

Cloud Data Center

API Reference

Issue	01
Date	2025-07-25



Copyright © Huawei Cloud Computing Technologies Co., Ltd. 2025. All rights reserved.

No part of this document may be reproduced or transmitted in any form or by any means without prior written consent of Huawei Cloud Computing Technologies Co., Ltd.

Trademarks and Permissions



HUAWEI and other Huawei trademarks are the property of Huawei Technologies Co., Ltd.

All other trademarks and trade names mentioned in this document are the property of their respective holders.

Notice

The purchased products, services and features are stipulated by the contract made between Huawei Cloud and the customer. All or part of the products, services and features described in this document may not be within the purchase scope or the usage scope. Unless otherwise specified in the contract, all statements, information, and recommendations in this document are provided "AS IS" without warranties, guarantees or representations of any kind, either express or implied.

The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.

Huawei Cloud Computing Technologies Co., Ltd.

Address: Huawei Cloud Data Center Jiaoxinggong Road
Qianzhong Avenue
Gui'an New District
Gui Zhou 550029
People's Republic of China

Website: <https://www.huaweicloud.com/intl/en-us/>

Contents

1 Before You Start.....	1
2 API Overview.....	4
3 Calling APIs.....	6
3.1 Making an API Request.....	6
3.2 Authentication.....	9
3.3 Response.....	10
4 API.....	12
4.1 Rack Management.....	12
4.1.1 Updating an Intelligent Rack.....	12
4.1.2 Listing Intelligent Racks.....	17
4.2 Equipment Room management.....	28
4.2.1 Modifying the IDC Description.....	29
4.2.2 Querying the IDC List.....	33
4.3 Physical Server Management.....	41
4.3.1 Batch Querying Physical Servers.....	41
4.3.2 Querying the Physical Server Information.....	59
4.3.3 Obtaining the Console Address.....	74
4.3.4 Querying Server Hardware Details.....	78
4.3.5 Querying the Firmware Details.....	119
4.3.6 Batch Modifying the Power Statuses of Physical Servers.....	124
4.3.7 Exporting Server Logs.....	129
4.3.8 Querying the Export Status of Logs.....	135
4.3.9 Downloading a Log File.....	140
4.4 iMetal Instance Management.....	144
4.4.1 Batch Creating Instances.....	144
4.4.2 Creating an Instance.....	154
4.4.3 Batch Querying Instances.....	163
4.4.4 Batch Deleting Instances.....	181
4.4.5 Querying Instance Status.....	186
4.4.6 Batch Reinstalling OSs.....	192
4.4.7 Batch Changing Instance Passwords.....	198
4.4.8 Deleting an Instance.....	204

4.4.9 Changing the IP Address of an Instance.....	208
4.5 Physical Server Diagnosis.....	213
4.5.1 Obtaining Server Overview.....	213
4.5.2 Obtaining Server Alarm Overview.....	221
4.5.3 Obtaining the Server Alarm Trend.....	230
4.5.4 Obtaining a Server Alarm List.....	238
4.5.5 The server event list is returned.....	249
4.5.6 Querying Event Definitions.....	257
4.6 Tag Management.....	264
4.6.1 Batch Creating Rack Tags.....	264
4.6.2 Batch Deleting Rack Tags.....	270
4.6.3 Batch Creating Resource Tags.....	276
4.6.4 Batch Deleting Resource Tags.....	282
5 Permissions and Supported Actions.....	289
5.1 Introduction.....	289
6 Appendix.....	295
6.1 Status Codes.....	295
6.2 Error Codes.....	298
6.3 Obtaining a Project ID.....	301
6.4 Obtaining an Account ID.....	302
6.5 Obtaining the Endpoint Information.....	302

1 Before You Start

Welcome to *Cloud Data Center API Reference*. Cloud Data Center (CloudDC) enables rapid transformation of traditional data centers (DCs) into cloud environments. It allows you to deploy servers in Huawei Cloud equipment rooms, taking advantage of advanced Huawei Cloud capabilities like infrastructure management, cloud-based networking, bare-metal-server management, and deterministic O&M.

This document describes how to use application programming interfaces (APIs) to perform operations on CloudDC resources, such as updating or querying intelligent racks, querying or modifying physical servers, and creating or deleting iMetal instances. For details about all supported operations, see [API Overview](#).

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

Endpoints

An endpoint is the request address for calling an API. Endpoints vary depending on services and regions. You can obtain the endpoints of services from [Regions and Endpoints](#).

Select a desired one based on your service requirements.

Table 1-1 CloudDC endpoints

Region	Endpoint Region	Endpoint
CN Southwest-Guiyang1	cn-southwest-2	clouddc.cn-southwest-2.myhuaweicloud.com
CN East-Shanghai1	cn-east-3	clouddc.cn-east-3.myhuaweicloud.com
CN South-Guangzhou	cn-south-1	clouddc.cn-south-1.myhuaweicloud.com

Region	Endpoint Region	Endpoint
AP-Singapore	ap-southeast-3	cloudcdc.ap-southeast-3.myhuaweicloud.com

Concepts

- **Account**

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

An IAM user is created by an account to use cloud services. Each IAM user has its own identity credentials (password or access keys).

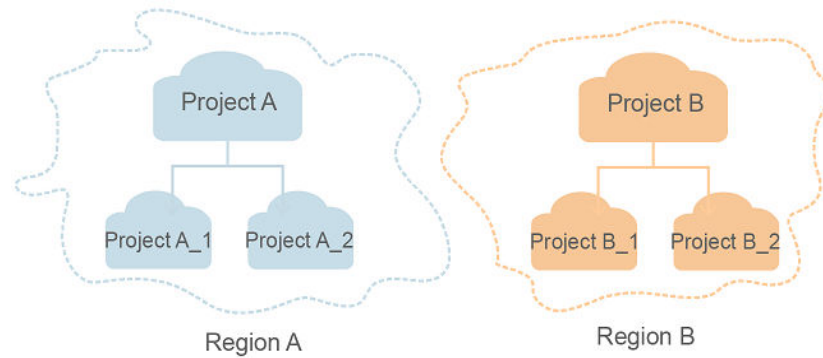
The account name, username, and password will be required for API authentication.
- **Region**

Regions are divided based on geographical location and network latency. Public services, such as Elastic Cloud Server (ECS), Elastic Volume Service (EVS), Object Storage Service (OBS), Virtual Private Cloud (VPC), Elastic IP (EIP), and Image Management Service (IMS), are shared within the same region. Regions are classified into universal regions and dedicated regions. A universal region provides universal cloud services for common tenants. A dedicated region provides specific services for specific tenants.

For details, see [Region and AZ](#).
- **AZ**

An AZ contains one or more physical data centers. Each AZ has independent cooling, fire extinguishing, moisture-proof, and electricity facilities. Within an AZ, compute, network, storage, and other resources are logically divided into multiple clusters. AZs within a region are interconnected by optical fibers for high-availability networking.
- **Project**

A project corresponds to a region. Default projects are defined to group and physically isolate resources (including compute, storage, and network resources) across regions. Users can be granted permissions in a default project to access all resources under their accounts in the region associated with the project. For more refined access control, create subprojects under a project and purchase resources in the subprojects. Users can then be assigned permissions to access only specific resources in the subprojects.

Figure 1-1 Project isolation model

- Enterprise Project

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

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

2 API Overview

CloudDC provides APIs for rack management, equipment room management, physical server management, iMetal instance management, physical server diagnosis, and tag management. You can use all functions of CloudDC by using these APIs.

Type	Description
Rack management	The rack management APIs allow you to update and query intelligent racks and perform other operations on racks. For details, see Rack Management .
Equipment room management	Equipment room management APIs allow you to modify IDC descriptions, query the IDC list, and perform other operations on equipment rooms. For details, see Equipment Room management .
Physical server management	Physical server management APIs allow you to perform the following operations: • Batch query physical servers. • Query information about a physical server. • Obtain the console address. • Query server hardware details. • Query server firmware details. • Batch modify the power statuses of physical servers. • Export server logs. • Query log export status. • Download log files. For details, see Physical Server Management .
iMetal instance management	iMetal instance APIs allow you to batch create instances, create an instance, batch query instances, batch delete instances, query instance status, batch install OSs, batch change instance passwords, delete instances, change an instance IP address, and perform other operations on iMetal instances. For details, see iMetal Instance Management .

Type	Description
Physical server diagnosis	Physical server diagnosis APIs provide APIs for server overview, server alarm overview, server alarm trend, server alarm list, server event list, event definition query, and others. For details, see Physical Server Diagnosis .
Tag management	Tag management APIs allow you to batch create rack tags, batch delete rack tags, batch create resource tags, batch delete resource tags, and perform other operations on tags. For details, see Tag Management .

3 Calling APIs

3.1 Making an API Request

This section describes the structure of a RESTful API request, and uses the IAM API for [creating an IAM user](#) as an example to demonstrate how to call an API.

Request URI

A request URI is in the following format:

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

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

- **URI-scheme:** Protocol used to transmit requests. All APIs use HTTPS.
- **Endpoint:** Domain name or IP address of the server bearing the REST service. The endpoint varies between services in different regions. It can be obtained from [Regions and Endpoints](#). For example, the endpoint of IAM in **CN-Hong Kong** is **iam.ap-southeast-1.myhuaweicloud.com**.
- **resource-path:** Access path of an API for performing a specified operation. Obtain the path from the URI of an API. For example, the resource-path of the API used to create an IAM user is **/v3.0/OS-USER/users**.
- **query-string:** An optional query parameter. Ensure that a question mark (?) is included before each query parameter that is in the format of "Parameter name=Parameter value". For example, **? limit=10** indicates that a maximum of 10 data records will be displayed.

For example, if you want to create an IAM user, use the endpoint of any region (for example, the endpoint in CN-Hong Kong: "iam.ap-southeast-1.myhuaweicloud.com") and the resource-path (/v3.0/OS-USER/users) in the URI of the [API used by the administrator to create an IAM user](#). The following is an example:

```
https://iam.ap-southeast-1.myhuaweicloud.com/v3.0/OS-USER/users
```

Figure 3-1 Example URI**NOTE**

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

Request Methods

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

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

For example, in the case of the API used to [create an IAM user](#), the request method is **POST**. The request is as follows:

```
POST https://iam.ap-southeast-1.myhuaweicloud.com/v3.0/OS-USER/users
```

Request Header

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

Common request header fields are as follows:

- **Content-Type:** specifies the request body type or format. This field is mandatory and its default value is **application/json**. Other values of this field will be provided for specific APIs if any.
- **Authorization:** specifies the signature authentication information. This field is optional. When AK/SK-based authentication is enabled, this field is automatically specified when SDK is used to sign the request. For details about AK/SK authentication, see [AK/SK Authentication](#).
- **X-Sdk-Date:** specifies the time when a request is sent. This field is optional. When AK/SK authentication is enabled, this field is automatically specified when SDK is used to sign the request. For details about AK/SK authentication, see [AK/SK Authentication](#).

- **X-Auth-Token**: specifies a user token only for token-based API authentication. The user token is a response to the API used to [obtain a user token](#). This API is the only one that does not require authentication.
- **X-Project-ID**: specifies a subproject ID. This parameter is mandatory only in multi-project scenarios. It is mandatory in the request header for accessing resources in a subproject through AK/SK-based authentication.
- **X-Domain-ID**: specifies an account ID, which is optional. It is mandatory in the request header for calling APIs of global services through AK/SK-based authentication.

For the API for [creating an IAM user as an administrator](#), if AK/SK-based authentication is enabled, the request with the header is as follows:

```
POST https://iam.ap-southeast-1.myhuaweicloud.com/v3.0/OS-USER/users
Content-Type: application/json
X-Sdk-Date: 20240416T095341Z
Authorization: SDK-HMAC-SHA256 Access=*****, SignedHeaders=content-type;host;x-sdk-date,
Signature=*****
```

Request Body

The body of a request is often sent in a structured format as specified in the **Content-Type** header field. The request body transfers content except the request header. If the request body contains Chinese characters, set **Content-type** to **utf-8**, for example, **Content-Type: application/json; charset=utf-8**.

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

In the case of the API used to [create an IAM user](#), the request parameters and parameter description can be obtained from the API request. The following provides an example request with a body included.

- **accountid**: account ID of an IAM user
- **username**: name of an IAM user
- **email**: email of an IAM user
- *********: login password of an IAM user

```
POST https://iam.ap-southeast-1.myhuaweicloud.com/v3.0/OS-USER/users
Content-Type: application/json
X-Sdk-Date: 20240416T095341Z
Authorization: SDK-HMAC-SHA256 Access=*****, SignedHeaders=content-type;host;x-sdk-date,
Signature=*****

{
  "user": {
    "domain_id": "accountid",
    "name": "username",
    "password": "*****",
    "email": "email",
    "description": "IAM User Description"
  }
}
```

If all data required for the API request is available, you can send the request to call the API through curl, Postman, or coding.

3.2 Authentication

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

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

AK/SK Authentication

NOTE

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

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

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

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

NOTE

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

Token Authentication

NOTE

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

A token specifies temporary permissions in a computer system. During API authentication using a token, the token is added to requests to get permissions for calling the API. You can obtain a token by calling the [Obtaining a User Token](#) API.

IMS is a project-level service. When you call the API, set **auth.scope** in the request body to **project**.

```
{
  "auth": {
    "identity": {
      "methods": [
        "password"
      ],

```

```
"password": {  
  "user": {  
    "name": "username", // IAM user name  
    "password": $ADMIN_PASS, //IAM user password. You are advised to store it in ciphertext in  
the configuration file or an environment variable and decrypt it when needed to ensure security.  
    "domain": {  
      "name": "domainname" // Name of the account that the IAM user belongs to  
    }  
  }  
},  
"scope": {  
  "project": {  
    "name": "xxxxxxxx" // Project name  
  }  
}  
}
```

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

```
POST https://iam.ap-southeast-1.myhuaweicloud.com/v3.0/OS-USER/users  
Content-Type: application/json  
X-Auth-Token: ABCDEFGH....
```

3.3 Response

Status Code

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

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

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

Response Header

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

[Figure 3-2](#) shows the response header fields for the API used to [create an IAM user](#). The **X-Subject-Token** header field is the desired user token. This token can then be used to authenticate the calling of other APIs.

NOTE

For security purposes, you are advised to set the token in ciphertext in configuration files or environment variables and decrypt it when using it.

Figure 3-2 Header fields of the response to the request for creating an IAM user

```
"X-Frame-Options": "SAMEORIGIN",
"X-IAM-ETag-id": "2562365939-d8f6f12921974cb097338ac11fcec8a",
"Transfer-Encoding": "chunked",
"Strict-Transport-Security": "max-age=31536000; includeSubdomains;",
"Server": "api-gateway",
"X-Request-Id": "af2953f2bcc67a42325a69a19e6c32a2",
"X-Content-Type-Options": "nosniff",
"Connection": "keep-alive",
"X-Download-Options": "noopen",
"X-XSS-Protection": "1; mode=block;",
"X-IAM-Trace-Id": "token_ _null_af2953f2bcc67a42325a69a19e6c32a2",
"Date": "Tue, 21 May 2024 09:03:40 GMT",
"Content-Type": "application/json; charset=utf8"
```

(Optional) Response Body

The body of a response is often returned in a structured format (for example, JSON or XML) as specified in the **Content-Type** header field. The response body transfers content except the response header.

The following shows part of the response body for the API used to [create an IAM user](#).

```
{
  "user": {
    "id": "c131886aec...",
    "name": "IAMUser",
    "description": "IAM User Description",
    "areacode": "",
    "phone": "",
    "email": "***@***.com",
    "status": null,
    "enabled": true,
    "pwd_status": false,
    "access_mode": "default",
    "is_domain_owner": false,
    "xuser_id": "",
    "xuser_type": "",
    "password_expires_at": null,
    "create_time": "2024-05-21T09:03:41.000000",
    "domain_id": "d78cbac1.....",
    "xdomain_id": "30086000.....",
    "xdomain_type": "",
    "default_project_id": null
  }
}
```

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

```
{
  "error_msg": "The request message format is invalid.",
  "error_code": "IMG.0001"
}
```

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

4 API

4.1 Rack Management

4.1.1 Updating an Intelligent Rack

Function

This API is used to update the information of an intelligent rack.

Calling Method

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

URI

PUT https://www.example.com/v1/{project_id}/iracks/{irack_id}

Table 4-1 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A

Parameter	Mandatory	Type	Description
irack_id	Yes	String	Definition Rack ID. Constraints N/A Range Rack ID. Default Value N/A

Request Parameters

Table 4-2 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Table 4-3 Request body parameter

Parameter	Mandatory	Type	Description
description	No	String	Definition Rack description. Constraints N/A Range Maximum length: 512 bytes Default Value N/A

Response Parameters

Status code: 200

Table 4-4 Response body parameter

Parameter	Type	Description
-	String	-

Status code: 400

Table 4-5 Response body parameters

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A
error_code	String	Definition Error code. Constraints N/A Range N/A

Status code: 401

Table 4-6 Response body parameters

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A
error_code	String	Definition Error code. Constraints N/A Range N/A

Status code: 429

Table 4-7 Response body parameters

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A

Status code: 500

Table 4-8 Response body parameters

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A
error_code	String	Definition Error code. Constraints N/A Range N/A

Example Requests

PUT https://{endpoint}/v1/{project_id}/iracks/{irack_id}

Example Responses

None

Status Codes

Status Code	Description
200	The request has succeeded.
400	Invalid request parameter.
401	Request error. User not authorized.
429	Request error due to too frequent requests.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.1.2 Listing Intelligent Racks

Function

This API is used to query the intelligent rack list.

Calling Method

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

URI

GET https://www.example.com/v1/{project_id}/iracks

Table 4-9 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A

Table 4-10 Query parameters

Parameter	Mandatory	Type	Description
region	Yes	String	Definition Site ID. Constraints N/A Range Site ID Default Value N/A
marker	No	String	Definition Query address of the next page. Constraints N/A Range N/A Default Value N/A
limit	No	String	Definition Page size. Constraints N/A Range [1,2000] Default Value 2000
order	No	String	Definition Sorting order. Constraints N/A Range asc : The query results are displayed in ascending order. desc : The query results are displayed in the descending order. Default Value None

Request Parameters

Table 4-11 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Response Parameters

Status code: 200**Table 4-12** Response body parameters

Parameter	Type	Description
iracks	Array of IRack objects	Definition A set of racks. Constraints N/A
page_info	PageInfo object	Definition Pagination information. Constraints N/A

Parameter	Type	Description
count	Integer	Definition The total number of racks. Constraints N/A Range N/A Default Value N/A

Table 4-13 IRack

Parameter	Type	Description
id	String	Definition Unique ID of a rack. Constraints N/A Range Rack ID Default Value N/A
name	String	Definition Rack name. Constraints N/A Range N/A Default Value N/A
dc	String	Definition Equipment room name. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
region	String	Definition Region information. Constraints N/A Range Regions Default Value N/A
location	String	Definition Rack location. Constraints N/A Range Maximum length: 128 bytes Default Value N/A
size	String	Definition Rack size. Constraints N/A Range Maximum length: 128 bytes Default Value N/A
unit	String	Definition Rack unit (U) Constraints N/A Range Maximum length: 128 bytes Default Value N/A

Parameter	Type	Description
power	String	Definition Rated power of a rack. Constraints N/A Range Maximum length: 128 bytes. It cannot contain spaces or line breaks. Default Value N/A
description	String	Definition Rack description. Constraints N/A Range Maximum length: 512 bytes Default Value N/A
is_cloud_based	String	Definition Whether racks are managed on the cloud. Constraints N/A Range true: Racks are managed on the cloud. false: Racks are not managed on the cloud. Default Value N/A
operation_status	Integer	Definition Whether racks are frozen. Constraints N/A Range 0: Not frozen Other: Frozen Default Value N/A

Parameter	Type	Description
freeze_effect	Integer	Definition Frozen effect. Constraints N/A Range 1: Racks can be released. 2: Racks are not allowed to be released. Default Value N/A
tags	tags object	-

Table 4-14 tags

Parameter	Type	Description
tags	Array of Tag objects	Definition Tags. Constraints N/A Range N/A Default Value N/A

Table 4-15 Tag

Parameter	Type	Description
key	String	Definition Tag key. Constraints N/A Range • The value cannot be empty and cannot start or end with spaces. A maximum of 128 characters are supported. • The value can contain letters, digits, and spaces in UTF-8 format. • The value can contain the following special characters: _.:=-@ • The value cannot start with sys. Default Value N/A
value	String	Definition Tag value. Constraints N/A Range • The value can contain a maximum of 255 characters. It can be empty but cannot be the default. • The value can be letters, digits, and spaces in UTF-8 format. • The value can contain the following special characters: _.:=-@ Default Value N/A

Table 4-16 PageInfo

Parameter	Type	Description
next_marker	String	Definition Query address of the next page. Constraints N/A Range N/A Default Value N/A
previous_marker	String	Definition Query address of the previous page. Constraints N/A Range N/A Default Value N/A
current_count	Integer	Definition The number of items returned on this page. Constraints N/A Range N/A Default Value N/A

Status code: 400

Table 4-17 Response body parameters

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A
error_code	String	Definition Error code. Constraints N/A Range N/A

Status code: 401**Table 4-18** Response body parameters

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A
error_code	String	Definition Error code. Constraints N/A Range N/A

Status code: 429

Table 4-19 Response body parameters

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A
error_code	String	Definition Error code. Constraints N/A Range N/A

Status code: 500

Table 4-20 Response body parameters

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A
error_code	String	Definition Error code. Constraints N/A Range N/A

Example Requests

```
GET https://{endpoint}/v1/{project_id}/iracks?region={region}
```

Example Responses

Status code: 200

Intelligent rack list is returned.

```
{
  "iracks": [ {
    "id": "01961525-c5fc-780c-92d9-f73eab3fb17c",
    "name": "raaaaaaaaa_698",
    "dc": "roooooooooom_698",
    "location": "CloudDC_TEST_Bed",
    "size": "600 mm (width)*1600 mm (depth)*2200 mm (height)",
    "unit": "47U",
    "power": "8KW",
    "description": "123123",
    "is_cloud_based": "true",
    "operation_status": 0,
    "freeze_effect": 1,
    "tags": [ {
      "key": "chennantest",
      "value": "1234556"
    }, {
      "key": "BQ0715",
      "value": "BQZ01-XG"
    } ]
  } ],
  "page_info": {
    "next_marker": "0196ebc1-494e-7e97-be8f-9fd00ac370fa",
    "previous_marker": "01961525-c5fc-780c-92d9-f73eab3fb17c",
    "current_count": 1000
  },
  "count": 4185
}
```

Status Codes

Status Code	Description
200	Intelligent rack list is returned.
400	Invalid request parameter.
401	Request error. User not authorized.
429	Request error. Too many requests.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.2 Equipment Room management

4.2.1 Modifying the IDC Description

Function

This API is used to modify the IDC description.

Calling Method

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

URI

PUT https://www.example.com/v1/{project_id}/idcs

Table 4-21 URI parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A

Request Parameters

Table 4-22 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Table 4-23 Request body parameter

Parameter	Mandatory	Type	Description
[Array element]	Yes	Array of - objects	Definition Batch update of IDC sets. Constraints N/A

Response Parameters

Status code: 200

Table 4-24 Response body parameter

Parameter	Type	Description
-	String	-

Status code: 400

Table 4-25 Response body parameters

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A
error_code	String	Definition Error code. Constraints N/A Range N/A

Status code: 401

Table 4-26 Response body parameters

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A
error_code	String	Definition Error code. Constraints N/A Range N/A

Status code: 429

Table 4-27 Response body parameters

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A
error_code	String	Definition Error code. Constraints N/A Range N/A

Status code: 500

Table 4-28 Response body parameters

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A
error_code	String	Definition Error code. Constraints N/A Range N/A

Example Request

Request for modifying the IDC description

```
PUT https://{endpoint}/v1/{project_id}/idcs
[ {
  "description" : "test",
  "id" : "019674ed-07c1-7496-b6a8-96989d73efa9"
}]
```

Example Response

Status code: 200

The request has been processed.

```
update idc success
```

Status Codes

Status Code	Description
200	The request has succeeded.
400	Invalid request parameter.
401	Request error. User not authorized.
429	Request error due to too frequent requests.

Status Code	Description
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.2.2 Querying the IDC List

Function

This API is used to query the IDC list.

Calling Method

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

URI

GET https://www.example.com/v1/{project_id}/idcs

Table 4-29 URI parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A

Table 4-30 Query parameters

Parameter	Mandatory	Type	Description
region	Yes	String	Definition Region information. Constraints N/A Range Regions Default Value N/A
limit	No	String	Definition Number of records on each page for pagination query. Constraints N/A Range [1-2000] Default Value 2000
order	No	String	Definition Sorting order. Constraints N/A Range • asc: The query results are displayed in ascending order. • desc: The query results are displayed in the descending order. Default Value N/A

Parameter	Mandatory	Type	Description
marker	No	String	Definition Query address of the next page. Constraints N/A Range N/A Default Value N/A

Request Parameters

Table 4-31 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Response Parameters

Status code: 200

Table 4-32 Response body parameters

Parameter	Type	Description
idcs	Array of IDc objects	Definition Equipment room set. Constraints N/A
page_info	PageInfo object	Definition Pagination information. Constraints N/A
count	Integer	Definition The total number of equipment rooms. Constraints N/A Range N/A Default Value N/A

Table 4-33 IDc

Parameter	Type	Description
name	String	Definition Equipment room name. Constraints N/A Range Maximum length: 256 bytes Default Value N/A
irack_num	Integer	Definition Number of racks contained. Constraints N/A Range Regions Default Value N/A

Parameter	Type	Description
id	String	Definition Equipment room ID. Constraints N/A Range Maximum length: 128 bytes Default Value N/A
region	String	Definition Region information. Constraints N/A Range Regions Default Value N/A
description	String	Definition Equipment room description. Constraints N/A Range Maximum length: 512 bytes Default Value N/A

Table 4-34 PageInfo

Parameter	Type	Description
next_marker	String	Definition Query address of the next page. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
previous_marker	String	Definition Query address of the previous page. Constraints N/A Range N/A Default Value N/A
current_count	Integer	Definition The number of items returned on this page. Constraints N/A Range N/A Default Value N/A

Status code: 400

Table 4-35 Response body parameters

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A
error_code	String	Definition Error code. Constraints N/A Range N/A

Status code: 401

Table 4-36 Response body parameters

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A
error_code	String	Definition Error code. Constraints N/A Range N/A

Status code: 429

Table 4-37 Response body parameters

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A
error_code	String	Definition Error code. Constraints N/A Range N/A

Status code: 500

Table 4-38 Response body parameters

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A
error_code	String	Definition Error code. Constraints N/A Range N/A

Example Request

Request for querying the IDC list

GET https://{endpoint}/v1/{project_id}/idcs

Example Response

Status code: 200

The IDC list is returned.

```
{
  "idcs": [ {
    "id": "019674ed-07c1-7496-b6a8-96989d73efa9",
    "name": "EquipmentRoom_001",
    "irack_num": 1016,
    "description": "Describe the test-hyphen_xaihauxia",
    "region": "cn-southwest-242"
  } ],
  "page_info": {
    "next_marker": "01981c9a-bf80-7265-b3d3-6e2b34fced5",
    "previous_marker": "019674ed-07c1-7496-b6a8-96989d73efa9",
    "current_count": 606
  },
  "count": 606
}
```

Status Codes

Status Code	Description
200	The IDC list is returned.
400	Invalid request parameter.
401	Request error. User not authorized.
429	Request error due to too frequent requests.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.3 Physical Server Management

4.3.1 Batch Querying Physical Servers

Function

This API is used to query the list of physical servers.

Calling Method

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

URI

GET /v1/{project_id}/physicalservers

Table 4-39 URI parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A

Table 4-40 Query parameters

Parameter	Mandatory	Type	Description
manage_state	No	String	Definition Server management status. Constraints N/A Range • onboard: The server is being provisioned. You can place an order and complete the LLD design. • ready: The delivery is complete, including hardware installation, network commissioning, server initialization, software commissioning, and transfer-to-maintenance acceptance. • in-use: The server is provisioned and in use. • frozen: Resources are frozen due to arrears. • offboarding: The server is being removed. Default Value N/A
marker	No	String	Definition ID of the last record on the previous page. Constraints N/A Range N/A Default Value N/A

Parameter	Mandatory	Type	Description
limit	No	Integer	Definition Number of records on each page for pagination query. Constraints N/A Range The value range is from 10 to 1000. If this parameter is not set or is set to a value less than 10 , the default value 10 is used. If the value is greater than 1000, the default value 1000 is used. Default Value 10

Request Parameters

Table 4-41 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Response Parameters

Status code: 200

Table 4-42 Response body parameters

Parameter	Type	Description
servers	Array of PhysicalServer objects	Definition Pagination of the server list. Constraints N/A
page_info	PageInfo object	Definition Pagination information. Constraints N/A
count	Integer	Definition The total number of servers. Constraints N/A Range N/A Default Value N/A

Table 4-43 PhysicalServer

Parameter	Type	Description
id	String	Definition Server ID. Constraints N/A Range Its value is in UUID format. Default Value N/A

Parameter	Type	Description
name	String	Definition Name of a physical server, which is used as the hostname when an instance is created. Constraints N/A Range N/A Default Value N/A
project_id	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A
domain_id	String	Definition domain ID Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
manage_state	String	Definition Server management status. Constraints N/A Value Range • onboard: The server is being provisioned. You can place an order and complete the LLD design. • ready: The delivery is complete, including hardware installation, network commissioning, server initialization, software commissioning, and transfer-to-maintenance acceptance. • in-use: The server is provisioned and in use. • frozen: Resources are frozen due to arrears. • offboarding: The server is being removed.

Parameter	Type	Description
		The diagram illustrates the lifecycle of a resource through various states and transitions. The states are represented by rounded rectangles: delivering, received, onboard, ready, in_use, frozen, and offboarding. The transitions are labeled with events or actions: delivering to received: Server deployment in equipment rooms received to onboard: LLD, network commissioning, and server initialization onboard to ready: Software commissioning and transfer-to-maintenance acceptance ready to in_use: iMetal instance provisioned ready to in_use: iMetal instance not provisioned in_use to ready: iMetal instance not provisioned in_use to frozen: In arrears frozen to in_use: In arrears in_use to offboarding: Removal request frozen to offboarding: Removal request ready to offboarding: Removal request offboarding to offboarding: Removal completed The process starts at a black dot (initial state) and ends at a purple circle (final state). Default Value N/A

Parameter	Type	Description
power_state	String	Definition Power supply status. The power_state value changes according to different operations and events. The common status transition process is as follows: • Power-on process: off > powering-on > on • Power-off process: on > powering-off > off • Reboot process: on > rebooting > on Constraints N/A Range • on: The power of a node is turned on, the hardware is powered on, and the OS is running or can be started normally. The node can execute computing tasks and provide services for upper-layer applications. • off: The power of a node is turned off, the power supply to the hardware is cut off, and all components are not working. The node cannot execute any computing tasks. • rebooting: A node is being rebooted, which means the node is powered off and then powered on. During this process, the hardware is initialized and the OS is started. • powering-on: When the node is being powered on, the hardware is powered on, but the OS may not be started. • powering-off: The node is being powered off. The OS performs some cleanup operations, such as saving data and stopping services, and then cuts off the power supply to the hardware. Example scenarios: 1. After a user creates and activates a node in Ironic or powers on a node,

Parameter	Type	Description
		the power_state value of the node changes to power on. 2. When a node is under maintenance or is no longer used, the administrator can power off the node. In this case, power_state is power off. 3. When an administrator uses the Ironi API to reboot a node, its power_state changes to rebooting during the process. 4. After an administrator sends a power-on instruction, the node enters the powering on state. The power_state value changes to power on when the OS has been started. 5. After an administrator sends a power-off instruction, the node enters the powering off state. The power_state value changes to off when the power supply is completely turned off. Default Value N/A
health_state	String	Definition Hardware health status. Constraints N/A Range • OK • Warning • Critical • Unknown Default Value N/A

Parameter	Type	Description
onboard_time	String	Definition Provisioning time. Constraints N/A Range The value is in RFC 3339 format, for example, 2025-04-22T12:03:18.50083+08:00. Default Value N/A
location	Location object	Definition Location of the physical server. Constraints N/A
hardware_attributes	HardwareSummary object	Definition Hardware overview information, including the server manufacturer, model, and serial number. Constraints N/A
tags	Array of Tag objects	Definition Tag. Constraints N/A
error	ErrorStatus object	Definition Error object returned upon a failure. Constraints N/A

Table 4-44 Location

Parameter	Type	Description
dc	String	Definition Equipment room name. Constraints N/A Range Maximum length: 256 bytes. Only letters, digits, underscores (_), hyphens (-), and periods (.) are allowed. Default Value N/A
rack	String	Definition Rack name. Constraints N/A Range Maximum length: 128 bytes. Only letters, digits, underscores (_), hyphens (-), and periods (.) are allowed. It cannot start with hyphens (-) or periods (.). Default Value N/A
unit	String	Definition Rack unit (U) Constraints N/A Range Maximum length: 128 bytes Default Value N/A

Table 4-45 HardwareSummary

Parameter	Type	Description
sn	String	Definition serial number Constraints N/A Range N/A Default Value N/A
manufacturer	String	Definition Manufacturer. Constraints N/A Range N/A Default Value N/A
model	String	Definition Model. Constraints N/A Range N/A Default Value N/A
main_board_manufacterer	String	Definition Mainboard vendor. Constraints N/A Range N/A Default Value N/A

Table 4-46 Tag

Parameter	Type	Description
key	String	Definition Tag key. Constraints N/A Range • The value cannot be empty and cannot start or end with spaces. A maximum of 128 characters are supported. • The value can contain letters, digits, and spaces in UTF-8 format. • The value can contain the following special characters: _.:=-@ • The value cannot start with sys. Default Value N/A
value	String	Definition Tag value. Constraints N/A Range • The value can contain a maximum of 255 characters. It can be empty but cannot be the default. • The value can be letters, digits, and spaces in UTF-8 format. • The value can contain the following special characters: _.:=-@ Default Value N/A

Table 4-47 ErrorStatus

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A
error_type	String	Definition Error type. Constraints N/A Range • create_instance_error: Instance creation error • delete_instance_error: Instance deletion error • reinstall_error: OS reinstallation error • modify_ip_error: IP address change error • verify_server_error: Server verification error • delete_server_error: Server deletion error Default Value N/A

Table 4-48 PageInfo

Parameter	Type	Description
next_marker	String	Definition Query address of the next page. Constraints N/A Range N/A Default Value N/A
previous_marker	String	Definition Query address of the previous page. Constraints N/A Range N/A Default Value N/A
current_count	Integer	Definition The number of items returned on this page. Constraints N/A Range N/A Default Value N/A

Status code: 400

Table 4-49 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 401

Table 4-50 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429**Table 4-51** Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500**Table 4-52** Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Request

Request for querying the list of physical servers

```
GET https://{endpoint}/v1/{project_id}/physicalservers?marker={marker}&limit={limit}
```

Example Response

Status code: 200

Physical servers are returned by page.

```
{
  "servers": [ {
    "id": "0195d690-cfd4-7303-a1e1-707f2f863921",
    "name": "test-host-102",
    "project_id": "e750c9499ffb4244add7398a0af4f215",
    "domain_id": "aef171e13fe24458a819bb42870571d9",
    "manage_state": "ready",
    "power_state": "",
    "health_state": "",
    "onboard_time": "2025-03-27T15:46:09.492642+08:00",
    "location": {
      "dc": "Room_room_003",
      "rack": "cabinet_room_003_1",
      "unit": "SN_26_151_241_102"
    },
    "hardware_attributes": {
      "sn": "SN_26_151_241_102",
      "manufacturer": "Huawei",
      "model": "2288H v108"
    },
    "tags": [ {
      "key": "2",
      "value": "3"
    } ],
    "error": {
      "error_code": "",
      "error_msg": "inspect imetal job failed, please contact oncall",
      "error_type": "verify_server_error"
    },
    "ops_result": "InspectError",
    "az_id": "",
    "region_id": "",
    "bmc_firmware_version": ""
  } ],
  "page_info": {
    "next_marker": "0197f36d-d84f-7d92-8d00-dd29b81b9498",
    "current_count": 1000
  },
  "count": 1763
}
```

Status Codes

Status Code	Description
200	Physical servers are returned by page.
400	Invalid request parameter.
401	The request is not authenticated.
429	The request is overloaded.

Status Code	Description
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.3.2 Querying the Physical Server Information

Function

This API is used to query the physical server information.

Calling Method

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

URI

GET /v1/{project_id}/physicalservers/{id}

Table 4-53 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A
id	Yes	String	Definition Server ID. Constraints N/A Range N/A Default Value N/A

Request Parameters

Table 4-54 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Response Parameters

Status code: 200**Table 4-55** Response body parameters

Parameter	Type	Description
id	String	Definition Server ID. Constraints N/A Range Its value is in UUID format. Default Value N/A

Parameter	Type	Description
name	String	Definition Name of a physical server, which is used as the hostname when an instance is created. Constraints N/A Range N/A Default Value N/A
project_id	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A
domain_id	String	Definition domain ID Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
manage_state	String	Definition Server management status. Constraints N/A Value Range • onboard: The server is being provisioned. You can place an order and complete the LLD design. • ready: The delivery is complete, including hardware installation, network commissioning, server initialization, software commissioning, and transfer-to-maintenance acceptance. • in-use: The server is provisioned and in use. • frozen: Resources are frozen due to arrears. • offboarding: The server is being removed.

Parameter	Type	Description
		<pre>graph TD; Start(()) -- "Resource purchase" --> delivering[delivering]; delivering -- "Server deployment in equipment rooms" --> received[received]; received -- "LLD, network commissioning, and server initialization" --> onboard[onboard]; onboard -- "Software commissioning and transfer-to-maintenance acceptance" --> ready[ready]; ready -- "iMetal instance provisioned" --> in_use[in_use]; ready -- "iMetal instance not provisioned" --> in_use; in_use -- "In arrears" --> frozen[frozen]; frozen -- "Removal request" --> offboarding[offboarding]; in_use -- "Removal request" --> offboarding; ready -- "Removal request" --> offboarding; offboarding -- "Removal completed" --> End((()));</pre> Default Value N/A

Parameter	Type	Description
power_state	String	Definition Power supply status. The power_state value changes according to different operations and events. The common status transition process is as follows: • Power-on process: off > powering-on > on • Power-off process: on > powering-off > off • Reboot process: on > rebooting > on Constraints N/A Range • on: The power of a node is turned on, the hardware is powered on, and the OS is running or can be started normally. The node can execute computing tasks and provide services for upper-layer applications. • off: The power of a node is turned off, the power supply to the hardware is cut off, and all components are not working. The node cannot execute any computing tasks. • rebooting: A node is being rebooted, which means the node is powered off and then powered on. During this process, the hardware is initialized and the OS is started. • powering-on: When the node is being powered on, the hardware is powered on, but the OS may not be started. • powering-off: The node is being powered off. The OS performs some cleanup operations, such as saving data and stopping services, and then cuts off the power supply to the hardware. Example scenario: After a user creates and activates a node in Ironic or powers on a node, the power_state

Parameter	Type	Description
		value of the node changes to power on. Example scenario: When a node is under maintenance or is no longer used, the administrator can power off the node. In this case, power_state is power off. Example scenario: When an administrator uses the Ironi API to reboot a node, its power_state changes to rebooting during the process. Example scenario: After an administrator sends a power-on instruction, the node enters the powering on state. The power_state value changes to power on when the OS has been started. Example scenario: After an administrator sends a power-off instruction, the node enters the powering off state. The power_state value changes to off when the power supply is completely turned off. Default Value N/A
health_state	String	Definition Hardware health status. Constraints N/A Range • OK • Warning • Critical • Unknown Default Value N/A

Parameter	Type	Description
onboard_time	String	Definition Provisioning time. Constraints N/A Range The value is in RFC 3339 format, for example, 2025-04-22T12:03:18.50083+08:00. Default Value N/A
location	Location object	Definition Location of the physical server. Constraints N/A
hardware_attributes	HardwareSummary object	Definition Hardware overview information, including the server manufacturer, model, and serial number. Constraints N/A
tags	Array of Tag objects	Definition Tag. Constraints N/A
error	ErrorStatus object	Definition Error object returned upon a failure. Constraints N/A

Table 4-56 Location

Parameter	Type	Description
dc	String	Definition Equipment room name. Constraints N/A Range Maximum length: 256 bytes. Only letters, digits, underscores (_), hyphens (-), and periods (.) are allowed. Default Value N/A
rack	String	Definition Rack name. Constraints N/A Range Maximum length: 128 bytes. Only letters, digits, underscores (_), hyphens (-), and periods (.) are allowed. It cannot start with hyphens (-) or periods (.). Default Value N/A
unit	String	Definition Rack unit (U) Constraints N/A Range Maximum length: 128 bytes Default Value N/A

Table 4-57 HardwareSummary

Parameter	Type	Description
sn	String	Definition serial number Constraints N/A Range N/A Default Value N/A
manufacturer	String	Definition Manufacturer. Constraints N/A Range N/A Default Value N/A
model	String	Definition Model. Constraints N/A Range N/A Default Value N/A
main_board_manufacterer	String	Definition Mainboard vendor. Constraints N/A Range N/A Default Value N/A

Table 4-58 Tag

Parameter	Type	Description
key	String	Definition Tag key. Constraints N/A Range • The value cannot be empty and cannot start or end with spaces. A maximum of 128 characters are supported. • The value can contain letters, digits, and spaces in UTF-8 format. • The value can contain the following special characters: _.:=-@ • The value cannot start with sys. Default Value N/A
value	String	Definition Tag value. Constraints N/A Range • The value can contain a maximum of 255 characters. It can be empty but cannot be the default. • The value can be letters, digits, and spaces in UTF-8 format. • The value can contain the following special characters: _.:=-@ Default Value N/A

Table 4-59 ErrorStatus

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A
error_type	String	Definition Error type. Constraints N/A Range • create_instance_error: Instance creation error • delete_instance_error: Instance deletion error • reinstall_error: OS reinstallation error • modify_ip_error: IP address change error • verify_server_error: Server verification error • delete_server_error: Server deletion exception Default Value N/A

Status code: 400

Table 4-60 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 401

Table 4-61 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429**Table 4-62** Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500**Table 4-63** Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Request

Request for querying information about physical servers

```
GET https://{endpoint}/v1/{project_id}/physicalservers/{id}
```

Example Response

Status code: 200

Physical server information returned.

```
{
  "id" : "0197ee54-53de-78fe-94dd-a6684e4a85ee",
  "name" : "CloudDC-Jarvis-147",
  "project_id" : "e750c9499ffb4244add7398a0af4f215",
  "domain_id" : "aef171e13fe24458a819bb42870571d9",
  "manage_state" : "ready",
  "power_state" : "off",
  "health_state" : "OK",
  "onboard_time" : "2025-07-09T16:36:33.374276+08:00",
  "location" : {
    "dc" : "BBB",
    "rack" : "AAA",
    "unit" : "19"
  },
  "hardware_attributes" : {
    "sn" : "CloudDC-Jarvis-147",
    "manufacturer" : "Huawei",
    "model" : "NV602x1x99x3"
  },
  "tags" : [ {
    "key" : "chennantest",
    "value" : "1223"
  }, {
    "key" : "QQ",
    "value" : "QQ"
  } ],
  "ops_result" : "Uninstalling",
  "az_id" : "",
  "region_id" : "",
  "bmc_firmware_version" : ""
}
```

Status Codes

Status Code	Description
200	Physical server information returned.
400	Invalid request parameter.
401	The request is not authenticated.
429	The request is overloaded.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.3.3 Obtaining the Console Address

Function

This API is used to obtain the console information.

Calling Method

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

URI

GET /v1/{project_id}/physicalservers/{id}/remote-console-address

Table 4-64 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A
id	Yes	String	Definition Server ID. Constraints N/A Range N/A Default Value N/A

Request Parameters

Table 4-65 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Response Parameters

Status code: 200

Table 4-66 Response body parameter

Parameter	Type	Description
url	String	Definition Remote login address. Constraints N/A Range N/A Default Value N/A

Status code: 400

Table 4-67 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 401

Table 4-68 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429**Table 4-69** Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500**Table 4-70** Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Request

Request for obtaining the console information

```
GET https://{endpoint}/v1/{project_id}/physicalservers/{id}/remote-console-address
```

Example Response

Status code: 200

The request has been processed.

```
{
  "url" : "https://cn-southwest-242-console.huaweicloud.com:443/vnc/testjarvis.cn-southwest-242/
vnc_auto.html?token=2e3e42cb-b5e7-49f0-91b6-d16401a823ac&compression=9&quality=0&resize=scale"
}
```

Status Codes

Status Code	Description
200	The request has succeeded.
400	Invalid request parameter.
401	The request is not authenticated.
429	The request is overloaded.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.3.4 Querying Server Hardware Details

Function

This API is used to query hardware details.

Calling Method

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

URI

```
GET /v1/{project_id}/physicalservers/{id}/hardware-attributes
```

Table 4-71 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A
id	Yes	String	Definition Server ID. Constraints N/A Range N/A Default Value N/A

Request Parameters

Table 4-72 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Response Parameters

Status code: 200

Table 4-73 Response body parameters

Parameter	Type	Description
summary	HardwareSummary object	Definition Hardware summary information, including the server manufacturer, model, and serial number Constraints N/A
memorys	Array of Memory objects	Definition The list of memory details. Constraints N/A
processors	Array of Processors objects	Definition The list of CPU details. Constraints N/A
network_adapters	Array of NetworkAdapter objects	Definition The list of network adapter details. Constraints N/A
fans	Array of Fan objects	Definition The list of fan details. Constraints N/A
powers	Array of Power objects	Definition The list of power supply details. Constraints N/A
storage_controllers	Array of StorageController objects	Definition The list of storage controller details. Constraints N/A

Parameter	Type	Description
metrics	Array of HardwareMetric objects	Definition Monitoring metrics Constraints N/A

Table 4-74 HardwareSummary

Parameter	Type	Description
sn	String	Definition serial number Constraints N/A Range N/A Default Value N/A
manufacturer	String	Definition Manufacturer. Constraints N/A Range N/A Default Value N/A
model	String	Definition Model. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
main_board_manufacturer	String	Definition Mainboard vendor. Constraints N/A Range N/A Default Value N/A

Table 4-75 Memory

Parameter	Type	Description
name	String	Definition Memory module name. Constraints N/A Range N/A Default Value N/A
capacity_mib	Integer	Definition Total memory capacity in MiB. Constraints N/A Range N/A Default Value N/A
manufacturer	String	Definition Manufacturer. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
memory_device_type	String	Definition Memory type, which is DDR4 or DDR6. Constraints N/A Range N/A Default Value N/A
allowed_speed_mhz	Integer	Definition CPU clock speed in MHz. Constraints N/A Range N/A Default Value N/A
operating_speed_mhz	Integer	Definition Current clock speed in MHz. Constraints N/A Range N/A Default Value N/A
serial_number	String	Definition Serial number. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
health	String	Definition Health status. Constraints N/A Range N/A Default Value N/A
state	String	Definition Enabling status. Constraints N/A Range N/A Default Value N/A
rank_count	String	Definition The number of memory ranks. Constraints N/A Range N/A Default Value N/A
data_width_bits	String	Definition Data bandwidth. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
part_number	String	Definition Component number. Constraints N/A Range N/A Default Value N/A
min_voltage_milli_volt	String	Definition Minimum voltage. Constraints N/A Range N/A Default Value N/A
bom_number	String	Definition BOM code. Constraints N/A Range N/A Default Value N/A
type_detail	String	Definition Type details. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
technology	String	Definition Technology. Constraints N/A Range N/A Default Value N/A
position	String	Definition Location. Constraints N/A Range N/A Default Value N/A

Table 4-76 Processors

Parameter	Type	Description
name	String	Definition Processor name. Constraints N/A Range N/A Default Value N/A
manufacturer	String	Definition Manufacturer. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
model	String	Definition Processor model. Constraints N/A Range N/A Default Value N/A
total_cores	Integer	Definition The total number of cores of a processor. Constraints N/A Range N/A Default Value N/A
total_enabled_cores	String	Definition The number of cores enabled for a processor. Constraints N/A Range N/A Default Value N/A
total_threads	Integer	Definition The total number of threads of a processor. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
total_enabled_threads	String	Definition The total number of enabled threads. Constraints N/A Range N/A Default Value N/A
socket	Integer	Definition The socket number of a processor. Constraints N/A Range N/A Default Value N/A
max_speed_mhz	Integer	Definition Maximum CPU clock speed of a processor in MHz. Constraints N/A Range N/A Default Value N/A
temperature	Integer	Definition Temperature of a processor. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
l1_cache_kib	Integer	Definition L1 cache in KiB Constraints N/A Range N/A Default Value N/A
l2_cache_kib	Integer	Definition L2 cache in KiB. Constraints N/A Range N/A Default Value N/A
l3_cache_kib	Integer	Definition L3 cache in KiB. Constraints N/A Range N/A Default Value N/A
frequency_mhz	Integer	Definition CPU clock speed of a processor. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
other_parameters	String	Definition Other parameters. Constraints N/A Range N/A Default Value N/A
serial_number	String	Definition Serial number. Constraints N/A Range N/A Default Value N/A
health	String	Definition Health status. Constraints N/A Range N/A Default Value N/A
state	String	Definition Status. Constraints N/A Range N/A Default Value N/A

Table 4-77 NetworkAdapter

Parameter	Type	Description
name	String	Definition Network adapter name. Constraints N/A Range N/A Default Value N/A
card_model	String	Definition Chip model of a network adapter. Constraints N/A Range N/A Default Value N/A
model	String	Definition Network adapter model. Constraints N/A Range N/A Default Value N/A
manufacturer	String	Definition Manufacturer of a network adapter. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
card_manufacturer	String	Definition Chip manufacturer of a network adapter. Constraints N/A Range N/A Default Value N/A
position	String	Definition Network adapter position. Constraints N/A Range N/A Default Value N/A
slot_number	Integer	Definition Network adapter slot number. Constraints N/A Range N/A Default Value N/A
pcb_version	String	Definition PCB version of a network adapter. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
driver_name	String	Definition Driver name of a network adapter. Constraints N/A Range N/A Default Value N/A
driver_version	String	Definition Driver version of a network adapter. Constraints N/A Range N/A Default Value N/A
associated_resource	String	Definition Associated resource of a network adapter. Constraints N/A Range N/A Default Value N/A
firmware_version	String	Definition Firmware version of a network adapter. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
health	String	Definition Health status. Constraints N/A Range N/A Default Value N/A
network_ports	Array of NetworkPort objects	Definition Network port list. Constraints N/A

Table 4-78 NetworkPort

Parameter	Type	Description
physical_port_number	Integer	Definition Physical port number of a network port. Constraints N/A Range N/A Default Value N/A
link_status	String	Definition Physical connection status of a network port. Constraints N/A Range • Up: connected • Down: not connected Default Value N/A

Parameter	Type	Description
associated_network_addresses	String	Definition Network address of a network port. Constraints N/A Range N/A Default Value N/A
active_link_technology	String	Definition Network protocol of a network port. Constraints N/A Range N/A Default Value N/A
port_type	String	Definition Network port type. Constraints N/A Range N/A Default Value N/A
port_max_speed	String	Definition Maximum rate of a network port. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
firmware_package_version	String	Definition Firmware version of a network port. Constraints N/A Range N/A Default Value N/A
bdf	String	Definition BDF of a network port. Constraints N/A Range N/A Default Value N/A
auto_neg	String	Definition Protocol. Constraints N/A Range N/A Default Value N/A

Table 4-79 Fan

Parameter	Type	Description
name	String	Definition Fan name. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
model	String	Definition Fan model. Constraints N/A Range N/A Default Value N/A
reading	String	Definition Fan speed. Constraints N/A Range N/A Default Value N/A
reading_units	String	Definition Fan speed unit. Constraints N/A Range N/A Default Value N/A
part_number	String	Definition Fan firmware code. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
speed_ratio	String	Definition Fan speed ratio. Constraints N/A Range N/A Default Value N/A
status	Status object	Hardware status.

Table 4-80 Power

Parameter	Type	Description
name	String	Definition Power supply name. Constraints N/A Range N/A Default Value N/A
slot_number	Integer	Definition Power supply slot. Constraints N/A Range N/A Default Value N/A
model	String	Definition Model of a power supply Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
manufacturer	String	Definition Power supply vendor Constraints N/A Range N/A Default Value N/A
power_supply_type	String	Definition Input mode. Constraints N/A Range N/A Default Value N/A
power_capacity_watts	String	Definition Rated power. Constraints N/A Range N/A Default Value N/A
line_input_voltage	Integer	Definition Input voltage. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
output_voltage	Integer	Definition Output voltage. Constraints N/A Range N/A Default Value N/A
protocol	String	Definition Protocol. Constraints N/A Range N/A Default Value N/A
active_standby	String	Definition Active/Standby mode. Constraints N/A Range N/A Default Value N/A
part_number	String	Definition Component number. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
serial_number	String	Definition Serial number. Constraints N/A Range N/A Default Value N/A
firmware_version	String	Definition Firmware version. Constraints N/A Range N/A Default Value N/A
status	Status object	Hardware status overview.

Table 4-81 StorageController

Parameter	Type	Description
name	String	Definition Name of a storage controller. Constraints N/A Range N/A Default Value N/A
model	String	Definition Storage controller model. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
manufacturer	String	Definition Storage controller manufacturer. Constraints N/A Range N/A Default Value N/A
state	String	Definition Storage controller status. Constraints N/A Range N/A Default Value N/A
health	String	Definition Health status of a storage controller. Constraints N/A Range N/A Default Value N/A
type	String	Definition Storage controller type. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
firmware_version	String	Definition Firmware version. Constraints N/A Range N/A Default Value N/A
supported_raid_levels	Array of strings	Definition The list of supported RAID levels. Constraints N/A
mode	String	Definition Storage controller mode. Constraints N/A Range N/A Default Value N/A
configuration_version	String	Definition The storage controller configuration version. Constraints N/A Range N/A Default Value N/A
sas_address	String	Definition SAS address. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
capacitance_name	String	Definition Name of a storage controller (BBU) capacitor. Constraints N/A Range N/A Default Value N/A
capacitance_state	String	Definition Enabling status of a storage controller (BBU) capacitor. Constraints N/A Range N/A Default Value N/A
capacitance_health	String	Definition Health status of a storage controller (BBU) capacitor. Constraints N/A Range N/A Default Value N/A
min_stripe_size_bytes	Long	Definition The minimum stripe size supported by a controller. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
max_stripe_size_bytes	Long	Definition The maximum stripe size supported by a controller. Constraints N/A Range N/A Default Value N/A
volumes	Array of Volume objects	Definition Logical disk list. Constraints N/A
drives	Array of strings	Definition The list of managed drives. Constraints N/A

Table 4-82 Volume

Parameter	Type	Description
name	String	Definition Name of a logical disk. Constraints N/A Range N/A Default Value N/A
volume_raid_level	String	Definition RAID level. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
capacity_bytes	Integer	Definition Capacity (unit: byte). Constraints N/A Range N/A Default Value N/A
optimum_io_size_bytes	Integer	Definition Stripe size of a logical disk (unit: byte). Constraints N/A Range N/A Default Value N/A
current_read_policy	String	Definition Current read policy. Constraints N/A Range N/A Default Value N/A
default_read_policy	String	Definition Default read policy. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
current_write_policy	String	Definition Current write policy. Constraints N/A Range N/A Default Value N/A
default_write_policy	String	Definition Default write policy. Constraints N/A Range N/A Default Value N/A
access_policy	String	Definition Access policy. Constraints N/A Range N/A Default Value N/A
current_io_policy	String	Definition Current I/O policy. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
default_io_policy	String	Definition Default I/O policy. Constraints N/A Range N/A Default Value N/A
drives	Array of Drive objects	Definition Details about physical storage disks. Constraints N/A
status	Status object	Hardware status overview.

Table 4-83 Drive

Parameter	Type	Description
id	String	Definition Driver resource ID. Constraints N/A Range N/A Default Value N/A
name	String	Definition Drive resource name. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
manufacturer	String	Definition Manufacturer of a driver. Constraints N/A Range N/A Default Value N/A
model	String	Definition Driver model. Constraints N/A Range N/A Default Value N/A
serial_number	String	Definition Serial number of a driver. Constraints N/A Range N/A Default Value N/A
revision	String	Definition Drive version. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
media_type	String	Definition Media type of a driver. Constraints N/A Range N/A Default Value N/A
protocol	String	Definition Driver-compliant protocol. Constraints N/A Range N/A Default Value N/A
sas_address	String	Definition SAS address. Constraints N/A Range N/A Default Value N/A
capacity_bytes	Integer	Definition Capacity (unit: byte). Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
capable_speed_gbs	Integer	Definition Maximum rate of the driver interface (unit: Gbit/s). Constraints N/A Range N/A Default Value N/A
negotiated_speed_gbs	Integer	Definition Negotiated rate of the driver interface (unit: Gbit/s). Constraints N/A Range N/A Default Value N/A
hotspare_type	String	Definition Hot spare status of a driver. Constraints N/A Range N/A Default Value N/A
hours_of_powered_up	Integer	Definition Power-on runtime of a driver (unit: hour). Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
power_state	String	Definition Driver power status. Constraints N/A Range N/A Default Value N/A
patrol_state	String	Definition Driver inspection status. Constraints N/A Range N/A Default Value N/A
associated_resource	String	Definition Resource owner of a driver. Constraints N/A Range N/A Default Value N/A
predicted_media_life_left_percent	Integer	Definition Remaining lifetime (in percentage) of a driver. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
health	String	Definition Health status of a drive. Constraints N/A Range N/A Default Value N/A

Table 4-84 Status

Parameter	Type	Description
state	String	Definition Hardware enabling status. Constraints N/A Range • Enabled • Disabled • Unknown Default Value N/A
health	String	Definition Hardware health status. Constraints N/A Range • OK • Warning • Critical • Unknown Default Value N/A

Table 4-85 HardwareMetric

Parameter	Type	Description
metric_name	String	Definition Metric name. Constraints N/A Range N/A Default Value N/A
metric_devices	Array of strings	Definition Monitoring metric object. Constraints N/A Range N/A Default Value N/A

Status code: 400

Table 4-86 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 401**Table 4-87** Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429**Table 4-88** Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500

Table 4-89 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Request

Request for querying the server hardware details

```
GET https://{endpoint}/v1/{project_id}/physicalservers/{id}/hardware-attributes
```

Example Response

Status code: 200

Hardware details are returned.

```
{
  "summary": {
    "sn": "2102314JLR10NA100021",
    "manufacturer": "Huawei",
    "model": "NV602x1x99x3",
    "main_board_manufacturer": "Huawei"
  },
  "memorys": [ {
    "name": "mainboardDIMM000",
    "manufacturer": "Samsung",
    "capacity_mib": 32768,
    "memory_device_type": "DDR4",
    "allowed_speed_mhz": 2933,
    "serial_number": "136BF0FB",
    "data_width_bits": 72,
    "rank_count": 2,
    "part_number": "M393A4K40CB2-CVF",
  }
}]
```

```
"min_voltage_millivolt" : 1200,
"position" : "mainboard",
" bom_number" : "",
"type_detail" : "Synchronous| Registered (Buffered)",
"technology" : "DRAM",
"operating_speed_mhz" : 2933,
"state" : "Enabled",
"health" : ""
}],
"processors" : [ {
  "name" : "CPU1",
  "manufacturer" : "CPU1",
  "total_enabled_cores" : 0,
  "health" : "",
  "state" : "Enabled",
  "other_parameters" : "64-bit Capable| Multi-Core| Hardware Thread| Execute Protection| Enhanced
Virtualization| Power/Performance Control",
  "serial_number" : "21B4118D798F0112",
  "total_enabled_threads" : 0,
  "total_cores" : 26,
  "total_threads" : 52,
  "model" : "Intel(R) Xeon(R) Gold 6278C CPU @ 2.60GHz",
  "max_speed_mhz" : 2600,
  "l1_cache_kib" : 1664,
  "l2_cache_kib" : 26624,
  "l3_cache_kib" : 36608,
  "socket" : 0,
  "temperature" : 0,
  "part_number" : "41020773",
  "frequency_mhz" : 2600
}],
"network_adapters" : [ {
  "name" : "LOM",
  "card_model" : "2*10GE+2*GE",
  "model" : "X722",
  "manufacturer" : "Intel",
  "card_manufacturer" : "Huawei",
  "position" : "",
  "slot_number" : 0,
  "pcb_version" : ".B",
  "driver_name" : "",
  "driver_version" : "",
  "associated_resource" : "CPU1",
  "firmware_version" : "",
  "health" : "OK",
  "network_ports" : [ {
    "physical_port_number" : "1",
    "link_status" : "Down",
    "associated_network_addresses" : "C8:A7:76:82:30:3E",
    "active_link_technology" : "Ethernet",
    "port_type" : "",
    "auto_neg" : "",
    "port_max_speed" : "10GE",
    "firmware_package_version" : "",
    "bdf" : "0000:1a:00.0"
  } ]
}],
"fans" : [ {
  "name" : "Fan1",
  "model" : "02311VSF 8038+",
  "reading" : 0,
  "reading_units" : "RPM",
  "part_number" : "02311VSF",
  "speed_ratio" : 0,
  "status" : {
    "state" : "Enabled",
    "health" : "OK"
  }
}],
```

```
"storage_controllers" : [ {
  "name" : "RAIDStorage0",
  "type" : "SAS3508",
  "model" : "",
  "manufacturer" : "Broadcom",
  "state" : "Enabled",
  "health" : "",
  "min_stripe_size_bytes" : 0,
  "max_stripe_size_bytes" : 0,
  "firmware_version" : "",
  "supported_raid_levels" : [ "RAID0", "RAID1", "RAID5", "RAID6", "RAID10", "RAID50", "RAID60" ],
  "mode" : "N/A",
  "configuration_version" : "",
  "sas_address" : "",
  "capacitance_name" : "",
  "capacitance_state" : "Enabled",
  "capacitance_health" : "OK",
  "volumes" : null,
  "drives" : [ "HDDPlaneDisk0", "HDDPlaneDisk1" ]
},
"powers" : [ {
  "name" : "PSU1",
  "slot_number" : 1,
  "model" : "PAC1500S12-BE",
  "manufacturer" : "HUAWEI",
  "power_supply_type" : "AC",
  "power_capacity_watts" : 1500,
  "line_input_voltage" : 228,
  "output_voltage" : 7,
  "protocol" : "",
  "active_standby" : "Active",
  "part_number" : "02312DAE",
  "serial_number" : "2102312DAEHVK4001029",
  "firmware_version" : "DC:107 PFC:107",
  "status" : {
    "state" : "Enabled",
    "health" : "OK"
  }
},
"metrics" : [ {
  "metric_name" : "cpu_health",
  "metric_devices" : [ "CPU1" ]
} ]
}
```

Status Codes

Status Code	Description
200	Hardware details are returned.
400	Invalid request parameter.
401	The request is not authenticated.
429	The request is overloaded.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.3.5 Querying the Firmware Details

Function

This API is used to query firmware details.

Calling Method

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

URI

GET /v1/{project_id}/physicalservers/{id}/firmware-attributes

Table 4-90 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A
id	Yes	String	Definition Server ID. Constraints N/A Range N/A Default Value N/A

Request Parameters

Table 4-91 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Response Parameters

Status code: 200

Table 4-92 Response body parameter

Parameter	Type	Description
[Array element]	Array of FirmwareDetails objects	Definition The list of firmware details. Constraints N/A

Table 4-93 FirmwareDetails

Parameter	Type	Description
component_name	String	Definition Component name. Constraints N/A Range N/A Default Value N/A
model	String	Definition Model. Constraints N/A Range N/A Default Value N/A
manufacturer	String	Definition Manufacturer. Constraints N/A Range N/A Default Value N/A
version	String	Definition Version. Constraints N/A Range N/A Default Value N/A

Status code: 400

Table 4-94 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 401

Table 4-95 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429**Table 4-96** Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500**Table 4-97** Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Requests

Request for querying firmware details

```
GET https://{endpoint}/v1/{project_id}/physicalservers/{id}/firmware-attributes
```

Example Responses

Status code: 200

Firmware details are returned.

```
[ {  
  "component_name": "ActiveBMC",  
  "model": "BMC-iBMC",  
  "manufacturer": "Huawei",  
  "version": "6.68"  
}]
```

Status Codes

Status Code	Description
200	Firmware details are returned.
400	Invalid request parameter.
401	The request is not authenticated.
429	The request is overloaded.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.3.6 Batch Modifying the Power Statuses of Physical Servers

Function

This API is used to modify the power status of a physical server. It is an asynchronous API. The power status modification result can be obtained from the information about the physical server.

Calling Method

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

URI

```
PUT /v1/{project_id}/physicalservers/power-state
```

Table 4-98 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A

Request Parameters

Table 4-99 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Table 4-100 Request body parameters

Parameter	Mandatory	Type	Description
action	Yes	String	Definition Power operation type. Constraints N/A Range - power on - power off - rebooting Default Value N/A
server_id_set	No	Array of strings	Definition Server ID list. Constraints A server ID list cannot contain more than 50 IDs.

Response Parameters

Status code: 200

Table 4-101 Response body parameter

Parameter	Type	Description
physical_servers	Array of physical_servers objects	Definition Returned information about the physical server. Constraints N/A

Table 4-102 physical_servers

Parameter	Type	Description
id	String	-

Status code: 400

Table 4-103 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 401

Table 4-104 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429**Table 4-105** Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500**Table 4-106** Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Requests

Request for modifying the power status of physical servers in batches

```
PUT https://{endpoint}/v1/{project_id}/physicalservers/power-state
{
  "action": "power on",
  "server_id_set": [ "01939592-e8fe-7d9b-9332-4589486377a4" ]
}
```

Example Responses

Status code: 200

The power status is modified.

```
{
  "physical_servers": {
    "id": {
      "$ref": "#/definitions/UUID"
    }
  }
}
```

Status Codes

Status Code	Description
200	Power status modified.
400	Invalid request parameter.
401	The request is not authenticated.
429	The request is overloaded.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.3.7 Exporting Server Logs

Function

This API is used to create an asynchronous task for exporting server logs. The system queries the log export status using **ShowLogsExportStatus**. When the status is **completed**, **DownloadServerLogs** is called to download log files.

Calling Method

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

URI

POST /v1/{project_id}/physicalservers/{id}/logs/exports

Table 4-107 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A
id	Yes	String	Definition Server ID. Constraints N/A Range N/A Default Value N/A

Request Parameters

Table 4-108 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Response Parameters

Status code: 202**Table 4-109** Response header parameters

Parameter	Type	Description
Content-Disposition	String	The format is attachment; filename=\${ <i>id</i> }-dump.tar.gz. <i>id</i> indicates the unique server SN.
Content-Transfer-Encoding	String	The encoding mode is fixed at binary .
Content-Type	String	The content type is fixed at application/octet-stream; charset=UTF-8 .

Table 4-110 Response body parameters

Parameter	Type	Description
export_id	String	export task id

Parameter	Type	Description
status	String	Definition Export progress. Constraints N/A Range • processing: The export is in progress. • completed: The export is complete. Default Value N/A
percentage	Integer	Definition Export progress percentage. Constraints N/A Range 0-100 Default Value N/A
created_at	DateTime	Definition Export start time. Constraints N/A Range The timestamp format is ISO 8601, for example, 2025-03-20T02:48:06+00:00. Default Value N/A

Status code: 401

Table 4-111 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429**Table 4-112** Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500

Table 4-113 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Requests

Request for exporting server logs

```
POST https://{endpoint}/v1/{project_id}/physicalservers/{id}/logs/exports
{ }
```

Example Responses

Status code: 202

Logs are compressed and returned as a stream.

```
{
  "export_id" : "1",
  "status" : "Running",
  "percentage" : "30%",
  "created_at" : "2024-07-01T11:32:49Z",
  "Content-Type" : "application/json; charset=utf-8"
}
```

Status Codes

Status Code	Description
202	Log package flow file is returned.

Status Code	Description
401	The request is not authenticated.
429	The request is overloaded.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.3.8 Querying the Export Status of Logs

Function

This API is used to query the log collection status and progress.

Calling Method

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

URI

GET /v1/{project_id}/physicalservers/{id}/logs/exports/{export_id}

Table 4-114 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A

Parameter	Mandatory	Type	Description
id	Yes	String	Definition Server ID. Constraints N/A Range N/A Default Value N/A
export_id	Yes	String	Definition Log export ID. Constraints N/A Range N/A Default Value N/A

Request Parameters

Table 4-115 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Response Parameters

Status code: 200

Table 4-116 Response body parameters

Parameter	Type	Description
export_id	String	export task id
status	String	Definition Export progress. Constraints N/A Range ● processing: The export is in progress. ● completed: The export is complete. Default Value N/A
percentage	Integer	Definition Export progress percentage. Constraints N/A Range 0-100 Default Value N/A
created_at	DateTime	Definition Export start time. Constraints N/A Range The timestamp format is ISO 8601, for example, 2025-03-20T02:48:06+00:00. Default Value N/A

Status code: 401

Table 4-117 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429**Table 4-118** Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500

Table 4-119 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Requests

Request for querying the export status of logs

```
GET https://{endpoint}/v1/{project_id}/physicalservers/{id}/logs/exports/{export_id}
```

Example Responses

Status code: 200

Logs are exported.

```
{
  "export_id" : "1",
  "status" : "Running",
  "percentage" : "30%",
  "created_at" : "2024-07-01T11:32:49Z"
}
```

Status Codes

Status Code	Description
200	Logs are exported.
401	The request is not authenticated.

Status Code	Description
429	The request is overloaded.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.3.9 Downloading a Log File

Function

This API is used to download a server log file.

Calling Method

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

URI

GET /v1/{project_id}/physicalservers/{id}/logs/exports/{export_id}/content

Table 4-120 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A
id	Yes	String	Definition Server ID. Constraints N/A Range N/A Default Value N/A

Parameter	Mandatory	Type	Description
export_id	Yes	String	Definition Log export ID. Constraints N/A Range N/A Default Value N/A

Request Parameters

Table 4-121 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Response Parameters

Status code: 200

Table 4-122 Response header parameters

Parameter	Type	Description
Content-Disposition	String	The format is attachment; filename=\${id}-dump.tar.gz. <i>id</i> indicates the unique server SN.

Parameter	Type	Description
Content-Type	String	The content type is fixed at application/octet-stream; charset=UTF-8 .
Content-Transfer-Encoding	String	The encoding mode is fixed at binary .

Table 4-123 Response body parameter

Parameter	Type	Description
-	String	-

Status code: 401

Table 4-124 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429

Table 4-125 Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500**Table 4-126** Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Requests

Downloading logs
GET https://{endpoint}/v1/{project_id}/physicalservers/{id}/logs/exports/{export_id}/content

Example Responses

None

Status Codes

Status Code	Description
200	The byte stream of a log file has been returned.

Status Code	Description
401	The request is not authenticated.
429	The request is overloaded.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.4 iMetal Instance Management

4.4.1 Batch Creating Instances

Function

This API is used to batch create instances. The supported scheduling policies are as follows:

1. Scheduling to selected servers
2. Random scheduling to idle servers

VPC and AI parameter plane networks can be configured.

This API is an asynchronous API. The instance creation and startup are not completed immediately. You can call the **ShowInstanceStatus** API to check whether the instance statuses are **running**. If they are, the instances have been created.

Constraint: The value of **manage_state** for the instances must be **ready**.

Calling Method

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

URI

POST /v1/{project_id}/instances/batch-create

Table 4-127 URI parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A

Request Parameters

Table 4-128 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Table 4-129 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Definition The hostname of an instance. Constraints N/A Range The value can contain 1 to 63 characters, including letters (case-sensitive), digits, underscores (_), hyphens (-), and periods (.). Default Value N/A
image_id	Yes	String	Definition Image ID. Constraints N/A Range N/A Default Value N/A
vpc_id	Yes	String	Definition ID of the VPC which the network interface to be created belongs to. You can query the ID using the VPC API: https://support.huaweicloud.com/intl/en-us/api-vpc/vpc_api01_0003.html Constraints N/A Range VPC ID Default Value N/A

Parameter	Mandatory	Type	Description
network_interfaces	Yes	Array of network_interfaces objects	Definition Network interface information about an iMetal server. Constraints An iMetal server can contain a maximum of two network interfaces, and the first one serves as the primary network interface. If multiple network interfaces are specified, ensure that all network interfaces belong to the same VPC.
password	Yes	String	Definition Default login password for the instance administrator. For Linux, the administrator is root . For Windows, the administrator is Administrator . Constraints N/A Range The value can contain 8 to 26 characters. The password must contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters (!@#\$%^&_-=+[{ }],./?). The password cannot contain the username or the username spelled backwards. Default Value N/A
metadata	No	Table 4-131 object	-

Parameter	Mandatory	Type	Description
description	No	String	Definition Description of an iMetal instance. Constraints N/A Range Maximum length: 255 characters Default Value The value is an empty character string by default.
placement	No	placement object	Definition Placement of the instance, which specifies the server policy. If placement is not specified, idle servers are selected based on min_count and max_count . Constraints N/A
min_count	No	Integer	Definition The minimum number of instances that must be started. If the number of actually started instances cannot meet the requirement, the entire request fails (in this case, no instances will be started). Constraints This parameter takes effect only when placement is not specified. The value cannot be greater than that of max_count . Range 1-100 Default Value N/A

Parameter	Mandatory	Type	Description
max_count	No	Integer	Definition The maximum number of instances that can be started. The system tries to start the maximum number of instances. However, the actual number of instances to be started is between min_count and max_count . Constraints This parameter takes effect only when placement is not specified. The value cannot be less than that of min_count . Range 1-100 Default Value N/A

Table 4-130 network_interfaces

Parameter	Mandatory	Type	Description
subnet_id	Yes	String	Definition subnet ID Constraints N/A Range N/A Default Value N/A

Table 4-131 metadata

Parameter	Mandatory	Type	Description
{Custom key}	No	Map<String,String>	Definition Metadata for creating an iMetal instance. You can use metadata to customize key-value pairs. If the metadata contains sensitive data, take appropriate measures to protect the sensitive data, for example, controlling access permissions and encrypting the data. Constraints N/A Range A maximum of 10 key-value pairs can be injected. A metadata key consists of 1 to 255 characters and contains only uppercase letters, lowercase letters, spaces, digits, hyphens (-), underscores (_), colons (:), and decimal points (.). A metadata value consists of a maximum of 255 characters. Default Value N/A

Table 4-132 placement

Parameter	Mandatory	Type	Description
server_id_set	No	Array of strings	Definition A set of server IDs. Constraints A server ID list cannot contain more than 50 IDs.

Response Parameters

Status code: 202

Table 4-133 Response body parameter

Parameter	Type	Description
instances	Array of instances objects	Definition Returned instance information. Constraints N/A

Table 4-134 instances

Parameter	Type	Description
id	String	Definition Instance ID. Constraints N/A Range N/A Default Value N/A

Status code: 400**Table 4-135** Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 401

Table 4-136 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429

Table 4-137 Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500

Table 4-138 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Request

Request for batch creating instances

POST https://{endpoint}/v1/{project_id}/instances/batch-create

Example Response

Status code: 202

Instances created.

```
{
  "instances" : {
    "id" : "0198170e-4ca7-7ee4-89a7-fa631843920b"
  }
}
```

Status Codes

Status Code	Description
202	Instances created.
400	Invalid request parameter.

Status Code	Description
401	The request is not authenticated.
429	The request is overloaded.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.4.2 Creating an Instance

Function

This API is used to create an instance with more custom parameters, such as an IP address.

The following scheduling policies are supported:

1. Scheduling to selected servers
2. Random scheduling to idle servers

VPC and AI parameter plane networks can be configured.

This API is an asynchronous API. The instance creation and startup are not completed immediately. You can call the **ShowInstanceStatus** API to check whether the instance statuses are **running**. If they are, the instances have been created.

Constraint: The value of **manage_state** for the instances must be **ready**.

Calling Method

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

URI

POST /v1/{project_id}/instances

Table 4-139 URI parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A

Request Parameters

Table 4-140 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Table 4-141 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Definition The hostname of an instance. Constraints N/A Range The value can contain 1 to 63 characters, including letters (case-sensitive), digits, underscores (_), hyphens (-), and periods (.). Default Value N/A
image_id	Yes	String	Definition Image ID. Constraints N/A Range N/A Default Value N/A
vpc_id	Yes	String	Definition ID of the VPC which the network interface to be created belongs to. You can query the ID using the VPC API: https://support.huaweicloud.com/intl/en-us/api-vpc/vpc_api01_0003.html Constraints N/A Range VPC ID Default Value N/A

Parameter	Mandatory	Type	Description
network_inter faces	Yes	Array of NetworkInter face objects	Definition Network interface information about an iMetal server. Constraints An iMetal server can contain a maximum of two network interfaces, and the first one serves as the primary network interface. If multiple network interfaces are specified, ensure that all network interfaces belong to the same VPC.
password	Yes	String	Definition Default login password for the instance administrator. For Linux, the administrator is root . For Windows, the administrator is Administrator . Constraints N/A Range The value can contain 8 to 26 characters. The password must contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters (!@#\$%^&_-=+[{ }],./?). The password cannot contain the username or the username spelled backwards. Default Value N/A
metadata	No	Table 4-143 object	-

Parameter	Mandatory	Type	Description
description	No	String	Definition Description of an iMetal instance. Constraints N/A Range Maximum length: 255 characters Default Value Empty string
placement	No	placement object	Definition Placement of the instance, which specifies the server policy. If placement is not specified, idle servers are selected based on min_count and max_count . Constraints N/A

Table 4-142 NetworkInterface

Parameter	Mandatory	Type	Description
subnet_id	Yes	String	Definition subnet id Constraints N/A Range N/A Default Value N/A

Parameter	Mandatory	Type	Description
ipv4_address	No	String	Definition Private IPv4 address of an elastic network interface. Constraints N/A Range N/A Default Value N/A

Table 4-143 metadata

Parameter	Mandatory	Type	Description
{Custom key}	No	Map<String,String>	Definition Metadata for creating an iMetal instance. You can use metadata to customize key-value pairs. If the metadata contains sensitive data, take appropriate measures to protect the sensitive data, for example, controlling access permissions and encrypting the data. Constraints N/A Range A maximum of 10 key-value pairs can be injected. A metadata key consists of 1 to 255 characters and contains only uppercase letters, lowercase letters, spaces, digits, hyphens (-), underscores (_), colons (:), and decimal points (.). A metadata value consists of a maximum of 255 characters. Default Value N/A

Table 4-144 placement

Parameter	Mandatory	Type	Description
server_id	No	String	Definition ID of the specified server. Constraints N/A Range ID of an idle server Default Value N/A

Response Parameters

Status code: 202

Table 4-145 Response body parameter

Parameter	Type	Description
instance_id	String	Instance ID.

Status code: 400

Table 4-146 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 401**Table 4-147** Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429**Table 4-148** Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500

Table 4-149 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Requests

Request for creating an instance

POST https://{endpoint}/v1/{project_id}/instances

Example Responses

Status code: 202

Instance created.

```
{
  "instance_id" : "0198170e-4ca7-7ee4-89a7-fa631843920b"
}
```

Status Codes

Status Code	Description
202	Instances created.
400	Invalid request parameter.

Status Code	Description
401	The request is not authenticated.
429	The request is overloaded.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.4.3 Batch Querying Instances

Function

This API is used to batch query instances.

Calling Method

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

URI

GET /v1/{project_id}/instances

Table 4-150 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A

Table 4-151 Query parameters

Parameter	Mandatory	Type	Description
limit	No	String	Definition Number of records on each page for pagination query. Constraints N/A Range The value range is from 10 to 1000. If this parameter is not set or is set to a value less than 10, the default value 10 is used. If the value is greater than 1000, the default value 1000 is used. Default Value 1000
marker	No	String	Definition Query address of the next page. Constraints N/A Range N/A Default Value N/A

Parameter	Mandatory	Type	Description
instance_state	No	String	Definition Instance status. Constraints N/A Range • pending: The instance is being started (resources are being allocated or the OS is being started). • running: The instance is running properly (can be connected through SSH or RDP). • stopping: The instance is being stopped (transiting to the stopped or hibernated state). • stopped: The instance is completely stopped (storage volumes are retained). • reinstalling: The OS is being reinstalled. • shutting-down: The instance is being terminated (being deleted). • terminated: The instance has been terminated (all resources are deleted and cannot be restored). • failed: The instance is in the failed state. You can only try to reinstall the OS. Other operations are not supported and related resources are cleared. Default Value N/A

Parameter	Mandatory	Type	Description
instance_id	No	String	Definition Instance IDs. The value can be an array consisting of multiple instance IDs. Constraints N/A Range A maximum of 100 IDs are supported. The IDs are separated by commas (,), for example, uuid1,uuid2,uuid3. Default Value N/A
server_id	No	String	Definition Server IDs. The value can be an array consisting of multiple server IDs. Constraints This parameter is mutually exclusive with instance_id_set. Range A maximum of 100 IDs are supported. The IDs are separated by commas (,), for example, uuid1,uuid2,uuid3. Default Value N/A

Request Parameters

Table 4-152 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Response Parameters

Status code: 200**Table 4-153** Response body parameters

Parameter	Type	Description
instances	Array of QueryInstanceResponseBody objects	Instance list.
page_info	PageInfo object	Definition Pagination information. Constraints N/A
count	Integer	The total number of instances.

Table 4-154 QueryInstanceResponseBody

Parameter	Type	Description
id	String	Definition Instance ID. Constraints N/A Range N/A Default Value N/A
name	String	Definition Instance name. Constraints N/A Range N/A Default Value N/A
vpc_id	String	Definition ID of the VPC which the network interface to be created belongs to. You can query the ID using the VPC API: https://support.huaweicloud.com/intl/en-us/api-vpc/vpc_api01_0003.html Constraints N/A Range VPC ID Default Value N/A

Parameter	Type	Description
network_interfaces	Array of NetworkInterface objects	Definition Network interface information about an iMetal server. Constraints An iMetal server can contain a maximum of two network interfaces, and the first one serves as the primary network interface. If multiple network interfaces are specified, ensure that all network interfaces belong to the same VPC.
tags	Array of Tag objects	Definition Tag. Constraints N/A
image	Image object	Definition Server image information. Constraints N/A
description	String	Definition Description of the cloud server. Constraints N/A Range N/A Default Value Empty string

Parameter	Type	Description
state	String	Definition Instance status. Constraints N/A Range • pending: The instance is being started (resources are being allocated or the OS is being started). • running: The instance is running properly (can be connected through SSH or RDP). • stopping: The instance is being stopped (transiting to the stopped or hibernated state). • stopped: The instance is completely stopped (storage volumes are retained). • reinstalling: The OS is being reinstalled. • shutting-down: The instance is being terminated (being deleted). • terminated: The instance has been terminated (all resources are deleted and cannot be restored). • failed: The instance is in the failed state. You can only try to reinstall the OS. Other operations are not supported and related resources are cleared. Default Value

Parameter	Type	Description
		N/A
metadata	Table 4-158 object	-
user_data	String	Definition Custom user data to be injected into the instance during instance creation. Constraints N/A Range The content of user_data must be encoded with base64. The maximum size of the content to be injected (before encoding) is 32 KB. Default Value N/A
server_id	String	Definition Server ID. Constraints N/A Range Its value is in UUID format. Default Value N/A
created_at	String	Definition Creation time. Constraints N/A Range The value is in RFC 3339 format, for example, 2025-04-22T12:03:18.50083+08:00. Default Value N/A

Parameter	Type	Description
updated_at	String	Definition Update time. Constraints N/A Range The value is in RFC 3339 format, for example, 2025-04-22T12:03:18.50083+08:00. Default Value N/A
launched_at	String	Definition Start time. Constraints N/A Range The value is in RFC 3339 format, for example, 2025-04-22T12:03:18.50083+08:00. Default Value N/A
error	ErrorStatus object	Definition Error object returned upon a failure. Constraints N/A

Table 4-155 NetworkInterface

Parameter	Type	Description
subnet_id	String	Definition subnet id Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
ipv4_address	String	Definition Private IPv4 address of an elastic network interface. Constraints N/A Range N/A Default Value N/A

Table 4-156 Tag

Parameter	Type	Description
key	String	Definition Tag key. Constraints N/A Range • The value cannot be empty and cannot start or end with spaces. A maximum of 128 characters are supported. • The value can contain letters, digits, and spaces in UTF-8 format. • The value can contain the following special characters: _.:=-@ • The value cannot start with sys. Default Value N/A

Parameter	Type	Description
value	String	Definition Tag value. Constraints N/A Range • The value can contain a maximum of 255 characters. It can be empty but cannot be the default. • The value can be letters, digits, and spaces in UTF-8 format. • The value can contain the following special characters: _./=+-@ Default Value N/A

Table 4-157 Image

Parameter	Type	Description
id	String	Definition Image ID. Constraints N/A Range The value is in UUID format. Default Value N/A
name	String	Definition Image name. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
os_type	String	Definition Image OS type. Constraints N/A Range - Linux - Windows - Other Default Value N/A

Table 4-158 metadata

Parameter	Type	Description
{Custom key}	Map<String,String >	Definition Metadata for creating an iMetal instance. You can use metadata to customize key-value pairs. If the metadata contains sensitive data, take appropriate measures to protect the sensitive data, for example, controlling access permissions and encrypting the data. Constraints N/A Range A maximum of 10 key-value pairs can be injected. A metadata key consists of 1 to 255 characters and contains only uppercase letters, lowercase letters, spaces, digits, hyphens (-), underscores (_), colons (:), and decimal points (.). A metadata value consists of a maximum of 255 characters. Default Value N/A

Table 4-159 ErrorStatus

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A
error_type	String	Definition Error type. Constraints N/A Range • create_instance_error: Instance creation error • delete_instance_error: Instance deletion error • reinstall_error: OS reinstallation error • modify_ip_error: IP address change error • verify_server_error: Server verification error • delete_server_error: Server deletion exception Default Value N/A

Table 4-160 PageInfo

Parameter	Type	Description
next_marker	String	Definition Query address of the next page. Constraints N/A Range N/A Default Value N/A
previous_marker	String	Definition Query address of the previous page. Constraints N/A Range N/A Default Value N/A
current_count	Integer	Definition The number of items returned on this page. Constraints N/A Range N/A Default Value N/A

Status code: 400

Table 4-161 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 401

Table 4-162 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429**Table 4-163** Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500**Table 4-164** Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Requests

Request for batch querying instances

```
GET https://{endpoint}/v1/{project_id}/instances
```

Example Responses

Status code: 200

The instance list is displayed by page.

```
{
  "instances": [ {
    "id": "0195f996-79c5-7d34-a98e-3a96f7926d96",
    "name": "host-0403-199",
    "vpc_id": "31434907-0817-4acc-9a59-c44cf157303b",
    "network_interfaces": [ {
      "subnet_id": "",
      "ipv4_address": "192.168.27.57"
    } ],
    "image": {
      "id": "e66a19b0-8c94-4b03-9f4d-4fbd676bcbf0",
      "name": "test-lsy\nUbuntu 22.04 server 64bit",
      "os_type": "Linux"
    },
    "description": "",
    "state": "terminated",
    "user_data": "",
    "server_id": "0195f996-79c5-7d34-a98e-3a96f7926d96",
    "created_at": "",
    "updated_at": "2025-07-11T17:07:05+08:00",
    "launched_at": "2025-04-03T10:59:03+08:00",
    "error": {
      "error_code": "iMetal.0099",
      "error_msg": "failed to reinstall os, create reinstall job on Jarvis failed",
      "error_type": "reinstall_error"
    }
  } ],
  "page_info": {
    "next_marker": "01981672-2e82-7d8a-a315-3f686155a815",
    "previous_marker": "",
    "current_count": 92
  },
  "count": 92
}
```

Status Codes

Status Code	Description
200	The instance list is displayed by page.
400	Invalid request parameter.
401	The request is not authenticated.
429	The request is overloaded.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.4.4 Batch Deleting Instances

Function

This API is used to batch delete instances. It is an asynchronous API. You can call the **ShowInstanceStatus** API to query the instance status. If the status of an instance changes from **shutting-down** to **terminated**, the instance has been deleted.

Calling Method

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

URI

POST /v1/{project_id}/instances/batch-delete

Table 4-165 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A

Request Parameters

Table 4-166 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Table 4-167 Request body parameter

Parameter	Mandatory	Type	Description
instance_id_set	No	Array of strings	Definition The list of instance IDs. Constraints A server ID list cannot contain more than 50 IDs.

Response Parameters

Status code: 202

Table 4-168 Response body parameter

Parameter	Type	Description
instances	Array of instances objects	Definition Returned instance information. Constraints N/A

Table 4-169 instances

Parameter	Type	Description
id	String	Definition Instance ID. Constraints N/A Range N/A Default Value N/A

Status code: 400

Table 4-170 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 401

Table 4-171 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429**Table 4-172** Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500

Table 4-173 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Requests

Request For batch deleting instances

GET https://{endpoint}/v1/{project_id}/instances/batch-delete

Example Responses

Status code: 202

Instances deleted.

```
{
  "instance_id" : "0198170e-4ca7-7ee4-89a7-fa631843920b"
}
```

Status Codes

Status Code	Description
202	Instances deleted.
400	Invalid request parameter.
401	The request is not authenticated.
429	The request is overloaded.

Status Code	Description
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.4.5 Querying Instance Status

Function

This API is used to query the instance status.

Calling Method

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

URI

GET /v1/{project_id}/instances/{id}/status

Table 4-174 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A
id	Yes	String	Definition Instance ID. Constraints N/A Range N/A Default Value N/A

Request Parameters

Table 4-175 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Response Parameters

Status code: 200

Table 4-176 Response body parameters

Parameter	Type	Description
state	String	Definition Instance status. Constraints N/A Range • pending: The instance is being started (resources are being allocated or the OS is being started). • running: The instance is running properly (can be connected through SSH or RDP). • stopping: The instance is being stopped (transiting to the stopped or hibernated state). • stopped: The instance is completely stopped (storage volumes are retained). • reinstalling: The OS is being reinstalled. • shutting-down: The instance is being terminated (being deleted). • terminated: The instance has been terminated (all resources are deleted and cannot be restored). • failed: The instance is in the failed state. You can only try to reinstall the OS. Other operations are not supported and related resources are cleared. <pre>graph TD none -- "RunInstances/CreateInstance" --> pending pending -- "DeleteInstance" --> none pending -- "DeleteInstance" --> shutting_down pending -- "DeleteInstance" --> failed pending -- "Provision Finished" --> running running -- "DeleteInstance" --> none running -- "DeleteInstance" --> shutting_down running -- "DeleteInstance" --> failed running -- "PowerOff/PowerReboot" --> stopping stopping -- "PowerOff/PowerReboot" --> shutting_down stopping -- "PowerOff/PowerReboot" --> failed stopping -- "PowerOn" --> running stopping -- "ModifyIP" --> running stopping -- "ChangePassword" --> stopped stopped -- "ChangePassword" --> stopped stopped -- "ReinstallIOS" --> reinstalling reinstalling -- "error" --> failed reinstalling -- "Provision Finished" --> running shutting_down -- "error" --> failed shutting_down -- "error" --> failed</pre>

Parameter	Type	Description
		Default Value N/A
error	ErrorStatus object	Definition Error object returned upon a failure. Constraints N/A

Table 4-177 ErrorStatus

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
error_type	String	Definition Error type. Constraints N/A Range • create_instance_error: Instance creation error • delete_instance_error: Instance deletion error • reinstall_error: OS reinstallation error • modify_ip_error: IP address change error • verify_server_error: Server verification error • delete_server_error: Server deletion exception Default Value N/A

Status code: 401**Table 4-178** Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429**Table 4-179** Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500**Table 4-180** Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Requests

Request for querying instance status

```
GET https://{endpoint}/v1/{project_id}/instances/{id}/status
```

Example Responses

Status code: 200

Instance status returned.

```
{  
  "status" : "stopped"  
}
```

Status Codes

Status Code	Description
200	Instance status returned.
401	The request is not authenticated.
429	The request is overloaded.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.4.6 Batch Reinstalling OSs

Function

This API is used to reinstall an OS using a new OS image. It is an asynchronous API. You can query the instance status by calling the **ShowInstanceStatus** API. If the status changes to **pending**, the OS is being reinstalled. If the status changes to **running**, the OS reinstallation is complete.

Prerequisites: The instance is in the running state.

Calling Method

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

URI

```
PUT /v1/{project_id}/instances/reinstall
```

Table 4-181 URI parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A

Request Parameters

Table 4-182 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Table 4-183 Request body parameters

Parameter	Mandatory	Type	Description
image_id	No	String	Definition Image ID, which is optional. If this parameter is not specified, the current image ID is used by default. Constraints N/A Range N/A Default Value An empty string. The current image ID is used by default.
password	Yes	String	Definition Default login password for the instance administrator. For Linux, the administrator is root . For Windows, the administrator is Administrator . Constraints N/A Range The value can contain 8 to 26 characters. The password must contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters (!@#\$%^_-=+[{ }],./?). The password cannot contain the username or the username spelled backwards. Default Value N/A
instance_id_set	No	Array of strings	Definition The list of instance IDs. Constraints An instance ID list cannot contain more than 50 IDs.

Response Parameters

Status code: 202

Table 4-184 Response body parameter

Parameter	Type	Description
instances	Array of instances objects	Definition Returned instance information. Constraints N/A

Table 4-185 instances

Parameter	Type	Description
id	String	Definition Instance ID. Constraints N/A Range N/A Default Value N/A

Status code: 400

Table 4-186 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 401**Table 4-187** Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429**Table 4-188** Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500

Table 4-189 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Requests

Request for batch reinstalling OSs

GET https://{endpoint}/v1/{project_id}/instances/reinstall

Example Responses

Status code: 202

OSs installed.

```
{
  "instances": [ {
    "id": "0197f36d-d83b-7258-b177-3784b7887a17"
  } ]
}
```

Status Codes

Status Code	Description
202	The OS has been installed.
400	Invalid request parameter.

Status Code	Description
401	The request is not authenticated.
429	The request is overloaded.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.4.7 Batch Changing Instance Passwords

Function

This API is used to change the passwords of the management account (user **root** or **Administrator**) for logging in to different servers.

Prerequisites: The instances are in the running state.

This API is synchronous. The passwords can be all changed or all fail to be changed.

Constraints:

There is no password complexity check that meets security requirements. No error message is displayed after an insecure password is entered.

The new password will be in effective after a server is started or restarted (by calling the **ChangeServerPowerState** API).

Calling Method

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

URI

PUT /v1/{project_id}/instances/password

Table 4-190 URI parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A

Request Parameters

Table 4-191 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Table 4-192 Request body parameters

Parameter	Mandatory	Type	Description
new_password	Yes	String	Definition Default login password for the instance administrator. For Linux, the administrator is root . For Windows, the administrator is Administrator . Constraints N/A Range The value can contain 8 to 26 characters. The password must contain at least three of the following character types: uppercase letters, lowercase letters, digits, and special characters (!@#\$%^&_+=+[{ }],.//?). The password cannot contain the username or the username spelled backwards. Default Value N/A
instance_id_set	No	Array of strings	Definition The list of instance IDs. Constraints An instance ID list cannot contain more than 50 IDs.

Response Parameters

Status code: 200

Table 4-193 Response body parameter

Parameter	Type	Description
instances	Array of instances objects	Definition Returned instance information. Constraints N/A

Table 4-194 instances

Parameter	Type	Description
id	String	Definition Instance ID. Constraints N/A Range N/A Default Value N/A

Status code: 400

Table 4-195 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 401

Table 4-196 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429**Table 4-197** Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500

Table 4-198 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Requests

Request for batch changing instance passwords

GET https://{endpoint}/v1/{project_id}/instances/password

Example Responses

Status code: 200

Password changed.

```
{
  "instances" : [ {
    "id" : "0197f36d-d83b-7258-b177-3784b7887a17"
  } ]
}
```

Status Codes

Status Code	Description
200	Password changed.
400	Invalid request parameter.
401	The request is not authenticated.

Status Code	Description
429	The request is overloaded.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.4.8 Deleting an Instance

Function

This API is used to delete an instance. It is an asynchronous API. You can call the **ShowInstanceStatus** API to query the instance status. If the status of the instance changes from **shutting-down** to **terminated**, the instance has been deleted.

Calling Method

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

URI

DELETE /v1/{project_id}/instances/{id}

Table 4-199 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A

Parameter	Mandatory	Type	Description
id	Yes	String	Definition Instance ID. Constraints N/A Range N/A Default Value N/A

Request Parameters

Table 4-200 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Response Parameters

Status code: 204

Table 4-201 Response body parameter

Parameter	Type	Description
-	String	-

Status code: 400

Table 4-202 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 401

Table 4-203 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429

Table 4-204 Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500

Table 4-205 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Requests

Request for deleting instances

```
GET https://{endpoint}/v1/{project_id}/instances/{id}
```

Example Responses

None

Status Codes

Status Code	Description
204	The request has succeeded.
400	Invalid request parameter.
401	The request is not authenticated.
429	The request is overloaded.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.4.9 Changing the IP Address of an Instance

Function

This API is used to select a specified iMetal instance and change its IP address.

The iMetal instance must be ready (commissioned successfully) or the IP address fails to be changed and the iMetal instance is powered off.

Calling Method

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

URI

```
PUT /v1/{project_id}/instances/{id}/ip
```

Table 4-206 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A
id	Yes	String	Definition Instance ID. Constraints N/A Range N/A Default Value N/A

Request Parameters

Table 4-207 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Table 4-208 Request body parameters

Parameter	Mandatory	Type	Description
vpc_id	No	String	Definition ID of the VPC which the network interface to be created belongs to. You can query the ID using the VPC API: https://support.huaweicloud.com/intl/en-us/api-vpc/vpc_api01_0003.html Constraints N/A Range VPC ID Default Value N/A
nics	No	Array of nics objects	Definition Network interface information. Constraints N/A

Response Parameters

Status code: 202

The IP address of the instance has been changed.

Status code: 400

Table 4-209 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 401

Table 4-210 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429

Table 4-211 Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500

Table 4-212 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Requests

Request for changing the IP address of an instance

GET https://{endpoint}/v1/{project_id}/instances/{id}/ip

Example Responses

None

Status Codes

Status Code	Description
202	The IP address of the instance has been changed.
400	Invalid request parameter.
401	The request is not authenticated.
429	The request is overloaded.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.5 Physical Server Diagnosis

4.5.1 Obtaining Server Overview

Function

This API is used to query the server overview, server startup status, and server operating status.

Calling Method

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

URI

GET /v1/{project_id}/physicalservers/status

Table 4-213 URI parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A

Request Parameters

Table 4-214 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Response Parameters

Status code: 200**Table 4-215** Response body parameters

Parameter	Type	Description
server_status	ServerStatus object	Definition Response object of the server operating status. Constraints N/A
server_power_status	ServerPowerStatus object	Definition Server power status object. Constraints N/A

Table 4-216 ServerStatus

Parameter	Type	Description
total	ServerState object	Definition All objects of the servers in all operating statuses. Constraints N/A
ok	Map<String, ServerState >	Definition All objects of the servers in the ok operating state. Constraints N/A
warning	Array of ServerState objects	Definition All objects of the servers in the warning operating state. Constraints N/A
critical	Array of ServerState objects	Definition All objects of the servers in the critical operating state. Constraints N/A
health	Array of ServerState objects	Definition All objects of the servers in the health operating state. Constraints N/A
unhealth	Array of ServerState objects	Definition All objects of the servers in the unhealth operating state. Constraints N/A
isolation	Array of ServerState objects	Definition All objects of the servers in the isolation operating state. Constraints N/A

Table 4-217 ServerState

Parameter	Type	Description
count	Integer	Definition Quantity. Constraints N/A Range N/A Default Value N/A
dc_stats	Map<String,String>	Definition Mapping between data center names and quantities. Constraints N/A

Table 4-218 ServerPowerStatus

Parameter	Type	Description
on	Integer	Definition The number of servers in the power-on state. Constraints N/A Range N/A Default Value N/A
off	Integer	Definition The number of servers in the power-off state. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
unknown	Integer	Definition The number of server power supplies in the unknown state. Constraints N/A Range N/A Default Value N/A

Status code: 400

Table 4-219 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 401

Table 4-220 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429

Table 4-221 Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500

Table 4-222 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Requests

Request for obtaining server overview

```
GET https://{endpoint}/v1/{project_id}/physicalservers/status
```

Example Responses

Status code: 200

```
{
  "server_status": {
    "total": {
      "count": 1758,
      "dc_stats": {
        "BBB": 599,
        "DC-062501": 1,
        "DC-Room": 1,
        "EquipmentRoom_001": 16,
        "EquipmentRoom_0707": 501,
        "EquipmentRoom_0707_new": 2,
        "EquipmentRoom_CloudDC_pytest": 2,
        "Equipment_room001": 2,
        "Room_001": 2,
        "Room_002": 1,
        "Room_room_003": 3,
        "chennantest001": 1,
        "chntest001": 5,
        "chntest002": 1,
        "irack_dc_TEST": 26,
        "pref_donot_operation_dc_1": 56,
        "pref_room_1003": 1,

```

```
"pref_room_1883" : 1,
"pref_room_1903" : 1,
"roooooooooom_1347" : 1,
"roooooooooom_698" : 513,
"roooooooooom_700" : 20,
"roooooooooom_701" : 1,
"test" : 1
}
},
"ok" : {
  "count" : 12,
  "dc_stats" : {
    "BBB" : 9,
    "EquipmentRoom_001" : 1,
    "roooooooooom_698" : 1,
    "roooooooooom_700" : 1
  }
},
"warning" : {
  "count" : 0,
  "dc_stats" : { }
},
"critical" : {
  "count" : 1,
  "dc_stats" : {
    "roooooooooom_700" : 1
  }
},
"health" : {
  "count" : 12,
  "dc_stats" : {
    "BBB" : 9,
    "EquipmentRoom_001" : 1,
    "roooooooooom_698" : 1,
    "roooooooooom_700" : 1
  }
},
"isolation" : {
  "count" : 0,
  "dc_stats" : { }
}
},
"server_power_status" : {
  "on" : 9,
  "off" : 4,
  "unknown" : 1745
}
}
```

Status Codes

Status Code	Description
200	-
400	Invalid request parameter.
401	The request is not authenticated.
429	The request is overloaded.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.5.2 Obtaining Server Alarm Overview

Function

This API is used to obtain the server alarm overview.

Calling Method

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

URI

GET /v1/{project_id}/physicalservers/alarms/summary

Table 4-223 URI parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A

Request Parameters

Table 4-224 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Response Parameters

Status code: 200

Table 4-225 Response body parameters

Parameter	Type	Description
alarm_levels	Array of AlarmLevel objects	Definition Alarm severity. Constraints N/A
alarm_devices	Array of AlarmDevice objects	Definition Alarm device information, including the device type and the number of alarms. Constraints N/A
alarm_hosts	Array of AlarmHost objects	Definition Top 10 faulty servers. Constraints N/A

Parameter	Type	Description
alarm_groups	Array of AlarmGroup objects	Definition Alarm grouping. Constraints N/A

Table 4-226 AlarmLevel

Parameter	Type	Description
alarm_level	Integer	Definition Alarm severity. Constraints N/A Range N/A Default Value N/A
alarm_number	Integer	Definition The number of alarms. Constraints N/A Range N/A Default Value N/A

Table 4-227 AlarmHost

Parameter	Type	Description
resource_name	String	Definition Resource name. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
resource_id	String	Definition Resource ID. Constraints N/A Range N/A Default Value N/A
alarm_infos	Array of AlarmInfo objects	Definition Alarm information. Constraints N/A

Table 4-228 AlarmInfo

Parameter	Type	Description
alarm_device	String	Definition Alarm device. Constraints N/A Range N/A Default Value N/A
alarm_number	Integer	Definition The number of alarms. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
alarm_duration	String	Definition Alarm duration. Constraints N/A Range N/A Default Value N/A

Table 4-229 AlarmGroup

Parameter	Type	Description
label	String	Definition Label. Constraints N/A Range N/A Default Value N/A
alarm_devices	Array of AlarmDevice objects	Definition Alarm devices. Constraints N/A
sns	Array of strings	Definition The list of SNs. Constraints N/A

Table 4-230 AlarmDevice

Parameter	Type	Description
alarm_device	String	Definition Alarm hardware. Constraints N/A Range N/A Default Value N/A
alarm_number	Integer	Definition The number of alarms. Constraints N/A Range N/A Default Value N/A

Status code: 400

Table 4-231 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 401

Table 4-232 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429

Table 4-233 Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500

Table 4-234 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Requests

Request for obtaining server alarm overview

GET https://{endpoint}/v1/{project_id}/physicalservers/alarms/summary

Example Responses

Status code: 200

```
{
  "alarm_levels" : [ {
    "alarm_level" : 3,
    "alarm_number" : 90
  }, {
    "alarm_level" : 2,
    "alarm_number" : 104
  }, {
    "alarm_level" : 1,
    "alarm_number" : 15
  }, {
    "alarm_level" : 4,
    "alarm_number" : 60
  } ],
  "alarm_devices" : [ {
    "alarm_device" : "memory_health",
    "alarm_number" : 163
  }, {
    "alarm_device" : "cpu_health",
```

```
{
  "alarm_number" : 19
}, {
  "alarm_device" : "fan_health",
  "alarm_number" : 6
}, {
  "alarm_device" : "nic_health",
  "alarm_number" : 6
}, {
  "alarm_device" : "disk_health",
  "alarm_number" : 2
}, {
  "alarm_device" : "power_health",
  "alarm_number" : 0
}, {
  "alarm_device" : "other_health",
  "alarm_number" : 73
} ],
"alarm_hosts" : [ {
  "resource_name" : "",
  "resource_id" : "01963d9c-dfca-72bc-8974-fae1f2c0700b",
  "alarm_infos" : [ {
    "alarm_device" : "alarm-eu43Rear",
    "alarm_duration" : 7161622903615878
  } ]
} ],
"alarm_groups" : [ {
  "label" : "Unknown",
  "alarm_devices" : [ {
    "alarm_device" : "power_health",
    "alarm_number" : 0
  }, {
    "alarm_device" : "nic_health",
    "alarm_number" : 6
  }, {
    "alarm_device" : "memory_health",
    "alarm_number" : 163
  }, {
    "alarm_device" : "fan_health",
    "alarm_number" : 6
  }, {
    "alarm_device" : "disk_health",
    "alarm_number" : 2
  }, {
    "alarm_device" : "cpu_health",
    "alarm_number" : 19
  }, {
    "alarm_device" : "other_health",
    "alarm_number" : 73
  } ],
  "sns" : [ "01963d9c-dfdf-7e66-a8cf-29ba55dcb4bd", "0197a5d0-0b9c-7564-a0ad-bf152d026a3c",
    "01963d9c-dfca-72bc-8974-fae1f2c0700b", "019661e2-5390-7aa5-91e8-5fc6841f6ed9", "01963d9c-
    dfd0-7a44-b42e-5270e52296b6" ]
} ]
}
```

Status Codes

Status Code	Description
200	-
400	Invalid request parameter.
401	The request is not authenticated.

Status Code	Description
429	The request is overloaded.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.5.3 Obtaining the Server Alarm Trend

Function

This API is used to query the server overview, server startup status, and server operating status.

Calling Method

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

URI

GET /v1/{project_id}/physicalservers/alarms/trend

Table 4-235 URI parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A

Table 4-236 Query parameters

Parameter	Mandatory	Type	Description
from	Yes	Integer	Definition Query start timestamp, in seconds. Constraints from must be smaller than to . Range The value is in timestamp format. Default Value N/A
to	Yes	Integer	Definition Query end timestamp, in seconds. Constraints from must be smaller than to . Range The value is in timestamp format. Default Value N/A

Request Parameters

Table 4-237 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Response Parameters

Status code: 200

Table 4-238 Response body parameters

Parameter	Type	Description
fault_hosts	Array of FaultHost objects	Definition Trend of faulty servers. Constraints N/A
alarm_daily_new_trends	Array of AlarmDailyTrend objects	Definition Daily new alarms. Constraints N/A

Table 4-239 FaultHost

Parameter	Type	Description
fault_date	DateTime	Definition Alarm time. Constraints N/A Range N/A Default Value N/A
new_fault_host	Integer	Definition The number of new faulty servers. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
fault_host	Array of strings	Definition SN of a faulty server. Constraints N/A Range N/A Default Value N/A

Table 4-240 AlarmDailyTrend

Parameter	Type	Description
alarm_date	DateTime	Definition Alarm time. Constraints N/A Range N/A Default Value N/A
alarm_devices	Array of AlarmDevice objects	Definition Alarm device information, including the device type and the number of alarms. Constraints N/A
alarm_levels	Array of AlarmLevel objects	Definition Alarm severity. Constraints N/A

Table 4-241 AlarmDevice

Parameter	Type	Description
alarm_device	String	Definition Alarm hardware. Constraints N/A Range N/A Default Value N/A
alarm_number	Integer	Definition The number of alarms. Constraints N/A Range N/A Default Value N/A

Table 4-242 AlarmLevel

Parameter	Type	Description
alarm_level	Integer	Definition Alarm severity. Constraints N/A Range N/A Default Value N/A
alarm_number	Integer	Definition The number of alarms. Constraints N/A Range N/A Default Value N/A

Status code: 400

Table 4-243 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 401

Table 4-244 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429**Table 4-245** Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500**Table 4-246** Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Requests

Request for obtaining server alarm trend

GET https://{endpoint}/v1/{project_id}/physicalservers/alarms/trend?from={from}&to={to}

Example Responses

Status code: 200

```
{
  "fault_hosts" : [ {
    "fault_date" : "2025-06-04T00:00:00+08:00",
    "new_fault_host" : 0,
    "fault_host" : [ ]
  } ],
  "alarm_daily_new_trends" : [ {
    "alarm_date" : "2025-06-04T00:00:00+08:00",
    "alarm_devices" : [ {
      "alarm_device" : "power_health",
      "alarm_number" : 0
    }, {
      "alarm_device" : "nic_health",
      "alarm_number" : 0
    }, {
      "alarm_device" : "memory_health",
      "alarm_number" : 0
    }, {
      "alarm_device" : "fan_health",
      "alarm_number" : 0
    }, {
      "alarm_device" : "disk_health",
      "alarm_number" : 0
    }, {
      "alarm_device" : "cpu_health",
      "alarm_number" : 0
    }, {
      "alarm_device" : "other_health",
      "alarm_number" : 0
    } ],
    "alarm_levels" : [ {
      "alarm_level" : 1,
      "alarm_number" : 0
    }, {
      "alarm_level" : 2,
      "alarm_number" : 0
    }, {
      "alarm_level" : 3,
      "alarm_number" : 0
    }, {
      "alarm_level" : 4,
      "alarm_number" : 0
    } ]
  } ]
}
```

Status Codes

Status Code	Description
200	-
400	Invalid request parameter.

Status Code	Description
401	The request is not authenticated.
429	The request is overloaded.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.5.4 Obtaining a Server Alarm List

Function

This API is used to obtain a server alarm list.

Calling Method

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

URI

GET /v1/{project_id}/physicalservers/alarms

Table 4-247 URI parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A

Table 4-248 Query parameters

Parameter	Mandatory	Type	Description
alarm_record_id	No	String	Definition Alarm record ID. Constraints N/A Range The value starts with ah and is followed by 22 characters, including letters and digits. Default Value N/A
alarm_status	No	String	Definition Alarm status. Constraints N/A Range • ok: The alarm status is normal. • alarm: An alarm is generated. • invalid: An alarm is invalid. Default Value N/A
alarm_type	No	String	Definition Alarm type. Constraints N/A Range • event • metric Default Value N/A

Parameter	Mandatory	Type	Description
resource_id	No	String	Definition Alarm resource ID. Multiple values can be separated by commas (,). Constraints N/A Range N/A Default Value N/A
alarm_level	No	Integer	Definition Alarm severity, which can be 1 (critical), 2 (major), 3 (minor), or 4 (informational). Constraints N/A Range • 1: Critical • 2: Major • 3: Minor • 4: Warning Default Value N/A
from	No	Integer	Definition Start time of the alarm, in seconds. Constraints from must be smaller than to . Range The value is in timestamp format. Default Value N/A

Parameter	Mandatory	Type	Description
to	No	Integer	Definition End time of an alarm, in seconds. Constraints from must be smaller than to . Range The value is in timestamp format. Default Value N/A
offset	No	Integer	Definition Pagination offset. Constraints N/A Range N/A Default Value N/A
limit	No	Integer	Definition Page size. Constraints N/A Range N/A Default Value N/A

Request Parameters

Table 4-249 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Response Parameters

Status code: 200

Table 4-250 Response body parameters

Parameter	Type	Description
alarms	Array of AlarmHistory objects	Definition Alarm list object. Constraints N/A
count	Integer	Definition Total alarms. Constraints N/A Range N/A Default Value N/A

Table 4-251 AlarmHistory

Parameter	Type	Description
alarm_record_id	String	Definition Alarm record ID. Constraints N/A Range N/A Default Value N/A
alarm_id	String	Definition Alarm ID. Constraints N/A Range N/A Default Value N/A
alarm_name	String	Definition Alarm name. Constraints N/A Range N/A Default Value N/A
alarm_status	String	Definition Alarm status. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
alarm_level	Integer	Definition Alarm severity. Constraints N/A Range N/A Default Value N/A
begin_time	Integer	Definition Alarm start time. Constraints N/A Range The value is in Unix timestamp. Default Value N/A
end_time	Integer	Definition Alarm end time. Constraints N/A Range The value is in Unix timestamp. Default Value N/A
last_alarm_time	Integer	Definition Time when the alarm was last reported. Constraints N/A Range The value is in Unix timestamp. Default Value N/A
metric	Metric object	-

Table 4-252 Metric

Parameter	Type	Description
metric_name	String	Definition Metric name of a resource. For example, the ECS metric cpu_util indicates the CPU usage of an ECS. The DDS metric mongo001_command_ps indicates the command execution frequency. For details about the metrics of each service, see Cloud Product Metrics . Constraints N/A Range 1-64 characters. The name must start with a letter and contain only letters, digits, and underscores (_). Default Value N/A
dimensions	Array of Dimension objects	Definition Resource dimension. Constraints N/A

Table 4-253 Dimension

Parameter	Type	Description
name	String	Definition Dimension of a resource. For example, the dimension of an ECS can be instance_id . A maximum of four dimensions are supported. For the metric dimension of each resource, see Cloud Product Metrics . Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
value	String	Definition Resource dimension value, which is an instance ID, for example, 4270ff17-aba3-4138-89fa-820594c39755 . Constraints N/A Range N/A Default Value N/A

Status code: 400

Table 4-254 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 401

Table 4-255 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429

Table 4-256 Response body parameters

Parameter	Type	Description
-	String	-

Status code: 500

Table 4-257 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Requests

Request for obtaining server alarm list

```
GET https://{endpoint}/v1/{project_id}/physicalservers/alarms
```

Example Responses

Status code: 200

```
{
  "alarms": [ {
    "alarm_record_id": "ah175258182510684b1cb108",
    "alarm_id": "al17525818209074GL0BZQMw",
    "alarm_name": "alarm-0715",
    "alarm_status": "alarm",
    "alarm_level": 2,
    "begin_time": 1752581825000,
    "end_time": 1752725863000,
    "last_alarm_time": 1752725863000,
    "metric": {
      "metric_name": "disk_health",
      "dimensions": [ {
        "name": "device",
        "value": "Disk0"
      }, {
        "name": "host",
        "value": "019661e2-5390-7aa5-91e8-5fc6841f6ed9"
      } ]
    }
  } ],
}
```

```
"count" : 347
}
```

Status Codes

Status Code	Description
200	-
400	Invalid request parameter.
401	The request is not authenticated.
429	The request is overloaded.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.5.5 The server event list is returned.

Function

This API is used to obtain a server event list.

Calling Method

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

URI

GET /v1/{project_id}/physicalservers/events

Table 4-258 URI parameter

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A

Table 4-259 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Integer	Definition Pagination offset. Constraints N/A Range N/A Default Value N/A
limit	No	Integer	Definition Page size. Constraints N/A Range N/A Default Value N/A
event_level	No	String	Definition Event level. Constraints N/A Range - critical - major - minor - info Default Value N/A
resource_id	No	String	Definition Alarm resource ID. Constraints N/A Range N/A Default Value N/A

Parameter	Mandatory	Type	Description
from	No	Integer	Definition Query start timestamp, in seconds. Constraints N/A Range The value is in timestamp format. Default Value N/A
to	No	Integer	Definition Query end timestamp, in seconds. Constraints N/A Range The value is in timestamp format. Default Value N/A

Request Parameters

Table 4-260 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Response Parameters

Status code: 200

Table 4-261 Response body parameters

Parameter	Type	Description
events	Array of EventInfo objects	Definition Event list object. Constraints N/A
count	Integer	Definition The total number of events in an event list. Constraints N/A Range N/A Default Value N/A

Table 4-262 EventInfo

Parameter	Type	Description
event_id	String	Definition Event ID. Constraints N/A Range N/A Default Value N/A
message_id	String	Definition Description ID. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
event_message	String	Definition Event description. Constraints N/A Range N/A Default Value N/A
event_level	String	Definition Event level. Constraints N/A Range - critical - major - minor - info Default Value N/A
status	String	Definition Event status. Constraints N/A Range N/A Default Value N/A
resource_id	String	Definition Resource ID. Constraints N/A Range Maximum length: 128 bytes Default Value N/A

Parameter	Type	Description
time	Integer	Definition Event time, recorded in milliseconds using a Unix timestamp. Constraints N/A Range The value is in Unix timestamp format. Default Value N/A
origin_event	String	Definition Original event. Constraints N/A Range Maximum length: 4,096 bytes Default Value N/A

Status code: 400

Table 4-263 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 401

Table 4-264 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429

Table 4-265 Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500

Table 4-266 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Requests

Request for querying the server event list

```
GET https://{endpoint}/v1/{project_id}/physicalservers/events
```

Example Responses

Status code: 200

Server event list returned.

```
{
  "events" : [ ],
  "count" : 0
}
```

Status Codes

Status Code	Description
200	The server event list is returned.
400	Invalid request parameter.

Status Code	Description
401	The request is not authenticated.
429	The request is overloaded.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.5.6 Querying Event Definitions

Function

This API is used to query event definitions.

Calling Method

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

URI

GET /v1/{project_id}/physicalservers/events/{event_id}

Table 4-267 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A
event_id	Yes	String	Event ID.

Request Parameters

Table 4-268 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Response Parameters

Status code: 200

Table 4-269 Response body parameters

Parameter	Type	Description
code	String	Definition Event code. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
status	String	Definition Status. Constraints N/A Range N/A Default Value N/A
name_cn	String	Definition Event name (in Chinese). Constraints N/A Range N/A Default Value N/A
name_en	String	Definition Event name (in English). Constraints N/A Range N/A Default Value N/A
effect_cn	String	Definition Event impact (in Chinese). Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
effect_en	String	Definition Event impact (in English). Constraints N/A Range N/A Default Value N/A
suggestion_cn	String	Definition Event handling suggestion (in Chinese). Constraints N/A Range N/A Default Value N/A
suggestion_en	String	Definition Event handling suggestion (in English). Constraints N/A Range N/A Default Value N/A
reason_cn	String	Definition Event cause (in Chinese). Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
reason_en	String	Definition Event cause (in English). Constraints N/A Range N/A Default Value N/A

Status code: 400

Table 4-270 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 401

Table 4-271 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429**Table 4-272** Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500

Table 4-273 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Requests

Request for querying event definitions

```
GET https://{endpoint}/v1/{project_id}/physicalservers/events/{event_id}
```

Example Responses

Status code: 200

Event definitions returned.

```
{
  "code" : "",
  "status" : "",
  "name_cn" : "",
  "name_en" : "",
  "effect_cn" : "",
  "effect_en" : "",
  "suggestion_cn" : "",
  "suggestion_en" : "",
  "reason_cn" : "",
  "reason_en" : ""
}
```

Status Codes

Status Code	Description
200	Event definitions are returned.
400	Invalid request parameter.
401	The request is not authenticated.
429	The request is overloaded.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.6 Tag Management

4.6.1 Batch Creating Rack Tags

Function

Batch Creating Rack Tags

Calling Method

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

URI

POST https://www.example.com/v1/{project_id}/iracks/{id}/tags/create

Table 4-274 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A

Parameter	Mandatory	Type	Description
id	Yes	String	Definition Rack resource ID. Constraints N/A Range Rack ID Default Value N/A

Request Parameters

Table 4-275 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Table 4-276 Request body parameter

Parameter	Mandatory	Type	Description
tags	No	Array of Tag objects	Definition Tags. Constraints N/A Range N/A Default Value N/A

Table 4-277 Tag

Parameter	Mandatory	Type	Description
key	Yes	String	Definition Tag key. Constraints N/A Range • The value cannot be empty and cannot start or end with spaces. A maximum of 128 characters are supported. • The value can contain letters, digits, and spaces in UTF-8 format. • The value can contain the following special characters: _.:=-@ • The value cannot start with sys. Default Value N/A

Parameter	Mandatory	Type	Description
value	No	String	Definition Tag value. Constraints N/A Range • The value can contain a maximum of 255 characters. It can be empty but cannot be the default. • The value can be letters, digits, and spaces in UTF-8 format. • The value can contain the following special characters: _./=+-@ Default Value N/A

Response Parameters

Status code: 204
Request succeeded.

Status code: 400

Table 4-278 Response body parameters

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A

Status code: 401

Table 4-279 Response body parameters

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A
error_code	String	Definition Error code. Constraints N/A Range N/A

Status code: 429

Table 4-280 Response body parameters

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A
error_code	String	Definition Error code. Constraints N/A Range N/A

Status code: 500

Table 4-281 Response body parameters

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A
error_code	String	Definition Error code. Constraints N/A Range N/A

Example Requests

None

Example Responses

None

Status Codes

Status Code	Description
204	Request succeeded.
400	Invalid request parameter.
401	Request error. User not authorized.
429	Request error due to too frequent requests.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.6.2 Batch Deleting Rack Tags

Function

This API is used to batch delete rack tags.

Calling Method

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

URI

POST https://www.example.com/v1/{project_id}/iracks/{id}/tags/delete

Table 4-282 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A
id	Yes	String	Definition Rack resource ID. Constraints N/A Range Rack ID Default Value N/A

Request Parameters

Table 4-283 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Table 4-284 Request body parameter

Parameter	Mandatory	Type	Description
tags	No	Array of Tag objects	Definition Tags. Constraints N/A Range N/A Default Value N/A

Table 4-285 Tag

Parameter	Mandatory	Type	Description
key	Yes	String	Definition Tag key. Constraints N/A Range • The value cannot be empty and cannot start or end with spaces. A maximum of 128 characters are supported. • The value can contain letters, digits, and spaces in UTF-8 format. • The value can contain the following special characters: _.:=-@ • The value cannot start with sys. Default Value N/A

Parameter	Mandatory	Type	Description
value	No	String	Definition Tag value. Constraints N/A Range • The value can contain a maximum of 255 characters. It can be empty but cannot be the default. • The value can be letters, digits, and spaces in UTF-8 format. • The value can contain the following special characters: _./=+-@ Default Value N/A

Response Parameters

Status code: 204

Request succeeded.

Status code: 400

Table 4-286 Response body parameters

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A

Status code: 401

Table 4-287 Response body parameters

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A
error_code	String	Definition Error code. Constraints N/A Range N/A

Status code: 429

Table 4-288 Response body parameters

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A
error_code	String	Definition Error code. Constraints N/A Range N/A

Status code: 500

Table 4-289 Response body parameters

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A
error_code	String	Definition Error code. Constraints N/A Range N/A

Example Requests

Request for batch creating resource tags

```
POST https://{endpoint}/v1/{project_id}/{resource_type}/{resource_id}/tags/create
```

Example Responses

None

Status Codes

Status Code	Description
204	Request succeeded.
400	Invalid request parameter.
401	Request error. User not authorized.
429	Request error due to too frequent requests.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.6.3 Batch Creating Resource Tags

Function

This API is used to batch create resource tags.

Calling Method

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

URI

```
POST /v1/{project_id}/{resource_type}/{resource_id}/tags/create
```

Table 4-290 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A
resource_type	Yes	String	Definition Resource type. Constraints N/A Range physicalservers Default Value N/A
resource_id	Yes	String	Definition Resource ID. Constraints N/A Range N/A Default Value N/A

Request Parameters

Table 4-291 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Table 4-292 Request body parameter

Parameter	Mandatory	Type	Description
tags	No	Array of Tag objects	Definition Tags. Constraints N/A

Table 4-293 Tag

Parameter	Mandatory	Type	Description
key	Yes	String	Definition Tag key. Constraints N/A Range • The value cannot be empty and cannot start or end with spaces. A maximum of 128 characters are supported. • The value can contain letters, digits, and spaces in UTF-8 format. • The value can contain the following special characters: _.:=-@ • The value cannot start with sys. Default Value N/A
value	No	String	Definition Tag value. Constraints N/A Range • The value can contain a maximum of 255 characters. It can be empty but cannot be the default. • The value can be letters, digits, and spaces in UTF-8 format. • The value can contain the following special characters: _.:/=+-@ Default Value N/A

Response Parameters

Status code: 204

Request succeeded.

Status code: 400

Table 4-294 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 401

Table 4-295 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429**Table 4-296** Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500**Table 4-297** Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Requests

Request for batch creating resource tags

```
POST https://{endpoint}/v1/{project_id}/{resource_type}/{resource_id}/tags/create
```

Example Responses

None

Status Codes

Status Code	Description
204	Request succeeded.
400	Invalid request parameter.
401	The request is not authenticated.
429	The request is overloaded.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

4.6.4 Batch Deleting Resource Tags

Function

This API is used to batch delete resource tags.

Calling Method

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

URI

```
POST /v1/{project_id}/{resource_type}/{resource_id}/tags/delete
```

Table 4-298 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition The project ID. Constraints N/A Range The project ID of the account Default Value N/A
resource_type	Yes	String	Definition Resource type. Constraints N/A Range physicalservers Default Value N/A
resource_id	Yes	String	Definition Resource ID. Constraints N/A Range N/A Default Value N/A

Request Parameters

Table 4-299 Request header parameter

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition Requests for calling an API can be authenticated using a token. If token-based authentication is used, this parameter is mandatory and must be set to a user token. Constraints N/A Range N/A Default Value N/A

Table 4-300 Request body parameter

Parameter	Mandatory	Type	Description
tags	No	Array of Tag objects	Definition Tags. Constraints N/A

Table 4-301 Tag

Parameter	Mandatory	Type	Description
key	Yes	String	Definition Tag key. Constraints N/A Range • The value cannot be empty and cannot start or end with spaces. A maximum of 128 characters are supported. • The value can contain letters, digits, and spaces in UTF-8 format. • The value can contain the following special characters: _.:=-@ • The value cannot start with sys. Default Value N/A
value	No	String	Definition Tag value. Constraints N/A Range • The value can contain a maximum of 255 characters. It can be empty but cannot be the default. • The value can be letters, digits, and spaces in UTF-8 format. • The value can contain the following special characters: _.:/=+-@ Default Value N/A

Response Parameters

Status code: 204

Request succeeded.

Status code: 400

Table 4-302 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 401

Table 4-303 Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A

Parameter	Type	Description
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Status code: 429**Table 4-304** Response body parameter

Parameter	Type	Description
-	String	-

Status code: 500**Table 4-305** Response body parameters

Parameter	Type	Description
error_code	String	Definition Error code. Constraints N/A Range N/A Default Value N/A
error_msg	String	Definition Error message. Constraints N/A Range N/A Default Value N/A

Example Requests

Request for batch deleting tags from a resource

```
POST https://{endpoint}/v1/{project_id}/{resource_type}/{resource_id}/tags/delete
```

Example Responses

None

Status Codes

Status Code	Description
204	Request succeeded.
400	Invalid request parameter.
401	The request is not authenticated.
429	The request is overloaded.
500	Internal server error.

Error Codes

For details, see [Error Codes](#).

5 Permissions and Supported Actions

5.1 Introduction

You can use Identity and Access Management (IAM) for fine-grained permissions management of your CloudDC resources. If your Huawei Cloud account does not need individual IAM users, you can skip this section.

With IAM, you can control access to specific Huawei Cloud resources from principals (IAM users, user groups, agencies, or trust agencies). IAM supports role/policy-based authorization and identity policy-based authorization.

Table 5-1 Differences between role/policy-based and identity policy-based authorization

Autho rizatio n Model	Core Relation ship	Permissio ns	Authorization Method	Description
Role/ Policy	User-permissi on- authoriz ation scope	• Syste m- define d roles • Syste m- define d policie s • Custom policie s	Assigning roles or policies to principals	To authorize a user, you need to add it to a user group first and then specify the scope of authorization. It is hard to provide fine-grained permissions control using authorization by user groups and a limited number of condition keys. This method is suitable for small and medium enterprises.

Authorization Model	Core Relationship	Permissions	Authorization Method	Description
Identity policy	User-policy	• System-defined policies • Custom identity policies	• Assigning identity policies to principals • Attaching identity policies to principals	You can authorize a user by attaching an identity policy to it. User-specific authorization and a variety of key conditions allow for more fine-grained permissions control. However, this model can be hard to set up. It requires a certain amount of expertise and is suitable for medium and large enterprises.

Assume that you want to grant IAM users permission to create CloudDC resources in **CN North-Beijing4** and **CN South-Guangzhou**. With policy-based authorization, the administrator needs to create two custom policies and assign both to the IAM users. With identity policy-based authorization, the administrator only needs to create one custom identity policy and configure the condition key **g:RequestTag** for the policy, and then attaches the policy to the users or grants the users the access permissions to the specified regions. Identity policy-based authorization is more flexible than policy-based authorization.

Policies/identity policies and actions in the two authorization models are not interoperable. You are advised to use the identity policy-based authorization model.

If you use IAM users in your account to call an API, the IAM users must be granted the required permissions. The required permissions are determined by the actions supported by the API. Only users with the policies allowing for those actions can call the API successfully.

Assume that an IAM user wants to call an API to query iMetal servers. With policy-based authorization, the IAM user must be granted the permissions allowing for action **cloudcdc:imetal:list**. With identity policy-based authorization, the IAM user must be granted the permissions allowing for action **cloudcdc:imetal:list**.

Actions

CloudDC provides system-defined policies that can be directly used in IAM. You can also create custom policies to supplement system-defined policies for more refined access control. Operations supported by policies are specific to APIs. The following are common concepts related to policies:

- Permissions: statements in a policy that allow or deny certain operations.
- APIs: REST APIs that can be called in a custom policy.

- **Actions:** added to a custom policy to control permissions for specific operations.
- **Dependencies:** actions which a specific action depends on. When allowing an action for a user, you also need to allow any existing action dependencies for that user.
- **IAM projects/Enterprise projects:** the authorization scope of a custom policy. A custom policy can be applied to IAM projects or enterprise projects or both. Policies that contain actions for both IAM and enterprise projects can be used and applied for both IAM and Enterprise Management. Policies that contain actions only for IAM projects can be used and applied to IAM only. Administrators can check whether an action supports IAM projects or enterprise projects in the action list. For details about the differences between IAM and enterprise management, see [What Are the Differences Between IAM and Enterprise Management?](#)

CloudDC supports the following actions that can be defined in custom policies.

Table 5-2 Rack management

Permission	API	Action	IAM Project	Enterprise Project
Updating an intelligent rack	PUT /api/v1/{project_id}/iracks/{irack_id}	clouddc:irack:update	Support ed	Not supported
Querying the intelligent rack list	GET /api/v1/{project_id}/iracks	clouddc:irack:list	Support ed	Not supported

Table 5-3 Equipment room management

Permission	API	Action	IAM Project	Enterprise Project
Modifying the IDC description	PUT /api/v1/{project_id}/idcs	clouddc:idc:update	Support ed	Not supported
Querying the IDC list	GET /api/v1/{project_id}/idcs	clouddc:idc:list	Support ed	Not supported

Table 5-4 Physical server management

Permission	API	Action	IAM Project	Enterprise Project
Batch querying physical servers	GET /v1/{project_id}/physicalservers	cloudcc:imetal:listServer	Supported	Not supported
Querying information about physical servers	GET /v1/{project_id}/physicalservers/{id}	cloudcc:imetal:getServer	Supported	Not supported
Obtaining the console address	GET /v1/{project_id}/physicalservers/{id}/remote-console-address	cloudcc:imetal:createRemoteConsoleLink	Supported	Not supported
Querying the server hardware details	GET /v1/{project_id}/physicalservers/{id}/hardware-attributes	cloudcc:imetal:getHardwareAttribute	Supported	Not supported
Querying the firmware details	GET /v1/{project_id}/physicalservers/{id}/firmware-attributes	cloudcc:imetal:getFirmwareAttribute	Supported	Not supported
Batch modifying the power statuses of physical servers	PUT /v1/{project_id}/physicalservers/power-state	cloudcc:imetal:updatePowerStatus	Supported	Not supported
Exporting server logs	POST /v1/{project_id}/physicalservers/{id}/logs/exports	cloudcc:imetal:createDumpLog	Supported	Not supported
Querying the export status of logs	GET /v1/{project_id}/physicalservers/{id}/logs/exports/{export_id}	cloudcc:imetal:getDumpLogProgress	Supported	Not supported
Downloading a log file	GET /v1/{project_id}/physicalservers/{id}/logs/exports/{export_id}/content	cloudcc:imetal:createDownloadLog	Supported	Not supported

Table 5-5 iMetal instance management

Permission	API	Action	IAM Project	Enterprise Project
Batch creating instances	POST /v1/{project_id}/instances/batch-create	cloudcc:instance:createBatch	Supported	Not supported
Creating an instance	POST /v1/{project_id}/instances	cloudcc:instance:create	Supported	Not supported
Batch querying instances	GET /v1/{project_id}/instances	cloudcc:instance:list	Supported	Not supported
Batch deleting instances	POST /v1/{project_id}/instances/batch-delete	cloudcc:instance:deleteBatch	Supported	Not supported
Querying instance status	GET /v1/{project_id}/instances/{id}/status	cloudcc:instance:get	Supported	Not supported
Batch reinstalling OSs	PUT /v1/{project_id}/instances/reinstall	cloudcc:instance:reinstallOS	Supported	Not supported
Batch changing instance passwords	PUT /v1/{project_id}/instances/password	cloudcc:instance:changePassword	Supported	Not supported
Deleting instances	DELETE /v1/{project_id}/instances/{id}	cloudcc:instance:delete	Supported	Not supported
Changing the IP address of an instance	PUT /v1/{project_id}/instances/{id}/ip	cloudcc:metal:updateIP	Supported	Not supported

Table 5-6 Physical server diagnosis

Permission	API	Action	IAM Project	Enterprise Project
Obtaining server overview	GET /v1/{project_id}/physicalservers/status	cloudcc::listStatus	Supported	Not supported
Obtaining server alarm overview	GET /v1/{project_id}/physicalservers/alarms/summary	cloudcc::listAlarmStat	Supported	Not supported

Permission	API	Action	IAM Project	Enterprise Project
Obtaining server alarm trend	GET /v1/{project_id}/physicalservers/alarms/trend	clouddc::listAlarmTrend	Supported	Not supported
Obtaining server alarm list	GET /v1/{project_id}/physicalservers/alarms	clouddc::listAlarm	Supported	Not supported
The server event list is returned.	GET /v1/{project_id}/physicalservers/events	clouddc::listEvent	Supported	Not supported
Querying event definitions	GET /v1/{project_id}/physicalservers/events/{event_id}	clouddc::listEventDicts	Supported	Not supported

Table 5-7 Tag management

Permission	API	Action	IAM Project	Enterprise Project
Batch creating rack tags	POST https://www.example.com/v1/{project_id}/iracks/{id}/tags/create	clouddc::irack:tagResource	Supported	Not supported
Batch deleting rack tags	POST https://www.example.com/v1/{project_id}/iracks/{id}/tags/delete	clouddc::irack:unTagResource	Supported	Not supported
Batch creating resource tags	POST /v1/{project_id}/{resource_type}/{resource_id}/tags/create	clouddc::tagResource	Supported	Not supported
Batch deleting tags from a resource	POST /v1/{project_id}/{resource_type}/{resource_id}/tags/delete	clouddc::unTagResource	Supported	Not supported

6 Appendix

6.1 Status Codes

Table 6-1 Status codes

Status Code	Message	Description
100	Continue	The client should proceed with the request. This provisional response informs the client that part of the request has been received and has not yet been rejected by the server.
101	Switching Protocols	The server has agreed to switch protocols. The server will only agree to switch protocols when new protocols are advantageous over existing protocols. For example, you can switch to a newer version of HTTP.
201	Created	The request for creating resources or a task has been fulfilled.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
203	Non-Authoritative Information	Non-authoritative information. The request is successful.
204	NoContent	The server has successfully fulfilled the request, but did not return any response body. This status code is returned in response to an HTTP OPTIONS request.
205	Reset Content	The server has fulfilled the request, but the requester is required to reset the content.

Status Code	Message	Description
206	Partial Content	The server has successfully fulfilled part of a GET request.
300	Multiple Choices	There are multiple choices for a requested resource. The response contains a list of resource characteristics and addresses from which a user client (such as a browser) can choose the most appropriate one.
301	Moved Permanently	The requested resource has been permanently moved to the given URI indicated in the response.
302	Found	The requested resource was temporarily moved.
303	See Other	The server is redirecting the client to a different address. It is expected to be accessed using a GET or POST method.
304	Not Modified	The requested resource has not been modified. When the server returns this status code, it does not return any resources.
305	Use Proxy	The requested resource must be accessed through a proxy.
306	Unused	This HTTP status code is no longer used.
400	BadRequest	Invalid request. Modify the request and retry.
401	Unauthorized	The authorization information provided by the client is incorrect or invalid.
402	Payment Required	This status code is reserved for future use.
403	Forbidden	The request has been rejected. The server understood your request but refused to authorize it, meaning you do not have permission to access the requested resource. Modify the request and retry.
404	NotFound	The requested resource could not be found. Modify the request and retry.
405	MethodNotAllowed	The request method is not allowed. Modify the request and retry.
406	Not Acceptable	The server could not satisfy the client's requirements for content characteristics.

Status Code	Message	Description
407	Proxy Authentication Required	The request must be authenticated for the client to use a proxy. This status code is similar to 401.
408	Request Time-out	A server timeout occurred due to a slow client request. The client can retry the request without making any changes.
409	Conflict	The request cannot be processed due to a conflict. This status code indicates that the resource that the client attempts to create already exists, or the requested update failed due to a conflict.
410	Gone	The requested resource does not exist. It has been permanently removed.
411	Length Required	The request cannot be completed because the Content-Length header was absent in the request.
412	Precondition Failed	One of the client-specified conditions in the request has failed.
413	Request Entity Too Large	The server refuses to process the request because the payload size is too large. The server may close the connection to prevent the client from continuously sending the request. If the server cannot process the request temporarily, the response will contain a Retry-After header field.
414	Request-URI Too Large	The URI (usually a web address) is longer than allowed.
415	Unsupported Media Type	The media format in the request is not supported.
416	Requested range not satisfiable	The requested range is invalid.
417	Expectation Failed	The server cannot fulfill the conditions set by the Expect header in the request.
422	UnprocessableEntity	The request is syntactically correct but semantically incorrect.
429	TooManyRequests	Too many requests have been made within the allowed time. You should try again after the time specified in the Retry-After header of the response has elapsed.

Status Code	Message	Description
500	InternalServerError	The server encountered an unexpected condition that prevented it from fulfilling the request.
501	Not Implemented	The server does not support a specific feature that is required to complete the request.
502	Bad Gateway	The server is acting as a gateway or proxy and receives an invalid request from a remote server.
503	ServiceUnavailable	The requested service is unavailable. Modify the request and retry.
504	ServerTimeout	The request failed to be fulfilled within the given time. This status code is returned to the client only when the Timeout parameter was specified in the request.
505	HTTP Version not supported	The server does not support the HTTP protocol version used in the request.

6.2 Error Codes

If an error occurs in API calling, no result is returned. Identify the error cause based on the error codes of each API. If an error occurs in API calling, HTTP status code 4xx or 5xx is returned. The response body contains the error code and additional information. If you are unable to identify the cause of an error, contact customer service and provide the error code so that we can help you solve the problem as soon as possible.

Format of an Error Response Body

If an error occurs during API calling, the system returns an error code and message to you. The following shows the format of an error response body:

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

In the preceding information, **error_code** is an error code, and **error_msg** describes the error.

Error Code Description

If an error code starting with **APIGW** is returned after you call an API, rectify the fault by referring to the instructions provided in [Error Codes](#).

Table 6-2 Common error codes

Status Code	Error Code	Error Message	Description	Solution
400	iMetal.0001	A request parameter contains invalid or unsupported value: %s	The request contains invalid or unsupported parameters.	Check the request body based on the returned error message.
400	iMetal.0002	Missing required parameters: %s	Required parameters are missing in the request.	Check the request body based on the returned error message.
401	iMetal.0003	Unauthorized	The request is not authenticated.	Authenticate the request again and try again.
403	iMetal.0004	Insufficient permissions	Insufficient permission.	Contact technical support to check the account permissions.
429	iMetal.0005	Too many requests	The request is overloaded.	Try again later.

Table 6-3 Physical server error codes

Status Code	Error Code	Error Message	Description	Solution
404	iMetal.0100	Physical servers ID not found: [{id}, ...]	The physical server ID is not found.	Check the validity of the physical server ID.
400	iMetal.0101	Physical servers state is not ready: [{id}, ...]	The physical server is not ready.	Try again later.
400	iMetal.0102	Physical servers ID already exist: [{id}, ...]	The physical server already exists.	Check parameters.
400	iMetal.0110	Inspect Physical servers error: [{id}, ...], {error details}	Hardware collection failed.	Rectify the fault based on the returned message or contact technical support engineers.

Table 6-4 iMetal instance error codes

Status Code	Error Code	Error Message	Description	Solution
404	iMetal.0200	Instances not found: [{id}, ...]	The iMetal instance does not exist.	Check the instance ID validity.
400	iMetal.0201	Insufficient server resources	Insufficient iMetal server resources.	Check the Max Count validity.
400	iMetal.0202	Action conflicts with instance's current state	The operation conflicts with the instance status, for example, changing the password of an instance that is being deleted.	Rectify the fault based on the returned message or contact technical support engineers.
400	iMetal.0203	Max Count is less than Min count	The value of Max count is smaller than that of Min count .	Check the validity of Max count and Min count .
400	iMetal.0204	Image not found	The image does not exist.	Check the validity of the image parameters.
400	iMetal.0205	Invalid password	Incorrect password.	Check the password validity.
400	iMetal.0206	User data exceeds size limits	The user data exceeds 32 KB.	Reduce the length of the custom script.
400	iMetal.0207	Invalid metadata configuration	Too many or too large metadata configurations.	Check the validity of the number and length of instance metadata.
404	iMetal.0230	Subnet not found: [{id}, ...]	The subnet does not exist.	Check the subnet validity.
400	iMetal.0231	Subnet unavailable: [{id}, ...]	The subnet is unavailable.	Ensure that the subnet status is ACTIVE .
400	iMetal.0232	Insufficient IP addresses in subnet	Insufficient subnet IP addresses.	Check the subnet availability.

Status Code	Error Code	Error Message	Description	Solution
400	iMetal.0233	Specified IP conflict in subnet	IP address conflict.	Check the validity of the IP address configuration.
400	iMetal.0234	IP specification prohibited in batch creation	IP addresses cannot be specified during batch creation.	Remove the IP address configuration parameter.
400	iMetal.0235	Create VPC ports overload	Too many VPC ports created in a batch.	Retry.

6.3 Obtaining a Project ID

Scenarios

A project ID is required for some URLs when an API is called. Obtain a project ID using either of the following methods:

- [Obtaining a Project ID by Calling an API](#)
- [Obtaining the Project ID on the Console](#)

Obtaining a Project ID by Calling an API

You can obtain the project ID by calling the API used to [query project information](#).

The API for obtaining a project ID is **GET [https://{Endpoint}/v3/projects](#)**. *{Endpoint}* indicates the endpoint of IAM, which can be obtained from [Endpoints](#). For details about API authentication, see [Authentication](#).

Here is an example response, where **id** indicates the project ID.

```
{
  "projects": [
    {
      "domain_id": "65382450e8f64ac0870cd180d14e684b",
      "is_domain": false,
      "parent_id": "65382450e8f64ac0870cd180d14e684b",
      "name": "cn-north-4",
      "description": "",
      "links": {
        "next": null,
        "previous": null,
        "self": "https://www.example.com/v3/projects/a4a5d4098fb4474fa22cd05f897d6b99"
      },
      "id": "a4a5d4098fb4474fa22cd05f897d6b99",
      "enabled": true
    }
  ],
  "links": {
```

```
"next": null,  
"previous": null,  
"self": "https://www.example.com/v3/projects"  
}
```

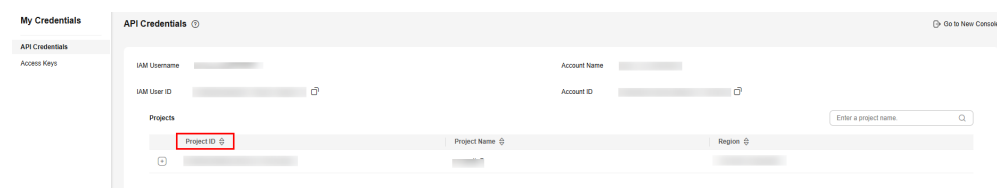
Obtaining the Project ID on the Console

To obtain a project ID from the console, perform the following operations:

1. Log in to the management console.
2. Click the username and select **My Credentials** from the drop-down list.

On the **API Credentials** page, view the project ID in the project list.

Figure 6-1 Viewing the project ID



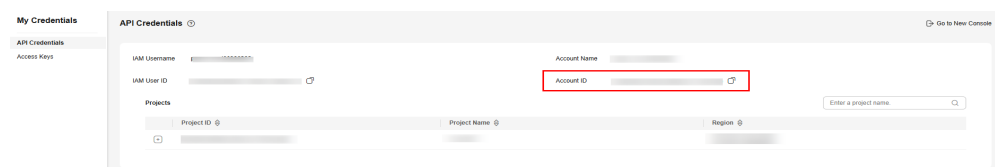
6.4 Obtaining an Account ID

An account ID is required for some URLs when an API is called. To obtain an account ID, perform the following operations:

1. Log in to the management console.
2. Click the username in the upper right corner and choose **My Credentials** from the drop-down list.

On the **API Credentials** page, view the account ID.

Figure 6-2 Obtaining an account ID



6.5 Obtaining the Endpoint Information

The endpoint information of a service consists of the service name, region ID, and external domain name. The format is as follows:

service_name.region0_id.external_global_domain_name

service_name indicates the service name abbreviation like cce and swr, which is case-insensitive. To obtain the values of *region0_id* and *external_global_domain_name*, use the method below.

Method: Using the Environment Parameter File

- *region0_id*: Search for **region0_id** on the "Basic_Parameters" sheet in the *xxx_export_all_v2_EN.xlsx* file exported during installation.
- *external_global_domain_name*: Search for **external_global_domain_name** on the "Basic_Parameters" sheet in the *xxx_export_all_v2_EN.xlsx* file exported during installation.