Cloud Container Engine

Getting Started

 Issue
 01

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Deploying an NGINX Deployment in a CCE Cluster

Deployments are a type of workload in Kubernetes. They are ideal for applications that do not require data consistency and durability, such as web and application servers. Each pod in a Deployment is independent of the others, and there is no difference in running status between them. This means that if one pod fails, requests can be redirected to other healthy pods, ensuring uninterrupted services. Deployment pods are also independent from one another and can be replaced with new ones. You can easily adjust the number of pods based on real-time service requirements, such as adding more during peak hours to handle increased traffic.

This section uses the lightweight web server NGINX as an example to describe how to deploy a Deployment in a CCE cluster.



Procedure

Step	Description
Preparations	Register a Huawei account and top up the account.
Step 1: Enable CCE for the First Time and Perform Authorization	Obtain the required permissions for your account when you use the CCE service in the current region for the first time.

Step	Description
Step 2: Create a Cluster	Create a CCE cluster to provide Kubernetes services.
Step 3: Create a Node Pool and Nodes in the Cluster	Create a node in the cluster to run your containerized applications.
Step 4: Create a Workload and Access It	Create a workload in the cluster to run your containers and create a Service for the workload to enable Internet access.
Follow-up Operations: Releasing Resources	To avoid additional charges, delete the cluster resources promptly if you no longer require them after practice.

Preparations

 Before starting, register a Huawei account and complete real-name authentication. For details, see Signing up for a HUAWEI ID and Enabling Huawei Cloud Services and Getting Authenticated.

Step 1: Enable CCE for the First Time and Perform Authorization

CCE works closely with multiple cloud services to support computing, storage, networking, and monitoring functions. When you log in to the CCE console for the first time, CCE automatically requests permissions to access those cloud services in the region where you run your applications. If you have been authorized in the current region, skip this step.

- **Step 1** Log in to the **CCE console** using your HUAWEI ID.
- **Step 2** Click **Step 2** in the upper left corner on the displayed page and select a region.
- Step 3 When you log in to the CCE console in a region for the first time, wait for the Authorization Statement dialog box to appear, carefully read the statement, and click OK.

After you agree to delegate the permissions, CCE creates an agency named **cce_admin_trust** in IAM to perform operations on other cloud resources and grants it the Tenant Administrator permissions. Tenant Administrator has the permissions on all cloud services except IAM. The permissions are used to call the cloud services on which CCE depends. The delegation takes effect only in the current region. You can go to the IAM console, choose **Agencies**, and click **cce_admin_trust** to view the delegation records of each region. For details, see **Account Delegation**.

NOTE

CCE may fail to run as expected if the Tenant Administrator permissions are not assigned. Therefore, do not delete or modify the **cce_admin_trust** agency when using CCE.

----End

Step 2: Create a Cluster

Step 1 Log in to the **CCE console**.

- If you have no clusters, click **Buy Cluster** on the wizard page.
- If you have CCE clusters, choose **Clusters** in the navigation pane, click **Buy Cluster** in the upper right corner.
- **Step 2** Configure basic cluster parameters.

Only mandatory parameters are described in this example. You can keep the default values for most other parameters. For details about the parameter configurations, see **Buying a CCE Standard/Turbo Cluster**.

Basic Settings	
Туре	CCE Standard Cluster (CCE cluster originally) Matter notes house (Single and initiale) CCE Turbo Cluster CCE Autoplot Cluster CCE A
Billing Mode	Yearly/Monthly Paypersee
Cluster Name	Constant ① Must be unique under the same account.
Enterprise Project (9)	defaut v O. Create Enterprise Project (2
Cluster Version	Recommend v1.29 Version of Kuberneles to use for the cluster Version Relaxer
Cluster Scale	Nodes 50 Nodes 200 Nodes 1000 Nodes 2000
	Seto: The maximum number of nodes that can be managed by the cluder. Matter mode specifications are determined based on the cluder scale. After the cluder is created, node specifications can be nodefied, but nodes can only be upgated for hyper specifications. Native: Generally, the cluster may not incash the maximum number of nodes of the cluder incash scale is initiated to multiple factors, such as the type, quantity, and size of insource cliques in the cluster, and estimant access to the cluster from being overladed. You aclosed to polymore security handmary by referring to the preventing cluster reveals. Bet Placetice aclosed to polymore security handmary by referring to the preventing cluster reveals. Bet Placetice aclosed to polymore security handmary by referring to the preventing cluster reveals. Bet Placetice aclosed to polymore security handmary by referring to the preventing cluster reveals. Bet Placetice aclosed to polymore security handmary by referring to the preventing cluster reveals. Bet Placetice aclosed to polymore access to the cluster handware access to the cluster handware access to the cluster is access to the cluster handware access to the cluster is access to the cluster handware access to the cluster. The cluster handware access to the cluster is access to the cluster handware access to the cluster is access to the cluster handware access to the cluster is access to the cluster handware access to the cluster is access to the cluster handware access to the cluster is access to the c
Master Nodes	1 Mones Single Note stated and results of the state of th

Parameter	Example	Description
Туре	CCE Standard Cluster	CCE allows you to create various types of clusters for diverse needs. It provides highly reliable, secure, business-class container services.
		You can select CCE Standard Cluster or CCE Turbo Cluster as required.
		CCE standard clusters provide highly reliable, secure, business-class containers.
		• CCE Turbo clusters use high-performance cloud native networks and provide cloud native hybrid scheduling. Such clusters have improved resource utilization and can be used in more scenarios.
		For details about cluster types, see Comparison Between Cluster Types.

Parameter	Example	Description				
Billing Mode	Pay-per-use	 Select a billing mode for the cluster. Yearly/Monthly: a prepaid billing mode. Resources will be billed based on the service duration. This cost-effective mode is ideal when the duration of resource usage is predictable. If you choose this billing mode, you will need to set the desired duration and decide whether to enable automatic subscription renewal. Monthly subscriptions renew automatically every month, while yearly subscriptions renew automatically every year. 				
		• Pay-per-use : a postpaid billing mode. It is suitable for scenarios where resources will be billed based on usage frequency and duration. You can provision or delete resources at any time.				
		For details, see Billing Modes.				
Cluster Name	cce-test	Name of the cluster to be created				
Enterprise Project	default	Enterprise projects facilitate project-level management and grouping of cloud resources and users. For more details, see Enterprise Management.				
		This parameter is displayed only for enterprise users who have enabled Enterprise Project Management.				
Cluster Version	The recommende d version, for example, v1.29	Select the latest commercial release for improved stability, reliability, new functionalities. CCE offers various versions of Kubernetes software.				
Cluster Scale	Nodes: 50	Configure the parameter as required. This parameter controls the maximum number of worker nodes that the cluster can manage. After the cluster is created, it can only be scaled out.				

Parameter	Example	Description
Master Nodes	3 Masters	Select the number of master nodes. The master nodes are automatically hosted by CCE and deployed with Kubernetes cluster management components such as kube- apiserver, kube-controller-manager, and kube- scheduler.
		• 3 Masters : Three master nodes will be created for high cluster availability.
		 Single: Only one master node will be created in your cluster.
		This parameter cannot be changed after the cluster is created.

Step 3 Configure network parameters.

Network Settings	
Cluster Network	
VPC (1)	wpczer (192/168.0016) → Q Cente VPC (2
	Not estable after creation. Select a VPC to provide COR blocks for the master and worker nodes in your cluster.
Note Subnet (3)	satisfies (so to solve)
	Available Surgeries Produces 201
IPv6 🕐	We to bald an P44P94 dawladak claster
Default Node Security	40 month 124 m010
Group (?)	
Container Network	
Network Model	VPC network Tunnel network
	Suitable for services that require high performance.
	under medicine. The relation is as a limited by the product with the tendors is assisted through turnel ecogosition to be the other the company turnel ecogositis the other the other the company turnel ecogosition
	Itse VPC ondry table quota performance.
	Notestable after creation Model framework used by the container network in the cluster.
Container CIDR Block	Maritaly Set Anto select Hear by sen CLR boxes?
	10 v . 0 . 0 / 15 v
	+
	Foll Paddresser reserved for each note: 128 🗸 How many Fols a node can create all most
	Not estable after greation Max. nodes supported by the current networking configuration. \$12
Service Network	
Catalina CIDD Black	
General Croff DIUK	
	Not editable after greation.Configure an P address range for Challer IP Services in your cluster.

Parameter	Example	Description
VPC	vpc-cce	Select a VPC for the cluster. If no VPC is available, click Create VPC to create one. After the VPC is created, click the refresh icon. For details about how to create a VPC, see Creating a VPC and Subnet .
Node Subnet	subnet-cce	Select a subnet. Nodes in the cluster are assigned with the IP addresses in the subnet.

Parameter	Example	Description
Network Model	VPC network	Select VPC network or Tunnel network . By default, the VPC network model is selected.
		For details about the differences between different container network models, see Container Network .
Container CIDR Block	10.0.0.0/16	Configure the CIDR block used by containers. It controls how many pods can run in the cluster.
Service CIDR Block	10.247.0.0/16	Configure the ClusterIP CIDR block for the cluster. It controls how many Services can be created in the cluster and cannot be changed after configuration.

Step 4 Click **Next: Select Add-on**. On the page displayed, select the add-ons to be installed during cluster creation.

This example only includes the mandatory add-ons that are automatically installed.



- **Step 5** Click **Next: Add-on Configuration**. There is no need to set up the add-ons that are installed by default.
- **Step 6** Click **Next: Confirm configuration**, confirm the resources on the page displayed, and click **Submit**.

Wait until the cluster is created. It takes about 5 to 10 minutes to create a cluster.

The created cluster will be displayed on the **Clusters** page, and there are zero nodes in it.

Figure 1-1 Cluster created

All Clusters (4)	CCE Standard Cluster (1) ⑦	CCE Turbo Cluster (1)	CCE Autopilot cluster (2)	NEW		
Export Q Search or filter	by keyword.					
	e-test O Running E Standard v1.29 Nodes: 50	Ave	0 / 0 allable/Total Nodes	 CPU Usage	 Memory Usage	Monitor Cukubecti Sheli Pay-per-use Created on Sep 26, 2024 10.24.28 GMT+08.00 Installed Add-ons 2
 No node in th 	he cluster. Create or accept nodes. Creat	e Node				
				End (1/1)		

----End

Step 3: Create a Node Pool and Nodes in the Cluster

- **Step 1** Log in to the CCE console and click the cluster name to access the cluster console.
- **Step 2** In the navigation pane, choose **Nodes**. On the **Node Pools** tab, click **Create Node Pool** in the upper right corner.
- Step 3 Configure the node pool parameters.

Only mandatory parameters are described in this example. You can keep the default values for most other parameters. For details about the configuration parameters, see **Creating a Node Pool**.

Configurations	Choose the specifications and OS for a cloud	server to run your containerized applications of	n.					
Node Type ③	Elastic Cloud Server (VM)	Elastic Cloud Server (physical machine)	BMS					
Specifications	vCPUs -Select-	V Memory -Select-	V Flavor Enter a flavo	or name. Q Use s	pot pricing flavor Recommende	d Specifications Selection		
	General computing-plus	General computing Memory-optimized	General computing-basic	GPU-accelerated Disk-in	tensive FlexusX	Kunpeng general computing-plus	Kunpeng memory-optimized	
	Kunpeng ultra-high I/O U	Itra-high I/O						
	Flavor 🖯	AZ 0 ⑦	vCPUs Memory	Assured/Maxim 0	Packets Per Sec 🖯 🧿	CPU 🖯	Pay-per-use price \varTheta	Yearly/Monthly Price \varTheta
	c7:xlarge.4	AZ1 AZ2 AZ3 AZ4	4 vCPUs 16 GIB	1.6 / 8.0 Gbil/s	800,000 pps	Intel Ice Lake	¥1.093/hour	¥524.80/month
	C7.2xlarge.2	AZ1 AZ2 AZ3 AZ4	8 vCPUs 16 GiB	3.0 / 15.0 Gbit/s	1,500,000 pps	Intel Ice Lake	¥1.713/hour	¥822.00/month
	C7.2xlarge.4	AZ1 AZ2 AZ3 AZ4	8 vCPUs 32 GIB	3.0 / 15.0 Gbit/s	1,500,000 pps	Intel Ice Lake	¥2.187/hour	¥1,049.60/month
	c7.3xlarge.2	AZ1 AZ2 AZ3 AZ4	12 vCPUs 24 GIB	5.0 / 17.0 Gbit/s	2,000,000 pps	Intel Ice Lake	¥2.569/hour	¥1,233.00/month
	c7.3xlarge.4	AZ1 AZ2 AZ3 AZ4	12 vCPUs 48 GiB	5.0 / 17.0 Gbit/s	2,000,000 pps	Intel Ice Lake	¥3.28/hour	¥1,574.40/month
	C7.4xlarge.2	AZ1 AZ2 AZ3 AZ4	16 vCPUs 32 GiB	6.0 / 20.0 Gbit/s	2,800,000 pps	Intel Ice Lake	¥3.425/hour	¥1,644.00/month
	c7.4xlarge.4	AZ1 AZ2 AZ3 AZ4	16 vCPUs 64 GIB	6.0 / 20.0 Gbit/s	2,800,000 pps	Intel Ice Lake	¥4.373/hour	¥2,099.20/month
	C7.6xlarge.2	AZ1 AZ2 AZ3 AZ4	24 vCPUs 48 GIB	9.0 / 25.0 Gbit/s	4,000,000 pps	Intel Ice Lake	¥5.138/hour	¥2,466.00/month
	· ··· ·							
	Selected Specifications							
	Nodes can only be added	from the selected specifications. You are advis	ed to select multiple node specifications.	Mutti-flavor Billing				
	Specifications		Pay-per-use price	Yearly/Monthly	Price AZ	0		Operation
	General computing-plus c7.xla	rge.2 4 vCPUs 8 GiB	¥0.856/hour	¥411.00/month	2	AZ1 🗹 AZ2 🗹 AZ3 🕻	AZ4	Delete
Container Engine	Recommend containerd Docker	r						
	We recommend using Containerd, whi	ch provides a better user experience and more	powerful features. Container Engine De	escription				
os 💿	Public image Private ima	96						
	G Huawei Cloud EulerOS 2	.0 EulerOS 2.9	🗘 Ubuntu 22.04	CentOS 7.6				

Parameter	Example	Description
Node Type	Elastic Cloud Server (VM)	Select a node type based on service requirements. Then, the available node flavors will be automatically displayed in the Specifications area for you to select.
Specifications	4 vCPUs 8Select a node flavor that best fits your seGiBneeds.	
		For optimal performance of the cluster components, you are advised to set up the node with a minimum of 4 vCPUs and 8 GiB of memory.

Parameter	Example	Description	
Container Engine	containerd	Select a container engine based on service requirements. For details about the differences between container engines, see Container Engines .	
OS	Huawei Cloud EulerOS 2.0	Select an OS for the node.	
Login Mode	A custom password	• Password : Enter a password for logging in to the node and confirm the password. The default username is root . Keep the password secure. If you forget the password, the system is unable to retrieve it.	
		 Key Pair: Select a key pair for logging to the node and select the check box to acknowledge that you have obtained the key file and without this file you will not be able to log in to the node. A key pair is used for identity authentication when you remotely log in to a node. If no key pair is available, click Create Key Pair to create one. For details, see Creating a Key Pair on the Management Console. 	

Step 4 Configure parameters in **Storage Settings** and **Network Settings**. In this example, you can keep the default values for the parameters. You only need to select I have confirmed that the security group rules have been correctly configured for nodes to communicate with each other. and click Next: Confirm.

Storage Settings	Configure storage resources for containers and applications on the node.
System Disk	General-purpose SSD (AZ3 AZ2 AZ4 AZ4) v - 50 + GB
	Expand v System Disk Encryption: Not encrypted
Data Disk	⊙ General-purpose SSD (AZ3 AZ2 AZ1 AZ4)
	Used by the container runtime and kubelet. Do not uninstall this disk. Otherwise, the node will become unavailable. How do I set data disk size? How do I allocate data disk space?
	Expand 🗸 Container Engine: Shared disk space Pod. All Write Mode: Linear Data Disk Encryption: Not encrypted
	Add
	You can add 15 more EVS data disks.
Network Settings	Configure networking resources for node and application communication.
Virtual Private Cloud	урс-ссе
Node subnet	Multiple subnet Single subnet (192, 168.0.0.24) (Subnet) V Q Available Subnet IP Addresses: 246
	If the single subnet IP resources associated with your node pool are tight, it is recommended that you configure multiple subnets for the node pool
	A If the default DNS server of the subnet is modified, ensure that the custom DNS server can resolve the CBS service domain name. Otherwise, the node cannot be created.
Node IP	Automate
Associate Security Group	Core-test-coe-node-r8mb7 [Default] X V Q Create Security Group [2]
	Configure security group rules for worker modes in your cluster. The rules will take effect on all worker nodes in the cluster. For additional security group configurations, go to the Security Groups page. The security group for master nodes is automatically created by CCE. View Default Security Group Rules (2) Not caldable after creation
	🕑 I have confirmed that the security group rules have been correctly configured for nodes to communicate with each other.

- **Step 5** Check the node specifications, read the instructions on the page, and click **Submit**.
- **Step 6** Locate the row containing the target node pool and click **Scaling**. There are zero nodes in the created node pool by default.

Node Pools Nodes	Quick Links Create	e Node Pool
Export Vew Events Operation Records 🗸 Quota (remaining/total): Cluster nodes (50150) ECS (9091 1,000) CPU(cores) (7,996 8,000)		
Q. Search or filter by keyword.		0 (¢
∨ cce-test-nodepool-80468 O Normal	(View Node) (Update) Scaling) (Auto Scaling) (More	e ~)
Node Type : Elastic Cloud Server (VM) Enterprise Project : default Total number of nodes (actual/expected): 0 / 0 CPU Usage/Request: -/ Memory Usage/Request: -/- 🕥		

Step 7 Set the number of nodes to be added to **2**, which means two more nodes will be created in the node pool.

Node Pool Scaling	
Node Pool Name	cce-test-nodepool-80468
Current Nodes	0
Scaling	Add node Reduce node
Resized Flavor	c7 xlarge 2 AZ1 V
	Use the selected flavor to expand the node capacity. If the flavor resources are insufficient, the capacity expansion will fail.
Billing Mode	Pay-per-use Yearly/Monthly
Nodes to Be Added	- 2 +
	Max. nodes that can be created at a time: $\underline{50}$

Step 8 Wait until the nodes are created. It takes about 5 to 10 minutes to complete the node creation.

^ cce-test-indepool-80488 ○ Normal View Node Update Scaling Auto Scaling (More ∨							
Node Type : Elastic Cloud Server (VM)	Enterprise Project : default	Total number of nodes (actual/e	expected): 2/2 CPU Usage/Request: /	Memory Usage/Request: /	0		
Specifications	AZ	Status	Actual/Desired Nodes	Number of yearly/month	On-Demand Nodes	Auto Scaling	Operation
c7.xlarge.2 4 vCPUs 8 GiB	AZ1	O Normal	2/2	0	0	Close	View Node Scaling

----End

Step 4: Create a Workload and Access It

You can deploy a workload using the console or **kubectl**. This section uses an NGINX image as an example.

Using the CCE Console

- **Step 1** In the navigation pane, choose **Workloads**. Then, click **Create Workload** in the upper right corner.
- **Step 2** Configure the basic information about the workload.

In this example, configure the following parameters and keep the default values for other parameters. (For details about the configuration parameters, see **Creating a Deployment**.)

Parameter	Example	Description
Workload Type	Deployment	In Kubernetes clusters, a workload refers to an application that is currently running. There are various built-in workloads available, each designed for different functions and application scenarios. For details about workload types, see Workloads .
Workload Name	nginx	Enter a workload name.
Namespace	default	In a Kubernetes cluster, a namespace is a conceptual grouping of resources or objects. Each namespace provides isolation for data from other namespaces.
		After a cluster is created, a namespace named default is generated by default. You can directly use the namespace.
Pods	1	Enter the number of pods.

Step 3 Configure container parameters.

Configure the following parameters and keep the default values for other parameters.

Container Settings					
Container Information	Container - 1				+ Add Container
	Basic Info	Container	container-1	Pull Policy	Always 🕐
	Health Check	Name Image Name	nginx Replace Image	Image Tag	latest ~
	Environment Variables Data	CPU Quota	Request 0.25 cores; Limit 0.25 cores (2)	Memory	Request 512.00 MiB; Limit 512.00 MiB ①
	Storage Security Context	GPU Quota	This function is unavailable because add-on GPU is not installed. Install now	NPU Quota	This function is unavailable because add-on NPU is not installed. Install now
	Logging	Privileged	0 0	Init	● ◎
Image Access Credential	default-secret ×		C Grante Secret		

image Access Credential	deladit-secret A	×.	Greate Secret

Parameter	Example	Description
Image Name	The nginx image of the latest version	Click Select Image . In the displayed dialog box, click the Open Source Images tab and select a public image.

Parameter	Example	Description
CPU Quota	Request: 0.25 cores; Limit: 0.25 cores	• Request : Enter the number of CPUs pre- allocated to the container. The default value is 0.25 cores.
		• Limit: Enter the maximum number of CPUs that can be used by the container. The default value is the same as that of the resource request. If the resource limit is greater than the resource request, it indicates that the pre-allocated resource limit can be temporarily exceeded in burst scenarios.
		For details, see Configuring Container Specifications.
Memory Quota	Request: 512 MiB; Limit: 512 MiB	• Request : Enter the number of memory resources pre-allocated to the container. The default value is 512 MiB.
		• Limit: Enter the maximum number of memory resources that can be used by the container. The default value is the same as that of the resource request. If the resource limit is greater than the resource request, it indicates that the pre-allocated resource limit can be temporarily exceeded in burst scenarios.
		For details, see Configuring Container Specifications .

Step 4 Configure access settings.

In the **Service Settings** area, click the plus sign (+) and create a Service for accessing the workload from external networks. This example shows how to create a LoadBalancer Service. You can configure the following parameters in the window that slides out from the right.

Service Name	nginx						
Service Type	ClusterIP Expose services throug the internal IP of the cluster, which can only be accessed within the cluster	NodePort Expose services via IP and static port (NodePort) on each node	DNAT Expose cluster node access type services through NAT gateway, support multiple nodes to share and use elastic IP				
	1 It is recommended to	o select the load balancing access type for ou	ut-of-cluster access				
Service Affinity	Cluster-level N	lode-level 💿					
Load Balancer	Dedic V Netw	vork (TCP/UDP) V Auto c	~				
	Create a load balancing in current resource is deleter	nstance based on the following configurations d.	. The automatically created instance	will be automatically deleted when the			
	Automatically created load	b balancers are pay-per-use.					
	Instance Name	specify one or retain to the random default.					
	Enterprise Project	default	✓ Create Enterprise Project [2] ③				
	AZ	$AZ1 \times$	~				
	Frontend Subnet	cci-subnet-xoimk5 (192.168.32.0/19)	View Subnet 🖒				
	Backend Subnet	Backend Subnet Subnet of the load balancer					
	Network Specifications	Elastic Fixed ⑦ A single AZ instance supports a maximum o 10,000,000 Mbit/s bandwidth. The instance	f 400,000 new connections, 20,000,0 performance increases with the numb	00 concurrent connections, and er of AZs.			
	EIP	Do not use Auto c	reate ⑦				
	Line	Dynamic BGP Static	BGP				

Parameter	Example	Description
Service Name	nginx	Enter a Service name.
Service Type	LoadBalancer	Select a Service type, which refers to the Service access mode. For details about the differences between Service types, see Service .
Load Balancer	 Dedicated AZ: at least one AZ, for example, AZ1 EID: Auto 	Select Use existing if there is one. If no load balancer is available, select Auto create to create one and bind an EIP to it. For details about the parameters, see Creating a LoadBalancer Service .
	 EIP: Auto create Keep the default values for other parameters. 	

Create Service

Parameter	Example	Description
Ports	 Protocol: TCP 	• Protocol : Select a protocol for the load balancer listener.
	 Container Port: 80 Service Port: 8080 	• Container Port : Enter the listening port of the containerized application. The value must be the same as the listening port provided by the application for external systems. If the nginx image is used, set this parameter to 80 .
		• Service Port: Enter a custom port. Load balancer will use this port to create a listener and provide an entry for external traffic. You can customize the port for external access.

Step 5 Click Create Workload.

Wait until the workload is created. The created workload will be displayed on the **Deployments** tab.

Figure 1-2 Workload created

Deployments	StatefulSets	DaemonSets	Jobs	Cron Jobs	Pods				Quick Links Create from YAML	Create Workload
Deloto	Batch Redeploy	y Export ~	\supset							
Q. Select a	a property or enter a ke	yword.	Statue		Ports (Normal/All)	Namasnara 🖨	Created A	Imane Name 🖨	Operation	00
	Gau Haine O		Dupping			defeult	2 days app	iniage realite 🤝	Meeter Version	Lineards Mars of
			U Running		1/11 1/2	Uerduit	2 08/5 800	er nginx latest	NOTION VIEW LO	y opyrade more v
Total Records	:1									10 ~ (1 >

Step 6 Obtain the external access address of Nginx.

Click the name of the **nginx** workload to go to its details page. On the page displayed, click the **Access Mode** tab, view the IP address of nginx. The public IP address is the external access address.

Figure 1-3 Obtaining the external access address

< Back to Workload List						FAQs Monitor View	Log Upgrade More ~
📩 nginx 🗇							
Workload Name n	iginx			Namespace	default		
Status	Running			Greated	2 days ago		
Pods (Normal/All) 1	1.1. 2			Upgrade	Rolling upgrade		
Container Runtime n	unC						
Description -							
Pods Access Mode	Containers Auto Scaling	Scheduling Policies	Change History E	vents APM Settings			
Services Create Service	Doloto Export V	Quotas (Remaining/Total):	Namo ID f4d1cc0c-e132	-43e7-994c-8a3aa41bee1f 🗗			
Q. Select a property or en	ter a keyword.		Public IP	ð'			Q (0)
Service 🖯	Selector Θ	Namespace 🖯	Type Dedicated Status O Running		liner Por	rt/Proto 🖯 Created 🖯	Operation
o nginx-sdfr	epp nginx version v1	default	• cce-managed-lutt	(Load Ba	80 -> 80 / TCP	10 seconds ago	Manage Pod. View Events. More $$

Step 7 In the address box of a browser, enter {External access address:Service port} to access the workload. The value of {Service port} is the same as the service port specified in Step 4. In this example, the value is 8080.

Figure 1-4 Accessing nginx

$\leftrightarrow \rightarrow \mathbf{C}$	• ☆
Welcome to nginx!	
If you see this page, the nginx web server is successfully installed and working. Further configuration is required.	
For online documentation and support please refer to <u>nginx.org</u> . Commercial support is available at <u>nginx.com</u> .	
Thank you for using nginx.	

----End

Using kubectl

NOTICE

If you use kubectl to access the cluster, prepare an ECS **that has been bound with** an EIP in the same VPC as the cluster.

- **Step 1** Log in to the target ECS. For details, see **Logging In to a Linux ECS**.
- **Step 2** Install kubectl on the ECS.

You can check whether kubectl has been installed by running **kubectl version**. If kubectl has been installed, you can skip this step.

The Linux environment is used as an example to describe how to install and configure kubectl. For more installation methods, see **kubectl**.

1. Download kubectl. cd /home curl -LO https://dl.k8s.io/release/*{v1.29.0}*/bin/linux/amd64/kubectl

{v1.29.0} specifies the version. You can replace it as required.

- 2. Install kubectl. chmod +x kubectl mv -f kubectl /usr/local/bin
- Step 3 Configure a credential for kubectl to access the Kubernetes cluster.
 - 1. Log in to the **CCE console** and click the cluster name to access the cluster console. Choose **Overview** in the navigation pane.
 - 2. On the cluster overview page, locate the **Connection Info** area. Click **Configure** next to **kubectl** and view the kubectl connection information.
 - 3. In the window that slides out from the right, locate the **Download the kubeconfig file.** area, select **Intranet access** for **Current data**, and download the corresponding configuration file.
 - 4. Log in to the VM where the kubectl client has been installed and copy and paste the configuration file (for example, **kubeconfig.yaml**) downloaded in the previous step to the **/home** directory.
 - 5. Save the kubectl authentication file to the configuration file in the **\$HOME/.kube** directory.

cd /home mkdir -p \$HOME/.kube mv -f *kubeconfig.yaml* \$HOME/.kube/config

6. Run the kubectl command to see whether the cluster can be accessed.

For example, to view the cluster information, run the following command: kubectl cluster-info

Information similar to the following is displayed:

Kubernetes master is running at https://*.*.**:5443 CoreDNS is running at https://*.*.*:5443/api/v1/namespaces/kube-system/services/coredns:dns/proxy To further debug and diagnose cluster problems, use 'kubectl cluster-info dump'.

Step 4 Create a YAML file named **nginx-deployment.yaml**. **nginx-deployment.yaml** is an example file name. You can rename it as required.

vi nginx-deployment.yaml

The file content is as follows:

apiVersion: apps/v1 kind: Deployment metadata: name: nginx spec: replicas: 1 selector: matchLabels: app: nginx template: metadata: labels: app: nginx spec: containers: - image: nginx:alpine name: nainx imagePullSecrets: - name: default-secret

Step 5 Run the following command to deploy the workload:

kubectl create -f nginx-deployment.yaml

If information similar to the following is displayed, the workload is being created:

deployment "nginx" created

Step 6 Run the following command to check the workload status: kubectl get deployment

If information similar to the following is displayed, the workload has been created:

NAME READY UP-TO-DATE AVAILABLE AGE nginx 1/1 1 1 4m5s

The parameters in the command output are described as follows:

- NAME: specifies the name of a workload.
- **READY**: indicates the number of available pods/expected pods for the workload.
- **UP-TO-DATE**: specifies the number of pods that have been updated for the workload.
- **AVAILABLE**: specifies the number of pods available for the workload.
- **AGE**: specifies how long the workload has run.

Step 7 Create a YAML file named nginx-elb-svc.yaml and change the value of selector to that of matchLabels (app: nginx in this example) in the nginx-deployment.yaml file to associate the Service with the backend application.

vi nginx-elb-svc.yaml

For details about the parameters in the following example, see Using kubectl to Create a Service (Automatically Creating a Load Balancer).

apiVersion: v1
kind: Service
metadata:
annotations:
kubernetes.io/elb.class: union
kubernetes.io/elb.autocreate:
'{
"type": "public",
"bandwidth_name": "cce-bandwidth",
"bandwidth_chargemode": "bandwidth",
"bandwidth_size": 5,
"bandwidth_sharetype": "PER",
"eip_type": "5_bgp"
}'
labels:
app: nginx
name: nginx
spec:
ports:
- name: service0
port: 8080
protocol: TCP
targetPort: 80
selector:
app: nginx
type: LoadBalancer

Step 8 Run the following command to create the Service:

kubectl create -f nginx-elb-svc.yaml

If information similar to the following is displayed, the Service has been created:

service/nginx created

Step 9 Run the following command to check the Service: kubectl get svc

If information similar to the following is displayed, the access type has been configured, and the workload is accessible:

 NAME
 TYPE
 CLUSTER-IP
 EXTERNAL-IP
 PORT(S)
 AGE

 kubernetes
 ClusterIP
 10.247.0.1
 <none>
 443/TCP
 3d

 nginx
 LoadBalancer
 10.247.130.196
 .****
 8080:31540/TCP
 51s

Step 10 Enter the URL (for example, ****.**.8080**) in the address box of a browser. ****.**.**** specifies the EIP of the load balancer, and **8080** indicates the access port. Figure 1-5 Accessing nginx using the LoadBalancer Service

Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to <u>nginx.org</u>. Commercial support is available at <u>nginx.com</u>.

Thank you for using nginx.

----End

Follow-up Operations: Releasing Resources

To avoid additional charges, make sure to release resources promptly if you no longer require the cluster. For details, see **Deleting a Cluster**.

2 Deploying a WordPress StatefulSet in a CCE Cluster

StatefulSets are a specific type of workload in Kubernetes that are designed to manage stateful applications. Unlike Deployments, StatefulSets are ideal for applications that require data consistency and durability. Each application instance has its own unique identifier and must be deployed and scaled in a specific sequence. Examples of stateful applications include databases (like MySQL) and message queues (such as Kafka). This section uses the WordPress blogging platform and a MySQL database as an example to describe how to deploy a StatefulSet in a CCE cluster.

WordPress started as a blogging platform using PHP and MySQL, but it has evolved into a complete content management system. You can use a CCE cluster to quickly set up your own blog. For more information about WordPress, see the WordPress official website.

WordPress and a database (a MySQL database in this example) are often used together, with WordPress managing content and the database storing website data. In a containerized deployment, WordPress and MySQL typically run in separate containers. WordPress accesses MySQL through a Service.



Procedure

Step	Description
Preparations	Register a Huawei account and top up the account.

Step	Description
Step 1: Enable CCE for the First Time and Perform Authorization	Obtain the required permissions for your account when you use the CCE service in the current region for the first time.
Step 2: Create a Cluster	Create a CCE cluster to provide Kubernetes services.
Step 3: Create a Node Pool and Nodes in the Cluster	Create a node in the cluster to run your containerized applications.
Step 4: Deploy MySQL	Create a MySQL workload in the cluster and create a ClusterIP Service for WordPress access.
Step 5: Deploy WordPress	Create a WordPress workload in the cluster and create a LoadBalancer Service for the workload for Internet access.
Step 6: Access WordPress	Access the WordPress website from the Internet to start your blog.
Follow-up Operations: Releasing Resources	To avoid additional charges, delete the cluster resources promptly if you no longer require them after practice.

Preparations

 Before starting, register a Huawei account and complete real-name authentication. For details, see Signing up for a HUAWEI ID and Enabling Huawei Cloud Services and Getting Authenticated.

Step 1: Enable CCE for the First Time and Perform Authorization

CCE works closely with multiple cloud services to support computing, storage, networking, and monitoring functions. When you log in to the CCE console for the first time, CCE automatically requests permissions to access those cloud services in the region where you run your applications. If you have been authorized in the current region, skip this step.

- **Step 1** Log in to the **CCE console** using your HUAWEI ID.
- **Step 2** Click **Step 2** in the upper left corner on the displayed page and select a region.
- Step 3 When you log in to the CCE console in a region for the first time, wait for the Authorization Statement dialog box to appear, carefully read the statement, and click OK.

After you agree to delegate the permissions, CCE creates an agency named **cce_admin_trust** in IAM to perform operations on other cloud resources and grants it the Tenant Administrator permissions. Tenant Administrator has the permissions on all cloud services except IAM. The permissions are used to call the cloud services on which CCE depends. The delegation takes effect only in the

current region. You can go to the IAM console, choose **Agencies**, and click **cce_admin_trust** to view the delegation records of each region. For details, see **Account Delegation**.

NOTE

CCE may fail to run as expected if the Tenant Administrator permissions are not assigned. Therefore, do not delete or modify the **cce_admin_trust** agency when using CCE.

----End

Step 2: Create a Cluster

Step 1 Log in to the **CCE console**.

- If you have no clusters, click **Buy Cluster** on the wizard page.
- If you have CCE clusters, choose **Clusters** in the navigation pane, click **Buy Cluster** in the upper right corner.
- **Step 2** Configure basic cluster parameters.

Only mandatory parameters are described in this example. You can keep the default values for most other parameters. For details about the parameter configurations, see **Buying a CCE Standard/Turbo Cluster**.

Basic Settings	
Туре	CCE Standard Cluster (CCE cluster originally) Materinoles tooles Materinoles tooles Materinoles tooles Materinoles tooles Materinoles tooles Materinoles tooles Materinoles tooles Materinoles tooles Materinoles tooles Materinoles Mat
Billing Mode	Yearly/Monthy Payperace
Cluster Name	context Image: Context of the same account.
Enterprise Project ()	(default →) Q. Create Enterprise Project (2)
Cluster Version	Recommend v1.29 Version of Ribbornetis to sole for the cluster. Version Relate
Cluster Scale	Nodes 50 Nodes 100 Nodes 200 Nodes 200
	Select the maximum number of nodes had can be managed by the duther. Mater node specializations are determined status of an the cluster's context, node specializations can be modeling, but nodes can only bu spaced for higher specializations. While Generally, the cluster is not market the smaller status number of nodes the status cluster is but duties that is not allow that cluster is contact, node specializations can be modeling, but nodes can only bu spaced for higher specializations. While Generally, the cluster is not market the smaller status cluster is allowed to include a status of the status market market the cluster is not exclusive and estimated access to the cluster later busines during by reforming by referring to the to proverting cluster overbad. Beef Practices
Master Nodes	11dam Single Not offste der orston CCI will omer hern nache frei musich kaller ihrem nache frei musich her halter in einstellte Frei her halter ihrem nache frei musich her halter ihrem nache frei halter ihrem halt

Parameter	Example	Description
Туре	CCE Standard Cluster	CCE allows you to create various types of clusters for diverse needs. It provides highly reliable, secure, business-class container services.
		You can select CCE Standard Cluster or CCE Turbo Cluster as required.
		• CCE standard clusters provide highly reliable, secure, business-class containers.
		• CCE Turbo clusters use high-performance cloud native networks and provide cloud native hybrid scheduling. Such clusters have improved resource utilization and can be used in more scenarios.
		For details about cluster types, see Comparison Between Cluster Types.
Billing Mode	Pay-per-use	 Select a billing mode for the cluster. Yearly/Monthly: a prepaid billing mode. Resources will be billed based on the service duration. This cost-effective mode is ideal when the duration of resource usage is predictable. If you choose this billing mode, you will need to set the desired duration and decide whether to enable automatic subscription renewal. Monthly subscriptions renew automatically every month, while yearly subscriptions renew automatically every year. Pay-per-use: a postpaid billing mode. It is suitable for scenarios where resources will be billed based on usage frequency and duration. You can provision or delete resources at any time. For details, see Billing Modes.
Cluster Name	cce-test	Name of the cluster to be created
Enterprise Project	default	Enterprise projects facilitate project-level management and grouping of cloud resources and users. For more details, see Enterprise Management.
		This parameter is displayed only for enterprise users who have enabled Enterprise Project Management.

Parameter	Example	Description
Cluster Version	The recommende d version, for example, v1.29	Select the latest commercial release for improved stability, reliability, new functionalities. CCE offers various versions of Kubernetes software.
Cluster Scale	Nodes: 50	Configure the parameter as required. This parameter controls the maximum number of worker nodes that the cluster can manage. After the cluster is created, it can only be scaled out.
Master Nodes	3 Masters	Select the number of master nodes. The master nodes are automatically hosted by CCE and deployed with Kubernetes cluster management components such as kube- apiserver, kube-controller-manager, and kube- scheduler.
		• 3 Masters : Three master nodes will be created for high cluster availability.
		• Single : Only one master node will be created in your cluster.
		This parameter cannot be changed after the cluster is created.

Step 3 Configure network parameters.



Parameter	Example	Description
VPC	vpc-cce	Select a VPC for the cluster. If no VPC is available, click Create VPC to create one. After the VPC is created, click the refresh icon. For details about how to create a VPC, see Creating a VPC and Subnet .
Node Subnet	subnet-cce	Select a subnet. Nodes in the cluster are assigned with the IP addresses in the subnet.
Network Model	VPC network	Select VPC network or Tunnel network . By default, the VPC network model is selected. For details about the differences between different container network models, see Container Network .
Container CIDR Block	10.0.0.0/16	Configure the CIDR block used by containers. It controls how many pods can run in the cluster.
Service CIDR Block	10.247.0.0/16	Configure the ClusterIP CIDR block for the cluster. It controls how many Services can be created in the cluster and cannot be changed after configuration.

Step 4 Click **Next: Select Add-on**. On the page displayed, select the add-ons to be installed during cluster creation.

This example only includes the mandatory add-ons that are automatically installed.

	Cluster Configuration Select Add-on	Add-on Configuration	
Basic capabilities Purctions for proper cluster running			
CCE Container Network (Yangtse CNI) Default instalation	CCE Container Storage (Everest) Default Installation	CoreDNS Default installation	NodeLocal DNSCache Featured open source
Basic cluster add-on, which provides network connectivity, Internet access, and security locitation for pods in a cluster	Everest is a cloud native container storage system based on CSL used to support cloud storage services for Kubernetes.	CoreDNS is a DNS server that chains plugins and provides Kuberneties DNS Services.	NodeLocal DNSCache improves Cluster DNS performance by running a dns caching agent on cluster nodes as a DaemonSet.
@ View Details	@ View Details	@ View Details	@ View Details
Volcano Scheduler	CCE Cloud Bursting Engine for CCI Preterine Recommendation Externe Electory Servertiess		
Volcano is a batch system built on Kubernetes. It provides a suite of mechanisms currently missing from Kubernetes that are commonly required by many classes of	An add-on that schedules CCE pods onto CCI dusters		
(2 View Details	@ View Details		

- **Step 5** Click **Next: Add-on Configuration**. There is no need to set up the add-ons that are installed by default.
- **Step 6** Click **Next: Confirm configuration**, confirm the resources on the page displayed, and click **Submit**.

Wait until the cluster is created. It takes about 5 to 10 minutes to create a cluster.

The created cluster will be displayed on the **Clusters** page, and there are zero nodes in it.

Figure 2-1 Cluster created

All Clusters (4) CCE Standard Cluster (1) ③	CCE Turbo Cluster (1) CCE Autopilot clust	er (2) NEW		
Export				
Q Search or filter by keyword.				(Q)
CCE Standard v1.29 Nodes: 50	0 / 0 Available/Total Nodes	 CPU Usage	 Memory Usage	Monitor () Kubecti Shell ··· Pay per use Created on Sep 26, 2024 10 24 28 GMT+08 00 Installed Add-ons 2
No node in the cluster. Create or accept nodes. Create No	de			
		End (1/1)		

----End

Step 3: Create a Node Pool and Nodes in the Cluster

- **Step 1** Log in to the CCE console and click the cluster name to access the cluster console.
- **Step 2** In the navigation pane, choose **Nodes**. On the **Node Pools** tab, click **Create Node Pool** in the upper right corner.
- **Step 3** Configure the node pool parameters.

Only mandatory parameters are described in this example. You can keep the default values for most other parameters. For details about the configuration parameters, see **Creating a Node Pool**.

Configurations Choo	se the specifications and OS for a cloud se	erver to run your containerized applications	on.					
Node Type ③	Elastic Cloud Server (VM)	Elastic Cloud Server (physical machine)	BMS					
Specifications	vCPUsSelect	✓ Memory -Select	V Flavor Enter a flav	or name. Q Us	e spot pricing flavor Recomme	ended Specifications Selection		
	General computing-plus G	eneral computing Memory-optimiz	ed General computing-basic	GPU-accelerated Dist	Intensive FlexusX	Kunpeng general computing-plus	Kunpeng memory-optimize	ed
	Kunpeng ultra-high I/O Ultr	ra-high I/O						
	Flavor 🖯	AZ 🖯 🕤	vCPUs Memory 😣	Assured/Maxim Θ (?	Packets Per Sec 🖯 🤇	⊙ CPU ⊖	Pay-per-use price	Yearly/Monthly Price
	c7.xlarge.4	AZ1 AZ2 AZ3 AZ4	4 vCPUs 16 GiB	1.6 / 8.0 Gbit/s	800,000 pps	Intel Ice Lake	¥1.093/hour	¥524.80/month
	c7.2xlarge.2	AZ1 AZ2 AZ3 AZ4	8 vCPUs 16 GiB	3.0 / 15.0 Gbit/s	1,500,000 pps	Intel Ice Lake	¥1.713/hour	¥822.00/month
	c7.2xlarge.4	AZ1 AZ2 AZ3 AZ4	8 vCPUs 32 GiB	3.0 / 15.0 Gbit/s	1,500,000 pps	Intel Ice Lake	¥2.187/hour	¥1,049.60/month
	c7.3xlarge.2	AZ1 AZ2 AZ3 AZ4	12 vCPUs 24 GIB	5.0 / 17.0 Gbit/s	2,000,000 pps	Intel Ice Lake	¥2.569/hour	¥1,233.00/month
	c7.3xlarge.4	AZ1 AZ2 AZ3 AZ4	12 vCPUs 48 GiB	5.0 / 17.0 Gbit/s	2,000,000 pps	Intel Ice Lake	¥3.28/hour	¥1,574.40/month
	c7.4xlarge.2	AZ1 AZ2 AZ3 AZ4	16 vCPUs 32 GiB	6.0 / 20.0 Gbit/s	2,800,000 pps	Intel Ice Lake	¥3.425/hour	¥1,644.00/month
	c7.4xdarge.4	AZ1 AZ2 AZ3 AZ4	16 vCPUs 64 GIB	6.0 / 20.0 Gbit/s	2,800,000 pps	Intel Ice Lake	¥4.373/hour	¥2,099.20/month
	c7.6xlarge.2	AZ1 AZ2 AZ3 AZ4	24 vCPUs 48 GIB	9.0 / 25.0 Gbit/s	4,000,000 pps	Intel Ice Lake	¥5.138/hour	¥2,466.00/month
	- ••• ·							
	Selected Specifications							
	Nodes can only be added from	om the selected specifications. You are ad	vised to select multiple node specifications.	Multi-flavor Billing				
	Specifications		Pay-per-use price	Yearly/Month	ly Price	AZ 💮		Operation
	General computing-plus c7.xtarg	ge.2 4 vCPUs 8 GIB	¥0.856/hour	¥411.00/month		🖌 AZ1 💟 AZ2 💟 AZ3	✓ AZ4	Delete
Container Engine	Recommend containerd Docker	h provides a better user experience and m	ve cowerful features. Container Engine D	escription				
os 💿	Public image Private image							
	G Huawei Cloud EulerOS 2.0	Same EulerOS 2.9	🗘 Ubuntu 22.04	CentOS 7.6				

Parameter	Example	Description
Node Type	Elastic Cloud Server (VM)	Select a node type based on service requirements. Then, the available node flavors will be automatically displayed in the Specifications area for you to select.

Parameter	Example	Description
Specifications	4 vCPUs 8 GiB	Select a node flavor that best fits your service needs. For optimal performance of the cluster components, you are advised to set up the node with a minimum of 4 vCPUs and 8 GiB of memory.
Container Engine	containerd	Select a container engine based on service requirements. For details about the differences between container engines, see Container Engines .
OS	Huawei Cloud EulerOS 2.0	Select an OS for the node.
Login Mode	A custom password	 Password: Enter a password for logging in to the node and confirm the password. The default username is root. Keep the password secure. If you forget the password, the system is unable to retrieve it. Key Pair: Select a key pair for logging to the node and select the check box to acknowledge that you have obtained the key file and without this file you will not be able to log in to the node. A key pair is used for identity authentication when you remotely log in to a node. If no key pair is available, click Create Key Pair to create one. For details, see Creating a Key Pair on the Management Console.

Step 4 Configure parameters in Storage Settings and Network Settings. In this example, you can keep the default values for the parameters. You only need to select I have confirmed that the security group rules have been correctly configured for nodes to communicate with each other. and click Next: Confirm.

Storage Settings	onfigure storage resources for containers and applications on the node.					
System Disk	General-purpose SSD (AZ3 AZ2 AZ1 AZ4) v GB					
	Expand v System Disk Encryption Not encrypted					
Data Disk	General-purpose SSD (AZ3 AZ2 AZ1 AZ4) v - 100 + General-purpose SSD (AZ3 AZ2 AZ1 AZ4) v - 100 + General-purpose Add - Detail Data Disk Used by the container runtime and kabelet. Do not uninstall this disk. Otherwise, the node will become unarvailable. How do I set data disk see? How do I allocate data disk space? Provid V intervented					
	Add You can add 15 more EVS data disks.					
Network Settings	ionfigure networking resources for node and application communication.					
Virtual Private Cloud	Abcos					
Node subnet	Multiple subnet Stright subnet subnet/cce (192, 188,0.024) (Subnet) V Q Available Subnet IP Addresses: 246 If the single subnet IP resources associated with your node pool are tight, it is recommended that you configure multiple subnets for the node pool File F					
	A If the default DNS server of the subnet is modified, ensure that the custom DNS server can resolve the OBS service domain name. Otherwise, the node cannot be created.					
Node IP	Adamatic					
Associate Security Group	cce-test-cce-node-r8mb7 Default X v Q Create Security Group (2					
Associate Security Group	Cochetes-cose-nde-r8mb7 Default X v Cochetes-cose-nde-r8mb7 Cochetes-r8mb7 Cochetes-r8m					

- **Step 5** Check the node specifications, read the instructions on the page, and click **Submit**.
- **Step 6** Locate the row containing the target node pool and click **Scaling**. There are zero nodes in the created node pool by default.

Node Pools Nodes	Quick Links	Create Node Pool
Export Vever Events Operation Records 🗸 Autor (remaining total): Ouster moles (50:50) ECS (9991,000) (74/(cores) (7,9968,000)		
Q. Search or filter by keyword.		90
✓ cce-test-nodepool-80468 ○ Normal	(View Node) Update Scaling Auto Scaling) More V
Node Type : Elastic Cloud Server (VM) Enterprise Project : default Total number of nodes (actual/expected): 0/0 CPU Usage/Request: / Memory Usage/Request: / 🕥		

Step 7 Set the number of nodes to be added to **2**, which means two more nodes will be created in the node pool.

Node Pool Scaling	
Node Pool Name	cce-lest-nodepool-80468
Current Nodes	0
Scaling	Add node Reduce node
Resized Flavor	C7.xlarge 2 AZ1 V
	Use the selected flavor to expand the node capacity. If the flavor resources are insufficient, the capacity expansion will fail.
Billing Mode	Pay-per-use Yearly/Monthly
Nodes to Be Added	- 2 +
	Max. nodes that can be created at a time: 50

Step 8 Wait until the nodes are created. It takes about 5 to 10 minutes to complete the node creation.

∧ cce-test-nodepool-80468 ○ No	mal				(View No:	de Update Scaling	g Auto Scaling More V
Node Type : Elastic Cloud Server (VM) Enterprise Project : default	Total number of nodes (actual/	expected): 2/2 CPU Usage/Request: /	Memory Usage/Request: /	0		
Specifications	AZ	Status	Actual/Desired Nodes	Number of yearly/month	On-Demand Nodes	Auto Scaling	Operation
c7.xlarge.2 4 vCPUs 8 GiB	AZ1	O Normal	2/2	0	0	Close	View Node Scaling

----End

Step 4: Deploy MySQL

You can deploy a MySQL workload in different ways.

Using the CCE Console

- **Step 1** Log in to the **CCE console**.
- Step 2 Click the name of the target cluster to access the cluster console.
- **Step 3** In the navigation pane, choose **Workloads**. Then, click **Create Workload** in the upper right corner.
- **Step 4** Configure the basic information about the workload.

In this example, configure the following parameters and keep the default values for other parameters. For details about the configuration parameters, see **Creating a StatefulSet**.

Basic Info					
Workload Type	Deployment	StatefulSet	DaemonSet	Job	Cron Job
	A Switching the worklos	ad type will require you to co	onfigure workload paramete	ers again.	
Workload Name	mysql				
Namespace	default		✓ Q Create Nar	nespace	
Pods	- 1 +				

Parameter	Example	Description
Workload Type	StatefulSet	In Kubernetes clusters, a workload refers to an application that is currently running. There are various built-in workloads available, each designed for different functions and application scenarios. For details about workload types, see Workloads .
Workload Name	mysql	Enter a workload name.
Namespace	default	In a Kubernetes cluster, a namespace is a conceptual grouping of resources or objects. Each namespace provides isolation for data from other namespaces.
		After a cluster is created, a namespace named default is generated by default. You can directly use the namespace.

Parameter	Example	Description
Pods	1	Enter the number of pods.

Step 5 Configure the basic information about the container.

Container Settings				
Container Information	Container - 1			+ Add Container
	Basic Info Lifecycle Heath Check Erwironment Variables Data Storage Security Context Legging	Container Container Index Texp Register Image CPU Davis Register CPU	Pull Policy Image Tag Memory Quota NPU Quota Init Container	Aways ()
	Logging	Container	Container	

Parameter	Example	Description
Image Name	A mysql image of version 8.0	In the Container Settings area, click Basic Info and click Select Image . In the dialog box displayed, select Open Source Images , search for mysql , select the mysql image, and select 8.0 from the drop-down list for Image Tag .
CPU Quota	Request: 0.25 cores; Limit: 0.25 cores	• Request : Enter the number of CPUs pre- allocated to the container. The default value is 0.25 cores.
		 Limit: Enter the maximum number of CPUs that can be used by the container. The default value is the same as that of the resource request. If the resource limit is greater than the resource request, it indicates that the pre-allocated resource limit can be temporarily exceeded in burst scenarios. For details, see Configuring Container Specifications.
Memory Quota	Request: 512 MiB; Limit: 512 MiB	• Request : Enter the number of memory resources pre-allocated to the container. The default value is 512 MiB.
		• Limit: Enter the maximum number of memory resources that can be used by the container. The default value is the same as that of the resource request. If the resource limit is greater than the resource request, it indicates that the pre-allocated resource limit can be temporarily exceeded in burst scenarios.
		For details, see Configuring Container Specifications.

Step 6 Click **Environment Variables** and add four environment variables. For details about the environment variables supported by MySQL, see **MySQL**.

Container Settings					
Container Information	Container - 1				+ Add Container
	Basic Info Lifecycle	Environment variables affect the way a running Adding a Variable Editing Custom Varia	g container will behave. You can modify created variables as required	after deploying the workload. How Do I Add Environment Variables?	
	Check	Туре	Variable Name	Variable Value/Reference	Operation
	Variables	Custom v	MYSQL_ROOT_PASSWORD	(al ajia)p	Delete
	Data Storage	Custom ~	MYSQL_DATABASE	database	Delete
	Security Context	Custom V	MYSQL_USER	db_user	Delete
	roddaid	Custom ~	MYSQL_PASSWORD	Instrum?	Delete

Environment Variable	Example	Description
MYSQL_ROOT _PASSWORD	A custom password	Password of the root user of the MySQL database, which can be customized
MYSQL_DATA BASE	database	Name of the database to be created when the image is started, which can be customized
MYSQL_USER	db_user	Database username, which can be customized
MYSQL_PASS WORD	A custom password	Database user password, which can be customized

Step 7 Click **Data Storage**, click **Add Volume**, select **VolumeClaimTemplate (VTC)** from the drop-down list, and add an EVS disk for MySQL.

Click **Create PVC** and configure the following parameters: (Keep the default values for other parameters.)

 \times

Create PVC					
PVC Type	EVS	Local PV	DSS		
PVC Name	mysql				
Creation Method	Dynamically provision	0			
	Creating underlying storage in	curs fees.			
Storage Classes	csi-disk		~ Q		
Storage Volume Name Prefix	Please enter the storage vol	lume name prefix			
	If this parameter is left blank, the storage volume name prefix ar	he default value is \"pvc\". nd PVC UID.	The actual storage volum	e name is the combination of the	
AZ	AZ1 (2)				
	The current AZ has 2 nodes. E cannot be changed. Exercise of	VS disks can be attached caution when selecting an	only to nodes in the same EVS disk.	AZ. After an EVS disk is created, A	Zs
Disk Type	High I/O	General-purpose SSD	Ultra-high I/O	Extreme SSD	
	General Purpose SSD V2	High I/O(ext)	General-purp	ose SSD(ext)	
	Ultra-high I/O(ext)	Extreme SSD(ext)			
Capacity (GiB)		10	+		
Billing Mode	Pay-per-use Year	rly/Monthly			
Access Mode	ReadWriteOnce	0			

Parameter	Example	Description
РVС Туре	EVS	Select a type for the underlying storage volume used by the PVC.
PVC Name	mysql	Enter a custom PVC name, for example, mysql .
Storage Classes	csi-disk	The default value is csi-disk .
AZ	AZ1	Select an AZ. The EVS disk can only be attached to nodes in the same AZ. After an EVS disk is created, the AZ where the disk locates cannot be changed.
Disk Type	General- purpose SSD	Select a proper type as required.
Capacity (GiB)	10 GiB	Enter the capacity as required. The default value is 10 GiB.

Click **Create** and enter the path for mounting the storage volume to the container. The default path used by MySQL is **/var/lib/mysql**.

Container Settings				
Container Information	Container - 1			+ Add Container
Basic Info Lifecycle Health		VolumeClaimTemplate (VTC) PVC mysd (100a) EVS		
	Environment	Mount Path ③	Subpath (5)	Permission Operation
	Variables	/var/lib/mysql	Enter a sub-path, for example, tmp.	Read-write V Delete
	Data Storage		+	
	Security Context	Add Volume Learn more about storage volumes.		
	Logging			

Step 8 In the Headless Service Parameters area, configure a headless Service.

The headless Service is used for networking between StatefulSet pods. It generates a domain name for each pod for accessing a specific StatefulSet pod. For a MySQL database that has master/slave relationship and multiple replicas, a headless Service is needed to read and write data from and into the MySQL database server (known as a source) and copy the data to other replicas. In this example, MySQL is deployed in one pod. For details about how to deploy MySQL in multiple pods, see **Run a Replicated Stateful Application**.

Headless Ser	vice Parameters					
Service Name	mysql	×				
Port	Port Name		Service Port		Container Port	Operation
	mysql		- 3306 +		- 3306 +	Delete
			+	ŀ		

Parameter	Example	Description
Service Name	mysql	Enter a custom headless Service name.
Port Name	mysql	Enter a custom port name, which is used to distinguish different ports in the same Service. In this example, only one port is used.
Service Port	3306	Enter a custom port number. This port is used by the Service for external access. In this example, the port is the same as the container port.
Container Port	3306	The actual listening port of the application in the container. It is determined by the port opened by the application image. For example, the MySQL database open port is 3306.

Step 9 Click Create Workload.

Wait until the workload is created. After it is created, it will be displayed on the **StatefulSets** tab.

Overview	Deployments StatefulSets Daemon	Sets Jobs Cron Jobs	Pods				Quick Links Create from YAML Create Workload
Kubernetes Resources							
R Workloads	Delete Batch Redeploy Expo	м <u>~</u>)					
Gervices & Ingresses	 Select a property or enter a keyword. 						00
Storage	🥑 Workload Name 🖯	Status	Pods (Normal/All) 🖯	Namespace 🖯	Created 😣	Image Name 😣	Operation
₽ ConfigMaps and Se							
♀ Policies	🗹 mysql	 Running 	1/1.	default	6 minutes ago	imysql.8.0	Monitor View Log Upgrade More ~
App Templates							
G Custom Resources	Total Records: 1 10 V (1)						
© Namespaces							

----End

Using kubectl

NOTICE

You need to create an ECS **bound with an EIP in the same VPC as the cluster** first.

Step 1 Install kubectl on the ECS.

You can check whether kubectl has been installed by running **kubectl version**. If kubectl has been installed, you can skip this step.

The Linux environment is used as an example to describe how to install and configure kubectl. For more installation methods, see **kubectl**.

1. Download kubectl.

curl -LO https://dl.k8s.io/release/*{v1.29.0}*/bin/linux/amd64/kubectl

{v1.29.0} specifies the version. You can replace it as required.

2. Install kubectl. chmod +x kubectl mv -f kubectl /usr/local/bin

Step 2 Configure a credential for kubectl to access the Kubernetes cluster.

- 1. Log in to the **CCE console** and click the cluster name to access the cluster console. Choose **Overview** in the navigation pane.
- 2. On the cluster overview page, locate the **Connection Info** area. Click **Configure** next to **kubectl** and view the kubectl connection information.
- 3. In the window that slides out from the right, locate the **Download the kubeconfig file.** area, select **Intranet access** for **Current data**, and download the corresponding configuration file.
- 4. Log in to the VM where the kubectl client has been installed and copy and paste the configuration file (for example, **kubeconfig.yaml**) downloaded in the previous step to the **/home** directory.
- Save the kubectl authentication file to the configuration file in the **\$HOME/.kube** directory. cd /home mkdir -p \$HOME/.kube mv -f *kubeconfig.yaml* \$HOME/.kube/config
- 6. Run the kubectl command to see whether the cluster can be accessed.

For example, to view the cluster information, run the following command: kubectl cluster-info

Information similar to the following is displayed:

Kubernetes master is running at https://*.*.*:5443

CoreDNS is running at https://****:5443/api/v1/namespaces/kube-system/services/coredns:dns/proxy To further debug and diagnose cluster problems, use 'kubectl cluster-info dump'.

Step 3 Create a description file named **mysql.yaml**. **mysql.yaml** is an example file name. You can rename it as required.

vi *mysql.yaml* The file content is as follows: apiVersion: apps/v1 kind: StatefulSet metadata: name: mysql namespace: default spec: replicas: 1 selector: matchLabels: app: mysql version: v1 template: metadata: labels: app: mysql version: v1 spec: containers: - name: container-1 image: mysql:8.0 env: - name: MYSQL_ROOT_PASSWORD # Password of the root user of MySQL, which can be customized value: ***** - name: MYSQL_DATABASE # Name of the database to be created when the image is started, which can be customized value: database # Database username, which can be customized - name: MYSQL_USER value: db_user - name: MYSQL_PASSWORD # Database user password, which can be customized value: ***** resources: requests: cpu: 250m memory: 512Mi limits: cpu: 250m memory: 512Mi volumeMounts: - name: mysql mountPath: /var/lib/mysql imagePullSecrets: - name: default-secret serviceName: mysql volumeClaimTemplates: # Dynamically attach the EVS disk to the workload. apiVersion: v1 kind: PersistentVolumeClaim metadata: name: mysql namespace: default annotations: everest.io/disk-volume-type: SSD # EVS disk type labels: failure-domain.beta.kubernetes.io/region: ap-southeast-1 #Region where the EVS disk is in failure-domain.beta.kubernetes.io/zone: #AZ where the EVS disk is in. It must be the same as the AZ of the node that runs the workload. spec: accessModes: - ReadWriteOnce # ReadWriteOnce for an EVS disk resources: requests: storage: 10Gi storageClassName: csi-disk # Storage class name. The value is csi-disk for an EVS disk. apiVersion: v1

kind: Service metadata: name: mysql namespace: default labels: app: mysql version: v1 spec: selector: app: mysql version: v1 clusterIP: None ports: - name: mysql protocol: TCP port: 3306 targetPort: 3306 type: ClusterIP

Step 4 Create a MySQL workload.

kubectl apply -f *mysql.yaml*

If information similar to the following is displayed, the workload is being created:

statefulset "mysql" created

Step 5 Check the workload status. kubectl get statefulset

If information similar to the following is displayed, the workload has been created:

NAME READY AGE mysql 1/1 4m5s

Step 6 Check the Service.

kubectl get svc

If information similar to the following is displayed, the workload's access mode has been configured:

 NAME
 TYPE
 CLUSTER-IP
 EXTERNAL-IP
 PORT(S)
 AGE

 kubernetes
 ClusterIP
 10.247.0.1
 <none>
 443/TCP
 3d

 mysql
 ClusterIP
 None
 <none>
 3306/TCP
 51s

----End

Step 5: Deploy WordPress

You can deploy a WordPress workload using either of the following ways.

Using the CCE Console

- **Step 1** Log in to the **CCE console**.
- Step 2 Click the name of the target cluster to access the cluster console.
- **Step 3** In the navigation pane, choose **Workloads**. Then, click **Create Workload** in the upper right corner.
- **Step 4** Configure the basic information about the workload.

In this example, configure the following parameters and keep the default values for other parameters. For details about the configuration parameters, see **Creating a StatefulSet**.

Basic Info					
Workload Type	Deployment	StatefulSet	DaemonSet	Job	Cron Job
	A Switching the work	load type will require you to	configure workload parame	eters again.	
Workload Name	wordpress				
Namespace	default		✓ Q Create N	amespace	
Pods	- 1 +				

Parameter	Example	Description
Workload Type	Deployment	In Kubernetes clusters, a workload refers to an application that is currently running. There are various built-in workloads available, each designed for different functions and application scenarios. For details about workload types, see Workloads .
Workload Name	wordpress	Enter a workload name.
Namespace	default	In a Kubernetes cluster, a namespace is a conceptual grouping of resources or objects. Each namespace provides isolation for data from other namespaces.
		After a cluster is created, a namespace named default is generated by default. You can directly use the namespace.
Pods	1	Enter the number of pods.

Step 5 Configure the basic information about the container.

Container Settings			
Container Information	Container - 1		+ Add Container
	Basic Info Lifecycle Health Check Environment Variables Storage Storage Scounty Context Logping	Container Container Term Term Term Term Term Term Term Te	Pull Policy Aways © Image Tag Latest Memory Report 512.00 MR, Limit 512.00 MR © Coast NPU Quark Tas function is universitable because add on NPU is not installed. Initial new
		Container	Container

Parameter	Example	Description
lmage Name	The wordpress image of the latest version	In the Container Information area, click Basic Info and click Select Image . In the dialog box displayed, select Open Source Images , search for wordpress , select the wordpress image, and select latest from the drop-down list for Image Tag .

Parameter	Example	Description
CPU Quota	Request: 0.25 cores; Limit: 0.25 cores	• Request : Enter the number of CPUs pre- allocated to the container. The default value is 0.25 cores.
		• Limit: Enter the maximum number of CPUs that can be used by the container. The default value is the same as that of the resource request. If the resource limit is greater than the resource request, it indicates that the pre-allocated resource limit can be temporarily exceeded in burst scenarios.
		For details, see Configuring Container Specifications.
Memory Quota	Request: 512 MiB; Limit: 512 MiB	• Request : Enter the number of memory resources pre-allocated to the container. The default value is 512 MiB.
		• Limit: Enter the maximum number of memory resources that can be used by the container. The default value is the same as that of the resource request. If the resource limit is greater than the resource request, it indicates that the pre-allocated resource limit can be temporarily exceeded in burst scenarios.
		For details, see Configuring Container Specifications.

Step 6 Click **Environment Variables** and add environment variables listed in the table to add the MySQL database information to WordPress.

Container Settings							
Container Information	Container - 1						+ Add Container
	Basic Info Lifecycle	Environment variables at	fect the way a running o	container will behave. You can modify created	1 variables as requi	red after deploying the workload. How Do I Add Environment Variables?	
	Health Check	Adding a Variable	Editing Custom Variab	les in Batches			
	Environment	Туре		√ariable Name		Variable Value/Reference	Operation
	Variables	Custom	×)	WORDPRESS_DB_HOST		mysql:3306	Delete
	Storage	Custom	~	WORDPRESS DB USER		db user	Delete
	Security Context					<u></u>	
	Logging	Custom	×)	WORDPRESS_DB_PASSWORD		Jaholi .	Delete
		Custom	~	WORDPRESS_DB_NAME		database	Delete

Environment Variable	Example	Description
WORDPRESS_ DB_HOST	mysql:3306	IP address for accessing the database. In this example, you need to enter the access mode of the MySQL workload, that is, the headless Service in Step 4: Deploy MySQL . You can use the internal domain name mysql.default.svc.cluster.local:3306 of the cluster to access the workload. You can omit . default.svc.cluster.local and simply use mysql:3306 .
WORDPRESS_ DB_USER	db_user	Username for accessing data. The value must be the same as that of MYSQL_USER in Step 4: Deploy MySQL . This username is used to establish a connection with the MySQL database.
WORDPRESS_ DB_PASSWOR D	A custom database password	Password for accessing the database. The value must be the same as that of MYSQL_PASSWORD in Step 4: Deploy MySQL.
WORDPRESS_ DB_NAME	database	Name of the database to be accessed. The value must be the same as that of MYSQL_DATABASE in Step 4: Deploy MySQL .

Step 7 Click **Data Storage**, click **Add Volume**, select **PVC**, and add an EVS disk as the MySQL storage.

Click **Create PVC** and configure the following parameters: (Keep the default values for other parameters.)

Create PVC Create from	YAML			
PVC Type	EVS	SFS	OBS	SFS Turbo
	Local PV	DSS		
PVC Name	wordpress			
Namespace	default			
Creation Method	Dynamically provision	Use existing	Create new	0
	Creating underlying storage	incurs fees.		
Storage Classes	csi-disk		~ Q	
Storage Volume Name Prefix	Please enter the storage	volume name prefix		
	If this parameter is left blank storage volume name prefix	a, the default value is \"pvc\". T and PVC UID.	The actual storage volume na	ame is the combination of the
AZ	AZ1 (2)	AZ2 (0)	AZ3 (0)	AZ4 (0)
	The current AZ has 2 nodes cannot be changed. Exercis	. EVS disks can be attached c e caution when selecting an E	only to nodes in the same AZ EVS disk.	. After an EVS disk is created, AZs
Disk Type	High I/O	General-purpose SSD	Ultra-high I/O	Extreme SSD
	General Purpose SSD	V2 High I/O(ext)	General-purpose	SSD(ext)
	Ultra-high I/O(ext)	Extreme SSD(ext)		
Capacity (GiB)	-	10	+	
Billing Mode	Pay-per-use Ye	early/Monthly		

Parameter	Example	Description
РVС Туре	EVS	Select a type for the underlying storage volume used by the PVC.
PVC Name	wordpress	Enter a custom PVC name.
Creation Method	Dynamically provision	In this example, select Dynamically provision . The PVC, PV, and underlying storage volume will be automatically created. This method is ideal when no underlying storage volume is available.
Storage Classes	csi-disk	The default value is csi-disk .
AZ	AZ1	Select an AZ. The EVS disk can only be attached to nodes in the same AZ. After an EVS disk is created, the AZ where the disk locates cannot be changed.
Disk Type	General- purpose SSD	Select a proper type as required.

Parameter	Example	Description
Capacity (GiB)	10 GiB	Enter the capacity as required. The default value is 10 GiB.

Click **Create** and enter the path for mounting the storage volume to the container. The default path used by WordPress is **/var/www/html**.

Container Settings				
Container Information	Container - 1		+ Add Container	
	Basic Info Lifecycle Health	PVC PVC wordpress ~	Q You can Create PMC and then click refresh.	ŭ
	Environment Variables	Mount Path ③	Subpath (3)	Permission Operation
	Data Storage		+	
	Security Context	Add Volume V Learn more about storage	e volumes.	· · · · · · · · · · · · · · · · · · ·
	Logging			

Step 8 Configure access settings.

In the **Service Settings** area, click the plus sign (+) and create a Service for accessing the workload from external networks. This example shows how to create a LoadBalancer Service. You can configure the following parameters in the window that slides out from the right.

Create Servic	e						
Service Name	wordpress						
Service Type	ClusterIP Expose services through the internal IP of the cluster, which can only be accessed within the cluster	NodePort Expose services via IP and static port (NodePort) on each node	LoadBalancer Provide external services through ELB load balancing, high availability, ultra-high performance, stability and security	DNAT Expose cluster node access type services through NAT gateway, support multiple nodes to share and use elastic IP			
	It is recommended to select the load balancing access type for out-of-cluster access						
Service Affinity	Cluster-level No	ode-level (?)					
Load Balancer	Dedic V Netwo	rk (TCP/UDP) V Auto c	~				
	Create a load balancing ins current resource is deleted. Automatically created load	tance based on the following configurations.	The automatically created instance v	vill be automatically deleted when the			
	Instance Name	Specify one or retain to the random default					
	Enterprise Project	default	✓ Q Create Enterprise F	Project 🚺 💿			
	AZ AZ1 × ·						
	Frontend Subnet	cci-subnet-xoimk5 (192.168.32.0/19)	View Subnet [2]				
	Backend Subnet	Subnet of the load balancer	~ ©				
	Network Specifications Elastic Fixed Image: Transmission of the state of t						
	EIP	Do not use Auto cre	eate ⑦				

Parameter	Example	Description
Service Name	wordpress	Enter a Service name.
Service Type	LoadBalancer	Select a Service type, which refers to the Service access mode. For details about the differences between Service types, see Service .
Load Balancer	Dedicated	Select Use existing if there is one.
	 AZ: at least one AZ, for example, AZ1 	If no load balancer is available, select Auto create to create one and bind an EIP to it. For details about the parameters, see Creating a LoadBalancer Service .
	• EIP: Auto create	
	Keep the default values for other parameters.	
Ports	Protocol: TCP	• Protocol : Select a protocol for the load balancer listener.
	 Container Port: 80 Service Port: 8080 	• Container Port : Enter the listening port of the containerized application. The value must be the same as the listening port provided by the application for external systems. If the wordpress image is used, set this parameter to 80 .
		• Service Port: Enter a custom port. Load balancer will use this port to create a listener and provide an entry for external traffic. You can customize the port for external access.

Step 9 Click Create Workload.

Wait until the workload is created. After it is created, it will be displayed on the **Deployments** tab.

Overview	Deployments StatefulSets DaemonSets	Jobs Cron Jobs Pods					Quick Links	Create from YAML	Create Workload
Kubernetes Resources									
🗟 Workloads	Delete Batch Redeploy Export ~								
G Services & Ingresses	O Workload Name: wordpress × Add filter								× 0 0 0
🖽 Storage	Workload Name 🖯	Status	Pods (Normal/All) 🖯	Namespace Θ	Created O	Image Name 🖯		Operation	
Ø ConfigMaps and Se									
Q Policies	wordpress	 Running 	1/1.	default	2 hours ago	iatest wordpress: latest		Monitor View Log Up	grade More Y
App Templates									
Custom Resources	Total Records: 1 10 V (1)								
Namespaces									

----End

Using kubectl

Step 1 Log in to the ECS where kubectl has been installed.

Step 2 Create a description file named **wordpress-deployment.yaml**. **wordpress-deployment.yaml** is an example file name. You can rename it as required. vi *wordpress-deployment.yaml*

The file content is as follows:

apiVersion: apps/v1 kind: Deployment metadata: name: wordpress namespace: default spec: , replicas: 1 selector: matchLabels: app: wordpress version: v1 template: metadata: labels: app: wordpress version: v1 spec: containers: - name: container-1 image: wordpress:latest env: - name: WORDPRESS_DB_HOST value: mvsal:3306 - name: WORDPRESS_DB_USER value: db_user - name: WORDPRESS_DB_PASSWORD value: ***** - name: WORDPRESS_DB_NAME value: database resources: requests: cpu: 250m memory: 512Mi limits: cpu: 250m memory: 512Mi volumeMounts: - name: wordpress readOnly: false mountPath: /var/www/html imagePullSecrets: - name: default-secret volumes: - name: wordpress persistentVolumeClaim: claimName: wordpress apiVersion: v1 kind: PersistentVolumeClaim metadata: name: wordpress namespace: default annotations: everest.io/disk-volume-type: SSD everest.io/enterprise-project-id: '0' labels: failure-domain.beta.kubernetes.io/region: ap-southeast-1 # Region where the EVS disk is in failure-domain.beta.kubernetes.io/zone: # AZ where the EVS disk is in. It must be the same as the AZ of the node that runs the workload. spec: accessModes: - ReadWriteOnce resources:

requests: storage: 10Gi storageClassName: csi-disk

Step 3 Create the WordPress workload.

kubectl apply -f wordpress-deployment.yaml

Check the workload status.

kubectl get deployment

If information similar to the following is displayed, the workload has been created:

NAME READY UP-TO-DATE AVAILABLE AGE wordpress 1/1 1 1 4m5s

Step 4 Create a description file named **wordpress-service.yaml**. **wordpress-service.yaml** is an example file name. You can rename it as required. vi *wordpress-service.yaml*

The file content is as follows:

apiVersion: v1 kind: Service metadata: name: wordpress namespace: default annotations: kubernetes.io/elb.class: union kubernetes.io/elb.autocreate: '{ "type": "public", "bandwidth_name": "cce-wordpress", "bandwidth_chargemode": "bandwidth", "bandwidth_size": 5, "bandwidth_sharetype": "PER", "eip_type": "5_bgp" }' spec: selector: app: wordpress externalTrafficPolicy: Cluster ports: - name: cce-service-0 targetPort: 80 nodePort: 0 port: 8080 protocol: TCP type: LoadBalancer

Step 5 Create a Service.

kubectl create -f wordpress-service.yaml

If information similar to the following is displayed, the Service has been created:

service/wordpress created

Step 6 Check the Service.

kubectl get svc

If information similar to the following is displayed, the workload's access mode has been configured. You can use the LoadBalancer Service to access the WordPress workload from the Internet. **.**.** specifies the EIP of the load balancer, and **8080** indicates the access port.

NAME	TYPE	CLUSTER-IP	EXTERNA	L-IP PORT(S)	AGE
kubernetes	ClusterIP	10.247.0.1	<none></none>	443/TCP	3d

```
mysql ClusterIP 10.247.202.20 <none> 3306/TCP 8m
wordpress LoadBalancer 10.247.130.196 **.**.*** 8080:31540/TCP 51s
```

----End

Step 6: Access WordPress

Step 1 Obtain the external access address of WordPress.

Click the WordPress workload name to enter its details page. On the page displayed, click the **Access Mode** tab, view the IP address of WordPress. The public IP address is the external access address.

< Back to Workload List						FAQs M	onitor View L	og Upgrade	More v (
wordpres	s ටි								
Workload Name	wordpress			Namespace	default				
Status	O Running			Created	1 minutes ago				
Pods (Normal/All)	1/1 2			Upgrade	Rolling upgrade				
Container Runtime	runC								
Description									
Pods Access Mode	Containers Auto Scaling Scheduling Policies	Change Histor	ry Events	APM Settings					
Services		Name		Name and	1.010				
Create Service	Delete Export V A Quotas (Remaining/Total)	Private IP 172.	16.9.100 🗇	(pringly and O'	2				
Q Select a property of	or enter a keyword.	Public IP	ð						0 (e)
Service 🕀	Selector 🗧 Namespace 🕀	Type Dedi	icated		iner	Port/Proto	Created \ominus	Operation	
wordpress	app wordpress default version v1	• •	172 16 9 1	Load Ba 8	080 -> 80 / TCP		12 seconds ago	Manage Pod View Even	nts More 🗸

Step 2 Enter {External access address:Port} in the address box of a browser to access the application. The port number is the value of Service port configured in Step 8, which is 8080.

Welcome	
Welcome to the fam be on your way to u	ous five-minute WordPress installation process! Just fill in the information below and you'll sing the most extendable and powerful personal publishing platform in the world.
Information	needed
Please provide the fo	ollowing information. Don't worry, you can always change these settings later.
Site Title	
Username	
	Usernames can have only alphanumeric characters, spaces, underscores, hyphens, periods, and the @ symbol.
Password	Usernames can have only alphanumeric characters, spaces, underscores, hyphens, periods, and the @ symbol.
Password	Usernames can have only alphanumeric characters, spaces, underscores, hyphens, periods, and the @ symbol. /// Hide Important: You will need this password to log in. Please store it in a secure location.
Password Your Email	Usernames can have only alphanumeric characters, spaces, underscores, hyphens, periods, and the symbol.
Password Your Email	Usernames can have only alphanumeric characters, spaces, underscores, hyphens, periods, and the (a) symbol. W Hide Important: You will need this password to log in. Please store it in a secure location. Double-check your email address before continuing.
Password Your Email Search Engine Visibility	Usernames can have only alphanumeric characters, spaces, underscores, hyphens, periods, and the symbol. Filde Important: You will need this password to log in. Please store it in a secure location. Double-check your email address before continuing. Discourage search engines from indexing this site It is up to search engines to honor this request.

----End

Follow-up Operations: Releasing Resources

To avoid additional charges, make sure to release resources promptly if you no longer require the cluster. For details, see **Deleting a Cluster**.

3 Deploying an Application in a CCE Cluster Using a Helm Chart

Helm is a package manager that streamlines the deployment, upgrade, and management of Kubernetes applications. Helm uses charts, which are a packaging format that defines Kubernetes resources, to package all components deployed by Kubernetes. This includes application code, dependencies, configuration files, and deployment instructions. By doing so, Helm enables the distribution and deployment of complex Kubernetes applications in a more efficient, consistent manner. Moreover, Helm facilitates application upgrade and rollback, simplifying application lifecycle management.

This section describes how to deploy a WordPress workload using Helm.



Procedure

Step	Description
Preparations	Register a Huawei account and top up the account.
Step 1: Enable CCE for the First Time and Perform Authorization	Obtain the required permissions for your account when you use the CCE service in the current region for the first time.
Step 2: Create a Cluster	Create a CCE cluster to provide Kubernetes services.

Step	Description
Step 3: Create a Node Pool and Nodes in the Cluster	Create a node in the cluster to run your containerized applications.
Step 4: Access the Cluster Using Kubectl	Before using Helm charts, access the cluster on a VM using kubectl.
Step 5: Install Helm	Install Helm on the VM with kubectl installed.
Step 6: Deploy the Template	Create a WordPress workload in the cluster using the Helm installation command and create a Service for the workload for Internet access.
Step 7: Access WordPress	Access the WordPress website from the Internet to start your blog.
Follow-up Operations: Releasing Resources	To avoid additional charges, delete the cluster resources promptly if you no longer require them after practice.

Preparations

• Before starting, register a Huawei account and complete real-name authentication. For details, see Signing up for a HUAWEI ID and Enabling Huawei Cloud Services and Getting Authenticated.

Step 1: Enable CCE for the First Time and Perform Authorization

CCE works closely with multiple cloud services to support computing, storage, networking, and monitoring functions. When you log in to the CCE console for the first time, CCE automatically requests permissions to access those cloud services in the region where you run your applications. If you have been authorized in the current region, skip this step.

- **Step 1** Log in to the **CCE console** using your HUAWEI ID.
- **Step 2** Click **Step 2** in the upper left corner on the displayed page and select a region.
- Step 3 When you log in to the CCE console in a region for the first time, wait for the Authorization Statement dialog box to appear, carefully read the statement, and click OK.

After you agree to delegate the permissions, CCE creates an agency named **cce_admin_trust** in IAM to perform operations on other cloud resources and grants it the Tenant Administrator permissions. Tenant Administrator has the permissions on all cloud services except IAM. The permissions are used to call the cloud services on which CCE depends. The delegation takes effect only in the current region. You can go to the IAM console, choose **Agencies**, and click **cce_admin_trust** to view the delegation records of each region. For details, see **Account Delegation**.

D NOTE

CCE may fail to run as expected if the Tenant Administrator permissions are not assigned. Therefore, do not delete or modify the **cce_admin_trust** agency when using CCE.

----End

Step 2: Create a Cluster

Step 1 Log in to the **CCE console**.

- If you have no clusters, click **Buy Cluster** on the wizard page.
- If you have CCE clusters, choose **Clusters** in the navigation pane, click **Buy Cluster** in the upper right corner.

Step 2 Configure basic cluster parameters.

Only mandatory parameters are described in this example. You can keep the default values for most other parameters. For details about the parameter configurations, see **Buying a CCE Standard/Turbo Cluster**.

Basic Settings	
Туре	CCE Standard Cluster (CCE cluster originality) CCE Turbo Cluster CCE Turbo Cluster CCE Turbo Cluster CCE Autopiol
Billing Mode	YearlyMonthly Paypersee
Cluster Name	Constant ©
Enterprise Project ()	detaut → O Create Enterprise Project (2)
Cluster Version	Recommend v1.29 v1.28
	Version of Rubernetes to use for the cluster. Version Release
Cluster Scale	Nodes 50 Nodes 200 Nodes 2000 Nodes 2000
	Select the maximum number of nodes that can be managed by the cluster. Master mode specifications are determined based on the cluster scale. After the cluster is created, node specifications can be modified, but nodes can only be upgraded for higher specifications.
	Vote Generally, the duster may not reach the maximum number of notes of the selected scale. The actual scale is related to multiple factors, such as the type, quantity, and size of resource objects in the cluster, and external access to the cluster liceb-apsender. To provent the cluster from being overloade achieved to perform security hardening by referring to the for preventing cluster overload. Beek Practices
Master Nodes	3 Matters Single
	Not estable after creation CCC will create three manufers includes a control of the second control of the seco

Parameter	Example	Description
Туре	CCE Standard Cluster	CCE allows you to create various types of clusters for diverse needs. It provides highly reliable, secure, business-class container services.
		You can select CCE Standard Cluster or CCE Turbo Cluster as required.
		 CCE standard clusters provide highly reliable, secure, business-class containers.
		• CCE Turbo clusters use high-performance cloud native networks and provide cloud native hybrid scheduling. Such clusters have improved resource utilization and can be used in more scenarios.
		For details about cluster types, see Comparison Between Cluster Types.

Parameter	Example	Description
Billing Mode	Pay-per-use	 Select a billing mode for the cluster. Yearly/Monthly: a prepaid billing mode. Resources will be billed based on the service duration. This cost-effective mode is ideal when the duration of resource usage is predictable. If you choose this billing mode, you will need to set the desired duration and decide whether to enable automatic subscription renewal. Monthly subscriptions renew automatically every month, while yearly subscriptions renew automatically every year. Pay-per-use: a postpaid billing mode. It is suitable for scenarios where resources will be billed based on usage frequency and
		duration. You can provision or delete resources at any time. For details, see Billing Modes .
Cluster Name	cce-test	Name of the cluster to be created
Enterprise Project	default	Enterprise projects facilitate project-level management and grouping of cloud resources and users. For more details, see Enterprise Management . This parameter is displayed only for enterprise users who have enabled Enterprise Project
		Management.
Cluster Version	The recommende d version, for example, v1.29	Select the latest commercial release for improved stability, reliability, new functionalities. CCE offers various versions of Kubernetes software.
Cluster Scale	Nodes: 50	Configure the parameter as required. This parameter controls the maximum number of worker nodes that the cluster can manage. After the cluster is created, it can only be scaled out.

Parameter	Example	Description
Master Nodes	3 Masters	Select the number of master nodes. The master nodes are automatically hosted by CCE and deployed with Kubernetes cluster management components such as kube- apiserver, kube-controller-manager, and kube- scheduler.
		• 3 Masters : Three master nodes will be created for high cluster availability.
		 Single: Only one master node will be created in your cluster.
		This parameter cannot be changed after the cluster is created.

Step 3 Configure network parameters.

Settings				
Nork				
vpc-cce (192: 168:0.0116) v Q. Create VPC (2				
Not estable after creation. Select a VPC to provide CIDR blocks for the master and worker nodes in your cluster.				
Auditable Subart D Adverses 250				
Not estable after creation. Select a subnet in your VPC. Notes in the cluster will use the IP addresses in the subnet. Master nodes in a cluster are hosted and maintained by CCE. You only need to configure for worker nodes.				
How to bald an PH4PH6 dual stack cluster				
e Security Auto generate Use existing				
Two default security groups will be automatically created for your cluster, one for the master nodes and the other for the worker nodes. The security group for the master nodes is named (Cluster name 3-cce-control-[Flandom ID], and	that of the worker nodes is named (Cluster name)-cce-node-(Random ID). Learn more about default security group rules.			
letwork				
VPC network Tunnel network				
Suitable for services that require high performance. Suitable of large-scale networking, A container The VPC network is deeply integrated with the Network is deeply integrated with the				
underlying network. The networking scale is limited by based on the node network by compromising certain the USC confers table northa				
на и оточку вен фон. разлитите.				
Not estable after creation. Model framework used by the container network in the cluster.				
IDR Blook Mennally set Auto select How to plan CIDR blocks?				
Tool ID oddenooco second for noch adde Carton and Carton and a social additional additional				
ние силине или иссечениять, повог орденно из не читыть полнотизу сотвуденное, чть				
work				
R Box 10 v · 247 · 0 · 0 / 16 v				
settings work () c Security letwork del DR Block	Image: Sec: Sec: Sec: Sec: Sec: Sec: Sec: Se			

Parameter	Example	Description
VPC	vpc-cce	Select a VPC for the cluster. If no VPC is available, click Create VPC to create one. After the VPC is created, click the refresh icon. For details about how to create a VPC, see Creating a VPC and Subnet .
Node Subnet	subnet-cce	Select a subnet. Nodes in the cluster are assigned with the IP addresses in the subnet.

Parameter	Example	Description
Network Model	VPC network	Select VPC network or Tunnel network . By default, the VPC network model is selected.
		For details about the differences between different container network models, see Container Network .
Container CIDR Block	10.0.0.0/16	Configure the CIDR block used by containers. It controls how many pods can run in the cluster.
Service CIDR Block	10.247.0.0/16	Configure the ClusterIP CIDR block for the cluster. It controls how many Services can be created in the cluster and cannot be changed after configuration.

Step 4 Click **Next: Select Add-on**. On the page displayed, select the add-ons to be installed during cluster creation.

This example only includes the mandatory add-ons that are automatically installed.



- **Step 5** Click **Next: Add-on Configuration**. There is no need to set up the add-ons that are installed by default.
- **Step 6** Click **Next: Confirm configuration**, confirm the resources on the page displayed, and click **Submit**.

Wait until the cluster is created. It takes about 5 to 10 minutes to create a cluster.

The created cluster will be displayed on the **Clusters** page, and there are zero nodes in it.

Figure 3-1 Cluster created

All Clusters (4)	CCE Standard Cluster (1) ⑦	CCE Turbo Cluster (1)	CCE Autopilot cluster (2	2) NEW		
Export						
Q Search or filter I	by keyword.					Q
	-test O Running Standard v1.29 Nodes: 50	Ava	0 / 0 ilable/Total Nodes	 CPU Usage	 Memory Usage	Monitor Likubecti Shell ··· Pay-per-use Created on Sep 28, 2024 10:24:28 GMT+08:00 Installed Add ons 2
 No node in the 	e cluster. Create or accept nodes. Create	e Node				
				- End (1/1) -		

----End

Step 3: Create a Node Pool and Nodes in the Cluster

- **Step 1** Log in to the CCE console and click the cluster name to access the cluster console.
- **Step 2** In the navigation pane, choose **Nodes**. On the **Node Pools** tab, click **Create Node Pool** in the upper right corner.
- Step 3 Configure the node pool parameters.

Only mandatory parameters are described in this example. You can keep the default values for most other parameters. For details about the configuration parameters, see **Creating a Node Pool**.

Configurations	Choose the specifications and OS for a cloud	server to run your containerized applications on.								
Node Type 💿	Elastic Cloud Server (VM)	Elastic Cloud Server (physical machine)	BMS							
Specifications	vCPUs -Select-	V Memory -Select-	V Flavor Enter a flavo	v name. Q Use :	pot pricing flavor Recommende	ad Specifications Selection				
	General computing-plus	General computing Memory-optimized	General computing-basic	GPU-accelerated Disk-in	tensive FlexusX	Kunpeng general computing-plus	Kunpeng memory-optimized			
	Kunpeng ultra-high VO U	Iltra-high I/O								
	Flavor 🖯	AZ 🖯 🕤	vCPUs Memory	Assured/Maxim Θ ⑦	Packets Per Sec \ominus \bigcirc	CPU 0	Pay-per-use price \ominus	Yearly/Monthly Price \ominus		
	c7.xlarge.4	AZ1 AZ2 AZ3 AZ4	4 vCPUs 16 GiB	1.6 / 8.0 Gbit/s	800,000 pps	Intel Ice Lake	¥1.093/hour	¥524.80/month		
	c7.2xlarge.2	AZ1 AZ2 AZ3 AZ4	8 vCPUs 16 GiB	3.0 / 15.0 Gbit/s	1,500,000 pps	Intel Ice Lake	¥1.713/hour	¥822.00/month		
	C7.2xlarge.4	AZ1 AZ2 AZ3 AZ4	8 vCPUs 32 GIB	3.0 / 15.0 Gbit/s	1,500,000 pps	Intel Ice Lake	¥2.187/hour	¥1,049.60/month		
	c7.3xlarge.2	AZ1 AZ2 AZ3 AZ4	12 vCPUs 24 GiB	5.0 / 17.0 Gbit/s	2,000,000 pps	Intel Ice Lake	¥2.569/hour	¥1,233.00/month		
	c7.3xlarge.4	AZ1 AZ2 AZ3 AZ4	12 vCPUs 48 GiB	5.0 / 17.0 Gbit/s	2,000,000 pps	Intel Ice Lake	¥3.28/hour	¥1,574.40/month		
	c7.4xlarge.2	AZ1 AZ2 AZ3 AZ4	16 vCPUs 32 GiB	6.0 / 20.0 Gbit/s	2,800,000 pps	Intel Ice Lake	¥3.425/hour	¥1,644.00/month		
	c7.4xlarge.4	AZ1 AZ2 AZ3 AZ4	16 vCPUs 64 GiB	6.0 / 20.0 Gbit/s	2,800,000 pps	Intel Ice Lake	¥4.373/hour	¥2,099.20/month		
	c7.6xlarge.2	AZ1 AZ2 AZ3 AZ4	24 vCPUs 48 GiB	9.0 / 25.0 Gbit/s	4,000,000 pps	Intel Ice Lake	¥5.138/hour	¥2,466.00/month		
	· ··· ·									
	Selected Specifications	Selected Specifications								
	Nodes can only be added	Nodes can only be added from the selected specifications. You are advased to select multiple node specifications. Multi-favor Billing								
	Specifications		Pay-per-use price	Yearly/Monthly	Price AZ	0		Operation		
	General computing-plus c7:xta	arge.2 4 vCPUs 8 GIB	¥0.856/hour	¥411.00/month	2	AZ1 🔽 AZ2 💟 AZ3 🚦	AZ4	Delete		
Container Engine	Containerd Docker	r								
	We recommend using Containerd, whi	ich provides a better user experience and more p	owerful features. Container Engine De	scription						
os 💿	Public image Private ima	ige								
	G Huawei Cloud EulerOS 2	.0 EulerOS 2.9	🗘 Ubuntu 22.04	CentOS 7.6						

Parameter	Example	Description
Node Type	Elastic Cloud Server (VM)	Select a node type based on service requirements. Then, the available node flavors will be automatically displayed in the Specifications area for you to select.
Specifications	4 vCPUs 8 GiB	Select a node flavor that best fits your service needs.
		For optimal performance of the cluster components, you are advised to set up the node with a minimum of 4 vCPUs and 8 GiB of memory.

Parameter	Example	Description	
Container Engine	containerd	Select a container engine based on service requirements. For details about the differences between container engines, see Container Engines .	
OS	Huawei Cloud EulerOS 2.0	Select an OS for the node.	
Login Mode	A custom password	 Password: Enter a password for logging in to the node and confirm the password. The default username is root. Keep the password secure. If you forget the password, the system is unable to retrieve it. Key Pair: Select a key pair for logging to the node and select the check box to acknowledge that you have obtained the key file and without this file you will not be able to log in to the node. A key pair is used for identity authentication when you remotely log in to a node. If no key pair is available, click Create Key Pair to create one. For details, see Creating a Key Pair or the Management Concele 	

Step 4 Configure parameters in Storage Settings and Network Settings. In this example, you can keep the default values for the parameters. You only need to select I have confirmed that the security group rules have been correctly configured for nodes to communicate with each other. and click Next: Confirm.

Storage Settings	Configure storage resources for containers and applications on the node.
System Disk	General-purpose SSD (AZ3 AZ2 AZ1 AZ4) v GB
	Expand V System Disk Encryption: Not encrypted
Data Disk	⊙ General-purpose SSD (AZ3 AZ2 AZ1 AZ4)
	Used by the container runtime and kubelet. Do not uninstall this disk. Otherwise, the node will become unavailable. How do I set data disk size? How do I allocate data disk space?
	Expand 🗸 Container Engine: Shared disk space Pod: All Write Mode: Linear Data Disk Encryption: Not encrypted
	Add
	You can add 15 more EVS data disks.
Network Settings	Configure networking resources for node and application communication.
Virtual Private Cloud	ADC-CC6
Node subnet	
Node Subilet	Multiple subnet Single subnet Single subnet U24((subnet)) V (L Available Subnet IP Addresses: 246
	If the single subnet IP resources associated with your node pool are tight, it is recommended that you configure multiple subnets for the node pool
	If the default DNS server of the subnet is modified, ensure that the custom DNS server can resolve the CBS service domain name. Otherwise, the node cannot be created.
Node IP	hiterate -
	Padelites
Associate Security Group	cce-test-cce-node-6mb7 Detault X V Q Dreate Security Group [2]
	Configure security group rules for worker nodes in your cluster. The rules will take effect on all worker nodes in the cluster. For additional security group configurations, go to the Security Groups page. The security group for master nodes is automatically created by CCE. View Debail Security Group Nets (2) Not cellable after creation
	V I have confirmed that the security group rules have been correctly configured for nodes to communicate with each other.

- **Step 5** Check the node specifications, read the instructions on the page, and click **Submit**.
- **Step 6** Locate the row containing the target node pool and click **Scaling**. There are zero nodes in the created node pool by default.

Pools Nodes	Quick Links Create Node Poo
Export Verer Events Operation Records 🗸 Quota (remaining/total) Cluster nodes (\$0\$(5)) ECS (\$9991,000) CPU(cores) (7,996 8,000)	
Q. Search or filter by keyword.	() () ()
v cce-test-modepool-80468 O Normal	(View Node) (Update) Scaing (Auto Scaing) (More \vee)
Node Type : Elastic Cloud Server (VM) Enterprise Project : default Total number of nodes (actual/expected): 0/0 CPU Usage/Request: / Memory Usage/Request: / 🕥	

Step 7 Set the number of nodes to be added to **2**, which means two more nodes will be created in the node pool.

Node Pool Scaling	
Node Pool Name	cce-test-nodepool-80468
Current Nodes	0
Scaling	Add node Reduce node
Resized Flavor	c7.xlarge 2 AZ1 V
	Use the selected flavor to expand the node capacity. If the flavor resources are insufficient, the capacity expansion will fail.
Billing Mode	Pay-per-use Yearly/Monthly
Nodes to Be Added	- 2 +
	Max. nodes that can be created at a time: $\underline{50}$

Step 8 Wait until the nodes are created. It takes about 5 to 10 minutes to complete the node creation.

^ cce-test-nodepool-80468 O Normal Veew Node Update Scaling Auto Scaling More v							
Node Type : Elastic Cloud Server (VM	(I) Enterprise Project : default	Total number of nodes (actual	(expected): 2/2 CPU Usage/Request: /	Memory Usage/Request: /	0		
Specifications	AZ	Status	Actual/Desired Nodes	Number of yearly/month	On-Demand Nodes	Auto Scaling	Operation
c7.xlarge.2 4 vCPUs 8 GiB	AZ1	O Normal	2/2	0	0	Close	View Node Scaling

----End

Step 4: Access the Cluster Using Kubectl

NOTICE

You need to create an ECS **bound with an EIP in the same VPC as the cluster** first.

Step 1 Install kubectl on the ECS.

You can check whether kubectl has been installed by running **kubectl version**. If kubectl has been installed, you can skip this step.

The Linux environment is used as an example to describe how to install and configure kubectl. For more installation methods, see **kubectl**.

 Download kubectl. cd /home curl -LO https://dl.k8s.io/release/{v1.29.0}/bin/linux/amd64/kubectl {v1.29.0} specifies the version. You can replace it as required. 2. Install kubectl. chmod +x kubectl mv -f kubectl /usr/local/bin

Step 2 Configure a credential for kubectl to access the Kubernetes cluster.

- 1. Log in to the **CCE console** and click the cluster name to access the cluster console. Choose **Overview** in the navigation pane.
- 2. On the cluster overview page, locate the **Connection Info** area. Click **Configure** next to **kubectl** and view the kubectl connection information.
- 3. In the window that slides out from the right, locate the **Download the kubeconfig file.** area, select **Intranet access** for **Current data**, and download the corresponding configuration file.
- 4. Log in to the VM where the kubectl client has been installed and copy and paste the configuration file (for example, **kubeconfig.yaml**) downloaded in the previous step to the **/home** directory.
- 5. Save the kubectl authentication file to the configuration file in the **\$HOME/.kube** directory.

mkdir -p \$HOME/.kube mv -f *kubeconfig.yaml* \$HOME/.kube/config

6. Run the kubectl command to see whether the cluster can be accessed.

For example, to view the cluster information, run the following command: kubectl cluster-info

Information similar to the following is displayed:

Kubernetes master is running at https://*.*.*:5443

CoreDNS is running at https://****:5443/api/v1/namespaces/kube-system/services/coredns:dns/proxy To further debug and diagnose cluster problems, use 'kubectl cluster-info dump'.

----End

Step 5: Install Helm

This section uses Helm v3.7.0 as an example. If other versions are needed, see **Helm**.

- **Step 1** Download the Helm client to a VM in a cluster. wget https://get.helm.sh/helm-v3.7.0-linux-amd64.tar.gz
- **Step 2** Decompress the Helm package. tar -xzvf helm-v3.7.0-linux-amd64.tar.gz
- **Step 3** Copy and paste Helm to the system path, for example, /usr/local/bin/helm. mv linux-amd64/helm /usr/local/bin/helm
- **Step 4** Check the Helm version.

```
helm version
version.BuildInfo{Version:"v3.7.0",GitCommit:"eeac83883cb4014fe60267ec6373570374ce770b",GitTreeState:"
clean",GoVersion:"g01.16.8"}
```

----End

Step 6: Deploy the Template

This section uses the WordPress template as an example.

Step 1 Add the official WordPress repository.

helm repo add bitnami https://charts.bitnami.com/bitnami

Step 2 Run the following commands to create a WordPress workload:

helm install *myblog* bitnami/wordpress \

- --set mariadb.primary.persistence.enabled=true \
- --set mariadb.primary.persistence.storageClass=csi-disk \
- --set mariadb.primary.persistence.size=10Gi \
- --set persistence.enabled=false

The custom instance name is specified by *myblog*. The remaining parameters serve the following functions:

- Persistent storage volumes are used by the MariaDB database that is connected to WordPress to store data. StorageClass is used to automatically create persistent storage. The EVS disk type (csi-disk) is used, with a size of 10GiB.
- WordPress requires no data persistence, so you can set persistence.enabled to false for the PV.

The command output is as follows:

coalesce.go:223: warning: destination for mariadb.networkPolicy.egressRules.customRules is a table. Ignoring non-table value ([]) NAME: myblog LAST DEPLOYED: Mon Mar 27 11:47:58 2023 NAMESPACE: default STATUS: deployed REVISION: 1 TEST SUITE: None NOTES: CHART NAME: wordpress CHART VERSION: 15.2.57 APP VERSION: 6.1.1

** Be patient while the chart is being deployed.**

Your WordPress site can be accessed through the following DNS name from within your cluster:

myblog-wordpress.default.svc.cluster.local (port 80)

To access your WordPress site from outside the cluster, follow the steps below:

1. Get the WordPress URL by running these commands:

NOTE: It may take a few minutes for the LoadBalancer IP to be available. Watch the status with: 'kubectl get svc --namespace default -w myblog-wordpress'

export SERVICE_IP=\$(kubectl get svc --namespace default myblog-wordpress --template "{{ range (index .status.loadBalancer.ingress 0) }}{{ echo "WordPress URL: http://\$SERVICE_IP/" echo "WordPress Admin URL: http://\$SERVICE_IP/admin"

2. Open a browser and access WordPress using the obtained URL.

3. Log in with the following credentials below to see your blog:

echo Username: user

echo Password: \$(kubectl get secret --namespace default myblog-wordpress -o jsonpath="{.data.wordpress-password}" | base64 -d)

----End

Step 7: Access WordPress

Step 1 Modify the WordPress Service configuration.

To use a LoadBalancer Service in CCE, you need to configure it with additional annotations. Unfortunately, **bitnami/wordpress** does not come with this configuration, so you will have to modify it manually.

kubectl edit svc myblog-wordpress

Add **kubernetes.io/elb.autocreate** and **kubernetes.io/elb.class** to **metadata.annotations** and save the changes. These two annotations are used to create a shared load balancer, which allows access to the WordPress workload via the EIP of the load balancer.

```
apiVersion: v1
kind: Service
metadata:
name: myblog-wordpress
namespace: default
annotations:
kubernetes.io/elb.autocreate: '{ "type": "public", "bandwidth_name": "myblog-wordpress",
"bandwidth_chargemode": "bandwidth", "bandwidth_size": 5, "bandwidth_sharetype": "PER", "eip_type":
"5_bgp" }'
kubernetes.io/elb.class: union
spec:
ports:
- name: http
```

Step 2 Check the Service.

kubectl get svc

If information similar to the following is displayed, the workload's access mode has been configured. You can use the LoadBalancer Service to access the WordPress workload from the Internet. **.**.** specifies the EIP of the load balancer, and **80** indicates the access port.

NAMETYPECLUSTER-IPEXTERNAL-IPPORT(S)AGEkubernetesClusterIP10.247.0.1<none>443/TCP3dmyblog-mariadbClusterIP10.247.202.20<none>3306/TCP8mmyblog-wordpressLoadBalancer10.247.130.196**.**.***80:31540/TCP8m

Step 3 Access WordPress.

• To access the WordPress web page: In the address box of a browser, enter <*EIP of the load balancer***:80**.

User's Blog!

Sample Page

Mindblown: a blog about philosophy.

Hello world!

Welcome to WordPress. This is your first post. Edit or delete it, then start writing! March 27. 2023

- To access the WordPress management console:
 - a. Run the following command to obtain the password of **user**: kubectl get secret --namespace default *myblog-wordpress* -o jsonpath="{.data.wordpresspassword}" | base64 -d
 - b. In the address box of a browser, enter <EIP of the load balancer>:80/ login to access the WordPress backend. The user name is user, and the password is the character string obtained in the previous step.



----End

Follow-up Operations: Releasing Resources

To avoid additional charges, make sure to release resources promptly if you no longer require the cluster. For details, see **Deleting a Cluster**.