorageGroupsStorage = []model.StorageGroups{
    {
        Name: "vgpaas",
        CceManaged: &cceManagedStorageGroups,
        SelectorNames: listSelectorNamesStorageGroups,
        VirtualSpaces: listVirtualSpacesStorageGroups,
    },
}
sizeMatchLabels:= "100"
volumeTypeMatchLabels:= "SAS"
countMatchLabels:= "1"
matchLabelsStorageSelectors := &model.StorageSelectorsMatchLabels{
    Size: &sizeMatchLabels,
    VolumeType: &volumeTypeMatchLabels,
    Count: &countMatchLabels,
}
var listStorageSelectorsStorage = []model.StorageSelectors{
    {
        Name: "cceUse",
        StorageType: "evs",
        MatchLabels: matchLabelsStorageSelectors,
    },
}
storageSpec := &model.Storage{
```

```

StorageSelectors: listStorageSelectorsStorage,
StorageGroups: listStorageGroupsStorage,
}
var listDataVolumesSpec = []model.Volume{
{
Size: int32(100),
Volumetype: "SAS",
},
}
rootVolumeSpec := &model.Volume{
Size: int32(50),
Volumetype: "SAS",
}
sshKeyLogin:= "KeyPair-001"
loginSpec := &model.Login{
SshKey: &sshKeyLogin,
}
osSpec:= "Huawei Cloud EulerOS 2.0"
countSpec:= int32(1)
billingModeSpec:= int32(0)
specbody := &model.NodeSpec{
Flavor: "c7.large.2",
Az: "*****",
Os: &osSpec,
Login: loginSpec,
RootVolume: rootVolumeSpec,
DataVolumes: listDataVolumesSpec,
Storage: storageSpec,
NodeNicSpec: nodeNicSpecSpec,
Count: &countSpec,
BillingMode: &billingModeSpec,
Runtime: runtimeSpec,
ExtendParam: extendParamSpec,
}
nameMetadata:= "test-66909"
metadatabody := &model.NodeMetadata{
Name: &nameMetadata,
}
request.Body = &model.NodeCreateRequest{
Spec: specbody,
Metadata: metadatabody,
ApiVersion: "v3",
Kind: "Node",
}
response, err := client.CreateNode(request)
if err == nil {
fmt.Printf("%+v\n", response)
} else {
fmt.Println(err)
}
}
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
201	The job for creating a node in a specified cluster is successfully delivered.

Error Codes

See [Error Codes](#).

4.3.2 Reading a Specified Node

Function

This API is used to obtain details about a specified node via the node ID.

NOTE

The URL for cluster management is in the format of `https://Endpoint/uri`. In the URL, **uri** indicates the resource path, that is, the path for API access.

Calling Method

For details, see [Calling APIs](#).

URI

GET `/api/v3/projects/{project_id}/clusters/{cluster_id}/nodes/{node_id}`

Table 4-306 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI . Constraints: None Options: Project IDs of the account Default value: N/A

Parameter	Mandatory	Type	Description
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>
node_id	Yes	String	<p>Node ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p>

Request Parameters

Table 4-307 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-308 Response body parameters

Parameter	Type	Description
kind	String	API type. The value is fixed at Node and cannot be changed.
apiVersion	String	API version. The value is fixed at v3 and cannot be changed.
metadata	NodeMetadata object	Node metadata, which is a collection of attributes.
spec	NodeSpec object	Detailed description of the node. CCE creates or updates objects by defining or updating spec .
status	NodeStatus object	Node status, which is dynamically recorded. A user-defined value will not function when a node is being created or modified.

Table 4-309 NodeMetadata

Parameter	Type	Description
name	String	<p>Node name.</p> <p>NOTE Enter 1 to 56 characters starting with a lowercase letter and not ending with a hyphen (-). Only lowercase letters, digits, hyphens (-), and periods (.) are allowed.</p> <p>If name is not configured or is left blank, the node name is generated based on the default rule, which is <i>Cluster name-Random characters</i>. Only the first 36 characters are kept for a long cluster name.</p> <p>If the number of nodes (count) is greater than 1, some random characters are added to the end of the entered node name according to the default rule, which is <i>User-defined name-Random characters</i>. If the length of the entered node name exceeds 50 characters, the system uses the first 50 characters and adds a random character string to the end of the name.</p>
uid	String	<p>Node ID, which is unique and automatically generated after the resource is created. A user-defined ID will not take effect.</p>
labels	Map<String,String >	<p>CCE node label (not the native Kubernetes label).</p> <p>Labels are used to select objects that meet certain criteria. A label is a key-value pair.</p> <p>Example: <pre>"labels": { "key" : "value" }</pre> </p>

Parameter	Type	Description
annotations	Map<String,String >	<p>CCE node annotations, in key-value pairs (not the native Kubernetes annotations).</p> <p>Example:</p> <pre>"annotations": { "key1": "value1", "key2": "value2" }</pre> <p>NOTE</p> <ul style="list-style-type: none"> • annotations are not used to identify or select objects. The metadata in annotations may be small or large, structured or unstructured, and may include characters that are not allowed in labels. • This parameter is used only for query and cannot be input through a request. Entered data of this parameter is invalid.
creationTimestamp	String	Time when the object was created. The value is automatically generated after the object is created. A user-defined value will not take effect.
updateTimestamp	String	Time when the object was updated. The value is automatically generated after the object is created. A user-defined value will not take effect.
ownerReference	ownerReference object	Owner object

Table 4-310 ownerReference

Parameter	Type	Description
nodepoolName	String	Node pool name
nodepoolID	String	Node pool UID

Table 4-311 NodeSpec

Parameter	Type	Description
flavor	String	<p>Details: Node flavors. For details about the node flavors supported by CCE clusters, see Node Specifications.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
az	String	<p>Details: AZ where the node to be created is located. You need to specify the AZ name. Random AZs will not be allocated to a node created using APIs. For details about AZs supported by CCE, see Regions and Endpoints.</p> <p>Constraints: When you are creating a node pool and configuring a scaling group, this parameter cannot be set to random.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
os	String	<p>Details: Node OS. For details about the supported OSs, see Node OSs.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If the selected OS is not supported by the current cluster version, it will be automatically replaced with a supported OS of the same series. • If alpha.cce/NodeImageID in extendParam is specified during node creation, you do not need to configure this parameter. • If this parameter is not specified, CCE automatically selects a supported OS version based on the cluster version. • This parameter is mandatory when creating a node pool. • If you are using shared disk space when creating a node, this parameter is mandatory. Specifically, the disk initialization configuration management parameter storage is used and the name field of virtualSpaces in StorageGroups is set to share. <p>Options: N/A</p> <p>Default value: N/A</p>
login	Login object	<p>Details: Node login mode. Either the key pair or password must be used for login.</p> <p>Constraints: This parameter cannot be modified when a node pool is being updated.</p>
rootVolume	Volume object	<p>Details: Disk information of a node</p> <p>Constraints: None</p>

Parameter	Type	Description
dataVolumes	Array of Volume objects	<p>Details: Data disk parameters of a node. For DeC nodes, the parameter details are the same as those in rootVolume.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • A VM can have up to 16 disks attached, while a BMS can only have up to 10 disks attached. The maximum number of disks that can be attached to either a VM or BMS is limited by their respective maximum disk limits. (You can add more data disks to each of your nodes through the CCE console or APIs.) • The data disk used by the container runtime and kubelet cannot be detached, or the node will become unavailable. • This parameter can be left blank only when a system disk is selected for the system components.

Parameter	Type	Description
storage	Storage object	<p>Details: Disk initialization management parameter. This parameter is complex to configure. For details, see Attaching Disks to a Node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This field is supported by clusters of v1.15.11-r0 and later versions. If the cluster version is not supported, this field will be ignored. • If a node has both local and EVS disks attached, make sure to not keep the default value for this parameter, or it may result in unexpected disk partitions. • If you want to change the value range of a data disk to 20 to 32768, do not use the default value. • If you want to use the shared disk space (with the runtime and Kubernetes partitions cancelled), do not retain the default value of this parameter. For details about the shared disk space, see Space Allocation of a Data Disk. • If you want to store system components in the system disk, do not use the default value.
publicIP	NodePublicIP object	<p>Details: EIP of a node</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>
nodeNicSpec	NodeNicSpec object	<p>Details: ENI of a node</p> <p>Constraints: None</p>

Parameter	Type	Description
count	Integer	<p>Details: Number of nodes to be created in batches</p> <p>Constraints: This parameter can be left blank when it is used for a node pool.</p> <p>Options: Positive integers that are greater than or equal to 1 and less than or equal to the maximum limit</p> <p>Default value: N/A</p>
billingMode	Integer	<p>Details: Billing mode of a node</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • 0: pay-per-use • 1: yearly/monthly • 2: (Discarded) yearly/monthly billing with auto payment enabled <p>Default value: N/A</p>

Parameter	Type	Description
taints	Array of Taint objects	<p>Details:</p> <p>Taints, which can be added to nodes for anti-affinity configuration. Each taint contains the following parameters:</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain can be prefixed to a key. • Value: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. • Effect: Available options are NoSchedule, PreferNoSchedule, and NoExecute. <p>When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example:</p> <pre>"taints": [{ "key": "status", "value": "unavailable", "effect": "NoSchedule" }, { "key": "looks", "value": "bad", "effect": "NoSchedule" }]</pre> <p>Constraints:</p> <p>A maximum of 20 taints can be configured.</p>

Parameter	Type	Description
k8sTags	Map<String,String>	<p>Details: Defined in key-value pairs.</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain containing a maximum of 253 characters (such as example.com/my-key) can be prefixed to a key. • Value: The value can be left blank or contain 1 to 63 characters that start and end with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. <p>When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example: <pre>"k8sTags": { "key": "value" }</pre></p> <p>Constraints: A maximum of 20 key-value pairs are allowed.</p>

Parameter	Type	Description
ecsGroupId	String	<p>Details: ECS group ID. If this parameter is specified, nodes will be created in the specific ECS group.</p> <p>Constraints: This configuration does not take effect when a node pool is created. To ensure that all nodes in a node pool are in the same ECS group, configure nodeManagement in the node pool.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
dedicatedHostId	String	<p>Details: ID of the DeH to which nodes will be scheduled.</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>
userTags	Array of UserTag objects	<p>Details: Cloud server tag (resource tag). When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Constraints:</p> <ul style="list-style-type: none"> The key of a tag must be unique. The maximum number of custom tags supported by CCE varies depending on regions and cannot exceed 8. A tag key can have a maximum of 36 characters. It can only contain letters, digits, Unicode characters, and special characters (-_).

Parameter	Type	Description
runtime	Runtime object	Details: Container runtime <ul style="list-style-type: none">• Clusters earlier than v1.25: The default value is docker.• Clusters of v1.25 or later: The default value varies with the OSs.• For nodes running EulerOS 2.5 or EulerOS 2.8, the default container runtime is docker. For nodes running other OSs, the default container runtime is containerd. Constraints: None

Parameter	Type	Description
initializedConditions	Array of strings	<p>Details:</p> <p>Custom initialization flag, which is left blank by default.</p> <p>Before CCE nodes are initialized, they are tainted with node.cloudprovider.kubernetes.io/uninitialized to prevent pods from being scheduled to them. When creating a node, you can specify the initializedConditions parameter to control the taint removal time. By default, the timeout interval is not configured.</p> <p>Example:</p> <ol style="list-style-type: none"> 1. Create a node and add parameter "initializedConditions": ["CCEInitial", "CustomedInitial"]. 2. After custom initialization is complete, CCE will call a Kubernetes API (for example, PATCH /v1/nodes/{node_ip}/status) to update the node conditions by adding two labels of types CCEInitial and CustomedInitial and setting the status to True, as shown in the following: <pre>status: conditions: - type: CCEInitial status: 'True' - type: CustomedInitial status: 'True'</pre> <ol style="list-style-type: none"> 1. CCE polls status.Conditions of nodes to check whether there are conditions of types CCEInitial and CustomedInitial. If such conditions exist and the status is True, the node initialization is complete and the initialization taint is removed. 2. initializedConditions allows you to configure a timeout period during node creation. For example, "initializedConditions": ["CCEInitial:15m", "CustomedInitial:15m"] indicates that the timeout period is 15 minutes. After the timeout period is reached, the initialization conditions

Parameter	Type	Description
		<p>will be automatically ignored and the initialization taint will be removed when CCE polls the node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The timeout interval in initializedConditions ranges from 1 to 99 seconds. • Each value has 1 to 20 characters, which must consist of letters and digits. • The maximum number of flags cannot exceed 2. • The unit of the timeout period is minute (m).
extendParam	NodeExtendParam object	<p>Details: Extended parameters for creating a node</p> <p>Constraints: None</p>
hostnameConfig	HostnameConfig object	<p>Details: Kubernetes node name configuration parameter</p> <p>Constraints: The supported cluster version is v1.23.6-r0 to v1.25 or v1.25.2-r0 or later.</p>

Parameter	Type	Description
serverEnterprise-ProjectID	String	<p>Details: Enterprise project ID of a server. CCE does not support features provided by EPS. This field is used only for synchronizing enterprise project IDs of servers.</p> <p>Constraints: To create a node or node pool, you can specify an existing enterprise project for it. If this field is left blank, it inherits the enterprise project attributes of the cluster that runs the node or node pool.</p> <p>When updating a node pool, any configuration modifications you made will apply only to new nodes. You need to modify the enterprise projects of existing nodes on the EPS console.</p> <p>Options: N/A</p> <p>Default value: If no value is specified during update, this field will not be updated. If this parameter is left blank, the cluster enterprise project is returned.</p>

Table 4-312 Login

Parameter	Type	Description
sshKey	String	<p>Details: Name of the key pair used for login</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
userPassword	UserPassword object	<p>Details: Password used for node login</p> <p>Constraints: None</p>

Table 4-313 UserPassword

Parameter	Type	Description
username	String	<p>Details: Login account. The default value is root.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: root</p>
password	String	<p>Details: Login password. If a username and password are used when a node is created, this field is shielded in the response body.</p> <p>Constraints: The password field must be salted during node creation. For details, see Adding a Salt in the password Field When Creating a Node.</p> <p>Options: A password must:</p> <ul style="list-style-type: none"> • Contain 8 to 26 characters. • Contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters !@\$%^-_=+[{ }];:./? • Not contain the username or the username spelled backwards. <p>Default value: N/A</p>

Table 4-314 Volume

Parameter	Type	Description
size	Integer	<p>Details: Disk size, in GiB</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • System disks: 40 to 1024 • The first data disk: 20 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) • Other data disks: 10 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) <p>Default value: N/A</p>
volumetype	String	<p>Details: Disk type. For details about possible values, see the root volume parameter in the API used to create an ECS.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • SAS: high I/O SAS disks • SSD: ultra-high I/O SSD disks • SATA: common I/O SATA disks. SATA disks have been removed from EVS. You can find them attached only to existing nodes. <p>NOTE For details about disk types, see Disk Types and Performance.</p> <p>Default value: N/A</p>

Parameter	Type	Description
extendParam	Map<String, Object>	<p>Details: Extended disk parameters, defined in extendparam in the API used to create an ECS. For details, see extendparam Field Description for Creating Disks.</p> <p>Constraints: None</p>
cluster_id	String	<p>Details: ID of the storage pool used by the ECS system disk. This field is used only for DeC clusters and functions as dssPoolID, that is, the ID of the DSS storage pool. To obtain the value, see the ID field in the API used to obtain details of a DSS storage pool.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
cluster_type	String	<p>Details: Storage class of the ECS system disk</p> <p>Constraints: None</p> <p>Options: This field is used only for DeC clusters, and the value is always dss.</p> <p>Default value: N/A</p>

Parameter	Type	Description
hw:passthrough	Boolean	<p>Details:</p> <ul style="list-style-type: none"> Pay attention to this field if your ECS is SDI-compliant. If the value of this field is true, the created disk is of SCSI type. If the node pool type is ElasticBMS, this field must be set to true. If the node specification involves both local and EVS disks, configure the disk initialization parameters. For details, see Attaching Disks to a Node. <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
metadata	VolumeMetadata object	<p>Details: EVS disk encryption information. This parameter is mandatory only when the system disk or data disk of the node to be created needs to be encrypted.</p> <p>Constraints: None</p>

Table 4-315 VolumeMetadata

Parameter	Type	Description
<code>__system__encrypted</code>	String	<p>Details: Whether an EVS disk is encrypted. The value 0 indicates that the EVS disk is not encrypted, and the value 1 indicates that the EVS disk is encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: If this parameter does not appear, the disk is not encrypted.</p>
<code>__system__cmkid</code>	String	<p>Details: CMK ID, which indicates encryption in metadata. This field is used with __system__encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-316 Storage

Parameter	Type	Description
<code>storageSelectors</code>	Array of StorageSelectors objects	<p>Details: Disk selection. Matched disks are managed based on matchLabels and storageType settings. Disks are matched in sequence. The matching rule in the front is matched first.</p> <p>Constraints: None</p>

Parameter	Type	Description
storageGroups	Array of StorageGroups objects	<p>Details: A storage group consisting of multiple storage devices, which are used to divide storage space.</p> <p>Constraints: None</p>

Table 4-317 StorageSelectors

Parameter	Type	Description
name	String	<p>Details: Name of a selector, which is used as the index of selectorNames in storageGroup.</p> <p>Constraints: The name of each selector must be unique.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
storageType	String	<p>Details: Storage type</p> <p>Constraints:</p> <ul style="list-style-type: none"> The local storage type does not support disk selection. All local disks form a VG. Therefore, only one local storage selector is allowed. The system storage type does not support disk selection. It is recommended that you use the system disk to store system components. As a result, only one storage selector of the system type is allowed, and the name must be cceUse. <p>Options: Only evs (EVS disks), local (local disks), and system (system disks) are supported.</p> <p>Default value: N/A</p>
matchLabels	matchLabels object	<p>Details: Matching field of an EVS disk</p> <p>Constraints: If storageType is set to system (system disk), you do not need to configure this parameter.</p> <p>Options: The size, volumeType, metadataEncrypted, metadataCmkid, and count fields in DataVolume are supported.</p> <p>Default value: N/A</p>

Table 4-318 matchLabels

Parameter	Type	Description
size	String	<p>Details: Matched disk size, for example, 100. If this parameter is left blank, the disk size is not limited.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
volumeType	String	<p>Details: EVS disk type</p> <p>Constraints: None</p> <p>Options: SSD, GPSSD, SAS, ESSD, and SATA are supported. If this parameter is left blank, there is no restriction on the disk type.</p> <p>Default value: N/A</p>
metadataEncrypted	String	<p>Details: Disk encryption identifier. If this parameter is set to 0, it specifies that the disk is not encrypted. If this parameter is set to 1, it specifies that the disk is encrypted. If this parameter is left blank, there is no restriction on the disk encryption identifier.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
metadataCmkid	String	<p>Details: CMK ID of an encrypted disk. The value is a string of 36 bytes. If this parameter is left blank, there is no restriction on the disk key ID.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
count	String	<p>Details: Number of disks to be selected. If this parameter is left blank, all disks of this type are selected.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-319 StorageGroups

Parameter	Type	Description
name	String	<p>Details: Name of a virtual storage group, which must be unique</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If cceManaged is set to true, the name field must be set to vgpaas. • If the data disk is used as a temporary storage volume, the name field must be set to vg-everest-localvolume-ephemeral. • If the data disk is used as a persistent storage volume, the name field must be set to vg-everest-localvolume-persistent. <p>Default value: N/A</p>
cceManaged	Boolean	<p>Details: Storage space to which Kubernetes and runtime belong. Only one group is set to true. If this parameter is left blank, the default value false is used.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
selectorNames	Array of strings	<p>Details: Corresponds to name in storageSelectors. One group can select multiple selectors, but one selector can be selected by only one group.</p> <p>Constraints: System components cannot be separately stored in the system disk and data disks. Therefore, when the selector type is set to system, only one selector can be selected for a group.</p>

Parameter	Type	Description
virtualSpaces	Array of VirtualSpace objects	<p>Details: Detailed management of space configurations in a group</p> <p>Constraints: None</p>

Table 4-320 VirtualSpace

Parameter	Type	Description
name	String	<p>Details: Name of a virtualSpace. Only types of share, kubernetes, runtime, and user are supported.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • kubernetes: Kubernetes space configuration. lvmConfig needs to be configured. • runtime: runtime space configuration. runtimeConfig needs to be configured. • user: user space configuration. lvmConfig needs to be configured. <p>Default value: N/A</p>
size	String	<p>Details: Size of a virtualSpace. The value must be an integer in percentage, for example, 90%.</p> <p>Constraints: None</p> <p>Options: 10 to 90. The sum of percentages of all virtualSpaces in a group cannot exceed 100%.</p> <p>Default value: N/A</p>

Parameter	Type	Description
lvmConfig	LVMConfig object	<p>Details: LVM configuration management, which is applicable to share, Kubernetes, and user space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>
runtimeConfig	RuntimeConfig object	<p>Details: Runtime configuration management, which is applicable to runtime space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>

Table 4-321 LVMConfig

Parameter	Type	Description
lvType	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
path	String	<p>Details: Disk mount path. This parameter only takes effect in user configuration. The value can be an absolute path containing digits, uppercase letters, lowercase letters, periods (.), hyphens (-), and underscores (_).</p> <p>Constraints: Do not leave the path empty or set it to a key OS path such as the root directory. Key OS paths that cannot be entered: /, /home, /home/, /bin, /bin/, /lib, /lib/, /root, /root/, /boot, /boot/, /dev, /dev/, /etc, /etc/, /lost+found, /lost+found/, /mnt, /mnt/, /proc, /proc/, /sbin, /sbin/, /srv, /srv/, /tmp, /tmp/, /var, /var/, /media, /media/, /opt, /opt/, /selinux, /selinux/, /sys, /sys/, /usr, /usr/, /opt/cloud/, /mnt/paas/, /home/paas/, /var/paas/, /var/lib/, /var/script/</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-322 RuntimeConfig

Parameter	Type	Description
lvType	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-323 NodePublicIP

Parameter	Type	Description
ids	Array of strings	<p>Details: IDs of existing EIPs</p> <p>Constraints:</p> <ul style="list-style-type: none"> The quantity cannot be greater than the number of nodes to be created. If ids has been specified, you do not need to configure count and eip.
count	Integer	<p>Details: Number of EIPs to be dynamically created</p> <p>Constraints: count and eip must be configured simultaneously.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
eip	NodeEIPSpec object	<p>Details: EIP configuration</p> <p>Constraints: This parameter is not supported when creating a node pool.</p>

Table 4-324 NodeEIPSpec

Parameter	Type	Description
iptype	String	<p>Details: EIP type, specified in publicip.type in the API for assigning an EIP. For details, see Assigning an EIP.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
bandwidth	NodeBandwidth object	<p>Details: Bandwidth parameters of the EIP</p> <p>Constraints: None</p>

Table 4-325 NodeBandwidth

Parameter	Type	Description
chargemode	String	<p>Details: Bandwidth billing mode</p> <p>NOTE</p> <ul style="list-style-type: none"> • Billed by bandwidth: The billing will be based on the data transmission rate (in Mbps) of public networks. This billing mode is recommended if your bandwidth usage is higher than 10%. • Billed by traffic: The billing is based on the total amount of data (in GB) transmitted over the public network. This mode is available only when you are creating a pay-per-use node. This billing mode is recommended if your bandwidth usage is lower than 10%. <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If this field is not specified, the billing is based on bandwidth. • If the field value is empty, the billing is based on bandwidth. • If the field value is traffic, the billing is based on traffic. • If the value is out of the preceding options, the cloud server will fail to be created. <p>Default value: N/A</p>

Parameter	Type	Description
size	Integer	<p>Details: Bandwidth size, specified in bandwidth.size in the API for assigning an EIP. For details, see Assigning an EIP.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
sharetype	String	<p>Details: Bandwidth sharing type. Dedicated bandwidth is supported only. PER specifies dedicated bandwidth.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-326 NodeNicSpec

Parameter	Type	Description
primaryNic	NicSpec object	<p>Details: Description of the primary ENI</p> <p>Constraints: None</p>
extNics	Array of NicSpec objects	<p>Details: Extension ENI</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>

Table 4-327 NicSpec

Parameter	Type	Description
subnetId	String	<p>Details: Network ID of the subnet to which an ENI belongs. If subnetList is also configured for a node pool, the subnetList field is used for adding subnets to the node pool.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If subnetId is not specified when a primary ENI is creating, the cluster subnet will be used. • When creating an extension ENI, you must specify subnetId. <p>Options: N/A</p> <p>Default value: N/A</p>
fixedIps	Array of strings	<p>Details: The IP address of the primary ENI is specified using fixedIps. The number of IP addresses cannot be greater than the number of created nodes.</p> <p>Constraints: Either fixedIps or ipBlock can be specified. fiexdlps cannot be specified for extension ENIs.</p>
ipBlock	String	<p>Details: CIDR format of the primary ENI IP address range. The IP address of the created node falls in this range.</p> <p>Constraints: Either fixedIps or ipBlock can be specified.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
subnetList	Array of strings	<p>Details: Network ID list of the subnet where the ENI resides. Multiple subnets can be configured for a node pool.</p> <p>Constraints: A maximum of 20 subnets can be configured.</p>

Table 4-328 Taint

Parameter	Type	Description
key	String	<p>Details: Key</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
value	String	<p>Details: Value</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
effect	String	<p>Details: Effect</p> <p>Constraints: None</p> <p>Options: Available options are NoSchedule, PreferNoSchedule, and NoExecute.</p> <p>Default value: N/A</p>

Table 4-329 UserTag

Parameter	Type	Description
key	String	<p>Details: Key of the cloud server tag</p> <p>Constraints: The value cannot start with CCE-, _type_baremetal, or sys.</p> <p>Options: The value contains a maximum of 128 characters. The tag key must be unique and cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, /</p> <p>Default value: N/A</p>
value	String	<p>Details: Value of the cloud server tag</p> <p>Constraints: None</p> <p>Options: The value contains a maximum of 255 characters. The tag value cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, </p> <p>Default value: N/A</p>

Table 4-330 Runtime

Parameter	Type	Description
name	String	<p>Details: Container runtime</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • Clusters earlier than v1.25: The default value is docker. • Clusters of v1.25 or later: The default value varies with the OSs. • For nodes running EulerOS 2.5 or EulerOS 2.8, the default value is docker. For nodes running other OSs, the default value is containerd.

Table 4-331 NodeExtendParam

Parameter	Type	Description
ecs:performancety pe	String	<p>Details: ECS flavor types. This field is returned in the response.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
orderID	String	<p>Details: Order ID</p> <p>Constraints: This parameter is returned in the response when the node is billed on a yearly/monthly basis with auto payment enabled (only in creation scenarios).</p> <p>Options: N/A</p> <p>Default value: N/A</p>
productID	String	<p>Details: Product ID</p> <p>Constraints: This field is returned in the response when the node is billed on a yearly/ monthly basis with auto payment enabled.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
maxPods	Integer	<p>Details: Maximum number of pods that can be created on a node, including the default system pods. This limit prevents the node from being overloaded with pods. The number of pods that can be created on a node is determined by multiple parameters. For details, see Maximum Number of Pods That Can Be Created on a Node.</p> <p>Constraints: None</p> <p>Options: 16 to 256</p> <p>Default value: N/A</p>

Parameter	Type	Description
periodType	String	<p>Details: Subscription period type</p> <p>Constraints:</p> <ul style="list-style-type: none"> As a request parameter, it is valid and mandatory only when billingMode is set to 1 (yearly/monthly billing) or 2 (yearly/monthly billing with auto payment enabled) (This option has been discarded). As a response parameter, it is returned only when a yearly/monthly node is created. <p>Options:</p> <ul style="list-style-type: none"> month year <p>Default value: N/A</p>
periodNum	Integer	<p>Details: Number of subscription periods</p> <p>Constraints:</p> <ul style="list-style-type: none"> As a request parameter, it is valid and mandatory only when billingMode is set to 1 (yearly/monthly billing) or 2 (yearly/monthly billing with auto payment enabled) (This option has been discarded). As a response parameter, it is returned only when a yearly/monthly node is created. <p>Options:</p> <ul style="list-style-type: none"> If periodType is month, the value ranges from 1 to 9. If periodType is year, the value ranges from 1 to 3. <p>Default value: N/A</p>

Parameter	Type	Description
isAutoRenew	String	<p>Details: Whether auto-renewal is enabled</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified, auto-renewal is not enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto-renewal is enabled. • false: Auto-renewal is not enabled. <p>Default value: N/A</p>
isAutoPay	String	<p>Details: Whether an order is automatically or manually paid</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified when billingMode is set to 1, auto payment is not enabled. (Discarded) If not specified when billingMode is set to 2, auto payment is enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto payment is enabled. • false: Auto payment is not enabled. <p>Default value: N/A</p>

Parameter	Type	Description
<p>DockerLVMConfigOverride</p>	<p>String</p>	<p>Details: Docker data disk configuration item. (This parameter has been discarded. Use the storage field instead.) Example of the default configuration: "DockerLVMConfigOverride":"dockerThinpool=vgpaas/90%VG;kubernetesLV=vgpaas/10%VG;diskType=evs;lvType=linear" By default, if no VD disk is available, an error occurs because the data disk fails to be found. Specify diskType based on the actual drive letter type.</p> <p>Constraints: None</p> <p>Options: The following fields are included:</p> <ul style="list-style-type: none"> • userLV: (Optional) size of the user space, for example, vgpaas/20%VG • userPath (Optional): mount path of the user space, for example, /home/wqt-test • diskType: disk type. Only evs, hdd, and ssd are supported. • lvType: type of a logic volume. The value can be linear or striped. • dockerThinpool: Docker space size, for example, vgpaas/60%VG • kubernetesLV: kubelet space size, for example, vgpaas/20%VG <p>Default value: N/A</p>

Parameter	Type	Description
dockerBaseSize	Integer	<p>Details: Available disk space of a single container on a node (unit: G). This parameter has been discarded. Use containerBaseSize.</p> <p>For details about how to allocate the space for the container runtime, see Space Allocation of a Data Disk.</p> <p>Constraints: When Device Mapper is used, it is recommended that dockerBaseSize be set to a value less than or equal to 80 GiB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device.</p> <ul style="list-style-type: none"> The dockerBaseSize setting takes effect only on nodes running EulerOS or Huawei Cloud EulerOS 2.0 in clusters of the new version. <p>Options: 10 to 500</p> <p>Default value: If the value is not specified or is set to 0, the default value is used.</p> <ul style="list-style-type: none"> The default value is 10 in Device Mapper mode. In OverlayFS mode, the available space of a single container is not limited by default.

Parameter	Type	Description
containerBaseSize	Integer	<p>Details: Available disk space of a single container on a node (unit: G). For details about how to allocate the space for the container runtime, see Space Allocation of a Data Disk.</p> <p>Constraints: When Device Mapper is used, it is recommended that containerBaseSize be set to a value less than or equal to 80 GiB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device. In new versions, the Device Mapper mode is used only by BMSs in the same resource pool and is being discarded.</p> <ul style="list-style-type: none"> The containerBaseSize setting takes effect only on nodes running EulerOS or Huawei Cloud EulerOS 2.0 in clusters of the new version (v1.23.14-r0, v1.25.9-r0, v1.27.6-r0, v1.28.4-r0 or later). This parameter cannot be updated when a node pool is being updated. <p>Options: 10 to 500</p> <p>Default value: If the value is not specified or is set to 0, the default value is used.</p> <ul style="list-style-type: none"> The default value is 10 in Device Mapper mode. In OverlayFS mode, the available space of a single container is not limited by default.

Parameter	Type	Description
publicKey	String	<p>Details: Public key of a node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/ preInstall	String	<p>Details: Pre-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>Content to be encoded</code> base64</p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/ postInstall	String	<p>Details: Post-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>Content to be encoded</code> base64</p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
alpha.cce/ NodeImageID	String	<p>Details: This parameter is required when a custom image is used to create a BMS node.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
nicMultiqueue	String	<p>Details:</p> <ul style="list-style-type: none"> Number of ENI queues. Example: <code>"[{"queue":4}]"</code> <p>The following fields are included:</p> <ul style="list-style-type: none"> queue: number of ENI queues Supported configurations: {"1":128, "2":92, "4":92, "8":32, "16":16,"28":9}, indicating that a maximum of 128 ENIs can be associated if there is one queue and a maximum of 92 ENIs if there are two queues. A larger number of ENI queues indicates higher performance but fewer ENIs can be associated. The queue settings cannot be changed after creation. <p>Constraints: This field can be configured only for BMS nodes in CCE Turbo clusters.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
nicThreshold	String	<p>Details:</p> <ul style="list-style-type: none"> • ENI pre-binding thresholds. Example: "0.3:0.6" • Low threshold (L): determines the minimum number of pre-bound ENIs (Min). Formula: $Min = Total\ number\ of\ ENIs\ of\ the\ node \times L$ • High threshold (H): determines the maximum number of pre-bound ENIs (Max). Formula: $Max = Total\ number\ of\ ENIs\ of\ the\ node \times H$ • Number of ENIs bound to a BMS node (B) and number of ENIs being used by pods (U): $U + Min < B < U + Max$ • If the number of pre-bound ENIs on a BMS node is smaller than the minimum allowed, the system will bind more ENIs to make the numbers equal. • If the number of pre-bound ENIs on a BMS node is larger than the maximum allowed, the system periodically unbinds ENIs (about every 2 minutes) to make the numbers equal. <p>Constraints:</p> <ul style="list-style-type: none"> • This field can be configured only for BMS nodes in CCE Turbo clusters. • Pre-binding ENIs can speed up workload creation but occupies IP addresses. <p>Options: Both the thresholds are one-decimal-place values ranging from 0.0 to 1.0. The low threshold must be smaller than or equal to the high one.</p> <p>Default value: N/A</p>

Parameter	Type	Description
chargingMode	Integer	<p>Details: Billing mode of a node. This parameter has been discarded. Use billingMode in NodeSpec instead.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
marketType	String	<p>Details: When creating a spot ECS, this parameter should be set to spot.</p> <p>Constraints: This parameter is valid only when billingMode is set to 0.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
spotPrice	String	<p>Details: The highest price per hour a user accepts for a spot ECS</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This parameter takes effect only when billingMode is set to 0 and marketType is set to spot. • When billingMode is set to 0 and marketType is set to spot, if spotPrice is not specified, the pay-per-use price is used by default. • The spotPrice value must be less than or equal to the pay-per-use price and greater than or equal to the ECS market price. <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
agency_name	String	<p>Details: Agency name. An agency is created by a tenant administrator on Identity and Access Management (IAM) to provide temporary credentials for CCE nodes to access cloud servers. This parameter is returned only when it is transferred during node creation.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
kubeReservedMem	Integer	<p>Details: Reserved node memory, which is reserved for Kubernetes components.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
systemReservedMem	Integer	<p>Details: Reserved node memory, which is reserved for system components.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
init-node-password	String	<p>Details: Node password. If this parameter is used as a response parameter, asterisks (*) will be displayed.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
securityReinforcementType	String	<p>Details: Security hardening type of a node. Huawei Cloud EulerOS 2.0 images based on DJCP 2.0 level 3 security hardening are supported. DJCP checks identity authentication, access control, security audit, intrusion prevention, and malicious code prevention and hardens security.</p> <p>If this parameter is not specified, the original value is used. For example, If security hardening has been set up for a Huawei Cloud EulerOS 2.0 image and you do not specify this parameter when updating a node pool, the security hardening configuration will remain unchanged. To remove the security hardening configuration, set this parameter to null.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Empty: Security hardening is not enabled. • cybersecurity: Security hardening is enabled. <p>Default value: N/A</p>

Table 4-332 HostnameConfig

Parameter	Type	Description
type	String	<p>Details: Configuration type of the Kubernetes node name. The default value is privatelp.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The node names, Kubernetes node names, and VM names of the nodes configured with cceNodeName are the same. Node names cannot be changed. Once a VM name is altered on the ECS console, the node name cannot be modified accordingly during ECS synchronization. • To prevent conflicts between Kubernetes node names, a suffix is automatically added to the node name of a node configured with cceNodeName. The suffix consists of a hyphen (-) followed by five random lowercase letters and digits (0 to 9). <p>Options:</p> <ul style="list-style-type: none"> • privatelp: Use the private node IP address as the Kubernetes node name. • cceNodeName: Use the CCE node name as the Kubernetes node name. <p>Default value: privatelp</p>

Table 4-333 NodeStatus

Parameter	Type	Description
phase	String	Node status, which is the status of a node during its lifecycle (such as installation and uninstallation) and the status of a node in a Kubernetes cluster. Options: <ul style="list-style-type: none"> • Build: The node is being created. • Installing: The node is being installing. • Upgrading: The node is being upgraded. • Active: The node is running properly. • Abnormal: The node is abnormal. • Deleting: The node is being deleted. • Error: The node is faulty.
lastProbeTime	String	Last time when the node status was checked. If the cluster is in the abnormal, frozen, or intermediate state (for example, creating), the node status check may be affected. The node status that takes more than five minutes to check has no reference value.
jobID	String	ID of a creation or deletion job
serverId	String	ID of the underlying ECS or BMS node
privateIP	String	IP address in the private network segment of the primary NIC on the node
privateIPv6IP	String	IPv6 address in the private network segment of the primary NIC on the node
publicIP	String	Node EIP. If the ECS data is not synchronized in real time, you can click Sync Node Data on the console to manually update the data.
deleteStatus	DeleteStatus object	Resource status during resource deletion.

Parameter	Type	Description
configurationUpToDate	Boolean	Whether the node configuration is consistent with the latest configuration of the node template in the node pool to which the node belongs. When a node pool's OS or runtime is updated, the existing nodes may have a different OS or runtime, causing configurationUpToDate to be false . However, resetting the nodes will synchronize their OSs and runtimes with the node pool, setting configurationUpToDate to true

Table 4-334 DeleteStatus

Parameter	Type	Description
previous_total	Integer	Total number of existing cluster resource records when the cluster is deleted.
current_total	Integer	Latest number of resource records, which is generated based on the current cluster resource records.
updated	Integer	Total number of resource records updated when the cluster is deleted.
added	Integer	Total number of resource records updated when the cluster is deleted.
deleted	Integer	Total number of resource records deleted when the cluster is deleted.

Example Requests

None

Example Responses

Status code: 200

Information about the specified node is successfully obtained.

```
{
  "kind": "Node",
  "apiVersion": "v3",
  "metadata": {
    "name": "myhost",
    "uid": "4d1ecb2c-229a-11e8-9c75-0255ac100ceb",
    "creationTimestamp": "2018-08-02 08:12:40.124294439 +0000 UTC",
  }
}
```

```
"updateTimestamp" : "2018-08-02 08:18:20.221871842 +0000 UTC",
"annotations" : {
  "kubernetes.io/node-pool.id" : "az1.dc1#s1.medium#EulerOS 2.2"
}
},
"spec" : {
  "flavor" : "s1.medium",
  "az" : "*****",
  "os" : "EulerOS 2.2",
  "login" : {
    "sshKey" : "KeyPair-001"
  },
  "rootVolume" : {
    "volumetype" : "SAS",
    "size" : 40
  },
  "dataVolumes" : [ {
    "volumetype" : "SAS",
    "size" : 100
  } ],
  "publicIP" : {
    "eip" : {
      "bandwidth" : { }
    }
  },
  "billingMode" : 0
},
"status" : {
  "phase" : "Active",
  "serverId" : "456789abc-9368-46f3-8f29-d1a95622a568",
  "publicIP" : "10.34.56.78",
  "privateIP" : "192.168.1.23"
}
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ShowNodeSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
```

```
        .withSk(sk);

    CceClient client = CceClient.newBuilder()
        .withCredential(auth)
        .withRegion(CceRegion.valueOf("<YOUR REGION>"))
        .build();
    ShowNodeRequest request = new ShowNodeRequest();
    request.withClusterId("{cluster_id}");
    request.withNodeId("{node_id}");
    try {
        ShowNodeResponse response = client.showNode(request);
        System.out.println(response.toString());
    } catch (ConnectionException e) {
        e.printStackTrace();
    } catch (RequestTimeoutException e) {
        e.printStackTrace();
    } catch (ServiceResponseException e) {
        e.printStackTrace();
        System.out.println(e.getHttpStatusCode());
        System.out.println(e.getRequestId());
        System.out.println(e.getErrorCode());
        System.out.println(e.getErrorMsg());
    }
}
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ShowNodeRequest()
        request.cluster_id = "{cluster_id}"
        request.node_id = "{node_id}"
        response = client.show_node(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main
```

```

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ShowNodeRequest{}
    request.ClusterId = "{cluster_id}"
    request.NodeId = "{node_id}"
    response, err := client.ShowNode(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Information about the specified node is successfully obtained.

Error Codes

See [Error Codes](#).

4.3.3 Listing All Nodes in a Cluster

Function

This API is used to obtain details about all nodes in a specified cluster with the cluster ID.

 **NOTE**

The URL for cluster management is in the format of https://Endpoint/uri. In the URL, **uri** indicates the resource path, that is, the path for API access.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes

Table 4-335 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-336 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-337 Response body parameters

Parameter	Type	Description
kind	String	API type. The value is fixed at List .
apiVersion	String	API version. The value is fixed at v3 .
items	Array of Node objects	List of details for all nodes in the current cluster. You can filter nodes by items.metadata.name .

Table 4-338 Node

Parameter	Type	Description
kind	String	API type. The value is fixed at Node and cannot be changed.
apiVersion	String	API version. The value is fixed at v3 and cannot be changed.
metadata	NodeMetadata object	Node metadata, which is a collection of attributes.
spec	NodeSpec object	Detailed description of the node. CCE creates or updates objects by defining or updating spec .
status	NodeStatus object	Node status, which is dynamically recorded. A user-defined value will not function when a node is being created or modified.

Table 4-339 NodeMetadata

Parameter	Type	Description
name	String	<p>Node name.</p> <p>NOTE Enter 1 to 56 characters starting with a lowercase letter and not ending with a hyphen (-). Only lowercase letters, digits, hyphens (-), and periods (.) are allowed.</p> <p>If name is not configured or is left blank, the node name is generated based on the default rule, which is <i>Cluster name-Random characters</i>. Only the first 36 characters are kept for a long cluster name.</p> <p>If the number of nodes (count) is greater than 1, some random characters are added to the end of the entered node name according to the default rule, which is <i>User-defined name-Random characters</i>. If the length of the entered node name exceeds 50 characters, the system uses the first 50 characters and adds a random character string to the end of the name.</p>
uid	String	<p>Node ID, which is unique and automatically generated after the resource is created. A user-defined ID will not take effect.</p>
labels	Map<String,String >	<p>CCE node label (not the native Kubernetes label).</p> <p>Labels are used to select objects that meet certain criteria. A label is a key-value pair.</p> <p>Example: <pre>"labels": { "key" : "value" }</pre> </p>

Parameter	Type	Description
annotations	Map<String,String >	<p>CCE node annotations, in key-value pairs (not the native Kubernetes annotations).</p> <p>Example:</p> <pre>"annotations": { "key1": "value1", "key2": "value2" }</pre> <p>NOTE</p> <ul style="list-style-type: none"> • annotations are not used to identify or select objects. The metadata in annotations may be small or large, structured or unstructured, and may include characters that are not allowed in labels. • This parameter is used only for query and cannot be input through a request. Entered data of this parameter is invalid.
creationTimestamp	String	Time when the object was created. The value is automatically generated after the object is created. A user-defined value will not take effect.
updateTimestamp	String	Time when the object was updated. The value is automatically generated after the object is created. A user-defined value will not take effect.
ownerReference	ownerReference object	Owner object

Table 4-340 ownerReference

Parameter	Type	Description
nodepoolName	String	Node pool name
nodepoolID	String	Node pool UID

Table 4-341 NodeSpec

Parameter	Type	Description
flavor	String	<p>Details: Node flavors. For details about the node flavors supported by CCE clusters, see Node Specifications.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
az	String	<p>Details: AZ where the node to be created is located. You need to specify the AZ name. Random AZs will not be allocated to a node created using APIs. For details about AZs supported by CCE, see Regions and Endpoints.</p> <p>Constraints: When you are creating a node pool and configuring a scaling group, this parameter cannot be set to random.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
os	String	<p>Details: Node OS. For details about the supported OSs, see Node OSs.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If the selected OS is not supported by the current cluster version, it will be automatically replaced with a supported OS of the same series. • If alpha.cce/NodeImageID in extendParam is specified during node creation, you do not need to configure this parameter. • If this parameter is not specified, CCE automatically selects a supported OS version based on the cluster version. • This parameter is mandatory when creating a node pool. • If you are using shared disk space when creating a node, this parameter is mandatory. Specifically, the disk initialization configuration management parameter storage is used and the name field of virtualSpaces in StorageGroups is set to share. <p>Options: N/A</p> <p>Default value: N/A</p>
login	Login object	<p>Details: Node login mode. Either the key pair or password must be used for login.</p> <p>Constraints: This parameter cannot be modified when a node pool is being updated.</p>
rootVolume	Volume object	<p>Details: Disk information of a node</p> <p>Constraints: None</p>

Parameter	Type	Description
dataVolumes	Array of Volume objects	<p>Details: Data disk parameters of a node. For DeC nodes, the parameter details are the same as those in rootVolume.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • A VM can have up to 16 disks attached, while a BMS can only have up to 10 disks attached. The maximum number of disks that can be attached to either a VM or BMS is limited by their respective maximum disk limits. (You can add more data disks to each of your nodes through the CCE console or APIs.) • The data disk used by the container runtime and kubelet cannot be detached, or the node will become unavailable. • This parameter can be left blank only when a system disk is selected for the system components.

Parameter	Type	Description
storage	Storage object	<p>Details: Disk initialization management parameter. This parameter is complex to configure. For details, see Attaching Disks to a Node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This field is supported by clusters of v1.15.11-r0 and later versions. If the cluster version is not supported, this field will be ignored. • If a node has both local and EVS disks attached, make sure to not keep the default value for this parameter, or it may result in unexpected disk partitions. • If you want to change the value range of a data disk to 20 to 32768, do not use the default value. • If you want to use the shared disk space (with the runtime and Kubernetes partitions cancelled), do not retain the default value of this parameter. For details about the shared disk space, see Space Allocation of a Data Disk. • If you want to store system components in the system disk, do not use the default value.
publicIP	NodePublicIP object	<p>Details: EIP of a node</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>
nodeNicSpec	NodeNicSpec object	<p>Details: ENI of a node</p> <p>Constraints: None</p>

Parameter	Type	Description
count	Integer	<p>Details: Number of nodes to be created in batches</p> <p>Constraints: This parameter can be left blank when it is used for a node pool.</p> <p>Options: Positive integers that are greater than or equal to 1 and less than or equal to the maximum limit</p> <p>Default value: N/A</p>
billingMode	Integer	<p>Details: Billing mode of a node</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • 0: pay-per-use • 1: yearly/monthly • 2: (Discarded) yearly/monthly billing with auto payment enabled <p>Default value: N/A</p>

Parameter	Type	Description
taints	Array of Taint objects	<p>Details:</p> <p>Taints, which can be added to nodes for anti-affinity configuration. Each taint contains the following parameters:</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain can be prefixed to a key. • Value: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. • Effect: Available options are NoSchedule, PreferNoSchedule, and NoExecute. <p>When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example:</p> <pre>"taints": [{ "key": "status", "value": "unavailable", "effect": "NoSchedule" }, { "key": "looks", "value": "bad", "effect": "NoSchedule" }]</pre> <p>Constraints:</p> <p>A maximum of 20 taints can be configured.</p>

Parameter	Type	Description
k8sTags	Map<String,String>	<p>Details: Defined in key-value pairs.</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain containing a maximum of 253 characters (such as example.com/my-key) can be prefixed to a key. • Value: The value can be left blank or contain 1 to 63 characters that start and end with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. <p>When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example: <pre>"k8sTags": { "key": "value" }</pre></p> <p>Constraints: A maximum of 20 key-value pairs are allowed.</p>

Parameter	Type	Description
ecsGroupId	String	<p>Details: ECS group ID. If this parameter is specified, nodes will be created in the specific ECS group.</p> <p>Constraints: This configuration does not take effect when a node pool is created. To ensure that all nodes in a node pool are in the same ECS group, configure nodeManagement in the node pool.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
dedicatedHostId	String	<p>Details: ID of the DeH to which nodes will be scheduled.</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>
userTags	Array of UserTag objects	<p>Details: Cloud server tag (resource tag). When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Constraints:</p> <ul style="list-style-type: none"> The key of a tag must be unique. The maximum number of custom tags supported by CCE varies depending on regions and cannot exceed 8. A tag key can have a maximum of 36 characters. It can only contain letters, digits, Unicode characters, and special characters (-_).

Parameter	Type	Description
runtime	Runtime object	<p>Details: Container runtime</p> <ul style="list-style-type: none"> • Clusters earlier than v1.25: The default value is docker. • Clusters of v1.25 or later: The default value varies with the OSs. • For nodes running EulerOS 2.5 or EulerOS 2.8, the default container runtime is docker. For nodes running other OSs, the default container runtime is containerd. <p>Constraints: None</p>

Parameter	Type	Description
initializedConditions	Array of strings	<p>Details:</p> <p>Custom initialization flag, which is left blank by default.</p> <p>Before CCE nodes are initialized, they are tainted with node.cloudprovider.kubernetes.io/uninitialized to prevent pods from being scheduled to them. When creating a node, you can specify the initializedConditions parameter to control the taint removal time. By default, the timeout interval is not configured.</p> <p>Example:</p> <ol style="list-style-type: none"> 1. Create a node and add parameter "initializedConditions": ["CCEInitial", "CustomedInitial"]. 2. After custom initialization is complete, CCE will call a Kubernetes API (for example, PATCH /v1/nodes/{node_ip}/status) to update the node conditions by adding two labels of types CCEInitial and CustomedInitial and setting the status to True, as shown in the following: <pre>status: conditions: - type: CCEInitial status: 'True' - type: CustomedInitial status: 'True'</pre> <ol style="list-style-type: none"> 1. CCE polls status.Conditions of nodes to check whether there are conditions of types CCEInitial and CustomedInitial. If such conditions exist and the status is True, the node initialization is complete and the initialization taint is removed. 2. initializedConditions allows you to configure a timeout period during node creation. For example, "initializedConditions": ["CCEInitial:15m", "CustomedInitial:15m"] indicates that the timeout period is 15 minutes. After the timeout period is reached, the initialization conditions

Parameter	Type	Description
		<p>will be automatically ignored and the initialization taint will be removed when CCE polls the node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The timeout interval in initializedConditions ranges from 1 to 99 seconds. • Each value has 1 to 20 characters, which must consist of letters and digits. • The maximum number of flags cannot exceed 2. • The unit of the timeout period is minute (m).
extendParam	NodeExtendParam object	<p>Details: Extended parameters for creating a node</p> <p>Constraints: None</p>
hostnameConfig	HostnameConfig object	<p>Details: Kubernetes node name configuration parameter</p> <p>Constraints: The supported cluster version is v1.23.6-r0 to v1.25 or v1.25.2-r0 or later.</p>

Parameter	Type	Description
serverEnterprise-ProjectID	String	<p>Details: Enterprise project ID of a server. CCE does not support features provided by EPS. This field is used only for synchronizing enterprise project IDs of servers.</p> <p>Constraints: To create a node or node pool, you can specify an existing enterprise project for it. If this field is left blank, it inherits the enterprise project attributes of the cluster that runs the node or node pool.</p> <p>When updating a node pool, any configuration modifications you made will apply only to new nodes. You need to modify the enterprise projects of existing nodes on the EPS console.</p> <p>Options: N/A</p> <p>Default value: If no value is specified during update, this field will not be updated. If this parameter is left blank, the cluster enterprise project is returned.</p>

Table 4-342 Login

Parameter	Type	Description
sshKey	String	<p>Details: Name of the key pair used for login</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
userPassword	UserPassword object	<p>Details: Password used for node login</p> <p>Constraints: None</p>

Table 4-343 UserPassword

Parameter	Type	Description
username	String	<p>Details: Login account. The default value is root.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: root</p>
password	String	<p>Details: Login password. If a username and password are used when a node is created, this field is shielded in the response body.</p> <p>Constraints: The password field must be salted during node creation. For details, see Adding a Salt in the password Field When Creating a Node.</p> <p>Options: A password must:</p> <ul style="list-style-type: none"> • Contain 8 to 26 characters. • Contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters !@\$%^_+=+[{ }],./? • Not contain the username or the username spelled backwards. <p>Default value: N/A</p>

Table 4-344 Volume

Parameter	Type	Description
size	Integer	<p>Details: Disk size, in GiB</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • System disks: 40 to 1024 • The first data disk: 20 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) • Other data disks: 10 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) <p>Default value: N/A</p>
volumetype	String	<p>Details: Disk type. For details about possible values, see the root volume parameter in the API used to create an ECS.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • SAS: high I/O SAS disks • SSD: ultra-high I/O SSD disks • SATA: common I/O SATA disks. SATA disks have been removed from EVS. You can find them attached only to existing nodes. <p>NOTE For details about disk types, see Disk Types and Performance.</p> <p>Default value: N/A</p>

Parameter	Type	Description
extendParam	Map<String, Object>	<p>Details: Extended disk parameters, defined in extendparam in the API used to create an ECS. For details, see extendparam Field Description for Creating Disks.</p> <p>Constraints: None</p>
cluster_id	String	<p>Details: ID of the storage pool used by the ECS system disk. This field is used only for DeC clusters and functions as dssPoolID, that is, the ID of the DSS storage pool. To obtain the value, see the ID field in the API used to obtain details of a DSS storage pool.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
cluster_type	String	<p>Details: Storage class of the ECS system disk</p> <p>Constraints: None</p> <p>Options: This field is used only for DeC clusters, and the value is always dss.</p> <p>Default value: N/A</p>

Parameter	Type	Description
hw:passthrough	Boolean	<p>Details:</p> <ul style="list-style-type: none"> • Pay attention to this field if your ECS is SDI-compliant. If the value of this field is true, the created disk is of SCSI type. • If the node pool type is ElasticBMS, this field must be set to true. • If the node specification involves both local and EVS disks, configure the disk initialization parameters. For details, see Attaching Disks to a Node. <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
metadata	VolumeMetadata object	<p>Details: EVS disk encryption information. This parameter is mandatory only when the system disk or data disk of the node to be created needs to be encrypted.</p> <p>Constraints: None</p>

Table 4-345 VolumeMetadata

Parameter	Type	Description
<code>__system__encrypted</code>	String	<p>Details: Whether an EVS disk is encrypted. The value 0 indicates that the EVS disk is not encrypted, and the value 1 indicates that the EVS disk is encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: If this parameter does not appear, the disk is not encrypted.</p>
<code>__system__cmkid</code>	String	<p>Details: CMK ID, which indicates encryption in metadata. This field is used with __system__encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-346 Storage

Parameter	Type	Description
<code>storageSelectors</code>	Array of StorageSelectors objects	<p>Details: Disk selection. Matched disks are managed based on matchLabels and storageType settings. Disks are matched in sequence. The matching rule in the front is matched first.</p> <p>Constraints: None</p>

Parameter	Type	Description
storageGroups	Array of StorageGroups objects	<p>Details: A storage group consisting of multiple storage devices, which are used to divide storage space.</p> <p>Constraints: None</p>

Table 4-347 StorageSelectors

Parameter	Type	Description
name	String	<p>Details: Name of a selector, which is used as the index of selectorNames in storageGroup.</p> <p>Constraints: The name of each selector must be unique.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
storageType	String	<p>Details: Storage type</p> <p>Constraints:</p> <ul style="list-style-type: none"> The local storage type does not support disk selection. All local disks form a VG. Therefore, only one local storage selector is allowed. The system storage type does not support disk selection. It is recommended that you use the system disk to store system components. As a result, only one storage selector of the system type is allowed, and the name must be cceUse. <p>Options: Only evs (EVS disks), local (local disks), and system (system disks) are supported.</p> <p>Default value: N/A</p>
matchLabels	matchLabels object	<p>Details: Matching field of an EVS disk</p> <p>Constraints: If storageType is set to system (system disk), you do not need to configure this parameter.</p> <p>Options: The size, volumeType, metadataEncrypted, metadataCmkid, and count fields in DataVolume are supported.</p> <p>Default value: N/A</p>

Table 4-348 matchLabels

Parameter	Type	Description
size	String	<p>Details: Matched disk size, for example, 100. If this parameter is left blank, the disk size is not limited.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
volumeType	String	<p>Details: EVS disk type</p> <p>Constraints: None</p> <p>Options: SSD, GPSSD, SAS, ESSD, and SATA are supported. If this parameter is left blank, there is no restriction on the disk type.</p> <p>Default value: N/A</p>
metadataEncrypted	String	<p>Details: Disk encryption identifier. If this parameter is set to 0, it specifies that the disk is not encrypted. If this parameter is set to 1, it specifies that the disk is encrypted. If this parameter is left blank, there is no restriction on the disk encryption identifier.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
metadataCmkid	String	<p>Details: CMK ID of an encrypted disk. The value is a string of 36 bytes. If this parameter is left blank, there is no restriction on the disk key ID.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
count	String	<p>Details: Number of disks to be selected. If this parameter is left blank, all disks of this type are selected.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-349 StorageGroups

Parameter	Type	Description
name	String	<p>Details: Name of a virtual storage group, which must be unique</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If cceManaged is set to true, the name field must be set to vgpaas. • If the data disk is used as a temporary storage volume, the name field must be set to vg-everest-localvolume-ephemeral. • If the data disk is used as a persistent storage volume, the name field must be set to vg-everest-localvolume-persistent. <p>Default value: N/A</p>
cceManaged	Boolean	<p>Details: Storage space to which Kubernetes and runtime belong. Only one group is set to true. If this parameter is left blank, the default value false is used.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
selectorNames	Array of strings	<p>Details: Corresponds to name in storageSelectors. One group can select multiple selectors, but one selector can be selected by only one group.</p> <p>Constraints: System components cannot be separately stored in the system disk and data disks. Therefore, when the selector type is set to system, only one selector can be selected for a group.</p>

Parameter	Type	Description
virtualSpaces	Array of VirtualSpace objects	<p>Details: Detailed management of space configurations in a group</p> <p>Constraints: None</p>

Table 4-350 VirtualSpace

Parameter	Type	Description
name	String	<p>Details: Name of a virtualSpace. Only types of share, kubernetes, runtime, and user are supported.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • kubernetes: Kubernetes space configuration. lvmConfig needs to be configured. • runtime: runtime space configuration. runtimeConfig needs to be configured. • user: user space configuration. lvmConfig needs to be configured. <p>Default value: N/A</p>
size	String	<p>Details: Size of a virtualSpace. The value must be an integer in percentage, for example, 90%.</p> <p>Constraints: None</p> <p>Options: 10 to 90. The sum of percentages of all virtualSpaces in a group cannot exceed 100%.</p> <p>Default value: N/A</p>

Parameter	Type	Description
lvmConfig	LVMConfig object	<p>Details: LVM configuration management, which is applicable to share, Kubernetes, and user space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>
runtimeConfig	RuntimeConfig object	<p>Details: Runtime configuration management, which is applicable to runtime space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>

Table 4-351 LVMConfig

Parameter	Type	Description
lvType	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
path	String	<p>Details: Disk mount path. This parameter only takes effect in user configuration. The value can be an absolute path containing digits, uppercase letters, lowercase letters, periods (.), hyphens (-), and underscores (_).</p> <p>Constraints: Do not leave the path empty or set it to a key OS path such as the root directory. Key OS paths that cannot be entered: /, /home, /home/, /bin, /bin/, /lib, /lib/, /root, /root/, /boot, /boot/, /dev, /dev/, /etc, /etc/, /lost+found, /lost+found/, /mnt, /mnt/, /proc, /proc/, /sbin, /sbin/, /srv, /srv/, /tmp, /tmp/, /var, /var/, /media, /media/, /opt, /opt/, /selinux, /selinux/, /sys, /sys/, /usr, /usr/, /opt/cloud/, /mnt/paas/, /home/paas/, /var/paas/, /var/lib/, /var/script/</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-352 RuntimeConfig

Parameter	Type	Description
lvType	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-353 NodePublicIP

Parameter	Type	Description
ids	Array of strings	<p>Details: IDs of existing EIPs</p> <p>Constraints:</p> <ul style="list-style-type: none"> The quantity cannot be greater than the number of nodes to be created. If ids has been specified, you do not need to configure count and eip.
count	Integer	<p>Details: Number of EIPs to be dynamically created</p> <p>Constraints: count and eip must be configured simultaneously.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
eip	NodeEIPSpec object	<p>Details: EIP configuration</p> <p>Constraints: This parameter is not supported when creating a node pool.</p>

Table 4-354 NodeEIPSpec

Parameter	Type	Description
iptype	String	<p>Details: EIP type, specified in publicip.type in the API for assigning an EIP. For details, see Assigning an EIP.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
bandwidth	NodeBandwidth object	<p>Details: Bandwidth parameters of the EIP</p> <p>Constraints: None</p>

Table 4-355 NodeBandwidth

Parameter	Type	Description
chargemode	String	<p>Details: Bandwidth billing mode</p> <p>NOTE</p> <ul style="list-style-type: none"> • Billed by bandwidth: The billing will be based on the data transmission rate (in Mbps) of public networks. This billing mode is recommended if your bandwidth usage is higher than 10%. • Billed by traffic: The billing is based on the total amount of data (in GB) transmitted over the public network. This mode is available only when you are creating a pay-per-use node. This billing mode is recommended if your bandwidth usage is lower than 10%. <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If this field is not specified, the billing is based on bandwidth. • If the field value is empty, the billing is based on bandwidth. • If the field value is traffic, the billing is based on traffic. • If the value is out of the preceding options, the cloud server will fail to be created. <p>Default value: N/A</p>

Parameter	Type	Description
size	Integer	<p>Details: Bandwidth size, specified in bandwidth.size in the API for assigning an EIP. For details, see Assigning an EIP.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
sharetype	String	<p>Details: Bandwidth sharing type. Dedicated bandwidth is supported only. PER specifies dedicated bandwidth.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-356 NodeNicSpec

Parameter	Type	Description
primaryNic	NicSpec object	<p>Details: Description of the primary ENI</p> <p>Constraints: None</p>
extNics	Array of NicSpec objects	<p>Details: Extension ENI</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>

Table 4-357 NicSpec

Parameter	Type	Description
subnetId	String	<p>Details: Network ID of the subnet to which an ENI belongs. If subnetList is also configured for a node pool, the subnetList field is used for adding subnets to the node pool.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If subnetId is not specified when a primary ENI is creating, the cluster subnet will be used. • When creating an extension ENI, you must specify subnetId. <p>Options: N/A</p> <p>Default value: N/A</p>
fixedIps	Array of strings	<p>Details: The IP address of the primary ENI is specified using fixedIps. The number of IP addresses cannot be greater than the number of created nodes.</p> <p>Constraints: Either fixedIps or ipBlock can be specified. fiexdIps cannot be specified for extension ENIs.</p>
ipBlock	String	<p>Details: CIDR format of the primary ENI IP address range. The IP address of the created node falls in this range.</p> <p>Constraints: Either fixedIps or ipBlock can be specified.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
subnetList	Array of strings	<p>Details: Network ID list of the subnet where the ENI resides. Multiple subnets can be configured for a node pool.</p> <p>Constraints: A maximum of 20 subnets can be configured.</p>

Table 4-358 Taint

Parameter	Type	Description
key	String	<p>Details: Key</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
value	String	<p>Details: Value</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
effect	String	<p>Details: Effect</p> <p>Constraints: None</p> <p>Options: Available options are NoSchedule, PreferNoSchedule, and NoExecute.</p> <p>Default value: N/A</p>

Table 4-359 UserTag

Parameter	Type	Description
key	String	<p>Details: Key of the cloud server tag</p> <p>Constraints: The value cannot start with CCE-, _type_baremetal, or sys.</p> <p>Options: The value contains a maximum of 128 characters. The tag key must be unique and cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, /</p> <p>Default value: N/A</p>
value	String	<p>Details: Value of the cloud server tag</p> <p>Constraints: None</p> <p>Options: The value contains a maximum of 255 characters. The tag value cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, </p> <p>Default value: N/A</p>

Table 4-360 Runtime

Parameter	Type	Description
name	String	<p>Details: Container runtime</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • Clusters earlier than v1.25: The default value is docker. • Clusters of v1.25 or later: The default value varies with the OSs. • For nodes running EulerOS 2.5 or EulerOS 2.8, the default value is docker. For nodes running other OSs, the default value is containerd.

Table 4-361 NodeExtendParam

Parameter	Type	Description
ecs:performancety pe	String	<p>Details: ECS flavor types. This field is returned in the response.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
orderID	String	<p>Details: Order ID</p> <p>Constraints: This parameter is returned in the response when the node is billed on a yearly/monthly basis with auto payment enabled (only in creation scenarios).</p> <p>Options: N/A</p> <p>Default value: N/A</p>
productID	String	<p>Details: Product ID</p> <p>Constraints: This field is returned in the response when the node is billed on a yearly/ monthly basis with auto payment enabled.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
maxPods	Integer	<p>Details: Maximum number of pods that can be created on a node, including the default system pods. This limit prevents the node from being overloaded with pods. The number of pods that can be created on a node is determined by multiple parameters. For details, see Maximum Number of Pods That Can Be Created on a Node.</p> <p>Constraints: None</p> <p>Options: 16 to 256</p> <p>Default value: N/A</p>

Parameter	Type	Description
periodType	String	<p>Details: Subscription period type</p> <p>Constraints:</p> <ul style="list-style-type: none"> As a request parameter, it is valid and mandatory only when billingMode is set to 1 (yearly/monthly billing) or 2 (yearly/monthly billing with auto payment enabled) (This option has been discarded). As a response parameter, it is returned only when a yearly/monthly node is created. <p>Options:</p> <ul style="list-style-type: none"> month year <p>Default value: N/A</p>
periodNum	Integer	<p>Details: Number of subscription periods</p> <p>Constraints:</p> <ul style="list-style-type: none"> As a request parameter, it is valid and mandatory only when billingMode is set to 1 (yearly/monthly billing) or 2 (yearly/monthly billing with auto payment enabled) (This option has been discarded). As a response parameter, it is returned only when a yearly/monthly node is created. <p>Options:</p> <ul style="list-style-type: none"> If periodType is month, the value ranges from 1 to 9. If periodType is year, the value ranges from 1 to 3. <p>Default value: N/A</p>

Parameter	Type	Description
isAutoRenew	String	<p>Details: Whether auto-renewal is enabled</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified, auto-renewal is not enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto-renewal is enabled. • false: Auto-renewal is not enabled. <p>Default value: N/A</p>
isAutoPay	String	<p>Details: Whether an order is automatically or manually paid</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified when billingMode is set to 1, auto payment is not enabled. (Discarded) If not specified when billingMode is set to 2, auto payment is enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto payment is enabled. • false: Auto payment is not enabled. <p>Default value: N/A</p>

Parameter	Type	Description
<p>DockerLVMConfigOverride</p>	<p>String</p>	<p>Details: Docker data disk configuration item. (This parameter has been discarded. Use the storage field instead.) Example of the default configuration: "DockerLVMConfigOverride":"dockerThinpool=vgpaas/90%VG;kubernetesLV=vgpaas/10%VG;diskType=evs;lvType=linear" By default, if no VD disk is available, an error occurs because the data disk fails to be found. Specify diskType based on the actual drive letter type.</p> <p>Constraints: None</p> <p>Options: The following fields are included:</p> <ul style="list-style-type: none"> • userLV: (Optional) size of the user space, for example, vgpaas/20%VG • userPath (Optional): mount path of the user space, for example, /home/wqt-test • diskType: disk type. Only evs, hdd, and ssd are supported. • lvType: type of a logic volume. The value can be linear or striped. • dockerThinpool: Docker space size, for example, vgpaas/60%VG • kubernetesLV: kubelet space size, for example, vgpaas/20%VG <p>Default value: N/A</p>

Parameter	Type	Description
dockerBaseSize	Integer	<p>Details: Available disk space of a single container on a node (unit: G). This parameter has been discarded. Use containerBaseSize.</p> <p>For details about how to allocate the space for the container runtime, see Space Allocation of a Data Disk.</p> <p>Constraints: When Device Mapper is used, it is recommended that dockerBaseSize be set to a value less than or equal to 80 GiB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device.</p> <ul style="list-style-type: none"> The dockerBaseSize setting takes effect only on nodes running EulerOS or Huawei Cloud EulerOS 2.0 in clusters of the new version. <p>Options: 10 to 500</p> <p>Default value: If the value is not specified or is set to 0, the default value is used.</p> <ul style="list-style-type: none"> The default value is 10 in Device Mapper mode. In OverlayFS mode, the available space of a single container is not limited by default.

Parameter	Type	Description
containerBaseSize	Integer	<p>Details: Available disk space of a single container on a node (unit: G). For details about how to allocate the space for the container runtime, see Space Allocation of a Data Disk.</p> <p>Constraints: When Device Mapper is used, it is recommended that containerBaseSize be set to a value less than or equal to 80 GiB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device. In new versions, the Device Mapper mode is used only by BMSs in the same resource pool and is being discarded.</p> <ul style="list-style-type: none"> The containerBaseSize setting takes effect only on nodes running EulerOS or Huawei Cloud EulerOS 2.0 in clusters of the new version (v1.23.14-r0, v1.25.9-r0, v1.27.6-r0, v1.28.4-r0 or later). This parameter cannot be updated when a node pool is being updated. <p>Options: 10 to 500</p> <p>Default value: If the value is not specified or is set to 0, the default value is used.</p> <ul style="list-style-type: none"> The default value is 10 in Device Mapper mode. In OverlayFS mode, the available space of a single container is not limited by default.

Parameter	Type	Description
publicKey	String	<p>Details: Public key of a node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/ preInstall	String	<p>Details: Pre-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>Content to be encoded</code> base64</p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/ postInstall	String	<p>Details: Post-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>Content to be encoded</code> base64</p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
alpha.cce/ NodeImageID	String	<p>Details: This parameter is required when a custom image is used to create a BMS node.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
nicMultiqueue	String	<p>Details:</p> <ul style="list-style-type: none"> Number of ENI queues. Example: <code>"[{"queue":4}]"</code> <p>The following fields are included:</p> <ul style="list-style-type: none"> queue: number of ENI queues Supported configurations: {"1":128, "2":92, "4":92, "8":32, "16":16,"28":9}, indicating that a maximum of 128 ENIs can be associated if there is one queue and a maximum of 92 ENIs if there are two queues. A larger number of ENI queues indicates higher performance but fewer ENIs can be associated. The queue settings cannot be changed after creation. <p>Constraints: This field can be configured only for BMS nodes in CCE Turbo clusters.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
nicThreshold	String	<p>Details:</p> <ul style="list-style-type: none"> • ENI pre-binding thresholds. Example: "0.3:0.6" • Low threshold (L): determines the minimum number of pre-bound ENIs (Min). Formula: Min = Total number of ENIs of the node × L • High threshold (H): determines the maximum number of pre-bound ENIs (Max). Formula: Max = Total number of ENIs of the node × H • Number of ENIs bound to a BMS node (B) and number of ENIs being used by pods (U): $U + \text{Min} < B < U + \text{Max}$ • If the number of pre-bound ENIs on a BMS node is smaller than the minimum allowed, the system will bind more ENIs to make the numbers equal. • If the number of pre-bound ENIs on a BMS node is larger than the maximum allowed, the system periodically unbinds ENIs (about every 2 minutes) to make the numbers equal. <p>Constraints:</p> <ul style="list-style-type: none"> • This field can be configured only for BMS nodes in CCE Turbo clusters. • Pre-binding ENIs can speed up workload creation but occupies IP addresses. <p>Options: Both the thresholds are one-decimal-place values ranging from 0.0 to 1.0. The low threshold must be smaller than or equal to the high one.</p> <p>Default value: N/A</p>

Parameter	Type	Description
chargingMode	Integer	<p>Details: Billing mode of a node. This parameter has been discarded. Use billingMode in NodeSpec instead.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
marketType	String	<p>Details: When creating a spot ECS, this parameter should be set to spot.</p> <p>Constraints: This parameter is valid only when billingMode is set to 0.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
spotPrice	String	<p>Details: The highest price per hour a user accepts for a spot ECS</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This parameter takes effect only when billingMode is set to 0 and marketType is set to spot. • When billingMode is set to 0 and marketType is set to spot, if spotPrice is not specified, the pay-per-use price is used by default. • The spotPrice value must be less than or equal to the pay-per-use price and greater than or equal to the ECS market price. <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
agency_name	String	<p>Details: Agency name. An agency is created by a tenant administrator on Identity and Access Management (IAM) to provide temporary credentials for CCE nodes to access cloud servers. This parameter is returned only when it is transferred during node creation.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
kubeReservedMem	Integer	<p>Details: Reserved node memory, which is reserved for Kubernetes components.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
systemReservedMem	Integer	<p>Details: Reserved node memory, which is reserved for system components.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
init-node-password	String	<p>Details: Node password. If this parameter is used as a response parameter, asterisks (*) will be displayed.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
securityReinforcementType	String	<p>Details: Security hardening type of a node. Huawei Cloud EulerOS 2.0 images based on DJCP 2.0 level 3 security hardening are supported. DJCP checks identity authentication, access control, security audit, intrusion prevention, and malicious code prevention and hardens security.</p> <p>If this parameter is not specified, the original value is used. For example, If security hardening has been set up for a Huawei Cloud EulerOS 2.0 image and you do not specify this parameter when updating a node pool, the security hardening configuration will remain unchanged. To remove the security hardening configuration, set this parameter to null.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Empty: Security hardening is not enabled. • cybersecurity: Security hardening is enabled. <p>Default value: N/A</p>

Table 4-362 HostnameConfig

Parameter	Type	Description
type	String	<p>Details: Configuration type of the Kubernetes node name. The default value is privatelp.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The node names, Kubernetes node names, and VM names of the nodes configured with cceNodeName are the same. Node names cannot be changed. Once a VM name is altered on the ECS console, the node name cannot be modified accordingly during ECS synchronization. • To prevent conflicts between Kubernetes node names, a suffix is automatically added to the node name of a node configured with cceNodeName. The suffix consists of a hyphen (-) followed by five random lowercase letters and digits (0 to 9). <p>Options:</p> <ul style="list-style-type: none"> • privatelp: Use the private node IP address as the Kubernetes node name. • cceNodeName: Use the CCE node name as the Kubernetes node name. <p>Default value: privatelp</p>

Table 4-363 NodeStatus

Parameter	Type	Description
phase	String	Node status, which is the status of a node during its lifecycle (such as installation and uninstallation) and the status of a node in a Kubernetes cluster. Options: <ul style="list-style-type: none"> • Build: The node is being created. • Installing: The node is being installing. • Upgrading: The node is being upgraded. • Active: The node is running properly. • Abnormal: The node is abnormal. • Deleting: The node is being deleted. • Error: The node is faulty.
lastProbeTime	String	Last time when the node status was checked. If the cluster is in the abnormal, frozen, or intermediate state (for example, creating), the node status check may be affected. The node status that takes more than five minutes to check has no reference value.
jobID	String	ID of a creation or deletion job
serverId	String	ID of the underlying ECS or BMS node
privateIP	String	IP address in the private network segment of the primary NIC on the node
privateIPv6IP	String	IPv6 address in the private network segment of the primary NIC on the node
publicIP	String	Node EIP. If the ECS data is not synchronized in real time, you can click Sync Node Data on the console to manually update the data.
deleteStatus	DeleteStatus object	Resource status during resource deletion.

Parameter	Type	Description
configurationUpToDate	Boolean	Whether the node configuration is consistent with the latest configuration of the node template in the node pool to which the node belongs. When a node pool's OS or runtime is updated, the existing nodes may have a different OS or runtime, causing configurationUpToDate to be false . However, resetting the nodes will synchronize their OSs and runtimes with the node pool, setting configurationUpToDate to true

Table 4-364 DeleteStatus

Parameter	Type	Description
previous_total	Integer	Total number of existing cluster resource records when the cluster is deleted.
current_total	Integer	Latest number of resource records, which is generated based on the current cluster resource records.
updated	Integer	Total number of resource records updated when the cluster is deleted.
added	Integer	Total number of resource records updated when the cluster is deleted.
deleted	Integer	Total number of resource records deleted when the cluster is deleted.

Example Requests

None

Example Responses

Status code: 200

Information about all the nodes in the specified cluster is successfully obtained.

```
{
  "kind": "List",
  "apiVersion": "v3",
  "items": [ {
    "kind": "Node",
    "apiVersion": "v3",
    "metadata": {
```

```
"name" : "myhost",
"uid" : "4d1ecb2c-229a-11e8-9c75-0255ac100ceb",
"creationTimestamp" : "2018-08-02 07:37:24.005071325 +0000 UTC",
"updateTimestamp" : "2018-08-02 07:44:04.965500815 +0000 UTC",
"annotations" : {
  "kubernetes.io/node-pool.id" : "az1.dc1#s1.medium#EulerOS 2.2"
}
},
"spec" : {
  "flavor" : "s1.medium",
  "az" : "az1.dc1",
  "os" : "EulerOS 2.2",
  "login" : {
    "sshKey" : "KeyPair-001"
  },
  "rootVolume" : {
    "volumetype" : "SAS",
    "size" : 40
  },
  "dataVolumes" : [ {
    "volumetype" : "SAS",
    "size" : 100
  } ],
  "publicIP" : {
    "eip" : {
      "bandwidth" : { }
    }
  },
  "billingMode" : 0
},
"status" : {
  "phase" : "Active",
  "serverId" : "456789abc-9368-46f3-8f29-d1a95622a568",
  "publicIP" : "10.34.56.78",
  "privateIP" : "192.168.1.23"
}
}
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ListNodesSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";
```

```
ICredential auth = new BasicCredentials()
    .withProjectId(projectId)
    .withAk(ak)
    .withSk(sk);

CceClient client = CceClient.newBuilder()
    .withCredential(auth)
    .withRegion(CceRegion.valueOf("<YOUR REGION>"))
    .build();
ListNodesRequest request = new ListNodesRequest();
request.withClusterId("{cluster_id}");
try {
    ListNodesResponse response = client.listNodes(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ListNodesRequest()
        request.cluster_id = "{cluster_id}"
        response = client.list_nodes(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```

package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ListNodesRequest{}
    request.ClusterId = "{cluster_id}"
    response, err := client.ListNodes(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Information about all the nodes in the specified cluster is successfully obtained.

Error Codes

See [Error Codes](#).

4.3.4 Updating a Specified Node

Function

This API is used to update information about a specified node.

 **NOTE**

- Currently, only the **name** field in **metadata** can be updated. This field indicates the node name.
- The URL for cluster management is in the format of **https://Endpoint/uri**. In the URL, **uri** indicates the resource path, that is, the path for API access.

Calling Method

For details, see [Calling APIs](#).

URI

PUT /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes/{node_id}

Table 4-365 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
node_id	Yes	String	Node ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI .

Request Parameters

Table 4-366 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-367 Request body parameters

Parameter	Mandatory	Type	Description
metadata	Yes	ClusterNodeInformationMetadata object	Node metadata, which is a collection of attributes.

Table 4-368 ClusterNodeInformationMetadata

Parameter	Mandatory	Type	Description
name	Yes	String	Node name NOTE After the node name is changed, the ECS name (VM name) will be changed accordingly. Enter 1 to 56 characters starting with a lowercase letter and not ending with a hyphen (-). Only lowercase letters, digits, hyphens (-), and periods (.) are allowed.

Response Parameters

Status code: 200

Table 4-369 Response body parameters

Parameter	Type	Description
kind	String	API type. The value is fixed at Node and cannot be changed.
apiVersion	String	API version. The value is fixed at v3 and cannot be changed.
metadata	NodeMetadata object	Node metadata, which is a collection of attributes.
spec	NodeSpec object	Detailed description of the node. CCE creates or updates objects by defining or updating spec .
status	NodeStatus object	Node status, which is dynamically recorded. A user-defined value will not function when a node is being created or modified.

Table 4-370 NodeMetadata

Parameter	Type	Description
name	String	<p>Node name.</p> <p>NOTE Enter 1 to 56 characters starting with a lowercase letter and not ending with a hyphen (-). Only lowercase letters, digits, hyphens (-), and periods (.) are allowed.</p> <p>If name is not configured or is left blank, the node name is generated based on the default rule, which is <i>Cluster name-Random characters</i>. Only the first 36 characters are kept for a long cluster name.</p> <p>If the number of nodes (count) is greater than 1, some random characters are added to the end of the entered node name according to the default rule, which is <i>User-defined name-Random characters</i>. If the length of the entered node name exceeds 50 characters, the system uses the first 50 characters and adds a random character string to the end of the name.</p>
uid	String	<p>Node ID, which is unique and automatically generated after the resource is created. A user-defined ID will not take effect.</p>
labels	Map<String,String >	<p>CCE node label (not the native Kubernetes label).</p> <p>Labels are used to select objects that meet certain criteria. A label is a key-value pair.</p> <p>Example: <pre>"labels": { "key" : "value" }</pre> </p>

Parameter	Type	Description
annotations	Map<String,String >	<p>CCE node annotations, in key-value pairs (not the native Kubernetes annotations).</p> <p>Example:</p> <pre>"annotations": { "key1": "value1", "key2": "value2" }</pre> <p>NOTE</p> <ul style="list-style-type: none"> • annotations are not used to identify or select objects. The metadata in annotations may be small or large, structured or unstructured, and may include characters that are not allowed in labels. • This parameter is used only for query and cannot be input through a request. Entered data of this parameter is invalid.
creationTimestamp	String	Time when the object was created. The value is automatically generated after the object is created. A user-defined value will not take effect.
updateTimestamp	String	Time when the object was updated. The value is automatically generated after the object is created. A user-defined value will not take effect.
ownerReference	ownerReference object	Owner object

Table 4-371 ownerReference

Parameter	Type	Description
nodepoolName	String	Node pool name
nodepoolID	String	Node pool UID

Table 4-372 NodeSpec

Parameter	Type	Description
flavor	String	<p>Details: Node flavors. For details about the node flavors supported by CCE clusters, see Node Specifications.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
az	String	<p>Details: AZ where the node to be created is located. You need to specify the AZ name. Random AZs will not be allocated to a node created using APIs. For details about AZs supported by CCE, see Regions and Endpoints.</p> <p>Constraints: When you are creating a node pool and configuring a scaling group, this parameter cannot be set to random.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
os	String	<p>Details: Node OS. For details about the supported OSs, see Node OSs.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If the selected OS is not supported by the current cluster version, it will be automatically replaced with a supported OS of the same series. • If alpha.cce/NodeImageID in extendParam is specified during node creation, you do not need to configure this parameter. • If this parameter is not specified, CCE automatically selects a supported OS version based on the cluster version. • This parameter is mandatory when creating a node pool. • If you are using shared disk space when creating a node, this parameter is mandatory. Specifically, the disk initialization configuration management parameter storage is used and the name field of virtualSpaces in StorageGroups is set to share. <p>Options: N/A</p> <p>Default value: N/A</p>
login	Login object	<p>Details: Node login mode. Either the key pair or password must be used for login.</p> <p>Constraints: This parameter cannot be modified when a node pool is being updated.</p>
rootVolume	Volume object	<p>Details: Disk information of a node</p> <p>Constraints: None</p>

Parameter	Type	Description
dataVolumes	Array of Volume objects	<p>Details: Data disk parameters of a node. For DeC nodes, the parameter details are the same as those in rootVolume.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • A VM can have up to 16 disks attached, while a BMS can only have up to 10 disks attached. The maximum number of disks that can be attached to either a VM or BMS is limited by their respective maximum disk limits. (You can add more data disks to each of your nodes through the CCE console or APIs.) • The data disk used by the container runtime and kubelet cannot be detached, or the node will become unavailable. • This parameter can be left blank only when a system disk is selected for the system components.

Parameter	Type	Description
storage	Storage object	<p>Details: Disk initialization management parameter. This parameter is complex to configure. For details, see Attaching Disks to a Node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This field is supported by clusters of v1.15.11-r0 and later versions. If the cluster version is not supported, this field will be ignored. • If a node has both local and EVS disks attached, make sure to not keep the default value for this parameter, or it may result in unexpected disk partitions. • If you want to change the value range of a data disk to 20 to 32768, do not use the default value. • If you want to use the shared disk space (with the runtime and Kubernetes partitions cancelled), do not retain the default value of this parameter. For details about the shared disk space, see Space Allocation of a Data Disk. • If you want to store system components in the system disk, do not use the default value.
publicIP	NodePublicIP object	<p>Details: EIP of a node</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>
nodeNicSpec	NodeNicSpec object	<p>Details: ENI of a node</p> <p>Constraints: None</p>

Parameter	Type	Description
count	Integer	<p>Details: Number of nodes to be created in batches</p> <p>Constraints: This parameter can be left blank when it is used for a node pool.</p> <p>Options: Positive integers that are greater than or equal to 1 and less than or equal to the maximum limit</p> <p>Default value: N/A</p>
billingMode	Integer	<p>Details: Billing mode of a node</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • 0: pay-per-use • 1: yearly/monthly • 2: (Discarded) yearly/monthly billing with auto payment enabled <p>Default value: N/A</p>

Parameter	Type	Description
taints	Array of Taint objects	<p>Details:</p> <p>Taints, which can be added to nodes for anti-affinity configuration. Each taint contains the following parameters:</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain can be prefixed to a key. • Value: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. • Effect: Available options are NoSchedule, PreferNoSchedule, and NoExecute. <p>When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example:</p> <pre> taints: [{ "key": "status", "value": "unavailable", "effect": "NoSchedule" }, { "key": "looks", "value": "bad", "effect": "NoSchedule" }] </pre> <p>Constraints:</p> <p>A maximum of 20 taints can be configured.</p>

Parameter	Type	Description
k8sTags	Map<String,String>	<p>Details: Defined in key-value pairs.</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain containing a maximum of 253 characters (such as example.com/my-key) can be prefixed to a key. • Value: The value can be left blank or contain 1 to 63 characters that start and end with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. <p>When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example: <pre>"k8sTags": { "key": "value" }</pre></p> <p>Constraints: A maximum of 20 key-value pairs are allowed.</p>

Parameter	Type	Description
ecsGroupId	String	<p>Details: ECS group ID. If this parameter is specified, nodes will be created in the specific ECS group.</p> <p>Constraints: This configuration does not take effect when a node pool is created. To ensure that all nodes in a node pool are in the same ECS group, configure nodeManagement in the node pool.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
dedicatedHostId	String	<p>Details: ID of the DeH to which nodes will be scheduled.</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>
userTags	Array of UserTag objects	<p>Details: Cloud server tag (resource tag). When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Constraints:</p> <ul style="list-style-type: none"> The key of a tag must be unique. The maximum number of custom tags supported by CCE varies depending on regions and cannot exceed 8. A tag key can have a maximum of 36 characters. It can only contain letters, digits, Unicode characters, and special characters (-_).

Parameter	Type	Description
runtime	Runtime object	Details: Container runtime <ul style="list-style-type: none">• Clusters earlier than v1.25: The default value is docker.• Clusters of v1.25 or later: The default value varies with the OSs.• For nodes running EulerOS 2.5 or EulerOS 2.8, the default container runtime is docker. For nodes running other OSs, the default container runtime is containerd. Constraints: None

Parameter	Type	Description
initializedConditions	Array of strings	<p>Details:</p> <p>Custom initialization flag, which is left blank by default.</p> <p>Before CCE nodes are initialized, they are tainted with node.cloudprovider.kubernetes.io/uninitialized to prevent pods from being scheduled to them. When creating a node, you can specify the initializedConditions parameter to control the taint removal time. By default, the timeout interval is not configured.</p> <p>Example:</p> <ol style="list-style-type: none"> 1. Create a node and add parameter "initializedConditions": ["CCEInitial", "CustomedInitial"]. 2. After custom initialization is complete, CCE will call a Kubernetes API (for example, PATCH /v1/nodes/{node_ip}/status) to update the node conditions by adding two labels of types CCEInitial and CustomedInitial and setting the status to True, as shown in the following: <pre>status: conditions: - type: CCEInitial status: 'True' - type: CustomedInitial status: 'True'</pre> <ol style="list-style-type: none"> 1. CCE polls status.Conditions of nodes to check whether there are conditions of types CCEInitial and CustomedInitial. If such conditions exist and the status is True, the node initialization is complete and the initialization taint is removed. 2. initializedConditions allows you to configure a timeout period during node creation. For example, "initializedConditions": ["CCEInitial:15m", "CustomedInitial:15m"] indicates that the timeout period is 15 minutes. After the timeout period is reached, the initialization conditions

Parameter	Type	Description
		<p>will be automatically ignored and the initialization taint will be removed when CCE polls the node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The timeout interval in initializedConditions ranges from 1 to 99 seconds. • Each value has 1 to 20 characters, which must consist of letters and digits. • The maximum number of flags cannot exceed 2. • The unit of the timeout period is minute (m).
extendParam	NodeExtendParam object	<p>Details: Extended parameters for creating a node</p> <p>Constraints: None</p>
hostnameConfig	HostnameConfig object	<p>Details: Kubernetes node name configuration parameter</p> <p>Constraints: The supported cluster version is v1.23.6-r0 to v1.25 or v1.25.2-r0 or later.</p>

Parameter	Type	Description
serverEnterprise-ProjectID	String	<p>Details: Enterprise project ID of a server. CCE does not support features provided by EPS. This field is used only for synchronizing enterprise project IDs of servers.</p> <p>Constraints: To create a node or node pool, you can specify an existing enterprise project for it. If this field is left blank, it inherits the enterprise project attributes of the cluster that runs the node or node pool.</p> <p>When updating a node pool, any configuration modifications you made will apply only to new nodes. You need to modify the enterprise projects of existing nodes on the EPS console.</p> <p>Options: N/A</p> <p>Default value: If no value is specified during update, this field will not be updated. If this parameter is left blank, the cluster enterprise project is returned.</p>

Table 4-373 Login

Parameter	Type	Description
sshKey	String	<p>Details: Name of the key pair used for login</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
userPassword	UserPassword object	<p>Details: Password used for node login</p> <p>Constraints: None</p>

Table 4-374 UserPassword

Parameter	Type	Description
username	String	<p>Details: Login account. The default value is root.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: root</p>
password	String	<p>Details: Login password. If a username and password are used when a node is created, this field is shielded in the response body.</p> <p>Constraints: The password field must be salted during node creation. For details, see Adding a Salt in the password Field When Creating a Node.</p> <p>Options: A password must:</p> <ul style="list-style-type: none"> • Contain 8 to 26 characters. • Contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters !@\$%^-_=+[{ }];:./? • Not contain the username or the username spelled backwards. <p>Default value: N/A</p>

Table 4-375 Volume

Parameter	Type	Description
size	Integer	<p>Details: Disk size, in GiB</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • System disks: 40 to 1024 • The first data disk: 20 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) • Other data disks: 10 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) <p>Default value: N/A</p>
volumetype	String	<p>Details: Disk type. For details about possible values, see the root volume parameter in the API used to create an ECS.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • SAS: high I/O SAS disks • SSD: ultra-high I/O SSD disks • SATA: common I/O SATA disks. SATA disks have been removed from EVS. You can find them attached only to existing nodes. <p>NOTE For details about disk types, see Disk Types and Performance.</p> <p>Default value: N/A</p>

Parameter	Type	Description
extendParam	Map<String, Object>	<p>Details: Extended disk parameters, defined in extendparam in the API used to create an ECS. For details, see extendparam Field Description for Creating Disks.</p> <p>Constraints: None</p>
cluster_id	String	<p>Details: ID of the storage pool used by the ECS system disk. This field is used only for DeC clusters and functions as dssPoolID, that is, the ID of the DSS storage pool. To obtain the value, see the ID field in the API used to obtain details of a DSS storage pool.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
cluster_type	String	<p>Details: Storage class of the ECS system disk</p> <p>Constraints: None</p> <p>Options: This field is used only for DeC clusters, and the value is always dss.</p> <p>Default value: N/A</p>

Parameter	Type	Description
hw:passthrough	Boolean	<p>Details:</p> <ul style="list-style-type: none"> Pay attention to this field if your ECS is SDI-compliant. If the value of this field is true, the created disk is of SCSI type. If the node pool type is ElasticBMS, this field must be set to true. If the node specification involves both local and EVS disks, configure the disk initialization parameters. For details, see Attaching Disks to a Node. <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
metadata	VolumeMetadata object	<p>Details: EVS disk encryption information. This parameter is mandatory only when the system disk or data disk of the node to be created needs to be encrypted.</p> <p>Constraints: None</p>

Table 4-376 VolumeMetadata

Parameter	Type	Description
<code>__system__encrypted</code>	String	<p>Details: Whether an EVS disk is encrypted. The value 0 indicates that the EVS disk is not encrypted, and the value 1 indicates that the EVS disk is encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: If this parameter does not appear, the disk is not encrypted.</p>
<code>__system__cmkid</code>	String	<p>Details: CMK ID, which indicates encryption in metadata. This field is used with __system__encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-377 Storage

Parameter	Type	Description
<code>storageSelectors</code>	Array of StorageSelectors objects	<p>Details: Disk selection. Matched disks are managed based on matchLabels and storageType settings. Disks are matched in sequence. The matching rule in the front is matched first.</p> <p>Constraints: None</p>

Parameter	Type	Description
storageGroups	Array of StorageGroups objects	<p>Details: A storage group consisting of multiple storage devices, which are used to divide storage space.</p> <p>Constraints: None</p>

Table 4-378 StorageSelectors

Parameter	Type	Description
name	String	<p>Details: Name of a selector, which is used as the index of selectorNames in storageGroup.</p> <p>Constraints: The name of each selector must be unique.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
storageType	String	<p>Details: Storage type</p> <p>Constraints:</p> <ul style="list-style-type: none"> The local storage type does not support disk selection. All local disks form a VG. Therefore, only one local storage selector is allowed. The system storage type does not support disk selection. It is recommended that you use the system disk to store system components. As a result, only one storage selector of the system type is allowed, and the name must be cceUse. <p>Options: Only evs (EVS disks), local (local disks), and system (system disks) are supported.</p> <p>Default value: N/A</p>
matchLabels	matchLabels object	<p>Details: Matching field of an EVS disk</p> <p>Constraints: If storageType is set to system (system disk), you do not need to configure this parameter.</p> <p>Options: The size, volumeType, metadataEncrypted, metadataCmkid, and count fields in DataVolume are supported.</p> <p>Default value: N/A</p>

Table 4-379 matchLabels

Parameter	Type	Description
size	String	<p>Details: Matched disk size, for example, 100. If this parameter is left blank, the disk size is not limited.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
volumeType	String	<p>Details: EVS disk type</p> <p>Constraints: None</p> <p>Options: SSD, GPSSD, SAS, ESSD, and SATA are supported. If this parameter is left blank, there is no restriction on the disk type.</p> <p>Default value: N/A</p>
metadataEncrypted	String	<p>Details: Disk encryption identifier. If this parameter is set to 0, it specifies that the disk is not encrypted. If this parameter is set to 1, it specifies that the disk is encrypted. If this parameter is left blank, there is no restriction on the disk encryption identifier.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
metadataCmkid	String	<p>Details: CMK ID of an encrypted disk. The value is a string of 36 bytes. If this parameter is left blank, there is no restriction on the disk key ID.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
count	String	<p>Details: Number of disks to be selected. If this parameter is left blank, all disks of this type are selected.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-380 StorageGroups

Parameter	Type	Description
name	String	<p>Details: Name of a virtual storage group, which must be unique</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If cceManaged is set to true, the name field must be set to vgpaas. • If the data disk is used as a temporary storage volume, the name field must be set to vg-everest-localvolume-ephemeral. • If the data disk is used as a persistent storage volume, the name field must be set to vg-everest-localvolume-persistent. <p>Default value: N/A</p>
cceManaged	Boolean	<p>Details: Storage space to which Kubernetes and runtime belong. Only one group is set to true. If this parameter is left blank, the default value false is used.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
selectorNames	Array of strings	<p>Details: Corresponds to name in storageSelectors. One group can select multiple selectors, but one selector can be selected by only one group.</p> <p>Constraints: System components cannot be separately stored in the system disk and data disks. Therefore, when the selector type is set to system, only one selector can be selected for a group.</p>

Parameter	Type	Description
virtualSpaces	Array of VirtualSpace objects	<p>Details: Detailed management of space configurations in a group</p> <p>Constraints: None</p>

Table 4-381 VirtualSpace

Parameter	Type	Description
name	String	<p>Details: Name of a virtualSpace. Only types of share, kubernetes, runtime, and user are supported.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • kubernetes: Kubernetes space configuration. lvmConfig needs to be configured. • runtime: runtime space configuration. runtimeConfig needs to be configured. • user: user space configuration. lvmConfig needs to be configured. <p>Default value: N/A</p>
size	String	<p>Details: Size of a virtualSpace. The value must be an integer in percentage, for example, 90%.</p> <p>Constraints: None</p> <p>Options: 10 to 90. The sum of percentages of all virtualSpaces in a group cannot exceed 100%.</p> <p>Default value: N/A</p>

Parameter	Type	Description
lvmConfig	LVMConfig object	<p>Details: LVM configuration management, which is applicable to share, Kubernetes, and user space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>
runtimeConfig	RuntimeConfig object	<p>Details: Runtime configuration management, which is applicable to runtime space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>

Table 4-382 LVMConfig

Parameter	Type	Description
lvType	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
path	String	<p>Details: Disk mount path. This parameter only takes effect in user configuration. The value can be an absolute path containing digits, uppercase letters, lowercase letters, periods (.), hyphens (-), and underscores (_).</p> <p>Constraints: Do not leave the path empty or set it to a key OS path such as the root directory. Key OS paths that cannot be entered: /, /home, /home/, /bin, /bin/, /lib, /lib/, /root, /root/, /boot, /boot/, /dev, /dev/, /etc, /etc/, /lost+found, /lost+found/, /mnt, /mnt/, /proc, /proc/, /sbin, /sbin/, /srv, /srv/, /tmp, /tmp/, /var, /var/, /media, /media/, /opt, /opt/, /selinux, /selinux/, /sys, /sys/, /usr, /usr/, /opt/cloud/, /mnt/paas/, /home/paas/, /var/paas/, /var/lib/, /var/script/</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-383 RuntimeConfig

Parameter	Type	Description
lvType	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-384 NodePublicIP

Parameter	Type	Description
ids	Array of strings	<p>Details: IDs of existing EIPs</p> <p>Constraints:</p> <ul style="list-style-type: none"> The quantity cannot be greater than the number of nodes to be created. If ids has been specified, you do not need to configure count and eip.
count	Integer	<p>Details: Number of EIPs to be dynamically created</p> <p>Constraints: count and eip must be configured simultaneously.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
eip	NodeEIPSpec object	<p>Details: EIP configuration</p> <p>Constraints: This parameter is not supported when creating a node pool.</p>

Table 4-385 NodeEIPSpec

Parameter	Type	Description
iptype	String	<p>Details: EIP type, specified in publicip.type in the API for assigning an EIP. For details, see Assigning an EIP.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
bandwidth	NodeBandwidth object	<p>Details: Bandwidth parameters of the EIP</p> <p>Constraints: None</p>

Table 4-386 NodeBandwidth

Parameter	Type	Description
chargemode	String	<p>Details: Bandwidth billing mode</p> <p>NOTE</p> <ul style="list-style-type: none"> • Billed by bandwidth: The billing will be based on the data transmission rate (in Mbps) of public networks. This billing mode is recommended if your bandwidth usage is higher than 10%. • Billed by traffic: The billing is based on the total amount of data (in GB) transmitted over the public network. This mode is available only when you are creating a pay-per-use node. This billing mode is recommended if your bandwidth usage is lower than 10%. <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If this field is not specified, the billing is based on bandwidth. • If the field value is empty, the billing is based on bandwidth. • If the field value is traffic, the billing is based on traffic. • If the value is out of the preceding options, the cloud server will fail to be created. <p>Default value: N/A</p>

Parameter	Type	Description
size	Integer	<p>Details: Bandwidth size, specified in bandwidth.size in the API for assigning an EIP. For details, see Assigning an EIP.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
sharetype	String	<p>Details: Bandwidth sharing type. Dedicated bandwidth is supported only. PER specifies dedicated bandwidth.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-387 NodeNicSpec

Parameter	Type	Description
primaryNic	NicSpec object	<p>Details: Description of the primary ENI</p> <p>Constraints: None</p>
extNics	Array of NicSpec objects	<p>Details: Extension ENI</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>

Table 4-388 NicSpec

Parameter	Type	Description
subnetId	String	<p>Details: Network ID of the subnet to which an ENI belongs. If subnetList is also configured for a node pool, the subnetList field is used for adding subnets to the node pool.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If subnetId is not specified when a primary ENI is creating, the cluster subnet will be used. • When creating an extension ENI, you must specify subnetId. <p>Options: N/A</p> <p>Default value: N/A</p>
fixedIps	Array of strings	<p>Details: The IP address of the primary ENI is specified using fixedIps. The number of IP addresses cannot be greater than the number of created nodes.</p> <p>Constraints: Either fixedIps or ipBlock can be specified. fiexdlps cannot be specified for extension ENIs.</p>
ipBlock	String	<p>Details: CIDR format of the primary ENI IP address range. The IP address of the created node falls in this range.</p> <p>Constraints: Either fixedIps or ipBlock can be specified.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
subnetList	Array of strings	<p>Details: Network ID list of the subnet where the ENI resides. Multiple subnets can be configured for a node pool.</p> <p>Constraints: A maximum of 20 subnets can be configured.</p>

Table 4-389 Taint

Parameter	Type	Description
key	String	<p>Details: Key</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
value	String	<p>Details: Value</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
effect	String	<p>Details: Effect</p> <p>Constraints: None</p> <p>Options: Available options are NoSchedule, PreferNoSchedule, and NoExecute.</p> <p>Default value: N/A</p>

Table 4-390 UserTag

Parameter	Type	Description
key	String	<p>Details: Key of the cloud server tag</p> <p>Constraints: The value cannot start with CCE-, _type_baremetal, or sys.</p> <p>Options: The value contains a maximum of 128 characters. The tag key must be unique and cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, /</p> <p>Default value: N/A</p>
value	String	<p>Details: Value of the cloud server tag</p> <p>Constraints: None</p> <p>Options: The value contains a maximum of 255 characters. The tag value cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, </p> <p>Default value: N/A</p>

Table 4-391 Runtime

Parameter	Type	Description
name	String	<p>Details: Container runtime</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • Clusters earlier than v1.25: The default value is docker. • Clusters of v1.25 or later: The default value varies with the OSs. • For nodes running EulerOS 2.5 or EulerOS 2.8, the default value is docker. For nodes running other OSs, the default value is containerd.

Table 4-392 NodeExtendParam

Parameter	Type	Description
ecs:performancety pe	String	<p>Details: ECS flavor types. This field is returned in the response.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
orderID	String	<p>Details: Order ID</p> <p>Constraints: This parameter is returned in the response when the node is billed on a yearly/monthly basis with auto payment enabled (only in creation scenarios).</p> <p>Options: N/A</p> <p>Default value: N/A</p>
productID	String	<p>Details: Product ID</p> <p>Constraints: This field is returned in the response when the node is billed on a yearly/ monthly basis with auto payment enabled.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
maxPods	Integer	<p>Details: Maximum number of pods that can be created on a node, including the default system pods. This limit prevents the node from being overloaded with pods. The number of pods that can be created on a node is determined by multiple parameters. For details, see Maximum Number of Pods That Can Be Created on a Node.</p> <p>Constraints: None</p> <p>Options: 16 to 256</p> <p>Default value: N/A</p>

Parameter	Type	Description
periodType	String	<p>Details: Subscription period type</p> <p>Constraints:</p> <ul style="list-style-type: none"> As a request parameter, it is valid and mandatory only when billingMode is set to 1 (yearly/monthly billing) or 2 (yearly/monthly billing with auto payment enabled) (This option has been discarded). As a response parameter, it is returned only when a yearly/monthly node is created. <p>Options:</p> <ul style="list-style-type: none"> month year <p>Default value: N/A</p>
periodNum	Integer	<p>Details: Number of subscription periods</p> <p>Constraints:</p> <ul style="list-style-type: none"> As a request parameter, it is valid and mandatory only when billingMode is set to 1 (yearly/monthly billing) or 2 (yearly/monthly billing with auto payment enabled) (This option has been discarded). As a response parameter, it is returned only when a yearly/monthly node is created. <p>Options:</p> <ul style="list-style-type: none"> If periodType is month, the value ranges from 1 to 9. If periodType is year, the value ranges from 1 to 3. <p>Default value: N/A</p>

Parameter	Type	Description
isAutoRenew	String	<p>Details: Whether auto-renewal is enabled</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified, auto-renewal is not enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto-renewal is enabled. • false: Auto-renewal is not enabled. <p>Default value: N/A</p>
isAutoPay	String	<p>Details: Whether an order is automatically or manually paid</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified when billingMode is set to 1, auto payment is not enabled. (Discarded) If not specified when billingMode is set to 2, auto payment is enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto payment is enabled. • false: Auto payment is not enabled. <p>Default value: N/A</p>

Parameter	Type	Description
<p>DockerLVMConfigOverride</p>	<p>String</p>	<p>Details: Docker data disk configuration item. (This parameter has been discarded. Use the storage field instead.) Example of the default configuration: "DockerLVMConfigOverride":"dockerThinpool=vgpaas/90%VG;kubernetesLV=vgpaas/10%VG;diskType=evs;lvType=linear" By default, if no VD disk is available, an error occurs because the data disk fails to be found. Specify diskType based on the actual drive letter type.</p> <p>Constraints: None</p> <p>Options: The following fields are included:</p> <ul style="list-style-type: none"> • userLV: (Optional) size of the user space, for example, vgpaas/20%VG • userPath (Optional): mount path of the user space, for example, /home/wqt-test • diskType: disk type. Only evs, hdd, and ssd are supported. • lvType: type of a logic volume. The value can be linear or striped. • dockerThinpool: Docker space size, for example, vgpaas/60%VG • kubernetesLV: kubelet space size, for example, vgpaas/20%VG <p>Default value: N/A</p>

Parameter	Type	Description
dockerBaseSize	Integer	<p>Details: Available disk space of a single container on a node (unit: G). This parameter has been discarded. Use containerBaseSize.</p> <p>For details about how to allocate the space for the container runtime, see Space Allocation of a Data Disk.</p> <p>Constraints: When Device Mapper is used, it is recommended that dockerBaseSize be set to a value less than or equal to 80 GiB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device.</p> <ul style="list-style-type: none"> The dockerBaseSize setting takes effect only on nodes running EulerOS or Huawei Cloud EulerOS 2.0 in clusters of the new version. <p>Options: 10 to 500</p> <p>Default value: If the value is not specified or is set to 0, the default value is used.</p> <ul style="list-style-type: none"> The default value is 10 in Device Mapper mode. In OverlayFS mode, the available space of a single container is not limited by default.

Parameter	Type	Description
containerBaseSize	Integer	<p>Details: Available disk space of a single container on a node (unit: G). For details about how to allocate the space for the container runtime, see Space Allocation of a Data Disk.</p> <p>Constraints: When Device Mapper is used, it is recommended that containerBaseSize be set to a value less than or equal to 80 GiB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device. In new versions, the Device Mapper mode is used only by BMSs in the same resource pool and is being discarded.</p> <ul style="list-style-type: none"> • The containerBaseSize setting takes effect only on nodes running EulerOS or Huawei Cloud EulerOS 2.0 in clusters of the new version (v1.23.14-r0, v1.25.9-r0, v1.27.6-r0, v1.28.4-r0 or later). • This parameter cannot be updated when a node pool is being updated. <p>Options: 10 to 500</p> <p>Default value: If the value is not specified or is set to 0, the default value is used.</p> <ul style="list-style-type: none"> • The default value is 10 in Device Mapper mode. • In OverlayFS mode, the available space of a single container is not limited by default.

Parameter	Type	Description
publicKey	String	<p>Details: Public key of a node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/ preInstall	String	<p>Details: Pre-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>Content to be encoded</code> base64</p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/ postInstall	String	<p>Details: Post-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>Content to be encoded</code> base64</p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
alpha.cce/ NodeImageID	String	<p>Details: This parameter is required when a custom image is used to create a BMS node.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
nicMultiqueue	String	<p>Details:</p> <ul style="list-style-type: none"> Number of ENI queues. Example: <code>"[{"queue":4}]"</code> <p>The following fields are included:</p> <ul style="list-style-type: none"> queue: number of ENI queues Supported configurations: {"1":128, "2":92, "4":92, "8":32, "16":16,"28":9}, indicating that a maximum of 128 ENIs can be associated if there is one queue and a maximum of 92 ENIs if there are two queues. A larger number of ENI queues indicates higher performance but fewer ENIs can be associated. The queue settings cannot be changed after creation. <p>Constraints: This field can be configured only for BMS nodes in CCE Turbo clusters.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
nicThreshold	String	<p>Details:</p> <ul style="list-style-type: none"> • ENI pre-binding thresholds. Example: "0.3:0.6" • Low threshold (L): determines the minimum number of pre-bound ENIs (Min). Formula: Min = Total number of ENIs of the node × L • High threshold (H): determines the maximum number of pre-bound ENIs (Max). Formula: Max = Total number of ENIs of the node × H • Number of ENIs bound to a BMS node (B) and number of ENIs being used by pods (U): $U + \text{Min} < B < U + \text{Max}$ • If the number of pre-bound ENIs on a BMS node is smaller than the minimum allowed, the system will bind more ENIs to make the numbers equal. • If the number of pre-bound ENIs on a BMS node is larger than the maximum allowed, the system periodically unbinds ENIs (about every 2 minutes) to make the numbers equal. <p>Constraints:</p> <ul style="list-style-type: none"> • This field can be configured only for BMS nodes in CCE Turbo clusters. • Pre-binding ENIs can speed up workload creation but occupies IP addresses. <p>Options: Both the thresholds are one-decimal-place values ranging from 0.0 to 1.0. The low threshold must be smaller than or equal to the high one.</p> <p>Default value: N/A</p>

Parameter	Type	Description
chargingMode	Integer	<p>Details: Billing mode of a node. This parameter has been discarded. Use billingMode in NodeSpec instead.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
marketType	String	<p>Details: When creating a spot ECS, this parameter should be set to spot.</p> <p>Constraints: This parameter is valid only when billingMode is set to 0.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
spotPrice	String	<p>Details: The highest price per hour a user accepts for a spot ECS</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This parameter takes effect only when billingMode is set to 0 and marketType is set to spot. • When billingMode is set to 0 and marketType is set to spot, if spotPrice is not specified, the pay-per-use price is used by default. • The spotPrice value must be less than or equal to the pay-per-use price and greater than or equal to the ECS market price. <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
agency_name	String	<p>Details: Agency name. An agency is created by a tenant administrator on Identity and Access Management (IAM) to provide temporary credentials for CCE nodes to access cloud servers. This parameter is returned only when it is transferred during node creation.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
kubeReservedMem	Integer	<p>Details: Reserved node memory, which is reserved for Kubernetes components.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
systemReservedMem	Integer	<p>Details: Reserved node memory, which is reserved for system components.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
init-node-password	String	<p>Details: Node password. If this parameter is used as a response parameter, asterisks (*) will be displayed.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
securityReinforcementType	String	<p>Details: Security hardening type of a node. Huawei Cloud EulerOS 2.0 images based on DJCP 2.0 level 3 security hardening are supported. DJCP checks identity authentication, access control, security audit, intrusion prevention, and malicious code prevention and hardens security.</p> <p>If this parameter is not specified, the original value is used. For example, If security hardening has been set up for a Huawei Cloud EulerOS 2.0 image and you do not specify this parameter when updating a node pool, the security hardening configuration will remain unchanged. To remove the security hardening configuration, set this parameter to null.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Empty: Security hardening is not enabled. • cybersecurity: Security hardening is enabled. <p>Default value: N/A</p>

Table 4-393 HostnameConfig

Parameter	Type	Description
type	String	<p>Details: Configuration type of the Kubernetes node name. The default value is privatelp.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The node names, Kubernetes node names, and VM names of the nodes configured with cceNodeName are the same. Node names cannot be changed. Once a VM name is altered on the ECS console, the node name cannot be modified accordingly during ECS synchronization. • To prevent conflicts between Kubernetes node names, a suffix is automatically added to the node name of a node configured with cceNodeName. The suffix consists of a hyphen (-) followed by five random lowercase letters and digits (0 to 9). <p>Options:</p> <ul style="list-style-type: none"> • privatelp: Use the private node IP address as the Kubernetes node name. • cceNodeName: Use the CCE node name as the Kubernetes node name. <p>Default value: privatelp</p>

Table 4-394 NodeStatus

Parameter	Type	Description
phase	String	Node status, which is the status of a node during its lifecycle (such as installation and uninstallation) and the status of a node in a Kubernetes cluster. Options: <ul style="list-style-type: none"> • Build: The node is being created. • Installing: The node is being installing. • Upgrading: The node is being upgraded. • Active: The node is running properly. • Abnormal: The node is abnormal. • Deleting: The node is being deleted. • Error: The node is faulty.
lastProbeTime	String	Last time when the node status was checked. If the cluster is in the abnormal, frozen, or intermediate state (for example, creating), the node status check may be affected. The node status that takes more than five minutes to check has no reference value.
jobID	String	ID of a creation or deletion job
serverId	String	ID of the underlying ECS or BMS node
privateIP	String	IP address in the private network segment of the primary NIC on the node
privateIPv6IP	String	IPv6 address in the private network segment of the primary NIC on the node
publicIP	String	Node EIP. If the ECS data is not synchronized in real time, you can click Sync Node Data on the console to manually update the data.
deleteStatus	DeleteStatus object	Resource status during resource deletion.

Parameter	Type	Description
configurationUpToDate	Boolean	Whether the node configuration is consistent with the latest configuration of the node template in the node pool to which the node belongs. When a node pool's OS or runtime is updated, the existing nodes may have a different OS or runtime, causing configurationUpToDate to be false . However, resetting the nodes will synchronize their OSs and runtimes with the node pool, setting configurationUpToDate to true

Table 4-395 DeleteStatus

Parameter	Type	Description
previous_total	Integer	Total number of existing cluster resource records when the cluster is deleted.
current_total	Integer	Latest number of resource records, which is generated based on the current cluster resource records.
updated	Integer	Total number of resource records updated when the cluster is deleted.
added	Integer	Total number of resource records updated when the cluster is deleted.
deleted	Integer	Total number of resource records deleted when the cluster is deleted.

Example Requests

Update the name of a specified node.

```
{
  "metadata": {
    "name": "new-hostname"
  }
}
```

Example Responses

Status code: 200

Information about the specified node is successfully updated.

```
{
  "kind": "Node",
```

```
"apiVersion" : "v3",
"metadata" : {
  "name" : "new-hostname",
  "uid" : "4d1ecb2c-229a-11e8-9c75-0255ac100ceb",
  "creationTimestamp" : " 2017-08-20T21:11:09Z",
  "updateTimestamp" : "2017-08-20T21:11:09Z",
  "annotations" : {
    "kubernetes.io/node-pool.id" : "az1.dc1#s1.medium#EulerOS 2.2"
  }
},
"spec" : {
  "flavor" : "s1.medium",
  "az" : "az1.dc1",
  "os" : "EulerOS 2.2",
  "login" : {
    "sshKey" : "KeyPair-001"
  },
  "rootVolume" : {
    "volumetype" : "SAS",
    "size" : 40
  },
  "dataVolumes" : [ {
    "volumetype" : "SAS",
    "size" : 100
  } ],
  "publicIP" : {
    "eip" : { }
  },
  "billingMode" : 0
},
"status" : {
  "phase" : "Active",
  "serverId" : "456789abc-9368-46f3-8f29-d1a95622a568",
  "publicIP" : "10.34.56.78",
  "privateIP" : "192.168.1.23"
}
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

Update the name of a specified node.

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class UpdateNodeSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
```

```
String sk = System.getenv("CLOUD_SDK_SK");
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
    .withProjectId(projectId)
    .withAk(ak)
    .withSk(sk);

CceClient client = CceClient.newBuilder()
    .withCredential(auth)
    .withRegion(CceRegion.valueOf("<YOUR REGION>"))
    .build();
UpdateNodeRequest request = new UpdateNodeRequest();
request.withClusterId("{cluster_id}");
request.withNodeId("{node_id}");
ClusterNodeInformation body = new ClusterNodeInformation();
ClusterNodeInformationMetadata metadatabody = new ClusterNodeInformationMetadata();
metadatabody.withName("new-hostname");
body.withMetadata(metadatabody);
request.withBody(body);
try {
    UpdateNodeResponse response = client.updateNode(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

Update the name of a specified node.

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.getenv("CLOUD_SDK_AK")
    sk = os.getenv("CLOUD_SDK_SK")
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = UpdateNodeRequest()
        request.cluster_id = "{cluster_id}"
```

```
request.node_id = "{node_id}"
metadatabody = ClusterNodeInformationMetadata(
    name="new-hostname"
)
request.body = ClusterNodeInformation(
    metadata=metadatabody
)
response = client.update_node(request)
print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

Update the name of a specified node.

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.UpdateNodeRequest{}
    request.ClusterId = "{cluster_id}"
    request.NodeId = "{node_id}"
    metadatabody := &model.ClusterNodeInformationMetadata{
        Name: "new-hostname",
    }
    request.Body = &model.ClusterNodeInformation{
        Metadata: metadatabody,
    }
    response, err := client.UpdateNode(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Information about the specified node is successfully updated.

Error Codes

See [Error Codes](#).

4.3.5 Deleting a Node

Function

This API is used to delete a specified node.

NOTE

The URL for cluster management is in the format of `https://Endpoint/uri`. In the URL, **uri** indicates the resource path, that is, the path for API access.

Calling Method

For details, see [Calling APIs](#).

URI

DELETE `/api/v3/projects/{project_id}/clusters/{cluster_id}/nodes/{node_id}`

Table 4-396 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>
node_id	Yes	String	<p>Node ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p>

Table 4-397 Query Parameters

Parameter	Mandatory	Type	Description
nodepoolScaleDown	No	String	<p>Whether the request is delivered by the node pool. If the value is not NoScaleDown, the number of pods in the corresponding node pool is automatically updated.</p>

Request Parameters

Table 4-398 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-399 Response body parameters

Parameter	Type	Description
kind	String	API type. The value is fixed at Node and cannot be changed.
apiVersion	String	API version. The value is fixed at v3 and cannot be changed.
metadata	NodeMetadata object	Node metadata, which is a collection of attributes.
spec	NodeSpec object	Detailed description of the node. CCE creates or updates objects by defining or updating spec .
status	NodeStatus object	Node status, which is dynamically recorded. A user-defined value will not function when a node is being created or modified.

Table 4-400 NodeMetadata

Parameter	Type	Description
name	String	Node name. NOTE Enter 1 to 56 characters starting with a lowercase letter and not ending with a hyphen (-). Only lowercase letters, digits, hyphens (-), and periods (.) are allowed. If name is not configured or is left blank, the node name is generated based on the default rule, which is <i>Cluster name-Random characters</i> . Only the first 36 characters are kept for a long cluster name. If the number of nodes (count) is greater than 1 , some random characters are added to the end of the entered node name according to the default rule, which is <i>User-defined name-Random characters</i> . If the length of the entered node name exceeds 50 characters, the system uses the first 50 characters and adds a random character string to the end of the name.
uid	String	Node ID, which is unique and automatically generated after the resource is created. A user-defined ID will not take effect.

Parameter	Type	Description
labels	Map<String,String >	CCE node label (not the native Kubernetes label). Labels are used to select objects that meet certain criteria. A label is a key-value pair. Example: <pre>"labels": { "key": "value" }</pre>
annotations	Map<String,String >	CCE node annotations, in key-value pairs (not the native Kubernetes annotations). Example: <pre>"annotations": { "key1": "value1", "key2": "value2" }</pre> NOTE <ul style="list-style-type: none"> • annotations are not used to identify or select objects. The metadata in annotations may be small or large, structured or unstructured, and may include characters that are not allowed in labels. • This parameter is used only for query and cannot be input through a request. Entered data of this parameter is invalid.
creationTimestamp	String	Time when the object was created. The value is automatically generated after the object is created. A user-defined value will not take effect.
updateTimestamp	String	Time when the object was updated. The value is automatically generated after the object is created. A user-defined value will not take effect.
ownerReference	ownerReference object	Owner object

Table 4-401 ownerReference

Parameter	Type	Description
nodepoolName	String	Node pool name
nodepoolID	String	Node pool UID

Table 4-402 NodeSpec

Parameter	Type	Description
flavor	String	<p>Details: Node flavors. For details about the node flavors supported by CCE clusters, see Node Specifications.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
az	String	<p>Details: AZ where the node to be created is located. You need to specify the AZ name. Random AZs will not be allocated to a node created using APIs. For details about AZs supported by CCE, see Regions and Endpoints.</p> <p>Constraints: When you are creating a node pool and configuring a scaling group, this parameter cannot be set to random.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
os	String	<p>Details: Node OS. For details about the supported OSs, see Node OSs.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If the selected OS is not supported by the current cluster version, it will be automatically replaced with a supported OS of the same series. • If alpha.cce/NodeImageID in extendParam is specified during node creation, you do not need to configure this parameter. • If this parameter is not specified, CCE automatically selects a supported OS version based on the cluster version. • This parameter is mandatory when creating a node pool. • If you are using shared disk space when creating a node, this parameter is mandatory. Specifically, the disk initialization configuration management parameter storage is used and the name field of virtualSpaces in StorageGroups is set to share. <p>Options: N/A</p> <p>Default value: N/A</p>
login	Login object	<p>Details: Node login mode. Either the key pair or password must be used for login.</p> <p>Constraints: This parameter cannot be modified when a node pool is being updated.</p>
rootVolume	Volume object	<p>Details: Disk information of a node</p> <p>Constraints: None</p>

Parameter	Type	Description
dataVolumes	Array of Volume objects	<p>Details: Data disk parameters of a node. For DeC nodes, the parameter details are the same as those in rootVolume.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • A VM can have up to 16 disks attached, while a BMS can only have up to 10 disks attached. The maximum number of disks that can be attached to either a VM or BMS is limited by their respective maximum disk limits. (You can add more data disks to each of your nodes through the CCE console or APIs.) • The data disk used by the container runtime and kubelet cannot be detached, or the node will become unavailable. • This parameter can be left blank only when a system disk is selected for the system components.

Parameter	Type	Description
storage	Storage object	<p>Details: Disk initialization management parameter. This parameter is complex to configure. For details, see Attaching Disks to a Node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This field is supported by clusters of v1.15.11-r0 and later versions. If the cluster version is not supported, this field will be ignored. • If a node has both local and EVS disks attached, make sure to not keep the default value for this parameter, or it may result in unexpected disk partitions. • If you want to change the value range of a data disk to 20 to 32768, do not use the default value. • If you want to use the shared disk space (with the runtime and Kubernetes partitions cancelled), do not retain the default value of this parameter. For details about the shared disk space, see Space Allocation of a Data Disk. • If you want to store system components in the system disk, do not use the default value.
publicIP	NodePublicIP object	<p>Details: EIP of a node</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>
nodeNicSpec	NodeNicSpec object	<p>Details: ENI of a node</p> <p>Constraints: None</p>

Parameter	Type	Description
count	Integer	<p>Details: Number of nodes to be created in batches</p> <p>Constraints: This parameter can be left blank when it is used for a node pool.</p> <p>Options: Positive integers that are greater than or equal to 1 and less than or equal to the maximum limit</p> <p>Default value: N/A</p>
billingMode	Integer	<p>Details: Billing mode of a node</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • 0: pay-per-use • 1: yearly/monthly • 2: (Discarded) yearly/monthly billing with auto payment enabled <p>Default value: N/A</p>

Parameter	Type	Description
taints	Array of Taint objects	<p>Details:</p> <p>Taints, which can be added to nodes for anti-affinity configuration. Each taint contains the following parameters:</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain can be prefixed to a key. • Value: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. • Effect: Available options are NoSchedule, PreferNoSchedule, and NoExecute. <p>When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example:</p> <pre>"taints": [{ "key": "status", "value": "unavailable", "effect": "NoSchedule" }, { "key": "looks", "value": "bad", "effect": "NoSchedule" }]</pre> <p>Constraints:</p> <p>A maximum of 20 taints can be configured.</p>

Parameter	Type	Description
k8sTags	Map<String,String>	<p>Details: Defined in key-value pairs.</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain containing a maximum of 253 characters (such as example.com/my-key) can be prefixed to a key. • Value: The value can be left blank or contain 1 to 63 characters that start and end with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. <p>When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example: <pre>"k8sTags": { "key": "value" }</pre> </p> <p>Constraints: A maximum of 20 key-value pairs are allowed.</p>

Parameter	Type	Description
ecsGroupId	String	<p>Details: ECS group ID. If this parameter is specified, nodes will be created in the specific ECS group.</p> <p>Constraints: This configuration does not take effect when a node pool is created. To ensure that all nodes in a node pool are in the same ECS group, configure nodeManagement in the node pool.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
dedicatedHostId	String	<p>Details: ID of the DeH to which nodes will be scheduled.</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>
userTags	Array of UserTag objects	<p>Details: Cloud server tag (resource tag). When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Constraints:</p> <ul style="list-style-type: none"> The key of a tag must be unique. The maximum number of custom tags supported by CCE varies depending on regions and cannot exceed 8. A tag key can have a maximum of 36 characters. It can only contain letters, digits, Unicode characters, and special characters (-_).

Parameter	Type	Description
runtime	Runtime object	Details: Container runtime <ul style="list-style-type: none">• Clusters earlier than v1.25: The default value is docker.• Clusters of v1.25 or later: The default value varies with the OSs.• For nodes running EulerOS 2.5 or EulerOS 2.8, the default container runtime is docker. For nodes running other OSs, the default container runtime is containerd. Constraints: None

Parameter	Type	Description
initializedConditions	Array of strings	<p>Details:</p> <p>Custom initialization flag, which is left blank by default.</p> <p>Before CCE nodes are initialized, they are tainted with node.cloudprovider.kubernetes.io/uninitialized to prevent pods from being scheduled to them. When creating a node, you can specify the initializedConditions parameter to control the taint removal time. By default, the timeout interval is not configured.</p> <p>Example:</p> <ol style="list-style-type: none"> 1. Create a node and add parameter "initializedConditions": ["CCEInitial", "CustomedInitial"]. 2. After custom initialization is complete, CCE will call a Kubernetes API (for example, PATCH /v1/nodes/{node_ip}/status) to update the node conditions by adding two labels of types CCEInitial and CustomedInitial and setting the status to True, as shown in the following: <pre>status: conditions: - type: CCEInitial status: 'True' - type: CustomedInitial status: 'True'</pre> <ol style="list-style-type: none"> 1. CCE polls status.Conditions of nodes to check whether there are conditions of types CCEInitial and CustomedInitial. If such conditions exist and the status is True, the node initialization is complete and the initialization taint is removed. 2. initializedConditions allows you to configure a timeout period during node creation. For example, "initializedConditions": ["CCEInitial:15m", "CustomedInitial:15m"] indicates that the timeout period is 15 minutes. After the timeout period is reached, the initialization conditions

Parameter	Type	Description
		<p>will be automatically ignored and the initialization taint will be removed when CCE polls the node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The timeout interval in initializedConditions ranges from 1 to 99 seconds. • Each value has 1 to 20 characters, which must consist of letters and digits. • The maximum number of flags cannot exceed 2. • The unit of the timeout period is minute (m).
extendParam	NodeExtendParam object	<p>Details: Extended parameters for creating a node</p> <p>Constraints: None</p>
hostnameConfig	HostnameConfig object	<p>Details: Kubernetes node name configuration parameter</p> <p>Constraints: The supported cluster version is v1.23.6-r0 to v1.25 or v1.25.2-r0 or later.</p>

Parameter	Type	Description
serverEnterprise-ProjectID	String	<p>Details: Enterprise project ID of a server. CCE does not support features provided by EPS. This field is used only for synchronizing enterprise project IDs of servers.</p> <p>Constraints: To create a node or node pool, you can specify an existing enterprise project for it. If this field is left blank, it inherits the enterprise project attributes of the cluster that runs the node or node pool.</p> <p>When updating a node pool, any configuration modifications you made will apply only to new nodes. You need to modify the enterprise projects of existing nodes on the EPS console.</p> <p>Options: N/A</p> <p>Default value: If no value is specified during update, this field will not be updated. If this parameter is left blank, the cluster enterprise project is returned.</p>

Table 4-403 Login

Parameter	Type	Description
sshKey	String	<p>Details: Name of the key pair used for login</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
userPassword	UserPassword object	<p>Details: Password used for node login</p> <p>Constraints: None</p>

Table 4-404 UserPassword

Parameter	Type	Description
username	String	<p>Details: Login account. The default value is root.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: root</p>
password	String	<p>Details: Login password. If a username and password are used when a node is created, this field is shielded in the response body.</p> <p>Constraints: The password field must be salted during node creation. For details, see Adding a Salt in the password Field When Creating a Node.</p> <p>Options: A password must:</p> <ul style="list-style-type: none"> • Contain 8 to 26 characters. • Contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters <code>!@\$%^-_=+[]{};./?</code> • Not contain the username or the username spelled backwards. <p>Default value: N/A</p>

Table 4-405 Volume

Parameter	Type	Description
size	Integer	<p>Details: Disk size, in GiB</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • System disks: 40 to 1024 • The first data disk: 20 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) • Other data disks: 10 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) <p>Default value: N/A</p>
volumetype	String	<p>Details: Disk type. For details about possible values, see the root volume parameter in the API used to create an ECS.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • SAS: high I/O SAS disks • SSD: ultra-high I/O SSD disks • SATA: common I/O SATA disks. SATA disks have been removed from EVS. You can find them attached only to existing nodes. <p>NOTE For details about disk types, see Disk Types and Performance.</p> <p>Default value: N/A</p>

Parameter	Type	Description
extendParam	Map<String, Object>	<p>Details: Extended disk parameters, defined in extendparam in the API used to create an ECS. For details, see extendparam Field Description for Creating Disks.</p> <p>Constraints: None</p>
cluster_id	String	<p>Details: ID of the storage pool used by the ECS system disk. This field is used only for DeC clusters and functions as dssPoolID, that is, the ID of the DSS storage pool. To obtain the value, see the ID field in the API used to obtain details of a DSS storage pool.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
cluster_type	String	<p>Details: Storage class of the ECS system disk</p> <p>Constraints: None</p> <p>Options: This field is used only for DeC clusters, and the value is always dss.</p> <p>Default value: N/A</p>

Parameter	Type	Description
hw:passthrough	Boolean	<p>Details:</p> <ul style="list-style-type: none"> • Pay attention to this field if your ECS is SDI-compliant. If the value of this field is true, the created disk is of SCSI type. • If the node pool type is ElasticBMS, this field must be set to true. • If the node specification involves both local and EVS disks, configure the disk initialization parameters. For details, see Attaching Disks to a Node. <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
metadata	VolumeMetadata object	<p>Details: EVS disk encryption information. This parameter is mandatory only when the system disk or data disk of the node to be created needs to be encrypted.</p> <p>Constraints: None</p>

Table 4-406 VolumeMetadata

Parameter	Type	Description
<code>__system__encrypted</code>	String	<p>Details: Whether an EVS disk is encrypted. The value 0 indicates that the EVS disk is not encrypted, and the value 1 indicates that the EVS disk is encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: If this parameter does not appear, the disk is not encrypted.</p>
<code>__system__cmkid</code>	String	<p>Details: CMK ID, which indicates encryption in metadata. This field is used with __system__encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-407 Storage

Parameter	Type	Description
<code>storageSelectors</code>	Array of StorageSelectors objects	<p>Details: Disk selection. Matched disks are managed based on matchLabels and storageType settings. Disks are matched in sequence. The matching rule in the front is matched first.</p> <p>Constraints: None</p>

Parameter	Type	Description
storageGroups	Array of StorageGroups objects	<p>Details: A storage group consisting of multiple storage devices, which are used to divide storage space.</p> <p>Constraints: None</p>

Table 4-408 StorageSelectors

Parameter	Type	Description
name	String	<p>Details: Name of a selector, which is used as the index of selectorNames in storageGroup.</p> <p>Constraints: The name of each selector must be unique.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
storageType	String	<p>Details: Storage type</p> <p>Constraints:</p> <ul style="list-style-type: none"> The local storage type does not support disk selection. All local disks form a VG. Therefore, only one local storage selector is allowed. The system storage type does not support disk selection. It is recommended that you use the system disk to store system components. As a result, only one storage selector of the system type is allowed, and the name must be cceUse. <p>Options: Only evs (EVS disks), local (local disks), and system (system disks) are supported.</p> <p>Default value: N/A</p>
matchLabels	matchLabels object	<p>Details: Matching field of an EVS disk</p> <p>Constraints: If storageType is set to system (system disk), you do not need to configure this parameter.</p> <p>Options: The size, volumeType, metadataEncrypted, metadataCmkid, and count fields in DataVolume are supported.</p> <p>Default value: N/A</p>

Table 4-409 matchLabels

Parameter	Type	Description
size	String	<p>Details: Matched disk size, for example, 100. If this parameter is left blank, the disk size is not limited.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
volumeType	String	<p>Details: EVS disk type</p> <p>Constraints: None</p> <p>Options: SSD, GPSSD, SAS, ESSD, and SATA are supported. If this parameter is left blank, there is no restriction on the disk type.</p> <p>Default value: N/A</p>
metadataEncrypted	String	<p>Details: Disk encryption identifier. If this parameter is set to 0, it specifies that the disk is not encrypted. If this parameter is set to 1, it specifies that the disk is encrypted. If this parameter is left blank, there is no restriction on the disk encryption identifier.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
metadataCmkid	String	<p>Details: CMK ID of an encrypted disk. The value is a string of 36 bytes. If this parameter is left blank, there is no restriction on the disk key ID.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
count	String	<p>Details: Number of disks to be selected. If this parameter is left blank, all disks of this type are selected.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-410 StorageGroups

Parameter	Type	Description
name	String	<p>Details: Name of a virtual storage group, which must be unique</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If cceManaged is set to true, the name field must be set to vgpaas. • If the data disk is used as a temporary storage volume, the name field must be set to vg-everest-localvolume-ephemeral. • If the data disk is used as a persistent storage volume, the name field must be set to vg-everest-localvolume-persistent. <p>Default value: N/A</p>
cceManaged	Boolean	<p>Details: Storage space to which Kubernetes and runtime belong. Only one group is set to true. If this parameter is left blank, the default value false is used.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
selectorNames	Array of strings	<p>Details: Corresponds to name in storageSelectors. One group can select multiple selectors, but one selector can be selected by only one group.</p> <p>Constraints: System components cannot be separately stored in the system disk and data disks. Therefore, when the selector type is set to system, only one selector can be selected for a group.</p>

Parameter	Type	Description
virtualSpaces	Array of VirtualSpace objects	<p>Details: Detailed management of space configurations in a group</p> <p>Constraints: None</p>

Table 4-411 VirtualSpace

Parameter	Type	Description
name	String	<p>Details: Name of a virtualSpace. Only types of share, kubernetes, runtime, and user are supported.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • kubernetes: Kubernetes space configuration. lvmConfig needs to be configured. • runtime: runtime space configuration. runtimeConfig needs to be configured. • user: user space configuration. lvmConfig needs to be configured. <p>Default value: N/A</p>
size	String	<p>Details: Size of a virtualSpace. The value must be an integer in percentage, for example, 90%.</p> <p>Constraints: None</p> <p>Options: 10 to 90. The sum of percentages of all virtualSpaces in a group cannot exceed 100%.</p> <p>Default value: N/A</p>

Parameter	Type	Description
lvmConfig	LVMConfig object	<p>Details: LVM configuration management, which is applicable to share, Kubernetes, and user space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>
runtimeConfig	RuntimeConfig object	<p>Details: Runtime configuration management, which is applicable to runtime space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>

Table 4-412 LVMConfig

Parameter	Type	Description
lvType	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
path	String	<p>Details: Disk mount path. This parameter only takes effect in user configuration. The value can be an absolute path containing digits, uppercase letters, lowercase letters, periods (.), hyphens (-), and underscores (_).</p> <p>Constraints: Do not leave the path empty or set it to a key OS path such as the root directory. Key OS paths that cannot be entered: /, /home, /home/, /bin, /bin/, /lib, /lib/, /root, /root/, /boot, /boot/, /dev, /dev/, /etc, /etc/, /lost+found, /lost+found/, /mnt, /mnt/, /proc, /proc/, /sbin, /sbin/, /srv, /srv/, /tmp, /tmp/, /var, /var/, /media, /media/, /opt, /opt/, /selinux, /selinux/, /sys, /sys/, /usr, /usr/, /opt/cloud/, /mnt/paas/, /home/paas/, /var/paas/, /var/lib/, /var/script/</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-413 RuntimeConfig

Parameter	Type	Description
lvType	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-414 NodePublicIP

Parameter	Type	Description
ids	Array of strings	<p>Details: IDs of existing EIPs</p> <p>Constraints:</p> <ul style="list-style-type: none"> The quantity cannot be greater than the number of nodes to be created. If ids has been specified, you do not need to configure count and eip.
count	Integer	<p>Details: Number of EIPs to be dynamically created</p> <p>Constraints: count and eip must be configured simultaneously.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
eip	NodeEIPSpec object	<p>Details: EIP configuration</p> <p>Constraints: This parameter is not supported when creating a node pool.</p>

Table 4-415 NodeEIPSpec

Parameter	Type	Description
iptype	String	<p>Details: EIP type, specified in publicip.type in the API for assigning an EIP. For details, see Assigning an EIP.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
bandwidth	NodeBandwidth object	<p>Details: Bandwidth parameters of the EIP</p> <p>Constraints: None</p>

Table 4-416 NodeBandwidth

Parameter	Type	Description
chargemode	String	<p>Details: Bandwidth billing mode</p> <p>NOTE</p> <ul style="list-style-type: none"> • Billed by bandwidth: The billing will be based on the data transmission rate (in Mbps) of public networks. This billing mode is recommended if your bandwidth usage is higher than 10%. • Billed by traffic: The billing is based on the total amount of data (in GB) transmitted over the public network. This mode is available only when you are creating a pay-per-use node. This billing mode is recommended if your bandwidth usage is lower than 10%. <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If this field is not specified, the billing is based on bandwidth. • If the field value is empty, the billing is based on bandwidth. • If the field value is traffic, the billing is based on traffic. • If the value is out of the preceding options, the cloud server will fail to be created. <p>Default value: N/A</p>

Parameter	Type	Description
size	Integer	<p>Details: Bandwidth size, specified in bandwidth.size in the API for assigning an EIP. For details, see Assigning an EIP.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
sharetype	String	<p>Details: Bandwidth sharing type. Dedicated bandwidth is supported only. PER specifies dedicated bandwidth.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-417 NodeNicSpec

Parameter	Type	Description
primaryNic	NicSpec object	<p>Details: Description of the primary ENI</p> <p>Constraints: None</p>
extNics	Array of NicSpec objects	<p>Details: Extension ENI</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>

Table 4-418 NicSpec

Parameter	Type	Description
subnetId	String	<p>Details: Network ID of the subnet to which an ENI belongs. If subnetList is also configured for a node pool, the subnetList field is used for adding subnets to the node pool.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If subnetId is not specified when a primary ENI is creating, the cluster subnet will be used. • When creating an extension ENI, you must specify subnetId. <p>Options: N/A</p> <p>Default value: N/A</p>
fixedIps	Array of strings	<p>Details: The IP address of the primary ENI is specified using fixedIps. The number of IP addresses cannot be greater than the number of created nodes.</p> <p>Constraints: Either fixedIps or ipBlock can be specified. fiexdlps cannot be specified for extension ENIs.</p>
ipBlock	String	<p>Details: CIDR format of the primary ENI IP address range. The IP address of the created node falls in this range.</p> <p>Constraints: Either fixedIps or ipBlock can be specified.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
subnetList	Array of strings	<p>Details: Network ID list of the subnet where the ENI resides. Multiple subnets can be configured for a node pool.</p> <p>Constraints: A maximum of 20 subnets can be configured.</p>

Table 4-419 Taint

Parameter	Type	Description
key	String	<p>Details: Key</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
value	String	<p>Details: Value</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
effect	String	<p>Details: Effect</p> <p>Constraints: None</p> <p>Options: Available options are NoSchedule, PreferNoSchedule, and NoExecute.</p> <p>Default value: N/A</p>

Table 4-420 UserTag

Parameter	Type	Description
key	String	<p>Details: Key of the cloud server tag</p> <p>Constraints: The value cannot start with CCE-, _type_baremetal, or sys.</p> <p>Options: The value contains a maximum of 128 characters. The tag key must be unique and cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, /</p> <p>Default value: N/A</p>
value	String	<p>Details: Value of the cloud server tag</p> <p>Constraints: None</p> <p>Options: The value contains a maximum of 255 characters. The tag value cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, </p> <p>Default value: N/A</p>

Table 4-421 Runtime

Parameter	Type	Description
name	String	<p>Details: Container runtime</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • Clusters earlier than v1.25: The default value is docker. • Clusters of v1.25 or later: The default value varies with the OSs. • For nodes running EulerOS 2.5 or EulerOS 2.8, the default value is docker. For nodes running other OSs, the default value is containerd.

Table 4-422 NodeExtendParam

Parameter	Type	Description
ecs:performancety pe	String	<p>Details: ECS flavor types. This field is returned in the response.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
orderID	String	<p>Details: Order ID</p> <p>Constraints: This parameter is returned in the response when the node is billed on a yearly/monthly basis with auto payment enabled (only in creation scenarios).</p> <p>Options: N/A</p> <p>Default value: N/A</p>
productID	String	<p>Details: Product ID</p> <p>Constraints: This field is returned in the response when the node is billed on a yearly/ monthly basis with auto payment enabled.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
maxPods	Integer	<p>Details: Maximum number of pods that can be created on a node, including the default system pods. This limit prevents the node from being overloaded with pods. The number of pods that can be created on a node is determined by multiple parameters. For details, see Maximum Number of Pods That Can Be Created on a Node.</p> <p>Constraints: None</p> <p>Options: 16 to 256</p> <p>Default value: N/A</p>

Parameter	Type	Description
periodType	String	<p>Details: Subscription period type</p> <p>Constraints:</p> <ul style="list-style-type: none"> As a request parameter, it is valid and mandatory only when billingMode is set to 1 (yearly/monthly billing) or 2 (yearly/monthly billing with auto payment enabled) (This option has been discarded). As a response parameter, it is returned only when a yearly/monthly node is created. <p>Options:</p> <ul style="list-style-type: none"> month year <p>Default value: N/A</p>
periodNum	Integer	<p>Details: Number of subscription periods</p> <p>Constraints:</p> <ul style="list-style-type: none"> As a request parameter, it is valid and mandatory only when billingMode is set to 1 (yearly/monthly billing) or 2 (yearly/monthly billing with auto payment enabled) (This option has been discarded). As a response parameter, it is returned only when a yearly/monthly node is created. <p>Options:</p> <ul style="list-style-type: none"> If periodType is month, the value ranges from 1 to 9. If periodType is year, the value ranges from 1 to 3. <p>Default value: N/A</p>

Parameter	Type	Description
isAutoRenew	String	<p>Details: Whether auto-renewal is enabled</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified, auto-renewal is not enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto-renewal is enabled. • false: Auto-renewal is not enabled. <p>Default value: N/A</p>
isAutoPay	String	<p>Details: Whether an order is automatically or manually paid</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified when billingMode is set to 1, auto payment is not enabled. (Discarded) If not specified when billingMode is set to 2, auto payment is enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto payment is enabled. • false: Auto payment is not enabled. <p>Default value: N/A</p>

Parameter	Type	Description
<p>DockerLVMConfigOverride</p>	<p>String</p>	<p>Details: Docker data disk configuration item. (This parameter has been discarded. Use the storage field instead.) Example of the default configuration: "DockerLVMConfigOverride":"dockerThinpool=vgpaas/90%VG;kubernetesLV=vgpaas/10%VG;diskType=evs;lvType=linear"</p> <p>By default, if no VD disk is available, an error occurs because the data disk fails to be found. Specify diskType based on the actual drive letter type.</p> <p>Constraints: None</p> <p>Options: The following fields are included:</p> <ul style="list-style-type: none"> • userLV: (Optional) size of the user space, for example, vgpaas/20%VG • userPath (Optional): mount path of the user space, for example, /home/wqt-test • diskType: disk type. Only evs, hdd, and ssd are supported. • lvType: type of a logic volume. The value can be linear or striped. • dockerThinpool: Docker space size, for example, vgpaas/60%VG • kubernetesLV: kubelet space size, for example, vgpaas/20%VG <p>Default value: N/A</p>

Parameter	Type	Description
dockerBaseSize	Integer	<p>Details: Available disk space of a single container on a node (unit: G). This parameter has been discarded. Use containerBaseSize.</p> <p>For details about how to allocate the space for the container runtime, see Space Allocation of a Data Disk.</p> <p>Constraints: When Device Mapper is used, it is recommended that dockerBaseSize be set to a value less than or equal to 80 GiB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device.</p> <ul style="list-style-type: none"> The dockerBaseSize setting takes effect only on nodes running EulerOS or Huawei Cloud EulerOS 2.0 in clusters of the new version. <p>Options: 10 to 500</p> <p>Default value: If the value is not specified or is set to 0, the default value is used.</p> <ul style="list-style-type: none"> The default value is 10 in Device Mapper mode. In OverlayFS mode, the available space of a single container is not limited by default.

Parameter	Type	Description
containerBaseSize	Integer	<p>Details: Available disk space of a single container on a node (unit: G). For details about how to allocate the space for the container runtime, see Space Allocation of a Data Disk.</p> <p>Constraints: When Device Mapper is used, it is recommended that containerBaseSize be set to a value less than or equal to 80 GiB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device. In new versions, the Device Mapper mode is used only by BMSs in the same resource pool and is being discarded.</p> <ul style="list-style-type: none"> The containerBaseSize setting takes effect only on nodes running EulerOS or Huawei Cloud EulerOS 2.0 in clusters of the new version (v1.23.14-r0, v1.25.9-r0, v1.27.6-r0, v1.28.4-r0 or later). This parameter cannot be updated when a node pool is being updated. <p>Options: 10 to 500</p> <p>Default value: If the value is not specified or is set to 0, the default value is used.</p> <ul style="list-style-type: none"> The default value is 10 in Device Mapper mode. In OverlayFS mode, the available space of a single container is not limited by default.

Parameter	Type	Description
publicKey	String	<p>Details: Public key of a node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/ preInstall	String	<p>Details: Pre-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>"*Content to be encoded*" base64</code></p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/ postInstall	String	<p>Details: Post-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>"*Content to be encoded*" base64</code></p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
alpha.cce/ NodeImageID	String	<p>Details: This parameter is required when a custom image is used to create a BMS node.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
nicMultiqueue	String	<p>Details:</p> <ul style="list-style-type: none"> Number of ENI queues. Example: <code>"[{"queue":4}]"</code> <p>The following fields are included:</p> <ul style="list-style-type: none"> queue: number of ENI queues Supported configurations: {"1":128, "2":92, "4":92, "8":32, "16":16,"28":9}, indicating that a maximum of 128 ENIs can be associated if there is one queue and a maximum of 92 ENIs if there are two queues. A larger number of ENI queues indicates higher performance but fewer ENIs can be associated. The queue settings cannot be changed after creation. <p>Constraints: This field can be configured only for BMS nodes in CCE Turbo clusters.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
nicThreshold	String	<p>Details:</p> <ul style="list-style-type: none"> • ENI pre-binding thresholds. Example: "0.3:0.6" • Low threshold (L): determines the minimum number of pre-bound ENIs (Min). Formula: Min = Total number of ENIs of the node × L • High threshold (H): determines the maximum number of pre-bound ENIs (Max). Formula: Max = Total number of ENIs of the node × H • Number of ENIs bound to a BMS node (B) and number of ENIs being used by pods (U): $U + \text{Min} < B < U + \text{Max}$ • If the number of pre-bound ENIs on a BMS node is smaller than the minimum allowed, the system will bind more ENIs to make the numbers equal. • If the number of pre-bound ENIs on a BMS node is larger than the maximum allowed, the system periodically unbinds ENIs (about every 2 minutes) to make the numbers equal. <p>Constraints:</p> <ul style="list-style-type: none"> • This field can be configured only for BMS nodes in CCE Turbo clusters. • Pre-binding ENIs can speed up workload creation but occupies IP addresses. <p>Options: Both the thresholds are one-decimal-place values ranging from 0.0 to 1.0. The low threshold must be smaller than or equal to the high one.</p> <p>Default value: N/A</p>

Parameter	Type	Description
chargingMode	Integer	<p>Details: Billing mode of a node. This parameter has been discarded. Use billingMode in NodeSpec instead.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
marketType	String	<p>Details: When creating a spot ECS, this parameter should be set to spot.</p> <p>Constraints: This parameter is valid only when billingMode is set to 0.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
spotPrice	String	<p>Details: The highest price per hour a user accepts for a spot ECS</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This parameter takes effect only when billingMode is set to 0 and marketType is set to spot. • When billingMode is set to 0 and marketType is set to spot, if spotPrice is not specified, the pay-per-use price is used by default. • The spotPrice value must be less than or equal to the pay-per-use price and greater than or equal to the ECS market price. <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
agency_name	String	<p>Details: Agency name. An agency is created by a tenant administrator on Identity and Access Management (IAM) to provide temporary credentials for CCE nodes to access cloud servers. This parameter is returned only when it is transferred during node creation.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
kubeReservedMem	Integer	<p>Details: Reserved node memory, which is reserved for Kubernetes components.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
systemReservedMem	Integer	<p>Details: Reserved node memory, which is reserved for system components.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
init-node-password	String	<p>Details: Node password. If this parameter is used as a response parameter, asterisks (*) will be displayed.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
securityReinforcementType	String	<p>Details: Security hardening type of a node. Huawei Cloud EulerOS 2.0 images based on DJCP 2.0 level 3 security hardening are supported. DJCP checks identity authentication, access control, security audit, intrusion prevention, and malicious code prevention and hardens security.</p> <p>If this parameter is not specified, the original value is used. For example, If security hardening has been set up for a Huawei Cloud EulerOS 2.0 image and you do not specify this parameter when updating a node pool, the security hardening configuration will remain unchanged. To remove the security hardening configuration, set this parameter to null.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Empty: Security hardening is not enabled. • cybersecurity: Security hardening is enabled. <p>Default value: N/A</p>

Table 4-423 HostnameConfig

Parameter	Type	Description
type	String	<p>Details: Configuration type of the Kubernetes node name. The default value is privatelp.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The node names, Kubernetes node names, and VM names of the nodes configured with cceNodeName are the same. Node names cannot be changed. Once a VM name is altered on the ECS console, the node name cannot be modified accordingly during ECS synchronization. • To prevent conflicts between Kubernetes node names, a suffix is automatically added to the node name of a node configured with cceNodeName. The suffix consists of a hyphen (-) followed by five random lowercase letters and digits (0 to 9). <p>Options:</p> <ul style="list-style-type: none"> • privatelp: Use the private node IP address as the Kubernetes node name. • cceNodeName: Use the CCE node name as the Kubernetes node name. <p>Default value: privatelp</p>

Table 4-424 NodeStatus

Parameter	Type	Description
phase	String	Node status, which is the status of a node during its lifecycle (such as installation and uninstallation) and the status of a node in a Kubernetes cluster. Options: <ul style="list-style-type: none"> • Build: The node is being created. • Installing: The node is being installing. • Upgrading: The node is being upgraded. • Active: The node is running properly. • Abnormal: The node is abnormal. • Deleting: The node is being deleted. • Error: The node is faulty.
lastProbeTime	String	Last time when the node status was checked. If the cluster is in the abnormal, frozen, or intermediate state (for example, creating), the node status check may be affected. The node status that takes more than five minutes to check has no reference value.
jobID	String	ID of a creation or deletion job
serverId	String	ID of the underlying ECS or BMS node
privateIP	String	IP address in the private network segment of the primary NIC on the node
privateIPv6IP	String	IPv6 address in the private network segment of the primary NIC on the node
publicIP	String	Node EIP. If the ECS data is not synchronized in real time, you can click Sync Node Data on the console to manually update the data.
deleteStatus	DeleteStatus object	Resource status during resource deletion.

Parameter	Type	Description
configurationUpToDate	Boolean	Whether the node configuration is consistent with the latest configuration of the node template in the node pool to which the node belongs. When a node pool's OS or runtime is updated, the existing nodes may have a different OS or runtime, causing configurationUpToDate to be false . However, resetting the nodes will synchronize their OSs and runtimes with the node pool, setting configurationUpToDate to true

Table 4-425 DeleteStatus

Parameter	Type	Description
previous_total	Integer	Total number of existing cluster resource records when the cluster is deleted.
current_total	Integer	Latest number of resource records, which is generated based on the current cluster resource records.
updated	Integer	Total number of resource records updated when the cluster is deleted.
added	Integer	Total number of resource records updated when the cluster is deleted.
deleted	Integer	Total number of resource records deleted when the cluster is deleted.

Example Requests

None

Example Responses

Status code: 200

The job for deleting a node is successfully delivered.

```
{
  "kind": "Node",
  "apiVersion": "v3",
  "metadata": {
    "name": "new-hostname",
    "uid": "cc697ad9-9563-11e8-8ea7-0255ac106311",
    "creationTimestamp": "2018-08-01 08:20:49.944664515 +0000 UTC",
```



```
"updateTimestamp" : "2018-08-01 09:20:05.644032347 +0000 UTC",
"annotations" : {
  "kubernetes.io/node-pool.id" : "az1.dc1#s1.medium#EulerOS 2.2"
}
},
"spec" : {
  "flavor" : "s1.medium",
  "az" : "az1.dc1",
  "os" : "EulerOS 2.2",
  "login" : {
    "sshKey" : "KeyPair-001"
  },
  "rootVolume" : {
    "volumetype" : "SAS",
    "size" : 40
  },
  "dataVolumes" : [ {
    "volumetype" : "SAS",
    "size" : 100
  } ],
  "publicIP" : {
    "eip" : {
      "bandwidth" : { }
    }
  },
  "billingMode" : 0
},
"status" : {
  "phase" : "Deleting",
  "jobID" : "661f6f7d-956c-11e8-a916-0255ac10575d",
  "serverId" : "5b504f8d-33f1-4ab7-a600-b62dac967d72",
  "privateIP" : "192.168.0.69",
  "publicIP" : "10.154.194.59"
}
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class DeleteNodeSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
```

```
.withAk(ak)
.withSk(sk);

CceClient client = CceClient.newBuilder()
    .withCredential(auth)
    .withRegion(CceRegion.valueOf("<YOUR REGION>"))
    .build();
DeleteNodeRequest request = new DeleteNodeRequest();
request.withClusterId("{cluster_id}");
request.withNodeId("{node_id}");
try {
    DeleteNodeResponse response = client.deleteNode(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = DeleteNodeRequest()
        request.cluster_id = "{cluster_id}"
        request.node_id = "{node_id}"
        response = client.delete_node(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```

package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.DeleteNodeRequest{}
    request.ClusterId = "{cluster_id}"
    request.NodeId = "{node_id}"
    response, err := client.DeleteNode(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The job for deleting a node is successfully delivered.

Error Codes

See [Error Codes](#).

4.3.6 Enabling Scale-In Protection for a Node

Function

This API is used to enable scale-in protection for a node. A node with scale-in protection enabled cannot be removed by simply changing the number of nodes in the node pool.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes/locknodescaledown

Table 4-426 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-427 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-428 Request body parameters

Parameter	Mandatory	Type	Description
apiVersion	Yes	String	API version. The value is fixed at v3 .

Parameter	Mandatory	Type	Description
kind	Yes	String	API type. The value is fixed at List .
nodeList	No	Array of strings	ID list of nodes for which scale-in protection needs to be enabled. For details about how to obtain node IDs, see How to Obtain Parameters in the API URI .

Response Parameters

None

Example Requests

Lock a node so that it will not be scaled in.

```
POST /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes/locknodescaledown
{
  "kind": "List",
  "apiVersion": "v3",
  "nodeList": [ "xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx" ]
}
```

Example Responses

None

Status Codes

Status Code	Description
200	The scale-in protection is enabled for the node.

Error Codes

See [Error Codes](#).

4.3.7 Disabling Scale-In Protection for a Node

Function

This API is used to disable scale-in protection for a node. A node with scale-in protection disabled can be removed by changing the number of nodes in the node pool. Scale-in protection can be disabled only for pay-per-use nodes.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes/
unlocknodescaledown

Table 4-429 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-430 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-431 Request body parameters

Parameter	Mandatory	Type	Description
apiVersion	Yes	String	API version. The value is fixed at v3 .

Parameter	Mandatory	Type	Description
kind	Yes	String	API type. The value is fixed at List .
nodeList	No	Array of strings	ID list of nodes for which scale-in protection needs to be disabled. For details about how to obtain node IDs, see How to Obtain Parameters in the API URI .

Response Parameters

None

Example Requests

Unlock a node which cannot be scaled in.

```
POST /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes/unlocknodescaledown
{
  "kind": "List",
  "apiVersion": "v3",
  "nodeList": [ "xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx" ]
}
```

Example Responses

None

Status Codes

Status Code	Description
200	The scale-in protection is disabled for the node.

Error Codes

See [Error Codes](#).

4.3.8 Synchronizing Nodes

Function

This API is used to synchronize nodes.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v2/projects/{project_id}/clusters/{cluster_id}/nodes/{node_id}/sync

Table 4-432 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>
node_id	Yes	String	<p>Node ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p>

Request Parameters

Table 4-433 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-434 Response body parameters

Parameter	Type	Description
-	String	

Example Requests

None

Example Responses

None

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class SyncNodeSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();

        SyncNodeRequest request = new SyncNodeRequest();
        request.withClusterId("{cluster_id}");
        request.withNodeId("{node_id}");
        try {
            SyncNodeResponse response = client.syncNode(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
```

```
        e.printStackTrace();
    } catch (ServiceResponseException e) {
        e.printStackTrace();
        System.out.println(e.getHttpStatusCode());
        System.out.println(e.getRequestId());
        System.out.println(e.getErrorCode());
        System.out.println(e.getErrorMsg());
    }
}
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = SyncNodeRequest()
        request.cluster_id = "{cluster_id}"
        request.node_id = "{node_id}"
        response = client.sync_node(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
```

```

sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
    WithAk(ak).
    WithSk(sk).
    WithProjectId(projectId).
    Build()

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.SyncNodeRequest{}
request.ClusterId = "{cluster_id}"
request.NodeId = "{node_id}"
response, err := client.SyncNode(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Node configuration synchronized successfully.

Error Codes

See [Error Codes](#).

4.3.9 Synchronizing Nodes in Batches

Function

This API is used to synchronize nodes in batches.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes/sync

Table 4-435 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-436 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-437 Response body parameters

Parameter	Type	Description
-	String	

Example Requests

None

Example Responses

Status code: 200

Batch node configuration synchronized.

Start to batch sync nodes

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class BatchSyncNodesSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        BatchSyncNodesRequest request = new BatchSyncNodesRequest();
        request.withClusterId("{cluster_id}");
        try {
            BatchSyncNodesResponse response = client.batchSyncNodes(request);
            System.out.println(response.toString());
        }
    }
}
```

```
    } catch (ConnectionException e) {
        e.printStackTrace();
    } catch (RequestTimeoutException e) {
        e.printStackTrace();
    } catch (ServiceResponseException e) {
        e.printStackTrace();
        System.out.println(e.getHttpStatusCode());
        System.out.println(e.getRequestId());
        System.out.println(e.getErrorCode());
        System.out.println(e.getErrorMsg());
    }
}
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = BatchSyncNodesRequest()
        request.cluster_id = "{cluster_id}"
        response = client.batch_sync_nodes(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
```

```

example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
    WithAk(ak).
    WithSk(sk).
    WithProjectId(projectId).
    Build()

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.BatchSyncNodesRequest{}
request.ClusterId = "{cluster_id}"
response, err := client.BatchSyncNodes(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Batch node configuration synchronized.

Error Codes

See [Error Codes](#).

4.3.10 Accepting a Node

Function

This API is used to accept a node into a specified cluster.

NOTE

The URL for cluster management is in the format of https://Endpoint/uri. In the URL, **uri** indicates the resource path, that is, the path for API access.

Constraints

- ECSs, DeHs, and BMSs can be managed.

- The nodes to be managed must be running and do not belong to any other clusters. Additionally, the nodes cannot be labeled with **CCE-Dynamic-Provisioning-Node**.
- The nodes to be managed must be in the same VPC as the target cluster. If the cluster version is earlier than v1.13.10, the nodes and the cluster must also be in the same subnet.
- The nodes to be managed must have data disks attached, which can be local disks (disk-intensive disks). Each node should have a data disk of at least 20 GiB attached, and any existing data disks cannot be smaller than 10 GiB.
- Each of the nodes to be managed has at least 2 vCPUs and 4 GiB of memory and only one ENI bound.
- If an enterprise project is used, a node to be managed must be in the same enterprise project as the target cluster. Otherwise, resources cannot be identified during node management, ultimately rendering the node unmanageable. In clusters of v1.21.15-r0, v1.23.14-r0, v1.25.9-r0, v1.27.6-r0, v1.28.4-r0, or later versions, the nodes to be managed can be in different enterprise projects from that of the target cluster, and the enterprise projects of these nodes remain unchanged after the nodes are accepted.
- If IPv6 is enabled for a cluster, only nodes in a subnet with IPv6 enabled can be accepted and managed. If IPv6 is not enabled for the cluster, only nodes in a subnet without IPv6 enabled can be accepted.
- Nodes in a CCE Turbo cluster must support sub-ENIs, or each of them can have at least 16 ENIs bound. For details about the node flavors, see the node flavors that can be selected on the console when you create a node.
- Data disks that have been partitioned will be ignored during node management. Ensure that there is at least one unpartitioned data disk meeting the specifications attached to the node.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes/add

Table 4-438 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-439 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-440 Request body parameters

Parameter	Mandatory	Type	Description
apiVersion	Yes	String	API version. The value is fixed at v3 .

Parameter	Mandatory	Type	Description
kind	Yes	String	API type. The value is fixed at List .
nodeList	Yes	Array of AddNode objects	List of nodes to be managed. A maximum of 200 nodes can be managed simultaneously.

Table 4-441 AddNode

Parameter	Mandatory	Type	Description
serverID	Yes	String	Server ID, which can be obtained from the ECS or BMS console
spec	Yes	ReinstallNodeSpec object	Node reinstallation configuration parameters. Currently, accepted nodes cannot be added into node pools.

Table 4-442 ReinstallNodeSpec

Parameter	Mandatory	Type	Description
os	Yes	String	OS. If you specify a custom image, the actual OS version of the IMS image is used. Select an OS version supported by the current cluster. Example: Huawei Cloud EulerOS 2.0, Ubuntu 22.04, EulerOS 2.9, CentOS 7.6 and EulerOS 2.8
login	Yes	Login object	Node login mode. Either the key pair or password must be used for login. NOTE This parameter cannot be modified when a node pool is being updated.

Parameter	Mandatory	Type	Description
name	No	String	Node name. NOTE Specifying this field during reinstallation will change the node name, and the server name will change accordingly. By default, the current server name is used as the node name. Enter 1 to 56 characters starting with a lowercase letter. Only lowercase letters, digits, hyphens (-), and periods (.) are allowed.
serverConfig	No	ReinstallServerConfig object	Server configuration.
volumeConfig	No	ReinstallVolumeConfig object	Volume management configuration.
runtimeConfig	No	ReinstallRuntimeConfig object	Container runtime configuration.
k8sOptions	No	ReinstallK8sOptionsConfig object	Kubernetes node configuration.
lifecycle	No	NodeLifecycleConfig object	Customized lifecycle configuration of a node.

Parameter	Mandatory	Type	Description
initializedConditions	No	Array of strings	<p>Custom initialization flag. Before CCE nodes are initialized, they are tainted with node.cloudprovider.kubernetes.io/uninitialized to prevent pods from being scheduled to them.</p> <p>CCE supports custom initialization flags. After receiving the initializedConditions parameter, CCE converts the parameter value into a node label and provisions the label with the node, for example, cloudprovider.openvessel.io/inject-initialized-conditions=CCEInitial_CustomedInitial.</p> <p>After the node is labeled, its status.Conditions is polled to check whether the type of conditions has a flag name, such as CCEInitial and CustomedInitial. If all input flags exist and their status is True, the node initialization is complete and the initialization taint is removed.</p> <ul style="list-style-type: none"> • Use only letters and digits. Max. characters: 20. • Max. flags: 2.
extendParam	No	ReinstallExtendParam object	Extended reinstallation parameter, which is discarded.
hostnameConfig	No	HostnameConfig object	Kubernetes node name configuration parameter, which is supported by clusters of v1.23.6-r0 to v1.25 or clusters of v1.25.2-r0 or later versions.

Parameter	Mandatory	Type	Description
securityReinforcementType	No	String	<p>Details: Security hardening type of a node. Huawei Cloud EulerOS 2.0 images based on DJCP 2.0 level 3 security hardening are supported. DJCP checks identity authentication, access control, security audit, intrusion prevention, and malicious code prevention and hardens security.</p> <p>If this parameter is not specified, the original value is used. For example, If security hardening has been set up for a Huawei Cloud EulerOS 2.0 image and you do not specify this parameter when updating a node pool, the security hardening configuration will remain unchanged. To remove the security hardening configuration, set this parameter to null.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Empty: Security hardening is not enabled. • cybersecurity: Security hardening is enabled. <p>Default value: N/A</p>

Table 4-443 Login

Parameter	Mandatory	Type	Description
sshKey	No	String	<p>Details: Name of the key pair used for login</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
userPassword	No	UserPassword object	<p>Details: Password used for node login</p> <p>Constraints: None</p>

Table 4-444 UserPassword

Parameter	Mandatory	Type	Description
username	No	String	<p>Details: Login account. The default value is root.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: root</p>

Parameter	Mandatory	Type	Description
password	Yes	String	<p>Details: Login password. If a username and password are used when a node is created, this field is shielded in the response body.</p> <p>Constraints: The password field must be salted during node creation. For details, see Adding a Salt in the password Field When Creating a Node.</p> <p>Options: A password must:</p> <ul style="list-style-type: none"> • Contain 8 to 26 characters. • Contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters !@\$%^_+=+[{ }];,./? • Not contain the username or the username spelled backwards. <p>Default value: N/A</p>

Table 4-445 ReinstallServerConfig

Parameter	Mandatory	Type	Description
userTags	No	Array of UserTag objects	Cloud server tag (resource tag). The key of a tag must be unique. The maximum number of custom tags supported by CCE varies depending on regions and cannot exceed 8.
rootVolume	No	ReinstallVolumeSpec object	System disk configurations used in reinstallation.

Table 4-446 UserTag

Parameter	Mandatory	Type	Description
key	No	String	<p>Details: Key of the cloud server tag</p> <p>Constraints: The value cannot start with CCE-, __type_baremetal, or sys.</p> <p>Options: The value contains a maximum of 128 characters. The tag key must be unique and cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, /</p> <p>Default value: N/A</p>
value	No	String	<p>Details: Value of the cloud server tag</p> <p>Constraints: None</p> <p>Options: The value contains a maximum of 255 characters. The tag value cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, </p> <p>Default value: N/A</p>

Table 4-447 ReinstallVolumeSpec

Parameter	Mandatory	Type	Description
imageID	No	String	Custom image ID.
cmkID	No	String	User master key ID. If this parameter is left blank by default, the EVS disk is not encrypted.

Table 4-448 ReinstallVolumeConfig

Parameter	Mandatory	Type	Description
lvmConfig	No	String	<p>Configuration item of a Docker data disk (deprecated).</p> <p>The following is an example of the default configuration: <code>"lvmConfig": "dockerThinpool=vgpaas/90%VG;kubernetesLV=vgpaas/10%VG;diskType=evs;lvType=linear"</code></p> <p>The following fields are included:</p> <ul style="list-style-type: none"> • userLV: size of the user space, for example, vgpaas/20%VG. • userPath: mount path of the user space, for example, /home/wqt-test. • diskType: disk type. Currently, only evs, hdd, and ssd are supported. • lvType: type of a logic volume. The value can be linear or striped. • dockerThinpool: Docker space size, for example, vgpaas/60%VG. • kubernetesLV: kubelet space size, for example, vgpaas/20%VG.

Parameter	Mandatory	Type	Description
storage	No	Storage object	<p>Details: Disk initialization management parameter. This parameter is complex to configure. For details, see Attaching Disks to a Node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This field is supported by clusters of v1.15.11-r0 and later versions. If the cluster version is not supported, this field will be ignored. • If a node has both local and EVS disks attached, make sure to not keep the default value for this parameter, or it may result in unexpected disk partitions. • If you want to change the value range of a data disk to 20 to 32768, do not use the default value. • If you want to use the shared disk space (with the runtime and Kubernetes partitions cancelled), do not retain the default value of this parameter. For details about the shared disk space, see Space Allocation of a Data Disk. • If you want to store system components in the system disk, do not use the default value.

Table 4-449 Storage

Parameter	Mandatory	Type	Description
storageSelectors	Yes	Array of StorageSelectors objects	<p>Details: Disk selection. Matched disks are managed based on matchLabels and storageType settings. Disks are matched in sequence. The matching rule in the front is matched first.</p> <p>Constraints: None</p>
storageGroups	Yes	Array of StorageGroups objects	<p>Details: A storage group consisting of multiple storage devices, which are used to divide storage space.</p> <p>Constraints: None</p>

Table 4-450 StorageSelectors

Parameter	Mandatory	Type	Description
name	Yes	String	<p>Details: Name of a selector, which is used as the index of selectorNames in storageGroup.</p> <p>Constraints: The name of each selector must be unique.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
storageType	Yes	String	<p>Details: Storage type</p> <p>Constraints:</p> <ul style="list-style-type: none"> The local storage type does not support disk selection. All local disks form a VG. Therefore, only one local storage selector is allowed. The system storage type does not support disk selection. It is recommended that you use the system disk to store system components. As a result, only one storage selector of the system type is allowed, and the name must be cceUse. <p>Options: Only evs (EVS disks), local (local disks), and system (system disks) are supported.</p> <p>Default value: N/A</p>
matchLabels	No	matchLabels object	<p>Details: Matching field of an EVS disk</p> <p>Constraints: If storageType is set to system (system disk), you do not need to configure this parameter.</p> <p>Options: The size, volumeType, metadataEncrypted, metadataCmkid, and count fields in DataVolume are supported.</p> <p>Default value: N/A</p>

Table 4-451 matchLabels

Parameter	Mandatory	Type	Description
size	No	String	<p>Details: Matched disk size, for example, 100. If this parameter is left blank, the disk size is not limited.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
volumeType	No	String	<p>Details: EVS disk type</p> <p>Constraints: None</p> <p>Options: SSD, GPSSD, SAS, ESSD, and SATA are supported. If this parameter is left blank, there is no restriction on the disk type.</p> <p>Default value: N/A</p>
metadataEncrypted	No	String	<p>Details: Disk encryption identifier. If this parameter is set to 0, it specifies that the disk is not encrypted. If this parameter is set to 1, it specifies that the disk is encrypted. If this parameter is left blank, there is no restriction on the disk encryption identifier.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
metadataCmkid	No	String	<p>Details: CMK ID of an encrypted disk. The value is a string of 36 bytes. If this parameter is left blank, there is no restriction on the disk key ID.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
count	No	String	<p>Details: Number of disks to be selected. If this parameter is left blank, all disks of this type are selected.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-452 StorageGroups

Parameter	Mandatory	Type	Description
name	Yes	String	<p>Details: Name of a virtual storage group, which must be unique</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If cceManaged is set to true, the name field must be set to vgpaas. • If the data disk is used as a temporary storage volume, the name field must be set to vg-everest-localvolume-ephemeral. • If the data disk is used as a persistent storage volume, the name field must be set to vg-everest-localvolume-persistent. <p>Default value: N/A</p>
cceManaged	No	Boolean	<p>Details: Storage space to which Kubernetes and runtime belong. Only one group is set to true. If this parameter is left blank, the default value false is used.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
selectorNames	Yes	Array of strings	<p>Details: Corresponds to name in storageSelectors. One group can select multiple selectors, but one selector can be selected by only one group.</p> <p>Constraints: System components cannot be separately stored in the system disk and data disks. Therefore, when the selector type is set to system, only one selector can be selected for a group.</p>
virtualSpaces	Yes	Array of VirtualSpace objects	<p>Details: Detailed management of space configurations in a group</p> <p>Constraints: None</p>

Table 4-453 VirtualSpace

Parameter	Mandatory	Type	Description
name	Yes	String	<p>Details: Name of a virtualSpace. Only types of share, kubernetes, runtime, and user are supported.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • kubernetes: Kubernetes space configuration. lvmConfig needs to be configured. • runtime: runtime space configuration. runtimeConfig needs to be configured. • user: user space configuration. lvmConfig needs to be configured. <p>Default value: N/A</p>
size	Yes	String	<p>Details: Size of a virtualSpace. The value must be an integer in percentage, for example, 90%.</p> <p>Constraints: None</p> <p>Options: 10 to 90. The sum of percentages of all virtualSpaces in a group cannot exceed 100%.</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
lvmConfig	No	LVMConfig object	<p>Details: LVM configuration management, which is applicable to share, Kubernetes, and user space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>
runtimeConfig	No	RuntimeConfig object	<p>Details: Runtime configuration management, which is applicable to runtime space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>

Table 4-454 LVMConfig

Parameter	Mandatory	Type	Description
lvType	Yes	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
path	No	String	<p>Details:</p> <p>Disk mount path. This parameter only takes effect in user configuration. The value can be an absolute path containing digits, uppercase letters, lowercase letters, periods (.), hyphens (-), and underscores (_).</p> <p>Constraints:</p> <p>Do not leave the path empty or set it to a key OS path such as the root directory. Key OS paths that cannot be entered:</p> <p><i>/, /home, /home/, /bin, /bin/, /lib, /lib/, /root, /root/, /boot, /boot/, /dev, /dev/, /etc, /etc/, /lost+found, /lost+found/, /mnt, /mnt/, /proc, /proc/, /sbin, /sbin/, /srv, /srv/, /tmp, /tmp/, /var, /var/, /media, /media/, /opt, /opt/, /selinux, /selinux/, /sys, /sys/, /usr, /usr/, /opt/cloud/, /mnt/paas/, /home/paas/, /var/paas/, /var/lib/, /var/script/</i></p> <p>Options:</p> <p>N/A</p> <p>Default value:</p> <p>N/A</p>

Table 4-455 RuntimeConfig

Parameter	Mandatory	Type	Description
lvType	Yes	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-456 ReinstallRuntimeConfig

Parameter	Mandatory	Type	Description
dockerBaseSize	No	Integer	<p>Available disk space of a single container on a node, in GB. This parameter has been discarded. Use containerBaseSize.</p> <p>If this parameter is left blank or is set to 0, the default value is used. In Device Mapper mode, the default value is 10. In OverlayFS mode, the available space of a single container is not limited by default, and the dockerBaseSize setting takes effect only on nodes running EulerOS/Huawei Cloud EulerOS 2.0 in clusters of the new versions.</p> <p>For details about how to allocate the space for the container runtime, see Data Disk Space Allocation.</p> <p>When Device Mapper is used, it is recommended that dockerBaseSize be set to a value less than or equal to 80 GB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device.</p>

Parameter	Mandatory	Type	Description
containerBaseSize	No	Integer	<p>Available disk space of a single container on a node, in GiB.</p> <p>If this parameter is left blank or is set to 0, the default value is used. In OverlayFS mode, the available space of a single container is not limited by default. In Device Mapper mode, the default value is 10, and the containerBaseSize setting takes effect only on nodes running EulerOS/Huawei Cloud EulerOS 2.0 in clusters v1.23.14-r0, v1.25.9-r0, v1.27.6-r0, v1.28.4-r0 or later.</p> <p>For details about how to allocate the space for the container runtime, see Data Disk Space Allocation.</p> <p>When Device Mapper is used, it is recommended that containerBaseSize be set to a value less than or equal to 80 GB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device. In new versions, the Device Mapper mode is used only by BMSs in the same resource pool and is being discarded.</p> <p>NOTE This parameter cannot be updated when a node pool is being updated.</p>

Parameter	Mandatory	Type	Description
runtime	No	Runtime object	<p>Details: Container runtime</p> <ul style="list-style-type: none"> • Clusters earlier than v1.25: The default value is docker. • Clusters of v1.25 or later: The default value varies with the OSs. • For nodes running EulerOS 2.5 or EulerOS 2.8, the default container runtime is docker. For nodes running other OSs, the default container runtime is containerd. <p>Constraints: N/A</p>

Table 4-457 Runtime

Parameter	Mandatory	Type	Description
name	No	String	<p>Details: Container runtime</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • Clusters earlier than v1.25: The default value is docker. • Clusters of v1.25 or later: The default value varies with the OSs. • For nodes running EulerOS 2.5 or EulerOS 2.8, the default value is docker. For nodes running other OSs, the default value is containerd.

Table 4-458 ReinstallK8sOptionsConfig

Parameter	Mandatory	Type	Description
labels	No	Map<String,String>	<p>Defined in key-value pairs. A maximum of 20 key-value pairs are allowed.</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain containing a maximum of 253 characters (such as example.com/my-key) can be prefixed to a key. • Value: The value can be left blank or contain 1 to 63 characters that start and end with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. <p>Example:</p> <pre>"k8sTags": { "key": "value" }</pre>

Parameter	Mandatory	Type	Description
taints	No	Array of Taint objects	<p>Details:</p> <p>Taints, which can be added to nodes for anti-affinity configuration. Each taint contains the following parameters:</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain can be prefixed to a key. • Value: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. • Effect: Available options are NoSchedule, PreferNoSchedule, and NoExecute. <p>When creating a node, you can specify an initial value for this field and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example:</p> <pre>"taints": [{ "key": "status", "value": "unavailable", "effect": "NoSchedule" }, { "key": "looks", "value": "bad", "effect": "NoSchedule" }]</pre> <p>Constraints:</p> <p>A maximum of 20 taints can be configured.</p>

Parameter	Mandatory	Type	Description
maxPods	No	Integer	Maximum number of pods that can be created on a node, including the default system pods. Value range: 16 to 256. This limit prevents the node from being overloaded of pods.
nicMultiqueue	No	String	<ul style="list-style-type: none"> Number of ENI queues. Example: <code>"queue":4</code> The following fields are included: queue: number of ENI queues This field can be configured only for BMS nodes in CCE Turbo clusters. Supported configurations: {"1":128, "2":92, "4":92, "8":32, "16":16, "28":9}, indicating that a maximum of 128 ENIs can be associated if there is one queue and a maximum of 92 ENIs if there are two queues. A larger number of ENI queues indicates higher performance but fewer ENIs can be associated. The queue settings cannot be changed after creation.

Parameter	Mandatory	Type	Description
nicThreshold	No	String	<ul style="list-style-type: none"> ENI pre-binding thresholds. Example setting: "0.3:0.6" Low threshold (L): determines the minimum number of pre-bound ENIs (Min). Formula: $Min = Total\ number\ of\ ENIs\ of\ the\ node \times L$ High threshold (H): determines the maximum number of pre-bound ENIs (Max). Formula: $Max = Total\ number\ of\ ENIs\ of\ the\ node \times H$ Number of ENIs bound to a BMS node (B) and number of ENIs being used by pods (U): $U + Min < B < U + Max$ If the number of pre-bound ENIs on a BMS node is smaller than the minimum allowed, the system will bind more ENIs to make the numbers equal. If the number of pre-bound ENIs on a BMS node is larger than the maximum allowed, the system periodically unbinds ENIs (about every 2 minutes) to make the numbers equal. Both the thresholds are one-decimal-place values ranging from 0.0 to 1.0. The low threshold must be smaller than or equal to the high one. This field can be configured only for BMS nodes in a CCE Turbo cluster. Pre-binding ENIs can speed up workload creation but occupies IP addresses.

Table 4-459 Taint

Parameter	Mandatory	Type	Description
key	Yes	String	<p>Details: Key</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
value	No	String	<p>Details: Value</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
effect	Yes	String	<p>Details: Effect</p> <p>Constraints: None</p> <p>Options: Available options are NoSchedule, PreferNoSchedule, and NoExecute.</p> <p>Default value: N/A</p>

Table 4-460 NodeLifecycleConfig

Parameter	Mandatory	Type	Description
preInstall	No	String	Pre-installation script. The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240. The input value must be encoded using Base64. The method is as follows: echo -n <code>"*Content to be encoded*"</code> base64
postInstall	No	String	Post-installation script. The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240. The input value must be encoded using Base64. The method is as follows: echo -n <code>"*Content to be encoded*"</code> base64

Table 4-461 ReinstallExtendParam

Parameter	Mandatory	Type	Description
alpha.cce/NodeImageID	No	String	(Discarded) ID of the user image to run the target OS. Specifying this parameter is equivalent to specifying imageID in ReinstallVolumeSpec . The original value will be overwritten.

Table 4-462 HostnameConfig

Parameter	Mandatory	Type	Description
type	Yes	String	<p>Details: Configuration type of the Kubernetes node name. The default value is privatelp.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The node names, Kubernetes node names, and VM names of the nodes configured with cceNodeName are the same. Node names cannot be changed. Once a VM name is altered on the ECS console, the node name cannot be modified accordingly during ECS synchronization. • To prevent conflicts between Kubernetes node names, a suffix is automatically added to the node name of a node configured with cceNodeName. The suffix consists of a hyphen (-) followed by five random lowercase letters and digits (0 to 9). <p>Options:</p> <ul style="list-style-type: none"> • privatelp: Use the private node IP address as the Kubernetes node name. • cceNodeName: Use the CCE node name as the Kubernetes node name. <p>Default value: privatelp</p>

Response Parameters

Status code: 200

Table 4-463 Response body parameters

Parameter	Type	Description
jobid	String	Job ID returned after the job is delivered. The job ID can be used to query the job execution status.

Example Requests

Add a node running EulerOS 2.5 to a cluster.

```
POST /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes/add
{
  "kind": "List",
  "apiVersion": "v3",
  "nodeList": [ {
    "serverID": "xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx",
    "spec": {
      "name": "my-ecs-0001",
      "os": "EulerOS 2.5",
      "login": {
        "sshKey": "KeyPair-001"
      }
    }
  }
}
}]
}
```

Example Responses

Status code: 200

The job for accepting a node into a specified cluster is successfully delivered.

```
{
  "jobid": "2ec9b78d-9368-46f3-8f29-d1a95622a568"
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

Add a node running EulerOS 2.5 to a cluster.

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.UUID;
import java.util.List;
import java.util.ArrayList;
```

```
public class AddNodeSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        AddNodeRequest request = new AddNodeRequest();
        request.withClusterId("{cluster_id}");
        AddNodeList body = new AddNodeList();
        Login loginSpec = new Login();
        loginSpec.withSshKey("KeyPair-001");
        ReinstallNodeSpec specNodeList = new ReinstallNodeSpec();
        specNodeList.withOs("EulerOS 2.5")
            .withLogin(loginSpec)
            .withName("my-ecs-0001");
        List<AddNode> listbodyNodeList = new ArrayList<>();
        listbodyNodeList.add(
            new AddNode()
                .withServerID(UUID.fromString("xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx"))
                .withSpec(specNodeList)
        );
        body.withNodeList(listbodyNodeList);
        body.withKind("List");
        body.withApiVersion("v3");
        request.withBody(body);
        try {
            AddNodeResponse response = client.addNode(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

Add a node running EulerOS 2.5 to a cluster.

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *
```

```
if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = AddNodeRequest()
        request.cluster_id = "{cluster_id}"
        loginSpec = Login(
            ssh_key="KeyPair-001"
        )
        specNodeList = ReinstallNodeSpec(
            os="EulerOS 2.5",
            login=loginSpec,
            name="my-ecs-0001"
        )
        listNodeListbody = [
            AddNode(
                server_id="xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx",
                spec=specNodeList
            )
        ]
        request.body = AddNodeList(
            node_list=listNodeListbody,
            kind="List",
            api_version="v3"
        )
        response = client.add_node(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

Add a node running EulerOS 2.5 to a cluster.

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
```

```

sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
    WithAk(ak).
    WithSk(sk).
    WithProjectId(projectId).
    Build()

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.AddNodeRequest{}
request.ClusterId = "{cluster_id}"
sshKeyLogin:= "KeyPair-001"
loginSpec := &model.Login{
    SshKey: &sshKeyLogin,
}
nameSpec:= "my-ecs-0001"
specNodeList := &model.ReinstallNodeSpec{
    Os: "EulerOS 2.5",
    Login: loginSpec,
    Name: &nameSpec,
}
var nodeListbody = []model.AddNode{
    {
        ServerID: "xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx",
        Spec: specNodeList,
    },
}
request.Body = &model.AddNodeList{
    NodeList: nodeListbody,
    Kind: "List",
    ApiVersion: "v3",
}
response, err := client.AddNode(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}
    
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The job for accepting a node into a specified cluster is successfully delivered.

Error Codes

See [Error Codes](#).

4.3.11 Managing a Node in a Customized Node Pool

Function

This API is used to manage a node in a customized node pool of a cluster. Spot instances are not supported.

 **NOTE**

- ECSs, DeHs, and BMSs can be managed.
- The URL for cluster management is in the format of **https://Endpoint/uri**, where **uri** specifies the resource path for API access.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/nodepools/{nodepool_id}/nodes/add

Table 4-464 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>
nodepool_id	Yes	String	<p>Details: Node pool ID. For details about how to obtain the ID, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-465 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-466 Request body parameters

Parameter	Mandatory	Type	Description
apiVersion	Yes	String	API version. The value is fixed at v3 .

Parameter	Mandatory	Type	Description
kind	Yes	String	API type. The value is fixed at List .
nodeList	Yes	Array of AddNodesToNodePool objects	List of nodes to be managed. A maximum of 200 nodes can be managed simultaneously.

Table 4-467 AddNodesToNodePool

Parameter	Mandatory	Type	Description
serverID	Yes	String	Server ID, which can be obtained from the ECS or BMS console

Response Parameters

Status code: 200

Table 4-468 Response body parameters

Parameter	Type	Description
jobid	String	Job ID returned after the job is delivered. The job ID can be used to query the job execution status.

Example Requests

Manage a node in a customized node pool.

```
POST /api/v3/projects/{project_id}/clusters/{cluster_id}/nodepool/{nodepool_id}/nodes/add
{
  "kind": "List",
  "apiVersion": "v3",
  "nodeList": [ {
    "serverID": "xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx1"
  }, {
    "serverID": "xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx2"
  } ]
}
```

Example Responses

Status code: 200

The job for managing a node in the customized node pool in the cluster delivered.

```
{  
  "jobid" : "2ec9b78d-9368-46f3-8f29-d1a95622a568"  
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

Manage a node in a customized node pool.

```
package com.huaweicloud.sdk.test;  
  
import com.huaweicloud.sdk.core.auth.ICredential;  
import com.huaweicloud.sdk.core.auth.BasicCredentials;  
import com.huaweicloud.sdk.core.exception.ConnectionException;  
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;  
import com.huaweicloud.sdk.core.exception.ServiceResponseException;  
import com.huaweicloud.sdk.cce.v3.region.CceRegion;  
import com.huaweicloud.sdk.cce.v3.*;  
import com.huaweicloud.sdk.cce.v3.model.*;  
  
import java.util.UUID;  
import java.util.List;  
import java.util.ArrayList;  
  
public class AddNodesToNodePoolSolution {  
    public static void main(String[] args) {  
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great  
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or  
        // environment variables and decrypted during use to ensure security.  
        // In this example, AK and SK are stored in environment variables for authentication. Before running  
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment  
        String ak = System.getenv("CLOUD_SDK_AK");  
        String sk = System.getenv("CLOUD_SDK_SK");  
        String projectId = "{project_id}";  
  
        ICredential auth = new BasicCredentials()  
            .withProjectId(projectId)  
            .withAk(ak)  
            .withSk(sk);  
  
        CceClient client = CceClient.newBuilder()  
            .withCredential(auth)  
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))  
            .build();  
        AddNodesToNodePoolRequest request = new AddNodesToNodePoolRequest();  
        request.withClusterId("{cluster_id}");  
        request.withNodepoolId("{nodepool_id}");  
        AddNodesToNodePoolList body = new AddNodesToNodePoolList();  
        List<AddNodesToNodePool> listbodyNodeList = new ArrayList<>();  
        listbodyNodeList.add(  
            new AddNodesToNodePool()  
                .withServerID(UUID.fromString("xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx1"))  
        );  
        listbodyNodeList.add(  
            new AddNodesToNodePool()  
                .withServerID(UUID.fromString("xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx2"))  
        );  
        body.withNodeList(listbodyNodeList);  
        body.withKind("List");  
        body.withApiVersion("v3");  
        request.withBody(body);  
        try {  
            AddNodesToNodePoolResponse response = client.addNodesToNodePool(request);
```

```
        System.out.println(response.toString());
    } catch (ConnectionException e) {
        e.printStackTrace();
    } catch (RequestTimeoutException e) {
        e.printStackTrace();
    } catch (ServiceResponseException e) {
        e.printStackTrace();
        System.out.println(e.getHttpStatusCode());
        System.out.println(e.getRequestId());
        System.out.println(e.getErrorCode());
        System.out.println(e.getErrorMsg());
    }
}
}
```

Python

Manage a node in a customized node pool.

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = AddNodesToNodePoolRequest()
        request.cluster_id = "{cluster_id}"
        request.nodepool_id = "{nodepool_id}"
        listNodeListbody = [
            AddNodesToNodePool(
                server_id="xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxxx1"
            ),
            AddNodesToNodePool(
                server_id="xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxxx2"
            )
        ]
        request.body = AddNodesToNodePoolList(
            node_list=listNodeListbody,
            kind="List",
            api_version="v3"
        )
        response = client.add_nodes_to_node_pool(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

Manage a node in a customized node pool.

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.AddNodesToNodePoolRequest{}
    request.ClusterId = "{cluster_id}"
    request.NodepoolId = "{nodepool_id}"
    var listNodeListbody = []model.AddNodesToNodePool{
        {
            ServerID: "xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxxx1",
        },
        {
            ServerID: "xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxxx2",
        },
    }
    request.Body = &model.AddNodesToNodePoolList{
        NodeList: listNodeListbody,
        Kind: "List",
        ApiVersion: "v3",
    }
    response, err := client.AddNodesToNodePool(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The job for managing a node in the customized node pool in the cluster delivered.

Error Codes

See [Error Codes](#).

4.3.12 Resetting a Node

Function

This API is used to reset a node in a specified cluster.

 **NOTE**

The URL for cluster management is in the format of https://Endpoint/uri. In the URL, **uri** indicates the resource path, that is, the path for API access.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes/reset

Table 4-469 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-470 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-471 Request body parameters

Parameter	Mandatory	Type	Description
apiVersion	Yes	String	API version. The value is fixed at v3 .
kind	Yes	String	API type. The value is fixed at List .
nodeList	Yes	Array of ResetNode objects	List of nodes to be reset. A maximum of 200 nodes can be reset at a time.

Table 4-472 ResetNode

Parameter	Mandatory	Type	Description
nodeID	Yes	String	Node ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI .

Parameter	Mandatory	Type	Description
spec	Yes	ReinstallNodeSpec object	Node reinstallation configuration parameters. Nodes in a node pool cannot be specified externally. These nodes will be reinstalled based on the node pool settings. By default, this parameter is mandatory for nodes in a node pool.

Table 4-473 ReinstallNodeSpec

Parameter	Mandatory	Type	Description
os	Yes	String	OS. If you specify a custom image, the actual OS version of the IMS image is used. Select an OS version supported by the current cluster. Example: Huawei Cloud EulerOS 2.0, Ubuntu 22.04, EulerOS 2.9, CentOS 7.6 and EulerOS 2.8
login	Yes	Login object	Node login mode. Either the key pair or password must be used for login. NOTE This parameter cannot be modified when a node pool is being updated.
name	No	String	Node name. NOTE Specifying this field during reinstallation will change the node name, and the server name will change accordingly. By default, the current server name is used as the node name. Enter 1 to 56 characters starting with a lowercase letter. Only lowercase letters, digits, hyphens (-), and periods (.) are allowed.
serverConfig	No	ReinstallServerConfig object	Server configuration.

Parameter	Mandatory	Type	Description
volumeConfig	No	ReinstallVolumeConfig object	Volume management configuration.
runtimeConfig	No	ReinstallRuntimeConfig object	Container runtime configuration.
k8sOptions	No	ReinstallK8sOptionsConfig object	Kubernetes node configuration.
lifecycle	No	NodeLifecycleConfig object	Customized lifecycle configuration of a node.
initializedConditions	No	Array of strings	<p>Custom initialization flag. Before CCE nodes are initialized, they are tainted with node.cloudprovider.kubernetes.io/uninitialized to prevent pods from being scheduled to them.</p> <p>CCE supports custom initialization flags. After receiving the initializedConditions parameter, CCE converts the parameter value into a node label and provisions the label with the node, for example, cloudprovider.openvessel.io/inject-initialized-conditions=CCEInitial_CustomedInitial.</p> <p>After the node is labeled, its status.Conditions is polled to check whether the type of conditions has a flag name, such as CCEInitial and CustomedInitial. If all input flags exist and their status is True, the node initialization is complete and the initialization taint is removed.</p> <ul style="list-style-type: none"> • Use only letters and digits. Max. characters: 20. • Max. flags: 2.

Parameter	Mandatory	Type	Description
extendParam	No	ReinstallExtendParam object	Extended reinstallation parameter, which is discarded.
hostnameConfig	No	HostnameConfig object	Kubernetes node name configuration parameter, which is supported by clusters of v1.23.6-r0 to v1.25 or clusters of v1.25.2-r0 or later versions.
securityReinforcementType	No	String	<p>Details: Security hardening type of a node. Huawei Cloud EulerOS 2.0 images based on DJCP 2.0 level 3 security hardening are supported. DJCP checks identity authentication, access control, security audit, intrusion prevention, and malicious code prevention and hardens security.</p> <p>If this parameter is not specified, the original value is used. For example, If security hardening has been set up for a Huawei Cloud EulerOS 2.0 image and you do not specify this parameter when updating a node pool, the security hardening configuration will remain unchanged. To remove the security hardening configuration, set this parameter to null.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Empty: Security hardening is not enabled. • cybersecurity: Security hardening is enabled. <p>Default value: N/A</p>

Table 4-474 Login

Parameter	Mandatory	Type	Description
sshKey	No	String	<p>Details: Name of the key pair used for login</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
userPassword	No	UserPassword object	<p>Details: Password used for node login</p> <p>Constraints: None</p>

Table 4-475 UserPassword

Parameter	Mandatory	Type	Description
username	No	String	<p>Details: Login account. The default value is root.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: root</p>

Parameter	Mandatory	Type	Description
password	Yes	String	<p>Details: Login password. If a username and password are used when a node is created, this field is shielded in the response body.</p> <p>Constraints: The password field must be salted during node creation. For details, see Adding a Salt in the password Field When Creating a Node.</p> <p>Options: A password must:</p> <ul style="list-style-type: none"> • Contain 8 to 26 characters. • Contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters !@\$%^_+=+[{ }];,./? • Not contain the username or the username spelled backwards. <p>Default value: N/A</p>

Table 4-476 ReinstallServerConfig

Parameter	Mandatory	Type	Description
userTags	No	Array of UserTag objects	Cloud server tag (resource tag). The key of a tag must be unique. The maximum number of custom tags supported by CCE varies depending on regions and cannot exceed 8.
rootVolume	No	ReinstallVolumeSpec object	System disk configurations used in reinstallation.

Table 4-477 UserTag

Parameter	Mandatory	Type	Description
key	No	String	<p>Details: Key of the cloud server tag</p> <p>Constraints: The value cannot start with CCE-, __type_baremetal, or sys.</p> <p>Options: The value contains a maximum of 128 characters. The tag key must be unique and cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, /</p> <p>Default value: N/A</p>
value	No	String	<p>Details: Value of the cloud server tag</p> <p>Constraints: None</p> <p>Options: The value contains a maximum of 255 characters. The tag value cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, </p> <p>Default value: N/A</p>

Table 4-478 ReinstallVolumeSpec

Parameter	Mandatory	Type	Description
imageID	No	String	Custom image ID.
cmkID	No	String	User master key ID. If this parameter is left blank by default, the EVS disk is not encrypted.

Table 4-479 ReinstallVolumeConfig

Parameter	Mandatory	Type	Description
lvmConfig	No	String	<p>Configuration item of a Docker data disk (deprecated).</p> <p>The following is an example of the default configuration: <code>"lvmConfig": "dockerThinpool=vgpaas/90%VG;kubernetesLV=vgpaas/10%VG;diskType=evs;lvType=linear"</code></p> <p>The following fields are included:</p> <ul style="list-style-type: none"> • userLV: size of the user space, for example, vgpaas/20%VG. • userPath: mount path of the user space, for example, /home/wqt-test. • diskType: disk type. Currently, only evs, hdd, and ssd are supported. • lvType: type of a logic volume. The value can be linear or striped. • dockerThinpool: Docker space size, for example, vgpaas/60%VG. • kubernetesLV: kubelet space size, for example, vgpaas/20%VG.

Parameter	Mandatory	Type	Description
storage	No	Storage object	<p>Details: Disk initialization management parameter. This parameter is complex to configure. For details, see Attaching Disks to a Node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This field is supported by clusters of v1.15.11-r0 and later versions. If the cluster version is not supported, this field will be ignored. • If a node has both local and EVS disks attached, make sure to not keep the default value for this parameter, or it may result in unexpected disk partitions. • If you want to change the value range of a data disk to 20 to 32768, do not use the default value. • If you want to use the shared disk space (with the runtime and Kubernetes partitions cancelled), do not retain the default value of this parameter. For details about the shared disk space, see Space Allocation of a Data Disk. • If you want to store system components in the system disk, do not use the default value.

Table 4-480 Storage

Parameter	Mandatory	Type	Description
storageSelectors	Yes	Array of StorageSelectors objects	<p>Details: Disk selection. Matched disks are managed based on matchLabels and storageType settings. Disks are matched in sequence. The matching rule in the front is matched first.</p> <p>Constraints: None</p>
storageGroups	Yes	Array of StorageGroups objects	<p>Details: A storage group consisting of multiple storage devices, which are used to divide storage space.</p> <p>Constraints: None</p>

Table 4-481 StorageSelectors

Parameter	Mandatory	Type	Description
name	Yes	String	<p>Details: Name of a selector, which is used as the index of selectorNames in storageGroup.</p> <p>Constraints: The name of each selector must be unique.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
storageType	Yes	String	<p>Details: Storage type</p> <p>Constraints:</p> <ul style="list-style-type: none"> The local storage type does not support disk selection. All local disks form a VG. Therefore, only one local storage selector is allowed. The system storage type does not support disk selection. It is recommended that you use the system disk to store system components. As a result, only one storage selector of the system type is allowed, and the name must be cceUse. <p>Options: Only evs (EVS disks), local (local disks), and system (system disks) are supported.</p> <p>Default value: N/A</p>
matchLabels	No	matchLabels object	<p>Details: Matching field of an EVS disk</p> <p>Constraints: If storageType is set to system (system disk), you do not need to configure this parameter.</p> <p>Options: The size, volumeType, metadataEncrypted, metadataCmkid, and count fields in DataVolume are supported.</p> <p>Default value: N/A</p>

Table 4-482 matchLabels

Parameter	Mandatory	Type	Description
size	No	String	<p>Details: Matched disk size, for example, 100. If this parameter is left blank, the disk size is not limited.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
volumeType	No	String	<p>Details: EVS disk type</p> <p>Constraints: None</p> <p>Options: SSD, GPSSD, SAS, ESSD, and SATA are supported. If this parameter is left blank, there is no restriction on the disk type.</p> <p>Default value: N/A</p>
metadataEncrypted	No	String	<p>Details: Disk encryption identifier. If this parameter is set to 0, it specifies that the disk is not encrypted. If this parameter is set to 1, it specifies that the disk is encrypted. If this parameter is left blank, there is no restriction on the disk encryption identifier.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
metadataCmkid	No	String	<p>Details: CMK ID of an encrypted disk. The value is a string of 36 bytes. If this parameter is left blank, there is no restriction on the disk key ID.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
count	No	String	<p>Details: Number of disks to be selected. If this parameter is left blank, all disks of this type are selected.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-483 StorageGroups

Parameter	Mandatory	Type	Description
name	Yes	String	<p>Details: Name of a virtual storage group, which must be unique</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If cceManaged is set to true, the name field must be set to vgpaas. • If the data disk is used as a temporary storage volume, the name field must be set to vg-everest-localvolume-ephemeral. • If the data disk is used as a persistent storage volume, the name field must be set to vg-everest-localvolume-persistent. <p>Default value: N/A</p>
cceManaged	No	Boolean	<p>Details: Storage space to which Kubernetes and runtime belong. Only one group is set to true. If this parameter is left blank, the default value false is used.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
selectorNames	Yes	Array of strings	<p>Details: Corresponds to name in storageSelectors. One group can select multiple selectors, but one selector can be selected by only one group.</p> <p>Constraints: System components cannot be separately stored in the system disk and data disks. Therefore, when the selector type is set to system, only one selector can be selected for a group.</p>
virtualSpaces	Yes	Array of VirtualSpace objects	<p>Details: Detailed management of space configurations in a group</p> <p>Constraints: None</p>

Table 4-484 VirtualSpace

Parameter	Mandatory	Type	Description
name	Yes	String	<p>Details: Name of a virtualSpace. Only types of share, kubernetes, runtime, and user are supported.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • kubernetes: Kubernetes space configuration. lvmConfig needs to be configured. • runtime: runtime space configuration. runtimeConfig needs to be configured. • user: user space configuration. lvmConfig needs to be configured. <p>Default value: N/A</p>
size	Yes	String	<p>Details: Size of a virtualSpace. The value must be an integer in percentage, for example, 90%.</p> <p>Constraints: None</p> <p>Options: 10 to 90. The sum of percentages of all virtualSpaces in a group cannot exceed 100%.</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
lvmConfig	No	LVMConfig object	<p>Details: LVM configuration management, which is applicable to share, Kubernetes, and user space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>
runtimeConfig	No	RuntimeConfig object	<p>Details: Runtime configuration management, which is applicable to runtime space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>

Table 4-485 LVMConfig

Parameter	Mandatory	Type	Description
lvType	Yes	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
path	No	String	<p>Details: Disk mount path. This parameter only takes effect in user configuration. The value can be an absolute path containing digits, uppercase letters, lowercase letters, periods (.), hyphens (-), and underscores (_).</p> <p>Constraints: Do not leave the path empty or set it to a key OS path such as the root directory. Key OS paths that cannot be entered: /, /home, /home/, /bin, /bin/, /lib, /lib/, /root, /root/, /boot, /boot/, /dev, /dev/, /etc, /etc/, /lost+found, /lost+found/, /mnt, /mnt/, /proc, /proc/, /sbin, /sbin/, /srv, /srv/, /tmp, /tmp/, /var, /var/, /media, /media/, /opt, /opt/, /selinux, /selinux/, /sys, /sys/, /usr, /usr/, /opt/cloud/, /mnt/paas/, /home/paas/, /var/paas/, /var/lib/, /var/script/</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-486 RuntimeConfig

Parameter	Mandatory	Type	Description
lvType	Yes	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-487 ReinstallRuntimeConfig

Parameter	Mandatory	Type	Description
dockerBaseSize	No	Integer	<p>Available disk space of a single container on a node, in GB. This parameter has been discarded. Use containerBaseSize.</p> <p>If this parameter is left blank or is set to 0, the default value is used. In Device Mapper mode, the default value is 10. In OverlayFS mode, the available space of a single container is not limited by default, and the dockerBaseSize setting takes effect only on nodes running EulerOS/Huawei Cloud EulerOS 2.0 in clusters of the new versions.</p> <p>For details about how to allocate the space for the container runtime, see Data Disk Space Allocation.</p> <p>When Device Mapper is used, it is recommended that dockerBaseSize be set to a value less than or equal to 80 GB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device.</p>

Parameter	Mandatory	Type	Description
containerBaseSize	No	Integer	<p>Available disk space of a single container on a node, in GiB.</p> <p>If this parameter is left blank or is set to 0, the default value is used. In OverlayFS mode, the available space of a single container is not limited by default. In Device Mapper mode, the default value is 10, and the containerBaseSize setting takes effect only on nodes running EulerOS/Huawei Cloud EulerOS 2.0 in clusters v1.23.14-r0, v1.25.9-r0, v1.27.6-r0, v1.28.4-r0 or later.</p> <p>For details about how to allocate the space for the container runtime, see Data Disk Space Allocation.</p> <p>When Device Mapper is used, it is recommended that containerBaseSize be set to a value less than or equal to 80 GB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device. In new versions, the Device Mapper mode is used only by BMSs in the same resource pool and is being discarded.</p> <p>NOTE This parameter cannot be updated when a node pool is being updated.</p>

Parameter	Mandatory	Type	Description
runtime	No	Runtime object	<p>Details: Container runtime</p> <ul style="list-style-type: none"> • Clusters earlier than v1.25: The default value is docker. • Clusters of v1.25 or later: The default value varies with the OSs. • For nodes running EulerOS 2.5 or EulerOS 2.8, the default container runtime is docker. For nodes running other OSs, the default container runtime is containerd. <p>Constraints: N/A</p>

Table 4-488 Runtime

Parameter	Mandatory	Type	Description
name	No	String	<p>Details: Container runtime</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • Clusters earlier than v1.25: The default value is docker. • Clusters of v1.25 or later: The default value varies with the OSs. • For nodes running EulerOS 2.5 or EulerOS 2.8, the default value is docker. For nodes running other OSs, the default value is containerd.

Table 4-489 ReinstallK8sOptionsConfig

Parameter	Mandatory	Type	Description
labels	No	Map<String,String>	<p>Defined in key-value pairs. A maximum of 20 key-value pairs are allowed.</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain containing a maximum of 253 characters (such as example.com/my-key) can be prefixed to a key. • Value: The value can be left blank or contain 1 to 63 characters that start and end with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. <p>Example:</p> <pre>"k8sTags": { "key": "value" }</pre>

Parameter	Mandatory	Type	Description
taints	No	Array of Taint objects	<p>Details:</p> <p>Taints, which can be added to nodes for anti-affinity configuration. Each taint contains the following parameters:</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain can be prefixed to a key. • Value: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. • Effect: Available options are NoSchedule, PreferNoSchedule, and NoExecute. <p>When creating a node, you can specify an initial value for this field and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example:</p> <pre>"taints": [{ "key": "status", "value": "unavailable", "effect": "NoSchedule" }, { "key": "looks", "value": "bad", "effect": "NoSchedule" }]</pre> <p>Constraints:</p> <p>A maximum of 20 taints can be configured.</p>

Parameter	Mandatory	Type	Description
maxPods	No	Integer	Maximum number of pods that can be created on a node, including the default system pods. Value range: 16 to 256. This limit prevents the node from being overloaded of pods.
nicMultiqueue	No	String	<ul style="list-style-type: none"> Number of ENI queues. Example: <code>"[{\"queue\":4}]"</code> The following fields are included: <ul style="list-style-type: none"> queue: number of ENI queues This field can be configured only for BMS nodes in CCE Turbo clusters. Supported configurations: <code>{\"1\":128, \"2\":92, \"4\":92, \"8\":32, \"16\":16, \"28\":9}</code>, indicating that a maximum of 128 ENIs can be associated if there is one queue and a maximum of 92 ENIs if there are two queues. A larger number of ENI queues indicates higher performance but fewer ENIs can be associated. The queue settings cannot be changed after creation.

Parameter	Mandatory	Type	Description
nicThreshold	No	String	<ul style="list-style-type: none"> ENI pre-binding thresholds. Example setting: "0.3:0.6" Low threshold (L): determines the minimum number of pre-bound ENIs (Min). Formula: $Min = Total\ number\ of\ ENIs\ of\ the\ node \times L$ High threshold (H): determines the maximum number of pre-bound ENIs (Max). Formula: $Max = Total\ number\ of\ ENIs\ of\ the\ node \times H$ Number of ENIs bound to a BMS node (B) and number of ENIs being used by pods (U): $U + Min < B < U + Max$ If the number of pre-bound ENIs on a BMS node is smaller than the minimum allowed, the system will bind more ENIs to make the numbers equal. If the number of pre-bound ENIs on a BMS node is larger than the maximum allowed, the system periodically unbinds ENIs (about every 2 minutes) to make the numbers equal. Both the thresholds are one-decimal-place values ranging from 0.0 to 1.0. The low threshold must be smaller than or equal to the high one. This field can be configured only for BMS nodes in a CCE Turbo cluster. Pre-binding ENIs can speed up workload creation but occupies IP addresses.

Table 4-490 Taint

Parameter	Mandatory	Type	Description
key	Yes	String	<p>Details: Key</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
value	No	String	<p>Details: Value</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
effect	Yes	String	<p>Details: Effect</p> <p>Constraints: None</p> <p>Options: Available options are NoSchedule, PreferNoSchedule, and NoExecute.</p> <p>Default value: N/A</p>

Table 4-491 NodeLifecycleConfig

Parameter	Mandatory	Type	Description
preInstall	No	String	Pre-installation script. The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240. The input value must be encoded using Base64. The method is as follows: echo -n <code>"*Content to be encoded*"</code> base64
postInstall	No	String	Post-installation script. The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240. The input value must be encoded using Base64. The method is as follows: echo -n <code>"*Content to be encoded*"</code> base64

Table 4-492 ReinstallExtendParam

Parameter	Mandatory	Type	Description
alpha.cce/ NodeImageID	No	String	(Discarded) ID of the user image to run the target OS. Specifying this parameter is equivalent to specifying imageID in ReinstallVolumeSpec . The original value will be overwritten.

Table 4-493 HostnameConfig

Parameter	Mandatory	Type	Description
type	Yes	String	<p>Details: Configuration type of the Kubernetes node name. The default value is privatelp.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The node names, Kubernetes node names, and VM names of the nodes configured with cceNodeName are the same. Node names cannot be changed. Once a VM name is altered on the ECS console, the node name cannot be modified accordingly during ECS synchronization. • To prevent conflicts between Kubernetes node names, a suffix is automatically added to the node name of a node configured with cceNodeName. The suffix consists of a hyphen (-) followed by five random lowercase letters and digits (0 to 9). <p>Options:</p> <ul style="list-style-type: none"> • privatelp: Use the private node IP address as the Kubernetes node name. • cceNodeName: Use the CCE node name as the Kubernetes node name. <p>Default value: privatelp</p>

Response Parameters

Status code: 200

Table 4-494 Response body parameters

Parameter	Type	Description
jobid	String	Job ID returned after the job is delivered. The job ID can be used to query the job execution status.

Example Requests

- Reset the nodes running EulerOS 2.5 in the default node pool.

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes/reset

```
{
  "kind": "List",
  "apiVersion": "v3",
  "nodeList": [ {
    "nodeID": "yyyyyyyy-yyyy-yyyy-yyyyyyyyyyyy",
    "spec": {
      "name": "my-ecs-0001",
      "os": "EulerOS 2.5",
      "login": {
        "sshKey": "KeyPair-001"
      }
    }
  }
  ]
}
```

- Reset a node in a node pool (invalid spec).

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes/reset

```
{
  "kind": "List",
  "apiVersion": "v3",
  "nodeList": [ {
    "nodeID": "xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx",
    "spec": {
      "name": "my-ecs-0001",
      "os": "EulerOS 2.5",
      "login": {
        "sshKey": "KeyPair-001"
      }
    }
  }
  ]
}
```

Example Responses

Status code: 200

The job for resetting a node in a specified cluster is successfully delivered.

```
{
  "jobid": "2ec9b78d-9368-46f3-8f29-d1a95622a568"
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

- Reset the nodes running EulerOS 2.5 in the default node pool.

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.UUID;
import java.util.List;
import java.util.ArrayList;

public class ResetNodeSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before
        // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
        // environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();

        ResetNodeRequest request = new ResetNodeRequest();
        request.withClusterId("{cluster_id}");
        ResetNodeList body = new ResetNodeList();
        Login loginSpec = new Login();
        loginSpec.withSshKey("KeyPair-001");
        ReinstallNodeSpec specNodeList = new ReinstallNodeSpec();
        specNodeList.withOs("EulerOS 2.5")
            .withLogin(loginSpec)
            .withName("my-ecs-0001");
        List<ResetNode> listbodyNodeList = new ArrayList<>();
        listbodyNodeList.add(
            new ResetNode()
                .withNodeID(UUID.fromString("yyyyyyyy-yy-yy-yy-yyy-yyyy-yyyy-yyyy"))
                .withSpec(specNodeList)
        );
        body.withNodeList(listbodyNodeList);
        body.withKind("List");
        body.withApiVersion("v3");
        request.withBody(body);
        try {
            ResetNodeResponse response = client.resetNode(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
        }
    }
}
```

```
        System.out.println(e.getRequestId());
        System.out.println(e.getErrorCode());
        System.out.println(e.getErrorMsg());
    }
}
}
```

- **Reset a node in a node pool (invalid spec).**

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.UUID;
import java.util.List;
import java.util.ArrayList;

public class ResetNodeSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before
        // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
        // environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        ResetNodeRequest request = new ResetNodeRequest();
        request.withClusterId("{cluster_id}");
        ResetNodeList body = new ResetNodeList();
        Login loginSpec = new Login();
        loginSpec.withSshKey("KeyPair-001");
        ReinstallNodeSpec specNodeList = new ReinstallNodeSpec();
        specNodeList.withOs("EulerOS 2.5")
            .withLogin(loginSpec)
            .withName("my-ecs-0001");
        List<ResetNode> listbodyNodeList = new ArrayList<>();
        listbodyNodeList.add(
            new ResetNode()
                .withNodeID(UUID.fromString("xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx"))
                .withSpec(specNodeList)
        );
        body.withNodeList(listbodyNodeList);
        body.withKind("List");
        body.withApiVersion("v3");
        request.withBody(body);
        try {
            ResetNodeResponse response = client.resetNode(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
```



```
        e.printStackTrace();
    } catch (ServiceResponseException e) {
        e.printStackTrace();
        System.out.println(e.getHttpStatusCode());
        System.out.println(e.getRequestId());
        System.out.println(e.getErrorCode());
        System.out.println(e.getErrorMsg());
    }
}
}
```

Python

- Reset the nodes running EulerOS 2.5 in the default node pool.

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    # environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before
    # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    # environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ResetNodeRequest()
        request.cluster_id = "{cluster_id}"
        loginSpec = Login(
            ssh_key="KeyPair-001"
        )
        specNodeList = ReinstallNodeSpec(
            os="EulerOS 2.5",
            login=loginSpec,
            name="my-ecs-0001"
        )
        listNodeListbody = [
            ResetNode(
                node_id="yyyyyyyy-yyy-yyy-yyyy-yyyyyyyyyyyy",
                spec=specNodeList
            )
        ]
        request.body = ResetNodeList(
            node_list=listNodeListbody,
            kind="List",
            api_version="v3"
        )
        response = client.reset_node(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

- Reset a node in a node pool (invalid spec).

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    # environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before
    # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    # environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ResetNodeRequest()
        request.cluster_id = "{cluster_id}"
        loginSpec = Login(
            ssh_key="KeyPair-001"
        )
        specNodeList = ReinstallNodeSpec(
            os="EulerOS 2.5",
            login=loginSpec,
            name="my-ecs-0001"
        )
        listNodeListbody = [
            ResetNode(
                node_id="xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx",
                spec=specNodeList
            )
        ]
        request.body = ResetNodeList(
            node_list=listNodeListbody,
            kind="List",
            api_version="v3"
        )
        response = client.reset_node(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

- Reset the nodes running EulerOS 2.5 in the default node pool.

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
```

```

)
func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    // environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before
    // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    // environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ResetNodeRequest{
        request.ClusterId = "{cluster_id}"
        sshKeyLogin:= "KeyPair-001"
        loginSpec := &model.Login{
            SshKey: &sshKeyLogin,
        }
        nameSpec:= "my-ecs-0001"
        specNodeList := &model.ReinstallNodeSpec{
            Os: "EulerOS 2.5",
            Login: loginSpec,
            Name: &nameSpec,
        }
    }
    var listNodeListbody = []model.ResetNode{
        {
            NodeID: "yyyyyyyy-yyyy-yyyy-yyyy-yyyyyyyyyyyy",
            Spec: specNodeList,
        },
    }
    request.Body = &model.ResetNodeList{
        NodeList: listNodeListbody,
        Kind: "List",
        ApiVersion: "v3",
    }
    response, err := client.ResetNode(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
}

```

- Reset a node in a node pool (invalid spec).

```

package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or

```

```

environment variables and decrypted during use to ensure security.
// In this example, AK and SK are stored in environment variables for authentication. Before
running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
environment
ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
    WithAk(ak).
    WithSk(sk).
    WithProjectId(projectId).
    Build()

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.ResetNodeRequest{}
request.ClusterId = "{cluster_id}"
sshKeyLogin:= "KeyPair-001"
loginSpec := &model.Login{
    SshKey: &sshKeyLogin,
}
nameSpec:= "my-ecs-0001"
specNodeList := &model.ReinstallNodeSpec{
    Os: "EulerOS 2.5",
    Login: loginSpec,
    Name: &nameSpec,
}
var listNodeListbody = []model.ResetNode{
    {
        NodeID: "xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx",
        Spec: specNodeList,
    },
}
request.Body = &model.ResetNodeList{
    NodeList: listNodeListbody,
    Kind: "List",
    ApiVersion: "v3",
}
response, err := client.ResetNode(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The job for resetting a node in a specified cluster is successfully delivered.

Error Codes

See [Error Codes](#).

4.3.13 Removing a Node

Function

This API is used to remove a node from a specified cluster.

NOTE

The URL for cluster management is in the format of `https://Endpoint/uri`. In the URL, **uri** indicates the resource path, that is, the path for API access.

Calling Method

For details, see [Calling APIs](#).

URI

PUT `/api/v3/projects/{project_id}/clusters/{cluster_id}/nodes/operation/remove`

Table 4-495 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-496 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-497 Request body parameters

Parameter	Mandatory	Type	Description
apiVersion	No	String	API version. The value is fixed at v3 .
kind	No	String	API type. The value is fixed at RemoveNodesTask .
spec	Yes	RemoveNodeSpec object	Configuration information.
status	No	TaskStatus object	Job status.

Table 4-498 RemoveNodesSpec

Parameter	Mandatory	Type	Description
login	Yes	Login object	<p>Node login mode. Either the key pair or password must be used for login.</p> <p>NOTE This parameter cannot be modified when a node pool is being updated.</p>

Parameter	Mandatory	Type	Description
nodes	Yes	Array of NodelItem objects	List of nodes to be removed. A maximum of 200 nodes can be removed at a time.

Table 4-499 Login

Parameter	Mandatory	Type	Description
sshKey	No	String	Details: Name of the key pair used for login Constraints: None Options: N/A Default value: N/A
userPassword	No	UserPassword object	Details: Password used for node login Constraints: None

Table 4-500 UserPassword

Parameter	Mandatory	Type	Description
username	No	String	Details: Login account. The default value is root . Constraints: None Options: N/A Default value: root

Parameter	Mandatory	Type	Description
password	Yes	String	<p>Details: Login password. If a username and password are used when a node is created, this field is shielded in the response body.</p> <p>Constraints: The password field must be salted during node creation. For details, see Adding a Salt in the password Field When Creating a Node.</p> <p>Options: A password must:</p> <ul style="list-style-type: none"> • Contain 8 to 26 characters. • Contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters !@\$%^_-=+[{ }];,./? • Not contain the username or the username spelled backwards. <p>Default value: N/A</p>

Table 4-501 Nodeltem

Parameter	Mandatory	Type	Description
uid	Yes	String	Node ID.

Table 4-502 TaskStatus

Parameter	Mandatory	Type	Description
jobID	No	String	Job ID, which is used by the caller to query the job progress.

Response Parameters

Status code: 200

Table 4-503 Response body parameters

Parameter	Type	Description
apiVersion	String	API version. The value is fixed at v3 .
kind	String	API type. The value is fixed at RemoveNodesTask .
spec	RemoveNodesSpec object	Configuration information.
status	TaskStatus object	Job status.

Table 4-504 RemoveNodesSpec

Parameter	Type	Description
login	Login object	Node login mode. Either the key pair or password must be used for login. NOTE This parameter cannot be modified when a node pool is being updated.
nodes	Array of NodeItem objects	List of nodes to be removed. A maximum of 200 nodes can be removed at a time.

Table 4-505 Login

Parameter	Type	Description
sshKey	String	Details: Name of the key pair used for login Constraints: None Options: N/A Default value: N/A
userPassword	UserPassword object	Details: Password used for node login Constraints: None

Table 4-506 UserPassword

Parameter	Type	Description
username	String	<p>Details: Login account. The default value is root.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: root</p>
password	String	<p>Details: Login password. If a username and password are used when a node is created, this field is shielded in the response body.</p> <p>Constraints: The password field must be salted during node creation. For details, see Adding a Salt in the password Field When Creating a Node.</p> <p>Options: A password must:</p> <ul style="list-style-type: none"> • Contain 8 to 26 characters. • Contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters !@\$%^_+=+[{ }],./? • Not contain the username or the username spelled backwards. <p>Default value: N/A</p>

Table 4-507 NodeItem

Parameter	Type	Description
uid	String	Node ID.

Table 4-508 TaskStatus

Parameter	Type	Description
jobID	String	Job ID, which is used by the caller to query the job progress.

Example Requests

Removing a Node

```
PUT /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes/operation/remove
{
  "spec" : {
    "login" : {
      "sshKey" : "KeyPair-001"
    },
    "nodes" : [ {
      "uid" : "xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx"
    }, {
      "uid" : "yyyyyyyy-yyyy-yyyy-yyyy-yyyyyyyyyyyy"
    } ]
  }
}
```

Example Responses

Status code: 200

The job for removing a node in a specified cluster is successfully delivered.

```
{
  "spec" : {
    "login" : {
      "sshKey" : "KeyPair-001"
    },
    "nodes" : [ {
      "uid" : "xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx"
    }, {
      "uid" : "yyyyyyyy-yyyy-yyyy-yyyy-yyyyyyyyyyyy"
    } ]
  },
  "status" : {
    "jobID" : "2ec9b78d-9368-46f3-8f29-d1a95622a568"
  }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

Removing a Node

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
```

```
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class RemoveNodeSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        RemoveNodeRequest request = new RemoveNodeRequest();
        request.withClusterId("{cluster_id}");
        RemoveNodesTask body = new RemoveNodesTask();
        List<NodelItem> listSpecNodes = new ArrayList<>();
        listSpecNodes.add(
            new NodelItem()
                .withUid("xxxxxxxx-xxxx-xxxx-xxxxxxxxxxxx")
        );
        listSpecNodes.add(
            new NodelItem()
                .withUid("yyyyyyyy-yyyy-yyyy-yyyyyyyyyyyy")
        );
        Login loginSpec = new Login();
        loginSpec.withSshKey("KeyPair-001");
        RemoveNodesSpec specbody = new RemoveNodesSpec();
        specbody.withLogin(loginSpec)
            .withNodes(listSpecNodes);
        body.withSpec(specbody);
        request.withBody(body);
        try {
            RemoveNodeResponse response = client.removeNode(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

Removing a Node

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = RemoveNodeRequest()
        request.cluster_id = "{cluster_id}"
        listNodesSpec = [
            NodeItem(
                uid="xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx"
            ),
            NodeItem(
                uid="yyyyyyyy-yyyy-yyyy-yyyy-yyyyyyyyyyyy"
            )
        ]
        loginSpec = Login(
            ssh_key="KeyPair-001"
        )
        specbody = RemoveNodesSpec(
            login=loginSpec,
            nodes=listNodesSpec
        )
        request.body = RemoveNodesTask(
            spec=specbody
        )
        response = client.remove_node(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

Removing a Node

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
```

```
// The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
// In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
    WithAk(ak).
    WithSk(sk).
    WithProjectId(projectId).
    Build()

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.RemoveNodeRequest{
    request.ClusterId = "{cluster_id}"
    var listNodesSpec = []model.NodeItem{
        {
            Uid: "xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx",
        },
        {
            Uid: "yyyyyyyy-yyyy-yyyy-yyyy-yyyyyyyyyyyy",
        },
    }
    sshKeyLogin:= "KeyPair-001"
    loginSpec := &model.Login{
        SshKey: &sshKeyLogin,
    }
    specbody := &model.RemoveNodesSpec{
        Login: loginSpec,
        Nodes: listNodesSpec,
    }
    request.Body = &model.RemoveNodesTask{
        Spec: specbody,
    }
    response, err := client.RemoveNode(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The job for removing a node in a specified cluster is successfully delivered.

Error Codes

See [Error Codes](#).

4.3.14 Migrating a Node

Function

This API is used to migrate a node from a specified cluster to another cluster. The node can be migrated only between different clusters in the same VPC and project, and the cluster types before and after the migration must be the same.

BMS nodes in a CCE Turbo cluster cannot be migrated.

NOTE

The URL for cluster management is in the format of **https://Endpoint/uri**, where **uri** indicates the resource path for API access.

Constraints

- Nodes can be migrated only between clusters in the same VPC and project.
- Nodes cannot be migrated between CCE Turbo clusters and CCE standard clusters.
- Nodes cannot be migrated between DeC and non-DeC clusters.
- Nodes cannot be migrated between clusters with IPv6 enabled and clusters without IPv6 enabled.
- Nodes can be migrated only to the default node pool of the target cluster.
- Nodes that have only one system disk attached cannot be migrated.
- Physical ECS nodes in a CCE Turbo cluster cannot be migrated.

Calling Method

For details, see [Calling APIs](#).

URI

PUT /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes/operation/migrateto/{target_cluster_id}

Table 4-509 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>
target_cluster_id	Yes	String	<p>Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p>

Request Parameters

Table 4-510 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-511 Request body parameters

Parameter	Mandatory	Type	Description
apiVersion	No	String	API version. The value is fixed at v3 .

Parameter	Mandatory	Type	Description
kind	No	String	API type. The value is fixed at MigrateNodesTask .
spec	Yes	MigrateNodeSpec object	Configuration data.
status	No	TaskStatus object	Job status.

Table 4-512 MigrateNodesSpec

Parameter	Mandatory	Type	Description
os	Yes	String	Operating system type, which must be accurate to the version number. When alpha.cce/NodeImageID is specified, the value of os must be the same as the OS of the custom image.
extendParam	No	MigrateNodeExtendParam object	Extended parameters for node migration.
login	Yes	Login object	Node login mode. Either the key pair or password must be used for login. NOTE This parameter cannot be modified when a node pool is being updated.
runtime	No	Runtime object	Container runtime
nodes	Yes	Array of NodeItem objects	List of nodes to be migrated. A maximum of 200 nodes can be migrated at a time.

Table 4-513 MigrateNodeExtendParam

Parameter	Mandatory	Type	Description
maxPods	No	Integer	Maximum number of pods that can be created on a node, including the default system pods. Value range: 16 to 256. This limit prevents the node from being overloaded of pods.

Parameter	Mandatory	Type	Description
DockerLVMConfigOverride	No	String	<p>Docker data disk configurations.</p> <p>The disk type of the nodes to be migrated must be the same as that specified during node creation (that is, the value of <code>diskType</code> in <code>DockerLVMConfigOverride</code> must be the same as that specified during node creation). Ensure that the disk types of the nodes selected for a single API call are the same.</p> <p>The following is the default configuration:</p> <pre>"DockerLVMConfigOverride": "dockerThinpool=vgpaas/90%VG;kubernetesLV=vgpaas/10%VG;diskType=evs;lvType=linear"</pre> <p>The configuration contains the following fields:</p> <ul style="list-style-type: none"> • <code>userLV</code> (optional): size of the user space, for example, <code>vgpaas/20%VG</code>. • (Optional) <code>userPath</code>: mount path of the user space, for example, <code>/home/wqt-test</code>. • <code>diskType</code>: specifies the disk type. Currently, only <code>evs</code>, <code>hdd</code>, and <code>ssd</code> are supported. • <code>lvType</code>: type of the logical volume. Currently, the value can be <code>linear</code> or <code>striped</code>. For example, <code>striped</code>. • <code>dockerThinpool</code>: Docker disk size, for example, <code>vgpaas/60%VG</code>. • <code>kubernetesLV</code>: Kubelet space size, for example, <code>vgpaas/20%VG</code>.

Parameter	Mandatory	Type	Description
alpha.cce/ preInstall	No	String	<p>Pre-installation script. The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>The input value must be encoded using Base64. The method is as follows: <pre>echo -n "**Content to be encoded*" base64</pre></p>
alpha.cce/ postInstall	No	String	<p>Post-installation script. The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>The input value must be encoded using Base64. The method is as follows: <pre>echo -n "**Content to be encoded*" base64</pre></p>
alpha.cce/ NodeImageID	No	String	<p>ID of the user image to run the target OS.</p> <p>When alpha.cce/NodeImageID is specified, the value of os must be the same as the OS of the custom image.</p>

Table 4-514 Login

Parameter	Mandatory	Type	Description
sshKey	No	String	<p>Details: Name of the key pair used for login</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
userPassword	No	UserPassword object	<p>Details: Password used for node login</p> <p>Constraints: None</p>

Table 4-515 UserPassword

Parameter	Mandatory	Type	Description
username	No	String	<p>Details: Login account. The default value is root.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: root</p>

Parameter	Mandatory	Type	Description
password	Yes	String	<p>Details: Login password. If a username and password are used when a node is created, this field is shielded in the response body.</p> <p>Constraints: The password field must be salted during node creation. For details, see Adding a Salt in the password Field When Creating a Node.</p> <p>Options: A password must:</p> <ul style="list-style-type: none"> • Contain 8 to 26 characters. • Contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters !@\$%^_+[{ }];,./? • Not contain the username or the username spelled backwards. <p>Default value: N/A</p>

Table 4-516 Runtime

Parameter	Mandatory	Type	Description
name	No	String	<p>Details: Container runtime</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • Clusters earlier than v1.25: The default value is docker. • Clusters of v1.25 or later: The default value varies with the OSs. • For nodes running EulerOS 2.5 or EulerOS 2.8, the default value is docker. For nodes running other OSs, the default value is containerd.

Table 4-517 NodeItem

Parameter	Mandatory	Type	Description
uid	Yes	String	Node ID.

Table 4-518 TaskStatus

Parameter	Mandatory	Type	Description
jobID	No	String	Job ID, which is used by the caller to query the job progress.

Response Parameters

Status code: 200

Table 4-519 Response body parameters

Parameter	Type	Description
apiVersion	String	API version. The value is fixed at v3 .
kind	String	API type. The value is fixed at MigrateNodesTask .
spec	MigrateNodesSpec object	Configuration data.
status	TaskStatus object	Job status.

Table 4-520 MigrateNodesSpec

Parameter	Type	Description
os	String	Operating system type, which must be accurate to the version number. When alpha.cce/NodeImageID is specified, the value of os must be the same as the OS of the custom image.
extendParam	MigrateNodeExtendParam object	Extended parameters for node migration.
login	Login object	Node login mode. Either the key pair or password must be used for login. NOTE This parameter cannot be modified when a node pool is being updated.
runtime	Runtime object	Container runtime
nodes	Array of NodeItem objects	List of nodes to be migrated. A maximum of 200 nodes can be migrated at a time.

Table 4-521 MigrateNodeExtendParam

Parameter	Type	Description
maxPods	Integer	Maximum number of pods that can be created on a node, including the default system pods. Value range: 16 to 256. This limit prevents the node from being overloaded of pods.

Parameter	Type	Description
DockerLVMConfigOverride	String	<p>Docker data disk configurations.</p> <p>The disk type of the nodes to be migrated must be the same as that specified during node creation (that is, the value of diskType in DockerLVMConfigOverride must be the same as that specified during node creation). Ensure that the disk types of the nodes selected for a single API call are the same.</p> <p>The following is the default configuration:</p> <pre>"DockerLVMConfigOverride":"dockerThinpool=vgpaas/90%VG;kubernetesLV=vgpaas/10%VG;diskType=evs;lvType=linear"</pre> <p>The configuration contains the following fields:</p> <ul style="list-style-type: none"> • userLV (optional): size of the user space, for example, vgpaas/20%VG. • (Optional) userPath: mount path of the user space, for example, /home/wqt-test. • diskType: specifies the disk type. Currently, only evs, hdd, and ssd are supported. • lvType: type of the logical volume. Currently, the value can be linear or striped. For example, striped. • dockerThinpool: Docker disk size, for example, vgpaas/60%VG. • kubernetesLV: Kubelet space size, for example, vgpaas/20%VG.
alpha.cce/preInstall	String	<p>Pre-installation script. The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>The input value must be encoded using Base64. The method is as follows:</p> <pre>echo -n ""Content to be encoded"" base64</pre>

Parameter	Type	Description
alpha.cce/postInstall	String	<p>Post-installation script. The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>The input value must be encoded using Base64. The method is as follows: <code>echo -n "**Content to be encoded*" base64</code></p>
alpha.cce/NodeImageID	String	<p>ID of the user image to run the target OS.</p> <p>When alpha.cce/NodeImageID is specified, the value of os must be the same as the OS of the custom image.</p>

Table 4-522 Login

Parameter	Type	Description
sshKey	String	<p>Details: Name of the key pair used for login</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
userPassword	UserPassword object	<p>Details: Password used for node login</p> <p>Constraints: None</p>

Table 4-523 UserPassword

Parameter	Type	Description
username	String	<p>Details: Login account. The default value is root.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: root</p>
password	String	<p>Details: Login password. If a username and password are used when a node is created, this field is shielded in the response body.</p> <p>Constraints: The password field must be salted during node creation. For details, see Adding a Salt in the password Field When Creating a Node.</p> <p>Options: A password must:</p> <ul style="list-style-type: none"> • Contain 8 to 26 characters. • Contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters !@\$%^-_=+[{ }];,./? • Not contain the username or the username spelled backwards. <p>Default value: N/A</p>

Table 4-524 Runtime

Parameter	Type	Description
name	String	<p>Details: Container runtime</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> Clusters earlier than v1.25: The default value is docker. Clusters of v1.25 or later: The default value varies with the OSs. For nodes running EulerOS 2.5 or EulerOS 2.8, the default value is docker. For nodes running other OSs, the default value is containerd.

Table 4-525 Nodeltem

Parameter	Type	Description
uid	String	Node ID.

Table 4-526 TaskStatus

Parameter	Type	Description
jobID	String	Job ID, which is used by the caller to query the job progress.

Example Requests

- Migrate a node running EulerOS 2.5 to another cluster.

```
PUT /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes/operation/migrateto/{target_cluster_id}
```

```
{
  "spec": {
    "os": "EulerOS 2.5",
    "login": {
      "sshKey": "KeyPair-001"
    }
  },
  "nodes": [ {
    "uid": "xxxxxxxx-xxxx-xxxx-xxxxxxxxxxxx"
  }, {
    "uid": "yyyyyyyy-yyyy-yyyy-yyyy-yyyyyyyyyyyy"
  }
]
```

```
    }]  
  }  
}
```

- Migrate a node running EulerOS 2.5 and created using a specified image ID to another cluster.

PUT /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes/operation/migrateto/{target_cluster_id}

```
{  
  "spec" : {  
    "os" : "EulerOS 2.5",  
    "extendParam" : {  
      "alpha.cce/NodeImageID" : "cc697ad7-9563-11e8-8ea7-0255ac106311"  
    },  
    "login" : {  
      "sshKey" : "KeyPair-001"  
    },  
  },  
  "nodes" : [ {  
    "uid" : "xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxxx"  
  }, {  
    "uid" : "yyyyyyyy-yyyy-yyyy-yyyy-yyyyyyyyyyyyy"  
  } ]  
}
```

Example Responses

Status code: 200

The job for migrating a node from a specified cluster to another cluster is successfully delivered.

```
{  
  "spec" : {  
    "os" : "EulerOS 2.5",  
    "login" : {  
      "sshKey" : "KeyPair-001"  
    },  
  },  
  "runtime" : {  
    "name" : "docker"  
  },  
  "nodes" : [ {  
    "uid" : "xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxxx"  
  }, {  
    "uid" : "yyyyyyyy-yyyy-yyyy-yyyy-yyyyyyyyyyyyy"  
  } ]  
},  
  "status" : {  
    "jobID" : "2ec9b78d-9368-46f3-8f29-d1a95622a568"  
  }  
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

- Migrate a node running EulerOS 2.5 to another cluster.

```
package com.huaweicloud.sdk.test;  
  
import com.huaweicloud.sdk.core.auth.ICredential;  
import com.huaweicloud.sdk.core.auth.BasicCredentials;  
import com.huaweicloud.sdk.core.exception.ConnectionException;  
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
```

```
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class MigrateNodeSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before
        // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
        // environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        MigrateNodeRequest request = new MigrateNodeRequest();
        request.withClusterId("{cluster_id}");
        request.withTargetClusterId("{target_cluster_id}");
        MigrateNodesTask body = new MigrateNodesTask();
        List<NodeItem> listSpecNodes = new ArrayList<>();
        listSpecNodes.add(
            new NodeItem()
                .withUid("xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx")
        );
        listSpecNodes.add(
            new NodeItem()
                .withUid("yyyyyyyy-yy-yy-yy-yyy-yyyyyyyyyyyy")
        );
        Login loginSpec = new Login();
        loginSpec.withSshKey("KeyPair-001");
        MigrateNodesSpec specbody = new MigrateNodesSpec();
        specbody.withOs("EulerOS 2.5")
            .withLogin(loginSpec)
            .withNodes(listSpecNodes);
        body.withSpec(specbody);
        request.withBody(body);
        try {
            MigrateNodeResponse response = client.migrateNode(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

- Migrate a node running EulerOS 2.5 and created using a specified image ID to another cluster.


```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class MigrateNodeSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before
        // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
        // environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();

        MigrateNodeRequest request = new MigrateNodeRequest();
        request.withClusterId("{cluster_id}");
        request.withTargetClusterId("{target_cluster_id}");
        MigrateNodesTask body = new MigrateNodesTask();
        List<NodeItem> listSpecNodes = new ArrayList<>();
        listSpecNodes.add(
            new NodeItem()
                .withUid("xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx")
        );
        listSpecNodes.add(
            new NodeItem()
                .withUid("yyyyyyyy-yyyy-yyyy-yyyy-yyyyyyyyyyyy")
        );
        Login loginSpec = new Login();
        loginSpec.withSshKey("KeyPair-001");
        MigrateNodeExtendParam extendParamSpec = new MigrateNodeExtendParam();
        extendParamSpec.withAlphaCceNodeImageID("cc697ad7-9563-11e8-8ea7-0255ac106311");
        MigrateNodesSpec specbody = new MigrateNodesSpec();
        specbody.withOs("EulerOS 2.5")
            .withExtendParam(extendParamSpec)
            .withLogin(loginSpec)
            .withNodes(listSpecNodes);
        body.withSpec(specbody);
        request.withBody(body);
        try {
            MigrateNodeResponse response = client.migrateNode(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
        }
    }
}
```

```

        System.out.println(e.getHttpStatusCode());
        System.out.println(e.getRequestId());
        System.out.println(e.getErrorCode());
        System.out.println(e.getErrorMsg());
    }
}
}

```

Python

- Migrate a node running EulerOS 2.5 to another cluster.

```

# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    # environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before
    # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    # environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = MigrateNodeRequest()
        request.cluster_id = "{cluster_id}"
        request.target_cluster_id = "{target_cluster_id}"
        listNodesSpec = [
            NodeItem(
                uid="xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx"
            ),
            NodeItem(
                uid="yyyyyyyy-yy-yy-yy-yyy-yyyyyyyyyy"
            )
        ]
        loginSpec = Login(
            ssh_key="KeyPair-001"
        )
        specbody = MigrateNodesSpec(
            os="EulerOS 2.5",
            login=loginSpec,
            nodes=listNodesSpec
        )
        request.body = MigrateNodesTask(
            spec=specbody
        )
        response = client.migrate_node(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)

```

- Migrate a node running EulerOS 2.5 and created using a specified image ID to another cluster.

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    # environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before
    # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    # environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = MigrateNodeRequest()
        request.cluster_id = "{cluster_id}"
        request.target_cluster_id = "{target_cluster_id}"
        listNodesSpec = [
            NodelItem(
                uid="xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx"
            ),
            NodelItem(
                uid="yyyyyyyy-yy-yy-yy-yy-yyy-yyyyyyyy"
            )
        ]
        loginSpec = Login(
            ssh_key="KeyPair-001"
        )
        extendParamSpec = MigrateNodeExtendParam(
            alpha_cce_node_image_id="cc697ad7-9563-11e8-8ea7-0255ac106311"
        )
        specbody = MigrateNodesSpec(
            os="EulerOS 2.5",
            extend_param=extendParamSpec,
            login=loginSpec,
            nodes=listNodesSpec
        )
        request.body = MigrateNodesTask(
            spec=specbody
        )
        response = client.migrate_node(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

- Migrate a node running EulerOS 2.5 to another cluster.

```
package main
```

```

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    // environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before
    // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    // environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.MigrateNodeRequest{}
    request.ClusterId = "{cluster_id}"
    request.TargetClusterId = "{target_cluster_id}"
    var listNodesSpec = []model.NodeItem{
        {
            Uid: "xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx",
        },
        {
            Uid: "yyyyyyyy-yyyy-yyyy-y-y-yyyyyyyyyy",
        },
    }
    sshKeyLogin := "KeyPair-001"
    loginSpec := &model.Login{
        SshKey: &sshKeyLogin,
    }
    specbody := &model.MigrateNodesSpec{
        Os: "EulerOS 2.5",
        Login: loginSpec,
        Nodes: listNodesSpec,
    }
    request.Body = &model.MigrateNodesTask{
        Spec: specbody,
    }
    response, err := client.MigrateNode(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}

```

- Migrate a node running EulerOS 2.5 and created using a specified image ID to another cluster.

```

package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"

```

```
cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
"github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    // environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before
    // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    // environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.MigrateNodeRequest{}
    request.ClusterId = "{cluster_id}"
    request.TargetClusterId = "{target_cluster_id}"
    var listNodesSpec = []model.NodeItem{
        {
            Uid: "xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx",
        },
        {
            Uid: "yyyyyyyy-yyyy-yyyy-yyyy-yyyyyyyyyyyy",
        },
    }
    sshKeyLogin := "KeyPair-001"
    loginSpec := &model.Login{
        SshKey: &sshKeyLogin,
    }
    alphaCceNodeImageIDExtendParam := "cc697ad7-9563-11e8-8ea7-0255ac106311"
    extendParamSpec := &model.MigrateNodeExtendParam{
        AlphaCceNodeImageID: &alphaCceNodeImageIDExtendParam,
    }
    specbody := &model.MigrateNodesSpec{
        Os: "EulerOS 2.5",
        ExtendParam: extendParamSpec,
        Login: loginSpec,
        Nodes: listNodesSpec,
    }
    request.Body = &model.MigrateNodesTask{
        Spec: specbody,
    }
    response, err := client.MigrateNode(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the [Sample Code](#) tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The job for migrating a node from a specified cluster to another cluster is successfully delivered.

Error Codes

See [Error Codes](#).

4.3.15 Migrating a Node to a Custom Node Pool

Function

This API is used to migrate a node to a custom node pool. Only nodes in the default node pool can be migrated. Throughout the migration process, the node will remain unaffected and will not require resetting or restarting. Additionally, the original password will be preserved.

 **NOTE**

The URL for cluster management is in the format of **https://Endpoint/uri**, where **uri** specifies the resource path for API access.

Calling Method

For details, see [Calling APIs](#).

URI

PUT /api/v3/projects/{project_id}/clusters/{cluster_id}/nodepools/{nodepool_id}/nodes/migrate

Table 4-527 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>
nodepool_id	Yes	String	<p>Details: Node pool ID. For details about how to obtain the ID, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-528 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-529 Request body parameters

Parameter	Mandatory	Type	Description
apiVersion	Yes	String	API version. The value is fixed at v3 .

Parameter	Mandatory	Type	Description
kind	Yes	String	API type. The value is fixed at List .
nodeList	Yes	Array of MigrateNodesToNodePools objects	List of nodes to be migrated. A maximum of 50 nodes can be migrated at a time.

Table 4-530 MigrateNodesToNodePool

Parameter	Mandatory	Type	Description
nodeID	Yes	String	Node ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI .

Response Parameters

None

Example Requests

Migrate a node from the default node pool to a custom node pool.

```
POST /api/v3/projects/{project_id}/clusters/{cluster_id}/nodepool/{nodepool_id}/nodes/migrate
{
  "kind": "List",
  "apiVersion": "v3",
  "nodeList": [ {
    "nodeID": "xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx1"
  }, {
    "nodeID": "xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx2"
  } ]
}
```

Example Responses

None

Status Codes

Status Code	Description
200	The node has been migrated to the custom node pool.

Error Codes

See [Error Codes](#).

4.4 Node Pool Management

4.4.1 Creating a Node Pool

Function

This API is used to create a node pool in a specified cluster. This API can be called only when the cluster is in the available, scaling-out, or scaling-in state.

When creating a node pool in a CCE Turbo cluster of v1.21 or earlier, you can bind security groups to the node pool. A maximum of five security groups can be bound to a node pool.

After the security groups of a node pool are updated, the update takes effect only for newly created pods. You are advised to evict the original pods on the node.

 **NOTE**

If there is no cluster, [create one](#).

The URL for cluster management is in the format of **https://Endpoint/uri**, where **uri** specifies the resource path for API access.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/nodepools

Table 4-531 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-532 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-533 Request body parameters

Parameter	Mandatory	Type	Description
kind	Yes	String	<p>Details: API type</p> <p>Constraints: The value cannot be changed.</p> <p>Options: N/A</p> <p>Default value: NodePool</p>
apiVersion	Yes	String	<p>Details: API version</p> <p>Constraints: The value cannot be changed.</p> <p>Options: N/A</p> <p>Default value: v3</p>
metadata	Yes	NodePoolMetadata object	<p>Details: Metadata of a node pool</p> <p>Constraints: None</p>

Parameter	Mandatory	Type	Description
spec	Yes	NodePoolSpec object	<p>Details: Node pool specifications</p> <p>Constraints: This field is optional for updating a node pool.</p>
status	No	NodePoolStatus object	<p>Details: Node pool status</p> <p>Constraints: None</p>

Table 4-534 NodePoolMetadata

Parameter	Mandatory	Type	Description
name	Yes	String	<p>Details: Node pool name</p> <p>Constraints: You cannot create node pools named DefaultPool.</p> <p>Options: Enter 1 to 50 characters starting with a lowercase letter and not ending with a hyphen (-). Only lowercase letters, digits, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>
uid	No	String	<p>Details: UID of a node pool</p> <p>Constraints: The value is automatically generated after the object is created. A user-defined value will not take effect.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
annotations	No	Map<String,String>	<p>Details: Annotations of a node pool in key-value pairs</p> <p>Constraints: This parameter is used only for query and cannot be input through a request. Entered data of this parameter is invalid.</p>
updateTimestamp	No	String	<p>Details: Time when a node pool was updated</p> <p>Constraints: The value is automatically recorded when a node pool is updated and cannot be specified.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
creationTimestamp	No	String	<p>Details: Time when a node pool was created</p> <p>Constraints: The value is automatically recorded when a node pool is created and cannot be specified.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-535 NodePoolSpec

Parameter	Mandatory	Type	Description
type	No	String	<p>Details: Node pool type</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • vm: ECS • ElasticBMS: C6 general computing-plus BMS. An example flavor is c6.22xlarge.2.physical. • pm: BMS <p>Default value: vm</p>
nodeTemplate	Yes	NodeSpec object	<p>Details: Detailed parameters of a node pool template</p> <p>Constraints: None</p>
initialNodeCount	No	Integer	<p>Details: The initial number of nodes in a node pool. The obtained value is the desired number of nodes in the node pool.</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to 0 and less than or equal to the cluster scale</p> <p>Default value: 0</p>
autoscaling	No	NodePoolNodeAutoscaling object	<p>Details: Auto scaling parameters</p> <p>Constraints: None</p>

Parameter	Mandatory	Type	Description
nodeManagement	No	NodeManagement object	<p>Details: Node management configuration</p> <p>Constraints: None</p>
podSecurityGroups	No	Array of SecurityID objects	<p>Details: Security group configuration</p> <p>Constraints: None</p>
extensionScaleGroups	No	Array of ExtensionScaleGroup objects	<p>Details: Configuration list of the extended scaling groups in a node pool. For details, see the definition of ExtensionScaleGroup.</p> <p>Constraints: None</p>
customSecurityGroups	No	Array of strings	<p>Details: Custom security group configuration for a node pool. New nodes added to a node pool can be bound to a specified security group.</p> <ul style="list-style-type: none"> • Specifying no security group ID will add the new nodes to the default node security group. • Specifying a valid security group ID will put new nodes in that security group. • When specifying a security group, do not modify the port rules on which CCE depends. For details, see How Can I Configure a Security Group Rule in a Cluster? <p>Constraints: None</p>

Table 4-536 NodeSpec

Parameter	Mandatory	Type	Description
flavor	Yes	String	<p>Details: Node flavors. For details about the node flavors supported by CCE clusters, see Node Specifications.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
az	Yes	String	<p>Details: AZ where the node to be created is located. You need to specify the AZ name. Random AZs will not be allocated to a node created using APIs. For details about AZs supported by CCE, see Regions and Endpoints.</p> <p>Constraints: When you are creating a node pool and configuring a scaling group, this parameter cannot be set to random.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
os	No	String	<p>Details: Node OS. For details about the supported OSs, see Node OSs.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If the selected OS is not supported by the current cluster version, it will be automatically replaced with a supported OS of the same series. • If alpha.cce/NodeImageID in extendParam is specified during node creation, you do not need to configure this parameter. • If this parameter is not specified, CCE automatically selects a supported OS version based on the cluster version. • This parameter is mandatory when creating a node pool. • If you are using shared disk space when creating a node, this parameter is mandatory. Specifically, the disk initialization configuration management parameter storage is used and the name field of virtualSpaces in StorageGroups is set to share. <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
login	Yes	Login object	<p>Details: Node login mode. Either the key pair or password must be used for login.</p> <p>Constraints: This parameter cannot be modified when a node pool is being updated.</p>
rootVolume	Yes	Volume object	<p>Details: Disk information of a node</p> <p>Constraints: None</p>
dataVolumes	No	Array of Volume objects	<p>Details: Data disk parameters of a node. For DeC nodes, the parameter details are the same as those in rootVolume.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • A VM can have up to 16 disks attached, while a BMS can only have up to 10 disks attached. The maximum number of disks that can be attached to either a VM or BMS is limited by their respective maximum disk limits. (You can add more data disks to each of your nodes through the CCE console or APIs.) • The data disk used by the container runtime and kubelet cannot be detached, or the node will become unavailable. • This parameter can be left blank only when a system disk is selected for the system components.

Parameter	Mandatory	Type	Description
storage	No	Storage object	<p>Details: Disk initialization management parameter. This parameter is complex to configure. For details, see Attaching Disks to a Node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This field is supported by clusters of v1.15.11-r0 and later versions. If the cluster version is not supported, this field will be ignored. • If a node has both local and EVS disks attached, make sure to not keep the default value for this parameter, or it may result in unexpected disk partitions. • If you want to change the value range of a data disk to 20 to 32768, do not use the default value. • If you want to use the shared disk space (with the runtime and Kubernetes partitions cancelled), do not retain the default value of this parameter. For details about the shared disk space, see Space Allocation of a Data Disk. • If you want to store system components in the system disk, do not use the default value.
publicIP	No	NodePublicIP object	<p>Details: EIP of a node</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>

Parameter	Mandatory	Type	Description
nodeNicSpec	No	NodeNicSpec object	<p>Details: ENI of a node</p> <p>Constraints: None</p>
count	No	Integer	<p>Details: Number of nodes to be created in batches</p> <p>Constraints: This parameter can be left blank when it is used for a node pool.</p> <p>Options: Positive integers that are greater than or equal to 1 and less than or equal to the maximum limit</p> <p>Default value: N/A</p>
billingMode	No	Integer	<p>Details: Billing mode of a node</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • 0: pay-per-use • 1: yearly/monthly • 2: (Discarded) yearly/monthly billing with auto payment enabled <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
taints	No	Array of Taint objects	<p>Details:</p> <p>Taints, which can be added to nodes for anti-affinity configuration. Each taint contains the following parameters:</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain can be prefixed to a key. • Value: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. • Effect: Available options are NoSchedule, PreferNoSchedule, and NoExecute. <p>When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example:</p> <pre>"taints": [{ "key": "status", "value": "unavailable", "effect": "NoSchedule" }, { "key": "looks", "value": "bad", "effect": "NoSchedule" }]</pre> <p>Constraints:</p> <p>A maximum of 20 taints can be configured.</p>

Parameter	Mandatory	Type	Description
k8sTags	No	Map<String,String>	<p>Details: Defined in key-value pairs.</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain containing a maximum of 253 characters (such as example.com/my-key) can be prefixed to a key. • Value: The value can be left blank or contain 1 to 63 characters that start and end with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. <p>When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example:</p> <pre>"k8sTags": { "key": "value" }</pre> <p>Constraints: A maximum of 20 key-value pairs are allowed.</p>

Parameter	Mandatory	Type	Description
ecsGroupId	No	String	<p>Details: ECS group ID. If this parameter is specified, nodes will be created in the specific ECS group.</p> <p>Constraints: This configuration does not take effect when a node pool is created. To ensure that all nodes in a node pool are in the same ECS group, configure nodeManagement in the node pool.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
dedicatedHostId	No	String	<p>Details: ID of the DeH to which nodes will be scheduled.</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>

Parameter	Mandatory	Type	Description
userTags	No	Array of UserTag objects	<p>Details: Cloud server tag (resource tag). When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The key of a tag must be unique. The maximum number of custom tags supported by CCE varies depending on regions and cannot exceed 8. • A tag key can have a maximum of 36 characters. It can only contain letters, digits, Unicode characters, and special characters (-_).
runtime	No	Runtime object	<p>Details: Container runtime</p> <ul style="list-style-type: none"> • Clusters earlier than v1.25: The default value is docker. • Clusters of v1.25 or later: The default value varies with the OSs. • For nodes running EulerOS 2.5 or EulerOS 2.8, the default container runtime is docker. For nodes running other OSs, the default container runtime is containerd. <p>Constraints: None</p>

Parameter	Mandatory	Type	Description
initializedConditions	No	Array of strings	<p>Details: Custom initialization flag, which is left blank by default. Before CCE nodes are initialized, they are tainted with node.cloudprovider.kubernetes.io/uninitialized to prevent pods from being scheduled to them. When creating a node, you can specify the initializedConditions parameter to control the taint removal time. By default, the timeout interval is not configured.</p> <p>Example:</p> <ol style="list-style-type: none"> 1. Create a node and add parameter <code>"initializedConditions": ["CCEInitial", "CustomedInitial"]</code>. 2. After custom initialization is complete, CCE will call a Kubernetes API (for example, PATCH /v1/nodes/{node_ip}/status) to update the node conditions by adding two labels of types CCEInitial and CustomedInitial and setting the status to True, as shown in the following: <pre>status: conditions: - type: CCEInitial status: 'True' - type: CustomedInitial status: 'True'</pre> <ol style="list-style-type: none"> 1. CCE polls status.Conditions of nodes to check whether there are conditions of types CCEInitial and CustomedInitial. If such conditions exist and the status is True, the node initialization is complete and the initialization taint is removed.

Parameter	Mandatory	Type	Description
			<p>2. initializedConditions allows you to configure a timeout period during node creation. For example, "initializedConditions": ["CCEInitial:15m", "CustomedInitial:15m"] indicates that the timeout period is 15 minutes. After the timeout period is reached, the initialization conditions will be automatically ignored and the initialization taint will be removed when CCE polls the node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The timeout interval in initializedConditions ranges from 1 to 99 seconds. • Each value has 1 to 20 characters, which must consist of letters and digits. • The maximum number of flags cannot exceed 2. • The unit of the timeout period is minute (m).
extendParam	No	NodeExtendParam object	<p>Details: Extended parameters for creating a node</p> <p>Constraints: None</p>
hostnameConfig	No	HostnameConfig object	<p>Details: Kubernetes node name configuration parameter</p> <p>Constraints: The supported cluster version is v1.23.6-r0 to v1.25 or v1.25.2-r0 or later.</p>

Parameter	Mandatory	Type	Description
serverEnterpriseProjectID	No	String	<p>Details: Enterprise project ID of a server. CCE does not support features provided by EPS. This field is used only for synchronizing enterprise project IDs of servers.</p> <p>Constraints: To create a node or node pool, you can specify an existing enterprise project for it. If this field is left blank, it inherits the enterprise project attributes of the cluster that runs the node or node pool. When updating a node pool, any configuration modifications you made will apply only to new nodes. You need to modify the enterprise projects of existing nodes on the EPS console.</p> <p>Options: N/A</p> <p>Default value: If no value is specified during update, this field will not be updated. If this parameter is left blank, the cluster enterprise project is returned.</p>

Table 4-537 Login

Parameter	Mandatory	Type	Description
sshKey	No	String	<p>Details: Name of the key pair used for login</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
userPassword	No	UserPassword object	<p>Details: Password used for node login</p> <p>Constraints: None</p>

Table 4-538 UserPassword

Parameter	Mandatory	Type	Description
username	No	String	<p>Details: Login account. The default value is root.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: root</p>

Parameter	Mandatory	Type	Description
password	Yes	String	<p>Details: Login password. If a username and password are used when a node is created, this field is shielded in the response body.</p> <p>Constraints: The password field must be salted during node creation. For details, see Adding a Salt in the password Field When Creating a Node.</p> <p>Options: A password must:</p> <ul style="list-style-type: none"> • Contain 8 to 26 characters. • Contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters !@\$%^_+=+[{ }];,./? • Not contain the username or the username spelled backwards. <p>Default value: N/A</p>

Table 4-539 Volume

Parameter	Mandatory	Type	Description
size	Yes	Integer	<p>Details: Disk size, in GiB</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • System disks: 40 to 1024 • The first data disk: 20 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) • Other data disks: 10 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) <p>Default value: N/A</p>
volumetype	Yes	String	<p>Details: Disk type. For details about possible values, see the root_volume parameter in the API used to create an ECS.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • SAS: high I/O SAS disks • SSD: ultra-high I/O SSD disks • SATA: common I/O SATA disks. SATA disks have been removed from EVS. You can find them attached only to existing nodes. <p>NOTE For details about disk types, see Disk Types and Performance.</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
extendParam	No	Map<String, Object>	<p>Details: Extended disk parameters, defined in extendparam in the API used to create an ECS. For details, see extendparam Field Description for Creating Disks.</p> <p>Constraints: None</p>
cluster_id	No	String	<p>Details: ID of the storage pool used by the ECS system disk. This field is used only for DeC clusters and functions as dssPoolID, that is, the ID of the DSS storage pool.</p> <p>To obtain the value, see the ID field in the API used to obtain details of a DSS storage pool.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
cluster_type	No	String	<p>Details: Storage class of the ECS system disk</p> <p>Constraints: None</p> <p>Options: This field is used only for DeC clusters, and the value is always dss.</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
hw:passthrough	No	Boolean	<p>Details:</p> <ul style="list-style-type: none"> • Pay attention to this field if your ECS is SDI-compliant. If the value of this field is true, the created disk is of SCSI type. • If the node pool type is ElasticBMS, this field must be set to true. • If the node specification involves both local and EVS disks, configure the disk initialization parameters. For details, see Attaching Disks to a Node. <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
metadata	No	VolumeMetadata object	<p>Details: EVS disk encryption information. This parameter is mandatory only when the system disk or data disk of the node to be created needs to be encrypted.</p> <p>Constraints: None</p>

Table 4-540 VolumeMetadata

Parameter	Mandatory	Type	Description
<code>__system__encrypted</code>	No	String	<p>Details: Whether an EVS disk is encrypted. The value 0 indicates that the EVS disk is not encrypted, and the value 1 indicates that the EVS disk is encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: If this parameter does not appear, the disk is not encrypted.</p>
<code>__system__cmkid</code>	No	String	<p>Details: CMK ID, which indicates encryption in metadata. This field is used with __system__encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-541 Storage

Parameter	Mandatory	Type	Description
<code>storageSelectors</code>	Yes	Array of StorageSelectors objects	<p>Details: Disk selection. Matched disks are managed based on matchLabels and storageType settings. Disks are matched in sequence. The matching rule in the front is matched first.</p> <p>Constraints: None</p>

Parameter	Mandatory	Type	Description
storageGroups	Yes	Array of StorageGroups objects	<p>Details: A storage group consisting of multiple storage devices, which are used to divide storage space.</p> <p>Constraints: None</p>

Table 4-542 StorageSelectors

Parameter	Mandatory	Type	Description
name	Yes	String	<p>Details: Name of a selector, which is used as the index of selectorNames in storageGroup.</p> <p>Constraints: The name of each selector must be unique.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
storageType	Yes	String	<p>Details: Storage type</p> <p>Constraints:</p> <ul style="list-style-type: none"> The local storage type does not support disk selection. All local disks form a VG. Therefore, only one local storage selector is allowed. The system storage type does not support disk selection. It is recommended that you use the system disk to store system components. As a result, only one storage selector of the system type is allowed, and the name must be cceUse. <p>Options: Only evs (EVS disks), local (local disks), and system (system disks) are supported.</p> <p>Default value: N/A</p>
matchLabels	No	matchLabels object	<p>Details: Matching field of an EVS disk</p> <p>Constraints: If storageType is set to system (system disk), you do not need to configure this parameter.</p> <p>Options: The size, volumeType, metadataEncrypted, metadataCmkid, and count fields in DataVolume are supported.</p> <p>Default value: N/A</p>

Table 4-543 matchLabels

Parameter	Mandatory	Type	Description
size	No	String	<p>Details: Matched disk size, for example, 100. If this parameter is left blank, the disk size is not limited.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
volumeType	No	String	<p>Details: EVS disk type</p> <p>Constraints: None</p> <p>Options: SSD, GPSSD, SAS, ESSD, and SATA are supported. If this parameter is left blank, there is no restriction on the disk type.</p> <p>Default value: N/A</p>
metadataEncrypted	No	String	<p>Details: Disk encryption identifier. If this parameter is set to 0, it specifies that the disk is not encrypted. If this parameter is set to 1, it specifies that the disk is encrypted. If this parameter is left blank, there is no restriction on the disk encryption identifier.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
metadataCmkid	No	String	<p>Details: CMK ID of an encrypted disk. The value is a string of 36 bytes. If this parameter is left blank, there is no restriction on the disk key ID.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
count	No	String	<p>Details: Number of disks to be selected. If this parameter is left blank, all disks of this type are selected.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-544 StorageGroups

Parameter	Mandatory	Type	Description
name	Yes	String	<p>Details: Name of a virtual storage group, which must be unique</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If cceManaged is set to true, the name field must be set to vgpaas. • If the data disk is used as a temporary storage volume, the name field must be set to vg-everest-localvolume-ephemeral. • If the data disk is used as a persistent storage volume, the name field must be set to vg-everest-localvolume-persistent. <p>Default value: N/A</p>
cceManaged	No	Boolean	<p>Details: Storage space to which Kubernetes and runtime belong. Only one group is set to true. If this parameter is left blank, the default value false is used.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
selectorNames	Yes	Array of strings	<p>Details: Corresponds to name in storageSelectors. One group can select multiple selectors, but one selector can be selected by only one group.</p> <p>Constraints: System components cannot be separately stored in the system disk and data disks. Therefore, when the selector type is set to system, only one selector can be selected for a group.</p>
virtualSpaces	Yes	Array of VirtualSpace objects	<p>Details: Detailed management of space configurations in a group</p> <p>Constraints: None</p>

Table 4-545 VirtualSpace

Parameter	Mandatory	Type	Description
name	Yes	String	<p>Details: Name of a virtualSpace. Only types of share, kubernetes, runtime, and user are supported.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • kubernetes: Kubernetes space configuration. lvmConfig needs to be configured. • runtime: runtime space configuration. runtimeConfig needs to be configured. • user: user space configuration. lvmConfig needs to be configured. <p>Default value: N/A</p>
size	Yes	String	<p>Details: Size of a virtualSpace. The value must be an integer in percentage, for example, 90%.</p> <p>Constraints: None</p> <p>Options: 10 to 90. The sum of percentages of all virtualSpaces in a group cannot exceed 100%.</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
lvmConfig	No	LVMConfig object	<p>Details: LVM configuration management, which is applicable to share, Kubernetes, and user space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>
runtimeConfig	No	RuntimeConfig object	<p>Details: Runtime configuration management, which is applicable to runtime space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>

Table 4-546 LVMConfig

Parameter	Mandatory	Type	Description
lvType	Yes	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
path	No	String	<p>Details: Disk mount path. This parameter only takes effect in user configuration. The value can be an absolute path containing digits, uppercase letters, lowercase letters, periods (.), hyphens (-), and underscores (_).</p> <p>Constraints: Do not leave the path empty or set it to a key OS path such as the root directory. Key OS paths that cannot be entered: /, /home, /home/, /bin, /bin/, /lib, /lib/, /root, /root/, /boot, /boot/, /dev, /dev/, /etc, /etc/, /lost+found, /lost+found/, /mnt, /mnt/, /proc, /proc/, /sbin, /sbin/, /srv, /srv/, /tmp, /tmp/, /var, /var/, /media, /media/, /opt, /opt/, /selinux, /selinux/, /sys, /sys/, /usr, /usr/, /opt/cloud/, /mnt/paas/, /home/paas/, /var/paas/, /var/lib/, /var/script/</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-547 RuntimeConfig

Parameter	Mandatory	Type	Description
lvType	Yes	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-548 NodePublicIP

Parameter	Mandatory	Type	Description
ids	No	Array of strings	<p>Details: IDs of existing EIPs</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The quantity cannot be greater than the number of nodes to be created. • If ids has been specified, you do not need to configure count and eip.
count	No	Integer	<p>Details: Number of EIPs to be dynamically created</p> <p>Constraints: count and eip must be configured simultaneously.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
eip	No	NodeEIPSpec object	<p>Details: EIP configuration</p> <p>Constraints: This parameter is not supported when creating a node pool.</p>

Table 4-549 NodeEIPSpec

Parameter	Mandatory	Type	Description
iptype	Yes	String	<p>Details: EIP type, specified in publicip.type in the API for assigning an EIP. For details, see Assigning an EIP.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
bandwidth	No	NodeBandwidth object	<p>Details: Bandwidth parameters of the EIP</p> <p>Constraints: None</p>

Table 4-550 NodeBandwidth

Parameter	Mandatory	Type	Description
chargemode	No	String	<p>Details: Bandwidth billing mode</p> <p>NOTE</p> <ul style="list-style-type: none"> • Billed by bandwidth: The billing will be based on the data transmission rate (in Mbps) of public networks. This billing mode is recommended if your bandwidth usage is higher than 10%. • Billed by traffic: The billing is based on the total amount of data (in GB) transmitted over the public network. This mode is available only when you are creating a pay-per-use node. This billing mode is recommended if your bandwidth usage is lower than 10%. <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If this field is not specified, the billing is based on bandwidth. • If the field value is empty, the billing is based on bandwidth. • If the field value is traffic, the billing is based on traffic. • If the value is out of the preceding options, the cloud server will fail to be created. <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
size	No	Integer	<p>Details: Bandwidth size, specified in bandwidth.size in the API for assigning an EIP. For details, see Assigning an EIP.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
sharetype	No	String	<p>Details: Bandwidth sharing type. Dedicated bandwidth is supported only. PER specifies dedicated bandwidth.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-551 NodeNicSpec

Parameter	Mandatory	Type	Description
primaryNic	No	NicSpec object	<p>Details: Description of the primary ENI</p> <p>Constraints: None</p>
extNics	No	Array of NicSpec objects	<p>Details: Extension ENI</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>

Table 4-552 NicSpec

Parameter	Mandatory	Type	Description
subnetId	No	String	<p>Details: Network ID of the subnet to which an ENI belongs. If subnetList is also configured for a node pool, the subnetList field is used for adding subnets to the node pool.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If subnetId is not specified when a primary ENI is creating, the cluster subnet will be used. • When creating an extension ENI, you must specify subnetId. <p>Options: N/A</p> <p>Default value: N/A</p>
fixedIps	No	Array of strings	<p>Details: The IP address of the primary ENI is specified using fixedIps. The number of IP addresses cannot be greater than the number of created nodes.</p> <p>Constraints: Either fixedIps or ipBlock can be specified. fiexdlps cannot be specified for extension ENIs.</p>

Parameter	Mandatory	Type	Description
ipBlock	No	String	<p>Details: CIDR format of the primary ENI IP address range. The IP address of the created node falls in this range.</p> <p>Constraints: Either fixedIps or ipBlock can be specified.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
subnetList	No	Array of strings	<p>Details: Network ID list of the subnet where the ENI resides. Multiple subnets can be configured for a node pool.</p> <p>Constraints: A maximum of 20 subnets can be configured.</p>

Table 4-553 Taint

Parameter	Mandatory	Type	Description
key	Yes	String	<p>Details: Key</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
value	No	String	<p>Details: Value</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
effect	Yes	String	<p>Details: Effect</p> <p>Constraints: None</p> <p>Options: Available options are NoSchedule, PreferNoSchedule, and NoExecute.</p> <p>Default value: N/A</p>

Table 4-554 UserTag

Parameter	Mandatory	Type	Description
key	No	String	<p>Details: Key of the cloud server tag</p> <p>Constraints: The value cannot start with CCE-, _type_baremetal, or sys.</p> <p>Options: The value contains a maximum of 128 characters. The tag key must be unique and cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, /</p> <p>Default value: N/A</p>
value	No	String	<p>Details: Value of the cloud server tag</p> <p>Constraints: None</p> <p>Options: The value contains a maximum of 255 characters. The tag value cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, </p> <p>Default value: N/A</p>

Table 4-555 Runtime

Parameter	Mandatory	Type	Description
name	No	String	<p>Details: Container runtime</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • Clusters earlier than v1.25: The default value is docker. • Clusters of v1.25 or later: The default value varies with the OSs. • For nodes running EulerOS 2.5 or EulerOS 2.8, the default value is docker. For nodes running other OSs, the default value is containerd.

Table 4-556 NodeExtendParam

Parameter	Mandatory	Type	Description
ecs:performancetype	No	String	<p>Details: ECS flavor types. This field is returned in the response.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
orderID	No	String	<p>Details: Order ID</p> <p>Constraints: This parameter is returned in the response when the node is billed on a yearly/monthly basis with auto payment enabled (only in creation scenarios).</p> <p>Options: N/A</p> <p>Default value: N/A</p>
productID	No	String	<p>Details: Product ID</p> <p>Constraints: This field is returned in the response when the node is billed on a yearly/monthly basis with auto payment enabled.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
maxPods	No	Integer	<p>Details: Maximum number of pods that can be created on a node, including the default system pods. This limit prevents the node from being overloaded with pods. The number of pods that can be created on a node is determined by multiple parameters. For details, see Maximum Number of Pods That Can Be Created on a Node.</p> <p>Constraints: None</p> <p>Options: 16 to 256</p> <p>Default value: N/A</p>
periodType	No	String	<p>Details: Subscription period type</p> <p>Constraints:</p> <ul style="list-style-type: none"> As a request parameter, it is valid and mandatory only when billingMode is set to 1 (yearly/monthly billing) or 2 (yearly/monthly billing with auto payment enabled) (This option has been discarded). As a response parameter, it is returned only when a yearly/monthly node is created. <p>Options:</p> <ul style="list-style-type: none"> month year <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
periodNum	No	Integer	<p>Details: Number of subscription periods</p> <p>Constraints:</p> <ul style="list-style-type: none"> As a request parameter, it is valid and mandatory only when billingMode is set to 1 (yearly/monthly billing) or 2 (yearly/monthly billing with auto payment enabled) (This option has been discarded). As a response parameter, it is returned only when a yearly/monthly node is created. <p>Options:</p> <ul style="list-style-type: none"> If periodType is month, the value ranges from 1 to 9. If periodType is year, the value ranges from 1 to 3. <p>Default value: N/A</p>
isAutoRenew	No	String	<p>Details: Whether auto-renewal is enabled</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified, auto-renewal is not enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> true: Auto-renewal is enabled. false: Auto-renewal is not enabled. <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
isAutoPay	No	String	<p>Details: Whether an order is automatically or manually paid</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified when billingMode is set to 1, auto payment is not enabled. (Discarded) If not specified when billingMode is set to 2, auto payment is enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto payment is enabled. • false: Auto payment is not enabled. <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
DockerLVMConfigOverride	No	String	<p>Details:</p> <p>Docker data disk configuration item. (This parameter has been discarded. Use the storage field instead.) Example of the default configuration:</p> <pre>"DockerLVMConfigOverride":"dockerThinpool=vgpaas/90%VG;kubernetesLV=vgpaas/10%VG;diskType=evs;lvType=linear"</pre> <p>By default, if no VD disk is available, an error occurs because the data disk fails to be found. Specify diskType based on the actual drive letter type.</p> <p>Constraints:</p> <p>None</p> <p>Options:</p> <p>The following fields are included:</p> <ul style="list-style-type: none"> • userLV: (Optional) size of the user space, for example, vgpaas/20%VG • userPath (Optional): mount path of the user space, for example, /home/wqt-test • diskType: disk type. Only evs, hdd, and ssd are supported. • lvType: type of a logic volume. The value can be linear or striped. • dockerThinpool: Docker space size, for example, vgpaas/60%VG • kubernetesLV: kubelet space size, for example, vgpaas/20%VG <p>Default value:</p> <p>N/A</p>

Parameter	Mandatory	Type	Description
dockerBaseSize	No	Integer	<p>Details: Available disk space of a single container on a node (unit: G). This parameter has been discarded. Use containerBaseSize.</p> <p>For details about how to allocate the space for the container runtime, see Space Allocation of a Data Disk.</p> <p>Constraints: When Device Mapper is used, it is recommended that dockerBaseSize be set to a value less than or equal to 80 GiB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device.</p> <ul style="list-style-type: none"> The dockerBaseSize setting takes effect only on nodes running EulerOS or Huawei Cloud EulerOS 2.0 in clusters of the new version. <p>Options: 10 to 500</p> <p>Default value: If the value is not specified or is set to 0, the default value is used.</p> <ul style="list-style-type: none"> The default value is 10 in Device Mapper mode. In OverlayFS mode, the available space of a single container is not limited by default.

Parameter	Mandatory	Type	Description
containerBaseSize	No	Integer	<p>Details: Available disk space of a single container on a node (unit: G). For details about how to allocate the space for the container runtime, see Space Allocation of a Data Disk.</p> <p>Constraints: When Device Mapper is used, it is recommended that containerBaseSize be set to a value less than or equal to 80 GiB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device. In new versions, the Device Mapper mode is used only by BMSs in the same resource pool and is being discarded.</p> <ul style="list-style-type: none"> The containerBaseSize setting takes effect only on nodes running EulerOS or Huawei Cloud EulerOS 2.0 in clusters of the new version (v1.23.14-r0, v1.25.9-r0, v1.27.6-r0, v1.28.4-r0 or later). This parameter cannot be updated when a node pool is being updated. <p>Options: 10 to 500</p> <p>Default value: If the value is not specified or is set to 0, the default value is used.</p> <ul style="list-style-type: none"> The default value is 10 in Device Mapper mode. In OverlayFS mode, the available space of a single

Parameter	Mandatory	Type	Description
			container is not limited by default.
publicKey	No	String	<p>Details: Public key of a node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/ preInstall	No	String	<p>Details: Pre-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>"*Content to be encoded*" base64</code></p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
alpha.cce/postInstall	No	String	<p>Details: Post-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>"*Content to be encoded*" base64</code></p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/NodeImageID	No	String	<p>Details: This parameter is required when a custom image is used to create a BMS node.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
nicMultiqueue	No	String	<p>Details:</p> <ul style="list-style-type: none"> Number of ENI queues. Example: <code>"[{\"queue\":4}]"</code> <p>The following fields are included:</p> <ul style="list-style-type: none"> queue: number of ENI queues Supported configurations: {"1":128, "2":92, "4":92, "8":32, "16":16,"28":9}, indicating that a maximum of 128 ENIs can be associated if there is one queue and a maximum of 92 ENIs if there are two queues. A larger number of ENI queues indicates higher performance but fewer ENIs can be associated. The queue settings cannot be changed after creation. <p>Constraints: This field can be configured only for BMS nodes in CCE Turbo clusters.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
nicThreshold	No	String	<p>Details:</p> <ul style="list-style-type: none"> ENI pre-binding thresholds. Example: "0.3:0.6" Low threshold (L): determines the minimum number of pre-bound ENIs (Min). Formula: $Min = Total\ number\ of\ ENIs\ of\ the\ node \times L$ High threshold (H): determines the maximum number of pre-bound ENIs (Max). Formula: $Max = Total\ number\ of\ ENIs\ of\ the\ node \times H$ Number of ENIs bound to a BMS node (B) and number of ENIs being used by pods (U): $U + Min < B < U + Max$ If the number of pre-bound ENIs on a BMS node is smaller than the minimum allowed, the system will bind more ENIs to make the numbers equal. If the number of pre-bound ENIs on a BMS node is larger than the maximum allowed, the system periodically unbinds ENIs (about every 2 minutes) to make the numbers equal. <p>Constraints:</p> <ul style="list-style-type: none"> This field can be configured only for BMS nodes in CCE Turbo clusters. Pre-binding ENIs can speed up workload creation but occupies IP addresses. <p>Options:</p> <p>Both the thresholds are one-decimal-place values ranging from 0.0 to 1.0. The low threshold must be smaller than or equal to the high one.</p> <p>Default value:</p>

Parameter	Mandatory	Type	Description
			N/A
chargingMode	No	Integer	<p>Details: Billing mode of a node. This parameter has been discarded. Use billingMode in NodeSpec instead.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
marketType	No	String	<p>Details: When creating a spot ECS, this parameter should be set to spot.</p> <p>Constraints: This parameter is valid only when billingMode is set to 0.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
spotPrice	No	String	<p>Details: The highest price per hour a user accepts for a spot ECS</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This parameter takes effect only when billingMode is set to 0 and marketType is set to spot. • When billingMode is set to 0 and marketType is set to spot, if spotPrice is not specified, the pay-per-use price is used by default. • The spotPrice value must be less than or equal to the pay-per-use price and greater than or equal to the ECS market price. <p>Options: N/A</p> <p>Default value: N/A</p>
agency_name	No	String	<p>Details: Agency name. An agency is created by a tenant administrator on Identity and Access Management (IAM) to provide temporary credentials for CCE nodes to access cloud servers. This parameter is returned only when it is transferred during node creation.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
kubeReservedMem	No	Integer	<p>Details: Reserved node memory, which is reserved for Kubernetes components.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
systemReservedMem	No	Integer	<p>Details: Reserved node memory, which is reserved for system components.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
init-node-password	No	String	<p>Details: Node password. If this parameter is used as a response parameter, asterisks (*) will be displayed.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
securityReinforcementType	No	String	<p>Details: Security hardening type of a node. Huawei Cloud EulerOS 2.0 images based on DJCP 2.0 level 3 security hardening are supported. DJCP checks identity authentication, access control, security audit, intrusion prevention, and malicious code prevention and hardens security.</p> <p>If this parameter is not specified, the original value is used. For example, If security hardening has been set up for a Huawei Cloud EulerOS 2.0 image and you do not specify this parameter when updating a node pool, the security hardening configuration will remain unchanged. To remove the security hardening configuration, set this parameter to null.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Empty: Security hardening is not enabled. • cybersecurity: Security hardening is enabled. <p>Default value: N/A</p>

Table 4-557 HostnameConfig

Parameter	Mandatory	Type	Description
type	Yes	String	<p>Details: Configuration type of the Kubernetes node name. The default value is privatelp.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The node names, Kubernetes node names, and VM names of the nodes configured with cceNodeName are the same. Node names cannot be changed. Once a VM name is altered on the ECS console, the node name cannot be modified accordingly during ECS synchronization. • To prevent conflicts between Kubernetes node names, a suffix is automatically added to the node name of a node configured with cceNodeName. The suffix consists of a hyphen (-) followed by five random lowercase letters and digits (0 to 9). <p>Options:</p> <ul style="list-style-type: none"> • privatelp: Use the private node IP address as the Kubernetes node name. • cceNodeName: Use the CCE node name as the Kubernetes node name. <p>Default value: privatelp</p>

Table 4-558 NodePoolNodeAutoscaling

Parameter	Mandatory	Type	Description
enable	No	Boolean	<p>Details: Whether to enable auto scaling</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • false: Auto scaling is disabled. • true: Auto scaling is enabled. <p>Default value: false</p>
minNodeCount	No	Integer	<p>Details: Minimum number of nodes that can be scaled in if auto scaling is enabled</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to 0 and cannot be greater than the maximum number of nodes allowed by the cluster specifications</p> <p>Default value: 0</p>
maxNodeCount	No	Integer	<p>Details: Maximum number of nodes that can be added if auto scaling is enabled</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to the value of minNodeCount and cannot be greater than the maximum number of nodes allowed by the cluster specifications</p> <p>Default value: 0</p>

Parameter	Mandatory	Type	Description
scaleDownCo oldownTime	No	Integer	<p>Details: How long nodes will be kept, in minutes. During this period, nodes added will not be deleted.</p> <p>Constraints: None</p> <p>Options: 0 to 2147483646</p> <p>Default value: 0</p>
priority	No	Integer	<p>Details: Weight of a node pool. A node pool with a higher weight has a higher priority during scale-out.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: 0</p>

Table 4-559 NodeManagement

Parameter	Mandatory	Type	Description
serverGroupReference	No	String	<p>Details:</p> <p>A cloud server group ID. If this parameter is specified, the cloud server group will be associated with the target node pool, and all nodes in the node pool will be created in this cloud server group. After a cloud server group is associated with a node pool, the number of nodes in the node pool cannot exceed the number of cloud servers that can be added to the cloud server group, or the node pool cannot be scaled out.</p> <p>NOTE</p> <ul style="list-style-type: none"> After a cloud server group is associated with a node pool, the cloud servers added to the cloud server group will be distributed in strict accordance with the affinity policy and the maximum number of nodes in the node pool will be limited. The anti-affinity capabilities are available during cloud server creation on ECS. If your goal is to enhance service reliability by distributing cloud servers across different hosts and you do not want the number of nodes to be restricted by cloud server groups, you are not advised to associate cloud server groups with any node pools. A cloud server group can be disassociated from the node pool. After the change, the existing nodes will remain in the original cloud server group, and no new nodes will be added to the cloud server group. If the node pool is empty, you can associate a new cloud server group with the node pool or change the associated cloud server group. <p>Constraints:</p> <p>If a cloud server group is specified, the number of nodes</p>

Parameter	Mandatory	Type	Description
			<p>in the node pool cannot exceed the group quota.</p> <p>Options:</p> <ul style="list-style-type: none"> If this parameter is not specified or left blank, the cloud server group will be disassociated from the node pool. A cloud server group ID: The cloud server group associated with the node pool will be changed to a specified one. <p>Default value: N/A</p>

Table 4-560 SecurityID

Parameter	Mandatory	Type	Description
id	No	String	<p>Details: Security group ID</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-561 ExtensionScaleGroup

Parameter	Mandatory	Type	Description
metadata	No	ExtensionScaleGroupMetadata object	<p>Details: Basic information about an extended scaling group</p> <p>Constraints: None</p>

Parameter	Mandatory	Type	Description
spec	No	ExtensionScaleGroupSpec object	<p>Details: Configurations of an extended scaling group, which carry different configurations from those of the default scaling group</p> <p>Constraints: None</p>

Table 4-562 ExtensionScaleGroupMetadata

Parameter	Mandatory	Type	Description
uid	No	String	<p>Details: UUID of an extended scaling group, which is automatically generated by the system</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
name	No	String	<p>Details: Name of an extended scaling group</p> <p>Constraints: The value cannot be default.</p> <p>Options: The value can contain a maximum of 55 characters. Only digits, lowercase letters, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>

Table 4-563 ExtensionScaleGroupSpec

Parameter	Mandatory	Type	Description
flavor	No	String	<p>Details: Node flavors. For details about the node flavors supported by CCE clusters, see Node Specifications.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
az	No	String	<p>Details: Node AZ</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: If this parameter is not specified or left blank, the default scaling group configurations take effect.</p>
capacityReservationSpecification	No	CapacityReservationSpecification object	<p>Details: Capacity reservation configurations of an extended scaling group</p> <p>Constraints: None</p>
autoscaling	No	ScaleGroupAutoscaling object	<p>Details: Auto scaling configurations of an extended scaling group</p> <p>Constraints: None</p>

Table 4-564 CapacityReservationSpecification

Parameter	Mandatory	Type	Description
id	No	String	<p>Details: Private pool ID</p> <p>Constraints: This value can be ignored when preference is set to none.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
preference	No	String	<p>Details: Private pool capacity</p> <p>Constraints: If the value is none, the capacity reservation is not specified. If the value is targeted, the capacity reservation is specified. In this case, the ID cannot be left blank.</p> <p>Options: N/A</p> <p>Default value: none</p>

Table 4-565 ScaleGroupAutoscaling

Parameter	Mandatory	Type	Description
enable	No	Boolean	<p>Details: Whether to enable auto scaling for a scaling group</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • false: Auto scaling is disabled. • true: Auto scaling is enabled. <p>Default value: false</p>
extensionPriority	No	Integer	<p>Details: Scaling group priority. A larger value indicates a higher priority.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: 0</p>
minNodeCount	No	Integer	<p>Details: Minimum number of nodes that can be kept in a scaling group during auto scaling</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to 0 and cannot be greater than the maximum number of nodes allowed by the cluster specifications</p> <p>Default value: 0</p>

Parameter	Mandatory	Type	Description
maxNodeCount	No	Integer	<p>Details: Maximum number of nodes that can be kept in a scaling group during auto scaling</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to the value of minNodeCount, less than or equal to the maximum number of nodes allowed by the cluster specifications, and less than or equal to the maximum number of nodes in the node pool</p> <p>Default value: 0</p>

Table 4-566 NodePoolStatus

Parameter	Mandatory	Type	Description
currentNode	No	Integer	<p>Details: Total number of nodes in the current node pool (excluding the nodes that are being deleted)</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
creatingNode	No	Integer	<p>Details: Number of nodes that are being created in the current node pool</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
deletingNode	No	Integer	<p>Details: Number of nodes that are being deleted in the current node pool</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
configuration SyncedNodeCount	No	Integer	<p>Details: The number of nodes specified in the node pool configuration has been synchronized in the current node pool.</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
phase	No	String	<p>Details: Node pool status</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Null: The node pool is available. (The number of nodes in the current node pool has reached the expected value, and no node scaling is being performed.) • Synchronizing: The node pool is being scaled. (The number of nodes in the current node pool has not reached the expected value, and no node scaling is being performed.) • Synchronized: The node pool scaling is pending. (The number of nodes in the current node pool has not reached the expected value, or node scaling is being performed.) • SoldOut: The node pool cannot be scaled out. (This field is used in multiple scenarios, for example, resources in the node pool have been sold out or the resource quota is insufficient.)

Parameter	Mandatory	Type	Description
			<p>NOTE</p> <p>The preceding node pool status has been discarded. It is reserved only for compatibility. Do not use it anymore. Use the following instead:</p> <ul style="list-style-type: none"> • Node pool scaling status: You can obtain the status of the current node pool using parameters such as currentNode, creatingNode, or deletingNode. • Node pool scale-out: You can use conditions to obtain the detailed status of a node pool. Scalable can replace SoldOut. • Deleting: The node pool is being deleted. • Error: An error occurred. <p>Default value: N/A</p>
jobId	No	String	<p>Details:</p> <p>ID of a job executed on the node pool. This field is available only when the node pool is being deleted.</p> <p>Constraints:</p> <p>None</p> <p>Options:</p> <p>N/A</p> <p>Default value:</p> <p>N/A</p>
conditions	No	Array of NodePoolCondition objects	<p>Details:</p> <p>Node pool status details. For details, see the definition of Condition.</p> <p>Constraints:</p> <p>None</p>

Parameter	Mandatory	Type	Description
scaleGroupStatuses	No	Array of ScaleGroupStatus objects	<p>Details: Detailed status of a scaling group. For details, see the definition of ScaleGroupStatus.</p> <p>Constraints: None</p>

Table 4-567 ScaleGroupStatus

Parameter	Mandatory	Type	Description
name	No	String	<p>Details: Scaling group name</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
uid	No	String	<p>Details: Scaling group UUID</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
creationTimestamp	No	String	<p>Details: The time when a scaling group was created</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
updateTimestamp	No	String	Details: The time when a scaling group was updated Constraints: None Options: N/A Default value: N/A

Parameter	Mandatory	Type	Description
phase	No	String	<p>Details: Scaling group status</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Null: The scaling group is available. (The number of nodes in the current scaling group has reached the expected value, and no node scaling is being performed.) • Synchronizing: The scaling group is being scaled. (The number of nodes in the current scaling group has not reached the expected value, and no node scaling is being performed.) • Synchronized: The scaling is pending. (The number of nodes in the current scaling group has not reached the expected value, or node scaling is being performed.) • SoldOut: The scaling group cannot be scaled out. (This field is used in multiple scenarios, for example, resources in the node pool have been sold out or the resource quota is insufficient.)

Parameter	Mandatory	Type	Description
			<p>NOTE The preceding scaling group status has been discarded. It is reserved only for compatibility. Do not use it anymore. Use the following instead:</p> <ul style="list-style-type: none"> Scaling status of a scaling group: You can obtain the status of the current scaling group using parameters such as desiredNodeCount, existingNodeCount, or upcomingNodeCount. Scaling group scale-out: You can use conditions to obtain the detailed status of a scaling group. Scalable can replace SoldOut. Deleting: The scaling group is being deleted. Error: An error occurred. <p>Default value: N/A</p>
desiredNodeCount	No	Integer	<p>Details: Expected number of nodes in a scaling group</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
unpaidScaleNodeCount	No	Integer	<p>Details: Number of nodes in an unpaid order</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
existingNodeCount	No	existingNodeCount object	Details: Statistics on existing nodes in a scaling group Constraints: None
upcomingNodeCount	No	upcomingNodeCount object	Details: Statistics on the nodes to be added in a scaling group Constraints: None
scaleDownDisabledNodeCount	No	Integer	Details: Number of nodes that cannot be deleted in a scaling group Constraints: None Options: N/A Default value: N/A
conditions	No	Array of NodePoolCondition objects	Details: Scaling group status details. For details, see the definition of Condition . Constraints: None

Table 4-568 existingNodeCount

Parameter	Mandatory	Type	Description
postPaid	No	Integer	Details: Number of pay-per-use nodes Constraints: None Options: N/A Default value: N/A

Parameter	Mandatory	Type	Description
prePaid	No	Integer	Details: Number of yearly/monthly nodes Constraints: None Options: N/A Default value: N/A
total	No	Integer	Details: Total number of pay-per-use and yearly/monthly nodes Constraints: None Options: N/A Default value: N/A

Table 4-569 upcomingNodeCount

Parameter	Mandatory	Type	Description
postPaid	No	Integer	Details: Number of pay-per-use nodes Constraints: None Options: N/A Default value: N/A

Parameter	Mandatory	Type	Description
prePaid	No	Integer	<p>Details: Number of yearly/monthly nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
total	No	Integer	<p>Details: Total number of pay-per-use and yearly/monthly nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-570 NodePoolCondition

Parameter	Mandatory	Type	Description
type	No	String	<p>Details: Condition type</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Scalable: whether a node pool can be scaled out. If the status is False, node pool scale-out will not be triggered again. • QuotaInsufficient: Quotas on which node pool scale-out depends are insufficient, affecting the node pool scale-out status. • ResourceInsufficient: Resources on which node pool scale-out depends are insufficient, affecting the node pool scale-out status. • UnexpectedError: The node pool fails to be scaled out due to unexpected reasons, affecting the node pool scale-out status. • LockedByOrder: The yearly/monthly-billed node pool is locked due to an order. The value of Reason is the ID of the pending order. • Error: A node pool error occurred. A common trigger is deletion failure. <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
status	No	String	<p>Details: Current status of the condition</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • True • False <p>Default value: N/A</p>
lastProbeTime	No	String	<p>Details: Time when the status was last checked</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
lastTransitTime	No	String	<p>Details: Time when the status was last changed</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
reason	No	String	<p>Details: Reason why the status was last changed</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
message	No	String	Details: Detailed description of the condition Constraints: None Options: N/A Default value: N/A

Response Parameters

Status code: 201

Table 4-571 Response body parameters

Parameter	Type	Description
kind	String	Details: API type Constraints: The value cannot be changed. Options: N/A Default value: NodePool
apiVersion	String	Details: API version Constraints: The value cannot be changed. Options: N/A Default value: v3
metadata	NodePoolMetadata object	Details: Metadata of a node pool Constraints: None

Parameter	Type	Description
spec	NodePoolSpec object	<p>Details: Node pool specifications</p> <p>Constraints: This field is optional for updating a node pool.</p>
status	CreateNodePoolsStatus object	<p>Details: Node pool status</p> <p>Constraints: None</p>

Table 4-572 NodePoolMetadata

Parameter	Type	Description
name	String	<p>Details: Node pool name</p> <p>Constraints: You cannot create node pools named DefaultPool.</p> <p>Options: Enter 1 to 50 characters starting with a lowercase letter and not ending with a hyphen (-). Only lowercase letters, digits, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>
uid	String	<p>Details: UID of a node pool</p> <p>Constraints: The value is automatically generated after the object is created. A user-defined value will not take effect.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
annotations	Map<String,String >	<p>Details: Annotations of a node pool in key-value pairs</p> <p>Constraints: This parameter is used only for query and cannot be input through a request. Entered data of this parameter is invalid.</p>
updateTimestamp	String	<p>Details: Time when a node pool was updated</p> <p>Constraints: The value is automatically recorded when a node pool is updated and cannot be specified.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
creationTimestamp	String	<p>Details: Time when a node pool was created</p> <p>Constraints: The value is automatically recorded when a node pool is created and cannot be specified.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-573 NodePoolSpec

Parameter	Type	Description
type	String	<p>Details: Node pool type</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • vm: ECS • ElasticBMS: C6 general computing-plus BMS. An example flavor is c6.22xlarge.2.physical. • pm: BMS <p>Default value: vm</p>
nodeTemplate	NodeSpec object	<p>Details: Detailed parameters of a node pool template</p> <p>Constraints: None</p>
initialNodeCount	Integer	<p>Details: The initial number of nodes in a node pool. The obtained value is the desired number of nodes in the node pool.</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to 0 and less than or equal to the cluster scale</p> <p>Default value: 0</p>
autoscaling	NodePoolNodeAutoscaling object	<p>Details: Auto scaling parameters</p> <p>Constraints: None</p>
nodeManagement	NodeManagement object	<p>Details: Node management configuration</p> <p>Constraints: None</p>

Parameter	Type	Description
podSecurityGroups	Array of SecurityID objects	<p>Details: Security group configuration</p> <p>Constraints: None</p>
extensionScaleGroups	Array of ExtensionScaleGroup objects	<p>Details: Configuration list of the extended scaling groups in a node pool. For details, see the definition of ExtensionScaleGroup.</p> <p>Constraints: None</p>
customSecurityGroups	Array of strings	<p>Details: Custom security group configuration for a node pool. New nodes added to a node pool can be bound to a specified security group.</p> <ul style="list-style-type: none"> • Specifying no security group ID will add the new nodes to the default node security group. • Specifying a valid security group ID will put new nodes in that security group. • When specifying a security group, do not modify the port rules on which CCE depends. For details, see How Can I Configure a Security Group Rule in a Cluster? <p>Constraints: None</p>

Table 4-574 NodeSpec

Parameter	Type	Description
flavor	String	<p>Details: Node flavors. For details about the node flavors supported by CCE clusters, see Node Specifications.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
az	String	<p>Details: AZ where the node to be created is located. You need to specify the AZ name. Random AZs will not be allocated to a node created using APIs. For details about AZs supported by CCE, see Regions and Endpoints.</p> <p>Constraints: When you are creating a node pool and configuring a scaling group, this parameter cannot be set to random.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
os	String	<p>Details: Node OS. For details about the supported OSs, see Node OSs.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If the selected OS is not supported by the current cluster version, it will be automatically replaced with a supported OS of the same series. • If alpha.cce/NodeImageID in extendParam is specified during node creation, you do not need to configure this parameter. • If this parameter is not specified, CCE automatically selects a supported OS version based on the cluster version. • This parameter is mandatory when creating a node pool. • If you are using shared disk space when creating a node, this parameter is mandatory. Specifically, the disk initialization configuration management parameter storage is used and the name field of virtualSpaces in StorageGroups is set to share. <p>Options: N/A</p> <p>Default value: N/A</p>
login	Login object	<p>Details: Node login mode. Either the key pair or password must be used for login.</p> <p>Constraints: This parameter cannot be modified when a node pool is being updated.</p>
rootVolume	Volume object	<p>Details: Disk information of a node</p> <p>Constraints: None</p>

Parameter	Type	Description
dataVolumes	Array of Volume objects	<p>Details: Data disk parameters of a node. For DeC nodes, the parameter details are the same as those in rootVolume.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • A VM can have up to 16 disks attached, while a BMS can only have up to 10 disks attached. The maximum number of disks that can be attached to either a VM or BMS is limited by their respective maximum disk limits. (You can add more data disks to each of your nodes through the CCE console or APIs.) • The data disk used by the container runtime and kubelet cannot be detached, or the node will become unavailable. • This parameter can be left blank only when a system disk is selected for the system components.

Parameter	Type	Description
storage	Storage object	<p>Details: Disk initialization management parameter. This parameter is complex to configure. For details, see Attaching Disks to a Node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This field is supported by clusters of v1.15.11-r0 and later versions. If the cluster version is not supported, this field will be ignored. • If a node has both local and EVS disks attached, make sure to not keep the default value for this parameter, or it may result in unexpected disk partitions. • If you want to change the value range of a data disk to 20 to 32768, do not use the default value. • If you want to use the shared disk space (with the runtime and Kubernetes partitions cancelled), do not retain the default value of this parameter. For details about the shared disk space, see Space Allocation of a Data Disk. • If you want to store system components in the system disk, do not use the default value.
publicIP	NodePublicIP object	<p>Details: EIP of a node</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>
nodeNicSpec	NodeNicSpec object	<p>Details: ENI of a node</p> <p>Constraints: None</p>

Parameter	Type	Description
count	Integer	<p>Details: Number of nodes to be created in batches</p> <p>Constraints: This parameter can be left blank when it is used for a node pool.</p> <p>Options: Positive integers that are greater than or equal to 1 and less than or equal to the maximum limit</p> <p>Default value: N/A</p>
billingMode	Integer	<p>Details: Billing mode of a node</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • 0: pay-per-use • 1: yearly/monthly • 2: (Discarded) yearly/monthly billing with auto payment enabled <p>Default value: N/A</p>

Parameter	Type	Description
taints	Array of Taint objects	<p>Details:</p> <p>Taints, which can be added to nodes for anti-affinity configuration. Each taint contains the following parameters:</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain can be prefixed to a key. • Value: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. • Effect: Available options are NoSchedule, PreferNoSchedule, and NoExecute. <p>When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example:</p> <pre> taints: [{ "key": "status", "value": "unavailable", "effect": "NoSchedule" }, { "key": "looks", "value": "bad", "effect": "NoSchedule" }] </pre> <p>Constraints:</p> <p>A maximum of 20 taints can be configured.</p>

Parameter	Type	Description
k8sTags	Map<String,String>	<p>Details: Defined in key-value pairs.</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain containing a maximum of 253 characters (such as example.com/my-key) can be prefixed to a key. • Value: The value can be left blank or contain 1 to 63 characters that start and end with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. <p>When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example: <pre>"k8sTags": { "key": "value" }</pre> </p> <p>Constraints: A maximum of 20 key-value pairs are allowed.</p>

Parameter	Type	Description
ecsGroupId	String	<p>Details: ECS group ID. If this parameter is specified, nodes will be created in the specific ECS group.</p> <p>Constraints: This configuration does not take effect when a node pool is created. To ensure that all nodes in a node pool are in the same ECS group, configure nodeManagement in the node pool.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
dedicatedHostId	String	<p>Details: ID of the DeH to which nodes will be scheduled.</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>
userTags	Array of UserTag objects	<p>Details: Cloud server tag (resource tag). When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Constraints:</p> <ul style="list-style-type: none"> The key of a tag must be unique. The maximum number of custom tags supported by CCE varies depending on regions and cannot exceed 8. A tag key can have a maximum of 36 characters. It can only contain letters, digits, Unicode characters, and special characters (-_).

Parameter	Type	Description
runtime	Runtime object	Details: Container runtime <ul style="list-style-type: none">• Clusters earlier than v1.25: The default value is docker.• Clusters of v1.25 or later: The default value varies with the OSs.• For nodes running EulerOS 2.5 or EulerOS 2.8, the default container runtime is docker. For nodes running other OSs, the default container runtime is containerd. Constraints: None

Parameter	Type	Description
initializedConditions	Array of strings	<p>Details:</p> <p>Custom initialization flag, which is left blank by default.</p> <p>Before CCE nodes are initialized, they are tainted with node.cloudprovider.kubernetes.io/uninitialized to prevent pods from being scheduled to them. When creating a node, you can specify the initializedConditions parameter to control the taint removal time. By default, the timeout interval is not configured.</p> <p>Example:</p> <ol style="list-style-type: none"> 1. Create a node and add parameter "initializedConditions": ["CCEInitial", "CustomedInitial"]. 2. After custom initialization is complete, CCE will call a Kubernetes API (for example, PATCH /v1/nodes/{node_ip}/status) to update the node conditions by adding two labels of types CCEInitial and CustomedInitial and setting the status to True, as shown in the following: <pre>status: conditions: - type: CCEInitial status: 'True' - type: CustomedInitial status: 'True'</pre> <ol style="list-style-type: none"> 1. CCE polls status.Conditions of nodes to check whether there are conditions of types CCEInitial and CustomedInitial. If such conditions exist and the status is True, the node initialization is complete and the initialization taint is removed. 2. initializedConditions allows you to configure a timeout period during node creation. For example, "initializedConditions": ["CCEInitial:15m", "CustomedInitial:15m"] indicates that the timeout period is 15 minutes. After the timeout period is reached, the initialization conditions

Parameter	Type	Description
		<p>will be automatically ignored and the initialization taint will be removed when CCE polls the node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The timeout interval in initializedConditions ranges from 1 to 99 seconds. • Each value has 1 to 20 characters, which must consist of letters and digits. • The maximum number of flags cannot exceed 2. • The unit of the timeout period is minute (m).
extendParam	NodeExtendParam object	<p>Details: Extended parameters for creating a node</p> <p>Constraints: None</p>
hostnameConfig	HostnameConfig object	<p>Details: Kubernetes node name configuration parameter</p> <p>Constraints: The supported cluster version is v1.23.6-r0 to v1.25 or v1.25.2-r0 or later.</p>

Parameter	Type	Description
serverEnterprise-ProjectID	String	<p>Details: Enterprise project ID of a server. CCE does not support features provided by EPS. This field is used only for synchronizing enterprise project IDs of servers.</p> <p>Constraints: To create a node or node pool, you can specify an existing enterprise project for it. If this field is left blank, it inherits the enterprise project attributes of the cluster that runs the node or node pool.</p> <p>When updating a node pool, any configuration modifications you made will apply only to new nodes. You need to modify the enterprise projects of existing nodes on the EPS console.</p> <p>Options: N/A</p> <p>Default value: If no value is specified during update, this field will not be updated. If this parameter is left blank, the cluster enterprise project is returned.</p>

Table 4-575 Login

Parameter	Type	Description
sshKey	String	<p>Details: Name of the key pair used for login</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
userPassword	UserPassword object	<p>Details: Password used for node login</p> <p>Constraints: None</p>

Table 4-576 UserPassword

Parameter	Type	Description
username	String	<p>Details: Login account. The default value is root.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: root</p>
password	String	<p>Details: Login password. If a username and password are used when a node is created, this field is shielded in the response body.</p> <p>Constraints: The password field must be salted during node creation. For details, see Adding a Salt in the password Field When Creating a Node.</p> <p>Options: A password must:</p> <ul style="list-style-type: none"> • Contain 8 to 26 characters. • Contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters !@\$%^-_=+[{ }];:./? • Not contain the username or the username spelled backwards. <p>Default value: N/A</p>

Table 4-577 Volume

Parameter	Type	Description
size	Integer	<p>Details: Disk size, in GiB</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • System disks: 40 to 1024 • The first data disk: 20 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) • Other data disks: 10 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) <p>Default value: N/A</p>
volumetype	String	<p>Details: Disk type. For details about possible values, see the root volume parameter in the API used to create an ECS.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • SAS: high I/O SAS disks • SSD: ultra-high I/O SSD disks • SATA: common I/O SATA disks. SATA disks have been removed from EVS. You can find them attached only to existing nodes. <p>NOTE For details about disk types, see Disk Types and Performance.</p> <p>Default value: N/A</p>

Parameter	Type	Description
extendParam	Map<String, Object>	<p>Details: Extended disk parameters, defined in extendparam in the API used to create an ECS. For details, see extendparam Field Description for Creating Disks.</p> <p>Constraints: None</p>
cluster_id	String	<p>Details: ID of the storage pool used by the ECS system disk. This field is used only for DeC clusters and functions as dssPoolID, that is, the ID of the DSS storage pool. To obtain the value, see the ID field in the API used to obtain details of a DSS storage pool.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
cluster_type	String	<p>Details: Storage class of the ECS system disk</p> <p>Constraints: None</p> <p>Options: This field is used only for DeC clusters, and the value is always dss.</p> <p>Default value: N/A</p>

Parameter	Type	Description
hw:passthrough	Boolean	<p>Details:</p> <ul style="list-style-type: none"> • Pay attention to this field if your ECS is SDI-compliant. If the value of this field is true, the created disk is of SCSI type. • If the node pool type is ElasticBMS, this field must be set to true. • If the node specification involves both local and EVS disks, configure the disk initialization parameters. For details, see Attaching Disks to a Node. <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
metadata	VolumeMetadata object	<p>Details: EVS disk encryption information. This parameter is mandatory only when the system disk or data disk of the node to be created needs to be encrypted.</p> <p>Constraints: None</p>

Table 4-578 VolumeMetadata

Parameter	Type	Description
<code>__system__encrypted</code>	String	<p>Details: Whether an EVS disk is encrypted. The value 0 indicates that the EVS disk is not encrypted, and the value 1 indicates that the EVS disk is encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: If this parameter does not appear, the disk is not encrypted.</p>
<code>__system__cmkid</code>	String	<p>Details: CMK ID, which indicates encryption in metadata. This field is used with __system__encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-579 Storage

Parameter	Type	Description
<code>storageSelectors</code>	Array of StorageSelectors objects	<p>Details: Disk selection. Matched disks are managed based on matchLabels and storageType settings. Disks are matched in sequence. The matching rule in the front is matched first.</p> <p>Constraints: None</p>

Parameter	Type	Description
storageGroups	Array of StorageGroups objects	<p>Details: A storage group consisting of multiple storage devices, which are used to divide storage space.</p> <p>Constraints: None</p>

Table 4-580 StorageSelectors

Parameter	Type	Description
name	String	<p>Details: Name of a selector, which is used as the index of selectorNames in storageGroup.</p> <p>Constraints: The name of each selector must be unique.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
storageType	String	<p>Details: Storage type</p> <p>Constraints:</p> <ul style="list-style-type: none"> The local storage type does not support disk selection. All local disks form a VG. Therefore, only one local storage selector is allowed. The system storage type does not support disk selection. It is recommended that you use the system disk to store system components. As a result, only one storage selector of the system type is allowed, and the name must be cceUse. <p>Options: Only evs (EVS disks), local (local disks), and system (system disks) are supported.</p> <p>Default value: N/A</p>
matchLabels	matchLabels object	<p>Details: Matching field of an EVS disk</p> <p>Constraints: If storageType is set to system (system disk), you do not need to configure this parameter.</p> <p>Options: The size, volumeType, metadataEncrypted, metadataCmkid, and count fields in DataVolume are supported.</p> <p>Default value: N/A</p>

Table 4-581 matchLabels

Parameter	Type	Description
size	String	<p>Details: Matched disk size, for example, 100. If this parameter is left blank, the disk size is not limited.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
volumeType	String	<p>Details: EVS disk type</p> <p>Constraints: None</p> <p>Options: SSD, GPSSD, SAS, ESSD, and SATA are supported. If this parameter is left blank, there is no restriction on the disk type.</p> <p>Default value: N/A</p>
metadataEncrypted	String	<p>Details: Disk encryption identifier. If this parameter is set to 0, it specifies that the disk is not encrypted. If this parameter is set to 1, it specifies that the disk is encrypted. If this parameter is left blank, there is no restriction on the disk encryption identifier.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
metadataCmkid	String	<p>Details: CMK ID of an encrypted disk. The value is a string of 36 bytes. If this parameter is left blank, there is no restriction on the disk key ID.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
count	String	<p>Details: Number of disks to be selected. If this parameter is left blank, all disks of this type are selected.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-582 StorageGroups

Parameter	Type	Description
name	String	<p>Details: Name of a virtual storage group, which must be unique</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If cceManaged is set to true, the name field must be set to vgpaas. • If the data disk is used as a temporary storage volume, the name field must be set to vg-everest-localvolume-ephemeral. • If the data disk is used as a persistent storage volume, the name field must be set to vg-everest-localvolume-persistent. <p>Default value: N/A</p>
cceManaged	Boolean	<p>Details: Storage space to which Kubernetes and runtime belong. Only one group is set to true. If this parameter is left blank, the default value false is used.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
selectorNames	Array of strings	<p>Details: Corresponds to name in storageSelectors. One group can select multiple selectors, but one selector can be selected by only one group.</p> <p>Constraints: System components cannot be separately stored in the system disk and data disks. Therefore, when the selector type is set to system, only one selector can be selected for a group.</p>

Parameter	Type	Description
virtualSpaces	Array of VirtualSpace objects	<p>Details: Detailed management of space configurations in a group</p> <p>Constraints: None</p>

Table 4-583 VirtualSpace

Parameter	Type	Description
name	String	<p>Details: Name of a virtualSpace. Only types of share, kubernetes, runtime, and user are supported.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • kubernetes: Kubernetes space configuration. lvmConfig needs to be configured. • runtime: runtime space configuration. runtimeConfig needs to be configured. • user: user space configuration. lvmConfig needs to be configured. <p>Default value: N/A</p>
size	String	<p>Details: Size of a virtualSpace. The value must be an integer in percentage, for example, 90%.</p> <p>Constraints: None</p> <p>Options: 10 to 90. The sum of percentages of all virtualSpaces in a group cannot exceed 100%.</p> <p>Default value: N/A</p>

Parameter	Type	Description
lvmConfig	LVMConfig object	<p>Details: LVM configuration management, which is applicable to share, Kubernetes, and user space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>
runtimeConfig	RuntimeConfig object	<p>Details: Runtime configuration management, which is applicable to runtime space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>

Table 4-584 LVMConfig

Parameter	Type	Description
lvType	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
path	String	<p>Details: Disk mount path. This parameter only takes effect in user configuration. The value can be an absolute path containing digits, uppercase letters, lowercase letters, periods (.), hyphens (-), and underscores (_).</p> <p>Constraints: Do not leave the path empty or set it to a key OS path such as the root directory. Key OS paths that cannot be entered: /, /home, /home/, /bin, /bin/, /lib, /lib/, /root, /root/, /boot, /boot/, /dev, /dev/, /etc, /etc/, /lost+found, /lost+found/, /mnt, /mnt/, /proc, /proc/, /sbin, /sbin/, /srv, /srv/, /tmp, /tmp/, /var, /var/, /media, /media/, /opt, /opt/, /selinux, /selinux/, /sys, /sys/, /usr, /usr/, /opt/cloud/, /mnt/paas/, /home/paas/, /var/paas/, /var/lib/, /var/script/</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-585 RuntimeConfig

Parameter	Type	Description
lvType	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-586 NodePublicIP

Parameter	Type	Description
ids	Array of strings	<p>Details: IDs of existing EIPs</p> <p>Constraints:</p> <ul style="list-style-type: none"> The quantity cannot be greater than the number of nodes to be created. If ids has been specified, you do not need to configure count and eip.
count	Integer	<p>Details: Number of EIPs to be dynamically created</p> <p>Constraints: count and eip must be configured simultaneously.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
eip	NodeEIPSpec object	<p>Details: EIP configuration</p> <p>Constraints: This parameter is not supported when creating a node pool.</p>

Table 4-587 NodeEIPSpec

Parameter	Type	Description
iptype	String	<p>Details: EIP type, specified in publicip.type in the API for assigning an EIP. For details, see Assigning an EIP.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
bandwidth	NodeBandwidth object	<p>Details: Bandwidth parameters of the EIP</p> <p>Constraints: None</p>

Table 4-588 NodeBandwidth

Parameter	Type	Description
chargemode	String	<p>Details: Bandwidth billing mode</p> <p>NOTE</p> <ul style="list-style-type: none"> • Billed by bandwidth: The billing will be based on the data transmission rate (in Mbps) of public networks. This billing mode is recommended if your bandwidth usage is higher than 10%. • Billed by traffic: The billing is based on the total amount of data (in GB) transmitted over the public network. This mode is available only when you are creating a pay-per-use node. This billing mode is recommended if your bandwidth usage is lower than 10%. <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If this field is not specified, the billing is based on bandwidth. • If the field value is empty, the billing is based on bandwidth. • If the field value is traffic, the billing is based on traffic. • If the value is out of the preceding options, the cloud server will fail to be created. <p>Default value: N/A</p>

Parameter	Type	Description
size	Integer	<p>Details: Bandwidth size, specified in bandwidth.size in the API for assigning an EIP. For details, see Assigning an EIP.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
sharetype	String	<p>Details: Bandwidth sharing type. Dedicated bandwidth is supported only. PER specifies dedicated bandwidth.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-589 NodeNicSpec

Parameter	Type	Description
primaryNic	NicSpec object	<p>Details: Description of the primary ENI</p> <p>Constraints: None</p>
extNics	Array of NicSpec objects	<p>Details: Extension ENI</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>

Table 4-590 NicSpec

Parameter	Type	Description
subnetId	String	<p>Details: Network ID of the subnet to which an ENI belongs. If subnetList is also configured for a node pool, the subnetList field is used for adding subnets to the node pool.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If subnetId is not specified when a primary ENI is creating, the cluster subnet will be used. • When creating an extension ENI, you must specify subnetId. <p>Options: N/A</p> <p>Default value: N/A</p>
fixedIps	Array of strings	<p>Details: The IP address of the primary ENI is specified using fixedIps. The number of IP addresses cannot be greater than the number of created nodes.</p> <p>Constraints: Either fixedIps or ipBlock can be specified. fiexdlps cannot be specified for extension ENIs.</p>
ipBlock	String	<p>Details: CIDR format of the primary ENI IP address range. The IP address of the created node falls in this range.</p> <p>Constraints: Either fixedIps or ipBlock can be specified.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
subnetList	Array of strings	<p>Details: Network ID list of the subnet where the ENI resides. Multiple subnets can be configured for a node pool.</p> <p>Constraints: A maximum of 20 subnets can be configured.</p>

Table 4-591 Taint

Parameter	Type	Description
key	String	<p>Details: Key</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
value	String	<p>Details: Value</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
effect	String	<p>Details: Effect</p> <p>Constraints: None</p> <p>Options: Available options are NoSchedule, PreferNoSchedule, and NoExecute.</p> <p>Default value: N/A</p>

Table 4-592 UserTag

Parameter	Type	Description
key	String	<p>Details: Key of the cloud server tag</p> <p>Constraints: The value cannot start with CCE-, _type_baremetal, or sys.</p> <p>Options: The value contains a maximum of 128 characters. The tag key must be unique and cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, /</p> <p>Default value: N/A</p>
value	String	<p>Details: Value of the cloud server tag</p> <p>Constraints: None</p> <p>Options: The value contains a maximum of 255 characters. The tag value cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, </p> <p>Default value: N/A</p>

Table 4-593 Runtime

Parameter	Type	Description
name	String	<p>Details: Container runtime</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • Clusters earlier than v1.25: The default value is docker. • Clusters of v1.25 or later: The default value varies with the OSs. • For nodes running EulerOS 2.5 or EulerOS 2.8, the default value is docker. For nodes running other OSs, the default value is containerd.

Table 4-594 NodeExtendParam

Parameter	Type	Description
ecs:performancety pe	String	<p>Details: ECS flavor types. This field is returned in the response.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
orderID	String	<p>Details: Order ID</p> <p>Constraints: This parameter is returned in the response when the node is billed on a yearly/monthly basis with auto payment enabled (only in creation scenarios).</p> <p>Options: N/A</p> <p>Default value: N/A</p>
productID	String	<p>Details: Product ID</p> <p>Constraints: This field is returned in the response when the node is billed on a yearly/ monthly basis with auto payment enabled.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
maxPods	Integer	<p>Details: Maximum number of pods that can be created on a node, including the default system pods. This limit prevents the node from being overloaded with pods. The number of pods that can be created on a node is determined by multiple parameters. For details, see Maximum Number of Pods That Can Be Created on a Node.</p> <p>Constraints: None</p> <p>Options: 16 to 256</p> <p>Default value: N/A</p>

Parameter	Type	Description
periodType	String	<p>Details: Subscription period type</p> <p>Constraints:</p> <ul style="list-style-type: none"> As a request parameter, it is valid and mandatory only when billingMode is set to 1 (yearly/monthly billing) or 2 (yearly/monthly billing with auto payment enabled) (This option has been discarded). As a response parameter, it is returned only when a yearly/monthly node is created. <p>Options:</p> <ul style="list-style-type: none"> month year <p>Default value: N/A</p>
periodNum	Integer	<p>Details: Number of subscription periods</p> <p>Constraints:</p> <ul style="list-style-type: none"> As a request parameter, it is valid and mandatory only when billingMode is set to 1 (yearly/monthly billing) or 2 (yearly/monthly billing with auto payment enabled) (This option has been discarded). As a response parameter, it is returned only when a yearly/monthly node is created. <p>Options:</p> <ul style="list-style-type: none"> If periodType is month, the value ranges from 1 to 9. If periodType is year, the value ranges from 1 to 3. <p>Default value: N/A</p>

Parameter	Type	Description
isAutoRenew	String	<p>Details: Whether auto-renewal is enabled</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified, auto-renewal is not enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto-renewal is enabled. • false: Auto-renewal is not enabled. <p>Default value: N/A</p>
isAutoPay	String	<p>Details: Whether an order is automatically or manually paid</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified when billingMode is set to 1, auto payment is not enabled. (Discarded) If not specified when billingMode is set to 2, auto payment is enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto payment is enabled. • false: Auto payment is not enabled. <p>Default value: N/A</p>

Parameter	Type	Description
<p>DockerLVMConfigOverride</p>	<p>String</p>	<p>Details:</p> <p>Docker data disk configuration item. (This parameter has been discarded. Use the storage field instead.)</p> <p>Example of the default configuration: <code>"DockerLVMConfigOverride":"dockerThinpool=vgpaas/90%VG;kubernetesLV=vgpaas/10%VG;diskType=evs;lvType=linear"</code></p> <p>By default, if no VD disk is available, an error occurs because the data disk fails to be found. Specify diskType based on the actual drive letter type.</p> <p>Constraints:</p> <p>None</p> <p>Options:</p> <p>The following fields are included:</p> <ul style="list-style-type: none"> • userLV: (Optional) size of the user space, for example, vgpaas/20%VG • userPath (Optional): mount path of the user space, for example, /home/wqt-test • diskType: disk type. Only evs, hdd, and ssd are supported. • lvType: type of a logic volume. The value can be linear or striped. • dockerThinpool: Docker space size, for example, vgpaas/60%VG • kubernetesLV: kubelet space size, for example, vgpaas/20%VG <p>Default value:</p> <p>N/A</p>

Parameter	Type	Description
dockerBaseSize	Integer	<p>Details: Available disk space of a single container on a node (unit: G). This parameter has been discarded. Use containerBaseSize.</p> <p>For details about how to allocate the space for the container runtime, see Space Allocation of a Data Disk.</p> <p>Constraints: When Device Mapper is used, it is recommended that dockerBaseSize be set to a value less than or equal to 80 GiB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device.</p> <ul style="list-style-type: none"> The dockerBaseSize setting takes effect only on nodes running EulerOS or Huawei Cloud EulerOS 2.0 in clusters of the new version. <p>Options: 10 to 500</p> <p>Default value: If the value is not specified or is set to 0, the default value is used.</p> <ul style="list-style-type: none"> The default value is 10 in Device Mapper mode. In OverlayFS mode, the available space of a single container is not limited by default.

Parameter	Type	Description
containerBaseSize	Integer	<p>Details: Available disk space of a single container on a node (unit: G). For details about how to allocate the space for the container runtime, see Space Allocation of a Data Disk.</p> <p>Constraints: When Device Mapper is used, it is recommended that containerBaseSize be set to a value less than or equal to 80 GiB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device. In new versions, the Device Mapper mode is used only by BMSs in the same resource pool and is being discarded.</p> <ul style="list-style-type: none"> • The containerBaseSize setting takes effect only on nodes running EulerOS or Huawei Cloud EulerOS 2.0 in clusters of the new version (v1.23.14-r0, v1.25.9-r0, v1.27.6-r0, v1.28.4-r0 or later). • This parameter cannot be updated when a node pool is being updated. <p>Options: 10 to 500</p> <p>Default value: If the value is not specified or is set to 0, the default value is used.</p> <ul style="list-style-type: none"> • The default value is 10 in Device Mapper mode. • In OverlayFS mode, the available space of a single container is not limited by default.

Parameter	Type	Description
publicKey	String	<p>Details: Public key of a node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/ preInstall	String	<p>Details: Pre-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>Content to be encoded</code> base64</p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/ postInstall	String	<p>Details: Post-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>Content to be encoded</code> base64</p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
alpha.cce/ NodeImageID	String	<p>Details: This parameter is required when a custom image is used to create a BMS node.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
nicMultiqueue	String	<p>Details:</p> <ul style="list-style-type: none"> Number of ENI queues. Example: <code>"[{"queue":4}]"</code> <p>The following fields are included:</p> <ul style="list-style-type: none"> queue: number of ENI queues Supported configurations: {"1":128, "2":92, "4":92, "8":32, "16":16, "28":9}, indicating that a maximum of 128 ENIs can be associated if there is one queue and a maximum of 92 ENIs if there are two queues. A larger number of ENI queues indicates higher performance but fewer ENIs can be associated. The queue settings cannot be changed after creation. <p>Constraints: This field can be configured only for BMS nodes in CCE Turbo clusters.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
nicThreshold	String	<p>Details:</p> <ul style="list-style-type: none"> • ENI pre-binding thresholds. Example: "0.3:0.6" • Low threshold (L): determines the minimum number of pre-bound ENIs (Min). Formula: Min = Total number of ENIs of the node × L • High threshold (H): determines the maximum number of pre-bound ENIs (Max). Formula: Max = Total number of ENIs of the node × H • Number of ENIs bound to a BMS node (B) and number of ENIs being used by pods (U): $U + \text{Min} < B < U + \text{Max}$ • If the number of pre-bound ENIs on a BMS node is smaller than the minimum allowed, the system will bind more ENIs to make the numbers equal. • If the number of pre-bound ENIs on a BMS node is larger than the maximum allowed, the system periodically unbinds ENIs (about every 2 minutes) to make the numbers equal. <p>Constraints:</p> <ul style="list-style-type: none"> • This field can be configured only for BMS nodes in CCE Turbo clusters. • Pre-binding ENIs can speed up workload creation but occupies IP addresses. <p>Options: Both the thresholds are one-decimal-place values ranging from 0.0 to 1.0. The low threshold must be smaller than or equal to the high one.</p> <p>Default value: N/A</p>

Parameter	Type	Description
chargingMode	Integer	<p>Details: Billing mode of a node. This parameter has been discarded. Use billingMode in NodeSpec instead.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
marketType	String	<p>Details: When creating a spot ECS, this parameter should be set to spot.</p> <p>Constraints: This parameter is valid only when billingMode is set to 0.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
spotPrice	String	<p>Details: The highest price per hour a user accepts for a spot ECS</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This parameter takes effect only when billingMode is set to 0 and marketType is set to spot. • When billingMode is set to 0 and marketType is set to spot, if spotPrice is not specified, the pay-per-use price is used by default. • The spotPrice value must be less than or equal to the pay-per-use price and greater than or equal to the ECS market price. <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
agency_name	String	<p>Details: Agency name. An agency is created by a tenant administrator on Identity and Access Management (IAM) to provide temporary credentials for CCE nodes to access cloud servers. This parameter is returned only when it is transferred during node creation.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
kubeReservedMem	Integer	<p>Details: Reserved node memory, which is reserved for Kubernetes components.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
systemReservedMem	Integer	<p>Details: Reserved node memory, which is reserved for system components.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
init-node-password	String	<p>Details: Node password. If this parameter is used as a response parameter, asterisks (*) will be displayed.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
securityReinforcementType	String	<p>Details: Security hardening type of a node. Huawei Cloud EulerOS 2.0 images based on DJCP 2.0 level 3 security hardening are supported. DJCP checks identity authentication, access control, security audit, intrusion prevention, and malicious code prevention and hardens security.</p> <p>If this parameter is not specified, the original value is used. For example, If security hardening has been set up for a Huawei Cloud EulerOS 2.0 image and you do not specify this parameter when updating a node pool, the security hardening configuration will remain unchanged. To remove the security hardening configuration, set this parameter to null.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Empty: Security hardening is not enabled. • cybersecurity: Security hardening is enabled. <p>Default value: N/A</p>

Table 4-595 HostnameConfig

Parameter	Type	Description
type	String	<p>Details: Configuration type of the Kubernetes node name. The default value is privatelp.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The node names, Kubernetes node names, and VM names of the nodes configured with cceNodeName are the same. Node names cannot be changed. Once a VM name is altered on the ECS console, the node name cannot be modified accordingly during ECS synchronization. • To prevent conflicts between Kubernetes node names, a suffix is automatically added to the node name of a node configured with cceNodeName. The suffix consists of a hyphen (-) followed by five random lowercase letters and digits (0 to 9). <p>Options:</p> <ul style="list-style-type: none"> • privatelp: Use the private node IP address as the Kubernetes node name. • cceNodeName: Use the CCE node name as the Kubernetes node name. <p>Default value: privatelp</p>

Table 4-596 NodePoolNodeAutoscaling

Parameter	Type	Description
enable	Boolean	<p>Details: Whether to enable auto scaling</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • false: Auto scaling is disabled. • true: Auto scaling is enabled. <p>Default value: false</p>
minNodeCount	Integer	<p>Details: Minimum number of nodes that can be scaled in if auto scaling is enabled</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to 0 and cannot be greater than the maximum number of nodes allowed by the cluster specifications</p> <p>Default value: 0</p>
maxNodeCount	Integer	<p>Details: Maximum number of nodes that can be added if auto scaling is enabled</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to the value of minNodeCount and cannot be greater than the maximum number of nodes allowed by the cluster specifications</p> <p>Default value: 0</p>

Parameter	Type	Description
scaleDownCooldownTime	Integer	<p>Details: How long nodes will be kept, in minutes. During this period, nodes added will not be deleted.</p> <p>Constraints: None</p> <p>Options: 0 to 2147483646</p> <p>Default value: 0</p>
priority	Integer	<p>Details: Weight of a node pool. A node pool with a higher weight has a higher priority during scale-out.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: 0</p>

Table 4-597 NodeManagement

Parameter	Type	Description
serverGroupReference	String	<p>Details:</p> <p>A cloud server group ID. If this parameter is specified, the cloud server group will be associated with the target node pool, and all nodes in the node pool will be created in this cloud server group. After a cloud server group is associated with a node pool, the number of nodes in the node pool cannot exceed the number of cloud servers that can be added to the cloud server group, or the node pool cannot be scaled out.</p> <p>NOTE</p> <ul style="list-style-type: none"> • After a cloud server group is associated with a node pool, the cloud servers added to the cloud server group will be distributed in strict accordance with the affinity policy and the maximum number of nodes in the node pool will be limited. The anti-affinity capabilities are available during cloud server creation on ECS. If your goal is to enhance service reliability by distributing cloud servers across different hosts and you do not want the number of nodes to be restricted by cloud server groups, you are not advised to associate cloud server groups with any node pools. • A cloud server group can be disassociated from the node pool. After the change, the existing nodes will remain in the original cloud server group, and no new nodes will be added to the cloud server group. If the node pool is empty, you can associate a new cloud server group with the node pool or change the associated cloud server group. <p>Constraints:</p> <p>If a cloud server group is specified, the number of nodes in the node pool cannot exceed the group quota.</p> <p>Options:</p> <ul style="list-style-type: none"> • If this parameter is not specified or left blank, the cloud server group will be disassociated from the node pool.

Parameter	Type	Description
		<ul style="list-style-type: none"> A cloud server group ID: The cloud server group associated with the node pool will be changed to a specified one. <p>Default value: N/A</p>

Table 4-598 SecurityID

Parameter	Type	Description
id	String	<p>Details: Security group ID</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-599 ExtensionScaleGroup

Parameter	Type	Description
metadata	ExtensionScaleGroupMetadata object	<p>Details: Basic information about an extended scaling group</p> <p>Constraints: None</p>
spec	ExtensionScaleGroupSpec object	<p>Details: Configurations of an extended scaling group, which carry different configurations from those of the default scaling group</p> <p>Constraints: None</p>

Table 4-600 ExtensionScaleGroupMetadata

Parameter	Type	Description
uid	String	<p>Details: UUID of an extended scaling group, which is automatically generated by the system</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
name	String	<p>Details: Name of an extended scaling group</p> <p>Constraints: The value cannot be default.</p> <p>Options: The value can contain a maximum of 55 characters. Only digits, lowercase letters, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>

Table 4-601 ExtensionScaleGroupSpec

Parameter	Type	Description
flavor	String	<p>Details: Node flavors. For details about the node flavors supported by CCE clusters, see Node Specifications.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
az	String	<p>Details: Node AZ</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: If this parameter is not specified or left blank, the default scaling group configurations take effect.</p>
capacityReservationSpecification	CapacityReservationSpecification object	<p>Details: Capacity reservation configurations of an extended scaling group</p> <p>Constraints: None</p>
autoscaling	ScaleGroupAutoscaling object	<p>Details: Auto scaling configurations of an extended scaling group</p> <p>Constraints: None</p>

Table 4-602 CapacityReservationSpecification

Parameter	Type	Description
id	String	<p>Details: Private pool ID</p> <p>Constraints: This value can be ignored when preference is set to none.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
preference	String	<p>Details: Private pool capacity</p> <p>Constraints: If the value is none, the capacity reservation is not specified. If the value is targeted, the capacity reservation is specified. In this case, the ID cannot be left blank.</p> <p>Options: N/A</p> <p>Default value: none</p>

Table 4-603 ScaleGroupAutoscaling

Parameter	Type	Description
enable	Boolean	<p>Details: Whether to enable auto scaling for a scaling group</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • false: Auto scaling is disabled. • true: Auto scaling is enabled. <p>Default value: false</p>
extensionPriority	Integer	<p>Details: Scaling group priority. A larger value indicates a higher priority.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: 0</p>

Parameter	Type	Description
minNodeCount	Integer	<p>Details: Minimum number of nodes that can be kept in a scaling group during auto scaling</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to 0 and cannot be greater than the maximum number of nodes allowed by the cluster specifications</p> <p>Default value: 0</p>
maxNodeCount	Integer	<p>Details: Maximum number of nodes that can be kept in a scaling group during auto scaling</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to the value of minNodeCount, less than or equal to the maximum number of nodes allowed by the cluster specifications, and less than or equal to the maximum number of nodes in the node pool</p> <p>Default value: 0</p>

Table 4-604 CreateNodePoolStatus

Parameter	Type	Description
currentNode	Integer	<p>Details: Total number of nodes in the current node pool (excluding the nodes that are being deleted)</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
creatingNode	Integer	<p>Details: Number of nodes that are being created in the current node pool</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
deletingNode	Integer	<p>Details: Number of nodes that are being deleted in the current node pool</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
configurationSyn- cedNodeCount	Integer	<p>Details: The number of nodes specified in the node pool configuration has been synchronized in the current node pool.</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
phase	String	<p>Details: Node pool status</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Null: The node pool is available. (The number of nodes in the current node pool has reached the expected value, and no node scaling is being performed.) • Synchronizing: The node pool is being scaled. (The number of nodes in the current node pool has not reached the expected value, and no node scaling is being performed.) • Synchronized: The node pool scaling is pending. (The number of nodes in the current node pool has not reached the expected value, or node scaling is being performed.) • SoldOut: The node pool cannot be scaled out. (This field is used in multiple scenarios, for example, resources in the node pool have been sold out or the resource quota is insufficient.) <p>NOTE The preceding node pool status has been discarded. It is reserved only for compatibility. Do not use it anymore. Use the following instead:</p> <ul style="list-style-type: none"> • Node pool scaling status: You can obtain the status of the current node pool using parameters such as currentNode, creatingNode, or deletingNode. • Node pool scale-out: You can use conditions to obtain the detailed status of a node pool. Scalable can replace SoldOut. • Deleting: The node pool is being deleted. • Error: An error occurred. <p>Default value: N/A</p>

Parameter	Type	Description
conditions	Array of NodePoolCondition objects	Details: Node pool status details. For details, see the definition of Condition . Constraints: None
scaleGroupStatuses	Array of ScaleGroupStatus objects	Details: Detailed status of a scaling group. For details, see the definition of ScaleGroupStatus . Constraints: None

Table 4-605 ScaleGroupStatus

Parameter	Type	Description
name	String	Details: Scaling group name Constraints: None Options: N/A Default value: N/A
uid	String	Details: Scaling group UUID Constraints: None Options: N/A Default value: N/A

Parameter	Type	Description
creationTimestamp	String	<p>Details: The time when a scaling group was created</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
updateTimestamp	String	<p>Details: The time when a scaling group was updated</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
phase	String	<p>Details: Scaling group status</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Null: The scaling group is available. (The number of nodes in the current scaling group has reached the expected value, and no node scaling is being performed.) • Synchronizing: The scaling group is being scaled. (The number of nodes in the current scaling group has not reached the expected value, and no node scaling is being performed.) • Synchronized: The scaling is pending. (The number of nodes in the current scaling group has not reached the expected value, or node scaling is being performed.) • SoldOut: The scaling group cannot be scaled out. (This field is used in multiple scenarios, for example, resources in the node pool have been sold out or the resource quota is insufficient.) <p>NOTE The preceding scaling group status has been discarded. It is reserved only for compatibility. Do not use it anymore. Use the following instead:</p> <ul style="list-style-type: none"> • Scaling status of a scaling group: You can obtain the status of the current scaling group using parameters such as desiredNodeCount, existingNodeCount, or upcomingNodeCount. • Scaling group scale-out: You can use conditions to obtain the detailed status of a scaling group. Scalable can replace SoldOut. • Deleting: The scaling group is being deleted. • Error: An error occurred. <p>Default value: N/A</p>

Parameter	Type	Description
desiredNodeCount	Integer	<p>Details: Expected number of nodes in a scaling group</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
unpaidScaleNodeCount	Integer	<p>Details: Number of nodes in an unpaid order</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
existingNodeCount	existingNodeCount object	<p>Details: Statistics on existing nodes in a scaling group</p> <p>Constraints: None</p>
upcomingNodeCount	upcomingNodeCount object	<p>Details: Statistics on the nodes to be added in a scaling group</p> <p>Constraints: None</p>
scaleDownDisabledNodeCount	Integer	<p>Details: Number of nodes that cannot be deleted in a scaling group</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
conditions	Array of NodePoolCondition objects	<p>Details: Scaling group status details. For details, see the definition of Condition.</p> <p>Constraints: None</p>

Table 4-606 existingNodeCount

Parameter	Type	Description
postPaid	Integer	<p>Details: Number of pay-per-use nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
prePaid	Integer	<p>Details: Number of yearly/monthly nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
total	Integer	<p>Details: Total number of pay-per-use and yearly/monthly nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-607 upcomingNodeCount

Parameter	Type	Description
postPaid	Integer	<p>Details: Number of pay-per-use nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
prePaid	Integer	<p>Details: Number of yearly/monthly nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
total	Integer	<p>Details: Total number of pay-per-use and yearly/monthly nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-608 NodePoolCondition

Parameter	Type	Description
type	String	<p>Details: Condition type</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Scalable: whether a node pool can be scaled out. If the status is False, node pool scale-out will not be triggered again. • QuotaInsufficient: Quotas on which node pool scale-out depends are insufficient, affecting the node pool scale-out status. • ResourceInsufficient: Resources on which node pool scale-out depends are insufficient, affecting the node pool scale-out status. • UnexpectedError: The node pool fails to be scaled out due to unexpected reasons, affecting the node pool scale-out status. • LockedByOrder: The yearly/monthly-billed node pool is locked due to an order. The value of Reason is the ID of the pending order. • Error: A node pool error occurred. A common trigger is deletion failure. <p>Default value: N/A</p>
status	String	<p>Details: Current status of the condition</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • True • False <p>Default value: N/A</p>

Parameter	Type	Description
lastProbeTime	String	<p>Details: Time when the status was last checked</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
lastTransitTime	String	<p>Details: Time when the status was last changed</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
reason	String	<p>Details: Reason why the status was last changed</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
message	String	<p>Details: Detailed description of the condition</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Example Requests

Create a node pool billed on a pay-per-use basis with the following configurations:
The number of nodes is 0. The node pool flavor is 2 vCPUs and 4 GiB of memory.

The node OS is EulerOS 2.5. Docker containers are deployed. The sizes of the system disk and data disk of the node are 40 GB and 100 GB, respectively. Both the disks are of the high I/O type.

```
{
  "kind": "NodePool",
  "apiVersion": "v3",
  "metadata": {
    "name": "lc-it-nodepool-79796"
  },
  "spec": {
    "initialNodeCount": 0,
    "type": "vm",
    "autoscaling": {
      "enable": false,
      "minNodeCount": 0,
      "maxNodeCount": 1,
      "scaleDownCooldownTime": 0,
      "priority": 0
    },
    "nodeManagement": {
      "serverGroupReference": ""
    },
    "nodeTemplate": {
      "flavor": "s6.large.2",
      "az": "*****",
      "os": "EulerOS 2.5",
      "login": {
        "sshKey": "KeyPair-001"
      },
      "rootVolume": {
        "volumetype": "SAS",
        "size": 40
      },
      "dataVolumes": [ {
        "volumetype": "SAS",
        "size": 100,
        "extendParam": {
          "useType": "docker"
        }
      } ],
      "billingMode": 0,
      "extendParam": {
        "alpha.cce/preInstall": "",
        "alpha.cce/postInstall": "",
        "alpha.cce/NodeImageID": "",
        "maxPods": 110
      },
      "nodeNicSpec": {
        "primaryNic": {
          "subnetId": "7e767d10-7548-4df5-ad72-aeac1d08bd8a"
        }
      }
    },
    "podSecurityGroups": [ {
      "id": ""
    } ]
  }
}
```

Example Responses

Status code: 201

The job for creating a node pool in a specified cluster is successfully delivered.

```
{
  "kind": "NodePool",
```

```
"apiVersion" : "v3",
"metadata" : {
  "name" : "lc-it-nodepool-79796",
  "uid" : "99addaa2-69eb-11ea-a592-0255ac1001bb"
},
"spec" : {
  "type" : "vm",
  "nodeTemplate" : {
    "flavor" : "s6.large.2",
    "az" : "*****",
    "os" : "EulerOS 2.5",
    "login" : {
      "sshKey" : "KeyPair-001"
    },
    "rootVolume" : {
      "volumetype" : "SAS",
      "size" : 40
    },
    "dataVolumes" : [ {
      "volumetype" : "SAS",
      "size" : 100,
      "extendParam" : {
        "useType" : "docker"
      }
    } ],
    "publicIP" : {
      "eip" : {
        "bandwidth" : { }
      }
    },
    "nodeNicSpec" : {
      "primaryNic" : {
        "subnetId" : "7e767d10-7548-4df5-ad72-aeac1d08bd8a"
      }
    },
    "billingMode" : 0,
    "extendParam" : {
      "alpha.cce/NodeImageID" : "",
      "alpha.cce/postInstall" : "",
      "alpha.cce/preInstall" : "",
      "maxPods" : 110
    },
    "k8sTags" : {
      "cce.cloud.com/cce-nodepool" : "lc-it-nodepool-79796"
    }
  },
  "autoscaling" : {
    "maxNodeCount" : 1
  },
  "nodeManagement" : { }
},
"status" : {
  "phase" : ""
}
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

Create a node pool billed on a pay-per-use basis with the following configurations: The number of nodes is 0. The node pool flavor is 2 vCPUs and 4 GiB of memory. The node OS is EulerOS 2.5. Docker containers are deployed. The sizes of the system disk and data disk of the node are 40 GB and 100 GB, respectively. Both the disks are of the high I/O type.

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.List;
import java.util.ArrayList;
import java.util.Map;
import java.util.HashMap;

public class CreateNodePoolSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();

        CreateNodePoolRequest request = new CreateNodePoolRequest();
        request.withClusterId("{cluster_id}");
        NodePool body = new NodePool();
        List<SecurityID> listSpecPodSecurityGroups = new ArrayList<>();
        listSpecPodSecurityGroups.add(
            new SecurityID()
                .withId("")
        );
        NodeManagement nodeManagementSpec = new NodeManagement();
        nodeManagementSpec.withServerGroupReference("");
        NodePoolNodeAutoscaling autoscalingSpec = new NodePoolNodeAutoscaling();
        autoscalingSpec.withEnable(false)
            .withMinNodeCount(0)
            .withMaxNodeCount(1)
            .withScaleDownCooldownTime(0)
            .withPriority(0);
        NodeExtendParam extendParamNodeTemplate = new NodeExtendParam();
        extendParamNodeTemplate.withMaxPods(110)
            .withAlphaCcePreInstall("")
            .withAlphaCcePostInstall("")
            .withAlphaCceNodeImageID("");
        NicSpec primaryNicNodeNicSpec = new NicSpec();
        primaryNicNodeNicSpec.withSubnetId("7e767d10-7548-4df5-ad72-aeac1d08bd8a");
        NodeNicSpec nodeNicSpecNodeTemplate = new NodeNicSpec();
        nodeNicSpecNodeTemplate.withPrimaryNic(primaryNicNodeNicSpec);
        Map<String, Object> listDataVolumesExtendParam = new HashMap<>();
        listDataVolumesExtendParam.put("useType", "docker");
        List<Volume> listNodeTemplateDataVolumes = new ArrayList<>();
        listNodeTemplateDataVolumes.add(
            new Volume()
                .withSize(100)
                .withVolumetype("SAS")
        );
    }
}
```



```
        .withExtendParam(listDataVolumesExtendParam)
    );
    Volume rootVolumeNodeTemplate = new Volume();
    rootVolumeNodeTemplate.withSize(40)
        .withVolumetype("SAS");
    Login loginNodeTemplate = new Login();
    loginNodeTemplate.withSshKey("KeyPair-001");
    NodeSpec nodeTemplateSpec = new NodeSpec();
    nodeTemplateSpec.withFlavor("s6.large.2")
        .withAz("*****")
        .withOs("EulerOS 2.5")
        .withLogin(loginNodeTemplate)
        .withRootVolume(rootVolumeNodeTemplate)
        .withDataVolumes(listNodeTemplateDataVolumes)
        .withNodeNicSpec(nodeNicSpecNodeTemplate)
        .withBillingMode(0)
        .withExtendParam(extendParamNodeTemplate);
    NodePoolSpec specbody = new NodePoolSpec();
    specbody.withType(NodePoolSpec.TypeEnum.fromValue("vm"))
        .withNodeTemplate(nodeTemplateSpec)
        .withInitialNodeCount(0)
        .withAutoscaling(autoscalingSpec)
        .withNodeManagement(nodeManagementSpec)
        .withPodSecurityGroups(listSpecPodSecurityGroups);
    NodePoolMetadata metadatabody = new NodePoolMetadata();
    metadatabody.withName("lc-it-nodepool-79796");
    body.withSpec(specbody);
    body.withMetadata(metadatabody);
    body.withApiVersion("v3");
    body.withKind("NodePool");
    request.withBody(body);
    try {
        CreateNodePoolResponse response = client.createNodePool(request);
        System.out.println(response.toString());
    } catch (ConnectionException e) {
        e.printStackTrace();
    } catch (RequestTimeoutException e) {
        e.printStackTrace();
    } catch (ServiceResponseException e) {
        e.printStackTrace();
        System.out.println(e.getHttpStatusCode());
        System.out.println(e.getRequestId());
        System.out.println(e.getErrorCode());
        System.out.println(e.getErrorMsg());
    }
}
```

Python

Create a node pool billed on a pay-per-use basis with the following configurations: The number of nodes is 0. The node pool flavor is 2 vCPUs and 4 GiB of memory. The node OS is EulerOS 2.5. Docker containers are deployed. The sizes of the system disk and data disk of the node are 40 GB and 100 GB, respectively. Both the disks are of the high I/O type.

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    variables and decrypted during use to ensure security.
```

```
# In this example, AK and SK are stored in environment variables for authentication. Before running this
example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
ak = os.environ["CLOUD_SDK_AK"]
sk = os.environ["CLOUD_SDK_SK"]
projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = CceClient.new_builder() \
    .with_credentials(credentials) \
    .with_region(CceRegion.value_of("<YOUR REGION>")) \
    .build()

try:
    request = CreateNodePoolRequest()
    request.cluster_id = "{cluster_id}"
    listPodSecurityGroupsSpec = [
        SecurityID(
            id=""
        )
    ]
    nodeManagementSpec = NodeManagement(
        server_group_reference=""
    )
    autoscalingSpec = NodePoolNodeAutoscaling(
        enable=False,
        min_node_count=0,
        max_node_count=1,
        scale_down_cooldown_time=0,
        priority=0
    )
    extendParamNodeTemplate = NodeExtendParam(
        max_pods=110,
        alpha_cce_pre_install="",
        alpha_cce_post_install="",
        alpha_cce_node_image_id=""
    )
    primaryNicNodeNicSpec = NicSpec(
        subnet_id="7e767d10-7548-4df5-ad72-aeac1d08bd8a"
    )
    nodeNicSpecNodeTemplate = NodeNicSpec(
        primary_nic=primaryNicNodeNicSpec
    )
    listExtendParamDataVolumes = {
        "useType": "docker"
    }
    listDataVolumesNodeTemplate = [
        Volume(
            size=100,
            volumetype="SAS",
            extend_param=listExtendParamDataVolumes
        )
    ]
    rootVolumeNodeTemplate = Volume(
        size=40,
        volumetype="SAS"
    )
    loginNodeTemplate = Login(
        ssh_key="KeyPair-001"
    )
    nodeTemplateSpec = NodeSpec(
        flavor="s6.large.2",
        az="*****",
        os="EulerOS 2.5",
        login=loginNodeTemplate,
        root_volume=rootVolumeNodeTemplate,
        data_volumes=listDataVolumesNodeTemplate,
        node_nic_spec=nodeNicSpecNodeTemplate,
        billing_mode=0,
```

```
        extend_param=extendParamNodeTemplate
    )
    specbody = NodePoolSpec(
        type="vm",
        node_template=nodeTemplateSpec,
        initial_node_count=0,
        autoscaling=autoscalingSpec,
        node_management=nodeManagementSpec,
        pod_security_groups=listPodSecurityGroupsSpec
    )
    metadatabody = NodePoolMetadata(
        name="lc-it-nodepool-79796"
    )
    request.body = NodePool(
        spec=specbody,
        metadata=metadatabody,
        api_version="v3",
        kind="NodePool"
    )
    response = client.create_node_pool(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

Create a node pool billed on a pay-per-use basis with the following configurations: The number of nodes is 0. The node pool flavor is 2 vCPUs and 4 GiB of memory. The node OS is EulerOS 2.5. Docker containers are deployed. The sizes of the system disk and data disk of the node are 40 GB and 100 GB, respectively. Both the disks are of the high I/O type.

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.CreateNodePoolRequest{
```

```

request.ClusterId = "{cluster_id}"
idPodSecurityGroups:= ""
var listPodSecurityGroupsSpec = []model.SecurityId{
    {
        Id: &idPodSecurityGroups,
    },
}
serverGroupReferenceNodeManagement:= ""
nodeManagementSpec := &model.NodeManagement{
    ServerGroupReference: &serverGroupReferenceNodeManagement,
}
enableAutoscaling:= false
minNodeCountAutoscaling:= int32(0)
maxNodeCountAutoscaling:= int32(1)
scaleDownCooldownTimeAutoscaling:= int32(0)
priorityAutoscaling:= int32(0)
autoscalingSpec := &model.NodePoolNodeAutoscaling{
    Enable: &enableAutoscaling,
    MinNodeCount: &minNodeCountAutoscaling,
    MaxNodeCount: &maxNodeCountAutoscaling,
    ScaleDownCooldownTime: &scaleDownCooldownTimeAutoscaling,
    Priority: &priorityAutoscaling,
}
maxPodsExtendParam:= int32(110)
alphaCcePreInstallExtendParam:= ""
alphaCcePostInstallExtendParam:= ""
alphaCceNodeImageIDExtendParam:= ""
extendParamNodeTemplate := &model.NodeExtendParam{
    MaxPods: &maxPodsExtendParam,
    AlphaCcePreInstall: &alphaCcePreInstallExtendParam,
    AlphaCcePostInstall: &alphaCcePostInstallExtendParam,
    AlphaCceNodeImageID: &alphaCceNodeImageIDExtendParam,
}
subnetIdPrimaryNic:= "7e767d10-7548-4df5-ad72-aeac1d08bd8a"
primaryNicNodeNicSpec := &model.NicSpec{
    SubnetId: &subnetIdPrimaryNic,
}
nodeNicSpecNodeTemplate := &model.NodeNicSpec{
    PrimaryNic: primaryNicNodeNicSpec,
}
var listExtendParamDataVolumes = map[string]interface{}{
    "useType": "docker",
}
var listDataVolumesNodeTemplate = []model.Volume{
    {
        Size: int32(100),
        Volumetype: "SAS",
        ExtendParam: listExtendParamDataVolumes,
    },
}
rootVolumeNodeTemplate := &model.Volume{
    Size: int32(40),
    Volumetype: "SAS",
}
sshKeyLogin:= "KeyPair-001"
loginNodeTemplate := &model.Login{
    SshKey: &sshKeyLogin,
}
osNodeTemplate:= "EulerOS 2.5"
billingModeNodeTemplate:= int32(0)
nodeTemplateSpec := &model.NodeSpec{
    Flavor: "s6.large.2",
    Az: "*****",
    Os: &osNodeTemplate,
    Login: loginNodeTemplate,
    RootVolume: rootVolumeNodeTemplate,
    DataVolumes: listDataVolumesNodeTemplate,
    NodeNicSpec: nodeNicSpecNodeTemplate,
    BillingMode: &billingModeNodeTemplate,
}

```

```

ExtendParam: extendParamNodeTemplate,
}
typeSpec:= model.GetNodePoolSpecTypeEnum().VM
initialNodeCountSpec:= int32(0)
specbody := &model.NodePoolSpec{
    Type: &typeSpec,
    NodeTemplate: nodeTemplateSpec,
    InitialNodeCount: &initialNodeCountSpec,
    Autoscaling: autoscalingSpec,
    NodeManagement: nodeManagementSpec,
    PodSecurityGroups: &listPodSecurityGroupsSpec,
}
metadatabody := &model.NodePoolMetadata{
    Name: "lc-it-nodepool-79796",
}
request.Body = &model.NodePool{
    Spec: specbody,
    Metadata: metadatabody,
    ApiVersion: "v3",
    Kind: "NodePool",
}
response, err := client.CreateNodePool(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
201	The job for creating a node pool in a specified cluster is successfully delivered.

Error Codes

See [Error Codes](#).

4.4.2 Reading a Specified Node Pool

Function

This API is used to obtain details about a specified node pool.

NOTE

The URL for cluster management is in the format of `https://Endpoint/uri`. In the URL, **uri** indicates the resource path, that is, the path for API access.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3/projects/{project_id}/clusters/{cluster_id}/nodepools/{nodepool_id}

Table 4-609 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>
nodepool_id	Yes	String	<p>Details: Node pool ID. For details about how to obtain the ID, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-610 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-611 Response body parameters

Parameter	Type	Description
kind	String	<p>Details: API type</p> <p>Constraints: The value cannot be changed.</p> <p>Options: N/A</p> <p>Default value: NodePool</p>
apiVersion	String	<p>Details: API version</p> <p>Constraints: The value cannot be changed.</p> <p>Options: N/A</p> <p>Default value: v3</p>
metadata	NodePoolMetadata object	<p>Details: Metadata of a node pool</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>
spec	NodePoolSpec object	<p>Details: Node pool specifications</p> <p>Constraints: This field is optional for updating a node pool.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
status	NodePoolStatus object	<p>Details: Node pool status</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-612 NodePoolMetadata

Parameter	Type	Description
name	String	<p>Details: Node pool name</p> <p>Constraints: You cannot create node pools named DefaultPool.</p> <p>Options: Enter 1 to 50 characters starting with a lowercase letter and not ending with a hyphen (-). Only lowercase letters, digits, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>
uid	String	<p>Details: UID of a node pool</p> <p>Constraints: The value is automatically generated after the object is created. A user-defined value will not take effect.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
annotations	Map<String,String >	<p>Details: Annotations of a node pool in key-value pairs</p> <p>Constraints: This parameter is used only for query and cannot be input through a request. Entered data of this parameter is invalid.</p>
updateTimestamp	String	<p>Details: Time when a node pool was updated</p> <p>Constraints: The value is automatically recorded when a node pool is updated and cannot be specified.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
creationTimestamp	String	<p>Details: Time when a node pool was created</p> <p>Constraints: The value is automatically recorded when a node pool is created and cannot be specified.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-613 NodePoolSpec

Parameter	Type	Description
type	String	<p>Details: Node pool type</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • vm: ECS • ElasticBMS: C6 general computing-plus BMS. An example flavor is c6.22xlarge.2.physical. • pm: BMS <p>Default value: vm</p>
nodeTemplate	NodeSpec object	<p>Details: Detailed parameters of a node pool template</p> <p>Constraints: None</p>
initialNodeCount	Integer	<p>Details: The initial number of nodes in a node pool. The obtained value is the desired number of nodes in the node pool.</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to 0 and less than or equal to the cluster scale</p> <p>Default value: 0</p>
autoscaling	NodePoolNodeAutoscaling object	<p>Details: Auto scaling parameters</p> <p>Constraints: None</p>
nodeManagement	NodeManagement object	<p>Details: Node management configuration</p> <p>Constraints: None</p>

Parameter	Type	Description
podSecurityGroups	Array of SecurityID objects	<p>Details: Security group configuration</p> <p>Constraints: None</p>
extensionScaleGroups	Array of ExtensionScaleGroup objects	<p>Details: Configuration list of the extended scaling groups in a node pool. For details, see the definition of ExtensionScaleGroup.</p> <p>Constraints: None</p>
customSecurityGroups	Array of strings	<p>Details: Custom security group configuration for a node pool. New nodes added to a node pool can be bound to a specified security group.</p> <ul style="list-style-type: none"> • Specifying no security group ID will add the new nodes to the default node security group. • Specifying a valid security group ID will put new nodes in that security group. • When specifying a security group, do not modify the port rules on which CCE depends. For details, see How Can I Configure a Security Group Rule in a Cluster? <p>Constraints: None</p>

Table 4-614 NodeSpec

Parameter	Type	Description
flavor	String	<p>Details: Node flavors. For details about the node flavors supported by CCE clusters, see Node Specifications.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
az	String	<p>Details: AZ where the node to be created is located. You need to specify the AZ name. Random AZs will not be allocated to a node created using APIs. For details about AZs supported by CCE, see Regions and Endpoints.</p> <p>Constraints: When you are creating a node pool and configuring a scaling group, this parameter cannot be set to random.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
os	String	<p>Details: Node OS. For details about the supported OSs, see Node OSs.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If the selected OS is not supported by the current cluster version, it will be automatically replaced with a supported OS of the same series. • If alpha.cce/NodeImageID in extendParam is specified during node creation, you do not need to configure this parameter. • If this parameter is not specified, CCE automatically selects a supported OS version based on the cluster version. • This parameter is mandatory when creating a node pool. • If you are using shared disk space when creating a node, this parameter is mandatory. Specifically, the disk initialization configuration management parameter storage is used and the name field of virtualSpaces in StorageGroups is set to share. <p>Options: N/A</p> <p>Default value: N/A</p>
login	Login object	<p>Details: Node login mode. Either the key pair or password must be used for login.</p> <p>Constraints: This parameter cannot be modified when a node pool is being updated.</p>
rootVolume	Volume object	<p>Details: Disk information of a node</p> <p>Constraints: None</p>

Parameter	Type	Description
dataVolumes	Array of Volume objects	<p>Details: Data disk parameters of a node. For DeC nodes, the parameter details are the same as those in rootVolume.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • A VM can have up to 16 disks attached, while a BMS can only have up to 10 disks attached. The maximum number of disks that can be attached to either a VM or BMS is limited by their respective maximum disk limits. (You can add more data disks to each of your nodes through the CCE console or APIs.) • The data disk used by the container runtime and kubelet cannot be detached, or the node will become unavailable. • This parameter can be left blank only when a system disk is selected for the system components.

Parameter	Type	Description
storage	Storage object	<p>Details: Disk initialization management parameter. This parameter is complex to configure. For details, see Attaching Disks to a Node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This field is supported by clusters of v1.15.11-r0 and later versions. If the cluster version is not supported, this field will be ignored. • If a node has both local and EVS disks attached, make sure to not keep the default value for this parameter, or it may result in unexpected disk partitions. • If you want to change the value range of a data disk to 20 to 32768, do not use the default value. • If you want to use the shared disk space (with the runtime and Kubernetes partitions cancelled), do not retain the default value of this parameter. For details about the shared disk space, see Space Allocation of a Data Disk. • If you want to store system components in the system disk, do not use the default value.
publicIP	NodePublicIP object	<p>Details: EIP of a node</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>
nodeNicSpec	NodeNicSpec object	<p>Details: ENI of a node</p> <p>Constraints: None</p>

Parameter	Type	Description
count	Integer	<p>Details: Number of nodes to be created in batches</p> <p>Constraints: This parameter can be left blank when it is used for a node pool.</p> <p>Options: Positive integers that are greater than or equal to 1 and less than or equal to the maximum limit</p> <p>Default value: N/A</p>
billingMode	Integer	<p>Details: Billing mode of a node</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • 0: pay-per-use • 1: yearly/monthly • 2: (Discarded) yearly/monthly billing with auto payment enabled <p>Default value: N/A</p>

Parameter	Type	Description
taints	Array of Taint objects	<p>Details:</p> <p>Taints, which can be added to nodes for anti-affinity configuration. Each taint contains the following parameters:</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain can be prefixed to a key. • Value: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. • Effect: Available options are NoSchedule, PreferNoSchedule, and NoExecute. <p>When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example:</p> <pre>"taints": [{ "key": "status", "value": "unavailable", "effect": "NoSchedule" }, { "key": "looks", "value": "bad", "effect": "NoSchedule" }]</pre> <p>Constraints:</p> <p>A maximum of 20 taints can be configured.</p>

Parameter	Type	Description
k8sTags	Map<String,String>	<p>Details: Defined in key-value pairs.</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain containing a maximum of 253 characters (such as example.com/my-key) can be prefixed to a key. • Value: The value can be left blank or contain 1 to 63 characters that start and end with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. <p>When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example: <pre>"k8sTags": { "key": "value" }</pre> </p> <p>Constraints: A maximum of 20 key-value pairs are allowed.</p>

Parameter	Type	Description
ecsGroupId	String	<p>Details: ECS group ID. If this parameter is specified, nodes will be created in the specific ECS group.</p> <p>Constraints: This configuration does not take effect when a node pool is created. To ensure that all nodes in a node pool are in the same ECS group, configure nodeManagement in the node pool.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
dedicatedHostId	String	<p>Details: ID of the DeH to which nodes will be scheduled.</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>
userTags	Array of UserTag objects	<p>Details: Cloud server tag (resource tag). When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The key of a tag must be unique. The maximum number of custom tags supported by CCE varies depending on regions and cannot exceed 8. • A tag key can have a maximum of 36 characters. It can only contain letters, digits, Unicode characters, and special characters (-_).

Parameter	Type	Description
runtime	Runtime object	<p>Details: Container runtime</p> <ul style="list-style-type: none"> • Clusters earlier than v1.25: The default value is docker. • Clusters of v1.25 or later: The default value varies with the OSs. • For nodes running EulerOS 2.5 or EulerOS 2.8, the default container runtime is docker. For nodes running other OSs, the default container runtime is containerd. <p>Constraints: None</p>

Parameter	Type	Description
initializedConditions	Array of strings	<p>Details:</p> <p>Custom initialization flag, which is left blank by default.</p> <p>Before CCE nodes are initialized, they are tainted with node.cloudprovider.kubernetes.io/uninitialized to prevent pods from being scheduled to them. When creating a node, you can specify the initializedConditions parameter to control the taint removal time. By default, the timeout interval is not configured.</p> <p>Example:</p> <ol style="list-style-type: none"> 1. Create a node and add parameter "initializedConditions": ["CCEInitial", "CustomedInitial"]. 2. After custom initialization is complete, CCE will call a Kubernetes API (for example, PATCH /v1/nodes/{node_ip}/status) to update the node conditions by adding two labels of types CCEInitial and CustomedInitial and setting the status to True, as shown in the following: <pre>status: conditions: - type: CCEInitial status: 'True' - type: CustomedInitial status: 'True'</pre> <ol style="list-style-type: none"> 1. CCE polls status.Conditions of nodes to check whether there are conditions of types CCEInitial and CustomedInitial. If such conditions exist and the status is True, the node initialization is complete and the initialization taint is removed. 2. initializedConditions allows you to configure a timeout period during node creation. For example, "initializedConditions": ["CCEInitial:15m", "CustomedInitial:15m"] indicates that the timeout period is 15 minutes. After the timeout period is reached, the initialization conditions

Parameter	Type	Description
		<p>will be automatically ignored and the initialization taint will be removed when CCE polls the node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The timeout interval in initializedConditions ranges from 1 to 99 seconds. • Each value has 1 to 20 characters, which must consist of letters and digits. • The maximum number of flags cannot exceed 2. • The unit of the timeout period is minute (m).
extendParam	NodeExtendParam object	<p>Details: Extended parameters for creating a node</p> <p>Constraints: None</p>
hostnameConfig	HostnameConfig object	<p>Details: Kubernetes node name configuration parameter</p> <p>Constraints: The supported cluster version is v1.23.6-r0 to v1.25 or v1.25.2-r0 or later.</p>

Parameter	Type	Description
serverEnterprise-ProjectID	String	<p>Details: Enterprise project ID of a server. CCE does not support features provided by EPS. This field is used only for synchronizing enterprise project IDs of servers.</p> <p>Constraints: To create a node or node pool, you can specify an existing enterprise project for it. If this field is left blank, it inherits the enterprise project attributes of the cluster that runs the node or node pool.</p> <p>When updating a node pool, any configuration modifications you made will apply only to new nodes. You need to modify the enterprise projects of existing nodes on the EPS console.</p> <p>Options: N/A</p> <p>Default value: If no value is specified during update, this field will not be updated. If this parameter is left blank, the cluster enterprise project is returned.</p>

Table 4-615 Login

Parameter	Type	Description
sshKey	String	<p>Details: Name of the key pair used for login</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
userPassword	UserPassword object	<p>Details: Password used for node login</p> <p>Constraints: None</p>

Table 4-616 UserPassword

Parameter	Type	Description
username	String	<p>Details: Login account. The default value is root.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: root</p>
password	String	<p>Details: Login password. If a username and password are used when a node is created, this field is shielded in the response body.</p> <p>Constraints: The password field must be salted during node creation. For details, see Adding a Salt in the password Field When Creating a Node.</p> <p>Options: A password must:</p> <ul style="list-style-type: none"> Contain 8 to 26 characters. Contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters !@\$%^_+=+[{ }],./? Not contain the username or the username spelled backwards. <p>Default value: N/A</p>

Table 4-617 Volume

Parameter	Type	Description
size	Integer	<p>Details: Disk size, in GiB</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • System disks: 40 to 1024 • The first data disk: 20 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) • Other data disks: 10 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) <p>Default value: N/A</p>
volumetype	String	<p>Details: Disk type. For details about possible values, see the root volume parameter in the API used to create an ECS.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • SAS: high I/O SAS disks • SSD: ultra-high I/O SSD disks • SATA: common I/O SATA disks. SATA disks have been removed from EVS. You can find them attached only to existing nodes. <p>NOTE For details about disk types, see Disk Types and Performance.</p> <p>Default value: N/A</p>

Parameter	Type	Description
extendParam	Map<String, Object>	<p>Details: Extended disk parameters, defined in extendparam in the API used to create an ECS. For details, see extendparam Field Description for Creating Disks.</p> <p>Constraints: None</p>
cluster_id	String	<p>Details: ID of the storage pool used by the ECS system disk. This field is used only for DeC clusters and functions as dssPoolID, that is, the ID of the DSS storage pool. To obtain the value, see the ID field in the API used to obtain details of a DSS storage pool.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
cluster_type	String	<p>Details: Storage class of the ECS system disk</p> <p>Constraints: None</p> <p>Options: This field is used only for DeC clusters, and the value is always dss.</p> <p>Default value: N/A</p>

Parameter	Type	Description
hw:passthrough	Boolean	<p>Details:</p> <ul style="list-style-type: none"> Pay attention to this field if your ECS is SDI-compliant. If the value of this field is true, the created disk is of SCSI type. If the node pool type is ElasticBMS, this field must be set to true. If the node specification involves both local and EVS disks, configure the disk initialization parameters. For details, see Attaching Disks to a Node. <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
metadata	VolumeMetadata object	<p>Details: EVS disk encryption information. This parameter is mandatory only when the system disk or data disk of the node to be created needs to be encrypted.</p> <p>Constraints: None</p>

Table 4-618 VolumeMetadata

Parameter	Type	Description
<code>__system__encrypted</code>	String	<p>Details: Whether an EVS disk is encrypted. The value 0 indicates that the EVS disk is not encrypted, and the value 1 indicates that the EVS disk is encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: If this parameter does not appear, the disk is not encrypted.</p>
<code>__system__cmkid</code>	String	<p>Details: CMK ID, which indicates encryption in metadata. This field is used with __system__encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-619 Storage

Parameter	Type	Description
<code>storageSelectors</code>	Array of StorageSelectors objects	<p>Details: Disk selection. Matched disks are managed based on matchLabels and storageType settings. Disks are matched in sequence. The matching rule in the front is matched first.</p> <p>Constraints: None</p>

Parameter	Type	Description
storageGroups	Array of StorageGroups objects	<p>Details: A storage group consisting of multiple storage devices, which are used to divide storage space.</p> <p>Constraints: None</p>

Table 4-620 StorageSelectors

Parameter	Type	Description
name	String	<p>Details: Name of a selector, which is used as the index of selectorNames in storageGroup.</p> <p>Constraints: The name of each selector must be unique.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
storageType	String	<p>Details: Storage type</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The local storage type does not support disk selection. All local disks form a VG. Therefore, only one local storage selector is allowed. • The system storage type does not support disk selection. It is recommended that you use the system disk to store system components. As a result, only one storage selector of the system type is allowed, and the name must be cceUse. <p>Options: Only evs (EVS disks), local (local disks), and system (system disks) are supported.</p> <p>Default value: N/A</p>
matchLabels	matchLabels object	<p>Details: Matching field of an EVS disk</p> <p>Constraints: If storageType is set to system (system disk), you do not need to configure this parameter.</p> <p>Options: The size, volumeType, metadataEncrypted, metadataCmkid, and count fields in DataVolume are supported.</p> <p>Default value: N/A</p>

Table 4-621 matchLabels

Parameter	Type	Description
size	String	<p>Details: Matched disk size, for example, 100. If this parameter is left blank, the disk size is not limited.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
volumeType	String	<p>Details: EVS disk type</p> <p>Constraints: None</p> <p>Options: SSD, GPSSD, SAS, ESSD, and SATA are supported. If this parameter is left blank, there is no restriction on the disk type.</p> <p>Default value: N/A</p>
metadataEncrypted	String	<p>Details: Disk encryption identifier. If this parameter is set to 0, it specifies that the disk is not encrypted. If this parameter is set to 1, it specifies that the disk is encrypted. If this parameter is left blank, there is no restriction on the disk encryption identifier.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
metadataCmkid	String	<p>Details: CMK ID of an encrypted disk. The value is a string of 36 bytes. If this parameter is left blank, there is no restriction on the disk key ID.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
count	String	<p>Details: Number of disks to be selected. If this parameter is left blank, all disks of this type are selected.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-622 StorageGroups

Parameter	Type	Description
name	String	<p>Details: Name of a virtual storage group, which must be unique</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If cceManaged is set to true, the name field must be set to vgpaas. • If the data disk is used as a temporary storage volume, the name field must be set to vg-everest-localvolume-ephemeral. • If the data disk is used as a persistent storage volume, the name field must be set to vg-everest-localvolume-persistent. <p>Default value: N/A</p>
cceManaged	Boolean	<p>Details: Storage space to which Kubernetes and runtime belong. Only one group is set to true. If this parameter is left blank, the default value false is used.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
selectorNames	Array of strings	<p>Details: Corresponds to name in storageSelectors. One group can select multiple selectors, but one selector can be selected by only one group.</p> <p>Constraints: System components cannot be separately stored in the system disk and data disks. Therefore, when the selector type is set to system, only one selector can be selected for a group.</p>

Parameter	Type	Description
virtualSpaces	Array of VirtualSpace objects	<p>Details: Detailed management of space configurations in a group</p> <p>Constraints: None</p>

Table 4-623 VirtualSpace

Parameter	Type	Description
name	String	<p>Details: Name of a virtualSpace. Only types of share, kubernetes, runtime, and user are supported.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • kubernetes: Kubernetes space configuration. lvmConfig needs to be configured. • runtime: runtime space configuration. runtimeConfig needs to be configured. • user: user space configuration. lvmConfig needs to be configured. <p>Default value: N/A</p>
size	String	<p>Details: Size of a virtualSpace. The value must be an integer in percentage, for example, 90%.</p> <p>Constraints: None</p> <p>Options: 10 to 90. The sum of percentages of all virtualSpaces in a group cannot exceed 100%.</p> <p>Default value: N/A</p>

Parameter	Type	Description
lvmConfig	LVMConfig object	<p>Details: LVM configuration management, which is applicable to share, Kubernetes, and user space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>
runtimeConfig	RuntimeConfig object	<p>Details: Runtime configuration management, which is applicable to runtime space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>

Table 4-624 LVMConfig

Parameter	Type	Description
lvType	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
path	String	<p>Details: Disk mount path. This parameter only takes effect in user configuration. The value can be an absolute path containing digits, uppercase letters, lowercase letters, periods (.), hyphens (-), and underscores (_).</p> <p>Constraints: Do not leave the path empty or set it to a key OS path such as the root directory. Key OS paths that cannot be entered: /, /home, /home/, /bin, /bin/, /lib, /lib/, /root, /root/, /boot, /boot/, /dev, /dev/, /etc, /etc/, /lost+found, /lost+found/, /mnt, /mnt/, /proc, /proc/, /sbin, /sbin/, /srv, /srv/, /tmp, /tmp/, /var, /var/, /media, /media/, /opt, /opt/, /selinux, /selinux/, /sys, /sys/, /usr, /usr/, /opt/cloud/, /mnt/paas/, /home/paas/, /var/paas/, /var/lib/, /var/script/</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-625 RuntimeConfig

Parameter	Type	Description
lvType	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-626 NodePublicIP

Parameter	Type	Description
ids	Array of strings	<p>Details: IDs of existing EIPs</p> <p>Constraints:</p> <ul style="list-style-type: none"> The quantity cannot be greater than the number of nodes to be created. If ids has been specified, you do not need to configure count and eip.
count	Integer	<p>Details: Number of EIPs to be dynamically created</p> <p>Constraints: count and eip must be configured simultaneously.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
eip	NodeEIPSpec object	<p>Details: EIP configuration</p> <p>Constraints: This parameter is not supported when creating a node pool.</p>

Table 4-627 NodeEIPSpec

Parameter	Type	Description
iptype	String	<p>Details: EIP type, specified in publicip.type in the API for assigning an EIP. For details, see Assigning an EIP.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
bandwidth	NodeBandwidth object	<p>Details: Bandwidth parameters of the EIP</p> <p>Constraints: None</p>

Table 4-628 NodeBandwidth

Parameter	Type	Description
chargemode	String	<p>Details: Bandwidth billing mode</p> <p>NOTE</p> <ul style="list-style-type: none"> • Billed by bandwidth: The billing will be based on the data transmission rate (in Mbps) of public networks. This billing mode is recommended if your bandwidth usage is higher than 10%. • Billed by traffic: The billing is based on the total amount of data (in GB) transmitted over the public network. This mode is available only when you are creating a pay-per-use node. This billing mode is recommended if your bandwidth usage is lower than 10%. <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If this field is not specified, the billing is based on bandwidth. • If the field value is empty, the billing is based on bandwidth. • If the field value is traffic, the billing is based on traffic. • If the value is out of the preceding options, the cloud server will fail to be created. <p>Default value: N/A</p>

Parameter	Type	Description
size	Integer	<p>Details: Bandwidth size, specified in bandwidth.size in the API for assigning an EIP. For details, see Assigning an EIP.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
sharetype	String	<p>Details: Bandwidth sharing type. Dedicated bandwidth is supported only. PER specifies dedicated bandwidth.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-629 NodeNicSpec

Parameter	Type	Description
primaryNic	NicSpec object	<p>Details: Description of the primary ENI</p> <p>Constraints: None</p>
extNics	Array of NicSpec objects	<p>Details: Extension ENI</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>

Table 4-630 NicSpec

Parameter	Type	Description
subnetId	String	<p>Details: Network ID of the subnet to which an ENI belongs. If subnetList is also configured for a node pool, the subnetList field is used for adding subnets to the node pool.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If subnetId is not specified when a primary ENI is creating, the cluster subnet will be used. • When creating an extension ENI, you must specify subnetId. <p>Options: N/A</p> <p>Default value: N/A</p>
fixedIps	Array of strings	<p>Details: The IP address of the primary ENI is specified using fixedIps. The number of IP addresses cannot be greater than the number of created nodes.</p> <p>Constraints: Either fixedIps or ipBlock can be specified. fixedIps cannot be specified for extension ENIs.</p>
ipBlock	String	<p>Details: CIDR format of the primary ENI IP address range. The IP address of the created node falls in this range.</p> <p>Constraints: Either fixedIps or ipBlock can be specified.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
subnetList	Array of strings	<p>Details: Network ID list of the subnet where the ENI resides. Multiple subnets can be configured for a node pool.</p> <p>Constraints: A maximum of 20 subnets can be configured.</p>

Table 4-631 Taint

Parameter	Type	Description
key	String	<p>Details: Key</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
value	String	<p>Details: Value</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
effect	String	<p>Details: Effect</p> <p>Constraints: None</p> <p>Options: Available options are NoSchedule, PreferNoSchedule, and NoExecute.</p> <p>Default value: N/A</p>

Table 4-632 UserTag

Parameter	Type	Description
key	String	<p>Details: Key of the cloud server tag</p> <p>Constraints: The value cannot start with CCE-, _type_baremetal, or sys.</p> <p>Options: The value contains a maximum of 128 characters. The tag key must be unique and cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, /</p> <p>Default value: N/A</p>
value	String	<p>Details: Value of the cloud server tag</p> <p>Constraints: None</p> <p>Options: The value contains a maximum of 255 characters. The tag value cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, </p> <p>Default value: N/A</p>

Table 4-633 Runtime

Parameter	Type	Description
name	String	<p>Details: Container runtime</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • Clusters earlier than v1.25: The default value is docker. • Clusters of v1.25 or later: The default value varies with the OSs. • For nodes running EulerOS 2.5 or EulerOS 2.8, the default value is docker. For nodes running other OSs, the default value is containerd.

Table 4-634 NodeExtendParam

Parameter	Type	Description
ecs:performancety pe	String	<p>Details: ECS flavor types. This field is returned in the response.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
orderId	String	<p>Details: Order ID</p> <p>Constraints: This parameter is returned in the response when the node is billed on a yearly/monthly basis with auto payment enabled (only in creation scenarios).</p> <p>Options: N/A</p> <p>Default value: N/A</p>
productId	String	<p>Details: Product ID</p> <p>Constraints: This field is returned in the response when the node is billed on a yearly/ monthly basis with auto payment enabled.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
maxPods	Integer	<p>Details: Maximum number of pods that can be created on a node, including the default system pods. This limit prevents the node from being overloaded with pods. The number of pods that can be created on a node is determined by multiple parameters. For details, see Maximum Number of Pods That Can Be Created on a Node.</p> <p>Constraints: None</p> <p>Options: 16 to 256</p> <p>Default value: N/A</p>

Parameter	Type	Description
periodType	String	<p>Details: Subscription period type</p> <p>Constraints:</p> <ul style="list-style-type: none"> As a request parameter, it is valid and mandatory only when billingMode is set to 1 (yearly/monthly billing) or 2 (yearly/monthly billing with auto payment enabled) (This option has been discarded). As a response parameter, it is returned only when a yearly/monthly node is created. <p>Options:</p> <ul style="list-style-type: none"> month year <p>Default value: N/A</p>
periodNum	Integer	<p>Details: Number of subscription periods</p> <p>Constraints:</p> <ul style="list-style-type: none"> As a request parameter, it is valid and mandatory only when billingMode is set to 1 (yearly/monthly billing) or 2 (yearly/monthly billing with auto payment enabled) (This option has been discarded). As a response parameter, it is returned only when a yearly/monthly node is created. <p>Options:</p> <ul style="list-style-type: none"> If periodType is month, the value ranges from 1 to 9. If periodType is year, the value ranges from 1 to 3. <p>Default value: N/A</p>

Parameter	Type	Description
isAutoRenew	String	<p>Details: Whether auto-renewal is enabled</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified, auto-renewal is not enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto-renewal is enabled. • false: Auto-renewal is not enabled. <p>Default value: N/A</p>
isAutoPay	String	<p>Details: Whether an order is automatically or manually paid</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified when billingMode is set to 1, auto payment is not enabled. (Discarded) If not specified when billingMode is set to 2, auto payment is enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto payment is enabled. • false: Auto payment is not enabled. <p>Default value: N/A</p>

Parameter	Type	Description
<p>DockerLVMConfigOverride</p>	<p>String</p>	<p>Details: Docker data disk configuration item. (This parameter has been discarded. Use the storage field instead.) Example of the default configuration: "DockerLVMConfigOverride":"dockerThinpool=vgpaas/90%VG;kubernetesLV=vgpaas/10%VG;diskType=evs;lvType=linear"</p> <p>By default, if no VD disk is available, an error occurs because the data disk fails to be found. Specify diskType based on the actual drive letter type.</p> <p>Constraints: None</p> <p>Options: The following fields are included:</p> <ul style="list-style-type: none"> • userLV: (Optional) size of the user space, for example, vgpaas/20%VG • userPath (Optional): mount path of the user space, for example, /home/wqt-test • diskType: disk type. Only evs, hdd, and ssd are supported. • lvType: type of a logic volume. The value can be linear or striped. • dockerThinpool: Docker space size, for example, vgpaas/60%VG • kubernetesLV: kubelet space size, for example, vgpaas/20%VG <p>Default value: N/A</p>

Parameter	Type	Description
dockerBaseSize	Integer	<p>Details: Available disk space of a single container on a node (unit: G). This parameter has been discarded. Use containerBaseSize.</p> <p>For details about how to allocate the space for the container runtime, see Space Allocation of a Data Disk.</p> <p>Constraints: When Device Mapper is used, it is recommended that dockerBaseSize be set to a value less than or equal to 80 GiB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device.</p> <ul style="list-style-type: none"> The dockerBaseSize setting takes effect only on nodes running EulerOS or Huawei Cloud EulerOS 2.0 in clusters of the new version. <p>Options: 10 to 500</p> <p>Default value: If the value is not specified or is set to 0, the default value is used.</p> <ul style="list-style-type: none"> The default value is 10 in Device Mapper mode. In OverlayFS mode, the available space of a single container is not limited by default.

Parameter	Type	Description
containerBaseSize	Integer	<p>Details: Available disk space of a single container on a node (unit: G). For details about how to allocate the space for the container runtime, see Space Allocation of a Data Disk.</p> <p>Constraints: When Device Mapper is used, it is recommended that containerBaseSize be set to a value less than or equal to 80 GiB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device. In new versions, the Device Mapper mode is used only by BMSs in the same resource pool and is being discarded.</p> <ul style="list-style-type: none"> The containerBaseSize setting takes effect only on nodes running EulerOS or Huawei Cloud EulerOS 2.0 in clusters of the new version (v1.23.14-r0, v1.25.9-r0, v1.27.6-r0, v1.28.4-r0 or later). This parameter cannot be updated when a node pool is being updated. <p>Options: 10 to 500</p> <p>Default value: If the value is not specified or is set to 0, the default value is used.</p> <ul style="list-style-type: none"> The default value is 10 in Device Mapper mode. In OverlayFS mode, the available space of a single container is not limited by default.

Parameter	Type	Description
publicKey	String	<p>Details: Public key of a node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/ preInstall	String	<p>Details: Pre-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>Content to be encoded</code> base64</p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/ postInstall	String	<p>Details: Post-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>Content to be encoded</code> base64</p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
alpha.cce/ NodeImageID	String	<p>Details: This parameter is required when a custom image is used to create a BMS node.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
nicMultiqueue	String	<p>Details:</p> <ul style="list-style-type: none"> Number of ENI queues. Example: <code>"[{"queue":4}]"</code> <p>The following fields are included:</p> <ul style="list-style-type: none"> queue: number of ENI queues Supported configurations: {"1":128, "2":92, "4":92, "8":32, "16":16,"28":9}, indicating that a maximum of 128 ENIs can be associated if there is one queue and a maximum of 92 ENIs if there are two queues. A larger number of ENI queues indicates higher performance but fewer ENIs can be associated. The queue settings cannot be changed after creation. <p>Constraints: This field can be configured only for BMS nodes in CCE Turbo clusters.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
nicThreshold	String	<p>Details:</p> <ul style="list-style-type: none"> • ENI pre-binding thresholds. Example: "0.3:0.6" • Low threshold (L): determines the minimum number of pre-bound ENIs (Min). Formula: Min = Total number of ENIs of the node × L • High threshold (H): determines the maximum number of pre-bound ENIs (Max). Formula: Max = Total number of ENIs of the node × H • Number of ENIs bound to a BMS node (B) and number of ENIs being used by pods (U): $U + \text{Min} < B < U + \text{Max}$ • If the number of pre-bound ENIs on a BMS node is smaller than the minimum allowed, the system will bind more ENIs to make the numbers equal. • If the number of pre-bound ENIs on a BMS node is larger than the maximum allowed, the system periodically unbinds ENIs (about every 2 minutes) to make the numbers equal. <p>Constraints:</p> <ul style="list-style-type: none"> • This field can be configured only for BMS nodes in CCE Turbo clusters. • Pre-binding ENIs can speed up workload creation but occupies IP addresses. <p>Options: Both the thresholds are one-decimal-place values ranging from 0.0 to 1.0. The low threshold must be smaller than or equal to the high one.</p> <p>Default value: N/A</p>

Parameter	Type	Description
chargingMode	Integer	<p>Details: Billing mode of a node. This parameter has been discarded. Use billingMode in NodeSpec instead.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
marketType	String	<p>Details: When creating a spot ECS, this parameter should be set to spot.</p> <p>Constraints: This parameter is valid only when billingMode is set to 0.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
spotPrice	String	<p>Details: The highest price per hour a user accepts for a spot ECS</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This parameter takes effect only when billingMode is set to 0 and marketType is set to spot. • When billingMode is set to 0 and marketType is set to spot, if spotPrice is not specified, the pay-per-use price is used by default. • The spotPrice value must be less than or equal to the pay-per-use price and greater than or equal to the ECS market price. <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
agency_name	String	<p>Details: Agency name. An agency is created by a tenant administrator on Identity and Access Management (IAM) to provide temporary credentials for CCE nodes to access cloud servers. This parameter is returned only when it is transferred during node creation.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
kubeReservedMem	Integer	<p>Details: Reserved node memory, which is reserved for Kubernetes components.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
systemReservedMem	Integer	<p>Details: Reserved node memory, which is reserved for system components.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
init-node-password	String	<p>Details: Node password. If this parameter is used as a response parameter, asterisks (*) will be displayed.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
securityReinforcementType	String	<p>Details: Security hardening type of a node. Huawei Cloud EulerOS 2.0 images based on DJCP 2.0 level 3 security hardening are supported. DJCP checks identity authentication, access control, security audit, intrusion prevention, and malicious code prevention and hardens security.</p> <p>If this parameter is not specified, the original value is used. For example, If security hardening has been set up for a Huawei Cloud EulerOS 2.0 image and you do not specify this parameter when updating a node pool, the security hardening configuration will remain unchanged. To remove the security hardening configuration, set this parameter to null.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Empty: Security hardening is not enabled. • cybersecurity: Security hardening is enabled. <p>Default value: N/A</p>

Table 4-635 HostnameConfig

Parameter	Type	Description
type	String	<p>Details: Configuration type of the Kubernetes node name. The default value is privatelp.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The node names, Kubernetes node names, and VM names of the nodes configured with cceNodeName are the same. Node names cannot be changed. Once a VM name is altered on the ECS console, the node name cannot be modified accordingly during ECS synchronization. • To prevent conflicts between Kubernetes node names, a suffix is automatically added to the node name of a node configured with cceNodeName. The suffix consists of a hyphen (-) followed by five random lowercase letters and digits (0 to 9). <p>Options:</p> <ul style="list-style-type: none"> • privatelp: Use the private node IP address as the Kubernetes node name. • cceNodeName: Use the CCE node name as the Kubernetes node name. <p>Default value: privatelp</p>

Table 4-636 NodePoolNodeAutoscaling

Parameter	Type	Description
enable	Boolean	<p>Details: Whether to enable auto scaling</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • false: Auto scaling is disabled. • true: Auto scaling is enabled. <p>Default value: false</p>
minNodeCount	Integer	<p>Details: Minimum number of nodes that can be scaled in if auto scaling is enabled</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to 0 and cannot be greater than the maximum number of nodes allowed by the cluster specifications</p> <p>Default value: 0</p>
maxNodeCount	Integer	<p>Details: Maximum number of nodes that can be added if auto scaling is enabled</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to the value of minNodeCount and cannot be greater than the maximum number of nodes allowed by the cluster specifications</p> <p>Default value: 0</p>

Parameter	Type	Description
scaleDownCooldownTime	Integer	<p>Details: How long nodes will be kept, in minutes. During this period, nodes added will not be deleted.</p> <p>Constraints: None</p> <p>Options: 0 to 2147483646</p> <p>Default value: 0</p>
priority	Integer	<p>Details: Weight of a node pool. A node pool with a higher weight has a higher priority during scale-out.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: 0</p>

Table 4-637 NodeManagement

Parameter	Type	Description
serverGroupReference	String	<p>Details:</p> <p>A cloud server group ID. If this parameter is specified, the cloud server group will be associated with the target node pool, and all nodes in the node pool will be created in this cloud server group. After a cloud server group is associated with a node pool, the number of nodes in the node pool cannot exceed the number of cloud servers that can be added to the cloud server group, or the node pool cannot be scaled out.</p> <p>NOTE</p> <ul style="list-style-type: none"> • After a cloud server group is associated with a node pool, the cloud servers added to the cloud server group will be distributed in strict accordance with the affinity policy and the maximum number of nodes in the node pool will be limited. The anti-affinity capabilities are available during cloud server creation on ECS. If your goal is to enhance service reliability by distributing cloud servers across different hosts and you do not want the number of nodes to be restricted by cloud server groups, you are not advised to associate cloud server groups with any node pools. • A cloud server group can be disassociated from the node pool. After the change, the existing nodes will remain in the original cloud server group, and no new nodes will be added to the cloud server group. If the node pool is empty, you can associate a new cloud server group with the node pool or change the associated cloud server group. <p>Constraints:</p> <p>If a cloud server group is specified, the number of nodes in the node pool cannot exceed the group quota.</p> <p>Options:</p> <ul style="list-style-type: none"> • If this parameter is not specified or left blank, the cloud server group will be disassociated from the node pool.

Parameter	Type	Description
		<ul style="list-style-type: none"> A cloud server group ID: The cloud server group associated with the node pool will be changed to a specified one. <p>Default value: N/A</p>

Table 4-638 SecurityID

Parameter	Type	Description
id	String	<p>Details: Security group ID</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-639 ExtensionScaleGroup

Parameter	Type	Description
metadata	ExtensionScaleGroupMetadata object	<p>Details: Basic information about an extended scaling group</p> <p>Constraints: None</p>
spec	ExtensionScaleGroupSpec object	<p>Details: Configurations of an extended scaling group, which carry different configurations from those of the default scaling group</p> <p>Constraints: None</p>

Table 4-640 ExtensionScaleGroupMetadata

Parameter	Type	Description
uid	String	<p>Details: UUID of an extended scaling group, which is automatically generated by the system</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
name	String	<p>Details: Name of an extended scaling group</p> <p>Constraints: The value cannot be default.</p> <p>Options: The value can contain a maximum of 55 characters. Only digits, lowercase letters, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>

Table 4-641 ExtensionScaleGroupSpec

Parameter	Type	Description
flavor	String	<p>Details: Node flavors. For details about the node flavors supported by CCE clusters, see Node Specifications.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
az	String	<p>Details: Node AZ</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: If this parameter is not specified or left blank, the default scaling group configurations take effect.</p>
capacityReservationSpecification	CapacityReservationSpecification object	<p>Details: Capacity reservation configurations of an extended scaling group</p> <p>Constraints: None</p>
autoscaling	ScaleGroupAutoscaling object	<p>Details: Auto scaling configurations of an extended scaling group</p> <p>Constraints: None</p>

Table 4-642 CapacityReservationSpecification

Parameter	Type	Description
id	String	<p>Details: Private pool ID</p> <p>Constraints: This value can be ignored when preference is set to none.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
preference	String	<p>Details: Private pool capacity</p> <p>Constraints: If the value is none, the capacity reservation is not specified. If the value is targeted, the capacity reservation is specified. In this case, the ID cannot be left blank.</p> <p>Options: N/A</p> <p>Default value: none</p>

Table 4-643 ScaleGroupAutoscaling

Parameter	Type	Description
enable	Boolean	<p>Details: Whether to enable auto scaling for a scaling group</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • false: Auto scaling is disabled. • true: Auto scaling is enabled. <p>Default value: false</p>
extensionPriority	Integer	<p>Details: Scaling group priority. A larger value indicates a higher priority.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: 0</p>

Parameter	Type	Description
minNodeCount	Integer	<p>Details: Minimum number of nodes that can be kept in a scaling group during auto scaling</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to 0 and cannot be greater than the maximum number of nodes allowed by the cluster specifications</p> <p>Default value: 0</p>
maxNodeCount	Integer	<p>Details: Maximum number of nodes that can be kept in a scaling group during auto scaling</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to the value of minNodeCount, less than or equal to the maximum number of nodes allowed by the cluster specifications, and less than or equal to the maximum number of nodes in the node pool</p> <p>Default value: 0</p>

Table 4-644 NodePoolStatus

Parameter	Type	Description
currentNode	Integer	<p>Details: Total number of nodes in the current node pool (excluding the nodes that are being deleted)</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
creatingNode	Integer	<p>Details: Number of nodes that are being created in the current node pool</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
deletingNode	Integer	<p>Details: Number of nodes that are being deleted in the current node pool</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
configurationSyn- cedNodeCount	Integer	<p>Details: The number of nodes specified in the node pool configuration has been synchronized in the current node pool.</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
phase	String	<p>Details: Node pool status</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Null: The node pool is available. (The number of nodes in the current node pool has reached the expected value, and no node scaling is being performed.) • Synchronizing: The node pool is being scaled. (The number of nodes in the current node pool has not reached the expected value, and no node scaling is being performed.) • Synchronized: The node pool scaling is pending. (The number of nodes in the current node pool has not reached the expected value, or node scaling is being performed.) • SoldOut: The node pool cannot be scaled out. (This field is used in multiple scenarios, for example, resources in the node pool have been sold out or the resource quota is insufficient.) <p>NOTE The preceding node pool status has been discarded. It is reserved only for compatibility. Do not use it anymore. Use the following instead:</p> <ul style="list-style-type: none"> • Node pool scaling status: You can obtain the status of the current node pool using parameters such as currentNode, creatingNode, or deletingNode. • Node pool scale-out: You can use conditions to obtain the detailed status of a node pool. Scalable can replace SoldOut. • Deleting: The node pool is being deleted. • Error: An error occurred. <p>Default value: N/A</p>

Parameter	Type	Description
jobId	String	<p>Details: ID of a job executed on the node pool. This field is available only when the node pool is being deleted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
conditions	Array of NodePoolCondition objects	<p>Details: Node pool status details. For details, see the definition of Condition.</p> <p>Constraints: None</p>
scaleGroupStatuses	Array of ScaleGroupStatus objects	<p>Details: Detailed status of a scaling group. For details, see the definition of ScaleGroupStatus.</p> <p>Constraints: None</p>

Table 4-645 ScaleGroupStatus

Parameter	Type	Description
name	String	<p>Details: Scaling group name</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
uid	String	<p>Details: Scaling group UUID</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
creationTimestamp	String	<p>Details: The time when a scaling group was created</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
updateTimestamp	String	<p>Details: The time when a scaling group was updated</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
phase	String	<p>Details: Scaling group status</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Null: The scaling group is available. (The number of nodes in the current scaling group has reached the expected value, and no node scaling is being performed.) • Synchronizing: The scaling group is being scaled. (The number of nodes in the current scaling group has not reached the expected value, and no node scaling is being performed.) • Synchronized: The scaling is pending. (The number of nodes in the current scaling group has not reached the expected value, or node scaling is being performed.) • SoldOut: The scaling group cannot be scaled out. (This field is used in multiple scenarios, for example, resources in the node pool have been sold out or the resource quota is insufficient.) <p>NOTE The preceding scaling group status has been discarded. It is reserved only for compatibility. Do not use it anymore. Use the following instead:</p> <ul style="list-style-type: none"> • Scaling status of a scaling group: You can obtain the status of the current scaling group using parameters such as desiredNodeCount, existingNodeCount, or upcomingNodeCount. • Scaling group scale-out: You can use conditions to obtain the detailed status of a scaling group. Scalable can replace SoldOut. • Deleting: The scaling group is being deleted. • Error: An error occurred. <p>Default value: N/A</p>

Parameter	Type	Description
desiredNodeCount	Integer	<p>Details: Expected number of nodes in a scaling group</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
unpaidScaleNodeCount	Integer	<p>Details: Number of nodes in an unpaid order</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
existingNodeCount	existingNodeCount object	<p>Details: Statistics on existing nodes in a scaling group</p> <p>Constraints: None</p>
upcomingNodeCount	upcomingNodeCount object	<p>Details: Statistics on the nodes to be added in a scaling group</p> <p>Constraints: None</p>
scaleDownDisabledNodeCount	Integer	<p>Details: Number of nodes that cannot be deleted in a scaling group</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
conditions	Array of NodePoolCondition objects	<p>Details: Scaling group status details. For details, see the definition of Condition.</p> <p>Constraints: None</p>

Table 4-646 existingNodeCount

Parameter	Type	Description
postPaid	Integer	<p>Details: Number of pay-per-use nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
prePaid	Integer	<p>Details: Number of yearly/monthly nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
total	Integer	<p>Details: Total number of pay-per-use and yearly/monthly nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-647 upcomingNodeCount

Parameter	Type	Description
postPaid	Integer	<p>Details: Number of pay-per-use nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
prePaid	Integer	<p>Details: Number of yearly/monthly nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
total	Integer	<p>Details: Total number of pay-per-use and yearly/monthly nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-648 NodePoolCondition

Parameter	Type	Description
type	String	<p>Details: Condition type</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Scalable: whether a node pool can be scaled out. If the status is False, node pool scale-out will not be triggered again. • QuotaInsufficient: Quotas on which node pool scale-out depends are insufficient, affecting the node pool scale-out status. • ResourceInsufficient: Resources on which node pool scale-out depends are insufficient, affecting the node pool scale-out status. • UnexpectedError: The node pool fails to be scaled out due to unexpected reasons, affecting the node pool scale-out status. • LockedByOrder: The yearly/monthly-billed node pool is locked due to an order. The value of Reason is the ID of the pending order. • Error: A node pool error occurred. A common trigger is deletion failure. <p>Default value: N/A</p>
status	String	<p>Details: Current status of the condition</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • True • False <p>Default value: N/A</p>

Parameter	Type	Description
lastProbeTime	String	<p>Details: Time when the status was last checked</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
lastTransitTime	String	<p>Details: Time when the status was last changed</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
reason	String	<p>Details: Reason why the status was last changed</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
message	String	<p>Details: Detailed description of the condition</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Example Requests

None

Example Responses

Status code: 200

Details about the specified node pool are obtained successfully.

```
{
  "kind" : "NodePool",
  "apiVersion" : "v3",
  "metadata" : {
    "name" : "lc-it-nodepool-79796",
    "uid" : "99adada2-69eb-11ea-a592-0255ac1001bb"
  },
  "spec" : {
    "type" : "vm",
    "nodeTemplate" : {
      "flavor" : "s6.large.2",
      "az" : "*****",
      "os" : "EulerOS 2.5",
      "login" : {
        "sshKey" : "KeyPair-001"
      }
    },
    "rootVolume" : {
      "volumetype" : "SAS",
      "size" : 40
    },
    "dataVolumes" : [ {
      "volumetype" : "SAS",
      "size" : 100,
      "extendParam" : {
        "useType" : "docker"
      }
    } ],
    "publicIP" : {
      "eip" : {
        "bandwidth" : { }
      }
    },
    "nodeNicSpec" : {
      "primaryNic" : {
        "subnetId" : "7e767d10-7548-4df5-ad72-aeac1d08bd8a"
      }
    },
    "billingMode" : 0,
    "extendParam" : {
      "maxPods" : 110
    },
    "k8sTags" : {
      "cce.cloud.com/cce-nodepool" : "lc-it-nodepool-79796"
    }
  },
  "autoscaling" : { },
  "nodeManagement" : { }
},
"status" : {
  "phase" : "Deleting",
  "jobId" : "3281fa02-69ee-11ea-a592-0255ac1001bb"
}
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;
```

```
import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ShowNodePoolSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();

        ShowNodePoolRequest request = new ShowNodePoolRequest();
        request.withClusterId("{cluster_id}");
        request.withNodepoolId("{nodepool_id}");
        try {
            ShowNodePoolResponse response = client.showNodePool(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
```

```
projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = CceClient.new_builder() \
    .with_credentials(credentials) \
    .with_region(CceRegion.value_of("<YOUR REGION>")) \
    .build()

try:
    request = ShowNodePoolRequest()
    request.cluster_id = "{cluster_id}"
    request.nodepool_id = "{nodepool_id}"
    response = client.show_node_pool(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ShowNodePoolRequest{}
    request.ClusterId = "{cluster_id}"
    request.NodepoolId = "{nodepool_id}"
    response, err := client.ShowNodePool(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Details about the specified node pool are obtained successfully.

Error Codes

See [Error Codes](#).

4.4.3 Listing All Node Pools in a Specified Cluster

Function

This API is used to obtain information about all node pools in a specified cluster.

NOTE

- The URL for cluster management is in the format of **https://Endpoint/uri**. In the URL, **uri** indicates the resource path, that is, the path for API access.
- A node pool is a group of nodes within a cluster that all have the same configuration.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3/projects/{project_id}/clusters/{cluster_id}/nodepools

Table 4-649 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Table 4-650 Query Parameters

Parameter	Mandatory	Type	Description
showDefaultNodePool	No	String	<p>Details: Whether to display the default node pool</p> <p>Constraints: N/A</p> <p>Options: If this parameter is set to true, the default node pool will be displayed. If this parameter is not specified, the default node pool will not be displayed.</p> <p>Default value: None</p>

Request Parameters

Table 4-651 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-652 Response body parameters

Parameter	Type	Description
kind	String	Details: API type Constraints: The value cannot be changed. Options: N/A Default value: List
apiVersion	String	Details: API version Constraints: The value cannot be changed. Options: N/A Default value: v3
items	Array of NodePoolResp objects	/

Table 4-653 NodePoolResp

Parameter	Type	Description
kind	String	Details: API type Constraints: The value cannot be changed. Options: N/A Default value: NodePool

Parameter	Type	Description
apiVersion	String	<p>Details: API version</p> <p>Constraints: The value cannot be changed.</p> <p>Options: N/A</p> <p>Default value: v3</p>
metadata	NodePoolMetadata object	<p>Details: Metadata of a node pool</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>
spec	NodePoolSpec object	<p>Details: Node pool specifications</p> <p>Constraints: This field is optional for updating a node pool.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
status	NodePoolStatus object	<p>Details: Node pool status</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-654 NodePoolMetadata

Parameter	Type	Description
name	String	<p>Details: Node pool name</p> <p>Constraints: You cannot create node pools named DefaultPool.</p> <p>Options: Enter 1 to 50 characters starting with a lowercase letter and not ending with a hyphen (-). Only lowercase letters, digits, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>
uid	String	<p>Details: UID of a node pool</p> <p>Constraints: The value is automatically generated after the object is created. A user-defined value will not take effect.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
annotations	Map<String,String >	<p>Details: Annotations of a node pool in key-value pairs</p> <p>Constraints: This parameter is used only for query and cannot be input through a request. Entered data of this parameter is invalid.</p>

Parameter	Type	Description
updateTimestamp	String	<p>Details: Time when a node pool was updated</p> <p>Constraints: The value is automatically recorded when a node pool is updated and cannot be specified.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
creationTimestamp	String	<p>Details: Time when a node pool was created</p> <p>Constraints: The value is automatically recorded when a node pool is created and cannot be specified.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-655 NodePoolSpec

Parameter	Type	Description
type	String	<p>Details: Node pool type</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • vm: ECS • ElasticBMS: C6 general computing-plus BMS. An example flavor is c6.22xlarge.2.physical. • pm: BMS <p>Default value: vm</p>

Parameter	Type	Description
nodeTemplate	NodeSpec object	Details: Detailed parameters of a node pool template Constraints: None
initialNodeCount	Integer	Details: The initial number of nodes in a node pool. The obtained value is the desired number of nodes in the node pool. Constraints: None Options: Values that are greater than or equal to 0 and less than or equal to the cluster scale Default value: 0
autoscaling	NodePoolNodeAutoscaling object	Details: Auto scaling parameters Constraints: None
nodeManagement	NodeManagement object	Details: Node management configuration Constraints: None
podSecurityGroups	Array of SecurityID objects	Details: Security group configuration Constraints: None
extensionScaleGroups	Array of ExtensionScaleGroup objects	Details: Configuration list of the extended scaling groups in a node pool. For details, see the definition of ExtensionScaleGroup . Constraints: None

Parameter	Type	Description
customSecurityGroups	Array of strings	<p>Details: Custom security group configuration for a node pool. New nodes added to a node pool can be bound to a specified security group.</p> <ul style="list-style-type: none"> • Specifying no security group ID will add the new nodes to the default node security group. • Specifying a valid security group ID will put new nodes in that security group. • When specifying a security group, do not modify the port rules on which CCE depends. For details, see How Can I Configure a Security Group Rule in a Cluster? <p>Constraints: None</p>

Table 4-656 NodeSpec

Parameter	Type	Description
flavor	String	<p>Details: Node flavors. For details about the node flavors supported by CCE clusters, see Node Specifications.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
az	String	<p>Details: AZ where the node to be created is located. You need to specify the AZ name. Random AZs will not be allocated to a node created using APIs. For details about AZs supported by CCE, see Regions and Endpoints.</p> <p>Constraints: When you are creating a node pool and configuring a scaling group, this parameter cannot be set to random.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
os	String	<p>Details: Node OS. For details about the supported OSs, see Node OSs.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If the selected OS is not supported by the current cluster version, it will be automatically replaced with a supported OS of the same series. • If alpha.cce/NodeImageID in extendParam is specified during node creation, you do not need to configure this parameter. • If this parameter is not specified, CCE automatically selects a supported OS version based on the cluster version. • This parameter is mandatory when creating a node pool. • If you are using shared disk space when creating a node, this parameter is mandatory. Specifically, the disk initialization configuration management parameter storage is used and the name field of virtualSpaces in StorageGroups is set to share. <p>Options: N/A</p> <p>Default value: N/A</p>
login	Login object	<p>Details: Node login mode. Either the key pair or password must be used for login.</p> <p>Constraints: This parameter cannot be modified when a node pool is being updated.</p>
rootVolume	Volume object	<p>Details: Disk information of a node</p> <p>Constraints: None</p>

Parameter	Type	Description
dataVolumes	Array of Volume objects	<p>Details: Data disk parameters of a node. For DeC nodes, the parameter details are the same as those in rootVolume.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • A VM can have up to 16 disks attached, while a BMS can only have up to 10 disks attached. The maximum number of disks that can be attached to either a VM or BMS is limited by their respective maximum disk limits. (You can add more data disks to each of your nodes through the CCE console or APIs.) • The data disk used by the container runtime and kubelet cannot be detached, or the node will become unavailable. • This parameter can be left blank only when a system disk is selected for the system components.

Parameter	Type	Description
storage	Storage object	<p>Details: Disk initialization management parameter. This parameter is complex to configure. For details, see Attaching Disks to a Node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This field is supported by clusters of v1.15.11-r0 and later versions. If the cluster version is not supported, this field will be ignored. • If a node has both local and EVS disks attached, make sure to not keep the default value for this parameter, or it may result in unexpected disk partitions. • If you want to change the value range of a data disk to 20 to 32768, do not use the default value. • If you want to use the shared disk space (with the runtime and Kubernetes partitions cancelled), do not retain the default value of this parameter. For details about the shared disk space, see Space Allocation of a Data Disk. • If you want to store system components in the system disk, do not use the default value.
publicIP	NodePublicIP object	<p>Details: EIP of a node</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>
nodeNicSpec	NodeNicSpec object	<p>Details: ENI of a node</p> <p>Constraints: None</p>

Parameter	Type	Description
count	Integer	<p>Details: Number of nodes to be created in batches</p> <p>Constraints: This parameter can be left blank when it is used for a node pool.</p> <p>Options: Positive integers that are greater than or equal to 1 and less than or equal to the maximum limit</p> <p>Default value: N/A</p>
billingMode	Integer	<p>Details: Billing mode of a node</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • 0: pay-per-use • 1: yearly/monthly • 2: (Discarded) yearly/monthly billing with auto payment enabled <p>Default value: N/A</p>

Parameter	Type	Description
taints	Array of Taint objects	<p>Details:</p> <p>Taints, which can be added to nodes for anti-affinity configuration. Each taint contains the following parameters:</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain can be prefixed to a key. • Value: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. • Effect: Available options are NoSchedule, PreferNoSchedule, and NoExecute. <p>When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example:</p> <pre>"taints": [{ "key": "status", "value": "unavailable", "effect": "NoSchedule" }, { "key": "looks", "value": "bad", "effect": "NoSchedule" }]</pre> <p>Constraints:</p> <p>A maximum of 20 taints can be configured.</p>

Parameter	Type	Description
k8sTags	Map<String,String>	<p>Details: Defined in key-value pairs.</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain containing a maximum of 253 characters (such as example.com/my-key) can be prefixed to a key. • Value: The value can be left blank or contain 1 to 63 characters that start and end with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. <p>When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example: <pre>"k8sTags": { "key": "value" }</pre></p> <p>Constraints: A maximum of 20 key-value pairs are allowed.</p>

Parameter	Type	Description
ecsGroupId	String	<p>Details: ECS group ID. If this parameter is specified, nodes will be created in the specific ECS group.</p> <p>Constraints: This configuration does not take effect when a node pool is created. To ensure that all nodes in a node pool are in the same ECS group, configure nodeManagement in the node pool.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
dedicatedHostId	String	<p>Details: ID of the DeH to which nodes will be scheduled.</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>
userTags	Array of UserTag objects	<p>Details: Cloud server tag (resource tag). When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Constraints:</p> <ul style="list-style-type: none"> The key of a tag must be unique. The maximum number of custom tags supported by CCE varies depending on regions and cannot exceed 8. A tag key can have a maximum of 36 characters. It can only contain letters, digits, Unicode characters, and special characters (-_).

Parameter	Type	Description
runtime	Runtime object	Details: Container runtime <ul style="list-style-type: none">• Clusters earlier than v1.25: The default value is docker.• Clusters of v1.25 or later: The default value varies with the OSs.• For nodes running EulerOS 2.5 or EulerOS 2.8, the default container runtime is docker. For nodes running other OSs, the default container runtime is containerd. Constraints: None

Parameter	Type	Description
initializedConditions	Array of strings	<p>Details:</p> <p>Custom initialization flag, which is left blank by default.</p> <p>Before CCE nodes are initialized, they are tainted with node.cloudprovider.kubernetes.io/uninitialized to prevent pods from being scheduled to them. When creating a node, you can specify the initializedConditions parameter to control the taint removal time. By default, the timeout interval is not configured.</p> <p>Example:</p> <ol style="list-style-type: none"> 1. Create a node and add parameter "initializedConditions": ["CCEInitial", "CustomedInitial"]. 2. After custom initialization is complete, CCE will call a Kubernetes API (for example, PATCH /v1/nodes/{node_ip}/status) to update the node conditions by adding two labels of types CCEInitial and CustomedInitial and setting the status to True, as shown in the following: <pre>status: conditions: - type: CCEInitial status: 'True' - type: CustomedInitial status: 'True'</pre> <ol style="list-style-type: none"> 1. CCE polls status.Conditions of nodes to check whether there are conditions of types CCEInitial and CustomedInitial. If such conditions exist and the status is True, the node initialization is complete and the initialization taint is removed. 2. initializedConditions allows you to configure a timeout period during node creation. For example, "initializedConditions": ["CCEInitial:15m", "CustomedInitial:15m"] indicates that the timeout period is 15 minutes. After the timeout period is reached, the initialization conditions

Parameter	Type	Description
		<p>will be automatically ignored and the initialization taint will be removed when CCE polls the node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The timeout interval in initializedConditions ranges from 1 to 99 seconds. • Each value has 1 to 20 characters, which must consist of letters and digits. • The maximum number of flags cannot exceed 2. • The unit of the timeout period is minute (m).
extendParam	NodeExtendParam object	<p>Details: Extended parameters for creating a node</p> <p>Constraints: None</p>
hostnameConfig	HostnameConfig object	<p>Details: Kubernetes node name configuration parameter</p> <p>Constraints: The supported cluster version is v1.23.6-r0 to v1.25 or v1.25.2-r0 or later.</p>

Parameter	Type	Description
serverEnterprise-ProjectID	String	<p>Details: Enterprise project ID of a server. CCE does not support features provided by EPS. This field is used only for synchronizing enterprise project IDs of servers.</p> <p>Constraints: To create a node or node pool, you can specify an existing enterprise project for it. If this field is left blank, it inherits the enterprise project attributes of the cluster that runs the node or node pool.</p> <p>When updating a node pool, any configuration modifications you made will apply only to new nodes. You need to modify the enterprise projects of existing nodes on the EPS console.</p> <p>Options: N/A</p> <p>Default value: If no value is specified during update, this field will not be updated. If this parameter is left blank, the cluster enterprise project is returned.</p>

Table 4-657 Login

Parameter	Type	Description
sshKey	String	<p>Details: Name of the key pair used for login</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
userPassword	UserPassword object	<p>Details: Password used for node login</p> <p>Constraints: None</p>

Table 4-658 UserPassword

Parameter	Type	Description
username	String	<p>Details: Login account. The default value is root.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: root</p>
password	String	<p>Details: Login password. If a username and password are used when a node is created, this field is shielded in the response body.</p> <p>Constraints: The password field must be salted during node creation. For details, see Adding a Salt in the password Field When Creating a Node.</p> <p>Options: A password must:</p> <ul style="list-style-type: none"> • Contain 8 to 26 characters. • Contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters <code>!@\$%^-_=+[]{};:./?</code> • Not contain the username or the username spelled backwards. <p>Default value: N/A</p>

Table 4-659 Volume

Parameter	Type	Description
size	Integer	<p>Details: Disk size, in GiB</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • System disks: 40 to 1024 • The first data disk: 20 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) • Other data disks: 10 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) <p>Default value: N/A</p>
volumetype	String	<p>Details: Disk type. For details about possible values, see the root volume parameter in the API used to create an ECS.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • SAS: high I/O SAS disks • SSD: ultra-high I/O SSD disks • SATA: common I/O SATA disks. SATA disks have been removed from EVS. You can find them attached only to existing nodes. <p>NOTE For details about disk types, see Disk Types and Performance.</p> <p>Default value: N/A</p>

Parameter	Type	Description
extendParam	Map<String, Object>	<p>Details: Extended disk parameters, defined in extendparam in the API used to create an ECS. For details, see extendparam Field Description for Creating Disks.</p> <p>Constraints: None</p>
cluster_id	String	<p>Details: ID of the storage pool used by the ECS system disk. This field is used only for DeC clusters and functions as dssPoolID, that is, the ID of the DSS storage pool. To obtain the value, see the ID field in the API used to obtain details of a DSS storage pool.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
cluster_type	String	<p>Details: Storage class of the ECS system disk</p> <p>Constraints: None</p> <p>Options: This field is used only for DeC clusters, and the value is always dss.</p> <p>Default value: N/A</p>

Parameter	Type	Description
hw:passthrough	Boolean	<p>Details:</p> <ul style="list-style-type: none"> Pay attention to this field if your ECS is SDI-compliant. If the value of this field is true, the created disk is of SCSI type. If the node pool type is ElasticBMS, this field must be set to true. If the node specification involves both local and EVS disks, configure the disk initialization parameters. For details, see Attaching Disks to a Node. <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
metadata	VolumeMetadata object	<p>Details: EVS disk encryption information. This parameter is mandatory only when the system disk or data disk of the node to be created needs to be encrypted.</p> <p>Constraints: None</p>

Table 4-660 VolumeMetadata

Parameter	Type	Description
<code>__system__encrypted</code>	String	<p>Details: Whether an EVS disk is encrypted. The value 0 indicates that the EVS disk is not encrypted, and the value 1 indicates that the EVS disk is encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: If this parameter does not appear, the disk is not encrypted.</p>
<code>__system__cmkid</code>	String	<p>Details: CMK ID, which indicates encryption in metadata. This field is used with __system__encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-661 Storage

Parameter	Type	Description
<code>storageSelectors</code>	Array of StorageSelectors objects	<p>Details: Disk selection. Matched disks are managed based on matchLabels and storageType settings. Disks are matched in sequence. The matching rule in the front is matched first.</p> <p>Constraints: None</p>

Parameter	Type	Description
storageGroups	Array of StorageGroups objects	<p>Details: A storage group consisting of multiple storage devices, which are used to divide storage space.</p> <p>Constraints: None</p>

Table 4-662 StorageSelectors

Parameter	Type	Description
name	String	<p>Details: Name of a selector, which is used as the index of selectorNames in storageGroup.</p> <p>Constraints: The name of each selector must be unique.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
storageType	String	<p>Details: Storage type</p> <p>Constraints:</p> <ul style="list-style-type: none"> The local storage type does not support disk selection. All local disks form a VG. Therefore, only one local storage selector is allowed. The system storage type does not support disk selection. It is recommended that you use the system disk to store system components. As a result, only one storage selector of the system type is allowed, and the name must be cceUse. <p>Options: Only evs (EVS disks), local (local disks), and system (system disks) are supported.</p> <p>Default value: N/A</p>
matchLabels	matchLabels object	<p>Details: Matching field of an EVS disk</p> <p>Constraints: If storageType is set to system (system disk), you do not need to configure this parameter.</p> <p>Options: The size, volumeType, metadataEncrypted, metadataCmkid, and count fields in DataVolume are supported.</p> <p>Default value: N/A</p>

Table 4-663 matchLabels

Parameter	Type	Description
size	String	<p>Details: Matched disk size, for example, 100. If this parameter is left blank, the disk size is not limited.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
volumeType	String	<p>Details: EVS disk type</p> <p>Constraints: None</p> <p>Options: SSD, GPSSD, SAS, ESSD, and SATA are supported. If this parameter is left blank, there is no restriction on the disk type.</p> <p>Default value: N/A</p>
metadataEncrypted	String	<p>Details: Disk encryption identifier. If this parameter is set to 0, it specifies that the disk is not encrypted. If this parameter is set to 1, it specifies that the disk is encrypted. If this parameter is left blank, there is no restriction on the disk encryption identifier.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
metadataCmkid	String	<p>Details: CMK ID of an encrypted disk. The value is a string of 36 bytes. If this parameter is left blank, there is no restriction on the disk key ID.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
count	String	<p>Details: Number of disks to be selected. If this parameter is left blank, all disks of this type are selected.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-664 StorageGroups

Parameter	Type	Description
name	String	<p>Details: Name of a virtual storage group, which must be unique</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If cceManaged is set to true, the name field must be set to vgpaas. • If the data disk is used as a temporary storage volume, the name field must be set to vg-everest-localvolume-ephemeral. • If the data disk is used as a persistent storage volume, the name field must be set to vg-everest-localvolume-persistent. <p>Default value: N/A</p>
cceManaged	Boolean	<p>Details: Storage space to which Kubernetes and runtime belong. Only one group is set to true. If this parameter is left blank, the default value false is used.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
selectorNames	Array of strings	<p>Details: Corresponds to name in storageSelectors. One group can select multiple selectors, but one selector can be selected by only one group.</p> <p>Constraints: System components cannot be separately stored in the system disk and data disks. Therefore, when the selector type is set to system, only one selector can be selected for a group.</p>

Parameter	Type	Description
virtualSpaces	Array of VirtualSpace objects	<p>Details: Detailed management of space configurations in a group</p> <p>Constraints: None</p>

Table 4-665 VirtualSpace

Parameter	Type	Description
name	String	<p>Details: Name of a virtualSpace. Only types of share, kubernetes, runtime, and user are supported.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • kubernetes: Kubernetes space configuration. lvmConfig needs to be configured. • runtime: runtime space configuration. runtimeConfig needs to be configured. • user: user space configuration. lvmConfig needs to be configured. <p>Default value: N/A</p>
size	String	<p>Details: Size of a virtualSpace. The value must be an integer in percentage, for example, 90%.</p> <p>Constraints: None</p> <p>Options: 10 to 90. The sum of percentages of all virtualSpaces in a group cannot exceed 100%.</p> <p>Default value: N/A</p>

Parameter	Type	Description
lvmConfig	LVMConfig object	<p>Details: LVM configuration management, which is applicable to share, Kubernetes, and user space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>
runtimeConfig	RuntimeConfig object	<p>Details: Runtime configuration management, which is applicable to runtime space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>

Table 4-666 LVMConfig

Parameter	Type	Description
lvType	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
path	String	<p>Details: Disk mount path. This parameter only takes effect in user configuration. The value can be an absolute path containing digits, uppercase letters, lowercase letters, periods (.), hyphens (-), and underscores (_).</p> <p>Constraints: Do not leave the path empty or set it to a key OS path such as the root directory. Key OS paths that cannot be entered: /, /home, /home/, /bin, /bin/, /lib, /lib/, /root, /root/, /boot, /boot/, /dev, /dev/, /etc, /etc/, /lost+found, /lost+found/, /mnt, /mnt/, /proc, /proc/, /sbin, /sbin/, /srv, /srv/, /tmp, /tmp/, /var, /var/, /media, /media/, /opt, /opt/, /selinux, /selinux/, /sys, /sys/, /usr, /usr/, /opt/cloud/, /mnt/paas/, /home/paas/, /var/paas/, /var/lib/, /var/script/</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-667 RuntimeConfig

Parameter	Type	Description
lvType	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-668 NodePublicIP

Parameter	Type	Description
ids	Array of strings	<p>Details: IDs of existing EIPs</p> <p>Constraints:</p> <ul style="list-style-type: none"> The quantity cannot be greater than the number of nodes to be created. If ids has been specified, you do not need to configure count and eip.
count	Integer	<p>Details: Number of EIPs to be dynamically created</p> <p>Constraints: count and eip must be configured simultaneously.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
eip	NodeEIPSpec object	<p>Details: EIP configuration</p> <p>Constraints: This parameter is not supported when creating a node pool.</p>

Table 4-669 NodeEIPSpec

Parameter	Type	Description
iptype	String	<p>Details: EIP type, specified in publicip.type in the API for assigning an EIP. For details, see Assigning an EIP.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
bandwidth	NodeBandwidth object	Details: Bandwidth parameters of the EIP Constraints: None

Table 4-670 NodeBandwidth

Parameter	Type	Description
chargemode	String	Details: Bandwidth billing mode NOTE <ul style="list-style-type: none"> • Billed by bandwidth: The billing will be based on the data transmission rate (in Mbps) of public networks. This billing mode is recommended if your bandwidth usage is higher than 10%. • Billed by traffic: The billing is based on the total amount of data (in GB) transmitted over the public network. This mode is available only when you are creating a pay-per-use node. This billing mode is recommended if your bandwidth usage is lower than 10%. Constraints: None Options: <ul style="list-style-type: none"> • If this field is not specified, the billing is based on bandwidth. • If the field value is empty, the billing is based on bandwidth. • If the field value is traffic, the billing is based on traffic. • If the value is out of the preceding options, the cloud server will fail to be created. Default value: N/A

Parameter	Type	Description
size	Integer	<p>Details: Bandwidth size, specified in bandwidth.size in the API for assigning an EIP. For details, see Assigning an EIP.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
sharetype	String	<p>Details: Bandwidth sharing type. Dedicated bandwidth is supported only. PER specifies dedicated bandwidth.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-671 NodeNicSpec

Parameter	Type	Description
primaryNic	NicSpec object	<p>Details: Description of the primary ENI</p> <p>Constraints: None</p>
extNics	Array of NicSpec objects	<p>Details: Extension ENI</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>

Table 4-672 NicSpec

Parameter	Type	Description
subnetId	String	<p>Details: Network ID of the subnet to which an ENI belongs. If subnetList is also configured for a node pool, the subnetList field is used for adding subnets to the node pool.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If subnetId is not specified when a primary ENI is creating, the cluster subnet will be used. • When creating an extension ENI, you must specify subnetId. <p>Options: N/A</p> <p>Default value: N/A</p>
fixedIps	Array of strings	<p>Details: The IP address of the primary ENI is specified using fixedIps. The number of IP addresses cannot be greater than the number of created nodes.</p> <p>Constraints: Either fixedIps or ipBlock can be specified. fiexdlps cannot be specified for extension ENIs.</p>
ipBlock	String	<p>Details: CIDR format of the primary ENI IP address range. The IP address of the created node falls in this range.</p> <p>Constraints: Either fixedIps or ipBlock can be specified.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
subnetList	Array of strings	<p>Details: Network ID list of the subnet where the ENI resides. Multiple subnets can be configured for a node pool.</p> <p>Constraints: A maximum of 20 subnets can be configured.</p>

Table 4-673 Taint

Parameter	Type	Description
key	String	<p>Details: Key</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
value	String	<p>Details: Value</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
effect	String	<p>Details: Effect</p> <p>Constraints: None</p> <p>Options: Available options are NoSchedule, PreferNoSchedule, and NoExecute.</p> <p>Default value: N/A</p>

Table 4-674 UserTag

Parameter	Type	Description
key	String	<p>Details: Key of the cloud server tag</p> <p>Constraints: The value cannot start with CCE-, _type_baremetal, or sys.</p> <p>Options: The value contains a maximum of 128 characters. The tag key must be unique and cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, /</p> <p>Default value: N/A</p>
value	String	<p>Details: Value of the cloud server tag</p> <p>Constraints: None</p> <p>Options: The value contains a maximum of 255 characters. The tag value cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, </p> <p>Default value: N/A</p>

Table 4-675 Runtime

Parameter	Type	Description
name	String	<p>Details: Container runtime</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • Clusters earlier than v1.25: The default value is docker. • Clusters of v1.25 or later: The default value varies with the OSs. • For nodes running EulerOS 2.5 or EulerOS 2.8, the default value is docker. For nodes running other OSs, the default value is containerd.

Table 4-676 NodeExtendParam

Parameter	Type	Description
ecs:performancety pe	String	<p>Details: ECS flavor types. This field is returned in the response.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
orderID	String	<p>Details: Order ID</p> <p>Constraints: This parameter is returned in the response when the node is billed on a yearly/monthly basis with auto payment enabled (only in creation scenarios).</p> <p>Options: N/A</p> <p>Default value: N/A</p>
productID	String	<p>Details: Product ID</p> <p>Constraints: This field is returned in the response when the node is billed on a yearly/monthly basis with auto payment enabled.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
maxPods	Integer	<p>Details: Maximum number of pods that can be created on a node, including the default system pods. This limit prevents the node from being overloaded with pods. The number of pods that can be created on a node is determined by multiple parameters. For details, see Maximum Number of Pods That Can Be Created on a Node.</p> <p>Constraints: None</p> <p>Options: 16 to 256</p> <p>Default value: N/A</p>

Parameter	Type	Description
periodType	String	<p>Details: Subscription period type</p> <p>Constraints:</p> <ul style="list-style-type: none"> As a request parameter, it is valid and mandatory only when billingMode is set to 1 (yearly/monthly billing) or 2 (yearly/monthly billing with auto payment enabled) (This option has been discarded). As a response parameter, it is returned only when a yearly/monthly node is created. <p>Options:</p> <ul style="list-style-type: none"> month year <p>Default value: N/A</p>
periodNum	Integer	<p>Details: Number of subscription periods</p> <p>Constraints:</p> <ul style="list-style-type: none"> As a request parameter, it is valid and mandatory only when billingMode is set to 1 (yearly/monthly billing) or 2 (yearly/monthly billing with auto payment enabled) (This option has been discarded). As a response parameter, it is returned only when a yearly/monthly node is created. <p>Options:</p> <ul style="list-style-type: none"> If periodType is month, the value ranges from 1 to 9. If periodType is year, the value ranges from 1 to 3. <p>Default value: N/A</p>

Parameter	Type	Description
isAutoRenew	String	<p>Details: Whether auto-renewal is enabled</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified, auto-renewal is not enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto-renewal is enabled. • false: Auto-renewal is not enabled. <p>Default value: N/A</p>
isAutoPay	String	<p>Details: Whether an order is automatically or manually paid</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified when billingMode is set to 1, auto payment is not enabled. (Discarded) If not specified when billingMode is set to 2, auto payment is enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto payment is enabled. • false: Auto payment is not enabled. <p>Default value: N/A</p>

Parameter	Type	Description
<p>DockerLVMConfigOverride</p>	<p>String</p>	<p>Details: Docker data disk configuration item. (This parameter has been discarded. Use the storage field instead.) Example of the default configuration: "DockerLVMConfigOverride":"dockerThinpool=vgpaas/90%VG;kubernetesLV=vgpaas/10%VG;diskType=evs;lvType=linear" By default, if no VD disk is available, an error occurs because the data disk fails to be found. Specify diskType based on the actual drive letter type.</p> <p>Constraints: None</p> <p>Options: The following fields are included:</p> <ul style="list-style-type: none"> • userLV: (Optional) size of the user space, for example, vgpaas/20%VG • userPath (Optional): mount path of the user space, for example, /home/wqt-test • diskType: disk type. Only evs, hdd, and ssd are supported. • lvType: type of a logic volume. The value can be linear or striped. • dockerThinpool: Docker space size, for example, vgpaas/60%VG • kubernetesLV: kubelet space size, for example, vgpaas/20%VG <p>Default value: N/A</p>

Parameter	Type	Description
dockerBaseSize	Integer	<p>Details: Available disk space of a single container on a node (unit: G). This parameter has been discarded. Use containerBaseSize.</p> <p>For details about how to allocate the space for the container runtime, see Space Allocation of a Data Disk.</p> <p>Constraints: When Device Mapper is used, it is recommended that dockerBaseSize be set to a value less than or equal to 80 GiB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device.</p> <ul style="list-style-type: none"> The dockerBaseSize setting takes effect only on nodes running EulerOS or Huawei Cloud EulerOS 2.0 in clusters of the new version. <p>Options: 10 to 500</p> <p>Default value: If the value is not specified or is set to 0, the default value is used.</p> <ul style="list-style-type: none"> The default value is 10 in Device Mapper mode. In OverlayFS mode, the available space of a single container is not limited by default.

Parameter	Type	Description
containerBaseSize	Integer	<p>Details: Available disk space of a single container on a node (unit: G). For details about how to allocate the space for the container runtime, see Space Allocation of a Data Disk.</p> <p>Constraints: When Device Mapper is used, it is recommended that containerBaseSize be set to a value less than or equal to 80 GiB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device. In new versions, the Device Mapper mode is used only by BMSs in the same resource pool and is being discarded.</p> <ul style="list-style-type: none"> The containerBaseSize setting takes effect only on nodes running EulerOS or Huawei Cloud EulerOS 2.0 in clusters of the new version (v1.23.14-r0, v1.25.9-r0, v1.27.6-r0, v1.28.4-r0 or later). This parameter cannot be updated when a node pool is being updated. <p>Options: 10 to 500</p> <p>Default value: If the value is not specified or is set to 0, the default value is used.</p> <ul style="list-style-type: none"> The default value is 10 in Device Mapper mode. In OverlayFS mode, the available space of a single container is not limited by default.

Parameter	Type	Description
publicKey	String	<p>Details: Public key of a node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/ preInstall	String	<p>Details: Pre-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>Content to be encoded</code> base64</p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/ postInstall	String	<p>Details: Post-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>Content to be encoded</code> base64</p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
alpha.cce/ NodeImageID	String	<p>Details: This parameter is required when a custom image is used to create a BMS node.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
nicMultiqueue	String	<p>Details:</p> <ul style="list-style-type: none"> Number of ENI queues. Example: <code>"[{"queue":4}]"</code> <p>The following fields are included:</p> <ul style="list-style-type: none"> queue: number of ENI queues Supported configurations: {"1":128, "2":92, "4":92, "8":32, "16":16,"28":9}, indicating that a maximum of 128 ENIs can be associated if there is one queue and a maximum of 92 ENIs if there are two queues. A larger number of ENI queues indicates higher performance but fewer ENIs can be associated. The queue settings cannot be changed after creation. <p>Constraints: This field can be configured only for BMS nodes in CCE Turbo clusters.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
nicThreshold	String	<p>Details:</p> <ul style="list-style-type: none"> • ENI pre-binding thresholds. Example: "0.3:0.6" • Low threshold (L): determines the minimum number of pre-bound ENIs (Min). Formula: Min = Total number of ENIs of the node × L • High threshold (H): determines the maximum number of pre-bound ENIs (Max). Formula: Max = Total number of ENIs of the node × H • Number of ENIs bound to a BMS node (B) and number of ENIs being used by pods (U): $U + \text{Min} < B < U + \text{Max}$ • If the number of pre-bound ENIs on a BMS node is smaller than the minimum allowed, the system will bind more ENIs to make the numbers equal. • If the number of pre-bound ENIs on a BMS node is larger than the maximum allowed, the system periodically unbinds ENIs (about every 2 minutes) to make the numbers equal. <p>Constraints:</p> <ul style="list-style-type: none"> • This field can be configured only for BMS nodes in CCE Turbo clusters. • Pre-binding ENIs can speed up workload creation but occupies IP addresses. <p>Options: Both the thresholds are one-decimal-place values ranging from 0.0 to 1.0. The low threshold must be smaller than or equal to the high one.</p> <p>Default value: N/A</p>

Parameter	Type	Description
chargingMode	Integer	<p>Details: Billing mode of a node. This parameter has been discarded. Use billingMode in NodeSpec instead.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
marketType	String	<p>Details: When creating a spot ECS, this parameter should be set to spot.</p> <p>Constraints: This parameter is valid only when billingMode is set to 0.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
spotPrice	String	<p>Details: The highest price per hour a user accepts for a spot ECS</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This parameter takes effect only when billingMode is set to 0 and marketType is set to spot. • When billingMode is set to 0 and marketType is set to spot, if spotPrice is not specified, the pay-per-use price is used by default. • The spotPrice value must be less than or equal to the pay-per-use price and greater than or equal to the ECS market price. <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
agency_name	String	<p>Details: Agency name. An agency is created by a tenant administrator on Identity and Access Management (IAM) to provide temporary credentials for CCE nodes to access cloud servers. This parameter is returned only when it is transferred during node creation.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
kubeReservedMem	Integer	<p>Details: Reserved node memory, which is reserved for Kubernetes components.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
systemReservedMem	Integer	<p>Details: Reserved node memory, which is reserved for system components.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
init-node-password	String	<p>Details: Node password. If this parameter is used as a response parameter, asterisks (*) will be displayed.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
securityReinforcementType	String	<p>Details: Security hardening type of a node. Huawei Cloud EulerOS 2.0 images based on DJCP 2.0 level 3 security hardening are supported. DJCP checks identity authentication, access control, security audit, intrusion prevention, and malicious code prevention and hardens security.</p> <p>If this parameter is not specified, the original value is used. For example, If security hardening has been set up for a Huawei Cloud EulerOS 2.0 image and you do not specify this parameter when updating a node pool, the security hardening configuration will remain unchanged. To remove the security hardening configuration, set this parameter to null.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Empty: Security hardening is not enabled. • cybersecurity: Security hardening is enabled. <p>Default value: N/A</p>

Table 4-677 HostnameConfig

Parameter	Type	Description
type	String	<p>Details: Configuration type of the Kubernetes node name. The default value is privatelp.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The node names, Kubernetes node names, and VM names of the nodes configured with cceNodeName are the same. Node names cannot be changed. Once a VM name is altered on the ECS console, the node name cannot be modified accordingly during ECS synchronization. • To prevent conflicts between Kubernetes node names, a suffix is automatically added to the node name of a node configured with cceNodeName. The suffix consists of a hyphen (-) followed by five random lowercase letters and digits (0 to 9). <p>Options:</p> <ul style="list-style-type: none"> • privatelp: Use the private node IP address as the Kubernetes node name. • cceNodeName: Use the CCE node name as the Kubernetes node name. <p>Default value: privatelp</p>

Table 4-678 NodePoolNodeAutoscaling

Parameter	Type	Description
enable	Boolean	<p>Details: Whether to enable auto scaling</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • false: Auto scaling is disabled. • true: Auto scaling is enabled. <p>Default value: false</p>
minNodeCount	Integer	<p>Details: Minimum number of nodes that can be scaled in if auto scaling is enabled</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to 0 and cannot be greater than the maximum number of nodes allowed by the cluster specifications</p> <p>Default value: 0</p>
maxNodeCount	Integer	<p>Details: Maximum number of nodes that can be added if auto scaling is enabled</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to the value of minNodeCount and cannot be greater than the maximum number of nodes allowed by the cluster specifications</p> <p>Default value: 0</p>

Parameter	Type	Description
scaleDownCooldownTime	Integer	<p>Details: How long nodes will be kept, in minutes. During this period, nodes added will not be deleted.</p> <p>Constraints: None</p> <p>Options: 0 to 2147483646</p> <p>Default value: 0</p>
priority	Integer	<p>Details: Weight of a node pool. A node pool with a higher weight has a higher priority during scale-out.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: 0</p>

Table 4-679 NodeManagement

Parameter	Type	Description
serverGroupReference	String	<p>Details:</p> <p>A cloud server group ID. If this parameter is specified, the cloud server group will be associated with the target node pool, and all nodes in the node pool will be created in this cloud server group. After a cloud server group is associated with a node pool, the number of nodes in the node pool cannot exceed the number of cloud servers that can be added to the cloud server group, or the node pool cannot be scaled out.</p> <p>NOTE</p> <ul style="list-style-type: none"> • After a cloud server group is associated with a node pool, the cloud servers added to the cloud server group will be distributed in strict accordance with the affinity policy and the maximum number of nodes in the node pool will be limited. The anti-affinity capabilities are available during cloud server creation on ECS. If your goal is to enhance service reliability by distributing cloud servers across different hosts and you do not want the number of nodes to be restricted by cloud server groups, you are not advised to associate cloud server groups with any node pools. • A cloud server group can be disassociated from the node pool. After the change, the existing nodes will remain in the original cloud server group, and no new nodes will be added to the cloud server group. If the node pool is empty, you can associate a new cloud server group with the node pool or change the associated cloud server group. <p>Constraints:</p> <p>If a cloud server group is specified, the number of nodes in the node pool cannot exceed the group quota.</p> <p>Options:</p> <ul style="list-style-type: none"> • If this parameter is not specified or left blank, the cloud server group will be disassociated from the node pool.

Parameter	Type	Description
		<ul style="list-style-type: none"> A cloud server group ID: The cloud server group associated with the node pool will be changed to a specified one. <p>Default value: N/A</p>

Table 4-680 SecurityID

Parameter	Type	Description
id	String	<p>Details: Security group ID</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-681 ExtensionScaleGroup

Parameter	Type	Description
metadata	ExtensionScaleGroupMetadata object	<p>Details: Basic information about an extended scaling group</p> <p>Constraints: None</p>
spec	ExtensionScaleGroupSpec object	<p>Details: Configurations of an extended scaling group, which carry different configurations from those of the default scaling group</p> <p>Constraints: None</p>

Table 4-682 ExtensionScaleGroupMetadata

Parameter	Type	Description
uid	String	<p>Details: UUID of an extended scaling group, which is automatically generated by the system</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
name	String	<p>Details: Name of an extended scaling group</p> <p>Constraints: The value cannot be default.</p> <p>Options: The value can contain a maximum of 55 characters. Only digits, lowercase letters, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>

Table 4-683 ExtensionScaleGroupSpec

Parameter	Type	Description
flavor	String	<p>Details: Node flavors. For details about the node flavors supported by CCE clusters, see Node Specifications.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
az	String	<p>Details: Node AZ</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: If this parameter is not specified or left blank, the default scaling group configurations take effect.</p>
capacityReservationSpecification	CapacityReservationSpecification object	<p>Details: Capacity reservation configurations of an extended scaling group</p> <p>Constraints: None</p>
autoscaling	ScaleGroupAutoscaling object	<p>Details: Auto scaling configurations of an extended scaling group</p> <p>Constraints: None</p>

Table 4-684 CapacityReservationSpecification

Parameter	Type	Description
id	String	<p>Details: Private pool ID</p> <p>Constraints: This value can be ignored when preference is set to none.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
preference	String	<p>Details: Private pool capacity</p> <p>Constraints: If the value is none, the capacity reservation is not specified. If the value is targeted, the capacity reservation is specified. In this case, the ID cannot be left blank.</p> <p>Options: N/A</p> <p>Default value: none</p>

Table 4-685 ScaleGroupAutoscaling

Parameter	Type	Description
enable	Boolean	<p>Details: Whether to enable auto scaling for a scaling group</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • false: Auto scaling is disabled. • true: Auto scaling is enabled. <p>Default value: false</p>
extensionPriority	Integer	<p>Details: Scaling group priority. A larger value indicates a higher priority.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: 0</p>

Parameter	Type	Description
minNodeCount	Integer	<p>Details: Minimum number of nodes that can be kept in a scaling group during auto scaling</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to 0 and cannot be greater than the maximum number of nodes allowed by the cluster specifications</p> <p>Default value: 0</p>
maxNodeCount	Integer	<p>Details: Maximum number of nodes that can be kept in a scaling group during auto scaling</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to the value of minNodeCount, less than or equal to the maximum number of nodes allowed by the cluster specifications, and less than or equal to the maximum number of nodes in the node pool</p> <p>Default value: 0</p>

Table 4-686 NodePoolStatus

Parameter	Type	Description
currentNode	Integer	<p>Details: Total number of nodes in the current node pool (excluding the nodes that are being deleted)</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
creatingNode	Integer	<p>Details: Number of nodes that are being created in the current node pool</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
deletingNode	Integer	<p>Details: Number of nodes that are being deleted in the current node pool</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
configurationSyn- cedNodeCount	Integer	<p>Details: The number of nodes specified in the node pool configuration has been synchronized in the current node pool.</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
phase	String	<p>Details: Node pool status</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Null: The node pool is available. (The number of nodes in the current node pool has reached the expected value, and no node scaling is being performed.) • Synchronizing: The node pool is being scaled. (The number of nodes in the current node pool has not reached the expected value, and no node scaling is being performed.) • Synchronized: The node pool scaling is pending. (The number of nodes in the current node pool has not reached the expected value, or node scaling is being performed.) • SoldOut: The node pool cannot be scaled out. (This field is used in multiple scenarios, for example, resources in the node pool have been sold out or the resource quota is insufficient.) <p>NOTE The preceding node pool status has been discarded. It is reserved only for compatibility. Do not use it anymore. Use the following instead:</p> <ul style="list-style-type: none"> • Node pool scaling status: You can obtain the status of the current node pool using parameters such as currentNode, creatingNode, or deletingNode. • Node pool scale-out: You can use conditions to obtain the detailed status of a node pool. Scalable can replace SoldOut. • Deleting: The node pool is being deleted. • Error: An error occurred. <p>Default value: N/A</p>

Parameter	Type	Description
jobId	String	<p>Details: ID of a job executed on the node pool. This field is available only when the node pool is being deleted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
conditions	Array of NodePoolCondition objects	<p>Details: Node pool status details. For details, see the definition of Condition.</p> <p>Constraints: None</p>
scaleGroupStatuses	Array of ScaleGroupStatus objects	<p>Details: Detailed status of a scaling group. For details, see the definition of ScaleGroupStatus.</p> <p>Constraints: None</p>

Table 4-687 ScaleGroupStatus

Parameter	Type	Description
name	String	<p>Details: Scaling group name</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
uid	String	<p>Details: Scaling group UUID</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
creationTimestamp	String	<p>Details: The time when a scaling group was created</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
updateTimestamp	String	<p>Details: The time when a scaling group was updated</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
phase	String	<p>Details: Scaling group status</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Null: The scaling group is available. (The number of nodes in the current scaling group has reached the expected value, and no node scaling is being performed.) • Synchronizing: The scaling group is being scaled. (The number of nodes in the current scaling group has not reached the expected value, and no node scaling is being performed.) • Synchronized: The scaling is pending. (The number of nodes in the current scaling group has not reached the expected value, or node scaling is being performed.) • SoldOut: The scaling group cannot be scaled out. (This field is used in multiple scenarios, for example, resources in the node pool have been sold out or the resource quota is insufficient.) <p>NOTE The preceding scaling group status has been discarded. It is reserved only for compatibility. Do not use it anymore. Use the following instead:</p> <ul style="list-style-type: none"> • Scaling status of a scaling group: You can obtain the status of the current scaling group using parameters such as desiredNodeCount, existingNodeCount, or upcomingNodeCount. • Scaling group scale-out: You can use conditions to obtain the detailed status of a scaling group. Scalable can replace SoldOut. • Deleting: The scaling group is being deleted. • Error: An error occurred. <p>Default value: N/A</p>

Parameter	Type	Description
desiredNodeCount	Integer	<p>Details: Expected number of nodes in a scaling group</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
unpaidScaleNodeCount	Integer	<p>Details: Number of nodes in an unpaid order</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
existingNodeCount	existingNodeCount object	<p>Details: Statistics on existing nodes in a scaling group</p> <p>Constraints: None</p>
upcomingNodeCount	upcomingNodeCount object	<p>Details: Statistics on the nodes to be added in a scaling group</p> <p>Constraints: None</p>
scaleDownDisabledNodeCount	Integer	<p>Details: Number of nodes that cannot be deleted in a scaling group</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
conditions	Array of NodePoolCondition objects	<p>Details: Scaling group status details. For details, see the definition of Condition.</p> <p>Constraints: None</p>

Table 4-688 existingNodeCount

Parameter	Type	Description
postPaid	Integer	<p>Details: Number of pay-per-use nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
prePaid	Integer	<p>Details: Number of yearly/monthly nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
total	Integer	<p>Details: Total number of pay-per-use and yearly/monthly nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-689 upcomingNodeCount

Parameter	Type	Description
postPaid	Integer	<p>Details: Number of pay-per-use nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
prePaid	Integer	<p>Details: Number of yearly/monthly nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
total	Integer	<p>Details: Total number of pay-per-use and yearly/monthly nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-690 NodePoolCondition

Parameter	Type	Description
type	String	<p>Details: Condition type</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Scalable: whether a node pool can be scaled out. If the status is False, node pool scale-out will not be triggered again. • QuotaInsufficient: Quotas on which node pool scale-out depends are insufficient, affecting the node pool scale-out status. • ResourceInsufficient: Resources on which node pool scale-out depends are insufficient, affecting the node pool scale-out status. • UnexpectedError: The node pool fails to be scaled out due to unexpected reasons, affecting the node pool scale-out status. • LockedByOrder: The yearly/monthly-billed node pool is locked due to an order. The value of Reason is the ID of the pending order. • Error: A node pool error occurred. A common trigger is deletion failure. <p>Default value: N/A</p>
status	String	<p>Details: Current status of the condition</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • True • False <p>Default value: N/A</p>

Parameter	Type	Description
lastProbeTime	String	<p>Details: Time when the status was last checked</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
lastTransitTime	String	<p>Details: Time when the status was last changed</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
reason	String	<p>Details: Reason why the status was last changed</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
message	String	<p>Details: Detailed description of the condition</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Example Requests

None

Example Responses

Status code: 200

Information about all node pools in the cluster is successfully obtained.

```
{
  "kind": "List",
  "apiVersion": "v3",
  "items": [ {
    "kind": "NodePool",
    "apiVersion": "v3",
    "metadata": {
      "name": "az1.dc1#s1.large#EulerOS 2.2",
      "uid": "az1.dc1#s1.large#EulerOS 2.2"
    },
    "spec": {
      "nodeTemplate": {
        "flavor": "s1.large",
        "az": "az1.dc1",
        "os": "EulerOS 2.2",
        "login": {
          "sshKey": "KeyPair-001"
        },
        "rootVolume": { },
        "publicIP": {
          "eip": {
            "bandwidth": { }
          }
        },
        "billingMode": 0
      },
      "autoscaling": {
        "enable": true,
        "maxNodeCount": 50
      }
    },
    "status": {
      "currentNode": 1
    }
  } ]
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ListNodePoolsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        environment variables and decrypted during use to ensure security.
    }
}
```

```
// In this example, AK and SK are stored in environment variables for authentication. Before running
this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
String ak = System.getenv("CLOUD_SDK_AK");
String sk = System.getenv("CLOUD_SDK_SK");
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
    .withProjectId(projectId)
    .withAk(ak)
    .withSk(sk);

CceClient client = CceClient.newBuilder()
    .withCredential(auth)
    .withRegion(CceRegion.valueOf("<YOUR REGION>"))
    .build();
ListNodePoolsRequest request = new ListNodePoolsRequest();
request.withClusterId("{cluster_id}");
try {
    ListNodePoolsResponse response = client.listNodePools(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.getenv("CLOUD_SDK_AK")
    sk = os.getenv("CLOUD_SDK_SK")
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ListNodePoolsRequest()
        request.cluster_id = "{cluster_id}"
        response = client.list_node_pools(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
```



```
print(e.error_code)
print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ListNodePoolsRequest{}
    request.ClusterId = "{cluster_id}"
    response, err := client.ListNodePools(request)
    if err == nil {
        fmt.Printf("%v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Information about all node pools in the cluster is successfully obtained.

Error Codes

See [Error Codes](#).

4.4.4 Updating a Specified Node Pool

Function

This API is used to update information about a specified node pool. This API can be called only when the cluster is in the Available, Scale Out, or Scale In state.

NOTE

- The URL for cluster management is in the following format: `https://Endpoint/uri`. `uri` indicates the resource path, that is, the API access path.
- Currently, only the node pool name can be updated. `initialNodeCount`, `k8sTags`, `taints`, `login` and `userTags` under `spec` are related to the scaling configuration of the node pool. If no value is set for this update, the initial value is used by default.

Calling Method

For details, see [Calling APIs](#).

URI

PUT `/api/v3/projects/{project_id}/clusters/{cluster_id}/nodepools/{nodepool_id}`

Table 4-691 Path Parameters

Parameter	Mandatory	Type	Description
<code>project_id</code>	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>
nodepool_id	Yes	String	<p>Details: Node pool ID. For details about how to obtain the ID, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-692 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-693 Request body parameters

Parameter	Mandatory	Type	Description
metadata	Yes	NodePoolMetadataUpdate object	<p>Details: Metadata of a node pool</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>
spec	Yes	NodePoolSpecUpdate object	<p>Details: Node pool specifications</p> <p>Constraints: This field is optional for updating a node pool.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-694 NodePoolMetadataUpdate

Parameter	Mandatory	Type	Description
name	Yes	String	<p>Details: Node pool name</p> <p>Constraints: You are not allowed to create node pools named DefaultPool.</p> <p>Options: Enter 1 to 50 characters starting with a lowercase letter and not ending with a hyphen (-). Only lowercase letters, digits, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>

Table 4-695 NodePoolSpecUpdate

Parameter	Mandatory	Type	Description
nodeTemplate	Yes	NodeSpecUpdate object	<p>Details: Detailed parameters of a node pool template</p> <p>Constraints: This field is optional for updating a node pool.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
initialNodeCount	Yes	Integer	<p>Details: Desired number of nodes in a node pool</p> <p>Constraints: This field is mandatory for updating a node pool.</p> <p>NOTE Note that if this field is not specified when updating a node pool, the expected number of nodes in the node pool will default to 0. If there are more nodes in the node pool than this number, the excess nodes will be scaled in.</p> <p>Options: Greater than 0 and less than the number of nodes that can be managed by the cluster</p> <p>Default value: 0</p>
autoscaling	Yes	NodePoolNodeAutoscaling object	<p>Details: Auto scaling parameters. Only pay-per-use node pools support auto scaling.</p> <p>Constraints: This field is optional for updating a node pool.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
nodeManagementUpdate	No	NodeManagement object	<p>Details: Node management configuration</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
taintPolicyOnExistingNodes	No	String	<p>Details: Whether to synchronize Kubernetes taints</p> <p>Constraints: N/A</p> <p>Options:</p> <ul style="list-style-type: none"> • refresh: Kubernetes taint modifications will be automatically synchronized to existing nodes. • ignore: Kubernetes taint modifications will not be automatically synchronized to existing nodes. <p>Default value: None</p>
labelPolicyOnExistingNodes	No	String	<p>Details: Whether to synchronize Kubernetes labels</p> <p>Constraints: N/A</p> <p>Options:</p> <ul style="list-style-type: none"> • refresh: Kubernetes label modifications will be automatically synchronized to existing nodes. • ignore: Kubernetes label modifications will not be automatically synchronized to existing nodes. <p>Default value: None</p>

Parameter	Mandatory	Type	Description
userTagsPolicyOnExistingNodes	No	String	<p>Details: Whether to synchronize node pool tags</p> <p>Constraints: N/A</p> <p>Options:</p> <ul style="list-style-type: none"> • refresh: Node pool tag modifications will be automatically synchronized to existing nodes. • ignore: Node pool tag modifications will not be automatically synchronized to existing nodes. <p>Default value: None</p>
extensionScaleGroups	No	Array of ExtensionScaleGroup objects	<p>Details: Configuration list of the extended scaling groups in a node pool. For details, see the definition of ExtensionScaleGroup.</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-696 NodeSpecUpdate

Parameter	Mandatory	Type	Description
flavor	No	String	Details: Node flavors Constraints: N/A Options: For details about the node flavors supported by CCE clusters, see Node Specifications . Default value: N/A

Parameter	Mandatory	Type	Description
os	No	String	<p>Details: Node OS. For details, see Node OSs.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If the selected OS is not supported by the current cluster version, it will be automatically replaced with a supported OS of the same series. • If alpha.cce/NodeImageID in extendParam is specified during node creation, you do not need to configure this parameter. • If this parameter is not specified, CCE will automatically select a supported OS version based on the cluster version. • This parameter is mandatory when creating a node pool. • This parameter is mandatory if the disk initialization parameter storage is used and the name field of virtualSpaces in StorageGroups is set to share during node creation. <p>Options: N/A</p> <p>Default value: N/A</p>
login	No	Login object	<p>Details: Node login mode. Either a key pair or password must be used for login.</p> <p>Constraints: This parameter cannot be modified when a node pool is being updated.</p>

Parameter	Mandatory	Type	Description
rootVolumeUpdate	No	Volume object	<p>Details: Disk information of a node</p> <p>Constraints: N/A</p>
dataVolumesUpdate	No	Array of Volume objects	<p>Details: Data disk parameters of a node. For DeC nodes, the parameter details are the same as those in rootVolume.</p> <p>Constraints: A VM can have up to 16 disks attached, while a BMS can only have up to 10 disks attached. The maximum number of disks that can be attached to either a VM or BMS is limited by their respective maximum disk limits. (You can add more data disks to each of your nodes through the CCE console or APIs.)</p> <p>The data disk used by the container runtime and kubelet cannot be detached, or the node will become unavailable.</p>

Parameter	Mandatory	Type	Description
storage	No	Storage object	<p>Details: Disk initialization management parameter. This parameter is complex to configure. For details, see Attaching Disks to a Node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This field is supported by clusters of v1.15.11-r0 and later versions. If the cluster version is not supported, this field will be ignored. • If a node has both local and EVS disks attached, make sure to not keep the default value for this parameter, or it may result in unexpected disk partitions. • If you want to change the value range of a data disk to 20 to 32768, do not use the default value. • If you want to use the shared disk space (with the runtime and Kubernetes partitions cancelled), do not retain the default value of this parameter. For details about the shared disk space, see Space Allocation of a Data Disk. • If you want to store system components in the system disk, do not use the default value.

Parameter	Mandatory	Type	Description
runtime	No	Runtime object	<p>Details: Container runtime</p> <ul style="list-style-type: none"> • Clusters earlier than v1.25: The default value is docker. • Clusters of v1.25 or later: The default value varies with the OSs. • For nodes running EulerOS 2.5 or EulerOS 2.8, the default container runtime is docker. For nodes running other OSs, the default container runtime is containerd. <p>Constraints: N/A</p>

Parameter	Mandatory	Type	Description
taints	Yes	Array of Taint objects	<p>Details:</p> <p>Taints, which can be added to nodes for anti-affinity configuration. Each taint contains the following parameters:</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain can be prefixed to a key. • Value: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. • Effect: Available options are NoSchedule, PreferNoSchedule, and NoExecute. <p>When creating a node, you can specify an initial value for this field and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example:</p> <pre>"taints": [{ "key": "status", "value": "unavailable", "effect": "NoSchedule" }, { "key": "looks", "value": "bad", "effect": "NoSchedule" }]</pre> <p>Constraints:</p> <ul style="list-style-type: none"> • A maximum of 20 taints can be configured.

Parameter	Mandatory	Type	Description
			<ul style="list-style-type: none">• If this parameter is not specified or left empty, the custom taints of the node pool will be deleted.• This field is optional for updating a node pool.

Parameter	Mandatory	Type	Description
k8sTags	Yes	Map<String,String>	<p>Details: Defined in key-value pairs.</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain containing a maximum of 253 characters (such as example.com/my-key) can be prefixed to a key. • Value: The value can be left blank or contain 1 to 63 characters that start and end with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. <p>When creating a node, you can specify an initial value for this field and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example:</p> <pre>"k8sTags": { "key": "value" }</pre> <p>Constraints:</p> <ul style="list-style-type: none"> • A maximum of 20 key-value pairs are allowed. • If this parameter is not specified or left empty, the custom Kubernetes labels of the node pool will be deleted. • This field is optional for updating a node pool.

Parameter	Mandatory	Type	Description
ecsGroupId	No	String	<p>Details: ECS group ID. If this parameter is specified, nodes will be created in the specific ECS group.</p> <p>Constraints: This configuration does not take effect when a node pool is created. To ensure that all nodes in a node pool are in the same ECS group, configure nodeManagement in the node pool.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
userTags	Yes	Array of UserTag objects	<p>Details: Cloud server resource tags</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The key of a tag must be unique. The maximum number of custom tags supported by CCE varies depending on regions and cannot exceed 8. • If this parameter is not specified or left empty, the custom cloud server tags of the node pool will be deleted. • This field is optional for updating a node pool. <p>Options: N/A</p> <p>Default value: null</p>

Parameter	Mandatory	Type	Description
nodeNameTemplate	No	Object	<p>Details: Defined in key-value pairs.</p> <ul style="list-style-type: none"> • nodeNamePrefix: A prefix must start with a lowercase letter and can only contain lowercase letters, digits, periods (.), and hyphens (-). If a period (.) is used, it must be surrounded by lowercase letters or digits. • nodeNameSuffix: A suffix must end with a lowercase letter or digit and can only contain lowercase letters, digits, periods (.), and hyphens (-). If a period (.) is used, it must be surrounded by lowercase letters or digits. <p>Example: <pre>"k8sTags": { "nodeNamePrefix": "test1", "nodeNameSuffix": "test2" }</pre> </p> <p>Constraints: This field is optional for updating a node pool.</p> <p>Default value: null</p>

Parameter	Mandatory	Type	Description
initializedConditions	No	Array of strings	<p>Details: Custom initialization flag, which is left blank by default. Before CCE nodes are initialized, they are tainted with node.cloudprovider.kubernetes.io/uninitialized to prevent pods from being scheduled to them. When creating a node, you can specify the initializedConditions parameter to control the taint removal time. By default, the timeout interval is not configured.</p> <p>Example:</p> <ol style="list-style-type: none"> 1. Create a node and add parameter <code>"initializedConditions": ["CCEInitial", "CustomedInitial"]</code>. 2. Update a node and add parameter <code>"initializedConditions": ["NodeInitial"]</code>. By default, when a new node in the node pool is added to the cluster, the node does not accept pods from other nodes. 3. After custom initialization is complete, CCE will call a Kubernetes API (for example, PATCH /v1/nodes/{node_ip}/status) to update the node conditions by adding two flags whose "type" values are CCEInitial and CustomedInitial, respectively, and both "status" values are True. <pre>status: conditions: - type: CCEInitial status: 'True' - type: CustomedInitial status: 'True'</pre>

Parameter	Mandatory	Type	Description
			<p>1. CCE polls status.Conditions of nodes to check whether there are conditions whose "type" is CCEInitial or CustomedInitial. If such conditions exist and their status is True, the node initialization is complete and the initialization taint is removed.</p> <p>2. initializedConditions allows you to configure a timeout interval during node creation. For example, "initializedConditions": ["CCEInitial:15m", "CustomedInitial:15m"] indicates that the timeout interval is 15 minutes. After the timeout interval is reached, the initialization conditions will be automatically ignored and the initialization taint will be removed when CCE polls the node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The timeout interval in initializedConditions ranges from 1 to 99 in the unit of seconds. • Each value must be between 1 and 20 characters long and can only contain letters and digits. • The maximum number of flags cannot exceed 2. • The unit of the timeout interval is minute (m). <p>NOTE</p> <ul style="list-style-type: none"> • This field is optional for updating a node pool.

Parameter	Mandatory	Type	Description
serverEnterpriseProjectID	No	String	<p>Details: Enterprise project ID of a server. CCE does not provide EPS features. This field is only used for synchronizing enterprise project IDs of servers.</p> <p>Constraints: To create a node or node pool, you can specify an existing enterprise project for it. If this field is left blank, it inherits the enterprise project attributes of the cluster that runs the node or node pool. When updating a node pool, any configuration modifications you made will apply only to new nodes. You need to modify the enterprise projects of existing nodes on the EPS console.</p> <p>Options: N/A</p> <p>Default value: If no value is specified during update, this field will not be updated. If this parameter is left blank, the cluster enterprise project will be returned.</p>
nodeNicSpecUpdate	No	nodeNicSpecUpdate object	<p>Details: Update the NIC of a node.</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
extendParam	No	NodePoolUpdateExtendParam object	<p>Details: Extended parameters supported when a node pool is updated</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-697 Login

Parameter	Mandatory	Type	Description
sshKey	No	String	<p>Details: Name of the key pair used for login</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
userPassword	No	UserPassword object	<p>Details: Password used for node login</p> <p>Constraints: None</p>

Table 4-698 UserPassword

Parameter	Mandatory	Type	Description
username	No	String	<p>Details: Login account. The default value is root.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: root</p>
password	Yes	String	<p>Details: Login password. If a username and password are used when a node is created, this field is shielded in the response body.</p> <p>Constraints: The password field must be salted during node creation. For details, see Adding a Salt in the password Field When Creating a Node.</p> <p>Options: A password must:</p> <ul style="list-style-type: none"> • Contain 8 to 26 characters. • Contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters !@\$%^-_=+[{ }];,./? • Not contain the username or the username spelled backwards. <p>Default value: N/A</p>

Table 4-699 Volume

Parameter	Mandatory	Type	Description
size	Yes	Integer	<p>Details: Disk size, in GiB</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • System disks: 40 to 1024 • The first data disk: 20 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) • Other data disks: 10 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) <p>Default value: N/A</p>
volumetype	Yes	String	<p>Details: Disk type. For details about possible values, see the root_volume parameter in the API used to create an ECS.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • SAS: high I/O SAS disks • SSD: ultra-high I/O SSD disks • SATA: common I/O SATA disks. SATA disks have been removed from EVS. You can find them attached only to existing nodes. <p>NOTE For details about disk types, see Disk Types and Performance.</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
extendParam	No	Map<String, Object>	<p>Details: Extended disk parameters, defined in extendparam in the API used to create an ECS. For details, see extendparam Field Description for Creating Disks.</p> <p>Constraints: None</p>
cluster_id	No	String	<p>Details: ID of the storage pool used by the ECS system disk. This field is used only for DeC clusters and functions as dssPoolID, that is, the ID of the DSS storage pool.</p> <p>To obtain the value, see the ID field in the API used to obtain details of a DSS storage pool.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
cluster_type	No	String	<p>Details: Storage class of the ECS system disk</p> <p>Constraints: None</p> <p>Options: This field is used only for DeC clusters, and the value is always dss.</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
hw:passthrough	No	Boolean	<p>Details:</p> <ul style="list-style-type: none"> Pay attention to this field if your ECS is SDI-compliant. If the value of this field is true, the created disk is of SCSI type. If the node pool type is ElasticBMS, this field must be set to true. If the node specification involves both local and EVS disks, configure the disk initialization parameters. For details, see Attaching Disks to a Node. <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
metadata	No	VolumeMetadata object	<p>Details: EVS disk encryption information. This parameter is mandatory only when the system disk or data disk of the node to be created needs to be encrypted.</p> <p>Constraints: None</p>

Table 4-700 VolumeMetadata

Parameter	Mandatory	Type	Description
<code>__system__encrypted</code>	No	String	<p>Details: Whether an EVS disk is encrypted. The value 0 indicates that the EVS disk is not encrypted, and the value 1 indicates that the EVS disk is encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: If this parameter does not appear, the disk is not encrypted.</p>
<code>__system__cmkid</code>	No	String	<p>Details: CMK ID, which indicates encryption in metadata. This field is used with __system__encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-701 Storage

Parameter	Mandatory	Type	Description
<code>storageSelectors</code>	Yes	Array of StorageSelectors objects	<p>Details: Disk selection. Matched disks are managed based on matchLabels and storageType settings. Disks are matched in sequence. The matching rule in the front is matched first.</p> <p>Constraints: None</p>

Parameter	Mandatory	Type	Description
storageGroups	Yes	Array of StorageGroups objects	<p>Details: A storage group consisting of multiple storage devices, which are used to divide storage space.</p> <p>Constraints: None</p>

Table 4-702 StorageSelectors

Parameter	Mandatory	Type	Description
name	Yes	String	<p>Details: Name of a selector, which is used as the index of selectorNames in storageGroup.</p> <p>Constraints: The name of each selector must be unique.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
storageType	Yes	String	<p>Details: Storage type</p> <p>Constraints:</p> <ul style="list-style-type: none"> The local storage type does not support disk selection. All local disks form a VG. Therefore, only one local storage selector is allowed. The system storage type does not support disk selection. It is recommended that you use the system disk to store system components. As a result, only one storage selector of the system type is allowed, and the name must be cceUse. <p>Options: Only evs (EVS disks), local (local disks), and system (system disks) are supported.</p> <p>Default value: N/A</p>
matchLabels	No	matchLabels object	<p>Details: Matching field of an EVS disk</p> <p>Constraints: If storageType is set to system (system disk), you do not need to configure this parameter.</p> <p>Options: The size, volumeType, metadataEncrypted, metadataCmkid, and count fields in DataVolume are supported.</p> <p>Default value: N/A</p>

Table 4-703 matchLabels

Parameter	Mandatory	Type	Description
size	No	String	<p>Details: Matched disk size, for example, 100. If this parameter is left blank, the disk size is not limited.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
volumeType	No	String	<p>Details: EVS disk type</p> <p>Constraints: None</p> <p>Options: SSD, GPSSD, SAS, ESSD, and SATA are supported. If this parameter is left blank, there is no restriction on the disk type.</p> <p>Default value: N/A</p>
metadataEncrypted	No	String	<p>Details: Disk encryption identifier. If this parameter is set to 0, it specifies that the disk is not encrypted. If this parameter is set to 1, it specifies that the disk is encrypted. If this parameter is left blank, there is no restriction on the disk encryption identifier.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
metadataCmkid	No	String	<p>Details: CMK ID of an encrypted disk. The value is a string of 36 bytes. If this parameter is left blank, there is no restriction on the disk key ID.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
count	No	String	<p>Details: Number of disks to be selected. If this parameter is left blank, all disks of this type are selected.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-704 StorageGroups

Parameter	Mandatory	Type	Description
name	Yes	String	<p>Details: Name of a virtual storage group, which must be unique</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If cceManaged is set to true, the name field must be set to vgpaas. • If the data disk is used as a temporary storage volume, the name field must be set to vg-everest-localvolume-ephemeral. • If the data disk is used as a persistent storage volume, the name field must be set to vg-everest-localvolume-persistent. <p>Default value: N/A</p>
cceManaged	No	Boolean	<p>Details: Storage space to which Kubernetes and runtime belong. Only one group is set to true. If this parameter is left blank, the default value false is used.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
selectorNames	Yes	Array of strings	<p>Details: Corresponds to name in storageSelectors. One group can select multiple selectors, but one selector can be selected by only one group.</p> <p>Constraints: System components cannot be separately stored in the system disk and data disks. Therefore, when the selector type is set to system, only one selector can be selected for a group.</p>
virtualSpaces	Yes	Array of VirtualSpace objects	<p>Details: Detailed management of space configurations in a group</p> <p>Constraints: None</p>

Table 4-705 VirtualSpace

Parameter	Mandatory	Type	Description
name	Yes	String	<p>Details: Name of a virtualSpace. Only types of share, kubernetes, runtime, and user are supported.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • kubernetes: Kubernetes space configuration. lvmConfig needs to be configured. • runtime: runtime space configuration. runtimeConfig needs to be configured. • user: user space configuration. lvmConfig needs to be configured. <p>Default value: N/A</p>
size	Yes	String	<p>Details: Size of a virtualSpace. The value must be an integer in percentage, for example, 90%.</p> <p>Constraints: None</p> <p>Options: 10 to 90. The sum of percentages of all virtualSpaces in a group cannot exceed 100%.</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
lvmConfig	No	LVMConfig object	<p>Details: LVM configuration management, which is applicable to share, Kubernetes, and user space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>
runtimeConfig	No	RuntimeConfig object	<p>Details: Runtime configuration management, which is applicable to runtime space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>

Table 4-706 LVMConfig

Parameter	Mandatory	Type	Description
lvType	Yes	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
path	No	String	<p>Details: Disk mount path. This parameter only takes effect in user configuration. The value can be an absolute path containing digits, uppercase letters, lowercase letters, periods (.), hyphens (-), and underscores (_).</p> <p>Constraints: Do not leave the path empty or set it to a key OS path such as the root directory. Key OS paths that cannot be entered: /, /home, /home/, /bin, /bin/, /lib, /lib/, /root, /root/, /boot, /boot/, /dev, /dev/, /etc, /etc/, /lost+found, /lost+found/, /mnt, /mnt/, /proc, /proc/, /sbin, /sbin/, /srv, /srv/, /tmp, /tmp/, /var, /var/, /media, /media/, /opt, /opt/, /selinux, /selinux/, /sys, /sys/, /usr, /usr/, /opt/cloud/, /mnt/paas/, /home/paas/, /var/paas/, /var/lib/, /var/script/</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-707 RuntimeConfig

Parameter	Mandatory	Type	Description
lvType	Yes	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-708 Runtime

Parameter	Mandatory	Type	Description
name	No	String	<p>Details: Container runtime</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • Clusters earlier than v1.25: The default value is docker. • Clusters of v1.25 or later: The default value varies with the OSs. • For nodes running EulerOS 2.5 or EulerOS 2.8, the default value is docker. For nodes running other OSs, the default value is containerd.

Table 4-709 Taint

Parameter	Mandatory	Type	Description
key	Yes	String	<p>Details: Key</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
value	No	String	<p>Details: Value</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
effect	Yes	String	<p>Details: Effect</p> <p>Constraints: None</p> <p>Options: Available options are NoSchedule, PreferNoSchedule, and NoExecute.</p> <p>Default value: N/A</p>

Table 4-710 UserTag

Parameter	Mandatory	Type	Description
key	No	String	<p>Details: Key of the cloud server tag</p> <p>Constraints: The value cannot start with CCE-, _type_baremetal, or sys.</p> <p>Options: The value contains a maximum of 128 characters. The tag key must be unique and cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, /</p> <p>Default value: N/A</p>
value	No	String	<p>Details: Value of the cloud server tag</p> <p>Constraints: None</p> <p>Options: The value contains a maximum of 255 characters. The tag value cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, </p> <p>Default value: N/A</p>

Table 4-711 nodeNicSpecUpdate

Parameter	Mandatory	Type	Description
primaryNic	No	primaryNic object	<p>Details: Description of the primary NIC</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-712 primaryNic

Parameter	Mandatory	Type	Description
subnetId	No	String	<p>Details: Network ID of the subnet to which a NIC belongs</p> <p>Constraints: If subnetId is not specified when a primary NIC is created, the cluster subnet will be used. If subnetList is specified for a node pool, the subnetList field is used for adding subnets to the node pool. When creating an extended NIC, you must specify subnetId.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
subnetList	No	Array of strings	<p>Details: Network ID list of the subnet where the NIC resides. Multiple subnets can be configured for a node pool.</p> <p>Constraints: A maximum of 20 subnets can be configured.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-713 NodePoolUpdateExtendParam

Parameter	Mandatory	Type	Description
agency_name	No	String	<p>Details: Agency name. An agency is created by a tenant administrator on Identity and Access Management (IAM) to provide temporary credentials for CCE nodes to access cloud servers.</p> <p>Constraints: This parameter is returned only when it is transferred during node creation.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
alpha.cce/ preInstall	No	String	<p>Details: Pre-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>"*Content to be encoded*" base64</code></p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/ postInstall	No	String	<p>Details: Post-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>"*Content to be encoded*" base64</code></p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
spotPrice	No	String	<p>Details: The highest price per hour a user accepts for a spot ECS</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This parameter takes effect only when billingMode is set to 0 and marketType is set to spot. • When billingMode is set to 0 and marketType is set to spot, if spotPrice is not specified, the pay-per-use price is used by default. • The spotPrice value must be less than or equal to the pay-per-use price and be greater than or equal to the ECS market price. <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
securityReinforcementType	No	String	<p>Details: Security hardening type of a node. Huawei Cloud EulerOS 2.0 images based on DJCP 2.0 level 3 security hardening are supported. DJCP checks identity authentication, access control, security audit, intrusion prevention, and malicious code prevention and hardens security.</p> <p>If this parameter is not specified, the original value is used. For example, If security hardening has been set up for a Huawei Cloud EulerOS 2.0 image and you do not specify this parameter when updating a node pool, the security hardening configuration will remain unchanged. To remove the security hardening configuration, set this parameter to null.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Empty: Security hardening is not enabled. • cybersecurity: Security hardening is enabled. <p>Default value: N/A</p>

Table 4-714 NodePoolNodeAutoscaling

Parameter	Mandatory	Type	Description
enable	No	Boolean	<p>Details: Whether to enable auto scaling</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • false: Auto scaling is disabled. • true: Auto scaling is enabled. <p>Default value: false</p>
minNodeCount	No	Integer	<p>Details: Minimum number of nodes that can be scaled in if auto scaling is enabled</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to 0 and cannot be greater than the maximum number of nodes allowed by the cluster specifications</p> <p>Default value: 0</p>
maxNodeCount	No	Integer	<p>Details: Maximum number of nodes that can be added if auto scaling is enabled</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to the value of minNodeCount and cannot be greater than the maximum number of nodes allowed by the cluster specifications</p> <p>Default value: 0</p>

Parameter	Mandatory	Type	Description
scaleDownCooldownTime	No	Integer	<p>Details: How long nodes will be kept, in minutes. During this period, nodes added will not be deleted.</p> <p>Constraints: None</p> <p>Options: 0 to 2147483646</p> <p>Default value: 0</p>
priority	No	Integer	<p>Details: Weight of a node pool. A node pool with a higher weight has a higher priority during scale-out.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: 0</p>

Table 4-715 NodeManagement

Parameter	Mandatory	Type	Description
serverGroupReference	No	String	<p>Details:</p> <p>A cloud server group ID. If this parameter is specified, the cloud server group will be associated with the target node pool, and all nodes in the node pool will be created in this cloud server group. After a cloud server group is associated with a node pool, the number of nodes in the node pool cannot exceed the number of cloud servers that can be added to the cloud server group, or the node pool cannot be scaled out.</p> <p>NOTE</p> <ul style="list-style-type: none"> • After a cloud server group is associated with a node pool, the cloud servers added to the cloud server group will be distributed in strict accordance with the affinity policy and the maximum number of nodes in the node pool will be limited. The anti-affinity capabilities are available during cloud server creation on ECS. If your goal is to enhance service reliability by distributing cloud servers across different hosts and you do not want the number of nodes to be restricted by cloud server groups, you are not advised to associate cloud server groups with any node pools. • A cloud server group can be disassociated from the node pool. After the change, the existing nodes will remain in the original cloud server group, and no new nodes will be added to the cloud server group. If the node pool is empty, you can associate a new cloud server group with the node pool or change the associated cloud server group. <p>Constraints:</p> <p>If a cloud server group is specified, the number of nodes</p>

Parameter	Mandatory	Type	Description
			<p>in the node pool cannot exceed the group quota.</p> <p>Options:</p> <ul style="list-style-type: none"> If this parameter is not specified or left blank, the cloud server group will be disassociated from the node pool. A cloud server group ID: The cloud server group associated with the node pool will be changed to a specified one. <p>Default value: N/A</p>

Table 4-716 ExtensionScaleGroup

Parameter	Mandatory	Type	Description
metadata	No	ExtensionScaleGroupMetadata object	<p>Details: Basic information about an extended scaling group</p> <p>Constraints: None</p>
spec	No	ExtensionScaleGroupSpec object	<p>Details: Configurations of an extended scaling group, which carry different configurations from those of the default scaling group</p> <p>Constraints: None</p>

Table 4-717 ExtensionScaleGroupMetadata

Parameter	Mandatory	Type	Description
uid	No	String	<p>Details: UUID of an extended scaling group, which is automatically generated by the system</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
name	No	String	<p>Details: Name of an extended scaling group</p> <p>Constraints: The value cannot be default.</p> <p>Options: The value can contain a maximum of 55 characters. Only digits, lowercase letters, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>

Table 4-718 ExtensionScaleGroupSpec

Parameter	Mandatory	Type	Description
flavor	No	String	<p>Details: Node flavors. For details about the node flavors supported by CCE clusters, see Node Specifications.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
az	No	String	Details: Node AZ Constraints: None Options: N/A Default value: If this parameter is not specified or left blank, the default scaling group configurations take effect.
capacityReservationSpecification	No	CapacityReservationSpecification object	Details: Capacity reservation configurations of an extended scaling group Constraints: None
autoscaling	No	ScaleGroupAutoscaling object	Details: Auto scaling configurations of an extended scaling group Constraints: None

Table 4-719 CapacityReservationSpecification

Parameter	Mandatory	Type	Description
id	No	String	Details: Private pool ID Constraints: This value can be ignored when preference is set to none . Options: N/A Default value: N/A

Parameter	Mandatory	Type	Description
preference	No	String	<p>Details: Private pool capacity</p> <p>Constraints: If the value is none, the capacity reservation is not specified. If the value is targeted, the capacity reservation is specified. In this case, the ID cannot be left blank.</p> <p>Options: N/A</p> <p>Default value: none</p>

Table 4-720 ScaleGroupAutoscaling

Parameter	Mandatory	Type	Description
enable	No	Boolean	<p>Details: Whether to enable auto scaling for a scaling group</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • false: Auto scaling is disabled. • true: Auto scaling is enabled. <p>Default value: false</p>
extensionPriority	No	Integer	<p>Details: Scaling group priority. A larger value indicates a higher priority.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: 0</p>

Parameter	Mandatory	Type	Description
minNodeCount	No	Integer	<p>Details: Minimum number of nodes that can be kept in a scaling group during auto scaling</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to 0 and cannot be greater than the maximum number of nodes allowed by the cluster specifications</p> <p>Default value: 0</p>
maxNodeCount	No	Integer	<p>Details: Maximum number of nodes that can be kept in a scaling group during auto scaling</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to the value of minNodeCount, less than or equal to the maximum number of nodes allowed by the cluster specifications, and less than or equal to the maximum number of nodes in the node pool</p> <p>Default value: 0</p>

Response Parameters

Status code: 200

Table 4-721 Response body parameters

Parameter	Type	Description
kind	String	<p>Details: API type</p> <p>Constraints: The value cannot be changed.</p> <p>Options: N/A</p> <p>Default value: NodePool</p>
apiVersion	String	<p>Details: API version</p> <p>Constraints: The value cannot be changed.</p> <p>Options: N/A</p> <p>Default value: v3</p>
metadata	NodePoolMetadata object	<p>Details: Metadata of a node pool</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>
spec	NodePoolSpec object	<p>Details: Node pool specifications</p> <p>Constraints: This field is optional for updating a node pool.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
status	UpdateNodePoolStatus object	<p>Details: Node pool status</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-722 NodePoolMetadata

Parameter	Type	Description
name	String	<p>Details: Node pool name</p> <p>Constraints: You cannot create node pools named DefaultPool.</p> <p>Options: Enter 1 to 50 characters starting with a lowercase letter and not ending with a hyphen (-). Only lowercase letters, digits, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>
uid	String	<p>Details: UID of a node pool</p> <p>Constraints: The value is automatically generated after the object is created. A user-defined value will not take effect.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
annotations	Map<String,String >	<p>Details: Annotations of a node pool in key-value pairs</p> <p>Constraints: This parameter is used only for query and cannot be input through a request. Entered data of this parameter is invalid.</p>
updateTimestamp	String	<p>Details: Time when a node pool was updated</p> <p>Constraints: The value is automatically recorded when a node pool is updated and cannot be specified.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
creationTimestamp	String	<p>Details: Time when a node pool was created</p> <p>Constraints: The value is automatically recorded when a node pool is created and cannot be specified.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-723 NodePoolSpec

Parameter	Type	Description
type	String	<p>Details: Node pool type</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • vm: ECS • ElasticBMS: C6 general computing-plus BMS. An example flavor is c6.22xlarge.2.physical. • pm: BMS <p>Default value: vm</p>
nodeTemplate	NodeSpec object	<p>Details: Detailed parameters of a node pool template</p> <p>Constraints: None</p>
initialNodeCount	Integer	<p>Details: The initial number of nodes in a node pool. The obtained value is the desired number of nodes in the node pool.</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to 0 and less than or equal to the cluster scale</p> <p>Default value: 0</p>
autoscaling	NodePoolNodeAutoscaling object	<p>Details: Auto scaling parameters</p> <p>Constraints: None</p>
nodeManagement	NodeManagement object	<p>Details: Node management configuration</p> <p>Constraints: None</p>

Parameter	Type	Description
podSecurityGroups	Array of SecurityID objects	<p>Details: Security group configuration</p> <p>Constraints: None</p>
extensionScaleGroups	Array of ExtensionScaleGroup objects	<p>Details: Configuration list of the extended scaling groups in a node pool. For details, see the definition of ExtensionScaleGroup.</p> <p>Constraints: None</p>
customSecurityGroups	Array of strings	<p>Details: Custom security group configuration for a node pool. New nodes added to a node pool can be bound to a specified security group.</p> <ul style="list-style-type: none"> • Specifying no security group ID will add the new nodes to the default node security group. • Specifying a valid security group ID will put new nodes in that security group. • When specifying a security group, do not modify the port rules on which CCE depends. For details, see How Can I Configure a Security Group Rule in a Cluster? <p>Constraints: None</p>

Table 4-724 NodeSpec

Parameter	Type	Description
flavor	String	<p>Details: Node flavors. For details about the node flavors supported by CCE clusters, see Node Specifications.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
az	String	<p>Details: AZ where the node to be created is located. You need to specify the AZ name. Random AZs will not be allocated to a node created using APIs. For details about AZs supported by CCE, see Regions and Endpoints.</p> <p>Constraints: When you are creating a node pool and configuring a scaling group, this parameter cannot be set to random.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
os	String	<p>Details: Node OS. For details about the supported OSs, see Node OSs.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If the selected OS is not supported by the current cluster version, it will be automatically replaced with a supported OS of the same series. • If alpha.cce/NodeImageID in extendParam is specified during node creation, you do not need to configure this parameter. • If this parameter is not specified, CCE automatically selects a supported OS version based on the cluster version. • This parameter is mandatory when creating a node pool. • If you are using shared disk space when creating a node, this parameter is mandatory. Specifically, the disk initialization configuration management parameter storage is used and the name field of virtualSpaces in StorageGroups is set to share. <p>Options: N/A</p> <p>Default value: N/A</p>
login	Login object	<p>Details: Node login mode. Either the key pair or password must be used for login.</p> <p>Constraints: This parameter cannot be modified when a node pool is being updated.</p>
rootVolume	Volume object	<p>Details: Disk information of a node</p> <p>Constraints: None</p>

Parameter	Type	Description
dataVolumes	Array of Volume objects	<p>Details:</p> <p>Data disk parameters of a node. For DeC nodes, the parameter details are the same as those in rootVolume.</p> <p>Constraints:</p> <ul style="list-style-type: none">• A VM can have up to 16 disks attached, while a BMS can only have up to 10 disks attached. The maximum number of disks that can be attached to either a VM or BMS is limited by their respective maximum disk limits. (You can add more data disks to each of your nodes through the CCE console or APIs.)• The data disk used by the container runtime and kubelet cannot be detached, or the node will become unavailable.• This parameter can be left blank only when a system disk is selected for the system components.

Parameter	Type	Description
storage	Storage object	<p>Details: Disk initialization management parameter. This parameter is complex to configure. For details, see Attaching Disks to a Node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This field is supported by clusters of v1.15.11-r0 and later versions. If the cluster version is not supported, this field will be ignored. • If a node has both local and EVS disks attached, make sure to not keep the default value for this parameter, or it may result in unexpected disk partitions. • If you want to change the value range of a data disk to 20 to 32768, do not use the default value. • If you want to use the shared disk space (with the runtime and Kubernetes partitions cancelled), do not retain the default value of this parameter. For details about the shared disk space, see Space Allocation of a Data Disk. • If you want to store system components in the system disk, do not use the default value.
publicIP	NodePublicIP object	<p>Details: EIP of a node</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>
nodeNicSpec	NodeNicSpec object	<p>Details: ENI of a node</p> <p>Constraints: None</p>

Parameter	Type	Description
count	Integer	<p>Details: Number of nodes to be created in batches</p> <p>Constraints: This parameter can be left blank when it is used for a node pool.</p> <p>Options: Positive integers that are greater than or equal to 1 and less than or equal to the maximum limit</p> <p>Default value: N/A</p>
billingMode	Integer	<p>Details: Billing mode of a node</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • 0: pay-per-use • 1: yearly/monthly • 2: (Discarded) yearly/monthly billing with auto payment enabled <p>Default value: N/A</p>

Parameter	Type	Description
taints	Array of Taint objects	<p>Details:</p> <p>Taints, which can be added to nodes for anti-affinity configuration. Each taint contains the following parameters:</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain can be prefixed to a key. • Value: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. • Effect: Available options are NoSchedule, PreferNoSchedule, and NoExecute. <p>When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example:</p> <pre>"taints": [{ "key": "status", "value": "unavailable", "effect": "NoSchedule" }, { "key": "looks", "value": "bad", "effect": "NoSchedule" }]</pre> <p>Constraints:</p> <p>A maximum of 20 taints can be configured.</p>

Parameter	Type	Description
k8sTags	Map<String,String>	<p>Details: Defined in key-value pairs.</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain containing a maximum of 253 characters (such as example.com/my-key) can be prefixed to a key. • Value: The value can be left blank or contain 1 to 63 characters that start and end with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. <p>When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example: <pre>"k8sTags": { "key": "value" }</pre></p> <p>Constraints: A maximum of 20 key-value pairs are allowed.</p>

Parameter	Type	Description
ecsGroupId	String	<p>Details: ECS group ID. If this parameter is specified, nodes will be created in the specific ECS group.</p> <p>Constraints: This configuration does not take effect when a node pool is created. To ensure that all nodes in a node pool are in the same ECS group, configure nodeManagement in the node pool.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
dedicatedHostId	String	<p>Details: ID of the DeH to which nodes will be scheduled.</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>
userTags	Array of UserTag objects	<p>Details: Cloud server tag (resource tag). When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Constraints:</p> <ul style="list-style-type: none"> The key of a tag must be unique. The maximum number of custom tags supported by CCE varies depending on regions and cannot exceed 8. A tag key can have a maximum of 36 characters. It can only contain letters, digits, Unicode characters, and special characters (-_).

Parameter	Type	Description
runtime	Runtime object	<p>Details: Container runtime</p> <ul style="list-style-type: none"> • Clusters earlier than v1.25: The default value is docker. • Clusters of v1.25 or later: The default value varies with the OSs. • For nodes running EulerOS 2.5 or EulerOS 2.8, the default container runtime is docker. For nodes running other OSs, the default container runtime is containerd. <p>Constraints: None</p>

Parameter	Type	Description
initializedConditions	Array of strings	<p>Details:</p> <p>Custom initialization flag, which is left blank by default.</p> <p>Before CCE nodes are initialized, they are tainted with node.cloudprovider.kubernetes.io/uninitialized to prevent pods from being scheduled to them. When creating a node, you can specify the initializedConditions parameter to control the taint removal time. By default, the timeout interval is not configured.</p> <p>Example:</p> <ol style="list-style-type: none"> 1. Create a node and add parameter "initializedConditions": ["CCEInitial", "CustomedInitial"]. 2. After custom initialization is complete, CCE will call a Kubernetes API (for example, PATCH /v1/nodes/{node_ip}/status) to update the node conditions by adding two labels of types CCEInitial and CustomedInitial and setting the status to True, as shown in the following: <pre>status: conditions: - type: CCEInitial status: 'True' - type: CustomedInitial status: 'True'</pre> <ol style="list-style-type: none"> 1. CCE polls status.Conditions of nodes to check whether there are conditions of types CCEInitial and CustomedInitial. If such conditions exist and the status is True, the node initialization is complete and the initialization taint is removed. 2. initializedConditions allows you to configure a timeout period during node creation. For example, "initializedConditions": ["CCEInitial:15m", "CustomedInitial:15m"] indicates that the timeout period is 15 minutes. After the timeout period is reached, the initialization conditions

Parameter	Type	Description
		<p>will be automatically ignored and the initialization taint will be removed when CCE polls the node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The timeout interval in initializedConditions ranges from 1 to 99 seconds. • Each value has 1 to 20 characters, which must consist of letters and digits. • The maximum number of flags cannot exceed 2. • The unit of the timeout period is minute (m).
extendParam	NodeExtendParam object	<p>Details: Extended parameters for creating a node</p> <p>Constraints: None</p>
hostnameConfig	HostnameConfig object	<p>Details: Kubernetes node name configuration parameter</p> <p>Constraints: The supported cluster version is v1.23.6-r0 to v1.25 or v1.25.2-r0 or later.</p>

Parameter	Type	Description
serverEnterprise-ProjectID	String	<p>Details: Enterprise project ID of a server. CCE does not support features provided by EPS. This field is used only for synchronizing enterprise project IDs of servers.</p> <p>Constraints: To create a node or node pool, you can specify an existing enterprise project for it. If this field is left blank, it inherits the enterprise project attributes of the cluster that runs the node or node pool.</p> <p>When updating a node pool, any configuration modifications you made will apply only to new nodes. You need to modify the enterprise projects of existing nodes on the EPS console.</p> <p>Options: N/A</p> <p>Default value: If no value is specified during update, this field will not be updated. If this parameter is left blank, the cluster enterprise project is returned.</p>

Table 4-725 Login

Parameter	Type	Description
sshKey	String	<p>Details: Name of the key pair used for login</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
userPassword	UserPassword object	<p>Details: Password used for node login</p> <p>Constraints: None</p>

Table 4-726 UserPassword

Parameter	Type	Description
username	String	<p>Details: Login account. The default value is root.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: root</p>
password	String	<p>Details: Login password. If a username and password are used when a node is created, this field is shielded in the response body.</p> <p>Constraints: The password field must be salted during node creation. For details, see Adding a Salt in the password Field When Creating a Node.</p> <p>Options: A password must:</p> <ul style="list-style-type: none"> • Contain 8 to 26 characters. • Contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters !@\$%^-_=+[{ }];:./? • Not contain the username or the username spelled backwards. <p>Default value: N/A</p>

Table 4-727 Volume

Parameter	Type	Description
size	Integer	<p>Details: Disk size, in GiB</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • System disks: 40 to 1024 • The first data disk: 20 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) • Other data disks: 10 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) <p>Default value: N/A</p>
volumetype	String	<p>Details: Disk type. For details about possible values, see the root volume parameter in the API used to create an ECS.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • SAS: high I/O SAS disks • SSD: ultra-high I/O SSD disks • SATA: common I/O SATA disks. SATA disks have been removed from EVS. You can find them attached only to existing nodes. <p>NOTE For details about disk types, see Disk Types and Performance.</p> <p>Default value: N/A</p>

Parameter	Type	Description
extendParam	Map<String, Object>	<p>Details: Extended disk parameters, defined in extendparam in the API used to create an ECS. For details, see extendparam Field Description for Creating Disks.</p> <p>Constraints: None</p>
cluster_id	String	<p>Details: ID of the storage pool used by the ECS system disk. This field is used only for DeC clusters and functions as dssPoolID, that is, the ID of the DSS storage pool. To obtain the value, see the ID field in the API used to obtain details of a DSS storage pool.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
cluster_type	String	<p>Details: Storage class of the ECS system disk</p> <p>Constraints: None</p> <p>Options: This field is used only for DeC clusters, and the value is always dss.</p> <p>Default value: N/A</p>

Parameter	Type	Description
hw:passthrough	Boolean	<p>Details:</p> <ul style="list-style-type: none"> • Pay attention to this field if your ECS is SDI-compliant. If the value of this field is true, the created disk is of SCSI type. • If the node pool type is ElasticBMS, this field must be set to true. • If the node specification involves both local and EVS disks, configure the disk initialization parameters. For details, see Attaching Disks to a Node. <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
metadata	VolumeMetadata object	<p>Details: EVS disk encryption information. This parameter is mandatory only when the system disk or data disk of the node to be created needs to be encrypted.</p> <p>Constraints: None</p>

Table 4-728 VolumeMetadata

Parameter	Type	Description
<code>__system__encrypted</code>	String	<p>Details: Whether an EVS disk is encrypted. The value 0 indicates that the EVS disk is not encrypted, and the value 1 indicates that the EVS disk is encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: If this parameter does not appear, the disk is not encrypted.</p>
<code>__system__cmkid</code>	String	<p>Details: CMK ID, which indicates encryption in metadata. This field is used with __system__encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-729 Storage

Parameter	Type	Description
<code>storageSelectors</code>	Array of StorageSelectors objects	<p>Details: Disk selection. Matched disks are managed based on matchLabels and storageType settings. Disks are matched in sequence. The matching rule in the front is matched first.</p> <p>Constraints: None</p>

Parameter	Type	Description
storageGroups	Array of StorageGroups objects	<p>Details: A storage group consisting of multiple storage devices, which are used to divide storage space.</p> <p>Constraints: None</p>

Table 4-730 StorageSelectors

Parameter	Type	Description
name	String	<p>Details: Name of a selector, which is used as the index of selectorNames in storageGroup.</p> <p>Constraints: The name of each selector must be unique.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
storageType	String	<p>Details: Storage type</p> <p>Constraints:</p> <ul style="list-style-type: none"> The local storage type does not support disk selection. All local disks form a VG. Therefore, only one local storage selector is allowed. The system storage type does not support disk selection. It is recommended that you use the system disk to store system components. As a result, only one storage selector of the system type is allowed, and the name must be cceUse. <p>Options: Only evs (EVS disks), local (local disks), and system (system disks) are supported.</p> <p>Default value: N/A</p>
matchLabels	matchLabels object	<p>Details: Matching field of an EVS disk</p> <p>Constraints: If storageType is set to system (system disk), you do not need to configure this parameter.</p> <p>Options: The size, volumeType, metadataEncrypted, metadataCmkid, and count fields in DataVolume are supported.</p> <p>Default value: N/A</p>

Table 4-731 matchLabels

Parameter	Type	Description
size	String	<p>Details: Matched disk size, for example, 100. If this parameter is left blank, the disk size is not limited.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
volumeType	String	<p>Details: EVS disk type</p> <p>Constraints: None</p> <p>Options: SSD, GPSSD, SAS, ESSD, and SATA are supported. If this parameter is left blank, there is no restriction on the disk type.</p> <p>Default value: N/A</p>
metadataEncrypted	String	<p>Details: Disk encryption identifier. If this parameter is set to 0, it specifies that the disk is not encrypted. If this parameter is set to 1, it specifies that the disk is encrypted. If this parameter is left blank, there is no restriction on the disk encryption identifier.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
metadataCmkid	String	<p>Details: CMK ID of an encrypted disk. The value is a string of 36 bytes. If this parameter is left blank, there is no restriction on the disk key ID.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
count	String	<p>Details: Number of disks to be selected. If this parameter is left blank, all disks of this type are selected.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-732 StorageGroups

Parameter	Type	Description
name	String	<p>Details: Name of a virtual storage group, which must be unique</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If cceManaged is set to true, the name field must be set to vgpaas. • If the data disk is used as a temporary storage volume, the name field must be set to vg-everest-localvolume-ephemeral. • If the data disk is used as a persistent storage volume, the name field must be set to vg-everest-localvolume-persistent. <p>Default value: N/A</p>
cceManaged	Boolean	<p>Details: Storage space to which Kubernetes and runtime belong. Only one group is set to true. If this parameter is left blank, the default value false is used.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
selectorNames	Array of strings	<p>Details: Corresponds to name in storageSelectors. One group can select multiple selectors, but one selector can be selected by only one group.</p> <p>Constraints: System components cannot be separately stored in the system disk and data disks. Therefore, when the selector type is set to system, only one selector can be selected for a group.</p>

Parameter	Type	Description
virtualSpaces	Array of VirtualSpace objects	<p>Details: Detailed management of space configurations in a group</p> <p>Constraints: None</p>

Table 4-733 VirtualSpace

Parameter	Type	Description
name	String	<p>Details: Name of a virtualSpace. Only types of share, kubernetes, runtime, and user are supported.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • kubernetes: Kubernetes space configuration. lvmConfig needs to be configured. • runtime: runtime space configuration. runtimeConfig needs to be configured. • user: user space configuration. lvmConfig needs to be configured. <p>Default value: N/A</p>
size	String	<p>Details: Size of a virtualSpace. The value must be an integer in percentage, for example, 90%.</p> <p>Constraints: None</p> <p>Options: 10 to 90. The sum of percentages of all virtualSpaces in a group cannot exceed 100%.</p> <p>Default value: N/A</p>

Parameter	Type	Description
lvmConfig	LVMConfig object	<p>Details: LVM configuration management, which is applicable to share, Kubernetes, and user space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>
runtimeConfig	RuntimeConfig object	<p>Details: Runtime configuration management, which is applicable to runtime space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>

Table 4-734 LVMConfig

Parameter	Type	Description
lvType	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
path	String	<p>Details: Disk mount path. This parameter only takes effect in user configuration. The value can be an absolute path containing digits, uppercase letters, lowercase letters, periods (.), hyphens (-), and underscores (_).</p> <p>Constraints: Do not leave the path empty or set it to a key OS path such as the root directory. Key OS paths that cannot be entered: /, /home, /home/, /bin, /bin/, /lib, /lib/, /root, /root/, /boot, /boot/, /dev, /dev/, /etc, /etc/, /lost+found, /lost+found/, /mnt, /mnt/, /proc, /proc/, /sbin, /sbin/, /srv, /srv/, /tmp, /tmp/, /var, /var/, /media, /media/, /opt, /opt/, /selinux, /selinux/, /sys, /sys/, /usr, /usr/, /opt/cloud/, /mnt/paas/, /home/paas/, /var/paas/, /var/lib/, /var/script/</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-735 RuntimeConfig

Parameter	Type	Description
lvType	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-736 NodePublicIP

Parameter	Type	Description
ids	Array of strings	<p>Details: IDs of existing EIPs</p> <p>Constraints:</p> <ul style="list-style-type: none"> The quantity cannot be greater than the number of nodes to be created. If ids has been specified, you do not need to configure count and eip.
count	Integer	<p>Details: Number of EIPs to be dynamically created</p> <p>Constraints: count and eip must be configured simultaneously.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
eip	NodeEIPSpec object	<p>Details: EIP configuration</p> <p>Constraints: This parameter is not supported when creating a node pool.</p>

Table 4-737 NodeEIPSpec

Parameter	Type	Description
iptype	String	<p>Details: EIP type, specified in publicip.type in the API for assigning an EIP. For details, see Assigning an EIP.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
bandwidth	NodeBandwidth object	<p>Details: Bandwidth parameters of the EIP</p> <p>Constraints: None</p>

Table 4-738 NodeBandwidth

Parameter	Type	Description
chargemode	String	<p>Details: Bandwidth billing mode</p> <p>NOTE</p> <ul style="list-style-type: none"> • Billed by bandwidth: The billing will be based on the data transmission rate (in Mbps) of public networks. This billing mode is recommended if your bandwidth usage is higher than 10%. • Billed by traffic: The billing is based on the total amount of data (in GB) transmitted over the public network. This mode is available only when you are creating a pay-per-use node. This billing mode is recommended if your bandwidth usage is lower than 10%. <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If this field is not specified, the billing is based on bandwidth. • If the field value is empty, the billing is based on bandwidth. • If the field value is traffic, the billing is based on traffic. • If the value is out of the preceding options, the cloud server will fail to be created. <p>Default value: N/A</p>

Parameter	Type	Description
size	Integer	<p>Details: Bandwidth size, specified in bandwidth.size in the API for assigning an EIP. For details, see Assigning an EIP.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
sharetype	String	<p>Details: Bandwidth sharing type. Dedicated bandwidth is supported only. PER specifies dedicated bandwidth.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-739 NodeNicSpec

Parameter	Type	Description
primaryNic	NicSpec object	<p>Details: Description of the primary ENI</p> <p>Constraints: None</p>
extNics	Array of NicSpec objects	<p>Details: Extension ENI</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>

Table 4-740 NicSpec

Parameter	Type	Description
subnetId	String	<p>Details: Network ID of the subnet to which an ENI belongs. If subnetList is also configured for a node pool, the subnetList field is used for adding subnets to the node pool.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If subnetId is not specified when a primary ENI is creating, the cluster subnet will be used. • When creating an extension ENI, you must specify subnetId. <p>Options: N/A</p> <p>Default value: N/A</p>
fixedIps	Array of strings	<p>Details: The IP address of the primary ENI is specified using fixedIps. The number of IP addresses cannot be greater than the number of created nodes.</p> <p>Constraints: Either fixedIps or ipBlock can be specified. fiexdlps cannot be specified for extension ENIs.</p>
ipBlock	String	<p>Details: CIDR format of the primary ENI IP address range. The IP address of the created node falls in this range.</p> <p>Constraints: Either fixedIps or ipBlock can be specified.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
subnetList	Array of strings	<p>Details: Network ID list of the subnet where the ENI resides. Multiple subnets can be configured for a node pool.</p> <p>Constraints: A maximum of 20 subnets can be configured.</p>

Table 4-741 Taint

Parameter	Type	Description
key	String	<p>Details: Key</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
value	String	<p>Details: Value</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
effect	String	<p>Details: Effect</p> <p>Constraints: None</p> <p>Options: Available options are NoSchedule, PreferNoSchedule, and NoExecute.</p> <p>Default value: N/A</p>

Table 4-742 UserTag

Parameter	Type	Description
key	String	<p>Details: Key of the cloud server tag</p> <p>Constraints: The value cannot start with CCE-, _type_baremetal, or sys.</p> <p>Options: The value contains a maximum of 128 characters. The tag key must be unique and cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, /</p> <p>Default value: N/A</p>
value	String	<p>Details: Value of the cloud server tag</p> <p>Constraints: None</p> <p>Options: The value contains a maximum of 255 characters. The tag value cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, </p> <p>Default value: N/A</p>

Table 4-743 Runtime

Parameter	Type	Description
name	String	<p>Details: Container runtime</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • Clusters earlier than v1.25: The default value is docker. • Clusters of v1.25 or later: The default value varies with the OSs. • For nodes running EulerOS 2.5 or EulerOS 2.8, the default value is docker. For nodes running other OSs, the default value is containerd.

Table 4-744 NodeExtendParam

Parameter	Type	Description
ecs:performancety pe	String	<p>Details: ECS flavor types. This field is returned in the response.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
orderId	String	<p>Details: Order ID</p> <p>Constraints: This parameter is returned in the response when the node is billed on a yearly/monthly basis with auto payment enabled (only in creation scenarios).</p> <p>Options: N/A</p> <p>Default value: N/A</p>
productId	String	<p>Details: Product ID</p> <p>Constraints: This field is returned in the response when the node is billed on a yearly/monthly basis with auto payment enabled.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
maxPods	Integer	<p>Details: Maximum number of pods that can be created on a node, including the default system pods. This limit prevents the node from being overloaded with pods. The number of pods that can be created on a node is determined by multiple parameters. For details, see Maximum Number of Pods That Can Be Created on a Node.</p> <p>Constraints: None</p> <p>Options: 16 to 256</p> <p>Default value: N/A</p>

Parameter	Type	Description
periodType	String	<p>Details: Subscription period type</p> <p>Constraints:</p> <ul style="list-style-type: none"> As a request parameter, it is valid and mandatory only when billingMode is set to 1 (yearly/monthly billing) or 2 (yearly/monthly billing with auto payment enabled) (This option has been discarded). As a response parameter, it is returned only when a yearly/monthly node is created. <p>Options:</p> <ul style="list-style-type: none"> month year <p>Default value: N/A</p>
periodNum	Integer	<p>Details: Number of subscription periods</p> <p>Constraints:</p> <ul style="list-style-type: none"> As a request parameter, it is valid and mandatory only when billingMode is set to 1 (yearly/monthly billing) or 2 (yearly/monthly billing with auto payment enabled) (This option has been discarded). As a response parameter, it is returned only when a yearly/monthly node is created. <p>Options:</p> <ul style="list-style-type: none"> If periodType is month, the value ranges from 1 to 9. If periodType is year, the value ranges from 1 to 3. <p>Default value: N/A</p>

Parameter	Type	Description
isAutoRenew	String	<p>Details: Whether auto-renewal is enabled</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified, auto-renewal is not enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto-renewal is enabled. • false: Auto-renewal is not enabled. <p>Default value: N/A</p>
isAutoPay	String	<p>Details: Whether an order is automatically or manually paid</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified when billingMode is set to 1, auto payment is not enabled. (Discarded) If not specified when billingMode is set to 2, auto payment is enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto payment is enabled. • false: Auto payment is not enabled. <p>Default value: N/A</p>

Parameter	Type	Description
<p>DockerLVMConfigOverride</p>	<p>String</p>	<p>Details: Docker data disk configuration item. (This parameter has been discarded. Use the storage field instead.) Example of the default configuration: "DockerLVMConfigOverride":"dockerThinpool=vgpaas/90%VG;kubernetesLV=vgpaas/10%VG;diskType=evs;lvType=linear"</p> <p>By default, if no VD disk is available, an error occurs because the data disk fails to be found. Specify diskType based on the actual drive letter type.</p> <p>Constraints: None</p> <p>Options: The following fields are included:</p> <ul style="list-style-type: none"> • userLV: (Optional) size of the user space, for example, vgpaas/20%VG • userPath (Optional): mount path of the user space, for example, /home/wqt-test • diskType: disk type. Only evs, hdd, and ssd are supported. • lvType: type of a logic volume. The value can be linear or striped. • dockerThinpool: Docker space size, for example, vgpaas/60%VG • kubernetesLV: kubelet space size, for example, vgpaas/20%VG <p>Default value: N/A</p>

Parameter	Type	Description
dockerBaseSize	Integer	<p>Details: Available disk space of a single container on a node (unit: G). This parameter has been discarded. Use containerBaseSize.</p> <p>For details about how to allocate the space for the container runtime, see Space Allocation of a Data Disk.</p> <p>Constraints: When Device Mapper is used, it is recommended that dockerBaseSize be set to a value less than or equal to 80 GiB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device.</p> <ul style="list-style-type: none"> The dockerBaseSize setting takes effect only on nodes running EulerOS or Huawei Cloud EulerOS 2.0 in clusters of the new version. <p>Options: 10 to 500</p> <p>Default value: If the value is not specified or is set to 0, the default value is used.</p> <ul style="list-style-type: none"> The default value is 10 in Device Mapper mode. In OverlayFS mode, the available space of a single container is not limited by default.

Parameter	Type	Description
containerBaseSize	Integer	<p>Details: Available disk space of a single container on a node (unit: G). For details about how to allocate the space for the container runtime, see Space Allocation of a Data Disk.</p> <p>Constraints: When Device Mapper is used, it is recommended that containerBaseSize be set to a value less than or equal to 80 GiB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device. In new versions, the Device Mapper mode is used only by BMSs in the same resource pool and is being discarded.</p> <ul style="list-style-type: none"> The containerBaseSize setting takes effect only on nodes running EulerOS or Huawei Cloud EulerOS 2.0 in clusters of the new version (v1.23.14-r0, v1.25.9-r0, v1.27.6-r0, v1.28.4-r0 or later). This parameter cannot be updated when a node pool is being updated. <p>Options: 10 to 500</p> <p>Default value: If the value is not specified or is set to 0, the default value is used.</p> <ul style="list-style-type: none"> The default value is 10 in Device Mapper mode. In OverlayFS mode, the available space of a single container is not limited by default.

Parameter	Type	Description
publicKey	String	<p>Details: Public key of a node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/ preInstall	String	<p>Details: Pre-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>Content to be encoded</code> base64</p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/ postInstall	String	<p>Details: Post-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>Content to be encoded</code> base64</p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
alpha.cce/ NodeImageID	String	<p>Details: This parameter is required when a custom image is used to create a BMS node.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
nicMultiqueue	String	<p>Details:</p> <ul style="list-style-type: none"> Number of ENI queues. Example: <code>"[{"queue":4}]"</code> <p>The following fields are included:</p> <ul style="list-style-type: none"> queue: number of ENI queues Supported configurations: {"1":128, "2":92, "4":92, "8":32, "16":16,"28":9}, indicating that a maximum of 128 ENIs can be associated if there is one queue and a maximum of 92 ENIs if there are two queues. A larger number of ENI queues indicates higher performance but fewer ENIs can be associated. The queue settings cannot be changed after creation. <p>Constraints: This field can be configured only for BMS nodes in CCE Turbo clusters.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
nicThreshold	String	<p>Details:</p> <ul style="list-style-type: none"> ENI pre-binding thresholds. Example: "0.3:0.6" Low threshold (L): determines the minimum number of pre-bound ENIs (Min). Formula: $\text{Min} = \text{Total number of ENIs of the node} \times L$ High threshold (H): determines the maximum number of pre-bound ENIs (Max). Formula: $\text{Max} = \text{Total number of ENIs of the node} \times H$ Number of ENIs bound to a BMS node (B) and number of ENIs being used by pods (U): $U + \text{Min} < B < U + \text{Max}$ If the number of pre-bound ENIs on a BMS node is smaller than the minimum allowed, the system will bind more ENIs to make the numbers equal. If the number of pre-bound ENIs on a BMS node is larger than the maximum allowed, the system periodically unbinds ENIs (about every 2 minutes) to make the numbers equal. <p>Constraints:</p> <ul style="list-style-type: none"> This field can be configured only for BMS nodes in CCE Turbo clusters. Pre-binding ENIs can speed up workload creation but occupies IP addresses. <p>Options: Both the thresholds are one-decimal-place values ranging from 0.0 to 1.0. The low threshold must be smaller than or equal to the high one.</p> <p>Default value: N/A</p>

Parameter	Type	Description
chargingMode	Integer	<p>Details: Billing mode of a node. This parameter has been discarded. Use billingMode in NodeSpec instead.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
marketType	String	<p>Details: When creating a spot ECS, this parameter should be set to spot.</p> <p>Constraints: This parameter is valid only when billingMode is set to 0.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
spotPrice	String	<p>Details: The highest price per hour a user accepts for a spot ECS</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This parameter takes effect only when billingMode is set to 0 and marketType is set to spot. • When billingMode is set to 0 and marketType is set to spot, if spotPrice is not specified, the pay-per-use price is used by default. • The spotPrice value must be less than or equal to the pay-per-use price and greater than or equal to the ECS market price. <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
agency_name	String	<p>Details: Agency name. An agency is created by a tenant administrator on Identity and Access Management (IAM) to provide temporary credentials for CCE nodes to access cloud servers. This parameter is returned only when it is transferred during node creation.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
kubeReservedMem	Integer	<p>Details: Reserved node memory, which is reserved for Kubernetes components.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
systemReservedMem	Integer	<p>Details: Reserved node memory, which is reserved for system components.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
init-node-password	String	<p>Details: Node password. If this parameter is used as a response parameter, asterisks (*) will be displayed.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
securityReinforcementType	String	<p>Details: Security hardening type of a node. Huawei Cloud EulerOS 2.0 images based on DJCP 2.0 level 3 security hardening are supported. DJCP checks identity authentication, access control, security audit, intrusion prevention, and malicious code prevention and hardens security.</p> <p>If this parameter is not specified, the original value is used. For example, If security hardening has been set up for a Huawei Cloud EulerOS 2.0 image and you do not specify this parameter when updating a node pool, the security hardening configuration will remain unchanged. To remove the security hardening configuration, set this parameter to null.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Empty: Security hardening is not enabled. • cybersecurity: Security hardening is enabled. <p>Default value: N/A</p>

Table 4-745 HostnameConfig

Parameter	Type	Description
type	String	<p>Details: Configuration type of the Kubernetes node name. The default value is privatelp.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The node names, Kubernetes node names, and VM names of the nodes configured with cceNodeName are the same. Node names cannot be changed. Once a VM name is altered on the ECS console, the node name cannot be modified accordingly during ECS synchronization. • To prevent conflicts between Kubernetes node names, a suffix is automatically added to the node name of a node configured with cceNodeName. The suffix consists of a hyphen (-) followed by five random lowercase letters and digits (0 to 9). <p>Options:</p> <ul style="list-style-type: none"> • privatelp: Use the private node IP address as the Kubernetes node name. • cceNodeName: Use the CCE node name as the Kubernetes node name. <p>Default value: privatelp</p>

Table 4-746 NodePoolNodeAutoscaling

Parameter	Type	Description
enable	Boolean	<p>Details: Whether to enable auto scaling</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • false: Auto scaling is disabled. • true: Auto scaling is enabled. <p>Default value: false</p>
minNodeCount	Integer	<p>Details: Minimum number of nodes that can be scaled in if auto scaling is enabled</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to 0 and cannot be greater than the maximum number of nodes allowed by the cluster specifications</p> <p>Default value: 0</p>
maxNodeCount	Integer	<p>Details: Maximum number of nodes that can be added if auto scaling is enabled</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to the value of minNodeCount and cannot be greater than the maximum number of nodes allowed by the cluster specifications</p> <p>Default value: 0</p>

Parameter	Type	Description
scaleDownCooldownTime	Integer	<p>Details: How long nodes will be kept, in minutes. During this period, nodes added will not be deleted.</p> <p>Constraints: None</p> <p>Options: 0 to 2147483646</p> <p>Default value: 0</p>
priority	Integer	<p>Details: Weight of a node pool. A node pool with a higher weight has a higher priority during scale-out.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: 0</p>

Table 4-747 NodeManagement

Parameter	Type	Description
serverGroupReference	String	<p>Details:</p> <p>A cloud server group ID. If this parameter is specified, the cloud server group will be associated with the target node pool, and all nodes in the node pool will be created in this cloud server group. After a cloud server group is associated with a node pool, the number of nodes in the node pool cannot exceed the number of cloud servers that can be added to the cloud server group, or the node pool cannot be scaled out.</p> <p>NOTE</p> <ul style="list-style-type: none"> • After a cloud server group is associated with a node pool, the cloud servers added to the cloud server group will be distributed in strict accordance with the affinity policy and the maximum number of nodes in the node pool will be limited. The anti-affinity capabilities are available during cloud server creation on ECS. If your goal is to enhance service reliability by distributing cloud servers across different hosts and you do not want the number of nodes to be restricted by cloud server groups, you are not advised to associate cloud server groups with any node pools. • A cloud server group can be disassociated from the node pool. After the change, the existing nodes will remain in the original cloud server group, and no new nodes will be added to the cloud server group. If the node pool is empty, you can associate a new cloud server group with the node pool or change the associated cloud server group. <p>Constraints:</p> <p>If a cloud server group is specified, the number of nodes in the node pool cannot exceed the group quota.</p> <p>Options:</p> <ul style="list-style-type: none"> • If this parameter is not specified or left blank, the cloud server group will be disassociated from the node pool.

Parameter	Type	Description
		<ul style="list-style-type: none"> A cloud server group ID: The cloud server group associated with the node pool will be changed to a specified one. <p>Default value: N/A</p>

Table 4-748 SecurityID

Parameter	Type	Description
id	String	<p>Details: Security group ID</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-749 ExtensionScaleGroup

Parameter	Type	Description
metadata	ExtensionScaleGroupMetadata object	<p>Details: Basic information about an extended scaling group</p> <p>Constraints: None</p>
spec	ExtensionScaleGroupSpec object	<p>Details: Configurations of an extended scaling group, which carry different configurations from those of the default scaling group</p> <p>Constraints: None</p>

Table 4-750 ExtensionScaleGroupMetadata

Parameter	Type	Description
uid	String	<p>Details: UUID of an extended scaling group, which is automatically generated by the system</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
name	String	<p>Details: Name of an extended scaling group</p> <p>Constraints: The value cannot be default.</p> <p>Options: The value can contain a maximum of 55 characters. Only digits, lowercase letters, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>

Table 4-751 ExtensionScaleGroupSpec

Parameter	Type	Description
flavor	String	<p>Details: Node flavors. For details about the node flavors supported by CCE clusters, see Node Specifications.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
az	String	<p>Details: Node AZ</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: If this parameter is not specified or left blank, the default scaling group configurations take effect.</p>
capacityReservationSpecification	CapacityReservationSpecification object	<p>Details: Capacity reservation configurations of an extended scaling group</p> <p>Constraints: None</p>
autoscaling	ScaleGroupAutoscaling object	<p>Details: Auto scaling configurations of an extended scaling group</p> <p>Constraints: None</p>

Table 4-752 CapacityReservationSpecification

Parameter	Type	Description
id	String	<p>Details: Private pool ID</p> <p>Constraints: This value can be ignored when preference is set to none.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
preference	String	<p>Details: Private pool capacity</p> <p>Constraints: If the value is none, the capacity reservation is not specified. If the value is targeted, the capacity reservation is specified. In this case, the ID cannot be left blank.</p> <p>Options: N/A</p> <p>Default value: none</p>

Table 4-753 ScaleGroupAutoscaling

Parameter	Type	Description
enable	Boolean	<p>Details: Whether to enable auto scaling for a scaling group</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • false: Auto scaling is disabled. • true: Auto scaling is enabled. <p>Default value: false</p>
extensionPriority	Integer	<p>Details: Scaling group priority. A larger value indicates a higher priority.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: 0</p>

Parameter	Type	Description
minNodeCount	Integer	<p>Details: Minimum number of nodes that can be kept in a scaling group during auto scaling</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to 0 and cannot be greater than the maximum number of nodes allowed by the cluster specifications</p> <p>Default value: 0</p>
maxNodeCount	Integer	<p>Details: Maximum number of nodes that can be kept in a scaling group during auto scaling</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to the value of minNodeCount, less than or equal to the maximum number of nodes allowed by the cluster specifications, and less than or equal to the maximum number of nodes in the node pool</p> <p>Default value: 0</p>

Table 4-754 UpdateNodePoolStatus

Parameter	Type	Description
currentNode	Integer	<p>Details: Total number of nodes in the current node pool (excluding the nodes that are being deleted)</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>
creatingNode	Integer	<p>Details: Number of nodes that are being created in the current node pool</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>
deletingNode	Integer	<p>Details: Number of nodes that are being deleted in the current node pool</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>
configurationSyncedNodeCount	Integer	<p>Details: The number of nodes specified in the node pool configuration has been synchronized in the current node pool.</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
phase	String	<p>Details: Node pool status</p> <p>Constraints: N/A</p> <p>Options:</p> <ul style="list-style-type: none"> • Null: The node pool is available. (The number of nodes in the current node pool has reached the expected value, and no node scaling is being performed.) • Synchronizing: The node pool is being scaled. (The number of nodes in the current node pool has not reached the expected value, and no node scaling is being performed.) • Synchronized: The node pool scaling is pending. (The number of nodes in the current node pool has not reached the expected value, and node scaling is being performed.) • SoldOut: The node pool cannot be scaled out. (This field is used in multiple scenarios, for example, resources in the node pool have been sold out or the resource quota is insufficient.) <p>NOTE The preceding node pool statuses have been deprecated. They are reserved only for compatibility. Do not use them anymore. Use the following instead:</p> <ul style="list-style-type: none"> • Node pool scaling status: You can obtain the status of the current node pool using parameters such as currentNode, creatingNode, or deletingNode. • Node pool scale-out: You can use conditions to obtain the detailed status of a node pool. Scalable can replace SoldOut. • Deleting: The node pool is being deleted. • Error: An error occurred. <p>Default value: N/A</p>

Parameter	Type	Description
conditions	Array of NodePoolCondition objects	Details: Details of node pool statuses. For details, see the definition of Condition . Constraints: N/A
scaleGroupStatuses	Array of ScaleGroupStatus objects	Details: Detailed status of a scaling group. For details, see the definition of ScaleGroupStatus . Constraints: N/A

Table 4-755 ScaleGroupStatus

Parameter	Type	Description
name	String	Details: Scaling group name Constraints: None Options: N/A Default value: N/A
uid	String	Details: Scaling group UUID Constraints: None Options: N/A Default value: N/A

Parameter	Type	Description
creationTimestamp	String	<p>Details: The time when a scaling group was created</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
updateTimestamp	String	<p>Details: The time when a scaling group was updated</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
phase	String	<p>Details: Scaling group status</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Null: The scaling group is available. (The number of nodes in the current scaling group has reached the expected value, and no node scaling is being performed.) • Synchronizing: The scaling group is being scaled. (The number of nodes in the current scaling group has not reached the expected value, and no node scaling is being performed.) • Synchronized: The scaling is pending. (The number of nodes in the current scaling group has not reached the expected value, or node scaling is being performed.) • SoldOut: The scaling group cannot be scaled out. (This field is used in multiple scenarios, for example, resources in the node pool have been sold out or the resource quota is insufficient.) <p>NOTE The preceding scaling group status has been discarded. It is reserved only for compatibility. Do not use it anymore. Use the following instead:</p> <ul style="list-style-type: none"> • Scaling status of a scaling group: You can obtain the status of the current scaling group using parameters such as desiredNodeCount, existingNodeCount, or upcomingNodeCount. • Scaling group scale-out: You can use conditions to obtain the detailed status of a scaling group. Scalable can replace SoldOut. • Deleting: The scaling group is being deleted. • Error: An error occurred. <p>Default value: N/A</p>

Parameter	Type	Description
desiredNodeCount	Integer	<p>Details: Expected number of nodes in a scaling group</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
unpaidScaleNodeCount	Integer	<p>Details: Number of nodes in an unpaid order</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
existingNodeCount	existingNodeCount object	<p>Details: Statistics on existing nodes in a scaling group</p> <p>Constraints: None</p>
upcomingNodeCount	upcomingNodeCount object	<p>Details: Statistics on the nodes to be added in a scaling group</p> <p>Constraints: None</p>
scaleDownDisabledNodeCount	Integer	<p>Details: Number of nodes that cannot be deleted in a scaling group</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
conditions	Array of NodePoolCondition objects	<p>Details: Scaling group status details. For details, see the definition of Condition.</p> <p>Constraints: None</p>

Table 4-756 existingNodeCount

Parameter	Type	Description
postPaid	Integer	<p>Details: Number of pay-per-use nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
prePaid	Integer	<p>Details: Number of yearly/monthly nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
total	Integer	<p>Details: Total number of pay-per-use and yearly/monthly nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-757 upcomingNodeCount

Parameter	Type	Description
postPaid	Integer	<p>Details: Number of pay-per-use nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
prePaid	Integer	<p>Details: Number of yearly/monthly nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
total	Integer	<p>Details: Total number of pay-per-use and yearly/monthly nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-758 NodePoolCondition

Parameter	Type	Description
type	String	<p>Details: Condition type</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Scalable: whether a node pool can be scaled out. If the status is False, node pool scale-out will not be triggered again. • QuotaInsufficient: Quotas on which node pool scale-out depends are insufficient, affecting the node pool scale-out status. • ResourceInsufficient: Resources on which node pool scale-out depends are insufficient, affecting the node pool scale-out status. • UnexpectedError: The node pool fails to be scaled out due to unexpected reasons, affecting the node pool scale-out status. • LockedByOrder: The yearly/monthly-billed node pool is locked due to an order. The value of Reason is the ID of the pending order. • Error: A node pool error occurred. A common trigger is deletion failure. <p>Default value: N/A</p>
status	String	<p>Details: Current status of the condition</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • True • False <p>Default value: N/A</p>

Parameter	Type	Description
lastProbeTime	String	<p>Details: Time when the status was last checked</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
lastTransitTime	String	<p>Details: Time when the status was last changed</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
reason	String	<p>Details: Reason why the status was last changed</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
message	String	<p>Details: Detailed description of the condition</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Example Requests

- Change the number of nodes in the node pool to 1.

```
PUT /api/v3/projects/{project_id}/clusters/{cluster_id}/nodepools/{nodepool_id}
```



```
{
  "metadata": {
    "name": "lc-it-nodepool-3"
  },
  "spec": {
    "nodeTemplate": {
      "k8sTags": { },
      "taints": [ {
        "key": "status",
        "value": "unavailable",
        "effect": "NoSchedule"
      } ],
      "userTags": [ ]
    },
    "autoscaling": {
      "enable": false,
      "minNodeCount": 0,
      "maxNodeCount": 0,
      "scaleDownCooldownTime": 0,
      "priority": 0
    },
    "initialNodeCount": 1
  }
}
```

- **Modify the key pair.**

PUT /api/v3/projects/{project_id}/clusters/{cluster_id}/nodepools/{nodepool_id}

```
{
  "metadata": {
    "name": "lc-it-nodepool-2"
  },
  "spec": {
    "nodeTemplate": {
      "k8sTags": { },
      "taints": [ {
        "key": "status",
        "value": "unavailable",
        "effect": "NoSchedule"
      } ],
      "userTags": [ ],
      "login": {
        "sshKey": "KeyPair-IES"
      }
    },
    "autoscaling": {
      "enable": false,
      "minNodeCount": 0,
      "maxNodeCount": 0,
      "scaleDownCooldownTime": 0,
      "priority": 0
    },
    "initialNodeCount": 1
  }
}
```

- **Modify the cloud server group of a node pool.**

PUT /api/v3/projects/{project_id}/clusters/{cluster_id}/nodepools/{nodepool_id}

```
{
  "metadata": {
    "name": "lc-it-nodepool-3"
  },
  "spec": {
    "nodeTemplate": {
      "k8sTags": { },
      "taints": [ {
        "key": "status",
        "value": "unavailable",
        "effect": "NoSchedule"
      } ]
    }
  }
}
```

```

    } },
    "userTags" : [ ]
  },
  "autoscaling" : { },
  "initialNodeCount" : 1,
  "nodeManagementUpdate" : {
    "serverGroupReference" : "8a611bcf-xxxx-xxxx-xxxx-be4ac7bc9075"
  }
}
}
}

```

Example Responses

Status code: 200

Information about the specified node pool is successfully updated.

```

{
  "kind" : "NodePool",
  "apiVersion" : "v3",
  "metadata" : {
    "name" : "lc-it-nodepool-3",
    "uid" : "1deef848-690d-11ea-a11b-0255ac1001b7"
  },
  "spec" : {
    "initialNodeCount" : 1,
    "type" : "vm",
    "nodeTemplate" : {
      "flavor" : "Sit3.xlarge.2",
      "az" : "*****",
      "os" : "EulerOS 2.5",
      "login" : {
        "sshKey" : "KeyPair-001"
      }
    },
    "rootVolume" : {
      "volumetype" : "SAS",
      "size" : 40
    },
    "dataVolumes" : [ {
      "volumetype" : "SAS",
      "size" : 100,
      "extendParam" : {
        "useType" : "docker"
      }
    }
  ],
  "publicIP" : {
    "eip" : {
      "bandwidth" : { }
    }
  },
  "nodeNicSpec" : {
    "primaryNic" : {
      "subnetId" : "7e767d10-7548-4df5-ad72-aeac1d08bd8a"
    }
  },
  "billingMode" : 0,
  "extendParam" : {
    "maxPods" : 110
  },
  "k8sTags" : {
    "cce.cloud.com/cce-nodepool" : "lc-it-nodepool-3"
  }
},
  "autoscaling" : { },
  "nodeManagement" : {
    "serverGroupReference" : "8a611bcf-xxxx-xxxx-xxxx-be4ac7bc9075"
  }
},
  "status" : {

```

```
"phase" : ""  
}  
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

- Change the number of nodes in the node pool to 1.

```
package com.huaweicloud.sdk.test;  
  
import com.huaweicloud.sdk.core.auth.ICredential;  
import com.huaweicloud.sdk.core.auth.BasicCredentials;  
import com.huaweicloud.sdk.core.exception.ConnectionException;  
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;  
import com.huaweicloud.sdk.core.exception.ServiceResponseException;  
import com.huaweicloud.sdk.cce.v3.region.CceRegion;  
import com.huaweicloud.sdk.cce.v3.*;  
import com.huaweicloud.sdk.cce.v3.model.*;  
  
import java.util.List;  
import java.util.ArrayList;  
import java.util.Map;  
import java.util.HashMap;  
  
public class UpdateNodePoolSolution {  
  
    public static void main(String[] args) {  
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great  
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or  
        // environment variables and decrypted during use to ensure security.  
        // In this example, AK and SK are stored in environment variables for authentication. Before  
        // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local  
        // environment  
        String ak = System.getenv("CLOUD_SDK_AK");  
        String sk = System.getenv("CLOUD_SDK_SK");  
        String projectId = "{project_id}";  
  
        ICredential auth = new BasicCredentials()  
            .withProjectId(projectId)  
            .withAk(ak)  
            .withSk(sk);  
  
        CceClient client = CceClient.newBuilder()  
            .withCredential(auth)  
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))  
            .build();  
        UpdateNodePoolRequest request = new UpdateNodePoolRequest();  
        request.withClusterId("{cluster_id}");  
        request.withNodepoolId("{nodepool_id}");  
        NodePoolUpdate body = new NodePoolUpdate();  
        NodePoolNodeAutoscaling autoscalingSpec = new NodePoolNodeAutoscaling();  
        autoscalingSpec.withEnable(false)  
            .withMinNodeCount(0)  
            .withMaxNodeCount(0)  
            .withScaleDownCooldownTime(0)  
            .withPriority(0);  
        List<Taint> listNodeTemplateTaints = new ArrayList<>();  
        listNodeTemplateTaints.add(  
            new Taint()  
                .withKey("status")  
                .withValue("unavailable")  
                .withEffect(Taint.EffectEnum.fromValue("NoSchedule"))  
        );  
        NodeSpecUpdate nodeTemplateSpec = new NodeSpecUpdate();
```

```
nodeTemplateSpec.withTaints(listNodeTemplateTaints);
NodePoolSpecUpdate specbody = new NodePoolSpecUpdate();
specbody.withNodeTemplate(nodeTemplateSpec)
    .withInitialNodeCount(1)
    .withAutoscaling(autoscalingSpec);
NodePoolMetadataUpdate metadatabody = new NodePoolMetadataUpdate();
metadatabody.withName("lc-it-nodepool-3");
body.withSpec(specbody);
body.withMetadata(metadatabody);
request.withBody(body);
try {
    UpdateNodePoolResponse response = client.updateNodePool(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

- **Modify the key pair.**

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.List;
import java.util.ArrayList;
import java.util.Map;
import java.util.HashMap;

public class UpdateNodePoolSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before
        // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
        // environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        UpdateNodePoolRequest request = new UpdateNodePoolRequest();
        request.withClusterId("{cluster_id}");
        request.withNodepoolId("{nodepool_id}");
        NodePoolUpdate body = new NodePoolUpdate();
```

```
NodePoolNodeAutoscaling autoscalingSpec = new NodePoolNodeAutoscaling();
autoscalingSpec.withEnable(false)
    .withMinNodeCount(0)
    .withMaxNodeCount(0)
    .withScaleDownCooldownTime(0)
    .withPriority(0);
Login loginNodeTemplate = new Login();
loginNodeTemplate.withSshKey("KeyPair-IES");
List<Taint> listNodeTemplateTaints = new ArrayList<>();
listNodeTemplateTaints.add(
    new Taint()
        .withKey("status")
        .withValue("unavailable")
        .withEffect(Taint.EffectEnum.fromValue("NoSchedule"))
);
NodeSpecUpdate nodeTemplateSpec = new NodeSpecUpdate();
nodeTemplateSpec.withTaints(listNodeTemplateTaints)
    .withLogin(loginNodeTemplate);
NodePoolSpecUpdate specbody = new NodePoolSpecUpdate();
specbody.withNodeTemplate(nodeTemplateSpec)
    .withInitialNodeCount(1)
    .withAutoscaling(autoscalingSpec);
NodePoolMetadataUpdate metadatabody = new NodePoolMetadataUpdate();
metadatabody.withName("lc-it-nodepool-2");
body.withSpec(specbody);
body.withMetadata(metadatabody);
request.withBody(body);
try {
    UpdateNodePoolResponse response = client.updateNodePool(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

- **Modify the cloud server group of a node pool.**

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.List;
import java.util.ArrayList;
import java.util.Map;
import java.util.HashMap;

public class UpdateNodePoolSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before
        // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
        // environment
    }
}
```

```
String ak = System.getenv("CLOUD_SDK_AK");
String sk = System.getenv("CLOUD_SDK_SK");
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
    .withProjectId(projectId)
    .withAk(ak)
    .withSk(sk);

CceClient client = CceClient.newBuilder()
    .withCredential(auth)
    .withRegion(CceRegion.valueOf("<YOUR REGION>"))
    .build();
UpdateNodePoolRequest request = new UpdateNodePoolRequest();
request.withClusterId("{cluster_id}");
request.withNodepoolId("{nodepool_id}");
NodePoolUpdate body = new NodePoolUpdate();
List<Taint> listNodeTemplateTaints = new ArrayList<>();
listNodeTemplateTaints.add(
    new Taint()
        .withKey("status")
        .withValue("unavailable")
        .withEffect(Taint.EffectEnum.fromValue("NoSchedule"))
);
NodeSpecUpdate nodeTemplateSpec = new NodeSpecUpdate();
nodeTemplateSpec.withTaints(listNodeTemplateTaints);
NodePoolSpecUpdate specbody = new NodePoolSpecUpdate();
specbody.withNodeTemplate(nodeTemplateSpec)
    .withInitialNodeCount(1);
NodePoolMetadataUpdate metadatabody = new NodePoolMetadataUpdate();
metadatabody.withName("lc-it-nodepool-3");
body.withSpec(specbody);
body.withMetadata(metadatabody);
request.withBody(body);
try {
    UpdateNodePoolResponse response = client.updateNodePool(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

- Change the number of nodes in the node pool to 1.

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    # environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before
    # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    # environment
```

```

ak = os.environ["CLOUD_SDK_AK"]
sk = os.environ["CLOUD_SDK_SK"]
projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = CceClient.new_builder() \
    .with_credentials(credentials) \
    .with_region(CceRegion.value_of("<YOUR REGION>")) \
    .build()

try:
    request = UpdateNodePoolRequest()
    request.cluster_id = "{cluster_id}"
    request.nodepool_id = "{nodepool_id}"
    autoscalingSpec = NodePoolNodeAutoscaling(
        enable=False,
        min_node_count=0,
        max_node_count=0,
        scale_down_cooldown_time=0,
        priority=0
    )
    listTaintsNodeTemplate = [
        Taint(
            key="status",
            value="unavailable",
            effect="NoSchedule"
        )
    ]
    nodeTemplateSpec = NodeSpecUpdate(
        taints=listTaintsNodeTemplate
    )
    specbody = NodePoolSpecUpdate(
        node_template=nodeTemplateSpec,
        initial_node_count=1,
        autoscaling=autoscalingSpec
    )
    metadatabody = NodePoolMetadataUpdate(
        name="lc-it-nodepool-3"
    )
    request.body = NodePoolUpdate(
        spec=specbody,
        metadata=metadatabody
    )
    response = client.update_node_pool(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)

```

- **Modify the key pair.**

```

# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before
    running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]

```

```

projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = CceClient.new_builder() \
    .with_credentials(credentials) \
    .with_region(CceRegion.value_of("<YOUR REGION>")) \
    .build()

try:
    request = UpdateNodePoolRequest()
    request.cluster_id = "{cluster_id}"
    request.nodepool_id = "{nodepool_id}"
    autoscalingSpec = NodePoolNodeAutoscaling(
        enable=False,
        min_node_count=0,
        max_node_count=0,
        scale_down_cooldown_time=0,
        priority=0
    )
    loginNodeTemplate = Login(
        ssh_key="KeyPair-IES"
    )
    listTaintsNodeTemplate = [
        Taint(
            key="status",
            value="unavailable",
            effect="NoSchedule"
        )
    ]
    nodeTemplateSpec = NodeSpecUpdate(
        taints=listTaintsNodeTemplate,
        login=loginNodeTemplate
    )
    specbody = NodePoolSpecUpdate(
        node_template=nodeTemplateSpec,
        initial_node_count=1,
        autoscaling=autoscalingSpec
    )
    metadatabody = NodePoolMetadataUpdate(
        name="lc-it-nodepool-2"
    )
    request.body = NodePoolUpdate(
        spec=specbody,
        metadata=metadatabody
    )
    response = client.update_node_pool(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)

```

- Modify the cloud server group of a node pool.

```

# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    # environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before
    # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    # environment

```



```
ak = os.environ["CLOUD_SDK_AK"]
sk = os.environ["CLOUD_SDK_SK"]
projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = CceClient.new_builder() \
    .with_credentials(credentials) \
    .with_region(CceRegion.value_of("<YOUR REGION>")) \
    .build()

try:
    request = UpdateNodePoolRequest()
    request.cluster_id = "{cluster_id}"
    request.nodepool_id = "{nodepool_id}"
    listTaintsNodeTemplate = [
        Taint(
            key="status",
            value="unavailable",
            effect="NoSchedule"
        )
    ]
    nodeTemplateSpec = NodeSpecUpdate(
        taints=listTaintsNodeTemplate
    )
    specbody = NodePoolSpecUpdate(
        node_template=nodeTemplateSpec,
        initial_node_count=1
    )
    metadatabody = NodePoolMetadataUpdate(
        name="lc-it-nodepool-3"
    )
    request.body = NodePoolUpdate(
        spec=specbody,
        metadata=metadatabody
    )
    response = client.update_node_pool(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

- Change the number of nodes in the node pool to 1.

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    // environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before
    // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    // environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
```

```

WithAk(ak).
WithSk(sk).
WithProjectId(projectId).
Build()

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.UpdateNodePoolRequest{}
request.ClusterId = "{cluster_id}"
request.NodepoolId = "{nodepool_id}"
enableAutoscaling:= false
minNodeCountAutoscaling:= int32(0)
maxNodeCountAutoscaling:= int32(0)
scaleDownCooldownTimeAutoscaling:= int32(0)
priorityAutoscaling:= int32(0)
autoscalingSpec := &model.NodePoolNodeAutoscaling{
    Enable: &enableAutoscaling,
    MinNodeCount: &minNodeCountAutoscaling,
    MaxNodeCount: &maxNodeCountAutoscaling,
    ScaleDownCooldownTime: &scaleDownCooldownTimeAutoscaling,
    Priority: &priorityAutoscaling,
}
valueTaints:= "unavailable"
var listTaintsNodeTemplate = []model.Taint{
    {
        Key: "status",
        Value: &valueTaints,
        Effect: model.GetTaintEffectEnum().NO_SCHEDULE,
    },
}
nodeTemplateSpec := &model.NodeSpecUpdate{
    Taints: listTaintsNodeTemplate,
}
specbody := &model.NodePoolSpecUpdate{
    NodeTemplate: nodeTemplateSpec,
    InitialNodeCount: int32(1),
    Autoscaling: autoscalingSpec,
}
metadatabody := &model.NodePoolMetadataUpdate{
    Name: "lc-it-nodepool-3",
}
request.Body = &model.NodePoolUpdate{
    Spec: specbody,
    Metadata: metadatabody,
}
response, err := client.UpdateNodePool(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}

```

- **Modify the key pair.**

```

package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great

```

security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.

// In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment

```
ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
    WithAk(ak).
    WithSk(sk).
    WithProjectId(projectId).
    Build()

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.UpdateNodePoolRequest{}
request.ClusterId = "{cluster_id}"
request.NodepoolId = "{nodepool_id}"
enableAutoscaling:= false
minNodeCountAutoscaling:= int32(0)
maxNodeCountAutoscaling:= int32(0)
scaleDownCooldownTimeAutoscaling:= int32(0)
priorityAutoscaling:= int32(0)
autoscalingSpec := &model.NodePoolNodeAutoscaling{
    Enable: &enableAutoscaling,
    MinNodeCount: &minNodeCountAutoscaling,
    MaxNodeCount: &maxNodeCountAutoscaling,
    ScaleDownCooldownTime: &scaleDownCooldownTimeAutoscaling,
    Priority: &priorityAutoscaling,
}
sshKeyLogin:= "KeyPair-IES"
loginNodeTemplate := &model.Login{
    SshKey: &sshKeyLogin,
}
valueTaints:= "unavailable"
var listTaintsNodeTemplate = []model.Taint{
    {
        Key: "status",
        Value: &valueTaints,
        Effect: model.GetTaintEffectEnum().NO_SCHEDULE,
    },
}
nodeTemplateSpec := &model.NodeSpecUpdate{
    Taints: listTaintsNodeTemplate,
    Login: loginNodeTemplate,
}
specbody := &model.NodePoolSpecUpdate{
    NodeTemplate: nodeTemplateSpec,
    InitialNodeCount: int32(1),
    Autoscaling: autoscalingSpec,
}
metadatabody := &model.NodePoolMetadataUpdate{
    Name: "lc-it-nodepool-2",
}
request.Body = &model.NodePoolUpdate{
    Spec: specbody,
    Metadata: metadatabody,
}
response, err := client.UpdateNodePool(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
```

- Modify the cloud server group of a node pool.

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    // environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before
    // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    // environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.UpdateNodePoolRequest{}
    request.ClusterId = "{cluster_id}"
    request.NodepoolId = "{nodepool_id}"
    valueTaints := "unavailable"
    var listTaintsNodeTemplate = []model.Taint{
        {
            Key: "status",
            Value: &valueTaints,
            Effect: model.GetTaintEffectEnum().NO_SCHEDULE,
        },
    }
    nodeTemplateSpec := &model.NodeSpecUpdate{
        Taints: listTaintsNodeTemplate,
    }
    specbody := &model.NodePoolSpecUpdate{
        NodeTemplate: nodeTemplateSpec,
        InitialNodeCount: int32(1),
    }
    metadatabody := &model.NodePoolMetadataUpdate{
        Name: "lc-it-nodepool-3",
    }
    request.Body = &model.NodePoolUpdate{
        Spec: specbody,
        Metadata: metadatabody,
    }
    response, err := client.UpdateNodePool(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Information about the specified node pool is successfully updated.

Error Codes

See [Error Codes](#).

4.4.5 Deleting a Node Pool

Function

This API is used to delete a specified node pool.

NOTE

The URL for cluster management is in the format of `https://Endpoint/uri`. In the URL, **uri** indicates the resource path, that is, the path for API access.

Calling Method

For details, see [Calling APIs](#).

URI

DELETE `/api/v3/projects/{project_id}/clusters/{cluster_id}/nodepools/{nodepool_id}`

Table 4-759 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>
nodepool_id	Yes	String	<p>Details: Node pool ID. For details about how to obtain the ID, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-760 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-761 Response body parameters

Parameter	Type	Description
kind	String	<p>Details: API type</p> <p>Constraints: The value cannot be changed.</p> <p>Options: N/A</p> <p>Default value: NodePool</p>
apiVersion	String	<p>Details: API version</p> <p>Constraints: The value cannot be changed.</p> <p>Options: N/A</p> <p>Default value: v3</p>
metadata	NodePoolMetadata object	<p>Details: Metadata of a node pool</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>
spec	NodePoolSpec object	<p>Details: Node pool specifications</p> <p>Constraints: This field is optional for updating a node pool.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
status	DeleteNodePoolStatus object	<p>Details: Node pool status</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-762 NodePoolMetadata

Parameter	Type	Description
name	String	<p>Details: Node pool name</p> <p>Constraints: You cannot create node pools named DefaultPool.</p> <p>Options: Enter 1 to 50 characters starting with a lowercase letter and not ending with a hyphen (-). Only lowercase letters, digits, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>
uid	String	<p>Details: UID of a node pool</p> <p>Constraints: The value is automatically generated after the object is created. A user-defined value will not take effect.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
annotations	Map<String,String >	<p>Details: Annotations of a node pool in key-value pairs</p> <p>Constraints: This parameter is used only for query and cannot be input through a request. Entered data of this parameter is invalid.</p>
updateTimestamp	String	<p>Details: Time when a node pool was updated</p> <p>Constraints: The value is automatically recorded when a node pool is updated and cannot be specified.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
creationTimestamp	String	<p>Details: Time when a node pool was created</p> <p>Constraints: The value is automatically recorded when a node pool is created and cannot be specified.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-763 NodePoolSpec

Parameter	Type	Description
type	String	<p>Details: Node pool type</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • vm: ECS • ElasticBMS: C6 general computing-plus BMS. An example flavor is c6.22xlarge.2.physical. • pm: BMS <p>Default value: vm</p>
nodeTemplate	NodeSpec object	<p>Details: Detailed parameters of a node pool template</p> <p>Constraints: None</p>
initialNodeCount	Integer	<p>Details: The initial number of nodes in a node pool. The obtained value is the desired number of nodes in the node pool.</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to 0 and less than or equal to the cluster scale</p> <p>Default value: 0</p>
autoscaling	NodePoolNodeAutoscaling object	<p>Details: Auto scaling parameters</p> <p>Constraints: None</p>
nodeManagement	NodeManagement object	<p>Details: Node management configuration</p> <p>Constraints: None</p>

Parameter	Type	Description
podSecurityGroups	Array of SecurityID objects	<p>Details: Security group configuration</p> <p>Constraints: None</p>
extensionScaleGroups	Array of ExtensionScaleGroup objects	<p>Details: Configuration list of the extended scaling groups in a node pool. For details, see the definition of ExtensionScaleGroup.</p> <p>Constraints: None</p>
customSecurityGroups	Array of strings	<p>Details: Custom security group configuration for a node pool. New nodes added to a node pool can be bound to a specified security group.</p> <ul style="list-style-type: none"> • Specifying no security group ID will add the new nodes to the default node security group. • Specifying a valid security group ID will put new nodes in that security group. • When specifying a security group, do not modify the port rules on which CCE depends. For details, see How Can I Configure a Security Group Rule in a Cluster? <p>Constraints: None</p>

Table 4-764 NodeSpec

Parameter	Type	Description
flavor	String	<p>Details: Node flavors. For details about the node flavors supported by CCE clusters, see Node Specifications.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
az	String	<p>Details: AZ where the node to be created is located. You need to specify the AZ name. Random AZs will not be allocated to a node created using APIs. For details about AZs supported by CCE, see Regions and Endpoints.</p> <p>Constraints: When you are creating a node pool and configuring a scaling group, this parameter cannot be set to random.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
os	String	<p>Details: Node OS. For details about the supported OSs, see Node OSs.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If the selected OS is not supported by the current cluster version, it will be automatically replaced with a supported OS of the same series. • If alpha.cce/NodeImageID in extendParam is specified during node creation, you do not need to configure this parameter. • If this parameter is not specified, CCE automatically selects a supported OS version based on the cluster version. • This parameter is mandatory when creating a node pool. • If you are using shared disk space when creating a node, this parameter is mandatory. Specifically, the disk initialization configuration management parameter storage is used and the name field of virtualSpaces in StorageGroups is set to share. <p>Options: N/A</p> <p>Default value: N/A</p>
login	Login object	<p>Details: Node login mode. Either the key pair or password must be used for login.</p> <p>Constraints: This parameter cannot be modified when a node pool is being updated.</p>
rootVolume	Volume object	<p>Details: Disk information of a node</p> <p>Constraints: None</p>

Parameter	Type	Description
dataVolumes	Array of Volume objects	<p>Details: Data disk parameters of a node. For DeC nodes, the parameter details are the same as those in rootVolume.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • A VM can have up to 16 disks attached, while a BMS can only have up to 10 disks attached. The maximum number of disks that can be attached to either a VM or BMS is limited by their respective maximum disk limits. (You can add more data disks to each of your nodes through the CCE console or APIs.) • The data disk used by the container runtime and kubelet cannot be detached, or the node will become unavailable. • This parameter can be left blank only when a system disk is selected for the system components.

Parameter	Type	Description
storage	Storage object	<p>Details: Disk initialization management parameter. This parameter is complex to configure. For details, see Attaching Disks to a Node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This field is supported by clusters of v1.15.11-r0 and later versions. If the cluster version is not supported, this field will be ignored. • If a node has both local and EVS disks attached, make sure to not keep the default value for this parameter, or it may result in unexpected disk partitions. • If you want to change the value range of a data disk to 20 to 32768, do not use the default value. • If you want to use the shared disk space (with the runtime and Kubernetes partitions cancelled), do not retain the default value of this parameter. For details about the shared disk space, see Space Allocation of a Data Disk. • If you want to store system components in the system disk, do not use the default value.
publicIP	NodePublicIP object	<p>Details: EIP of a node</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>
nodeNicSpec	NodeNicSpec object	<p>Details: ENI of a node</p> <p>Constraints: None</p>

Parameter	Type	Description
count	Integer	<p>Details: Number of nodes to be created in batches</p> <p>Constraints: This parameter can be left blank when it is used for a node pool.</p> <p>Options: Positive integers that are greater than or equal to 1 and less than or equal to the maximum limit</p> <p>Default value: N/A</p>
billingMode	Integer	<p>Details: Billing mode of a node</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • 0: pay-per-use • 1: yearly/monthly • 2: (Discarded) yearly/monthly billing with auto payment enabled <p>Default value: N/A</p>

Parameter	Type	Description
taints	Array of Taint objects	<p>Details:</p> <p>Taints, which can be added to nodes for anti-affinity configuration. Each taint contains the following parameters:</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain can be prefixed to a key. • Value: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. • Effect: Available options are NoSchedule, PreferNoSchedule, and NoExecute. <p>When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example:</p> <pre>"taints": [{ "key": "status", "value": "unavailable", "effect": "NoSchedule" }, { "key": "looks", "value": "bad", "effect": "NoSchedule" }]</pre> <p>Constraints:</p> <p>A maximum of 20 taints can be configured.</p>

Parameter	Type	Description
k8sTags	Map<String,String>	<p>Details: Defined in key-value pairs.</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain containing a maximum of 253 characters (such as example.com/my-key) can be prefixed to a key. • Value: The value can be left blank or contain 1 to 63 characters that start and end with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. <p>When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Example: <pre>"k8sTags": { "key": "value" }</pre></p> <p>Constraints: A maximum of 20 key-value pairs are allowed.</p>

Parameter	Type	Description
ecsGroupId	String	<p>Details: ECS group ID. If this parameter is specified, nodes will be created in the specific ECS group.</p> <p>Constraints: This configuration does not take effect when a node pool is created. To ensure that all nodes in a node pool are in the same ECS group, configure nodeManagement in the node pool.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
dedicatedHostId	String	<p>Details: ID of the DeH to which nodes will be scheduled.</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>
userTags	Array of UserTag objects	<p>Details: Cloud server tag (resource tag). When creating a node, you can specify the initial value for this parameter and this field is not returned during query. In node pools, the initial value can be specified in the node template and this field is returned during query. In other scenarios, this field is not returned during query.</p> <p>Constraints:</p> <ul style="list-style-type: none"> The key of a tag must be unique. The maximum number of custom tags supported by CCE varies depending on regions and cannot exceed 8. A tag key can have a maximum of 36 characters. It can only contain letters, digits, Unicode characters, and special characters (-_).

Parameter	Type	Description
runtime	Runtime object	Details: Container runtime <ul style="list-style-type: none">• Clusters earlier than v1.25: The default value is docker.• Clusters of v1.25 or later: The default value varies with the OSs.• For nodes running EulerOS 2.5 or EulerOS 2.8, the default container runtime is docker. For nodes running other OSs, the default container runtime is containerd. Constraints: None

Parameter	Type	Description
initializedConditions	Array of strings	<p>Details:</p> <p>Custom initialization flag, which is left blank by default.</p> <p>Before CCE nodes are initialized, they are tainted with node.cloudprovider.kubernetes.io/uninitialized to prevent pods from being scheduled to them. When creating a node, you can specify the initializedConditions parameter to control the taint removal time. By default, the timeout interval is not configured.</p> <p>Example:</p> <ol style="list-style-type: none"> 1. Create a node and add parameter "initializedConditions": ["CCEInitial", "CustomedInitial"]. 2. After custom initialization is complete, CCE will call a Kubernetes API (for example, PATCH /v1/nodes/{node_ip}/status) to update the node conditions by adding two labels of types CCEInitial and CustomedInitial and setting the status to True, as shown in the following: <pre>status: conditions: - type: CCEInitial status: 'True' - type: CustomedInitial status: 'True'</pre> <ol style="list-style-type: none"> 1. CCE polls status.Conditions of nodes to check whether there are conditions of types CCEInitial and CustomedInitial. If such conditions exist and the status is True, the node initialization is complete and the initialization taint is removed. 2. initializedConditions allows you to configure a timeout period during node creation. For example, "initializedConditions": ["CCEInitial:15m", "CustomedInitial:15m"] indicates that the timeout period is 15 minutes. After the timeout period is reached, the initialization conditions

Parameter	Type	Description
		<p>will be automatically ignored and the initialization taint will be removed when CCE polls the node.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The timeout interval in initializedConditions ranges from 1 to 99 seconds. • Each value has 1 to 20 characters, which must consist of letters and digits. • The maximum number of flags cannot exceed 2. • The unit of the timeout period is minute (m).
extendParam	NodeExtendParam object	<p>Details: Extended parameters for creating a node</p> <p>Constraints: None</p>
hostnameConfig	HostnameConfig object	<p>Details: Kubernetes node name configuration parameter</p> <p>Constraints: The supported cluster version is v1.23.6-r0 to v1.25 or v1.25.2-r0 or later.</p>

Parameter	Type	Description
serverEnterprise-ProjectID	String	<p>Details: Enterprise project ID of a server. CCE does not support features provided by EPS. This field is used only for synchronizing enterprise project IDs of servers.</p> <p>Constraints: To create a node or node pool, you can specify an existing enterprise project for it. If this field is left blank, it inherits the enterprise project attributes of the cluster that runs the node or node pool.</p> <p>When updating a node pool, any configuration modifications you made will apply only to new nodes. You need to modify the enterprise projects of existing nodes on the EPS console.</p> <p>Options: N/A</p> <p>Default value: If no value is specified during update, this field will not be updated. If this parameter is left blank, the cluster enterprise project is returned.</p>

Table 4-765 Login

Parameter	Type	Description
sshKey	String	<p>Details: Name of the key pair used for login</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
userPassword	UserPassword object	<p>Details: Password used for node login</p> <p>Constraints: None</p>

Table 4-766 UserPassword

Parameter	Type	Description
username	String	<p>Details: Login account. The default value is root.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: root</p>
password	String	<p>Details: Login password. If a username and password are used when a node is created, this field is shielded in the response body.</p> <p>Constraints: The password field must be salted during node creation. For details, see Adding a Salt in the password Field When Creating a Node.</p> <p>Options: A password must:</p> <ul style="list-style-type: none"> • Contain 8 to 26 characters. • Contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters !@\$%^-_=+[{ }];,./? • Not contain the username or the username spelled backwards. <p>Default value: N/A</p>

Table 4-767 Volume

Parameter	Type	Description
size	Integer	<p>Details: Disk size, in GiB</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • System disks: 40 to 1024 • The first data disk: 20 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) • Other data disks: 10 to 32768 (When storage is not specified, this value range becomes 100 to 32768.) <p>Default value: N/A</p>
volumetype	String	<p>Details: Disk type. For details about possible values, see the root volume parameter in the API used to create an ECS.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • SAS: high I/O SAS disks • SSD: ultra-high I/O SSD disks • SATA: common I/O SATA disks. SATA disks have been removed from EVS. You can find them attached only to existing nodes. <p>NOTE For details about disk types, see Disk Types and Performance.</p> <p>Default value: N/A</p>

Parameter	Type	Description
extendParam	Map<String, Object>	<p>Details: Extended disk parameters, defined in extendparam in the API used to create an ECS. For details, see extendparam Field Description for Creating Disks.</p> <p>Constraints: None</p>
cluster_id	String	<p>Details: ID of the storage pool used by the ECS system disk. This field is used only for DeC clusters and functions as dssPoolID, that is, the ID of the DSS storage pool. To obtain the value, see the ID field in the API used to obtain details of a DSS storage pool.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
cluster_type	String	<p>Details: Storage class of the ECS system disk</p> <p>Constraints: None</p> <p>Options: This field is used only for DeC clusters, and the value is always dss.</p> <p>Default value: N/A</p>

Parameter	Type	Description
hw:passthrough	Boolean	<p>Details:</p> <ul style="list-style-type: none"> • Pay attention to this field if your ECS is SDI-compliant. If the value of this field is true, the created disk is of SCSI type. • If the node pool type is ElasticBMS, this field must be set to true. • If the node specification involves both local and EVS disks, configure the disk initialization parameters. For details, see Attaching Disks to a Node. <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
metadata	VolumeMetadata object	<p>Details: EVS disk encryption information. This parameter is mandatory only when the system disk or data disk of the node to be created needs to be encrypted.</p> <p>Constraints: None</p>

Table 4-768 VolumeMetadata

Parameter	Type	Description
<code>__system__encrypted</code>	String	<p>Details: Whether an EVS disk is encrypted. The value 0 indicates that the EVS disk is not encrypted, and the value 1 indicates that the EVS disk is encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: If this parameter does not appear, the disk is not encrypted.</p>
<code>__system__cmkid</code>	String	<p>Details: CMK ID, which indicates encryption in metadata. This field is used with __system__encrypted.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-769 Storage

Parameter	Type	Description
<code>storageSelectors</code>	Array of StorageSelectors objects	<p>Details: Disk selection. Matched disks are managed based on matchLabels and storageType settings. Disks are matched in sequence. The matching rule in the front is matched first.</p> <p>Constraints: None</p>

Parameter	Type	Description
storageGroups	Array of StorageGroups objects	<p>Details: A storage group consisting of multiple storage devices, which are used to divide storage space.</p> <p>Constraints: None</p>

Table 4-770 StorageSelectors

Parameter	Type	Description
name	String	<p>Details: Name of a selector, which is used as the index of selectorNames in storageGroup.</p> <p>Constraints: The name of each selector must be unique.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
storageType	String	<p>Details: Storage type</p> <p>Constraints:</p> <ul style="list-style-type: none"> The local storage type does not support disk selection. All local disks form a VG. Therefore, only one local storage selector is allowed. The system storage type does not support disk selection. It is recommended that you use the system disk to store system components. As a result, only one storage selector of the system type is allowed, and the name must be cceUse. <p>Options: Only evs (EVS disks), local (local disks), and system (system disks) are supported.</p> <p>Default value: N/A</p>
matchLabels	matchLabels object	<p>Details: Matching field of an EVS disk</p> <p>Constraints: If storageType is set to system (system disk), you do not need to configure this parameter.</p> <p>Options: The size, volumeType, metadataEncrypted, metadataCmkid, and count fields in DataVolume are supported.</p> <p>Default value: N/A</p>

Table 4-771 matchLabels

Parameter	Type	Description
size	String	<p>Details: Matched disk size, for example, 100. If this parameter is left blank, the disk size is not limited.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
volumeType	String	<p>Details: EVS disk type</p> <p>Constraints: None</p> <p>Options: SSD, GPSSD, SAS, ESSD, and SATA are supported. If this parameter is left blank, there is no restriction on the disk type.</p> <p>Default value: N/A</p>
metadataEncrypted	String	<p>Details: Disk encryption identifier. If this parameter is set to 0, it specifies that the disk is not encrypted. If this parameter is set to 1, it specifies that the disk is encrypted. If this parameter is left blank, there is no restriction on the disk encryption identifier.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
metadataCmkid	String	<p>Details: CMK ID of an encrypted disk. The value is a string of 36 bytes. If this parameter is left blank, there is no restriction on the disk key ID.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
count	String	<p>Details: Number of disks to be selected. If this parameter is left blank, all disks of this type are selected.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-772 StorageGroups

Parameter	Type	Description
name	String	<p>Details: Name of a virtual storage group, which must be unique</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If cceManaged is set to true, the name field must be set to vgpaas. • If the data disk is used as a temporary storage volume, the name field must be set to vg-everest-localvolume-ephemeral. • If the data disk is used as a persistent storage volume, the name field must be set to vg-everest-localvolume-persistent. <p>Default value: N/A</p>
cceManaged	Boolean	<p>Details: Storage space to which Kubernetes and runtime belong. Only one group is set to true. If this parameter is left blank, the default value false is used.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
selectorNames	Array of strings	<p>Details: Corresponds to name in storageSelectors. One group can select multiple selectors, but one selector can be selected by only one group.</p> <p>Constraints: System components cannot be separately stored in the system disk and data disks. Therefore, when the selector type is set to system, only one selector can be selected for a group.</p>

Parameter	Type	Description
virtualSpaces	Array of VirtualSpace objects	<p>Details: Detailed management of space configurations in a group</p> <p>Constraints: None</p>

Table 4-773 VirtualSpace

Parameter	Type	Description
name	String	<p>Details: Name of a virtualSpace. Only types of share, kubernetes, runtime, and user are supported.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • kubernetes: Kubernetes space configuration. lvmConfig needs to be configured. • runtime: runtime space configuration. runtimeConfig needs to be configured. • user: user space configuration. lvmConfig needs to be configured. <p>Default value: N/A</p>
size	String	<p>Details: Size of a virtualSpace. The value must be an integer in percentage, for example, 90%.</p> <p>Constraints: None</p> <p>Options: 10 to 90. The sum of percentages of all virtualSpaces in a group cannot exceed 100%.</p> <p>Default value: N/A</p>

Parameter	Type	Description
lvmConfig	LVMConfig object	<p>Details: LVM configuration management, which is applicable to share, Kubernetes, and user space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>
runtimeConfig	RuntimeConfig object	<p>Details: Runtime configuration management, which is applicable to runtime space configuration</p> <p>Constraints: One virtualSpace supports only one config.</p>

Table 4-774 LVMConfig

Parameter	Type	Description
lvType	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
path	String	<p>Details: Disk mount path. This parameter only takes effect in user configuration. The value can be an absolute path containing digits, uppercase letters, lowercase letters, periods (.), hyphens (-), and underscores (_).</p> <p>Constraints: Do not leave the path empty or set it to a key OS path such as the root directory. Key OS paths that cannot be entered: /, /home, /home/, /bin, /bin/, /lib, /lib/, /root, /root/, /boot, /boot/, /dev, /dev/, /etc, /etc/, /lost+found, /lost+found/, /mnt, /mnt/, /proc, /proc/, /sbin, /sbin/, /srv, /srv/, /tmp, /tmp/, /var, /var/, /media, /media/, /opt, /opt/, /selinux, /selinux/, /sys, /sys/, /usr, /usr/, /opt/cloud/, /mnt/paas/, /home/paas/, /var/paas/, /var/lib/, /var/script/</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-775 RuntimeConfig

Parameter	Type	Description
lvType	String	<p>Details: LVM write mode. linear indicates the linear mode. striped indicates the striped mode, in which multiple disks are used to form a strip to improve disk performance.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-776 NodePublicIP

Parameter	Type	Description
ids	Array of strings	<p>Details: IDs of existing EIPs</p> <p>Constraints:</p> <ul style="list-style-type: none"> The quantity cannot be greater than the number of nodes to be created. If ids has been specified, you do not need to configure count and eip.
count	Integer	<p>Details: Number of EIPs to be dynamically created</p> <p>Constraints: count and eip must be configured simultaneously.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
eip	NodeEIPSpec object	<p>Details: EIP configuration</p> <p>Constraints: This parameter is not supported when creating a node pool.</p>

Table 4-777 NodeEIPSpec

Parameter	Type	Description
iptype	String	<p>Details: EIP type, specified in publicip.type in the API for assigning an EIP. For details, see Assigning an EIP.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
bandwidth	NodeBandwidth object	<p>Details: Bandwidth parameters of the EIP</p> <p>Constraints: None</p>

Table 4-778 NodeBandwidth

Parameter	Type	Description
chargemode	String	<p>Details: Bandwidth billing mode</p> <p>NOTE</p> <ul style="list-style-type: none"> • Billed by bandwidth: The billing will be based on the data transmission rate (in Mbps) of public networks. This billing mode is recommended if your bandwidth usage is higher than 10%. • Billed by traffic: The billing is based on the total amount of data (in GB) transmitted over the public network. This mode is available only when you are creating a pay-per-use node. This billing mode is recommended if your bandwidth usage is lower than 10%. <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If this field is not specified, the billing is based on bandwidth. • If the field value is empty, the billing is based on bandwidth. • If the field value is traffic, the billing is based on traffic. • If the value is out of the preceding options, the cloud server will fail to be created. <p>Default value: N/A</p>

Parameter	Type	Description
size	Integer	<p>Details: Bandwidth size, specified in bandwidth.size in the API for assigning an EIP. For details, see Assigning an EIP.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
sharetype	String	<p>Details: Bandwidth sharing type. Dedicated bandwidth is supported only. PER specifies dedicated bandwidth.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-779 NodeNicSpec

Parameter	Type	Description
primaryNic	NicSpec object	<p>Details: Description of the primary ENI</p> <p>Constraints: None</p>
extNics	Array of NicSpec objects	<p>Details: Extension ENI</p> <p>Constraints: This parameter is not supported when you add a node during node pool creation.</p>

Table 4-780 NicSpec

Parameter	Type	Description
subnetId	String	<p>Details: Network ID of the subnet to which an ENI belongs. If subnetList is also configured for a node pool, the subnetList field is used for adding subnets to the node pool.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • If subnetId is not specified when a primary ENI is creating, the cluster subnet will be used. • When creating an extension ENI, you must specify subnetId. <p>Options: N/A</p> <p>Default value: N/A</p>
fixedIps	Array of strings	<p>Details: The IP address of the primary ENI is specified using fixedIps. The number of IP addresses cannot be greater than the number of created nodes.</p> <p>Constraints: Either fixedIps or ipBlock can be specified. fiexdlps cannot be specified for extension ENIs.</p>
ipBlock	String	<p>Details: CIDR format of the primary ENI IP address range. The IP address of the created node falls in this range.</p> <p>Constraints: Either fixedIps or ipBlock can be specified.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
subnetList	Array of strings	<p>Details: Network ID list of the subnet where the ENI resides. Multiple subnets can be configured for a node pool.</p> <p>Constraints: A maximum of 20 subnets can be configured.</p>

Table 4-781 Taint

Parameter	Type	Description
key	String	<p>Details: Key</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
value	String	<p>Details: Value</p> <p>Constraints: The value must contain 1 to 63 characters starting and ending with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
effect	String	<p>Details: Effect</p> <p>Constraints: None</p> <p>Options: Available options are NoSchedule, PreferNoSchedule, and NoExecute.</p> <p>Default value: N/A</p>

Table 4-782 UserTag

Parameter	Type	Description
key	String	<p>Details: Key of the cloud server tag</p> <p>Constraints: The value cannot start with CCE-, _type_baremetal, or sys.</p> <p>Options: The value contains a maximum of 128 characters. The tag key must be unique and cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, /</p> <p>Default value: N/A</p>
value	String	<p>Details: Value of the cloud server tag</p> <p>Constraints: None</p> <p>Options: The value contains a maximum of 255 characters. The tag value cannot start or end with a space. It cannot contain non-printable ASCII characters (0-31) or the following special characters: =*<>, </p> <p>Default value: N/A</p>

Table 4-783 Runtime

Parameter	Type	Description
name	String	<p>Details: Container runtime</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value:</p> <ul style="list-style-type: none"> • Clusters earlier than v1.25: The default value is docker. • Clusters of v1.25 or later: The default value varies with the OSs. • For nodes running EulerOS 2.5 or EulerOS 2.8, the default value is docker. For nodes running other OSs, the default value is containerd.

Table 4-784 NodeExtendParam

Parameter	Type	Description
ecs:performancety pe	String	<p>Details: ECS flavor types. This field is returned in the response.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
orderID	String	<p>Details: Order ID</p> <p>Constraints: This parameter is returned in the response when the node is billed on a yearly/monthly basis with auto payment enabled (only in creation scenarios).</p> <p>Options: N/A</p> <p>Default value: N/A</p>
productID	String	<p>Details: Product ID</p> <p>Constraints: This field is returned in the response when the node is billed on a yearly/ monthly basis with auto payment enabled.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
maxPods	Integer	<p>Details: Maximum number of pods that can be created on a node, including the default system pods. This limit prevents the node from being overloaded with pods. The number of pods that can be created on a node is determined by multiple parameters. For details, see Maximum Number of Pods That Can Be Created on a Node.</p> <p>Constraints: None</p> <p>Options: 16 to 256</p> <p>Default value: N/A</p>

Parameter	Type	Description
periodType	String	<p>Details: Subscription period type</p> <p>Constraints:</p> <ul style="list-style-type: none"> As a request parameter, it is valid and mandatory only when billingMode is set to 1 (yearly/monthly billing) or 2 (yearly/monthly billing with auto payment enabled) (This option has been discarded). As a response parameter, it is returned only when a yearly/monthly node is created. <p>Options:</p> <ul style="list-style-type: none"> month year <p>Default value: N/A</p>
periodNum	Integer	<p>Details: Number of subscription periods</p> <p>Constraints:</p> <ul style="list-style-type: none"> As a request parameter, it is valid and mandatory only when billingMode is set to 1 (yearly/monthly billing) or 2 (yearly/monthly billing with auto payment enabled) (This option has been discarded). As a response parameter, it is returned only when a yearly/monthly node is created. <p>Options:</p> <ul style="list-style-type: none"> If periodType is month, the value ranges from 1 to 9. If periodType is year, the value ranges from 1 to 3. <p>Default value: N/A</p>

Parameter	Type	Description
isAutoRenew	String	<p>Details: Whether auto-renewal is enabled</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified, auto-renewal is not enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto-renewal is enabled. • false: Auto-renewal is not enabled. <p>Default value: N/A</p>
isAutoPay	String	<p>Details: Whether an order is automatically or manually paid</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified when billingMode is set to 1, auto payment is not enabled. (Discarded) If not specified when billingMode is set to 2, auto payment is enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto payment is enabled. • false: Auto payment is not enabled. <p>Default value: N/A</p>

Parameter	Type	Description
<p>DockerLVMConfigOverride</p>	<p>String</p>	<p>Details: Docker data disk configuration item. (This parameter has been discarded. Use the storage field instead.) Example of the default configuration: "DockerLVMConfigOverride":"dockerThinpool=vgpaas/90%VG;kubernetesLV=vgpaas/10%VG;diskType=evs;lvType=linear"</p> <p>By default, if no VD disk is available, an error occurs because the data disk fails to be found. Specify diskType based on the actual drive letter type.</p> <p>Constraints: None</p> <p>Options: The following fields are included:</p> <ul style="list-style-type: none"> • userLV: (Optional) size of the user space, for example, vgpaas/20%VG • userPath (Optional): mount path of the user space, for example, /home/wqt-test • diskType: disk type. Only evs, hdd, and ssd are supported. • lvType: type of a logic volume. The value can be linear or striped. • dockerThinpool: Docker space size, for example, vgpaas/60%VG • kubernetesLV: kubelet space size, for example, vgpaas/20%VG <p>Default value: N/A</p>

Parameter	Type	Description
dockerBaseSize	Integer	<p>Details: Available disk space of a single container on a node (unit: G). This parameter has been discarded. Use containerBaseSize.</p> <p>For details about how to allocate the space for the container runtime, see Space Allocation of a Data Disk.</p> <p>Constraints: When Device Mapper is used, it is recommended that dockerBaseSize be set to a value less than or equal to 80 GiB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device.</p> <ul style="list-style-type: none"> The dockerBaseSize setting takes effect only on nodes running EulerOS or Huawei Cloud EulerOS 2.0 in clusters of the new version. <p>Options: 10 to 500</p> <p>Default value: If the value is not specified or is set to 0, the default value is used.</p> <ul style="list-style-type: none"> The default value is 10 in Device Mapper mode. In OverlayFS mode, the available space of a single container is not limited by default.

Parameter	Type	Description
containerBaseSize	Integer	<p>Details: Available disk space of a single container on a node (unit: G). For details about how to allocate the space for the container runtime, see Space Allocation of a Data Disk.</p> <p>Constraints: When Device Mapper is used, it is recommended that containerBaseSize be set to a value less than or equal to 80 GiB. If the value is too large, the container runtime may fail to be started due to long initialization. If there are special requirements for the container disk space, you can mount an external or local storage device. In new versions, the Device Mapper mode is used only by BMSs in the same resource pool and is being discarded.</p> <ul style="list-style-type: none"> • The containerBaseSize setting takes effect only on nodes running EulerOS or Huawei Cloud EulerOS 2.0 in clusters of the new version (v1.23.14-r0, v1.25.9-r0, v1.27.6-r0, v1.28.4-r0 or later). • This parameter cannot be updated when a node pool is being updated. <p>Options: 10 to 500</p> <p>Default value: If the value is not specified or is set to 0, the default value is used.</p> <ul style="list-style-type: none"> • The default value is 10 in Device Mapper mode. • In OverlayFS mode, the available space of a single container is not limited by default.

Parameter	Type	Description
publicKey	String	<p>Details: Public key of a node</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/ preInstall	String	<p>Details: Pre-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>Content to be encoded</code> base64</p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
alpha.cce/ postInstall	String	<p>Details: Post-installation script. The input value must be encoded using Base64. The method is as follows: echo -n <code>Content to be encoded</code> base64</p> <p>Constraints: The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
alpha.cce/ NodeImageID	String	<p>Details: This parameter is required when a custom image is used to create a BMS node.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
nicMultiqueue	String	<p>Details:</p> <ul style="list-style-type: none"> Number of ENI queues. Example: <code>"[{"queue":4}]"</code> <p>The following fields are included:</p> <ul style="list-style-type: none"> queue: number of ENI queues Supported configurations: {"1":128, "2":92, "4":92, "8":32, "16":16,"28":9}, indicating that a maximum of 128 ENIs can be associated if there is one queue and a maximum of 92 ENIs if there are two queues. A larger number of ENI queues indicates higher performance but fewer ENIs can be associated. The queue settings cannot be changed after creation. <p>Constraints: This field can be configured only for BMS nodes in CCE Turbo clusters.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
nicThreshold	String	<p>Details:</p> <ul style="list-style-type: none"> • ENI pre-binding thresholds. Example: "0.3:0.6" • Low threshold (L): determines the minimum number of pre-bound ENIs (Min). Formula: Min = Total number of ENIs of the node × L • High threshold (H): determines the maximum number of pre-bound ENIs (Max). Formula: Max = Total number of ENIs of the node × H • Number of ENIs bound to a BMS node (B) and number of ENIs being used by pods (U): $U + \text{Min} < B < U + \text{Max}$ • If the number of pre-bound ENIs on a BMS node is smaller than the minimum allowed, the system will bind more ENIs to make the numbers equal. • If the number of pre-bound ENIs on a BMS node is larger than the maximum allowed, the system periodically unbinds ENIs (about every 2 minutes) to make the numbers equal. <p>Constraints:</p> <ul style="list-style-type: none"> • This field can be configured only for BMS nodes in CCE Turbo clusters. • Pre-binding ENIs can speed up workload creation but occupies IP addresses. <p>Options: Both the thresholds are one-decimal-place values ranging from 0.0 to 1.0. The low threshold must be smaller than or equal to the high one.</p> <p>Default value: N/A</p>

Parameter	Type	Description
chargingMode	Integer	<p>Details: Billing mode of a node. This parameter has been discarded. Use billingMode in NodeSpec instead.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
marketType	String	<p>Details: When creating a spot ECS, this parameter should be set to spot.</p> <p>Constraints: This parameter is valid only when billingMode is set to 0.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
spotPrice	String	<p>Details: The highest price per hour a user accepts for a spot ECS</p> <p>Constraints:</p> <ul style="list-style-type: none"> This parameter takes effect only when billingMode is set to 0 and marketType is set to spot. When billingMode is set to 0 and marketType is set to spot, if spotPrice is not specified, the pay-per-use price is used by default. The spotPrice value must be less than or equal to the pay-per-use price and greater than or equal to the ECS market price. <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
agency_name	String	<p>Details: Agency name. An agency is created by a tenant administrator on Identity and Access Management (IAM) to provide temporary credentials for CCE nodes to access cloud servers. This parameter is returned only when it is transferred during node creation.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
kubeReservedMem	Integer	<p>Details: Reserved node memory, which is reserved for Kubernetes components.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
systemReservedMem	Integer	<p>Details: Reserved node memory, which is reserved for system components.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
init-node-password	String	<p>Details: Node password. If this parameter is used as a response parameter, asterisks (*) will be displayed.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
securityReinforcementType	String	<p>Details: Security hardening type of a node. Huawei Cloud EulerOS 2.0 images based on DJCP 2.0 level 3 security hardening are supported. DJCP checks identity authentication, access control, security audit, intrusion prevention, and malicious code prevention and hardens security.</p> <p>If this parameter is not specified, the original value is used. For example, If security hardening has been set up for a Huawei Cloud EulerOS 2.0 image and you do not specify this parameter when updating a node pool, the security hardening configuration will remain unchanged. To remove the security hardening configuration, set this parameter to null.</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Empty: Security hardening is not enabled. • cybersecurity: Security hardening is enabled. <p>Default value: N/A</p>

Table 4-785 HostnameConfig

Parameter	Type	Description
type	String	<p>Details: Configuration type of the Kubernetes node name. The default value is privatelp.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • The node names, Kubernetes node names, and VM names of the nodes configured with cceNodeName are the same. Node names cannot be changed. Once a VM name is altered on the ECS console, the node name cannot be modified accordingly during ECS synchronization. • To prevent conflicts between Kubernetes node names, a suffix is automatically added to the node name of a node configured with cceNodeName. The suffix consists of a hyphen (-) followed by five random lowercase letters and digits (0 to 9). <p>Options:</p> <ul style="list-style-type: none"> • privatelp: Use the private node IP address as the Kubernetes node name. • cceNodeName: Use the CCE node name as the Kubernetes node name. <p>Default value: privatelp</p>

Table 4-786 NodePoolNodeAutoscaling

Parameter	Type	Description
enable	Boolean	<p>Details: Whether to enable auto scaling</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • false: Auto scaling is disabled. • true: Auto scaling is enabled. <p>Default value: false</p>
minNodeCount	Integer	<p>Details: Minimum number of nodes that can be scaled in if auto scaling is enabled</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to 0 and cannot be greater than the maximum number of nodes allowed by the cluster specifications</p> <p>Default value: 0</p>
maxNodeCount	Integer	<p>Details: Maximum number of nodes that can be added if auto scaling is enabled</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to the value of minNodeCount and cannot be greater than the maximum number of nodes allowed by the cluster specifications</p> <p>Default value: 0</p>

Parameter	Type	Description
scaleDownCooldownTime	Integer	<p>Details: How long nodes will be kept, in minutes. During this period, nodes added will not be deleted.</p> <p>Constraints: None</p> <p>Options: 0 to 2147483646</p> <p>Default value: 0</p>
priority	Integer	<p>Details: Weight of a node pool. A node pool with a higher weight has a higher priority during scale-out.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: 0</p>

Table 4-787 NodeManagement

Parameter	Type	Description
serverGroupReference	String	<p>Details:</p> <p>A cloud server group ID. If this parameter is specified, the cloud server group will be associated with the target node pool, and all nodes in the node pool will be created in this cloud server group. After a cloud server group is associated with a node pool, the number of nodes in the node pool cannot exceed the number of cloud servers that can be added to the cloud server group, or the node pool cannot be scaled out.</p> <p>NOTE</p> <ul style="list-style-type: none"> • After a cloud server group is associated with a node pool, the cloud servers added to the cloud server group will be distributed in strict accordance with the affinity policy and the maximum number of nodes in the node pool will be limited. The anti-affinity capabilities are available during cloud server creation on ECS. If your goal is to enhance service reliability by distributing cloud servers across different hosts and you do not want the number of nodes to be restricted by cloud server groups, you are not advised to associate cloud server groups with any node pools. • A cloud server group can be disassociated from the node pool. After the change, the existing nodes will remain in the original cloud server group, and no new nodes will be added to the cloud server group. If the node pool is empty, you can associate a new cloud server group with the node pool or change the associated cloud server group. <p>Constraints:</p> <p>If a cloud server group is specified, the number of nodes in the node pool cannot exceed the group quota.</p> <p>Options:</p> <ul style="list-style-type: none"> • If this parameter is not specified or left blank, the cloud server group will be disassociated from the node pool.

Parameter	Type	Description
		<ul style="list-style-type: none"> A cloud server group ID: The cloud server group associated with the node pool will be changed to a specified one. <p>Default value: N/A</p>

Table 4-788 SecurityID

Parameter	Type	Description
id	String	<p>Details: Security group ID</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-789 ExtensionScaleGroup

Parameter	Type	Description
metadata	ExtensionScaleGroupMetadata object	<p>Details: Basic information about an extended scaling group</p> <p>Constraints: None</p>
spec	ExtensionScaleGroupSpec object	<p>Details: Configurations of an extended scaling group, which carry different configurations from those of the default scaling group</p> <p>Constraints: None</p>

Table 4-790 ExtensionScaleGroupMetadata

Parameter	Type	Description
uid	String	<p>Details: UUID of an extended scaling group, which is automatically generated by the system</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
name	String	<p>Details: Name of an extended scaling group</p> <p>Constraints: The value cannot be default.</p> <p>Options: The value can contain a maximum of 55 characters. Only digits, lowercase letters, and hyphens (-) are allowed.</p> <p>Default value: N/A</p>

Table 4-791 ExtensionScaleGroupSpec

Parameter	Type	Description
flavor	String	<p>Details: Node flavors. For details about the node flavors supported by CCE clusters, see Node Specifications.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
az	String	<p>Details: Node AZ</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: If this parameter is not specified or left blank, the default scaling group configurations take effect.</p>
capacityReservationSpecification	CapacityReservationSpecification object	<p>Details: Capacity reservation configurations of an extended scaling group</p> <p>Constraints: None</p>
autoscaling	ScaleGroupAutoscaling object	<p>Details: Auto scaling configurations of an extended scaling group</p> <p>Constraints: None</p>

Table 4-792 CapacityReservationSpecification

Parameter	Type	Description
id	String	<p>Details: Private pool ID</p> <p>Constraints: This value can be ignored when preference is set to none.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
preference	String	<p>Details: Private pool capacity</p> <p>Constraints: If the value is none, the capacity reservation is not specified. If the value is targeted, the capacity reservation is specified. In this case, the ID cannot be left blank.</p> <p>Options: N/A</p> <p>Default value: none</p>

Table 4-793 ScaleGroupAutoscaling

Parameter	Type	Description
enable	Boolean	<p>Details: Whether to enable auto scaling for a scaling group</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • false: Auto scaling is disabled. • true: Auto scaling is enabled. <p>Default value: false</p>
extensionPriority	Integer	<p>Details: Scaling group priority. A larger value indicates a higher priority.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: 0</p>

Parameter	Type	Description
minNodeCount	Integer	<p>Details: Minimum number of nodes that can be kept in a scaling group during auto scaling</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to 0 and cannot be greater than the maximum number of nodes allowed by the cluster specifications</p> <p>Default value: 0</p>
maxNodeCount	Integer	<p>Details: Maximum number of nodes that can be kept in a scaling group during auto scaling</p> <p>Constraints: None</p> <p>Options: Values that are greater than or equal to the value of minNodeCount, less than or equal to the maximum number of nodes allowed by the cluster specifications, and less than or equal to the maximum number of nodes in the node pool</p> <p>Default value: 0</p>

Table 4-794 DeleteNodePoolStatus

Parameter	Type	Description
currentNode	Integer	<p>Details: Total number of nodes in the current node pool (excluding the nodes that are being deleted)</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>
creatingNode	Integer	<p>Details: Number of nodes that are being created in the current node pool</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>
deletingNode	Integer	<p>Details: Number of nodes that are being deleted in the current node pool</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>
configurationSyn- cedNodeCount	Integer	<p>Details: The number of nodes specified in the node pool configuration has been synchronized in the current node pool.</p> <p>Constraints: N/A</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
phase	String	<p>Details: Node pool status</p> <p>Constraints: N/A</p> <p>Options:</p> <ul style="list-style-type: none"> • Null: The node pool is available. (The number of nodes in the current node pool has reached the expected value, and no node scaling is being performed.) • Synchronizing: The node pool is being scaled. (The number of nodes in the current node pool has not reached the expected value, and no node scaling is being performed.) • Synchronized: The node pool scaling is pending. (The number of nodes in the current node pool has not reached the expected value, and node scaling is being performed.) • SoldOut: The node pool cannot be scaled out. (This field is used in multiple scenarios, for example, resources in the node pool have been sold out or the resource quota is insufficient.) <p>NOTE The preceding node pool statuses have been deprecated. They are reserved only for compatibility. Do not use them anymore. Use the following instead:</p> <ul style="list-style-type: none"> • Node pool scaling status: You can obtain the status of the current node pool using parameters such as currentNode, creatingNode, or deletingNode. • Node pool scale-out: You can use conditions to obtain the detailed status of a node pool. Scalable can replace SoldOut. • Deleting: The node pool is being deleted. • Error: An error occurred. <p>Default value: N/A</p>

Parameter	Type	Description
jobId	String	Details: ID of a job executed on the node pool Constraints: N/A Options: N/A Default value: N/A
conditions	Array of NodePoolCondition objects	Details: Details of node pool statuses. For details, see the definition of Condition . Constraints: N/A
scaleGroupStatuses	Array of ScaleGroupStatus objects	Details: Detailed status of a scaling group. For details, see the definition of ScaleGroupStatus . Constraints: N/A

Table 4-795 ScaleGroupStatus

Parameter	Type	Description
name	String	Details: Scaling group name Constraints: None Options: N/A Default value: N/A

Parameter	Type	Description
uid	String	<p>Details: Scaling group UUID</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
creationTimestamp	String	<p>Details: The time when a scaling group was created</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
updateTimestamp	String	<p>Details: The time when a scaling group was updated</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
phase	String	<p>Details: Scaling group status</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Null: The scaling group is available. (The number of nodes in the current scaling group has reached the expected value, and no node scaling is being performed.) • Synchronizing: The scaling group is being scaled. (The number of nodes in the current scaling group has not reached the expected value, and no node scaling is being performed.) • Synchronized: The scaling is pending. (The number of nodes in the current scaling group has not reached the expected value, or node scaling is being performed.) • SoldOut: The scaling group cannot be scaled out. (This field is used in multiple scenarios, for example, resources in the node pool have been sold out or the resource quota is insufficient.) <p>NOTE The preceding scaling group status has been discarded. It is reserved only for compatibility. Do not use it anymore. Use the following instead:</p> <ul style="list-style-type: none"> • Scaling status of a scaling group: You can obtain the status of the current scaling group using parameters such as desiredNodeCount, existingNodeCount, or upcomingNodeCount. • Scaling group scale-out: You can use conditions to obtain the detailed status of a scaling group. Scalable can replace SoldOut. • Deleting: The scaling group is being deleted. • Error: An error occurred. <p>Default value: N/A</p>

Parameter	Type	Description
desiredNodeCount	Integer	<p>Details: Expected number of nodes in a scaling group</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
unpaidScaleNodeCount	Integer	<p>Details: Number of nodes in an unpaid order</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
existingNodeCount	existingNodeCount object	<p>Details: Statistics on existing nodes in a scaling group</p> <p>Constraints: None</p>
upcomingNodeCount	upcomingNodeCount object	<p>Details: Statistics on the nodes to be added in a scaling group</p> <p>Constraints: None</p>
scaleDownDisabledNodeCount	Integer	<p>Details: Number of nodes that cannot be deleted in a scaling group</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Type	Description
conditions	Array of NodePoolCondition objects	<p>Details: Scaling group status details. For details, see the definition of Condition.</p> <p>Constraints: None</p>

Table 4-796 existingNodeCount

Parameter	Type	Description
postPaid	Integer	<p>Details: Number of pay-per-use nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
prePaid	Integer	<p>Details: Number of yearly/monthly nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
total	Integer	<p>Details: Total number of pay-per-use and yearly/monthly nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-797 upcomingNodeCount

Parameter	Type	Description
postPaid	Integer	<p>Details: Number of pay-per-use nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
prePaid	Integer	<p>Details: Number of yearly/monthly nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
total	Integer	<p>Details: Total number of pay-per-use and yearly/monthly nodes</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-798 NodePoolCondition

Parameter	Type	Description
type	String	<p>Details: Condition type</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Scalable: whether a node pool can be scaled out. If the status is False, node pool scale-out will not be triggered again. • QuotaInsufficient: Quotas on which node pool scale-out depends are insufficient, affecting the node pool scale-out status. • ResourceInsufficient: Resources on which node pool scale-out depends are insufficient, affecting the node pool scale-out status. • UnexpectedError: The node pool fails to be scaled out due to unexpected reasons, affecting the node pool scale-out status. • LockedByOrder: The yearly/monthly-billed node pool is locked due to an order. The value of Reason is the ID of the pending order. • Error: A node pool error occurred. A common trigger is deletion failure. <p>Default value: N/A</p>
status	String	<p>Details: Current status of the condition</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • True • False <p>Default value: N/A</p>

Parameter	Type	Description
lastProbeTime	String	<p>Details: Time when the status was last checked</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
lastTransitTime	String	<p>Details: Time when the status was last changed</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
reason	String	<p>Details: Reason why the status was last changed</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
message	String	<p>Details: Detailed description of the condition</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Example Requests

None

Example Responses

Status code: 200

The job for deleting the node pool is successfully delivered.

```
{
  "kind" : "NodePool",
  "apiVersion" : "v3",
  "metadata" : {
    "name" : "lc-it-nodepool-79796",
    "uid" : "99adada2-69eb-11ea-a592-0255ac1001bb"
  },
  "spec" : {
    "type" : "vm",
    "nodeTemplate" : {
      "flavor" : "s6.large.2",
      "az" : "*****",
      "os" : "EulerOS 2.5",
      "login" : {
        "sshKey" : "KeyPair-001"
      }
    },
    "rootVolume" : {
      "volumetype" : "SAS",
      "size" : 40
    },
    "dataVolumes" : [ {
      "volumetype" : "SAS",
      "size" : 100,
      "extendParam" : {
        "useType" : "docker"
      }
    } ],
    "publicIP" : {
      "eip" : {
        "bandwidth" : { }
      }
    },
    "nodeNicSpec" : {
      "primaryNic" : {
        "subnetId" : "7e767d10-7548-4df5-ad72-aeac1d08bd8a"
      }
    },
    "billingMode" : 0,
    "extendParam" : {
      "maxPods" : 110
    },
    "k8sTags" : {
      "cce.cloud.com/cce-nodepool" : "lc-it-nodepool-79796"
    }
  },
  "autoscaling" : { },
  "nodeManagement" : { }
},
"status" : {
  "phase" : "Deleting",
  "jobId" : "3281fa02-69ee-11ea-a592-0255ac1001bb"
}
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;
```

```
import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class DeleteNodePoolSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();

        DeleteNodePoolRequest request = new DeleteNodePoolRequest();
        request.withClusterId("{cluster_id}");
        request.withNodepoolId("{nodepool_id}");
        try {
            DeleteNodePoolResponse response = client.deleteNodePool(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
```

```

projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = CceClient.new_builder() \
    .with_credentials(credentials) \
    .with_region(CceRegion.value_of("<YOUR REGION>")) \
    .build()

try:
    request = DeleteNodePoolRequest()
    request.cluster_id = "{cluster_id}"
    request.nodepool_id = "{nodepool_id}"
    response = client.delete_node_pool(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)

```

Go

```

package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.DeleteNodePoolRequest{}
    request.ClusterId = "{cluster_id}"
    request.NodepoolId = "{nodepool_id}"
    response, err := client.DeleteNodePool(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The job for deleting the node pool is successfully delivered.

Error Codes

See [Error Codes](#).

4.4.6 Scaling a Node Pool

Function

This API is used to scale in or out a node pool.

NOTE

The URL for cluster management is in the format of **https://Endpoint/uri**, where **uri** specifies the resource path for API access.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/nodepools/{nodepool_id}/operation/scale

Table 4-799 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>
nodepool_id	Yes	String	<p>Details: Node pool ID. For details about how to obtain the ID, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-800 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-801 Request body parameters

Parameter	Mandatory	Type	Description
kind	Yes	String	<p>Details: API type</p> <p>Constraints: None</p> <p>Options: The value is fixed at NodePool.</p> <p>Default value: N/A</p>
apiVersion	Yes	String	<p>Details: API version</p> <p>Constraints: None</p> <p>Options: The value is fixed at v3.</p> <p>Default value: N/A</p>
spec	Yes	ScaleNodePoolSpec object	<p>Details: Parameters in the request for scaling a node pool</p> <p>Constraints: None</p>

Table 4-802 ScaleNodePoolSpec

Parameter	Mandatory	Type	Description
desiredNodeCount	Yes	Integer	<p>Details: Desired number of nodes in a node pool</p> <p>Constraints: This parameter is mandatory. If it is omitted, the default value 0 is used. This will result in the deletion of all nodes in the node pool scaling group.</p> <p>Options: 0 or a positive integer</p> <p>Default value: 0</p>
scaleGroups	Yes	Array of strings	<p>Details: Name of the scaling group in a node pool to be scaled</p> <p>Constraints: Only one scaling group name can be specified. If the default scaling group is required, set the parameter to default.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
options	No	ScaleNodePoolOptions object	<p>Details: Configurations of node pool scaling options</p> <p>Constraints: None</p>

Table 4-803 ScaleNodePoolOptions

Parameter	Mandatory	Type	Description
scalableChecking	No	String	<p>Details: Policy for checking the scale-out</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • instant: When a scale-out request is delivered, the system synchronously checks whether the underlying resources are sold out. • async: When a scale-out request is delivered, the system asynchronously checks whether the underlying resources are sold out. <p>Default value: instant</p>
billingConfigOverride	No	ScaleUpBillingConfigOverride object	<p>Details: The default billing mode of a node pool will be overwritten when the node pool is scaled out. If the scale-out of yearly/monthly nodes is needed in a new node pool, this parameter is required. In other scenarios, you are not advised to use this parameter.</p> <p>Constraints: Only clusters of v1.21.11-r0, v1.23.9-r0, v1.25.4-r0, and later versions support the scale-out of yearly/monthly nodes in pay-per-use node pools.</p>

Table 4-804 ScaleUpBillingConfigOverride

Parameter	Mandatory	Type	Description
billingMode	No	Integer	<p>Details: Billing mode of a node</p> <p>Constraints: This parameter is optional. If it is not specified, the default billing mode of the node pool where the node is in is used.</p> <p>Options:</p> <ul style="list-style-type: none"> • 0: pay-per-use • 1: yearly/monthly <p>Default value: N/A</p>
extendParam	No	ScaleUpExtendParam object	<p>Details: Parameters for configuring the yearly/monthly billing mode</p> <p>Constraints:</p> <ul style="list-style-type: none"> • This parameter is not considered in the pay-per-use billing mode. • This parameter is mandatory for the yearly/monthly billing mode.

Table 4-805 ScaleUpExtendParam

Parameter	Mandatory	Type	Description
periodNum	Yes	Integer	<p>Details: Yearly/Monthly duration</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • If periodType is month, the value ranges from 1 to 9. • If periodType is year, the value ranges from 1 to 3. <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
periodType	Yes	String	<p>Details: Yearly/Monthly type</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • year • month <p>Default value: N/A</p>
isAutoRenew	No	Boolean	<p>Details: Whether to enable auto renewal</p> <p>Constraints: It is valid when billingMode is set to 1. If it is left blank, auto renewal is not enabled by default.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto renewal is enabled. • false: Auto renewal is not enabled. <p>Default value: N/A</p>
isAutoPay	No	Boolean	<p>Details: Whether an order is automatically or manually paid</p> <p>Constraints: This field is valid when billingMode is set to 1 or 2 (discarded). If not specified when billingMode is set to 1, auto payment is not enabled.</p> <p>Options:</p> <ul style="list-style-type: none"> • true: Auto payment is enabled. • false: Auto payment is not enabled. <p>Default value: N/A</p>

Response Parameters

None

Example Requests

- Scale out nodes in the default scaling group of a node pool (pay-per-use).

```
{
  "kind": "NodePool",
  "apiVersion": "v3",
  "spec": {
    "desiredNodeCount": 1,
    "scaleGroups": [ "default" ]
  }
}
```
- Scale out nodes in the default scaling group of a node pool (yearly/monthly).

```
{
  "kind": "NodePool",
  "apiVersion": "v3",
  "spec": {
    "desiredNodeCount": 1,
    "scaleGroups": [ "default" ],
    "options": {
      "billingConfigOverride": {
        "billingMode": 1,
        "extendParam": {
          "periodNum": 1,
          "periodType": "month",
          "isAutoRenew": false,
          "isAutoPay": false
        }
      }
    }
  }
}
```

Example Responses

None

SDK Sample Code

The SDK sample code is as follows.

Java

- Scale out nodes in the default scaling group of a node pool (pay-per-use).

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class ScaleNodePoolSolution {

    public static void main(String[] args) {
```

```
// The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
environment variables and decrypted during use to ensure security.
// In this example, AK and SK are stored in environment variables for authentication. Before
running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
environment
String ak = System.getenv("CLOUD_SDK_AK");
String sk = System.getenv("CLOUD_SDK_SK");
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
    .withProjectId(projectId)
    .withAk(ak)
    .withSk(sk);

CceClient client = CceClient.newBuilder()
    .withCredential(auth)
    .withRegion(CceRegion.valueOf("<YOUR REGION>"))
    .build();
ScaleNodePoolRequest request = new ScaleNodePoolRequest();
request.withClusterId("{cluster_id}");
request.withNodepoolId("{nodepool_id}");
ScaleNodePoolRequestBody body = new ScaleNodePoolRequestBody();
List<String> listSpecScaleGroups = new ArrayList<>();
listSpecScaleGroups.add("default");
ScaleNodePoolSpec specbody = new ScaleNodePoolSpec();
specbody.withDesiredNodeCount(1)
    .withScaleGroups(listSpecScaleGroups);
body.withSpec(specbody);
body.withApiVersion("v3");
body.withKind("NodePool");
request.withBody(body);
try {
    ScaleNodePoolResponse response = client.scaleNodePool(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

- Scale out nodes in the default scaling group of a node pool (yearly/monthly).

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class ScaleNodePoolSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        environment variables and decrypted during use to ensure security.
    }
}
```



```
// In this example, AK and SK are stored in environment variables for authentication. Before
running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
environment
String ak = System.getenv("CLOUD_SDK_AK");
String sk = System.getenv("CLOUD_SDK_SK");
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
    .withProjectId(projectId)
    .withAk(ak)
    .withSk(sk);

CceClient client = CceClient.newBuilder()
    .withCredential(auth)
    .withRegion(CceRegion.valueOf("<YOUR REGION>"))
    .build();

ScaleNodePoolRequest request = new ScaleNodePoolRequest();
request.withClusterId("{cluster_id}");
request.withNodepoolId("{nodepool_id}");
ScaleNodePoolRequestBody body = new ScaleNodePoolRequestBody();
ScaleUpExtendParam extendParamBillingConfigOverride = new ScaleUpExtendParam();
extendParamBillingConfigOverride.withPeriodNum(1)
    .withPeriodType("month")
    .withIsAutoRenew(false)
    .withIsAutoPay(false);
ScaleUpBillingConfigOverride billingConfigOverrideOptions = new
ScaleUpBillingConfigOverride();
billingConfigOverrideOptions.withBillingMode(1)
    .withExtendParam(extendParamBillingConfigOverride);
ScaleNodePoolOptions optionsSpec = new ScaleNodePoolOptions();
optionsSpec.withBillingConfigOverride(billingConfigOverrideOptions);
List<String> listSpecScaleGroups = new ArrayList<>();
listSpecScaleGroups.add("default");
ScaleNodePoolSpec specbody = new ScaleNodePoolSpec();
specbody.withDesiredNodeCount(1)
    .withScaleGroups(listSpecScaleGroups)
    .withOptions(optionsSpec);
body.withSpec(specbody);
body.withApiVersion("v3");
body.withKind("NodePool");
request.withBody(body);
try {
    ScaleNodePoolResponse response = client.scaleNodePool(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

- Scale out nodes in the default scaling group of a node pool (pay-per-use).
coding: utf-8

```
import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *
```

```
if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    # environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before
    # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    # environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ScaleNodePoolRequest()
        request.cluster_id = "{cluster_id}"
        request.nodepool_id = "{nodepool_id}"
        listScaleGroupsSpec = [
            "default"
        ]
        specbody = ScaleNodePoolSpec(
            desired_node_count=1,
            scale_groups=listScaleGroupsSpec
        )
        request.body = ScaleNodePoolRequestBody(
            spec=specbody,
            api_version="v3",
            kind="NodePool"
        )
        response = client.scale_node_pool(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

- Scale out nodes in the default scaling group of a node pool (yearly/monthly).

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    # environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before
    # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    # environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
```

```
request = ScaleNodePoolRequest()
request.cluster_id = "{cluster_id}"
request.nodepool_id = "{nodepool_id}"
extendParamBillingConfigOverride = ScaleUpExtendParam(
    period_num=1,
    period_type="month",
    is_auto_renew=False,
    is_auto_pay=False
)
billingConfigOverrideOptions = ScaleUpBillingConfigOverride(
    billing_mode=1,
    extend_param=extendParamBillingConfigOverride
)
optionsSpec = ScaleNodePoolOptions(
    billing_config_override=billingConfigOverrideOptions
)
listScaleGroupsSpec = [
    "default"
]
specbody = ScaleNodePoolSpec(
    desired_node_count=1,
    scale_groups=listScaleGroupsSpec,
    options=optionsSpec
)
request.body = ScaleNodePoolRequestBody(
    spec=specbody,
    api_version="v3",
    kind="NodePool"
)
response = client.scale_node_pool(request)
print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

- Scale out nodes in the default scaling group of a node pool (pay-per-use).

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    // environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before
    // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    // environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
```

```

        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build()

    request := &model.ScaleNodePoolRequest{}
    request.ClusterId = "{cluster_id}"
    request.NodepoolId = "{nodepool_id}"
    var listScaleGroupsSpec = []string{
        "default",
    }
    specbody := &model.ScaleNodePoolSpec{
        DesiredNodeCount: int32(1),
        ScaleGroups: listScaleGroupsSpec,
    }
    request.Body = &model.ScaleNodePoolRequestBody{
        Spec: specbody,
        ApiVersion: "v3",
        Kind: "NodePool",
    }
    response, err := client.ScaleNodePool(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}

```

- Scale out nodes in the default scaling group of a node pool (yearly/monthly).

```

package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    // environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before
    // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    // environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ScaleNodePoolRequest{}
    request.ClusterId = "{cluster_id}"
    request.NodepoolId = "{nodepool_id}"
    isAutoRenewExtendParam:= false
    isAutoPayExtendParam:= false
    extendParamBillingConfigOverride := &model.ScaleUpExtendParam{
        PeriodNum: int32(1),
        PeriodType: "month",
        IsAutoRenew: &isAutoRenewExtendParam,
    }
}

```

```

    IsAutoPay: &isAutoPayExtendParam,
  }
  billingConfigOverrideOptions := &model.ScaleUpBillingConfigOverride{
    BillingMode: int32(1),
    ExtendParam: extendParamBillingConfigOverride,
  }
  optionsSpec := &model.ScaleNodePoolOptions{
    BillingConfigOverride: billingConfigOverrideOptions,
  }
  var listScaleGroupsSpec = []string{
    "default",
  }
  specbody := &model.ScaleNodePoolSpec{
    DesiredNodeCount: int32(1),
    ScaleGroups: listScaleGroupsSpec,
    Options: optionsSpec,
  }
  request.Body = &model.ScaleNodePoolRequestBody{
    Spec: specbody,
    ApiVersion: "v3",
    Kind: "NodePool",
  }
  response, err := client.ScaleNodePool(request)
  if err == nil {
    fmt.Printf("%v\n", response)
  } else {
    fmt.Println(err)
  }
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
202	The node pool scaling is accepted. Nodes in the node pool will be added or deleted based on the expected number of nodes in the node pool after scaling.

Error Codes

See [Error Codes](#).

4.4.7 Synchronizing Node Pools

Function

This API is used to synchronize the configurations of existing nodes in a node pool.

NOTE

The URL for cluster management is in the format of **https://Endpoint/uri**, where **uri** specifies the resource path for API access.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/:projectid/clusters/{cluster_id}/nodepools/{nodepool_id}/operation/upgrade

Table 4-806 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
nodepool_id	Yes	String	<p>Details: Node pool ID. For details about how to obtain the ID, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-807 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-808 Request body parameters

Parameter	Mandatory	Type	Description
spec	Yes	UpgradeNodePoolSpec object	Parameters in the request for synchronizing a node pool

Table 4-809 UpgradeNodePoolSpec

Parameter	Mandatory	Type	Description
maxUnavailable	Yes	Integer	Maximum number of nodes to be synchronized in each batch. The value ranges from 1 to 20. It specifies the maximum number of nodes that can be unavailable during node upgrade. Nodes will be unavailable during synchronization by resetting the nodes. Properly configure this parameter to prevent pod scheduling failures caused by too many unavailable nodes in the cluster.

Parameter	Mandatory	Type	Description
nodeIDs	No	Array of strings	List of node IDs selected in the node pool to be synchronized. For details about how to obtain the IDs, see How to Obtain Parameters in the API URI .
nodePoolID	Yes	String	Node pool ID. For details about how to obtain the ID, see How to Obtain Parameters in the API URI .
nodeTemplate	No	UpgradeNodePoolSpecNodeTemplate object	Parameters for synchronizing a node pool template

Table 4-810 UpgradeNodePoolSpecNodeTemplate

Parameter	Mandatory	Type	Description
lifeCycle	Yes	NodeLifecycleConfig object	Customized node lifecycle configurations
login	Yes	Login object	<p>Details: Node login mode. Either a key pair or password must be used for login.</p> <p>Constraints: This parameter cannot be modified when a node pool is being updated.</p>

Table 4-811 NodeLifecycleConfig

Parameter	Mandatory	Type	Description
preInstall	No	String	<p>Pre-installation script. The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>The input value must be encoded using Base64. The method is as follows: <code>echo -n "*Content to be encoded*" base64</code></p>
postInstall	No	String	<p>Post-installation script. The characters of both the pre-installation and post-installation scripts are centrally calculated, and the total number of characters after transcoding cannot exceed 10,240.</p> <p>The input value must be encoded using Base64. The method is as follows: <code>echo -n "*Content to be encoded*" base64</code></p>

Table 4-812 Login

Parameter	Mandatory	Type	Description
sshKey	No	String	<p>Details: Name of the key pair used for login</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
userPassword	No	UserPassword object	Details: Password used for node login Constraints: None

Table 4-813 UserPassword

Parameter	Mandatory	Type	Description
username	No	String	Details: Login account. The default value is root . Constraints: None Options: N/A Default value: root

Parameter	Mandatory	Type	Description
password	Yes	String	<p>Details: Login password. If a username and password are used when a node is created, this field is shielded in the response body.</p> <p>Constraints: The password field must be salted during node creation. For details, see Adding a Salt in the password Field When Creating a Node.</p> <p>Options: A password must:</p> <ul style="list-style-type: none"> • Contain 8 to 26 characters. • Contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters !@\$%^_+=+[{ }];,./? • Not contain the username or the username spelled backwards. <p>Default value: N/A</p>

Response Parameters

None

Example Requests

- Synchronize an on-premises node pool.

```
{
  "spec": {
    "maxUnavailable": 1,
    "nodeIDs": [ "aaaaaaaa-aaaa-aaaa-aaaa-aaaaaaaaaaaa", "bbbbbbb-bbbb-bbbb-bbbb-
bbbbbbbbbb" ],
    "nodePoolID": "cccccccc-cccc-cccc-cccc-cccccccccccc"
  }
}
```

- Synchronize the default node pool.

```
{
  "spec": {
    "maxUnavailable": 1,
    "nodeIDs": [ "aaaaaaaa-aaaa-aaaa-aaaa-aaaaaaaaaaaa", "bbbbbbb-bbbb-bbbb-bbbb-
bbbbbbbbbb" ],
    "nodePoolID": "DefaultPool",
    "nodeTemplate": {
```

```
"lifeCycle" : {
  "preInstall" : "ZWNobyAx",
  "postInstall" : "ZWNobyAx"
},
"login" : {
  "userPassword" : {
    "password" : "xxxxx",
    "username" : "root"
  }
}
}
```

Example Responses

None

SDK Sample Code

The SDK sample code is as follows.

Java

- Synchronize an on-premises node pool.

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class UpgradeNodePoolSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before
        // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
        // environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        UpgradeNodePoolRequest request = new UpgradeNodePoolRequest();
        request.withClusterId("{cluster_id}");
        request.withNodepoolId("{nodepool_id}");
        UpgradeNodePool body = new UpgradeNodePool();
        List<String> listSpecNodeIDs = new ArrayList<>();
```

```
listSpecNodeIds.add("aaaaaaaa-aaaa-aaaa-aaaa-aaaaaaaaaaaa");
listSpecNodeIds.add("bbbbbbb-bbbb-bbbb-bbbb-bbbbbbbbbb");
NodePoolUpgradeSpec specbody = new NodePoolUpgradeSpec();
specbody.withNodePoolID("ccccccc-cccc-cccc-cccc-ccccccccccc")
    .withNodeIds(listSpecNodeIds)
    .withMaxUnavailable(1);
body.withSpec(specbody);
request.withBody(body);
try {
    UpgradeNodePoolResponse response = client.upgradeNodePool(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

- Synchronize the default node pool.

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class UpgradeNodePoolSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before
        // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
        // environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        UpgradeNodePoolRequest request = new UpgradeNodePoolRequest();
        request.withClusterId("{cluster_id}");
        request.withNodepoolId("{nodepool_id}");
        UpgradeNodePool body = new UpgradeNodePool();
        NodeTemplateLifeCycle lifeCycleNodeTemplate = new NodeTemplateLifeCycle();
        lifeCycleNodeTemplate.withPreInstall("ZWNobyAx")
            .withPostInstall("ZWNobyAx");
        NodeTemplateLoginUserPassword userPasswordLogin = new NodeTemplateLoginUserPassword();
```

```
userPasswordLogin.withUsername("root")
    .withPassword("xxxxx");
NodeTemplateLogin loginNodeTemplate = new NodeTemplateLogin();
loginNodeTemplate.withUserPassword(userPasswordLogin);
NodeTemplate nodeTemplateSpec = new NodeTemplate();
nodeTemplateSpec.withLogin(loginNodeTemplate)
    .withLifecycle(lifeCycleNodeTemplate);
List<String> listSpecNodeIDs = new ArrayList<>();
listSpecNodeIDs.add("aaaaaaaa-aaaa-aaaa-aaaa-aaaaaaaaaaaa");
listSpecNodeIDs.add("bbbbbbbb-bbbb-bbbb-bbbb-bbbbbbbbbbb");
NodePoolUpgradeSpec specbody = new NodePoolUpgradeSpec();
specbody.withNodePoolID("DefaultPool")
    .withNodeIDs(listSpecNodeIDs)
    .withNodeTemplate(nodeTemplateSpec)
    .withMaxUnavailable(1);
body.withSpec(specbody);
request.withBody(body);
try {
    UpgradeNodePoolResponse response = client.upgradeNodePool(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

- Synchronize an on-premises node pool.

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    # environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before
    # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    # environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = UpgradeNodePoolRequest()
        request.cluster_id = "{cluster_id}"
        request.nodepool_id = "{nodepool_id}"
        listNodeIDsSpec = [
            "aaaaaaaa-aaaa-aaaa-aaaa-aaaaaaaaaaaa",
```

```

"bbbbbbb-bbbb-bbbb-bbbb-bbbbbbbbb"
]
specbody = NodePoolUpgradeSpec(
    node_pool_id="ccccccc-cccc-cccc-cccccccccccc",
    node_ids=listNodeIdsSpec,
    max_unavailable=1
)
request.body = UpgradeNodePool(
    spec=specbody
)
response = client.upgrade_node_pool(request)
print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)

```

- Synchronize the default node pool.

```

# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    # environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before
    # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    # environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = UpgradeNodePoolRequest()
        request.cluster_id = "{cluster_id}"
        request.nodepool_id = "{nodepool_id}"
        lifeCycleNodeTemplate = NodeTemplateLifeCycle(
            pre_install="ZWNobyAx",
            post_install="ZWNobyAx"
        )
        userPasswordLogin = NodeTemplateLoginUserPassword(
            username="root",
            password="xxxxx"
        )
        loginNodeTemplate = NodeTemplateLogin(
            user_password=userPasswordLogin
        )
        nodeTemplateSpec = NodeTemplate(
            login=loginNodeTemplate,
            life_cycle=lifeCycleNodeTemplate
        )
        listNodeIdsSpec = [
            "aaaaaaaa-aaaa-aaaa-aaaa-aaaaaaaaaaaa",
            "bbbbbbb-bbbb-bbbb-bbbb-bbbbbbbbb"
        ]
        specbody = NodePoolUpgradeSpec(
            node_pool_id="DefaultPool",

```



```

        node_ids=listNodeIdsSpec,
        node_template=nodeTemplateSpec,
        max_unavailable=1
    )
    request.body = UpgradeNodePool(
        spec=specbody
    )
    response = client.upgrade_node_pool(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)

```

Go

- Synchronize an on-premises node pool.

```

package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    // environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before
    // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    // environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.UpgradeNodePoolRequest{}
    request.ClusterId = "{cluster_id}"
    request.NodepoolId = "{nodepool_id}"
    var listNodeIdsSpec = []string{
        "aaaaaaaa-aaaa-aaaa-aaaa-aaaaaaaaaaaa",
        "bbbbbbb-bbbb-bbbb-bbbb-bbbbbbbbbb",
    }
    maxUnavailableSpec:= int32(1)
    specbody := &model.NodePoolUpgradeSpec{
        NodePoolID: "ccccccc-cccc-cccc-cccc-cccccccccc",
        NodeIDs: &listNodeIdsSpec,
        MaxUnavailable: &maxUnavailableSpec,
    }
    request.Body = &model.UpgradeNodePool{
        Spec: specbody,
    }
    response, err := client.UpgradeNodePool(request)
    if err == nil {

```

```

    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}

```

- Synchronize the default node pool.

```

package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
    // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
    // environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before
    // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
    // environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.UpgradeNodePoolRequest{}
    request.ClusterId = "{cluster_id}"
    request.NodepoolId = "{nodepool_id}"
    preInstallLifeCycle := "ZWNobyAx"
    postInstallLifeCycle := "ZWNobyAx"
    lifeCycleNodeTemplate := &model.NodeTemplateLifeCycle{
        PreInstall: &preInstallLifeCycle,
        PostInstall: &postInstallLifeCycle,
    }
    usernameUserPassword := "root"
    passwordUserPassword := "xxxxx"
    userPasswordLogin := &model.NodeTemplateLoginUserPassword{
        Username: &usernameUserPassword,
        Password: &passwordUserPassword,
    }
    loginNodeTemplate := &model.NodeTemplateLogin{
        UserPassword: userPasswordLogin,
    }
    nodeTemplateSpec := &model.NodeTemplate{
        Login: loginNodeTemplate,
        LifeCycle: lifeCycleNodeTemplate,
    }
    var listNodeIdsSpec = []string{
        "aaaaaaaa-aaaa-aaaa-aaaa-aaaaaaaaaaaa",
        "bbbbbbb-bbbb-bbbb-bbbb-bbbbbbbbb",
    }
    maxUnavailableSpec := int32(1)
    specbody := &model.NodePoolUpgradeSpec{
        NodePoolID: "DefaultPool",
        NodeIDs: &listNodeIdsSpec,

```

```
    NodeTemplate: nodeTemplateSpec,  
    MaxUnavailable: &maxUnavailableSpec,  
  }  
  request.Body = &model.UpgradeNodePool{  
    Spec: specbody,  
  }  
  response, err := client.UpgradeNodePool(request)  
  if err == nil {  
    fmt.Printf("%+v\n", response)  
  } else {  
    fmt.Println(err)  
  }  
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The node pool synchronization has been accepted.

Error Codes

See [Error Codes](#).

4.5 Storage Management

4.5.1 Creating a PVC (to be discarded)

Function

This API is used to create a PersistentVolumeClaim (PVC) in a specified namespace. A PVC is a request for PersistentVolume (PV). The PV carries details of real cloud storage such as EVS disks, SFS file systems, and OBS buckets. This API is to be deprecated. Use the corresponding Kubernetes PVC API instead.

NOTE

The URL for storage management is in the format of **https://{clusterid}.Endpoint/uri**. In the URL, *{clusterid}* indicates the cluster ID, and *uri* indicates the resource path, that is, the path for API access. If *https://Endpoint/uri* is used, the **X-Cluster-ID** parameter in the request header must be specified.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v1/namespaces/{namespace}/cloudpersistentvolumeclaims

Table 4-814 Path Parameters

Parameter	Mandatory	Type	Description
namespace	Yes	String	<p>Namespace where the PVC is located.</p> <p>Constraints:</p> <ul style="list-style-type: none"> • Custom namespace. You must create a namespace in the cluster before using it. • The namespace provided by the system is namespace default. • Namespaces kube-system and kube-public cannot be used.

Request Parameters

Table 4-815 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
X-Cluster-ID	No	String	Cluster ID. This field is mandatory when the URL format https://Endpoint/uri is used. For details about how to obtain the value, see How to Obtain Parameters in the API URI .

Table 4-816 Request body parameters

Parameter	Mandatory	Type	Description
apiVersion	Yes	String	API version. The value is fixed at v1 .
kind	Yes	String	API type. The value is fixed at PersistentVolumeClaim .
metadata	Yes	PersistentVolumeClaimMetadata object	Cluster object metadata, which is a collection of attributes.
spec	Yes	PersistentVolumeClaimSpec object	Detailed description of the cluster object. CCE creates or updates objects by defining or updating spec .
status	No	PersistentVolumeClaimStatus object	PVC status. The request to create a PVC does not need to carry this parameter.

Table 4-817 PersistentVolumeClaimMetadata

Parameter	Mandatory	Type	Description
name	Yes	String	PVC name. Enter 1 to 253 characters starting and ending with a letter or digit. Only lowercase letters, digits, hyphens (-), and periods (.) are allowed. PVC names must be unique in a namespace.
labels	No	String	PVC labels, in the format of key-value pairs. <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain containing a maximum of 253 characters (such as example.com/my-key) can be prefixed to a key. • Value: The value can be left blank or contain 1 to 63 characters that start and end with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.

Table 4-818 PersistentVolumeClaimSpec

Parameter	Mandatory	Type	Description
volumeID	Yes	String	ID of an existing storage volume. <ul style="list-style-type: none"> • If an SFS, EVS, or SFS Turbo volume is used, set this parameter to the ID of the volume. • If an OBS bucket is used, set this parameter to the OBS bucket name.

Parameter	Mandatory	Type	Description
storageType	Yes	String	Cloud storage class. This parameter is used together with volumeID . That is, volumeID and storageType must be configured at the same time. <ul style="list-style-type: none"> • bs: EVS • nfs: SFS • obs: OBS • efs: SFS Turbo
accessModes	Yes	Array of strings	Access mode of the volume. Only the first value in all selected options is valid. <ul style="list-style-type: none"> • ReadWriteOnce: The volume can be mounted as read-write by a single node. <p>NOTE This function is supported only when the cluster version is v1.13.10 and the storage-driver version is 1.0.19.</p> <ul style="list-style-type: none"> • ReadOnlyMany (default): The volume can be mounted as read-only by many nodes. • ReadWriteMany: The volume can be mounted as read-write by many nodes.
storageClassName	No	String	Storage class name of the PVC.
volumeName	No	String	Name of the PV bound to the PVC.
resources	No	ResourceRequirements object	Resource requests and limits.
volumeMode	No	String	PV type specified by the PVC.

Table 4-819 ResourceRequirements

Parameter	Mandatory	Type	Description
limits	No	Map<String,String>	Resource limits. This parameter is invalid during creation.

Parameter	Mandatory	Type	Description
requests	No	Map<String,String>	Resource requests. This parameter is invalid during creation.

Table 4-820 PersistentVolumeClaimStatus

Parameter	Mandatory	Type	Description
accessModes	No	Array of strings	Access mode of the PV.
capacity	No	String	Actual resources and capacity of the PV.
phase	No	String	Current status of the PVC.

Response Parameters

Status code: 201

Table 4-821 Response body parameters

Parameter	Type	Description
apiVersion	String	API version. The value is fixed at v1 .
kind	String	API type. The value is fixed at PersistentVolumeClaim .
metadata	PersistentVolumeClaimMetadata object	Cluster object metadata, which is a collection of attributes.
spec	PersistentVolumeClaimSpec object	Detailed description of the cluster object. CCE creates or updates objects by defining or updating spec .
status	PersistentVolumeClaimStatus object	PVC status. The request to create a PVC does not need to carry this parameter.

Table 4-822 PersistentVolumeClaimMetadata

Parameter	Type	Description
name	String	PVC name. Enter 1 to 253 characters starting and ending with a letter or digit. Only lowercase letters, digits, hyphens (-), and periods (.) are allowed. PVC names must be unique in a namespace.
labels	String	PVC labels, in the format of key-value pairs. <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain containing a maximum of 253 characters (such as example.com/my-key) can be prefixed to a key. • Value: The value can be left blank or contain 1 to 63 characters that start and end with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.

Table 4-823 PersistentVolumeClaimSpec

Parameter	Type	Description
volumeID	String	ID of an existing storage volume. <ul style="list-style-type: none"> • If an SFS, EVS, or SFS Turbo volume is used, set this parameter to the ID of the volume. • If an OBS bucket is used, set this parameter to the OBS bucket name.
storageType	String	Cloud storage class. This parameter is used together with volumeID . That is, volumeID and storageType must be configured at the same time. <ul style="list-style-type: none"> • bs: EVS • nfs: SFS • obs: OBS • efs: SFS Turbo

Parameter	Type	Description
accessModes	Array of strings	<p>Access mode of the volume. Only the first value in all selected options is valid.</p> <ul style="list-style-type: none"> • ReadWriteOnce: The volume can be mounted as read-write by a single node. <p>NOTE This function is supported only when the cluster version is v1.13.10 and the storage-driver version is 1.0.19.</p> <ul style="list-style-type: none"> • ReadOnlyMany (default): The volume can be mounted as read-only by many nodes. • ReadWriteMany: The volume can be mounted as read-write by many nodes.
storageClassName	String	Storage class name of the PVC.
volumeName	String	Name of the PV bound to the PVC.
resources	ResourceRequirements object	Resource requests and limits.
volumeMode	String	PV type specified by the PVC.

Table 4-824 ResourceRequirements

Parameter	Type	Description
limits	Map<String,String >	Resource limits. This parameter is invalid during creation.
requests	Map<String,String >	Resource requests. This parameter is invalid during creation.

Table 4-825 PersistentVolumeClaimStatus

Parameter	Type	Description
accessModes	Array of strings	Access mode of the PV.
capacity	String	Actual resources and capacity of the PV.
phase	String	Current status of the PVC.

Example Requests

Specifying an EVS volume ID and creating a PVC

```
POST /api/v1/namespaces/default/cloudpersistentvolumeclaims
{
  "apiVersion": "v1",
  "kind": "PersistentVolumeClaim",
  "metadata": {
    "name": "csms-dev-create",
    "namespace": "default"
  },
  "spec": {
    "volumeID": "86b29e16-23db-11e7-9c83-fa163ec08232",
    "storageType": "bs",
    "accessModes": [ "ReadWriteMany" ]
  }
}
```

Example Responses

Status code: 201

The job for creating a PVC is successfully delivered.

```
{
  "kind": "PersistentVolumeClaim",
  "apiVersion": "v1",
  "metadata": {
    "name": "csms-dev-create ",
    "namespace": "default",
    "selfLink": "/api/v1/namespaces/default/persistentvolumeclaims/db-mysql-0",
    "uid": "86b29e16-23db-11e7-9c83-fa163ec08232",
    "resourceVersion": "1793115",
    "creationTimestamp": "2017-04-18T02:05:42Z"
  },
  "spec": {
    "volumeName": "csms-dev-create ",
    "accessModes": [ "ReadWriteMany" ],
    "resources": {
      "requests": {
        "storage": "1Gi"
      }
    }
  },
  "status": {
    "phase": "Pending",
    "accessModes": [ "ReadWriteMany" ]
  }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

Specifying an EVS volume ID and creating a PVC

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
```

```
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class CreateCloudPersistentVolumeClaimsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");

        ICredential auth = new BasicCredentials()
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        CreateCloudPersistentVolumeClaimsRequest request = new
        CreateCloudPersistentVolumeClaimsRequest();
        request.withNamespace("{namespace}");
        PersistentVolumeClaim body = new PersistentVolumeClaim();
        List<PersistentVolumeClaimSpec.AccessModesEnum> listSpecAccessModes = new ArrayList<>();

        listSpecAccessModes.add(PersistentVolumeClaimSpec.AccessModesEnum.fromValue("ReadWriteMany"));
        PersistentVolumeClaimSpec specbody = new PersistentVolumeClaimSpec();
        specbody.withVolumeID("86b29e16-23db-11e7-9c83-fa163ec08232")
            .withStorageType("bs")
            .withAccessModes(listSpecAccessModes);
        PersistentVolumeClaimMetadata metadatabody = new PersistentVolumeClaimMetadata();
        metadatabody.withName("csms-dev-create");
        body.withSpec(specbody);
        body.withMetadata(metadatabody);
        body.withKind("PersistentVolumeClaim");
        body.withApiVersion("v1");
        request.withBody(body);
        try {
            CreateCloudPersistentVolumeClaimsResponse response =
            client.createCloudPersistentVolumeClaims(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

Specifying an EVS volume ID and creating a PVC

```
# coding: utf-8
```

```
import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]

    credentials = BasicCredentials(ak, sk)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = CreateCloudPersistentVolumeClaimsRequest()
        request.namespace = "{namespace}"
        listAccessModesSpec = [
            "ReadWriteMany"
        ]
        specbody = PersistentVolumeClaimSpec(
            volume_id="86b29e16-23db-11e7-9c83-fa163ec08232",
            storage_type="bs",
            access_modes=listAccessModesSpec
        )
        metadatabody = PersistentVolumeClaimMetadata(
            name="csms-dev-create"
        )
        request.body = PersistentVolumeClaim(
            spec=specbody,
            metadata=metadatabody,
            kind="PersistentVolumeClaim",
            api_version="v1"
        )
        response = client.create_cloud_persistent_volume_claims(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

Specifying an EVS volume ID and creating a PVC

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
```

```

example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")

auth := basic.NewCredentialsBuilder().
    WithAk(ak).
    WithSk(sk).
    Build()

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.CreateCloudPersistentVolumeClaimsRequest{}
request.Namespace = "{namespace}"
var listAccessModesSpec = []model.PersistentVolumeClaimSpecAccessModes{
    model.GetPersistentVolumeClaimSpecAccessModesEnum().READ_WRITE_MANY,
}
specbody := &model.PersistentVolumeClaimSpec{
    VolumeID: "86b29e16-23db-11e7-9c83-fa163ec08232",
    StorageType: "bs",
    AccessModes: listAccessModesSpec,
}
metadatabody := &model.PersistentVolumeClaimMetadata{
    Name: "csms-dev-create",
}
request.Body = &model.PersistentVolumeClaim{
    Spec: specbody,
    Metadata: metadatabody,
    Kind: "PersistentVolumeClaim",
    ApiVersion: "v1",
}
response, err := client.CreateCloudPersistentVolumeClaims(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}
    
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
201	The job for creating a PVC is successfully delivered.

Error Codes

See [Error Codes](#).

4.5.2 Deleting a PVC (to be discarded)

Function

This API is used to delete a PVC from a specified namespace. Using this API, you can determine whether to retain the cloud storage volume associated with the PVC. This API has been deprecated. Use the corresponding Kubernetes PV API instead.

NOTE

The URL for storage management is in the format of **https://{clusterid}.Endpoint/uri**. In the URL, *{clusterid}* indicates the cluster ID, and *uri* indicates the resource path, that is, the path for API access. If *https://Endpoint/uri* is used, the **X-Cluster-ID** parameter in the request header must be specified.

Calling Method

For details, see [Calling APIs](#).

URI

DELETE /api/v1/namespaces/{namespace}/cloudpersistentvolumeclaims/{name}

Table 4-826 Path Parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Name of the PVC to be deleted.
namespace	Yes	String	Namespace where the PVC is located.

Table 4-827 Query Parameters

Parameter	Mandatory	Type	Description
deleteVolume	No	String	Whether to delete associated backend cloud storage volume after the PVC is deleted. The value can be true (delete) or false (not delete). The value defaults to false .

Parameter	Mandatory	Type	Description
storageType	No	String	<p>Cloud storage type. This parameter is used together with deleteVolume. That is, deleteVolume and storageType must be configured at the same time.</p> <ul style="list-style-type: none"> • bs: EVS • nfs: SFS • obs: OBS • efs: SFS Turbo

Request Parameters

Table 4-828 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>
X-Cluster-ID	No	String	Cluster ID. This field is mandatory when the URL format https://Endpoint/uri is used. For details about how to obtain the value, see How to Obtain Parameters in the API URI .

Response Parameters

Status code: 200

Table 4-829 Response body parameters

Parameter	Type	Description
apiVersion	String	API version. The value is fixed at v1 .
kind	String	API type. The value is fixed at PersistentVolumeClaim .
metadata	PersistentVolumeClaimMetadata object	Cluster object metadata, which is a collection of attributes.
spec	PersistentVolumeClaimSpec object	Detailed description of the cluster object. CCE creates or updates objects by defining or updating spec .
status	PersistentVolumeClaimStatus object	PVC status. The request to create a PVC does not need to carry this parameter.

Table 4-830 PersistentVolumeClaimMetadata

Parameter	Type	Description
name	String	PVC name. Enter 1 to 253 characters starting and ending with a letter or digit. Only lowercase letters, digits, hyphens (-), and periods (.) are allowed. PVC names must be unique in a namespace.
labels	String	PVC labels, in the format of key-value pairs. <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain containing a maximum of 253 characters (such as example.com/my-key) can be prefixed to a key. • Value: The value can be left blank or contain 1 to 63 characters that start and end with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed.

Table 4-831 PersistentVolumeClaimSpec

Parameter	Type	Description
volumeID	String	ID of an existing storage volume. <ul style="list-style-type: none"> • If an SFS, EVS, or SFS Turbo volume is used, set this parameter to the ID of the volume. • If an OBS bucket is used, set this parameter to the OBS bucket name.
storageType	String	Cloud storage class. This parameter is used together with volumeID . That is, volumeID and storageType must be configured at the same time. <ul style="list-style-type: none"> • bs: EVS • nfs: SFS • obs: OBS • efs: SFS Turbo

Parameter	Type	Description
accessModes	Array of strings	Access mode of the volume. Only the first value in all selected options is valid. <ul style="list-style-type: none"> • ReadWriteOnce: The volume can be mounted as read-write by a single node. <p>NOTE This function is supported only when the cluster version is v1.13.10 and the storage-driver version is 1.0.19.</p> <ul style="list-style-type: none"> • ReadOnlyMany (default): The volume can be mounted as read-only by many nodes. • ReadWriteMany: The volume can be mounted as read-write by many nodes.
storageClassName	String	Storage class name of the PVC.
volumeName	String	Name of the PV bound to the PVC.
resources	ResourceRequirements object	Resource requests and limits.
volumeMode	String	PV type specified by the PVC.

Table 4-832 ResourceRequirements

Parameter	Type	Description
limits	Map<String,String >	Resource limits. This parameter is invalid during creation.
requests	Map<String,String >	Resource requests. This parameter is invalid during creation.

Table 4-833 PersistentVolumeClaimStatus

Parameter	Type	Description
accessModes	Array of strings	Access mode of the PV.
capacity	String	Actual resources and capacity of the PV.
phase	String	Current status of the PVC.

Example Requests

None

Example Responses

None

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class DeleteCloudPersistentVolumeClaimsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");

        ICredential auth = new BasicCredentials()
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        DeleteCloudPersistentVolumeClaimsRequest request = new
        DeleteCloudPersistentVolumeClaimsRequest();
        request.setName("{name}");
        request.withNamespace("{namespace}");
        try {
            DeleteCloudPersistentVolumeClaimsResponse response =
            client.deleteCloudPersistentVolumeClaims(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]

    credentials = BasicCredentials(ak, sk)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = DeleteCloudPersistentVolumeClaimsRequest()
        request.name = "{name}"
        request.namespace = "{namespace}"
        response = client.delete_cloud_persistent_volume_claims(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())
```

```
request := &model.DeleteCloudPersistentVolumeClaimsRequest{}
request.Name = "{name}"
request.Namespace = "{namespace}"
response, err := client.DeleteCloudPersistentVolumeClaims(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The job for deleting a PVC is successfully delivered.

Error Codes

See [Error Codes](#).

4.6 Add-on Management

4.6.1 Installing an Add-on Instance

Function

This API is used to install an add-on instance by using an add-on template.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/addons

Request Parameters

Table 4-834 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-835 Request body parameters

Parameter	Mandatory	Type	Description
kind	Yes	String	API type. The value is fixed at Addon and cannot be changed. Any user-defined value is invalid.
apiVersion	Yes	String	API version. The value is fixed at v3 and cannot be changed. Any user-defined value is invalid.
metadata	Yes	AddonMetadata object	Basic information about the object. Metadata is a collection of attributes.
spec	Yes	InstanceRequestSpec object	Detailed description of add-on installation or upgrade.

Table 4-836 AddonMetadata

Parameter	Mandatory	Type	Description
uid	No	String	Unique ID
name	No	String	Add-on name
alias	No	String	Add-on alias
labels	No	Map<String,String>	Add-on labels in key-value pairs. This is a reserved field and does not take effect.
annotations	No	Map<String,String>	Add-on annotations in the format of key-value pairs. <ul style="list-style-type: none"> For add-on installation, the value is fixed at {"addon.install/type":"install"}. For add-on upgrade, the value is fixed at {"addon.upgrade/type":"upgrade"}.
updateTimestamp	No	String	Updated at
creationTimestamp	No	String	Created at

Table 4-837 InstanceRequestSpec

Parameter	Mandatory	Type	Description
version	No	String	Version of the add-on to install or upgrade, for example, 1.0.0 . <ul style="list-style-type: none"> Installation: This parameter is optional. If not specified, the latest version supported by the cluster is used. Upgrade: This parameter is mandatory. The version number must be specified.
clusterID	Yes	String	Cluster ID.
values	Yes	Map<String, Object>	Add-on template installation parameters (varying depending on the add-on). During the add-on upgrade, you need to specify all the installation parameters. If the parameters are not specified, the default values in the add-on template are used. The current add-on installation parameters can be obtained through the API for querying add-on instances.
addonTemplateName	Yes	String	Name of the add-on template to be installed, for example, coredns .

Response Parameters

Status code: 201

Table 4-838 Response body parameters

Parameter	Type	Description
kind	String	API type. The value is fixed at Addon and cannot be changed.
apiVersion	String	API version. The value is fixed at v3 and cannot be changed.
metadata	AddonMetadata object	Basic information about the object. Metadata is a collection of attributes.

Parameter	Type	Description
spec	InstanceSpec object	Detailed description of the add-on instance.
status	AddonInstanceStatus object	Add-on instance status.

Table 4-839 AddonMetadata

Parameter	Type	Description
uid	String	Unique ID
name	String	Add-on name
alias	String	Add-on alias
labels	Map<String,String >	Add-on labels in key-value pairs. This is a reserved field and does not take effect.
annotations	Map<String,String >	Add-on annotations in the format of key-value pairs. <ul style="list-style-type: none"> For add-on installation, the value is fixed at {"addon.install/type":"install"}. For add-on upgrade, the value is fixed at {"addon.upgrade/type":"upgrade"}.
updateTimestamp	String	Updated at
creationTimestamp	String	Created at

Table 4-840 InstanceSpec

Parameter	Type	Description
clusterID	String	Cluster ID.
version	String	Add-on template version, for example, 1.0.0 .
addonTemplateName	String	Add-on template name, for example, coredns .
addonTemplateType	String	Add-on template type.

Parameter	Type	Description
addonTemplateLogo	String	URL for obtaining the add-on template logo.
addonTemplateLabels	Array of strings	Labels of the add-on template.
description	String	Add-on template description.
values	Map<String, Object>	Add-on template installation parameters (varying depending on the add-on). Set the parameters accordingly.

Table 4-841 AddonInstanceStatus

Parameter	Type	Description
status	String	<p>Add-on instance status. Options:</p> <ul style="list-style-type: none"> • running: All of the add-on instances are running. This specifies that the add-on runs properly. • abnormal: The add-on instances are abnormal and the add-on cannot be used. You can click the add-on name to view exceptions. • installing: The add-on is being installed. • installFailed: Installing the add-on failed. In this case, uninstall the add-on and then reinstall it. • upgrading: The add-on is being upgraded. • upgradeFailed: Upgrading the add-on failed. In this case, upgrade the add-on again or uninstall the add-on and reinstall it. • deleting: The add-on is being deleted. • deleteFailed: Deleting the add-on failed. In this case, uninstall the add-on again. • deleteSuccess: Deleting the add-on succeeded. • available: Only some instances of the add-on are running. This specifies that some functions of the add-on are available. • rollbacking: The add-on is being rolled back. • rollbackFailed: Rolling back the add-on failed. In this case, roll back the add-on again or uninstall the add-on and reinstall it. • unknown: The add-on chart instance does not exist.
Reason	String	Cause of the add-on installation failure.
message	String	Installation error details.
targetVersions	Array of strings	Versions to which the current add-on version can be upgraded.

Parameter	Type	Description
currentVersion	Versions object	Information about the current add-on version.
isRollbackable	Boolean	Whether the add-on version can be rolled back to the source version.
previousVersion	String	The add-on version before upgrade or rollback

Table 4-842 Versions

Parameter	Type	Description
version	String	Add-on version.
input	Object	Add-on installation parameters.
stable	Boolean	Whether the add-on version is a stable release.
translate	Object	Translation information used by the GUI.
supportVersions	Array of SupportVersions objects	Cluster versions that support the add-on.
creationTimestamp	String	Creation time.
updateTimestamp	String	Update time.

Table 4-843 SupportVersions

Parameter	Type	Description
clusterType	String	Cluster type that supports the add-on.
clusterVersion	Array of strings	Cluster versions that support the add-on. The value is a regular expression.

Parameter	Type	Description
category	Array of strings	<p>The cluster types to which the settings are applied</p> <p>Options:</p> <ul style="list-style-type: none"> • CCE: CCE standard clusters • Turbo: CCE Turbo clusters • Autopilot: CCE Autopilot clusters <p>Default value:</p> <p>If this parameter is left blank, CCE standard and Turbo clusters are used by default.</p>

Example Requests

Install the coredns add-on of version 1.17.15. The add-on specification is 2500 QPS, and the number of add-on instances is 2.

```
{
  "kind": "Addon",
  "apiVersion": "v3",
  "metadata": {
    "annotations": {
      "addon.install/type": "install"
    }
  },
  "spec": {
    "clusterID": "1b2ec02d-a3b2-11ec-b0d0-0255ac100099",
    "version": "1.17.15",
    "addonTemplateName": "coredns",
    "values": {
      "basic": {
        "cluster_ip": "10.247.3.10",
        "image_version": "1.17.15",
        "platform": "linux-amd64",
        "swr_addr": "<Replace_SWR_address>",
        "swr_user": "hwofficial",
        "rbac_enabled": true
      },
      "flavor": {
        "name": 2500,
        "replicas": 2,
        "resources": [ {
          "limitsCpu": "500m",
          "limitsMem": "512Mi",
          "name": "coredns",
          "requestsCpu": "500m",
          "requestsMem": "512Mi"
        } ]
      },
      "custom": {
        "stub_domains": { },
        "upstream_nameservers": [ ],
        "cluster_id": "1b2ec02d-a3b2-11ec-b0d0-0255ac100099",
        "tenant_id": "0504201b6c80256b2f08c0099f0c8fe4"
      }
    }
  }
}
```

Example Responses

Status code: 201

OK

```
{
  "kind": "Addon",
  "apiVersion": "v3",
  "metadata": {
    "uid": "b748aaea-a984-11ec-987b-0255ac1000bc",
    "name": "coredns",
    "alias": "coredns",
    "creationTimestamp": "2022-03-22T02:06:41Z",
    "updateTimestamp": "2022-03-22T02:06:41Z"
  },
  "spec": {
    "clusterID": "1b2ec02d-a3b2-11ec-b0d0-0255ac100099",
    "version": "1.17.15",
    "addonTemplateName": "coredns",
    "addonTemplateType": "helm",
    "addonTemplateLogo": "",
    "addonTemplateLabels": [ "ServiceDiscovery" ],
    "description": "CoreDNS is a DNS server that chains plugins and provides Kubernetes DNS Services",
    "values": {
      "basic": {
        "cluster_ip": "10.247.3.10",
        "image_version": "1.17.15",
        "platform": "linux-amd64",
        "rbac_enabled": true,
        "swr_addr": "",
        "swr_user": "hwofficial"
      },
      "custom": {
        "cluster_id": "1b2ec02d-a3b2-11ec-b0d0-0255ac100099",
        "stub_domains": { },
        "tenant_id": "0504201b6c80256b2f08c0099f0c8fe4",
        "upstream_nameservers": [ ]
      },
      "flavor": {
        "name": 2500,
        "replicas": 2,
        "resources": [ {
          "limitsCpu": "500m",
          "limitsMem": "512Mi",
          "name": "coredns",
          "requestsCpu": "500m",
          "requestsMem": "512Mi"
        } ]
      }
    }
  },
  "status": {
    "status": "installing",
    "Reason": "",
    "message": "",
    "targetVersions": null,
    "currentVersion": {
      "version": "1.17.15",
      "input": {
        "basic": {
          "cluster_ip": "10.247.3.10",
          "image_version": "1.17.15",
          "platform": "linux-amd64",
          "swr_addr": "",
          "swr_user": "hwofficial"
        },
        "parameters": {
          "custom": {
```

```

"stub_domains" : "",
"upstream_nameservers" : ""
},
"flavor1" : {
  "name" : 2500,
  "replicas" : 2,
  "resources" : [ {
    "limitsCpu" : "500m",
    "limitsMem" : "512Mi",
    "name" : "coredns",
    "requestsCpu" : "500m",
    "requestsMem" : "512Mi"
  } ]
},
"flavor2" : {
  "name" : 5000,
  "replicas" : 2,
  "resources" : [ {
    "limitsCpu" : "1000m",
    "limitsMem" : "1024Mi",
    "name" : "coredns",
    "requestsCpu" : "1000m",
    "requestsMem" : "1024Mi"
  } ]
},
"flavor3" : {
  "name" : 10000,
  "replicas" : 2,
  "resources" : [ {
    "limitsCpu" : "2000m",
    "limitsMem" : "2048Mi",
    "name" : "coredns",
    "requestsCpu" : "2000m",
    "requestsMem" : "2048Mi"
  } ]
},
"flavor4" : {
  "name" : 20000,
  "replicas" : 4,
  "resources" : [ {
    "limitsCpu" : "2000m",
    "limitsMem" : "2048Mi",
    "name" : "coredns",
    "requestsCpu" : "2000m",
    "requestsMem" : "2048Mi"
  } ]
}
},
"stable" : true,
"translate" : {
  "en_US" : {
    "addon" : {
      "changeLog" : "Supported CCE clusters of v1.21.",
      "description" : "CoreDNS is a DNS server that chains plugins and provides Kubernetes DNS Services"
    },
    "description" : {
      "Parameters.custom.stub_domains" : "The target nameserver may itself be a Kubernetes service. For instance, you can run your own copy of dnsmasq to export custom DNS names into the ClusterDNS namespace, a JSON map using a DNS suffix key (e.g. \"acme.local\") and a value consisting of a JSON array of DNS IPs.",
      "Parameters.custom.upstream_nameservers" : "If specified, then the values specified replace the nameservers taken by default from the node's /etc/resolv.conf. Limits:a maximum of three upstream nameservers can be specified, A JSON array of DNS IPs.",
      "Parameters.flavor1.description" : "Concurrent domain name resolution ability - External domain name: 2500 qps, Internal domain name: 10000 qps",
      "Parameters.flavor1.name" : 2500,
      "Parameters.flavor2.description" : "Concurrent domain name resolution ability - External domain name: 5000 qps, Internal domain name: 20000 qps",

```



```

    "Parameters.flavor2.name" : 5000,
    "Parameters.flavor3.description" : "Concurrent domain name resolution ability - External domain
name: 10000 qps, Internal domain name: 40000 qps",
    "Parameters.flavor3.name" : 10000,
    "Parameters.flavor4.description" : "Concurrent domain name resolution ability - External domain
name: 20000 qps, Internal domain name: 80000 qps",
    "Parameters.flavor4.name" : 20000
  },
  "key" : {
    "Parameters.custom.stub_domains" : "stub domain",
    "Parameters.custom.upstream_nameservers" : "upstream nameservers"
  }
},
"fr_FR" : {
  "addon" : {
    "changeLog" : "Prise en charge du cluster 1.21.",
    "description" : "Un serveur DNS qui enchaîne les plug-ins et fournit des services DNS Kubernetes."
  },
  "description" : {
    "Parameters.custom.stub_domains" : "Le serveur de noms cible peut lui-même être un service
Kubernetes. Par exemple, vous pouvez exécuter votre propre copie de dnsmasq pour exporter des noms
DNS personnalisés dans l'espace de noms ClusterDNS, une carte JSON à l'aide d'une clé de suffixe DNS (par
exemple, «acme.local») et une valeur constituée d'un tableau JSON d'adresses IP DNS.",
    "Parameters.custom.upstream_nameservers" : "Si spécifié, les valeurs spécifiées remplacent les
serveurs de noms pris par défaut dans le fichier /etc/resolv.conf du nœud. Limites: un maximum de trois
serveurs de noms en amont peuvent être spécifiés, un tableau JSON d'adresses IP DNS.",
    "Parameters.flavor1.description" : "Capacité de résolution de nom de domaine simultanée - Nom de
domaine externe: 2500 qps, Nom de domaine interne: 10000 qp",
    "Parameters.flavor1.name" : 2500,
    "Parameters.flavor2.description" : "Capacité de résolution de nom de domaine simultanée - Nom de
domaine externe: 5000 qps, Nom de domaine interne: 20000 qp",
    "Parameters.flavor2.name" : 5000,
    "Parameters.flavor3.description" : "Capacité de résolution de nom de domaine simultanée - Nom de
domaine externe: 10000 qps, Nom de domaine interne: 40000 qp",
    "Parameters.flavor3.name" : 10000,
    "Parameters.flavor4.description" : "Capacité de résolution de nom de domaine simultanée - Nom de
domaine externe: 20000 qps, Nom de domaine interne: 80000 qp",
    "Parameters.flavor4.name" : 20000
  },
  "key" : {
    "Parameters.custom.stub_domains" : "domaine stub",
    "Parameters.custom.upstream_nameservers" : "serveurs de noms en amont"
  }
},
"zh_CN" : {
  "addon" : {
    "changeLog" : "",
    "description" : ""
  },
  "description" : {
    "Parameters.custom.stub_domains" : "",
    "Parameters.custom.upstream_nameservers" : "",
    "Parameters.flavor1.description" : "",
    "Parameters.flavor1.name" : 2500,
    "Parameters.flavor2.description" : "",
    "Parameters.flavor2.name" : 5000,
    "Parameters.flavor3.description" : "",
    "Parameters.flavor3.name" : 10000,
    "Parameters.flavor4.description" : "",
    "Parameters.flavor4.name" : 20000
  },
  "key" : {
    "Parameters.custom.stub_domains" : "",
    "Parameters.custom.upstream_nameservers" : ""
  }
}
},
"supportVersions" : null,
"creationTimestamp" : "2021-12-14T13:43:15Z",

```

```
"updateTimestamp" : "2022-01-11T14:32:10Z"  
}  
}  
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

Install the coredns add-on of version 1.17.15. The add-on specification is 2500 QPS, and the number of add-on instances is 2.

```
package com.huaweicloud.sdk.test;  
  
import com.huaweicloud.sdk.core.auth.ICredential;  
import com.huaweicloud.sdk.core.auth.BasicCredentials;  
import com.huaweicloud.sdk.core.exception.ConnectionException;  
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;  
import com.huaweicloud.sdk.core.exception.ServiceResponseException;  
import com.huaweicloud.sdk.cce.v3.region.CceRegion;  
import com.huaweicloud.sdk.cce.v3.*;  
import com.huaweicloud.sdk.cce.v3.model.*;  
  
import java.util.Map;  
import java.util.HashMap;  
  
public class CreateAddonInstanceSolution {  
  
    public static void main(String[] args) {  
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great  
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or  
        // environment variables and decrypted during use to ensure security.  
        // In this example, AK and SK are stored in environment variables for authentication. Before running  
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment  
        String ak = System.getenv("CLOUD_SDK_AK");  
        String sk = System.getenv("CLOUD_SDK_SK");  
  
        ICredential auth = new BasicCredentials()  
            .withAk(ak)  
            .withSk(sk);  
  
        CceClient client = CceClient.newBuilder()  
            .withCredential(auth)  
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))  
            .build();  
        CreateAddonInstanceRequest request = new CreateAddonInstanceRequest();  
        InstanceRequest body = new InstanceRequest();  
        Map<String, Object> listSpecValues = new HashMap<>();  
        listSpecValues.put("basic", "{\r\nbac_enabled\":true,\r\nswr_user\":\r\nhwofficial\r\n,\r\nimage_version  
\r\n:\r\n\"1.17.15\",\r\ncluster_ip\":\r\n\"10.247.3.10\",\r\nplatform\":\r\n\"linux-amd64\",\r\nswr_addr  
\r\n:\r\n\"<Replace_SWR_address>\r\n\"});  
        listSpecValues.put("flavor", "{\r\nreplicas\":2,\r\nname\":2500,\r\nresources\":{\r\nlimitsCpu\":\r\n\"500m  
\r\n,\r\nname\":\r\n\"coredns\",\r\nlimitsMem\":\r\n\"512Mi\",\r\nrequestsMem\":\r\n\"512Mi\",\r\nrequestsCpu\":\r\n\"500m\r\n\"}}");  
        listSpecValues.put("custom", "{\r\ntenant_id\":\r\n\"0504201b6c80256b2f08c0099f0c8fe4\",\r\ncluster_id  
\r\n:\r\n\"1b2ec02d-a3b2-11ec-b0d0-0255ac100099\",\r\nstub_domains\":\r\n{\r\n,\r\nupstream_nameservers\":\r\n{}}");  
        InstanceRequestSpec specbody = new InstanceRequestSpec();  
        specbody.withVersion("1.17.15")  
            .withClusterID("1b2ec02d-a3b2-11ec-b0d0-0255ac100099")  
            .withValues(listSpecValues)  
            .withAddonTemplateName("coredns");  
        Map<String, String> listMetadataAnnotations = new HashMap<>();  
        listMetadataAnnotations.put("addon.install/type", "install");  
        AddonMetadata metadatabody = new AddonMetadata();  
        metadatabody.withAnnotations(listMetadataAnnotations);  
        body.withSpec(specbody);  
    }  
}
```

```
body.withMetadata(metadataBody);
body.withApiVersion("v3");
body.withKind("Addon");
request.withBody(body);
try {
    CreateAddonInstanceResponse response = client.createAddonInstance(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

Install the coredns add-on of version 1.17.15. The add-on specification is 2500 QPS, and the number of add-on instances is 2.

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]

    credentials = BasicCredentials(ak, sk)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = CreateAddonInstanceRequest()
        listValuesSpec = {
            "basic": {"rbac_enabled": true, "swr_user": "hwofficial", "image_version": "1.17.15", "cluster_ip": "10.247.3.10", "platform": "linux-amd64", "swr_addr": "<Replace_SWR_address>"},
            "flavor": {"replicas": 2, "name": "2500", "resources": [{"limitsCpu": "500m", "name": "coredns"}, {"limitsMem": "512Mi", "requestsMem": "512Mi", "requestsCpu": "500m"}]},
            "custom": {"tenant_id": "0504201b6c80256b2f08c0099f0c8fe4", "cluster_id": "1b2ec02d-a3b2-11ec-b0d0-0255ac100099", "stub_domains": {}, "upstream_nameservers": []}
        }
        specbody = InstanceRequestSpec(
            version="1.17.15",
            cluster_id="1b2ec02d-a3b2-11ec-b0d0-0255ac100099",
            values=listValuesSpec,
            addon_template_name="coredns"
        )
        listAnnotationsMetadata = {
            "addon.install/type": "install"
        }
    }
```

```
metadatabody = AddonMetadata(  
    annotations=listAnnotationsMetadata  
)  
request.body = InstanceRequest(  
    spec=specbody,  
    metadata=metadatabody,  
    api_version="v3",  
    kind="Addon"  
)  
response = client.create_addon_instance(request)  
print(response)  
except exceptions.ClientRequestException as e:  
    print(e.status_code)  
    print(e.request_id)  
    print(e.error_code)  
    print(e.error_msg)
```

Go

Install the coredns add-on of version 1.17.15. The add-on specification is 2500 QPS, and the number of add-on instances is 2.

```
package main  
  
import (  
    "fmt"  
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"  
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"  
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"  
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"  
)  
  
func main() {  
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security  
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment  
    // variables and decrypted during use to ensure security.  
    // In this example, AK and SK are stored in environment variables for authentication. Before running this  
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment  
    ak := os.Getenv("CLOUD_SDK_AK")  
    sk := os.Getenv("CLOUD_SDK_SK")  
  
    auth := basic.NewCredentialsBuilder().  
        WithAk(ak).  
        WithSk(sk).  
        Build()  
  
    client := cce.NewCceClient(  
        cce.CceClientBuilder().  
            WithRegion(region.ValueOf("<YOUR REGION>")).  
            WithCredential(auth).  
            Build())  
  
    request := &model.CreateAddonInstanceRequest{}  
    var listValuesSpec = map[string]interface{}{  
        "basic": "{ \"rbac_enabled\": true, \"swr_user\": \"hwofficial\", \"image_version\": \"1.17.15\", \"cluster_ip  
\": \"10.247.3.10\", \"platform\": \"linux-amd64\", \"swr_addr\": \"<Replace_SWR_address>\",  
        \"flavor\": \"{ \"replicas\": 2, \"name\": 2500, \"resources\": [ { \"limitsCpu\": \"500m\", \"name\": \"coredns  
\", \"limitsMem\": \"512Mi\", \"requestsMem\": \"512Mi\", \"requestsCpu\": \"500m\" } ] },  
        \"custom\": \"{ \"tenant_id\": \"0504201b6c80256b2f08c0099f0c8fe4\", \"cluster_id\": \"1b2ec02d-  
a3b2-11ec-b0d0-0255ac100099\", \"stub_domains\": {}, \"upstream_nameservers\": [ ] },  
    }  
    versionSpec := "1.17.15"  
    specbody := &model.InstanceRequestSpec{  
        Version: &versionSpec,  
        ClusterID: "1b2ec02d-a3b2-11ec-b0d0-0255ac100099",  
        Values: listValuesSpec,  
        AddonTemplateName: "coredns",  
    }  
    var listAnnotationsMetadata = map[string]string{
```

```
    "addon.install/type": "install",
  }
  metadatabody := &model.AddonMetadata{
    Annotations: listAnnotationsMetadata,
  }
  request.Body = &model.InstanceRequest{
    Spec: specbody,
    Metadata: metadatabody,
    ApiVersion: "v3",
    Kind: "Addon",
  }
  response, err := client.CreateAddonInstance(request)
  if err == nil {
    fmt.Printf("%+v\n", response)
  } else {
    fmt.Println(err)
  }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
201	OK

Error Codes

See [Error Codes](#).

4.6.2 Listing Add-on Templates

Function

This API is used to query add-on templates.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3/addontemplates

Table 4-844 Query Parameters

Parameter	Mandatory	Type	Description
addon_template_name	No	String	Add-on name or alias for search. If this parameter is not specified, all the add-ons will be searched.

Request Parameters

Table 4-845 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-846 Response body parameters

Parameter	Type	Description
kind	String	API type. The value is fixed at Addon and cannot be changed.
apiVersion	String	API version. The value is fixed at v3 and cannot be changed.
items	Array of AddonTemplate objects	List of add-on templates.

Table 4-847 AddonTemplate

Parameter	Type	Description
kind	String	API type. The value is fixed at Addon and cannot be changed.
apiVersion	String	API version. The value is fixed at v3 and cannot be changed.
metadata	AddonMetadata object	Basic information about the object. Metadata is a collection of attributes.

Parameter	Type	Description
spec	Templatespec object	Detailed description of the add-on template.

Table 4-848 AddonMetadata

Parameter	Type	Description
uid	String	Unique ID
name	String	Add-on name
alias	String	Add-on alias
labels	Map<String,String >	Add-on labels in key-value pairs. This is a reserved field and does not take effect.
annotations	Map<String,String >	Add-on annotations in the format of key-value pairs. <ul style="list-style-type: none"> For add-on installation, the value is fixed at {"addon.install/type":"install"}. For add-on upgrade, the value is fixed at {"addon.upgrade/type":"upgrade"}.
updateTimestamp	String	Updated at
creationTimestamp	String	Created at

Table 4-849 Templatespec

Parameter	Type	Description
type	String	Template type. The value is helm or static .
require	Boolean	Whether the add-on is mandatory.
labels	Array of strings	Group to which the template belongs.
logoURL	String	URL of the logo image.
readmeURL	String	Add-on details and usage description.
description	String	Description
versions	Array of Versions objects	Template version details.

Table 4-850 Versions

Parameter	Type	Description
version	String	Add-on version.
input	Object	Add-on installation parameters.
stable	Boolean	Whether the add-on version is a stable release.
translate	Object	Translation information used by the GUI.
supportVersions	Array of SupportVersions objects	Cluster versions that support the add-on.
creationTimestamp	String	Creation time.
updateTimestamp	String	Update time.

Table 4-851 SupportVersions

Parameter	Type	Description
clusterType	String	Cluster type that supports the add-on.
clusterVersion	Array of strings	Cluster versions that support the add-on. The value is a regular expression.
category	Array of strings	The cluster types to which the settings are applied Options: <ul style="list-style-type: none"> • CCE: CCE standard clusters • Turbo: CCE Turbo clusters • Autopilot: CCE Autopilot clusters Default value: If this parameter is left blank, CCE standard and Turbo clusters are used by default.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "kind": "Addon",
  "apiVersion": "v3",
  "items": [ {
    "kind": "Addon",
    "apiVersion": "v3",
    "metadata": {
      "uid": "coredns",
      "name": "coredns",
      "alias": "coredns",
      "creationTimestamp": "2018-11-04T16:15:56Z",
      "updateTimestamp": "2022-01-11T14:32:10Z"
    },
    "spec": {
      "type": "helm",
      "require": true,
      "labels": [ "ServiceDiscovery" ],
      "logoURL": "",
      "description": "CoreDNS is a DNS server that chains plugins and provides Kubernetes DNS Services",
      "versions": [ {
        "version": "1.13.6",
        "input": {
          "basic": {
            "cluster_ip": "10.247.3.10",
            "ipv6": false,
            "platform": "linux-amd64",
            "swr_addr": "100.125.16.65:20202",
            "swr_user": "hwofficial"
          },
          "parameters": {
            "custom": {
              "stub_domains": "",
              "upstream_nameservers": ""
            },
            "flavor1": {
              "name": 2500,
              "replicas": 2,
              "resources": [ {
                "limitsCpu": "500m",
                "limitsMem": "512Mi",
                "name": "coredns",
                "requestsCpu": "500m",
                "requestsMem": "512Mi"
              } ]
            },
            "flavor2": {
              "name": 5000,
              "replicas": 2,
              "resources": [ {
                "limitsCpu": "1000m",
                "limitsMem": "1024Mi",
                "name": "coredns",
                "requestsCpu": "1000m",
                "requestsMem": "1024Mi"
              } ]
            },
            "flavor3": {
              "name": 10000,
              "replicas": 2,
              "resources": [ {
                "limitsCpu": "2000m",
                "limitsMem": "2048Mi",
                "name": "coredns",
                "requestsCpu": "2000m",
                "requestsMem": "2048Mi"
              } ]
            },
            "flavor4": {
              "name": 20000,

```

```

"replicas" : 4,
"resources" : [ {
  "limitsCpu" : "2000m",
  "limitsMem" : "2048Mi",
  "name" : "coredns",
  "requestsCpu" : "2000m",
  "requestsMem" : "2048Mi"
} ]
}
},
"stable" : true,
"translate" : {
  "en_US" : {
    "addon" : {
      "changeLog" : "Support for clusters with new version",
      "description" : "CoreDNS is a DNS server that chains plugins and provides Kubernetes DNS
Services"
    },
    "description" : {
      "Parameters.custom.stub_domains" : "The target nameserver may itself be a Kubernetes service.
For instance, you can run your own copy of dnsmasq to export custom DNS names into the ClusterDNS
namespace, a JSON map using a DNS suffix key (e.g. \"acme.local\") and a value consisting of a JSON array
of DNS IPs.",
      "Parameters.custom.upstream_nameservers" : "If specified, then the values specified replace the
nameservers taken by default from the node's /etc/resolv.conf. Limits:a maximum of three upstream
nameservers can be specified, A JSON array of DNS IPs.",
      "Parameters.flavor1.description" : "Concurrent domain name resolution ability - External domain
name: 2500 qps, Internal domain name: 10000 qps",
      "Parameters.flavor1.name" : 2500,
      "Parameters.flavor2.description" : "Concurrent domain name resolution ability - External domain
name: 5000 qps, Internal domain name: 20000 qps",
      "Parameters.flavor2.name" : 5000,
      "Parameters.flavor3.description" : "Concurrent domain name resolution ability - External domain
name: 10000 qps, Internal domain name: 40000 qps",
      "Parameters.flavor3.name" : 10000,
      "Parameters.flavor4.description" : "Concurrent domain name resolution ability - External domain
name: 20000 qps, Internal domain name: 80000 qps",
      "Parameters.flavor4.name" : 20000
    },
    "key" : {
      "Parameters.custom.stub_domains" : "stub domain",
      "Parameters.custom.upstream_nameservers" : "upstream nameservers"
    }
  },
  "fr_FR" : {
    "addon" : {
      "changeLog" : "Prise en charge des clusters avec une nouvelle version",
      "description" : "Un serveur DNS qui enchaîne les plug-ins et fournit des services DNS Kubernetes."
    },
    "description" : {
      "Parameters.custom.stub_domains" : "Le serveur de noms cible peut lui-même être un service
Kubernetes. Par exemple, vous pouvez exécuter votre propre copie de dnsmasq pour exporter des noms
DNS personnalisés dans l'espace de noms ClusterDNS, une carte JSON à l'aide d'une clé de suffixe DNS (par
exemple, «acme.local») et une valeur constituée d'un tableau JSON d'adresses IP DNS.",
      "Parameters.custom.upstream_nameservers" : "Si spécifié, les valeurs spécifiées remplacent les
serveurs de noms pris par défaut dans le fichier /etc/resolv.conf du nœud. Limites: un maximum de trois
serveurs de noms en amont peuvent être spécifiés, un tableau JSON d'adresses IP DNS.",
      "Parameters.flavor1.description" : "Capacité de résolution de nom de domaine simultanée - Nom
de domaine externe: 2500 qps, Nom de domaine interne: 10000 qp",
      "Parameters.flavor1.name" : 2500,
      "Parameters.flavor2.description" : "Capacité de résolution de nom de domaine simultanée - Nom
de domaine externe: 5000 qps, Nom de domaine interne: 20000 qp",
      "Parameters.flavor2.name" : 5000,
      "Parameters.flavor3.description" : "Capacité de résolution de nom de domaine simultanée - Nom
de domaine externe: 10000 qps, Nom de domaine interne: 40000 qp",
      "Parameters.flavor3.name" : 10000,
      "Parameters.flavor4.description" : "Capacité de résolution de nom de domaine simultanée - Nom
de domaine externe: 20000 qps, Nom de domaine interne: 80000 qp",

```

```
    "Parameters.flavor4.name" : 20000
  },
  "key" : {
    "Parameters.custom.stub_domains" : "domaine stub",
    "Parameters.custom.upstream_nameservers" : "serveurs de noms en amont"
  }
},
"zh_CN" : {
  "addon" : {
    "changeLog" : "",
    "description" : ""
  },
  "description" : {
    "Parameters.custom.stub_domains" : "",
    "Parameters.custom.upstream_nameservers" : "",
    "Parameters.flavor1.description" : "",
    "Parameters.flavor1.name" : 2500,
    "Parameters.flavor2.description" : "",
    "Parameters.flavor2.name" : 5000,
    "Parameters.flavor3.description" : "",
    "Parameters.flavor3.name" : 10000,
    "Parameters.flavor4.description" : "",
    "Parameters.flavor4.name" : 20000
  },
  "key" : {
    "Parameters.custom.stub_domains" : "",
    "Parameters.custom.upstream_nameservers" : ""
  }
}
},
"supportVersions" : [ {
  "clusterType" : "VirtualMachine",
  "clusterVersion" : [ "v1.13.*" ]
}, {
  "clusterType" : "BareMetal",
  "clusterVersion" : [ "v1.13.*" ]
}, {
  "clusterType" : "ARM64",
  "clusterVersion" : [ "v1.13.*" ]
} ],
"creationTimestamp" : "2021-03-18T12:51:05Z",
"updateTimestamp" : "2021-03-18T12:51:05Z"
} ]
} ]
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ListAddonTemplatesSolution {

    public static void main(String[] args) {
```

```
// The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
// In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
String ak = System.getenv("CLOUD_SDK_AK");
String sk = System.getenv("CLOUD_SDK_SK");

ICredential auth = new BasicCredentials()
    .withAk(ak)
    .withSk(sk);

CceClient client = CceClient.newBuilder()
    .withCredential(auth)
    .withRegion(CceRegion.valueOf("<YOUR REGION>"))
    .build();
ListAddonTemplatesRequest request = new ListAddonTemplatesRequest();
try {
    ListAddonTemplatesResponse response = client.listAddonTemplates(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.getenv("CLOUD_SDK_AK")
    sk = os.getenv("CLOUD_SDK_SK")

    credentials = BasicCredentials(ak, sk)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ListAddonTemplatesRequest()
        response = client.list_addon_templates(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```

package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ListAddonTemplatesRequest{}
    response, err := client.ListAddonTemplates(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.6.3 Updating an Add-on Instance

Function

This API is used to update an add-on instance.

Calling Method

For details, see [Calling APIs](#).

URI

PUT /api/v3/addons/{id}

Table 4-852 Path Parameters

Parameter	Mandatory	Type	Description
id	Yes	String	Add-on instance ID.

Request Parameters

Table 4-853 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-854 Request body parameters

Parameter	Mandatory	Type	Description
kind	Yes	String	API type. The value is fixed at Addon and cannot be changed. Any user-defined value is invalid.
apiVersion	Yes	String	API version. The value is fixed at v3 and cannot be changed. Any user-defined value is invalid.
metadata	Yes	AddonMetadata object	Basic information about the object. Metadata is a collection of attributes.
spec	Yes	InstanceRequestSpec object	Detailed description of add-on installation or upgrade.

Table 4-855 AddonMetadata

Parameter	Mandatory	Type	Description
uid	No	String	Unique ID
name	No	String	Add-on name
alias	No	String	Add-on alias

Parameter	Mandatory	Type	Description
labels	No	Map<String,String>	Add-on labels in key-value pairs. This is a reserved field and does not take effect.
annotations	No	Map<String,String>	Add-on annotations in the format of key-value pairs. <ul style="list-style-type: none"> For add-on installation, the value is fixed at {"addon.install/type":"install"}. For add-on upgrade, the value is fixed at {"addon.upgrade/type":"upgrade"}.
updateTimestamp	No	String	Updated at
creationTimestamp	No	String	Created at

Table 4-856 InstanceRequestSpec

Parameter	Mandatory	Type	Description
version	No	String	Version of the add-on to install or upgrade, for example, 1.0.0 . <ul style="list-style-type: none"> Installation: This parameter is optional. If not specified, the latest version supported by the cluster is used. Upgrade: This parameter is mandatory. The version number must be specified.
clusterID	Yes	String	Cluster ID.

Parameter	Mandatory	Type	Description
values	Yes	Map<String, Object>	Add-on template installation parameters (varying depending on the add-on). During the add-on upgrade, you need to specify all the installation parameters. If the parameters are not specified, the default values in the add-on template are used. The current add-on installation parameters can be obtained through the API for querying add-on instances.
addonTemplateName	Yes	String	Name of the add-on template to be installed, for example, coredns .

Response Parameters

Status code: 200

Table 4-857 Response body parameters

Parameter	Type	Description
kind	String	API type. The value is fixed at Addon and cannot be changed.
apiVersion	String	API version. The value is fixed at v3 and cannot be changed.
metadata	AddonMetadata object	Basic information about the object. Metadata is a collection of attributes.
spec	InstanceSpec object	Detailed description of the add-on instance.
status	AddonInstanceStatus object	Add-on instance status.

Table 4-858 AddonMetadata

Parameter	Type	Description
uid	String	Unique ID
name	String	Add-on name

Parameter	Type	Description
alias	String	Add-on alias
labels	Map<String,String>	Add-on labels in key-value pairs. This is a reserved field and does not take effect.
annotations	Map<String,String>	Add-on annotations in the format of key-value pairs. <ul style="list-style-type: none"> For add-on installation, the value is fixed at {"addon.install/type":"install"}. For add-on upgrade, the value is fixed at {"addon.upgrade/type":"upgrade"}.
updateTimestamp	String	Updated at
creationTimestamp	String	Created at

Table 4-859 InstanceSpec

Parameter	Type	Description
clusterID	String	Cluster ID.
version	String	Add-on template version, for example, 1.0.0 .
addonTemplateName	String	Add-on template name, for example, coredns .
addonTemplateType	String	Add-on template type.
addonTemplateLogo	String	URL for obtaining the add-on template logo.
addonTemplateLabels	Array of strings	Labels of the add-on template.
description	String	Add-on template description.
values	Map<String,Object>	Add-on template installation parameters (varying depending on the add-on). Set the parameters accordingly.

Table 4-860 AddonInstanceStatus

Parameter	Type	Description
status	String	<p>Add-on instance status. Options:</p> <ul style="list-style-type: none"> ● running: All of the add-on instances are running. This specifies that the add-on runs properly. ● abnormal: The add-on instances are abnormal and the add-on cannot be used. You can click the add-on name to view exceptions. ● installing: The add-on is being installed. ● installFailed: Installing the add-on failed. In this case, uninstall the add-on and then reinstall it. ● upgrading: The add-on is being upgraded. ● upgradeFailed: Upgrading the add-on failed. In this case, upgrade the add-on again or uninstall the add-on and reinstall it. ● deleting: The add-on is being deleted. ● deleteFailed: Deleting the add-on failed. In this case, uninstall the add-on again. ● deleteSuccess: Deleting the add-on succeeded. ● available: Only some instances of the add-on are running. This specifies that some functions of the add-on are available. ● rollbacking: The add-on is being rolled back. ● rollbackFailed: Rolling back the add-on failed. In this case, roll back the add-on again or uninstall the add-on and reinstall it. ● unknown: The add-on chart instance does not exist.
Reason	String	Cause of the add-on installation failure.
message	String	Installation error details.
targetVersions	Array of strings	Versions to which the current add-on version can be upgraded.

Parameter	Type	Description
currentVersion	Versions object	Information about the current add-on version.
isRollbackable	Boolean	Whether the add-on version can be rolled back to the source version.
previousVersion	String	The add-on version before upgrade or rollback

Table 4-861 Versions

Parameter	Type	Description
version	String	Add-on version.
input	Object	Add-on installation parameters.
stable	Boolean	Whether the add-on version is a stable release.
translate	Object	Translation information used by the GUI.
supportVersions	Array of SupportVersions objects	Cluster versions that support the add-on.
creationTimestamp	String	Creation time.
updateTimestamp	String	Update time.

Table 4-862 SupportVersions

Parameter	Type	Description
clusterType	String	Cluster type that supports the add-on.
clusterVersion	Array of strings	Cluster versions that support the add-on. The value is a regular expression.

Parameter	Type	Description
category	Array of strings	<p>The cluster types to which the settings are applied</p> <p>Options:</p> <ul style="list-style-type: none"> • CCE: CCE standard clusters • Turbo: CCE Turbo clusters • Autopilot: CCE Autopilot clusters <p>Default value:</p> <p>If this parameter is left blank, CCE standard and Turbo clusters are used by default.</p>

Example Requests

Update the everest add-on to version 2.1.30.

```
{
  "kind": "Addon",
  "apiVersion": "v3",
  "metadata": {
    "annotations": {
      "addon.upgrade/type": "upgrade"
    }
  },
  "spec": {
    "clusterID": "*****",
    "version": "2.1.30",
    "addonTemplateName": "everest",
    "values": {
      "basic": {
        "bms_url": "*****",
        "driver_init_image_version": "2.1.30",
        "ecsEndpoint": "*****",
        "everest_image_version": "2.1.30",
        "evs_url": "*****",
        "iam_url": "*****",
        "ims_url": "*****",
        "obs_url": "*****",
        "platform": "linux-amd64",
        "sfs30_url": "*****",
        "sfs_turbo_url": "*****",
        "sfs_url": "*****",
        "supportHcs": false,
        "swr_addr": "*****",
        "swr_user": "hwofficial",
        "rbac_enabled": true,
        "cluster_version": "v1.23"
      }
    },
    "flavor": {
      "description": "High available",
      "name": "HA",
      "replicas": 2,
      "resources": [ {
        "limitsCpu": "250m",
        "limitsMem": "2000Mi",
        "name": "everest-csi-controller",
        "requestsCpu": "250m",
        "requestsMem": "1500Mi"
      }, {

```

```

    "limitsCpu" : "500m",
    "limitsMem" : "300Mi",
    "name" : "everest-csi-driver",
    "requestsCpu" : "100m",
    "requestsMem" : "300Mi"
  } ],
  "category" : [ "CCE", "Turbo" ]
},
"custom" : {
  "cluster_id" : "*****",
  "csi_attacher_detach_worker_threads" : "60",
  "csi_attacher_worker_threads" : "60",
  "default_vpc_id" : "*****",
  "disable_auto_mount_secret" : false,
  "enable_node_attacher" : true,
  "flow_control" : { },
  "multiAZEnabled" : false,
  "over_subscription" : "80",
  "project_id" : "*****",
  "volume_attaching_flow_ctrl" : "0"
}
}
}
}

```

Example Responses

Status code: 200

OK

```

{
  "kind" : "Addon",
  "apiVersion" : "v3",
  "metadata" : {
    "uid" : "*****",
    "name" : "everest",
    "alias" : "everest",
    "creationTimestamp" : "2023-07-03T10:57:43Z",
    "updateTimestamp" : "2023-07-03T11:24:05Z"
  },
  "spec" : {
    "clusterID" : "*****",
    "version" : "2.1.30",
    "addonTemplateName" : "everest",
    "addonTemplateType" : "helm",
    "addonTemplateLogo" : "*****",
    "addonTemplateLabels" : [ "Storage" ],
    "description" : "",
    "values" : {
      "basic" : {
        "bms_url" : "*****",
        "cluster_version" : "v1.23",
        "driver_init_image_version" : "2.1.30",
        "ecsEndpoint" : "*****",
        "everest_image_version" : "2.1.30",
        "evs_url" : "*****",
        "iam_url" : "*****",
        "ims_url" : "*****",
        "obs_url" : "*****",
        "platform" : "linux-amd64",
        "rbac_enabled" : true,
        "sfs30_url" : "*****",
        "sfs_turbo_url" : "*****",
        "sfs_url" : "*****",
        "supportHcs" : false,
        "swr_addr" : "*****",
        "swr_user" : "hwofficial"
      }
    }
  },
}

```

```

"custom" : {
  "cluster_id" : "*****",
  "cluster_version" : "v1.23.8-r0",
  "csi_attacher_detach_worker_threads" : "60",
  "csi_attacher_worker_threads" : "60",
  "default_vpc_id" : "*****",
  "disable_auto_mount_secret" : false,
  "enable_node_attacher" : false,
  "flow_control" : { },
  "multiAZEnabled" : false,
  "over_subscription" : "80",
  "project_id" : "*****",
  "volume_attaching_flow_ctrl" : "0"
},
"flavor" : {
  "category" : [ "CCE", "Turbo" ],
  "description" : "Has only one instance",
  "name" : "Single",
  "replicas" : 1,
  "resources" : [ {
    "limitsCpu" : "250m",
    "limitsMem" : "600Mi",
    "name" : "everest-csi-controller",
    "requestsCpu" : "250m",
    "requestsMem" : "600Mi"
  }, {
    "limitsCpu" : "100m",
    "limitsMem" : "300Mi",
    "name" : "everest-csi-driver",
    "requestsCpu" : "100m",
    "requestsMem" : "300Mi"
  } ]
},
"systemAutoInject" : {
  "cluster" : {
    "clusterID" : "*****",
    "clusterNetworkMode" : "vpc-router",
    "clusterVersion" : "v1.23.8-r0"
  },
  "user" : {
    "projectID" : "*****"
  }
}
},
"status" : {
  "status" : "upgrading",
  "Reason" : "addon upgrading",
  "message" : "",
  "targetVersions" : null,
  "isRollbackable" : false,
  "currentVersion" : {
    "version" : "2.1.30",
    "input" : {
      "basic" : {
        "bms_url" : "*****",
        "driver_init_image_version" : "2.1.30",
        "ecsEndpoint" : "*****",
        "everest_image_version" : "2.1.30",
        "evs_url" : "*****",
        "iam_url" : "*****",
        "ims_url" : "*****",
        "obs_url" : "*****",
        "platform" : "*****",
        "sfs30_url" : "*****",
        "sfs_turbo_url" : "*****",
        "sfs_url" : "*****",
        "supportHcs" : false,
        "swr_addr" : "*****",

```



```

"swr_user" : "hwofficial"
},
"parameters" : {
  "common" : {
    "defaultVPCId" : 1234567
  },
  "custom" : {
    "cluster_id" : "",
    "csi_attacher_detach_worker_threads" : "60",
    "csi_attacher_worker_threads" : "60",
    "default_vpc_id" : "",
    "disable_auto_mount_secret" : false,
    "enable_node_attacher" : false,
    "flow_control" : { },
    "multiAZEnabled" : false,
    "over_subscription" : "80",
    "project_id" : "",
    "volume_attaching_flow_ctrl" : "0"
  },
  "flavor1" : {
    "description" : "High available",
    "name" : "HA",
    "replicas" : 2,
    "resources" : [ {
      "limitsCpu" : "250m",
      "limitsMem" : "1500Mi",
      "name" : "everest-csi-controller",
      "requestsCpu" : "250m",
      "requestsMem" : "600Mi"
    }, {
      "limitsCpu" : "500m",
      "limitsMem" : "300Mi",
      "name" : "everest-csi-driver",
      "requestsCpu" : "100m",
      "requestsMem" : "300Mi"
    } ]
  },
  "flavor2" : {
    "description" : "Has only one instance",
    "name" : "Single",
    "replicas" : 1,
    "resources" : [ {
      "limitsCpu" : "250m",
      "limitsMem" : "600Mi",
      "name" : "everest-csi-controller",
      "requestsCpu" : "250m",
      "requestsMem" : "600Mi"
    }, {
      "limitsCpu" : "100m",
      "limitsMem" : "300Mi",
      "name" : "everest-csi-driver",
      "requestsCpu" : "100m",
      "requestsMem" : "300Mi"
    } ]
  },
  "flavor3" : {
    "description" : "custom resources",
    "name" : "custom-resources",
    "replicas" : 2,
    "resources" : [ {
      "limitsCpu" : "250m",
      "limitsMem" : "2000Mi",
      "name" : "everest-csi-controller",
      "requestsCpu" : "250m",
      "requestsMem" : "1500Mi"
    }, {
      "limitsCpu" : "500m",
      "limitsMem" : "300Mi",
      "name" : "everest-csi-driver",

```

```
        "requestsCpu" : "100m",
        "requestsMem" : "300Mi"
    } ]
}
},
"stable" : true,
"translate" : {
    "en_US" : {
        "addon" : {
            "changeLog" : "",
            "description" : ""
        },
        "description" : {
            "Parameters.flavor1.description" : "Deploy the add-on with two instances, delivering high
availability but requiring more compute resources.",
            "Parameters.flavor1.name" : "HA",
            "Parameters.flavor2.description" : "Deploy the add-on with one instance.",
            "Parameters.flavor2.name" : "Standalone",
            "Parameters.flavor3.name" : "Custom"
        }
    },
    "fr_FR" : {
        "addon" : {
            "changeLog" : "",
            "description" : ""
        },
        "description" : {
            "Parameters.flavor1.description" : "Déployez avec deux instances, haute disponibilité.",
            "Parameters.flavor1.name" : "HA",
            "Parameters.flavor2.description" : "Déployez avec une seule instance.",
            "Parameters.flavor2.name" : "Célibataire",
            "Parameters.flavor3.name" : "Douane"
        }
    },
    "zh_CN" : {
        "addon" : {
            "changeLog" : "",
            "description" : ""
        },
        "description" : {
            "Parameters.flavor1.description" : "Dual-instance deployment features high availability but requires
more compute resources.",
            "Parameters.flavor1.name" : "High availability",
            "Parameters.flavor2.description" : "Single-instance deployment",
            "Parameters.flavor2.name" : "Single instance",
            "Parameters.flavor3.description" : "Custom resource specifications for deployment",
            "Parameters.flavor3.name" : "Custom"
        }
    }
},
"supportVersions" : null,
"creationTimestamp" : "2023-05-12T16:10:05Z",
"updateTimestamp" : "2023-05-12T16:10:05Z"
}
}
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

Update the everest add-on to version 2.1.30.

```
package com.huaweicloud.sdk.test;
```

```

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.Map;
import java.util.HashMap;

public class UpdateAddonInstanceSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");

        ICredential auth = new BasicCredentials()
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();

        UpdateAddonInstanceRequest request = new UpdateAddonInstanceRequest();
        request.withId("{id}");
        InstanceRequest body = new InstanceRequest();
        Map<String, Object> listSpecValues = new HashMap<>();
        listSpecValues.put("basic", "{\"evs_url\": \"*****\", \"obs_url\": \"*****\", \"cluster_version
        \": \"v1.23\", \"supportHcs\": false, \"iam_url\": \"*****\", \"rbac_enabled\": true, \"ecsEndpoint\": \"*****\", \"sfs_url
        \": \"*****\", \"platform\": \"linux-amd64\", \"ims_url\": \"*****\", \"driver_init_image_version
        \": \"2.1.30\", \"sfs30_url\": \"*****\", \"sfs_turbo_url\": \"*****\", \"swr_user\": \"hwofficial\", \"bms_url\": \"*****
        \", \"everest_image_version\": \"2.1.30\", \"swr_addr\": \"*****\"}");
        listSpecValues.put("flavor", "{\"replicas\": 2, \"name\": \"HA\", \"description\": \"High available
        \", \"resources\": [{\"limitsCpu\": \"250m\", \"name\": \"everest-csi-controller\", \"limitsMem\": \"2000Mi
        \", \"requestsMem\": \"1500Mi\", \"requestsCpu\": \"250m\"}, {\"limitsCpu\": \"500m\", \"name\": \"everest-csi-
        driver\", \"limitsMem\": \"300Mi\", \"requestsMem\": \"300Mi\", \"requestsCpu\": \"100m\"}], \"category\": [\"CCE
        \", \"Turbo\"]}");
        listSpecValues.put("custom", "{\"csi_attacher_worker_threads\": \"60\", \"cluster_id\": \"*****
        \", \"csi_attacher_detach_worker_threads\": \"60\", \"disable_auto_mount_secret\": false, \"over_subscription
        \": \"80\", \"project_id\": \"*****\", \"enable_node_attacher\": true, \"volume_attaching_flow_ctrl
        \": \"0\", \"multiAZEnabled\": false, \"flow_control\": {}, \"default_vpc_id\": \"*****\"}");
        InstanceRequestSpec specbody = new InstanceRequestSpec();
        specbody.withVersion("2.1.30")
            .withClusterID("*****")
            .withValues(listSpecValues)
            .withAddonTemplateName("everest");
        Map<String, String> listMetadataAnnotations = new HashMap<>();
        listMetadataAnnotations.put("addon.upgrade/type", "upgrade");
        AddonMetadata metadatabody = new AddonMetadata();
        metadatabody.withAnnotations(listMetadataAnnotations);
        body.withSpec(specbody);
        body.withMetadata(metadatabody);
        body.withApiVersion("v3");
        body.withKind("Addon");
        request.withBody(body);
        try {
            UpdateAddonInstanceResponse response = client.updateAddonInstance(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
    
```

```
e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

Update the everest add-on to version 2.1.30.

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]

    credentials = BasicCredentials(ak, sk)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = UpdateAddonInstanceRequest()
        request.id = "{id}"
        listValuesSpec = {
            "basic": {"\evs_url\":"*****","\obs_url\":"*****","\cluster_version\":"v1.23","\supportHcs
\":"false","\iam_url\":"*****","\rbac_enabled\":"true","\ecsEndpoint\":"*****","\sfs_url\":"*****","\platform
\":"linux-amd64","\ims_url\":"*****","\driver_init_image_version\":"2.1.30","\sfs30_url\":"*****
","\sfs_turbo_url\":"*****","\swr_user\":"hwofficial","\bms_url\":"*****","\everest_image_version
\":"2.1.30","\swr_addr\":"*****"}
            "flavor": {"\replicas\":"2","\name\":"HA","\description\":"High available","\resources\":[{"limitsCpu
\":"250m","\name\":"everest-csi-controller","\limitsMem\":"2000Mi","\requestsMem\":"1500Mi
","\requestsCpu\":"250m"}],{"limitsCpu\":"500m","\name\":"everest-csi-driver","\limitsMem\":"300Mi
","\requestsMem\":"300Mi","\requestsCpu\":"100m"}],\category\":[\CCE\","\Turbo\]}},
            "custom": {"\csi_attacher_worker_threads\":"60","\cluster_id\":"*****
\","\csi_attacher_detach_worker_threads\":"60","\disable_auto_mount_secret\":"false","\over_subscription
\":"80","\project_id\":"*****","\enable_node_attacher\":"true","\volume_attaching_flow_ctrl
\":"0","\multiAZEnabled\":"false","\flow_control\":"{\","\default_vpc_id\":"*****"}"
        }
        specbody = InstanceRequestSpec(
            version="2.1.30",
            cluster_id="*****",
            values=listValuesSpec,
            addon_template_name="everest"
        )
        listAnnotationsMetadata = {
            "addon.upgrade/type": "upgrade"
        }
        metadatabody = AddonMetadata(
            annotations=listAnnotationsMetadata
        )
```

```

request.body = InstanceRequest(
    spec=specbody,
    metadata=metadatabody,
    api_version="v3",
    kind="Addon"
)
response = client.update_addon_instance(request)
print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)

```

Go

Update the everest add-on to version 2.1.30.

```

package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.UpdateAddonInstanceRequest{}
    request.Id = "{id}"
    var listValuesSpec = map[string]interface{}{
        "basic": "{ \"evs_url\": \"****\", \"obs_url\": \"****\", \"cluster_version\": \"v1.23\", \"supportHcs
        \": false, \"iam_url\": \"****\", \"rbac_enabled\": true, \"ecsEndpoint\": \"****\", \"sfs_url\": \"****\", \"platform
        \": \"linux-amd64\", \"ims_url\": \"****\", \"driver_init_image_version\": \"2.1.30\", \"sfs30_url\": \"****
        \", \"sfs_turbo_url\": \"****\", \"swr_user\": \"hwofficial\", \"bms_url\": \"****\", \"everest_image_version
        \": \"2.1.30\", \"swr_addr\": \"****\" }",
        "flavor": "{ \"replicas\": 2, \"name\": \"HA\", \"description\": \"High available\", \"resources\": { \"limitsCpu
        \": \"250m\", \"name\": \"everest-csi-controller\", \"limitsMem\": \"2000Mi\", \"requestsMem\": \"1500Mi
        \", \"requestsCpu\": \"250m\" }, { \"limitsCpu\": \"500m\", \"name\": \"everest-csi-driver\", \"limitsMem\": \"300Mi
        \", \"requestsMem\": \"300Mi\", \"requestsCpu\": \"100m\" } }\", \"category\": [ \"CCE\", \"Turbo\" ] }",
        "custom": "{ \"csi_attacher_worker_threads\": \"60\", \"cluster_id\": \"****
        \", \"csi_attacher_detach_worker_threads\": \"60\", \"disable_auto_mount_secret\": false, \"over_subscription
        \": \"80\", \"project_id\": \"****\", \"enable_node_attacher\": true, \"volume_attaching_flow_ctrl
        \": \"0\", \"multiAZEnabled\": false, \"flow_control\": { }, \"default_vpc_id\": \"****\" }",
    }
    versionSpec := "2.1.30"
    specbody := &model.InstanceRequestSpec{
        Version: &versionSpec,
        ClusterID: "****",
    }

```

```

Values: listValuesSpec,
  AddonTemplateName: "everest",
}
var listAnnotationsMetadata = map[string]string{
  "addon.upgrade/type": "upgrade",
}
metadatabody := &model.AddonMetadata{
  Annotations: listAnnotationsMetadata,
}
request.Body = &model.InstanceRequest{
  Spec: specbody,
  Metadata: metadatabody,
  ApiVersion: "v3",
  Kind: "Addon",
}
response, err := client.UpdateAddonInstance(request)
if err == nil {
  fmt.Printf("%v\n", response)
} else {
  fmt.Println(err)
}
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.6.4 Rolling Back an Add-on Instance

Function

Roll back the add-on instance version to the source version. Only when the **status.isRollbackable** parameter is set to **true**, and the add-on instance is in the **running**, **available**, **abnormal**, **upgradeFailed**, or **rollbackFailed** state, the version can be rolled back to the source version.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/addons/{id}/operation/rollback

Table 4-863 Path Parameters

Parameter	Mandatory	Type	Description
id	Yes	String	Add-on instance ID

Request Parameters

Table 4-864 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-865 Request body parameters

Parameter	Mandatory	Type	Description
clusterID	Yes	String	Cluster ID

Response Parameters

Status code: 200

Table 4-866 Response body parameters

Parameter	Type	Description
kind	String	API type. The value is fixed at Addon and cannot be changed.

Parameter	Type	Description
apiVersion	String	API version. The value is fixed at v3 and cannot be changed.
metadata	AddonMetadata object	Basic information about the object. Metadata is a collection of attributes.
spec	InstanceSpec object	Detailed description of the add-on instance.
status	AddonInstanceStatus object	Add-on instance status.

Table 4-867 AddonMetadata

Parameter	Type	Description
uid	String	Unique ID
name	String	Add-on name
alias	String	Add-on alias
labels	Map<String,String>	Add-on labels in key-value pairs. This is a reserved field and does not take effect.
annotations	Map<String,String>	Add-on annotations in the format of key-value pairs. <ul style="list-style-type: none"> For add-on installation, the value is fixed at {"addon.install/type":"install"}. For add-on upgrade, the value is fixed at {"addon.upgrade/type":"upgrade"}.
updateTimestamp	String	Updated at
creationTimestamp	String	Created at

Table 4-868 InstanceSpec

Parameter	Type	Description
clusterID	String	Cluster ID.
version	String	Add-on template version, for example, 1.0.0 .

Parameter	Type	Description
addonTemplateName	String	Add-on template name, for example, coredns .
addonTemplateType	String	Add-on template type.
addonTemplateLogo	String	URL for obtaining the add-on template logo.
addonTemplateLabels	Array of strings	Labels of the add-on template.
description	String	Add-on template description.
values	Map<String, Object>	Add-on template installation parameters (varying depending on the add-on). Set the parameters accordingly.

Table 4-869 AddonInstanceStatus

Parameter	Type	Description
status	String	<p>Add-on instance status. Options:</p> <ul style="list-style-type: none"> • running: All of the add-on instances are running. This specifies that the add-on runs properly. • abnormal: The add-on instances are abnormal and the add-on cannot be used. You can click the add-on name to view exceptions. • installing: The add-on is being installed. • installFailed: Installing the add-on failed. In this case, uninstall the add-on and then reinstall it. • upgrading: The add-on is being upgraded. • upgradeFailed: Upgrading the add-on failed. In this case, upgrade the add-on again or uninstall the add-on and reinstall it. • deleting: The add-on is being deleted. • deleteFailed: Deleting the add-on failed. In this case, uninstall the add-on again. • deleteSuccess: Deleting the add-on succeeded. • available: Only some instances of the add-on are running. This specifies that some functions of the add-on are available. • rollbacking: The add-on is being rolled back. • rollbackFailed: Rolling back the add-on failed. In this case, roll back the add-on again or uninstall the add-on and reinstall it. • unknown: The add-on chart instance does not exist.
Reason	String	Cause of the add-on installation failure.
message	String	Installation error details.
targetVersions	Array of strings	Versions to which the current add-on version can be upgraded.

Parameter	Type	Description
currentVersion	Versions object	Information about the current add-on version.
isRollbackable	Boolean	Whether the add-on version can be rolled back to the source version.
previousVersion	String	The add-on version before upgrade or rollback

Table 4-870 Versions

Parameter	Type	Description
version	String	Add-on version.
input	Object	Add-on installation parameters.
stable	Boolean	Whether the add-on version is a stable release.
translate	Object	Translation information used by the GUI.
supportVersions	Array of SupportVersions objects	Cluster versions that support the add-on.
creationTimestamp	String	Creation time.
updateTimestamp	String	Update time.

Table 4-871 SupportVersions

Parameter	Type	Description
clusterType	String	Cluster type that supports the add-on.
clusterVersion	Array of strings	Cluster versions that support the add-on. The value is a regular expression.

Parameter	Type	Description
category	Array of strings	<p>The cluster types to which the settings are applied</p> <p>Options:</p> <ul style="list-style-type: none"> • CCE: CCE standard clusters • Turbo: CCE Turbo clusters • Autopilot: CCE Autopilot clusters <p>Default value:</p> <p>If this parameter is left blank, CCE standard and Turbo clusters are used by default.</p>

Example Requests

```
{
  "clusterID" : "*****"
}
```

Example Responses

Status code: 200

Add-on instance version is rolled back.

```
{
  "kind" : "Addon",
  "apiVersion" : "v3",
  "metadata" : {
    "uid" : "*****",
    "name" : "everest",
    "alias" : "everest",
    "creationTimestamp" : "2023-03-15T02:48:01Z",
    "updateTimestamp" : "2023-03-15T04:18:45Z"
  },
  "spec" : {
    "clusterID" : "*****",
    "version" : "2.1.16",
    "addonTemplateName" : "everest",
    "addonTemplateType" : "helm",
    "addonTemplateLogo" : "*****",
    "addonTemplateLabels" : [ "Storage" ],
    "description" : "Everest is a cloud native container storage system based on CSI, used\nto support cloud storages services for Kubernetes",
    "values" : {
      "basic" : {
        "base_image" : "euleros",
        "bms_url" : "*****",
        "cluster_version" : "v1.25",
        "driver_init_image_version" : "2.1.16",
        "ecsEndpoint" : "*****",
        "euleros_version" : "2.2.5",
        "everest_image_version" : "2.1.16",
        "evs_url" : "*****",
        "iam_url" : "*****",
        "ims_url" : "*****",
        "obs_url" : "*****",
        "platform" : "linux-amd64",
        "rbac_enabled" : true,

```

```

"sfs30_url" : "*****",
"sfs_turbo_url" : "*****",
"sfs_url" : "*****",
"supportHcs" : false,
"swr_addr" : "*****",
"swr_user" : "*****"
},
"custom" : {
"cluster_id" : "*****",
"cluster_version" : "v1.25.3-r0",
"csi_attacher_detach_worker_threads" : "60",
"csi_attacher_worker_threads" : "60",
"default_vpc_id" : "*****",
"disable_auto_mount_secret" : false,
"enable_node_attacher" : false,
"flow_control" : { },
"multiAZEnabled" : false,
"over_subscription" : "80",
"project_id" : "*****",
"volume_attaching_flow_ctrl" : "0"
},
"flavor" : {
"category" : [ "CCE", "Turbo" ],
"description" : "High available",
"name" : "HA",
"replicas" : 2,
"resources" : [ {
"limitsCpu" : "250m",
"limitsMem" : "1500Mi",
"name" : "everest-csi-controller",
"requestsCpu" : "250m",
"requestsMem" : "600Mi"
}, {
"limitsCpu" : "500m",
"limitsMem" : "300Mi",
"name" : "everest-csi-driver",
"requestsCpu" : "100m",
"requestsMem" : "300Mi"
} ]
},
"multiAZPreferred" : {
"podAntiAffinity" : {
"preferredDuringSchedulingIgnoredDuringExecution" : [ {
"podAffinityTerm" : {
"labelSelector" : {
"matchExpressions" : [ {
"key" : "app",
"operator" : "In",
"values" : [ "everest-csi-controller" ]
} ]
} ]
},
"topologyKey" : "topology.kubernetes.io/zone"
},
"weight" : 100
} ]
},
"multiAZRequired" : {
"podAntiAffinity" : {
"requiredDuringSchedulingIgnoredDuringExecution" : [ {
"labelSelector" : {
"matchExpressions" : [ {
"key" : "app",
"operator" : "In",
"values" : [ "everest-csi-controller" ]
} ]
} ]
},
"topologyKey" : "topology.kubernetes.io/zone"
} ]
} ]

```

```

    }
  },
  "systemAutoInject" : {
    "cluster" : {
      "category" : "CCE",
      "clusterID" : "*****",
      "clusterNetworkMode" : "vpc-router",
      "clusterVersion" : "v1.25.3-r0"
    },
    "user" : {
      "projectID" : "*****"
    }
  },
  "tolerations" : [ {
    "effect" : "NoExecute",
    "key" : "node.kubernetes.io/not-ready",
    "operator" : "Exists",
    "tolerationSeconds" : 60
  }, {
    "effect" : "NoExecute",
    "key" : "node.kubernetes.io/unreachable",
    "operator" : "Exists",
    "tolerationSeconds" : 60
  } ]
}
},
"status" : {
  "status" : "rollbacking",
  "Reason" : "Rollback to 4",
  "message" : "",
  "targetVersions" : [ "2.1.18", "2.1.19" ],
  "isRollbackable" : false,
  "previousVersion" : "2.1.19",
  "currentVersion" : {
    "version" : "2.1.16",
    "input" : {
      "basic" : {
        "bms_url" : "*****",
        "driver_init_image_version" : "2.1.16",
        "ecsEndpoint" : "*****",
        "everest_image_version" : "2.1.16",
        "evs_url" : "*****",
        "iam_url" : "*****",
        "ims_url" : "*****",
        "obs_url" : "*****",
        "platform" : "linux-amd64",
        "sfs30_url" : "*****",
        "sfs_turbo_url" : "*****",
        "sfs_url" : "*****",
        "supportHcs" : false,
        "swr_addr" : "*****",
        "swr_user" : "*****"
      },
      "parameters" : {
        "common" : {
          "defaultVPCId" : 0
        },
        "custom" : {
          "cluster_id" : "",
          "csi_attacher_detach_worker_threads" : "60",
          "csi_attacher_worker_threads" : "60",
          "default_vpc_id" : "",
          "disable_auto_mount_secret" : false,
          "enable_node_attacher" : false,
          "flow_control" : { },
          "multiAZEnabled" : false,
          "over_subscription" : "80",
          "project_id" : "",
          "volume_attaching_flow_ctrl" : "0"
        }
      }
    }
  }
}
}

```

```

},
"flavor1" : {
  "description" : "High available",
  "name" : "HA",
  "replicas" : 2,
  "resources" : [ {
    "limitsCpu" : "250m",
    "limitsMem" : "1500Mi",
    "name" : "everest-csi-controller",
    "requestsCpu" : "250m",
    "requestsMem" : "600Mi"
  }, {
    "limitsCpu" : "500m",
    "limitsMem" : "300Mi",
    "name" : "everest-csi-driver",
    "requestsCpu" : "100m",
    "requestsMem" : "300Mi"
  } ]
},
"flavor2" : {
  "description" : "Has only one instance",
  "name" : "Single",
  "replicas" : 1,
  "resources" : [ {
    "limitsCpu" : "250m",
    "limitsMem" : "600Mi",
    "name" : "everest-csi-controller",
    "requestsCpu" : "250m",
    "requestsMem" : "600Mi"
  }, {
    "limitsCpu" : "100m",
    "limitsMem" : "300Mi",
    "name" : "everest-csi-driver",
    "requestsCpu" : "100m",
    "requestsMem" : "300Mi"
  } ]
},
"flavor3" : {
  "description" : "custom resources",
  "name" : "custom-resources",
  "replicas" : 2,
  "resources" : [ {
    "limitsCpu" : "250m",
    "limitsMem" : "2000Mi",
    "name" : "everest-csi-controller",
    "requestsCpu" : "250m",
    "requestsMem" : "1500Mi"
  }, {
    "limitsCpu" : "500m",
    "limitsMem" : "300Mi",
    "name" : "everest-csi-driver",
    "requestsCpu" : "100m",
    "requestsMem" : "300Mi"
  } ]
}
}
},
"stable" : true,
"translate" : {
  "en_US" : {
    "addon" : {
      "changeLog" : "*****",
      "description" : "*****"
    },
    "description" : {
      "Parameters.flavor1.description" : "*****",
      "Parameters.flavor1.name" : "*****",
      "Parameters.flavor2.description" : "*****",
      "Parameters.flavor2.name" : "*****",

```

```
        "Parameters.flavor3.name" : "*****"
    },
    "zh_CN" : {
        "addon" : {
            "changeLog" : "*****",
            "description" : "*****"
        },
        "description" : {
            "Parameters.flavor1.description" : "*****",
            "Parameters.flavor1.name" : "*****",
            "Parameters.flavor2.description" : "*****",
            "Parameters.flavor2.name" : "*****",
            "Parameters.flavor3.description" : "*****",
            "Parameters.flavor3.name" : "*****"
        }
    }
},
"supportVersions" : null,
"creationTimestamp" : "2023-02-21T16:29:02Z",
"updateTimestamp" : "2023-02-22T06:49:50Z"
}
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class RollbackAddonInstanceSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");

        ICredential auth = new BasicCredentials()
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        RollbackAddonInstanceRequest request = new RollbackAddonInstanceRequest();
        request.withId("{id}");
        AddonInstanceRollbackRequest body = new AddonInstanceRollbackRequest();
        body.withClusterID("*****");
        request.withBody(body);
        try {
```



```
        RollbackAddonInstanceResponse response = client.rollbackAddonInstance(request);
        System.out.println(response.toString());
    } catch (ConnectionException e) {
        e.printStackTrace();
    } catch (RequestTimeoutException e) {
        e.printStackTrace();
    } catch (ServiceResponseException e) {
        e.printStackTrace();
        System.out.println(e.getHttpStatusCode());
        System.out.println(e.getRequestId());
        System.out.println(e.getErrorCode());
        System.out.println(e.getErrorMsg());
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]

    credentials = BasicCredentials(ak, sk)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = RollbackAddonInstanceRequest()
        request.id = "{id}"
        request.body = AddonInstanceRollbackRequest(
            cluster_id="*****"
        )
        response = client.rollback_addon_instance(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
```

```
// The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
// In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")

auth := basic.NewCredentialsBuilder().
    WithAk(ak).
    WithSk(sk).
    Build()

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.RollbackAddonInstanceRequest{}
request.Id = "{id}"
request.Body = &model.AddonInstanceRollbackRequest{
    ClusterID: "*****",
}
response, err := client.RollbackAddonInstance(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Add-on instance version is rolled back.

Error Codes

See [Error Codes](#).

4.6.5 Deleting an Add-on Instance

Function

This API is used to delete an add-on instance.

Calling Method

For details, see [Calling APIs](#).

URI

DELETE /api/v3/addons/{id}

Table 4-872 Path Parameters

Parameter	Mandatory	Type	Description
id	Yes	String	Add-on instance ID.

Table 4-873 Query Parameters

Parameter	Mandatory	Type	Description
cluster_id	No	String	Cluster ID (deprecated). For details about how to obtain the cluster ID, see How Do I Obtain Parameters in the API URI .

Request Parameters

Table 4-874 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-875 Response body parameters

Parameter	Type	Description
kind	String	API type. The value is fixed at Addon and cannot be changed.
apiVersion	String	API version. The value is fixed at v3 and cannot be changed.
metadata	AddonMetadata object	Basic information about the object. Metadata is a collection of attributes.
spec	InstanceSpec object	Detailed description of the add-on instance.
status	AddonInstanceStatus object	Add-on instance status.

Table 4-876 AddonMetadata

Parameter	Type	Description
uid	String	Unique ID
name	String	Add-on name

Parameter	Type	Description
alias	String	Add-on alias
labels	Map<String,String>	Add-on labels in key-value pairs. This is a reserved field and does not take effect.
annotations	Map<String,String>	Add-on annotations in the format of key-value pairs. <ul style="list-style-type: none"> For add-on installation, the value is fixed at {"addon.install/type":"install"}. For add-on upgrade, the value is fixed at {"addon.upgrade/type":"upgrade"}.
updateTimestamp	String	Updated at
creationTimestamp	String	Created at

Table 4-877 InstanceSpec

Parameter	Type	Description
clusterID	String	Cluster ID.
version	String	Add-on template version, for example, 1.0.0 .
addonTemplateName	String	Add-on template name, for example, coredns .
addonTemplateType	String	Add-on template type.
addonTemplateLogo	String	URL for obtaining the add-on template logo.
addonTemplateLabels	Array of strings	Labels of the add-on template.
description	String	Add-on template description.
values	Map<String,Object>	Add-on template installation parameters (varying depending on the add-on). Set the parameters accordingly.

Table 4-878 AddonInstanceStatus

Parameter	Type	Description
status	String	<p>Add-on instance status. Options:</p> <ul style="list-style-type: none"> ● running: All of the add-on instances are running. This specifies that the add-on runs properly. ● abnormal: The add-on instances are abnormal and the add-on cannot be used. You can click the add-on name to view exceptions. ● installing: The add-on is being installed. ● installFailed: Installing the add-on failed. In this case, uninstall the add-on and then reinstall it. ● upgrading: The add-on is being upgraded. ● upgradeFailed: Upgrading the add-on failed. In this case, upgrade the add-on again or uninstall the add-on and reinstall it. ● deleting: The add-on is being deleted. ● deleteFailed: Deleting the add-on failed. In this case, uninstall the add-on again. ● deleteSuccess: Deleting the add-on succeeded. ● available: Only some instances of the add-on are running. This specifies that some functions of the add-on are available. ● rollbacking: The add-on is being rolled back. ● rollbackFailed: Rolling back the add-on failed. In this case, roll back the add-on again or uninstall the add-on and reinstall it. ● unknown: The add-on chart instance does not exist.
Reason	String	Cause of the add-on installation failure.
message	String	Installation error details.
targetVersions	Array of strings	Versions to which the current add-on version can be upgraded.

Parameter	Type	Description
currentVersion	Versions object	Information about the current add-on version.
isRollbackable	Boolean	Whether the add-on version can be rolled back to the source version.
previousVersion	String	The add-on version before upgrade or rollback

Table 4-879 Versions

Parameter	Type	Description
version	String	Add-on version.
input	Object	Add-on installation parameters.
stable	Boolean	Whether the add-on version is a stable release.
translate	Object	Translation information used by the GUI.
supportVersions	Array of SupportVersions objects	Cluster versions that support the add-on.
creationTimestamp	String	Creation time.
updateTimestamp	String	Update time.

Table 4-880 SupportVersions

Parameter	Type	Description
clusterType	String	Cluster type that supports the add-on.
clusterVersion	Array of strings	Cluster versions that support the add-on. The value is a regular expression.

Parameter	Type	Description
category	Array of strings	<p>The cluster types to which the settings are applied</p> <p>Options:</p> <ul style="list-style-type: none"> • CCE: CCE standard clusters • Turbo: CCE Turbo clusters • Autopilot: CCE Autopilot clusters <p>Default value:</p> <p>If this parameter is left blank, CCE standard and Turbo clusters are used by default.</p>

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "kind": "Addon",
  "apiVersion": "v3",
  "metadata": {
    "uid": "*****",
    "name": "everest",
    "alias": "everest",
    "creationTimestamp": "2023-07-03T10:57:43Z",
    "updateTimestamp": "2023-07-03T11:24:05Z"
  },
  "spec": {
    "clusterID": "*****",
    "version": "2.1.30",
    "addonTemplateName": "everest",
    "addonTemplateType": "helm",
    "addonTemplateLogo": "*****",
    "addonTemplateLabels": [ "Storage" ],
    "description": "",
    "values": {
      "basic": {
        "bms_url": "*****",
        "cluster_version": "v1.23",
        "driver_init_image_version": "2.1.30",
        "ecsEndpoint": "*****",
        "everest_image_version": "2.1.30",
        "evs_url": "*****",
        "iam_url": "*****",
        "ims_url": "*****",
        "obs_url": "*****",
        "platform": "linux-amd64",
        "rbac_enabled": true,
        "sfs30_url": "*****",
        "sfs_turbo_url": "*****",
        "sfs_url": "*****",
        "supportHcs": false,
        "swr_addr": "*****",

```



```

"swr_user" : "hwofficial"
},
"custom" : {
  "cluster_id" : "*****",
  "cluster_version" : "v1.23.8-r0",
  "csi_attacher_detach_worker_threads" : "60",
  "csi_attacher_worker_threads" : "60",
  "default_vpc_id" : "*****",
  "disable_auto_mount_secret" : false,
  "enable_node_attacher" : false,
  "flow_control" : { },
  "multiAZEnabled" : false,
  "over_subscription" : "80",
  "project_id" : "*****",
  "volume_attaching_flow_ctrl" : "0"
},
"flavor" : {
  "category" : [ "CCE", "Turbo" ],
  "description" : "Has only one instance",
  "name" : "Single",
  "replicas" : 1,
  "resources" : [ {
    "limitsCpu" : "250m",
    "limitsMem" : "600Mi",
    "name" : "everest-csi-controller",
    "requestsCpu" : "250m",
    "requestsMem" : "600Mi"
  }, {
    "limitsCpu" : "100m",
    "limitsMem" : "300Mi",
    "name" : "everest-csi-driver",
    "requestsCpu" : "100m",
    "requestsMem" : "300Mi"
  } ]
},
"systemAutoInject" : {
  "cluster" : {
    "clusterID" : "*****",
    "clusterNetworkMode" : "vpc-router",
    "clusterVersion" : "v1.23.8-r0"
  },
  "user" : {
    "projectID" : "*****"
  }
}
},
"status" : {
  "status" : "deleting",
  "message" : "",
  "targetVersions" : null,
  "isRollbackable" : false,
  "currentVersion" : {
    "version" : "2.1.30",
    "input" : {
      "basic" : {
        "bms_url" : "*****",
        "driver_init_image_version" : "2.1.30",
        "ecsEndpoint" : "*****",
        "everest_image_version" : "2.1.30",
        "evs_url" : "*****",
        "iam_url" : "*****",
        "ims_url" : "*****",
        "obs_url" : "*****",
        "platform" : "*****",
        "sfs30_url" : "*****",
        "sfs_turbo_url" : "*****",
        "sfs_url" : "*****",
        "supportHcs" : false,

```

```

"swr_addr": "*****",
"swr_user": "hwofficial"
},
"parameters": {
  "common": {
    "defaultVPCId": 1234567
  },
  "custom": {
    "cluster_id": "",
    "csi_attacher_detach_worker_threads": "60",
    "csi_attacher_worker_threads": "60",
    "default_vpc_id": "",
    "disable_auto_mount_secret": false,
    "enable_node_attacher": false,
    "flow_control": { },
    "multiAZEnabled": false,
    "over_subscription": "80",
    "project_id": "",
    "volume_attaching_flow_ctrl": "0"
  },
  "flavor1": {
    "description": "High available",
    "name": "HA",
    "replicas": 2,
    "resources": [ {
      "limitsCpu": "250m",
      "limitsMem": "1500Mi",
      "name": "everest-csi-controller",
      "requestsCpu": "250m",
      "requestsMem": "600Mi"
    }, {
      "limitsCpu": "500m",
      "limitsMem": "300Mi",
      "name": "everest-csi-driver",
      "requestsCpu": "100m",
      "requestsMem": "300Mi"
    } ]
  },
  "flavor2": {
    "description": "Has only one instance",
    "name": "Single",
    "replicas": 1,
    "resources": [ {
      "limitsCpu": "250m",
      "limitsMem": "600Mi",
      "name": "everest-csi-controller",
      "requestsCpu": "250m",
      "requestsMem": "600Mi"
    }, {
      "limitsCpu": "100m",
      "limitsMem": "300Mi",
      "name": "everest-csi-driver",
      "requestsCpu": "100m",
      "requestsMem": "300Mi"
    } ]
  },
  "flavor3": {
    "description": "custom resources",
    "name": "custom-resources",
    "replicas": 2,
    "resources": [ {
      "limitsCpu": "250m",
      "limitsMem": "2000Mi",
      "name": "everest-csi-controller",
      "requestsCpu": "250m",
      "requestsMem": "1500Mi"
    }, {
      "limitsCpu": "500m",
      "limitsMem": "300Mi",

```

```
        "name" : "everest-csi-driver",
        "requestsCpu" : "100m",
        "requestsMem" : "300Mi"
    } ]
}
},
"stable" : true,
"translate" : {
    "en_US" : {
        "addon" : {
            "changeLog" : "",
            "description" : ""
        },
        "description" : {
            "Parameters.flavor1.description" : "Deploy the add-on with two instances, delivering high
availability but requiring more compute resources.",
            "Parameters.flavor1.name" : "HA",
            "Parameters.flavor2.description" : "Deploy the add-on with one instance.",
            "Parameters.flavor2.name" : "Standalone",
            "Parameters.flavor3.name" : "Custom"
        }
    },
    "fr_FR" : {
        "addon" : {
            "changeLog" : "",
            "description" : ""
        },
        "description" : {
            "Parameters.flavor1.description" : "Déployez avec deux instances, haute disponibilité.",
            "Parameters.flavor1.name" : "HA",
            "Parameters.flavor2.description" : "Déployez avec une seule instance.",
            "Parameters.flavor2.name" : "Célibataire",
            "Parameters.flavor3.name" : "Douane"
        }
    },
    "zh_CN" : {
        "addon" : {
            "changeLog" : "",
            "description" : ""
        },
        "description" : {
            "Parameters.flavor1.description" : "Dual-instance deployment features high availability but requires
more compute resources.",
            "Parameters.flavor1.name" : "High availability",
            "Parameters.flavor2.description" : "Single-instance deployment",
            "Parameters.flavor2.name" : "Single instance",
            "Parameters.flavor3.description" : "Custom resource specifications for deployment",
            "Parameters.flavor3.name" : "Custom"
        }
    }
},
"supportVersions" : null,
"creationTimestamp" : "2023-05-12T16:10:05Z",
"updateTimestamp" : "2023-05-12T16:10:05Z"
}
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
```

```
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class DeleteAddonInstanceSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");

        ICredential auth = new BasicCredentials()
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        DeleteAddonInstanceRequest request = new DeleteAddonInstanceRequest();
        request.withId("{id}");
        try {
            DeleteAddonInstanceResponse response = client.deleteAddonInstance(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.getenv("CLOUD_SDK_AK")
    sk = os.getenv("CLOUD_SDK_SK")

    credentials = BasicCredentials(ak, sk)

    client = CceClient.new_builder() \
```

```
.with_credentials(credentials) \  
.with_region(CceRegion.value_of("<YOUR REGION>")) \  
.build()  
  
try:  
    request = DeleteAddonInstanceRequest()  
    request.id = "{id}"  
    response = client.delete_addon_instance(request)  
    print(response)  
except exceptions.ClientRequestException as e:  
    print(e.status_code)  
    print(e.request_id)  
    print(e.error_code)  
    print(e.error_msg)
```

Go

```
package main  
  
import (  
    "fmt"  
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"  
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"  
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"  
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"  
)  
  
func main() {  
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security  
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment  
    // variables and decrypted during use to ensure security.  
    // In this example, AK and SK are stored in environment variables for authentication. Before running this  
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment  
    ak := os.Getenv("CLOUD_SDK_AK")  
    sk := os.Getenv("CLOUD_SDK_SK")  
  
    auth := basic.NewCredentialsBuilder().  
        WithAk(ak).  
        WithSk(sk).  
        Build()  
  
    client := cce.NewCceClient(  
        cce.CceClientBuilder().  
            WithRegion(region.ValueOf("<YOUR REGION>")).  
            WithCredential(auth).  
            Build())  
  
    request := &model.DeleteAddonInstanceRequest{}  
    request.Id = "{id}"  
    response, err := client.DeleteAddonInstance(request)  
    if err == nil {  
        fmt.Printf("%v\n", response)  
    } else {  
        fmt.Println(err)  
    }  
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.6.6 Querying an Add-on Instance

Function

This API is used to obtain details about an add-on instance.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3/addons/{id}

Table 4-881 Path Parameters

Parameter	Mandatory	Type	Description
id	Yes	String	Add-on instance ID.

Table 4-882 Query Parameters

Parameter	Mandatory	Type	Description
cluster_id	No	String	Cluster ID (deprecated). For details about how to obtain the cluster ID, see How Do I Obtain Parameters in the API URI .

Request Parameters

Table 4-883 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-884 Response body parameters

Parameter	Type	Description
kind	String	API type. The value is fixed at Addon and cannot be changed.
apiVersion	String	API version. The value is fixed at v3 and cannot be changed.
metadata	AddonMetadata object	Basic information about the object. Metadata is a collection of attributes.
spec	InstanceSpec object	Detailed description of the add-on instance.
status	AddonInstanceStatus object	Add-on instance status.

Table 4-885 AddonMetadata

Parameter	Type	Description
uid	String	Unique ID
name	String	Add-on name
alias	String	Add-on alias
labels	Map<String,String >	Add-on labels in key-value pairs. This is a reserved field and does not take effect.
annotations	Map<String,String >	Add-on annotations in the format of key-value pairs. <ul style="list-style-type: none"> For add-on installation, the value is fixed at {"addon.install/type":"install"}. For add-on upgrade, the value is fixed at {"addon.upgrade/type":"upgrade"}.
updateTimestamp	String	Updated at
creationTimestamp	String	Created at

Table 4-886 InstanceSpec

Parameter	Type	Description
clusterID	String	Cluster ID.

Parameter	Type	Description
version	String	Add-on template version, for example, 1.0.0 .
addonTemplateName	String	Add-on template name, for example, coredns .
addonTemplateType	String	Add-on template type.
addonTemplateLogo	String	URL for obtaining the add-on template logo.
addonTemplateLabels	Array of strings	Labels of the add-on template.
description	String	Add-on template description.
values	Map<String, Object>	Add-on template installation parameters (varying depending on the add-on). Set the parameters accordingly.

Table 4-887 AddonInstanceStatus

Parameter	Type	Description
status	String	<p>Add-on instance status. Options:</p> <ul style="list-style-type: none"> ● running: All of the add-on instances are running. This specifies that the add-on runs properly. ● abnormal: The add-on instances are abnormal and the add-on cannot be used. You can click the add-on name to view exceptions. ● installing: The add-on is being installed. ● installFailed: Installing the add-on failed. In this case, uninstall the add-on and then reinstall it. ● upgrading: The add-on is being upgraded. ● upgradeFailed: Upgrading the add-on failed. In this case, upgrade the add-on again or uninstall the add-on and reinstall it. ● deleting: The add-on is being deleted. ● deleteFailed: Deleting the add-on failed. In this case, uninstall the add-on again. ● deleteSuccess: Deleting the add-on succeeded. ● available: Only some instances of the add-on are running. This specifies that some functions of the add-on are available. ● rollbacking: The add-on is being rolled back. ● rollbackFailed: Rolling back the add-on failed. In this case, roll back the add-on again or uninstall the add-on and reinstall it. ● unknown: The add-on chart instance does not exist.
Reason	String	Cause of the add-on installation failure.
message	String	Installation error details.
targetVersions	Array of strings	Versions to which the current add-on version can be upgraded.

Parameter	Type	Description
currentVersion	Versions object	Information about the current add-on version.
isRollbackable	Boolean	Whether the add-on version can be rolled back to the source version.
previousVersion	String	The add-on version before upgrade or rollback

Table 4-888 Versions

Parameter	Type	Description
version	String	Add-on version.
input	Object	Add-on installation parameters.
stable	Boolean	Whether the add-on version is a stable release.
translate	Object	Translation information used by the GUI.
supportVersions	Array of SupportVersions objects	Cluster versions that support the add-on.
creationTimestamp	String	Creation time.
updateTimestamp	String	Update time.

Table 4-889 SupportVersions

Parameter	Type	Description
clusterType	String	Cluster type that supports the add-on.
clusterVersion	Array of strings	Cluster versions that support the add-on. The value is a regular expression.

Parameter	Type	Description
category	Array of strings	<p>The cluster types to which the settings are applied</p> <p>Options:</p> <ul style="list-style-type: none"> • CCE: CCE standard clusters • Turbo: CCE Turbo clusters • Autopilot: CCE Autopilot clusters <p>Default value:</p> <p>If this parameter is left blank, CCE standard and Turbo clusters are used by default.</p>

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "kind": "Addon",
  "apiVersion": "v3",
  "metadata": {
    "uid": "24b23108-55c0-11e9-926f-0255ac101a31",
    "name": "gpu-beta",
    "alias": "gpu",
    "creationTimestamp": "2019-04-03T03:25:34Z",
    "updateTimestamp": "2019-04-03T03:25:34Z"
  },
  "spec": {
    "clusterID": "0c0e4a63-5539-11e9-95f7-0255ac10177e",
    "version": "1.0.0",
    "addonTemplateName": "gpu-beta",
    "addonTemplateType": "helm",
    "addonTemplateLogo": "",
    "addonTemplateLabels": [ "Accelerator" ],
    "description": "A device plugin for nvidia.com/gpu resource on nvidia driver",
    "values": {
      "basic": {
        "rbac_enabled": true,
        "swr_addr": "100.125.6.246:20202",
        "swr_user": "hwofficial"
      }
    }
  },
  "status": {
    "status": "installing",
    "Reason": "",
    "message": "",
    "targetVersions": null,
    "currentVersion": {
      "version": "1.0.0",
      "input": {
        "basic": {
          "swr_addr": "100.125.6.246:20202",

```

```
    "swr_user" : "hwofficial"
  },
  "parameters" : {}
},
"stable" : true,
"translate" : {
  "en_US" : {
    "addon" : {
      "changeLog" : "A device plugin for nvidia.com/gpu resource on nvidia driver",
      "description" : "A device plugin for nvidia.com/gpu resource on nvidia driver"
    }
  },
  "zh_CN" : {
    "addon" : {
      "changeLog" : "",
      "description" : ""
    }
  }
},
"supportVersions" : null,
"creationTimestamp" : "2018-10-23T13:14:55Z",
"updateTimestamp" : "2018-12-07T09:40:24Z"
}
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ShowAddonInstanceSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");

        ICredential auth = new BasicCredentials()
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        ShowAddonInstanceRequest request = new ShowAddonInstanceRequest();
        request.withId("{id}");
        try {
            ShowAddonInstanceResponse response = client.showAddonInstance(request);
            System.out.println(response.toString());
        }
    }
}
```

```

    } catch (ConnectionException e) {
        e.printStackTrace();
    } catch (RequestTimeoutException e) {
        e.printStackTrace();
    } catch (ServiceResponseException e) {
        e.printStackTrace();
        System.out.println(e.getHttpStatusCode());
        System.out.println(e.getRequestId());
        System.out.println(e.getErrorCode());
        System.out.println(e.getErrorMsg());
    }
}
}
}

```

Python

```

# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]

    credentials = BasicCredentials(ak, sk)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ShowAddonInstanceRequest()
        request.id = "{id}"
        response = client.show_addon_instance(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)

```

Go

```

package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment

```

```
ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")

auth := basic.NewCredentialsBuilder().
    WithAk(ak).
    WithSk(sk).
    Build()

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.ShowAddonInstanceRequest{}
request.Id = "{id}"
response, err := client.ShowAddonInstance(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.6.7 Listing Add-on Instances

Function

This API is used to list all add-on instances in the cluster.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3/addons

Table 4-890 Query Parameters

Parameter	Mandatory	Type	Description
cluster_id	Yes	String	Cluster ID. For details about how to obtain a cluster ID, see How to Obtain Parameters in the API URI .

Request Parameters

Table 4-891 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-892 Response body parameters

Parameter	Type	Description
kind	String	API type. The value is fixed at Addon and cannot be changed.
apiVersion	String	API version. The value is fixed at v3 and cannot be changed.
items	Array of AddonInstance objects	Add-on instance list.

Table 4-893 AddonInstance

Parameter	Type	Description
kind	String	API type. The value is fixed at Addon and cannot be changed.
apiVersion	String	API version. The value is fixed at v3 and cannot be changed.
metadata	AddonMetadata object	Basic information about the object. Metadata is a collection of attributes.

Parameter	Type	Description
spec	InstanceSpec object	Detailed description of the add-on instance.
status	AddonInstanceStatus object	Add-on instance status.

Table 4-894 AddonMetadata

Parameter	Type	Description
uid	String	Unique ID
name	String	Add-on name
alias	String	Add-on alias
labels	Map<String,String >	Add-on labels in key-value pairs. This is a reserved field and does not take effect.
annotations	Map<String,String >	Add-on annotations in the format of key-value pairs. <ul style="list-style-type: none"> For add-on installation, the value is fixed at {"addon.install/type":"install"}. For add-on upgrade, the value is fixed at {"addon.upgrade/type":"upgrade"}.
updateTimestamp	String	Updated at
creationTimestamp	String	Created at

Table 4-895 InstanceSpec

Parameter	Type	Description
clusterID	String	Cluster ID.
version	String	Add-on template version, for example, 1.0.0 .
addonTemplateName	String	Add-on template name, for example, coredns .
addonTemplateType	String	Add-on template type.

Parameter	Type	Description
addonTemplateLogo	String	URL for obtaining the add-on template logo.
addonTemplateLabels	Array of strings	Labels of the add-on template.
description	String	Add-on template description.
values	Map<String, Object>	Add-on template installation parameters (varying depending on the add-on). Set the parameters accordingly.

Table 4-896 AddonInstanceStatus

Parameter	Type	Description
status	String	<p>Add-on instance status. Options:</p> <ul style="list-style-type: none"> ● running: All of the add-on instances are running. This specifies that the add-on runs properly. ● abnormal: The add-on instances are abnormal and the add-on cannot be used. You can click the add-on name to view exceptions. ● installing: The add-on is being installed. ● installFailed: Installing the add-on failed. In this case, uninstall the add-on and then reinstall it. ● upgrading: The add-on is being upgraded. ● upgradeFailed: Upgrading the add-on failed. In this case, upgrade the add-on again or uninstall the add-on and reinstall it. ● deleting: The add-on is being deleted. ● deleteFailed: Deleting the add-on failed. In this case, uninstall the add-on again. ● deleteSuccess: Deleting the add-on succeeded. ● available: Only some instances of the add-on are running. This specifies that some functions of the add-on are available. ● rollbacking: The add-on is being rolled back. ● rollbackFailed: Rolling back the add-on failed. In this case, roll back the add-on again or uninstall the add-on and reinstall it. ● unknown: The add-on chart instance does not exist.
Reason	String	Cause of the add-on installation failure.
message	String	Installation error details.
targetVersions	Array of strings	Versions to which the current add-on version can be upgraded.

Parameter	Type	Description
currentVersion	Versions object	Information about the current add-on version.
isRollbackable	Boolean	Whether the add-on version can be rolled back to the source version.
previousVersion	String	The add-on version before upgrade or rollback

Table 4-897 Versions

Parameter	Type	Description
version	String	Add-on version.
input	Object	Add-on installation parameters.
stable	Boolean	Whether the add-on version is a stable release.
translate	Object	Translation information used by the GUI.
supportVersions	Array of SupportVersions objects	Cluster versions that support the add-on.
creationTimestamp	String	Creation time.
updateTimestamp	String	Update time.

Table 4-898 SupportVersions

Parameter	Type	Description
clusterType	String	Cluster type that supports the add-on.
clusterVersion	Array of strings	Cluster versions that support the add-on. The value is a regular expression.

Parameter	Type	Description
category	Array of strings	<p>The cluster types to which the settings are applied</p> <p>Options:</p> <ul style="list-style-type: none"> • CCE: CCE standard clusters • Turbo: CCE Turbo clusters • Autopilot: CCE Autopilot clusters <p>Default value:</p> <p>If this parameter is left blank, CCE standard and Turbo clusters are used by default.</p>

Example Requests

None

Example Responses

Status code: 200

ok

```
{
  "kind": "Addon",
  "apiVersion": "v3",
  "items": [ {
    "kind": "Addon",
    "apiVersion": "v3",
    "metadata": {
      "uid": "8ca259cc-553b-11e9-926f-0255ac101a31",
      "name": "storage-driver",
      "alias": "storage-driver",
      "creationTimestamp": "2019-04-02T11:36:26Z",
      "updateTimestamp": "2019-04-02T11:36:26Z"
    },
    "spec": {
      "clusterID": "0c0e4a63-5539-11e9-95f7-0255ac10177e",
      "version": "1.0.10",
      "addonTemplateName": "storage-driver",
      "addonTemplateType": "helm",
      "addonTemplateLogo": "https://192.149.48.66/cce-addon-southchina-aw1hz2u/storage-driverlogo.svg",
      "addonTemplateLabels": [ "Storage" ],
      "description": "A kubernetes FlexVolume Driver used to support cloud storage",
      "values": {
        "basic": {
          "addon_version": "1.0.10",
          "euleros_version": "2.2.5",
          "obs_url": "",
          "platform": "linux-amd64",
          "swr_addr": "100.125.6.246:20202",
          "swr_user": "hwofficial"
        },
        "flavor": {
          "replicas": 1
        }
      },
      "parameters": { }
    }
  }
],
}
```

```
"status" : {
  "status" : "running",
  "Reason" : "Install complete",
  "message" : "",
  "targetVersions" : null,
  "currentVersion" : {
    "version" : "1.0.10",
    "input" : {
      "basic" : {
        "euleros_version" : "2.2.5",
        "obs_url" : "",
        "swr_addr" : "100.125.6.246:20202",
        "swr_user" : "hwofficial"
      },
      "parameters" : { }
    },
    "stable" : true,
    "translate" : {
      "en_US" : {
        "addon" : {
          "changeLog" : "The plug-in is upgraded to enhance the storage plug-in function.",
          "description" : "A kubernetes FlexVolume Driver used to support cloud storage"
        }
      },
      "zh_CN" : {
        "addon" : {
          "changeLog" : "",
          "description" : ""
        }
      }
    },
    "supportVersions" : null,
    "creationTimestamp" : "2019-03-29T13:45:37Z",
    "updateTimestamp" : "2019-03-29T13:45:37Z"
  }
}
}]
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ListAddonInstancesSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
    }
}
```

```
ICredential auth = new BasicCredentials()
    .withAk(ak)
    .withSk(sk);

CceClient client = CceClient.newBuilder()
    .withCredential(auth)
    .withRegion(CceRegion.valueOf("<YOUR REGION>"))
    .build();
ListAddonInstancesRequest request = new ListAddonInstancesRequest();
try {
    ListAddonInstancesResponse response = client.listAddonInstances(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]

    credentials = BasicCredentials(ak, sk)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ListAddonInstancesRequest()
        response = client.list_addon_instances(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
```



```

cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
"github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ListAddonInstancesRequest{}
    response, err := client.ListAddonInstances(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	ok

Error Codes

See [Error Codes](#).

4.7 Cluster Upgrade

4.7.1 Upgrading a Cluster

Function

Cluster upgrade

 NOTE

- Cluster upgrade involves many operations on components. You are advised to upgrade your cluster on the CCE console, a more interactive and intuitive way to reduce operational risks.
- Currently, cluster upgrade APIs are available only upon request.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/upgrade

Table 4-899 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-900 Request body parameters

Parameter	Mandatory	Type	Description
metadata	Yes	UpgradeClusterRequestMetadata object	<p>Details: Cluster upgrade metadata information</p> <p>Constraints: None</p>
spec	Yes	UpgradeSpec object	<p>Details: Upgrade configuration information. CCE upgrades a cluster based on spec.</p> <p>Constraints: None</p>

Table 4-901 UpgradeClusterRequestMetadata

Parameter	Mandatory	Type	Description
apiVersion	Yes	String	<p>Details: API version</p> <p>Constraints: The value is fixed.</p> <p>Options:</p> <ul style="list-style-type: none"> v3
kind	Yes	String	<p>Details: API type</p> <p>Constraints: The value is fixed.</p> <p>Options:</p> <ul style="list-style-type: none"> UpgradeTask

Table 4-902 UpgradeSpec

Parameter	Mandatory	Type	Description
clusterUpgradeAction	No	ClusterUpgradeAction object	<p>Details: Detailed configuration information about the cluster upgrade</p> <p>Constraints: None</p>

Table 4-903 ClusterUpgradeAction

Parameter	Mandatory	Type	Description
addons	No	Array of UpgradeAddonConfig objects	<p>Details: Add-on configuration list. CCE upgrades add-ons based on the configuration during the cluster upgrade.</p> <p>Constraints: None</p>
nodeOrder	No	Map<String,Array< NodePriority >>	<p>Details: Upgrade sequence of nodes in a node pool. key indicates the node pool ID. The value for the default node pool is DefaultPool.</p> <p>Constraints: None</p>
nodePoolOrder	No	Map<String,Integer>	<p>Details: Upgrade sequence of a node pool, in key-value pairs. key indicates the node pool ID. The value for the default node pool is DefaultPool. value indicates the node pool priority. The default value is 0, which indicates the lowest priority. A larger value indicates a higher priority.</p> <p>Constraints: None</p>

Parameter	Mandatory	Type	Description
strategy	Yes	UpgradeStrategy object	Details: Cluster upgrade policy Constraints: None
targetVersion	Yes	String	Details: Target cluster version, for example, v1.23 Constraints: You can only upgrade a cluster to a later version. Do not enter a value that is equal to or earlier than the current cluster version. Options: Supported cluster versions

Table 4-904 UpgradeAddonConfig

Parameter	Mandatory	Type	Description
addonTemplateName	Yes	String	Details: CCE add-on name Constraints: None Options: Names of the add-ons installed in the cluster.
operation	Yes	String	Details: Action for upgrading an add-on Constraints: None Options: patch: specifies that the add-on version will be upgraded.

Parameter	Mandatory	Type	Description
version	Yes	String	<p>Details: Target add-on version</p> <p>Constraints: The target add-on version must match the target cluster version.</p> <p>Options: N/A</p>
values	No	Map<String, Object>	<p>Details: Add-on parameter list, in key-value pairs</p> <p>Constraints: None</p>

Table 4-905 NodePriority

Parameter	Mandatory	Type	Description
nodeSelector	Yes	NodeSelector object	<p>Details: Node label selector, which selects a batch of nodes</p> <p>Constraints: Only labels on the nodes are allowed.</p>
priority	Yes	Integer	<p>Details: Priority of the current batch of nodes. A larger value indicates a higher priority.</p> <p>Constraints: None</p> <p>Options: Positive integers</p> <p>Default value: 0</p>

Table 4-906 NodeSelector

Parameter	Mandatory	Type	Description
key	Yes	String	Details: Key Constraints: None Options: N/A
value	No	Array of strings	Details: Tag value list Constraints: None Options: N/A
operator	Yes	String	Details: Logical operators of labels Constraints: None Options: <ul style="list-style-type: none"> • in • notin • exists • ! • gt • lt

Table 4-907 UpgradeStrategy

Parameter	Mandatory	Type	Description
type	Yes	String	Details: Upgrade policy type Constraints: None Options: <ul style="list-style-type: none"> • inPlaceRollingUpdate: in-place upgrade

Parameter	Mandatory	Type	Description
inPlaceRollingUpdate	No	InPlaceRollingUpdate object	<p>Details: Detailed configuration of an in-place upgrade policy</p> <p>Constraints: This parameter is mandatory when the in-place upgrade policy type is specified.</p>

Table 4-908 InPlaceRollingUpdate

Parameter	Mandatory	Type	Description
userDefinedStep	No	Integer	<p>Details: Maximum number of nodes to be upgraded in a batch. Node pools will be upgraded in sequence. Nodes in node pools will be upgraded in batches. One node is upgraded in the first batch, two nodes in the second batch, and the number of nodes to be upgraded in each subsequent batch increases by a power of 2 until the maximum number of nodes to be upgraded in each batch is reached. The next cluster is upgraded after the previous one is upgraded.</p> <p>Constraints: None</p> <p>Options: 1 to 60</p> <p>Default value: 20</p>

Parameter	Mandatory	Type	Description
scope	No	String	<p>Details: Scope of the node upgrade batch</p> <p>Constraints: None</p> <p>Options: Cluster: If the scope is set to a cluster, the upgrade batch will remain unchanged throughout the entire upgrade process. NodePool: If the scope is set to node pools, the upgrade batch will be reset for each individual node pool.</p> <p>Default value: Cluster</p>

Response Parameters

Status code: 200

Table 4-909 Response body parameters

Parameter	Type	Description
metadata	UpgradeClusterResponseMetadata object	Upgrade task metadata
spec	UpgradeResponseSpec object	Upgrade settings

Table 4-910 UpgradeClusterResponseMetadata

Parameter	Type	Description
uid	String	Upgrade task ID. You can obtain the progress by calling the API for obtaining cluster upgrade task details.

Table 4-911 UpgradeResponseSpec

Parameter	Type	Description
clusterUpgradeAction	ClusterUpgradeResponseAction object	Cluster upgrade settings

Table 4-912 ClusterUpgradeResponseAction

Parameter	Type	Description
version	String	Current cluster version
targetVersion	String	Target cluster version, for example, v1.23.
targetPlatformVersion	String	Platform version of the target cluster, which is an internal version of the cluster version and cannot be specified.
strategy	UpgradeStrategyResponse object	Upgrade policies
config	Object	Cluster configuration specified during an upgrade

Table 4-913 UpgradeStrategyResponse

Parameter	Type	Description
type	String	Upgrade policy type
inPlaceRollingUpdate	InPlaceRollingUpdateResponse object	Detailed configuration of an in-place upgrade policy

Table 4-914 InPlaceRollingUpdateResponse

Parameter	Type	Description
userDefinedStep	Integer	Maximum number of nodes to be upgraded in a batch
scope	String	Scope of the node upgrade batch

Example Requests

Upgrade the cluster to v1.23 and set the node upgrade step to 20.

```
POST /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/upgrade
{
  "metadata": {
    "apiVersion": "v3",
    "kind": "UpgradeTask"
  },
  "spec": {
    "clusterUpgradeAction": {
      "strategy": {
        "type": "inPlaceRollingUpdate",
        "inPlaceRollingUpdate": {
          "userDefinedStep": 20
        }
      }
    },
    "targetVersion": "v1.23"
  }
}
```

Example Responses

Status code: 200

Cluster upgrade requested.

```
{
  "metadata": {
    "uid": "976a33e2-f545-11ed-87af-0255ac1002c2"
  },
  "spec": {
    "clusterUpgradeAction": {
      "version": "v1.19.16-r20",
      "targetVersion": "v1.23.8-r0",
      "targetPlatformVersion": "cce.10",
      "strategy": {
        "type": "inPlaceRollingUpdate",
        "inPlaceRollingUpdate": {
          "userDefinedStep": 20
        }
      }
    },
    "config": {}
  }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

Upgrade the cluster to v1.23 and set the node upgrade step to 20.

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
```

```
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class UpgradeClusterSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        UpgradeClusterRequest request = new UpgradeClusterRequest();
        request.withClusterId("{cluster_id}");
        UpgradeClusterRequestBody body = new UpgradeClusterRequestBody();
        InPlaceRollingUpdate inPlaceRollingUpdateStrategy = new InPlaceRollingUpdate();
        inPlaceRollingUpdateStrategy.withUserDefinedStep(20);
        UpgradeStrategy strategyClusterUpgradeAction = new UpgradeStrategy();
        strategyClusterUpgradeAction.withType("inPlaceRollingUpdate")
            .withInPlaceRollingUpdate(inPlaceRollingUpdateStrategy);
        ClusterUpgradeAction clusterUpgradeActionSpec = new ClusterUpgradeAction();
        clusterUpgradeActionSpec.withStrategy(strategyClusterUpgradeAction)
            .withTargetVersion("v1.23");
        UpgradeSpec specbody = new UpgradeSpec();
        specbody.withClusterUpgradeAction(clusterUpgradeActionSpec);
        UpgradeClusterRequestMetadata metadatabody = new UpgradeClusterRequestMetadata();
        metadatabody.withApiVersion("v3")
            .withKind("UpgradeTask");
        body.withSpec(specbody);
        body.withMetadata(metadatabody);
        request.withBody(body);
        try {
            UpgradeClusterResponse response = client.upgradeCluster(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

Upgrade the cluster to v1.23 and set the node upgrade step to 20.

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
```

```
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = UpgradeClusterRequest()
        request.cluster_id = "{cluster_id}"
        inplaceRollingUpdateStrategy = InPlaceRollingUpdate(
            user_defined_step=20
        )
        strategyClusterUpgradeAction = UpgradeStrategy(
            type="inPlaceRollingUpdate",
            in_place_rolling_update=inPlaceRollingUpdateStrategy
        )
        clusterUpgradeActionSpec = ClusterUpgradeAction(
            strategy=strategyClusterUpgradeAction,
            target_version="v1.23"
        )
        specbody = UpgradeSpec(
            cluster_upgrade_action=clusterUpgradeActionSpec
        )
        metadatabody = UpgradeClusterRequestMetadata(
            api_version="v3",
            kind="UpgradeTask"
        )
        request.body = UpgradeClusterRequestBody(
            spec=specbody,
            metadata=metadatabody
        )
        response = client.upgrade_cluster(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

Upgrade the cluster to v1.23 and set the node upgrade step to 20.

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
```

```
// The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
// risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
// variables and decrypted during use to ensure security.
// In this example, AK and SK are stored in environment variables for authentication. Before running this
// example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
    WithAk(ak).
    WithSk(sk).
    WithProjectId(projectId).
    Build()

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.UpgradeClusterRequest{}
request.ClusterId = "{cluster_id}"
userDefinedStepInPlaceRollingUpdate := int32(20)
inPlaceRollingUpdateStrategy := &model.InPlaceRollingUpdate{
    UserDefinedStep: &userDefinedStepInPlaceRollingUpdate,
}
strategyClusterUpgradeAction := &model.UpgradeStrategy{
    Type: "inPlaceRollingUpdate",
    InPlaceRollingUpdate: inPlaceRollingUpdateStrategy,
}
clusterUpgradeActionSpec := &model.ClusterUpgradeAction{
    Strategy: strategyClusterUpgradeAction,
    TargetVersion: "v1.23",
}
specbody := &model.UpgradeSpec{
    ClusterUpgradeAction: clusterUpgradeActionSpec,
}
metadatabody := &model.UpgradeClusterRequestMetadata{
    ApiVersion: "v3",
    Kind: "UpgradeTask",
}
request.Body = &model.UpgradeClusterRequestBody{
    Spec: specbody,
    Metadata: metadatabody,
}
response, err := client.UpgradeCluster(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Cluster upgrade requested.

Error Codes

See [Error Codes](#).

4.7.2 Obtaining Cluster Upgrade Task Details

Function

Upgrade task ID, obtained from the **uid** field in the response body after the cluster upgrade API is called.

NOTE

- Cluster upgrade involves many operations on components. You are advised to upgrade your cluster on the CCE console, a more interactive and intuitive way to reduce operational risks.
- Currently, cluster upgrade APIs are available only upon request.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/upgrade/tasks/{task_id}

Table 4-915 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>
task_id	Yes	String	<p>Details: Upgrade task ID, obtained from the uid field in the response body after the cluster upgrade API is called.</p> <p>Constraints: None</p> <p>Options: Upgrade task IDs</p> <p>Default value: N/A</p>

Request Parameters

None

Response Parameters

Status code: 200

Table 4-916 Response body parameters

Parameter	Type	Description
apiVersion	String	API version. Defaults to v3 .
kind	String	Resource type. Defaults to UpgradeTask .
metadata	UpgradeTaskMetadata object	Upgrade task metadata.

Parameter	Type	Description
spec	UpgradeTaskSpec object	Upgrade task information.
status	UpgradeTaskStatus object	Upgrade task status.

Table 4-917 UpgradeTaskMetadata

Parameter	Type	Description
uid	String	Upgrade task ID.
creationTimestamp	String	Time when a task was created.
updateTimestamp	String	Time when a task is updated.

Table 4-918 UpgradeTaskSpec

Parameter	Type	Description
version	String	Source cluster version.
targetVersion	String	Target cluster version to upgrade to.
items	Object	Additional information about the upgrade task.

Table 4-919 UpgradeTaskStatus

Parameter	Type	Description
phase	String	Indicates the status of the upgrade task. Init: initializing NOTE Queuing: waiting <ul style="list-style-type: none"> ● Running: The driver is running. NOTE Pause: paused <ul style="list-style-type: none"> ● Success: successful. NOTE Failed: failed
progress	String	Upgrade task progress.
completionTime	String	End time of the upgrade task.

Example Requests

None

Example Responses

Status code: 200

Cluster upgrade task details obtained.

```
{
  "kind" : "UpgradeTask",
  "apiVersion" : "v3",
  "metadata" : {
    "uid" : "xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx",
    "creationTimestamp" : "2022-12-16 13:40:20.756712 +0800 CST",
    "updateTimestamp" : "2022-12-16 13:40:20.756712 +0800 CST"
  },
  "spec" : {
    "version" : "v1.19.16-r4",
    "targetVersion" : "v1.23.5-r0"
  },
  "status" : {
    "phase" : "Init",
    "progress" : "0.00",
    "completionTime" : "2022-12-16 13:40:20.756712 +0800 CST"
  }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ShowUpgradeClusterTaskSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);
```

```
CceClient client = CceClient.newBuilder()
    .withCredential(auth)
    .withRegion(CceRegion.valueOf("<YOUR REGION>"))
    .build();
ShowUpgradeClusterTaskRequest request = new ShowUpgradeClusterTaskRequest();
request.withClusterId("{cluster_id}");
request.withTaskId("{task_id}");
try {
    ShowUpgradeClusterTaskResponse response = client.showUpgradeClusterTask(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.valueOf("<YOUR REGION>")) \
        .build()

    try:
        request = ShowUpgradeClusterTaskRequest()
        request.cluster_id = "{cluster_id}"
        request.task_id = "{task_id}"
        response = client.show_upgrade_cluster_task(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
```

```

"fmt"
"github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
"github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ShowUpgradeClusterTaskRequest{}
    request.ClusterId = "{cluster_id}"
    request.TaskId = "{task_id}"
    response, err := client.ShowUpgradeClusterTask(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Cluster upgrade task details obtained.

Error Codes

See [Error Codes](#).

4.7.3 Retrying a Cluster Upgrade Task

Function

Execute the failed cluster upgrade task again.

 NOTE

- Cluster upgrade involves many operations on components. You are advised to upgrade your cluster on the CCE console, a more interactive and intuitive way to reduce operational risks.
- Currently, cluster upgrade APIs are available only upon request.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/upgrade/retry

Table 4-920 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

None

Response Parameters

None

Example Requests

None

Example Responses

None

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class RetryUpgradeClusterTaskSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        RetryUpgradeClusterTaskRequest request = new RetryUpgradeClusterTaskRequest();
        request.withClusterId("{cluster_id}");
        try {
            RetryUpgradeClusterTaskResponse response = client.retryUpgradeClusterTask(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
        }
    }
}
```

```

        System.out.println(e.getErrorMsg());
    }
}
}

```

Python

```

# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = RetryUpgradeClusterTaskRequest()
        request.cluster_id = "{cluster_id}"
        response = client.retry_upgrade_cluster_task(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)

```

Go

```

package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).

```

```

Build()

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.RetryUpgradeClusterTaskRequest{}
request.ClusterId = "{cluster_id}"
response, err := client.RetryUpgradeClusterTask(request)
if err == nil {
    fmt.Printf("%v\n", response)
} else {
    fmt.Println(err)
}
}
    
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Cluster upgrade retry requested.

Error Codes

See [Error Codes](#).

4.7.4 Suspending a Cluster Upgrade Task (Deprecated)

Function

Suspend the cluster upgrade task.

NOTE

- Cluster upgrade involves many operations on components. You are advised to upgrade your cluster on the CCE console, a more interactive and intuitive way to reduce operational risks.
- Currently, cluster upgrade APIs are available only upon request.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/upgrade/pause

Table 4-921 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

None

Response Parameters

None

Example Requests

None

Example Responses

None

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class PauseUpgradeClusterTaskSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        PauseUpgradeClusterTaskRequest request = new PauseUpgradeClusterTaskRequest();
        request.withClusterId("{cluster_id}");
        try {
            PauseUpgradeClusterTaskResponse response = client.pauseUpgradeClusterTask(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
```

example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment

```
ak = os.environ["CLOUD_SDK_AK"]
sk = os.environ["CLOUD_SDK_SK"]
projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = CceClient.new_builder() \
    .with_credentials(credentials) \
    .with_region(CceRegion.value_of("<YOUR REGION>")) \
    .build()

try:
    request = PauseUpgradeClusterTaskRequest()
    request.cluster_id = "{cluster_id}"
    response = client.pause_upgrade_cluster_task(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.PauseUpgradeClusterTaskRequest{}
    request.ClusterId = "{cluster_id}"
    response, err := client.PauseUpgradeClusterTask(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Cluster upgrade suspension requested.

Error Codes

See [Error Codes](#).

4.7.5 Continuing to Execute a Cluster Upgrade Task (Deprecated)

Function

Resume the suspended cluster upgrade task.

NOTE

- Cluster upgrade involves many operations on components. You are advised to upgrade your cluster on the CCE console, a more interactive and intuitive way to reduce operational risks.
- Currently, cluster upgrade APIs are available only upon request.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/upgrade/continue

Table 4-922 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

None

Response Parameters

None

Example Requests

None

Example Responses

None

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ContinueUpgradeClusterTaskSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        ContinueUpgradeClusterTaskRequest request = new ContinueUpgradeClusterTaskRequest();
        request.withClusterId("{cluster_id}");
        try {
            ContinueUpgradeClusterTaskResponse response = client.continueUpgradeClusterTask(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
```

```
example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
ak = os.environ["CLOUD_SDK_AK"]
sk = os.environ["CLOUD_SDK_SK"]
projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = CceClient.new_builder() \
    .with_credentials(credentials) \
    .with_region(CceRegion.value_of("<YOUR REGION>")) \
    .build()

try:
    request = ContinueUpgradeClusterTaskRequest()
    request.cluster_id = "{cluster_id}"
    response = client.continue_upgrade_cluster_task(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ContinueUpgradeClusterTaskRequest{}
    request.ClusterId = "{cluster_id}"
    response, err := client.ContinueUpgradeClusterTask(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Cluster upgrade resumption requested.

Error Codes

See [Error Codes](#).

4.7.6 Obtaining a List of Cluster Upgrade Task Details

Function

Obtain a list of cluster upgrade task details.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/upgrade/tasks

Table 4-923 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

None

Response Parameters

Status code: 200

Table 4-924 Response body parameters

Parameter	Type	Description
apiVersion	String	API version, which defaults to v3
kind	String	Resource type
metadata	UpgradeTaskMetadata object	Metadata
items	Array of UpgradeTaskResponseBody objects	Cluster upgrade tasks

Table 4-925 UpgradeTaskResponseBody

Parameter	Type	Description
apiVersion	String	API version. Defaults to v3 .
kind	String	Resource type. Defaults to UpgradeTask .

Parameter	Type	Description
metadata	UpgradeTaskMetadata object	Upgrade task metadata.
spec	UpgradeTaskSpec object	Upgrade task information.
status	UpgradeTaskStatus object	Upgrade task status.

Table 4-926 UpgradeTaskMetadata

Parameter	Type	Description
uid	String	Upgrade task ID.
creationTimestamp	String	Time when a task was created.
updateTimestamp	String	Time when a task is updated.

Table 4-927 UpgradeTaskSpec

Parameter	Type	Description
version	String	Source cluster version.
targetVersion	String	Target cluster version to upgrade to.
items	Object	Additional information about the upgrade task.

Table 4-928 UpgradeTaskStatus

Parameter	Type	Description
phase	String	Indicates the status of the upgrade task. Init: initializing NOTE Queuing: waiting <ul style="list-style-type: none"> • Running: The driver is running. NOTE Pause: paused <ul style="list-style-type: none"> • Success: successful. NOTE Failed: failed

Parameter	Type	Description
progress	String	Upgrade task progress.
completionTime	String	End time of the upgrade task.

Example Requests

None

Example Responses

Status code: 200

The list of cluster upgrade task details is obtained.

```
{
  "kind": "List",
  "apiVersion": "v3",
  "metadata": { },
  "items": [ {
    "kind": "UpgradeTask",
    "apiVersion": "v3",
    "metadata": {
      "uid": "f40cafed-7bf1-4c3b-b619-80113b4bbb18",
      "creationTimestamp": "2023-11-24 16:41:12.09236 +0800 CST",
      "updateTimestamp": "2023-11-24 16:44:05.634206 +0800 CST"
    },
    "spec": {
      "version": "v1.17.17-r0",
      "targetVersion": "v1.19.16-r80"
    },
    "status": {
      "phase": "Success",
      "completionTime": "2023-11-24 16:44:05.634206 +0800 CST"
    }
  }, {
    "kind": "UpgradeTask",
    "apiVersion": "v3",
    "metadata": {
      "uid": "91755b96-5fd8-4a6a-bda1-983de9055996",
      "creationTimestamp": "2023-11-24 19:54:35.194306 +0800 CST",
      "updateTimestamp": "2023-11-24 20:14:35.194306 +0800 CST"
    },
    "spec": {
      "version": "v1.19.16-r80",
      "targetVersion": "v1.23.8-r10"
    },
    "status": {
      "phase": "Success",
      "completionTime": "2023-11-24 20:14:35.194306 +0800 CST"
    }
  }
  ]
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;
```

```
import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ListUpgradeClusterTasksSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        ListUpgradeClusterTasksRequest request = new ListUpgradeClusterTasksRequest();
        request.withClusterId("{cluster_id}");
        try {
            ListUpgradeClusterTasksResponse response = client.listUpgradeClusterTasks(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.getenv("CLOUD_SDK_AK")
    sk = os.getenv("CLOUD_SDK_SK")
    projectId = "{project_id}"
```

```
credentials = BasicCredentials(ak, sk, projectId)

client = CceClient.new_builder() \
    .with_credentials(credentials) \
    .with_region(CceRegion.value_of("<YOUR REGION>")) \
    .build()

try:
    request = ListUpgradeClusterTasksRequest()
    request.cluster_id = "{cluster_id}"
    response = client.list_upgrade_cluster_tasks(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ListUpgradeClusterTasksRequest{}
    request.ClusterId = "{cluster_id}"
    response, err := client.ListUpgradeClusterTasks(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The list of cluster upgrade task details is obtained.

Error Codes

See [Error Codes](#).

4.7.7 Pre-upgrade Check

Function

Pre-upgrade check

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/precheck

Table 4-929 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-930 Request body parameters

Parameter	Mandatory	Type	Description
apiVersion	Yes	String	<p>Details: API version</p> <p>Constraints: The value is fixed.</p> <p>Options:</p> <ul style="list-style-type: none"> v3
kind	Yes	String	<p>Details: API type</p> <p>Constraints: The value is fixed.</p> <p>Options:</p> <ul style="list-style-type: none"> PreCheckTask
spec	Yes	PrecheckSpec object	<p>Details: spec is an element type of the collection class. The main body of the configuration that needs to be checked before an upgrade is provided in spec. CCE checks the configuration based on spec.</p> <p>Constraints: None</p>

Table 4-931 PrecheckSpec

Parameter	Mandatory	Type	Description
clusterID	Yes	String	<p>Details: Cluster ID</p> <p>Constraints: None</p> <p>Options: N/A</p>
clusterVersion	Yes	String	<p>Details: Cluster version. The value is the patch version of the current cluster. You can log in to the console and view the version on the Overview page.</p> <p>Constraints: None</p> <p>Options: N/A</p>
targetVersion	Yes	String	<p>Details: Target version. If you enter a major version, the latest patch version is automatically selected.</p> <p>Constraints: None</p> <p>Options: Available cluster versions later than the current cluster version</p>
skippedCheckItemList	No	Array of skippedCheckItemList objects	<p>Details: Skipped check items</p> <p>Constraints: None</p> <p>Options: N/A</p>

Table 4-932 skippedCheckItemList

Parameter	Mandatory	Type	Description
name	No	String	<p>Details: Name of the skipped checked item</p> <p>Constraints: None</p> <p>Options: N/A</p>
resourceSelector	No	resourceSelector object	<p>Details: Resource tag selector</p> <p>Constraints: This parameter is available only for node check, but not for cluster check or add-on check.</p> <p>Options: N/A</p>

Table 4-933 resourceSelector

Parameter	Mandatory	Type	Description
key	Yes	String	<p>Details: Tag key</p> <p>Constraints: None</p> <p>Options: <ul style="list-style-type: none"> • node.uid: node UID </p>
values	No	Array of strings	<p>Details: Tag value list</p> <p>Constraints: None</p> <p>Options: N/A</p>

Parameter	Mandatory	Type	Description
operator	Yes	String	Details: Logical operators of labels Constraints: None Options: <ul style="list-style-type: none"> In

Response Parameters

Status code: 200

Table 4-934 Response body parameters

Parameter	Type	Description
apiVersion	String	API version
kind	String	Resource type
metadata	PrecheckCluserResponseMetadata object	Pre-upgrade check metadata
spec	PrecheckCluserResponseSpec object	spec is an element type of the collection class. The main body of the configuration that needs to be checked before an upgrade is provided in spec . CCE checks the configuration based on the spec description.
status	PrecheckStatus object	Pre-upgrade check status of a cluster

Table 4-935 PrecheckCluserResponseMetadata

Parameter	Type	Description
uid	String	Check the task ID.

Table 4-936 PrecheckCluserResponseSpec

Parameter	Type	Description
clusterID	String	Cluster ID

Parameter	Type	Description
clusterVersion	String	Current cluster version
targetVersion	String	Target version
skippedCheckItem List	Array of skippedCheckItemResponse objects	Skipped check items

Table 4-937 skippedCheckItemResponse

Parameter	Type	Description
name	String	Name of the item that is skipped to be checked
resourceSelector	resourceSelectorResponse object	Resource tag selector. This parameter is available only for node check, but not for cluster check or add-on check.

Table 4-938 resourceSelectorResponse

Parameter	Type	Description
key	String	Tag key
values	Array of strings	Tag value list
operator	String	Tag value

Table 4-939 PrecheckStatus

Parameter	Type	Description
phase	String	Status. Options: <ul style="list-style-type: none"> • Init: initializing • Running • Success • Failed • Error
expireTimeStamp	String	Check result expiration time
message	String	Information, which typically indicates the log for execution errors

Parameter	Type	Description
clusterCheckStatus	clusterCheckStatus object	Status of a cluster restrictions check
addonCheckStatus	addonCheckStatus object	Status of an add-on check
nodeCheckStatus	nodeCheckStatus object	Node check status

Table 4-940 clusterCheckStatus

Parameter	Type	Description
phase	String	Status. Options: <ul style="list-style-type: none"> • Init: initializing • Running • Success • Failed
itemsStatus	Array of PreCheckItemStatus objects	Compliance set by check item

Table 4-941 addonCheckStatus

Parameter	Type	Description
phase	String	Status. Options: <ul style="list-style-type: none"> • Init: initializing • Running • Success • Failed
itemsStatus	Array of PreCheckItemStatus objects	Compliance set by check item

Table 4-942 nodeCheckStatus

Parameter	Type	Description
phase	String	Status. Options: <ul style="list-style-type: none"> • Init: initializing • Running • Success • Failed
nodeStageStatus	Array of NodeStageStatus objects	Node check status

Table 4-943 NodeStageStatus

Parameter	Type	Description
nodeInfo	NodeInfo object	Node information
itemsStatus	Array of PreCheckItemStatus objects	Compliance set by check item

Table 4-944 NodeInfo

Parameter	Type	Description
uid	String	Node UID
name	String	Node name
status	String	Status
nodeType	String	Node type

Table 4-945 PreCheckItemStatus

Parameter	Type	Description
name	String	Check item
kind	String	Check item type. Options: <ul style="list-style-type: none"> • Exception: exceptions that need to be resolved by you • Risk: risks that can be skipped after you confirm them

Parameter	Type	Description
group	String	Check item group. Options: <ul style="list-style-type: none"> • LimitCheck: cluster limit check • MasterCheck: master node check • NodeCheck: worker node check • AddonCheck: add-on check • ExecuteException: process error check
level	String	Check item severity. Options: <ul style="list-style-type: none"> • Info: information • Warning • Fatal: critical
phase	String	Status. Options: <ul style="list-style-type: none"> • Init: initializing • Running • Success • Failed
message	String	Information
riskSource	riskSource object	Risk item
errorCodes	Array of strings	Error code set

Table 4-946 riskSource

Parameter	Type	Description
configurationRisks	Array of configurationRisks objects	Configuration risk
deprecatedAPIRisks	Array of deprecatedAPIRisks objects	Deprecated API risk
nodeRisks	Array of nodeRisks objects	Node risk
addonRisks	Array of addonRisks objects	Add-on risk

Table 4-947 configurationRisks

Parameter	Type	Description
package	String	Component
sourceFile	String	How to Obtain
nodeMsg	String	Node information
field	String	Parameter Value
operation	String	Change an operation type.
originalValue	String	Original Value
value	String	Current Value

Table 4-948 deprecatedAPIRisks

Parameter	Type	Description
url	String	Request path, for example, /apis/policy/v1beta1/podsecuritypolicies
userAgent	String	Client information

Table 4-949 nodeRisks

Parameter	Type	Description
NodeID	String	Worker node ID

Table 4-950 addonRisks

Parameter	Type	Description
addonTemplateName	String	Name of the add-on template
alias	String	Add-on alias

Example Requests

Request body for a cluster pre-upgrade check

```
POST /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/precheck
```

```
{
  "kind": "PreCheckTask",
  "apiVersion": "v3",
```

```
"spec" : {
  "clusterID" : "8978deaa-1743-11ee-8e46-0255ac10004c",
  "clusterVersion" : "v1.15.11-r1",
  "targetVersion" : "v1.19.16-r80",
  "skippedCheckItemList" : [ ]
}
}
```

Example Responses

Status code: 200

Cluster pre-upgrade check succeeded.

```
{
  "kind" : "PreCheckTask",
  "apiVersion" : "v3",
  "metadata" : {
    "uid" : "9991b45e-a2be-4b49-aca4-50a25fa6f81e"
  },
  "spec" : {
    "clusterID" : "8978deaa-1743-11ee-8e46-0255ac10004c",
    "clusterVersion" : "v1.15.11-r1",
    "targetVersion" : "v1.19.16-r80"
  },
  "status" : {
    "phase" : "Init",
    "clusterCheckStatus" : {
      "phase" : "Init"
    },
    "addonCheckStatus" : {
      "phase" : "Init"
    },
    "nodeCheckStatus" : {
      "phase" : "Init"
    }
  }
}
```

Status Codes

Status Code	Description
200	Cluster pre-upgrade check succeeded.

Error Codes

See [Error Codes](#).

4.7.8 Obtaining Details About a Pre-upgrade Check Task of a Cluster

Function

Obtain details about a pre-upgrade check task of a cluster. The task ID is obtained from the **uid** field in the response body after the cluster check API is called.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/precheck/tasks/{task_id}

Table 4-951 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
task_id	Yes	String	<p>Details: Upgrade task ID, obtained from the uid field in the response body after the cluster upgrade API is called.</p> <p>Constraints: None</p> <p>Options: Upgrade task IDs</p> <p>Default value: N/A</p>

Request Parameters

None

Response Parameters

Status code: 200

Table 4-952 Response body parameters

Parameter	Type	Description
apiVersion	String	API version, which defaults to v3
kind	String	Resource type, which defaults to PreCheckTask
metadata	PrecheckTaskMetadata object	Metadata of a pre-upgrade check task
spec	PrecheckClusterResponseSpec object	Information of a pre-upgrade check task
status	PrecheckStatus object	Status of a pre-upgrade check task

Table 4-953 PrecheckTaskMetadata

Parameter	Type	Description
uid	String	Task ID

Parameter	Type	Description
creationTimestamp	String	Time when the task was created
updateTimestamp	String	Time when the task was updated

Table 4-954 PrecheckClusterResponseSpec

Parameter	Type	Description
clusterID	String	Cluster ID
clusterVersion	String	Current cluster version
targetVersion	String	Target version
skippedCheckItemList	Array of skippedCheckItemListResponse objects	Skipped check items

Table 4-955 skippedCheckItemListResponse

Parameter	Type	Description
name	String	Name of the item that is skipped to be checked
resourceSelector	resourceSelectorResponse object	Resource tag selector. This parameter is available only for node check, but not for cluster check or add-on check.

Table 4-956 resourceSelectorResponse

Parameter	Type	Description
key	String	Tag key
values	Array of strings	Tag value list
operator	String	Tag value

Table 4-957 PrecheckStatus

Parameter	Type	Description
phase	String	Status. Options: <ul style="list-style-type: none"> • Init: initializing • Running • Success • Failed • Error
expireTimeStamp	String	Check result expiration time
message	String	Information, which typically indicates the log for execution errors
clusterCheckStatus	clusterCheckStatus object	Status of a cluster restrictions check
addonCheckStatus	addonCheckStatus object	Status of an add-on check
nodeCheckStatus	nodeCheckStatus object	Node check status

Table 4-958 clusterCheckStatus

Parameter	Type	Description
phase	String	Status. Options: <ul style="list-style-type: none"> • Init: initializing • Running • Success • Failed
itemsStatus	Array of PreCheckItemStatus objects	Compliance set by check item

Table 4-959 addonCheckStatus

Parameter	Type	Description
phase	String	Status. Options: <ul style="list-style-type: none"> • Init: initializing • Running • Success • Failed

Parameter	Type	Description
itemsStatus	Array of PreCheckItemStatus objects	Compliance set by check item

Table 4-960 nodeCheckStatus

Parameter	Type	Description
phase	String	Status. Options: <ul style="list-style-type: none"> • Init: initializing • Running • Success • Failed
nodeStageStatus	Array of NodeStageStatus objects	Node check status

Table 4-961 NodeStageStatus

Parameter	Type	Description
nodeInfo	NodeInfo object	Node information
itemsStatus	Array of PreCheckItemStatus objects	Compliance set by check item

Table 4-962 NodeInfo

Parameter	Type	Description
uid	String	Node UID
name	String	Node name
status	String	Status
nodeType	String	Node type

Table 4-963 PreCheckItemStatus

Parameter	Type	Description
name	String	Check item
kind	String	Check item type. Options: <ul style="list-style-type: none"> • Exception: exceptions that need to be resolved by you • Risk: risks that can be skipped after you confirm them
group	String	Check item group. Options: <ul style="list-style-type: none"> • LimitCheck: cluster limit check • MasterCheck: master node check • NodeCheck: worker node check • AddonCheck: add-on check • ExecuteException: process error check
level	String	Check item severity. Options: <ul style="list-style-type: none"> • Info: information • Warning • Fatal: critical
phase	String	Status. Options: <ul style="list-style-type: none"> • Init: initializing • Running • Success • Failed
message	String	Information
riskSource	riskSource object	Risk item
errorCodes	Array of strings	Error code set

Table 4-964 riskSource

Parameter	Type	Description
configurationRisks	Array of configurationRisks objects	Configuration risk
deprecatedAPIRisks	Array of deprecatedAPIRisks objects	Deprecated API risk

Parameter	Type	Description
nodeRisks	Array of nodeRisks objects	Node risk
addonRisks	Array of addonRisks objects	Add-on risk

Table 4-965 configurationRisks

Parameter	Type	Description
package	String	Component
sourceFile	String	How to Obtain
nodeMsg	String	Node information
field	String	Parameter Value
operation	String	Change an operation type.
originalValue	String	Original Value
value	String	Current Value

Table 4-966 deprecatedAPIRisks

Parameter	Type	Description
url	String	Request path, for example, /apis/policy/v1beta1/podsecuritypolicies
userAgent	String	Client information

Table 4-967 nodeRisks

Parameter	Type	Description
NodeID	String	Worker node ID

Table 4-968 addonRisks

Parameter	Type	Description
addonTemplateName	String	Name of the add-on template

Parameter	Type	Description
alias	String	Add-on alias

Example Requests

None

Example Responses

Status code: 200

The details about a pre-upgrade check task of a cluster are obtained.

```
{
  "kind": "PreCheckTask",
  "apiVersion": "v3",
  "metadata": {
    "uid": "f61e008c-1600-41c0-9bde-121de5a30660",
    "creationTimestamp": "2023-11-25 07:20:04.592972 +0000 UTC",
    "updateTimestamp": "2023-11-25 07:21:05.518966 +0000 UTC"
  },
  "spec": {
    "clusterVersion": "v1.19.16-r4",
    "targetVersion": "v1.23.5-r0"
  },
  "status": {
    "phase": "Success",
    "expireTimeStamp": "2023-11-25 08:21:05.518966 +0000 UTC",
    "clusterCheckStatus": {
      "phase": "Success",
      "itemsStatus": [ {
        "name": "DeprecatedApiCheck",
        "kind": "Risk",
        "group": "LimitCheck",
        "level": "Info",
        "phase": "Success",
        "message": "check item succeed",
        "riskSource": { }
      }, {
        "name": "NodeContainerdPodRestartRisk",
        "kind": "Risk",
        "group": "LimitCheck",
        "level": "Warning",
        "phase": "Success",
        "message": "check item succeed",
        "riskSource": { }
      }, {
        "name": "ResiduePackageVersion",
        "kind": "Exception",
        "group": "LimitCheck",
        "level": "Fatal",
        "phase": "Success",
        "message": "check item succeed",
        "riskSource": { }
      }
    ]
  },
  "addonCheckStatus": {
    "phase": "Success",
    "itemsStatus": [ {
      "name": "AddonLimit",
      "kind": "Exception",
      "group": "AddonCheck",
      "level": "Warning",

```



```

    "phase": "Success",
    "message": "check item succeed",
    "riskSource": { }
  }, {
    "name": "CoreDNSConfLimit",
    "kind": "Exception",
    "group": "AddonCheck",
    "level": "Fatal",
    "phase": "Success",
    "message": "check item succeed",
    "riskSource": { }
  } ]
},
"nodeCheckStatus": {
  "phase": "Success"
}
}
}

```

Status Codes

Status Code	Description
200	The details about a pre-upgrade check task of a cluster are obtained.

Error Codes

See [Error Codes](#).

4.7.9 Obtaining a List of Pre-upgrade Check Tasks of a Cluster

Function

Obtain a list of pre-upgrade check tasks of a cluster.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/precheck/tasks

Table 4-969 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

None

Response Parameters

Status code: 200

Table 4-970 Response body parameters

Parameter	Type	Description
apiVersion	String	API version, which defaults to v3
kind	String	Type
metadata	Metadata object	Basic information about the object. Metadata is a collection of attributes.

Parameter	Type	Description
items	Array of PrecheckClusterTask objects	Cluster check tasks

Table 4-971 Metadata

Parameter	Type	Description
uid	String	Unique ID.
name	String	Resource name
labels	Map<String,String >	Resource labels in key-value pairs. This is a reserved field and does not take effect.
annotations	Map<String,String >	Resource annotations in the format of key-value pairs.
updateTimestamp	String	Update time.
creationTimestamp	String	Creation time.

Table 4-972 PrecheckClusterTask

Parameter	Type	Description
apiVersion	String	API version, which defaults to v3
kind	String	Resource type, which defaults to PreCheckTask
metadata	PrecheckTaskMetadata object	Metadata of a pre-upgrade check task
spec	PrecheckClusterResponseSpec object	Information of a pre-upgrade check task
status	PrecheckStatus object	Status of a pre-upgrade check task

Table 4-973 PrecheckTaskMetadata

Parameter	Type	Description
uid	String	Task ID

Parameter	Type	Description
creationTimestamp	String	Time when the task was created
updateTimestamp	String	Time when the task was updated

Table 4-974 PrecheckClusterResponseSpec

Parameter	Type	Description
clusterID	String	Cluster ID
clusterVersion	String	Current cluster version
targetVersion	String	Target version
skippedCheckItemList	Array of skippedCheckItemListResponse objects	Skipped check items

Table 4-975 skippedCheckItemListResponse

Parameter	Type	Description
name	String	Name of the item that is skipped to be checked
resourceSelector	resourceSelectorResponse object	Resource tag selector. This parameter is available only for node check, but not for cluster check or add-on check.

Table 4-976 resourceSelectorResponse

Parameter	Type	Description
key	String	Tag key
values	Array of strings	Tag value list
operator	String	Tag value

Table 4-977 PrecheckStatus

Parameter	Type	Description
phase	String	Status. Options: <ul style="list-style-type: none"> • Init: initializing • Running • Success • Failed • Error
expireTimeStamp	String	Check result expiration time
message	String	Information, which typically indicates the log for execution errors
clusterCheckStatus	clusterCheckStatus object	Status of a cluster restrictions check
addonCheckStatus	addonCheckStatus object	Status of an add-on check
nodeCheckStatus	nodeCheckStatus object	Node check status

Table 4-978 clusterCheckStatus

Parameter	Type	Description
phase	String	Status. Options: <ul style="list-style-type: none"> • Init: initializing • Running • Success • Failed
itemsStatus	Array of PreCheckItemStatus objects	Compliance set by check item

Table 4-979 addonCheckStatus

Parameter	Type	Description
phase	String	Status. Options: <ul style="list-style-type: none"> • Init: initializing • Running • Success • Failed

Parameter	Type	Description
itemsStatus	Array of PreCheckItemStatus objects	Compliance set by check item

Table 4-980 nodeCheckStatus

Parameter	Type	Description
phase	String	Status. Options: <ul style="list-style-type: none"> • Init: initializing • Running • Success • Failed
nodeStageStatus	Array of NodeStageStatus objects	Node check status

Table 4-981 NodeStageStatus

Parameter	Type	Description
nodeInfo	NodeInfo object	Node information
itemsStatus	Array of PreCheckItemStatus objects	Compliance set by check item

Table 4-982 NodeInfo

Parameter	Type	Description
uid	String	Node UID
name	String	Node name
status	String	Status
nodeType	String	Node type

Table 4-983 PreCheckItemStatus

Parameter	Type	Description
name	String	Check item
kind	String	Check item type. Options: <ul style="list-style-type: none"> ● Exception: exceptions that need to be resolved by you ● Risk: risks that can be skipped after you confirm them
group	String	Check item group. Options: <ul style="list-style-type: none"> ● LimitCheck: cluster limit check ● MasterCheck: master node check ● NodeCheck: worker node check ● AddonCheck: add-on check ● ExecuteException: process error check
level	String	Check item severity. Options: <ul style="list-style-type: none"> ● Info: information ● Warning ● Fatal: critical
phase	String	Status. Options: <ul style="list-style-type: none"> ● Init: initializing ● Running ● Success ● Failed
message	String	Information
riskSource	riskSource object	Risk item
errorCodes	Array of strings	Error code set

Table 4-984 riskSource

Parameter	Type	Description
configurationRisks	Array of configurationRisks objects	Configuration risk
deprecatedAPIRisks	Array of deprecatedAPIRisks objects	Deprecated API risk

Parameter	Type	Description
nodeRisks	Array of nodeRisks objects	Node risk
addonRisks	Array of addonRisks objects	Add-on risk

Table 4-985 configurationRisks

Parameter	Type	Description
package	String	Component
sourceFile	String	How to Obtain
nodeMsg	String	Node information
field	String	Parameter Value
operation	String	Change an operation type.
originalValue	String	Original Value
value	String	Current Value

Table 4-986 deprecatedAPIRisks

Parameter	Type	Description
url	String	Request path, for example, /apis/policy/v1beta1/podsecuritypolicies
userAgent	String	Client information

Table 4-987 nodeRisks

Parameter	Type	Description
NodeID	String	Worker node ID

Table 4-988 addonRisks

Parameter	Type	Description
addonTemplateName	String	Name of the add-on template

Parameter	Type	Description
alias	String	Add-on alias

Example Requests

None

Example Responses

Status code: 200

The list of pre-upgrade check tasks of a cluster is obtained.

```
{
  "kind": "List",
  "apiVersion": "v3",
  "metadata": { },
  "items": [ {
    "kind": "PreCheckTask",
    "apiVersion": "v3",
    "metadata": {
      "uid": "10b52d23-080a-4b7d-bf83-64b4687ca786",
      "creationTimestamp": "2023-12-16 07:07:11.099111 +0000 UTC",
      "updateTimestamp": "2023-12-16 07:09:10.425622 +0000 UTC"
    },
    "spec": {
      "clusterVersion": "v1.23.5-r0",
      "targetVersion": "v1.23.11-r0"
    },
    "status": {
      "phase": "Failed",
      "clusterCheckStatus": {
        "phase": "Success",
        "itemsStatus": [ {
          "name": "DeprecatedApiCheck",
          "kind": "Risk",
          "group": "LimitCheck",
          "level": "Info",
          "phase": "Success",
          "message": "check item succeed",
          "riskSource": { }
        }, {
          "name": "BlackLimit",
          "kind": "Exception",
          "group": "LimitCheck",
          "level": "Fatal",
          "phase": "Success",
          "message": "check item succeed",
          "riskSource": { }
        }, {
          "name": "MasterSSH",
          "kind": "Exception",
          "group": "LimitCheck",
          "level": "Fatal",
          "phase": "Success",
          "message": "check item succeed",
          "riskSource": { }
        }, {
          "name": "ReleaseLimit",
          "kind": "Exception",
          "group": "LimitCheck",
          "level": "Warning",
          "phase": "Success",

```


Error Codes

See [Error Codes](#).

4.7.10 Post-upgrade Check

Function

Post-upgrade check, which is used by the customer to check the cluster status after an upgrade and provide feedback after services are restored. Use this API with the console.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/postcheck

Table 4-989 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-990 Request body parameters

Parameter	Mandatory	Type	Description
apiVersion	Yes	String	Details: API version Constraints: The value is fixed. Options: <ul style="list-style-type: none"> v3
kind	Yes	String	Details: API type Constraints: The value is fixed. Options: <ul style="list-style-type: none"> PostCheckTask
spec	Yes	PostcheckResponseSpec object	spec indicates the configuration confirmed after an upgrade.

Table 4-991 PostcheckResponseSpec

Parameter	Mandatory	Type	Description
clusterID	No	String	Cluster ID
clusterVersion	No	String	Source cluster version
targetVersion	No	String	Current cluster version

Response Parameters

Status code: 200

Table 4-992 Response body parameters

Parameter	Type	Description
apiVersion	String	API version
kind	String	Resource type

Parameter	Type	Description
metadata	PostcheckCluserResponseMetadata object	Post-upgrade check metadata
spec	PostcheckSpec object	Configuration confirmed after a cluster upgrade
status	status object	Status confirmed after a cluster upgrade

Table 4-993 PostcheckCluserResponseMetadata

Parameter	Type	Description
uid	String	Task ID

Table 4-994 PostcheckSpec

Parameter	Type	Description
clusterID	String	Details: Cluster ID Constraints: None Options: N/A
clusterVersion	String	Details: Source cluster version Constraints: None Options: N/A
targetVersion	String	Details: Current cluster version Constraints: None Options: Supported cluster versions

Table 4-995 status

Parameter	Type	Description
phase	String	Status. Options: <ul style="list-style-type: none"> • Success • Failed • Error

Example Requests

Post-upgrade check

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/postcheck

```
{
  "kind": "PostCheckTask",
  "apiVersion": "v3",
  "spec": {
    "clusterID": "8978deaa-1743-11ee-8e46-0255ac10004c",
    "clusterVersion": "v1.15.11-r1",
    "targetVersion": "v1.19.16-r80"
  }
}
```

Example Responses

Status code: 200

Cluster post-upgrade check succeeded.

```
{
  "kind": "PostCheckTask",
  "apiVersion": "v3",
  "metadata": {
    "uid": "e99fedf8-348c-4084-b0fd-81bf187df4e0"
  },
  "spec": {
    "clusterID": "8978deaa-1743-11ee-8e46-0255ac10004c",
    "clusterVersion": "v1.15.11-r1",
    "targetVersion": "v1.19.16-r80"
  },
  "status": {
    "phase": "Success"
  }
}
```

Status Codes

Status Code	Description
200	Cluster post-upgrade check succeeded.

Error Codes

See [Error Codes](#).

4.7.11 Cluster Backup

Function

Cluster backup

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3.1/projects/{project_id}/clusters/{cluster_id}/operation/snapshot

Table 4-996 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

None

Response Parameters

Status code: 200

Table 4-997 Response body parameters

Parameter	Type	Description
uid	String	Task ID
metadata	SnapshotClusterResponseMetadata object	Backup metadata

Table 4-998 SnapshotClusterResponseMetadata

Parameter	Type	Description
apiVersion	String	API version, which defaults to v3.1
kind	String	Task type

Example Requests

Example of a cluster upgrade backup request

```
POST /api/v3.1/projects/{project_id}/clusters/{cluster_id}/operation/snapshot
```

Example Responses

Status code: 200

The cluster backup task is created.

```
{
  "uid": "15376f1b-daa6-4e2d-96a6-e9d5d7caeea2",
  "metadata": {
    "kind": "Snapshot",
    "apiVersion": "v3.1"
  }
}
```

Status Codes

Status Code	Description
200	The cluster backup task is created.

Error Codes

See [Error Codes](#).

4.7.12 Obtaining a List of Cluster Backup Task Details

Function

Obtain a list of cluster backup task details.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3.1/projects/{project_id}/clusters/{cluster_id}/operation/snapshot/tasks

Table 4-999 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

None

Response Parameters

Status code: 200

Table 4-1000 Response body parameters

Parameter	Type	Description
apiVersion	String	API version, which defaults to v3.1
kind	String	Task type
metadata	SnapshotTaskMetadata object	Backup metadata
items	Array of SnapshotTask objects	Backup tasks
status	SnapshotTaskStatus object	Backup task status

Table 4-1001 SnapshotTask

Parameter	Type	Description
kind	String	Task type
apiVersion	String	API version
metadata	SnapshotTaskMetadata object	Backup metadata
spec	SnapshotSpec object	Backing Up Task Configurations (To Be Deprecated)
status	SnapshotStatus object	Backup task status

Table 4-1002 SnapshotTaskMetadata

Parameter	Type	Description
uid	String	Task ID
creationTimestamp	String	Time when the task was created
updateTimestamp	String	Time when the task was updated

Table 4-1003 SnapshotSpec

Parameter	Type	Description
items	Array of SnapshotSpecItems objects	Backup task details

Table 4-1004 SnapshotSpecItems

Parameter	Type	Description
id	String	Subtask ID
type	String	Subtask type
status	String	Status
creationTimestamp	String	Time when the task was created
updateTimestamp	String	Time when the task was updated
message	String	Information

Table 4-1005 SnapshotStatus

Parameter	Type	Description
phase	String	Task status
progress	String	Task progress
completionTime	String	Completion time

Table 4-1006 SnapshotTaskStatus

Parameter	Type	Description
latestBackupTime	String	Time of the latest backup

Example Requests

None

Example Responses

Status code: 200

The list of cluster backup task details is obtained.

```
{
  "kind": "List",
  "apiVersion": "v3.1",
  "metadata": { },
  "items": [ {
    "kind": "SnapshotTask",
    "apiVersion": "v3.1",
    "metadata": {
      "uid": "87d326f9-46b0-486e-a4ba-1f82ec9315ed",
      "creationTimestamp": "2023-11-25 17:03:46.739012 +0800 CST",
      "updateTimestamp": "2023-11-25 17:03:46.739027 +0800 CST"
    },
    "spec": { },
    "status": {
      "phase": "Running",
      "progress": "67",
      "completionTime": "2023-11-25 17:03:46.739027 +0800 CST"
    }
  } ],
  "status": {
    "latestBackupTime": "2023-11-25 17:03:47.980844 +0800 CST"
  }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ListClusterMasterSnapshotTasksSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        ListClusterMasterSnapshotTasksRequest request = new ListClusterMasterSnapshotTasksRequest();
        request.withClusterId("{cluster_id}");
        try {
            ListClusterMasterSnapshotTasksResponse response = client.listClusterMasterSnapshotTasks(request);
            System.out.println(response.toString());
        }
    }
}
```

```
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ListClusterMasterSnapshotTasksRequest()
        request.cluster_id = "{cluster_id}"
        response = client.list_cluster_master_snapshot_tasks(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
```

```

example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
    WithAk(ak).
    WithSk(sk).
    WithProjectId(projectId).
    Build()

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.ListClusterMasterSnapshotTasksRequest{}
request.ClusterId = "{cluster_id}"
response, err := client.ListClusterMasterSnapshotTasks(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The list of cluster backup task details is obtained.

Error Codes

See [Error Codes](#).

4.7.13 Obtaining the Cluster Upgrade Information

Function

Obtain the cluster upgrade information.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3/projects/{project_id}/clusters/{cluster_id}/upgradeinfo

Table 4-1007 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

None

Response Parameters

Status code: 200

Table 4-1008 Response body parameters

Parameter	Type	Description
kind	String	Type
apiVersion	String	API version
metadata	Metadata object	Basic information about the object. Metadata is a collection of attributes.

Parameter	Type	Description
spec	UpgradeInfoSpec object	Upgrade settings
status	UpgradeInfoStatus object	Upgrade status

Table 4-1009 Metadata

Parameter	Type	Description
uid	String	Unique ID.
name	String	Resource name
labels	Map<String,String>	Resource labels in key-value pairs. This is a reserved field and does not take effect.
annotations	Map<String,String>	Resource annotations in the format of key-value pairs.
updateTimestamp	String	Update time.
creationTimestamp	String	Creation time.

Table 4-1010 UpgradeInfoSpec

Parameter	Type	Description
lastUpgradeInfo	UpgradeInfoStatus object	Last cluster upgrade
versionInfo	UpgradeVersionInfo object	Version
upgradeFeatureGates	UpgradeFeatureGates object	Cluster upgrade feature gates

Table 4-1011 UpgradeVersionInfo

Parameter	Type	Description
release	String	Official version, for example, v1.19.10
patch	String	Patch version, for example, r0
suggestPatch	String	Recommended target patch version, for example, r0

Parameter	Type	Description
targetVersions	Array of strings	Target versions for the upgrade

Table 4-1012 UpgradeFeatureGates

Parameter	Type	Description
supportUpgradePageV4	Boolean	Whether the cluster upgrade console supports v4. This field is used by the CCE console.

Table 4-1013 UpgradeInfoStatus

Parameter	Type	Description
phase	String	Status of the upgrade task <ul style="list-style-type: none"> • Init: initializing • Running • Pause • Success • Failed
progress	String	Upgrade task progress
completionTime	String	End time of the upgrade task

Example Requests

None

Example Responses

Status code: 200

The cluster upgrade information is obtained.

```
{
  "kind": "UpgradeInfo",
  "apiVersion": "v3",
  "metadata": { },
  "spec": {
    "lastUpgradeInfo": {
      "phase": "Success",
      "completionTime": "2023-11-25 11:18:54.478926 +0800 CST"
    },
    "versionInfo": {
      "release": "v1.27.2",
      "patch": "r0",
      "suggestPatch": "r0",
      "targetVersions": [ "v1.27.3-r0" ]
    }
  }
}
```

```
},  
"upgradeFeatureGates" : {  
  "supportUpgradePageV4" : true  
}  
},  
"status" : {  
  "phase" : "Success",  
  "completionTime" : "2023-11-25 11:18:54.478926 +0800 CST"  
}  
}
```

Status Codes

Status Code	Description
200	The cluster upgrade information is obtained.

Error Codes

See [Error Codes](#).

4.7.14 Obtaining a Cluster Upgrade Path

Function

Obtain the cluster upgrade path.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3/clusterupgradepaths

Request Parameters

Table 4-1014 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-1015 Response body parameters

Parameter	Type	Description
apiVersion	String	API version
kind	String	Resource type
metadata	Metadata object	Basic information about the object. Metadata is a collection of attributes.
upgradePaths	Array of UpgradePath objects	Upgrade paths

Table 4-1016 Metadata

Parameter	Type	Description
uid	String	Unique ID.
name	String	Resource name
labels	Map<String,String >	Resource labels in key-value pairs. This is a reserved field and does not take effect.
annotations	Map<String,String >	Resource annotations in the format of key-value pairs.
updateTimestamp	String	Update time.
creationTimestamp	String	Creation time.

Table 4-1017 UpgradePath

Parameter	Type	Description
version	String	Cluster version. For example, v1.19.16-r20 for clusters of v1.19 or earlier, and v1.21 for clusters of v1.21 or later. For details, see CCE Cluster Versions.

Parameter	Type	Description
platformVersion	String	CCE cluster platform version, which is an internal version under the cluster version (version). Platform versions are used to trace iterations in a major cluster version. They are unique within a major cluster version and recounted when the major cluster version changes. The format of platformVersion is cce.X.Y.- X : an internal feature version. When features or OSs in a cluster version are modified or patches are released in the cluster, the value of this parameter increases monotonically from 1.- Y : a patch version of an internal feature version. This parameter is only used for updating a software package for a released feature version. The value of this parameter increases monotonically from 0.
targetVersions	Array of strings	Target versions that can be upgraded

Example Requests

None

Example Responses

Status code: 200

The cluster upgrade path is obtained.

```
{
  "kind": "ClusterUpgradePaths",
  "apiVersion": "v3",
  "metadata": { },
  "upgradePaths": [ {
    "version": "v1.25",
    "platformVersion": "cce.5.0",
    "targetVersions": [ "v1.25.6-r0", "v1.27.3-r0" ]
  }, {
    "version": "v1.25",
    "platformVersion": "cce.4.0",
    "targetVersions": [ "v1.25.6-r0", "v1.27.3-r0" ]
  }, {
    "version": "v1.23",
    "platformVersion": "cce.10.0",
    "targetVersions": [ "v1.23.11-r0", "v1.25.6-r0", "v1.27.3-r0" ]
  }, {
    "version": "v1.23",
    "platformVersion": "cce.9.0",
    "targetVersions": [ "v1.23.11-r0", "v1.25.6-r0", "v1.27.3-r0" ]
  } ]
}
```

Status Codes

Status Code	Description
200	The cluster upgrade path is obtained.

Error Codes

See [Error Codes](#).

4.7.15 Obtaining the Configuration of Cluster Upgrade Feature Gates

Function

Obtain the configuration of cluster upgrade feature gates.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3/clusterupgradefeaturegates

Request Parameters

Table 4-1018 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-1019 Response body parameters

Parameter	Type	Description
apiVersion	String	API version
kind	String	Resource type
metadata	Metadata object	Basic information about the object. Metadata is a collection of attributes.
upgradeFeatureGates	Map<String,String>	Feature gates information, which is in the format of a key-value pair. <ul style="list-style-type: none"> • Key: can be DisplayPreCheckDetail (displaying details about all cluster check items before an upgrade), EvsSnapshot (using EVS snapshots to back up clusters), LabelForSkippedNode (labeling the nodes skipped during a cluster upgrade), or UpgradeStrategy (specifying cluster upgrade policies) • Value: can be Support, Disable, or Default, which is determined using default CCE rules.

Table 4-1020 Metadata

Parameter	Type	Description
uid	String	Unique ID.
name	String	Resource name
labels	Map<String,String>	Resource labels in key-value pairs. This is a reserved field and does not take effect.
annotations	Map<String,String>	Resource annotations in the format of key-value pairs.
updateTimestamp	String	Update time.
creationTimestamp	String	Creation time.

Example Requests

None

Example Responses

Status code: 200

The cluster upgrade path is obtained.

```
{
  "kind": "ClusterUpgradeFeatureGates",
  "apiVersion": "v3",
  "metadata": { },
  "upgradeFeatureGates": {
    "DisplayPreCheckDetail": "Support",
    "EvsSnapshot": "Support",
    "LabelForSkippedNode": "Support",
    "UpgradeStrategy": "Support"
  }
}
```

Status Codes

Status Code	Description
200	The cluster upgrade path is obtained.

Error Codes

See [Error Codes](#).

4.7.16 Enabling the Cluster Upgrade Process Booting Task

Function

This API is used to create a cluster upgrade booting task. After the booting task is created by calling this API, start the check through the cluster pre-upgrade check.

The upgrade process task is used to control the execution process of the cluster upgrade task. The execution process is as follows: Pre-upgrade check -> Cluster upgrade -> Post-upgrade check.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/upgradeworkflows

Table 4-1021 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-1022 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-1023 Request body parameters

Parameter	Mandatory	Type	Description
kind	Yes	String	Details: API type Constraints: The value is fixed. Options: <ul style="list-style-type: none"> • WorkflowTask
apiVersion	Yes	String	Details: API version Constraints: The value is fixed. Options: <ul style="list-style-type: none"> • v3
spec	Yes	WorkflowSpec object	Details: Element type of the collection class. The main body of the cluster upgrade process is provided in spec . CCE creates or updates objects by defining or updating spec . Constraints: None

Table 4-1024 WorkflowSpec

Parameter	Mandatory	Type	Description
clusterID	Yes	String	Details: Cluster ID Constraints: None Options: N/A
clusterVersion	No	String	Details: Current cluster version Constraints: None Options: N/A

Parameter	Mandatory	Type	Description
targetVersion	Yes	String	Details: Target cluster version Constraints: None Options: N/A

Response Parameters

Status code: 201

Table 4-1025 Response body parameters

Parameter	Type	Description
kind	String	API type. The value is fixed at WorkflowTask and cannot be changed.
apiVersion	String	API version. The value is fixed at v3 and cannot be changed.
metadata	Metadata object	Upgrade process metadata
spec	WorkflowResponseSpec object	Element type of the collection class. The main body of the cluster upgrade process is provided in spec . CCE creates or updates objects by defining or updating spec .
status	WorkflowStatus object	Element type of the collection class, which is used to record the current status of the cluster upgrade process, including the execution status of each process in the cluster upgrade process.

Table 4-1026 Metadata

Parameter	Type	Description
uid	String	Unique ID.
name	String	Resource name
labels	Map<String,String >	Resource labels in key-value pairs. This is a reserved field and does not take effect.

Parameter	Type	Description
annotations	Map<String,String >	Resource annotations in the format of key-value pairs.
updateTimestamp	String	Update time.
creationTimestamp	String	Creation time.

Table 4-1027 WorkFlowResponseSpec

Parameter	Type	Description
clusterID	String	Cluster ID
clusterVersion	String	Current cluster version
targetVersion	String	Target cluster version

Table 4-1028 WorkFlowStatus

Parameter	Type	Description
phase	String	Execution status of the cluster upgrade process. Options: Init: No task is running in the upgrade process. Running: Some tasks in the upgrade process are being executed. Pending: A task in the upgrade process fails to be executed. Success: All tasks in the upgrade process have been executed. Cancel: The upgrade process has been canceled.
pointStatuses	Array of PointStatus objects	Execution status of each task in the upgrade process
lineStatuses	Array of LineStatus objects	Task execution path of the upgrade process

Table 4-1029 PointStatus

Parameter	Type	Description
taskType	String	Cluster upgrade task type. Options: Cluster : a cluster upgrade task PreCheck : a cluster pre-upgrade check task Rollback : a cluster rollback task Snapshot : a cluster upgrade snapshot task PostCheck : a cluster post-upgrade check task
taskID	String	Upgrade task ID
status	String	Cluster upgrade status. Options: Init : The task is in the initial state. Queuing : The task is in the execution queue. Running : The task is being executed. Success : The task has been executed. Failed : Executing the task failed.
startTimeStamp	String	Start time of the upgrade task
endTimeStamp	String	End time of the upgrade task
expireTimeStamp	String	Expiration time of the upgrade task (only for pre-upgrade check tasks)

Table 4-1030 LineStatus

Parameter	Type	Description
startPoint	Point object	Path startpoint
endPoint	Point object	Path endpoint
critical	String	Whether it is a key path. An upgrade can be canceled only after the key path is executed.

Table 4-1031 Point

Parameter	Type	Description
taskType	String	Cluster upgrade task type. Options: Cluster: a cluster upgrade task PreCheck: a cluster pre-upgrade check task Rollback: a cluster rollback task Snapshot: a cluster upgrade snapshot task PostCheck: a cluster post-upgrade check task

Example Requests

Enable the process of upgrading a cluster to v1.23.

```
POST /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/upgradeworkflows
{
  "kind": "WorkFlowTask",
  "apiVersion": "v3",
  "spec": {
    "targetVersion": "v1.23",
    "clusterID": "b4b9e60f-8aa2-11ee-af09-0255ac10004f"
  }
}
```

Example Responses

Status code: 201

The upgrade process is created in the specified cluster.

```
{
  "kind": "WorkFlowTask",
  "apiVersion": "v3",
  "metadata": {
    "uid": "5ddfddfe-87db-11ec-b5e5-0255ac111914"
  },
  "spec": {
    "clusterID": "b4b9e60f-8aa2-11ee-af09-0255ac10004f",
    "clusterVersion": "v1.17.17-r0",
    "targetVersion": "v1.19.16-r80"
  },
  "status": {
    "pointStatuses": [ {
      "taskType": "PreCheck"
    }, {
      "taskType": "Snapshot"
    }, {
      "taskType": "Cluster"
    }, {
      "taskType": "PostCheck"
    } ],
    "lineStatuses": [ {
      "startPoint": {
        "taskType": "PreCheck"
      }
    } ],
  },
}
```



```
"endPoint" : {  
  "taskType" : "Cluster"  
}  
}, {  
  "startPoint" : {  
    "taskType" : "Cluster"  
  },  
  "endPoint" : {  
    "taskType" : "PostCheck"  
  }  
}  
}]  
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

Enable the process of upgrading a cluster to v1.23.

```
package com.huaweicloud.sdk.test;  
  
import com.huaweicloud.sdk.core.auth.ICredential;  
import com.huaweicloud.sdk.core.auth.BasicCredentials;  
import com.huaweicloud.sdk.core.exception.ConnectionException;  
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;  
import com.huaweicloud.sdk.core.exception.ServiceResponseException;  
import com.huaweicloud.sdk.cce.v3.region.CceRegion;  
import com.huaweicloud.sdk.cce.v3.*;  
import com.huaweicloud.sdk.cce.v3.model.*;  
  
public class CreateUpgradeWorkFlowSolution {  
    public static void main(String[] args) {  
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great  
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or  
        // environment variables and decrypted during use to ensure security.  
        // In this example, AK and SK are stored in environment variables for authentication. Before running  
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment  
        String ak = System.getenv("CLOUD_SDK_AK");  
        String sk = System.getenv("CLOUD_SDK_SK");  
        String projectId = "{project_id}";  
  
        ICredential auth = new BasicCredentials()  
            .withProjectId(projectId)  
            .withAk(ak)  
            .withSk(sk);  
  
        CceClient client = CceClient.newBuilder()  
            .withCredential(auth)  
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))  
            .build();  
        CreateUpgradeWorkFlowRequest request = new CreateUpgradeWorkFlowRequest();  
        request.withClusterId("{cluster_id}");  
        CreateUpgradeWorkFlowRequestBody body = new CreateUpgradeWorkFlowRequestBody();  
        WorkFlowSpec specbody = new WorkFlowSpec();  
        specbody.withClusterID("b4b9e60f-8aa2-11ee-af09-0255ac10004f")  
            .withTargetVersion("v1.23");  
        body.withSpec(specbody);  
        body.withApiVersion("v3");  
        body.withKind("WorkFlowTask");  
        request.withBody(body);  
        try {  
            CreateUpgradeWorkFlowResponse response = client.createUpgradeWorkFlow(request);
```

```
        System.out.println(response.toString());
    } catch (ConnectionException e) {
        e.printStackTrace();
    } catch (RequestTimeoutException e) {
        e.printStackTrace();
    } catch (ServiceResponseException e) {
        e.printStackTrace();
        System.out.println(e.getHttpStatusCode());
        System.out.println(e.getRequestId());
        System.out.println(e.getErrorCode());
        System.out.println(e.getErrorMsg());
    }
}
}
```

Python

Enable the process of upgrading a cluster to v1.23.

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = CreateUpgradeWorkFlowRequest()
        request.cluster_id = "{cluster_id}"
        specbody = WorkFlowSpec(
            cluster_id="b4b9e60f-8aa2-11ee-af09-0255ac10004f",
            target_version="v1.23"
        )
        request.body = CreateUpgradeWorkFlowRequestBody(
            spec=specbody,
            api_version="v3",
            kind="WorkFlowTask"
        )
        response = client.create_upgrade_work_flow(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

Enable the process of upgrading a cluster to v1.23.

```

package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.CreateUpgradeWorkFlowRequest{}
    request.ClusterId = "{cluster_id}"
    clusterIDSpec := "b4b9e60f-8aa2-11ee-af09-0255ac10004f"
    specbody := &model.WorkFlowSpec{
        ClusterID: &clusterIDSpec,
        TargetVersion: "v1.23",
    }
    request.Body = &model.CreateUpgradeWorkFlowRequestBody{
        Spec: specbody,
        ApiVersion: "v3",
        Kind: "WorkFlowTask",
    }
    response, err := client.CreateUpgradeWorkFlow(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
201	The upgrade process is created in the specified cluster.

Error Codes

See [Error Codes](#).

4.7.17 Obtaining a List of Upgrade Workflows

Function

Obtain a list of historical cluster upgrade booting tasks.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/upgradeworkflows

Table 4-1032 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-1033 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-1034 Response body parameters

Parameter	Type	Description
kind	String	API type. The value is fixed at List and cannot be changed.
apiVersion	String	API version. The value is fixed at v3 and cannot be changed.
items	UpgradeWorkflow object	Upgrade workflow list

Table 4-1035 UpgradeWorkflow

Parameter	Type	Description
kind	String	API type. The value is fixed at WorkflowTask and cannot be changed.
apiVersion	String	API version. The value is fixed at v3 and cannot be changed.
metadata	Metadata object	Upgrade process metadata
spec	WorkflowResponseSpec object	Element type of the collection class. The main body of the cluster upgrade process is provided in spec . CCE creates or updates objects by defining or updating spec .
status	WorkflowStatus object	Element type of the collection class, which is used to record the current status of the cluster upgrade process, including the execution status of each process in the cluster upgrade process.

Table 4-1036 Metadata

Parameter	Type	Description
uid	String	Unique ID.
name	String	Resource name
labels	Map<String,String>	Resource labels in key-value pairs. This is a reserved field and does not take effect.
annotations	Map<String,String>	Resource annotations in the format of key-value pairs.

Parameter	Type	Description
updateTimestamp	String	Update time.
creationTimestamp	String	Creation time.

Table 4-1037 WorkFlowResponseSpec

Parameter	Type	Description
clusterID	String	Cluster ID
clusterVersion	String	Current cluster version
targetVersion	String	Target cluster version

Table 4-1038 WorkFlowStatus

Parameter	Type	Description
phase	String	Execution status of the cluster upgrade process. Options: Init: No task is running in the upgrade process. Running: Some tasks in the upgrade process are being executed. Pending: A task in the upgrade process fails to be executed. Success: All tasks in the upgrade process have been executed. Cancel: The upgrade process has been canceled.
pointStatuses	Array of PointStatus objects	Execution status of each task in the upgrade process
lineStatuses	Array of LineStatus objects	Task execution path of the upgrade process

Table 4-1039 PointStatus

Parameter	Type	Description
taskType	String	Cluster upgrade task type. Options: Cluster : a cluster upgrade task PreCheck : a cluster pre-upgrade check task Rollback : a cluster rollback task Snapshot : a cluster upgrade snapshot task PostCheck : a cluster post-upgrade check task
taskID	String	Upgrade task ID
status	String	Cluster upgrade status. Options: Init : The task is in the initial state. Queuing : The task is in the execution queue. Running : The task is being executed. Success : The task has been executed. Failed : Executing the task failed.
startTimeStamp	String	Start time of the upgrade task
endTimeStamp	String	End time of the upgrade task
expireTimeStamp	String	Expiration time of the upgrade task (only for pre-upgrade check tasks)

Table 4-1040 LineStatus

Parameter	Type	Description
startPoint	Point object	Path startpoint
endPoint	Point object	Path endpoint
critical	String	Whether it is a key path. An upgrade can be canceled only after the key path is executed.

Table 4-1041 Point

Parameter	Type	Description
taskType	String	Cluster upgrade task type. Options: Cluster: a cluster upgrade task PreCheck: a cluster pre-upgrade check task Rollback: a cluster rollback task Snapshot: a cluster upgrade snapshot task PostCheck: a cluster post-upgrade check task

Example Requests

None

Example Responses

Status code: 200

The list of historical cluster upgrade booting tasks is obtained.

```
{
  "apiVersion": "v3",
  "kind": "List",
  "items": {
    "kind": "WorkflowTask",
    "apiVersion": "v3",
    "metadata": {
      "uid": "730f5577-38ef-448c-b4a7-c6878fbefdda",
      "creationTimestamp": "2023-11-24 08:39:15.894417 +0000 UTC",
      "updateTimestamp": "2023-11-25 02:57:25.718567 +0000 UTC"
    },
    "spec": {
      "clusterID": "b4b9e60f-8aa2-11ee-af09-0255ac10004f",
      "clusterVersion": "v1.17.17-r0",
      "targetVersion": "v1.19.16-r80"
    },
    "status": {
      "phase": "Cancel",
      "pointStatuses": [ {
        "taskType": "PreCheck"
      }, {
        "taskType": "Snapshot"
      }, {
        "taskType": "Cluster"
      }, {
        "taskType": "PostCheck"
      } ],
      "lineStatuses": [ {
        "startPoint": {
          "taskType": "PreCheck"
        },
        "endPoint": {
          "taskType": "Cluster"
        }
      }, {
        "startPoint": {
```

```
        "taskType" : "Cluster"
    },
    "endPoint" : {
        "taskType" : "PostCheck"
    }
}
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ListUpgradeWorkFlowsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        ListUpgradeWorkFlowsRequest request = new ListUpgradeWorkFlowsRequest();
        request.withClusterId("{cluster_id}");
        try {
            ListUpgradeWorkFlowsResponse response = client.listUpgradeWorkFlows(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ListUpgradeWorkFlowsRequest()
        request.cluster_id = "{cluster_id}"
        response = client.list_upgrade_work_flows(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
```

```
WithCredential(auth).  
Build()  
  
request := &model.ListUpgradeWorkFlowsRequest{}  
request.ClusterId = "{cluster_id}"  
response, err := client.ListUpgradeWorkFlows(request)  
if err == nil {  
    fmt.Printf("%+v\n", response)  
} else {  
    fmt.Println(err)  
}  
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The list of historical cluster upgrade booting tasks is obtained.

Error Codes

See [Error Codes](#).

4.7.18 Obtaining Details About a Specified Cluster Upgrade Task

Function

This API is used to obtain details about an upgrade booting task based on the task ID.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/upgradeworkflows/{upgrade_workflow_id}

Table 4-1042 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>
upgrade_workflow_id	Yes	String	<p>Booting process ID of a cluster upgrade task. For details about how to obtain the ID, see Obtaining API URI Parameters.</p>

Request Parameters

Table 4-1043 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-1044 Response body parameters

Parameter	Type	Description
kind	String	API type. The value is fixed at WorkflowTask and cannot be changed.
apiVersion	String	API version. The value is fixed at v3 and cannot be changed.
metadata	Metadata object	Upgrade process metadata
spec	WorkflowResponseSpec object	Element type of the collection class. The main body of the cluster upgrade process is provided in spec . CCE creates or updates objects by defining or updating spec .
status	WorkflowStatus object	Element type of the collection class, which is used to record the current status of the cluster upgrade process, including the execution status of each process in the cluster upgrade process.

Table 4-1045 Metadata

Parameter	Type	Description
uid	String	Unique ID.
name	String	Resource name
labels	Map<String,String>	Resource labels in key-value pairs. This is a reserved field and does not take effect.
annotations	Map<String,String>	Resource annotations in the format of key-value pairs.
updateTimestamp	String	Update time.
creationTimestamp	String	Creation time.

Table 4-1046 WorkflowResponseSpec

Parameter	Type	Description
clusterID	String	Cluster ID
clusterVersion	String	Current cluster version

Parameter	Type	Description
targetVersion	String	Target cluster version

Table 4-1047 WorkFlowStatus

Parameter	Type	Description
phase	String	Execution status of the cluster upgrade process. Options: Init: No task is running in the upgrade process. Running: Some tasks in the upgrade process are being executed. Pending: A task in the upgrade process fails to be executed. Success: All tasks in the upgrade process have been executed. Cancel: The upgrade process has been canceled.
pointStatuses	Array of PointStatus objects	Execution status of each task in the upgrade process
lineStatuses	Array of LineStatus objects	Task execution path of the upgrade process

Table 4-1048 PointStatus

Parameter	Type	Description
taskType	String	Cluster upgrade task type. Options: Cluster: a cluster upgrade task PreCheck: a cluster pre-upgrade check task Rollback: a cluster rollback task Snapshot: a cluster upgrade snapshot task PostCheck: a cluster post-upgrade check task
taskId	String	Upgrade task ID

Parameter	Type	Description
status	String	Cluster upgrade status. Options: Init: The task is in the initial state. Queuing: The task is in the execution queue. Running: The task is being executed. Success: The task has been executed. Failed: Executing the task failed.
startTimeStamp	String	Start time of the upgrade task
endTimeStamp	String	End time of the upgrade task
expireTimeStamp	String	Expiration time of the upgrade task (only for pre-upgrade check tasks)

Table 4-1049 LineStatus

Parameter	Type	Description
startPoint	Point object	Path startpoint
endPoint	Point object	Path endpoint
critical	String	Whether it is a key path. An upgrade can be canceled only after the key path is executed.

Table 4-1050 Point

Parameter	Type	Description
taskType	String	Cluster upgrade task type. Options: Cluster: a cluster upgrade task PreCheck: a cluster pre-upgrade check task Rollback: a cluster rollback task Snapshot: a cluster upgrade snapshot task PostCheck: a cluster post-upgrade check task

Example Requests

None

Example Responses

Status code: 200

Details about the cluster upgrade task are obtained.

```
{
  "kind": "WorkFlowTask",
  "apiVersion": "v3",
  "metadata": {
    "uid": "c271e39e-1a6e-4d3d-8fa8-2a36329c68d1",
    "creationTimestamp": "2023-11-25 06:32:34.923248 +0000 UTC",
    "updateTimestamp": "2023-11-25 07:49:30.281911 +0000 UTC"
  },
  "spec": {
    "clusterID": "b4b9e60f-8aa2-11ee-af09-0255ac10004f",
    "clusterVersion": "v1.17.17-r0",
    "targetVersion": "v1.19.16-r80"
  },
  "status": {
    "phase": "Pending",
    "pointStatuses": [ {
      "taskType": "PreCheck",
      "taskID": "f61e008c-1600-41c0-9bde-121de5a30660",
      "status": "Success",
      "startTimeStamp": "2023-11-25 07:20:04.592972 +0000 UTC",
      "endTimeStamp": "2023-11-25 07:21:05.518966 +0000 UTC",
      "expireTimeStamp": "2023-11-25 08:21:05.518966 +0000 UTC"
    }, {
      "taskType": "Snapshot"
    }, {
      "taskType": "Cluster",
      "taskID": "6d799ff6-3afe-4242-80b4-6f0a0fa746cb",
      "status": "Failed",
      "startTimeStamp": "2023-11-25 07:49:30.283459 +0000 UTC",
      "endTimeStamp": "2023-11-25 07:58:35.507243 +0000 UTC"
    }, {
      "taskType": "PostCheck"
    }
  ],
  "lineStatuses": [ {
    "startPoint": {
      "taskType": "PreCheck"
    },
    "endPoint": {
      "taskType": "Cluster"
    }
  }, {
    "startPoint": {
      "taskType": "Cluster"
    },
    "endPoint": {
      "taskType": "PostCheck"
    }
  }
]
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
```

```
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ShowUpgradeWorkFlowSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        ShowUpgradeWorkFlowRequest request = new ShowUpgradeWorkFlowRequest();
        request.withClusterId("{cluster_id}");
        request.withUpgradeWorkflowId("{upgrade_workflow_id}");
        try {
            ShowUpgradeWorkFlowResponse response = client.showUpgradeWorkFlow(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.getenv("CLOUD_SDK_AK")
    sk = os.getenv("CLOUD_SDK_SK")
    projectId = "{project_id}"
```

```
credentials = BasicCredentials(ak, sk, projectId)

client = CceClient.new_builder() \
    .with_credentials(credentials) \
    .with_region(CceRegion.value_of("<YOUR REGION>")) \
    .build()

try:
    request = ShowUpgradeWorkFlowRequest()
    request.cluster_id = "{cluster_id}"
    request.upgrade_workflow_id = "{upgrade_workflow_id}"
    response = client.show_upgrade_work_flow(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ShowUpgradeWorkFlowRequest{}
    request.ClusterId = "{cluster_id}"
    request.UpgradeWorkflowId = "{upgrade_workflow_id}"
    response, err := client.ShowUpgradeWorkFlow(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Details about the cluster upgrade task are obtained.

Error Codes

See [Error Codes](#).

4.7.19 Updating the Status of a Specified Cluster Upgrade Booting Task

Function

This API is used to update the status of a specified cluster upgrade booting task. This API applies only to the upgrade cancellation process.

When this API is called, the status of the upgrade process booting task cannot be **running**, **success**, or **cancel**, and the status of the upgrade subtask cannot be **running**, **init**, **pause**, or **queue**.

Calling Method

For details, see [Calling APIs](#).

URI

PATCH /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/upgradeworkflows/{upgrade_workflow_id}

Table 4-1051 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>
upgrade_workflow_id	Yes	String	<p>Booting process ID of a cluster upgrade task. For details about how to obtain the ID, see Obtaining API URI Parameters.</p>

Request Parameters

Table 4-1052 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-1053 Request body parameters

Parameter	Mandatory	Type	Description
status	No	status object	<p>Details: Updated workflow status (Only Cancel is supported.)</p> <p>Constraints: None</p>

Table 4-1054 status

Parameter	Mandatory	Type	Description
phase	No	String	<p>Details: Execution status of the cluster upgrade process</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • Cancel: The upgrade is canceled.

Response Parameters

Status code: 200

Table 4-1055 Response body parameters

Parameter	Type	Description
kind	String	API type. The value is fixed at WorkflowTask and cannot be changed.
apiVersion	String	API version. The value is fixed at v3 and cannot be changed.
metadata	Metadata object	Upgrade process metadata
spec	WorkflowResponseSpec object	Element type of the collection class. The main body of the cluster upgrade process is provided in spec . CCE creates or updates objects by defining or updating spec .
status	WorkflowStatus object	Element type of the collection class, which is used to record the current status of the cluster upgrade process, including the execution status of each process in the cluster upgrade process.

Table 4-1056 Metadata

Parameter	Type	Description
uid	String	Unique ID.
name	String	Resource name
labels	Map<String,String>	Resource labels in key-value pairs. This is a reserved field and does not take effect.
annotations	Map<String,String>	Resource annotations in the format of key-value pairs.
updateTimestamp	String	Update time.
creationTimestamp	String	Creation time.

Table 4-1057 WorkflowResponseSpec

Parameter	Type	Description
clusterID	String	Cluster ID
clusterVersion	String	Current cluster version

Parameter	Type	Description
targetVersion	String	Target cluster version

Table 4-1058 WorkFlowStatus

Parameter	Type	Description
phase	String	Execution status of the cluster upgrade process. Options: Init: No task is running in the upgrade process. Running: Some tasks in the upgrade process are being executed. Pending: A task in the upgrade process fails to be executed. Success: All tasks in the upgrade process have been executed. Cancel: The upgrade process has been canceled.
pointStatuses	Array of PointStatus objects	Execution status of each task in the upgrade process
lineStatuses	Array of LineStatus objects	Task execution path of the upgrade process

Table 4-1059 PointStatus

Parameter	Type	Description
taskType	String	Cluster upgrade task type. Options: Cluster: a cluster upgrade task PreCheck: a cluster pre-upgrade check task Rollback: a cluster rollback task Snapshot: a cluster upgrade snapshot task PostCheck: a cluster post-upgrade check task
taskId	String	Upgrade task ID

Parameter	Type	Description
status	String	Cluster upgrade status. Options: Init: The task is in the initial state. Queuing: The task is in the execution queue. Running: The task is being executed. Success: The task has been executed. Failed: Executing the task failed.
startTimeStamp	String	Start time of the upgrade task
endTimeStamp	String	End time of the upgrade task
expireTimeStamp	String	Expiration time of the upgrade task (only for pre-upgrade check tasks)

Table 4-1060 LineStatus

Parameter	Type	Description
startPoint	Point object	Path startpoint
endPoint	Point object	Path endpoint
critical	String	Whether it is a key path. An upgrade can be canceled only after the key path is executed.

Table 4-1061 Point

Parameter	Type	Description
taskType	String	Cluster upgrade task type. Options: Cluster: a cluster upgrade task PreCheck: a cluster pre-upgrade check task Rollback: a cluster rollback task Snapshot: a cluster upgrade snapshot task PostCheck: a cluster post-upgrade check task

Example Requests

Cancel the upgrade process.

```
PATCH /api/v3/projects/47eb1d64cbeb45cfa01ae20af4f4b563/clusters/
f9960c6b-8e60-11ee-9754-0255ac100b05/operation/upgradeworkflows/
d0b7e319-8172-424c-86ea-543cd23f9756

{
  "status" : {
    "phase" : "Cancel"
  }
}
```

Example Responses

Status code: 200

The status of the cluster upgrade booting task is updated.

```
{
  "kind" : "WorkFlowTask",
  "apiVersion" : "v3",
  "metadata" : {
    "uid" : "c271e39e-1a6e-4d3d-8fa8-2a36329c68d1",
    "creationTimestamp" : "2023-11-25 06:32:34.923248 +0000 UTC",
    "updateTimestamp" : "2023-11-25 07:49:30.281911 +0000 UTC"
  },
  "spec" : {
    "clusterID" : "b4b9e60f-8aa2-11ee-af09-0255ac10004f",
    "clusterVersion" : "v1.17.17-r0",
    "targetVersion" : "v1.19.16-r80"
  },
  "status" : {
    "phase" : "Cancel",
    "pointStatuses" : [ {
      "taskType" : "PreCheck",
      "taskID" : "f61e008c-1600-41c0-9bde-121de5a30660",
      "status" : "Success",
      "startTimeStamp" : "2023-11-25 07:20:04.592972 +0000 UTC",
      "endTimeStamp" : "2023-11-25 07:21:05.518966 +0000 UTC",
      "expireTimeStamp" : "2023-11-25 08:21:05.518966 +0000 UTC"
    }, {
      "taskType" : "Snapshot"
    }, {
      "taskType" : "Cluster",
      "taskID" : "6d799ff6-3afe-4242-80b4-6f0a0fa746cb",
      "status" : "Failed",
      "startTimeStamp" : "2023-11-25 07:49:30.283459 +0000 UTC",
      "endTimeStamp" : "2023-11-25 07:58:35.507243 +0000 UTC"
    }, {
      "taskType" : "PostCheck"
    } ],
    "lineStatuses" : [ {
      "startPoint" : {
        "taskType" : "PreCheck"
      },
      "endPoint" : {
        "taskType" : "Cluster"
      }
    }, {
      "startPoint" : {
        "taskType" : "Cluster"
      },
      "endPoint" : {
        "taskType" : "PostCheck"
      }
    } ]
  }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

Cancel the upgrade process.

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class UpgradeWorkFlowUpdateSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        UpgradeWorkFlowUpdateRequest request = new UpgradeWorkFlowUpdateRequest();
        request.withClusterId("{cluster_id}");
        request.withUpgradeWorkflowId("{upgrade_workflow_id}");
        UpgradeWorkFlowUpdateRequestBody body = new UpgradeWorkFlowUpdateRequestBody();
        UpgradeWorkFlowUpdateRequestBodyStatus statusbody = new
UpgradeWorkFlowUpdateRequestBodyStatus();
        statusbody.withPhase(UpgradeWorkFlowUpdateRequestBodyStatus.PhaseEnum.fromValue("Cancel"));
        body.withStatus(statusbody);
        request.withBody(body);
        try {
            UpgradeWorkFlowUpdateResponse response = client.upgradeWorkFlowUpdate(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

Cancel the upgrade process.

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = UpgradeWorkFlowUpdateRequest()
        request.cluster_id = "{cluster_id}"
        request.upgrade_workflow_id = "{upgrade_workflow_id}"
        statusbody = UpgradeWorkFlowUpdateRequestBodyStatus(
            phase="Cancel"
        )
        request.body = UpgradeWorkFlowUpdateRequestBody(
            status=statusbody
        )
        response = client.upgrade_work_flow_update(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

Cancel the upgrade process.

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
```

```

sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
    WithAk(ak).
    WithSk(sk).
    WithProjectId(projectId).
    Build()

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.UpgradeWorkFlowUpdateRequest{}
request.ClusterId = "{cluster_id}"
request.UpgradeWorkflowId = "{upgrade_workflow_id}"
phaseStatus:= model.GetUpgradeWorkFlowUpdateRequestBodyStatusPhaseEnum().CANCEL
statusbody := &model.UpgradeWorkFlowUpdateRequestBodyStatus{
    Phase: &phaseStatus,
}
request.Body = &model.UpgradeWorkFlowUpdateRequestBody{
    Status: statusbody,
}
response, err := client.UpgradeWorkFlowUpdate(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The status of the cluster upgrade booting task is updated.

Error Codes

See [Error Codes](#).

4.8 Quota Management

4.8.1 Querying Resource Quotas

Function

This API is used to query CCE resource quotas.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3/projects/{project_id}/quotas

Table 4-1062 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI . Constraints: None Options: Project IDs of the account Default value: N/A

Request Parameters

Table 4-1063 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-1064 Response body parameters

Parameter	Type	Description
quotas	Array of QuotaResource objects	Resources

Table 4-1065 QuotaResource

Parameter	Type	Description
quotaKey	String	Details: Resource type Constraints: None Options: <ul style="list-style-type: none"> cluster: cluster quota Default value: N/A
quotaLimit	Integer	Quota
used	Integer	Number of created resources
unit	String	Unit
regionId	String	Region ID. This parameter is not returned if not involved.
availabilityZoneId	String	AZ ID. This parameter is not returned if not involved.

Example Requests

None

Example Responses

Status code: 200

The resource quotas are obtained successfully.

```
{
  "quotas" : [ {
    "quotaKey" : "cluster",
    "quotaLimit" : 20,
    "used" : 13,
    "unit" : "count"
  } ]
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ShowQuotasSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        ShowQuotasRequest request = new ShowQuotasRequest();
        try {
            ShowQuotasResponse response = client.showQuotas(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
```

```
# The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
variables and decrypted during use to ensure security.
# In this example, AK and SK are stored in environment variables for authentication. Before running this
example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
ak = os.environ["CLOUD_SDK_AK"]
sk = os.environ["CLOUD_SDK_SK"]
projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = CceClient.new_builder() \
    .with_credentials(credentials) \
    .with_region(CceRegion.value_of("<YOUR REGION>")) \
    .build()

try:
    request = ShowQuotasRequest()
    response = client.show_quotas(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ShowQuotasRequest{}
    response, err := client.ShowQuotas(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The resource quotas are obtained successfully.

Error Codes

See [Error Codes](#).

4.9 API Versions

4.9.1 Obtaining API Versions

Function

This API is used to query the list of API versions supported by CCE.

Calling Method

For details, see [Calling APIs](#).

URI

GET /

Request Parameters

None

Response Parameters

Status code: 200

Table 4-1066 Response body parameters

Parameter	Type	Description
versions	Array of APIVersionDetail objects	API version list.

Table 4-1067 APIVersionDetail

Parameter	Type	Description
id	String	API version ID. Example: v3
links	Array of APIVersionLink objects	URL of the API version.
min_version	String	Microversion. If the APIs of this version support microversions, set this parameter to the supported minimum microversion. If no microversion is supported, leave this parameter blank.
status	String	API version status. Possible values: <ul style="list-style-type: none"> • CURRENT: preferred API version • SUPPORTED: old API version that is still supported • DEPRECATED: discarded API version that will be deleted
updated	String	Time when the API was released (UTC). For example, if the API version is v3, the value is '2018-09-15 00:00:00Z'.
version	String	Microversion. If the APIs of this version support microversions, set this parameter to the supported maximum microversion. If no microversion is supported, leave this parameter blank.

Table 4-1068 APIVersionLink

Parameter	Type	Description
href	String	URL of the API version.
rel	String	Link attributes. self : A self link contains a versioned link to the resource. Use these links immediately after linking.

Example Requests

None

Example Responses

Status code: 200

The API version list is queried successfully.

```
{
  "versions": [ {
    "id": "v3",
    "links": [ {
      "href": "https://cce.region.***.com/v3",
      "rel": "self"
    } ],
    "min_version": "",
    "status": "CURRENT",
    "updated": "2018-09-15 00:00:00Z",
    "version": ""
  } ]
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ShowVersionSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");

        ICredential auth = new BasicCredentials()
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        ShowVersionRequest request = new ShowVersionRequest();
        try {
            ShowVersionResponse response = client.showVersion(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
        }
    }
}
```

```
        System.out.println(e.getStatusCode());
        System.out.println(e.getRequestId());
        System.out.println(e.getErrorCode());
        System.out.println(e.getErrorMsg());
    }
}
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]

    credentials = BasicCredentials(ak, sk)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ShowVersionRequest()
        response = client.show_version(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        Build()
```

```

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.ShowVersionRequest{}
response, err := client.ShowVersion(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The API version list is queried successfully.

Error Codes

See [Error Codes](#).

4.10 Tag Management

4.10.1 Adding Resource Tags to a Specified Cluster in Batches

Function

This API is used to add resource tags for a specified cluster in batches.

NOTE

- Each cluster supports a maximum of 20 resource tags.
- This API is idempotent. If the to-be-added tag has the same tag key and tag value as an existing tag, the tag will be added. If the to-be-added tag has the same key but different value as an existing tag, the tag will overwrite the existing one.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/tags/create

Table 4-1069 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-1070 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-1071 Request body parameters

Parameter	Mandatory	Type	Description
tags	Yes	Array of ResourceTag objects	List of cluster resource tags to be created. Each cluster supports a maximum of 20 resource tags.

Table 4-1072 ResourceTag

Parameter	Mandatory	Type	Description
key	No	String	<p>Details: Key</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • The value cannot be empty and cannot start or end with spaces. A maximum of 128 characters are supported. • Letters, digits, and spaces in UTF-8 format are supported. • The value can contain the following special characters: <code>_:=-@</code> • The value cannot start with <code>_sys_</code>. <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
value	No	String	<p>Details: Value</p> <p>Constraints: None</p> <p>Options:</p> <ul style="list-style-type: none"> • The value can be null but not the default. Max characters: 255 • Letters, digits, and spaces in UTF-8 format are supported. • The value can contain the following special characters: _./=+-@ <p>Default value: N/A</p>

Response Parameters

None

Example Requests

Adding Resource Tags to a Specified Cluster in Batches

```
POST /api/v3/projects/{project_id}/clusters/{cluster_id}/tags/create
```

```
{
  "tags": [ {
    "key": "key1",
    "value": "value1"
  }, {
    "key": "key2",
    "value": "value3"
  } ]
}
```

Example Responses

None

SDK Sample Code

The SDK sample code is as follows.

Java

Adding Resource Tags to a Specified Cluster in Batches

```
package com.huaweicloud.sdk.test;
```

```
import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class BatchCreateClusterTagsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        BatchCreateClusterTagsRequest request = new BatchCreateClusterTagsRequest();
        request.withClusterId("{cluster_id}");
        BatchCreateClusterTagsRequestBody body = new BatchCreateClusterTagsRequestBody();
        List<ResourceTag> listbodyTags = new ArrayList<>();
        listbodyTags.add(
            new ResourceTag()
                .withKey("key1")
                .withValue("value1")
        );
        listbodyTags.add(
            new ResourceTag()
                .withKey("key2")
                .withValue("value3")
        );
        body.withTags(listbodyTags);
        request.withBody(body);
        try {
            BatchCreateClusterTagsResponse response = client.batchCreateClusterTags(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

Adding Resource Tags to a Specified Cluster in Batches

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = BatchCreateClusterTagsRequest()
        request.cluster_id = "{cluster_id}"
        listTagsbody = [
            ResourceTag(
                key="key1",
                value="value1"
            ),
            ResourceTag(
                key="key2",
                value="value3"
            )
        ]
        request.body = BatchCreateClusterTagsRequestBody(
            tags=listTagsbody
        )
        response = client.batch_create_cluster_tags(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

Adding Resource Tags to a Specified Cluster in Batches

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
```

```

ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
    WithAk(ak).
    WithSk(sk).
    WithProjectId(projectId).
    Build()

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.BatchCreateClusterTagsRequest{}
request.ClusterId = "{cluster_id}"
keyTags:= "key1"
valueTags:= "value1"
keyTags1:= "key2"
valueTags1:= "value3"
var listTagsbody = []model.ResourceTag{
    {
        Key: &keyTags,
        Value: &valueTags,
    },
    {
        Key: &keyTags1,
        Value: &valueTags1,
    },
}
request.Body = &model.BatchCreateClusterTagsRequestBody{
    Tags: listTagsbody,
}
response, err := client.BatchCreateClusterTags(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
204	No Content

Error Codes

See [Error Codes](#).

4.10.2 Deleting Resource Tags of a Specified Cluster in Batches

Function

This API is used to delete resource tags of a specified cluster in batches.

 **NOTE**

- This API is idempotent. If the tag key of the to-be-deleted tag does not exist, the tag will be deleted.

Calling Method

For details, see [Calling APIs](#).

URI

POST /api/v3/projects/{project_id}/clusters/{cluster_id}/tags/delete

Table 4-1073 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-1074 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-1075 Request body parameters

Parameter	Mandatory	Type	Description
tags	Yes	Array of ResourceDeleteTag objects	List of cluster resource tags to be deleted

Table 4-1076 ResourceDeleteTag

Parameter	Mandatory	Type	Description
key	No	String	<p>The key value of the resource tag</p> <ul style="list-style-type: none"> It cannot be null. It can contain a maximum of 128 characters. It can contain Chinese characters, letters, digits, and spaces in UTF-8 format. It can contain the following special characters: <code>._:/=+-@.</code> It cannot start with <code>_sys_</code>.

Response Parameters

None

Example Requests

Deleting Resource Tags of a Specified Cluster in Batches

```
POST /api/v3/projects/{project_id}/clusters/{cluster_id}/tags/delete
{
  "tags" : [ {
    "key" : "key1"
  }, {
    "key" : "key2"
  } ]
}
```

Example Responses

None

SDK Sample Code

The SDK sample code is as follows.

Java

Deleting Resource Tags of a Specified Cluster in Batches

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
```

```
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class BatchDeleteClusterTagsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        BatchDeleteClusterTagsRequest request = new BatchDeleteClusterTagsRequest();
        request.withClusterId("{cluster_id}");
        BatchDeleteClusterTagsRequestBody body = new BatchDeleteClusterTagsRequestBody();
        List<ResourceDeleteTag> listbodyTags = new ArrayList<>();
        listbodyTags.add(
            new ResourceDeleteTag()
                .withKey("key1")
        );
        listbodyTags.add(
            new ResourceDeleteTag()
                .withKey("key2")
        );
        body.withTags(listbodyTags);
        request.withBody(body);
        try {
            BatchDeleteClusterTagsResponse response = client.batchDeleteClusterTags(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

Deleting Resource Tags of a Specified Cluster in Batches

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *
```

```
if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = BatchDeleteClusterTagsRequest()
        request.cluster_id = "{cluster_id}"
        listTagsbody = [
            ResourceDeleteTag(
                key="key1"
            ),
            ResourceDeleteTag(
                key="key2"
            )
        ]
        request.body = BatchDeleteClusterTagsRequestBody(
            tags=listTagsbody
        )
        response = client.batch_delete_cluster_tags(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

Deleting Resource Tags of a Specified Cluster in Batches

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()
```

```

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.BatchDeleteClusterTagsRequest{}
request.ClusterId = "{cluster_id}"
keyTags:= "key1"
keyTags1:= "key2"
var listTagsbody = []model.ResourceDeleteTag{
    {
        Key: &keyTags,
    },
    {
        Key: &keyTags1,
    },
}
request.Body = &model.BatchDeleteClusterTagsRequestBody{
    Tags: listTagsbody,
}
response, err := client.BatchDeleteClusterTags(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
204	No Content

Error Codes

See [Error Codes](#).

4.11 Configuration Management

4.11.1 Obtaining the Parameters That Can Be Configured for a Node Pool

Function

This API is used to obtain the parameters that can be configured in a specified CCE node pool.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3/projects/{project_id}/clusters/{cluster_id}/nodepools/{nodepool_id}/configuration/detail

Table 4-1077 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
nodepool_id	Yes	String	<p>Details: Node pool ID. For details about how to obtain the ID, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-1078 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-1079 Response body parameters

Parameter	Type	Description
{User defined key}	Map<String,Array < PackageOptions >>	Response body for obtaining the parameter configuration list of a specified node pool

Table 4-1080 PackageOptions

Parameter	Type	Description
name	String	Parameter name
default	Object	Default parameter value. If this parameter is not specified, the default value will take effect. The returned parameter can be of integer, string, or Boolean type.

Parameter	Type	Description
validAt	String	How parameters will take effect. <ul style="list-style-type: none"> • static: The parameters take effect when the cluster or node pool is being created and cannot be changed later. • immediately: The parameters can be modified when the cluster or node pool is running, and the modification takes effect immediately.
empty	Boolean	Whether the configuration item can be empty. Options: <ul style="list-style-type: none"> • true: If this parameter is set to true, no value will take effect. • false: If this parameter is set to false, the default value will take effect.
schema	String	Parameter category
type	String	Parameter type

Example Requests

None

Example Responses

Status code: 200

The parameters of the specified node pool are obtained.

```
{
  "kubelet" : [ {
    "name" : "kube-api-qps",
    "default" : 300,
    "validAt" : "immediately",
    "empty" : false,
    "schema" : "",
    "type" : "float"
  } ]
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
```

```
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ShowNodePoolConfigurationDetailsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        ShowNodePoolConfigurationDetailsRequest request = new
        ShowNodePoolConfigurationDetailsRequest();
        request.withClusterId("{cluster_id}");
        request.withNodepoolId("{nodepool_id}");
        try {
            ShowNodePoolConfigurationDetailsResponse response =
            client.showNodePoolConfigurationDetails(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
```

```
sk = os.environ["CLOUD_SDK_SK"]
projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = CceClient.new_builder() \
    .with_credentials(credentials) \
    .with_region(CceRegion.value_of("<YOUR REGION>")) \
    .build()

try:
    request = ShowNodePoolConfigurationDetailsRequest()
    request.cluster_id = "{cluster_id}"
    request.nodepool_id = "{nodepool_id}"
    response = client.show_node_pool_configuration_details(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ShowNodePoolConfigurationDetailsRequest{}
    request.ClusterId = "{cluster_id}"
    request.NodepoolId = "{nodepool_id}"
    response, err := client.ShowNodePoolConfigurationDetails(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The parameters of the specified node pool are obtained.

Error Codes

See [Error Codes](#).

4.11.2 Obtaining the List of Parameters That Can Be Configured for a Cluster

Function

This API is used to obtain the list of parameters that can be configured for a CCE cluster.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3/projects/{project_id}/clusters/{cluster_id}/configuration/detail

Table 4-1081 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-1082 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-1083 Response body parameters

Parameter	Type	Description
{User defined key}	Map<String,Array < PackageOptions >>	Response body for obtaining the parameter configuration list of a cluster

Table 4-1084 PackageOptions

Parameter	Type	Description
name	String	Parameter name
default	Object	Default parameter value. If this parameter is not specified, the default value will take effect. The returned parameter can be of integer, string, or Boolean type.

Parameter	Type	Description
validAt	String	How parameters will take effect. <ul style="list-style-type: none"> • static: The parameters take effect when the cluster or node pool is being created and cannot be changed later. • immediately: The parameters can be modified when the cluster or node pool is running, and the modification takes effect immediately.
empty	Boolean	Whether the configuration item can be empty. Options: <ul style="list-style-type: none"> • true: If this parameter is set to true, no value will take effect. • false: If this parameter is set to false, the default value will take effect.
schema	String	Parameter category
type	String	Parameter type

Example Requests

None

Example Responses

Status code: 200

A list of parameters that can be configured for a cluster is obtained successfully.

```
{
  "kube-apiserver": [ {
    "name": "default-not-ready-toleration-seconds",
    "default": 300,
    "validAt": "immediately",
    "empty": true,
    "schema": "kubernetes",
    "type": "int"
  } ]
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
```

```
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ShowClusterConfigurationDetailsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        ShowClusterConfigurationDetailsRequest request = new ShowClusterConfigurationDetailsRequest();
        request.withClusterId("{cluster_id}");
        try {
            ShowClusterConfigurationDetailsResponse response =
client.showClusterConfigurationDetails(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.getenv("CLOUD_SDK_AK")
    sk = os.getenv("CLOUD_SDK_SK")
    projectId = "{project_id}"
```



```
credentials = BasicCredentials(ak, sk, projectId)

client = CceClient.new_builder() \
    .with_credentials(credentials) \
    .with_region(CceRegion.value_of("<YOUR REGION>")) \
    .build()

try:
    request = ShowClusterConfigurationDetailsRequest()
    request.cluster_id = "{cluster_id}"
    response = client.show_cluster_configuration_details(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ShowClusterConfigurationDetailsRequest{}
    request.ClusterId = "{cluster_id}"
    response, err := client.ShowClusterConfigurationDetails(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	A list of parameters that can be configured for a cluster is obtained successfully.

Error Codes

See [Error Codes](#).

4.11.3 Obtaining the Parameters That Can Be Configured for a Node Pool

Function

This API is used to obtain the parameters that can be configured for a node pool.

Calling Method

For details, see [Calling APIs](#).

URI

GET /api/v3/projects/{project_id}/clusters/{cluster_id}/nodepools/{nodepool_id}/configuration

Table 4-1085 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>
nodepool_id	Yes	String	<p>Details: Node pool ID. For details about how to obtain the ID, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-1086 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-1087 Response body parameters

Parameter	Type	Description
apiVersion	String	API version
kind	String	API type. The value is fixed at Configuration .
metadata	ConfigurationMetadata object	Configuration metadata
spec	ClusterConfigurationsSpec object	Configuration specifications
status	Object	Configuration status

Table 4-1088 ConfigurationMetadata

Parameter	Type	Description
name	String	Configuration name
labels	Map<String,String >	<p>A configuration label in a key-value pair.</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain containing a maximum of 253 characters (such as example.com/my-key) can be prefixed to a key. • Value: The value can be left blank or contain 1 to 63 characters that start and end with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. <p>Example: "foo": "bar"</p>

Table 4-1089 ClusterConfigurationsSpec

Parameter	Type	Description
packages	Array of packages objects	Component configuration item details

Table 4-1090 packages

Parameter	Type	Description
name	String	Component name
configurations	Array of ConfigurationItem objects	Component configuration items

Table 4-1091 ConfigurationItem

Parameter	Type	Description
name	String	<p>Details: Configuration overrides of the default components in a cluster. For details about the supported components and their parameters, see Configuration Management.</p> <p>Constraints: If you specify a component or parameter that is not supported, this configuration item will be ignored.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
value	AnyType	<p>Details: Configuration overrides of the default components in a cluster. For details about the supported components and their parameters, see Configuration Management.</p> <p>Constraints: If you specify a component or parameter that is not supported, this configuration item will be ignored.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Example Requests

None

Example Responses

Status code: 200

The parameter configurations of the node pool are obtained successfully.

```
{
  "kind": "Configuration",
  "apiVersion": "v3",
  "metadata": {
    "name": "configuration",
    "labels": {
      "nodepool_id": "61de338d-a1f9-11ed-8891-0255ac100036"
    }
  },
  "spec": {
    "packages": [ {
      "name": "kube-apiserver",
      "configurations": [ {
        "name": "event-rate-limit-qps",
        "value": 200
      }, {
        "name": "support-overload",
        "value": false
      } ]
    }, {
      "name": "kube-scheduler",
      "configurations": [ {
        "name": "kube-api-qps",
        "value": 100
      }, {
        "name": "default-scheduler",
        "value": "kube-scheduler"
      } ]
    } ]
  },
  "status": { }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ShowNodePoolConfigurationsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
```

```
environment variables and decrypted during use to ensure security.
// In this example, AK and SK are stored in environment variables for authentication. Before running
this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
String ak = System.getenv("CLOUD_SDK_AK");
String sk = System.getenv("CLOUD_SDK_SK");
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
    .withProjectId(projectId)
    .withAk(ak)
    .withSk(sk);

CceClient client = CceClient.newBuilder()
    .withCredential(auth)
    .withRegion(CceRegion.valueOf("<YOUR REGION>"))
    .build();

ShowNodePoolConfigurationsRequest request = new ShowNodePoolConfigurationsRequest();
request.withClusterId("{cluster_id}");
request.withNodepoolId("{nodepool_id}");
try {
    ShowNodePoolConfigurationsResponse response = client.showNodePoolConfigurations(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.getenv("CLOUD_SDK_AK")
    sk = os.getenv("CLOUD_SDK_SK")
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ShowNodePoolConfigurationsRequest()
        request.cluster_id = "{cluster_id}"
        request.nodepool_id = "{nodepool_id}"
        response = client.show_node_pool_configurations(request)
        print(response)
```



```
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ShowNodePoolConfigurationsRequest{}
    request.ClusterId = "{cluster_id}"
    request.NodepoolId = "{nodepool_id}"
    response, err := client.ShowNodePoolConfigurations(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The parameter configurations of the node pool are obtained successfully.

Error Codes

See [Error Codes](#).

4.11.4 Changing the Values of Configuration Parameters of a Node Pool

Function

This API is used to change the values of parameter configurations of a node pool in the CCE cluster.

Calling Method

For details, see [Calling APIs](#).

URI

PUT /api/v3/projects/{project_id}/clusters/{cluster_id}/nodepools/{nodepool_id}/configuration

Table 4-1092 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
nodepool_id	Yes	String	<p>Details: Node pool ID. For details about how to obtain the ID, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-1093 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-1094 Request body parameters

Parameter	Mandatory	Type	Description
apiVersion	Yes	String	API version. The value is fixed at v3 .
kind	Yes	String	API type. The value is fixed at Configuration .
metadata	Yes	ConfigurationMetadata object	Configuration metadata
spec	Yes	ClusterConfigurationsSpec object	Configuration specifications

Table 4-1095 ConfigurationMetadata

Parameter	Mandatory	Type	Description
name	Yes	String	Configuration name

Parameter	Mandatory	Type	Description
labels	No	Map<String,String>	<p>A configuration label in a key-value pair.</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain containing a maximum of 253 characters (such as example.com/my-key) can be prefixed to a key. • Value: The value can be left blank or contain 1 to 63 characters that start and end with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. <p>Example: "foo": "bar"</p>

Table 4-1096 ClusterConfigurationsSpec

Parameter	Mandatory	Type	Description
packages	Yes	Array of packages objects	Component configuration item details

Table 4-1097 packages

Parameter	Mandatory	Type	Description
name	No	String	Component name
configurations	No	Array of ConfigurationItem objects	Component configuration items

Table 4-1098 ConfigurationItem

Parameter	Mandatory	Type	Description
name	No	String	<p>Details: Configuration overrides of the default components in a cluster. For details about the supported components and their parameters, see Configuration Management.</p> <p>Constraints: If you specify a component or parameter that is not supported, this configuration item will be ignored.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
value	No	AnyType	<p>Details: Configuration overrides of the default components in a cluster. For details about the supported components and their parameters, see Configuration Management.</p> <p>Constraints: If you specify a component or parameter that is not supported, this configuration item will be ignored.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-1099 Response body parameters

Parameter	Type	Description
apiVersion	String	API version
kind	String	API type. The value is fixed at Configuration .
metadata	ConfigurationMetadata object	Configuration metadata
spec	ClusterConfigurationsSpec object	Configuration specifications
status	Object	Configuration status

Table 4-1100 ConfigurationMetadata

Parameter	Type	Description
name	String	Configuration name
labels	Map<String,String >	<p>A configuration label in a key-value pair.</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain containing a maximum of 253 characters (such as example.com/my-key) can be prefixed to a key. • Value: The value can be left blank or contain 1 to 63 characters that start and end with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. <p>Example: "foo": "bar"</p>

Table 4-1101 ClusterConfigurationsSpec

Parameter	Type	Description
packages	Array of packages objects	Component configuration item details

Table 4-1102 packages

Parameter	Type	Description
name	String	Component name
configurations	Array of ConfigurationItem objects	Component configuration items

Table 4-1103 ConfigurationItem

Parameter	Type	Description
name	String	<p>Details: Configuration overrides of the default components in a cluster. For details about the supported components and their parameters, see Configuration Management.</p> <p>Constraints: If you specify a component or parameter that is not supported, this configuration item will be ignored.</p> <p>Options: N/A</p> <p>Default value: N/A</p>
value	AnyType	<p>Details: Configuration overrides of the default components in a cluster. For details about the supported components and their parameters, see Configuration Management.</p> <p>Constraints: If you specify a component or parameter that is not supported, this configuration item will be ignored.</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Example Requests

The following example describes how to update the **system-reserved-mem** and **kube-reserved-mem** parameters in kubelet.

```
/api/v3/projects/{project_id}/clusters/{cluster_id}/nodepools/{nodepool_id}/configuration

{
  "kind": "Configuration",
  "apiVersion": "v3",
  "metadata": {
    "name": "configuration"
  },
  "spec": {
    "packages": [ {
      "name": "kubelet",
      "configurations": [ {
        "name": "system-reserved-mem",
        "value": 600
      }, {
        "name": "kube-reserved-mem",
        "value": 800
      } ]
    } ]
  }
}
```

Example Responses

Status code: 200

The parameter configurations of the node pool are updated successfully.

```
{
  "kind": "Configuration",
  "apiVersion": "v3",
  "metadata": {
    "name": "configuration",
    "labels": {
      "nodepool_id": "61de338d-a1f9-11ed-8891-0255ac100036"
    }
  },
  "spec": {
    "packages": [ {
      "name": "kube-apiserver",
      "configurations": [ {
        "name": "event-rate-limit-qps",
        "value": 200
      }, {
        "name": "support-overload",
        "value": false
      } ]
    }, {
      "name": "kube-scheduler",
      "configurations": [ {
        "name": "kube-api-qps",
        "value": 100
      }, {
        "name": "default-scheduler",
        "value": "kube-scheduler"
      } ]
    } ]
  },
  "status": { }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

The following example describes how to update the **system-reserved-mem** and **kube-reserved-mem** parameters in kubelet.

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class UpdateNodePoolConfigurationSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        UpdateNodePoolConfigurationRequest request = new UpdateNodePoolConfigurationRequest();
        request.withClusterId("{cluster_id}");
        request.withNodepoolId("{nodepool_id}");
        UpdateClusterConfigurationsBody body = new UpdateClusterConfigurationsBody();
        List<ConfigurationItem> listPackagesConfigurations = new ArrayList<>();
        listPackagesConfigurations.add(
            new ConfigurationItem()
                .withName("system-reserved-mem")
                .withValue("600")
        );
        listPackagesConfigurations.add(
            new ConfigurationItem()
                .withName("kube-reserved-mem")
                .withValue("800")
        );
        List<ClusterConfigurationsSpecPackages> listSpecPackages = new ArrayList<>();
        listSpecPackages.add(
            new ClusterConfigurationsSpecPackages()
                .withName("kubelet")
                .withConfigurations(listPackagesConfigurations)
        );
        ClusterConfigurationsSpec specbody = new ClusterConfigurationsSpec();
        specbody.withPackages(listSpecPackages);
        ConfigurationMetadata metadatabody = new ConfigurationMetadata();
```

```
metadatabody.withName("configuration");
body.withSpec(specbody);
body.withMetadata(metadatabody);
body.withKind("Configuration");
body.withApiVersion("v3");
request.withBody(body);
try {
    UpdateNodePoolConfigurationResponse response = client.updateNodePoolConfiguration(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

The following example describes how to update the **system-reserved-mem** and **kube-reserved-mem** parameters in kubelet.

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = UpdateNodePoolConfigurationRequest()
        request.cluster_id = "{cluster_id}"
        request.nodepool_id = "{nodepool_id}"
        listConfigurationsPackages = [
            ConfigurationItem(
                name="system-reserved-mem",
                value="600"
            ),
            ConfigurationItem(
                name="kube-reserved-mem",
                value="800"
            )
        ]
        listPackagesSpec = [
            ClusterConfigurationsSpecPackages(
```

```
        name="kubelet",
        configurations=listConfigurationsPackages
    )
]
specbody = ClusterConfigurationsSpec(
    packages=listPackagesSpec
)
metadatabody = ConfigurationMetadata(
    name="configuration"
)
request.body = UpdateClusterConfigurationsBody(
    spec=specbody,
    metadata=metadatabody,
    kind="Configuration",
    api_version="v3"
)
response = client.update_node_pool_configuration(request)
print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

The following example describes how to update the **system-reserved-mem** and **kube-reserved-mem** parameters in kubelet.

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.UpdateNodePoolConfigurationRequest{
        request.ClusterId = "{cluster_id}"
        request.NodepoolId = "{nodepool_id}"
        nameConfigurations:= "system-reserved-mem"
        valueConfigurations:= "600"
        var valueConfigurationsInterface interface{} = valueConfigurations
        nameConfigurations1:= "kube-reserved-mem"
        valueConfigurations1:= "800"
    }
```

```

var valueConfigurationsInterface1 interface{} = valueConfigurations1
var listConfigurationsPackages = []model.ConfigurationItem{
    {
        Name: &nameConfigurations,
        Value: &valueConfigurationsInterface,
    },
    {
        Name: &nameConfigurations1,
        Value: &valueConfigurationsInterface1,
    },
}
namePackages:= "kubelet"
var listPackagesSpec = []model.ClusterConfigurationsSpecPackages{
    {
        Name: &namePackages,
        Configurations: &listConfigurationsPackages,
    },
}
specbody := &model.ClusterConfigurationsSpec{
    Packages: listPackagesSpec,
}
metadatabody := &model.ConfigurationMetadata{
    Name: "configuration",
}
request.Body = &model.UpdateClusterConfigurationsBody{
    Spec: specbody,
    Metadata: metadatabody,
    Kind: "Configuration",
    ApiVersion: "v3",
}
response, err := client.UpdateNodePoolConfiguration(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	The parameter configurations of the node pool are updated successfully.

Error Codes

See [Error Codes](#).

4.12 Chart Management

4.12.1 Uploading a Chart

Function

This API is used to upload a chart.

Calling Method

For details, see [Calling APIs](#).

URI

POST /v2/charts

Request Parameters

Table 4-1104 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	Details: The request body type or format Constraints: The GET method is not verified. Options: <ul style="list-style-type: none">• application/json• application/json;charset=utf-8• application/x-pem-file• multipart/form-data (used when the FormData parameter is present) Default value: N/A

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-1105 FormData parameters

Parameter	Mandatory	Type	Description
parameters	No	String	<p>Parameter configurations for uploading a chart. The following is an example: {"override":true,"skip_lint":true,"source":"package"}</p> <ul style="list-style-type: none"> skip_lint: whether lint uploaded chart - override: whether override existed chart - visible: update chart visible
content	Yes	File	Chart package file

Response Parameters

Status code: 201

Table 4-1106 Response body parameters

Parameter	Type	Description
id	String	Chart ID
name	String	Chart name

Parameter	Type	Description
values	String	Chart value
translate	String	Chart translation resources
instruction	String	Chart description
version	String	Chart version
description	String	Chart description
source	String	Chart source
icon_url	String	URL to chart icons
public	Boolean	Whether the chart is public
chart_url	String	URL to the chart
create_at	String	Created at
update_at	String	Updated at

Example Requests

If the **FormData** parameter is present, **multipart/form-data** should be used in **Content-Type** and the file path should be specified.

```
POST /v2/charts -H "X-Auth-Token:$token" -H "Content-Type:multipart/form-data" -F
parameters='{ "skip_lint":true,"override":true,"source":"package"}' -F content=@/root/neo4j-3.0.1.tgz
```

Example Responses

Status code: 201

Created

```
{
  "id" : "e99a7e86-afdd-11eb-aca3-0255ac100b0e",
  "name" : "neo4j",
  "values" : "{ \"acceptLicenseAgreement\": \"no\", \"affinity\": {}, \"authEnabled\": true, \"clusterDomain\": \"cluster.local\", \"core\": { \"initContainers\": [], \"numberOfServers\": 3, \"persistentVolume\": { \"enabled\": true, \"mountPath\": \"/data\", \"size\": \"10Gi\" }, \"sidecarContainers\": [], \"defaultDatabase\": \"neo4j\", \"image\": \"neo4j\", \"imagePullPolicy\": \"IfNotPresent\", \"imageTag\": \"4.0.3-enterprise\", \"name\": \"neo4j\", \"nodeSelector\": {}, \"podDisruptionBudget\": {}, \"readReplica\": { \"autoscaling\": { \"enabled\": false, \"maxReplicas\": 3, \"minReplicas\": 1, \"targetAverageUtilization\": 70 }, \"initContainers\": [], \"numberOfServers\": 0, \"resources\": {}, \"sidecarContainers\": [], \"resources\": {}, \"testImage\": \"markhneedham/k8s-kubectl\", \"testImageTag\": \"master\", \"tolerations\": [], \"useAPOC\": \"true\" } }, \"translate\" : \"\", \"instruction\" : \"README.md\", \"version\" : \"3.0.1\", \"description\" : \"DEPRECATED Neo4j is the world's leading graph database\", \"source\" : \"\", \"icon_url\" : \"https://info.neo4j.com/rs/773-GON-065/images/neo4j_logo.png\", \"public\" : false, \"chart_url\" : \"neo4j-3.0.1.tgz\", \"create_at\" : \"2021-05-08T08:53:13Z\", \"update_at\" : \"2021-05-08T08:53:13Z\" } }
```


SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class UploadChartSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");

        ICredential auth = new BasicCredentials()
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        UploadChartRequest request = new UploadChartRequest();
        try {
            UploadChartResponse response = client.uploadChart(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
```

```
variables and decrypted during use to ensure security.
# In this example, AK and SK are stored in environment variables for authentication. Before running this
example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
ak = os.environ["CLOUD_SDK_AK"]
sk = os.environ["CLOUD_SDK_SK"]

credentials = BasicCredentials(ak, sk)

client = CceClient.new_builder() \
    .with_credentials(credentials) \
    .with_region(CceRegion.value_of("<YOUR REGION>")) \
    .build()

try:
    request = UploadChartRequest()
    response = client.upload_chart(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.UploadChartRequest{}
    response, err := client.UploadChart(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
201	Created

Error Codes

See [Error Codes](#).

4.12.2 Obtaining a Chart List

Function

This API is used to obtain the chart list.

Calling Method

For details, see [Calling APIs](#).

URI

GET /v2/charts

Request Parameters

Table 4-1107 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-1108 Response body parameters

Parameter	Type	Description
[items]	Array of ChartResp objects	Chart list

Table 4-1109 ChartResp

Parameter	Type	Description
id	String	Chart ID
name	String	Chart name
values	String	Chart value
translate	String	Chart translation resources
instruction	String	Chart description
version	String	Chart version
description	String	Chart description
source	String	Chart source

Parameter	Type	Description
icon_url	String	URL to chart icons
public	Boolean	Whether the chart is public
chart_url	String	URL to the chart
create_at	String	Created at
update_at	String	Updated at

Example Requests

None

Example Responses

Status code: 200

OK

```
[ {
  "id" : "1abd3bd6-0258-11ec-b8b0-0255ac100b05",
  "name" : "magento-mysql",
  "values" : "{\n  \"basic\":{\n    \"admin_password\": \"*****\",\n    \"admin_username\": \"username\",\n    \"app_name\": \"magento\",\n    \"mysql_database\": \"magento\",\n    \"mysql_name\": \"mysql\",\n    \"mysql_password\": \"*****\",\n    \"mysql_port\": 3306,\n    \"mysql_root_password\": \"*****\",\n    \"mysql_user\": \"magento\",\n    \"storage_class\": \"csi-nas\",\n    \"storage_mode\": \"ReadWriteMany\",\n    \"storage_size\": \"10G\",\n    \"global\":{\n      \"magento_EIP\": \"100.100.100.100\",\n      \"magento_EPORT\": 32080,\n      \"namespace\": \"default\",\n      \"image\":{\n        \"magento_image\": \"example.com/everest/magento:latest\",\n        \"mysql_image\": \"example.com/everest/mysql:5.7.14\"}}},\n  \"translate\" : \"\",\n  \"instruction\" : \"\",\n  \"version\" : \"1.0.0\",\n  \"description\" : \"chart description\",\n  \"source\" : \"\",\n  \"icon_url\" : \"https://example.com/magento-stack-110x117.png\",\n  \"public\" : false,\n  \"chart_url\" : \"magento-mysql-1.0.0.tgz\",\n  \"create_at\" : \"2021-08-20T08:00:29Z\",\n  \"update_at\" : \"2021-08-20T08:00:29Z\"
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;
```

```
public class ListChartsSolution {  
    public static void main(String[] args) {  
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great  
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or  
        // environment variables and decrypted during use to ensure security.  
        // In this example, AK and SK are stored in environment variables for authentication. Before running  
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment  
        String ak = System.getenv("CLOUD_SDK_AK");  
        String sk = System.getenv("CLOUD_SDK_SK");  
  
        ICredential auth = new BasicCredentials()  
            .withAk(ak)  
            .withSk(sk);  
  
        CceClient client = CceClient.newBuilder()  
            .withCredential(auth)  
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))  
            .build();  
        ListChartsRequest request = new ListChartsRequest();  
        try {  
            ListChartsResponse response = client.listCharts(request);  
            System.out.println(response.toString());  
        } catch (ConnectionException e) {  
            e.printStackTrace();  
        } catch (RequestTimeoutException e) {  
            e.printStackTrace();  
        } catch (ServiceResponseException e) {  
            e.printStackTrace();  
            System.out.println(e.getHttpStatusCode());  
            System.out.println(e.getRequestId());  
            System.out.println(e.getErrorCode());  
            System.out.println(e.getErrorMsg());  
        }  
    }  
}
```

Python

```
# coding: utf-8  
  
import os  
from huaweicloudsdkcore.auth.credentials import BasicCredentials  
from huaweicloudsdkcce.v3.region.cce_region import CceRegion  
from huaweicloudsdkcore.exceptions import exceptions  
from huaweicloudsdkcce.v3 import *  
  
if __name__ == "__main__":  
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security  
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment  
    # variables and decrypted during use to ensure security.  
    # In this example, AK and SK are stored in environment variables for authentication. Before running this  
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment  
    ak = os.getenv("CLOUD_SDK_AK")  
    sk = os.getenv("CLOUD_SDK_SK")  
  
    credentials = BasicCredentials(ak, sk)  
  
    client = CceClient.new_builder() \  
        .with_credentials(credentials) \  
        .with_region(CceRegion.value_of("<YOUR REGION>")) \  
        .build()  
  
    try:  
        request = ListChartsRequest()  
        response = client.list_charts(request)  
        print(response)  
    except exceptions.ClientRequestException as e:  
        print(e.status_code)
```

```
print(e.request_id)
print(e.error_code)
print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ListChartsRequest{}
    response, err := client.ListCharts(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.12.3 Obtaining a Release List

Function

This API is used to obtain a release list.

Calling Method

For details, see [Calling APIs](#).

URI

GET /cce/cam/v3/clusters/{cluster_id}/releases

Table 4-1110 Path Parameters

Parameter	Mandatory	Type	Description
cluster_id	Yes	String	Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI . Constraints: None Options: Cluster IDs Default value: N/A

Table 4-1111 Query Parameters

Parameter	Mandatory	Type	Description
chart_id	No	String	Chart ID
namespace	No	String	Namespace of the chart

Request Parameters

Table 4-1112 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-1113 Response body parameters

Parameter	Type	Description
[items]	Array of ReleaseResp objects	

Table 4-1114 ReleaseResp

Parameter	Type	Description
chart_name	String	Chart name
chart_public	Boolean	Whether the chart is public
chart_version	String	Chart version
cluster_id	String	Cluster ID
cluster_name	String	Current name
create_at	String	Created at
description	String	Release description
name	String	Release name
namespace	String	Namespace to which a chart release belongs
parameters	String	Release parameters
resources	String	Resources required by the release

Parameter	Type	Description
status	String	Release status. <ul style="list-style-type: none"> • DEPLOYED: The release is normal. • DELETED: The release has been deleted. • FAILED: The release fails to be deployed. • DELETING: The release is being deleted. • PENDING_INSTALL: The release is waiting to be installed. • PENDING_UPGRADE: The release is waiting to be upgraded. • PENDING_ROLLBACK: The release is waiting for rollback. • UNKNOWN: The release status is unknown, indicating that the release is abnormal. You can manually delete the release and reinstall it.
status_description	String	Release status description
update_at	String	Updated at
values	String	Release value
version	Integer	Release version

Example Requests

None

Example Responses

Status code: 200

OK

```
[ {
  "chart_name": "magento-mysql",
  "chart_public": false,
  "chart_version": "1.0.0",
  "cluster_id": "a870253f-5dc7-11ee-bf71-0255ac100b03",
  "cluster_name": "sfs-turbo-test",
  "create_at": "2023-11-14T20:30:57+08:00",
  "description": "Initial install underway",
  "name": "testwww",
  "namespace": "monitoring",
  "parameters": "",
  "resources": "",
  "status": "PENDING_INSTALL",
  "status_description": "Initial install underway",
```

```
"update_at" : "2023-11-14T20:30:57+08:00",
"values" : [{"basic":{"admin_password":"*****","admin_username":"username","app_name":"magento","mysql_database":"magento","mysql_name":"mysql","mysql_password":"*****","mysql_port":3306,"mysql_root_password":"*****","mysql_user":"magento","storage_class":"csinas","storage_mode":"ReadWriteMany","storage_size":"10G"},"global":{"magento_EIP":"100.100.100.100","magento_EPORT":32080,"namespace":"default","image":{"magento_image":"example.com/everest/magento:latest","mysql_image":"example.com/everest/mysql:5.7.14"}}},
"version" : 1
}]
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ListReleasesSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");

        ICredential auth = new BasicCredentials()
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        ListReleasesRequest request = new ListReleasesRequest();
        request.withClusterId("{cluster_id}");
        try {
            ListReleasesResponse response = client.listReleases(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]

    credentials = BasicCredentials(ak, sk)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ListReleasesRequest()
        request.cluster_id = "{cluster_id}"
        response = client.list_releases(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())
```

```

request := &model.ListReleasesRequest{}
request.ClusterId = "{cluster_id}"
response, err := client.ListReleases(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.12.4 Updating a Chart

Function

This API is used to update a chart.

Calling Method

For details, see [Calling APIs](#).

URI

PUT /v2/charts/{chart_id}

Table 4-1115 Path Parameters

Parameter	Mandatory	Type	Description
chart_id	Yes	String	Chart ID

Request Parameters

Table 4-1116 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-1117 FormData parameters

Parameter	Mandatory	Type	Description
parameters	No	String	Parameter configurations for uploading a chart. The following is an example: {"override":true,"skip_lint":true,"source":"package"}"- skip_lint: whether lint uploaded chart - override: whether override existed chart - visible: update chart visible
content	Yes	File	Chart package file

Response Parameters

Status code: 200

Table 4-1118 Response body parameters

Parameter	Type	Description
id	String	Chart ID
name	String	Chart name
values	String	Chart value
translate	String	Chart translation resources
instruction	String	Chart description
version	String	Chart version
description	String	Chart description
source	String	Chart source
icon_url	String	URL to chart icons
public	Boolean	Whether the chart is public
chart_url	String	URL to the chart
create_at	String	Created at
update_at	String	Updated at

Example Requests

Use **multipart/form-data** for **Content-Type** and specify the file path when the **FormData** parameter is present.


```
PUT /v2/charts/{chart_id} -H "X-Auth-Token:$token" -H "Content-Type:multipart/form-data" -F
parameters='{ "skip_lint":true,"override":true,"source":"package"}' -F content=@/root/neo4j-3.0.1.tgz
```

Example Responses

Status code: 200

OK

```
{
  "id": "e99a7e86-afdd-11eb-aca3-0255ac100b0e",
  "name": "neo4j",
  "values": "{ \"acceptLicenseAgreement\": \"no\", \"affinity\": {}, \"authEnabled\": true, \"clusterDomain\": \"cluster.local\", \"core\": { \"initContainers\": [], \"numberOfServers\": 3, \"persistentVolume\": { \"enabled\": true, \"mountPath\": \"/data\", \"size\": \"10Gi\" }, \"sidecarContainers\": [], \"defaultDatabase\": \"neo4j\", \"image\": \"neo4j\", \"imagePullPolicy\": \"IfNotPresent\", \"imageTag\": \"4.0.3-enterprise\", \"name\": \"neo4j\", \"nodeSelector\": {}, \"podDisruptionBudget\": {}, \"readReplica\": { \"autoscaling\": { \"enabled\": false, \"maxReplicas\": 3, \"minReplicas\": 1, \"targetAverageUtilization\": 70 }, \"initContainers\": [], \"numberOfServers\": 0, \"resources\": {}, \"sidecarContainers\": [], \"resources\": {}, \"testImage\": \"markhneedham/k8s-kubectl\", \"testImageTag\": \"master\", \"tolerations\": [], \"useAPOC\": \"true\" } }",
  "translate": "",
  "instruction": "README.md",
  "version": "3.0.1",
  "description": "DEPRECATED Neo4j is the world's leading graph database",
  "source": "",
  "icon_url": "https://example.com/images/neo4j_logo.png",
  "public": false,
  "chart_url": "neo4j-3.0.1.tgz",
  "create_at": "2021-05-08T08:53:13Z",
  "update_at": "2021-05-08T08:53:13Z"
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class UpdateChartSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");

        ICredential auth = new BasicCredentials()
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
```

```
        .withRegion(CceRegion.valueOf("<YOUR REGION>"))
        .build();
UpdateChartRequest request = new UpdateChartRequest();
request.withChartId("{chart_id}");
try {
    UpdateChartResponse response = client.updateChart(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]

    credentials = BasicCredentials(ak, sk)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = UpdateChartRequest()
        request.chart_id = "{chart_id}"
        response = client.update_chart(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)
```

```

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.UpdateChartRequest{}
    request.ChartId = "{chart_id}"
    response, err := client.UpdateChart(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.12.5 Creating a Release

Function

This API is used to create a release.

Calling Method

For details, see [Calling APIs](#).

URI

POST /cce/cam/v3/clusters/{cluster_id}/releases

Table 4-1119 Path Parameters

Parameter	Mandatory	Type	Description
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-1120 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-1121 Request body parameters

Parameter	Mandatory	Type	Description
chart_id	Yes	String	Chart ID
description	No	String	Release description
name	Yes	String	Release name
namespace	Yes	String	Namespace to which a chart release belongs
version	Yes	String	Release version
parameters	No	ReleaseReqBodyParams object	Release parameters
values	Yes	values object	Release value

Table 4-1122 ReleaseReqBodyParams

Parameter	Mandatory	Type	Description
dry_run	No	Boolean	After this function is enabled, only chart parameters are verified, and installation is not performed.

Parameter	Mandatory	Type	Description
name_template	No	String	Release name template
no_hooks	No	Boolean	Whether to disable hooks during installation
replace	No	Boolean	Whether to replace the release with the same name
recreate	No	Boolean	Whether to rebuild the release
reset_values	No	Boolean	Whether to reset values during an update
release_version	No	Integer	Version of the rollback release
include_hooks	No	Boolean	Enable hooks during an update or deletion.

Table 4-1123 values

Parameter	Mandatory	Type	Description
imagePullPolicy	No	String	Image pull policy
imageTag	No	String	Image tag

Response Parameters

Status code: 201

Table 4-1124 Response body parameters

Parameter	Type	Description
chart_name	String	Chart name
chart_public	Boolean	Whether the chart is public
chart_version	String	Chart version
cluster_id	String	Cluster ID
cluster_name	String	Current name
create_at	String	Created at
description	String	Release description

Parameter	Type	Description
name	String	Release name
namespace	String	Namespace to which a chart release belongs
parameters	String	Release parameters
resources	String	Resources required by the release
status	String	Release status. <ul style="list-style-type: none"> • DEPLOYED: The release is normal. • DELETED: The release has been deleted. • FAILED: The release fails to be deployed. • DELETING: The release is being deleted. • PENDING_INSTALL: The release is waiting to be installed. • PENDING_UPGRADE: The release is waiting to be upgraded. • PENDING_ROLLBACK: The release is waiting for rollback. • UNKNOWN: The release status is unknown, indicating that the release is abnormal. You can manually delete the release and reinstall it.
status_description	String	Release status description
update_at	String	Updated at
values	String	Release value
version	Integer	Release version

Example Requests

```
POST /cce/cam/v3/clusters/{cluster_id}/releases
{
  "name": "nino21",
  "namespace": "project01",
  "version": "1.0.0",
  "chart_id": "3c138b72-7ce4-6d76-7c55-604cdb2ce423",
  "values": {
    "imageTag": "v2",
    "imagePullPolicy": "IfNotPresent"
  },
  "parameters": {
    "dry_run": false,
    "no_hooks": false,

```

```
"replace" : false,
"name_template" : ""
}
}
```

Example Responses

Status code: 201

Created

```
{
  "chart_name" : "magento-mysql",
  "chart_public" : false,
  "chart_version" : "1.0.0",
  "cluster_id" : "a870253f-5dc7-11ee-bf71-0255ac100b03",
  "cluster_name" : "sfs-turbo-test",
  "create_at" : "2023-11-14T20:30:57+08:00",
  "description" : "Initial install underway",
  "name" : "testwww",
  "namespace" : "monitoring",
  "parameters" : "",
  "resources" : "",
  "status" : "PENDING_INSTALL",
  "status_description" : "Initial install underway",
  "update_at" : "2023-11-14T20:30:57+08:00",
  "values" : "{\"basic\":{\"admin_password\":\"*****\",\"admin_username\":\"username\",\"app_name\":\"magento\",\"mysql_database\":\"magento\",\"mysql_name\":\"mysql\",\"mysql_password\":\"*****\",\"mysql_port\":\"3306\",\"mysql_root_password\":\"*****\",\"mysql_user\":\"magento\",\"storage_class\":\"csi-nas\",\"storage_mode\":\"ReadWriteMany\",\"storage_size\":\"10G\"},\"global\":{\"magento_EIP\":\"100.100.100.100\",\"magento_EPORT\":\"32080\",\"namespace\":\"default\"},\"image\":{\"magento_image\":\"example.com/everest/magento:latest\",\"mysql_image\":\"example.com/everest/mysql:5.7.14\"}}",
  "version" : 1
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class CreateReleaseSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");

        ICredential auth = new BasicCredentials()
            .withAk(ak)
            .withSk(sk);
```



```
CceClient client = CceClient.newBuilder()
    .withCredential(auth)
    .withRegion(CceRegion.valueOf("<YOUR REGION>"))
    .build();
CreateReleaseRequest request = new CreateReleaseRequest();
request.withClusterId("{cluster_id}");
CreateReleaseReqBody body = new CreateReleaseReqBody();
CreateReleaseReqBodyValues valuesbody = new CreateReleaseReqBodyValues();
valuesbody.withImagePullPolicy("IfNotPresent")
    .withImageTag("v2");
ReleaseReqBodyParams parametersbody = new ReleaseReqBodyParams();
parametersbody.withDryRun(false)
    .withNameTemplate("")
    .withNoHooks(false)
    .withReplace(false);
body.withValues(valuesbody);
body.withParameters(parametersbody);
body.withVersion("1.0.0");
body.withNamespace("project01");
body.withName("nino21");
body.withChartId("3c138b72-7ce4-6d76-7c55-604cdb2ce423");
request.withBody(body);
try {
    CreateReleaseResponse response = client.createRelease(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]

    credentials = BasicCredentials(ak, sk)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = CreateReleaseRequest()
        request.cluster_id = "{cluster_id}"
```

```
valuesbody = CreateReleaseReqBodyValues(
    image_pull_policy="IfNotPresent",
    image_tag="v2"
)
parametersbody = ReleaseReqBodyParams(
    dry_run=False,
    name_template="",
    no_hooks=False,
    replace=False
)
request.body = CreateReleaseReqBody(
    values=valuesbody,
    parameters=parametersbody,
    version="1.0.0",
    namespace="project01",
    name="nino21",
    chart_id="3c138b72-7ce4-6d76-7c55-604cdb2ce423"
)
response = client.create_release(request)
print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.CreateReleaseRequest{}
    request.ClusterId = "{cluster_id}"
    imagePullPolicyValues := "IfNotPresent"
    imageTagValues := "v2"
    valuesbody := &model.CreateReleaseReqBodyValues{
        ImagePullPolicy: &imagePullPolicyValues,
        ImageTag: &imageTagValues,
    }
    dryRunParameters := false
    nameTemplateParameters := ""
    noHooksParameters := false
```

```
replaceParameters:= false
parametersbody := &model.ReleaseReqBodyParams{
    DryRun: &dryRunParameters,
    NameTemplate: &nameTemplateParameters,
    NoHooks: &noHooksParameters,
    Replace: &replaceParameters,
}
request.Body = &model.CreateReleaseReqBody{
    Values: valuesbody,
    Parameters: parametersbody,
    Version: "1.0.0",
    Namespace: "project01",
    Name: "nino21",
    ChartId: "3c138b72-7ce4-6d76-7c55-604cdb2ce423",
}
response, err := client.CreateRelease(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
201	Created

Error Codes

See [Error Codes](#).

4.12.6 Deleting a Chart

Function

This API is used to delete a chart.

Calling Method

For details, see [Calling APIs](#).

URI

DELETE /v2/charts/{chart_id}

Table 4-1125 Path Parameters

Parameter	Mandatory	Type	Description
chart_id	Yes	String	Chart ID

Request Parameters

Table 4-1126 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-1127 Response body parameters

Parameter	Type	Description
id	String	Chart ID
name	String	Chart name
values	String	Chart value
translate	String	Chart translation resources
instruction	String	Chart description
version	String	Chart version
description	String	Chart description
source	String	Chart source
icon_url	String	URL to chart icons
public	Boolean	Whether the chart is public
chart_url	String	URL to the chart
create_at	String	Created at
update_at	String	Updated at

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "id" : "e99a7e86-afdd-11eb-aca3-0255ac100b0e",
  "name" : "neo4j",
  "values" : "{\acceptLicenseAgreement\": \"no\", \"affinity\": {}, \"authEnabled\": true, \"clusterDomain\": \"cluster.local\", \"core\": {\initContainers\": [], \"numberOfServers\": 3, \"persistentVolume\": {\enabled\": true, \"mountPath\": \"/data\", \"size\": \"10Gi\"}, \"sidecarContainers\": []}, \"defaultDatabase\": \"neo4j\", \"image\": \"neo4j\", \"imagePullPolicy\": \"IfNotPresent\", \"imageTag\": \"4.0.3-enterprise\", \"name\": \"neo4j\", \"nodeSelector\": {}, \"podDisruptionBudget\": {}, \"readReplica\": {\autoscaling\": {\enabled\": false, \"maxReplicas\": 3, \"minReplicas\": 1, \"targetAverageUtilization\": 70}, \"initContainers\": [], \"numberOfServers\": 0, \"resources\": {}, \"sidecarContainers\": []}, \"resources\": {}, \"testImage\": \"markhneedham/k8s-kubectl\", \"testImageTag\": \"master\", \"tolerations\": [], \"useAPOC\": \"true\"}",
  "translate" : "",
  "instruction" : "README.md",
  "version" : "3.0.1",
  "description" : "DEPRECATED Neo4j is the world's leading graph database",
  "source" : ""
}
```

```
"icon_url" : "https://example.com/images/neo4j_logo.png",
"public" : false,
"chart_url" : "neo4j-3.0.1.tgz",
"create_at" : "2021-05-08T08:53:12Z",
"update_at" : "2021-05-08T08:53:12Z"
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class DeleteChartSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");

        ICredential auth = new BasicCredentials()
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        DeleteChartRequest request = new DeleteChartRequest();
        request.withChartId("{chart_id}");
        try {
            DeleteChartResponse response = client.deleteChart(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8
```

```
import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]

    credentials = BasicCredentials(ak, sk)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = DeleteChartRequest()
        request.chart_id = "{chart_id}"
        response = client.delete_chart(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.DeleteChartRequest{}
    request.ChartId = "{chart_id}"
    response, err := client.DeleteChart(request)
    if err == nil {
```

```

    fmt.Printf("%+v\n", response)
  } else {
    fmt.Println(err)
  }
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.12.7 Updating a Release

Function

This API is used to update a release.

Calling Method

For details, see [Calling APIs](#).

URI

PUT /cce/cam/v3/clusters/{cluster_id}/namespace/{namespace}/releases/{name}

Table 4-1128 Path Parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Release name
namespace	Yes	String	Namespace of the chart

Parameter	Mandatory	Type	Description
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-1129 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Table 4-1130 Request body parameters

Parameter	Mandatory	Type	Description
chart_id	Yes	String	Chart ID
action	Yes	String	upgrade for an upgrade and rollback for a rollback
parameters	Yes	ReleaseReqBodyParams object	Release parameters
values	Yes	values object	Release value

Table 4-1131 ReleaseReqBodyParams

Parameter	Mandatory	Type	Description
dry_run	No	Boolean	After this function is enabled, only chart parameters are verified, and installation is not performed.
name_template	No	String	Release name template
no_hooks	No	Boolean	Whether to disable hooks during installation

Parameter	Mandatory	Type	Description
replace	No	Boolean	Whether to replace the release with the same name
recreate	No	Boolean	Whether to rebuild the release
reset_values	No	Boolean	Whether to reset values during an update
release_version	No	Integer	Version of the rollback release
include_hooks	No	Boolean	Enable hooks during an update or deletion.

Table 4-1132 values

Parameter	Mandatory	Type	Description
imagePullPolicy	No	String	Image pull policy
imageTag	No	String	Image tag

Response Parameters

Status code: 200

Table 4-1133 Response body parameters

Parameter	Type	Description
chart_name	String	Chart name
chart_public	Boolean	Whether the chart is public
chart_version	String	Chart version
cluster_id	String	Cluster ID
cluster_name	String	Current name
create_at	String	Created at
description	String	Release description
name	String	Release name
namespace	String	Namespace to which a chart release belongs
parameters	String	Release parameters

Parameter	Type	Description
resources	String	Resources required by the release
status	String	Release status. <ul style="list-style-type: none"> • DEPLOYED: The release is normal. • DELETED: The release has been deleted. • FAILED: The release fails to be deployed. • DELETING: The release is being deleted. • PENDING_INSTALL: The release is waiting to be installed. • PENDING_UPGRADE: The release is waiting to be upgraded. • PENDING_ROLLBACK: The release is waiting for rollback. • UNKNOWN: The release status is unknown, indicating that the release is abnormal. You can manually delete the release and reinstall it.
status_description	String	Release status description
update_at	String	Updated at
values	String	Release value
version	Integer	Release version

Example Requests

```
PUT /cce/cam/v3/clusters/{cluster_id}/namespace/{namespace}/releases/{name}
{
  "chart_id": "af4b699e-018c-11ec-b8b0-0255ac100b05",
  "action": "upgrade",
  "parameters": {
    "dry_run": false,
    "name_template": "string",
    "no_hooks": false,
    "replace": false,
    "recreate": false,
    "reset_values": false,
    "release_version": 1,
    "include_hooks": false
  },
  "values": {
    "imagePullPolicy": "IfNotPresent",
    "imageTag": "v2"
  }
}
```

Example Responses

Status code: 200

OK

```
{
  "chart_name": "magento-mysql",
  "chart_public": false,
  "chart_version": "1.0.0",
  "cluster_id": "a870253f-5dc7-11ee-bf71-0255ac100b03",
  "cluster_name": "sfs-turbo-test",
  "create_at": "2023-11-14T20:30:57+08:00",
  "description": "Initial install underway",
  "name": "testwww",
  "namespace": "monitoring",
  "parameters": "",
  "resources": "",
  "status": "PENDING_INSTALL",
  "status_description": "Initial install underway",
  "update_at": "2023-11-14T20:30:57+08:00",
  "values": "{\"basic\":{\"admin_password\":\"*****\",\"admin_username\":\"username\",\"app_name\":\"magento\",\"mysql_database\":\"magento\",\"mysql_name\":\"mysql\",\"mysql_password\":\"*****\",\"mysql_port\":\"3306\",\"mysql_root_password\":\"*****\",\"mysql_user\":\"magento\",\"storage_class\":\"csi-nas\",\"storage_mode\":\"ReadWriteMany\",\"storage_size\":\"10G\"},\"global\":{\"magento_EIP\":\"100.100.100.100\",\"magento_EPORT\":\"32080\",\"namespace\":\"default\"},\"image\":{\"magento_image\":\"example.com/everest/magento:latest\",\"mysql_image\":\"example.com/everest/mysql:5.7.14\"}}",
  "version": 1
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class UpdateReleaseSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");

        ICredential auth = new BasicCredentials()
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
    }
}
```

```
UpdateReleaseRequest request = new UpdateReleaseRequest();
request.withName("{name}");
request.withNamespace("{namespace}");
request.withClusterId("{cluster_id}");
UpdateReleaseReqBody body = new UpdateReleaseReqBody();
UpdateReleaseReqBodyValues valuesbody = new UpdateReleaseReqBodyValues();
valuesbody.withImagePullPolicy("IfNotPresent")
    .withImageTag("v2");
ReleaseReqBodyParams parametersbody = new ReleaseReqBodyParams();
parametersbody.withDryRun(false)
    .withNameTemplate("string")
    .withNoHooks(false)
    .withReplace(false)
    .withRecreate(false)
    .withResetValues(false)
    .withReleaseVersion(1)
    .withIncludeHooks(false);
body.withValues(valuesbody);
body.withParameters(parametersbody);
body.withAction(UpdateReleaseReqBody.ActionEnum.fromValue("upgrade"));
body.withChartId("af4b699e-018c-11ec-b8b0-0255ac100b05");
request.withBody(body);
try {
    UpdateReleaseResponse response = client.updateRelease(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]

    credentials = BasicCredentials(ak, sk)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = UpdateReleaseRequest()
        request.name = "{name}"
        request.namespace = "{namespace}"
```

```
request.cluster_id = "{cluster_id}"
valuesbody = UpdateReleaseReqBodyValues(
    image_pull_policy="IfNotPresent",
    image_tag="v2"
)
parametersbody = ReleaseReqBodyParams(
    dry_run=False,
    name_template="string",
    no_hooks=False,
    replace=False,
    recreate=False,
    reset_values=False,
    release_version=1,
    include_hooks=False
)
request.body = UpdateReleaseReqBody(
    values=valuesbody,
    parameters=parametersbody,
    action="upgrade",
    chart_id="af4b699e-018c-11ec-b8b0-0255ac100b05"
)
response = client.update_release(request)
print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.UpdateReleaseRequest{
        request.Name = "{name}"
        request.Namespace = "{namespace}"
        request.ClusterId = "{cluster_id}"
        imagePullPolicyValues:= "IfNotPresent"
        imageTagValues:= "v2"
        valuesbody := &model.UpdateReleaseReqBodyValues{
            ImagePullPolicy: &imagePullPolicyValues,
```

```

    ImageTag: &imageTagValues,
  }
  dryRunParameters:= false
  nameTemplateParameters:= "string"
  noHooksParameters:= false
  replaceParameters:= false
  recreateParameters:= false
  resetValuesParameters:= false
  releaseVersionParameters:= int32(1)
  includeHooksParameters:= false
  parametersbody := &model.ReleaseReqBodyParams{
    DryRun: &dryRunParameters,
    NameTemplate: &nameTemplateParameters,
    NoHooks: &noHooksParameters,
    Replace: &replaceParameters,
    Recreate: &recreateParameters,
    ResetValues: &resetValuesParameters,
    ReleaseVersion: &releaseVersionParameters,
    IncludeHooks: &includeHooksParameters,
  }
  request.Body = &model.UpdateReleaseReqBody{
    Values: valuesbody,
    Parameters: parametersbody,
    Action: model.GetUpdateReleaseReqBodyActionEnum().UPGRADE,
    ChartId: "af4b699e-018c-11ec-b8b0-0255ac100b05",
  }
  response, err := client.UpdateRelease(request)
  if err == nil {
    fmt.Printf("%+v\n", response)
  } else {
    fmt.Println(err)
  }
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.12.8 Obtaining a Chart

Function

This API is used to obtain a chart.

Calling Method

For details, see [Calling APIs](#).

URI

GET /v2/charts/{chart_id}

Table 4-1134 Path Parameters

Parameter	Mandatory	Type	Description
chart_id	Yes	String	Chart ID

Request Parameters

Table 4-1135 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-1136 Response body parameters

Parameter	Type	Description
id	String	Chart ID
name	String	Chart name
values	String	Chart value
translate	String	Chart translation resources
instruction	String	Chart description
version	String	Chart version
description	String	Chart description
source	String	Chart source
icon_url	String	URL to chart icons
public	Boolean	Whether the chart is public
chart_url	String	URL to the chart
create_at	String	Created at
update_at	String	Updated at

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "id": "e99a7e86-afdd-11eb-aca3-0255ac100b0e",
  "name": "neo4j",
  "values": "{\n  \"acceptLicenseAgreement\": \"no\",\n  \"affinity\": {},\n  \"authEnabled\": true,\n  \"clusterDomain\": \"cluster.local\",\n  \"core\": {\n    \"initContainers\": [],\n    \"numberOfServers\": 3,\n    \"persistentVolume\": {\n      \"enabled\": true,\n      \"mountPath\": \"/data\",\n      \"size\": \"10Gi\",\n      \"sidecarContainers\": [],\n      \"defaultDatabase\": \"neo4j\",\n      \"image\": \"neo4j\",\n      \"imagePullPolicy\": \"IfNotPresent\",\n      \"imageTag\": \"4.0.3-enterprise\",\n      \"name\": \"neo4j\",\n      \"nodeSelector\": {},\n      \"podDisruptionBudget\": {},\n      \"readReplica\": {\n        \"autoscaling\": {\n          \"enabled\": false,\n          \"maxReplicas\": 3,\n          \"minReplicas\": 1,\n          \"targetAverageUtilization\": 70\n        },\n        \"initContainers\": [],\n        \"numberOfServers\": 0,\n        \"resources\": {},\n        \"sidecarContainers\": [],\n        \"resources\": {\n          \"testImage\": \"markhneedham/k8s-kubectl\",\n          \"testImageTag\": \"master\",\n          \"tolerations\": [],\n          \"useAPOC\": true\n        }\n      }\n    },\n    \"translate\": \"\",\n    \"instruction\": \"README.md\",\n    \"version\": \"3.0.1\",\n    \"description\": \"DEPRECATED Neo4j is the world's leading graph database\",\n    \"source\": \"\",\n    \"icon_url\": \"https://info.neo4j.com/rs/773-GON-065/images/neo4j_logo.png\",\n    \"public\": false,\n    \"chart_url\": \"neo4j-3.0.1.tgz\",\n    \"create_at\": \"2021-05-08T08:53:13Z\",\n    \"update_at\": \"2021-05-08T08:53:13Z\"\n  }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ShowChartSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");

        ICredential auth = new BasicCredentials()
            .withAk(ak)
            .withSk(sk);
```

```
CceClient client = CceClient.newBuilder()
    .withCredential(auth)
    .withRegion(CceRegion.valueOf("<YOUR REGION>"))
    .build();
ShowChartRequest request = new ShowChartRequest();
request.withChartId("{chart_id}");
try {
    ShowChartResponse response = client.showChart(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]

    credentials = BasicCredentials(ak, sk)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ShowChartRequest()
        request.chart_id = "{chart_id}"
        response = client.show_chart(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
```

```

    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ShowChartRequest{}
    request.ChartId = "{chart_id}"
    response, err := client.ShowChart(request)
    if err == nil {
        fmt.Printf("%v\n", response)
    } else {
        fmt.Println(err)
    }
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.12.9 Deleting a Release

Function

This API is used to delete a release.

Calling Method

For details, see [Calling APIs](#).

URI

DELETE /cce/cam/v3/clusters/{cluster_id}/namespace/{namespace}/releases/{name}

Table 4-1137 Path Parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Release name
namespace	Yes	String	Namespace of the chart
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-1138 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-1139 Response body parameters

Parameter	Type	Description
chart_name	String	Chart name
chart_public	Boolean	Whether the chart is public
chart_version	String	Chart version
cluster_id	String	Cluster ID
cluster_name	String	Current name
create_at	String	Created at
description	String	Release description
name	String	Release name
namespace	String	Namespace to which a chart release belongs
parameters	String	Release parameters
resources	String	Resources required by the release
status	String	<p>Release status.</p> <ul style="list-style-type: none"> • DEPLOYED: The release is normal. • DELETED: The release has been deleted. • FAILED: The release fails to be deployed. • DELETING: The release is being deleted. • PENDING_INSTALL: The release is waiting to be installed. • PENDING_UPGRADE: The release is waiting to be upgraded. • PENDING_ROLLBACK: The release is waiting for rollback. • UNKNOWN: The release status is unknown, indicating that the release is abnormal. You can manually delete the release and reinstall it.
status_description	String	Release status description
update_at	String	Updated at
values	String	Release value
version	Integer	Release version

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "chart_name": "magento-mysql",
  "chart_public": false,
  "chart_version": "1.0.0",
  "cluster_id": "a870253f-5dc7-11ee-bf71-0255ac100b03",
  "cluster_name": "sfs-turbo-test",
  "create_at": "2023-11-14T20:30:57+08:00",
  "name": "testwww",
  "namespace": "monitoring",
  "parameters": "",
  "resources": "",
  "status": "DELETING",
  "update_at": "2023-11-14T20:30:57+08:00",
  "values": "{\"basic\":{\"admin_password\":\"*****\",\"admin_username\":\"username\",\"app_name\":\"magento\",\"mysql_database\":\"magento\",\"mysql_name\":\"mysql\",\"mysql_password\":\"*****\",\"mysql_port\":\"3306\",\"mysql_root_password\":\"*****\",\"mysql_user\":\"magento\",\"storage_class\":\"csi-nas\",\"storage_mode\":\"ReadWriteMany\",\"storage_size\":\"10G\"},\"global\":{\"magento_EIP\":\"100.100.100.100\",\"magento_EPORT\":\"32080\",\"namespace\":\"default\"},\"image\":{\"magento_image\":\"example.com/everest/magento:latest\",\"mysql_image\":\"example.com/everest/mysql:5.7.14\"}}",
  "version": 1
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class DeleteReleaseSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");

        ICredential auth = new BasicCredentials()
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
```

```
        .withCredential(auth)
        .withRegion(CceRegion.valueOf("<YOUR REGION>"))
        .build();
DeleteReleaseRequest request = new DeleteReleaseRequest();
request.setName("{name}");
request.withNamespace("{namespace}");
request.withClusterId("{cluster_id}");
try {
    DeleteReleaseResponse response = client.deleteRelease(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]

    credentials = BasicCredentials(ak, sk)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = DeleteReleaseRequest()
        request.name = "{name}"
        request.namespace = "{namespace}"
        request.cluster_id = "{cluster_id}"
        response = client.delete_release(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
```

```

"github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
"github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.DeleteReleaseRequest{}
    request.Name = "{name}"
    request.Namespace = "{namespace}"
    request.ClusterId = "{cluster_id}"
    response, err := client.DeleteRelease(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.12.10 Downloading a Chart

Function

This API is used to download a chart.

Calling Method

For details, see [Calling APIs](#).

URI

GET /v2/charts/{chart_id}/archive

Table 4-1140 Path Parameters

Parameter	Mandatory	Type	Description
chart_id	Yes	String	Chart ID

Request Parameters

Table 4-1141 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	Details: The request body type or format Constraints: The GET method is not verified. Options: <ul style="list-style-type: none">• application/json• application/json;charset=utf-8• application/x-pem-file• multipart/form-data (used when the FormData parameter is present) Default value: N/A

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-1142 Response body parameters

Parameter	Type	Description
-	File	File name of the downloaded chart

Example Requests

None

Example Responses

Status code: 200

OK

```
"chart-file.tgz"
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;
import com.huaweicloud.sdk.core.auth.ICredential;
```

```
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class DownloadChartSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");

        ICredential auth = new BasicCredentials()
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        DownloadChartRequest request = new DownloadChartRequest();
        request.withChartId("{chart_id}");
        try {
            DownloadChartResponse response = client.downloadChart(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.getenv("CLOUD_SDK_AK")
    sk = os.getenv("CLOUD_SDK_SK")

    credentials = BasicCredentials(ak, sk)

    client = CceClient.new_builder() \
```

```
.with_credentials(credentials) \  
.with_region(CceRegion.value_of("<YOUR REGION>")) \  
.build()  
  
try:  
    request = DownloadChartRequest()  
    request.chart_id = "{chart_id}"  
    response = client.download_chart(request)  
    print(response)  
except exceptions.ClientRequestException as e:  
    print(e.status_code)  
    print(e.request_id)  
    print(e.error_code)  
    print(e.error_msg)
```

Go

```
package main  
  
import (  
    "fmt"  
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"  
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"  
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"  
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"  
)  
  
func main() {  
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security  
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment  
    // variables and decrypted during use to ensure security.  
    // In this example, AK and SK are stored in environment variables for authentication. Before running this  
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment  
    ak := os.Getenv("CLOUD_SDK_AK")  
    sk := os.Getenv("CLOUD_SDK_SK")  
  
    auth := basic.NewCredentialsBuilder().  
        WithAk(ak).  
        WithSk(sk).  
        Build()  
  
    client := cce.NewCceClient(  
        cce.CceClientBuilder().  
            WithRegion(region.ValueOf("<YOUR REGION>")).  
            WithCredential(auth).  
            Build())  
  
    request := &model.DownloadChartRequest{  
        request.ChartId = "{chart_id}"  
    }  
    response, err := client.DownloadChart(request)  
    if err == nil {  
        fmt.Printf("%v\n", response)  
    } else {  
        fmt.Println(err)  
    }  
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.12.11 Obtaining a Release

Function

This API is used to obtain a release.

Calling Method

For details, see [Calling APIs](#).

URI

GET /cce/cam/v3/clusters/{cluster_id}/namespace/{namespace}/releases/{name}

Table 4-1143 Path Parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Release name
namespace	Yes	String	Namespace of the chart
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-1144 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-1145 Response body parameters

Parameter	Type	Description
chart_name	String	Chart name
chart_public	Boolean	Whether the chart is public
chart_version	String	Chart version
cluster_id	String	Cluster ID
cluster_name	String	Current name
create_at	String	Created at
description	String	Release description
name	String	Release name
namespace	String	Namespace to which a chart release belongs
parameters	String	Release parameters
resources	String	Resources required by the release
status	String	Release status. <ul style="list-style-type: none"> • DEPLOYED: The release is normal. • DELETED: The release has been deleted. • FAILED: The release fails to be deployed. • DELETING: The release is being deleted. • PENDING_INSTALL: The release is waiting to be installed. • PENDING_UPGRADE: The release is waiting to be upgraded. • PENDING_ROLLBACK: The release is waiting for rollback. • UNKNOWN: The release status is unknown, indicating that the release is abnormal. You can manually delete the release and reinstall it.
status_description	String	Release status description
update_at	String	Updated at
values	String	Release value
version	Integer	Release version

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "chart_name": "magento-mysql",
  "chart_public": false,
  "chart_version": "1.0.0",
  "cluster_id": "a870253f-5dc7-11ee-bf71-0255ac100b03",
  "cluster_name": "sfs-turbo-test",
  "create_at": "2023-11-14T20:30:57+08:00",
  "description": "Initial install underway",
  "name": "testwww",
  "namespace": "monitoring",
  "parameters": "",
  "resources": "",
  "status": "PENDING_INSTALL",
  "status_description": "Initial install underway",
  "update_at": "2023-11-14T20:30:57+08:00",
  "values": "{\"basic\":{\"admin_password\":\"*****\",\"admin_username\":\"username\",\"app_name\":\"magento\",\"mysql_database\":\"magento\",\"mysql_name\":\"mysql\",\"mysql_password\":\"*****\",\"mysql_port\":\"3306\",\"mysql_root_password\":\"*****\",\"mysql_user\":\"magento\",\"storage_class\":\"csi-nas\",\"storage_mode\":\"ReadWriteMany\",\"storage_size\":\"10G\"},\"global\":{\"magento_EIP\":\"100.100.100.100\",\"magento_EPORT\":\"32080\",\"namespace\":\"default\",\"image\":{\"magento_image\":\"example.com/everest/magento:latest\",\"mysql_image\":\"example.com/everest/mysql:5.7.14\"}}\",
  \"version\": 1
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ShowReleaseSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");

        ICredential auth = new BasicCredentials()
            .withAk(ak)
            .withSk(sk);
```

```
CceClient client = CceClient.newBuilder()
    .withCredential(auth)
    .withRegion(CceRegion.valueOf("<YOUR REGION>"))
    .build();
ShowReleaseRequest request = new ShowReleaseRequest();
request.withName("{name}");
request.withNamespace("{namespace}");
request.withClusterId("{cluster_id}");
try {
    ShowReleaseResponse response = client.showRelease(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]

    credentials = BasicCredentials(ak, sk)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ShowReleaseRequest()
        request.name = "{name}"
        request.namespace = "{namespace}"
        request.cluster_id = "{cluster_id}"
        response = client.show_release(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main
```

```
import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ShowReleaseRequest{}
    request.Name = "{name}"
    request.Namespace = "{namespace}"
    request.ClusterId = "{cluster_id}"
    response, err := client.ShowRelease(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.12.12 Obtaining Chart Values

Function

This API is used to obtain chart values.

Calling Method

For details, see [Calling APIs](#).

URI

GET /v2/charts/{chart_id}/values

Table 4-1146 Path Parameters

Parameter	Mandatory	Type	Description
chart_id	Yes	String	Chart ID

Request Parameters

Table 4-1147 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-1148 Response body parameters

Parameter	Type	Description
values	Map<String, Object>	Data in values.yaml . The data structure depends on the chart.

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "values": {
    "basic": {
      "admin_password": "*****",
      "admin_username": "username"
    },
    "global": {
      "magento_EIP": "127.0.0.1",
      "magento_EPORT": 32080,
      "namespace": "demo"
    },
    "image": {
```

```
"magento_image" : "example.com/demo/magento:latest",
"mysql_image" : "example.com/demo/mysql:5.7.14"
}
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ShowChartValuesSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");

        ICredential auth = new BasicCredentials()
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        ShowChartValuesRequest request = new ShowChartValuesRequest();
        request.withChartId("{chart_id}");
        try {
            ShowChartValuesResponse response = client.showChartValues(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
```



```
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]

    credentials = BasicCredentials(ak, sk)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ShowChartValuesRequest()
        request.chart_id = "{chart_id}"
        response = client.show_chart_values(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        Build()

    client := cce.NewCceClient(
        cce.CceClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ShowChartValuesRequest{}
    request.ChartId = "{chart_id}"
    response, err := client.ShowChartValues(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    }
}
```

```

    } else {
        fmt.Println(err)
    }
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.12.13 Obtaining Historical Records of a Release

Function

This API is used to obtain historical records of a release.

Calling Method

For details, see [Calling APIs](#).

URI

GET /cce/cam/v3/clusters/{cluster_id}/namespace/{namespace}/releases/{name}/history

Table 4-1149 Path Parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Release name
namespace	Yes	String	Namespace of the chart

Parameter	Mandatory	Type	Description
cluster_id	Yes	String	<p>Details: Cluster ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Cluster IDs</p> <p>Default value: N/A</p>

Request Parameters

Table 4-1150 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-1151 Response body parameters

Parameter	Type	Description
[items]	Array of ReleaseResp objects	

Table 4-1152 ReleaseResp

Parameter	Type	Description
chart_name	String	Chart name
chart_public	Boolean	Whether the chart is public
chart_version	String	Chart version
cluster_id	String	Cluster ID
cluster_name	String	Current name
create_at	String	Created at
description	String	Release description
name	String	Release name

Parameter	Type	Description
namespace	String	Namespace to which a chart release belongs
parameters	String	Release parameters
resources	String	Resources required by the release
status	String	Release status. <ul style="list-style-type: none"> • DEPLOYED: The release is normal. • DELETED: The release has been deleted. • FAILED: The release fails to be deployed. • DELETING: The release is being deleted. • PENDING_INSTALL: The release is waiting to be installed. • PENDING_UPGRADE: The release is waiting to be upgraded. • PENDING_ROLLBACK: The release is waiting for rollback. • UNKNOWN: The release status is unknown, indicating that the release is abnormal. You can manually delete the release and reinstall it.
status_description	String	Release status description
update_at	String	Updated at
values	String	Release value
version	Integer	Release version

Example Requests

None

Example Responses

Status code: 200

OK

```
[ {
  "chart_name": "magento-mysql",
  "chart_public": false,
  "chart_version": "1.0.0",
  "cluster_id": "a870253f-5dc7-11ee-bf71-0255ac100b03",
  "cluster_name": "sfs-turbo-test",
```

```
"create_at" : "2023-11-14T20:30:57+08:00",
"description" : "Initial install underway",
"name" : "testwww",
"namespace" : "monitoring",
"parameters" : "",
"resources" : "",
"status" : "PENDING_INSTALL",
"status_description" : "Initial install underway",
"update_at" : "2023-11-14T20:30:57+08:00",
"values" : "{\n  \"basic\":{\n    \"admin_password\": \"*****\",\n    \"admin_username\": \"username\",\n    \"app_name\": \"magento\",\n    \"mysql_database\": \"magento\",\n    \"mysql_name\": \"mysql\",\n    \"mysql_password\": \"*****\",\n    \"mysql_port\": 3306,\n    \"mysql_root_password\": \"*****\",\n    \"mysql_user\": \"magento\",\n    \"storage_class\": \"csi-nas\",\n    \"storage_mode\": \"ReadWriteMany\",\n    \"storage_size\": \"10G\",\n    \"global\": {\n      \"magento_EIP\": \"100.100.100.100\",\n      \"magento_EPORT\": 32080,\n      \"namespace\": \"default\",\n      \"image\": {\n        \"magento_image\": \"example.com/everest/magento:latest\",\n        \"mysql_image\": \"example.com/everest/mysql:5.7.14\"}\n    }\n  }\n}"
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ShowReleaseHistorySolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");

        ICredential auth = new BasicCredentials()
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        ShowReleaseHistoryRequest request = new ShowReleaseHistoryRequest();
        request.setName("{name}");
        request.withNamespace("{namespace}");
        request.withClusterId("{cluster_id}");
        try {
            ShowReleaseHistoryResponse response = client.showReleaseHistory(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
        }
    }
}
```

```

        System.out.println(e.getHttpStatusCode());
        System.out.println(e.getRequestId());
        System.out.println(e.getErrorCode());
        System.out.println(e.getErrorMsg());
    }
}
}
}

```

Python

```

# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]

    credentials = BasicCredentials(ak, sk)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ShowReleaseHistoryRequest()
        request.name = "{name}"
        request.namespace = "{namespace}"
        request.cluster_id = "{cluster_id}"
        response = client.show_release_history(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)

```

Go

```

package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")

    auth := basic.NewCredentialsBuilder().

```

```

WithAk(ak).
WithSk(sk).
Build()

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.ShowReleaseHistoryRequest{}
request.Name = "{name}"
request.Namespace = "{namespace}"
request.ClusterId = "{cluster_id}"
response, err := client.ShowReleaseHistory(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
}

```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.12.14 Obtaining the Quota of a User Chart

Function

This API is used to obtain the quota of a user chart.

Calling Method

For details, see [Calling APIs](#).

URI

GET /v2/charts/{project_id}/quotas

Table 4-1153 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p>Details: Project ID. For details about how to obtain the value, see How to Obtain Parameters in the API URI.</p> <p>Constraints: None</p> <p>Options: Project IDs of the account</p> <p>Default value: N/A</p>

Request Parameters

Table 4-1154 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	<p>Details: The request body type or format</p> <p>Constraints: The GET method is not verified.</p> <p>Options:</p> <ul style="list-style-type: none"> • application/json • application/json;charset=utf-8 • application/x-pem-file • multipart/form-data (used when the FormData parameter is present) <p>Default value: N/A</p>

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>Details: Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a User Token.</p> <p>Constraints: None</p> <p>Options: N/A</p> <p>Default value: N/A</p>

Response Parameters

Status code: 200

Table 4-1155 Response body parameters

Parameter	Type	Description
quotas	quotas object	Chart quota

Table 4-1156 quotas

Parameter	Type	Description
resources	Array of resources objects	Resources

Table 4-1157 resources

Parameter	Type	Description
type	String	Resource type
quota	Integer	Resource quota
used	Integer	Used resources

Example Requests

None

Example Responses

Status code: 200

OK

```
{
  "quotas" : {
    "resources" : [ {
      "type" : "Charts",
      "quota" : 200,
      "used" : 2
    } ]
  }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.cce.v3.region.CceRegion;
import com.huaweicloud.sdk.cce.v3.*;
import com.huaweicloud.sdk.cce.v3.model.*;

public class ShowUserChartsQuotasSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        CceClient client = CceClient.newBuilder()
            .withCredential(auth)
            .withRegion(CceRegion.valueOf("<YOUR REGION>"))
            .build();
        ShowUserChartsQuotasRequest request = new ShowUserChartsQuotasRequest();
        try {
            ShowUserChartsQuotasResponse response = client.showUserChartsQuotas(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        }
    }
}
```

```
        e.printStackTrace();
    } catch (ServiceResponseException e) {
        e.printStackTrace();
        System.out.println(e.getHttpStatusCode());
        System.out.println(e.getRequestId());
        System.out.println(e.getErrorCode());
        System.out.println(e.getErrorMsg());
    }
}
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkcce.v3.region.cce_region import CceRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkcce.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = CceClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(CceRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ShowUserChartsQuotasRequest()
        response = client.show_user_charts_quotas(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    cce "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/cce/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"
```

```
auth := basic.NewCredentialsBuilder().
    WithAk(ak).
    WithSk(sk).
    WithProjectId(projectId).
    Build()

client := cce.NewCceClient(
    cce.CceClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.ShowUserChartsQuotasRequest{}
response, err := client.ShowUserChartsQuotas(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.13 Add-on Instance Parameters

4.13.1 CoreDNS

Add-on Overview

CoreDNS is a DNS server that uses chain plug-ins to provide domain name resolution services for Kubernetes clusters. It is the recommended DNS server solution by the Kubernetes community.

Add-on Parameters

Table 4-1158 Parameters

Parameter	Mandatory	Type	Description
basic	No	object	Basic configuration parameters, which do not need to be specified
flavor	Yes	Table 4-1159 object	Flavor parameters
custom	Yes	Table 4-1160 object	Custom parameters

Table 4-1159 Configuration of flavor

Parameter	Mandatory	Type	Description
replicas	Yes	int	Number of pods. The default value is 2.
resources	Yes	Array of resources object	Container resource (CPU and memory) quotas

Table 4-1160 Configuration of custom

Parameter	Mandatory	Type	Description
servers	No	object	Configuration of servers
stub_domains	No	Map<String>[[]string	Stub domain configuration
multiAZEnable	No	bool	Whether to enable the forcible mode of multi-AZ deployment for the deployment component. The default value is false . Deployment pods of the add-on will be forcibly scheduled to nodes in different AZs. If there are fewer AZs than pods, the extra pods will fail to run. If both multiAZEnable and multiAZBalance are set to true, the settings of multiAZBalance take effect, which means, the equivalent mode of multi-AZ deployment is used.

Parameter	Mandatory	Type	Description
multiAZBalance	No	bool	Whether to enable the equivalent mode of multi-AZ deployment for the deployment component. The default value is false . Deployment pods of the add-on are evenly scheduled to the nodes in the cluster in each AZ. If a new AZ is added, it is recommended that you increase add-on pods for cross-AZ HA deployment. With the equivalent multi-AZ deployment, the difference between the number of add-on pods in different AZs will be less than or equal to 1. If resources in one of the AZs are insufficient, pods cannot be scheduled to that AZ.
tolerations	No	Array of Table 4-1162	Toleration configuration

Table 4-1161 Data structure of the resources field

Parameter	Mandatory	Type	Description
limitsCpu	Yes	String	CPU size limit (unit: m)
limitsMem	Yes	String	Memory size limit (unit: Mi)
name	Yes	String	Add-on name. The value is fixed at coredns .
requestsCpu	Yes	String	Requested CPU size (unit: m)
requestsMem	Yes	String	Requested memory size (unit: Mi)

Table 4-1162 Taints and tolerations

Parameter	Mandatory	Type	Description
key	No	String	Taint key
effect	No	String	Taint policy
operator	No	String	Operator
tolerationSeconds	No	Int	Toleration time window

Table 4-1163 Configuration of server

Parameter	Mandatory	Type	Description
port	No	Int	Domain port number. The default value is 5353 .
zones	No	Array of Table 4-1165	Domain configuration
plugins	No	Array of Table 4-1164	Configuration of plugin

Table 4-1164 Configuration of plugin

Parameter	Mandatory	Type	Description
name	Yes	String	Plugin name
configBlock	No	String	Configuration of plugin
parameters	No	String/Int	Extended parameters of the plugin

Table 4-1165 Configuration of zone

Parameter	Mandatory	Type	Description
zone	Yes	String	Domain to be listened on. The default value is a period (.).

Example Request

```
{
  "kind": "Addon",
  "apiVersion": "v3",
  "metadata": {
    "annotations": {
      "addon.install/type": "install"
    }
  },
  "spec": {
    "clusterID": "2292498e-*****-0255ac1001ba",
    "version": "1.29.2",
    "addonTemplateName": "coredns",
    "values": {
      "basic": {
        "basickey": "val"
      },
      "flavor": {
        "replicas": 2,
        "resources": [{
          "limitsCpu": "2000m",
```



```

        "limitsMem": "2000Mi",
        "name": "coredns",
        "requestsCpu": "2000m",
        "requestsMem": "2000Mi"
    }
},
"custom": {
    "multiAZBalance": false,
    "multiAZEnabled": false,
    "node_match_expressions": [],
    "servers": [{
        "plugins": [{
            "name": "bind",
            "parameters": "{$POD_IP}"
        }],
        {
            "configBlock": "servfail 5s",
            "name": "cache",
            "parameters": 30
        },
        {
            "name": "errors"
        },
        {
            "name": "health",
            "parameters": "{$POD_IP}:8080"
        },
        {
            "name": "ready",
            "parameters": "{$POD_IP}:8081"
        },
        {
            "configBlock": "pods insecure\nfallthrough in-addr.arpa ip6.arpa",
            "name": "kubernetes",
            "parameters": "cluster.local in-addr.arpa ip6.arpa"
        },
        {
            "name": "loadbalance",
            "parameters": "round_robin"
        },
        {
            "name": "prometheus",
            "parameters": "{$POD_IP}:9153"
        },
        {
            "configBlock": "policy random",
            "name": "forward",
            "parameters": ". /etc/resolv.conf"
        },
        {
            "name": "reload"
        }
    ]},
    "port": 5353,
    "zones": [{
        "zone": "."
    }
}],
"stub_domains": {
},
"tolerations": [{
    "key": "node.kubernetes.io/not-ready",
    "operator": "Exists",
    "effect": "NoExecute",
    "tolerationSeconds": 60
},
{
    "key": "node.kubernetes.io/unreachable",
    "operator": "Exists",

```

```

    "effect": "NoExecute",
    "tolerationSeconds": 60
  }}
}
}
}
}
}

```

4.13.2 CCE Container Storage (Everest)

Add-on Overview

The CCE Container Storage (Everest) add-on uses the Container Storage Interface (CSI) to link Kubernetes clusters with cloud storage services.

Add-on Parameters

Table 4-1166 Parameters

Parameter	Mandatory	Type	Description
basic	No	object	Basic configuration parameters, which do not need to be specified
flavor	Yes	Table 4-1167 object	Flavor parameters
custom	Yes	Table 4-1168 object	Custom parameters

Table 4-1167 Configuration of flavor

Parameter	Mandatory	Type	Description
description	No	String	Add-on description
name	Yes	String	Add-on specification name
replicas	Yes	String	Number of pods. The default value is 1 .
resources	Yes	resources object	Container resource (CPU and memory) quotas

Table 4-1168 Configuration of custom

Parameter	Mandatory	Type	Description
default_vpc_id	Yes	String	VPC ID

Parameter	Mandatory	Type	Description
cluster_id	Yes	String	Cluster ID
cluster_name	Yes	String	Cluster name
project_id	Yes	String	Project ID
disable_auto_mount_secret	No	bool	Whether to allow the default AK/SK to be used during OBS volume mounting Default value: false
over_subscription	No	String	Local PV overcommitment ratio Default value: 80
csi_attach_worker_threads	No	String	The number of concurrent workers for detaching volumes Default value: 60
volume_attaching_flow_ctrl	No	String	Attaching flow control data Default value: 0 .
number_of_reserved_disks	No	String	Disk attaching capability reserved for non-container scenarios Default value: 6
flow_control	No	Map<String>string	Flow control parameter Default value: {}
enable_node_attacher	No	bool	Whether to start agent attacher Default value: false
multiAZEnabled	No	bool	Whether to enable the forcible mode of multi-AZ deployment for the deployment component. The default value is false . Deployment pods of the add-on will be forcibly scheduled to nodes in different AZs. If there are fewer AZs than pods, the extra pods will fail to run. If both multiAZEnable and multiAZBalance are set to true, the settings of multiAZBalance take effect, which means, the equivalent mode of multi-AZ deployment is used.

Parameter	Mandatory	Type	Description
multiAZBalance	No	bool	Whether to enable the equivalent mode of multi-AZ deployment for the deployment component. The default value is false . Deployment pods of the add-on are evenly scheduled to the nodes in the cluster in each AZ. If a new AZ is added, it is recommended that you increase add-on pods for cross-AZ HA deployment. With the equivalent multi-AZ deployment, the difference between the number of add-on pods in different AZs will be less than or equal to 1. If resources in one of the AZs are insufficient, pods cannot be scheduled to that AZ.
tolerations	No	Array of Table 4-1170	Toleration configuration
node_match_expressions	No	Array of Table 4-1171	Add-on pod affinity configuration

Table 4-1169 Data structure of the resources field

Parameter	Mandatory	Type	Description
limitsCpu	Yes	String	CPU size limit (unit: m)
limitsMem	Yes	String	Memory size limit (unit: Mi)
name	Yes	String	Add-on name. The value is fixed at everest-csi-controller or everest-csi-driver .
requestsCpu	Yes	String	Requested CPU size (unit: m)
requestsMem	Yes	String	Requested memory size (unit: Mi)

Table 4-1170 Taints and tolerations

Parameter	Mandatory	Type	Description
key	No	String	Taint key
effect	No	String	Taint policy

Parameter	Mandatory	Type	Description
operator	No	String	Operator
tolerationSeconds	No	Int	Toleration time window

Table 4-1171 nodeMatchExpression node affinity

Parameter	Mandatory	Type	Description
key	No	String	Taint key
values	No	List<String >	Node affinity name
operator	No	String	Operator

Example Request

```
{
  "kind": "Addon",
  "apiVersion": "v3",
  "metadata": { "annotations": { "addon.install/type": "install" } },
  "spec": {
    "clusterID": "cea63ae5-df9b-11ee-9f27-0255ac1001b2",
    "version": "2.4.4",
    "addonTemplateName": "everest",
    "values": {
      "basic": {
        "bms_url": "bms.***.com",
        "driver_init_image_version": "2.4.4",
        "ecsEndpoint": "https://ecs.***.com",
        "everest_image_version": "2.4.4",
        "evs_url": "evs.***.com",
        "iam_url": "iam.***.com",
        "ims_url": "ims.***.com",
        "obs_url": "obs.***.com",
        "platform": "linux-amd64",
        "sfs30_url": "obs.***.com",
        "sfs_turbo_url": "sfs-turbo.***.com",
        "sfs_url": "sfs.***.com",
        "supportHcs": false,
        "swr_addr": "swr.***.com",
        "swr_user": "hwofficial",
        "rbac_enabled": true,
        "cluster_version": "v1.23"
      },
      "flavor": {
        "description": "High available",
        "is_default": true,
        "name": "HA50",
        "recommend_cluster_flavor_types": ["small"],
        "replicas": 2,
        "resources": [
          {
            "limitsCpu": "250m",
            "limitsMem": "600Mi",
            "name": "everest-csi-controller",
            "requestsCpu": "250m",
            "requestsMem": "600Mi"
          }
        ]
      }
    }
  }
}
```

```
{
  "limitsCpu": "300m",
  "limitsMem": "300Mi",
  "name": "everest-csi-driver",
  "requestsCpu": "300m",
  "requestsMem": "300Mi"
},
"category": ["CCE", "Turbo"]
},
"custom": {
  "annotations": {},
  "cluster_id": "",
  "cluster_name": "",
  "csi_attacher_detach_worker_threads": "60",
  "csi_attacher_worker_threads": "60",
  "default_vpc_id": "",
  "disable_auto_mount_secret": false,
  "enable_node_attacher": false,
  "flow_control": {},
  "multiAZBalance": false,
  "multiAZEnabled": false,
  "node_match_expressions": [],
  "number_of_reserved_disks": "6",
  "over_subscription": "80",
  "project_id": "",
  "tolerations": [
    {
      "key": "node.kubernetes.io/not-ready",
      "operator": "Exists",
      "effect": "NoExecute",
      "tolerationSeconds": 60
    },
    {
      "key": "node.kubernetes.io/unreachable",
      "operator": "Exists",
      "effect": "NoExecute",
      "tolerationSeconds": 60
    }
  ],
  "volume_attaching_flow_ctrl": "0"
}
}
```

4.13.3 CCE Node Problem Detector

Add-on Overview

CCE Node Problem Detector (node-problem-detector, NPD) is an add-on that monitors abnormal events of cluster nodes and connects to a third-party monitoring platform. It is a daemon running on each node. It collects node issues from different daemons and reports them to the API server. It can run as a DaemonSet or a daemon.

Add-on Parameters

Table 4-1172 Parameters

Parameter	Mandatory	Type	Description
basic	No	object	Basic configuration parameters, which do not need to be specified
flavor	Yes	Table 4-1173 object	Flavor parameters
custom	Yes	Table 4-1174 object	Custom parameters

Table 4-1173 Configuration of flavor

Parameter	Mandatory	Type	Description
description	No	String	Add-on description
name	Yes	String	Add-on specification name. The value is fixed at Single-instance .
replicas	Yes	String	Number of pods. The default value is 1 .
resources	Yes	resources object	Container resource (CPU and memory) quotas

Table 4-1174 Configuration of custom

Parameter	Mandatory	Type	Description
feature_gate	No	String	Feature gate, which is used to enable the beta features
multiAZBalance	No	Bool	Multi AZ deployment
multiAZEnabled	No	Bool	Whether to deploy the add-on pods in multiple AZs. The default value is false . If this parameter is set to true , cross-AZ deployment is forcibly performed. If this parameter is set to false , cross-AZ deployment is preferred.

Parameter	Mandatory	Type	Description
npc	Yes	object Table 4-1176	node-problem-controller configuration
tolerations	No	List<Object> Table 4-1178	Tolerations of the add-on
node_match_expressions	No	List<Object> Table 4-1178	Node affinity configuration of the add-on

Table 4-1175 Data structure of the resources field

Parameter	Mandatory	Type	Description
limitsCpu	Yes	String	CPU size limit (unit: m)
limitsMem	Yes	String	Memory size limit (unit: Mi)
name	Yes	String	Add-on name. The value is fixed at custom-resources .
requestsCpu	Yes	String	Requested CPU size (unit: m)
requestsMem	Yes	String	Requested memory size (unit: Mi)

Table 4-1176 Data structure of the npc field

Parameter	Mandatory	Type	Description
maxTaintedNode	Yes	String or Int	The maximum number of nodes that NPC can add taints to when a single fault occurs on multiple nodes for minimizing impact. The value can be in int or percentage format.

Table 4-1177 Taints and tolerations

Parameter	Mandatory	Type	Description
key	No	String	Taint key
effect	No	String	Taint policy

Parameter	Mandatory	Type	Description
operator	No	String	Operator
tolerationSeconds	No	Int	Toleration time window

Table 4-1178 nodeMatchExpression node affinity

Parameter	Mandatory	Type	Description
key	No	String	Taint key
values	No	List<String>	Node affinity name
operator	No	String	Operator

Example Request

```
{
  "kind": "Addon",
  "apiVersion": "v3",
  "metadata": {
    "annotations": {
      "addon.install/type": "install"
    }
  },
  "spec": {
    "clusterID": "b78fb690-b82c-11ee-83cf-0255ac100b0f",
    "version": "1.18.48",
    "addonTemplateName": "npd",
    "values": {
      "basic": {
        "image_version": "1.18.48",
        "swr_addr": "****",
        "swr_user": "****",
        "rbac_enabled": true,
        "cluster_version": "v1.23"
      }
    },
    "flavor": {
      "description": "custom resources",
      "name": "custom-resources",
      "replicas": 2,
      "resources": [
        {
          "limitsCpu": "100m",
          "limitsMem": "300Mi",
          "name": "node-problem-controller",
          "requestsCpu": "30m",
          "requestsMem": "100Mi"
        },
        {
          "limitsCpu": "100m",
          "limitsMem": "300Mi",
          "name": "node-problem-detector",
          "requestsCpu": "30m",
          "requestsMem": "100Mi"
        }
      ]
    },
    "category": [
```


Table 4-1180 Configuration of flavor

Parameter	Mandatory	Type	Description
replicas	Yes	String	Number of pods. The default value is 1 .
resources	Yes	Array of resources object	Container resource (CPU and memory) quotas

Table 4-1181 Configuration of custom

Parameter	Mandatory	Type	Description
serviceType	Yes	String	External access type. The value can be NodePort or ELB and defaults to NodePort .
port	No	int	Port number of the kubernetes-dashboard Service. The default value is 8443 .
loadBalancerIP	No	String	IP address of the ELB when external access type is ELB.
elbClass	No	String	ELB type when external access type is ELB. The value can be union (shared load balancer) or performance (dedicated load balancer) and defaults to union .
elbID	No	String	ID of the ELB when external access type is ELB.
certUploaded	No	bool	Whether to use a custom certificate. The default value is true .
cert	No	String	Cert of a custom certificate
key	No	String	Key of a custom certificate

Table 4-1182 Data structure of the resources field

Parameter	Mandatory	Type	Description
limitsCpu	Yes	String	CPU size limit (unit: m)
limitsMem	Yes	String	Memory size limit (unit: Mi)
name	Yes	String	Add-on name. The value is fixed at dashboard .

Parameter	Mandatory	Type	Description
requestsCpu	Yes	String	Requested CPU size (unit: m)
requestsMem	Yes	String	Requested memory size (unit: Mi)

Example Request

```
{
  "kind": "Addon",
  "apiVersion": "v3",
  "metadata": {
    "annotations": {
      "addon.install/type": "install"
    }
  },
  "spec": {
    "clusterID": "2292498e-d169-**-9151-***1001ba",
    "version": "2.2.27",
    "addonTemplateName": "dashboard",
    "values": {
      "basic": {
        "basickey": "val"
      },
      "flavor": {
        "replicas": 1,
        "resources": [{
          "limitsCpu": "100m",
          "limitsMem": "512Mi",
          "name": "dashboard",
          "requestsCpu": "50m",
          "requestsMem": "256Mi"
        }]
      },
      "custom": {
        "cert": "****",
        "certUploaded": true,
        "elbClass": "union",
        "elbID": 0,
        "key": "****",
        "loadBalancerIP": "",
        "port": 8443,
        "serviceType": "NodePort",
        "cluster_id": "2292498e-d169-**-9151-***1001ba",
        "tenant_id": "*****"
      }
    }
  }
}
```

4.13.5 CCE Cluster Autoscaler

Add-on Overview

The CCE Cluster Autoscaler (autoscaler) add-on enables node pools to be scaled in or out.

Add-on Parameters

Table 4-1183 Parameters

Parameter	Mandatory	Type	Description
basic	No	object	Basic configuration parameters, which do not need to be specified
flavor	Yes	Table 4-1184 object	Flavor parameters
custom	Yes	Table 4-1185 object	Custom parameters

Table 4-1184 flavor

Parameter	Mandatory	Type	Description
replicas	Yes	String	Number of pods. The default value is 2 .
resources	Yes	Array of resources object	Container resource (CPU and memory) quotas

Table 4-1185 custom

Parameter	Mandatory	Type	Description
cluster_id	Yes	string	Cluster ID.
tenant_id	Yes	string	ID of the project where the current cluster is in.
scaleDownEnabled	No	bool	Whether to enable auto scale-in. The default value is false .
scaleDownDelayAfterAdd	No	int	Cooldown period (in minutes) for starting scale-in evaluation again after auto scale-out was triggered in a cluster. The default value is 10 .
scaleDownDelayAfterDelete	No	int	Cooldown period (in minutes) for starting scale-in evaluation again after auto scale-in was triggered in a cluster. The default value is 10 .

Parameter	Mandatory	Type	Description
scaleDownDelayAfterFailure	No	int	Cooldown period (in minutes) for starting scale-in evaluation again after auto scale-in triggered by a cluster failed. The default value is 10 .
maxEmptyBulkDeleteFlag	No	int	Number of idle nodes that can be concurrently scaled in. The default value is 10 .
unremovableNodeRecheckTimeout	No	int	Interval (in minutes) for starting the checks again after a node is determined not to be scaled in. The default value is 5 .
scaleDownUtilizationThreshold	No	double	CPU and memory usage thresholds for determining whether a node can be scaled in. The default value is 0.5 .
maxNodesTotal	No	int	Maximum number of nodes that can be added to a cluster. The default value is 1000 .
coresTotal	No	int	Maximum number of CPU cores that can be added to a cluster. The default value is 32000 .
memoryTotal	No	int	Memory upper limit (in Gi) for cluster scale-out. The default value is 128000 .
scaleUpUtilizationEnabled	No	bool	Whether to enable custom scaling. The default value is true .
scaleUpUnscheduledPodEnabled	No	bool	Whether to enable automatic scale-out for unscheduled pods. The default value is true .
ignoreDaemonSetsUtilization	No	bool	Whether to ignore DaemonSets' resource usage when thresholds determine if scale-in is performed. The default value is false .
skipNodesWithCustomControllerPods	No	bool	Scale-in is not performed on the node which has containers created by a third-party controller running on it. The default value is true .
logLevel	No	int	Log level. The default value is 4 .

Parameter	Mandatory	Type	Description
multiAZEnable	No	bool	Whether to enable the forcible mode of multi-AZ deployment for the deployment component. The default value is false . Deployment pods of the add-on will be forcibly scheduled to nodes in different AZs. If there are fewer AZs than pods, the extra pods will fail to run. If both multiAZEnable and multiAZBalance are set to true, the settings of multiAZBalance take effect, which means, the equivalent mode of multi-AZ deployment is used.
multiAZBalance	No	bool	Whether to enable the equivalent mode of multi-AZ deployment for the deployment component. The default value is false . Deployment pods of the add-on are evenly scheduled to the nodes in the cluster in each AZ. If a new AZ is added, it is recommended that you increase add-on pods for cross-AZ HA deployment. With the equivalent multi-AZ deployment, the difference between the number of add-on pods in different AZs will be less than or equal to 1. If resources in one of the AZs are insufficient, pods cannot be scheduled to that AZ.
tolerations	No	Array of Table 4-1187	Toleration configuration
node_match_expressions	No	Array of Table 4-1188	Add-on pod affinity configuration

Table 4-1186 Data structure of the resources field

Parameter	Mandatory	Type	Description
limitsCpu	Yes	String	CPU size limit (unit: m)
limitsMem	Yes	String	Memory size limit (unit: Mi)
name	Yes	String	Add-on name. The value is fixed at autoscaler .

Parameter	Mandatory	Type	Description
requestsCpu	Yes	String	Requested CPU size (unit: m)
requestsMem	Yes	String	Requested memory size (unit: Mi)

Table 4-1187 Taints and tolerations

Parameter	Mandatory	Type	Description
key	No	String	Taint key
effect	No	String	Taint policy
operator	No	String	Operator
tolerationSeconds	No	Int	Toleration time window

Table 4-1188 nodeMatchExpression node affinity

Parameter	Mandatory	Type	Description
key	No	String	Taint key
values	No	List<String>	Node affinity name
operator	No	String	Operator

Example Request

```
{
  "kind": "Addon",
  "apiVersion": "v3",
  "metadata": {
    "annotations": {
      "addon.install/type": "install"
    }
  },
  "spec": {
    "clusterID": "2292498e-*****-0255ac1001ba",
    "version": "1.23.116",
    "addonTemplateName": "autoscaler",
    "values": {
      "basic": {
        "basickey": "val"
      },
      "flavor": {
        "replicas": 2,
        "resources": [{
          "limitsCpu": "1000m",
          "limitsMem": "1000Mi",
          "name": "autoscaler",
          "requestsCpu": "1000m",

```



```

        "requestsMem": "1000Mi"
    }
  },
  "custom": {
    "cluster_id": "2292498e-*****-0255ac1001ba",
    "coresTotal": 32000,
    "ignoreDaemonSetsUtilization": false,
    "logLevel": 4,
    "maxEmptyBulkDeleteFlag": 10,
    "maxNodeProvisionTime": 15,
    "maxNodesTotal": 1000,
    "memoryTotal": 128000,
    "multiAZBalance": false,
    "multiAZEnabled": false,
    "node_match_expressions": [],
    "scaleDownDelayAfterAdd": 10,
    "scaleDownDelayAfterDelete": 10,
    "scaleDownDelayAfterFailure": 3,
    "scaleDownEnabled": false,
    "scaleDownUnneededTime": 10,
    "scaleDownUtilizationThreshold": 0.5,
    "scaleUpUnscheduledPodEnabled": true,
    "scaleUpUtilizationEnabled": true,
    "skipNodesWithCustomControllerPods": true,
    "tenant_id": "*****",
    "tolerations": [{
      "key": "node.kubernetes.io/not-ready",
      "operator": "Exists",
      "effect": "NoExecute",
      "tolerationSeconds": 60
    },
    {
      "key": "node.kubernetes.io/unreachable",
      "operator": "Exists",
      "effect": "NoExecute",
      "tolerationSeconds": 60
    }
  ],
    "unremovableNodeRecheckTimeout": 5
  }
}
}
}

```

4.13.6 NGINX Ingress Controller

Add-on Overview

The NGINX Ingress Controller add-on can automatically modify configurations when there are changes to pods in Services. This add-on uses Nginx's excellent stability, performance, and concurrent processing ability to effectively manage containerized applications at the application layer.

Add-on Parameters

Table 4-1189 Parameters

Parameter	Mandatory	Type	Description
basic	No	object	Basic configuration parameters, which do not need to be specified

Parameter	Mandatory	Type	Description
flavor	Yes	Table 4-1190 object	Flavor parameters
custom	Yes	Table 4-1191 object	Custom parameters

Table 4-1190 flavor

Parameter	Mandatory	Type	Description
replicas	Yes	String	Number of pods. The default value is 1 .
resources	Yes	resources object	Container resource (CPU and memory) quotas

Table 4-1191 custom

Parameter	Mandatory	Type	Description
ingressClasses	Yes	String	Controller name. The default value is nginx .
namespace	Yes	String	Namespace where the add-on is in. The default value is kube-system .
service	Yes	Table 4-1196	Configuration of a Service that provides external access
config	No	Map<String>String	Nginx configuration parameters. For details, see ConfigMaps .
admissionWebhooks	No	Table 4-1195	Configuration of ingress admission verification.
metrics	No	Table 4-1197	Monitoring metric configuration.
defaultBackendService	No	String	Default 404 service, which is in the format of <i><namespace>/<service_name></i> .
extraArgs	No	Table 4-1198	Extended parameter configuration.

Parameter	Mandatory	Type	Description
multiAZEnable	No	bool	Whether to enable the forcible mode of multi-AZ deployment for the deployment component. The default value is false . Deployment pods of the add-on will be forcibly scheduled to nodes in different AZs. If there are fewer AZs than pods, the extra pods will fail to run. If both multiAZEnable and multiAZBalance are set to true, the settings of multiAZBalance take effect, which means, the equivalent mode of multi-AZ deployment is used.
multiAZBalance	No	bool	Whether to enable the equivalent mode of multi-AZ deployment for the deployment component. The default value is false . Deployment pods of the add-on are evenly scheduled to the nodes in the cluster in each AZ. If a new AZ is added, it is recommended that you increase add-on pods for cross-AZ HA deployment. With the equivalent multi-AZ deployment, the difference between the number of add-on pods in different AZs will be less than or equal to 1. If resources in one of the AZs are insufficient, pods cannot be scheduled to that AZ.
tolerations	No	Array of Table 4-1193	Toleration configuration
node_match_expressions	No	Array of Table 4-1194	Add-on pod affinity configuration

Table 4-1192 Data structure of the resources field

Parameter	Mandatory	Type	Description
limitsCpu	Yes	String	CPU size limit (unit: m)
limitsMem	Yes	String	Memory size limit (unit: Mi)
name	Yes	String	Add-on name. The value is fixed at nginx-ingress .
requestsCpu	Yes	String	Requested CPU size (unit: m)

Parameter	Mandatory	Type	Description
requestsMemory	Yes	String	Requested memory size (unit: Mi)

Table 4-1193 Taints and tolerations

Parameter	Mandatory	Type	Description
key	No	String	Taint key
effect	No	String	Taint policy
operator	No	String	Operator
tolerationSeconds	No	Int	Toleration time window

Table 4-1194 nodeMatchExpression node affinity

Parameter	Mandatory	Type	Description
key	No	String	Taint key
values	No	List<String>	Node affinity name
operator	No	String	Operator

Table 4-1195 admissionWebhook

Parameter	Mandatory	Type	Description
enable	No	bool	Whether to enable ingress resource admission verification. The default value is true .

Table 4-1196 service

Parameter	Mandatory	Type	Description
annotations	No	Map<String>String	Annotations of a Service that provides external access. This parameter is only for configurations of ELB-related options, such as kubernetes.io/elb.class , kubernetes.io/elb.id , and kubernetes.io/elb.pass-through .

Parameter	Mandatory	Type	Description
loadBalancerIP	No	String	Load balancer IP address used by the Service that is interconnected with the load balancer.

Table 4-1197 metrics

Parameter	Mandatory	Type	Description
enable	No	bool	Whether to monitor metrics. The default value is true .
excludeSocketMetrics	No	String	Shielded monitoring metrics. The default value is "nginx_ingress_controller_success,nginx_ingress_controller_header_duration_seconds,nginx_ingress_controller_ingress_upstream_latency_seconds" .

Table 4-1198 extraArg extended parameter

Parameter	Mandatory	Type	Description
default-ssl-certificate	No	String	Default certificate configuration. For details, see Default SSL Certificate .

Example Request

```
{
  "kind": "Addon",
  "apiVersion": "v3",
  "metadata": {
    "annotations": {
      "addon.install/type": "install"
    }
  },
  "spec": {
    "clusterID": "2292498e-*****ac1001ba",
    "version": "2.2.52",
    "addonTemplateName": "nginx-ingress",
    "values": {
      "basic": {
        "basickey": "val"
      },
      "flavor": {
        "replicas": 2,
        "resources": [{
          "limitsCpu": "8000m",
          "limitsMem": "4000Mi",
          "name": "nginx-ingress",
          "requestsCpu": "8000m",
          "requestsMem": "4000Mi"
        }]
      }
    }
  }
}
```

```

    },
    "custom": {
      "config": {
        "keep-alive-requests": "100"
      },
      "defaultBackend": {
        "enabled": true
      },
      "defaultBackendService": "",
      "extraArgs": {
        "default-ssl-certificate": ""
      },
      "ingressClass": "nginx",
      "multiAZBalance": false,
      "multiAZEnabled": false,
      "namespace": "kube-system",
      "node_match_expressions": [],
      "service": {
        "annotations": {
          "kubernetes.io/elb.class": "performance",
          "kubernetes.io/elb.id": "8d6bd485-d8ac-4693-815d-9d54d79b0666"
        },
        "loadBalancerIP": ""
      },
      "tolerations": [{
        "key": "node.kubernetes.io/not-ready",
        "operator": "Exists",
        "effect": "NoExecute",
        "tolerationSeconds": 60
      },
      {
        "key": "node.kubernetes.io/unreachable",
        "operator": "Exists",
        "effect": "NoExecute",
        "tolerationSeconds": 60
      }
    ]
  }
}

```

4.13.7 Kubernetes Metrics Server

Add-on Overview

From version 1.8 onwards, Kubernetes provides resource usage metrics, such as the container CPU and memory usage, through the Metrics API. These metrics can be directly accessed by users (for example, by using the **kubectl top** command) or used by controllers (for example, Horizontal Pod Autoscaler) in a cluster for decision-making. The specific component is metrics-server, which is used to substitute for Heapster for providing the similar functions. Heapster has been gradually abandoned since v1.11.

Add-on Parameters

Table 4-1199 Parameters

Parameter	Mandatory	Type	Description
basic	No	object	Basic configuration parameters, which do not need to be specified

Parameter	Mandatory	Type	Description
flavor	Yes	Table 4-1200 object	Flavor parameters
custom	Yes	Table 4-1201 object	Custom parameters

Table 4-1200 flavor

Parameter	Mandatory	Type	Description
description	No	String	Add-on description
name	Yes	String	Add-on specification name. The value is fixed at Single-instance .
replicas	Yes	String	Number of pods. The default value is 1 .
resources	Yes	resources object	Container resource (CPU and memory) quotas

Table 4-1201 custom

Parameter	Mandatory	Type	Description
multiAZBalance	No	Bool	Whether the equivalent mode of multi-AZ deployment is enabled. If this function is enabled, the equivalent mode is used.
multiAZEnabled	No	Bool	Whether to deploy the add-on pods in multiple AZs. The default value is false . If this parameter is set to true , cross-AZ deployment is forcibly performed. If this parameter is set to false , cross-AZ deployment is preferred.
tolerations	No	List<Object> Table 4-1204	Tolerations of the add-on
node_match_expressions	No	List<Object> Table 4-1204	Node affinity configuration of the add-on

Table 4-1202 Data structure of the resources field

Parameter	Mandatory	Type	Description
limitsCpu	Yes	String	CPU size limit (unit: m)
limitsMem	Yes	String	Memory size limit (unit: Mi)
name	Yes	String	Add-on name. The value is fixed at metrics-server .
requestsCpu	Yes	String	Requested CPU size (unit: m)
requestsMem	Yes	String	Requested memory size (unit: Mi)

Table 4-1203 Taints and tolerations

Parameter	Mandatory	Type	Description
key	No	String	Taint key
effect	No	String	Taint policy
operator	No	String	Operator
tolerationSeconds	No	Int	Toleration time window

Table 4-1204 nodeMatchExpression node affinity

Parameter	Mandatory	Type	Description
key	No	String	Taint key
values	No	List<String>	Node affinity name
operator	No	String	Operator

Example Request

```
{
  "kind": "Addon",
  "apiVersion": "v3",
  "metadata": {
    "annotations": {
      "addon.install/type": "install"
    }
  },
  "spec": {
    "clusterID": "b78fb690-b82c-11ee-83cf-0255ac100b0f",
    "version": "1.3.39",
  }
}
```



```
"addonTemplateName": "metrics-server",
"values": {
  "basic": {
    "image_version": "v0.6.2",
    "swr_addr": "****",
    "swr_user": "****",
    "rbac_enabled": true,
    "cluster_version": "v1.23"
  },
  "flavor": {
    "description": "Has only one instance",
    "name": "Single",
    "replicas": 1,
    "resources": [
      {
        "limitsCpu": "1000m",
        "limitsMem": "1000Mi",
        "name": "metrics-server",
        "requestsCpu": "100m",
        "requestsMem": "300Mi"
      }
    ],
    "category": [
      "CCE",
      "Turbo"
    ]
  },
  "custom": {
    "annotations": {},
    "multiAZBalance": false,
    "multiAZEnabled": false,
    "node_match_expressions": [],
    "tolerations": [
      {
        "key": "node.kubernetes.io/not-ready",
        "operator": "Exists",
        "effect": "NoExecute",
        "tolerationSeconds": 60
      },
      {
        "key": "node.kubernetes.io/unreachable",
        "operator": "Exists",
        "effect": "NoExecute",
        "tolerationSeconds": 60
      }
    ]
  }
}
}
```

4.13.8 CCE Advanced HPA

Add-on Overview

CCE Advanced HPA (cce-hpa-controller) is an in-house add-on, which can be used to flexibly scale in or out Deployments based on metrics such as CPU usage and memory usage.

Add-on Parameters

Table 4-1205 Parameters

Parameter	Mandatory	Type	Description
basic	No	object	Basic configuration parameters, which do not need to be specified
flavor	Yes	Table 4-1206 object	Flavor parameters
custom	Yes	Table 4-1207 object	Custom parameters

Table 4-1206 flavor

Parameter	Mandatory	Type	Description
replicas	Yes	String	Number of pods. The default value is 2 .
resources	Yes	resources object	Container resource (CPU and memory) quotas.

Table 4-1207 custom

Parameter	Mandatory	Type	Description
multiAZenable	No	bool	Whether to enable the forcible mode of multi-AZ deployment for the deployment component. The default value is false . Deployment pods of the add-on will be forcibly scheduled to nodes in different AZs. If there are fewer AZs than pods, the extra pods will fail to run. If both multiAZenable and multiAZBalance are set to true, the settings of multiAZBalance take effect, which means, the equivalent mode of multi-AZ deployment is used.

Parameter	Mandatory	Type	Description
multiAZBalance	No	bool	Whether to enable the equivalent mode of multi-AZ deployment for the deployment component. The default value is false . Deployment pods of the add-on are evenly scheduled to the nodes in the cluster in each AZ. If a new AZ is added, it is recommended that you increase add-on pods for cross-AZ HA deployment. With the equivalent multi-AZ deployment, the difference between the number of add-on pods in different AZs will be less than or equal to 1. If resources in one of the AZs are insufficient, pods cannot be scheduled to that AZ.
tolerations	No	Array of Table 4-1209	Toleration configuration
node_match_expressions	No	Array of Table 4-1210	Add-on pod affinity configuration

Table 4-1208 Data structure of the resources field

Parameter	Mandatory	Type	Description
limitsCpu	Yes	String	CPU size limit (unit: m)
limitsMem	Yes	String	Memory size limit (unit: Mi)
name	Yes	String	Add-on name. The value is fixed at customedhpa-controller .
requestsCpu	Yes	String	Requested CPU size (unit: m)
requestsMem	Yes	String	Requested memory size (unit: Mi)

Table 4-1209 Taints and tolerations

Parameter	Mandatory	Type	Description
key	No	String	Taint key
effect	No	String	Taint policy
operator	No	String	Operator

Parameter	Mandatory	Type	Description
tolerationSeconds	No	Int	Toleration time window

Table 4-1210 nodeMatchExpression node affinity

Parameter	Mandatory	Type	Description
key	No	String	Taint key
values	No	List<String >	Node affinity name
operator	No	String	Operator

Example Request

```
{
  "kind": "Addon",
  "apiVersion": "v3",
  "metadata": {
    "annotations": {
      "addon.install/type": "install"
    }
  },
  "spec": {
    "clusterID": "2292498e-*****-0255ac1001ba",
    "version": "1.4.2",
    "addonTemplateName": "cce-hpa-controller",
    "values": {
      "basic": {
        "basickey": "val"
      },
      "flavor": {
        "replicas": 1,
        "resources": [{
          "limitsCpu": "100m",
          "limitsMem": "300Mi",
          "name": "customedhpa-controller",
          "requestsCpu": "100m",
          "requestsMem": "300Mi"
        }]
      },
      "custom": {
        "multiAZBalance": false,
        "multiAZEnabled": false,
        "node_match_expressions": [],
        "tolerations": [{
          "key": "node.kubernetes.io/not-ready",
          "operator": "Exists",
          "effect": "NoExecute",
          "tolerationSeconds": 60
        },
        {
          "key": "node.kubernetes.io/unreachable",
          "operator": "Exists",
          "effect": "NoExecute",
          "tolerationSeconds": 60
        }
      ]
    }
  }
}
```

```
}  
}
```

4.13.9 CCE Cloud Bursting Engine for CCI

Add-on Overview

The virtual-kubelet add-on is an implementation of the open-source Virtual Kubelet project. When momentary traffic spikes occur in CCE clusters, virtual-kubelet uses Huawei Cloud CCI to create pods for Deployments, StatefulSets, and jobs, eliminating the overhead of resizing CCE clusters. For details, see [virtual kubelet](#).

Add-on Parameters

Table 4-1211 Parameters

Parameter	Mandatory	Type	Description
basic	Yes	Table 4-1212 object	Basic add-on configuration parameters
flavor	Yes	Table 4-1213 object	Flavor parameters
custom	Yes	Table 4-1214 object	Custom parameters

Table 4-1212 basic

Parameter	Mandatory	Type	Description
available_zone	Yes	String	AZ where the add-on is deployed. Example: cn-north-4a
cci_address	Yes	String	Access address and port number of CCI. Example: https://cci.***.com:443
euleros_version	Yes	String	EulerOS version. The value is fixed at 2.2.5 .
iam_addresses	Yes	String	Access address and port number of IAM. Example: https://iam.***.com:443
swr_addr	Yes	String	Access address of SWR. Example: swr.***.com

Parameter	Mandatory	Type	Description
swr_user	Yes	String	SWR user name. The default value is hwofficial .
rbac_enabled	Yes	String	Whether RBAC is supported. If RBAC is supported, the value is true .
cluster_id	Yes	String	Cluster ID
cluster_name	Yes	String	Cluster name
vpc_id	Yes	String	VPC ID
network_id	Yes	String	Subnet ID
security_group_id	Yes	String	Security group ID
project_id	Yes	String	Project ID
region	Yes	String	Region Example: cn-north-4

Table 4-1213 flavor

Parameter	Mandatory	Type	Description
description	No	String	Add-on description
name	No	String	Add-on specification name
replicas	Yes	String	Number of pods. The default value is 1 .
resources	No	resources object	Container resource (CPU and memory) quotas

Table 4-1214 custom

Parameter	Mandatory	Type	Description
isInstallProxy	No	String	Cross-service interworking. true: Pods in a Cloud Container Engine (CCE) cluster can communicate with pods in a Cloud Container Instance (CCI) cluster through Kubernetes Service.
subnet_id	Yes	String	IPv4 subnet ID

Parameter	Mandatory	Type	Description
subnets	No	subnet object	Extended subnet configuration

Table 4-1215 Data structure of the resources field

Parameter	Mandatory	Type	Description
limitsCpu	No	String	CPU size limit (unit: m)
limitsMem	No	String	Memory size limit (unit: Mi)
name	Yes	String	Add-on name
requestsCpu	No	String	Requested CPU size (unit: m)
requestsMem	No	String	Requested memory size (unit: Mi)

Table 4-1216 Data structure of the subnet field

Parameter	Mandatory	Type	Description
subnetID	Yes	String	ID of the extended IPv4 subnet

Example Request

```
{
  "metadata": {
    "annotations": {
      "addon.install/type": "install"
    }
  },
  "spec": {
    "clusterID": "ccbe7bdf-4**9-3**b-b**4-0*****78",
    "version": "1.5.15",
    "addonTemplateName": "virtual-kubelet",
    "values": {
      "basic": {
        "addon_version": "1.5.15",
        "available_zone": "cn-north-4a",
        "cci_address": "https://cci.***.com:443",
        "euleros_version": "2.2.5",
        "iam_address": "https://iam.***.com:443",
        "swr_addr": "swr.***.com",
        "swr_user": "hwofficial",
        "rbac_enabled": true,
        "cluster_id": "ccbe7bdf-4**9-3**b-b**4-0*****78",
        "cluster_name": "test-vk",
        "vpc_id": "2372199f-e6e0-48be-9437-e774aae6bd70",
        "network_id": "863a5e6c-e4f5-45f8-80d9-5090f17a767b",
        "security_group_id": "ac3c1a82-f320-495a-b81d-e7aaa6b304a4",
        "project_id": "085a4*****00a9ccf7fba",
        "region": "cn-north-4"
      }
    }
  }
}
```

```

},
"flavor": {
  "description": "Has only one instance",
  "name": "Single",
  "replicas": 1,
  "resources": [
    {
      "name": "virtual-kubelet",
      "limitsCpu": "2000m",
      "requestsCpu": "500m",
      "limitsMem": "4096Mi",
      "requestsMem": "512Mi"
    },
    {
      "name": "bursting-virtual-kubelet",
      "limitsCpu": "2000m",
      "requestsCpu": "500m",
      "limitsMem": "4096Mi",
      "requestsMem": "512Mi"
    },
    {
      "name": "profile-controller",
      "limitsCpu": "1000m",
      "requestsCpu": "250m",
      "limitsMem": "1024Mi",
      "requestsMem": "256Mi"
    },
    {
      "name": "proxy",
      "limitsCpu": "2000m",
      "requestsCpu": "250m",
      "limitsMem": "4096Mi",
      "requestsMem": "512Mi"
    },
    {
      "name": "resource-syncer",
      "limitsCpu": "2000m",
      "requestsCpu": "250m",
      "limitsMem": "4096Mi",
      "requestsMem": "512Mi"
    },
    {
      "name": "bursting-resource-syncer",
      "limitsCpu": "2000m",
      "requestsCpu": "500m",
      "limitsMem": "1024Mi",
      "requestsMem": "256Mi"
    },
    {
      "name": "webhook",
      "limitsCpu": "2000m",
      "requestsCpu": "500m",
      "limitsMem": "1024Mi",
      "requestsMem": "256Mi"
    },
    {
      "name": "bursting-webhook",
      "limitsCpu": "2000m",
      "requestsCpu": "500m",
      "limitsMem": "1024Mi",
      "requestsMem": "256Mi"
    }
  ]
},
"custom": {
  "isInstallProxy": true,
  "subnet_id": "ad821361-288b-4d1f-9309-65aa2809e4fd",
  "subnets": [
    {

```


Parameter	Mandatory	Type	Description
swr_addr	Yes	String	Image repository address
swr_user	Yes	String	Tenant path of an image repository

Table 4-1219 Configuration of custom

Parameter	Mandatory	Type	Description
compatible_with_legacy_api	No	Bool	API compatibility switch Default value: false true : The add-on supports the GPU native mode and xGPU virtualization.
component_schedulername	Yes	String	Name of the scheduler used by the add-on. Default value: default-scheduler
disable_mount_path_v1	No	Bool	Default value: false true : <code>/opt/cloud/cce/nvidia</code> is not mounted to the <code>/usr/lib/nvidia</code> directory of a GPU container.
disable_nvidia_gsp	No	Bool	Default value: true true : The GPU GSP firmware is disabled.
driver_mount_paths	No	String	Driver file directory that needs to be automatically mounted to a GPU container Default value: "bin,lib64"
enable_fault_isolation	No	Bool	Default value: true true : The add-on detects hardware faults or driver issues of a GPU and then sets the GPU to be unavailable.
enable_health_monitoring	No	Bool	Default value: true true : The add-on detects hardware faults or driver issues of a GPU.
enable_metrics_monitoring	No	Bool	Default value: true true : The add-on collects GPU metrics and reports these metrics to Prometheus.

Parameter	Mandatory	Type	Description
enable_simple_lib64_mount	No	Bool	Default value: true true : Only the libxxx.so.x file is mounted to a container.
enable_xgpu	No	Bool	Default value: false Whether to enable xGPU virtualization.
gpu_driver_config	No	Map	Configurations of the GPU driver for a single node pool Default value: {}
health_checks_v2	No	String	GPU error range for the add-on health checks Default value: "74,79"
inject_ld_library_path	No	String	Value of the LD_LIBRARY_PATH environment variable automatically injected by the add-on to a GPU container Default value: ""
lib64_container_paths	No	String	Mount path of NVIDIA lib64 in a GPU container Default value: "/usr/lib64,/usr/lib/x86_64-linux-gnu"
metrics_delete_interval	No	int	Timeout threshold for deleting a metric when the metric cannot be obtained. The unit is millisecond. Default value: 30000
metrics_monitor_interval	No	int	Interval for obtaining metrics, in milliseconds. Default value: 15000
nvidia_driver_download_url	Yes	String	Path for downloading the NVIDIA driver Default value: ""

Example Request

```
{
  "kind": "Addon",
  "apiVersion": "v3",
  "metadata": {
    "name": "gpu-beta",
  },
  "spec": {
    "clusterID": "80c9e306-***-***-***-0255ac100043",
  }
}
```

```

"version": "2.0.69",
"addonTemplateName": "gpu-beta",
"values": {
  "basic": {
    "cluster_version": "v1.27",
    "device_version": "2.0.69",
    "driver_version": "2.0.69",
    "obs_url": "****",
    "region": "****",
    "swr_addr": "****",
    "swr_user": "****"
  },
  "custom": {
    "compatible_with_legacy_api": true,
    "component_schedulername": "kube-scheduler",
    "disable_mount_path_v1": false,
    "disable_nvidia_gsp": true,
    "driver_mount_paths": "bin,lib64",
    "enable_fault_isolation": true,
    "enable_health_monitoring": true,
    "enable_metrics_monitoring": true,
    "enable_simple_lib64_mount": true,
    "enable_xgpu": true,
    "gpu_driver_config": {},
    "health_check_xids_v2": "74,79",
    "inject_ld_library_path": "",
    "lib64_container_paths": "/usr/lib64,/usr/lib/x86_64-linux-gnu",
    "metrics_delete_interval": 30000,
    "metrics_monitor_interval": 15000,
    "nvidia_driver_download_url": ""
  }
}
}
}
}

```

4.13.11 CCE AI Suite (Ascend NPU)

Add-on Overview

CCE AI Suite (Ascend NPU) is a device management add-on that supports NPUs in containers.

After this add-on is installed, you can create AI-accelerated nodes to quickly and efficiently process inference and image recognition.

Add-on Parameters

Table 4-1220 Parameters

Parameter	Mandatory	Type	Description
basic	No	object	Basic configuration parameters, which do not need to be specified
flavor	Yes	Table 4-1222 object	Flavor parameters
custom	Yes	Table 4-1223 object	Custom parameters

Table 4-1221 Configuration of basic

Parameter	Mandatory	Type	Description
cluster_version	Yes	String	CCE cluster version
device_version	Yes	String	Add-on version
driver_version	Yes	String	Image tag of an add-on pod where the driver is installed when automatic driver installation is enabled for the add-on. Generally, the value is the same as that of device_version .
swr_addr	Yes	String	Image repository address
swr_user	Yes	String	Tenant path of an image repository

Table 4-1222 Configuration of flavor

Parameter	Mandatory	Type	Description
description	No	String	Add-on description
name	Yes	String	Add-on specification name. The value is fixed at Single-instance .
replicas	Yes	String	Number of pods. The default value is 1 .
resources	Yes	resources object	Container resource (CPU and memory) quotas

Table 4-1223 Configuration of custom

Parameter	Mandatory	Type	Description
auto_install_npu_driver	No	Bool	Default value: false true : The NPU driver is automatically installed on a node. Only some specifications of 310 and 310P cards are supported.
check_frequency_failed_threshold	No	Int	Threshold for the add-on to check how many times an NPU device is considered unhealthy Default value: 100
check_frequency_fall_times	No	Int	Threshold for the add-on to check whether to isolate a chip when the dominant frequency of the chip is reduced Default value: 3
check_frequency_gate	No	Bool	true : Checks on the chip dominant frequency are enabled. Default value: false
check_frequency_recover_threshold	No	Int	Threshold for the add-on to check how many times an NPU device is considered healthy Default value: 100
check_frequency_rise_times	No	Int	Threshold for the add-on to check whether the chip dominant frequency is restored Default value: 2
container_path	No	String	Path for mounting the Hiai Library in a container Default value: "/usr/local/HiAI_unused"
host_path	No	String	Path containing the Hiai library on a host Default value: "/usr/local/HiAI_unused"

Parameter	Mandatory	Type	Description
npu_driver_config	No	Map	If an NPU driver is automatically installed on a node, the key of this parameter specifies the driver model, and the value specifies the address for downloading the NPU driver of that model. Default value: {}

Table 4-1224 Data structure of the resources field

Parameter	Mandatory	Type	Description
limitsCpu	Yes	String	CPU size limit (unit: m) Default value: 1000m
limitsMem	Yes	String	Memory size limit (unit: Mi) Default value: 4096Mi
name	Yes	String	Add-on name. The value is fixed at npu-driver-installer .
requestsCpu	Yes	String	Requested CPU size (unit: m) Default value: 50m
requestsMem	Yes	String	Requested memory size (unit: Mi) Default value: 100Mi

Example Request

```
{
  "kind": "Addon",
  "apiVersion": "v3",
  "metadata": {
    "name": "huawei-npu",
  },
  "spec": {
    "clusterID": "e93c2716-****-****-****-0255ac10004e",
    "version": "2.0.26",
    "addonTemplateName": "huawei-npu",
    "values": {
      "basic": {
        "cluster_version": "v1.23",
        "device_version": "2.0.26",
        "driver_version": "2.0.26",
        "platform": "linux-amd64",
        "rbac_enabled": true,
        "swr_addr": "****",
        "swr_user": "****"
      },
      "custom": {
        "annotations": {},
      }
    }
  }
}
```

```

"auto_install_npu_driver": true,
"check_frequency_failed_threshold": 100,
"check_frequency_fall_times": 3,
"check_frequency_gate": false,
"check_frequency_recover_threshold": 100,
"check_frequency_rise_times": 2,
"container_path": "/usr/local/HiAI_unused",
"host_path": "/usr/local/HiAI_unused",
"npu_driver_config": {}
},
"flavor": {
"category": [
"CCE",
"Turbo"
],
"name": "default",
"resources": [
{
"limitsCpu": "1000m",
"limitsMem": "4096Mi",
"name": "npu-driver-installer",
"requestsCpu": "50m",
"requestsMem": "100Mi"
}
]
},
}
}
}

```

4.13.12 Volcano Scheduler

Add-on Overview

Volcano is a batch scheduling platform based on Kubernetes. It provides a series of features required by machine learning, deep learning, bioinformatics, genomics, and other big data applications, as a powerful supplement to Kubernetes capabilities.

Add-on Parameters

Table 4-1225 Parameters

Parameter	Mandatory	Type	Description
basic	No	Table 4-1226 object	Basic configuration parameters, which do not need to be specified
flavor	Yes	Table 4-1227 object	Flavor parameters
custom	Yes	Table 4-1228 object	Custom parameters

Table 4-1226 Configuration of basic

Parameter	Mandatory	Type	Description
swr_addr	Yes	String	Add-on download address, which does not need to be specified
swr_user	Yes	String	User who can download the add-on. This parameter does not need to be specified.
platform	Yes	String	Add-on platform, which does not need to be specified
escEndpoint	Yes	String	ECS address, which does not need to be specified

Table 4-1227 Configuration of flavor

Parameter	Mandatory	Type	Description
description	No	String	Add-on description
name	Yes	String	Add-on specification name. The value is fixed at Single-instance .
replicas	Yes	String	Number of pods. The default value is 1 .
resources	Yes	resources object	Container resource (CPU and memory) quotas

Table 4-1228 Configuration of custom

Parameter	Mandatory	Type	Description
multiAZEnabled	No	Bool	Whether multi-AZ deployment is enabled true : The Volcano Scheduler pods are deployed based on anti-affinity.
node_match_expressions	No	Table 4-1231	Expression for matching the Volcano Scheduler pods to nodes
tolerations	No	Table 4-1230	The format is the same as that of Kubernetes tolerations. It is used to add taints to Volcano Scheduler pods.
oversubscription_ratio	No	int	Node resource overcommitment ratio in the Volcano scheduling environment

Parameter	Mandatory	Type	Description
deschedule_r_enable	No	Bool	Whether to support rescheduling
enable_workload_balancer	No	Bool	Whether load balancers are supported
default_scheduler_conf	Yes	yaml	The format is the same as that of the YAML for Volcano. For details, see Volcano Scheduler .
deschedulePolicy	No	yaml	The format is the same as that of the YAML for Volcano descheduling configuration. For details, see Descheduling .

Table 4-1229 Data structure of the resources field

Parameter	Mandatory	Type	Description
limitsCpu	Yes	String	CPU size limit (unit: m) Default value: 250m
limitsMem	Yes	String	Memory size limit (unit: Mi) Default value: 512Mi
name	Yes	String	Add-on name. The value is fixed at virtual-kubelet .
requestsCpu	Yes	String	Requested CPU size (unit: m) Default value: 250m
requestsMem	Yes	String	Requested memory size (unit: Mi) Default value: 512Mi

Table 4-1230 Taints and tolerations

Parameter	Mandatory	Type	Description
key	No	String	Taint key
effect	No	String	Taint policy
operator	No	String	Operator
tolerationSeconds	No	Int	Toleration time window

Table 4-1231 nodeMatchExpression node affinity

Parameter	Mandatory	Type	Description
key	No	String	Taint key
values	No	List<String >	Node affinity name
operator	No	String	Operator

Example Request

```
{
  "kind": "Addon",
  "apiVersion": "v3",
  "metadata": {
    "annotations": {
      "addon.install/type": "install"
    }
  },
  "spec": {
    "clusterID": "2292498e-d169-*****-0255ac1001ba",
    "version": "1.12.14",
    "addonTemplateName": "volcano",
    "values": {
      "basic": {
        "swr_addr": "x.x.x.x:20202",
        "swr_user": "hwofficial",
        "platform": "linux-amd64",
        "ecsEndpoint": "x.x.x.x"
      },
      "flavor": {
        "resources": [{
          "limitsCpu": "500m",
          "limitsMem": "500Mi",
          "name": "volcano-scheduler",
          "requestsCpu": "2000m",
          "requestsMem": "2000Mi"
        },
        {
          "limitsCpu": "500m",
          "limitsMem": "500Mi",
          "name": "volcano-controller",
          "requestsCpu": "2000m",
          "requestsMem": "2000Mi"
        },
        {
          "limitsCpu": "200m",
          "limitsMem": "500Mi",
          "name": "volcano-admission",
          "requestsCpu": "500m",
          "requestsMem": "500Mi"
        },
        {
          "limitsCpu": "100m",
          "limitsMem": "150Mi",
          "name": "volcano-agent",
          "requestsCpu": "200m",
          "requestsMem": "200Mi"
        },
        {
          "limitsCpu": "50m",
          "limitsMem": "50Mi",
          "name": "volcano-exporter",
          "requestsCpu": "100m",

```

```

    "requestsMem": "100Mi"
  },
  {
    "limitsCpu": "500m",
    "limitsMem": "256Mi",
    "name": "volcano-descheduler",
    "requestsCpu": "1000m",
    "requestsMem": "512Mi"
  },
  {
    "limitsCpu": "300m",
    "limitsMem": "300Mi",
    "name": "volcano-recommender",
    "requestsCpu": "500m",
    "requestsMem": "500Mi"
  },
  {
    "limitsCpu": "200m",
    "limitsMem": "200Mi",
    "name": "volcano-recommender-prometheus-adapter",
    "requestsCpu": "300m",
    "requestsMem": "300Mi"
  }
}
"custom": {
  "default_scheduler_conf": {
    "actions": "allocate,backfill,preempt",
    "tiers": [
      {
        "plugins": [
          {
            "name": "priority"
          },
          {
            "name": "conformance"
          },
          {
            "name": "gang",
            "enablePreemptable": "false",
            "enableJobStarving": "false",
          }
        ]
      },
      {
        "plugins": [
          {
            "name": "predicates"
          },
          {
            "name": "nodeorder"
          },
          {
            "name": "drf",
            "enablePreemptable": "false",
          }
        ]
      },
      {
        "plugins": [
          {
            "name": "cce-gpu-topology-predicate"
          },
          {
            "name": "cce-gpu-topology-priority"
          },
          {
            "name": "xgpu"
          }
        ]
      },
      {
        "plugins": [
          {
            "name": "nodelocalvolume"
          },
          {
            "name": "nodeemptydirvolume"
          }
        ]
      }
    ]
  }
}

```


Example Request

```
{
  "kind": "Addon",
  "apiVersion": "v3",
  "metadata": {
    "annotations": {
      "addon.install/type": "install"
    }
  },
  "spec": {
    "clusterID": "2292498e-d169-*****-0255ac1001ba",
    "version": "1.1.1",
    "addonTemplateName": "dew-provider",
    "values": {
      "basic": {
        "basickey": "val"
      },
      "flavor": {
        "resources": [{
          "limitsCpu": "100m",
          "limitsMem": "100Mi",
          "name": "dew-provider",
          "requestsCpu": "100m",
          "requestsMem": "100Mi"
        }]
      },
      "custom": {
        "rotation_poll_interval": "2m"
      }
    }
  }
}
```

4.13.14 CCE Network Metrics Exporter

Add-on Overview

CCE Network Metrics Exporter (dolphin) is an add-on for monitoring and managing container network traffic. It collects traffic statistics of containers that do not use the host network in CCE Turbo clusters and performs node-wide container connectivity checks.

Add-on Parameters

Table 4-1234 Parameters

Parameter	Mandatory	Type	Description
basic	No	object	Basic configuration parameters, which do not need to be specified
flavor	Yes	Table 4-1235 object	Flavor parameters
custom	Yes	Table 4-1236 object	Custom parameters

Table 4-1235 Configuration of flavor

Parameter	Mandatory	Type	Description
name	Yes	String	Add-on specification name. The value is fixed at default .
resources	Yes	resources object	Container resource (CPU and memory) quotas

Table 4-1236 Configuration of custom

Parameter	Mandatory	Type	Description
annotations	No	Map<String>String	Custom annotation

Table 4-1237 Data structure of the resources field

Parameter	Mandatory	Type	Description
limitsCpu	Yes	String	CPU size limit (unit: m) Default value: 500m
limitsMem	Yes	String	Memory size limit (unit: Mi) Default value: 512Mi
name	Yes	String	Add-on name. The value is fixed at dolphin .
requestsCpu	Yes	String	Requested CPU size (unit: m) Default value: 500m
requestsMem	Yes	String	Requested memory size (unit: Mi) Default value: 512Mi

Example Request

```
{
  "kind": "Addon",
  "apiVersion": "v3",
  "metadata": {
    "name": "dolphin",
    "alias": "CCE Network Metrics Exporter",
    "addon.install/type": "install"
  },
  "spec": {
    "clusterID": "****",
    "version": "1.4.5",
    "addonTemplateName": "dolphin",
    "values": {
      "basic": {
        "cluster_version": "v1.28",
```

```
"image_version": "1.4.5",
"platform": "linux-amd64",
"rbac_enabled": true,
"swr_addr": "****",
"swr_user": "****"
},
"custom": {
  "annotations": {}
},
"flavor": {
  "name": "default",
  "resources": [
    {
      "limitsCpu": "500m",
      "limitsMem": "512Mi",
      "name": "dolphin",
      "requestsCpu": "500m",
      "requestsMem": "512Mi"
    }
  ]
}
}
```

4.13.15 NodeLocal DNSCache

Add-on Overview

NodeLocal DNSCache is an add-on developed based on the community NodeLocal DNSCache. This add-on functions as a DaemonSet to run the DNS cache proxy on cluster nodes to improve cluster DNS performance.

Add-on Parameters

Table 4-1238 Parameters

Parameter	Mandatory	Type	Description
basic	No	object	Basic configuration parameters, which do not need to be specified
flavor	Yes	Table 4-1239 object	Flavor parameters
custom	Yes	Table 4-1240 object	Custom parameters

Table 4-1239 Configuration of flavor

Parameter	Mandatory	Type	Description
replicas	No	String	Number of admission-controller component instances in the add-on. The default value is 2 .

Parameter	Mandatory	Type	Description
resources	No	Array resources object	Container resource (CPU and memory) quotas

Table 4-1240 Configuration of custom

Parameter	Mandatory	Type	Description
enable_dnsconfig_admission	No	bool	Enables DNSConfig automatic injection. The default value is true . After this function is enabled, a DNSConfig admission controller will be created. The controller intercepts pod creation requests in the namespace labeled with node-localdns-injection=enabled based on Admission Webhook, and automatically configures Pod dnsConfig that uses the DNS cache. If this function is disabled or the pod belongs to a non-target namespace, you must manually configure DNSConfig for the pod.
enable_namespace_admission	No	bool	Adds node-local-dns-injection=enabled to a created namespace. The default value is true . After this tag is added to a namespace, the system identifies the namespace creation request and automatically adds the tag. The target of these operations does not include the built-in namespaces (such as kube-system).
multiAZEnable	No	bool	Whether to enable the forcible mode of multi-AZ deployment for the deployment component. The default value is false . Deployment pods of the add-on will be forcibly scheduled to nodes in different AZs. If there are fewer AZs than pods, the extra pods will fail to run. If both multiAZEnable and multiAZBalance are set to true, the settings of multiAZBalance take effect, which means, the equivalent mode of multi-AZ deployment is used.

Parameter	Mandatory	Type	Description
multiAZBalance	No	bool	Whether to enable the equivalent mode of multi-AZ deployment for the deployment component. The default value is false . Deployment pods of the add-on are evenly scheduled to the nodes in the cluster in each AZ. If a new AZ is added, it is recommended that you increase add-on pods for cross-AZ HA deployment. With the equivalent multi-AZ deployment, the difference between the number of add-on pods in different AZs will be less than or equal to 1. If resources in one of the AZs are insufficient, pods cannot be scheduled to that AZ.
tolerations	No	Array of Table 4-1242	Tolerations of the admission-controller component

Table 4-1241 Data structure of the resources field

Parameter	Mandatory	Type	Description
limitsCpu	Yes	String	CPU size limit (unit: m)
limitsMem	Yes	String	Memory size limit (unit: Mi)
name	Yes	String	Add-on name. The value is fixed at node-local-dns-admission-controller or node-local-dns-cache .
requestsCpu	Yes	String	Requested CPU size (unit: m)
requestsMem	Yes	String	Requested memory size (unit: Mi)

Table 4-1242 Taints and tolerations

Parameter	Mandatory	Type	Description
key	No	String	Taint key
effect	No	String	Taint policy
operator	No	String	Operator
tolerationSeconds	No	Int	Toleration time window

Example Request

```
{
  "kind": "Addon",
  "apiVersion": "v3",
  "metadata": {
    "annotations": {
      "addon.install/type": "install"
    }
  },
  "spec": {
    "clusterID": "2292498e-d169-*****-0255ac1001ba",
    "version": "1.6.2",
    "addonTemplateName": "node-local-dns",
    "values": {
      "basic": {
        "basickey": "val"
      },
      "flavor": {
        "replicas": 2,
        "resources": [{
          "limitsCpu": "250m",
          "limitsMem": "512Mi",
          "name": "node-local-dns-admission-controller",
          "requestsCpu": "250m",
          "requestsMem": "512Mi"
        },
        {
          "limitsCpu": "500m",
          "limitsMem": "512Mi",
          "name": "node-local-dns-cache",
          "requestsCpu": "25m",
          "requestsMem": "5Mi"
        }
      ]
    },
    "custom": {
      "enable_dnsconfig_admission": true,
      "enable_namespace_admission": true,
      "multiAZBalance": false,
      "multiAZEnabled": false,
      "node_match_expressions": [],
      "tolerations": [{
        "key": "node.kubernetes.io/not-ready",
        "operator": "Exists",
        "effect": "NoExecute",
        "tolerationSeconds": 60
      },
      {
        "key": "node.kubernetes.io/unreachable",
        "operator": "Exists",
        "effect": "NoExecute",
        "tolerationSeconds": 60
      }
    ]
  }
}
```

4.13.16 Cloud Native Cluster Monitoring

Add-on Overview

The Cluster Native Cluster Monitoring add-on (kube-prometheus-stack) uses Prometheus-operator and Prometheus to provide easy-to-use, end-to-end Kubernetes cluster monitoring.

This add-on enables monitoring data to connect to the monitoring center, so that you can view monitoring data and configure alarms on the console.

Add-on Parameters

Table 4-1243 Parameters

Parameter	Mandatory	Type	Description
basic	No	object	Basic configuration parameters, which do not need to be specified
flavor	Yes	Table 4-1244 object	Flavor parameters
custom	Yes	Table 4-1245 object	Custom parameters

Table 4-1244 Configuration of flavor

Parameter	Mandatory	Type	Description
description	No	String	Add-on description
name	Yes	String	Add-on specification name
resources	Yes	resources object	Container resource (CPU and memory) quotas

Table 4-1245 Configuration of custom

Parameter	Mandatory	Type	Description
aom_enable	No	Boolean	Whether to interconnect with AOM
aom_instance_id	No	String	AOM instance ID. This parameter is mandatory when AOM is interconnected with the cluster.

Parameter	Mandatory	Type	Description
aom_project_id	No	String	ID of the project to which the AOM instance belongs. This parameter is mandatory when AOM is interconnected with the cluster.
aom_auth_type	No	String	Authentication type for interconnecting with AOM. This parameter is mandatory when AOM is interconnected with the cluster. The value is fixed at Bearer .
aom_app_key	No	String	app_key for interconnecting with AOM. This parameter is mandatory when AOM is interconnected with the cluster.
aom_app_secret	No	String	app_secret for interconnecting with AOM. This parameter is mandatory when AOM is interconnected with the cluster.
deploy_mode	Yes	String	Prometheus add-on model. The value can be agent or server . agent is recommended.
enablethird	No	Boolean	Whether to report metrics to the third-party monitoring system.
url_third	No	String	URL for the third-party monitoring system to report metrics.
basic_auth_username_third	No	String	Account for interconnecting with a third-party monitoring system (in the BasicAuth authentication mode)
basic_auth_password_third	No	String	Password for interconnecting with a third-party monitoring system (in the BasicAuth authentication mode)
bearer_token	No	String	Token for interconnecting with a third-party monitoring system (in the BearerToken authentication mode)
cluster	Yes	String	Cluster name
clusterId	Yes	String	Cluster ID
enable_custom_metrics	No	Boolean	Whether to enable custom metric collection. The default value is false .
highAvailability	No	Boolean	Whether HA is enabled. The default value is false .

Parameter	Mandatory	Type	Description
scrapeInterval	Yes	String	Default metric collection period. The default value is 15s .
shards	No	Integer	Number of collected fragments. This parameter is valid only in the agent mode. The default value is 1 .

Table 4-1246 Data structure of the resources field

Parameter	Mandatory	Type	Description
limitsCpu	Yes	String	CPU size limit (unit: m)
limitsMem	Yes	String	Memory size limit (unit: Mi)
name	Yes	String	Workload name
requestsCpu	Yes	String	Requested CPU size (unit: m)
requestsMem	Yes	String	Requested memory size (unit: Mi)

Example Request

```
{
  "kind": "Addon",
  "apiVersion": "v3",
  "metadata": {
    "annotations": {
      "addon.install/type": "install"
    }
  },
  "spec": {
    "clusterID": "b889764e-c100-11ee-80cf-0255ac100b0f",
    "version": "3.9.5",
    "addonTemplateName": "cie-collector",
    "values": {
      "basic": {
        "aom_endpoint": "https://**",
        "aom_url": "https://**",
        "region_id": "**",
        "swr_addr": "**",
        "swr_user": "**",
        "rbac_enabled": true,
        "cluster_version": "v1.27"
      },
      "flavor": {
        "deploy_mode": "agent",
        "description": "Default flavor for agent mode.",
        "name": "Agent-Default",
        "resources": [
          {
            "limitsCpu": "500m",
            "limitsMem": "500Mi",
            "name": "prometheusOperator",
            "requestsCpu": "100m",

```

```
    "requestsMem": "100Mi"
  },
  {
    "limitsCpu": "4",
    "limitsMem": "8Gi",
    "name": "prometheus",
    "requestsCpu": "500m",
    "requestsMem": "500Mi"
  },
  {
    "limitsCpu": "500m",
    "limitsMem": "500Mi",
    "name": "kubeStateMetrics",
    "requestsCpu": "200m",
    "requestsMem": "200Mi"
  },
  {
    "limitsCpu": "500m",
    "limitsMem": "1Gi",
    "name": "nodeExporter",
    "requestsCpu": "200m",
    "requestsMem": "100Mi"
  }
],
"category": [
  "CCE",
  "Turbo"
],
"custom": {
  "aom_app_key": "*****",
  "aom_app_secret": "*****",
  "aom_auth_type": "Bearer",
  "aom_enable": true,
  "aom_instance_id": "a2bf5a6f-2c64-4a7f-a369-78dccd9cb6fd",
  "aom_project_id": "b6315dd3d0ff4be5b31a963256794989",
  "basic_auth_password_third": "",
  "basic_auth_username_third": "",
  "bearer_token": "",
  "cluster": "test-cluster",
  "clusterId": "b889764e-c100-11ee-80cf-0255ac100b0f",
  "deploy_mode": "agent",
  "enable_custom_metrics": true,
  "enablethird": false,
  "highAvailability": false,
  "projectId": "b6315dd3d0ff4be5b31a963256794989",
  "region": "****",
  "scrapeInterval": "15s",
  "shards": 1,
  "url_third": ""
}
}
}
```

4.13.17 Cloud Native Logging

Add-on Overview

The Cloud Native Logging add-on (log-agent) is developed based on Fluent Bit and OpenTelemetry for collecting logs and Kubernetes events. This add-on supports CRD-based log collection policies. It collects and forwards standard output logs, container file logs, node logs, and Kubernetes event logs in a cluster based on configured policies. It also reports Kubernetes events to AOM for configuring event alarms. By default, all abnormal events and some normal events are reported.

Add-on Parameters

Table 4-1247 Parameters

Parameter	Mandatory	Type	Description
basic	No	object	Basic configuration parameters, which do not need to be specified
flavor	Yes	Table 4-1248 object	Flavor parameters
custom	Yes	Table 4-1249 object	Custom parameters

Table 4-1248 Configuration of flavor

Parameter	Mandatory	Type	Description
description	No	String	Add-on description
name	Yes	String	Add-on specification name. The value is fixed at Single-instance .
replicas	Yes	String	Number of otel-collector component instances. The default value is 1 .
resources	Yes	resources object	Container resource (CPU and memory) quotas

Table 4-1249 Configuration of custom

Parameter	Mandatory	Type	Description
caCert	Yes	String	Specifies a client certificate, which is encrypted using Base64. This parameter is optional during installation. It is generated by the CCE add-on center and used for two-way authentication between components and webhook requests. Domain name to be issued: *.monitoring.svc .

Parameter	Mandatory	Type	Description
serverCert	Yes	String	Specifies a server certificate, which is encrypted using Base64. This parameter is optional during installation. It is generated by CCE add-ons and used for two-way authentication between components and webhook requests. Domain name to be issued: *.monitoring.svc .
serverKey	Yes	String	Specifies the private key of a server, which is encrypted using Base64. This parameter is optional during installation. It is generated by CCE add-ons and used for two-way authentication between components and webhook requests. Domain name to be issued: *.monitoring.svc .
accessKey	No	String	Specifies the access key ID of a user, which is used to request AOM and LTS APIs. If this parameter is left blank, a temporary AK/SK is used.
secretKey	No	String	Specifies the access key of a user, which is used to request AOM and LTS APIs. If this parameter is left blank, a temporary AK/SK is used.
createDefaultStdout	No	Bool	Specifies whether to create the default policy for collecting container standard output logs and reporting them to LTS. This parameter is valid only after it is specified during the add-on installation. The default value is false .
createDefaultEvent	No	Bool	Specifies whether to create the default policy for collecting Kubernetes events and reporting them to LTS. This parameter is valid only after it is specified during the add-on installation. The default value is false .
multiAZEnabled	No	Bool	Specifies whether to deploy the add-on pods in multiple AZs. The default value is false . If this parameter is set to true , cross-AZ deployment is forcibly performed. If this parameter is set to false , cross-AZ deployment is preferred.

Parameter	Mandatory	Type	Description
cluster_category	No	String	The value is fixed at CCE .
ltsAccessEndpoint	No	String	Specifies the address for reporting logs to LTS. If this parameter is left blank, the address specified in basic is used.
ltsEndpoint	No	String	Specifies the address of the LTS APIs. If this parameter is left blank, the address specified in basic is used.
aomEndpoint	No	String	Specifies the address for reporting events to AOM. If this parameter is left blank, the address specified in basic is used.
projectID	Yes	String	Specifies the ID of the project to which the current CCE cluster belongs. This parameter is optional during installation.
clusterID	Yes	String	Specifies the ID of the current CCE cluster. This parameter is optional during installation.
clusterName	Yes	String	Specifies the name of the current CCE cluster.

Table 4-1250 Data structure of the resources field

Parameter	Mandatory	Type	Description
limitsCpu	Yes	String	CPU size limit (unit: m)
limitsMem	Yes	String	Memory size limit (unit: Mi)
name	Yes	String	Component name. Options: fluent-bit : component for collecting node logs cop-logs : generates soft links for collected files on each node. log-operator : generates fluent-bit and otel-collector configurations. otel-collector : reports collected logs and events to AOM and LTS.
requestsCpu	Yes	String	Requested CPU size (unit: m)

Parameter	Mandatory	Type	Description
requestsMem	Yes	String	Requested memory size (unit: Mi)

Example Request

```
{
  "kind": "Addon",
  "apiVersion": "v3",
  "metadata": {
    "annotations": {
      "addon.install/type": "install"
    }
  },
  "spec": {
    "clusterID": "ccbe7bdf-4**9-3**b-b**4-0*****78",
    "version": "1.4.4",
    "addonTemplateName": "log-agent",
    "values": {
      "basic": {
        "aomEndpoint": "https://**",
        "iam_url": "**",
        "ltsAccessEndpoint": "https://**:8102",
        "ltsEndpoint": "https://**",
        "region": "**",
        "swr_addr": "**",
        "swr_user": "**",
        "rbac_enabled": true,
        "cluster_version": "v1.25"
      }
    },
    "flavor": {
      "description": "Recommended when the number of logs per second does not exceed 5000.",
      "name": "Low",
      "replicas": 1,
      "resources": [
        {
          "limitsCpu": "500m",
          "limitsMem": "500Mi",
          "name": "fluent-bit",
          "requestsCpu": "100m",
          "requestsMem": "200Mi"
        },
        {
          "limitsCpu": 1,
          "limitsMem": "500Mi",
          "name": "cop-logs",
          "requestsCpu": "100m",
          "requestsMem": "100Mi"
        },
        {
          "limitsCpu": "500m",
          "limitsMem": "500Mi",
          "name": "log-operator",
          "requestsCpu": "100m",
          "requestsMem": "100Mi"
        },
        {
          "limitsCpu": 1,
          "limitsMem": "2Gi",
          "name": "otel-collector",
          "requestsCpu": "200m",
          "requestsMem": "1Gi"
        }
      ]
    },
    "category": [
```

```
"CCE",
  "Turbo"
]
},
"custom": {
  "accessKey": "",
  "aomEndpoint": "https://****",
  "aomPrivateEndpointIP": "",
  "caCert": "",
  "clusterID": "",
  "clusterName": "clusterName",
  "cluster_category": "CCE",
  "createAudit": false,
  "createDefaultEvent": false,
  "createDefaultEventToAOM": true,
  "createDefaultStdout": false,
  "createKubeApiserver": false,
  "createKubeControllerManager": false,
  "createKubeScheduler": false,
  "ltsAccessEndpoint": "https://***:8102",
  "ltsAuditStreamID": "",
  "ltsEndpoint": "https://****",
  "ltsEventStreamID": "",
  "ltsGroupID": "",
  "ltsKubeApiserverStreamID": "",
  "ltsKubeControllerManagerStreamID": "",
  "ltsKubeSchedulerStreamID": "",
  "ltsLogReportDomain": "",
  "ltsPrivateEndpointIP": "",
  "ltsStdoutStreamID": "",
  "multiAZEnabled": false,
  "paasakskEnable": true,
  "projectID": "",
  "secretKey": "",
  "securityToken": "",
  "serverCert": "",
  "serverKey": ""
}
}
}
```

5 Kubernetes APIs

Description

Kubernetes APIs are resource-based (RESTful) programming interfaces provided through HTTP. It supports query, creation, update, and deletion of various cluster resources using standard HTTP request methods (POST, PUT, PATCH, DELETE, and GET).

CCE allows you to use native [Kubernetes APIs](#) in the following ways:

- [Calling Kubernetes APIs Through the Cluster API Server](#). It is suitable for API calls on scale thanks to its direct connection to the API Server. This is a recommended option.
- [Calling Kubernetes APIs Through API Gateway](#). It applies to small-scale API calls. API gateway flow control may be triggered when APIs are called on scale.

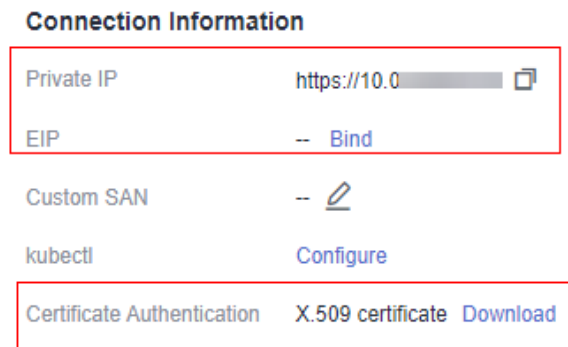
Calling Kubernetes APIs Through the Cluster API Server

You can use the API server of a Kubernetes cluster to call Kubernetes-native APIs.

Step 1 Obtain the cluster certificate and API server.

- Method 1: Obtain the certificate by calling the API for [obtaining the cluster certificate](#), save the returned information to the `kubeconfig.json` file, and extract the certificate, private key, and API server information. The commands are as follows:

```
# Obtain the CA certificate of the cluster and save it as ca.crt.
cat ./kubeconfig.json |grep certificate-authority-data | awk -F "" '{print $4}' | base64 -d > ./ca.crt
# Obtain the client certificate and save it as client.crt.
cat ./kubeconfig.json |grep client-certificate-data | awk -F "" '{print $4}' | base64 -d > ./client.crt
# Obtain the client private key and save it as client.key.
cat ./kubeconfig.json |grep client-key-data | awk -F "" '{print $4}' | base64 -d > ./client.key
# Obtain the API server.
cat ./kubeconfig.json |grep server | awk -F "" '{print $4}'
```
- Method 2: Obtain the API server IP address (private or public network address) on the [Overview](#) page of the CCE console and download the certificate (`ca.crt`, `client.crt`, and `client.key` files).



Step 2 Call Kubernetes-native APIs using the cluster certificate.

For example, run the **curl** command to call an API to view the pod information. The following is an example:

```
curl --cacert ./ca.crt --cert ./client.crt --key ./client.key https://192.168.0.198:5443/api/v1/namespaces/default/pods/
```

Specifically:

- *./ca.crt*, *./client.crt*, and *./client.key* specify that the certificate files in the current path are used. Replace them with the actual file paths.
- **192.168.0.198:5443** is the IP address of the cluster API server.
- */api/v1/namespaces/default/pods/* specifies the URI of the cluster API for viewing pod information in the **default** namespace. For more cluster APIs, see [Kubernetes API](#).

----End

Calling Kubernetes APIs Through API Gateway

You can call Kubernetes-native APIs through API Gateway using the URL in the format of **https://{clusterid}.Endpoint/uri**. In the URL, *{clusterid}* indicates the cluster ID, and *uri* indicates the resource path, that is, the path for API access.

Table 5-1 URL parameters

Parameter	Description
{clusterid}	Cluster ID. After a cluster is created, call the API for obtaining a cluster in a specified project to obtain the cluster ID.
Endpoint	Entry (URL) for a web service, which can be obtained from Endpoints .
uri	Access path of an API for performing an operation. Obtain the value from the URI of the API. For details, see Kubernetes API .

- Step 1** Obtain the token of the region where the cluster is located. For details about how to obtain the token, see Obtaining a Token.
- Step 2** Obtain the cluster ID using either of the following methods:
- Method 1: Obtain the cluster UID by calling the API for obtaining cluster information.
 - Method 2: Obtain the cluster ID on the **Overview** page of the CCE console.
- Step 3** Determine the requested URL based on the URL format **https://{clusterid}.Endpoint/uri**.
- **{clusterid}**: Obtain the value by using **Step 2**.
 - **Endpoint**: Obtain the endpoint from **Regions and Endpoints**.
For example, the endpoint of CCE in the **AP-Singapore** region is **cce.ap-southeast-3.myhuaweicloud.com**.
 - **uri**: Set this parameter based on the API to be called. For example, if you want to create a Deployment, the request method is POST and the API URI is **/apis/apps/v1/namespaces/{namespace}/deployments**, where **{namespace}** indicates the cluster namespace name. In this example, the value is **default**.
For more APIs, see **Kubernetes APIs**.

Combine the preceding parameters following the URL format **https://{clusterid}.Endpoint/uri**.

The following is an example of the URL for calling the API to view information about all pods:

```
https://07da5****.cce.ap-southeast-3.myhuaweicloud.com/apis/apps/v1/namespaces/default/deployments
```

- Step 4** Use the request method specified by the API and set the request header parameters. If parameters in the body need to be added, add the structure corresponding to the API by referring to **Kubernetes APIs**.

Example curl command to call the API for creating a Deployment using POST and adding the corresponding body:

In this example, the **nginx.json** file is used to create a Deployment named **nginx**. The Deployment uses the **nginx:latest** image and contains two pods. Each pod occupies 100m CPU and 200 MiB memory.

```
curl --location --request POST 'https://07da5****.cce.ap-southeast-3.myhuaweicloud.com/apis/apps/v1/namespaces/default/deployments' \
--header 'Content-Type: application/json' \
--header 'X-Auth-Token: MIIWVW****' \
--data @nginx.json
```

Header parameters contained in the request are as follows:

Table 5-2 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	Message body type (format), for example, application/json.

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details, see Obtaining a Token .

nginx.json is located in the current directory and contains the following content:

```
{
  "apiVersion": "apps/v1",
  "kind": "Deployment",
  "metadata": {
    "name": "nginx"
  },
  "spec": {
    "replicas": 2,
    "selector": {
      "matchLabels": {
        "app": "nginx"
      }
    },
    "template": {
      "metadata": {
        "labels": {
          "app": "nginx"
        }
      },
      "spec": {
        "containers": [
          {
            "image": "nginx:latest",
            "name": "container-0",
            "resources": {
              "limits": {
                "cpu": "100m",
                "memory": "200Mi"
              },
              "requests": {
                "cpu": "100m",
                "memory": "200Mi"
              }
            }
          }
        ],
        "imagePullSecrets": [
          {
            "name": "default-secret"
          }
        ]
      }
    }
  }
}
```

----End

Related Documents

- [Accessing a Cluster Using Kubernetes APIs](#)
- [Kubernetes official SDKs](#) (including Go, Python, and Java)

Language	Client Library	Sample Program
C	github.com/kubernetes-client/c	Browse
dotnet	github.com/kubernetes-client/csharp	Browse
Go	github.com/kubernetes/client-go/	Browse
Haskell	github.com/kubernetes-client/haskell	Browse
Java	github.com/kubernetes-client/java	Browse
JavaScript	github.com/kubernetes-client/javascript	Browse
Perl	github.com/kubernetes-client/perl/	Browse
Python	github.com/kubernetes-client/python/	Browse
Ruby	github.com/kubernetes-client/ruby/	Browse

6 Out-of-Date APIs

6.1 Obtaining Cluster Certificates

Function

This API is used to obtain certificates of a specified cluster. This API has been deprecated. Use [this API](#) to obtain the cluster certificate instead.

URI

GET /api/v3/projects/{project_id}/clusters/{cluster_id}/clustercert

Table 6-1 URI parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For details about how to obtain a project ID, see How to Obtain Parameters in the API URI .
cluster_id	Yes	String	Cluster ID. For details about how to obtain a cluster ID, see How to Obtain Parameters in the API URI .

Request

Table 6-2 Request header parameter description

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	Message body type (format). Possible values: <ul style="list-style-type: none"> • application/json;charset=utf-8 • application/json
X-Auth-Token	Yes	String	Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details on how to obtain a user token, see Authentication . Maximum length: 16,384 characters

Response

Status code: 200

Table 6-3 Response body parameters

Parameter	Type	Description
kind	String	API type. The value is fixed at Config and cannot be changed. Default value: Config
apiVersion	String	API version. The value is fixed to v1 .
preferences	String	This field is not used currently and is left unspecified by default.
clusters	Array of Clusters objects	Cluster list.
users	Array of Users objects	Stores the certificate information and client key information of a specified user.
contexts	Array of Contexts objects	Context list.

Parameter	Type	Description
current-context	String	Current context. If publicip (elastic IP address of the VM) exists, the value is external . If publicip does not exist, the value is internal .

Table 6-4 Clusters

Parameter	Type	Description
name	String	Cluster name. <ul style="list-style-type: none"> If the publicip parameter does not exist (that is, no EIP exists), there is only one cluster in the cluster list, and the value of this parameter is internalCluster. If the publicip parameter exists (that is, the EIP exists), there are at least two clusters in the cluster list, and the value of this parameter is externalCluster.
cluster	ClusterCert object	Cluster information.

Table 6-5 ClusterCert

Parameter	Type	Description
server	String	Server IP address.
certificate-authority-data	String	Certificate authorization data.
insecure-skip-tls-verify	Boolean	Whether to skip the server certificate verification. If the cluster type is externalCluster , the value is true .

Table 6-6 Users

Parameter	Type	Description
name	String	The value is fixed to user .
user	User object	Stores the certificate information and client key information of a specified user.

Table 6-7 User

Parameter	Type	Description
client-certificate-data	String	Client certificate.
client-key-data	String	PEM encoding data from the TLS client key file.

Table 6-8 Contexts

Parameter	Type	Description
name	String	Context name. <ul style="list-style-type: none"> If the publicip parameter does not exist (that is, no EIP exists), there is only one cluster in the cluster list, and the value of this parameter is internal. If the publicip parameter exists (that is, the EIP exists), there are at least two clusters in the cluster list, and the value of this parameter is external.
context	Context object	Context information.

Table 6-9 Context

Parameter	Type	Description
cluster	String	Cluster context.
user	String	User context.

Request Example

None

Example Response

Status code: 200

Certificates of the specified cluster are successfully obtained. For details about the certificate file format, see the following structure of **Config** (Kubernetes v1).

```
{
  "kind": "Config",
  "apiVersion": "v1",
  "preferences": { }
```

```

"clusters" : [ {
  "name" : "internalCluster",
  "cluster" : {
    "server" : "https://192.168.1.7:5443",
    "certificate-authority-data" : "Q2VydGlmaWN*****kQgQ0VSVEIGSUNBVEUtLS0tLQo="
  }
}],
"users" : [ {
  "name" : "user",
  "user" : {
    "client-certificate-data" : "LS0tLS1CRUdJTi*****RkIDQVRFLS0tLS0K",
    "client-key-data" : "LS0tLS1CRUdJTiBSU*****BLRVktLS0tLQo="
  }
}],
"contexts" : [ {
  "name" : "internal",
  "context" : {
    "cluster" : "internalCluster",
    "user" : "user"
  }
}],
"current-context" : "internal"
}

```

Status Code

Status code	Description
200	Certificates of the specified cluster are successfully obtained. For details about the certificate file format, see the structure of Config (Kubernetes v1).

Error Codes

For details, see [Error Codes](#).

6.2 Creating a PersistentVolume

Function

This API is used to create a PersistentVolume associated with cloud storage (for example, EVS, SFS, and OBS). This API has been deprecated. Use the corresponding Kubernetes PV API instead.

NOTE

The format of the storage management URL is **https://{clusterid}.Endpoint/uri**. In the URL, *{clusterid}* indicates a cluster ID, and *uri* indicates the resource path, that is, the path for API access. If **https://Endpoint/uri** is used, the **X-Cluster-ID** parameter must be specified in the request header.

URI

POST /api/v1/cloudpersistentvolumes

Request

Table 6-10 Request header parameter description

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	Message body type (format). Possible values: <ul style="list-style-type: none"> • application/json;charset=utf-8 • application/json
X-Auth-Token	Yes	String	Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details on how to obtain a user token, see Authentication . Maximum length: 16,384 characters
X-Cluster-ID	No	String	Cluster ID. This parameter is mandatory when the URL format https://Endpoint/uri is used. For details about how to obtain the value, see How to Obtain Parameters in the API URI .

Table 6-11 Request body parameters

Parameter	Mandatory	Type	Description
apiVersion	Yes	String	API version. The value is fixed to v1 . Default value: v1
kind	Yes	String	API type. The value is fixed to PersistentVolume . Default value: PersistentVolume
metadata	Yes	PersistentVolumeMetadata object	PersistentVolume metadata information.

Parameter	Mandatory	Type	Description
spec	Yes	PersistentVolumeSpec object	PersistentVolume specifications.
status	No	PersistentVolumeStatus object	PersistentVolume status information.

Table 6-12 PersistentVolumeMetadata

Parameter	Mandatory	Type	Description
name	Yes	String	PV name. Enter 1 to 253 characters starting and ending with a letter or digit. Only lowercase letters, digits, hyphens (-), and periods (.) are allowed. PV names must be unique in a namespace.
labels	No	Map<String,String>	<p>PV labels, in the format of key-value pairs.</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain can be prefixed to a key and contain a maximum of 253 characters. Example DNS subdomain: example.com/my-key • Value: The value can be left blank or 1 to 63 characters, starting with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed in the character string. <p>Example label: "foo": "bar"</p>

Table 6-13 PersistentVolumeSpec

Parameter	Mandatory	Type	Description
flexVolume	Yes	FlexVolume object	FlexVolume storage plug-in of Kubernetes.
persistentVolumeReclaimPolicy	No	String	<p>PV reclaim policy. Possible values:</p> <ul style="list-style-type: none"> • Retain: The Retain reclaim policy allows for manual reclamation of the resource. When the PVC is deleted, the PV still exists and the volume is considered "released". • Recycle: The Recycle reclaim policy performs a basic scrub (rm -rf / thevolume / *) on the volume and makes it available again for a new claim. • Delete: For volume plug-ins that support the Delete reclaim policy, deletion removes both the PV object from Kubernetes, as well as the associated storage asset in the external infrastructure. Volumes that were dynamically provisioned inherit the reclaim policy of their StorageClass, which defaults to Delete.

Parameter	Mandatory	Type	Description
accessModes	Yes	Array of strings	<p>Access mode of the PersistentVolume.</p> <ul style="list-style-type: none"> • ReadWriteOnce: The volume can be mounted as read-write by a single node. <p>NOTE This function is supported only when the cluster version is v1.13.10 and the storage-driver version is 1.0.19.</p> <ul style="list-style-type: none"> • ReadOnlyMany: The volume can be mounted as read-only by many nodes. • ReadWriteMany: The volume can be mounted as read-write by many nodes.

Table 6-14 FlexVolume

Parameter	Mandatory	Type	Description
driver	Yes	String	<p>Name of the FlexVolume storage plug-in. Set this parameter based on the storage volume type.</p> <ul style="list-style-type: none"> • huawei.com/fuxivol (EVS) • huawei.com/fuxinfs (SFS) • huawei.com/fuxiobs (OBS) • huawei.com/fuxiefs (SFS Turbo)

Parameter	Mandatory	Type	Description
fsType	Yes	String	File system type. Set this parameter based on the storage volume type. <ul style="list-style-type: none"> • ext4: EVS volume. For details, see Using EVS Disks as Storage Volumes. • nfs: SFS volume. For details, see Using SFS File Systems as Storage Volumes. • obs: OBS volume. For details, see Using OBS Buckets as Storage Volumes. • efs: SFS Turbo volume. For details, see Using SFS Turbo File Systems as Storage Volumes.
options	Yes	Options object	FlexVolume configuration items.

Table 6-15 Options

Parameter	Mandatory	Type	Description
fsType	Yes	String	File system type. Set this parameter based on the storage volume type. <ul style="list-style-type: none"> • ext4 (EVS) • nfs (SFS) • obs (OBS) • efs (SFS Turbo)
region	Yes	String	Region where the cloud storage is located.
volumeID	Yes	String	UUID of the cloud storage. If the cloud storage is an OBS bucket, set this parameter to the bucket name.

Parameter	Mandatory	Type	Description
storageType	Yes	String	Cloud storage volume type. <ul style="list-style-type: none"> • bs (EVS) • nfs (SFS) • obs (OBS) • efs (SFS Turbo)

Table 6-16 PersistentVolumeStatus

Parameter	Mandatory	Type	Description
accessModes	No	Array of strings	Access mode of the PersistentVolume.
phase	No	String	PV status. Possible values: <ul style="list-style-type: none"> • Available: The volume is not bound to any PVC. • Bound: The PV has been bound to a PVC. • Released: The PVC bound to the PV has been deleted, but the PV has not been made available again for a new claim in the cluster. • Failed: Automatic reclaim of the volume has failed.

Response

Status code: 201

Table 6-17 Response body parameters

Parameter	Type	Description
apiVersion	String	API version. The value is fixed to v1 . Default value: v1
kind	String	API type. The value is fixed to PersistentVolume . Default value: PersistentVolume
metadata	PersistentVolumeMetadata object	PersistentVolume metadata information.

Parameter	Type	Description
spec	PersistentVolumeSpec object	PersistentVolume specifications.
status	PersistentVolumeStatus object	PersistentVolume status information.

Table 6-18 PersistentVolumeMetadata

Parameter	Type	Description
name	String	PV name. Enter 1 to 253 characters starting and ending with a letter or digit. Only lowercase letters, digits, hyphens (-), and periods (.) are allowed. PV names must be unique in a namespace.
labels	Map<String,String>	<p>PV labels, in the format of key-value pairs.</p> <ul style="list-style-type: none"> • Key: Enter 1 to 63 characters starting with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain can be prefixed to a key and contain a maximum of 253 characters. Example DNS subdomain: example.com/my-key • Value: The value can be left blank or 1 to 63 characters, starting with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed in the character string. <p>Example label: "foo": "bar"</p>

Table 6-19 PersistentVolumeSpec

Parameter	Type	Description
flexVolume	FlexVolume object	FlexVolume storage plug-in of Kubernetes.

Parameter	Type	Description
persistentVolumeReclaimPolicy	String	<p>PV reclaim policy. Possible values:</p> <ul style="list-style-type: none"> ● Retain: The Retain reclaim policy allows for manual reclamation of the resource. When the PVC is deleted, the PV still exists and the volume is considered "released". ● Recycle: The Recycle reclaim policy performs a basic scrub (<code>rm -rf / thevolume / *</code>) on the volume and makes it available again for a new claim. ● Delete: For volume plug-ins that support the Delete reclaim policy, deletion removes both the PV object from Kubernetes, as well as the associated storage asset in the external infrastructure. Volumes that were dynamically provisioned inherit the reclaim policy of their StorageClass, which defaults to Delete.
accessModes	Array of strings	<p>Access mode of the PersistentVolume.</p> <ul style="list-style-type: none"> ● ReadWriteOnce: The volume can be mounted as read-write by a single node. <p>NOTE This function is supported only when the cluster version is v1.13.10 and the storage-driver version is 1.0.19.</p> <ul style="list-style-type: none"> ● ReadOnlyMany: The volume can be mounted as read-only by many nodes. ● ReadWriteMany: The volume can be mounted as read-write by many nodes.

Table 6-20 FlexVolume

Parameter	Type	Description
driver	String	<p>Name of the FlexVolume storage plug-in. Set this parameter based on the storage volume type.</p> <ul style="list-style-type: none"> ● huawei.com/fuxivol (EVS) ● huawei.com/fuxinfs (SFS) ● huawei.com/fuxiobs (OBS) ● huawei.com/fuxiefs (SFS Turbo)

Parameter	Type	Description
fsType	String	File system type. Set this parameter based on the storage volume type. <ul style="list-style-type: none"> • ext4: EVS volume. For details, see Using EVS Disks as Storage Volumes. • nfs: SFS volume. For details, see Using SFS File Systems as Storage Volumes. • obs: OBS volume. For details, see Using OBS Buckets as Storage Volumes. • efs: SFS Turbo volume. For details, see Using SFS Turbo File Systems as Storage Volumes.
options	Options object	FlexVolume configuration items.

Table 6-21 Options

Parameter	Type	Description
fsType	String	File system type. Set this parameter based on the storage volume type. <ul style="list-style-type: none"> • ext4 (EVS) • nfs (SFS) • obs (OBS) • efs (SFS Turbo)
region	String	Region where the cloud storage is located.
volumeID	String	UUID of the cloud storage. If the cloud storage is an OBS bucket, set this parameter to the bucket name.
storageType	String	Cloud storage volume type. <ul style="list-style-type: none"> • bs (EVS) • nfs (SFS) • obs (OBS) • efs (SFS Turbo)

Table 6-22 PersistentVolumeStatus

Parameter	Type	Description
accessModes	Array of strings	Access mode of the PersistentVolume.

Parameter	Type	Description
phase	String	PV status. Possible values: <ul style="list-style-type: none"> ● Available: The volume is not bound to any PVC. ● Bound: The PV has been bound to a PVC. ● Released: The PVC bound to the PV has been deleted, but the PV has not been made available again for a new claim in the cluster. ● Failed: Automatic reclaim of the volume has failed.

Request Example

- Specifying an EVS volume ID and creating a PersistentVolume:

```
{
  "apiVersion": "v1",
  "kind": "PersistentVolume",
  "metadata": {
    "labels": {
      "name": "pv-test"
    },
    "name": "pv-test"
  },
  "spec": {
    "accessModes": [ "ReadWriteMany" ],
    "flexVolume": {
      "driver": "huawei.com/fuxivol",
      "fsType": "ext4",
      "options": {
        "fsType": "ext4",
        "kubernetes.io/namespace": "default",
        "region": "southchina",
        "volumeID": "76e01b29-08b9-11e8-9ca5-1051722006ec",
        "storageType": "bs"
      }
    }
  },
  "persistentVolumeReclaimPolicy": "Delete"
}
```

- ```
{
 "apiVersion": "v1",
 "kind": "PersistentVolume",
 "metadata": {
 "labels": {
 "name": "pv-test"
 },
 "name": "pv-test"
 },
 "spec": {
 "accessModes": ["ReadWriteMany"],
 "flexVolume": {
 "driver": "huawei.com/fuxivol",
 "fsType": "ext4",
 "options": {
 "fsType": "ext4",
 "region": "southchina",
 "volumeID": "76e01b29-08b9-11e8-9ca5-1051722006ec",
 "storageType": "bs"
 }
 }
 }
}
```



```

 },
 "persistentVolumeReclaimPolicy" : "Delete"
 }
}

```

## Example Response

**Status code: 201**

The job for creating a PersistentVolume is successfully delivered.

```

{
 "kind" : "PersistentVolume",
 "apiVersion" : "v1",
 "metadata" : {
 "name" : "pv-test",
 "namespace" : "default",
 "selfLink" : "/api/v1/namespaces/default/persistentvolumes/pv-test",
 "uid" : "e174188f-ff21-11e7-855b-fa163eaf5675",
 "resourceVersion" : "174229",
 "creationTimestamp" : "2018-01-22T03:11:03Z",
 "labels" : {
 "name" : "pv-test"
 },
 "enable" : true
 },
 "spec" : {
 "capacity" : {
 "storage" : "1Gi"
 },
 "accessModes" : ["ReadWriteMany"],
 "flexVolume" : {
 "driver" : "huawei.com/fuxivol",
 "fsType" : "ext4",
 "options" : {
 "fsType" : "ext4",
 "kubernetes.io/namespace" : "default",
 "volumeID" : "0781b22f-4d89-4e9c-b026-80e545cea16c"
 }
 },
 "persistentVolumeReclaimPolicy" : "Delete"
 },
 "status" : {
 "phase" : "Pending"
 }
}

```

## Status Code

| Status Code | Description                                                        |
|-------------|--------------------------------------------------------------------|
| 201         | The job for creating a PersistentVolume is successfully delivered. |

## Error Codes

For details, see [Error Codes](#).

## 6.3 Deleting a PersistentVolume

### Function

This API is used to delete a PersistentVolume from a specified namespace. Using this API, you can determine whether to retain the cloud storage associated with the PersistentVolume. This API has been deprecated. Use the corresponding Kubernetes PV API instead.

#### NOTE

The format of the storage management URL is **https://{clusterid}.Endpoint/uri**. In the URL, *{clusterid}* indicates a cluster ID, and *uri* indicates the resource path, that is, the path for API access. If **https://Endpoint/uri** is used, the **X-Cluster-ID** parameter must be specified in the request header.

### URI

DELETE /api/v1/cloudpersistentvolumes/{name}

**Table 6-23** URI parameter description

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name      | Yes       | String | <p>Name of the PersistentVolume to be deleted.</p> <p>Name format: <i>Volume name</i>[? deleteVolume=<i>BOOLEAN</i>&amp;storageType=<i>Cloud storage volume type</i>]. The content in square brackets can be omitted. Examples:</p> <ul style="list-style-type: none"> <li>• volume-49f1? deleteVolume=true&amp;storageType=bs</li> <li>• volume-49f1</li> </ul> <p>In the first example:</p> <p><b>deleteVolume:</b> Whether to delete associated backend cloud storage after the PersistentVolume is deleted. The value can be <b>true</b> or <b>false</b> and defaults to <b>false</b>. If it is set to <b>true</b>, it indicates that the associated backend cloud storage is deleted after the PersistentVolume is deleted. If it is set to <b>false</b>, it indicates that the associated backend cloud storage is not deleted after the PersistentVolume is deleted.</p> <p><b>NOTE</b><br/>If the storage volume type is <b>efs</b>, this parameter must be set to <b>false</b>.</p> <p><b>storageType:</b> Cloud storage volume type. This parameter is used together with <b>deleteVolume</b>. That is, <b>deleteVolume</b> and <b>storageType</b> must be configured at the same time.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• <b>bs:</b> EVS</li> <li>• <b>nfs:</b> SFS</li> <li>• <b>obs:</b> OBS</li> <li>• <b>efs:</b> SFS Turbo</li> </ul> |

## Request

**Table 6-24** Request header parameter description

| Parameter    | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                              |
|--------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Content-Type | Yes       | String | Message body type (format).<br>Possible values: <ul style="list-style-type: none"> <li>• <b>application/json;charset=utf-8</b></li> <li>• <b>application/json</b></li> </ul>                                                                                                                             |
| X-Auth-Token | Yes       | String | Requests for calling an API can be authenticated using either a token or AK/SK. If token-based authentication is used, this parameter is mandatory and must be set to a user token. For details on how to obtain a user token, see <a href="#">Authentication</a> .<br>Maximum length: 16,384 characters |
| X-Cluster-ID | No        | String | Cluster ID. This parameter is mandatory when the URL format <b>https://Endpoint/uri</b> is used. For details about how to obtain the value, see <a href="#">How to Obtain Parameters in the API URI</a> .                                                                                                |

## Response

**Status code: 200**

**Table 6-25** Response body parameters

| Parameter  | Type                                            | Description                                                                                  |
|------------|-------------------------------------------------|----------------------------------------------------------------------------------------------|
| apiVersion | String                                          | API version. The value is fixed to <b>v1</b> .<br>Default value: v1                          |
| kind       | String                                          | API type. The value is fixed to <b>PersistentVolume</b> .<br>Default value: PersistentVolume |
| metadata   | <a href="#">PersistentVolumeMetadata</a> object | PersistentVolume metadata information.                                                       |

| Parameter | Type                                          | Description                          |
|-----------|-----------------------------------------------|--------------------------------------|
| spec      | <a href="#">PersistentVolumeSpec</a> object   | PersistentVolume specifications.     |
| status    | <a href="#">PersistentVolumeStatus</a> object | PersistentVolume status information. |

**Table 6-26** PersistentVolumeMetadata

| Parameter | Type               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name      | String             | PV name. Enter 1 to 253 characters starting and ending with a letter or digit. Only lowercase letters, digits, hyphens (-), and periods (.) are allowed. PV names must be unique in a namespace.                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| labels    | Map<String,String> | <p>PV labels, in the format of key-value pairs.</p> <ul style="list-style-type: none"> <li>• <b>Key:</b> Enter 1 to 63 characters starting with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed. A DNS subdomain can be prefixed to a key and contain a maximum of 253 characters. Example DNS subdomain: example.com/my-key</li> <li>• <b>Value:</b> The value can be left blank or a string of 1 to 63 characters starting with a letter or digit. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed in the character string.</li> </ul> <p>Example label: "foo": "bar"</p> |

**Table 6-27** PersistentVolumeSpec

| Parameter  | Type                              | Description                               |
|------------|-----------------------------------|-------------------------------------------|
| flexVolume | <a href="#">FlexVolume</a> object | FlexVolume storage plug-in of Kubernetes. |

| Parameter                     | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| persistentVolumeReclaimPolicy | String           | <p>PV reclaim policy. Possible values:</p> <ul style="list-style-type: none"> <li>● <b>Retain</b>: The Retain reclaim policy allows for manual reclamation of the resource. When the PVC is deleted, the PV still exists and the volume is considered "released".</li> <li>● <b>Recycle</b>: The Recycle reclaim policy performs a basic scrub (<code>rm -rf / thevolume / *</code>) on the volume and makes it available again for a new claim.</li> <li>● <b>Delete</b>: For volume plug-ins that support the Delete reclaim policy, deletion removes both the PV object from Kubernetes, as well as the associated storage asset in the external infrastructure. Volumes that were dynamically provisioned inherit the reclaim policy of their StorageClass, which defaults to <b>Delete</b>.</li> </ul> |
| accessModes                   | Array of strings | <p>Access mode of the PersistentVolume.</p> <ul style="list-style-type: none"> <li>● <b>ReadWriteOnce</b>: The volume can be mounted as read-write by a single node.</li> </ul> <p><b>NOTE</b><br/>This function is supported only when the cluster version is v1.13.10 and the storage-driver version is 1.0.19.</p> <ul style="list-style-type: none"> <li>● <b>ReadOnlyMany</b>: The volume can be mounted as read-only by many nodes.</li> <li>● <b>ReadWriteMany</b>: The volume can be mounted as read-write by many nodes.</li> </ul>                                                                                                                                                                                                                                                                |

**Table 6-28** FlexVolume

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                        |
|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| driver    | String | <p>Name of the FlexVolume storage plug-in. Set this parameter based on the storage volume type.</p> <ul style="list-style-type: none"> <li>● huawei.com/fuxivol (EVS)</li> <li>● huawei.com/fuxinfs (SFS)</li> <li>● huawei.com/fuxiobs (OBS)</li> <li>● huawei.com/fuxiefs (SFS Turbo)</li> </ul> |

| Parameter | Type                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| fsType    | String                | File system type. Set this parameter based on the storage volume type. <ul style="list-style-type: none"> <li>• <b>ext4</b>: EVS volume. For details, see <a href="#">Using EVS Disks as Storage Volumes</a>.</li> <li>• <b>nfs</b>: SFS volume. For details, see <a href="#">Using SFS File Systems as Storage Volumes</a>.</li> <li>• <b>obs</b>: OBS volume. For details, see <a href="#">Using OBS Buckets as Storage Volumes</a>.</li> <li>• <b>efs</b>: SFS Turbo volume. For details, see <a href="#">Using SFS Turbo File Systems as Storage Volumes</a>.</li> </ul> |
| options   | <b>Options</b> object | FlexVolume configuration items.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

**Table 6-29** Options

| Parameter   | Type   | Description                                                                                                                                                                                                |
|-------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| fsType      | String | File system type. Set this parameter based on the storage volume type. <ul style="list-style-type: none"> <li>• ext4 (EVS)</li> <li>• nfs (SFS)</li> <li>• obs (OBS)</li> <li>• efs (SFS Turbo)</li> </ul> |
| region      | String | Region where the cloud storage is located.                                                                                                                                                                 |
| volumeID    | String | UUID of the cloud storage. If the cloud storage is an OBS bucket, set this parameter to the bucket name.                                                                                                   |
| storageType | String | Cloud storage volume type. <ul style="list-style-type: none"> <li>• bs (EVS)</li> <li>• nfs (SFS)</li> <li>• obs (OBS)</li> <li>• efs (SFS Turbo)</li> </ul>                                               |

**Table 6-30** PersistentVolumeStatus

| Parameter   | Type             | Description                          |
|-------------|------------------|--------------------------------------|
| accessModes | Array of strings | Access mode of the PersistentVolume. |

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| phase     | String | PV status. Possible values: <ul style="list-style-type: none"> <li>● <b>Available:</b> The volume is not bound to any PVC.</li> <li>● <b>Bound:</b> The PV has been bound to a PVC.</li> <li>● <b>Released:</b> The PVC bound to the PV has been deleted, but the PV has not been made available again for a new claim in the cluster.</li> <li>● <b>Failed:</b> Automatic reclaim of the volume has failed.</li> </ul> |

## Request Example

None

## Example Response

**Status code: 200**

The job for deleting a PersistentVolume is successfully delivered.

```
{
 "kind": "PersistentVolume",
 "apiVersion": "v1",
 "metadata": {
 "name": "pv-test",
 "selfLink": "/api/v1/persistentvolumes/pv-test",
 "uid": "0d93181d-3628-11e7-9093-fa163e8c373b",
 "resourceVersion": "180886",
 "creationTimestamp": "2017-05-11T08:58:51Z",
 "labels": {
 "app": "test"
 }
 },
 "spec": {
 "flexVolume": {
 "driver": "huawei.com/fuxivol",
 "fsType": "ext4",
 "options": {
 "fsType": "ext4",
 "kubernetes.io/namespace": "default",
 "volumeID": "0781b22f-4d89-4e9c-b026-80e545cea16c"
 }
 },
 "capacity": {
 "storage": "1Gi"
 },
 "accessModes": ["ReadWriteMany"],
 "persistentVolumeReclaimPolicy": "Delete"
 },
 "status": {
 "phase": "Available"
 }
}
```



## Status Code

| Status Code | Description                                                        |
|-------------|--------------------------------------------------------------------|
| 200         | The job for deleting a PersistentVolume is successfully delivered. |

## Error Codes

For details, see [Error Codes](#).

# 7 Permissions and Supported Actions

---

You can use Identity and Access Management (IAM) for fine-grained permissions management of your CCE clusters. If your account does not need individual IAM users, you can skip this section.

New IAM users do not have any permissions assigned by default. You need to first add them to one or more groups and attach policies or roles to these groups. Users inherit permissions from the groups to which they are added and can perform specific operations on cloud services based on the assigned permissions. For more information about policy syntax and example policies, see [Permissions Overview](#).

You can grant users permissions by using [roles](#) and [policies](#). Roles are provided by IAM to define service-based permissions that match users' job responsibilities. Policies define API-based permissions for operations on specific resources under certain conditions, allowing for more fine-grained, secure access control of cloud resources.

## NOTE

If you want to allow or deny the access to an API, fine-grained authorization is a good choice.

An account has all of the permissions required to call all APIs, but IAM users must have the required permissions specifically assigned. The required permissions are determined by the actions supported by the API. Only users with the permissions allowing for those actions can call the API successfully. For example, if an IAM user wants to query ECSs using an API, the user must have been granted permissions that allow the `ecs:servers:list` action.

## Supported Actions

CCE provides system-defined policies that can be directly used in IAM. You can also create custom policies to supplement system-defined policies for more refined access control. Operations supported by policies are specific to APIs. The following are common concepts related to policies:

- Permissions: statements in a policy that allow or deny certain operations.
- APIs: REST APIs that can be called by a user who has been granted specific permissions.

- **Actions:** specific operations that are allowed or denied in a custom policy.
- **Dependencies:** actions which a specific action depends on. When allowing an action for a user, you also need to allow any existing action dependencies for that user.
- **IAM projects/Enterprise projects:** the authorization scope of a custom policy. A custom policy can be applied to IAM projects or enterprise projects or both. Policies that contain actions for both IAM and enterprise projects can be used and applied for both IAM and Enterprise Management. Policies that contain actions only for IAM projects can be used and applied to IAM only. For details about the differences between IAM and enterprise management, see [What Are the Differences Between IAM and Enterprise Management?](#)

 **NOTE**

The check mark (√) and cross symbol (x) respectively indicate that an action takes effect or does not take effect for the corresponding type of projects.

CCE supports the following actions in custom policies.

**Table 7-1** Cluster management actions

| Permission                      | API                                                                      | Action             | IAM Project | Enterprise Project |
|---------------------------------|--------------------------------------------------------------------------|--------------------|-------------|--------------------|
| Obtaining clusters in a project | GET /api/v3/projects/{project_id}/clusters                               | cce:cluster:list   | √           | √                  |
| Obtaining a cluster             | GET /api/v3/projects/{project_id}/clusters/{cluster_id}                  | cce:cluster:get    | √           | √                  |
| Creating a cluster              | POST /api/v3/projects/{project_id}/clusters                              | cce:cluster:create | √           | √                  |
| Updating a cluster              | PUT /api/v3/projects/{project_id}/clusters/{cluster_id}                  | cce:cluster:update | √           | √                  |
| Deleting a cluster              | DELETE /api/v3/projects/{project_id}/clusters/{cluster_id}               | cce:cluster:delete | √           | √                  |
| Upgrading a cluster             | POST /api/v2/projects/:projectid/clusters/:clusterid/upgrade             | cce:cluster:update | √           | √                  |
| Waking up a cluster             | POST /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/awake | cce:cluster:start  | √           | √                  |

| Permission                               | API                                                                          | Action             | IAM Project | Enterprise Project |
|------------------------------------------|------------------------------------------------------------------------------|--------------------|-------------|--------------------|
| Hibernating a cluster                    | POST /api/v3/projects/{project_id}/clusters/{cluster_id}/operation/hibernate | cce:cluster:stop   | √           | √                  |
| Changing the specifications of a cluster | POST /api/v2/projects/{project_id}/clusters/:clusterid/resize                | cce:cluster:resize | √           | √                  |
| Obtaining the certificate of a cluster   | POST /api/v3/projects/{project_id}/clusters/{cluster_id}/clustercert         | cce:cluster:get    | √           | √                  |

**Table 7-2** Node management actions

| Permission                       | API                                                                     | Action          | IAM Project | Enterprise Project                                                                                                                                |
|----------------------------------|-------------------------------------------------------------------------|-----------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Obtaining all nodes in a cluster | GET /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes           | cce:node:list   | √           | √                                                                                                                                                 |
| Obtaining a node                 | GET /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes/{node_id} | cce:node:get    | √           | √                                                                                                                                                 |
| Creating a node                  | POST /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes          | cce:node:create | √           | √<br><b>NOTE</b><br>If you use enterprise project authorization to create a node, you need to add the global permission of <b>evs:quota:get</b> . |
| Updating a node                  | PUT /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes/{node_id} | cce:node:update | √           | √                                                                                                                                                 |

| Permission      | API                                                                        | Action          | IAM Project | Enterprise Project |
|-----------------|----------------------------------------------------------------------------|-----------------|-------------|--------------------|
| Deleting a node | DELETE /api/v3/projects/{project_id}/clusters/{cluster_id}/nodes/{node_id} | cce:node:delete | √           | √                  |

**Table 7-3** Job management actions

| Permission                        | API                                                                                             | Action         | IAM Project | Enterprise Project |
|-----------------------------------|-------------------------------------------------------------------------------------------------|----------------|-------------|--------------------|
| Obtaining information about a job | GET /api/v3/projects/{project_id}/jobs/{job_id}                                                 | cce:job:get    | √           | √                  |
| Listing all jobs                  | GET /api/v2/projects/{project_id}/jobs                                                          | cce:job:list   | √           | √                  |
| Deleting one or all jobs          | DELETE /api/v2/projects/{project_id}/jobs<br>DELETE /api/v2/projects/{project_id}/jobs/{job_id} | cce:job:delete | √           | √                  |

**Table 7-4** Node pool management actions

| Permission                            | API                                                                             | Action              | IAM Project | Enterprise Project |
|---------------------------------------|---------------------------------------------------------------------------------|---------------------|-------------|--------------------|
| Obtaining all node pools in a cluster | GET /api/v3/projects/{project_id}/clusters/{cluster_id}/nodepools               | cce:nodepool:list   | √           | √                  |
| Obtaining a node pool                 | GET /api/v3/projects/{project_id}/clusters/{cluster_id}/nodepools/{nodepool_id} | cce:nodepool:get    | √           | √                  |
| Creating a node pool                  | POST /api/v3/projects/{project_id}/clusters/{cluster_id}/nodepools              | cce:nodepool:create | √           | √                  |
| Updating a node pool                  | PUT /api/v3/projects/{project_id}/clusters/{cluster_id}/nodepools/{nodepool_id} | cce:nodepool:update | √           | √                  |

| Permission           | API                                                                                | Action              | IAM Project | Enterprise Project |
|----------------------|------------------------------------------------------------------------------------|---------------------|-------------|--------------------|
| Deleting a node pool | DELETE /api/v3/projects/{project_id}/clusters/{cluster_id}/nodepools/{nodepool_id} | cce:nodepool:delete | √           | √                  |

**Table 7-5** Chart management actions

| Permission                          | API                    | Action           | IAM Project | Enterprise Project |
|-------------------------------------|------------------------|------------------|-------------|--------------------|
| Updating a chart                    | PUT /v2/charts/{id}    | cce:chart:update | √           | x                  |
| Uploading a chart                   | POST /v2/charts        | cce:chart:upload | √           | x                  |
| Listing all charts                  | GET /v2/charts         | cce:chart:list   | √           | x                  |
| Obtaining information about a chart | GET /v2/charts/{id}    | cce:chart:get    | √           | x                  |
| Deleting a chart                    | DELETE /v2/charts/{id} | cce:chart:delete | √           | x                  |

**Table 7-6** Release management actions

| Permission                            | API                        | Action             | IAM Project | Enterprise Project |
|---------------------------------------|----------------------------|--------------------|-------------|--------------------|
| Updating a release                    | PUT /v2/releases/{name}    | cce:release:update | √           | √                  |
| Listing all releases                  | GET /v2/releases           | cce:release:list   | √           | √                  |
| Creating a release                    | POST /v2/releases          | cce:release:create | √           | √                  |
| Obtaining information about a release | GET /v2/releases/{name}    | cce:release:get    | √           | √                  |
| Deleting a release                    | DELETE /v2/releases/{name} | cce:release:delete | √           | √                  |

**Table 7-7** Storage management actions

| Permission                       | API                                                                      | Action             | IAM Project | Enterprise Project |
|----------------------------------|--------------------------------------------------------------------------|--------------------|-------------|--------------------|
| Creating a PersistentVolumeClaim | POST /api/v1/namespaces/{namespace}/cloudpersistentvolumeclaims          | cce:storage:create | √           | √                  |
| Deleting a PersistentVolumeClaim | DELETE /api/v1/namespaces/{namespace}/cloudpersistentvolumeclaims/{name} | cce:storage:delete | √           | √                  |
| Listing all volumes              | GET /storage/api/v1/namespaces/{namespace}/listvolumes                   | cce:storage:list   | √           | √                  |

**Table 7-8** Add-on management actions

| Permission                   | API                                                | Action                   | IAM Project | Enterprise Project |
|------------------------------|----------------------------------------------------|--------------------------|-------------|--------------------|
| Creating an add-on instance  | POST /api/v3/addons                                | cce:addonInstance:create | √           | √                  |
| Obtaining an add-on instance | GET /api/v3/addons/{id}?cluster_id={cluster_id}    | cce:addonInstance:get    | √           | √                  |
| Listing all add-on instances | GET /api/v3/addons?cluster_id={cluster_id}         | cce:addonInstance:list   | √           | √                  |
| Deleting an add-on instance  | DELETE /api/v3/addons/{id}?cluster_id={cluster_id} | cce:addonInstance:delete | √           | √                  |
| Updating an add-on instance  | PUT /api/v3/addons/{id}                            | cce:addonInstance:update | √           | √                  |

**Table 7-9** Quota management actions

| Permission              | API                                      | Action        | IAM Project | Enterprise Project |
|-------------------------|------------------------------------------|---------------|-------------|--------------------|
| Obtaining quota details | GET /api/v3/projects/{project_id}/quotas | cce:quota:get | √           | √                  |



# 8 Appendix

## 8.1 Status Code

[Table 8-1](#) describes the status codes.

**Table 8-1** Status code

| Stat<br>us<br>Cod<br>e | Code                          | Description                                                                                                                                                                                                                                      |
|------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 100                    | Continue                      | The server has received the initial part of the request and the client should continue to send the remaining part.<br>It is issued on a provisional basis while request processing continues. It alerts the client to wait for a final response. |
| 101                    | Switching Protocols           | The requester has asked the server to switch protocols and the server has agreed to do so. The target protocol must be more advanced than the source protocol.<br>For example, the current HTTP protocol is switched to a later version of HTTP. |
| 201                    | Created                       | The request has been fulfilled, resulting in the creation of a new resource.                                                                                                                                                                     |
| 202                    | Accepted                      | The request has been accepted for processing, but the processing has not been completed.                                                                                                                                                         |
| 203                    | Non-Authoritative Information | The server successfully processed the request, but is returning information that may be from another source.                                                                                                                                     |

| Stat<br>us<br>Cod<br>e | Code              | Description                                                                                                                                                                                                 |
|------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 204                    | NoContent         | The server has successfully processed the request, but does not return any content. The status code is returned in response to an HTTP OPTIONS request.                                                     |
| 205                    | Reset Content     | The server successfully processed the request, but is not returning any content.                                                                                                                            |
| 206                    | Partial Content   | The server has successfully processed a part of the GET request.                                                                                                                                            |
| 300                    | Multiple Choices  | There are multiple options for the requested resource. For example, this code could be used to present a list of resource characteristics and addresses from which the client such as a browser may choose. |
| 301                    | Moved Permanently | This and all future requests should be permanently directed to the given URI indicated in this response.                                                                                                    |
| 302                    | Found             | The requested resource was temporarily moved.                                                                                                                                                               |
| 303                    | See Other         | The response to the request can be found under a different URI, and should be retrieved using a GET or POST method.                                                                                         |
| 304                    | Not Modified      | The requested resource has not been modified. In such case, there is no need to retransmit the resource since the client still has a previously-downloaded copy.                                            |
| 305                    | Use Proxy         | The requested resource is available only through a proxy.                                                                                                                                                   |
| 306                    | Unused            | This HTTP status code is no longer used.                                                                                                                                                                    |
| 400                    | BadRequest        | The request is invalid. The client should modify the request instead of re-initiating it.                                                                                                                   |
| 401                    | Unauthorized      | The authorization information provided by the client is incorrect or invalid.                                                                                                                               |
| 402                    | Payment Required  | This status code is reserved for future use.                                                                                                                                                                |

| Stat<br>us<br>Cod<br>e | Code                          | Description                                                                                                                                                                                                                               |
|------------------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 403                    | Forbidden                     | The server has received the request and understood it, but the server is refusing to respond to it.<br>The client should modify the request instead of re-initiating it.                                                                  |
| 404                    | NotFound                      | The requested resource cannot be found.<br>The client should modify the request instead of re-initiating it.                                                                                                                              |
| 405                    | MethodNotAllowed              | A request method is not supported for the requested resource.<br>The client should modify the request instead of re-initiating it.                                                                                                        |
| 406                    | Not Acceptable                | The server cannot fulfill the request based on the content characteristics of the request.                                                                                                                                                |
| 407                    | Proxy Authentication Required | This code is similar to 401, but indicates that the client must first authenticate itself with the proxy.                                                                                                                                 |
| 408                    | Request Time-out              | The server timed out waiting for the request.<br>The client may re-initiate the request without modifications at any later time.                                                                                                          |
| 409                    | Conflict                      | The request cannot be processed due to a conflict.<br>This status code indicates that the resource that the client attempts to create already exists, or the request fails to be processed because of the update of the conflict request. |
| 410                    | Gone                          | The requested resource cannot be found.<br>The status code indicates that the requested resource has been deleted permanently.                                                                                                            |
| 411                    | Length Required               | The server refused to process the request because the request does not specify the length of its content.                                                                                                                                 |
| 412                    | Precondition Failed           | The server does not meet one of the preconditions that the requester puts on the request.                                                                                                                                                 |

| Stat<br>us<br>Cod<br>e | Code                            | Description                                                                                                                                                                                                                                                                                                                                                      |
|------------------------|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 413                    | Request Entity Too Large        | The server refuses to process a request because the request entity is too large. The server may disable the connection to prevent the client from sending requests consecutively. If the server temporarily cannot process the request, the response will contain a Retry-After header field.                                                                    |
| 414                    | Request-URI Too Large           | The URI provided was too long for the server to process.                                                                                                                                                                                                                                                                                                         |
| 415                    | Unsupported Media Type          | The server does not support the media type in the request.                                                                                                                                                                                                                                                                                                       |
| 416                    | Requested range not satisfiable | The requested range is invalid.                                                                                                                                                                                                                                                                                                                                  |
| 417                    | Expectation Failed              | The server fails to meet the requirements of the Expect request-header field.                                                                                                                                                                                                                                                                                    |
| 422                    | UnprocessableEntity             | The request is well-formed but is unable to be processed due to semantic errors.                                                                                                                                                                                                                                                                                 |
| 429                    | TooManyRequests                 | The client sends excessive requests to the server within a given time (exceeding the limit on the access frequency of the client), or the server receives excessive requests within a given time (beyond its processing capability). In this case, the client should repeat requests after the time specified in the Retry-After header of the response expires. |
| 500                    | InternalServerError             | The server is able to receive the request but it could not understand the request.                                                                                                                                                                                                                                                                               |
| 501                    | Not Implemented                 | The server does not support the requested function.                                                                                                                                                                                                                                                                                                              |
| 502                    | Bad Gateway                     | The server acting as a gateway or proxy receives an invalid response from a remote server.                                                                                                                                                                                                                                                                       |
| 503                    | ServiceUnavailable              | The requested service is invalid.<br>The client should modify the request instead of re-initiating it.                                                                                                                                                                                                                                                           |
| 504                    | ServerTimeout                   | The server could not return a timely response. The response will reach the client only if the request carries a timeout parameter.                                                                                                                                                                                                                               |

| Status Code | Code                       | Description                                                                |
|-------------|----------------------------|----------------------------------------------------------------------------|
| 505         | HTTP Version not supported | The server does not support the HTTP protocol version used in the request. |

## 8.2 Error Codes

If an error occurs in API calling, no result is returned. Identify the cause based on the error code of each API. If an error occurs in API calling, HTTP status code 4xx or 5xx is returned. The response body contains the specific error code and information. If you fail to locate the cause of an error, contact customer service and provide the error code, so that we can help you solve the problem as soon as possible.

### Format of an Error Response Body

If an error occurs during API calling, an error code and a message will be displayed. The following shows an error response body.

```
{
 "errorMessage": "The format of message is error",
 "errorCode": "CCE.01400001"
}
```

In the preceding information, **errorCode** is an error code, and **errorMessage** describes the error.

### Error Code Description

If an error code starting with **APIGW** is returned after you call an API, rectify the fault by referring to the instructions provided in [Error Codes](#).

| Status Code | Error Code   | Error Message                | Description                    | Troubleshooting                                                                                                    |
|-------------|--------------|------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------|
| 400         | CCE.01400001 | Invalid request.             | Invalid request body.          | Modify the request body based on the returned message and the CCE API documentation, or contact technical support. |
| 400         | CCE.01400002 | Subnet not found in the VPC. | No subnet is found in the VPC. | Check whether the subnet in the request body is in the corresponding VPC.                                          |

| Status Code | Error Code   | Error Message                           | Description                                               | Troubleshooting                                                           |
|-------------|--------------|-----------------------------------------|-----------------------------------------------------------|---------------------------------------------------------------------------|
| 400         | CCE.01400003 | IPv6 not supported for the subnet.      | The subnet does not support IPv6.                         | Use a subnet that supports IPv6.                                          |
| 400         | CCE.01400004 | No available flavors for master nodes.  | There is no available flavor for the master node.         | Change to another available cluster flavor or contact technical support.  |
| 400         | CCE.01400005 | Container network CIDR blocks conflict. | The container CIDR block conflicts with the existing one. | Check the container CIDR block based on the returned message.             |
| 400         | CCE.01400006 | Content type not supported.             | The content type is invalid.                              | Use the supported content type by referring to the CCE API documentation. |
| 400         | CCE.01400007 | Insufficient cluster quota.             | Insufficient cluster quota.                               | Submit a service ticket to increase the cluster quota.                    |
| 400         | CCE.01400008 | Insufficient server quota               | Insufficient ECS quota.                                   | Submit a service ticket to increase the ECS quota.                        |
| 400         | CCE.01400009 | Insufficient CPU quota.                 | Insufficient ECS CPU quota.                               | Submit a service ticket to increase the ECS CPU quota.                    |
| 400         | CCE.01400010 | Insufficient memory quota.              | Insufficient ECS memory quota.                            | Submit a service ticket to increase the ECS memory quota.                 |
| 400         | CCE.01400011 | Insufficient security group quota.      | Insufficient security group quota.                        | Submit a service ticket to increase the security group quota.             |
| 400         | CCE.01400012 | Insufficient EIP quota.                 | Insufficient EIP quota.                                   | Submit a service ticket to increase the EIP quota.                        |

| Status Code | Error Code   | Error Message                                           | Description                                                 | Troubleshooting                                                                   |
|-------------|--------------|---------------------------------------------------------|-------------------------------------------------------------|-----------------------------------------------------------------------------------|
| 400         | CCE.01400013 | Insufficient volume quota.                              | Insufficient disk quota.                                    | Submit a service ticket to increase the disk quota based on the returned message. |
| 400         | CCE.01400014 | Excessive nodes in the cluster.                         | The number of nodes exceeds the cluster scale.              | Submit a service ticket to change the cluster flavor.                             |
| 400         | CCE.01400015 | Version not supported.                                  | The cluster version is not supported.                       | Create a cluster of the supported version based on the returned message.          |
| 400         | CCE.01400016 | Current cluster type does not support this node flavor. | The current cluster type does not support this node flavor. | Use the correct node flavor based on the returned message.                        |
| 400         | CCE.01400017 | No available container CIDR block found.                | No available container CIDR block is found.                 | Use a correct container CIDR block based on the returned message.                 |
| 400         | CCE.01400018 | This type of OS cannot be created in this CCE version.  | The current CCE version does not support this type of OS.   | Use a supported OS based on the returned message.                                 |
| 400         | CCE.01400019 | Insufficient resource tenant quota.                     | The quota of the resource tenant is insufficient.           | Rectify the fault based on the returned message or contact technical support.     |
| 400         | CCE.01400020 | Insufficient VPC quota.                                 | Insufficient VPC quota.                                     | Rectify the fault based on the returned message or contact technical support.     |
| 400         | CCE.01400021 | No available flavors for nodes.                         | There is no available flavor for the node.                  | Change to another available node flavor or contact technical support.             |

| Status Code | Error Code   | Error Message                                      | Description                                                                              | Troubleshooting                                                                                                    |
|-------------|--------------|----------------------------------------------------|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| 400         | CCE.01400022 | No available node volumes for nodes.               | There is no available EVS disk flavor for the node.                                      | Change to another available EVS disk flavor or contact technical support.                                          |
| 400         | CCE.01400023 | operation conflict                                 | Nodes cannot be created during cluster scale-out.                                        | Try again later.                                                                                                   |
| 400         | CCE.01400024 | operation conflict                                 | The cluster cannot be deleted during node creation.                                      | Try again later.                                                                                                   |
| 400         | CCE.01400025 | Unsupported flavor with insufficient sub-ENI quota | The sub-ENI quota is insufficient. The VM flavor is not supported by CCE Turbo clusters. | Select a VM flavor whose sub-ENI quota is not 0.                                                                   |
| 400         | CCE.01400033 | Snapshot task already exists.                      | The cluster backup task already exists.                                                  | Wait until the cluster backup task is complete and try again.                                                      |
| 400         | CCE.02400001 | Invalid request.                                   | Invalid request body.                                                                    | Modify the request body based on the returned message and the CCE API documentation, or contact technical support. |
| 400         | CCE.03400001 | Invalid request.                                   | Invalid request body.                                                                    | Modify the request body based on the returned message and the CCE API documentation, or contact technical support. |



| Status Code | Error Code   | Error Message                                                    | Description                                                                | Troubleshooting                                                                                               |
|-------------|--------------|------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| 400         | CCE.03400002 | Missing access key.                                              | The access key is missing.                                                 | Ensure that the version of the installed or upgraded storage add-on is correct, or contact technical support. |
| 401         | CCE.01401001 | Authorization failed.                                            | Authentication failed.                                                     | Rectify the fault based on the returned message or contact technical support.                                 |
| 401         | CCE.02401001 | Authorization failed.                                            | Authentication failed.                                                     | Rectify the fault based on the returned message or contact technical support.                                 |
| 401         | CCE.03401001 | Authorization failed.                                            | Authentication failed.                                                     | Rectify the fault based on the returned message or contact technical support.                                 |
| 403         | CCE.01403001 | Forbidden.                                                       | Access denied.                                                             | Rectify the fault based on the returned message or contact technical support.                                 |
| 403         | CCE.01403002 | Current cluster status does not allow node pool to be deleted.   | A node pool in the cluster that is in the current state cannot be deleted. | Wait until the cluster runs properly and try again.                                                           |
| 403         | CCE.01403003 | Current node pool status does not allow node pool to be deleted. | The node pool in the current state cannot be deleted.                      | Wait until the node pool runs properly and try again.                                                         |
| 403         | CCE.01403004 | Node pool cannot be deleted when it is locked by an order.       | The node pool locked by an order cannot be deleted.                        | Pay or cancel the yearly/monthly order and try again.                                                         |

| Status Code | Error Code   | Error Message                                                         | Description                                                                              | Troubleshooting                                                                         |
|-------------|--------------|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 403         | CCE.01403005 | Node pool cannot be deleted when it is scaling.                       | The node pool is being scaled out and cannot be deleted.                                 | Wait until the node pool scale-out completes and try again.                             |
| 403         | CCE.01403006 | Node pool cannot be deleted when exists installing or deleting nodes. | There are nodes that are being installed or deleted and the node pool cannot be deleted. | Wait until the nodes in the node pool are installed or deleted and try again.           |
| 403         | CCE.02403001 | Forbidden.                                                            | Access denied.                                                                           | Rectify the fault based on the returned message or contact technical support.           |
| 403         | CCE.03403001 | Forbidden.                                                            | Access denied.                                                                           | Rectify the fault based on the returned message or contact technical support.           |
| 404         | CCE.01404001 | Resource not found.                                                   | Resources not found.                                                                     | Check whether the resource to be accessed has been deleted.                             |
| 404         | CCE.02404001 | Resource not found.                                                   | Resources not found.                                                                     | Check whether the resource to be accessed has been deleted.                             |
| 404         | CCE.03404001 | Resource not found.                                                   | Resources not found.                                                                     | Check whether the resource to be accessed has been deleted.                             |
| 409         | CCE.01409001 | The resource already exists.                                          | The resource already exists.                                                             | Delete the resource and try again.                                                      |
| 409         | CCE.01409002 | Resource updated with out-of-date version.                            | An out-of-date version is used to update the target resource.                            | Ensure that the target resource version is the latest one or contact technical support. |

| Status Code | Error Code   | Error Message                                    | Description                                                 | Troubleshooting                                                               |
|-------------|--------------|--------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------------------------|
| 409         | CCE.02409001 | The resource already exists.                     | The resource already exists.                                | Delete the resource and try again.                                            |
| 409         | CCE.03409001 | Addon instance has installed.                    | The add-on instance has been installed.                     | Delete the add-on instance and install it again.                              |
| 429         | CCE.01429002 | Resource locked by other requests.               | The resource is locked by another request.                  | Rectify the fault based on the returned message or contact technical support. |
| 429         | CCE.01429003 | The concurrency limit of tasks has been reached. | The number of concurrent tasks has reached the upper limit. | Reduce the frequency of sending requests or contact technical support.        |
| 429         | CCE.02429001 | The throttling threshold has been reached.       | The maximum number of requests has been reached.            | Reduce the frequency of sending requests or contact technical support.        |
| 500         | CCE.01500001 | Internal error.                                  | Internal error.                                             | Rectify the fault based on the returned message or contact technical support. |
| 500         | CCE.02500001 | Internal error.                                  | Internal error.                                             | Rectify the fault based on the returned message or contact technical support. |
| 500         | CCE.03500001 | Internal error.                                  | Internal error.                                             | Rectify the fault based on the returned message or contact technical support. |

## 8.3 Obtaining a Project ID

### Scenarios

A project ID is required for some URLs when APIs are called. Therefore, obtain a project ID in advance. Two methods are available:

- [Call an API](#)
- [Use the console](#)

### Obtaining the Project ID by Calling an API

You can obtain the project ID by calling the API used to [obtain projects based on specified criteria](#).

The API for obtaining a project ID is **GET https://{Endpoint}/v3/projects**. **{Endpoint}** indicates the endpoint of IAM, which can be obtained from [Endpoints](#). For details about API authentication, see [Authentication](#).

The following is an example response. The value of **id** is the project ID.

```
{
 "projects": [
 {
 "domain_id": "65382450e8f64ac0870cd180d14e684b",
 "is_domain": false,
 "parent_id": "65382450e8f64ac0870cd180d14e684b",
 "name": "project_name",
 "description": "",
 "links": {
 "next": null,
 "previous": null,
 "self": "https://www.example.com/v3/projects/a4a5d4098fb4474fa22cd05f897d6b99"
 },
 "id": "a4a5d4098fb4474fa22cd05f897d6b99",
 "enabled": true
 }
],
 "links": {
 "next": null,
 "previous": null,
 "self": "https://www.example.com/v3/projects"
 }
}
```

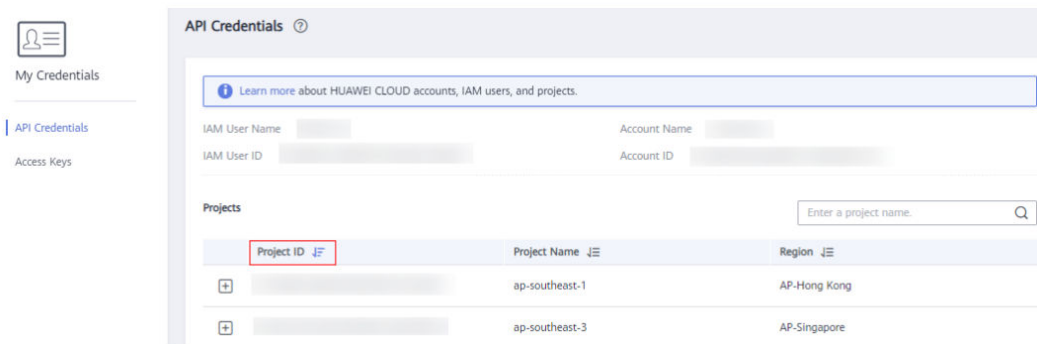
### Obtaining a Project ID from the Console

To obtain a project ID from the console, perform the following operations:

1. Log in to the management console.
2. Hover over the username in the upper right corner and select **My Credentials** from the drop-down list.

On the **API Credentials** page, view the project ID in the project list.

**Figure 8-1** Viewing project IDs



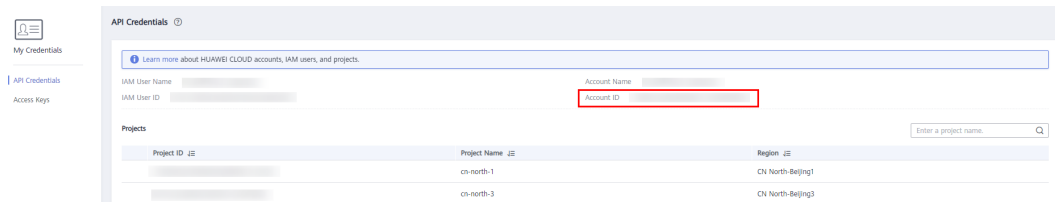
## 8.4 Obtaining an Account ID

An account ID (domain-id) is required for some URLs when an API is called. To obtain an account ID, perform the following operations:

1. Sign up and log in to the management console.
2. Click the username in the upper right corner and choose **My Credentials** from the drop-down list.

On the **API Credentials** page, view the account ID.

**Figure 8-2** Obtaining an account ID



## 8.5 Specifying Add-ons to Be Installed During Cluster Creation

When creating a cluster, you can add a key-value pair to **annotations** of the **metadata** field in the request body to install an add-on in the cluster. The key is **cluster.install.addons/install**, and the value is a JSON array of **AddonTemplate**.

**Table 8-2** Value data structure

| Parameter | Mandatory | Type                               | Description                                                                                                                                                                                                                                         |
|-----------|-----------|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Value     | Yes       | JSON array of AddonTemplate string | Add-on to be installed in the cluster. If this parameter is not specified, the CoreDNS and CCE Container Storage (Everest) add-ons are installed in the cluster by default. For details about the parameter values, see <a href="#">Table 8-3</a> . |

**Table 8-3** Data structure of the AddonTemplate field

| Parameter         | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| addonTemplateName | Yes       | String | Add-on name.<br>Options: <ul style="list-style-type: none"> <li>● <b>coredns</b>: Install CoreDNS.</li> <li>● <b>everest</b>: Install CCE Container Storage (Everest).</li> <li>● <b>node-local-dns</b>: Install NodeLocal DNSCache.</li> <li>● <b>volcano</b>: Install Volcano Scheduler.</li> <li>● <b>npd</b>: Install CCE Node Problem Detector.</li> <li>● <b>cie-collector</b>: Install Cloud Native Cluster Monitoring.</li> <li>● <b>log-agent</b>: Install Cloud Native Logging.</li> <li>● <b>virtual-kubelet</b>: Install CCE Cloud Bursting Engine for CCI.</li> </ul> |
| version           | No        | String | Add-on version.<br>To view the add-on version, log in to the CCE console, choose <b>Add-ons</b> in the navigation pane, click the name of the target add-on, and check the change history. If this parameter is left blank, the latest version is used by default.                                                                                                                                                                                                                                                                                                                 |

| Parameter | Mandatory | Type     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------|-----------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| values    | No        | Json Map | <ul style="list-style-type: none"> <li>CoreDNS: For details about the parameters required for installing the add-on, see <a href="#">CoreDNS</a>.</li> <li>Cloud Native Cluster Monitoring: For details about the parameters required for installing the add-on, see <a href="#">Cloud Native Cluster Monitoring</a>.</li> <li>Cloud Native Logging: For details about the parameters required for installing the add-on, see <a href="#">Cloud Native Logging</a>.</li> <li>CCE Cloud Bursting Engine for CCI: For details about the parameters required for installing the add-on, see <a href="#">CCE Cloud Bursting Engine for CCI</a>.</li> </ul> <p><b>NOTE</b><br/>You do not need to specify this parameter when installing the CCE Container Storage (Everest), NodeLocal DNSCache, Volcano Scheduler, or CCE Node Problem Detector add-on.</p> |

### Example Request

Create a cluster using a VPC network and install CoreDNS and CCE Container Storage (Everest) in it.

```
{
 "kind": "Cluster",
 "apiVersion": "v3",
 "metadata": {
 "name": "test",
 "annotations": {
 "cluster.install.addons.external/install": "[{\"addonTemplateName\":\"icagent\",\"extendParam\":{\"logSwitch\":\"false\",\"tDSEnable\":\"false\"}}]",
 "cluster.install.addons/install": "[{\"addonTemplateName\":\"coredns\",\"values\":{\"flavor\":{\"is_default\":false,\"name\":\"2500\",\"recommend_cluster_flavor_types\":[\"small\"],\"replicas\":2,\"resources\":{\"limitsCpu\":\"500m\",\"limitsMem\":\"512Mi\"},\"name\":\"coredns\",\"replicas\":2,\"requestsCpu\":\"500m\",\"requestsMem\":\"512Mi\"}},\"size\":\"small\",\"category\":[\"CCE\",\"Turbo\"]}],\n{\"addonTemplateName\":\"everest\"}]"
 }
 },
 "spec": {
 "category": "CCE",
 "flavor": "cce.s1.small",
 "version": "v1.29",
 "type": "VirtualMachine",
 "hostNetwork": {
 "vpc": "*****",
 "subnet": "*****"
 },
 "containerNetwork": {
```

```
 "mode": "vpc-router",
 "cidrs": [
 {
 "cidr": "10.0.0.0/16"
 }
]
 },
 "ipv6enable": false,
 "description": "",
 "billingMode": 0,
 "kubeProxyMode": "iptables",
 "extendParam": {
 "alpha.cce/fixPoolMask": "25",
 "enterpriseProjectId": "0"
 },
 "authentication": {
 "mode": "rbac"
 },
 "configurationsOverride": [
 {
 "name": "kube-apiserver",
 "configurations": [
 {
 "name": "support-overload",
 "value": true
 }
]
 }
],
 "deletionProtection": false,
 "serviceNetwork": {
 "IPv4CIDR": "10.247.0.0/16"
 }
}
```

## 8.6 How to Obtain Parameters in the API URI

### Obtaining a Project ID (`project_id`)

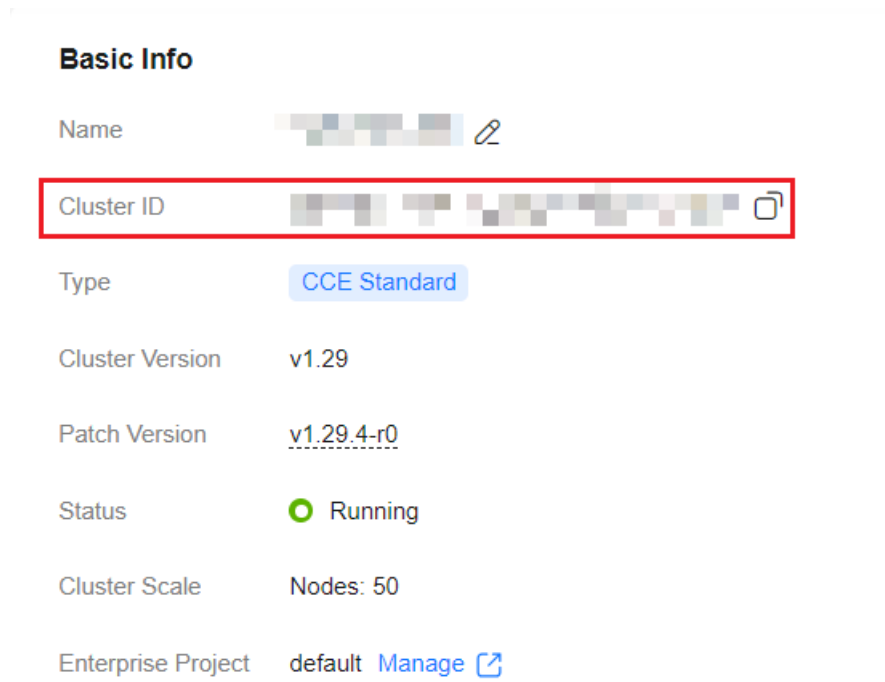
`project_id` indicates the project ID, which can be obtained from the console or APIs. For details, see [Obtaining a Project ID](#).

### Obtaining a Cluster ID (`cluster_id`)

- Step 1** Log in to the CCE console. In the navigation pane, choose **Clusters**.
- Step 2** Click the name of the created cluster. The cluster details page is displayed. Obtain the cluster ID.



**Figure 8-3** Obtaining the cluster ID



----End

### Obtaining a Node ID (node\_id)

- Step 1** Log in to the CCE console. In the navigation pane, choose **Clusters**.
- Step 2** Click the name of the created cluster to access the cluster console. In the navigation pane, choose **Nodes**. On the **Nodes** tab, move the cursor to the node name and view the node ID.

**Figure 8-4** Obtaining the node ID

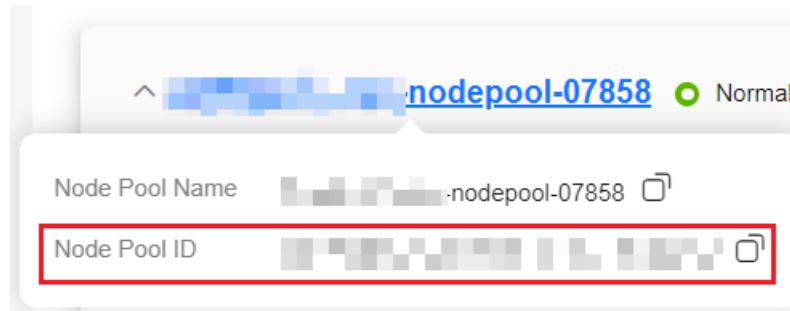


----End

### Obtaining a Node Pool ID (nodepool\_id)

- Step 1** Log in to the CCE console. In the navigation pane, choose **Clusters**.
- Step 2** Click the name of the created cluster to access the cluster console. In the navigation pane, choose **Nodes**. On the **Node Pools** tab, move the cursor to the node pool name and view the node pool ID.

**Figure 8-5** Obtaining the node pool ID

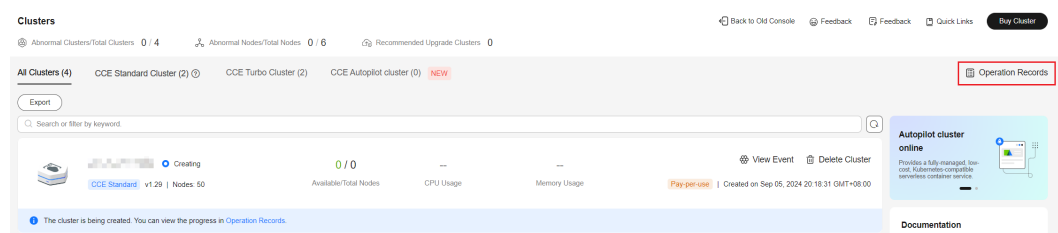


----End

## Obtaining a Job ID (job\_id)

**Step 1** Log in to the CCE console. In the navigation pane, choose **Clusters**. The following uses cluster management as an example to describe how to obtain the **job\_id** of the cluster that is being created.

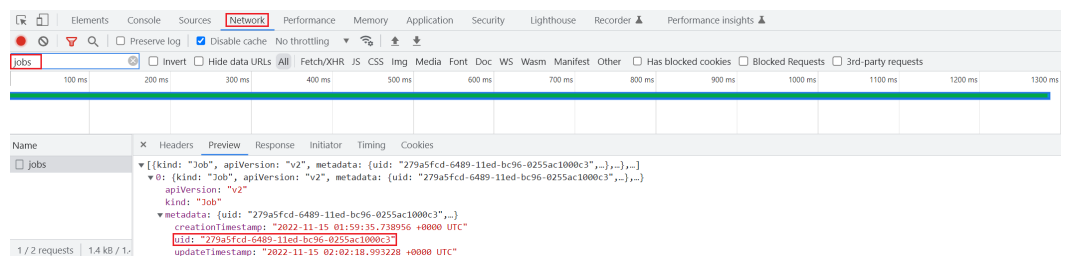
**Figure 8-6** Creating a cluster



**Step 2** Obtain the job ID.

1. If you are using Google Chrome, press **F12**. On the pane displayed on the right, click the **Network** tab.
2. Click **Operation Records** on the CCE console to view details about cluster operation records.
3. Enter **jobs** in the **Filter** text box to filter out the jobs. Select a job from the list on the left and click **Preview**. The **uid** field indicates the job UID.

**Figure 8-7** Obtaining the job ID



----End

## 8.7 Creating a VPC and Subnet

### Context

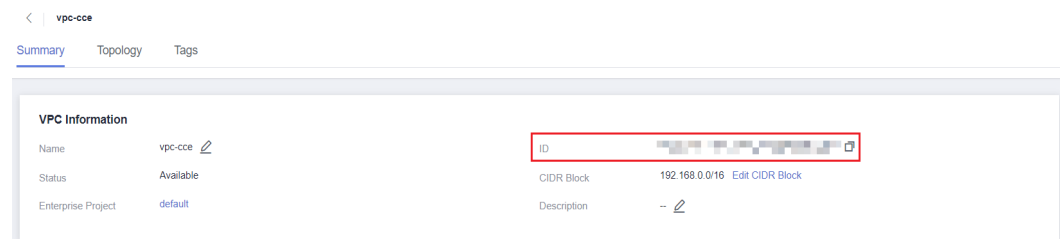
To provide a secure and isolated network environment for CCE, create a VPC before creating a cluster.

If you have already created a VPC, you do not need to create it again.

### Creating a VPC

- Step 1** On the management console, click **Service List**, and choose **Network > Virtual Private Cloud** to launch the VPC console.
- Step 2** On the VPC console, click **Create VPC** to create a VPC.
- Step 3** The created VPC is displayed in the list. Click its name and obtain the VPC ID, which will be required in [cluster creation](#).

**Figure 8-8** Obtaining the VPC ID

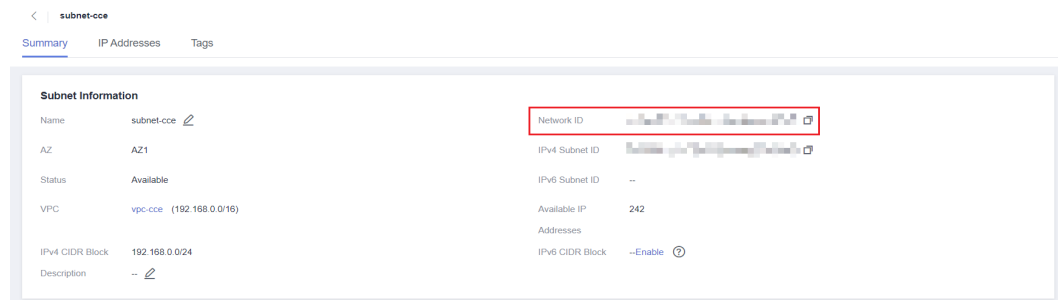


----End

### Creating a Subnet

- Step 1** On the management console, click **Service List**, and choose **Network > Virtual Private Cloud** to launch the VPC console.
- Step 2** On the **VPC console**, choose **Virtual Private Cloud > Subnets** in the navigation pane, and click **Create Subnet** in the upper right corner.
- Step 3** Create a subnet as prompted and click its name to obtain the network ID, which will be required in [cluster creation](#).

**Figure 8-9** Obtaining the network ID of a subnet



----End

## 8.8 Creating a Key Pair

### Context

Create a key pair before you create a container cluster. Key pairs are used for user identity authentication upon login to a worker node.

If you have already created a key pair, you do not need to create it again.

### Procedure

- Step 1** On the management console, click **Service List**, and choose **Compute > Elastic Cloud Server** to go to the ECS console.
- Step 2** In the navigation pane, choose **Key Pair**.
- Step 3** Click **Create Key Pair** and create a key pair as prompted. For details, see [Key Pairs](#).
- Step 4** After the creation is complete, a key file in the **.pem** format is generated and automatically saved to the default directory on your local computer.

----End

## 8.9 Node Flavor Description

### NOTE

Different regions support different node flavors, and node flavors may be changed or sold out. You are advised to log in to the CCE console and check whether the required node flavors are supported on the page for creating nodes.

- **CCE standard cluster**

CCE clusters support only 2 vCPUs and 4 GiB or higher specifications. You are advised to query node specifications on the console. For details about node specifications, see [Specifications](#).

You need to enter the specific flavor name, for example, **c6.large.2**.

The following tables list the specifications supported by CCE. (The specifications of some ECS models vary by region. The actual specifications displayed on the console are used.)

- ECS (VM)

| Node Type          | Flavor Type                    | Flavor Name                                                   |
|--------------------|--------------------------------|---------------------------------------------------------------|
| x86 node           | General computing-plus         | ac8, ac7, c7, c7e, c7n, c7t, c6s, c6, c6nl, c6x, c3, and c3ne |
|                    | General computing              | s7, s7n, as7, s6, s6nl, s3, and s2                            |
|                    | General computing-basic        | t6                                                            |
|                    | Memory-optimized               | m7, m7n, m6, m6nl, m3, m2, am7, and m3ne                      |
|                    | Large-memory                   | e7, e6, and e3                                                |
|                    | Disk-intensive                 | d7, d6, d6nl, d2, and d3                                      |
|                    | Ultra-high I/O                 | i7, i7n, i3, ir7, ir7n, and ir3                               |
|                    | High-performance computing     | h3 and hc2                                                    |
|                    | GPU-accelerated                | pi2 and pi1<br>p2s, p2v, p2vs, and p1<br>g6, g5, and g6v      |
|                    | AI-accelerated                 | ai1s and ai1                                                  |
|                    | FlexusX                        | x1 and x1e                                                    |
| Kunpeng (Arm) node | Kunpeng general computing-plus | kc1, kc1n, and kc2                                            |
|                    | Kunpeng memory-optimized       | km1, km1s, and km2                                            |
|                    | Kunpeng ultra-high I/O         | ki1                                                           |
|                    | AI-accelerated                 | kai1s and kai1                                                |

- ECS (physical server): c6 and c7 are supported.

| Node Type              | Flavor Name                                                                                                        |
|------------------------|--------------------------------------------------------------------------------------------------------------------|
| General computing-plus | c6.22xlarge.2.physical<br>c6.22xlarge.2.physical.129nic<br>c6.22xlarge.4.physical<br>c6.22xlarge.4.physical.129nic |

- BMS:
  - x86 nodes: BMSs of the physical.d2, physical.s4, physical.c6ne, and physical.d6ne types are supported.
  - Arm nodes: BMS of the physical.a1.2xlarge type is supported.

- **CCE Turbo cluster**

- ECS (VM)

| Node Type          | Flavor Type                    | Flavor Name                                       |
|--------------------|--------------------------------|---------------------------------------------------|
| x86 node           | General computing-plus         | ac8, ac7, c7, c7n, c7e, c7t, c6ne, c6sne, and c3n |
|                    | General computing              | s7n, s7, as7, and s6ne                            |
|                    | Memory-optimized               | m7, m7n, m3n, m6ne, m6sne, and am7                |
|                    | Large-memory                   | e7                                                |
|                    | Disk-intensive                 | d7                                                |
|                    | Ultra-high I/O                 | i7, i7n, i3ne, ir7, and ir7n                      |
|                    | GPU-accelerated                | pi2ne<br>p2sne                                    |
|                    | FlexusX                        | x1 and x1e                                        |
| Kunpeng (Arm) node | Kunpeng general computing-plus | kc1n                                              |
|                    | Kunpeng memory-optimized       | km1n                                              |

- ECS (physical server): c6 and c7 are supported.

| Node Type              | Flavor Name                   |
|------------------------|-------------------------------|
| General computing-plus | c6.22xlarge.2.physical        |
|                        | c6.22xlarge.2.physical.129nic |
|                        | c6.22xlarge.4.physical        |
|                        | c6.22xlarge.4.physical.129nic |

 NOTE

The available specifications of IPv6 dual-stack nodes vary with regions. For details, see [Constraints](#).

## 8.10 Adding a Salt in the password Field When Creating a Node

When a node is created through the API, you need to add a salt to the **password** field to safeguard the password. The procedure is as follows:

 NOTE

The salt must be set based on the password complexity requirements:

- A string of 8–26 characters.
- Contains at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters `!@$%^_+=+[];./?`
- Cannot contain the username or the username spelled backwards.
- Cannot contain the username, the username spelled backwards, or more than two consecutive characters in the username (for Windows ECSs).

### Python

To salt a password in the Python 3.7.7 environment, perform the following steps:

```
pip install passlib
python -c "import base64; from passlib.hash import sha512_crypt; salted_password = base64.b64encode(sha512_crypt.hash('*****', salt='salt', rounds=5000).encode()).decode(); print(salted_password)"
```

 NOTE

The **python crypt** package has compatibility issues in macOS. If the package cannot be executed, run it in Linux.

### Java

To salt a password in the Java environment, perform the following steps:

1. Obtain a random number as the salt.

```
private static String getCharAndNumr(int length) {
 String val = "";
 Random random = new SecureRandom();
 for (int i = 0; i < length; i++) {
 // Indicates whether to output letters or digits.
 String charOrNum = random.nextInt(2) % 2 == 0 ? "char" : "num";
```

```
// Character string
if ("char".equalsIgnoreCase(charOrNum)) {
 // Indicates whether an upper-case or lower-case letter is obtained.
 int choice = random.nextInt(2) % 2 == 0 ? 65 : 97;
 val += (char) (choice + random.nextInt(26));
} else if ("num".equalsIgnoreCase(charOrNum)) { // Digit
 val += String.valueOf(random.nextInt(10));
}
}
return val;
}
```

2. Generate a salt.

```
private static String generateSalt() {
 String salt;
 try {
 salt = "6" + getCharAndNumr(16);
 } catch (Exception e) {
 salt = defaultSalt;
 }

 return salt;
}
```

3. Generate a ciphertext password based on the salt.

```
public static String getSaltPassword(String password) {
 if (StringUtils.isBlank(password)) {
 throw new BizException("password is empty");
 }

 String salt = generateSalt();

 Crypt crypt = new Crypt();
 return crypt.crypt(password, salt);
}
```

4. Encode the value of the **password** field using Base64.

```
(Base64.getEncoder().encodeToString(AddSaltPasswordUtil.getSaltPassword(cceNodeCreateVo.getPassword()).getBytes()))
```

5. A complete example is as follows:

```
import java.util.Base64;
import java.util.Random;
import java.security.SecureRandom;

import org.apache.commons.codec.digest.Crypt;
import org.apache.commons.lang.StringUtils;

public class PassWord {

 static String defaultSalt = null;

 public static void main(String[] args) throws Exception {
 System.out.println(Base64.getEncoder().encodeToString(PassWord.getSaltPassword("Custom password").getBytes()));
 }

 // Generate a ciphertext password based on the salt.
 public static String getSaltPassword(String password) throws Exception {
 if (StringUtils.isBlank(password)) {
 throw new Exception("password is empty");
 }
 String salt = generateSalt();
 return Crypt.crypt(password, salt);
 }

 //Generate a salt.
 private static String generateSalt() {
 String salt;
 try {
```



```

 salt = "6" + getCharAndNumr(16);
 }catch (Exception e){
 salt = defaultSalt;
 }
 return salt;
}

// Obtain a random number as the salt.
private static String getCharAndNumr(int length) {
 String val = "";
 Random random = new SecureRandom();
 for (int i = 0; i < length; i++) {
 // Indicates whether to output letters or digits.
 String charOrNum = random.nextInt(2) % 2 == 0 ? "char" : "num";
 // Character string
 if ("char".equalsIgnoreCase(charOrNum)) {
 // Indicates whether an upper-case or lower-case letter is obtained.
 int choice = random.nextInt(2) % 2 == 0 ? 65 : 97;
 val += (char) (choice + random.nextInt(26));
 } else if ("num".equalsIgnoreCase(charOrNum)) { // Digit
 val += String.valueOf(random.nextInt(10));
 }
 }
 return val;
}
}

```

## Go

You can use either of the following methods to salt passwords for the Go language:

- <https://github.com/amoghe/go-crypt>
- <https://github.com/GehirnInc/crypt>

## 8.11 Maximum Number of Pods That Can Be Created on a Node

### Calculation of the Maximum Number of Pods on a Node

The maximum number of pods that can be created on a node is calculated based on the cluster type:

| Network Model  | Maximum Number of Pods on a Node                 | Recommended Configuration |
|----------------|--------------------------------------------------|---------------------------|
| Tunnel network | <a href="#">Maximum number of pods on a node</a> | None                      |

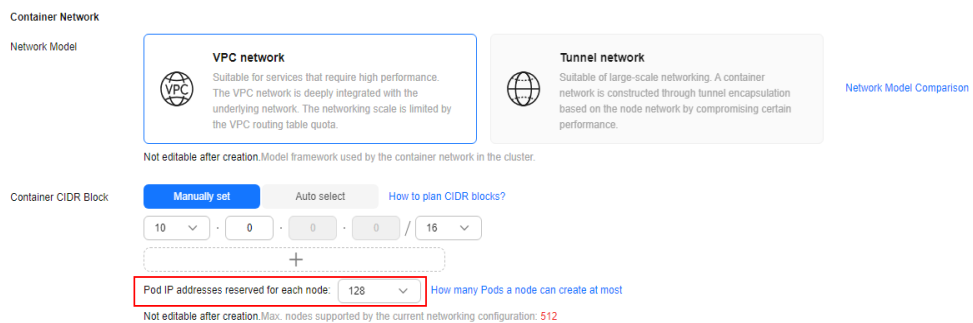
| Network Model                                     | Maximum Number of Pods on a Node                                                                                                                      | Recommended Configuration                                                                                                                                                                                                                                                               |
|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VPC network                                       | The smaller value between the <b>maximum number of pods on a node</b> and the <b>number of container IP addresses that can be allocated on a node</b> | To ensure new pods run smoothly on a node, make sure that the number of pods on the node does not exceed the number of container IP addresses that can be assigned to it. If there are not enough container IP addresses available on the node, the new pods may not function properly. |
| Cloud Native Network 2.0 (for CCE Turbo clusters) | The smaller value between the <b>maximum number of pods on a node</b> and the <b>number of ENIs on a node in a CCE Turbo cluster</b>                  | To ensure new pods run smoothly on a node, make sure that the number of pods on the node does not exceed the number of ENIs on it. If there are not enough ENIs available on the node, the new pods may not function properly.                                                          |

## Number of Allocatable Container IP Addresses on a Node

When creating a cluster in the VPC network model, follow the [rules for managing container IP addresses](#) and specify the number of container IP addresses that can be allocated to each node using `alpha.cce/fixPoolMask`.

The maximum number of pods that can be created on a node is determined by the number of container IP addresses that can be allocated to it. In a **container network**, each pod needs its own IP address. If there are not enough pre-allocated container IP addresses on the node, pods cannot be created. If `hostNetwork: true` is configured in the YAML file, pods will use the **host network** instead of the allocatable container IP addresses. For details, see [Pod IP Address Allocation Differences Between the Container Network and Host Network](#).

**Figure 8-10** Specifying the number of allocatable container IP addresses on a node in the VPC network model



By default, a node occupies three container IP addresses (network address, gateway address, and broadcast address). Therefore, the number of container IP addresses that can be allocated to a node equals the number of selected container IP addresses minus 3. For example, in the preceding figure, the number of container IP addresses that can be allocated to a node is 125 (128 - 3).

## Maximum Number of Pods on a Node

When creating a node, you can configure the maximum number of pods (maxPods) that can be created on the node. This parameter is a configuration item of kubelet and determines the maximum number of pods that can be created by kubelet.

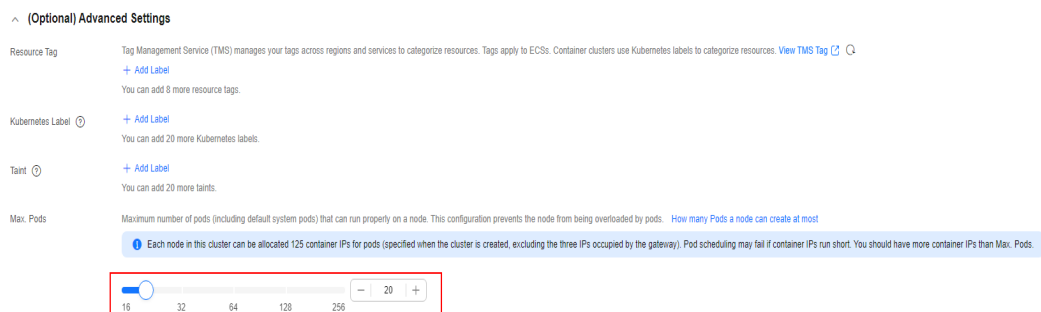
### NOTICE

For nodes in the default node pool (**DefaultPool**), the maximum number of pods cannot be changed after the nodes are created.

After a node in a custom node pool is created, you can modify the **max-pods** parameter in the node pool configuration to change the maximum number of pods on the node. For details, see [Configuring a Node Pool](#).

By default, the maximum number of pods on a node can be adjusted to 256. To increase the deployment density on a node, submit a [service ticket](#) to increase the maximum number of pods on a node, which can be 512.

**Figure 8-11** Configuring the maximum number of pods during node creation



**Table 8-4** lists the default maximum number of pods on a node based on node specifications.

**Table 8-4** Default maximum number of pods on a node

| Memory | Max. Pods |
|--------|-----------|
| 4 GB   | 20        |
| 8 GB   | 40        |
| 16 GB  | 60        |
| 32 GB  | 80        |

| Memory         | Max. Pods |
|----------------|-----------|
| 64 GB or above | 110       |

## Number of Node ENIs (Available Only in CCE Turbo Clusters)

In a CCE Turbo cluster, ECS nodes use sub-ENIs and BMS nodes use ENIs. The maximum number of pods that can be created on a node depends on the number of ENIs that can be used by the node.

Figure 8-12 Node ENIs

| Flavor                                      | vCPUs   Memory  | Assured/Maximum Bandwidth | Packets Per Second (PPS) | CPU            | Max. Pods |
|---------------------------------------------|-----------------|---------------------------|--------------------------|----------------|-----------|
| <input checked="" type="radio"/> c7.large.2 | 2 vCPUs   4 GB  | 0.64 / 4.0 Gbits          | 400,000 pps              | Intel Ice Lake | 16        |
| <input type="radio"/> c7.large.4            | 2 vCPUs   8 GB  | 0.64 / 4.0 Gbits          | 400,000 pps              | Intel Ice Lake | 16        |
| <input type="radio"/> c7.xlarge.2           | 4 vCPUs   8 GB  | 1.28 / 8.0 Gbits          | 800,000 pps              | Intel Ice Lake | 32        |
| <input type="radio"/> c7.xlarge.4           | 4 vCPUs   16 GB | 1.28 / 8.0 Gbits          | 800,000 pps              | Intel Ice Lake | 32        |

## Pod IP Address Allocation Differences Between the Container Network and Host Network

When creating a pod, you can select the container network or host network for the pod.

- Container network (default): **Each pod is assigned an IP address by the cluster networking add-ons, which occupies the IP addresses of the container network.**
- Host network: Pods with **hostNetwork: true** configured directly use the network of the host. For details, see [Configuring hostNetwork for Pods](#). After the configuration, the pods use the ports on the host and their IP address is identical to that of the host, **without relying on the IP addresses of the container network**. When using a host network, avoid conflicts between the pod ports and service ports on the host. Use a host network only if a particular application requires access to a specific port on the host.

## 8.12 Node OS

### Mappings Between Cluster Versions and OS Versions

The following table lists the mappings between released cluster versions and OS versions.

**Table 8-5** ECS (VM) OSs

| OS                       | Cluster Version            | CCE Standard Cluster |                                    | CCE Turbo Cluster        | Latest Kernel                                                                                                                                                                                                                 |
|--------------------------|----------------------------|----------------------|------------------------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                            | VPC Network          | Tunnel Network                     | Cloud Native 2.0 Network |                                                                                                                                                                                                                               |
| Huawei Cloud EulerOS 2.0 | v1.30                      | √                    | √                                  | √                        | 5.10.0-182.0.0.95.r1941_123.hce2.x86_64                                                                                                                                                                                       |
|                          | v1.29                      | √                    | √                                  | √                        | 5.10.0-182.0.0.95.r1941_123.hce2.x86_64                                                                                                                                                                                       |
|                          | v1.28                      | √                    | √                                  | √                        | 5.10.0-182.0.0.95.r1941_123.hce2.x86_64                                                                                                                                                                                       |
|                          | v1.27                      | √                    | Supported in v1.27.3-r0 or later.  | √                        | 5.10.0-182.0.0.95.r1941_123.hce2.x86_64                                                                                                                                                                                       |
|                          | v1.25                      | √                    | Supported in v1.25.6-r0 or later.  | √                        | <ul style="list-style-type: none"> <li>Clusters of v1.25.3-r0 or later<br/>5.10.0-182.0.0.95.r1941_123.hce2.x86_64</li> <li>Clusters of versions earlier than v1.25.3-r0<br/>5.10.0-60.18.0.50.r865_35.hce2.x86_64</li> </ul> |
|                          | v1.23 (end of maintenance) | √                    | Supported in v1.23.11-r0 or later. | √                        | <ul style="list-style-type: none"> <li>Clusters of v1.23.8-r0 or later<br/>5.10.0-182.0.0.95.r1941_123.hce2.x86_64</li> <li>Clusters of versions earlier than v1.23.8-r0<br/>5.10.0-60.18.0.50.r865_35.hce2.x86_64</li> </ul> |

| OS                             | Cluster Version            | CCE Standard Cluster |                                    | CCE Turbo Cluster        | Latest Kernel                                                                                                                                                                                                                   |
|--------------------------------|----------------------------|----------------------|------------------------------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                |                            | VPC Network          | Tunnel Network                     | Cloud Native 2.0 Network |                                                                                                                                                                                                                                 |
| Huawei Cloud EulerOS 2.0 (Arm) | v1.30                      | √                    | √                                  | √                        | 5.10.0-182.0.0.95.r1941_123.hce2.aarch64                                                                                                                                                                                        |
|                                | v1.29                      | √                    | √                                  | √                        | 5.10.0-182.0.0.95.r1941_123.hce2.aarch64                                                                                                                                                                                        |
|                                | v1.28                      | √                    | √                                  | √                        | 5.10.0-182.0.0.95.r1941_123.hce2.aarch64                                                                                                                                                                                        |
|                                | v1.27                      | √                    | Supported in v1.27.3-r0 or later.  | √                        | 5.10.0-182.0.0.95.r1941_123.hce2.aarch64                                                                                                                                                                                        |
|                                | v1.25                      | √                    | Supported in v1.25.6-r0 or later.  | √                        | <ul style="list-style-type: none"> <li>Clusters of v1.25.3-r0 or later<br/>5.10.0-182.0.0.95.r1941_123.hce2.aarch64</li> <li>Clusters of versions earlier than v1.25.3-r0<br/>5.10.0-60.18.0.50.r865_35.hce2.aarch64</li> </ul> |
|                                | v1.23 (end of maintenance) | √                    | Supported in v1.23.11-r0 or later. | √                        | <ul style="list-style-type: none"> <li>Clusters of v1.23.8-r0 or later<br/>5.10.0-182.0.0.95.r1941_123.hce2.aarch64</li> <li>Clusters of versions earlier than v1.23.8-r0<br/>5.10.0-60.18.0.50.r865_35.hce2.aarch64</li> </ul> |
| Ubuntu 22.04                   | v1.30                      | √                    | x                                  | √                        | 5.15.0-113-generic                                                                                                                                                                                                              |

| OS                       | Cluster Version            | CCE Standard Cluster |                | CCE Turbo Cluster        | Latest Kernel                                                                                                                                                                          |
|--------------------------|----------------------------|----------------------|----------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                            | VPC Network          | Tunnel Network | Cloud Native 2.0 Network |                                                                                                                                                                                        |
|                          | v1.29                      | √                    | x              | √                        | 5.15.0-113-generic                                                                                                                                                                     |
|                          | v1.28                      | √                    | x              | √                        | 5.15.0-113-generic                                                                                                                                                                     |
|                          | v1.27                      | √                    | x              | √                        | <ul style="list-style-type: none"> <li>Clusters of v1.27.3-r0 or later<br/>5.15.0-113-generic</li> <li>Clusters of versions earlier than v1.27.3-r0<br/>5.15.0-86-generic</li> </ul>   |
|                          | v1.25                      | √                    | x              | √                        | <ul style="list-style-type: none"> <li>Clusters of v1.25.6-r0 or later<br/>5.15.0-113-generic</li> <li>Clusters of versions earlier than v1.25.6-r0<br/>5.15.0-86-generic</li> </ul>   |
|                          | v1.23 (end of maintenance) | √                    | x              | √                        | <ul style="list-style-type: none"> <li>Clusters of v1.23.11-r0 or later<br/>5.15.0-113-generic</li> <li>Clusters of versions earlier than v1.23.11-r0<br/>5.15.0-86-generic</li> </ul> |
| Huawei Cloud EulerOS 1.1 | v1.30                      | √                    | √              | √                        | 3.10.0-1160.76.2.hce1c.x86_64                                                                                                                                                          |
|                          | v1.29                      | √                    | √              | √                        | 3.10.0-1160.76.2.hce1c.x86_64                                                                                                                                                          |

| OS                       | Cluster Version            | CCE Standard Cluster |                | CCE Turbo Cluster        | Latest Kernel                                                                                                                                                                                            |
|--------------------------|----------------------------|----------------------|----------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                            | VPC Network          | Tunnel Network | Cloud Native 2.0 Network |                                                                                                                                                                                                          |
|                          | v1.28                      | √                    | √              | √                        | 3.10.0-1160.76.2.hce1c.x86_64                                                                                                                                                                            |
|                          | v1.27                      | √                    | √              | √                        | 3.10.0-1160.76.2.hce1c.x86_64                                                                                                                                                                            |
|                          | v1.25                      | √                    | √              | √                        | 3.10.0-1160.76.2.hce1c.x86_64                                                                                                                                                                            |
|                          | v1.23 (end of maintenance) | √                    | √              | √                        | 3.10.0-1160.76.2.hce1c.x86_64                                                                                                                                                                            |
|                          | v1.21 (end of maintenance) | √                    | √              | √                        | 3.10.0-1160.76.2.hce1c.x86_64                                                                                                                                                                            |
| CentOS Linux release 7.6 | v1.30                      | √                    | √              | √                        | 3.10.0-1160.119.1.el7.x86_64                                                                                                                                                                             |
|                          | v1.29                      | √                    | √              | √                        | 3.10.0-1160.119.1.el7.x86_64                                                                                                                                                                             |
|                          | v1.28                      | √                    | √              | √                        | 3.10.0-1160.119.1.el7.x86_64                                                                                                                                                                             |
|                          | v1.27                      | √                    | √              | √                        | 3.10.0-1160.119.1.el7.x86_64                                                                                                                                                                             |
|                          | v1.25                      | √                    | √              | √                        | 3.10.0-1160.119.1.el7.x86_64                                                                                                                                                                             |
|                          | v1.23 (end of maintenance) | √                    | √              | √                        | <ul style="list-style-type: none"> <li>Clusters of v1.23.3-r0 or later<br/>3.10.0-1160.119.1.el7.x86_64</li> <li>Clusters of versions earlier than v1.23.3-r0<br/>3.10.0-1160.66.1.el7.x86_64</li> </ul> |



| OS | Cluster Version                  | CCE Standard Cluster |                | CCE Turbo Cluster        | Latest Kernel                                                                                                                                                                                                                                                          |
|----|----------------------------------|----------------------|----------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |                                  | VPC Network          | Tunnel Network | Cloud Native 2.0 Network |                                                                                                                                                                                                                                                                        |
|    | v1.21 (end of maintenance)       | √                    | √              | √                        | <ul style="list-style-type: none"> <li>Clusters of v1.21.5-r0 or later<br/>3.10.0-1160.119.1.el7.x86_64</li> <li>v1.21.4-r0 clusters:<br/>3.10.0-1160.66.1.el7.x86_64</li> <li>Clusters of versions earlier than v1.21.4-r0<br/>3.10.0-1160.25.1.el7.x86_64</li> </ul> |
|    | v1.19 (end of maintenance)       | √                    | √              | √                        | 3.10.0-1160.108.1.el7.x86_64                                                                                                                                                                                                                                           |
|    | v1.17.17 (end of maintenance)    | √                    | √              | √                        | 3.10.0-1160.15.2.el7.x86_64                                                                                                                                                                                                                                            |
|    | v1.17.9 (end of maintenance)     | √                    | √              | √                        | 3.10.0-1062.12.1.el7.x86_64                                                                                                                                                                                                                                            |
|    | v1.15.11 (end of maintenance)    | √                    | √              | √                        | 3.10.0-1062.12.1.el7.x86_64                                                                                                                                                                                                                                            |
|    | v1.15.6-r1 (end of maintenance)  | √                    | √              | √                        | 3.10.0-1062.1.1.el7.x86_64                                                                                                                                                                                                                                             |
|    | v1.13.10-r1 (end of maintenance) | √                    | √              | √                        | 3.10.0-957.21.3.el7.x86_64                                                                                                                                                                                                                                             |

| OS                  | Cluster Version                    | CCE Standard Cluster |                | CCE Turbo Cluster        | Latest Kernel                                                                                                                                                                                                                           |
|---------------------|------------------------------------|----------------------|----------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     |                                    | VPC Network          | Tunnel Network | Cloud Native 2.0 Network |                                                                                                                                                                                                                                         |
|                     | v1.13.7-r0<br>(end of maintenance) | √                    | √              | √                        | 3.10.0-957.21.3.el7.x86_64                                                                                                                                                                                                              |
| EulerOS release 2.9 | v1.30                              | √                    | √              | √                        | 4.18.0-147.5.1.6.h1305.eulerosv2r9.x86_64                                                                                                                                                                                               |
|                     | v1.29                              | √                    | √              | √                        | 4.18.0-147.5.1.6.h1305.eulerosv2r9.x86_64                                                                                                                                                                                               |
|                     | v1.28                              | √                    | √              | √                        | 4.18.0-147.5.1.6.h1305.eulerosv2r9.x86_64                                                                                                                                                                                               |
|                     | v1.27                              | √                    | √              | √                        | 4.18.0-147.5.1.6.h1305.eulerosv2r9.x86_64                                                                                                                                                                                               |
|                     | v1.25                              | √                    | √              | √                        | 4.18.0-147.5.1.6.h1305.eulerosv2r9.x86_64                                                                                                                                                                                               |
|                     | v1.23<br>(end of maintenance)      | √                    | √              | √                        | <ul style="list-style-type: none"> <li>• Clusters of v1.23.5-r0 or later<br/>4.18.0-147.5.1.6.h1305.eulerosv2r9.x86_64</li> <li>• Clusters of versions earlier than v1.23.5-r0<br/>4.18.0-147.5.1.6.h1017.eulerosv2r9.x86_64</li> </ul> |

| OS                        | Cluster Version            | CCE Standard Cluster |                | CCE Turbo Cluster        | Latest Kernel                                                                                                                                                                                                                       |
|---------------------------|----------------------------|----------------------|----------------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           |                            | VPC Network          | Tunnel Network | Cloud Native 2.0 Network |                                                                                                                                                                                                                                     |
|                           | v1.21 (end of maintenance) | √                    | √              | √                        | <ul style="list-style-type: none"> <li>Clusters of v1.21.7-r0 or later<br/>4.18.0-147.5.1.6.h1305.eulerosv2r9.x86_64</li> <li>Clusters of versions earlier than v1.21.7-r0<br/>4.18.0-147.5.1.6.h1017.eulerosv2r9.x86_64</li> </ul> |
|                           | v1.19 (end of maintenance) | √                    | √              | √                        | 4.18.0-147.5.1.6.h1152.eulerosv2r9.x86_64                                                                                                                                                                                           |
| EulerOS release 2.9 (Arm) | v1.30                      | √                    | √              | √                        | 4.19.90-vhulk2103.1.0.h1263.eulerosv2r9.aarch64                                                                                                                                                                                     |
|                           | v1.29                      | √                    | √              | √                        | 4.19.90-vhulk2103.1.0.h1263.eulerosv2r9.aarch64                                                                                                                                                                                     |
|                           | v1.28                      | √                    | √              | √                        | 4.19.90-vhulk2103.1.0.h1263.eulerosv2r9.aarch64                                                                                                                                                                                     |
|                           | v1.27                      | √                    | √              | √                        | 4.19.90-vhulk2103.1.0.h1263.eulerosv2r9.aarch64                                                                                                                                                                                     |
|                           | v1.25                      | √                    | √              | √                        | 4.19.90-vhulk2103.1.0.h1263.eulerosv2r9.aarch64                                                                                                                                                                                     |

| OS                                            | Cluster Version            | CCE Standard Cluster |                | CCE Turbo Cluster        | Latest Kernel                                                                                                                                                                                                                                  |
|-----------------------------------------------|----------------------------|----------------------|----------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                               |                            | VPC Network          | Tunnel Network | Cloud Native 2.0 Network |                                                                                                                                                                                                                                                |
|                                               | v1.23 (end of maintenance) | √                    | √              | √                        | <ul style="list-style-type: none"> <li>Clusters of v1.23.5-r0 or later<br/>4.19.90-vhulk2103.1.0.h1263.eulerosv2r9.aarch64</li> <li>Clusters of versions earlier than v1.23.5-r0<br/>4.19.90-vhulk2103.1.0.h990.eulerosv2r9.aarch64</li> </ul> |
|                                               | v1.21 (end of maintenance) | √                    | √              | √                        | <ul style="list-style-type: none"> <li>Clusters of v1.21.7-r0 or later<br/>4.19.90-vhulk2103.1.0.h1263.eulerosv2r9.aarch64</li> <li>Clusters of versions earlier than v1.21.7-r0<br/>4.19.90-vhulk2103.1.0.h990.eulerosv2r9.aarch64</li> </ul> |
|                                               | v1.19 (end of maintenance) | √                    | √              | √                        | 4.19.90-vhulk2103.1.0.h1144.eulerosv2r9.aarch64                                                                                                                                                                                                |
| EulerOS release 2.8 (Arm, end of maintenance) | v1.27 or later             | x                    | x              | x                        | None                                                                                                                                                                                                                                           |
|                                               | v1.25 (end of maintenance) | √                    | √              | √                        | 4.19.36-vhulk1907.1.0.h1350.eulerosv2r8.aarch64                                                                                                                                                                                                |

| OS                                       | Cluster Version               | CCE Standard Cluster |                | CCE Turbo Cluster        | Latest Kernel                                   |
|------------------------------------------|-------------------------------|----------------------|----------------|--------------------------|-------------------------------------------------|
|                                          |                               | VPC Network          | Tunnel Network | Cloud Native 2.0 Network |                                                 |
|                                          | v1.23 (end of maintenance)    | √                    | √              | √                        | 4.19.36-vhulk1907.1.0.h1350.eulerosv2r8.aarch64 |
|                                          | v1.21 (end of maintenance)    | √                    | √              | √                        | 4.19.36-vhulk1907.1.0.h1350.eulerosv2r8.aarch64 |
|                                          | v1.19.16 (end of maintenance) | √                    | √              | √                        | 4.19.36-vhulk1907.1.0.h1350.eulerosv2r8.aarch64 |
|                                          | v1.19.10 (end of maintenance) | √                    | √              | √                        | 4.19.36-vhulk1907.1.0.h962.eulerosv2r8.aarch64  |
|                                          | v1.17.17 (end of maintenance) | √                    | √              | √                        | 4.19.36-vhulk1907.1.0.h962.eulerosv2r8.aarch64  |
|                                          | v1.15.11 (end of maintenance) | √                    | √              | √                        | 4.19.36-vhulk1907.1.0.h702.eulerosv2r8.aarch64  |
| EulerOS release 2.5 (end of maintenance) | v1.27 or later                | x                    | x              | x                        | None                                            |
|                                          | v1.25 (end of maintenance)    | √                    | √              | √                        | 3.10.0-862.14.1.5.h687.eulerosv2r7.x86_64       |
|                                          | v1.23 (end of maintenance)    | √                    | √              | √                        | 3.10.0-862.14.1.5.h687.eulerosv2r7.x86_64       |

| OS | Cluster Version                  | CCE Standard Cluster |                | CCE Turbo Cluster        | Latest Kernel                             |
|----|----------------------------------|----------------------|----------------|--------------------------|-------------------------------------------|
|    |                                  | VPC Network          | Tunnel Network | Cloud Native 2.0 Network |                                           |
|    | v1.21 (end of maintenance)       | √                    | √              | √                        | 3.10.0-862.14.1.5.h687.eulerosv2r7.x86_64 |
|    | v1.19.16 (end of maintenance)    | √                    | √              | √                        | 3.10.0-862.14.1.5.h687.eulerosv2r7.x86_64 |
|    | v1.19.10 (end of maintenance)    | √                    | √              | √                        | 3.10.0-862.14.1.5.h520.eulerosv2r7.x86_64 |
|    | v1.19.8 (end of maintenance)     | √                    | √              | √                        | 3.10.0-862.14.1.5.h520.eulerosv2r7.x86_64 |
|    | v1.17.17 (end of maintenance)    | √                    | √              | √                        | 3.10.0-862.14.1.5.h470.eulerosv2r7.x86_64 |
|    | v1.17.9 (end of maintenance)     | √                    | √              | √                        | 3.10.0-862.14.1.5.h428.eulerosv2r7.x86_64 |
|    | v1.15.11 (end of maintenance)    | √                    | √              | √                        | 3.10.0-862.14.1.5.h428.eulerosv2r7.x86_64 |
|    | v1.15.6-r1 (end of maintenance)  | √                    | √              | √                        | 3.10.0-862.14.1.5.h328.eulerosv2r7.x86_64 |
|    | v1.13.10-r1 (end of maintenance) | √                    | √              | √                        | 3.10.0-862.14.1.2.h249.eulerosv2r7.x86_64 |

| OS                                              | Cluster Version                 | CCE Standard Cluster |                | CCE Turbo Cluster        | Latest Kernel                             |
|-------------------------------------------------|---------------------------------|----------------------|----------------|--------------------------|-------------------------------------------|
|                                                 |                                 | VPC Network          | Tunnel Network | Cloud Native 2.0 Network |                                           |
|                                                 | v1.13.7-r0 (end of maintenance) | √                    | √              | √                        | 3.10.0-862.14.1.0.h197.eulerosv2r7.x86_64 |
| Ubuntu 18.04 server 64-bit (end of maintenance) | v1.27 or later                  | x                    | x              | x                        | None                                      |
|                                                 | v1.25 (end of maintenance)      | √                    | x              | √                        | 4.15.0-171-generic                        |
|                                                 | v1.23 (end of maintenance)      | √                    | x              | √                        | 4.15.0-171-generic                        |
|                                                 | v1.21 (end of maintenance)      | √                    | x              | √                        | 4.15.0-171-generic                        |
|                                                 | v1.19.16 (end of maintenance)   | √                    | x              | √                        | 4.15.0-171-generic                        |
|                                                 | v1.19.8 (end of maintenance)    | √                    | x              | √                        | 4.15.0-136-generic                        |
|                                                 | v1.17.17 (end of maintenance)   | √                    | x              | √                        | 4.15.0-136-generic                        |

**Table 8-6** ECS (PM) OSs

| OS                   | Cluster Version               | CCE Standard Cluster |                | CCE Turbo Cluster        | Latest Kernel                               |
|----------------------|-------------------------------|----------------------|----------------|--------------------------|---------------------------------------------|
|                      |                               | VPC Network          | Tunnel Network | Cloud Native 2.0 Network |                                             |
| EulerOS release 2.10 | v1.30                         | √                    | √              | √                        | 4.18.0-147.5.2.15.h1109.eulerosv2r10.x86_64 |
|                      | v1.29                         | √                    | √              | √                        | 4.18.0-147.5.2.15.h1109.eulerosv2r10.x86_64 |
|                      | v1.28                         | √                    | √              | √                        | 4.18.0-147.5.2.15.h1109.eulerosv2r10.x86_64 |
|                      | v1.27                         | √                    | √              | √                        | 4.18.0-147.5.2.15.h1109.eulerosv2r10.x86_64 |
|                      | v1.25                         | √                    | √              | √                        | 4.18.0-147.5.2.15.h1109.eulerosv2r10.x86_64 |
|                      | v1.23                         | √                    | √              | √                        | 4.18.0-147.5.2.15.h1109.eulerosv2r10.x86_64 |
|                      | v1.21 (end of maintenance)    | √                    | √              | √                        | 4.18.0-147.5.2.15.h1109.eulerosv2r10.x86_64 |
|                      | v1.19.16 (end of maintenance) | √                    | √              | √                        | 4.18.0-147.5.2.15.h1109.eulerosv2r10.x86_64 |



**Table 8-7** BMS OSs

| OS                                                                                                       | Cluster Version | CCE Standard Cluster |                | CCE Turbo Cluster        | Latest Kernel                            |
|----------------------------------------------------------------------------------------------------------|-----------------|----------------------|----------------|--------------------------|------------------------------------------|
|                                                                                                          |                 | VPC Network          | Tunnel Network | Cloud Native 2.0 Network |                                          |
| Huawei Cloud EulerOS 2.0 (supported by certain regions and server models. For details, see the console.) | v1.30           | √                    | √              | x                        | 5.10.0-60.18.0.50.r1083_58.hce2.x86_64   |
|                                                                                                          | v1.29           | √                    | √              | x                        | 5.10.0-60.18.0.50.r1083_58.hce2.x86_64   |
|                                                                                                          | v1.28           | √                    | √              | x                        | 5.10.0-60.18.0.50.r1083_58.hce2.x86_64   |
|                                                                                                          | v1.27           | √                    | √              | x                        | 5.10.0-60.18.0.50.r1083_58.hce2.x86_64   |
|                                                                                                          | v1.25           | √                    | √              | x                        | 5.10.0-60.18.0.50.r1083_58.hce2.x86_64   |
|                                                                                                          | v1.23           | √                    | √              | x                        | 5.10.0-60.18.0.50.r1083_58.hce2.x86_64   |
| EulerOS release 2.9 (restricted use. Submit a service ticket for confirmation.)                          | v1.30           | √                    | √              | x                        | 4.18.0-147.5.1.6.h841.eulerosv2r9.x86_64 |
|                                                                                                          | v1.29           | √                    | √              | x                        | 4.18.0-147.5.1.6.h841.eulerosv2r9.x86_64 |
|                                                                                                          | v1.28           | √                    | √              | x                        | 4.18.0-147.5.1.6.h841.eulerosv2r9.x86_64 |
|                                                                                                          | v1.27           | √                    | √              | x                        | 4.18.0-147.5.1.6.h841.eulerosv2r9.x86_64 |
|                                                                                                          | v1.25           | √                    | √              | x                        | 4.18.0-147.5.1.6.h841.eulerosv2r9.x86_64 |

| OS                                       | Cluster Version               | CCE Standard Cluster |                | CCE Turbo Cluster        | Latest Kernel                            |
|------------------------------------------|-------------------------------|----------------------|----------------|--------------------------|------------------------------------------|
|                                          |                               | VPC Network          | Tunnel Network | Cloud Native 2.0 Network |                                          |
|                                          | v1.23                         | √                    | √              | x                        | 4.18.0-147.5.1.6.h841.eulerosv2r9.x86_64 |
|                                          | v1.21 (end of maintenance)    | √                    | √              | x                        | 4.18.0-147.5.1.6.h841.eulerosv2r9.x86_64 |
|                                          | v1.19 (end of maintenance)    | √                    | √              | x                        | 4.18.0-147.5.1.6.h841.eulerosv2r9.x86_64 |
| EulerOS release 2.3 (end of maintenance) | v1.27 or later                | x                    | x              | x                        | None                                     |
|                                          | v1.25 (end of maintenance)    | √                    | √              | x                        | 3.10.0-514.41.4.28.h62.x86_64            |
|                                          | v1.23 (end of maintenance)    | √                    | √              | x                        | 3.10.0-514.41.4.28.h62.x86_64            |
|                                          | v1.21 (end of maintenance)    | √                    | √              | x                        | 3.10.0-514.41.4.28.h62.x86_64            |
|                                          | v1.19 (end of maintenance)    | √                    | √              | x                        | 3.10.0-514.41.4.28.h62.x86_64            |
|                                          | v1.17 (end of maintenance)    | √                    | √              | x                        | 3.10.0-514.41.4.28.h62.x86_64            |
|                                          | v1.15.11 (end of maintenance) | √                    | √              | x                        | 3.10.0-514.41.4.28.h62.x86_64            |

## 8.13 Space Allocation of a Data Disk

This section describes how to allocate data disk space to nodes so that you can configure the data disk space accordingly.

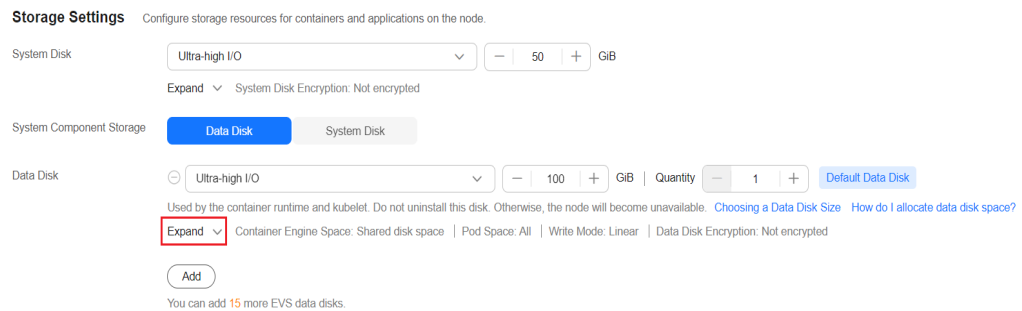
### Allocating Default Data Disk Space

 NOTE

- In clusters of a version earlier than v1.23.18-r0, v1.25.13-r0, v1.27.10-r0, v1.29.4-r0, or v1.28.8-r0, a default data disk will be added to the node for the container runtime and kubelet components. You can customize the space allocation of the default data disk.
- In clusters of v1.23.18-r0, v1.25.13-r0, v1.27.10-r0, v1.28.8-r0, v1.29.4-r0, or later, a default data disk will be added to the node for the container runtime and kubelet components only if **System Component Storage** is set to **Data Disk**. You can customize the space allocation of the default data disk.

When creating a node, you can customize Data Disk Space Allocation in the expanded area of **Data Disk**.

**Figure 8-13** Allocating data disk space



- **Space Allocation for Container Engines**
  - Specified disk space: CCE divides the data disk space for two parts by default. One part is used to store the Docker/containerd working directories, container image data, and image metadata. The other is reserved for kubelet and emptyDir volumes. The available container engine space affects image pulls and container startup and running.
    - Container engine and container image space (90% by default): stores the container runtime working directories, container image data, and image metadata.
    - kubelet and emptyDir space (10% by default): stores pod configuration files, secrets, and mounted storage such as emptyDir volumes.

 NOTE

If the sum of the container engine and container image space and the kubelet and emptyDir space is less than 100%, the remaining space will be allocated for user data. You can mount the storage volume to a service path. Do not leave the path empty or set it to a key OS path such as the root directory.

- Shared disk space: In clusters of v1.21.10-r0, v1.23.8-r0, v1.25.3-r0, or later versions, CCE allows **a container engine (Docker/containerd) and kubelet components to share data disk space.**
- **Space Allocation for Pods:** indicates the basesize of a pod. You can set an upper limit for the disk space occupied by each workload pod (including the space occupied by container images). This setting prevents the pods from taking all the disk space available, which may cause service exceptions. It is recommended that the value is less than or equal to 80% of the container engine space. This parameter is related to the node OS and container storage rootfs and is not supported in some scenarios. For details, see [Mapping Between OS and Container Storage Rootfs](#).
- Write Mode
  - **Linear:** A linear logical volume integrates one or more physical volumes. Data is written to the next physical volume when the previous one is used up.
  - **Striped:** available only if there are at least two data disks. A striped logical volume stripes data into blocks of the same size and stores them in multiple physical volumes in sequence. This allows data to be concurrently read and written. A storage pool consisting of striped volumes cannot be scaled-out.

## Space Allocation for Container Engines

For nodes using a data disk shared between a container engine and kubelet components, the container storage Rootfs is of the **OverlayFS** type. For details about data disk space allocation, see [Data Disk Shared Between a Container Engine and kubelet Components](#).

For a node using a non-shared data disk (100 GiB for example), the division of the disk space varies depending on the container storage Rootfs type **Device Mapper** or **OverlayFS**. For details about the container storage Rootfs corresponding to different OSs, see [Mapping Between OS and Container Storage Rootfs](#).

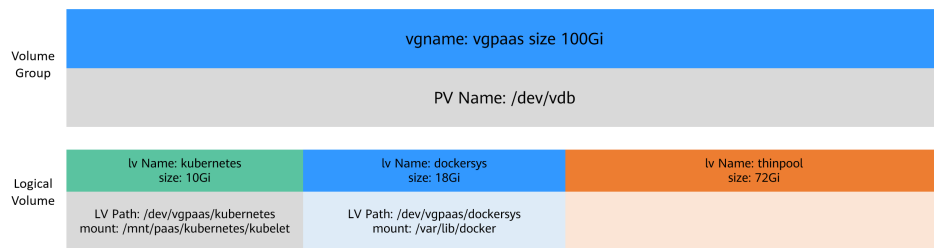
- **Rootfs (Device Mapper)**

By default, the container engine and image space, occupying 90% of the data disk, can be divided into the following two parts:

- The **/var/lib/docker** directory is used as the Docker working directory and occupies 20% of the container engine and container image space by default. (Space size of the **/var/lib/docker** directory = **Data disk space x 90% x 20%**)
- The thin pool is used to store container image data, image metadata, and container data, and occupies 80% of the container engine and container image space by default. (Thin pool space = **Data disk space x 90% x 80%**)

The thin pool is dynamically mounted. You can view it by running the **lsblk** command on a node, but not the **df -h** command.

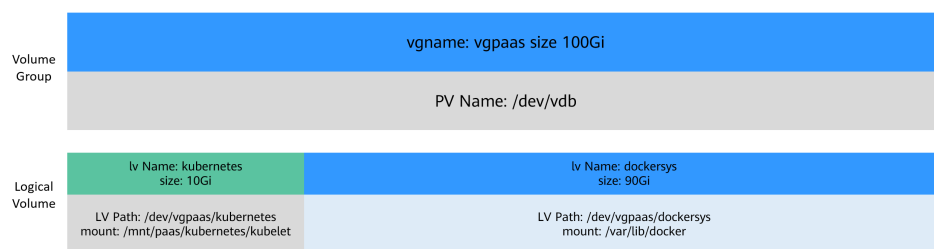
**Figure 8-14** Space allocation for container engines of Device Mapper



- **Rootfs (OverlayFS)**

No separate thin pool. The entire container engine and container image space (90% of the data disk by default) are in the `/var/lib/docker` directory.

**Figure 8-15** Space allocation for container engines of OverlayFS



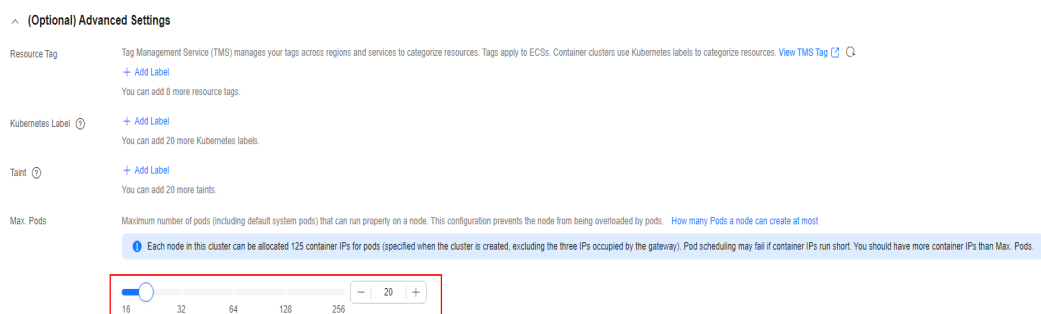
## Space Allocation for Pods

The customized pod container space (`basesize`) is related to the node OS and container storage Rootfs. For details about the container storage Rootfs, see [Mapping Between OS and Container Storage Rootfs](#).

- Device Mapper supports custom pod `basesize`. The default value is 10 GiB.
- In OverlayFS mode, the pod container space is not limited by default.

When configuring **`basesize`**, consider the maximum number of pods allowed on one node. The container engine space should be greater than the total disk space used by containers. Formula: **Container engine space (90% by default) > Number of containers x basesize**. Otherwise, the container engine space allocated to the node may be insufficient and the container cannot be started.

**Figure 8-16** Configuring the maximum number of pods during node creation



For nodes that support **`basesize`**, when Device Mapper is used, although you can limit the size of the `/home` directory of a single container (to 10 GiB by default),

all containers on the node still share the thin pool of the node for storage. They are not completely isolated. When the sum of the thin pool space used by certain containers reaches the upper limit, other containers cannot run properly.

In addition, after a file is deleted in the **/home** directory of the container, the thin pool space occupied by the file is not released immediately. Therefore, even if **basesize** is set to 10 GiB, the thin pool space occupied by files keeps increasing until 10 GiB when files are created in the container. The space released after file deletion will be reused but after a while. If **the number of containers on the node multiplied by basesize** is greater than the thin pool space size of the node, there is a possibility that the thin pool space has been used up.

## Mapping Between OS and Container Storage Rootfs

**Table 8-8** Node OSs and container engines in CCE clusters

| OS          | Container Storage Rootfs                                                                                   | Custom Basesize                                                                                                                                                                                               |
|-------------|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CentOS 7.x  | Clusters of v1.19.16 and earlier use Device Mapper.<br>Clusters of v1.19.16 and later use OverlayFS.       | Supported when Rootfs is set to Device Mapper and the runtime is Docker. The default value is 10 GiB.<br>If Rootfs is set to OverlayFS, the basesize cannot be customized.                                    |
| EulerOS 2.3 | Device Mapper                                                                                              | Supported only when the runtime is Docker. The default value is 10 GiB.                                                                                                                                       |
| EulerOS 2.5 | Device Mapper                                                                                              | Supported only when the runtime is Docker. The default value is 10 GiB.                                                                                                                                       |
| EulerOS 2.8 | Clusters of v1.19.16-r2 and earlier use Device Mapper.<br>Clusters of v1.19.16-r2 and later use OverlayFS. | Supported when Rootfs is set to Device Mapper and the runtime is Docker. The default value is 10 GiB.<br>Supported when Rootfs is set to OverlayFS and the runtime is Docker. There are no limits by default. |

| OS                       | Container Storage Rootfs | Custom Basesize                                                                                                                                                                                                                                                                                                                                 |
|--------------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EulerOS 2.9              | OverlayFS                | Supported by Docker clusters of v1.19.16-r0, v1.21.3-r0, v1.23.3-r0, or later. There are no limits by default.<br>Supported by containerd clusters of v1.23.14-r0, v1.25.9-r0, v1.27.6-r0, v1.28.4-r0, or later. There are no limits by default.<br>Not supported by clusters of a version earlier than v1.19.16-r0, v1.21.3-r0, or v1.23.3-r0. |
| EulerOS 2.10             | OverlayFS                | Supported only by Docker clusters of a version earlier than v1.23.14-r0, v1.25.9-r0, v1.27.6-r0, or v1.28.4-r0. There are no limits by default.<br>Supported by both Docker and containerd clusters of v1.23.14-r0, v1.25.9-r0, v1.27.6-r0, v1.28.4-r0, or later. There are no limits by default.                                               |
| Ubuntu 18.04             | OverlayFS                | Not supported                                                                                                                                                                                                                                                                                                                                   |
| Ubuntu 22.04             | OverlayFS                | Not supported                                                                                                                                                                                                                                                                                                                                   |
| Huawei Cloud EulerOS 1.1 | OverlayFS                | Not supported                                                                                                                                                                                                                                                                                                                                   |
| Huawei Cloud EulerOS 2.0 | OverlayFS                | Supported only by Docker clusters of a version earlier than v1.23.14-r0, v1.25.9-r0, v1.27.6-r0, or v1.28.4-r0. There are no limits by default.<br>Supported by both Docker and containerd clusters of v1.23.14-r0, v1.25.9-r0, v1.27.6-r0, v1.28.4-r0, or later. There are no limits by default.                                               |

**Table 8-9** Node OSs and container engines in CCE Turbo clusters

| OS         | Container Storage Rootfs | Custom Basesize |
|------------|--------------------------|-----------------|
| CentOS 7.x | OverlayFS                | Not supported   |

| OS                       | Container Storage Rootfs    | Custom Basesize                                                                                                                                                                                                                                                                                       |
|--------------------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ubuntu 18.04             | OverlayFS                   | Not supported                                                                                                                                                                                                                                                                                         |
| Ubuntu 22.04             | OverlayFS                   | Not supported                                                                                                                                                                                                                                                                                         |
| EulerOS 2.9              | OverlayFS                   | Supported when Rootfs is set to OverlayFS and the runtime is Docker. There are no limits by default. Supported by both Docker and containerd clusters of v1.23.14-r0, v1.25.9-r0, v1.27.6-r0, v1.28.4-r0, or later.                                                                                   |
| EulerOS 2.10             | Device Mapper for ECSs (PM) | Supported when Rootfs is set to Device Mapper and the runtime is containerd. The default value is 10 GiB.                                                                                                                                                                                             |
| Huawei Cloud EulerOS 1.1 | OverlayFS                   | Not supported                                                                                                                                                                                                                                                                                         |
| Huawei Cloud EulerOS 2.0 | OverlayFS                   | Supported only by Docker clusters of a version earlier than v1.23.14-r0, v1.25.9-r0, v1.27.6-r0, or v1.28.4-r0. There are no limits by default.<br><br>Supported by both Docker and containerd clusters of v1.23.14-r0, v1.25.9-r0, v1.27.6-r0, v1.28.4-r0, or later. There are no limits by default. |

## Garbage Collection Policies for Container Images

When the container engine space is insufficient, image garbage collection is triggered.

The policy for garbage collecting images takes two factors into consideration: **HighThresholdPercent** and **LowThresholdPercent**. Disk usage exceeding the high threshold (default: 80%) will trigger garbage collection. The garbage collection will delete least recently used images until the low threshold (default: 70%) is met.

## Recommended Configuration for the Container Engine Space

- The container engine space should be greater than the total disk space used by containers. Formula: **Container engine space > Number of containers x basesize**
- You are advised to create and delete files of containerized services in local storage volumes (such as emptyDir and hostPath volumes) or cloud storage directories mounted to the containers. In this way, the thin pool space is not



occupied. emptyDir volumes occupy the kubelet space. Therefore, properly plan the size of the kubelet space.

- You can deploy services on nodes that use the OverlayFS (for details, see [Mapping Between OS and Container Storage Rootfs](#)) so that the disk space occupied by files created or deleted in containers can be released immediately.

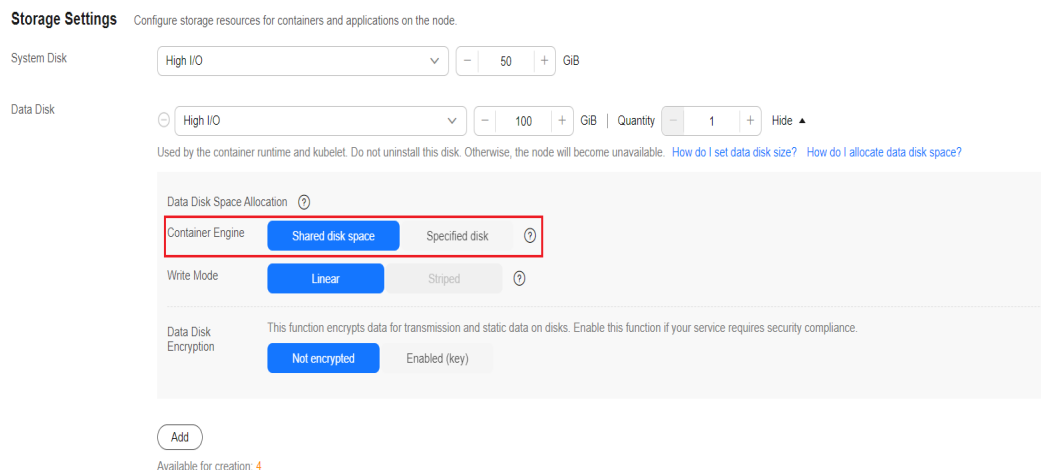
## Data Disk Shared Between a Container Engine and kubelet Components

Docker/containerd and kubelet components share the space of a data disk.

### NOTICE

- This function is available only to clusters of v1.21.10-r0, v1.23.8-r0, v1.25.3-r0, or later versions.
- If Rootfs is set to OverlayFS, shared data disks are supported. If Rootfs is set to Device Mapper, shared data disks are not supported.
- If you have installed an NPD add-on in the cluster, upgrade the add-on to v1.18.10 or later. Otherwise, false alarms will be generated.
- If you have installed a log-agent add-on in the cluster, upgrade the add-on to v1.3.0 or later. Otherwise, log collection will be affected.
- If you have installed ICAGENT in the cluster, upgrade it to v5.12.140 or later. Otherwise, log collection will be affected. For details about how to view or upgrade an ICAGENT version, see [CCE Access](#).

**Figure 8-17** Configuration for sharing disk space

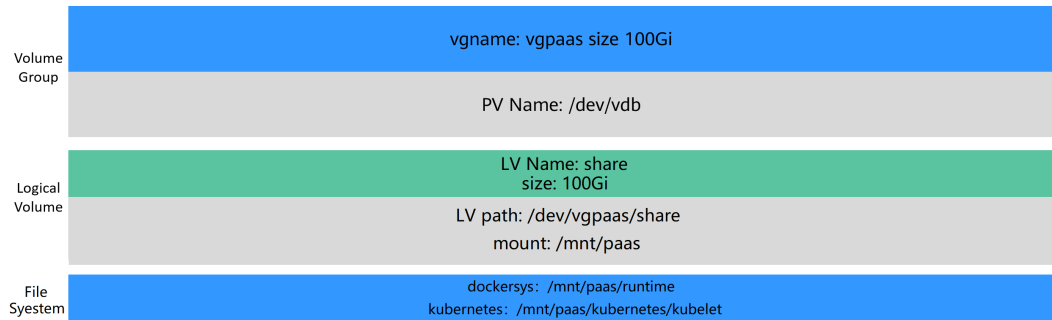


For nodes using a shared data disk, the container storage Rootfs is of the **OverlayFS** type. After such a node is created, the data disk space (for example, 100 GiB) will not be divided for the container engines, container images, and kubelet components. The data disk is mounted to **/mnt/paas**, and the storage space is divided using two file systems.

- dockersys: /mnt/paas/runtime

- Kubernetes: /mnt/paas/kubernetes/kubelet

**Figure 8-18** Allocating the storage space of a shared data disk



## Common Issues

[How Do I Expand the Storage Capacity of a Container?](#)

[Expanding the Disk Capacity of a Node in a CCE Cluster](#)

## 8.14 Attaching Disks to a Node

### Challenges

In disk planning and striped logical disk creation, it is difficult for users to flexibly attach and partition disks when creating a node.

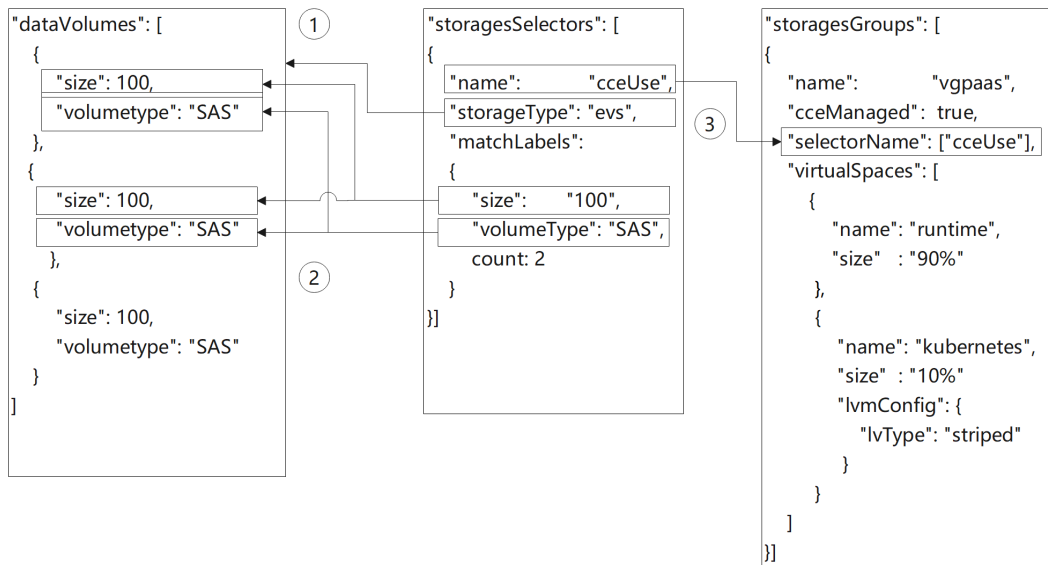
During node creation, the **storage** field selects a data disk based on parameters, such as the disk size and disk type, to prevent failures in node creation, resetting, migration, and management caused by drive letter matching failures. For example, if **DockerLVMConfigOverride.diskType** in the NodeExtendParam field is set to **evs** during node creation, C7 nodes will not be created.

### Solution

This section provides details about the **storage** field used in node creation so that you can implement complex disk selection and partitioning by calling the node creation API.

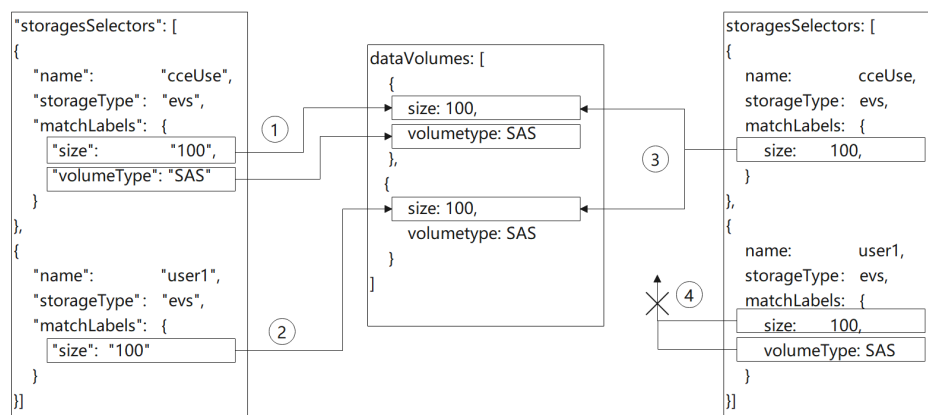
The **storage** field consists of **storageSelectors** and **storageGroups**. The **storageSelectors** field is responsible for disk selection, and the **storageGroups** field is responsible for disk processing.

The basic logic for field matching is as follows:



1. **storageSelectors** selects an EVS disk or a local disk based on the value of **storageType**.
  - a. Local disks do not support exact match. All local disks will be selected as data disks.  
 If some local disks need to be reserved, occupy the disks in the pre-installation script. The script is similar to the following:
 

```
prepare
vgName=vg-test
storageDevice=/dev/vdb
vgcreate
vgcreate ${vgName} ${storageDevice}
```
  - b. EVS disks match the disks created in **dataVolumes** based on the settings of **matchLabels**.
2. Policies have priorities to match **matchLabels**. The **matchLabels** policy nearest to **storageSelectors** has a higher priority and the disk nearest to **dataVolumes** will be preferentially matches. As **matchLabels** uses loose matching, you are advised to place the **matchLabels** policy with a small matching range on the top. For example:

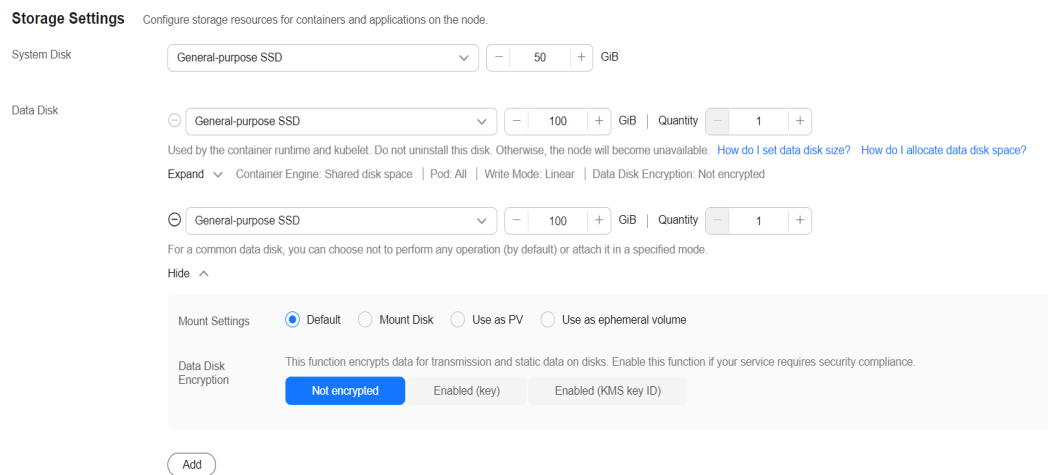


- a. In step 1, the first disk in **dataVolumes** is matched by the EVS disk whose size is 100 GiB and storage class is SAS. In step 2, the second disk in **dataVolumes** is matched by the EVS disk whose size is 100 GiB because the first disk has been selected.

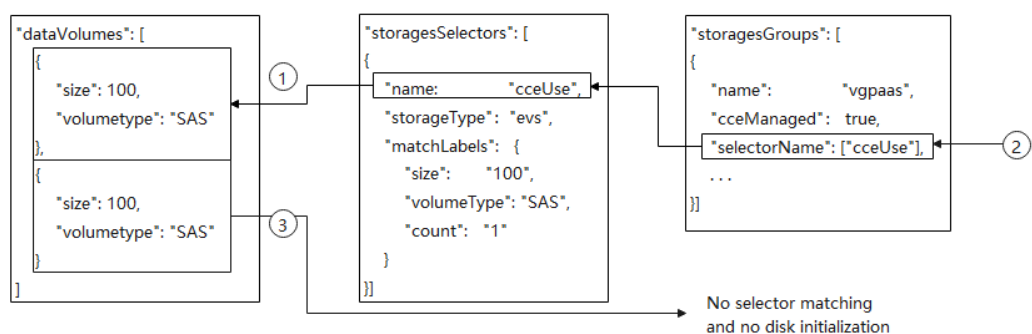
- b. In step 3, two disks in **dataVolumes** can be matched because **volumeType** or **count** is not specified in **matchLabels**. In this case, no disk is available for matching in step 4.
3. **storageGroups** associates with **storageSelectors** based on **selectorName**. Finally, two 100 GiB disks are selected. The CCE backend groups the two PVs into a volume group (VG) and divides the VG into two logical volumes (LVs) in the ratio of 9:1. 10% of Kubernetes LVs are partitioned in striped mode. 90% runtime LVs are partitioned in linear mode by default because **runtimeConfig** is not configured.

## Creating a Raw Disk

During node creation on the CCE console, click **Add Data Disk**. Then, click **Expand** next to the newly added data disk and select **Default**. The created disk is a raw disk.



The following figure shows the API calling logic.



1. The **cceUse** selector matches a 100 GiB data disk.
2. The selected disk is managed by CCE and used as a data disk.
3. The other 100 GiB data disk created in **dataVolumes** is not selected by any selector and is managed by **storageGroups**. Therefore, this EVS disk will be attached to the node as a raw disk and will not be initialized.

After the node is created, log in to the node and check whether a 100 GiB disk has been attached but not initialized.

```
[root@test-83790 ~]# lsblk -n
sda 8:0 0 50G 0 disk
├─sda1 8:1 0 50G 0 part /
sdb 8:16 0 100G 0 disk
├─vgpaas-dockersys 253:0 0 18G 0 lvm /var/lib/docker
├─vgpaas-thinpool_tmeta 253:1 0 3G 0 lvm
├─vgpaas-thinpool 253:3 0 67G 0 lvm
├─docker-253:0-786433-7cb37dc21202bfe2fc78dd1d33b70571e7e1982e56a4118f6facd630cbc8b38 253:5 0 10G 0 dm /var/lib/docker/devicemapper/
├─docker-253:0-786433-e17cd8670b9f423eaff34b92bd82a2e620118227c26da2e41eda7894361c9942 253:6 0 10G 0 dm /var/lib/docker/devicemapper/
├─docker-253:0-786433-0dedb47e75eed3f635ce2d47c584587ae622c70dcb0eafeade9e14693a3146a0 253:7 0 10G 0 dm /var/lib/docker/devicemapper/
├─docker-253:0-786433-93ed7e6e14313d13ecfa1152937b153fe599c48cfda9f9ecd43c1c36cae89a38a 253:8 0 10G 0 dm /var/lib/docker/devicemapper/
├─docker-253:0-786433-e7066e08bf5c6249850a09e080cf43d9a7be499eae33aa8feb06c027d26fa1e9 253:9 0 10G 0 dm /var/lib/docker/devicemapper/
├─docker-253:0-786433-5ecc4420da9a58fb66108db599a8267af3e8856da86b9c3d7fb82090a8781ae8 253:10 0 10G 0 dm /var/lib/docker/devicemapper/
├─vgpaas-thinpool_tdata 253:2 0 67G 0 lvm
├─vgpaas-thinpool 253:3 0 67G 0 lvm
├─docker-253:0-786433-7cb37dc21202bfe2fc78dd1d33b70571e7e1982e56a4118f6facd630cbc8b38 253:5 0 10G 0 dm /var/lib/docker/devicemapper/
├─docker-253:0-786433-e17cd8670b9f423eaff34b92bd82a2e620118227c26da2e41eda7894361c9942 253:6 0 10G 0 dm /var/lib/docker/devicemapper/
├─docker-253:0-786433-0dedb47e75eed3f635ce2d47c584587ae622c70dcb0eafeade9e14693a3146a0 253:7 0 10G 0 dm /var/lib/docker/devicemapper/
├─docker-253:0-786433-93ed7e6e14313d13ecfa1152937b153fe599c48cfda9f9ecd43c1c36cae89a38a 253:8 0 10G 0 dm /var/lib/docker/devicemapper/
├─docker-253:0-786433-e7066e08bf5c6249850a09e080cf43d9a7be499eae33aa8feb06c027d26fa1e9 253:9 0 10G 0 dm /var/lib/docker/devicemapper/
├─docker-253:0-786433-5ecc4420da9a58fb66108db599a8267af3e8856da86b9c3d7fb82090a8781ae8 253:10 0 10G 0 dm /var/lib/docker/devicemapper/
├─vgpaas-kubernetes 253:4 0 10G 0 lvm /mnt/paas/kubernetes/kubelet
sdc 8:32 0 100G 0 disk
```

The following is an API example:

```
{
 "kind": "Node",
 "apiVersion": "v3",
 "metadata": {
 "name": "test-83790"
 },
 "spec": {
 "flavor": "c3.large.2",
 "az": "ap-southeast-1a",
 "os": "EulerOS 2.9",
 "dataVolumes": [
 {
 "size": 100,
 "volumetype": "SAS"
 },
 {
 "size": 100,
 "volumetype": "SAS"
 }
],
 "billingMode": 0,
 "extendParam": {
 "maxPods": 110
 },
 "nodeNicSpec": {
 "primaryNic": {
 "subnetId": "ca964acf-8468-4735-8229-97940ef6c881"
 }
 },
 "rootVolume": {
 "size": 50,
 "volumetype": "SAS"
 },
 "runtime": {
 "name": "docker"
 },
 "login": {
 "userPassword": {
 "username": "root",
 "password": "*****"
 }
 },
 "storage": {
 "storageSelectors": [
 {
 "name": "cceUse",
 "storageType": "evs",
 "matchLabels": {
 "size": "100",
 "volumeType": "SAS",
 "count": "1"
 }
 }
]
 }
 }
}
```

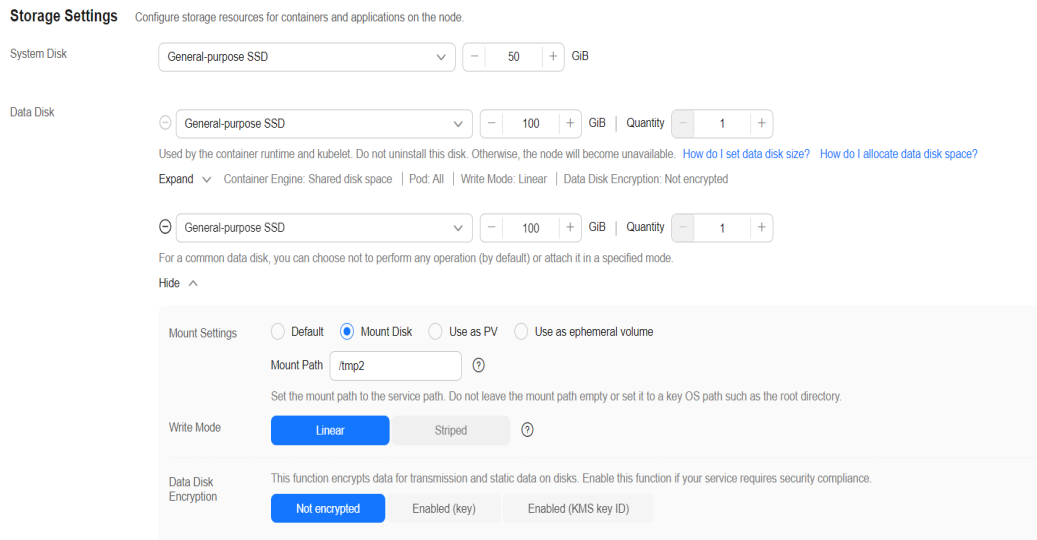
```

 }
],
 "storageGroups": [
 {
 "name": "vgpaas",
 "selectorNames": [
 "cceUse"
],
 "cceManaged": true,
 "virtualSpaces": [
 {
 "name": "runtime",
 "size": "90%"
 },
 {
 "name": "kubernetes",
 "size": "10%"
 }
]
 }
]
},
"count": 1
}

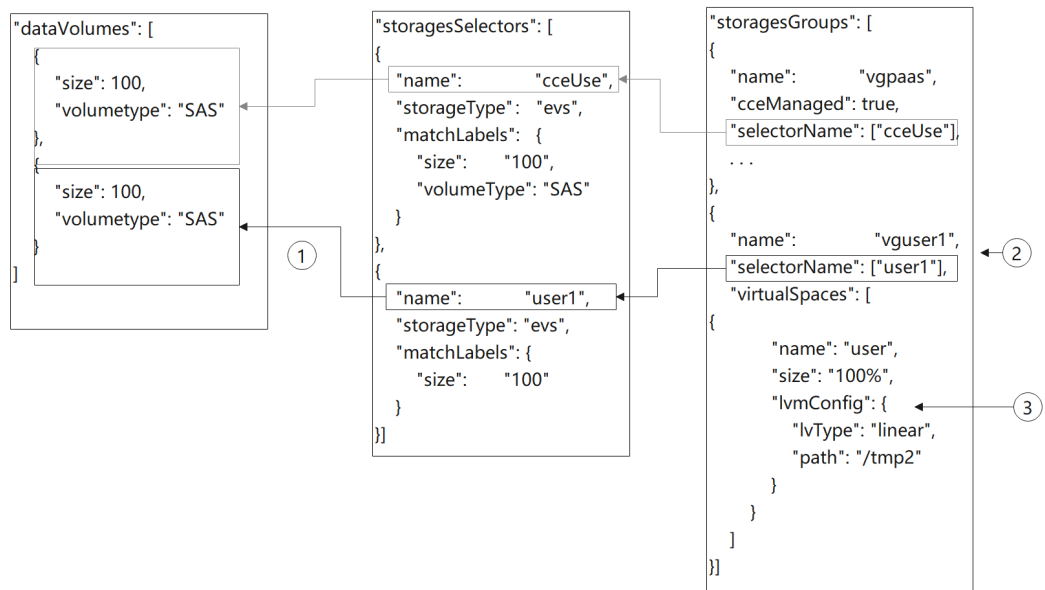
```

## Attaching a Disk to a Specified Path

During node creation on the CCE console, click **Add Data Disk**. Then, click **Expand** next to the newly added data disk, select **Mount Disk**, and set the mount path. In this case, CCE initializes and attaches the disk by default.



The following figure shows the API calling logic.



1. The **user1** selector selects a 100 GiB data disk.
2. Create a VG named **vguser1** using LVM.
3. Strip all the space of **vguser1** into an LV named **user** and format the disk in ext4 format. Finally, attach the disk to the **/tmp2** directory.

After the node is created, log in to the node and check whether a 100 GiB disk has been attached and managed by LVM.

```
[root@test-37106 ~]# lsblk -n
sda 8:0 0 50G 0 disk
├─sda1 8:1 0 50G 0 part /
├─sdb 8:16 0 100G 0 disk
├─vgpaas-dockersys 253:0 0 16G 0 lvm /var/lib/docker
├─vgpaas-thinpool_tmeta 253:1 0 3G 0 lvm
├─vgpaas-thinpool 253:3 0 59G 0 lvm
├─docker-253:0-917505-3a36be80c1a49db5da9639d222f19ce5983489080a36efdda1f17fa2d0bb7da9 253:6 0 10G 0 dm /var/lib/docker/devicemapper/
├─docker-253:0-917505-46a876d16929a54d4f5ea97da81c3603c79cd5630be1c1010b476387a5d3c086 253:7 0 10G 0 dm /var/lib/docker/devicemapper/
├─docker-253:0-917505-93081c85109968299fdca13a077e82252e725a6e37cae7299841db482656b815 253:8 0 10G 0 dm /var/lib/docker/devicemapper/
├─docker-253:0-917505-513c5bda896de61ac85d917366da4ea4d78ab9f87cd4caae9e465badc0003c62 253:9 0 10G 0 dm /var/lib/docker/devicemapper/
├─docker-253:0-917505-a6ac0d3ae8bffb57a92e6812079e503db49942619d5bbcb69bb9516b31e15e67 253:10 0 10G 0 dm /var/lib/docker/devicemapper/
├─docker-253:0-917505-f9dfa31cdc3eb514a797c98311372ac8497d9a99581acdfefff0114bdf8e525 253:11 0 10G 0 dm /var/lib/docker/devicemapper/
├─vgpaas-thinpool_tdata 253:2 0 59G 0 lvm
├─vgpaas-thinpool 253:3 0 59G 0 lvm
├─docker-253:0-917505-3a36be80c1a49db5da9639d222f19ce5983489080a36efdda1f17fa2d0bb7da9 253:6 0 10G 0 dm /var/lib/docker/devicemapper/
├─docker-253:0-917505-46a876d16929a54d4f5ea97da81c3603c79cd5630be1c1010b476387a5d3c086 253:7 0 10G 0 dm /var/lib/docker/devicemapper/
├─docker-253:0-917505-93081c85109968299fdca13a077e82252e725a6e37cae7299841db482656b815 253:8 0 10G 0 dm /var/lib/docker/devicemapper/
├─docker-253:0-917505-513c5bda896de61ac85d917366da4ea4d78ab9f87cd4caae9e465badc0003c62 253:9 0 10G 0 dm /var/lib/docker/devicemapper/
├─docker-253:0-917505-a6ac0d3ae8bffb57a92e6812079e503db49942619d5bbcb69bb9516b31e15e67 253:10 0 10G 0 dm /var/lib/docker/devicemapper/
├─docker-253:0-917505-f9dfa31cdc3eb514a797c98311372ac8497d9a99581acdfefff0114bdf8e525 253:11 0 10G 0 dm /var/lib/docker/devicemapper/
├─vgpaas-kubernetes 8:32 0 100G 0 disk /mnt/paas/kubernetes/kubelet
├─vguser1-user 253:5 0 100G 0 lvm /tmp2
[root@test-37106 ~]#
```

The following is an API example. There are two data disks. One is used by CCE, and the other is mounted to the **/tmp2** directory.

```
{
 "kind": "Node",
 "apiVersion": "v3",
 "metadata": {
 "name": "test-37106"
 },
 "spec": {
 "flavor": "c3.large.2",
 "az": "ap-southeast-1a",
 "os": "EulerOS 2.9",
 "dataVolumes": [
 {
 "size": 100,
 "volumetype": "SAS"
 }
]
 }
}
```

```

 {
 "size": 100,
 "volumetype": "SAS"
 }
],
 "billingMode": 0,
 "extendParam": {
 "maxPods": 110
 },
 "nodeNicSpec": {
 "primaryNic": {
 "subnetId": "ca964acf-8468-4735-8229-97940ef6c881"
 }
 },
 "rootVolume": {
 "size": 50,
 "volumetype": "SAS"
 },
 "runtime": {
 "name": "docker"
 },
 "login": {
 "userPassword": {
 "username": "root",
 "password": "*****"
 }
 },
 "storage": {
 "storageSelectors": [
 {
 "name": "cceUse",
 "storageType": "evs",
 "matchLabels": {
 "size": "100",
 "volumeType": "SAS",
 "count": "1"
 }
 },
 {
 "name": "user1",
 "storageType": "evs",
 "matchLabels": {
 "size": "100",
 "volumeType": "SAS",
 "count": "1"
 }
 }
],
 "storageGroups": [
 {
 "name": "vgpaas",
 "selectorNames": [
 "cceUse"
],
 "cceManaged": true,
 "virtualSpaces": [
 {
 "name": "runtime",
 "size": "80%"
 },
 {
 "name": "kubernetes",
 "size": "20%"
 }
]
 }
],
 {
 "name": "vguser1",
 "selectorNames": [

```



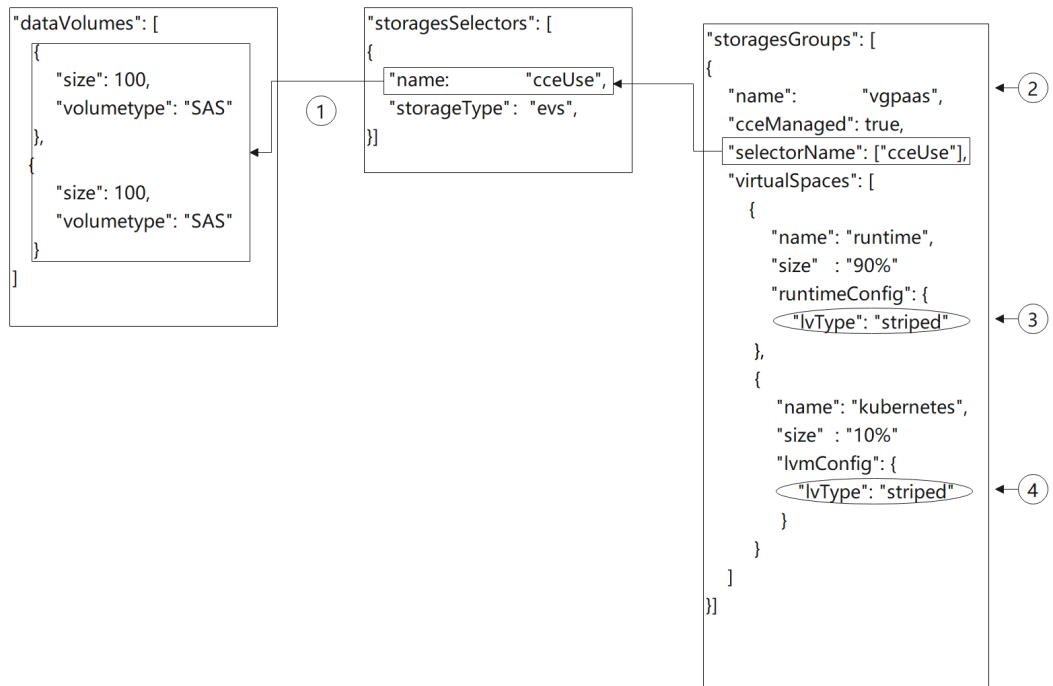
```

 "user1"
],
 "virtualSpaces": [
 {
 "name": "user",
 "size": "100%",
 "lvmConfig": {
 "lvType": "linear",
 "path": "/tmp2"
 }
 }
]
 }
],
 "count": 1
}

```

### Creating Striped LVs to Improve Disk Performance

Currently, the striped LV function is supported only by calling an API. The following is an example:



1. **storageSelectors** matches all EVS disks in **dataVolumes** because **matchLabels** is not contained in **storageSelectors**.
2. Create a VG named **vgpaas** using LVM.
3. Strip 90% of the **vgpaas** space into runtime LVs.
4. Strip 10% of the **vgpaas** space into Kubernetes LVs.

 NOTE

- Two or more data disks are required for striping.
- When creating a striped LV, ensure that the types and sizes of the PVs added to the VG are the same. Otherwise, the creation will fail.
- When creating a striped LV, use the striping configuration for both the runtime LV and Kubernetes LV. Otherwise, the creation will fail.

Log in to the node and run the following command to view the striping result:

```
[root@test-83773 ~]# lvdisplay -m | grep -C 10 striped
LV Size 36.00 GiB
Current LE 9216
Segments 1
Allocation inherit
Read ahead sectors auto
- currently set to 512
Block device 253:0

--- Segments ---
Logical extents 0 to 9215:
 Type striped
 Stripes 2
 Stripe size 64.00 KiB
 Stripe 0:
 Physical volume /dev/sdb
 Physical extents 0 to 4607
 Stripe 1:
 Physical volume /dev/sdc
 Physical extents 0 to 4607

--
LV Size 20.00 GiB
Current LE 5120
Segments 1
Allocation inherit
Read ahead sectors auto
- currently set to 8192
Block device 253:4

--- Segments ---
Logical extents 0 to 5119:
 Type striped
 Stripes 2
 Stripe size 64.00 KiB
 Stripe 0:
 Physical volume /dev/sdb
```

The following is an API example:

```
{
 "kind": "Node",
 "apiVersion": "v3",
```

```

"metadata": {
 "name": "test-83773"
},
"spec": {
 "flavor": "c3.large.2",
 "az": "ap-southeast-1a",
 "os": "EulerOS 2.9",
 "dataVolumes": [
 {
 "size": 100,
 "volumetype": "SAS"
 },
 {
 "size": 100,
 "volumetype": "SAS"
 }
],
 "billingMode": 0,
 "extendParam": {
 "maxPods": 110
 },
 "nodeNicSpec": {
 "primaryNic": {
 "subnetId": "ca964acf-8468-4735-8229-97940ef6c881"
 }
 },
 "rootVolume": {
 "size": 50,
 "volumetype": "SAS"
 },
 "runtime": {
 "name": "docker"
 },
 "login": {
 "userPassword": {
 "username": "root",
 "password": "*****"
 }
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 "storage": {
 "storageSelectors": [
 {
 "name": "cceUse",
 "storageType": "evs"
 }
],
 "storageGroups": [
 {
 "name": "vgpaas",
 "selectorNames": [
 "cceUse"
],
 "cceManaged": true,
 "virtualSpaces": [
 {
 "name": "runtime",
 "size": "90%",
 "runtimeConfig": {
 "lvType": "striped"
 }
 },
 {
 "name": "kubernetes",
 "size": "10%",
 "lvmConfig": {
 "lvType": "striped"
 }
 }
]
 }
]
 }
}

```

```
 }
]
},
"count": 1
}
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