

**GaussDB**

# API Reference

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# 1 Before You Start

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GaussDB is a distributed relational database developed by Huawei. GaussDB supports distributed transactions and intra-city deployment across AZs for zero data loss, storage for petabytes of data, and scale-out to more than 1,000 nodes. It is highly available, secure, and scalable and provides services including quick deployment, backup, restoration, monitoring, and alarm reporting for enterprises.

This document describes how to use application programming interfaces (APIs) to perform operations on instances, such as creating, deleting, querying and scaling out instances. For operation details, see [API Overview](#).

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

## Endpoints

An endpoint is the **request address** for calling an API. Endpoints vary depending on services and regions. For the GaussDB endpoints, see [Regions and Endpoints](#).

## Concepts

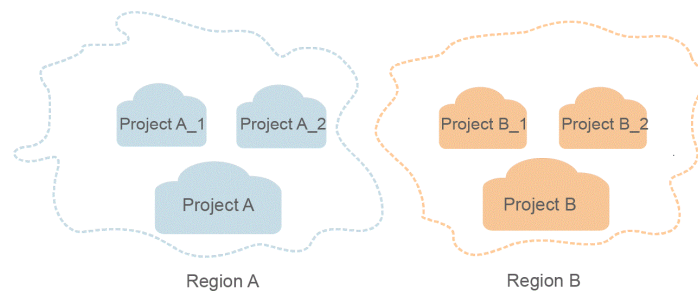
- Account  
An account is created upon successful registration. The account has full access permissions for all of its cloud services and resources. It can be used to reset user passwords and grant user permissions. The account is a payment entity, which should not be used directly to perform routine management. For security purposes, create Identity and Access Management (IAM) users and grant them permissions for routine management.
- User  
A user is created using an account to use cloud services. Each user has its own identity credentials (password and access keys).  
The account name, username, and password will be required for API authentication.
- Region  
A region is a geographic area in which cloud resources are deployed. Availability zones (AZs) in the same region can communicate with each other over an intranet, while AZs in different regions are isolated from each other.



Deploying cloud resources in different regions can better suit certain user requirements or comply with local laws or regulations.

- 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, computing, network, storage, and other resources are logically divided into multiple clusters. AZs within a region are interconnected using high-speed optical fibers to support cross-AZ high-availability systems.
- Project  
Projects group and isolate compute, storage, and network resources across physical regions. A default project is provided for each region, and subprojects can be created under each default project. Users can be granted permissions to access all resources in a specific 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 isolating model



# 2 API Overview

You can use GaussDB APIs to create and delete DB instances, query DB instances, obtain and modify DB instance parameters, and configure and query automated backup policies. For details, see the following table.

Type	Subtype	Description
GaussDB APIs	DB Engine versions and specifications	Query DB engine versions, query instance specifications, query DB engines, and query specifications that a DB instance can be changed to.
GaussDB APIs	Storage management	Query the disk type of a DB instance.
GaussDB APIs	Instance Management	Manage DB instances, including creating a DB instance, scaling up storage, deleting a DB instance, querying DB instances, obtaining specified DB instances, adding CNs, adding DN shards, resetting a database password, changing a DB instance name, querying the components of a DB instance, changing vCPUs and memory of a DB instance, switching roles of primary and standby DNs in shards, rebooting a DB instance, checking whether host load is unbalanced due to a primary/standby switchover, querying solution template settings, querying EIPs bound to DB instances, validating password strength, binding and unbinding an EIP, querying the SSL certificate download address of a DB instance, and querying instance quotas of a tenant.

Type	Subtype	Description
GaussDB APIs	Parameter Configuration	Modify parameters of a specified DB instance, obtain parameter templates, obtain the parameters of a specified DB instance, create a parameter template, delete a parameter template, query details about a parameter template, replicate a parameter template, reset a parameter template, obtain the differences of two parameter templates, query instances that a parameter template can be applied to, check whether a parameter template name is unique, apply a parameter template, query application records of a parameter template, and query change history of a parameter template.
GaussDB APIs	Backup and Restoration	Configure an automated backup policy, query an automated backup policy, query backups, create a manual backup, delete a manual backup, query the restoration time range, restore data to a new DB instance, query instances that can be used for backups and restorations, and query information about the original instance based on a specific point of time or a backup file.
GaussDB APIs	Database and Account Management	Create a database, create a database account, create a database schema, configure permissions of database accounts, reset a password for a database account, query databases, query database users, and query database schemas.
GaussDB APIs	Tag Management	Query instance tags, query project tags, query predefined tags, and add tags for instances.
GaussDB APIs	Quota Management	Modify enterprise project quotas and query enterprise project quotas
GaussDB APIs	Task Management	Obtain task information, query tasks, and delete a task record.
GaussDB APIs	Recycle Bin	Set the recycle bin policy, query the recycling policy, and query all DB engine instances in the recycle bin.

# 3 Calling APIs

## 3.1 Making an API Request

This section describes the structure of a REST API and how to call an API. Before calling an API, you need to [obtain the user token](#). The obtained token can then be used to authenticate the calling of other APIs.

### Request URI

A request URI consists of the following:

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

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

**Table 3-1** Parameters in a URI

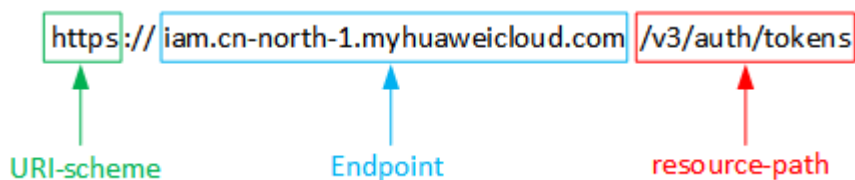
Parameter	Description
URI-scheme	Protocol used to transmit requests. All APIs use HTTPS.
Endpoint	Domain name or IP address of the server bearing the REST service. The endpoint varies between services in different regions. It can be obtained from <a href="#">Regions and Endpoints</a> . For example, the endpoint of IAM in the <b>CN-Hong Kong</b> region is <b>iam.ap-southeast-1.myhuaweicloud.com</b> .
resource-path	Access path of an API for performing a specified operation. Obtain the path from the URI of an API. For example, the <b>resource-path</b> of the API used to obtain a user token is <b>/v3/auth/tokens</b> .

Parameter	Description
query-string	Query parameter, which is optional. Ensure that a question mark (?) is included before each query parameter that is in the format of "Parameter name=Parameter value". For example, ? <b>limit=10</b> indicates that a maximum of 10 data records will be displayed.

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

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

**Figure 3-1** Example URI



**NOTE**

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

## Request Methods

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

**Table 3-2** HTTP methods

Method	Description
GET	Requests the server to return the 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.

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

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

## Request Header

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

**Table 3-3** lists common request header fields.

**Table 3-3** Common request headers

Name	Description	Mandatory	Example Value
Host	Requested server information, which can be obtained from the URL of the service API. The value is in the <i>hostname[:port]</i> format. If the port number is not specified, the default port is used. The default port number for <b>https</b> is <b>443</b> .	No This parameter is mandatory for AK/SK authentication.	code.test.com or code.test.com:443
Content-Type	MIME type of the request body. You are advised to use the default value <b>application/json</b> . For APIs used to upload objects or images, the value can vary depending on the flow type.	Yes	application/json
Content-Length	Length of the request body. The unit is byte.	No	3495

Name	Description	Mandatory	Example Value
X-Project-Id	Project ID. Obtain the project ID by following the instructions in <a href="#">Obtaining a Project ID</a> .	No This parameter is mandatory for requests that use AK/SK authentication in the Dedicated Cloud (DeC) scenario or multi-project scenario.	e9993fc787d94b6c886cb aa340f9c0f4
X-Auth-Token	User token. The user token is a response to the API used to <a href="#">obtain a user token</a> . This API is the only one that does not require authentication. After the request is processed, the value of <b>X-Subject-Token</b> in the message header is the token value.	No This parameter is mandatory for token authentication.	The following is part of an example token: MIIPAgYJKoZlhvNAQc-Co...ggg1BBIIlNPXsidG9rZ

 **NOTE**

In addition to supporting token-based authentication, APIs support authentication using access key ID/secret access key (AK/SK). During AK/SK-based authentication, an SDK is used to sign the request, and the **Authorization** (signature information) and **X-Sdk-Date** (time when the request is sent) header fields are automatically added to the request.

For more information, see **AK/SK-based Authentication** in [Authentication](#).

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

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

### (Optional) Request Body

This part is optional. A request body is generally sent in a structured format (for example, JSON or XML), corresponding to **Content-Type** in the request header, and is used to transfer content other than the request header. If the request body contains full-width characters, these characters must be coded in UTF-8.

The request body varies according to the APIs. Certain APIs do not require the request body, such as the GET and DELETE APIs.

In the case of the API used to [obtain a user token](#), the request parameters and parameter description can be obtained from the API request. The following provides an example request with a body included. Replace *username*, *domainname*, *\*\*\*\*\** (login password), and *xxxxxxxxxxxxxxxxxxxx* (project name, such as cn-north-1) with actual values. You can obtain the values from [Regions and Endpoints](#).

 NOTE

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

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

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

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

## 3.2 Authentication

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

- Token-based authentication: Requests are authenticated using a token.
- AK/SK-based authentication: Requests are authenticated by encrypting the request body using an AK/SK pair. Authentication using AK/SK is recommended because it is more secure than authentication using tokens.



## Token Authentication

### NOTE

The validity period of a token is 24 hours. If a token is required, the system caches the token to avoid frequent calling.

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.

When **calling an API to obtain a user token**, you must set **auth.scope** in the request body to **project**.

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

In **Making an API Request**, the process of calling the API used to **obtain a user token** is described.

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

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

## AK/SK-based Authentication

### NOTE

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

In AK/SK-based 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 associated with a secret access key and is used in conjunction with a secret access key to sign requests cryptographically.

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

---

**NOTICE**

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

---

## 3.3 Response

### Status Code

After sending a request, you will receive a response, including the 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 response. For more information, see [Status Codes](#).

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

### Response Header

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

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

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

```
connection → keep-alive
content-type → application/json
date → Tue, 12 Feb 2019 06:52:13 GMT
server → Web Server
strict-transport-security → max-age=31536000; includeSubdomains;
transfer-encoding → chunked
via → proxy A
x-content-type-options → nosniff
x-download-options → noopen
x-frame-options → SAMEORIGIN
x-iam-trace-id → 218d45ab-d674-4995-af3a-2d0255ba41b5
x-subject-token → MIIVXQYJKoZIhvcNAQcCoIIVTjCCGEOCAQEwDTALBgjghkgBZQMEAgEwgharBgkqhkiG9w0BBwGgghacBIIWmHsidG9rZW4iOansiZXhwaXJlc19hdCI6IiwMTktMDItMTNUMD
fj3KJs6YgKnpVNRbW2eZ5eb78SZOkajACgklqO1wi4JIGzrpd18LGXK5bdfq4lqHCYb8P4NaYONYejeAgzVefYtLWT1GSO0zxKZmlQHq82HBqHdglZO9fuEbL5dMhdavj+33wEl
xHRCE9I87o+k9-
j+CMZSEB7bUGd5Uj6eRASXl1jipPEGA270g1FruooL6jggIFkNPQuFSOU8+uSsttVwRtnfsC+qTp22Rkd5MCqFGQ8LcuUxC3a+9CMBnOintWW7oeRUUVhVpxk8pxiX1wTEboX-
RzT6MUbvpGw-oPNFYxJECKnoH3HRozv0vN--n5d6Nbxg==
x-xss-protection → 1; mode=block;
```

## (Optional) Response Body

This part is optional. The body of a response is often returned in 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 is part of the response body for the API used to [obtain a user token](#).

```
{
  "token": {
    "expires_at": "2019-02-13T06:52:13.855000Z",
    "methods": [
      "password"
    ],
    "catalog": [
      {
        "endpoints": [
          {
            "region_id": "az-01",
            .....

```

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

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

In the response body, **error\_code** is an error code, and **error\_msg** provides information about the error.

# 4 APIs (Recommended)

## 4.1 DB Engine Versions and Specifications

### 4.1.1 Querying DB Engine Versions

#### Function

This API is used to query DB engine versions supported by a DB instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

#### URI

GET [https://{Endpoint}/v3/{project\\_id}/datastore/versions](https://{Endpoint}/v3/{project_id}/datastore/versions)

**Table 4-1** Parameter description

Name	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

## Request Parameters

None

## Response Parameters

**Table 4-2** Response parameter description

Name	Type	Description
versions	Array of strings	DB engine versions supported by GaussDB.

## Example Request

Querying DB engine versions

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/datastore/versions
```

## Example Response

DB engine versions queried.

```
{
  "versions": [
    "1.4",
    "2.3"
  ]
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.1.2 Querying Instance Specifications

### Function

This API is used to query instance specifications. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

## URI

GET `https://{Endpoint}/v3.2/{project_id}/flavors?limit={limit}&offset={offset}&ha_mode={ha_mode}&version={version}&spec_code={spec_code}`

**Table 4-3** Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
version	No	String	<b>Explanation:</b> DB version number. You can query the specifications supported by a specified DB version, for example, V2.0-1.4. <b>Restrictions:</b> None <b>Value range:</b> None <b>Default value:</b> None
spec_code	No	String	<b>Explanation:</b> Specification code. <b>Restrictions:</b> None <b>Value range:</b> None <b>Default value:</b> None

Name	Mandatory	Type	Description
ha_mode	No	String	<p><b>Explanation:</b> Instance type. You can query the specifications supported by a specified instance type.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• Primary/standby: <b>centralization_standard</b></li> <li>• Distributed (independent deployment): <b>enterprise</b></li> </ul> <p><b>Default value:</b> None</p>
limit	No	Integer	<p><b>Explanation:</b> Number of records to be queried. For example, if this parameter is set to <b>10</b>, a maximum of 10 records can be displayed.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [1, 100]</p> <p><b>Default value:</b> 100</p>
offset	No	Integer	<p><b>Explanation:</b> Index offset. The query starts from the next piece of data indexed by this parameter. For example, if this parameter is set to <b>1</b> and <b>limit</b> is set to <b>10</b>, only the 2nd to 11th records are displayed.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [0, 2<sup>31</sup>-1]</p> <p><b>Default value:</b> 0 (indicating that the query starts from the first data record.)</p>

## Request Parameters

None

## Response Parameters

**Table 4-4** Parameter description

Name	Type	Description
flavors	Array of objects	<b>Explanation:</b> Specification details. For details, see <a href="#">Table 4-5</a> .
total	Integer	<b>Explanation:</b> Total number of records. <b>Value range:</b> [0, 2 <sup>31</sup> -1]

**Table 4-5** flavors description

Name	Type	Description
vcpus	String	<b>Explanation:</b> Number of vCPUs. <b>Value range:</b> None
ram	String	<b>Explanation:</b> Memory size in GB. <b>Value range:</b> None
spec_code	String	<b>Explanation:</b> Resource specification code. For details, see <a href="#">DB Instance Specifications</a> . <b>Value range:</b> None
availability_zone	Array of strings	<b>Explanation:</b> AZ supported by the specifications.



Name	Type	Description
az_status	Map<String,String>	<p><b>Explanation:</b>  <b>key</b> indicates the AZ ID, and <b>value</b> indicates the specification status in the AZ.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• <b>normal:</b> available.</li> <li>• <b>unsupported:</b> not supported.</li> <li>• <b>sellout:</b> sold out.</li> </ul>
version	String	<p><b>Explanation:</b>  DB engine version supported by the specifications.</p> <p><b>Value range:</b>  None</p>
name	String	<p><b>Explanation:</b>  DB engine.</p> <p><b>Value range:</b>  None</p>
group_type	String	<p><b>Explanation:</b>  Performance specifications.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• <b>normal:</b> dedicated (1:8)</li> <li>• <b>normal2:</b> dedicated (1:4)</li> <li>• <b>armFlavors:</b> Kunpeng dedicated (1:8)</li> <li>• <b>exclusive:</b> dedicated (1:4). It is only suitable for primary/standby instances of the basic edition.</li> <li>• <b>armExclusive:</b> Kunpeng dedicated (1:4). It is only suitable for primary/standby instances of the basic edition.</li> <li>• <b>economical:</b> favored (1:4)</li> <li>• <b>economical2:</b> favored (1:8)</li> <li>• <b>armFlavors2:</b> Kunpeng dedicated (1:4)</li> <li>• <b>general:</b> general-purpose (1:4)</li> </ul>

### Example Request

- Querying specifications of a primary/standby instance

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/
```

```
v3.2/0483b6b16e954cb88930a360d2c4e663/flavors?  
offset=0&limit=10&ha_mode=centralization_standard&version=V2.0-3.100&spec_code=gaussdb.openga  
uss.ee.km1.2xlarge.arm8.ha
```

- Querying specifications of a distributed instance

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/  
v3.2/0483b6b16e954cb88930a360d2c4e663/flavors?  
offset=0&limit=10&ha_mode=enterprise&version=V2.0-3.100&spec_code=gaussdb.opengauss.ee.dn.m4.  
2xlarge.8.in
```

## Example Response

Instance specifications queried.

```
{  
  "flavors": [  
    {  
      "vcpus": "2",  
      "ram": "16",  
      "availability_zone": [  
        "az2xahz",  
        "az1xahz",  
        "az3xahz"  
      ],  
      "version": "V2.0-1.4",  
      "name": "GaussDB",  
      "spec_code": "gaussdb.opengauss.ee.dn.m6.large.8.in",  
      "az_status": {  
        "az2xahz": "normal",  
        "az1xahz": "normal",  
        "az3xahz": "normal"  
      },  
      "group_type": "normal2"  
    }  
  ],  
  "total": 1  
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.1.3 Querying DB Engines

### Function

This API is used to query DB engines. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

```
GET https://{Endpoint}/v3.1/{project_id}/datastores
```

**Table 4-6** Parameter description

Name	Mandatory	Description
project_id	Yes	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>

## Request Parameters

None

## Response Parameters

**Table 4-7** Parameter description

Name	Type	Description
datastores	Array of objects	DB engines. For details, see <a href="#">Table 4-8</a> .

**Table 4-8** dataStores field data structure description

Parameter	Type	Description
supported_versions	Array of strings	Engine versions supported by the deployment model.
instance_model	String	Deployment model. Value: <ul style="list-style-type: none"> <li><b>ha</b>: primary/standby</li> <li><b>independent</b>: independent</li> </ul>

## Example Request

Querying DB engines

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.1/0483b6b16e954cb88930a360d2c4e663/datastores
```

## Example Response

```
DB engines queried.
{
  "datastores": [
    {
      "supported_versions": [
        "V2.0-2.0",
        "V2.0-2.3",
        "V2.0-2.6",
        "V2.0-2.9"
      ],
      "instance_mode": "ha"
    }
  ]
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.1.4 Querying Specifications That a DB Instance Can Be Changed To

### Function

This API is used to query specifications that a DB instance can be changed to. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

```
GET https://{Endpoint}/v3/{project_id}/instances/{instance_id}/available-flavors
```

**Table 4-9** Parameter description

Name	Mandatory	Type	Description
project_id	Yes	String	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
instance_id	Yes	String	DB instance ID.
limit	No	Integer	Number of records to be queried. The default value is <b>100</b> . The value cannot be a negative number. The minimum value is <b>1</b> and the maximum value is <b>100</b> . For example, if this parameter is set to <b>10</b> , a maximum of 10 records can be displayed.
offset	No	Integer	Index offset. If <b>offset</b> is set to <i>N</i> , the resource query starts from the <i>N</i> +1 data entry. The default value is <b>0</b> , indicating that the query starts from the first data entry. The value cannot be a negative number. For example, if this parameter is set to <b>1</b> and <b>limit</b> is set to <b>10</b> , only the 2nd to 11th records are displayed.

## Request Parameters

None

## Response Parameters

**Table 4-10** Parameter description

Name	Type	Description
flavors	Array of objects	Specification details. For details, see <a href="#">Table 4-11</a> .

Name	Type	Description
total_count	integer	Total number of records.

**Table 4-11** flavors description

Name	Type	Description
vcpus	string	Number of vCPUs.
ram	string	Memory size in GB.
spec_code	string	Resource specification code, for example, <b>gaussdb.opengauss.ee.dn.m6.4xlarge.8.in</b>
az_status	Map<String,String>	<b>key</b> indicates the AZ ID, and <b>value</b> indicates the specification status in the AZ. Its value can be any of the following: <ul style="list-style-type: none"> <li>• <b>normal</b>: available.</li> <li>• <b>unsupported</b>: not supported.</li> <li>• <b>sellout</b>: sold out.</li> </ul>

## Example Request

Querying specifications that a DB instance can be changed to (The number of query records is 10, and the offset is 0.)

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsdsae3435in14/available-flavors
```

## Example Response

Instance specifications queried.

```
{
  "flavors": [ {
    "spec_code": "gaussdb.opengauss.ee.m6.2xlarge.x868.ha",
    "vcpus": "8",
    "ram": "64",
    "az_status": [ {
      "az2xahz": "normal"
    } ]
  } ],
  "total_count": 1
}
```

## Status Code

- Normal  
200

- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

# 4.2 Storage Management

## 4.2.1 Querying the Storage Usage of a DB Instance

### Function

This API is used to query the total storage and used storage of a specified DB instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/volume-usage](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/volume-usage)

**Table 4-12** Parameter description

Name	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	DB instance ID.

### Request Parameters

None

## Response Parameters

Table 4-13 Parameter description

Parameter	Type	Description
used	String	Used storage space of the current instance, in GB.
total	String	Total storage space of the current instance, in GB.

## Example Request

Querying the storage usage of a DB instance

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfdsae3435in14/volume-usage
```

## Example Response

Instance storage usage queried.

```
{  "used" : "15.0",  "total" : "185.0"}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.2.2 Querying the Disk Type of a DB Instance

### Function

This API is used to query the disk type of a DB instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

```
GET https://{Endpoint}/v3/{project_id}/storage-type?version={version}&ha_mode={ha_mode}
```



**Table 4-14** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
version	Yes	String	<p><b>Explanation:</b> DB version number. To obtain the DB version number, see <a href="#">Querying DB Engine Versions</a>.</p> <p><b>Value range:</b> None</p>
ha_mode	No	String	<p><b>Explanation:</b> Instance mode. The value is case-insensitive.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• <b>enterprise</b> (distributed)</li> <li>• <b>centralization_standard</b> (primary/standby)</li> </ul>

## Request Parameters

None

## Response Parameters

**Table 4-15** Response parameters

Parameter	Type	Description
storage_type	Array of objects	<b>Explanation:</b> Storage type information. For details, see <a href="#">Table 4-16</a> .

**Table 4-16** storage\_type field data structure description

Parameter	Type	Description
name	String	<b>Explanation:</b> disk type name. <b>Value range:</b> <ul style="list-style-type: none"> <li>● <b>ULTRAHIGH:</b> indicates the SSD.</li> <li>● <b>ESSD:</b> indicates the extreme SSD.</li> </ul>
az_status	map<String, String>	<b>Explanation:</b> <b>key</b> indicates the AZ ID, and <b>value</b> indicates the specification status in the AZ. <b>Value range:</b> <ul style="list-style-type: none"> <li>● <b>normal:</b> on sale.</li> <li>● <b>unsupported:</b> not supported.</li> <li>● <b>sellout:</b> sold out.</li> </ul>
support_compute_group_type	List<String>	<b>Explanation:</b> Performance specifications. <b>Value range:</b> <ul style="list-style-type: none"> <li>● <b>normal:</b> dedicated (1:8)</li> <li>● <b>normal2:</b> dedicated (1:4)</li> <li>● <b>armFlavors:</b> Kunpeng dedicated (1:8)</li> <li>● <b>armFlavors2:</b> Kunpeng dedicated (1:4)</li> <li>● <b>armFlavors2Shared:</b> Kunpeng general computing-plus II (shared)</li> <li>● <b>general:</b> General-purpose (1:4)</li> <li>● <b>exclusive:</b> Dedicated (1:4). It is only suitable for primary/standby instances of the basic edition.</li> <li>● <b>armExclusive:</b> Kunpeng dedicated (1:4). It is only suitable for primary/standby instances of the basic edition.</li> <li>● <b>economical:</b> Favored (1:4)</li> <li>● <b>economical2:</b> Favored (1:8)</li> </ul>

## Example Request

- Querying the disk type of a distributed instance  
GET [https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/storage-type?version=2.1&ha\\_mode=enterprise](https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/storage-type?version=2.1&ha_mode=enterprise)
- Querying the disk type of a primary/standby instance  
[https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/storage-type?version=2.1&ha\\_mode=centralization\\_standard](https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/storage-type?version=2.1&ha_mode=centralization_standard)

## Example Response

Disk types of the instances queried.

```
{
  "storage_type": [
    {
      "name": "ULTRAHIGH",
      "az_status": {
        "aaa": "normal",
        "bbb": "normal",
        "ccc": "normal"
      },
      "support_compute_group_type": [
        "normal",
        "armFlavors",
        "armFlavors2Shared",
        "normal2"
      ]
    },
    {
      "name": "ESSD",
      "az_status": {
        "az2xahz": "normal",
        "az1xahz": "normal",
        "az3xahz": "normal"
      },
      "support_compute_group_type": [
        "normal",
        "armFlavors",
        "armFlavors2Shared",
        "normal2"
      ]
    }
  ]
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3 Instance Management

### 4.3.1 Creating a DB Instance (v3.2)

#### Function

This API is used to create a GaussDB instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

#### URI

POST [https://{Endpoint}/v3.2/{project\\_id}/instances](https://{Endpoint}/v3.2/{project_id}/instances)

**Table 4-17** Parameter description

Name	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

## Request Parameters

**Table 4-18** Request parameters

Name	Mandatory	Type	Description
name	Yes	String	Instance name. Instances of the same type can have same names under the same tenant. The name must consist of 4 to 64 characters and start with a letter. It can contain only letters (case-sensitive), digits, hyphens (-), and underscores (_).
datastore	Yes	Object	Database information. For details, see <a href="#">Table 4-19</a> .
ha	Yes	Object	Instance deployment model. For details, see <a href="#">Table 4-20</a> .
configuration_id	No	String	Parameter template ID. If this parameter is not specified, the default parameter template is used and this parameter is not returned in the response body.
port	No	String	Port number used by the database to provide services for external systems. If you do not configure this parameter, the default value <b>8000</b> is used. Value range: <b>1024 to 39998</b> . The following ports are not allowed: 2378, 2379, 2380, 4999, 5000, 5999, 6000, 6001, 8097, 8098, 12016, 12017, 20049, 20050, 21731, 21732, 32122, 32123, and 32124.
password	Yes	String	Database password. The GaussDB database password must: Consist of 8 to 32 characters, including at least three of the following: uppercase letters, lowercase letters, digits, and special characters (~!@#%^*_-=+?,).  Enter a strong password to improve security, preventing security risks such as brute force cracking.
backup_strategy	No	Object	Backup policy. For details, see <a href="#">Table 4-21</a> .

Name	Mandatory	Type	Description
enterprise_project_id	No	String	Enterprise project ID. This parameter is suitable only for enterprise tenants. For details, see <b>id</b> in the <b>enterprise_project field data structure</b> table in <a href="#">Querying Enterprise Projects</a> of <i>Enterprise Management API Reference</i> .
disk_encryption_id	No	String	Key ID for disk encryption. This parameter is left blank by default. For details about key grant, see <a href="#">Creating a Grant</a> in the <i>Data Encryption Workshop User Guide</i> .
flavor_ref	Yes	String	Specification code. The value cannot be left blank. To obtain its value, see the <b>spec_code</b> field in <a href="#">Querying Instance Specifications</a> .
volume	Yes	Object	Volume information. For details, see <a href="#">Table 4-22</a> .
region	Yes	String	Region ID. The value cannot be left blank. For details about how to obtain this parameter value, see <a href="#">Regions and Endpoints</a> .
availability_zone	Yes	String	AZ ID. The value cannot be left blank. You can deploy a GaussDB instance in the same AZ or different AZs, and use commas (,) to separate AZs. The value cannot be left blank. For details about how to obtain this parameter value, see <a href="#">Regions and Endpoints</a> .
vpc_id	Yes	String	VPC ID. To obtain this parameter value, use either of the following methods: <ul style="list-style-type: none"><li>• Method 1: Log in to the VPC console and view the VPC ID in the VPC details page.</li><li>• Method 2: Query the VPC ID through the VPC API. For details, see <a href="#">Querying VPCs</a>.</li></ul>

Name	Mandatory	Type	Description
subnet_id	Yes	String	<p>Network ID of the subnet. To obtain this parameter value, use either of the following methods:</p> <ul style="list-style-type: none"> <li>Method 1: Log in to VPC console and click the target subnet on the <b>Subnets</b> page. You can view the network ID on the displayed page.</li> <li>Method 2: Query the subnet ID through the VPC API. For details, see <a href="#">Querying Subnets</a>.</li> </ul>
security_group_id	Yes	String	<p>Security group which the instance is associated with. To obtain this parameter value, use either of the following methods: If you do not need to specify a security group, contact customer service.</p> <ul style="list-style-type: none"> <li>Method 1: Log in to VPC console. Choose <b>Access Control &gt; Security Groups</b> in the navigation pane on the left. On the displayed page, click the target security group. You can view the security group ID on the displayed page.</li> <li>Method 2: Query the security group through the VPC API. For details, see <a href="#">Querying Security Groups</a>.</li> </ul>
charge_info	No	Object	<p>Billing mode, which can be pay-per-use or yearly/monthly. For details, see <a href="#">Table 4-23</a>.</p>
time_zone	No	String	<p>UTC time zone.</p> <ul style="list-style-type: none"> <li>If this parameter is not specified, GaussDB uses UTC in the International website by default.</li> <li>If this parameter is specified, the value ranges from UTC-12:00 to UTC+12:00 at the full hour. For example, the parameter can be <b>UTC+08:00</b> rather than <b>UTC+08:30</b>.</li> </ul>
sharding_num	No	Integer	<p>This parameter is available only for distributed instances. Number of shards. The value ranges from 1 to 9.</p>

Name	Mandatory	Type	Description
coordinator_num	No	Integer	This parameter is available only for distributed instances. Number of CNs. The value ranges from 1 to 9. The number of CNs cannot exceed twice the number of shards.
replica_num	No	Integer	Number of replicas. The value can be 3. If this parameter is left blank, the default value is 3.
enable_force_switch	No	Boolean	Whether to forcibly promote a standby node to primary. The value can only be <b>true</b> or <b>false</b> . <b>true</b> indicates that the function is enabled, and <b>false</b> (default value) indicates that the function is disabled. This function is available only for instances of version 1.2.2 or later.  <b>NOTE</b> The function is suitable for the following scenario: When the primary node is faulty, a standby node is forcibly promoted to primary, ensuring the instance availability. When an instance is faulty, a forcible switchover enables the instance to run normally as soon as possible at the cost of losing some data. This is an escape method used when the instance is unavailable.
enable_single_float_ip	No	Boolean	Whether to enable single floating IP address policy, which is only suitable for primary/standby instances. Value range: <ul style="list-style-type: none"> <li>• <b>true</b>: This function is enabled. Only one floating IP address is bound to the primary node of a DB instance. If a primary/standby failover occurs, the floating IP address does not change.</li> <li>• <b>false</b> (default value): The function is disabled. Each node is bound to a floating IP address. If a primary/standby failover occurs, the floating IP addresses change.</li> </ul> <b>NOTE</b> This parameter is only available for primary/standby instances that run 3.206 or later versions.



**Table 4-19** datastore field data structure description

Name	Mandatory	Type	Description
type	Yes	String	DB engine. Value: <b>GaussDB</b> . It is case-insensitive.
version	No	String	DB engine version. If this parameter is not specified, the latest version is used by default. For details, see <a href="#">Querying DB Engine Versions</a> .

**Table 4-20** ha field data structure description

Name	Mandatory	Type	Description
mode	Yes	String	Deployment model. The value is case-insensitive and can be <b>enterprise</b> (enterprise edition) and <b>combined</b> (basic edition for combined deployment) for distributed instances and <b>centralization_standard</b> for primary/standby instances.
consistency	Yes	String	Transaction consistency type. The value is case-insensitive and can be: <ul style="list-style-type: none"> <li>• <b>strong</b>: strong consistency</li> <li>• <b>eventual</b>: eventual consistency</li> </ul>
replication_mode	Yes	String	Replication mode for the standby node. The value can only be set to <b>sync</b> , indicating that data is synchronized in synchronous mode.

Name	Mandatory	Type	Description
instance_mode	No	String	<p>Product type of the instance to be created. If this parameter is not specified, an instance of the enterprise edition will be created by default. To create an instance of the basic edition or ecosystem edition, you need to specify the parameter value.</p> <ul style="list-style-type: none"> <li>• <b>enterprise</b>: The instance of the enterprise edition will be created.</li> <li>• <b>basic</b>: The instance of the basic edition will be created.</li> <li>• <b>ecology</b>: The instance of the ecosystem edition will be created.</li> </ul>

**Table 4-21** backup\_strategy field data structure description

Name	Mandatory	Type	Description
start_time	Yes	String	<p>Backup time window. The creation of an automated backup will be triggered during the backup time window.</p> <p>The value cannot be left blank or negative. It must be a valid value in the "hh:mm-HH:MM" format. The current time is in the UTC format.</p> <ul style="list-style-type: none"> <li>• The <b>HH</b> value must be 1 greater than the <b>hh</b> value.</li> <li>• The values of <b>mm</b> and <b>MM</b> must be the same and must be set to <b>00</b>.</li> </ul> <p>Example value:</p> <ul style="list-style-type: none"> <li>• 08:00-09:00</li> <li>• 23:00-00:00</li> </ul>
keep_days	No	Integer	<p>Retention days for specific backup files.</p> <p>Value: <b>1</b> to <b>36500</b>. If this parameter is not specified, the default value <b>7</b> is used.</p>

**Table 4-22** volume field data structure description

Name	Mandatory	Type	Description
type	Yes	String	Disk type. <ul style="list-style-type: none"> <li>Value range: <b>ULTRAHIGH</b> (SSD storage) or <b>ESSD</b> (extreme SSD storage). The value is case-sensitive.</li> </ul>
size	Yes	Integer	Storage. For example, if this parameter is set to <b>40</b> , 40 GB of storage is allocated to the created instance. ECS deployment: The value is from (Number of shards x 40 GB) to (Number of shards x 24 TB) and must be a multiple of (Number of shards x 4 GB).

**Table 4-23** chargeInfo field data structure description

Name	Mandatory	Type	Description
charge_mode	Yes	String	Billing mode. <b>postPaid</b> : pay-per-use billing. <b>prePaid</b> : yearly/monthly billing.
period_type	No	String	Subscription period. Value range: <ul style="list-style-type: none"> <li><b>month</b>: The service is subscribed by month.</li> <li><b>year</b>: The service is subscribed by year.</li> </ul> <b>NOTE</b> This parameter is valid and mandatory only when <b>charge_mode</b> is set to <b>prePaid</b> .

Name	Mandatory	Type	Description
period_num	No	Integer	<p>This parameter is valid and mandatory only when <b>charge_mode</b> is set to <b>prePaid</b>.</p> <p>Value range:</p> <ul style="list-style-type: none"> <li>When <b>period_type</b> is set to <b>month</b>, the parameter value ranges from <b>1</b> to <b>9</b>.</li> <li>When <b>period_type</b> is set to <b>year</b>, the parameter value ranges from <b>1</b> to <b>3</b>.</li> </ul> <p>When a floating-point value is used, the value is automatically truncated to an integer.</p>
is_auto_renew	No	Boolean	<p>Whether automatic renewal is enabled for yearly/monthly instances. If you enable this function, the order will be automatically paid during the subscription renewal. The default renewal period is one month for monthly subscription and one year for yearly subscription. The renewal period can be configured as needed.</p> <ul style="list-style-type: none"> <li><b>true</b>: Automatic renewal is enabled.</li> <li><b>false</b>: Automatic renewal is disabled. The default value is <b>false</b>.</li> </ul>
is_auto_pay	No	Boolean	<p>Whether the order will be automatically paid after yearly/monthly instances are created. This parameter does not affect the payment mode of automatic renewal.</p> <ul style="list-style-type: none"> <li><b>true</b>: The order will be automatically paid.</li> <li><b>false</b>: The order will be manually paid. The default value is <b>false</b>.</li> </ul>

## Response Parameters

**Table 4-24** Response parameters

Name	Type	Description
instance	Object	<p>Instance information.</p> <p>For details, see <a href="#">Table 4-25</a>.</p>

Name	Type	Description
job_id	String	Instance creation task ID. This parameter is returned only when pay-per-use instances are created.
order_id	String	Order ID. This parameter is returned only for the creation of yearly/monthly instances.

**Table 4-25** instance description

Name	Type	Description
id	String	Instance ID.
name	String	Instance name. Instances of the same type can have same names under the same tenant. The value must consist of 4 to 64 characters and start with a letter. It is case-insensitive and contains only letters, digits, hyphens (-), and underscores (_).
status	String	Instance status. For example, <b>BUILD</b> indicates that the instance is being created. This parameter is returned only when pay-per-use instances are created.
datastore	Object	Database information. For details, see <a href="#">Table 4-26</a> .
ha	Object	Database deployment model. For details, see <a href="#">Table 4-27</a> .
replica_num	Integer	Number of replicas.
port	String	Database port, which is the same as the request parameter.
backup_strategy	Object	Automated backup policy. For details, see <a href="#">Table 4-28</a> .
enterprise_project_id	String	Project ID.
flavor_ref	String	Specification code. The value cannot be left blank.

Name	Type	Description
volume	Object	Volume information. For details, see <a href="#">Table 4-29</a> .
region	String	Region ID.
availability_zone	String	AZ ID.
vpc_id	String	VPC ID.
subnet_id	String	Network ID of the subnet.
security_group_id	String	Security group to which the instance belongs.
charge_info	Object	Payment mode. For details, see <a href="#">Table 4-30</a> .

**Table 4-26** datastore field data structure description

Name	Type	Description
type	String	DB engine. Value: GaussDB
version	String	DB engine version.

**Table 4-27** ha field data structure description

Name	Type	Description
mode	String	Deployment model. The value is case-insensitive and can be <b>combined</b> (basic edition for combined deployment) and <b>enterprise</b> (enterprise edition) for distributed instances and <b>centralization_standard</b> for primary/standby instances.
replication_mode	String	Replication mode for the standby node. The value can only be set to <b>sync</b> , indicating that data is synchronized in synchronous mode.
consistency	String	Transaction consistency type. This parameter is reserved for GaussDB. Value: <ul style="list-style-type: none"> <li>• <b>strong</b>: strong consistency</li> <li>• <b>eventual</b>: eventual consistency</li> </ul>

Name	Type	Description
consistency_protocol	String	Replica consistency protocol. The value can be <b>quorum</b> (default value) or <b>paxos</b> . If it is not specified, the default value is used.

**Table 4-28** backup\_strategy field data structure description

Name	Type	Description
start_time	String	<p>Backup time window. The creation of an automated backup will be triggered during the backup time window.</p> <p>The value cannot be left blank. It must be a valid value in the "hh:mm-HH:MM" format. The current time is in the UTC format.</p> <ul style="list-style-type: none"> <li>The <b>HH</b> value must be 1 greater than the <b>hh</b> value.</li> <li>The values of <b>mm</b> and <b>MM</b> must be the same and must be set to <b>00</b>.</li> </ul> <p>Example value:</p> <ul style="list-style-type: none"> <li>08:00-09:00</li> <li>23:00-00:00</li> </ul> <p>If <b>backup_strategy</b> in the request body is left blank, <b>02:00-03:00</b> is returned for <b>start_time</b> by default.</p>
keep_days	Integer	<p>Retention days for specific backup files.</p> <p>Value range: <b>1</b> to <b>732</b>. If the <b>backup_strategy</b> field is not specified in the request body, <b>keep_days</b> in the response body is set to 7 days by default.</p>

**Table 4-29** volume field data structure description

Name	Type	Description
type	String	<p>Disk type.</p> <p>Its value is case-sensitive and can be:</p> <ul style="list-style-type: none"> <li><b>ULTRAHIGH</b>, indicating SSD.</li> <li><b>ESSD</b>: indicates the extreme SSD.</li> </ul>
size	Integer	Storage.

**Table 4-30** charge\_Info field data structure description

Name	Type	Description
charge_mode	String	Billing mode. <b>postPaid</b> : pay-per-use billing. <b>prePaid</b> : yearly/monthly billing.
period_type	String	Subscription period. <b>month</b> : The service is subscribed by month. <b>year</b> : The service is subscribed by year. This parameter is valid and mandatory only when <b>charge_mode</b> is set to <b>prePaid</b> . Value: <ul style="list-style-type: none"> <li>• <b>month</b></li> <li>• <b>year</b></li> </ul>
period_num	Integer	This parameter is valid and mandatory only when <b>charge_mode</b> is set to <b>prePaid</b> . Value range: When <b>period_type</b> is set to <b>month</b> , the parameter value ranges from <b>1</b> to <b>9</b> . When <b>period_type</b> is set to <b>year</b> , the parameter value ranges from <b>1</b> to <b>3</b> .
is_auto_renew	Boolean	Whether automatic renewal is enabled for yearly/monthly instances. If you enable this function, the order will be automatically paid during the subscription renewal. The default renewal period is one month for monthly subscription and one year for yearly subscription. The renewal period can be configured as needed. <b>true</b> : indicates that the subscription is automatically renewed. <b>false</b> : indicates that the subscription is not automatically renewed. The default value is <b>false</b> .



Name	Type	Description
is_auto_pay	Boolean	Whether the order will be automatically paid after yearly/monthly instances are created. This parameter does not affect the payment mode of automatic renewal.  <b>true:</b> indicates that the order is automatically paid from the account. <b>false:</b> indicates that the order is manually paid from the account. The default value is <b>false</b> .

## Example Request

- Creating a distributed instance in the independent deployment (one-year yearly/monthly billing, DB engine V2.0-2.7, three AZs, three CNs, three shards, three replicas, and 8 vCPUs and 64 GB)

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.2/0483b6b16e954cb88930a360d2c4e663/instances
{
  "name": "user1-v3-independent-02",
  "datastore": {
    "type": "GaussDB",
    "version": "V2.0-2.7"
  },
  "flavor_ref": "gaussdb.opengauss.ee.dn.m6.2xlarge.8.in",
  "volume": {
    "type": "ULTRAHIGH",
    "size": 120
  },
  "disk_encryption_id": "24ae42b5-4009-4ea2-b66a-0b211e424dab",
  "region": "aaa",
  "availability_zone": "bbb,ccc,ddd",
  "vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
  "subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
  "security_group_id": "c6123999-8532-421c-9db6-e078013ff58f",
  "backup_strategy": {
    "start_time": "17:00-18:00",
    "keep_days": 7
  },
  "charge_info": {
    "charge_mode": "prePaid",
    "period_type": "year",
    "period_num": 1
  },
  "password": "xxxxxx",
  "configuration_id": "",
  "enterprise_project_id": "",
  "time_zone": "UTC+08:00",
  "ha": {
    "mode": "enterprise",
    "consistency": "strong",
    "replication_mode": "sync"
  },
  "sharding_num": 3,
  "coordinator_num": 3,
  "replica_num": 3,
  "port": 8000,
```

- ```
"enable_force_switch":true
}
```
- Creating a primary/standby (1 primary + 2 standby) instance (pay-per-use billing, DB engine V2.0-2.7, single AZ, 8 vCPUs and 64 GB)

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.2/0483b6b16e954cb88930a360d2c4e663/instances
```

```
{
  "name": "user1-v3-ha-01",
  "datastore": {
    "type": "GaussDB",
    "version": "V2.0-2.7"
  },
  "flavor_ref": "gaussdb.opengauss.ee.km1.2xlarge.arm8.ha",
  "volume": {
    "type": "ULTRAHIGH",
    "size": 120
  },
  "disk_encryption_id": "24ae42b5-4009-4ea2-b66a-0b211e424dab",
  "region": "aaa",
  "availability_zone": "bbb,bbb,bbb",
  "vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
  "subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
  "security_group_id": "c6123999-8532-421c-9db6-e078013ff58f",
  "backup_strategy": {
    "start_time": "17:00-18:00",
    "keep_days": 7
  },
  "charge_info": {
    "charge_mode": "postPaid"
  },
  "password": "xxxxxx",
  "configuration_id": "",
  "enterprise_project_id": "",
  "time_zone": "UTC+08:00",
  "ha": {
    "mode": "centralization_standard",
    "consistency": "strong",
    "replication_mode": "sync"
  },
  "replica_num": 3,
  "port": 8000,
  "enable_force_switch": true
}
```

- Creating a primary/standby (1 primary + 2 standby) DB instance (one-year yearly/monthly billing, DB engine 2, three AZs, 8 vCPUs and 64 GB)

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.2/0483b6b16e954cb88930a360d2c4e663/instances
```

```
{
  "name": "user1-v3-ha-02",
  "datastore": {
    "type": "GaussDB",
    "version": "V2.0-2.7"
  },
  "flavor_ref": "gaussdb.opengauss.ee.km1.2xlarge.arm8.ha",
  "volume": {
    "type": "ULTRAHIGH",
    "size": 120
  },
  "disk_encryption_id": "24ae42b5-4009-4ea2-b66a-0b211e424dab",
  "region": "aaa",
  "availability_zone": "bbb,ccc,ddd",
  "vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
  "subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
  "security_group_id": "c6123999-8532-421c-9db6-e078013ff58f",
  "backup_strategy": {
    "start_time": "17:00-18:00",
  }
}
```

```
    "keep_days": 7
  },
  "charge_info": {
    "charge_mode": "prePaid",
    "period_type": "year",
    "period_num": 1
  },
  "password": "xxxxxx",
  "configuration_id": "",
  "enterprise_project_id": "",
  "time_zone": "UTC+08:00",
  "ha": {
    "mode": "centralization_standard",
    "consistency": "strong",
    "replication_mode": "sync"
  },
  "replica_num": 3,
  "port": 8000,
  "enable_force_switch": true
}
```

## Example Response

- Distributed instance in the independent deployment (pay-per-use billing, DB engine V2.0-2.7, single AZ, 3 CNs, 3 shards, 3 replicas, 8 vCPUs and 64 GB) created.

```
{
  "instance": {
    "id": "ad8cd1440aa94a02ae4580fcb3143in14",
    "name": "user1-v3-independent-01",
    "status": "BUILD",
    "datastore": {
      "type": "GaussDB",
      "version": "V2.0-2.7"
    },
    "ha": {
      "mode": "Enterprise",
      "replication_mode": "sync",
      "consistency": "strong"
    },
    "port": "8000",
    "volume": {
      "type": "ULTRAHIGH",
      "size": 120
    },
    "replica_num": 3,
    "region": "aaa",
    "backup_strategy": {
      "start_time": "17:00-18:00",
      "keep_days": 7
    },
    "enterprise_project_id": "0",
    "flavor_ref": "gaussdb.opengauss.ee.dn.m6.2xlarge.8.in",
    "availability_zone": "bbb,bbb,bbb",
    "vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
    "subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
    "security_group_id": "c6123999-8532-421c-9db6-e078013ff58f",
    "charge_info": {
      "charge_mode": "postPaid"
    }
  },
  "job_id": "30f2790a-a5b6-4a13-a5ab-733c746609af"
}
```

- Distributed instance (one-year yearly/monthly billing, DB engine V2.0-2.7, three AZs, three CNs, three shards, three replicas, 8 vCPUs and 64 GB) created.

```
{
  "instance": {
    "id": "ad8cd1440aa94a02ae4580fcbebb3143in14",
    "name": "user1-v3-independent-02",
    "datastore": {
      "type": "GaussDB",
      "version": "V2.0-2.7"
    },
    "ha": {
      "mode": "Enterprise",
      "replication_mode": "sync",
      "consistency": "strong"
    },
    "port": "8000",
    "volume": {
      "type": "ULTRAHIGH",
      "size": 120
    },
    "replica_num": 3,
    "region": "aaa",
    "backup_strategy": {
      "start_time": "17:00-18:00",
      "keep_days": 7
    },
    "enterprise_project_id": "0",
    "flavor_ref": "gaussdb.opengauss.ee.dn.m6.2xlarge.8.in",
    "availability_zone": "bbb,bbb,bbb",
    "vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
    "subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
    "security_group_id": "c6123999-8532-421c-9db6-e078013ff58f",
    "charge_info": {
      "charge_mode": "prePaid",
      "period_type": "year",
      "period_num": 1,
      "is_auto_renew": false,
      "is_auto_pay": false
    }
  },
  "job_id": "30f2790a-a5b6-4a13-a5ab-733c746609af"
}
```

- Primary/Standby instance (1 primary + 2 standby, pay-per-use billing, DB engine V2.0-2.7, single AZ, 8 vCPUs and 64 GB) created.

```
{
  "instance": {
    "id": "ad8cd1440aa94a02ae4580fcbebb3143in14",
    "name": "user1-v3-ha-01",
    "status": "BUILD",
    "datastore": {
      "type": "GaussDB",
      "version": "V2.0-2.7"
    },
    "ha": {
      "mode": "Enterprise",
      "replication_mode": "sync",
      "consistency": "strong"
    },
    "port": "8000",
    "volume": {
      "type": "ULTRAHIGH",
      "size": 120
    },
    "region": "aaa",
    "replica_num": 3,
    "backup_strategy": {
      "start_time": "17:00-18:00",
      "keep_days": 7
    }
  }
}
```

```
    },
    "enterprise_project_id": "0",
    "flavor_ref": "gaussdb.opengauss.ee.dn.m6.2xlarge.8.in",
    "availability_zone": "bbb,bbb,bbb",
    "vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
    "charge_info": {
      "charge_mode": "postPaid"
    },
    "subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
    "security_group_id": "c6123999-8532-421c-9db6-e078013ff58f"
  },
  "job_id": "30f2790a-a5b6-4a13-a5ab-733c746609af"
}
```

- Primary/Standby instance (1 primary + 2 standby, one-year yearly/monthly billing, DB engine V2.0-2.7, three AZs, 8 vCPUs and 64 GB) created.

```
{
  "instance": {
    "id": "ad8cd1440aa94a02ae4580fcbabb3143in14",
    "name": "user1-v3-ha-02",
    "datastore": {
      "type": "GaussDB",
      "version": "V2.0-2.7"
    },
    "ha": {
      "mode": "Enterprise",
      "replication_mode": "sync",
      "consistency": "strong"
    },
    "port": "8000",
    "volume": {
      "type": "ULTRAHIGH",
      "size": 120
    },
    "replica_num": 3,
    "region": "aaa",
    "backup_strategy": {
      "start_time": "17:00-18:00",
      "keep_days": 7
    },
    "enterprise_project_id": "0",
    "flavor_ref": "gaussdb.opengauss.ee.dn.m6.2xlarge.8.in",
    "availability_zone": "bbb,bbb,bbb",
    "vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
    "subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
    "security_group_id": "c6123999-8532-421c-9db6-e078013ff58f",
    "charge_info": {
      "charge_mode": "prePaid",
      "period_type": "year",
      "period_num": 1,
      "is_auto_renew": false,
      "is_auto_pay": false
    }
  },
  "job_id": "30f2790a-a5b6-4a13-a5ab-733c746609af"
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.2 Creating a DB Instance (v5)

### Function

This API is derived from the API for creating a DB instance (v3.1). The **Subscription-Agency** field is added to the request header of the API. This field is only available when a shared key is used to create a yearly/monthly GaussDB instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

- The current API supports only the new IAM plane authentication.
- When using a shared KMS key to create a yearly/monthly instance, you need to create an agency for the Billing service and authorize the system policy **ServicePolicyForGaussDBFulfillment** to the agency. You can obtain the agency URN in the format of "iam::{account\_id}:agency:{agency\_name}". When calling this API, you add the Subscription-Agency header to the request and set its value to the agency URN.

### URI

POST [https://{Endpoint}/v5/{project\\_id}/instances](https://{Endpoint}/v5/{project_id}/instances)

**Table 4-31** Parameter description

| Name       | Mandatory | Description                                                                                                                                                                                                                                                                                                                |
|------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | <b>Explanation:</b><br>Project ID of a tenant in a region.<br>For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> .<br><b>Restrictions:</b><br>None<br><b>Value range:</b><br>The value can contain 32 characters. Only letters and digits are allowed.<br><b>Default value:</b><br>None |

## Request Parameters

**Table 4-32** Request parameters

| Name             | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                       |
|------------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name             | Yes       | String | Instance name.<br>Instances of the same type can have same names under the same tenant.<br>The name must consist of 4 to 64 characters and start with a letter. It can contain only letters (case-sensitive), digits, hyphens (-), and underscores (_).                                                                                                           |
| datastore        | Yes       | Object | Database information.<br>For details, see <a href="#">Table 4-33</a> .                                                                                                                                                                                                                                                                                            |
| ha               | Yes       | Object | Instance deployment model. For details, see <a href="#">Table 4-34</a> .                                                                                                                                                                                                                                                                                          |
| configuration_id | No        | String | Parameter template ID. If this parameter is not specified, the default parameter template is used and this parameter is not returned in the response body.                                                                                                                                                                                                        |
| port             | No        | String | Port number used by the database to provide services for external systems. If you do not configure this parameter, the default value <b>8000</b> is used. Value range: <b>1024 to 39998</b> . The following ports are not allowed: 2378, 2379, 2380, 4999, 5000, 5999, 6000, 6001, 8097, 8098, 12016, 12017, 20049, 20050, 21731, 21732, 32122, 32123, and 32124. |
| password         | Yes       | String | Database password.<br>The GaussDB database password must:<br>Consist of 8 to 32 characters, including at least three of the following: uppercase letters, lowercase letters, digits, and special characters (~!@#%^*_-=+?,).<br>Enter a strong password to improve security, preventing security risks such as brute force cracking.                              |
| backup_strategy  | No        | Object | Backup policy.<br>For details, see <a href="#">Table 4-35</a> .                                                                                                                                                                                                                                                                                                   |

| Name                  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                               |
|-----------------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | No        | String | Enterprise project ID. This parameter is suitable only for enterprise tenants.<br>For details, see <b>id</b> in the <b>enterprise_project field data structure</b> table in <a href="#">Querying Enterprise Projects</a> of <i>Enterprise Management API Reference</i> .                                                  |
| disk_encryption_id    | No        | String | Key ID for disk encryption. This parameter is left blank by default.<br>For details about key grant, see <a href="#">Creating a Grant</a> in the <i>Data Encryption Workshop User Guide</i> .                                                                                                                             |
| flavor_ref            | Yes       | String | Specification code. The value cannot be left blank. To obtain its value, see the <b>spec_code</b> field in <a href="#">Querying Instance Specifications</a> .                                                                                                                                                             |
| volume                | Yes       | Object | Volume information.<br>For details, see <a href="#">Table 4-36</a> .                                                                                                                                                                                                                                                      |
| region                | Yes       | String | Region ID.<br>The value cannot be left blank. For details about how to obtain this parameter value, see <a href="#">Regions and Endpoints</a> .                                                                                                                                                                           |
| availability_zone     | Yes       | String | AZ ID.<br>The value cannot be left blank. You can deploy a GaussDB instance in the same AZ or different AZs, and use commas (,) to separate AZs.<br>The value cannot be left blank. For details about how to obtain this parameter value, see <a href="#">Regions and Endpoints</a> .                                     |
| vpc_id                | Yes       | String | VPC ID. To obtain this parameter value, use either of the following methods: <ul style="list-style-type: none"><li>• Method 1: Log in to the VPC console and view the VPC ID in the VPC details page.</li><li>• Method 2: Query the VPC ID through the VPC API. For details, see <a href="#">Querying VPCs</a>.</li></ul> |



| Name              | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| subnet_id         | Yes       | String  | <p>Network ID of the subnet. To obtain this parameter value, use either of the following methods:</p> <ul style="list-style-type: none"> <li>Method 1: Log in to VPC console and click the target subnet on the <b>Subnets</b> page. You can view the network ID on the displayed page.</li> <li>Method 2: Query the subnet ID through the VPC API. For details, see <a href="#">Querying Subnets</a>.</li> </ul>                                                                                                                                                                                                                  |
| security_group_id | Yes       | String  | <p>Security group which the instance is associated with. To obtain this parameter value, use either of the following methods: If you do not need to specify a security group, contact customer service.</p> <ul style="list-style-type: none"> <li>Method 1: Log in to VPC console. Choose <b>Access Control &gt; Security Groups</b> in the navigation pane on the left. On the displayed page, click the target security group. You can view the security group ID on the displayed page.</li> <li>Method 2: Query the security group through the VPC API. For details, see <a href="#">Querying Security Groups</a>.</li> </ul> |
| charge_info       | No        | Object  | <p>Billing mode, which can be pay-per-use or yearly/monthly.<br/>For details, see <a href="#">Table 4-37</a>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| time_zone         | No        | String  | <p>UTC time zone.</p> <ul style="list-style-type: none"> <li>If this parameter is not specified, GaussDB uses UTC in the International website by default.</li> <li>If this parameter is specified, the value ranges from UTC-12:00 to UTC+12:00 at the full hour. For example, the parameter can be <b>UTC+08:00</b> rather than <b>UTC+08:30</b>.</li> </ul>                                                                                                                                                                                                                                                                     |
| sharding_num      | No        | Integer | <p>This parameter is available only for distributed instances. Number of shards. The value ranges from 1 to 9.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Name                   | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| coordinator_num        | No        | Integer | This parameter is available only for distributed instances. Number of CNs. The value ranges from 1 to 9. The number of CNs cannot exceed twice the number of shards.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| replica_num            | No        | Integer | Number of replicas. The value can be 3. If this parameter is left blank, the default value is 3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| enable_force_switch    | No        | Boolean | Whether to forcibly promote a standby node to primary. The value can only be <b>true</b> or <b>false</b> . <b>true</b> indicates that the function is enabled, and <b>false</b> (default value) indicates that the function is disabled. This function is available only for instances of version 1.2.2 or later.<br><br><b>NOTE</b><br>The function is suitable for the following scenario: When the primary node is faulty, a standby node is forcibly promoted to primary, ensuring the instance availability. When an instance is faulty, a forcible switchover enables the instance to run normally as soon as possible at the cost of losing some data. This is an escape method used when the instance is unavailable. |
| enable_single_float_ip | No        | Boolean | Whether to enable single floating IP address policy, which is only suitable for primary/standby instances.<br>Value range:<br><ul style="list-style-type: none"> <li>• <b>true</b>: This function is enabled. Only one floating IP address is bound to the primary node of a DB instance. If a primary/standby failover occurs, the floating IP address does not change.</li> <li>• <b>false</b> (default value): The function is disabled. Each node is bound to a floating IP address. If a primary/standby failover occurs, the floating IP addresses change.</li> </ul> <b>NOTE</b><br>This parameter is only available for primary/standby instances that run 3.206 or later versions.                                   |

**Table 4-33** datastore field data structure description

| Name    | Mandatory | Type   | Description                                                                                                                                                     |
|---------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type    | Yes       | String | DB engine. Value: <b>GaussDB</b> . It is case-insensitive.                                                                                                      |
| version | No        | String | DB engine version. If this parameter is not specified, the latest version is used by default.<br>For details, see <a href="#">Querying DB Engine Versions</a> . |

**Table 4-34** ha field data structure description

| Name             | Mandatory | Type   | Description                                                                                                                                                                                                                                               |
|------------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| mode             | Yes       | String | Deployment model. The value is case-insensitive and can be <b>enterprise</b> (enterprise edition) and <b>combined</b> (basic edition for combined deployment) for distributed instances and <b>centralization_standard</b> for primary/standby instances. |
| consistency      | Yes       | String | Transaction consistency type. The value is case-insensitive and can be: <ul style="list-style-type: none"> <li>• <b>strong</b>: strong consistency</li> <li>• <b>eventual</b>: eventual consistency</li> </ul>                                            |
| replication_mode | Yes       | String | Replication mode for the standby node. The value can only be set to <b>sync</b> , indicating that data is synchronized in synchronous mode.                                                                                                               |

| Name          | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| instance_mode | No        | String | <p>Product type of the instance to be created. If this parameter is not specified, an instance of the enterprise edition will be created by default. To create an instance of the basic edition or ecosystem edition, you need to specify the parameter value.</p> <ul style="list-style-type: none"> <li>• <b>enterprise</b>: The instance of the enterprise edition will be created.</li> <li>• <b>basic</b>: The instance of the basic edition will be created.</li> <li>• <b>ecology</b>: The instance of the ecosystem edition will be created.</li> </ul> |

**Table 4-35** backup\_strategy field data structure description

| Name       | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| start_time | Yes       | String  | <p>Backup time window. The creation of an automated backup will be triggered during the backup time window. The value cannot be left blank or negative. It must be a valid value in the "hh:mm-HH:MM" format. The current time is in the UTC format.</p> <ul style="list-style-type: none"> <li>• The <b>HH</b> value must be 1 greater than the <b>hh</b> value.</li> <li>• The values of <b>mm</b> and <b>MM</b> must be the same and must be set to <b>00</b>.</li> </ul> <p>Example value:</p> <ul style="list-style-type: none"> <li>• 08:00-09:00</li> <li>• 23:00-00:00</li> </ul> |
| keep_days  | No        | Integer | <p>Retention days for specific backup files. Value: <b>1</b> to <b>36500</b>. If this parameter is not specified, the default value <b>7</b> is used.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                 |

**Table 4-36** volume field data structure description

| Name | Mandatory | Type    | Description                                                                                                                                                                                                                                                             |
|------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type | Yes       | String  | Disk type.<br><ul style="list-style-type: none"> <li>Value range: <b>ULTRAHIGH</b> (SSD storage) or <b>ESSD</b> (extreme SSD storage). The value is case-sensitive.</li> </ul>                                                                                          |
| size | Yes       | Integer | Storage. For example, if this parameter is set to <b>40</b> , 40 GB of storage is allocated to the created instance.<br>ECS deployment: The value is from (Number of shards x 40 GB) to (Number of shards x 24 TB) and must be a multiple of (Number of shards x 4 GB). |

**Table 4-37** chargeInfo field data structure description

| Name        | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                    |
|-------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| charge_mode | Yes       | String | Billing mode.<br><b>postPaid</b> : pay-per-use billing.<br><b>prePaid</b> : yearly/monthly billing.                                                                                                                                                                                                            |
| period_type | No        | String | Subscription period.<br>Value range: <ul style="list-style-type: none"> <li><b>month</b>: The service is subscribed by month.</li> <li><b>year</b>: The service is subscribed by year.</li> </ul> <b>NOTE</b><br>This parameter is valid and mandatory only when <b>charge_mode</b> is set to <b>prePaid</b> . |

| Name          | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| period_num    | No        | Integer | <p>This parameter is valid and mandatory only when <b>charge_mode</b> is set to <b>prePaid</b>.</p> <p>Value range:</p> <ul style="list-style-type: none"> <li>When <b>period_type</b> is set to <b>month</b>, the parameter value ranges from <b>1</b> to <b>9</b>.</li> <li>When <b>period_type</b> is set to <b>year</b>, the parameter value ranges from <b>1</b> to <b>3</b>.</li> </ul> <p>When a floating-point value is used, the value is automatically truncated to an integer.</p>                             |
| is_auto_renew | No        | Boolean | <p>Whether automatic renewal is enabled for yearly/monthly instances. If you enable this function, the order will be automatically paid during the subscription renewal. The default renewal period is one month for monthly subscription and one year for yearly subscription. The renewal period can be configured as needed.</p> <ul style="list-style-type: none"> <li><b>true</b>: Automatic renewal is enabled.</li> <li><b>false</b>: Automatic renewal is disabled. The default value is <b>false</b>.</li> </ul> |
| is_auto_pay   | No        | Boolean | <p>Whether the order will be automatically paid after yearly/monthly instances are created. This parameter does not affect the payment mode of automatic renewal.</p> <ul style="list-style-type: none"> <li><b>true</b>: The order will be automatically paid.</li> <li><b>false</b>: The order will be manually paid. The default value is <b>false</b>.</li> </ul>                                                                                                                                                     |

## Response Parameters

**Table 4-38** Response parameters

| Name     | Type   | Description                                                                      |
|----------|--------|----------------------------------------------------------------------------------|
| instance | Object | <p>Instance information.</p> <p>For details, see <a href="#">Table 4-39</a>.</p> |

| Name     | Type   | Description                                                                                           |
|----------|--------|-------------------------------------------------------------------------------------------------------|
| job_id   | String | Instance creation task ID.<br>This parameter is returned only when pay-per-use instances are created. |
| order_id | String | Order ID. This parameter is returned only for the creation of yearly/monthly instances.               |

**Table 4-39** instance description

| Name                  | Type    | Description                                                                                                                                                                                                                                               |
|-----------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                    | String  | Instance ID.                                                                                                                                                                                                                                              |
| name                  | String  | Instance name. Instances of the same type can have same names under the same tenant.<br>The value must consist of 4 to 64 characters and start with a letter. It is case-insensitive and contains only letters, digits, hyphens (-), and underscores (_). |
| status                | String  | Instance status. For example, <b>BUILD</b> indicates that the instance is being created.<br>This parameter is returned only when pay-per-use instances are created.                                                                                       |
| datastore             | Object  | Database information.<br>For details, see <a href="#">Table 4-40</a> .                                                                                                                                                                                    |
| ha                    | Object  | Database deployment model.<br>For details, see <a href="#">Table 4-41</a> .                                                                                                                                                                               |
| replica_num           | Integer | Number of replicas.                                                                                                                                                                                                                                       |
| port                  | String  | Database port, which is the same as the request parameter.                                                                                                                                                                                                |
| backup_strategy       | Object  | Automated backup policy.<br>For details, see <a href="#">Table 4-42</a> .                                                                                                                                                                                 |
| enterprise_project_id | String  | Project ID.                                                                                                                                                                                                                                               |
| flavor_ref            | String  | Specification code. The value cannot be left blank.                                                                                                                                                                                                       |

| Name              | Type   | Description                                                          |
|-------------------|--------|----------------------------------------------------------------------|
| volume            | Object | Volume information.<br>For details, see <a href="#">Table 4-43</a> . |
| region            | String | Region ID.                                                           |
| availability_zone | String | AZ ID.                                                               |
| vpc_id            | String | VPC ID.                                                              |
| subnet_id         | String | Network ID of the subnet.                                            |
| security_group_id | String | Security group to which the instance belongs.                        |
| charge_info       | Object | Payment mode.<br>For details, see <a href="#">Table 4-44</a> .       |

**Table 4-40** datastore field data structure description

| Name    | Type   | Description                  |
|---------|--------|------------------------------|
| type    | String | DB engine. Value:<br>GaussDB |
| version | String | DB engine version.           |

**Table 4-41** ha field data structure description

| Name             | Type   | Description                                                                                                                                                                                                                                               |
|------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| mode             | String | Deployment model. The value is case-insensitive and can be <b>combined</b> (basic edition for combined deployment) and <b>enterprise</b> (enterprise edition) for distributed instances and <b>centralization_standard</b> for primary/standby instances. |
| replication_mode | String | Replication mode for the standby node. The value can only be set to <b>sync</b> , indicating that data is synchronized in synchronous mode.                                                                                                               |
| consistency      | String | Transaction consistency type. This parameter is reserved for GaussDB. Value: <ul style="list-style-type: none"><li>• <b>strong</b>: strong consistency</li><li>• <b>eventual</b>: eventual consistency</li></ul>                                          |



| Name                 | Type   | Description                                                                                                                                       |
|----------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| consistency_protocol | String | Replica consistency protocol. The value can be <b>quorum</b> (default value) or <b>paxos</b> . If it is not specified, the default value is used. |

**Table 4-42** backup\_strategy field data structure description

| Name       | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| start_time | String  | <p>Backup time window. The creation of an automated backup will be triggered during the backup time window.</p> <p>The value cannot be left blank. It must be a valid value in the "hh:mm-HH:MM" format. The current time is in the UTC format.</p> <ul style="list-style-type: none"> <li>The <b>HH</b> value must be 1 greater than the <b>hh</b> value.</li> <li>The values of <b>mm</b> and <b>MM</b> must be the same and must be set to <b>00</b>.</li> </ul> <p>Example value:</p> <ul style="list-style-type: none"> <li>08:00-09:00</li> <li>23:00-00:00</li> </ul> <p>If <b>backup_strategy</b> in the request body is left blank, <b>02:00-03:00</b> is returned for <b>start_time</b> by default.</p> |
| keep_days  | Integer | <p>Retention days for specific backup files.</p> <p>Value range: <b>1</b> to <b>732</b>. If the <b>backup_strategy</b> field is not specified in the request body, <b>keep_days</b> in the response body is set to 7 days by default.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

**Table 4-43** volume field data structure description

| Name | Type    | Description                                                                                                                                                                                           |
|------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type | String  | <p>Disk type.</p> <p>Its value is case-sensitive and can be:</p> <ul style="list-style-type: none"> <li><b>ULTRAHIGH</b>, indicating SSD.</li> <li><b>ESSD</b>: indicates the extreme SSD.</li> </ul> |
| size | Integer | Storage.                                                                                                                                                                                              |

**Table 4-44** charge\_Info field data structure description

| Name          | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| charge_mode   | String  | Billing mode.<br><b>postPaid</b> : pay-per-use billing.<br><b>prePaid</b> : yearly/monthly billing.                                                                                                                                                                                                                                                                                                                                                                                                                      |
| period_type   | String  | Subscription period. <b>month</b> : The service is subscribed by month. <b>year</b> : The service is subscribed by year. This parameter is valid and mandatory only when <b>charge_mode</b> is set to <b>prePaid</b> .<br>Value: <ul style="list-style-type: none"><li>• <b>month</b></li><li>• <b>year</b></li></ul>                                                                                                                                                                                                    |
| period_num    | Integer | This parameter is valid and mandatory only when <b>charge_mode</b> is set to <b>prePaid</b> .<br>Value range:<br>When <b>period_type</b> is set to <b>month</b> , the parameter value ranges from <b>1</b> to <b>9</b> . When <b>period_type</b> is set to <b>year</b> , the parameter value ranges from <b>1</b> to <b>3</b> .                                                                                                                                                                                          |
| is_auto_renew | Boolean | Whether automatic renewal is enabled for yearly/monthly instances. If you enable this function, the order will be automatically paid during the subscription renewal. The default renewal period is one month for monthly subscription and one year for yearly subscription. The renewal period can be configured as needed.<br><b>true</b> : indicates that the subscription is automatically renewed. <b>false</b> : indicates that the subscription is not automatically renewed. The default value is <b>false</b> . |

| Name        | Type    | Description                                                                                                                                                                                                                                                                                                                                                          |
|-------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| is_auto_pay | Boolean | Whether the order will be automatically paid after yearly/monthly instances are created. This parameter does not affect the payment mode of automatic renewal.<br><br><b>true:</b> indicates that the order is automatically paid from the account.<br><b>false:</b> indicates that the order is manually paid from the account. The default value is <b>false</b> . |

## Example Request

- Creating a distributed instance in the independent deployment (one-year yearly/monthly billing, DB engine V2.0-2.7, three AZs, three CNs, three shards, three replicas, and 8 vCPUs and 64 GB)

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.2/0483b6b16e954cb88930a360d2c4e663/instances
{
  "name": "user1-v3-independent-02",
  "datastore": {
    "type": "GaussDB",
    "version": "V2.0-2.7"
  },
  "flavor_ref": "gaussdb.opengauss.ee.dn.m6.2xlarge.8.in",
  "volume": {
    "type": "ULTRAHIGH",
    "size": 120
  },
  "disk_encryption_id": "24ae42b5-4009-4ea2-b66a-0b211e424dab",
  "region": "aaa",
  "availability_zone": "bbb,ccc,ddd",
  "vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
  "subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
  "security_group_id": "c6123999-8532-421c-9db6-e078013ff58f",
  "backup_strategy": {
    "start_time": "17:00-18:00",
    "keep_days": 7
  },
  "charge_info": {
    "charge_mode": "prePaid",
    "period_type": "year",
    "period_num": 1
  },
  "password": "xxxxxx",
  "configuration_id": "",
  "enterprise_project_id": "",
  "time_zone": "UTC+08:00",
  "ha": {
    "mode": "enterprise",
    "consistency": "strong",
    "replication_mode": "sync"
  },
  "sharding_num": 3,
  "coordinator_num": 3,
  "replica_num": 3,
  "port": 8000,
```

- ```
"enable_force_switch":true
}
```
- Creating a primary/standby (1 primary + 2 standby) instance (pay-per-use billing, DB engine V2.0-2.7, single AZ, 8 vCPUs and 64 GB)

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.2/0483b6b16e954cb88930a360d2c4e663/instances
```

```
{
  "name": "user1-v3-ha-01",
  "datastore": {
    "type": "GaussDB",
    "version": "V2.0-2.7"
  },
  "flavor_ref": "gaussdb.opengauss.ee.km1.2xlarge.arm8.ha",
  "volume": {
    "type": "ULTRAHIGH",
    "size": 120
  },
  "disk_encryption_id": "24ae42b5-4009-4ea2-b66a-0b211e424dab",
  "region": "aaa",
  "availability_zone": "bbb,bbb,bbb",
  "vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
  "subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
  "security_group_id": "c6123999-8532-421c-9db6-e078013ff58f",
  "backup_strategy": {
    "start_time": "17:00-18:00",
    "keep_days": 7
  },
  "charge_info": {
    "charge_mode": "postPaid"
  },
  "password": "xxxxxx",
  "configuration_id": "",
  "enterprise_project_id": "",
  "time_zone": "UTC+08:00",
  "ha": {
    "mode": "centralization_standard",
    "consistency": "strong",
    "replication_mode": "sync"
  },
  "replica_num": 3,
  "port": 8000,
  "enable_force_switch": true
}
```

- Creating a primary/standby (1 primary + 2 standby) DB instance (one-year yearly/monthly billing, DB engine 2, three AZs, 8 vCPUs and 64 GB)

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.2/0483b6b16e954cb88930a360d2c4e663/instances
```

```
{
  "name": "user1-v3-ha-02",
  "datastore": {
    "type": "GaussDB",
    "version": "V2.0-2.7"
  },
  "flavor_ref": "gaussdb.opengauss.ee.km1.2xlarge.arm8.ha",
  "volume": {
    "type": "ULTRAHIGH",
    "size": 120
  },
  "disk_encryption_id": "24ae42b5-4009-4ea2-b66a-0b211e424dab",
  "region": "aaa",
  "availability_zone": "bbb,ccc,ddd",
  "vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
  "subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
  "security_group_id": "c6123999-8532-421c-9db6-e078013ff58f",
  "backup_strategy": {
    "start_time": "17:00-18:00",
  }
}
```

```
    "keep_days": 7
  },
  "charge_info": {
    "charge_mode": "prePaid",
    "period_type": "year",
    "period_num": 1
  },
  "password": "xxxxxx",
  "configuration_id": "",
  "enterprise_project_id": "",
  "time_zone": "UTC+08:00",
  "ha": {
    "mode": "centralization_standard",
    "consistency": "strong",
    "replication_mode": "sync"
  },
  "replica_num": 3,
  "port": 8000,
  "enable_force_switch": true
}
```

## Example Response

- Distributed instance in the independent deployment (pay-per-use billing, DB engine V2.0-2.7, single AZ, 3 CNs, 3 shards, 3 replicas, 8 vCPUs and 64 GB) created.

```
{
  "instance": {
    "id": "ad8cd1440aa94a02ae4580fcbebb3143in14",
    "name": "user1-v3-independent-01",
    "status": "BUILD",
    "datastore": {
      "type": "GaussDB",
      "version": "V2.0-2.7"
    },
    "ha": {
      "mode": "Enterprise",
      "replication_mode": "sync",
      "consistency": "strong"
    },
    "port": "8000",
    "volume": {
      "type": "ULTRAHIGH",
      "size": 120
    },
    "replica_num": 3,
    "region": "aaa",
    "backup_strategy": {
      "start_time": "17:00-18:00",
      "keep_days": 7
    },
    "enterprise_project_id": "0",
    "flavor_ref": "gaussdb.opengauss.ee.dn.m6.2xlarge.8.in",
    "availability_zone": "bbb,bbb,bbb",
    "vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
    "subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
    "security_group_id": "c6123999-8532-421c-9db6-e078013ff58f",
    "charge_info": {
      "charge_mode": "postPaid"
    }
  },
  "job_id": "30f2790a-a5b6-4a13-a5ab-733c746609af"
}
```

- Distributed instance (one-year yearly/monthly billing, DB engine V2.0-2.7, three AZs, three CNs, three shards, three replicas, 8 vCPUs and 64 GB) created.

```
{
  "instance": {
    "id": "ad8cd1440aa94a02ae4580fcbebb3143in14",
    "name": "user1-v3-independent-02",
    "datastore": {
      "type": "GaussDB",
      "version": "V2.0-2.7"
    },
    "ha": {
      "mode": "Enterprise",
      "replication_mode": "sync",
      "consistency": "strong"
    },
    "port": "8000",
    "volume": {
      "type": "ULTRAHIGH",
      "size": 120
    },
    "replica_num": 3,
    "region": "aaa",
    "backup_strategy": {
      "start_time": "17:00-18:00",
      "keep_days": 7
    },
    "enterprise_project_id": "0",
    "flavor_ref": "gaussdb.opengauss.ee.dn.m6.2xlarge.8.in",
    "availability_zone": "bbb,bbb,bbb",
    "vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
    "subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
    "security_group_id": "c6123999-8532-421c-9db6-e078013ff58f",
    "charge_info": {
      "charge_mode": "prePaid",
      "period_type": "year",
      "period_num": 1,
      "is_auto_renew": false,
      "is_auto_pay": false
    }
  },
  "job_id": "30f2790a-a5b6-4a13-a5ab-733c746609af"
}
```

- Primary/Standby instance (1 primary + 2 standby, pay-per-use billing, DB engine V2.0-2.7, single AZ, 8 vCPUs and 64 GB) created.

```
{
  "instance": {
    "id": "ad8cd1440aa94a02ae4580fcbebb3143in14",
    "name": "user1-v3-ha-01",
    "status": "BUILD",
    "datastore": {
      "type": "GaussDB",
      "version": "V2.0-2.7"
    },
    "ha": {
      "mode": "Enterprise",
      "replication_mode": "sync",
      "consistency": "strong"
    },
    "port": "8000",
    "volume": {
      "type": "ULTRAHIGH",
      "size": 120
    },
    "region": "aaa",
    "replica_num": 3,
    "backup_strategy": {
      "start_time": "17:00-18:00",
      "keep_days": 7
    }
  }
}
```

```
    },
    "enterprise_project_id": "0",
    "flavor_ref": "gaussdb.opengauss.ee.dn.m6.2xlarge.8.in",
    "availability_zone": "bbb,bbb,bbb",
    "vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
    "charge_info": {
      "charge_mode": "postPaid"
    },
    "subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
    "security_group_id": "c6123999-8532-421c-9db6-e078013ff58f"
  },
  "job_id": "30f2790a-a5b6-4a13-a5ab-733c746609af"
}
```

- Primary/Standby instance (1 primary + 2 standby, one-year yearly/monthly billing, DB engine V2.0-2.7, three AZs, 8 vCPUs and 64 GB) created.

```
{
  "instance": {
    "id": "ad8cd1440aa94a02ae4580fcbabb3143in14",
    "name": "user1-v3-ha-02",
    "datastore": {
      "type": "GaussDB",
      "version": "V2.0-2.7"
    },
    "ha": {
      "mode": "Enterprise",
      "replication_mode": "sync",
      "consistency": "strong"
    },
    "port": "8000",
    "volume": {
      "type": "ULTRAHIGH",
      "size": 120
    },
    "replica_num": 3,
    "region": "aaa",
    "backup_strategy": {
      "start_time": "17:00-18:00",
      "keep_days": 7
    },
    "enterprise_project_id": "0",
    "flavor_ref": "gaussdb.opengauss.ee.dn.m6.2xlarge.8.in",
    "availability_zone": "bbb,bbb,bbb",
    "vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
    "subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
    "security_group_id": "c6123999-8532-421c-9db6-e078013ff58f",
    "charge_info": {
      "charge_mode": "prePaid",
      "period_type": "year",
      "period_num": 1,
      "is_auto_renew": false,
      "is_auto_pay": false
    }
  },
  "job_id": "30f2790a-a5b6-4a13-a5ab-733c746609af"
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.3 Adding CNs and DN Shards and Scaling Up Storage

### Function

This API is used to add CNs, add DN shards, and scale up storage. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

- Scaling up storage
  - The storage space must be a multiple of (Number of shards x 4 GB).
  - All nodes must be available.

### URI

POST [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/action](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/action)

**Table 4-45** Parameter description

Name	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	Instance ID.



## Request

**Table 4-46** Parameter description

Name	Mandatory	Type	Description
expand_cluster	No	Object	This parameter is mandatory when you add CNs or shards. For details, see <a href="#">Table 4-47</a> .
enlarge_volume	No	Object	New storage space after scaling up. This parameter is mandatory for scaling up storage. For details, see <a href="#">Table 4-50</a> .
is_auto_pay	No	String	Whether the order will be automatically paid after yearly/monthly instances are created. This parameter does not affect the payment mode of automatic renewal. <ul style="list-style-type: none"><li>• <b>true</b>: indicates that the order is automatically paid from the account.</li><li>• <b>false</b> (default value): indicates that the order is manually paid from the account.</li></ul>

**Table 4-47** expand\_cluster field data structure description

Name	Mandatory	Type	Description
coordinators	No	Array of Coordinators objects	This parameter is mandatory for adding CNs. For details, see <a href="#">Table 4-48</a> .
shard	No	Shard object	This parameter is mandatory for adding shards. For details, see <a href="#">Table 4-49</a> .

**Table 4-48** coordinators parameter description

Name	Mandatory	Type	Description
az_code	Yes	String	AZs to which CNs are to be added. If multiple CNs need to be added, enter the AZ where each CN is located. For details about AZs in different regions, see <a href="#">Regions and Endpoints</a> .

**Table 4-49** shard parameter description

Name	Mandatory	Type	Description
count	Yes	Integer	Number of shards to be added.

**Table 4-50** enlarge\_volume field data structure description

Name	Mandatory	Type	Description
size	Yes	Integer	Storage space, which must always be a multiple of (Number of shards x 4 GB). Value range: (Number of shards x 40 GB) to (Number of shards x 24 TB).

## Response Parameters

**Table 4-51** Response parameters

Name	Type	Description
job_id	String	Task ID. This parameter is returned when your instance is billed at a pay-per-use basis.
order_id	String	Order ID. This parameter is returned only when your instance is billed at a yearly/monthly basis.

## Example Request

- Adding a CN

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfdsae3435in14/action
{
  "expand_cluster": {
    "coordinators": [
      {
        "az_code": "az_code"
      }
    ]
  }
}
```

- Adding multiple CNs

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfdsae3435in14/action
{
  "expand_cluster": {
    "coordinators": [
      {
        "az_code": "az_code"
      },
      {
        "az_code": "az_code"
      },
      {
        "az_code": "az_code"
      }
    ]
  }
}
```

- Adding a DN shard

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfdsae3435in14/action
{
  "expand_cluster": {
    "shard": {
      "count": 1
    }
  }
}
```

- Scaling up storage to 400 GB

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfdsae3435in14/action
{
  "enlarge_volume": {
    "size": 400
  }
}
```

## Example Response

```
{
  "job_id": "2b414788a6004883a02390e2eb0ea227"
}
```

## Status Code

- Normal  
202

- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.4 Deleting a DB Instance

### Function

This API is used to delete a DB instance. Currently, instances billed on a yearly/monthly basis cannot be deleted. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

DELETE [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}](https://{Endpoint}/v3/{project_id}/instances/{instance_id})

**Table 4-52** Parameter description

Name	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

Name	Mandatory	Description
instance_id	Yes	<p><b>Explanation:</b> Instance ID, which is the unique identifier of an instance.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>

## Request Parameters

None

## Response Parameters

**Table 4-53** Parameter description

Name	Type	Description
job_id	String	<p><b>Explanation:</b> ID of the instance deletion task.</p> <p><b>Value range:</b> UUID format</p>
order_id	string	<p><b>Explanation:</b> Order ID. This parameter is returned only when your instance is billed at a yearly/monthly basis. No information is returned when you unsubscribe from a yearly/monthly instance that has expired.</p> <p><b>Value range:</b> None</p>

## Example Request

Deleting a DB instance

```
DELETE https://gaussdb-opengauss.ap-
```

```
southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/  
dsfae23fsfsae3435in01
```

## Example Response

```
{  
  "job_id": "dff1d289-4d03-4942-8b9f-463ea07c000d"  
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.5 Querying DB Instances

### Function

This API is used to query DB instances and their details. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

```
GET https://{Endpoint}/v3.3/{project_id}/instances?  
id={id}&name={name}&type={type}&datastore_type={datastore_type}&vpc_id={vp  
c_id}&subnet_id={subnet_id}&offset={offset}&limit={limit}
```

**Table 4-54** URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>

**Table 4-55** Query parameters

Parameter	Mandatory	Type	Description
id	No	String	<p>Instance ID. The asterisk (*) is reserved for the system. If the instance ID starts with *, fuzzy match is performed based on the value following *. Otherwise, the exact match is performed based on the instance ID. The value cannot only contain asterisks (*).</p>
name	No	String	<p>Instance name. The asterisk (*) is reserved for the system. If the instance name starts with *, fuzzy match is performed based on the value following *. Otherwise, the exact match is performed based on the instance name. The value cannot only contain asterisks (*).</p>

Parameter	Mandatory	Type	Description
type	No	String	Instance type. Its value is case sensitive. Value range: <ul style="list-style-type: none"> <li>• <b>Enterprise</b> (case-sensitive): distributed instances (in the independent deployment)</li> <li>• <b>Centralization_standard</b> (case-sensitive): primary/standby instances</li> </ul>
datastore_type	No	String	Database type. Its value is case-sensitive and can be <b>GaussDB</b> .
vpc_id	No	String	VPC ID. <ul style="list-style-type: none"> <li>• Method 1: Log in to the VPC console and query the VPC ID in the VPC details page.</li> <li>• Method 2: Query the VPC ID through the VPC API. For details, see <a href="#">Querying VPCs</a>.</li> <li>• Method 2: See "Querying VPCs" in <i>Virtual Private Cloud API Reference</i>.</li> </ul>
subnet_id	No	String	Network ID of the subnet. <ul style="list-style-type: none"> <li>• Method 1: Log in to VPC console and click the target subnet on the <b>Subnets</b> page. You can view the network ID on the displayed page.</li> <li>• Method 2: Query the VPC ID through the VPC API. For details, see <a href="#">Querying Subnets</a>.</li> <li>• Method 2: See "Querying Subnets" in <i>Virtual Private Cloud API Reference</i>.</li> </ul>
offset	No	Integer	Index offset. If <b>offset</b> is set to <i>N</i> , the resource query starts from the <i>N</i> +1 data entry. The default value is <b>0</b> , indicating that the query starts from the first data entry. The value cannot be a negative number.



Parameter	Mandatory	Type	Description
limit	No	Integer	Number of records to be queried. The default value is <b>100</b> . The value cannot be a negative number. The minimum value is <b>1</b> and the maximum value is <b>100</b> .
tags	No	Array	<p>Tag key-value pairs of the instance.</p> <ul style="list-style-type: none"> <li>• <i>{key}</i> indicates the tag key. It must be unique and cannot be empty. Each tag key can contain a maximum of 127 Unicode characters. <b>key</b> cannot be an empty string, a space, or left blank. Before using <b>key</b>, delete single-byte character (SBC) spaces before and after it. The value cannot contain the following special characters: +/?#&amp;=,%</li> <li>• <i>{value}</i> indicates the tag value, which can be empty. Each tag value can contain a maximum of 255 Unicode characters. Before using <b>value</b>, delete SBC spaces before and after it. The value cannot contain the following special characters: +/?#&amp;=,%</li> </ul> <p>If the tag value is left blank, it indicates <b>any_value</b> (querying any value).</p> <p>To query instances with multiple tag key-value pairs, separate the pairs with commas (.). A maximum of 10 key-value pairs are supported.</p>
charge_mode	No	String	<p>Billing mode.</p> <p>Value range:</p> <ul style="list-style-type: none"> <li>• <b>postPaid</b>: pay-per-use billing.</li> <li>• <b>prePaid</b>: yearly/monthly billing.</li> </ul>

## Request Parameters

None

## Response Parameters

**Table 4-56** Response parameters

Parameter	Type	Description
instances	Array of <a href="#">Table 4-57</a> objects	Instance information.
total_count	Integer	Total number of records.

**Table 4-57** instances

Parameter	Type	Description
id	String	Instance ID.
name	String	Instance name.

Parameter	Type	Description
status	String	<p>Instance status.</p> <p>Value:</p> <ul style="list-style-type: none"> <li>• <b>BUILD</b>: The instance is being created.</li> <li>• <b>ACTIVE</b>: The instance is normal.</li> <li>• <b>FAILED</b>: The instance is abnormal.</li> <li>• <b>FROZEN</b>: The instance is frozen.</li> <li>• <b>MODIFYING</b>: The storage is being scaled up or instance specifications are being changed.</li> <li>• <b>EXPANDING</b>: Read replicas, CNs, or DN shards are being added to the instance.</li> <li>• <b>REBOOTING</b>: The instance is being rebooted.</li> <li>• <b>REDUCING</b>: Read replicas are being deleted.</li> <li>• <b>UPGRADING</b>: The instance is being upgraded.</li> <li>• <b>RESTORING</b>: The instance is being restored.</li> <li>• <b>SWITCHOVER</b>: A primary/standby switchover is being performed.</li> <li>• <b>MIGRATING</b>: The instance is being migrated.</li> <li>• <b>BACKING UP</b>: The instance is being backed up.</li> <li>• <b>UPGRADE TO BE OBSERVED</b>: The instance upgrade is in the observation period.</li> <li>• <b>REDUCING REPLICATION</b>: The number of replicas is being reduced.</li> <li>• <b>STORAGE FULL</b>: The instance storage is full.</li> </ul>
private_ips	Array of strings	<p>Private IP address list. This parameter is an empty string until ECSs where CNs of distributed instances are deployed or ECSs where DN of primary/standby instances are deployed are created.</p>

Parameter	Type	Description
public_ips	Array of strings	Public IP address list. This parameter cannot be left blank after an EIP is bound.
port	Integer	Database port number. The GaussDB database port ranges from 1024 to 39998 (excluding the following which are occupied by the system and cannot be used: 2378, 2379, 2380, 4999, 5000, 5999, 6000, 6001, 8097, 8098, 20049, 20050, 21731, and 21732). If this parameter is not specified, the default port number <b>8000</b> is used.
type	String	Instance type. The value is case-sensitive. <ul style="list-style-type: none"> <li>• <b>Enterprise:</b> distributed instance (enterprise edition)</li> </ul>
ha	<a href="#">Table 4-58</a> object	This parameter is returned for distributed and primary/standby instances.
replica_num	Integer	Number of replicas.
region	String	Region where the instance is deployed.
datastore	<a href="#">Table 4-59</a> object	Database information.
created	String	Creation time, in the "yyyy-mm-dd hh:mm:ss timezone" format. <b>timezone</b> indicates the time zone. When the instance is being created, the value is the time when the creation request is delivered. After the instance is created, the value is the time when the creation is complete, for example, 2024-07-02 08:32:07 UTC.
updated	String	Update time. The format is the same as that of the <b>created</b> field. The value is empty when the instance is being created. After the instance is created, the value is not empty.

Parameter	Type	Description
db_user_name	String	Default username.
vpc_id	String	VPC ID.
subnet_id	String	Network ID of the subnet.
security_group_id	String	Security group ID.
flavor_ref	String	Specification code. To obtain its value, see the <b>spec_code</b> field in <a href="#">Querying Instance Specifications</a> .
flavor_info	<a href="#">Table 4-61</a> object	Specification information.
volume	<a href="#">Table 4-62</a> object	Volume information.
switch_strategy	String	Database failover priority. If you do not configure failover priority during instance creation, this parameter will not be displayed. The value can be <b>Reliability</b> or <b>Availability</b> , indicating the reliability first and availability first, respectively. If no failover priority is selected during the creation, the failover priority is not displayed.
backup_strategy	<a href="#">Table 4-63</a> object	Backup policy.
maintenance_window	String	Maintenance window, in the UTC format.
nodes	Array of <a href="#">Table 4-64</a> objects	Instance node information.
disk_encryption_id	String	Disk encryption key ID. This parameter is displayed only when the instance disk is encrypted.
enterprise_project_id	String	Enterprise project ID. If an instance does not belong to any enterprise project, the default value is <b>0</b> .
instance_mode	String	Instance mode. <ul style="list-style-type: none"> <li><b>basic</b>: basic edition</li> <li><b>enterprise</b>: enterprise edition</li> </ul>

Parameter	Type	Description
disk_encryption_id	String	Disk encryption key ID. This parameter is displayed only when the instance disk is encrypted.
charge_info	Table 4-65 object	Billing mode, which can be pay-per-use or yearly/monthly.
time_zone	String	Time zone.
tags	Array of Table 4-66 objects	Tags. This parameter is not returned if there is no tag.
disk_usage	String	Available disk usage of the instance. The value ranges from <b>0</b> to <b>1</b> and contains four decimal places.
mysql_compatibility	Table 14 mysql_compatibility object	M compatibility configuration of the instance.

Table 4-58 ha

Parameter	Type	Description
consistency	String	Database consistency type. It is only suitable for distributed instances. Value range: <ul style="list-style-type: none"> <li><b>strong</b>: strong consistency</li> <li><b>eventual</b>: eventual consistency</li> </ul>
replication_mode	String	Replication mode for the standby node. The value cannot be left blank. The value <b>sync</b> indicates that data is synchronized in synchronous mode.

Table 4-59 datastore

Parameter	Type	Description
type	String	Database engine.
version	String	Major version of the database.
complete_version	String	Minor version of the database.

Parameter	Type	Description
target_version	String	Target version that the database is being upgraded to.
complete_kernel_version	String	Database kernel version.
hotfix_version_infos	Array of <a href="#">Table 4-60</a> objects	Hot patch information.

**Table 4-60** hotfix\_version\_infos

Parameter	Type	Description
version	String	Hot patch version.
upgrade_finished_time	String	List of time when the hot patch update is complete. The time when the hot patch update is complete is expressed in the "yyyy-mm-dd hh:mm:ss timezone" format. <b>timezone</b> indicates the time zone.

**Table 4-61** flavor\_info

Parameter	Type	Description
vcpu	Integer	Number of vCPUs.
mem	Integer	Memory size.

**Table 4-62** volume

Parameter	Type	Description
type	String	Disk type. <b>ULTRAHIGH</b> (SSD storage) or <b>ESSD</b> (extreme SSD storage). The value is case-sensitive.
size	Integer	Storage.

**Table 4-63** backup\_strategy

Parameter	Type	Description
start_time	String	Backup time window. The creation of an automated backup will be triggered during the backup time window. The time is in the UTC format.
keep_days	Integer	Number of days to retain the generated backup files. Value range: 1-732.

**Table 4-64** nodes

Parameter	Type	Description
id	String	Node ID.
name	String	Node name.
role	String	Node type. <ul style="list-style-type: none"><li>● <b>master</b>: primary node</li><li>● <b>slave</b>: standby node</li><li>● <b>secondary</b>: log node</li><li>● <b>readreplica</b>: read replica.</li></ul>
status	String	Node status. <b>BUILD_FAILED</b> : The node fails to be created.
availability_zone	String	AZ.
private_ip	String	Private IP address of the node. For distributed instances, this parameter is only valid for CNs. For primary/standby instances, this parameter is valid for all nodes. The parameter value is returned after an ECS is created.



Parameter	Type	Description
public_ip	String	EIP that has been bound. For distributed instances, this parameter is only valid for CNs. For primary/standby instances, this parameter is valid for all nodes. The parameter value is returned after an ECS is created and an EIP is bound to a DB instance.
component_names	String	Component information on the node (for example, <i>component ID.distributed ID</i> ). Separate information of multiple components with semicolons (;).

**Table 4-65** charge\_info

Parameter	Type	Description
charge_mode	String	Billing mode. Value range: <ul style="list-style-type: none"> <li>• <b>postPaid</b>: pay-per-use billing.</li> <li>• <b>prePaid</b>: yearly/monthly billing.</li> </ul>

**Table 4-66** tags

Parameter	Type	Description
key	String	Tag key.
value	String	Tag value.

**Table 4-67** mysql\_compatibility

Parameter	Type	Description
port	String	Port for M compatibility.

## Example Request

- Querying instances based on search criteria

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/
```

```
v3.3/97b026aa9cc4417888c14c84a1ad9860/instances?  
id=ed7cc6166ec24360a5ed5c5c9c2ed726in14&name=hy&type=Enterprise&datastore_type=GaussDB&v  
pc_id=19e5d45d-70fd-4a91-87e9-  
b27e71c9891f&subnet_id=bd51fb45-2dcb-4296-8783-8623bfe89bb7&offset=0&limit=10
```

- Querying all instances

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/  
v3.3/97b026aa9cc4417888c14c84a1ad9860/instances
```

## Example Response

- Instances queried.

```
{  
  "instances": [ {  
    "id": "b331ed66cc3249f78bc20737308c01f4in14",  
    "status": "ACTIVE",  
    "name": "gauss-9e88",  
    "port": 8000,  
    "type": "enterprise",  
    "ha": {  
      "consistency": "strong",  
      "replication_mode": "sync"  
    },  
    "region": "cn-xianhz-1",  
    "datastore": {  
      "type": "GaussDB",  
      "version": "V2.0-2.7",  
      "complete_version": "V2.0-2.7.2",  
      "target_version": "V2.0-3.208.0",  
      "complete_kernel_version": "V500R002C10SPC610"  
    },  
    "created": "2021-01-15 01:46:40 UTC",  
    "updated": "2021-01-15 02:05:03 UTC",  
    "volume": {  
      "type": "ULTRAHIGH",  
      "size": 120  
    },  
    "nodes": [ {  
      "id": "02ebf757aaf94074855f49cc6e0e4712no14",  
      "name": "gauss-9e88_gaussdbv5cn_2",  
      "role": "master",  
      "status": "ACTIVE",  
      "availability_zone": "az2xahz",  
      "component_names": "cn_5001:"  
    }, {  
      "id": "0a87b8ecbf46aba1409cfc0f0d5c34no14",  
      "name": "gauss-9e88_gaussdbv5cn_0",  
      "role": "master",  
      "status": "ACTIVE",  
      "availability_zone": "az2xahz",  
      "component_names": "cn_5002:"  
    }, {  
      "id": "2d9fec1ab3834936b074d63acf48b1f2no14",  
      "name": "gauss-9e88_gaussdbv5dn3_2",  
      "role": "master",  
      "status": "ACTIVE",  
      "availability_zone": "az2xahz",  
      "component_names": "dn_6003:60073"  
    }, {  
      "id": "48bb08a2d635435891ac0caa1c0bf2e3no14",  
      "name": "gauss-9e88_gaussdbv5dn1_0",  
      "role": "master",  
      "status": "ACTIVE",  
      "availability_zone": "az2xahz",  
      "component_names": "dn_6001:60011"  
    }, {  
      "id": "5df830f652204827ada32f8bc28b107eno14",  
      "name": "gauss-9e88_gaussdbv5dn1_1",  
    }  
  ]  
}
```

```
"role" : "slave",
"status" : "ACTIVE",
"availability_zone" : "az2xahz",
"component_names" : "dn_6002:60011"
}, {
  "id" : "8a97a246cee841b38c5b47290d4c9c38no14",
  "name" : "gauss-9e88_gaussdbv5cn_1",
  "role" : "master",
  "status" : "ACTIVE",
  "availability_zone" : "az2xahz",
  "component_names" : "cn_5003:"
}, {
  "id" : "8c1a3f8ecca4d9e9974a868bb6dd942no14",
  "name" : "gauss-9e88_gaussdbv5dn2_0",
  "role" : "master",
  "status" : "ACTIVE",
  "availability_zone" : "az2xahz",
  "component_names" : "dn_6004:60042"
}, {
  "id" : "9bd0c80b8a684cc9bd7d99dd5adffb07no14",
  "name" : "gauss-9e88_gaussdbv5dn3_1",
  "role" : "slave",
  "status" : "ACTIVE",
  "availability_zone" : "az2xahz",
  "component_names" : "dn_6005:60073"
}, {
  "id" : "9e2a3cd541e249d4af5aa57c5d3a7f39no14",
  "name" : "gauss-9e88_gaussdbv5dn1_2",
  "role" : "slave",
  "status" : "ACTIVE",
  "availability_zone" : "az2xahz",
  "component_names" : "dn_6006:60011"
}, {
  "id" : "b046d28989ec4ae5a1a9ab20fe65f248no14",
  "name" : "gauss-9e88_gaussdbv5dn2_2",
  "role" : "slave",
  "status" : "ACTIVE",
  "availability_zone" : "az2xahz",
  "component_names" : "dn_6007:60042"
}, {
  "id" : "b614cc12fd3742dbb230245f88a7bf00no14",
  "name" : "gauss-9e88_gaussdbv5dn3_0",
  "role" : "slave",
  "status" : "ACTIVE",
  "availability_zone" : "az2xahz",
  "component_names" : "dn_6008:60073"
}, {
  "id" : "caba8e88c3c84ae58202f1f589490611no14",
  "name" : "gauss-9e88_gaussdbv5dn1_1",
  "role" : "slave",
  "status" : "ACTIVE",
  "availability_zone" : "az2xahz",
  "component_names" : "dn_6009:60042"
} ],
"private_ips" : [ "192.168.28.81 / 192.168.27.52 / 192.168.16.253" ],
"public_ips" : [ ],
"db_user_name" : "root",
"vpc_id" : "5f84a5c4-2f93-41de-8359-d7acedb585cc",
"subnet_id" : "300036af-a92f-4e9e-8e9f-7d20e7878b05",
"security_group_id" : "2dcfd40a-8f32-46b8-8a47-6cfab5eba163",
"flavor_ref" : "gaussdb.opengauss.ee.dn.m6.large.8.in",
"flavor_info" : {
  "vcpu" : 2,
  "mem" : 16
},
"switch_strategy" : "Reliability",
"charge_info" : {
  "charge_mode" : "prePaid"
},
}
```

```
"backup_strategy" : {
  "start_time" : "19:00-20:00",
  "keep_days" : 7
},
"maintenance_window" : "18:00-22:00",
"disk_encryption_id" : "24ae42b5-4009-4ea2-b66a-0b211e424dab",
"enterprise_project_id" : "6e76681b-a2f5-4c5f-97c5-ba4fd3c0dfb2",
"instance_mode" : "enterprise",
"time_zone" : "UTC+08:00",

"disk_usage" : "0.9890",
"mysql_compatibility" : {
  "port" : 3306
}
}, {
  "id" : "226b4afcfc84c86bf1b9cb345d3b00fin14",
  "status" : "ACTIVE",
  "name" : "UTS-gauss-ad53-2C3D",
  "port" : 8000,
  "type" : "enterprise",
  "ha" : {
    "consistency" : "strong",
    "replication_mode" : "sync"
  },
  "region" : "cn-xianhz-1",
  "datastore" : {
    "type" : "GaussDB",
    "version" : "V2.0-2.7",
    "complete_version" : "V2.0-2.7.2",
    "complete_kernel_version" : "V500R002C10SPC610",
    "target_version" : "V2.0-3.208.0",
    "hotfix_version_infos" : [ {
      "version" : "V2.0-2.7.2.1",
      "upgrade_finished_time" : "2020-12-23 03:21:41 UTC"
    }, {
      "version" : "V2.0-2.7.2.2",
      "upgrade_finished_time" : "2020-12-23 03:22:41 UTC"
    }
  ]
},
  "created" : "2021-01-08 09:18:27 UTC",
  "updated" : "2021-01-14 13:25:03 UTC",
  "volume" : {
    "type" : "ULTRAHIGH",
    "size" : 120
  },
  "nodes" : [ {
    "id" : "07538a1def584cee99e2a5685eeab36ano14",
    "name" : "UTS-gauss-ad53-2C3D_gaussdbv5dn3_1",
    "role" : "slave",
    "status" : "ACTIVE",
    "availability_zone" : "az2xahz",
    "component_names" : "dn_6009:60072"
  }, {
    "id" : "21f41baba1e2454f82331b7cb5aeabe5no14",
    "name" : "UTS-gauss-ad53-2C3D_gaussdbv5dn1_2",
    "role" : "master",
    "status" : "ACTIVE",
    "availability_zone" : "az2xahz",
    "component_names" : "dn_6008:60042"
  }, {
    "id" : "2909771a3b3e4e3998f9388e77d22391no14",
    "name" : "UTS-gauss-ad53-2C3D_gaussdbv5dn1_0",
    "role" : "slave",
    "status" : "ACTIVE",
    "availability_zone" : "az2xahz",
    "component_names" : "dn_6007:60011"
  }, {
    "id" : "2bd9a90a5da242a6b0743a7f597f6106no14",
    "name" : "UTS-gauss-ad53-2C3D_gaussdbv5dn2_2",
```

```
"role" : "master",
"status" : "ACTIVE",
"availability_zone" : "az2xahz",
"component_names" : "dn_6006:60042"
}, {
  "id" : "77092f1dad74d3ea13d28269cdd3590no14",
  "name" : "UTS-gauss-ad53-2C3D_gaussdbv5dn2_2",
  "role" : "master",
  "status" : "ACTIVE",
  "availability_zone" : "az2xahz",
  "component_names" : "dn_6005:60072"
}, {
  "id" : "a46bfaa6d5a24355a60fce7432b964cano14",
  "name" : "UTS-gauss-ad53-2C3D_gaussdbv5dn3_0",
  "role" : "slave",
  "status" : "ACTIVE",
  "availability_zone" : "az2xahz",
  "component_names" : "dn_6004:60072"
}, {
  "id" : "aa5277736f3844e2a7adeb9de529e2b1no14",
  "name" : "UTS-gauss-ad53-2C3D_gaussdbv5dn2_1",
  "role" : "slave",
  "status" : "ACTIVE",
  "availability_zone" : "az2xahz",
  "component_names" : "dn_6003:60042"
}, {
  "id" : "b1d798e4ea7344dfa95032984bc6cfd7no14",
  "name" : "UTS-gauss-ad53-2C3D_gaussdbv5cn_1",
  "role" : "master",
  "status" : "ACTIVE",
  "availability_zone" : "az2xahz",
  "component_names" : "cn_5002:"
}, {
  "id" : "b9a46540186f4c0781eabaa2a79594cbno14",
  "name" : "UTS-gauss-ad53-2C3D_gaussdbv5dn1_1",
  "role" : "slave",
  "status" : "ACTIVE",
  "availability_zone" : "az2xahz",
  "component_names" : "dn_6002:60011"
}, {
  "id" : "d283813030364060ab64371d50294977no14",
  "name" : "UTS-gauss-ad53-2C3D_gaussdbv5dn2_0",
  "role" : "slave",
  "status" : "ACTIVE",
  "availability_zone" : "az2xahz",
  "component_names" : "dn_6001:60042"
}, {
  "id" : "eb7bce29b2284cd290405eaddc1b1a1eno14",
  "name" : "UTS-gauss-ad53-2C3D_gaussdbv5cn_0",
  "role" : "master",
  "status" : "FAILED",
  "availability_zone" : "az2xahz",
  "component_names" : "cn_5001:"
} ],
"private_ips" : [ "192.168.30.44 / 192.168.29.231" ],
"public_ips" : [ "10.154.217.248" ],
"db_user_name" : "root",
"vpc_id" : "5f84a5c4-2f93-41de-8359-d7acedb585cc",
"subnet_id" : "300036af-a92f-4e9e-8e9f-7d20e7878b05",
"security_group_id" : "2dcfd40a-8f32-46b8-8a47-6cfab5eba163",
"flavor_ref" : "gaussdb.opengauss.ee.dn.m6.large.8.in",
"flavor_info" : {
  "vcpu" : 2,
  "mem" : 16
},
"switch_strategy" : "Reliability",
"charge_info" : {
  "charge_mode" : "prePaid"
},
}
```

```
"backup_strategy" : {
  "start_time" : "18:00-19:00",
  "keep_days" : 7
},
"maintenance_window" : "18:00-22:00",
"enterprise_project_id" : "0",
"instance_mode" : "enterprise",
"time_zone" : "UTC+08:00",
"disk_usage" : "1.0000",
"mysql_compatibility" : {
  "port" : 3306
}
}, {
  "id" : "706c65c3dd7d497ab16f5b3a113690abin14",
  "status" : "ACTIVE",
  "name" : "UTS-gauss-7362",
  "port" : 8000,
  "type" : "enterprise",
  "ha" : {
    "replication_mode" : "sync"
  },
  "region" : "cn-xianhz-1",
  "datastore" : {
    "type" : "GaussDB",
    "version" : "2.7",
    "complete_version" : "2.7.2",
    "complete_kernel_version" : "V500R002C10SPC610",
    "target_version" : "3.208.0",
    "hotfix_version_infos" : [ {
      "version" : "2.7.2.1",
      "upgrade_finished_time" : "2020-12-23 03:21:41 UTC"
    }, {
      "version" : "2.7.2.2",
      "upgrade_finished_time" : "2020-12-23 03:22:41 UTC"
    } ]
  },
  "created" : "2020-12-23 03:21:41 UTC",
  "updated" : "2021-01-15 02:32:13 UTC",
  "volume" : {
    "type" : "ULTRAHIGH",
    "size" : 80
  },
  "nodes" : [ {
    "id" : "25b7f16ee4084b7884d52f1bdfab4e68no14",
    "name" : "UTS-gauss-7362_gaussdbv5dn1_2",
    "role" : "master",
    "status" : "ACTIVE",
    "availability_zone" : "az2xahz",
    "component_names" : "dn_6003:60011"
  }, {
    "id" : "ad6f02f31744422fa8ce487e81c9e7afno14",
    "name" : "UTS-gauss-7362_gaussdbv5cn_0",
    "role" : "master",
    "status" : "ACTIVE",
    "availability_zone" : "az2xahz",
    "component_names" : "cn_5001:"
  }, {
    "id" : "b30c56582bf44a548e3bb5b5af6c4773no14",
    "name" : "UTS-gauss-7362_gaussdbv5dn1_1",
    "role" : "slave",
    "status" : "ACTIVE",
    "availability_zone" : "az2xahz",
    "component_names" : "dn_6002:60011"
  }, {
    "id" : "f79ea0600cba42b2888bd9bd67e52a79no14",
    "name" : "UTS-gauss-7362_gaussdbv5dn1_0",
    "role" : "slave",
    "status" : "ACTIVE",
    "availability_zone" : "az2xahz",
```

```
"component_names" : "dn_6001:60011"
}],
"private_ips" : [ "192.168.26.70" ],
"public_ips" : [ ],

"db_user_name" : "root",
"vpc_id" : "5f84a5c4-2f93-41de-8359-d7acedb585cc",
"subnet_id" : "300036af-a92f-4e9e-8e9f-7d20e7878b05",
"security_group_id" : "2dcfd40a-8f32-46b8-8a47-6cfab5eba163",
"flavor_ref" : "gaussdb.opengauss.ee.dn.m6.large.8.in",
"flavor_info" : {
  "vcpu" : 2,
  "mem" : 16
},
"switch_strategy" : "Reliability",
"charge_info" : {
  "charge_mode" : "postPaid"
},
"backup_strategy" : {
  "start_time" : "16:00-17:00",
  "keep_days" : 7
},
"maintenance_window" : "18:00-22:00",
"enterprise_project_id" : "0",
"instance_mode" : "enterprise",
"time_zone" : "UTC+08:00",
"disk_usage" : "0.9940",
"mysql_compatibility" : {
  "port" : 3306
}
}, {
  "id" : "4ad42d079a3948d88c28d6236211b21ein14",
  "status" : "ACTIVE",
  "name" : "UTS-gauss-4336",
  "port" : 8000,
  "type" : "enterprise",
  "ha" : {
    "replication_mode" : "sync"
  },
  "region" : "cn-xianhz-1",
  "datastore" : {
    "type" : "GaussDB",
    "version" : "2.7",
    "complete_version" : "2.7.2",
    "complete_kernel_version" : "V500R002C10SPC610",
    "target_version" : "3.208.0",
    "hotfix_version_infos" : [ {
      "version" : "2.7.2.1",
      "upgrade_finished_time" : "2020-12-23 03:21:41 UTC"
    }, {
      "version" : "2.7.2.2",
      "upgrade_finished_time" : "2020-12-23 03:22:41 UTC"
    }
  ]
},
"created" : "2020-12-03 14:28:53 UTC",
"updated" : "2021-01-14 13:20:10 UTC",
"volume" : {
  "type" : "ULTRAHIGH",
  "size" : 40
},
"nodes" : [ {
  "id" : "254dbda6f03643519ad64b39481bd11cno14",
  "name" : "UTS-gauss-4336_gaussdbv5dn1_2",
  "role" : "master",
  "status" : "ACTIVE",
  "availability_zone" : "az1xahz",
  "component_names" : "dn_6001:60011"
}, {
  "id" : "6ad76d4db26443c2a93b280739a31558no14",
```

```
"name" : "UTS-gauss-4336_gaussdbv5dn1_1",
"role" : "slave",
"status" : "ACTIVE",
"availability_zone" : "az1xahz",
"component_names" : "dn_6002:60011"
}, {
  "id" : "9fdebfb821bdf444a8689b19c0ff588ceno14",
  "name" : "UTS-gauss-4336_gaussdbv5cn_0",
  "role" : "master",
  "status" : "FAILED",
  "availability_zone" : "az1xahz",
  "component_names" : "cn_5001:"
}, {
  "id" : "dd64bdbbc02a542d88823b1582f772d25no14",
  "name" : "UTS-gauss-4336_gaussdbv5cn_1",
  "role" : "master",
  "status" : "ACTIVE",
  "availability_zone" : "az1xahz",
  "component_names" : "cn_5002:"
}, {
  "id" : "de3c41461045466faf6c2b96eb709540no14",
  "name" : "UTS-gauss-4336_gaussdbv5dn1_0",
  "role" : "slave",
  "status" : "ACTIVE",
  "availability_zone" : "az1xahz",
  "component_names" : "dn_6001:60011"
}
],
"private_ips" : [ "192.168.30.93 / 192.168.29.232" ],
"public_ips" : [ ],
"db_user_name" : "root",
"vpc_id" : "5f84a5c4-2f93-41de-8359-d7acedb585cc",
"subnet_id" : "300036af-a92f-4e9e-8e9f-7d20e7878b05",
"security_group_id" : "2dcfd40a-8f32-46b8-8a47-6cfab5eba163",
"flavor_ref" : "gaussdb.opengauss.ee.dn.m6.large.8.in",
"flavor_info" : {
  "vcpu" : 2,
  "mem" : 16
},
"switch_strategy" : "Reliability",
"charge_info" : {
  "charge_mode" : "postPaid"
},
"backup_strategy" : {
  "start_time" : "18:00-19:00",
  "keep_days" : 7
},
"maintenance_window" : "18:00-22:00",
"enterprise_project_id" : "0",
"instance_mode" : "basic",
"time_zone" : "UTC+08:00",
"disk_usage" : "1.0000",
"mysql_compatibility" : {
  "port" : 3306
}
}
}],
"total_count" : 4
}
```

- Instance details queried.

```
{
  "instances" : [ {
    "id" : "706c65c3dd7d497ab16f5b3a113690abin14",
    "status" : "ACTIVE",
    "name" : "UTS-gauss-7362",
    "port" : 8000,
    "type" : "enterprise",
    "ha" : {
      "replication_mode" : "sync"
    },
  },
  "region" : "cn-xianhz-1",
}
```



```
"datastore" : {
  "type" : "GaussDB",
  "version" : "2.7",
  "complete_version" : "2.7.2",
  "complete_kernel_version" : "V500R002C10SPC610",
  "target_version" : "3.208.0",
  "hotfix_version_infos" : [ {
    "version" : "2.7.2.1",
    "upgrade_finished_time" : "2020-12-23 03:21:41 UTC"
  }, {
    "version" : "2.7.2.2",
    "upgrade_finished_time" : "2020-12-23 03:22:41 UTC"
  } ]
},
"created" : "2020-12-23 03:21:41 UTC",
"updated" : "2021-01-15 02:32:13 UTC",
"volume" : {
  "type" : "ULTRAHIGH",
  "size" : 80
},
"nodes" : [ {
  "id" : "25b7f16ee4084b7884d52f1bdfab4e68no14",
  "name" : "UTS-gauss-7362_gaussdbv5dn1_2",
  "role" : "master",
  "status" : "ACTIVE",
  "availability_zone" : "az2xahz",
  "component_names" : "dn_6003:60011"
}, {
  "id" : "ad6f02f31744422fa8ce487e81c9e7afno14",
  "name" : "UTS-gauss-7362_gaussdbv5cn_0",
  "role" : "master",
  "status" : "ACTIVE",
  "availability_zone" : "az2xahz",
  "component_names" : "cn_6004:"
}, {
  "id" : "b30c56582bf44a548e3bb5b5af6c4773no14",
  "name" : "UTS-gauss-7362_gaussdbv5dn1_1",
  "role" : "slave",
  "status" : "ACTIVE",
  "availability_zone" : "az2xahz",
  "component_names" : "dn_6002:60011"
}, {
  "id" : "f79ea0600cba42b2888bd9bd67e52a79no14",
  "name" : "UTS-gauss-7362_gaussdbv5dn1_0",
  "role" : "slave",
  "status" : "ACTIVE",
  "availability_zone" : "az2xahz",
  "component_names" : "dn_6001:60011"
} ],
"private_ips" : [ "192.168.26.70" ],
"public_ips" : [ ],
"db_user_name" : "root",
"vpc_id" : "5f84a5c4-2f93-41de-8359-d7acedb585cc",
"subnet_id" : "300036af-a92f-4e9e-8e9f-7d20e7878b05",
"security_group_id" : "2dcfd40a-8f32-46b8-8a47-6cfab5eba163",
"flavor_ref" : "gaussdb.opengauss.ee.dn.m6.large.8.in",
"flavor_info" : {
  "vcpu" : 2,
  "mem" : 16
},
"switch_strategy" : "Reliability",
"charge_info" : {
  "charge_mode" : "postPaid"
},
"backup_strategy" : {
  "start_time" : "16:00-17:00",
  "keep_days" : 7
},
"maintenance_window" : "18:00-22:00",
```

```
"disk_encryption_id" : "",
"enterprise_project_id" : "0",
"instance_mode" : "enterprise",
"time_zone" : "UTC+08:00",
"disk_usage" : "0.9670"
}],
"total_count" : 1
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.6 Resetting a Database Password

### Function

This API is used to reset a database password. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

POST [https://{{Endpoint}}/v3/{{project\\_id}}/instances/{{instance\\_id}}/password](https://{{Endpoint}}/v3/{{project_id}}/instances/{{instance_id}}/password)

**Table 4-68** Parameter description

Name	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	DB instance ID.

## Request Parameters

**Table 4-69** Parameter description

Name	Mandatory	Type	Description
password	Yes	String	Password for user <b>root</b> . The password must: <ul style="list-style-type: none"><li>• Consist of 8 to 32 characters.</li><li>• Contain at least three types of the following characters: Uppercase letters, lowercase letters, digits, and the following special characters: ~! @# %^*-_ =+?,</li><li>• Support weak password verification.</li></ul>

## Response Parameters

None

## Example Request

Changing the password of user **root**

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfsae3435in01/password
{
  "password": "*****"
}
```

## Example Response

```
{}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.7 Changing a DB Instance Name

### Function

This API is used to change an instance name. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

PUT [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/name](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/name)

**Table 4-70** Parameter description

Name	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	Instance ID.

### Request Parameters

**Table 4-71** Parameter description

Name	Mandatory	Type	Description
name	Yes	String	DB instance name. Instances can have same names under the same tenant. The name must consist of 4 to 64 characters and start with a letter. It can contain only letters (case-sensitive), digits, hyphens (-), and underscores (_).

## Response Parameters

Table 4-72 Response parameters

Name	Type	Description
job_id	String	Task ID for changing the instance name.

## Example Request

Changing the instance name to **instance-name**

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfdsae3435in14/name
{
  "name": "instance-name"
}
```

## Example Response

```
{
  "job_id": "2b414788a6004883a02390e2eb0ea227"
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.8 Rebooting a DB Instance

### Function

This API is used to reboot a DB instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

The instance cannot reboot when it is being created, scaled, restored, frozen, or its instance specifications is being changed.

## URI

POST `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/restart`

**Table 4-73** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	String	Instance ID.

## Request Parameters

None

## Response Parameters

**Table 4-74** Response parameters

Parameter	Type	Description
job_id	String	Task ID.

## Example Request

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfsae3435in14/restart
```

## Example Response

```
{  
  "job_id": "2b414788a6004883a02390e2eb0ea227"  
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.9 Switching Roles of the Primary and Standby DN in Shards

### Function

This API is used to perform a primary/standby DN switchover for one or more shards. In a shard, only one standby node can be promoted to primary. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

POST [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/switch-shard](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/switch-shard)

**Table 4-75** Parameter description

Name	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	DB instance ID.

## Request Parameters

**Table 4-76** Parameter description

Name	Mandatory	Type	Description
shards	Yes	Array	Nodes. You can switch standby DN's of multiple shards to primary DN's. The node information is the node IDs and component IDs of shards whose standby DN's are promoted to primary. For details, see <a href="#">Table 4-77</a> .

**Table 4-77** shards parameter description

Name	Mandatory	Type	Description
node_id	Yes	String	ID of the node where the standby DN to be promoted to primary is deployed.
component_id	Yes	String	ID of the standby DN to be promoted to primary. It contains up to 7 characters. It cannot be null, an empty string or spaces. Before verifying and using it, spaces are automatically filtered out. The value contains at least three types of the following: uppercase letters, lowercase letters, digits, and underscores (_). For details about how to obtain the component ID, see <a href="#">Querying the Components of a DB Instance</a> .



## Response Parameters

**Table 4-78** Response parameters

Name	Type	Description
job_id	String	ID of the task for switching standby DN's of multiple shards to primary DN's.

## Example Request

Switching roles of primary and standby DN's in multiple shards

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0c8243400d37468bb4aed3cc94c2911d/instances/f9b5f9b296ec6808e067in14/switch-shard
{
  "shards": [
    {
      "node_id": "0bc478b4d132494a8f7b804da521b4b2no14",
      "component_id": "dn_6001"
    },
    {
      "node_id": "53dee94c50574d36a0060db0a6b644f6no14",
      "component_id": "dn_6004"
    }
  ]
}
```

## Example Response

Roles of the primary and standby DN's in the shards switched.

```
{
  "job_id": "e96bbb23-e053-4bd0-b0b7-16ad3f5d9b6d"
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.10 Querying the Components of a DB Instance

### Function

This API is used to query components of a DB instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

## URI

GET [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/components](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/components)

**Table 4-79** Parameter description

Name	Type	Mandatory	Description
project_id	String	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	String	Yes	DB instance ID.
limit	Integer	No	Number of records to be queried. The default value is <b>100</b> . The value cannot be a negative number. The minimum value is <b>1</b> and the maximum value is <b>100</b> . For example, if this parameter is set to <b>10</b> , a maximum of 10 records can be displayed.
offset	Integer	No	Index offset. If <b>offset</b> is set to <i>N</i> , the resource query starts from the <i>N+1</i> data entry. The default value is <b>0</b> , indicating that the query starts from the first data entry. The value cannot be a negative number. For example, if this parameter is set to <b>0</b> and <b>limit</b> is set to <b>10</b> , only the 1st to 10th records are displayed.

Name	Type	Mandatory	Description
component_type	String	No	Component type. If this parameter is <b>ALL</b> (default value), all types of components are queried. <b>CM</b> : CMS components. Value: <ul style="list-style-type: none"> <li>• <b>ALL</b></li> <li>• <b>CN</b></li> <li>• <b>DN</b></li> <li>• <b>CM</b></li> <li>• <b>GTM</b></li> <li>• <b>ETCD</b></li> </ul>
availability_zone_id	String	No	ID of the AZ where the primary component is located. The default value is <b>ALL</b> , indicating that component information of nodes in all AZs of the instance is queried. When you query the AZ where a primary DN is located, the information of all DNs in the same shard as the primary DN is displayed. When you query the AZ where a CN is located, only the CN information in the AZ is displayed. When you query the AZ where a component (except CNs or DNs) is located, information about all components of the same type is returned. If there is no such a component, no information is returned.

## Request Parameters

None

## Response Parameters

**Table 4-80** Parameter description

Name	Type	Description
nodes	Array of objects	Component details. For details, see <a href="#">Table 4-81</a> .
total_count	Integer	Total number of records.

**Table 4-81** nodes description

Name	Type	Description
id	String	Node ID.
components	Array of objects	Component information under the instance node. For details, see <a href="#">Table 4-82</a> .
name	String	Node name.
availability_zone_id	String	Code of the AZ where the node is located.
description	String	AZ description.
status	String	Node status.

**Table 4-82** components description

Name	Type	Description
id	String	Component ID. <ul style="list-style-type: none"><li>• Global Transaction Manager (GTM): manages the status of transactions.</li><li>• Cluster Management Server (CMS): manages the instance status.</li><li>• Data node (DN): stores and queries table data.</li><li>• Coordinator node (CN): stores database metadata, distributes and executes query tasks, and then returns the query results from DNs to applications.</li><li>• Editable Text Configuration Daemon (ETCD): serves as a distributed key-value storage system used for configuration sharing and service discovery (registration and search).</li></ul>
role	String	Node role. <ul style="list-style-type: none"><li>• <b>master</b>: primary node</li><li>• <b>slave</b>: standby node</li></ul>

Name	Type	Description
status	String	Component status. <ul style="list-style-type: none"><li>● <b>Primary</b>: primary component</li><li>● <b>Normal</b>: The component is normal.</li><li>● <b>Down</b>: The component is abnormal.</li><li>● <b>Standby</b>: standby component</li><li>● <b>StateFollower</b>: standby ETCD</li><li>● <b>StateLeader</b>: primary ETCD</li><li>● <b>StateCandidate</b>: arbitration ETCD</li></ul>
distributed_id	String	Group ID. This parameter is used to identify DNs in the same shard. For other components, the value is an empty string.
type	String	Node type. Value: <b>DN</b> , <b>CN</b> , <b>GTM</b> , <b>CM</b> , or <b>ETCD</b> .
detail	String	Details.

## Example Request

Querying the components of a DB instance

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dd93e98e103b4fc4b5a978a6bd6f03a9in14/components
```

## Example Response

Components of the primary/standby instance queried.

```
{
  "nodes": [
    {
      "components": [
        {
          "id": "cm_1",
          "role": "master",
          "status": "Primary",
          "distributed_id": "",
          "type": "CM",
          "detail": ""
        },
        {
          "id": "etcd_7001",
          "role": "master",
          "status": "StateLeader",
          "distributed_id": "",
          "type": "ETCD",
          "detail": ""
        },
        {
          "id": "dn_6001",
          "role": "master",
          "status": "Primary",
          "distributed_id": "60011",
        }
      ]
    }
  ]
}
```

```
        "type": "DN",
        "detail": "Normal"
    }
},
"id": "7d19f72f8f514564bd92962a6fbddb7dno14",
"name": "gauss-9e1a_root_0",
"availability_zone_id": "cn-southwest-244a",
"description": "az1",
"status": "normal"
},
{
  "components": [
    {
      "id": "cm_3",
      "role": "slave",
      "status": "Standby",
      "distributed_id": "",
      "type": "CM",
      "detail": ""
    },
    {
      "id": "etcd_7003",
      "role": "slave",
      "status": "StateFollower",
      "distributed_id": "",
      "type": "ETCD",
      "detail": ""
    },
    {
      "id": "dn_6003",
      "role": "slave",
      "status": "Standby",
      "distributed_id": "60011",
      "type": "DN",
      "detail": "Normal"
    }
  ],
  "id": "aafc2e14234d4c9eadb481fb0a09a865no14",
  "name": "gauss-9e1a_root_2",
  "availability_zone_id": "cn-southwest-244a",
  "description": "az1",
  "status": "normal"
},
{
  "components": [
    {
      "id": "cm_2",
      "role": "slave",
      "status": "Standby",
      "distributed_id": "",
      "type": "CM",
      "detail": ""
    },
    {
      "id": "etcd_7002",
      "role": "slave",
      "status": "StateFollower",
      "distributed_id": "",
      "type": "ETCD",
      "detail": ""
    },
    {
      "id": "dn_6002",
      "role": "slave",
      "status": "Standby",
      "distributed_id": "60011",
      "type": "DN",
      "detail": "Normal"
    }
  ]
}
```

```
    ],
    "id": "d6c6c6e6b48c41d79d99d7240751d744no14",
    "name": "gauss-9e1a_root_1",
    "availability_zone_id": "cn-southwest-244a",
    "description": "az1",
    "status": "normal"
  }
],
"total_count": 3
}
```

Components of the distributed instance in the independent deployment queried.

```
{
  "nodes": [
    {
      "components": [
        {
          "id": "cn_5001",
          "role": "master",
          "status": "Normal",
          "distributed_id": "",
          "type": "CN",
          "detail": ""
        }
      ],
      "id": "e0c39a9b9e91421cacbf75c47e0c9dno14",
      "name": "gauss-6b36_gaussdbv5cn_0",
      "hostname": null,
      "availability_zone_id": "cn-southwest-244a",
      "description": "az1",
      "status": "normal"
    },
    {
      "components": [
        {
          "id": "gtm_1002",
          "role": "slave",
          "status": "Standby",
          "distributed_id": "",
          "type": "GTM",
          "detail": "Connection ok"
        }
      ],
      "id": "a19a1844ab93407489d8a63ca298f908no14",
      "name": "gauss-6b36_gaussdbv5gtm_0",
      "hostname": null,
      "availability_zone_id": "cn-southwest-244a",
      "description": "az1",
      "status": "normal"
    },
    {
      "components": [
        {
          "id": "gtm_1003",
          "role": "slave",
          "status": "Standby",
          "distributed_id": "",
          "type": "GTM",
          "detail": "Connection ok"
        }
      ],
      "id": "fd949ad6b00c4d72b7af5f015817d4d9no14",
      "name": "gauss-6b36_gaussdbv5gtm_1",
      "hostname": null,
      "availability_zone_id": "cn-southwest-244b",
      "description": "az2",
      "status": "normal"
    },
    {
      "components": [
```

```
{
  {
    "id": "cm_2",
    "role": "slave",
    "status": "Standby",
    "distributed_id": "",
    "type": "CM",
    "detail": ""
  },
  {
    "id": "etcd_7002",
    "role": "slave",
    "status": "StateFollower",
    "distributed_id": "",
    "type": "ETCD",
    "detail": ""
  }
],
"id": "ac7e24fc9626479c96ab6215f2107faeno14",
"name": "gauss-6b36_gaussdbv5cms_1",
"hostname": null,
"availability_zone_id": "cn-southwest-244b",
"description": "az2",
"status": "normal"
},
{
  "components": [
    {
      "id": "dn_6001",
      "role": "master",
      "status": "Primary",
      "distributed_id": "60011",
      "type": "DN",
      "detail": "Normal"
    }
  ]
},
"id": "0989068696f94631a45b3f2b13ac7810no14",
"name": "gauss-6b36_gaussdbv5dn1_0",
"hostname": null,
"availability_zone_id": "cn-southwest-244a",
"description": "az1",
"status": "normal"
},
{
  "components": [
    {
      "id": "cm_1",
      "role": "master",
      "status": "Primary",
      "distributed_id": "",
      "type": "CM",
      "detail": ""
    },
    {
      "id": "etcd_7001",
      "role": "master",
      "status": "StateFollower",
      "distributed_id": "",
      "type": "ETCD",
      "detail": ""
    }
  ]
},
"id": "912ca1f9f12f41968d60d82a7f630bedno14",
"name": "gauss-6b36_gaussdbv5cms_2",
"hostname": null,
"availability_zone_id": "cn-southwest-244c",
"description": "az3",
"status": "normal"
},
{
```



```
"components": [
  {
    "id": "dn_6002",
    "role": "slave",
    "status": "Standby",
    "distributed_id": "60011",
    "type": "DN",
    "detail": "Normal"
  }
],
"id": "365261e60ac14dff846480e8cc555d66no14",
"name": "gauss-6b36_gaussdbv5dn1_1",
"hostname": null,
"availability_zone_id": "cn-southwest-244b",
"description": "az2",
"status": "normal"
},
{
  "components": [
    {
      "id": "dn_6003",
      "role": "slave",
      "status": "Standby",
      "distributed_id": "60011",
      "type": "DN",
      "detail": "Normal"
    }
  ],
  "id": "3ce7e13a25524e7b81d78cad9afd9464no14",
  "name": "gauss-6b36_gaussdbv5dn1_2",
  "hostname": null,
  "availability_zone_id": "cn-southwest-244c",
  "description": "az3",
  "status": "normal"
},
{
  "components": [
    {
      "id": "cm_3",
      "role": "slave",
      "status": "Standby",
      "distributed_id": "",
      "type": "CM",
      "detail": ""
    },
    {
      "id": "etcd_7003",
      "role": "slave",
      "status": "StateLeader",
      "distributed_id": "",
      "type": "ETCD",
      "detail": ""
    }
  ],
  "id": "e0deb77337604d149a76ce02b5060d86no14",
  "name": "gauss-6b36_gaussdbv5cms_0",
  "hostname": null,
  "availability_zone_id": "cn-southwest-244a",
  "description": "az1",
  "status": "normal"
},
{
  "components": [
    {
      "id": "gtm_1001",
      "role": "master",
      "status": "Primary",
      "distributed_id": "",
      "type": "GTM",
```

```
        "detail": "Connection ok"
      }
    ],
    "id": "9a88dc2a3f3e4f8c844f86dc032fde84no14",
    "name": "gauss-6b36_gaussdbv5gtm_2",
    "hostname": null,
    "availability_zone_id": "cn-southwest-244c",
    "description": "az3",
    "status": "normal"
  }
],
"total_count": 10
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.11 Changing the vCPUs and Memory of a DB Instance

### Function

This API is used to change the vCPUs and memory of a DB instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

- The OS architecture of the new specifications must be the same as that of the old specifications.

### URI

PUT [https://{Endpoint}/v3/{project\\_id}/instance/{instance\\_id}/flavor](https://{Endpoint}/v3/{project_id}/instance/{instance_id}/flavor)

**Table 4-83** Parameter description

Name	Mandatory	Description
project_id	Yes	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
instance_id	Yes	Instance ID.

## Request Parameters

**Table 4-84** Parameter description

Name	Mandatory	Type	Description
flavor_ref	Yes	String	<p>New specification code. To obtain its value, see the <b>Specification Code</b> column in <a href="#">Table 7-4</a>.</p> <p>To obtain its value, see <a href="#">Querying Instance Specifications</a>.</p>
is_auto_pay	No	Boolean	<p>Whether the order will be automatically paid after yearly/monthly instances are created. This parameter does not affect the payment mode of automatic renewal.</p> <ul style="list-style-type: none"> <li><b>true:</b> indicates that the order is automatically paid from the account.</li> <li><b>false:</b> indicates that the order is manually paid from the account. The default value is <b>false</b>.</li> </ul>

## Response Parameters

Table 4-85 Response parameter description

Name	Type	Description
job_id	String	ID of changing instance specifications. This parameter is returned only when DB instances are billed at a pay-per-use basis.
order_id	String	Order ID. This parameter is returned only when you change the specifications of a yearly/monthly instance.

## Example Request

Changing the specifications of a pay-per-use instance to 16 vCPUs and 128 GB

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/
opengauss/v3/0483b6b16e954cb88930a360d2c4e663/instance/dsfae23fsdsae3435in14/flavor
{
  "flavor_ref": "gaussdb.opengauss.ee.dn.m6.4xlarge.8.in"
}
```

Changing the specifications of a yearly/monthly DB instance from 8 vCPUs and 64 GB to 16 vCPUs and 128 GB

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/
opengauss/v3/0483b6b16e954cb88930a360d2c4e663/instance/dsfae23fsdsae3435in14/flavor
{
  "flavor_ref": "gaussdb.opengauss.ee.dn.m6.4xlarge.8.in",
  "is_auto_pay": true
}
```

## Example Response

Instance specifications changed.

```
{
  "job_id": "2b414788a6004883a02390e2eb0ea227"
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.12 Checking Whether Host Load Is Unbalanced Due to a Primary/Standby Switchover

### Function

This API is used to check whether the host load is unbalanced due to a primary/standby switchover. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/balance](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/balance)

**Table 4-86** Parameter description

Name	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	DB instance ID.

### Request Parameters

None

## Response Parameters

**Table 4-87** Parameter description

Name	Type	Description
balanced	Boolean	Whether the host load is unbalanced due to a primary/standby switchover. <ul style="list-style-type: none"><li>● <b>true</b>: balanced.</li><li>● <b>false</b>: unbalanced.</li></ul>

## Example Request

Checking whether host load is unbalanced due to a primary/standby switchover

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/opengauss/v3/0483b6b16e954cb88930a360d2c4e663/instance/dsfae23fsfsae3435in14/balance
```

## Example Response

The host load is balanced.

```
{  "balanced": true}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.13 Querying Solution Template Settings

### Function

This API is used to query the number of replicas, shards, and nodes corresponding to a specified instance or deployment mode. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

## Constraints

The request parameters **solution** and **instance\_id** cannot be both empty. If the parameters are both configured, the value of **instance\_id** is used.

## URI

GET [https://{Endpoint}/v3/{project\\_id}/deployment-form](https://{Endpoint}/v3/{project_id}/deployment-form)

**Table 4-88** Parameter description

Name	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	No	DB instance ID.
solution	No	Solution template name. <b>triset:</b> HA (1 primary + 2 standby)

## Request Parameters

None

## Response Parameters

**Table 4-89** Parameter description

Name	Type	Description
initial_node_num	Integer	Number of initial nodes. If <b>solution</b> is set to <b>triset</b> , this parameter is returned. Otherwise, <b>null</b> is returned.
solution	String	Solution template name.
shard_num	Integer	Number of shards.

Name	Type	Description
replica_num	Integer	Number of replicas.

## Example Request

Querying solution template settings

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/fff3cb7f644d4fc9a3c58f2bfe239b9e/deployment-form?solution=triset
```

## Example Response

Solution template settings queried.

```
{
  "initial_node_num" : 3,
  "solution" : "triset",
  "shard_num" : 1,
  "replica_num" : 3
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.14 Querying EIPs Bound to a DB Instance

### Function

This API is used to query EIPs bound to a DB instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

```
GET https://{Endpoint}/v3/{project_id}/instances/{instance_id}/public-ips?offset={offset}&limit={limit}
```



**Table 4-90** Parameter description

Name	Type	Mandatory	Description
project_id	String	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	String	Yes	DB instance ID.
offset	Integer	No	Index offset. If <b>offset</b> is set to <i>N</i> , the resource query starts from the <i>N</i> +1 data entry. The default value is <b>0</b> , indicating that the query starts from the first data entry. The value cannot be a negative number.
limit	Integer	No	Number of records to be queried. The default value is <b>50</b> . The value cannot be a negative number. The minimum value is <b>1</b> and the maximum value is <b>50</b> .

## Request Parameters

None

## Response Parameters

**Table 4-91** Parameter description

Name	Type	Description
public_ips	Array of objects	EIPs bound to an instance. For details, see <a href="#">Table 4-92</a> .
total_count	Integer	Total number of records.

**Table 4-92** public\_ips field data structure description

Name	Type	Description
public_ip_id	String	EIP ID.
public_ip_type	String	EIP type.
port_id	String	Port ID.
public_ip_addresses	String	EIP.
private_ip_addresses	String	Private IP address.
bandwidth_id	String	Bandwidth ID.
bandwidth_name	String	Bandwidth name.
bandwidth_share_type	String	Bandwidth sharing type.
bandwidth_size	Integer	Bandwidth range.
applied_at	String	Modification time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the offset is <b>+08:00</b> .

## Example Request

Querying EIPs bound to a DB instance

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/599628f2665841b2a66fa2780fad025/instances/e0984e23578c4296950336e613d99d32in14/public-ips?offset=0&limit=1
```

## Example Response

EIPs bound to the instance queried.

```
{
  "public_ips": [ {
    "public_ip_id": "78458261-5175-4254-8242-5959115d379a",
    "public_ip_type": "5_g-vm",
    "port_id": "a8d606bf-7e20-463d-afed-b7fc2909aa7d",
    "public_ip_address": "100.95.156.144",
    "private_ip_address": "192.168.0.133",
    "applied_at": "2022-08-09T03:06:52+0800",
    "bandwidth_id": "7ae23d75-3150-4957-94ae-9352b15f140e",
    "bandwidth_name": "Bandwidth_2021-12-08-16-39-27",
    "bandwidth_size": 5,
    "bandwidth_share_type": "PER"
  } ],
  "total_count": 1
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.15 Validating Password Strength

### Function

This API is used to verify the security of user **root** password. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

POST [https://{Endpoint}/v3/{project\\_id}/weak-password-verification](https://{Endpoint}/v3/{project_id}/weak-password-verification)

**Table 4-93** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

## Request Parameters

**Table 4-94** Parameter description

Name	Mandatory	Type	Description
password	Yes	String	Password of the database account.

## Response Parameters

**Table 4-95** Parameter description

Parameter	Type	Description
is_weak_password	Boolean	Whether the password is weak. <ul style="list-style-type: none"><li>• <b>true</b>: It is a weak password.</li><li>• <b>false</b>: It is not a weak password.</li></ul>

## Example Request

Checking whether the password of a database account is weak

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/weak-password-verification
{
  "password": "*****"
}
```

## Example Response

Weak password verification succeeded.

```
{
  "is_weak_password": false
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.16 Binding or Unbinding an EIP

### Function

This API is used to bind an EIP to an instance node or unbind an EIP from an instance node. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

POST [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/nodes/{node\\_id}/public-ip](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/nodes/{node_id}/public-ip)

**Table 4-96** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	Instance ID.
node_id	Yes	Node ID.

### Request Parameters

**Table 4-97** Parameter description

Parameter	Mandatory	Type	Description
action	Yes	String	Operation identifier. Value: <ul style="list-style-type: none"><li>• <b>BIND</b>: An EIP is bound.</li><li>• <b>UNBIND</b>: An EIP is unbound.</li></ul>
public_ip	Yes	String	EIP.

Parameter	Mandatory	Type	Description
public_ip_id	Yes	String	EIP ID.

## Response Parameters

Table 4-98 Parameter description

Parameter	Type	Description
job_id	String	Job ID.

## Example Request

- Binding an EIP to a GaussDB instance

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfdsae3435in14/nodes/0bc478b4d132494a8f7b804da521b4b2no14/public-ip
{
  "action": "BIND",
  "public_ip": "10.154.218.161",
  "public_ip_id": "45da4782-e0c8-4aa4-a290-b8740014f710"
}
```

- Unbinding an EIP from a GaussDB instance

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfdsae3435in14/nodes/0bc478b4d132494a8f7b804da521b4b2no14/public-ip
{
  "action": "UNBIND",
  "public_ip": "10.154.218.161",
  "public_ip_id": "45da4782-e0c8-4aa4-a290-b8740014f710"
}
```

## Example Response

EIP bounded or unbounded.

```
{
  "job_id": "2b414788a6004883a02390e2eb0ea227"
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.17 Querying the SSL Certificate Download Address of a DB Instance

### Function

This API is used to query the address for downloading the SSL certificate of a DB instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/ssl-cert/download-link](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/ssl-cert/download-link)

**Table 4-99** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	String	Instance ID.

### Request Parameters

None

## Response Parameters

**Table 4-100** Parameter description

Parameter	Type	Description
download_link	String	Download address of the SSL certificate.

## Example Request

Querying the address for downloading the SSL certificate of a DB instance

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfdsae3435in14/ssl-cert/download-link
```

## Example Response

Address for downloading the SSL certificate queried.

```
{
  "download_link": "https://***/Certificate_Download.zip"
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.18 Querying the Instance Quotas of a Tenant

### Function

This API is used to query the instance quotas of a tenant. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

```
GET https://{Endpoint}/v3/{project_id}/project-quotas
```



**Table 4-101** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>

## Request Parameters

None

## Response Parameters

**Table 4-102** Parameter description

Parameter	Type	Description
quotas	object	<p><b>Explanation:</b> Instance quota of a tenant. For details, see <a href="#">Table 4-103</a>.</p>

**Table 4-103** quotas

Parameter	Type	Description
resources	Array of objects	<p><b>Explanation:</b> Resource objects. For details, see <a href="#">Table 4-104</a>.</p>

**Table 4-104** resources

Parameter	Type	Description
type	String	<b>Explanation:</b> Quota of a specified type. <b>Value range:</b> <b>instance:</b> indicates the instance quota.
used	Integer	<b>Explanation:</b> Number of created resources. <b>Value range:</b> None
quota	Integer	<b>Explanation:</b> Maximum resource quota. <b>Value range:</b> None

## Example Request

Querying the instance quotas of a tenant

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/project-quotas
```

## Example Response

Instance quotas of the tenant queried.

```
{
  "quotas": {
    "resources": [ {
      "type": "instance",
      "used": 4,
      "quota": 50
    } ]
  }
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.19 Starting a DB Instance or Node

### Function

This API is used to start a DB instance or node. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

POST [https://{endpoint}/v3/{project\\_id}/instances/{instance\\_id}/db-startup](https://{endpoint}/v3/{project_id}/instances/{instance_id}/db-startup)

**Table 4-105** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	Instance ID.

### Request Parameters

**Table 4-106** Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to <a href="#">obtain a user token</a> . After the request is processed, the value of <b>X-Subject-Token</b> in the message header is the token value.

Parameter	Mandatory	Type	Description
X-Language	No	String	Language. Default value: <b>en-us</b> Value range: <ul style="list-style-type: none"> <li>• <b>zh-cn</b></li> <li>• <b>en-us</b></li> </ul>

**Table 4-107** Request body parameters

Parameter	Mandatory	Type	Description
node_ids	Yes	Array of strings	ID of the node to be started. The value cannot be null. If the value is left blank, the instance is started.

## Response Parameters

**Table 4-108** Parameter description

Parameter	Type	Description
job_id	String	ID of the asynchronous task for starting a DB instance or node.

**Table 4-109** Parameter description

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.

## Example Request

Starting a node

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/
cc94568cb5a54e4a8ab5dff95e64a5e0br14/instances/d8e6ca5a624745bcb546a227aa3ae1cfin14/db-startup
{
  "node_ids": ["187ff420e15c467eaaef226154eb1578no14","4ed9cbb0d61144e0802a82c0ab0e1de5no14"]
}
```

## Example Response

Node started.

```
{
  "job_id" : "bf26cf3c-d046-4080-bb45-f114be7afa5f"
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.20 Stopping a DB Instance or Node

### Function

This API is used to stop a DB instance or node. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

POST [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/db-stop](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/db-stop)

**Table 4-110** URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

Parameter	Mandatory	Type	Description
instance_id	Yes	String	ID of the instance to be stopped.

## Request Parameters

Table 4-111 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to <a href="#">obtain a user token</a> . After the request is processed, the value of <b>X-Subject-Token</b> in the message header is the token value.
X-Language	No	String	Language. Default value: <b>en-us</b> Values: <ul style="list-style-type: none"><li>• <b>zh-cn</b></li><li>• <b>en-us</b></li></ul>

Table 4-112 Request body parameters

Parameter	Mandatory	Type	Description
node_ids	Yes	Array of strings	ID of the node to be stopped. The value cannot be null. If the list is empty, the instance is stopped.

## Response Parameters

Table 4-113 Parameter description

Parameter	Type	Description
job_id	String	ID of the asynchronous task for stopping a DB instance or node.

**Table 4-114** Parameter description

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.

## Example Request

Stopping a DB instance and enabling Transparent Data Encryption

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/054e292c9880d4992f02c0196d3ea468/instances/d8e6ca5a624745bcb546a227aa3ae1cfin14/db-stop
{
  "node_ids": ["187ff420e15c467eaaef226154eb1578no14","4ed9cbb0d61144e0802a82c0ab0e1de5no14"]
}
```

## Example Response

Instance stopped.

```
{
  "job_id": "bf26cf3c-d046-4080-bb45-f114be7afa5f"
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.21 Enabling M Compatibility Port

### Function

This API is used to enable the M compatibility port. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

To enable this function, you need to ensure that there is the **templatem** template database in your DB instance. If there is no the template database, it will be automatically created. The **templatem** template database cannot be created for DB instances whose replica consistency protocol is Paxos.

## URI

POST [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/mysql-compatibility](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/mysql-compatibility)

**Table 4-115** URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
instance_id	Yes	String	Instance ID, which is compliant with the UUID format.

## Request Parameters

**Table 4-116** Request body parameters

Parameter	Mandatory	Type	Description
port	Yes	string	<p>Port for M compatibility. Value range: <b>1024 to 39989</b></p> <p>The following ports are used by the system and cannot be used: 2378, 2379, 2380, 2400, 4999, 5000, 5001, 5100, 5500, 5999, 6000, 6001, 6009, 6010, 6500, 8015, 8097, 8098, 8181, 9090, 9100, 9180, 9187, 9200, 12016, 12017, 20049, 20050, 21731, 21732, 32122, 32123, 32124, 32125, 32126, 39001, [Database port, Database port + 10].</p>



## Response Parameters

**Table 4-117** Parameter description

Parameter	Type	Description
job_id	String	Task ID.

## Example Request

Enabling M compatibility port and setting it to 3306

```
POST https://gaussdb-opengauss.ap-
southeast-1.myhuaweicloud.com/v3/619d3e78f61b4be68bc5aa0b59edcf7b/instances/
1bb786201ae54b179b45c17e0f332f4bin14/mysql-compatibility
{
  "port" : 3306
}
```

## Example Response

M compatibility port enabled.

```
{
  "job_id": "2b414788a6004883a02390e2eb0ea227"
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.22 Changing or Disabling M Compatibility Port

### Function

This API is used to change or disable the M compatibility port. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

To change or disable this function, you need to ensure that there is the **templatem** template database in your DB instance. If there is no the template

database, it will be automatically created. The **templatem** template database cannot be created for DB instances whose replica consistency protocol is Paxos.

## URI

PUT `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/mysql-compatibility`

**Table 4-118** URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	String	Instance ID, which is compliant with the UUID format.

## Request Parameters

**Table 4-119** Request body parameters

Parameter	Mandatory	Type	Description
port	Yes	string	<p>Port for M compatibility. Value range: <b>0</b> or <b>1024</b> to <b>39989</b></p> <ul style="list-style-type: none"> <li>The following ports are used by the system and cannot be used: 2378, 2379, 2380, 2400, 4999, 5000, 5001, 5100, 5500, 5999, 6000, 6001, 6009, 6010, 6500, 8015, 8097, 8098, 8181, 9090, 9100, 9180, 9187, 9200, 12016, 12017, 20049, 20050, 21731, 21732, 32122, 32123, 32124, 32125, 32126, 39001, [Database port, Database port + 10].</li> <li>If the value is 0, the port is disabled.</li> </ul>

## Response Parameters

**Table 4-120** Parameter description

Parameter	Type	Description
job_id	String	Task ID.

## Example Request

- Changing the M compatibility port to 3307

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/619d3e78f61b4be68bc5aa0b59edcf7b/instances/1bb786201ae54b179b45c17e0f332f4bin14/mysql-compatibility
{
  "port": "3307"
}
```

- Disabling M compatibility port

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/619d3e78f61b4be68bc5aa0b59edcf7b/instances/1bb786201ae54b179b45c17e0f332f4bin14/mysql-compatibility
{
  "port": "0"
}
```

## Example Response

M compatibility port changed or disabled.

```
{  
  "job_id": "2b414788a6004883a02390e2eb0ea227"  
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.23 Querying the Top I/O Threads

### Function

This API is used to query top I/O statistics of instance database processes and return the results associated with session information. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

The resource types and operating systems of instances must support the **pidstat** command.

### URI

GET [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/top-io-traffics?  
node\\_id={node\\_id}&component\\_id={component\\_id}&top\\_io\\_num={top\\_io\\_num}&  
ort\\_condition={sort\\_condition}](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/top-io-traffics?node_id={node_id}&component_id={component_id}&top_io_num={top_io_num}&sort_condition={sort_condition})

**Table 4-121** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
instance_id	Yes	String	Instance ID.
node_id	Yes	String	Node ID. It must be a DN node of a non-log role or a CN node, and the node status must be normal. To obtain the value, see <a href="#">Querying the Components of a DB Instance</a> .
component_id	Yes	String	<p>Component ID. It must be a CN or a DN component of a non-log role. To obtain the value, see <a href="#">Querying the Components of a DB Instance</a>.</p> <ul style="list-style-type: none"> <li>• Data node (DN): stores and queries table data.</li> <li>• Coordinator node (CN): stores database metadata, distributes and executes query tasks, and then returns the query results from DNs to applications.</li> </ul>

Parameter	Mandatory	Type	Description
top_io_num	No	Integer	Number of top I/O threads to be queried in the database process. The default value is <b>20</b> . The returned result includes information about the top I/O threads with associated session information. The number of records returned in the result cannot exceed the value of this parameter.
sort_condition	No	String	Top I/O sorting condition. Value: <ul style="list-style-type: none"> <li>• <b>read</b></li> <li>• <b>write</b></li> </ul>

## Request Parameters

None

## Response Parameters

**Table 4-122** Parameter description

Parameter	Type	Description
top_io_infos	Array of objects	I/O information. Each element in the list indicates an I/O record. For details, see <a href="#">Table 4-123</a> .

**Table 4-123** top\_io\_infos field data structure description

Parameter	Type	Description
thread_id	String	Thread ID.
thread_type	String	Thread type. The value can be <b>worker</b> or <b>background</b> . To use this parameter, set <b>enable_thread_pool</b> to <b>on</b> . Value: <ul style="list-style-type: none"> <li>• <b>worker</b></li> <li>• <b>background</b></li> </ul>
disk_read_rate	Integer	Rate of reading data from disks, in KB/s.

Parameter	Type	Description
disk_write_rate	Integer	Rate of writing data to the disk, in KB/s.
session_id	String	Session ID.
unique_sql_id	String	SQL ID.
database_name	String	Database.
client_ip	String	IP address of the client.
user_name	String	Username.
state	String	Status.
sql_start	Integer	Start time of the statement.

## Example Request

Top I/Os queried.

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/{instance_id}/top-io-traffics?node_id=42cbf784585e419d9eb33c005f4ced94no14&component_id=dn_6001&top_io_num=20&sort_condition=write
```

## Example Response

```
{
  "top_io_infos": [ {
    "thread_id": "55067",
    "thread_type": "worker",
    "disk_read_rate": 0,
    "disk_write_rate": 1.43,
    "session_id": "725",
    "unique_sql_id": "3545025713",
    "database_name": "postgres",
    "client_ip": "23.100.74.131",
    "user_name": "root",
    "state": "active",
    "sql_start": 1690448618689
  } ]
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.24 Querying CNs

### Function

This API is used to query CNs. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/coordinators](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/coordinators)

**Table 4-124** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	String	Instance ID, which is compliant with the UUID format.
offset	No	Integer	Index offset. If <b>offset</b> is set to <i>N</i> , the resource query starts from the <i>N</i> +1 data entry. The default value is <b>0</b> , indicating that the query starts from the first data entry. The value cannot be a negative number.
limit	No	Integer	Number of records to be queried. The default value is <b>200</b> . The value cannot be a negative number. The minimum value is <b>1</b> and the maximum value is <b>200</b> .



## Request Parameters

None

## Response Parameters

**Table 4-125** Response body parameters

Parameter	Type	Description
instance_id	String	Instance ID.
max_reduction_num	Integer	Maximum number of nodes that can be deleted at a time.
nodes	Array of <a href="#">Table 4-126</a> objects	Node information list.

**Table 4-126** CnInfoBeforeReduce

Parameter	Type	Description
id	String	Node ID.
name	String	Node name.
status	String	Node status. <ul style="list-style-type: none"><li>• <b>normal</b>: The node is normal.</li><li>• <b>abnormal</b>: The node is abnormal.</li><li>• <b>creating</b>: The node is being created.</li><li>• <b>createfail</b>: The node fails to be created.</li></ul>
availability_zone	String	AZ.
support_reduce	Boolean	Whether the node can be deleted.

## Example Request

Querying CNs

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/cc6fd964d93f4003851dfc29d57d30a5in14/coordinators
```

## Example Response

CNs queried.

```
{
  "instance_id" : "cc6fd964d93f4003851dfc29d57d30a5in14",
  "max_reduction_num" : 10,
  "nodes" : [ {
    "id" : "25b7f16ee4084b7884d52f1bdfab4e68no14",
    "name" : "UTS-gauss-7362_gaussdbv5cn_0",
    "status" : "normal",
    "availability_zone" : "az2",
    "support_reduce" : true
  }, {
    "id" : "ad6f02f31744422fa8ce487e81c9e7afno14",
    "name" : "UTS-gauss-7362_gaussdbv5cn_1",
    "status" : "normal",
    "availability_zone" : "az3",
    "support_reduce" : true
  } ]
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.25 Querying Storage Autoscaling Policies of a DB Instance

### Function

This API is used to query storage autoscaling policies of a DB instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/auto-enlarge-policy](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/auto-enlarge-policy)

**Table 4-127** URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	String	Instance ID, which is compliant with the UUID format.

## Request Parameters

None

## Response Parameters

**Table 4-128** Response body parameters

Parameter	Type	Description
switch_option	Boolean	Whether to enable or disable storage autoscaling.
limit_volume_size	Integer	Maximum storage that can be automatically scaled to.
min_volume_size	Integer	Minimum storage that can be automatically scaled to.
max_volume_size	Integer	Maximum storage that the system can provide for the instance.
trigger_available_percent	Integer	Percentage of available storage. The storage will be automatically scaled up if the available storage drops to or below the value of this parameter.

Parameter	Type	Description
percents	Array of integers	Percentages of available storage that you can choose from.
step_size	Integer	Scaling step when the storage is scaled by fixed size.
step_percent	Integer	Scaling step when the storage is scaled by percentage.

## Example Request

Querying storage autoscaling policies of a DB instance

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/054e292c9880d4992f02c0196d3ea468/instances/cc6fd964d93f4003851dfc29d57d30a5in14/auto-enlarge-policy
```

## Example Response

Storage autoscaling policies queried.

```
{
  "switch_option" : true,
  "limit_volume_size" : 200,
  "min_volume_size" : 160,
  "max_volume_size" : 240,
  "trigger_available_percent" : 20,
  "percents": [
    20,
    25,
    50
  ],
  "step_size": 200,
  "step_percent": null
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.26 Querying Advanced Features

### Function

This API is used to query the advanced features of the current instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

## URI

GET [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/advance-features](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/advance-features)

**Table 4-129** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	Instance ID.

## Request Parameters

**Table 4-130** Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to <a href="#">obtain a user token</a> . After the request is processed, the value of <b>X-Subject-Token</b> in the message header is the token value.
X-Language	No	String	Language. Default value: <b>en-us</b> Values: <ul style="list-style-type: none"><li>• <b>zh-cn</b></li><li>• <b>en-us</b></li></ul>

## Response Parameters

**Table 4-131** Response body parameters

Parameter	Type	Description
features	Array of <a href="#">Table 4 FeatureResult</a>	Advanced features.

**Table 4-132** FeatureResult

Parameter	Type	Description
name	String	Feature name.
status	String	Whether the feature is enabled. Value range: <ul style="list-style-type: none"><li>• <b>true</b></li><li>• <b>false</b></li></ul>
description	String	Feature description.
type	String	Feature value type. Value range: <ul style="list-style-type: none"><li>• <b>integer</b></li><li>• <b>string</b></li><li>• <b>boolean</b></li></ul>
value	String	Feature value.
range	String	Feature value range.
range_description	String	Feature scope description.

### Example Request

Querying the advanced features of the current instance and checking whether each feature is enabled

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/e73893ef73754465a8bd2e0857bbf13ein14/advance-features
```

### Example Response

```
{  "features": [    {      "name": "ledger",
```

```
    "status": "off",
    "description": "anti-proof database,"
    "type": "boolean",
    "range": "on|off",
    "value": "off",
    "range_description": "Whether to enable the ledger database function. The value on indicates the
function is enabled, and the value off indicates that the function is disabled. If it is enabled, a new tamper-
proof mode can be created and the common mode can be changed to the tamper-proof mode.
  },
  {
    "name": "ilm",
    "status": "off",
    "description": " Advanced compression",
    "type": "boolean",
    "range": "on|off",
    "value": "off",
    "range_description": "Whether to enable OLTP table compression for data lifecycle management.
The value on indicates that the function is enabled, and the value off indicates that the function is disabled."
  },
  {
    "name": "security",
    "status": "off",
    "description": " Dynamic data masking",
    "type": "boolean",
    "range": "on|off",
    "value": "off",
    "range_description": "Set this parameter to on when a security policy is required. However, this
occupies system resources and affects system performance."
  }
]
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.3.27 Enabling or Disabling Advanced Features

### Function

This API is used to enable or disable advanced features. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

POST [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/advance-features](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/advance-features)

**Table 4-133** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	Instance ID.

## Request Parameters

**Table 4-134** Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to <a href="#">obtain a user token</a> . After the request is processed, the value of <b>X-Subject-Token</b> in the message header is the token value.
X-Language	No	String	Language. Default value: <b>en-us</b> Values: <ul style="list-style-type: none"><li>• <b>zh-cn</b></li><li>• <b>en-us</b></li></ul>



**Table 4-135** Request body parameters

Parameter	Mandatory	Type	Description
params	Yes	Object	Features to be modified. Its value is in JSON format and can be obtained from the response parameters in <a href="#">Querying Advanced Features</a> . The <b>key</b> and <b>value</b> , respectively, correspond to <b>name</b> and <b>range_description</b> in the response parameters of the API for querying advanced features.  <pre>{   "key" : "value" }</pre>

## Response Parameters

**Table 4-136** Parameter description

Parameter	Type	Description
job_id	String	Task ID.

## Example Request

Enabling or disabling advanced feature

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/e73893ef73754465a8bd2e0857bbf13ein14/advance-features
{
  "params": {
    "ledger": "on",
    "security": "on",
    "ilm": "on",
    "vectordb": "on"
  }
}
```

## Example Response

```
{
  "job_id": "9cb66b27111669609799e022d08d6c3a"
}
```

## Status Code

- Normal  
202

- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

# 4.4 Parameter Configuration

## 4.4.1 Obtaining Parameter Templates

### Function

This API is used to obtain parameter templates, including all databases' default and custom parameter templates. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3.2/{project\\_id}/configurations?  
offset={offset}&limit={limit}](https://{Endpoint}/v3.2/{project_id}/configurations?offset={offset}&limit={limit})

**Table 4-137** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

Parameter	Mandatory	Type	Description
offset	No	Integer	<p><b>Explanation:</b> Index offset. The query starts from the next piece of data indexed by this parameter. For example, if this parameter is set to <b>0</b> and <b>limit</b> is set to <b>10</b>, only the 1st to 10th records are displayed.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [0, 2<sup>31</sup>-1]</p> <p><b>Default value:</b> 0 (indicating that the query starts from the first data record.)</p>
limit	No	Integer	<p><b>Explanation:</b> Number of records to be queried. For example, if this parameter is set to <b>10</b>, a maximum of 10 records can be displayed.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [1, 100]</p> <p><b>Default value:</b> 100</p>

## Request Parameters

None

## Response Parameters

**Table 4-138** Parameter description

Parameter	Type	Description
configurations	Array of objects	<p><b>Explanation:</b> Parameter template information. For details, see <a href="#">Table 4-139</a>.</p>

Parameter	Type	Description
count	Integer	<b>Explanation:</b> Total number of records. <b>Value range:</b> [0, 2 <sup>31</sup> - 1]

**Table 4-139** configurations field data structure description

Parameter	Type	Description
id	String	<b>Explanation:</b> Parameter template ID, which is the unique ID of a parameter template. <b>Value range:</b> The value can contain 36 characters. Only letters and digits are allowed.
name	String	<b>Explanation:</b> Parameter template name. <b>Value range:</b> The value can contain 1 to 64 characters and is case-sensitive. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed
description	String	<b>Explanation:</b> Parameter template description. <b>Value range:</b> The value can contain up to 256 characters but cannot contain carriage return characters. The following special characters are not allowed: ! <"='>&
datastore_version	String	<b>Explanation:</b> Engine version. <b>Value range:</b> None
datastore_name	String	<b>Explanation:</b> Engine name. <b>Value range:</b> GaussDB

Parameter	Type	Description
ha_mode	String	<b>Explanation:</b> Instance type. <b>Value range:</b> The value is case-sensitive. The value <b>Enterprise</b> indicates the distributed instance (Enterprise Edition). The value <b>centralization_standard</b> indicates the centralized instance.
created	String	<b>Explanation:</b> Creation time in the "yyyy-MM-dd HH:mm:ss" format, for example, 2024-07-03 14:18:55. <b>Value range:</b> None
updated	String	<b>Explanation:</b> Update time in the "yyyy-MM-dd HH:mm:ss" format, for example, 2024-07-03 14:18:55. <b>Value range:</b> None
user_defined	Boolean	<b>Explanation:</b> Whether the parameter template is a custom template. <b>Value range:</b> <ul style="list-style-type: none"><li>● <b>false:</b> The parameter template is a default template.</li><li>● <b>true:</b> The parameter template is a custom template.</li></ul>

## Example Request

Obtaining parameter templates

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.2/0483b6b16e954cb88930a360d2c4e663/configurations?offset=1&limit=3
```

## Example Response

Parameter templates queried.

```
{
  "count": 3,
  "configurations": [
    {
      "id": "b000d7c91f1749da87315700793a11d4pr14",
      "name": "Default-GaussDB-EE-1.0-Dist-Combined (4 replicas)",
      "description": "Default parameter template for GaussDB-Enterprise Edition-1.0-Distributed-
```

```
combined (4 replicas)",
  "created": "2022-03-23 07:20:11",
  "updated": "2022-03-23 07:20:11",
  "datastore_version": "V2.0-1.0",
  "datastore_name": "GaussDB",
  "ha_mode": "combined",
  "user_defined": false
},
{
  "id": "8d99f260ea1b4493a1b349e7abce5c09pr14",
  "name": "Default-Finance-Edition-GaussDB-1.3-Combined",
  "description": "Default parameter template for Finance Edition GaussDB 1.3-Combined",
  "created": "2022-03-23 07:20:11",
  "updated": "2022-03-23 07:20:11",
  "datastore_version": "V2.0-1.1",
  "datastore_name": "GaussDB",
  "ha_mode": "combined",
  "user_defined": false
},
{
  "id": "0f44b65521a8414d8b8811df810d94ccpr14",
  "name": "Default-Finance-Disaster-GaussDB-1.3-Combined",
  "description": "Default parameter template for Finance Disaster GaussDB 1.3-Combined",
  "created": "2022-03-23 07:20:11",
  "updated": "2022-03-23 07:20:11",
  "datastore_version": "V2.0-1.2",
  "datastore_name": "GaussDB",
  "ha_mode": "combined",
  "user_defined": false
}
]
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.4.2 Obtaining the Parameters of a Specified DB Instance

### Function

This API is used to obtain parameters of a specified DB instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3.2/{project\\_id}/instances/{instance\\_id}/configurations](https://{Endpoint}/v3.2/{project_id}/instances/{instance_id}/configurations)

**Table 4-140** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
instance_id	Yes	String	Instance ID.

## Request Parameters

**Table 4-141** Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>User token. You can obtain the token by calling the IAM API used to <a href="#">obtain a user token</a>. The value of the token is that of <b>X-Subject-Token</b> in the response header.</p>
X-Language	No	String	<p>Language. Default value: <b>en-us</b> Value range:</p> <ul style="list-style-type: none"> <li>• <b>zh-cn</b></li> <li>• <b>en-us</b></li> </ul>

## Response Parameters

**Table 4-142** Parameter description

Parameter	Type	Description
datastore_version	String	Engine version.
datastore_name	String	Engine name.
created	String	Creation time in the "yyyy-MM-dd HH:mm:ss" format.
updated	String	Update time in the "yyyy-MM-ddHH:mm:ss" format.
configuration_parameters	Array of objects	Parameters defined by users based on the default parameter templates. For details, see <a href="#">Table 4-143</a> .

**Table 4-143** configuration\_parameters field data structure description

Parameter	Type	Description
name	String	Parameter name.
value	String	Parameter value.
restart_required	Boolean	Whether a reboot is required after the parameter is modified.
value_range	String	Parameter value range.
type	String	Parameter type. The value can be <b>string</b> , <b>integer</b> , <b>boolean</b> , <b>list</b> , or <b>float</b> . Value: <ul style="list-style-type: none"><li>• <b>string</b></li><li>• <b>integer</b></li><li>• <b>boolean</b></li><li>• <b>list</b></li><li>• <b>float</b></li></ul>
description	String	Parameter description.

## Example Request

Obtaining parameters of a specified DB instance



```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.2/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsdsae3435in14/configurations
```

## Example Response

Parameters of the instance queried.

```
{
  "created": "2022-04-11 10:46:59",
  "updated": "2022-04-11 10:46:59",
  "datastore_version": "V2.0-2.0",
  "datastore_name": "GaussDB",
  "configuration_parameters": [
    {
      "name": "audit_system_object",
      "value": "12295",
      "type": "integer",
      "description": "Determines whether to audit the CREATE, DROP, and ALTER operations on GaussDB Kernel database objects. GaussDB Kernel database objects include databases, users, schemas, and tables. You can change the parameter value to audit only the operations on required database objects. During a forcible primary/standby failover, set audit_system_object to the maximum value and audit all DDL objects. If the parameter value is incorrectly changed, DDL audit logs will be lost. Contact customer service personnel to change it.",
      "restart_required": false,
      "value_range": "0-2097151"
    }
  ]
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.4.3 Modifying Parameters of a Specified DB Instance

### Function

This API is used to modify parameters in the parameter template of a specified DB instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

The values of the modified parameters must be within the default value range of the specified database version. For details about the range of parameter values, see "Viewing and Modifying Instance Parameters" in the *GaussDB User Guide*.

## URI

PUT [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/configurations](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/configurations)

**Table 4-144** Parameter description

Name	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	Instance ID.

## Request Parameters

**Table 4-145** Parameter description

Name	Mandatory	Type	Description
values	Yes	Map<String,String>	Parameter values defined by users based on the default parameter templates. Example: For <b>failed_login_attempts: 4</b> , <b>failed_login_attempts</b> indicates the parameter name, and <b>4</b> indicated the changed parameter value.

## Response Parameters

**Table 4-146** Parameter description

Name	Type	Description
restart_required	Boolean	Whether the instance needs to be rebooted. <ul style="list-style-type: none"><li>• <b>true</b>: indicates that the instance needs to be rebooted.</li><li>• <b>false</b>: indicates that the instance does not need to be rebooted.</li></ul>
job_id	String	Task ID for modifying the parameters of a specified instance.

### Example Request

- Changing the value of **failed\_login\_attempts** to **4** (The change is applied without a DB instance reboot.)

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfsae3435in01/configurations
{
  "values": {
    "failed_login_attempts": "4"
  }
}
```

- Changing the value of **track\_activity\_query\_size** to **2048** and the value of **max\_replication\_slots** to **25** (The changes are applied after the instance is rebooted.)

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfsae3435in01/configurations
{
  "values": {
    "track_activity_query_size": "2048",
    "max_replication_slots": "25"
  }
}
```

### Example Response

- Parameter modified (The instance does not need to be rebooted).

```
{
  "restart_required": false,
  "job_id": "5a08604b-7820-4cf1-9356-b378c4fac694"
}
```

- Parameter modified (The instance needs to be rebooted).

```
{
  "restart_required": true,
  "job_id": "e51532df-b94d-4fbc-9cf0-aea030ade45d"
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.4.4 Creating a Parameter Template

### Function

This API is used to create a parameter template. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

POST [https://{Endpoint}/v3/{project\\_id}/configurations](https://{Endpoint}/v3/{project_id}/configurations)

**Table 4-147** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

## Request Parameters

**Table 4-148** Parameter description

Name	Mandatory	Type	Description
name	Yes	String	Name of the parameter template, which must be unique. The template name can contain up to 64 characters. It can contain only letters (case-sensitive), digits, hyphens (-), underscores (_), and periods (.).
description	No	String	Parameter template description. This parameter is left blank by default. Up to 256 characters are displayed. Carriage return characters or special characters (>!<"&'=) are not allowed.
parameter_values	No	Map<String,String>	Mapping between parameter names and parameter values. You can specify parameter values based on a default parameter template.
datastore	Yes	object	DB engine information. To obtain the value, see <a href="#">Querying DB Engine Versions</a> . For details, see <a href="#">Table 4-149</a> .

**Table 4-149** datastore parameter description

Name	Mandatory	Type	Description
engine_version	Yes	String	DB engine version.

Name	Mandatory	Type	Description
instance_mode	Yes	String	Deployment model. Value: <ul style="list-style-type: none"> <li>• <b>ha</b>: primary/standby deployment</li> <li>• <b>ha:readonly</b>: read replicas of primary/standby deployment</li> <li>• <b>independent</b>: distributed independent deployment</li> </ul>

## Response Parameters

**Table 4-150** Parameter description

Parameter	Type	Description
id	String	Parameter template ID.
name	String	Parameter template name.
created_at	String	Creation time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the offset is shown as <b>+0800</b> .

## Example Request

- Creating a parameter template for GaussDB 2.3 primary/standby instances

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/configurations
{
  "name": "paramTemplate",
  "description": "",
  "parameter_values": {
    "audit_system_object": "12294"
  },
  "datastore": {
    "engine_version": "2.3",
    "instance_mode": "ha"
  }
}
```

- Creating a parameter template with multiple user-defined parameters for GaussDB 2.3 distributed instances in the independent deployment

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/configurations
{
  "name": "paramTemplate",
  "description": "",
```

```
"parameter_values": {  
  "audit_system_object": "12294",  
  "dn:effective_cache_size": "262143",  
  "checkpoint_segments": "2048"  
},  
"datastore": {  
  "engine_version": "2.3",  
  "instance_mode": "independent"  
}  
}
```

## Example Response

Parameter template created.

```
{  
  "id" : "137eeaf0cc884ca4adffa9ebd101c115pr14",  
  "name" : "paramTemplate-del",  
  "created_at" : "2022-08-09T03:06:52+0800"  
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.4.5 Deleting a Parameter Template

### Function

This API is used to delete a parameter template. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

DELETE [https://{Endpoint}/v3/{project\\_id}/configurations/{config\\_id}](https://{Endpoint}/v3/{project_id}/configurations/{config_id})

**Table 4-151** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
config_id	Yes	String	Parameter template ID.

## Request Parameters

None

## Response Parameters

None

## Example Request

Deleting a parameter template

```
DELETE https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/619d3e78f61b4be68bc5aa0b59edcf7b/configurations/3ca44134a16d4bbab8eb701e025b19f7pr14
```

## Example Response

None

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).



## Error Code

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

## 4.4.6 Querying Details About a Parameter Template

### Function

This API is used to query details about a parameter template based on the parameter template ID. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3.1/{project\\_id}/configurations/{config\\_id}](https://{Endpoint}/v3.1/{project_id}/configurations/{config_id})

**Table 4-152** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
config_id	Yes	String	Parameter template ID.

## Request Parameters

**Table 4-153** Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to <a href="#">obtain a user token</a> . The value of the token is that of <b>X-Subject-Token</b> in the response header.
X-Language	No	String	Language. Default value: <b>en-us</b> Value range: <ul style="list-style-type: none"> <li>• <b>zh-cn</b></li> <li>• <b>en-us</b></li> </ul>

## Response Parameters

**Table 4-154** Parameter description

Parameter	Type	Description
id	String	Parameter template ID.
name	String	Parameter template name.
description	String	Parameter template description.
engine_version	String	Engine version.
instance_mode	String	Deployment model. Value: <ul style="list-style-type: none"> <li>• <b>ha</b>: primary/standby</li> <li>• <b>independent</b>: independent</li> </ul>
created_at	String	Creation time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the offset is <b>+0800</b> .

Parameter	Type	Description
updated_at	String	Modification time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the offset is <b>+0800</b> .
configuration_parameters	Array of objects	Parameter details. For details about the parameters, see <a href="#">Table 4-155</a> .

**Table 4-155** configuration\_parameters field data structure description

Parameter	Type	Description
name	String	Name of a specific parameter.
value	String	Value of a specific parameter.
need_restart	Boolean	Whether the instance needs to be rebooted. <b>true</b> : Instance needs to be rebooted. <b>false</b> : Instance does not need to be rebooted.
readonly	Boolean	Whether the parameter is read-only. <b>true</b> : read only <b>false</b> : editable
value_range	String	Parameter value range.
data_type	String	Parameter type. The value can be <b>string</b> , <b>integer</b> , <b>boolean</b> , <b>list</b> , <b>all</b> , or <b>float</b> .
description	String	Parameter description.

## Example Request

Querying details about a parameter template

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.1/619d3e78f61b4be68bc5aa0b59edcf7b/configurations/3ca44134a16d4bbab8eb701e025b19f7pr14
```

## Example Response

Parameter template details queried.

```
{
  "id": "3ca44134a16d4bbab8eb701e025b19f7pr14",
  "name": "GaussDB_2b87a799-515",
  "description": "ParamGroup for instance.",
  "engine_version": "V2.0-2.3",
  "instance_mode": "ha",
```

```
"created_at": "2022-08-05T08:15:07+0800",
"updated_at": "2022-08-09T03:06:52+0800",
"configuration_parameters": [
  {
    "name": "audit_system_object",
    "value": "12294",
    "need_restart": false,
    "readonly": false,
    "value_range": "1-65536",
    "data_type": "integer",
    "description": "This parameter determines whether to audit the CREATE, DROP, and ALTER
operations on GaussDB Kernel database objects. GaussDB Kernel database objects include DATABASE,
USER, SCHEMA, and TABLE. You can change the value of this parameter to audit only the operations on
required database objects. In scenarios where a standby node is forcibly elected as primary, you are advised
to set audit_system_object to the maximum value and audit all DDL objects. Improper modification of this
parameter will cause loss of DDL audit logs. Contact the customer service to change the parameter value."
  }
]
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.4.7 Replicating a Parameter Template

### Function

This API is used to replicate a parameter template. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

POST [https://{Endpoint}/v3/{project\\_id}/configurations/{config\\_id}/copy](https://{Endpoint}/v3/{project_id}/configurations/{config_id}/copy)

**Table 4-156** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
config_id	Yes	String	ID of the parameter template to be replicated.

## Request Parameters

**Table 4-157** Parameter description

Name	Mandatory	Type	Description
name	Yes	String	Name of the replicated parameter template, which cannot be the same as that of an existing parameter template. The value can contain 1 to 64 characters. It can contain only letters (case-sensitive), digits, hyphens (-), underscores (_), and periods (.).
description	No	String	Parameter template description. This parameter is left blank by default. The description must consist of up to 256 characters. Carriage return characters or special characters (>! <"&'=) are not allowed.

## Response Parameters

**Table 4-158** Parameter description

Parameter	Type	Description
config_id	String	ID of the replicated parameter template.

## Example Request

Replicating a parameter template

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/619d3e78f61b4be68bc5aa0b59edcf7b/configurations/3ca44134a16d4bbab8eb701e025b19f7pr14/copy
{
  "name" : "paramTemplate-1233",
  "description": "Description"
}
```

## Example Response

Parameter template replicated.

```
{
  "config_id" : "3ca44134a16d4bbab8eb701e025b19f7pr14"
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.4.8 Resetting a Parameter Template

### Function

This API is used to reset a parameter template. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

Only custom parameter templates can be reset.

## URI

POST [https://{Endpoint}/v3/{project\\_id}/configurations/{config\\_id}/reset](https://{Endpoint}/v3/{project_id}/configurations/{config_id}/reset)

**Table 4-159** Parameter description

Name	Type	Mandatory	Description
project_id	String	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
config_id	String	Yes	Parameter template ID.

## Request Parameters

None

## Response Parameters

None

## Example Request

Resetting a parameter template

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/619d3e78f61b4be68bc5aa0b59edcf7b/configurations/3ca44134a16d4bbab8eb701e025b19f7pr14/reset
```

## Example Response

None

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.4.9 Obtaining the Differences of Two Parameter Templates

### Function

This API is used to obtain the differences of two parameter templates. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

POST [https://{Endpoint}/v3/{project\\_id}/configurations/comparison](https://{Endpoint}/v3/{project_id}/configurations/comparison)

**Table 4-160** Parameter description

Name	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

### Request Parameters

**Table 4-161** Parameter description

Name	Mandatory	Type	Description
source_id	Yes	String	ID of the source parameter template to be compared.



Name	Mandatory	Type	Description
target_id	Yes	String	ID of the target parameter template to be compared. The deployment model of the target parameter template must be the same as that of the source parameter template.

## Response Parameters

**Table 4-162** Parameter description

Parameter	Type	Description
differences	Array of objects	Differences between parameter templates. For details, see <a href="#">Table 4-163</a> .

**Table 4-163** differences field data structure description

Parameter	Type	Description
name	String	Parameter name.
source_value	String	Parameter value of the source parameter template.
target_value	String	Parameter value of the target parameter template.

## Example Request

Obtaining the differences of two parameter templates

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/configurations/comparison
{
  "source_id": "3e9f722f27c9477089bdf576b33f9d8epr14",
  "target_id": "a51fcdde022a4ea8a016a3c4671644f4pr14"
}
```

## Example Response

Differences of two parameter templates queried.

```
{
  "differences": [ {
    "name": "audit_system_object",
    "source_value": "12289",
    "target_value": "12295"
  }
]
```

```
}]  
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.4.10 Querying Instances That a Parameter Template Can Be Applied To

### Function

This API is used to query the instances that the current parameter template can be applied to. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/configurations/{config\\_id}/applicable-instances](https://{Endpoint}/v3/{project_id}/configurations/{config_id}/applicable-instances)

**Table 4-164** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

Parameter	Mandatory	Type	Description
config_id	Yes	String	Parameter template ID.
offset	No	Integer	Index offset. If <b>offset</b> is set to <i>N</i> , the resource query starts from the <i>N</i> +1 data entry. The default value is <b>0</b> , indicating that the query starts from the first data entry. The value cannot be a negative number. For example, if this parameter is set to <b>0</b> and <b>limit</b> is set to <b>10</b> , only the 1st to 10th records are displayed.
limit	No	Integer	Number of records to be queried. The default value is <b>100</b> . The value cannot be a negative number. The minimum value is <b>1</b> and the maximum value is <b>100</b> . For example, if this parameter is set to <b>10</b> , a maximum of 10 records can be displayed.

## Request Parameters

None

## Response Parameters

**Table 4-165** Parameter description

Parameter	Type	Description
instances	Array of objects	Parameter template information. For details, see <a href="#">Table 4-166</a> .
total_count	Integer	Total number of records.

**Table 4-166** instances field data structure description

Parameter	Type	Description
instance_id	String	DB instance ID.
instance_name	String	DB instance name.

## Example Request

Querying instances that the current parameter template can be applied to

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/619d3e78f61b4be68bc5aa0b59edcf7b/configurations/3ca44134a16d4bbab8eb701e025b19f7pr14/applicable-instances
```

## Example Response

Instances that the current parameter template can be applied to queried.

```
{  "instances": [    {      "instance_id": "1995a67680474481b3e42ac1474e32e0in14",      "instance_name": "gauss-a283"    },    {      "instance_id": "8303819fd8744ef69f34595e9710a33din14",      "instance_name": "gauss-2423-lt-master"    }  ],  "total_count": 2}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.4.11 Checking Whether the Parameter Template Name Exists

### Function

This API is used to check whether the parameter template name exists. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

```
GET https://{Endpoint}/v3/{project_id}/configurations/name-validation?name={name}
```

**Table 4-167** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
name	Yes	String	Parameter template name. The template name can contain 1 to 64 characters. It can contain only letters (case-sensitive), digits, hyphens (-), underscores (_), and periods (.).

## Request Parameters

None

## Response Parameters

**Table 4-168** Parameter description

Parameter	Type	Description
exist	Boolean	Verification result. <ul style="list-style-type: none"><li>● <b>true:</b> The name already exists.</li><li>● <b>false:</b> The name does not exist.</li></ul>

## Example Request

Checking whether the parameter template name exists

```
GET https://gaussdb-opengauss.ap-
```

```
southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/configurations/name-validation?name=paramTemplate-a9f3
```

## Example Response

Check result returned.

```
{  
  "exist" : false  
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.4.12 Applying a Parameter Template

### Function

This API is used to apply a parameter template. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

PUT [https://{{Endpoint}}/v3/{{project\\_id}}/configurations/{{config\\_id}}/apply](https://{{Endpoint}}/v3/{{project_id}}/configurations/{{config_id}}/apply)

**Table 4-169** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
config_id	Yes	String	Parameter template ID.

## Request Parameters

**Table 4-170** Parameter description

Parameter	Mandatory	Type	Description
instance_ids	Yes	Array of strings	Instance IDs.

## Response Parameters

**Table 4-171** Parameter description

Parameter	Type	Description
job_id	String	Asynchronous task ID for applying a parameter template.

## Example Request

Applying a parameter template

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/configurations/3ca44134a16d4bbab8eb701e025b19f7pr14/apply
```

```
{
  "instance_ids" : [ "5362449138da4e408dbae5152ca26640in14",
                    "ea926816f0154066830d12ebeb8562din14" ]
}
```

## Example Response

Parameter template applied.

```
{
  "job_id" : "bf26cf3c-d046-4080-bb45-f114be7afa5f"
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

# 4.4.13 Querying Application Records of a Parameter Template

## Function

This API is used to view application records of a parameter template. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

## URI

GET [https://{Endpoint}/v3/{project\\_id}/configurations/{config\\_id}/applied-histories](https://{Endpoint}/v3/{project_id}/configurations/{config_id}/applied-histories)



**Table 4-172** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
config_id	Yes	String	Parameter template ID.
offset	No	Integer	Index offset. If <b>offset</b> is set to <i>N</i> , the resource query starts from the <i>N</i> +1 data entry. The default value is <b>0</b> , indicating that the query starts from the first data entry. The value cannot be a negative number. For example, if this parameter is set to <b>0</b> and <b>limit</b> is set to <b>10</b> , only the 1st to 10th records are displayed.
limit	No	Integer	Number of records to be queried. The default value is <b>100</b> . The value cannot be a negative number. The minimum value is <b>1</b> and the maximum value is <b>100</b> . For example, if this parameter is set to <b>10</b> , a maximum of 10 records can be displayed.

## Request Parameters

None

## Response Parameters

**Table 4-173** Parameter description

Parameter	Type	Description
histories	Array of objects	Application records. For details, see <a href="#">Table 4-174</a> .
total_count	Integer	Total number of records.

**Table 4-174** histories field data structure description

Parameter	Type	Description
instance_id	String	DB instance ID.
instance_name	String	DB instance name.
apply_result	String	Application status. <ul style="list-style-type: none"><li>• SUCCESS</li><li>• FAILED</li><li>• APPLYING</li></ul>
applied_at	String	Application time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the offset is shown as <b>+0800</b> .
error_code	String	Error code of the failure cause, for example, DBS.280005.

## Example Request

Querying application records of a parameter template

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/619d3e78f61b4be68bc5aa0b59edcf7b/configurations/3ca44134a16d4bbab8eb701e025b19f7pr14/applied-histories
```

## Example Response

Application records of the parameter template queried.

```
{  "histories": [    {      "instance_id": "1995a67680474481b3e42ac1474e32e0in14",      "instance_name": "gauss-a283",
```

```
"apply_result" : "SUCCESS",
"applied_at" : "2022-08-09T03:06:52+0800",
"error_code" : ""
},
{
  "instance_id": "8303819fd8744ef69f34595e9710a33din14",
  "instance_name": "gauss-2423-lt-master",
  "apply_result" : "FAILED",
  "applied_at" : "2022-08-09T03:06:52+0800",
  "error_code" : "DBS.280005"
}
],
"total_count": 2
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.4.14 Querying Change History of a Parameter Template

### Function

This API is used to query the change history of a parameter template. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/configurations/{config\\_id}/histories](https://{Endpoint}/v3/{project_id}/configurations/{config_id}/histories)

**Table 4-175** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
config_id	Yes	String	Parameter template ID.
offset	No	Integer	Index offset. If <b>offset</b> is set to <i>N</i> , the resource query starts from the <i>N</i> +1 data entry. The default value is <b>0</b> , indicating that the query starts from the first data entry. The value cannot be a negative number. For example, if this parameter is set to <b>0</b> and <b>limit</b> is set to <b>10</b> , only the 1st to 10th records are displayed.
limit	No	Integer	Number of records to be queried. The default value is <b>100</b> . The value cannot be a negative number. The minimum value is <b>1</b> and the maximum value is <b>100</b> . For example, if this parameter is set to <b>10</b> , a maximum of 10 records can be displayed.

## Request Parameters

None

## Response Parameters

**Table 4-176** Parameter description

Parameter	Type	Description
histories	Array of objects	Parameter template information. For details, see <a href="#">Table 4-177</a> .
total_count	Integer	Total number of records.

**Table 4-177** histories field data structure description

Parameter	Type	Description
parameter_name	String	Parameter name.
old_value	String	Old parameter value.
new_value	String	New parameter value.
update_result	String	Change status. <ul style="list-style-type: none"> <li>• SUCCESS</li> <li>• FAILED</li> </ul>
updated_at	String	Modification time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the offset is <b>+0800</b> .

### Example Request

Querying the change history of a parameter template

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/619d3e78f61b4be68bc5aa0b59edcf7b/configurations/3ca44134a16d4bbab8eb701e025b19f7pr14/histories
```

### Example Response

Change history of the parameter template queried.

```
{
  "histories": [ {
    "parameter_name": "audit_system_object",
    "old_value": "12295",
    "new_value": "12298",
    "update_result": "SUCCESS",
    "updated_at": "2022-08-09T03:06:52+0800"
  } ],
}
```

```
"total_count" : 1  
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

# 4.5 Version Upgrade

## 4.5.1 Querying Versions That a DB Instance Can Be Upgraded To

### Function

This API is used to query versions that a DB instance can be upgraded to. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3.1/{project\\_id}/instances/{instance\\_id}/db-upgrade/candidate-versions](https://{Endpoint}/v3.1/{project_id}/instances/{instance_id}/db-upgrade/candidate-versions)

**Table 4-178** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	String	Instance ID, which is compliant with the UUID format.

## Request Parameters

None

## Response Parameters

**Table 4-179** Response parameters

Parameter	Type	Description
upgrade_type_list	Array of <a href="#">Table 4-180</a> objects	Upgrade types.
rollback_enabled	Boolean	Whether rollback is supported. <ul style="list-style-type: none"><li>● <b>true</b>: Rollback is supported.</li><li>● <b>false</b>: Rollback is not supported.</li></ul>
source_version	String	Source instance version.
target_version	String	Target version. The target version is only returned when the instance is in the rolling upgrade phase, or no information is returned.

Parameter	Type	Description
roll_upgrade_progress	<a href="#">Table 4-182</a> object	DN or AZ information during the rolling upgrade.
upgrade_candidate_versions	Array of strings	Versions that can be upgraded to, including minor and major versions. An empty array is returned during a rolling upgrade.
hotfix_upgrade_candidate_versions	Array of strings	Hot patch versions that can be updated. An empty array is returned during a rolling upgrade.
hotfix_rollback_candidate_versions	Array of strings	Hot patch versions that can be rolled back. An empty array is returned during a rolling upgrade.
hotfix_upgrade_infos	Array of <a href="#">Table 4-183</a> objects	Information about hot patch versions that can be installed.
hotfix_rollback_infos	Array of <a href="#">Table 4-184</a> objects	Information about hot patch versions that can be rolled back.

**Table 4-180** upgrade\_type\_list

Parameter	Type	Description
upgrade_type	String	Upgrade type. <ul style="list-style-type: none"> <li>● <b>grey</b>: Gray upgrade</li> <li>● <b>inplace</b>: In-place upgrade</li> <li>● <b>hotfix</b>: Hot patch update</li> </ul>
enable	Boolean	Whether the upgrade type is available. <ul style="list-style-type: none"> <li>● <b>true</b>: yes</li> <li>● <b>false</b>: no</li> </ul>
upgrade_action_list	Array of <a href="#">Table 4-181</a> objects	Upgrade actions.



Parameter	Type	Description
is_parallel_upgrade	Boolean	<p>Whether intra-AZ parallel upgrade is supported.</p> <ul style="list-style-type: none"> <li>• <b>true</b>: The current instance is in the rolling upgrade phase of the gray upgrade. The intra-AZ parallel upgrade is supported. Once this parameter is configured, it cannot be changed later.</li> <li>• <b>false</b>: The current instance is being upgraded. The intra-AZ parallel upgrade is not supported. Once this parameter is configured, it cannot be changed later.</li> <li>• <b>null</b>: The current instance is not in the upgrade process.</li> </ul>

**Table 4-181** upgrade\_action\_list

Parameter	Type	Description
upgrade_action	String	<p>Upgrade action.</p> <ul style="list-style-type: none"> <li>• <b>upgrade</b>: Rolling upgrade</li> <li>• <b>upgradeAutoCommit</b>: Auto-commit</li> <li>• <b>commit</b>: Commit</li> <li>• <b>rollback</b>: Rollback</li> </ul>
enable	Boolean	<p>Whether the upgrade action is available.</p> <ul style="list-style-type: none"> <li>• <b>true</b>: yes</li> <li>• <b>false</b>: no</li> </ul>

**Table 4-182** roll\_upgrade\_progress

Parameter	Type	Description
upgraded_dn_group_numbers	String	Number of shards that have been upgraded.
total_dn_group_numbers	String	Total number of shards.
not_fully_upgraded_az	String	AZs that have not been upgraded. Multiple AZs are separated by commas (.). For instances in the independent deployment, <b>null</b> is returned.

Parameter	Type	Description
already_upgraded_az	String	AZs that have upgraded. Multiple AZs are separated by commas (.). For instances in the independent deployment, <b>null</b> is returned.
az_description_map	Map<String,String>	AZ description.

**Table 4-183** hotfix\_upgrade\_infos

Parameter	Type	Description
version	String	Hot patch version.
common_patch	String	Patch type. Value range: <ul style="list-style-type: none"> <li>• <b>common</b>: common patch</li> <li>• <b>certain</b>: custom patch</li> </ul>
backup_sensitive	Boolean	Whether the patch is related to backups.
description	String	Description of the patch.

**Table 4-184** hotfix\_rollback\_infos

Parameter	Type	Description
version	String	Hot patch version.
common_patch	String	Patch type. Value range: <ul style="list-style-type: none"> <li>• <b>common</b>: common patch</li> <li>• <b>certain</b>: custom patch</li> </ul>
backup_sensitive	Boolean	Whether the patch is related to backups.
description	String	Description of the patch.

## Example Request

Querying versions that a DB instance can be upgraded to

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.1/0483b6b16e954cb88930a360d2c4e663/instances/cc6fd964d93f4003851dfc29d57d30a5in14/db-upgrade/candidate-versions
```

## Example Response

Target version, shard status, and AZ status in the rolling upgrade returned.

```
{
  "upgrade_type_list": [
    {
      "upgrade_type": "grey",
      "upgrade_action_list": [
        {
          "upgrade_action": "commit",
          "enable": false
        },
        {
          "upgrade_action": "rollback",
          "enable": false
        },
        {
          "upgrade_action": "upgrade",
          "enable": true
        },
        {
          "upgrade_action": "upgradeAutoCommit",
          "enable": true
        }
      ],
      "enable": true,
      "is_parallel_upgrade": null
    },
    {
      "upgrade_type": "hotfix",
      "upgrade_action_list": null,
      "enable": false,
      "is_parallel_upgrade": null
    },
    {
      "upgrade_type": "inplace",
      "upgrade_action_list": [
        {
          "upgrade_action": "upgradeAutoCommit",
          "enable": true
        }
      ],
      "enable": true,
      "is_parallel_upgrade": null
    }
  ],
  "rollback_enabled": false,
  "source_version": "V2.0-8.102.0",
  "target_version": null,
  "roll_upgrade_progress": {
    "not_fully_upgraded_az": "cn-southwest-244a,cn-southwest-244b,cn-southwest-244c",
    "already_upgraded_az": "",
    "az_description_map": {
      "cn-southwest-244c": "az3",
      "cn-southwest-244b": "az2",
      "cn-southwest-244a": "az1"
    }
  },
  "upgrade_candidate_versions": [
    "V2.0-8.300.0",
    "V2.0-8.103.0"
  ],
  "hotfix_upgrade_candidate_versions": [],
  "hotfix_rollback_candidate_versions": [],
  "hotfix_upgrade_infos": [],
  "hotfix_rollback_infos": []
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

# 4.5.2 Upgrading the Kernel Version of a DB Instance

## Function

This API is used to upgrade kernel version of a DB instance. There are three upgrade types: in-place upgrade, gray upgrade, and hot patch update.

- In-place upgrade  
Services are interrupted for about 30 minutes during the in-place upgrade. All nodes in a DB instance are upgraded at a time and you need to stop all services during the upgrade.
- Gray upgrade  
Services are interrupted for 10s during the upgrade of each primary DN or CN. The management plane is upgraded first, and then the data plane from the standby nodes to the primary nodes. You can select auto-commit after the upgrade or perform a rolling upgrade.
  - Auto-commit: All nodes are upgraded at the same time. Services are interrupted for about 10s during the upgrade.
  - Rolling upgrade: You can observe service status before committing the upgrade. There are upgrade and commit phases.
    - In the upgrade phase, DB instances can be upgraded by shard or AZ based on the deployment model.
      - Distributed instances are upgraded by shard.
      - Primary/standby instances are upgraded by AZ.
    - In the commit phase, you can test services on your instance after the upgrade is complete, and then either commit or roll back the upgrade based on test results.
      - Commit: After the upgrade is complete and services are normal, commit the upgrade.
      - Rollback: When the upgrade is complete and enters the commit phase, you can roll back the instance to the source version as required.
- Hot patch update
  - Auto-commit: Hot patches are automatically updated and committed without downtime.
  - Rollback: Services are not interrupted when the hot patches are rolled back.

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

## URI

PUT [https://{Endpoint}/v3.1/{project\\_id}/instances/{instance\\_id}/db-upgrade](https://{Endpoint}/v3.1/{project_id}/instances/{instance_id}/db-upgrade)

**Table 4-185** URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	String	Instance ID, which is compliant with the UUID format.

## Request Parameters

**Table 4-186** Request body parameters

Parameter	Mandatory	Type	Description
upgrade_type	Yes	String	Instance upgrade type. The value is case-sensitive. <ul style="list-style-type: none"><li>• <b>inplace</b>: In-place upgrade</li><li>• <b>grey</b>: Gray upgrade</li><li>• <b>hotfix</b>: Hot patch update</li></ul>

Parameter	Mandatory	Type	Description
upgrade_action	No	String	<p>Instance upgrade action. The value is case-sensitive.</p> <p>For the in-place upgrade, this parameter is optional.</p> <p>For the gray upgrade, this parameter can be set to <b>upgradeAutoCommit</b>, <b>upgrade</b>, <b>commit</b>, or <b>rollback</b>.</p> <p>For the hot patch update, this parameter can be set to <b>upgradeAutoCommit</b> or <b>rollback</b>.</p> <ul style="list-style-type: none"> <li>● <b>upgradeAutoCommit</b>: Auto-commit</li> <li>● <b>upgrade</b>: Rolling upgrade</li> <li>● <b>commit</b>: Commit</li> <li>● <b>rollback</b>: Rollback</li> </ul>
target_version	No	String	<p>Target version that the instance will be upgraded to.</p> <ul style="list-style-type: none"> <li>● In a hot patch update, multiple hot patch versions can be configured.</li> </ul>
upgrade_shard_num	No	Integer	<p>Number of shards to be upgraded in a gray upgrade for a distributed instance. This parameter is mandatory when upgrade action is set to <b>upgrade</b> (rolling upgrade). The value cannot be greater than the number of shards that have not been upgraded.</p>
upgrade_az	No	String	<p>AZ to be upgraded in a gray upgrade. This parameter is mandatory when upgrade action is set to <b>upgrade</b> (rolling upgrade). Multiple AZs can be upgraded at the same time. Use commas (,) to separate AZs. You cannot enter an AZ that does not belong to the instance.</p>

## Response Parameters

Table 4-187 Response body parameters

Parameter	Type	Description
job_id	String	Task ID. For pay-per-use instances, only the task ID is returned.
order_id	String	Order ID. This parameter is returned only when your instance is billed at a yearly/monthly basis.

## Example Request

- In-place upgrade

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/
v3.1/0483b6b16e954cb88930a360d2c4e663/instances/cc6fd964d93f4003851dfc29d57d30a5in14/db-
upgrade
{
  "upgrade_type": "inplace",
  "target_version": "xxx"
}
```

- Hot patch update

- Updating hot patches

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/
v3.1/0483b6b16e954cb88930a360d2c4e663/instances/
cc6fd964d93f4003851dfc29d57d30a5in14/db-upgrade
{
  "upgrade_type": "hotfix",
  "target_version": "xxxx,xxxx,xxxx",
  "upgrade_action": "upgradeAutoCommit"
}
```

- Rolling back hot patches

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/
v3.1/0483b6b16e954cb88930a360d2c4e663/instances/
cc6fd964d93f4003851dfc29d57d30a5in14/db-upgrade
{
  "upgrade_type": "hotfix",
  "target_version": "xxxx,xxxx,xxxx",
  "upgrade_action": "rollback"
}
```

- Gray upgrade

- Setting **upgrade\_action** to **upgradeAutoCommit**

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/
v3.1/0483b6b16e954cb88930a360d2c4e663/instances/
cc6fd964d93f4003851dfc29d57d30a5in14/db-upgrade
{
  "upgrade_type": "grey",
  "target_version": "xxx",
  "upgrade_action": "upgradeAutoCommit"
}
```

- Setting **upgrade\_action** to **upgrade**

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/
```

```
v3.1/0483b6b16e954cb88930a360d2c4e663/instances/  
cc6fd964d93f4003851dfc29d57d30a5in14/db-upgrade  
{  
  "upgrade_type": "grey",  
  "target_version": "xxx",  
  "upgrade_action": "upgrade",  
  "upgrade_shard_num": 1,  
}
```

- Rolling back the upgrade when the instance is in the rolling upgrade phase (All upgraded shards will be rolled back. After the instance becomes available, the rollback is successful.)

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/  
v3.1/0483b6b16e954cb88930a360d2c4e663/instances/  
cc6fd964d93f4003851dfc29d57d30a5in14/db-upgrade  
{  
  "upgrade_type": "grey",  
  "target_version": "xxx",  
  "upgrade_action": "rollback"  
}
```

- Committing the upgrade when the instance is in the rolling upgrade phase (After all upgraded shards are upgraded, you can commit the upgrade.) (After the instance is available, the upgrade is complete.)

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/  
v3.1/0483b6b16e954cb88930a360d2c4e663/instances/  
cc6fd964d93f4003851dfc29d57d30a5in14/db-upgrade  
{  
  "upgrade_type": "grey",  
  "target_version": "xxx",  
  "upgrade_action": "commit"  
}
```

- Upgrading a primary/standby instance in the gray method (upgrade action is rolling upgrade)

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/  
v3.1/0483b6b16e954cb88930a360d2c4e663/instances/cc6fd964d93f4003851dfc29d57d30a5in14/db-  
upgrade  
{  
  "upgrade_type": "grey",  
  "upgrade_action": "upgrade",  
  "target_version": "xxx",  
  "upgrade_az": "az1,az2"  
}
```

## Example Response

```
{  
  "job_id": "2b414788a6004883a02390e2eb0ea227"  
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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



## 4.5.3 Querying Upgrade Types and Versions That Instances Can Be Upgraded to in Batches

### Function

This API is used to query the available upgrade types and versions that instances can be upgraded to in batches. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

POST [https://{Endpoint}/v3.1/{project\\_id}/instances/db-upgrade/candidate-versions](https://{Endpoint}/v3.1/{project_id}/instances/db-upgrade/candidate-versions)

**Table 4-188** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

### Request Parameters

**Table 4-189** Request body parameters

Parameter	Mandatory	Type	Description
instance_ids	No	Array of strings	Instance IDs for batch upgrade.

## Response Parameters

**Table 4-190** Response parameters

Parameter	Type	Description
upgrade_type_list	Array of <a href="#">Table 4-191</a> objects	Upgrade types. Array length: <b>0</b> to <b>1000</b>
target_version	String	Target version. The target version is only returned when the instance is in the rolling upgrade phase, or no information is returned. Minimum length: <b>0</b> Maximum characters: <b>1000</b>
upgrade_candidate_versions	Array of strings	Versions that can be upgraded, including major and minor versions. Minimum length: <b>0</b> Maximum characters: <b>1000</b> Array length: <b>0</b> to <b>1000</b>
hotfix_upgrade_infos	Array of <a href="#">Table 4-193</a> objects	Information about hot patch versions that can be updated. Array length: <b>0</b> to <b>1000</b>
hotfix_rollback_infos	Array of <a href="#">Table 4-193</a> objects	Information about hot patch versions that can be rolled back.

**Table 4-191** upgrade\_type\_list

Parameter	Type	Description
upgrade_type	String	Upgrade type. Value range: <ul style="list-style-type: none"><li>• <b>grey</b>: Gray upgrade</li><li>• <b>inplace</b>: In-place upgrade</li><li>• <b>hotfix</b>: Hot patch update</li></ul>
enable	Boolean	Check if the upgrade type is available. <ul style="list-style-type: none"><li>• <b>true</b>: yes.</li><li>• <b>false</b>: no.</li></ul>
upgrade_action_list	Array of <a href="#">Table 4-192</a> objects	Upgrade actions. Array length: <b>0</b> to <b>1000</b>

Parameter	Type	Description
is_parallel_upgrade	Boolean	<p>Whether intra-AZ parallel upgrade is supported.</p> <ul style="list-style-type: none"> <li>• <b>true</b>: The current instance is in the rolling upgrade phase of the gray upgrade. The intra-AZ parallel upgrade is supported. Once this parameter is configured, it cannot be changed later.</li> <li>• <b>false</b>: The current instance is being upgraded. The intra-AZ parallel upgrade is not supported. Once this parameter is configured, it cannot be changed later.</li> <li>• <b>null</b>: The current instance is not in the upgrade process.</li> </ul>

**Table 4-192** upgrade\_action\_list

Parameter	Type	Description
upgrade_action	String	<p>Upgrade action.</p> <p>Value range:</p> <ul style="list-style-type: none"> <li>• <b>upgrade</b>: Upgrade</li> <li>• <b>upgradeAutoCommit</b>: Auto-commit</li> <li>• <b>commit</b>: Commit</li> <li>• <b>rollback</b>: Rollback</li> </ul>
enable	Boolean	<p>Check if the upgrade type is available.</p> <ul style="list-style-type: none"> <li>• <b>true</b>: yes.</li> <li>• <b>false</b>: no.</li> </ul>

**Table 4-193** hotfix\_upgrade\_infos

Parameter	Type	Description
version	String	Hot patch version.
common_patch	String	<p>Patch type.</p> <p>Value range:</p> <ul style="list-style-type: none"> <li>• <b>common</b>: common patch</li> <li>• <b>certain</b>: custom patch</li> </ul>

Parameter	Type	Description
backup_sensitive	Boolean	Whether the patch is related to backups. Value range: <ul style="list-style-type: none"><li>• <b>true</b>: The patch is related to backups.</li><li>• <b>false</b>: The patch is not related to backups.</li></ul>
description	String	Description of the patch.

## Example Request

Querying the upgrade types and versions that instances can be upgraded to in batches.

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.1/0483b6b16e954cb88930a360d2c4e663/instances/db-upgrade/candidate-versions
{
  "instance_ids": [ "cc0ae5c47bf94834bf9e44138f7f995ain14", "aa0ae5c47bf94834bf9e44138f7f995ain14" ]
}
```

## Example Response

Querying the available upgrade types and versions that instances can be upgraded to in batches

```
{
  "upgrade_type_list": [
    {
      "upgrade_type": "grey",
      "upgrade_action_list": [
        {
          "upgrade_action": "commit",
          "enable": false
        },
        {
          "upgrade_action": "rollback",
          "enable": false
        },
        {
          "upgrade_action": "upgrade",
          "enable": true
        },
        {
          "upgrade_action": "upgradeAutoCommit",
          "enable": true
        }
      ]
    },
    {
      "enable": true,
      "is_parallel_upgrade": null
    }
  ],
  {
    "upgrade_type": "inplace",
    "upgrade_action_list": [
      {
        "upgrade_action": "upgradeAutoCommit",
        "enable": true
      }
    ]
  }
}
```

```
    }
  ],
  "enable": true,
  "is_parallel_upgrade": null
},
{
  "upgrade_type": "hotfix",
  "upgrade_action_list": [
    {
      "upgrade_action": "upgradeAutoCommit",
      "enable": false
    },
    {
      "upgrade_action": "rollback",
      "enable": false
    }
  ],
  "enable": false,
  "is_parallel_upgrade": null
}
],
"upgrade_candidate_versions": [
  "V2.0-8.100.0"
],
"target_version": null,
"hotfix_upgrade_infos": [],
"hotfix_rollback_infos": []
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.5.4 Upgrading Kernel Versions of Instances in Batches

### Function

This API is used to upgrade kernel versions of instances in batches. There are three upgrade types: gray upgrade, in-place upgrade, and hot patch update. The earliest version of all selected instances must be earlier than available target versions, and they must support the same upgrade method and action. If gray upgrade is used, all AZs and shards are upgraded by default.

- In-place upgrade: Services are interrupted for about 30 minutes during the in-place upgrade. All nodes in a DB instance are upgraded at a time and you need to stop all services during the upgrade.
- Gray upgrade:  
Services are interrupted for 10s during the upgrade of each primary DN or CN. The management plane is upgraded first, and then the data plane from the standby nodes to the primary nodes.
  - Auto-commit: All nodes are upgraded at the same time. Services are interrupted for about 10s during the upgrade.

- Rolling upgrade: You can observe service status before committing the upgrade. There are upgrade and commit phases.
  - In the upgrade phase, DB instances can be upgraded by shard or AZ based on the deployment model.
    - Distributed instances are upgraded by shard. When instances are upgraded in batches, all shards are upgraded by default.
    - Primary/standby instances are upgraded by AZ. When instances are upgraded in batches, all shards are upgraded by default.
  - In the commit phase, you can test services on your instance after the upgrade is complete, and then either commit or roll back the upgrade based on test results.
    - Commit: After the upgrade is complete and services are normal, commit the upgrade.
    - Rollback: When the upgrade is complete and enters the commit phase, you can roll back the instance to the source version as required.
- Hot patch update
  - Auto-commit: Hot patches are automatically updated and committed without downtime. Only product bugs are fixed.
  - Rollback: Services are not interrupted when the hot patches are rolled back.
- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

## URI

PUT [https://{Endpoint}/v3/{project\\_id}/instances/db-upgrade](https://{Endpoint}/v3/{project_id}/instances/db-upgrade)

**Table 4-194** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>

## Request Parameters

**Table 4-195** Request body parameters

Parameter	Mandatory	Type	Description
instance_ids	Yes	Array of strings	Instance IDs for batch upgrade.
upgrade_type	Yes	String	<p>Instance upgrade type. There are three upgrade types: in-place upgrade, gray upgrade, and hot patch update. The value is case-sensitive.</p> <p>Value range:</p> <ul style="list-style-type: none"> <li>● <b>grey:</b> Gray upgrade</li> <li>● <b>inplace:</b> In-place upgrade</li> <li>● <b>hotfix:</b> Hot patch update</li> </ul>

Parameter	Mandatory	Type	Description
upgrade_action	No	String	Instance upgrade action. For an in-place upgrade, this parameter does not need to be specified. For the gray upgrade, this parameter can be set to <b>upgradeAutoCommit</b> , <b>upgrade</b> , <b>commit</b> , or <b>rollback</b> . The value is case-sensitive. <ul style="list-style-type: none"> <li>• <b>upgrade</b>: Upgrade</li> <li>• <b>upgradeAutoCommit</b>: Auto-commit</li> <li>• <b>commit</b>: Commit</li> <li>• <b>rollback</b>: Rollback</li> </ul>
target_version	No	String	Target version that the instances are upgraded to in batches. This parameter is optional.  For a gray upgrade or an in-place upgrade, if this parameter is not specified, the instances are upgraded to the preferred version by default. For a major version upgrade, this parameter is mandatory for the gray upgrade and in-place upgrade. For a hot patch update, this parameter does not need to be specified and all available hot patches are updated by default.

## Response Parameters

Table 4-196 Response parameters

Parameter	Type	Description
job_ids	Array of strings	Task ID.
succeeded_num	Integer	Number of instances whose task requests are submitted successfully.
failed_num	Integer	Number of instances whose task requests fail to be submitted.



Parameter	Type	Description
failed_instance_ids	Array of strings	IDs of instances whose task requests fail to be submitted.
error_messages	Array of strings	List of error information about task submission failures.

## Example Request

- Upgrading instances in batches using the in-place upgrade

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/db-upgrade
{
  "instance_ids": [ "cc0ae5c47bf94834bf9e44138f7f995ain14",
"aa0ae5c47bf94834bf9e44138f7f995ain14" ],
  "upgrade_type": "inplace",
  "target_version": "8.100.0"
}
```

- Upgrading instances in batches using the gray upgrade with the rolling upgrade action

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/db-upgrade
{
  "instance_ids": [ "cc0ae5c47bf94834bf9e44138f7f995ain14",
"aa0ae5c47bf94834bf9e44138f7f995ain14" ],
  "upgrade_type": "grey",
  "upgrade_action": "upgrade",
  "target_version": "8.100.0"
}
```

- Upgrading instances in batches using the gray upgrade with the rollback action

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/db-upgrade
{
  "instance_ids": [ "cc0ae5c47bf94834bf9e44138f7f995ain14",
"aa0ae5c47bf94834bf9e44138f7f995ain14" ],
  "upgrade_type": "grey",
  "upgrade_action": "rollback",
  "target_version": "8.100.0"
}
```

- Upgrading instances in batches using the gray upgrade with the auto-commit action

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/db-upgrade
{
  "instance_ids": [ "cc0ae5c47bf94834bf9e44138f7f995ain14",
"aa0ae5c47bf94834bf9e44138f7f995ain14" ],
  "upgrade_type": "grey",
  "upgrade_action": "upgradeAutoCommit",
  "target_version": "8.100.0"
}
```

- Upgrading instances in batches using the hot patch update with the auto-commit action

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/db-upgrade
```

```
{
  "instance_ids": [ "cc0ae5c47bf94834bf9e44138f7f995ain14",
    "aa0ae5c47bf94834bf9e44138f7f995ain14" ],
  "upgrade_type": "hotfix",
  "upgrade_action": "upgradeAutoCommit"
}
```

- Rolling back instances in batches using the hot patch update with the rollback action

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/db-upgrade
{
  "instance_ids": [ "cc0ae5c47bf94834bf9e44138f7f995ain14",
    "aa0ae5c47bf94834bf9e44138f7f995ain14" ],
  "upgrade_type": "hotfix",
  "upgrade_action": "rollback"
}
```

## Example Response

```
{
  "job_ids": [ "2b414788a6004883a02390e2eb0ea227", "aa414788a6004883a02390e2eb0ea228" ],
  "succeeded_num": 2,
  "failed_num": 1,
  "failed_instance_ids": [ "cc0ae5c47bf94834bf9e44138f7f995ain14" ],
  "error_messages": ["This operation cannot be performed because the instance status is abnormal."]
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

# 4.6 Backup and Restoration

## 4.6.1 Configuring an Automated Backup Policy

### Function

This API is used to configure an automated backup policy. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

PUT https://{Endpoint}/v3.1/{project\_id}/instances/{instance\_id}/backups/policy

**Table 4-197** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	Instance ID.

## Request Parameters

**Table 4-198** Parameter description

Parameter	Mandatory	Type	Description
backup_policy	Yes	Object	Backup policy information. For details, see <a href="#">Table 4-199</a> .

**Table 4-199** backup\_policy field data structure description

Parameter	Mandatory	Type	Description
keep_days	Yes	Integer	Backup retention days. The value ranges from 1 to 36500.

Parameter	Mandatory	Type	Description
start_time	Yes	String	<p>Backup time window. The creation of an automated backup will be triggered during the backup time window.</p> <p>The value cannot be empty. It must be a valid value in the "hh:mm-HH:MM" format. The current time is in the UTC format.</p> <p>The value of <b>HH</b> must be 1 greater than the value of <b>hh</b>. The values of <b>mm</b> and <b>MM</b> must be the same and must be <b>00</b>.</p> <p>Example value: 21:00-22:00</p> <p><b>NOTE</b> This parameter indicates the time period (in UTC format) during which backup is performed. For example, if the local backup time is 05:00-06:00 and the time zone is UTC+08:00, set the parameter value to <b>21:00-22:00</b>. If the time zone is UTC+04:00, set the value to <b>01:00-02:00</b>.</p>

Parameter	Mandatory	Type	Description
period	Yes	String	<p>Full backup period. An automated full backup is performed on the UTC date of each week.</p> <p>Value range: <b>1 to 7</b>. The value is a number separated by commas (,), indicating the days of the week.</p> <p>Example value:</p> <ul style="list-style-type: none"> <li>• <b>1,2,3,4</b> indicates that the backup period is Monday, Tuesday, Wednesday, and Thursday.</li> <li>• <b>1,2,3,4,5,6,7</b> indicates that an automated backup is performed every day from Monday to Sunday.</li> <li>• <b>1,3,5</b> indicates that an automated backup is performed on Monday, Wednesday, and Friday.</li> </ul> <p><b>NOTE</b> This parameter indicates the date (in UTC format) on which backup is performed. For example, if the local backup time is 05:00-06:00 on Monday and Tuesday, and the time zone is UTC+08:00, set the parameter value to <b>1,7</b>. If the time zone is UTC+04:00, set the value to <b>1,2</b>.</p>
differential_period	Yes	String	<p>Differential backup interval. Interval for automated differential backup.</p> <p>The value can be <b>15, 30, 60, 180, 360, 720, or 1440</b>. The unit is minute.</p> <p>Example value: 30</p>

Parameter	Mandatory	Type	Description
rate_limit	No	Integer	Upload speed at which backup data is uploaded to OBS. The default value <b>0 MB/s</b> indicates that the speed is not limited. The upload speed is related to the bandwidth. Value range: <b>0 to 1024</b> Minimum value: <b>0 MB/s</b>
prefetch_block	No	Integer	Number of prefetch pages from the modified pages in the disk table file during a differential backup. When modified pages are adjacent (for example, with a bulk data load), you can set this parameter to a large value. When modified pages are scattered (for example, random update), you can set this parameter to a small value. The default value is <b>64</b> . Value range: 1 to 8192 Minimum value: <b>1</b> Maximum value: <b>8192</b>
file_split_size	No	Integer	Size by which full and differential backup files are split, in GB. The value range is 0 to 1024, but it must be a multiple of 4. The default value is <b>4</b> . <b>0</b> indicates the size is not limited. Value range: <b>0 to 1024</b> Minimum value: <b>0</b> Maximum value: <b>1024</b>
enable_standby_backup	No	Boolean	Whether to enable backup on a standby node. (It is not suitable for single-node instances and instances earlier than 3.100.0.)

## Response Parameters

None

## Example Request

Configuring a backup policy for GaussDB (Set backup retention period to seven days and backup time window to 19:00-20:00).

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfdsae3435in14/backups/policy
{
  "backup_policy": {
    "keep_days": 7,
    "start_time": "19:00-20:00",
    "period": "1,2,3,4,5",
    "differential_period": "30",
    "rate_limit": 75 ,
    "prefetch_block": 64 ,
    "file_split_size": 4 ,
    "enable_standby_backup" : false
  }
}
```

## Example Response

```
{}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.6.2 Querying an Automated Backup Policy

### Function

This API is used to query an automated backup policy. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET https://{Endpoint}/v3/{project\_id}/instances/{instance\_id}/backups/policy

**Table 4-200** Parameter description

Name	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	Instance ID.

## Request Parameters

None

## Response Parameters

**Table 4-201** Parameter description

Parameter	Type	Description
backup_policy	Object	Backup policy information. For details, see <a href="#">Table 4-202</a> .

**Table 4-202** backup\_policy field data structure description

Parameter	Type	Description
keep_days	Integer	Full backup retention days. Value: <b>1</b> to <b>732</b> Minimum value: <b>1</b> Maximum value: <b>732</b>



Parameter	Type	Description
start_time	String	Full backup time window. The creation of an automated backup will be triggered during the backup time window. The value must be a valid value in the "hh:mm-HH:MM" format. The current time is in the UTC format. <ul style="list-style-type: none"> <li>The <b>HH</b> value must be 1 greater than the <b>hh</b> value.</li> <li>The values of <b>mm</b> and <b>MM</b> must be the same and must be set to <b>00</b>.</li> </ul>
period	String	Full backup period. Data will be automatically backed up on the selected days every week. The value is a number separated by commas (,), indicating the days of the week. Example value: <ul style="list-style-type: none"> <li><b>1,2,3,4</b> indicates that the backup period is Monday, Tuesday, Wednesday, and Thursday.</li> <li><b>1,2,3,4,5,6,7</b> indicates that an automated backup is performed every day from Monday to Sunday.</li> <li><b>1,3,5</b> indicates that an automated backup is performed on Monday, Wednesday, and Friday.</li> </ul>
differential_period	String	(This field has been deprecated.) Differential backup period. An automated differential backup will be performed on the specified minutes.
differential_period	Integer	Differential backup period. An automated differential backup will be performed on the specified minutes.
rate_limit	Integer	Upload speed at which data is uploaded to OBS. <b>0 MB/s</b> indicates that the speed is not limited. The upload speed is related to the bandwidth.
prefetch_block	Integer	Number of prefetch pages from the modified pages in the disk table file during a differential backup. When modified pages are adjacent (for example, with a bulk data load), you can set this parameter to a large value. When modified pages are scattered (for example, random update), you can set this parameter to a small value. The default value is <b>64</b> .
filesplit_size	Integer	This field has been deprecated.

Parameter	Type	Description
file_split_size	Integer	Size by which full and differential backup files are split, in GB. The value is from <b>0</b> to <b>1024</b> , but it must be a multiple of 4. The default value is <b>4</b> . <b>0</b> indicates the size is not limited.
enable_standby_backup	Boolean	Whether to enable backup on a standby node. <ul style="list-style-type: none"><li>● <b>true</b>: This function is enabled.</li><li>● <b>false</b>: This function is disabled.</li></ul>

## Example Request

Querying an automated backup policy

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfdsae3435in14/backups/policy
```

## Example Response

Automated backup policy queried.

```
{  "backup_policy": {    "period": "1,2,3,4,5,6,7",    "keep_days": 7,    "start_time": "18:00-19:00",    "differential_period": 30 ,    "rate_limit": 75 ,    "prefetch_block": 64 ,    "file_split_size": 4 ,    "enable_standby_backup" : false  } }
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.6.3 Querying Backups

### Function

This API is used to obtain backups of an instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

## Constraints

This API can be used to query only manual and automated full backups.

## URI

GET `https://{Endpoint}/v3.2/{project_id}/backups?instance_id={instance_id}&backup_id={backup_id}&backup_type={backup_type}&ofset={offset}&limit={limit}&begin_time={begin_time}&end_time={end_time}`

**Table 4-203** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	No	String	<b>Explanation:</b> Instance ID, which uniquely identifies an instance and is used to query the backups of an instance. <b>Restrictions:</b> This parameter is mandatory when you query log backups. <b>Value range:</b> The value is compliant with the UUID format and can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

Parameter	Mandatory	Type	Description
backup_id	No	String	<p><b>Explanation:</b> Backup ID, which uniquely identifies an instance backup and is used to query information about a backup.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value is compliant with the UUID format and can contain 36 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
backup_type	No	String	<p><b>Explanation:</b> Backup type.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• <b>auto:</b> instance-level automated full backup</li> <li>• <b>manual:</b> instance-level manual full backup</li> </ul> <p><b>Default value:</b> None</p>
offset	No	Integer	<p><b>Explanation:</b> Index offset. The query starts from the next piece of data indexed by this parameter.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [0, 10<sup>10</sup>-1]</p> <p><b>Default value:</b> 0 (indicating that the query starts from the first data record.)</p>

Parameter	Mandatory	Type	Description
limit	No	Integer	<b>Explanation:</b> Number of records to be queried. <b>Restrictions:</b> None <b>Value range:</b> [0, 100] <b>Default value:</b> 100
begin_time	No	String	<b>Explanation:</b> Query start time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the offset is <b>+0800</b> . Example: 2022-05-09T16:01:10+0800. <b>Restrictions:</b> This parameter can be used together with <b>end_time</b> . If <b>end_time</b> is not used, the backups created after <b>begin_time</b> are returned. If <b>end_time</b> is used, the backups created between <b>begin_time</b> and <b>end_time</b> are returned. <b>Value range:</b> None <b>Default value:</b> None

Parameter	Mandatory	Type	Description
end_time	No	String	<p><b>Explanation:</b> Query end time. The format is "yyyy-mm-ddThh:mm:ssZ" and the end time must be later than the start time. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the offset is <b>+0800</b>. Example: 2022-05-09T16:01:10+0800.</p> <p><b>Restrictions:</b> This parameter can be used together with <b>begin_time</b>. If <b>begin_time</b> is not used, the backups created before <b>end_time</b> are returned. If <b>begin_time</b> is used, the backups created between <b>begin_time</b> and <b>end_time</b> are returned.</p> <p><b>Value range:</b> None</p> <p><b>Default value:</b> None</p>

## Request Parameters

None

## Response Parameters

**Table 4-204** Parameter description

Parameter	Type	Description
backups	Array of objects	<p><b>Explanation:</b> Backup information. For details, see <a href="#">Table 4-205</a>.</p>

Parameter	Type	Description
total_count	Long	<p><b>Explanation:</b> Total number of backup files.</p> <p><b>Value range:</b> [0, 2<sup>63</sup> - 1]. The actual value depends on the number of backups in the backup list.</p>

**Table 4-205** backups field data structure description

Parameter	Type	Description
id	String	<p><b>Explanation:</b> Backup ID, which uniquely identifies a backup.</p> <p><b>Value range:</b> The value can contain 36 characters. Only letters and digits are allowed.</p>
name	String	<p><b>Explanation:</b> Backup name.</p> <p><b>Value range:</b> None</p>
description	String	<p><b>Explanation:</b> Description of the backup file.</p> <p><b>Value range:</b> The value can contain up to 256 characters but cannot contain carriage return characters. The following special characters are not allowed: ! &lt; " = ' &gt; &amp;</p>
begin_time	String	<p><b>Explanation:</b> Backup start time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as <b>+0800</b>. Example: 2022-05-09T16:01:10+0800.</p> <p><b>Value range:</b> None</p>

Parameter	Type	Description
end_time	String	<b>Explanation:</b> Backup end time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as <b>+0800</b> . Example: 2022-05-09T16:01:10+0800. <b>Value range:</b> None
status	String	<b>Explanation:</b> Backup status. <b>Value range:</b> <ul style="list-style-type: none"><li>● <b>BUILDING</b>: Backup in progress</li><li>● <b>COMPLETED</b>: Backup completed</li><li>● <b>FAILED</b>: Backup failed</li></ul>
size	Double	<b>Explanation:</b> Backup size in MB. <b>Value range:</b> The value is determined by the backup size.
type	String	<b>Explanation:</b> Backup type. <b>Value range:</b> <ul style="list-style-type: none"><li>● <b>auto</b>: instance-level automated full backup</li><li>● <b>manual</b>: instance-level manual full backup</li></ul>
datastore	Object	<b>Explanation:</b> Database information. For details, see <a href="#">Table 4-206</a> .
instance_id	String	<b>Explanation:</b> ID of the instance to which the backup belongs. <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.



**Table 4-206** datastore field data structure description

Parameter	Type	Description
type	String	<b>Explanation:</b> DB engine. The value is case-insensitive and can be: <b>GaussDB.</b> <b>Value range:</b> None
version	String	<b>Explanation:</b> DB engine version. If this parameter is not specified, the latest version is used by default. To query supported DB engine versions, see <a href="#">Querying DB Engine Versions</a> . <b>Value range:</b> None

## Example Request

- Querying all backups

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.2/0483b6b16e954cb88930a360d2c4e663/backups
```

- Querying instances based on search criteria

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.2/0483b6b16e954cb88930a360d2c4e663/backups?instance_id=88be33e4c5a64ceba42b42da89310111in14&backup_id=88be1234c5a64ceba42b42da89310111br14&backup_type=auto&begin_time=2022-05-09T16:15:50+0800&end_time=2022-05-09T16:20:45+0800&limit=1&offset=1
```

## Example Response

Backups queried.

```
{
  "backups": [
    {
      "id": "a696cd25e4fc453aa503650225cece8bbr14",
      "name": "GaussDB-hly-ha-20220509080110906",
      "status": "FAILED",
      "size": 0.0,
      "type": "auto",
      "datastore": {
        "type": "GaussDB",
        "version": "V2.0-1.4"
      },
      "begin_time": "2022-05-09T16:01:10+0800",
      "end_time": "2022-05-09T16:04:31+0800",
      "instance_id": "164abc6d35114095bb849d007b19db3bin14"
    },
    {
      "id": "5651c62a7f12461c98020dd3abfe24ccbr14",
      "name": "GaussDB-hly-master-20220509022658257",
```

```
"status": "FAILED",
"size": 0.0,
"type": "auto",
"datastore": {
  "type": "GaussDB",
  "version": "V2.0-1.4"
},
"begin_time": "2022-05-09T10:26:58+0800",
"end_time": "2022-05-09T10:30:17+0800",

"instance_id": "fd26e3bf26e5467587eec857e4f66ef0in14"
}
],
"total_count": 2
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.6.4 Creating a Manual Backup

### Function

This API is used to create a manual backup. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

POST [https://{Endpoint}/v3/{project\\_id}/backups](https://{Endpoint}/v3/{project_id}/backups)

**Table 4-207** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>

## Request Parameters

**Table 4-208** Parameter description

Parameter	Mandatory	Type	Description
instance_id	Yes	String	DB instance ID.
name	Yes	String	<p>Backup name. It must contain 4 to 64 characters and start with a letter. Only letters (case-sensitive), digits, hyphens (-), and underscores (_) are allowed.</p> <p>Minimum characters: <b>4</b> Maximum characters: <b>64</b></p>
description	No	String	<p>Backup description. It contains up to 256 characters and cannot contain the following special characters: &gt; &lt;"&amp;'= Maximum characters: <b>256</b></p>

## Example Request

Creating a manual full backup for a DB instance

```
POST https://gaussdb-opengauss.ap-
```

```
southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/backups
{
  "instance_id": "7e01ac5ac5274957ba506f3851d11d51in14",
  "name": "backupwqwq3",
  "description": "manual backup"
}
```

## Response Parameters

**Table 4-209** Response body parameters

Parameter	Type	Description
backup	Object	Backup information. For details, see <a href="#">Table 4-210</a> .
job_id	String	Task ID.

**Table 4-210** backup field data structure description

Parameter	Type	Description
id	String	Backup ID.
name	String	Backup name, which must be unique.
description	String	Backup description.
begin_time	String	Backup start time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the offset is <b>+0800</b> .
status	String	Backup status. Value: <ul style="list-style-type: none"> <li>● <b>BUILDING</b>: Backup in progress</li> <li>● <b>COMPLETED</b>: Backup completed</li> <li>● <b>FAILED</b>: Backup failed</li> </ul>
type	String	Backup type. Value: <b>manual</b> (manual full backup).
instance_id	String	DB instance ID.

## Example Response

```
{
  "backup": {
    "id": "e76112bfb2074871bf54cb8df5af7f64br14",
    "name": "backupwqwq32",
    "description": "mannual backup",
    "status": "BUILDING",
    "type": "manual",
  }
}
```

```
"begin_time": "2022-05-09T18:02:31+0800",
"instance_id": "fd26e3bf26e5467587eec857e4f66ef0in14"
},
"job_id": "e4733090-b2c8-4ea7-a33a-f55f65723fb3"
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.6.5 Stopping a Backup

### Function

This API is used to stop backups of a DB instance, including all its ongoing full and differential backups. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

POST [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/backups/stop](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/backups/stop)

**Table 4-211** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	String	Instance ID.

## Request Parameters

None

## Response Parameters

**Table 4-212** Response body parameters

Name	Type	Description
job_id	String	Task ID.

## Example Request

Stopping a backup

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfdsae3435in14/backups/stop
```

## Example Response

Backup stopped.

```
{  
  "job_id" : "dff1d289-4d03-4942-8b9f-463ea07c000d"  
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.6.6 Deleting a Manual Backup

### Function

This API is used to delete a manual backup. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

## URI

DELETE https://{Endpoint}/v3/{project\_id}/backups/{backup\_id}

**Table 4-213** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
backup_id	Yes	String	Manual backup ID.

## Request Parameters

None

## Response Parameters

**Table 4-214** Response body parameters

Parameter	Type	Description
backup_id	String	Backup ID.
backup_name	String	Backup file name.

## Example Request

Deleting a manual backup

```
DELETE https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/backups/e28d08754b1a490fb2b3540ed013a7fbb14
```

## Example Response

Manual backup deleted.

```
{
  "backup_id" : "85755cb697234111bfc4970795ca9018br14",
  "backup_name" : "backup-d6e1"
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.6.7 Querying the Restoration Time Range

### Function

This API is used to query the restoration time range of an instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/restore-time?date={date}](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/restore-time?date={date})



**Table 4-215** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
instance_id	Yes	String	Instance ID.
date	Yes	String	Date to be queried. The value is in the "yyyy-mm-dd" format, and the time zone is UTC.

## Request Parameters

None

## Response Parameters

**Table 4-216** Parameter description

Parameter	Type	Description
restore_time	Array of objects	Restoration time ranges. For details, see <a href="#">Table 4-217</a> .

**Table 4-217** restore\_time field data structure description

Parameter	Type	Description
start_time	Long	Start time of the restoration time range in the UNIX timestamp format. The unit is millisecond and the time zone is UTC+8.

Parameter	Type	Description
end_time	Long	End time of the restoration time range in the UNIX timestamp format. The unit is millisecond and the time zone is UTC+8.

## Example Request

Querying the restoration time range

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/d2113b7c60154636b94bea1320b6a874in14/restore-time?date=2022-04-17
```

## Example Response

Restoration time range queried.

```
{  "restore_time": [    {      "start_time": 1652084311000,      "end_time": 1652092839000    },    {      "start_time": 1652092847000,      "end_time": 1652094792000    }  ]}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.6.8 Restoring Data to a New instance

### Function

This API is used to restore data to a new DB instance using backups. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

## Constraints

The DB engine versions and instance types of the original and new instances must be the same.

The specifications of the new instance must be greater than or equal to those of the original instance.

## URI

POST `https://{Endpoint}/v3/{project_id}/instances`

**Table 4-218** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

## Request Parameters

**Table 4-219** Parameter description

Parameter	Mandatory	Type	Description
name	Yes	String	DB instance name. Instances of the same type can have same names under the same tenant. The name must consist of 4 to 64 characters and start with a letter. It can contain only letters (case-sensitive), digits, hyphens (-), and underscores (_).

Parameter	Mandatory	Type	Description
availability_zone	Yes	String	<p>AZ ID.</p> <p>The value cannot be empty. You can deploy GaussDB in the same AZ or across three different AZs, and use commas (,) to separate AZs. For example:</p> <ul style="list-style-type: none"> <li>To deploy a DB instance in the same AZ, enter three same AZ IDs.</li> <li>To deploy a DB instance across three different AZs, enter three different AZ IDs.</li> </ul> <p>The value cannot be empty. For details about how to obtain this parameter value, see <a href="#">Regions and Endpoints</a>.</p>
flavor_ref	Yes	String	<p>Specification code. The value cannot be empty. To obtain its value, see the <b>spec_code</b> field in <a href="#">Querying Instance Specifications</a>.</p>
volume	Yes	Object	<p>Volume information.</p> <p>For details, see <a href="#">Table 4-220</a>.</p>
disk_encryption_id	No	String	<p>Key ID for disk encryption. The default value is empty.</p>
vpc_id	Yes	String	<p>VPC ID. To obtain this parameter value, use the following methods:</p> <ul style="list-style-type: none"> <li>Method 1: Log in to VPC console and view the VPC ID in the VPC details page.</li> <li>Method 2: Query the VPC ID through the VPC API. For details, see <a href="#">Querying VPCs</a>.</li> <li>Method 2: See the section "Querying VPCs" in the <i>Virtual Private Cloud API Reference</i>.</li> </ul>

Parameter	Mandatory	Type	Description
subnet_id	Yes	String	<p>Network ID of the subnet. To obtain this parameter value, use either of the following methods:</p> <ul style="list-style-type: none"> <li>• Method 1: Log in to VPC console and click the target subnet on the <b>Subnets</b> page. You can view the network ID on the displayed page.</li> <li>• Method 2: Query the subnet ID through the VPC API. For details, see <a href="#">Querying Subnets</a>.</li> <li>• Method 2: See section "Querying Subnets" in the <i>Virtual Private Cloud API Reference</i>.</li> </ul>
security_group_id	Yes	String	<p>Security group which the instance is associated with. To obtain this parameter value, use either of the following methods:</p> <ul style="list-style-type: none"> <li>• Method 1: Log in to VPC console. Choose <b>Access Control &gt; Security Groups</b> in the navigation pane on the left. On the displayed page, click the target security group. You can view the security group ID on the displayed page.</li> <li>• Method 2: Query the security group through the VPC API. For details, see <a href="#">Querying Security Groups</a>.</li> <li>• Method 2: See the section "Querying Security Groups" in the <i>Virtual Private Cloud API Reference</i>.</li> </ul>

Parameter	Mandatory	Type	Description
password	Yes	String	Database password. The GaussDB database password must: Consist of 8 to 32 characters, including at least three of the following: uppercase letters, lowercase letters, digits, and special characters ~!@#%^*_-=+?, Enter a strong password to improve security, preventing security risks such as brute force cracking.
charge_info	No	Object	Billing mode, which can be pay-per-use or yearly/monthly. For details, see <a href="#">Table 4-221</a> .
backup_strategy	No	Object	Automated backup policy. For details, see <a href="#">Table 4-223</a> .
restore_point	Yes	Object	Restoration information. For details, see <a href="#">Table 4-222</a> .
enable_parallel_restore	No	Boolean	Whether to support parallel restoration. If this parameter is not specified, the function is not supported for instances of the enterprise edition, and supported for primary/standby instances by default.
configuration_id	No	String	Parameter template ID. If this parameter is not specified, the default parameter template is used.
enterprise_project_id	No	String	Enterprise project ID.

Parameter	Mandatory	Type	Description
port	No	String	Port number used by the database to provide services for external systems, ranging from 1024 to 39998. If you do not configure this parameter, the default value <b>8000</b> is used. The following ports are not allowed: 2378, 2379, 2380, 4999, 5000, 5999, 6000, 6001, 8097, 8098, 12016, 12017, 20049, 20050, 21731, 21732, 32122, 32123, and 32124.
time_zone	No	String	UTC time zone. <ul style="list-style-type: none"> <li>• If this parameter is not specified, GaussDB uses UTC in the International website by default.</li> <li>• If this parameter is specified, the value ranges from UTC-12:00 to UTC +12:00 at the full hour. For example, the parameter can be <b>UTC+08:00</b> rather than <b>UTC+08:30</b>.</li> </ul>
enable_force_switch	No	Boolean	Whether to forcibly promote a standby node to primary. The value can only be <b>true</b> or <b>false</b> . <b>true</b> : The function is enabled. <b>false</b> (default value): The function is disabled. Only 1.2.2 and later versions are supported. <b>NOTE</b> The function is suitable for the following scenario: When the primary node is faulty, a standby node is forcibly promoted to primary to provide services, ensuring the instance availability. When the instance is faulty, this function is used to recover services as soon as possible at the cost of partial data loss. You are not advised to use this function if you are not clear about the impact of data loss on services.

**Table 4-220** volume field data structure description

Parameter	Mandatory	Type	Description
type	Yes	String	Disk type. <b>LOCALSSD</b> indicates the local SSD and is available for primary/standby instances. <b>ULTRAHIGH</b> indicates the cloud disk and is available for distributed instances in the independent deployment. The value is case-sensitive. <b>ULTRAHIGH</b> : local disk. <b>ESSD</b> : extreme SSD.
size	Yes	Integer	Storage space, which must be at least equal to that of the original instance. For example, if this parameter is set to <b>40</b> , 40 GB of storage is allocated to the instance.  ECS deployment: The value is from (Number of shards x 40 GB) to (Number of shards x 16 TB) and must be a multiple of (Number of shards x 4 GB).

**Table 4-221** charge\_info field data structure description

Parameter	Mandatory	Type	Description
charge_mode	Yes	String	Billing mode. <b>postPaid</b> : pay-per-use billing. <b>prePaid</b> : yearly/monthly billing.
period_type	No	string	Subscription period type. <b>month</b> : The service is subscribed by month. <b>year</b> : The service is subscribed by year. This parameter is valid and mandatory only when <b>charge_mode</b> is set to <b>prePaid</b> .



Parameter	Mandatory	Type	Description
period_num	No	integer	<p>This parameter is valid and mandatory only when <b>charge_mode</b> is set to <b>prePaid</b>.</p> <p>Value range:</p> <p>When <b>period_type</b> is set to <b>month</b>, the parameter value ranges from <b>1</b> to <b>9</b>. When <b>period_type</b> is set to <b>year</b>, the parameter value ranges from <b>1</b> to <b>3</b>.</p> <p>When a floating-point value is transferred, the value is automatically truncated to an integer.</p>
is_auto_renew	No	boolean	<p>Whether automatic renewal is enabled for yearly/monthly instances. If you enable this function, the order will be automatically paid during the subscription renewal. The default renewal period is one month for monthly subscription and one year for yearly subscription. The renewal period can be configured as needed.</p> <p><b>true</b>: indicates that the subscription is automatically renewed. <b>false</b>: indicates that the subscription is not automatically renewed. The default value is <b>false</b>.</p>
is_auto_pay	No	boolean	<p>Whether the order will be automatically paid after yearly/monthly instances are created. This parameter does not affect the payment mode of automatic renewal.</p> <p><b>true</b>: indicates that the order is automatically paid from the account. <b>false</b>: indicates that the order is manually paid from the account. The default value is <b>false</b>.</p>

**Table 4-222** restore\_point field data structure description

Parameter	Mandatory	Type	Description
instance_id	Yes	String	Source instance ID.
backup_id	No	String	ID of the backup to be restored.
type	No	String	Restoration type. Value: <ul style="list-style-type: none"><li>• <b>backup</b>: indicates data is restored using backups. In this mode, <b>type</b> is optional and <b>backup_id</b> is mandatory.</li><li>• <b>timestamp</b>: indicates data is restored using point-in-time recovery (PITR). In this mode, <b>type</b> is mandatory and <b>restore_time</b> is mandatory.</li></ul> Value: <ul style="list-style-type: none"><li>• <b>backup</b></li><li>• <b>timestamp</b></li></ul>
restore_time	No	Long	Time point of data restoration in the UNIX timestamp format. The unit is millisecond and the time zone is UTC.

**Table 4-223** backup\_strategy field data structure description

Parameter	Mandatory	Type	Description
start_time	Yes	String	Deprecated field. Leave it blank.
keep_days	No	Integer	Deprecated field. Leave it blank.

## Response Parameters

**Table 4-224** Parameter description

Parameter	Type	Description
instance	Object	Instance information. For details, see <a href="#">Table 4-225</a> .

Parameter	Type	Description
job_id	String	Task ID for restoring data to a new DB instance.
order_id	string	ID of the order for creating an instance. This parameter is returned only when a yearly/monthly instance is created.

**Table 4-225** instance description

Parameter	Type	Description
id	String	Instance ID.
name	String	DB instance name. Instances of the same type can have same names under the same tenant. The name must consist of 4 to 64 characters and start with a letter. It can contain only letters (case-sensitive), digits, hyphens (-), and underscores (_).
status	String	Instance status. For example, <b>BUILD</b> indicates that the instance is being created.
datastore	Object	Database information. For details, see <a href="#">Table 4-226</a> .
ha	Object	Instance deployment model. For details, see <a href="#">Table 4-227</a> .
port	String	Database port. The default value is <b>8000</b> .
enterprise_project_id	String	Project ID.
volume	Object	Volume information. For details, see <a href="#">Table 4-228</a> .
backup_strategy	Object	Automated backup policy. For details, see <a href="#">Table 4-229</a> .
replica_num	Integer	Number of replicas.
region	String	Region ID. The value cannot be empty. For details about how to obtain this parameter value, see <a href="#">Regions and Endpoints</a> .
flavor_ref	String	Specification code.

Parameter	Type	Description
availability_zone	String	AZ ID. You can deploy your instance in the same AZ or across three different AZs, and use commas (,) to separate AZs. The value cannot be empty. For details about how to obtain this parameter value, see <a href="#">Regions and Endpoints</a> .
vpc_id	String	VPC ID.
subnet_id	String	Subnet ID.
security_group_id	String	Security group ID.
charge_info	Object	Billing mode, which can be pay-per-use or yearly/monthly. For details, see <a href="#">Table 4-230</a> .

**Table 4-226** datastore field data structure description

Parameter	Type	Description
type	String	DB engine. Value: <ul style="list-style-type: none"> <li>• <b>GaussDB</b></li> </ul>
version	String	DB engine version.

**Table 4-227** ha field data structure description

Parameter	Type	Description
mode	String	For distributed instances, the return value is <b>enterprise</b> (enterprise edition). For primary/standby instances, the return value is <b>centralization_standard</b> (primary/standby edition).
replication_mode	String	Replication mode for the standby node. The value can only be set to <b>sync</b> , indicating that data is synchronized in synchronous mode.

Parameter	Type	Description
consistency	String	(GaussDB reserved parameter) Transaction consistency type. The value can be <b>strong</b> or <b>eventual</b> . Value: <ul style="list-style-type: none"> <li>• <b>strong</b></li> <li>• <b>eventual</b></li> </ul>

**Table 4-228** volume field data structure description

Parameter	Type	Description
type	String	Disk type. Its value is case-sensitive and can be: <ul style="list-style-type: none"> <li>• <b>ULTRAHIGH</b>: indicates the SSD.</li> <li>• <b>ESSD</b>: indicates the extreme SSD.</li> </ul> Value: <ul style="list-style-type: none"> <li>• <b>ULTRAHIGH</b></li> <li>• <b>ESSD</b></li> </ul>
size	Integer	Disk size. When restoring a distributed GaussDB instance, you need to specify the size to be a multiple of (Number of shards x 4 GB). Value range: (Number of shards x 40 GB) to (Number of shards x 16 TB).

**Table 4-229** backup\_strategy field data structure description

Parameter	Type	Description
start_time	String	This field has been deprecated.
keep_days	Integer	This field has been deprecated.

**Table 4-230** charge\_info field data structure description

Parameter	Type	Description
charge_mode	String	Billing mode. <b>postPaid</b> : pay-per-use billing. <b>prePaid</b> : yearly/monthly billing.

Parameter	Type	Description
period_type	string	Subscription period type. <b>month</b> : The service is subscribed by month. <b>year</b> : The service is subscribed by year. This parameter is valid and mandatory only when <b>charge_mode</b> is set to <b>prePaid</b> .
period_num	integer	This parameter is valid and mandatory only when <b>charge_mode</b> is set to <b>prePaid</b> . Value range: When <b>period_type</b> is set to <b>month</b> , the parameter value ranges from <b>1</b> to <b>9</b> . When <b>period_type</b> is set to <b>year</b> , the parameter value ranges from <b>1</b> to <b>3</b> .
is_auto_renew	boolean	Whether automatic renewal is enabled for yearly/monthly instances. If you enable this function, the order will be automatically paid during the subscription renewal. The default renewal period is one month for monthly subscription and one year for yearly subscription. The renewal period can be configured as needed. <b>true</b> : indicates that the subscription is automatically renewed. <b>false</b> : indicates that the subscription is not automatically renewed. The default value is <b>false</b> .
is_auto_pay	boolean	Whether the order will be automatically paid after yearly/monthly instances are created. This parameter does not affect the payment mode of automatic renewal. <b>true</b> : indicates that the order is automatically paid from the account. <b>false</b> (default value): indicates that the order is manually paid from the account.

## Example Request

- Restoring data to a new DB instance using backups. The new DB instance features 8 vCPUs, 64 GB memory, and 160 GB storage.

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances
{
  "name": "targetInst",
  "availability_zone": "aaa,bbb,ccc",
  "flavor_ref": "gaussdb.opengauss.ee.dn.m6.2xlarge.8.in",
  "volume": {
    "type": "ULTRAHIGH",
    "size": 160
  },
  "disk_encryption_id": "2gfdsh-844a-4023-a776-fc5c5fb71fb4",
```

```
"vpc_id": "490a4a08-ef4b-44c5-94be-3051ef9e4fce",
"subnet_id": "0e2eda62-1d42-4d64-a9d1-4e9aa9cd994f",
"security_group_id": "2a1f7fc8-3307-42a7-aa6f-42c8b9b8f8c5",
"password": "*****",
"restore_point": {
  "instance_id": "d8e6ca5a624745bcb546a227aa3ae1cfin14",
  "backup_id": "2f4ddb93b9014b0893d81d2e472f30febr14"
},
"enable_parallel_restore": false,
"configuration_id": "52e86e87445847a79bf807ceda213165pr01",
"enterprise_project_id": "ba1f7fc8-3307-42a7-aa6f-42c8b9b8f85c",
"port": 8000,
"enable_force_switch": true,
"time_zone": "UTC+04:00"
}
```

- Restoring data to a new DB instance using backups. The new DB instance features 8 vCPUs, 64 GB memory, and 160 GB storage.

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances
{
  "name": "targetInst",
  "availability_zone": "aaa,bbb,ccc",
  "flavor_ref": "gaussdb.opengauss.ee.dn.m6.2xlarge.8.in",
  "volume": {
    "type": "ULTRAHIGH",
    "size": 160
  },
  "disk_encryption_id": "2gfdsh-844a-4023-a776-fc5c5fb71fb4",
  "vpc_id": "490a4a08-ef4b-44c5-94be-3051ef9e4fce",
  "subnet_id": "0e2eda62-1d42-4d64-a9d1-4e9aa9cd994f",
  "security_group_id": "2a1f7fc8-3307-42a7-aa6f-42c8b9b8f8c5",
  "password": "*****",
  "restore_point": {
    "instance_id": "d8e6ca5a624745bcb546a227aa3ae1cfin14",
    "backup_id": "2f4ddb93b9014b0893d81d2e472f30febr14",
    "type": "backup"
  },
  "enable_parallel_restore": false,
  "configuration_id": "52e86e87445847a79bf807ceda213165pr01",
  "enterprise_project_id": "ba1f7fc8-3307-42a7-aa6f-42c8b9b8f85c",
  "port": 8000,
  "enable_force_switch": true,
  "time_zone": "UTC+04:00"
}
```

- Restoring data to a new DB instance using PITR. The new DB instance features 8 vCPUs, 64 GB memory, and 160 GB storage.

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances
{
  "name": "targetInst",
  "availability_zone": "aaa,bbb,ccc",
  "flavor_ref": "gaussdb.opengauss.ee.dn.m6.2xlarge.8.in",
  "volume": {
    "type": "ULTRAHIGH",
    "size": 160
  },
  "disk_encryption_id": "2gfdsh-844a-4023-a776-fc5c5fb71fb4",
  "vpc_id": "490a4a08-ef4b-44c5-94be-3051ef9e4fce",
  "subnet_id": "0e2eda62-1d42-4d64-a9d1-4e9aa9cd994f",
  "security_group_id": "2a1f7fc8-3307-42a7-aa6f-42c8b9b8f8c5",
  "password": "*****",
  "restore_point": {
    "instance_id": "d8e6ca5a624745bcb546a227aa3ae1cfin14",
    "type": "timestamp",
    "restore_time": 1532001446987
  },
}
```

```
"enable_parallel_restore": false,
"configuration_id": "52e86e87445847a79bf807ceda213165pr01",
"enterprise_project_id": "ba1f7fc8-3307-42a7-aa6f-42c8b9b8f85c",
"port": 8000,
"enable_force_switch": true,
"time_zone": "UTC+04:00"
}
```

## Response

Data is resorted to the new instance.

```
{
  "instance": {
    "id": "2gfdsh844a4023a776fc5c5fb71fb4in14",
    "name": "gaussdb-instance-rep2",
    "status": "BUILD",
    "datastore": {
      "type": "GaussDB",
      "version": "1.4"
    },
    "ha": {
      "mode": "enterprise",
      "consistency": "strong",
      "replication_mode": "sync"
    },
    "volume": {
      "type": "ULTRAHIGH",

      "size": 160
    },
    "port": "8000",
    "replica_num": 3,
    "region": "regionA",
    "enable_parallel_restore": false,
    "flavor_ref": "gaussdb.opengauss.ee.dn.m6.2xlarge.8.in",

    "availability_zone": "aaa,bbb,ccc",
    "vpc_id": "490a4a08-ef4b-44c5-94be-3051ef9e4fce",
    "subnet_id": "0e2eda62-1d42-4d64-a9d1-4e9aa9cd994f",
    "security_group_id": "2a1f7fc8-3307-42a7-aa6f-42c8b9b8f8c5",
    "charge_info": {
      "charge_mode": "postPaid"
    },
    "enterprise_project_id": "fdsa-3rds",
  },
  "job_id": "dff1d289-4d03-4942-8b9f-463ea07c000d"
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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



## 4.6.9 Querying Instances That Can Be Used for Backups and Restorations

### Function

This API is used to query the instances that can be used for backups and restorations. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

The **restore\_time** and **backup\_id** parameters cannot be both left blank.

### URI

GET [https://{Endpoint}/v3.1/{project\\_id}/restorable-instances](https://{Endpoint}/v3.1/{project_id}/restorable-instances)

**Table 4-231** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
backup_id	No	Instance backup ID. You can use the backup ID to query the instance topology information and filter the queried instances (including the number of nodes and replicas of instances). If this parameter is left blank, <b>restore_time</b> is used.
restore_time	No	Specific point of time. If the backup ID is left blank, this parameter is used to query the instance topology information and filter the queried instances.

Parameter	Mandatory	Description
source_instance_id	No	ID of the DB instance to be restored. <ul style="list-style-type: none"> <li>If <b>backup_id</b> is not left blank, <b>source_instance_id</b> is optional.</li> <li>If <b>backup_id</b> is left blank and <b>restore_time</b> is not left blank, <b>source_instance_id</b> is mandatory.</li> <li><b>source_instance_id</b> and <b>backup_id</b> cannot be both left blank.</li> </ul>
offset	No	Index offset. If <b>offset</b> is set to <i>N</i> , the resource query starts from the <i>N</i> +1 data entry. The default value is <b>0</b> , indicating that the query starts from the first data entry. The value cannot be a negative number.
limit	No	Number of records to be queried. The default value is <b>100</b> . The value cannot be a negative number. The minimum value is <b>1</b> and the maximum value is <b>100</b> .

## Request Parameters

None

## Response Parameters

**Table 4-232** Parameter description

Parameter	Type	Description
instances	Array of Objects	Instances that can be used for backups and restorations. For details, see <a href="#">Table 4-233</a> .
total_count	Integer	Total number of queried instances.

**Table 4-233** instances parameter data structure description

Parameter	Type	Description
instance_name	String	DB instance name.
instance_id	String	Instance ID.
volume_type	String	Storage type.

Parameter	Type	Description
data_volume_size	Number	Storage space, in GB
version	String	Instance version
mode	String	Deployment model. <ul style="list-style-type: none"><li>• <b>Ha</b>: primary/standby deployment</li><li>• <b>Independent</b>: independent deployment</li></ul>
instance_mode	String	Instance model. <ul style="list-style-type: none"><li>• <b>enterprise</b>: enterprise edition</li><li>• <b>standard</b>: standard edition</li><li>• <b>basic</b>: basic edition</li></ul>

## Example Request

Querying instances that can be used for backups and restorations

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.1/0611f1bd8b00d5d32f17c017f15b599f/restorable-instances?source_instance_id=88efb3753dc844829c380edff7798eecin14&backup_id=d3f223e9c35d450ea0692bdbff686e45br14
```

## Example Response

Instances that can be used for backups and restorations queried.

```
{
  "instances": [
    {
      "instance_name": "gaussdb",
      "instance_id": "3ea6d6463c9a4baf9a47c5b74464307cin14",
      "volume_type": "ULTRAHIGH",
      "data_volume_size": 500,
      "version": "V2.0-8.102",
      "mode": "Ha",
      "instance_mode": "enterprise"
    }
  ],
  "total_count": 1
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.6.10 Querying Information About the Original Instance Based on a Specific Point of Time or a Backup File

### Function

This API is used to query the information of the original instance based on a specific point of time or a backup file. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

The **restore\_time** and **backup\_id** parameters cannot be both left blank.

- If **backup\_id** is not left blank, the query is performed based on **backup\_id**.
- If **backup\_id** is left blank, the query is performed based on **restore\_time**.
- If **restore\_time** and **backup\_id** are both specified, the query is performed based on **backup\_id**.

### URI

GET `https://{Endpoint}/v3.1/{project_id}/instance-snapshot?instance_id={instance_id}&restore_time={restore_time}&backup_id={backup_id}`

**Table 4-234** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

Parameter	Mandatory	Type	Description
instance_id	No	String	Original instance ID. If <b>restore_time</b> is specified, <b>instance_id</b> is mandatory.
restore_time	No	String	This parameter is mandatory when you want to view DB instance backups based on a specified point in time. Instance information at a time point in the UNIX timestamp format, in milliseconds. The time zone is UTC.
backup_id	No	String	Backup ID. This parameter is mandatory when a DB instance is restored using a backup ID.

## Request Parameters

None

## Response Parameters

**Table 4-235** Parameter description

Parameter	Type	Description
cluster_mode	String	Instance deployment model. Value: <ul style="list-style-type: none"> <li>● <b>Ha</b>: primary/standby deployment</li> <li>● <b>Independent</b>: independent deployment</li> <li>● <b>Combined</b>: combined deployment</li> </ul>
instance_model	String	Instance model. Value: <ul style="list-style-type: none"> <li>● <b>basic</b>: basic edition</li> <li>● <b>standard</b>: standard edition</li> <li>● <b>enterprise</b>: enterprise edition</li> </ul>
data_volume_size	String	Storage space, in GB

Parameter	Type	Description
solution	String	Solution template type. Value: <ul style="list-style-type: none"><li>● <b>single</b>: single node</li><li>● <b>double</b>: 1 primary + 1 standby (2 nodes)</li><li>● <b>triset</b>: 1 primary + 2 standby</li><li>● <b>logger</b>: 1 primary + 1 standby + 1 log</li><li>● <b>loggerdorado</b>: 1 primary + 1 standby + 1 log (shared storage)</li><li>● <b>quadruset</b>: 1 primary + 3 standby</li><li>● <b>hws</b>: distributed (independent deployment)</li></ul>
node_num	Integer	Number of nodes.
coordinator_num	Integer	Number of CNs.
sharding_num	Integer	Number of shards.
replica_num	Integer	Number of replicas.
engine_version	String	Engine version.

## Example Request

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.1/0483b6b16e954cb88930a360d2c4e663/instance-snapshot
```

## Example Response

```
{
  "cluster_mode": "Ha",
  "instance_mode": "enterprise",
  "data_volume_size": "200",
  "solution": "triset",
  "node_num": 3,
  "coordinator_num": 0,
  "sharding_num": 3,
  "replica_num": 3,
  "engine_version": "V2.0-2.2.90"
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.6.11 Restoring Data to the Original or Existing Instance

### Function

This API is used to restore data to the original DB instance or an existing DB instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

POST [https://{endpoint}/v3/{project\\_id}/instances/recovery](https://{endpoint}/v3/{project_id}/instances/recovery)

**Table 4-236** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

### Request Parameters

**Table 4-237** Parameter description

Parameter	Mandatory	Type	Description
source	Yes	Object	Instance from which the backup was created. For details, see <a href="#">Table 4-238</a> .

Parameter	Mandatory	Type	Description
target	Yes	Object	The instance to which the backup is restored. For details, see <a href="#">Table 4-239</a> .

**Table 4-238** source field data structure description

Parameter	Mandatory	Type	Description
instance_id	Yes	String	DB instance ID.
type	Yes	String	Restoration type. The available values are as follows: <ul style="list-style-type: none"> <li>• <b>backup</b> (default value): Data is restored using backups. In this case, <b>backup_id</b> is mandatory.</li> <li>• <b>timestamp</b>: Data is restored using point-in-time recovery. In this case, <b>restore_time</b> is mandatory.</li> </ul>
backup_id	No	String	Backup ID used for restoration. It indicates the ID of the full backup corresponding to <b>schema_type</b> . This parameter must be specified when backups are used for restoration.
restore_time	No	String	Timestamp to which data is restored to using point-in-time recovery. You can query the available time range by calling the <a href="#">Querying the Restoration Time Range</a> API.

**Table 4-239** target field data structure description

Parameter	Mandatory	Type	Description
instance_id	Yes	String	ID of the DB instance which the backup will be restored to. <ul style="list-style-type: none"> <li>• When restoring data to the original instance, enter the original instance ID.</li> <li>• When restoring data to an existing DB instance, enter the existing instance ID.</li> </ul>



## Response Parameters

**Table 4-240** Response body parameters

Parameter	Type	Description
job_id	String	Task ID.

## Example Request

Restoring data to the original or existing instance

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/
opengauss/v3/0483b6b16e954cb88930a360d2c4e663/instances/recovery
{
  "source" : {
    "instance_id" : "5362449138da4e408dbae5152ca26640in14",
    "type" : "backup",
    "backup_id" : "cc94568cb5a54e4a8ab5dff95e64a5e0br14"
  },
  "target" : {
    "instance_id" : "5362449138da4e408dbae5152ca26640in14"
  }
}
```

## Example Response

Data restored to the original or existing instance.

```
{
  "job_id" : "a03b1b8a-b756-467c-8a49-38720c3d23ec"
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.6.12 Confirming Data Integrity After a Backup Is Restored

### Function

This API is used to confirm data integrity after a backup is restored. This API can be called only after data is restored to the original instance. Once data integrity has been confirmed, any logs archived after the point in time data was restored from will be lost, but normal log archiving will be restored. Before calling this API:

- Learn how to [authenticate](#) this API.

- Obtain the required [region and endpoint](#).

## URI

POST `https://{endpoint}/v3/{project_id}/instances/{instance_id}/confirm-restore-data`

**Table 4-241** Parameter description

Parameter	Type	Mandatory	Description
project_id	String	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	String	Yes	Instance ID.

## Request Parameters

None.

## Response Parameters

**Table 4-242** Response body parameters

Parameter	Type	Description
job_id	String	Task ID.

## Example Request

Confirming data integrity after a backup is restored

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/opengauss/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsdsae3435in14/confirm-restore-data
```

## Example Response

```
{  
  "job_id" : "a03b1b8a-b756-467c-8a49-38720c3d23ec"  
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

# 4.7 Log Management

## 4.7.1 Querying Whether Error Log Collection Is Enabled

### Function

This API is used to query whether error log collection is enabled. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/error-log/switch/status](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/error-log/switch/status)

**Table 4-243** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
instance_id	Yes	String	Instance ID.

## Request Parameters

None

## Response Parameters

**Table 4-244** Response Parameters

Parameter	Type	Description
status	String	<p>Whether error log collection is enabled.</p> <ul style="list-style-type: none"> <li>● <b>ON:</b> enabled</li> <li>● <b>OFF:</b> disabled</li> </ul>

## Example Request

```
GET https://gaussdb-opengauss.cn-north-4.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/0317e6bbae534b8eb8f74f0eafcf1d3din01/error-log/switch/status
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/0317e6bbae534b8eb8f74f0eafcf1d3din01/error-log/switch/status
```

## Example Response

```
{
  "status": "OFF"
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.7.2 Querying the Link for Downloading Error Logs

### Function

This API is used to query the link for downloading error logs. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/error-log](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/error-log)

**Table 4-245** Request path parameters

Parameter	Type	Mandatory	Description
project_id	String	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	String	Yes	Instance ID.

**Table 4-246** Request query parameters

Parameter	Type	Mandatory	Description
offset	Integer	No	Index offset. If <b>offset</b> is set to <i>N</i> , the resource query starts from the <i>N</i> +1 data entry. The default value is <b>0</b> , indicating that the query starts from the first data entry. The value cannot be a negative number. For example, if this parameter is set to <b>0</b> and <b>limit</b> is set to <b>10</b> , only the 1st to 10th records are displayed.
limit	Integer	No	Number of records to be queried. The default value is <b>10</b> . The value cannot be a negative number. The minimum value is <b>1</b> and the maximum value is <b>100</b> . For example, if this parameter is set to <b>10</b> , a maximum of 10 records can be displayed.
start_time	String	Yes	Start time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the offset is <b>+0800</b> .
end_time	String	Yes	End time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the offset is <b>+0800</b> . Only error logs generated in the past 30 days can be queried.

## Request Parameters

None

## Response Parameters

**Table 4-247** Response body parameters

Parameter	Type	Mandatory	Description
total	Integer	Yes	Total number of records.
log_files	Array of object	Yes	Log files. For details, see <a href="#">Table 4-248</a> .

**Table 4-248** log\_files field data structure description

Parameter	Type	Mandatory	Description
file_name	String	Yes	Log file name.
file_link	String	Yes	Link for downloading the log file.
file_size	String	Yes	Log file size in KB.
start_time	String	Yes	Log start time.
end_time	String	Yes	Log end time.
status	String	Yes	Log collection status.

## Example Request

```
GET https://gaussdb-opengauss.cn-north-4.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/0317e6bbae534b8eb8f74f0eafcf1d3din01/error-log?start_time=2022-03-15T10:41:14+0800&end_time=2022-03-16T10:41:14+0800
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/0317e6bbae534b8eb8f74f0eafcf1d3din01/error-log?start_time=2022-03-15T10:41:14+0800&end_time=2022-03-16T10:41:14+0800
```

## Example Response

```
{
  "total": 1,
  "log_files": [{
    "status": "ENABLE",
    "file_name": "d289e7f024d741698fb94d73316874ffin14_collector_20220506_155941.tar.gz",
    "start_time": "1651820343244",
    "end_time": "1651823943244",
    "file_size": "62",
    "file_link": "****"
  }]
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.7.3 Creating a Slow Query Log Download Task

### Function

This API is used to create a slow query log download task. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

POST [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/slow-log/download](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/slow-log/download)

**Table 4-249** URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	String	Instance ID, which is compliant with the UUID format.



## Request Parameters

None

## Response Parameters

**Table 4-250** Response body parameters

Parameter	Type	Description
list	Array of SlowLogDownloadInfo objects	Downloaded slow query log information. For details, see <a href="#">Table 4-251</a> .

**Table 4-251** SlowLogDownloadInfo field data structure description

Parameter	Type	Description
id	String	Slow query log ID.
instance_id	String	Instance ID.
node_id	String	Node ID.
workflow_id	String	Workflow ID.
file_name	String	File name.
file_size	String	File size in bytes.
file_link	String	Link for downloading the file.
bucket_name	String	Bucket name
created_at	Long	Creation time.
updated_at	Long	Update time.
version	String	Version.
status	String	Status.
message	String	Message.

## Example Request

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/cc6fd964d93f4003851dfc29d57d30a5in14/slow-log/download
```

## Example Response

### NOTICE

When a request is delivered for the first time, the response is an empty list.

```
{
  "list" : []
}
```

```
{
  "list" : [ {
    "id" : "64d7bad3-6665-4590-baa2-eb5394e49625",
    "instance_id" : "9b2f4cc6cd584c67bc179a2bfbb37f90in14",
    "node_id" : "9d8c79cc41074452977a564b335220f5no14",
    "workflow_id" : "7d77153c12dde-4f3c-a333-7d30503267f2",
    "file_name" :
    "c7025305deb34ae9af1be94f698e7949_slowlog_download__9d8c79cc41074452977a564b335220f5no142023
    0823024331782",
    "file_size" : "719.0",
    "file_link" : "****",
    "bucket_name" : null,
    "created_at" : 1692758611782,
    "updated_at" : 1692758611782,
    "version" : null,
    "status" : "EXPORTING",
    "message" : null
  }, {
    "id" : "4712c3b1-d26a-49d4-9652-211d6ac106c5",
    "instance_id" : "9b2f4cc6cd584c67bc179a2bfbb37f90in14",
    "node_id" : "9d03b0a73ebd415eb2f692862f326cb7no14",
    "workflow_id" : "7d77153c12dde-4805-bd0b-d70c803a873a",
    "file_name" :
    "c7025305deb34ae9af1be94f698e7949_slowlog_download__9d03b0a73ebd415eb2f692862f326cb7no142023
    0823024331727",
    "file_size" : "719.0",
    "file_link" : "****",
    "bucket_name" : null,
    "created_at" : 1692758611727,
    "updated_at" : 1692758611727,
    "version" : null,
    "status" : "EXPORTING",
    "message" : null
  } ]
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.7.4 Querying Downloaded Slow Query Log Information

### Function

This API is used to query downloaded slow query log information. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/slow-log/download](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/slow-log/download)

Table 4-252 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	String	Instance ID, which is compliant with the UUID format.

### Request Parameters

None

## Response Parameters

**Table 4-253** Response body parameters

Parameter	Type	Description
list	Array of SlowLogDownloadInfo objects	Downloaded slow query log information. For details, see <a href="#">Table 4-254</a> .

**Table 4-254** SlowLogDownloadInfo field data structure description

Parameter	Type	Description
id	String	Slow query log ID.
instance_id	String	Instance ID.
node_id	String	Node ID.
workflow_id	String	Workflow ID.
file_name	String	File name.
file_size	String	File size in bytes.
file_link	String	Link for downloading the file.
bucket_name	String	Bucket name
created_at	Long	Creation time.
updated_at	Long	Update time.
version	String	Version.
status	String	Status.
message	String	Message.

### Example Request

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/cc6fd964d93f4003851dfc29d57d30a5in14/slow-log/download
```

### Example Response

```
{
  "list": [ {
    "id": "64d7bad3-6665-4590-baa2-eb5394e49625",
    "instance_id": "9b2f4cc6cd584c67bc179a2bfbb37f90in14",
    "node_id": "9d8c79cc41074452977a564b335220f5no14",
    "workflow_id": "7d77153c12dde-4f3c-a333-7d30503267f2",
    "file_name":
```

```
"c7025305deb34ae9af1be94f698e7949_slowlog_download__9d8c79cc41074452977a564b335220f5no1420230823024331782",
  "file_size": "719.0",
  "file_link": "****",
  "bucket_name": null,
  "created_at": 1692758611782,
  "updated_at": 1692758611782,
  "version": null,
  "status": "success",
  "message": null
}, {
  "id": "4712c3b1-d26a-49d4-9652-211d6ac106c5",
  "instance_id": "9b2f4cc6cd584c67bc179a2bfbb37f90in14",
  "node_id": "9d03b0a73ebd415eb2f692862f326cb7no14",
  "workflow_id": "7d77153c12dde-4805-bd0b-d70c803a873a",
  "file_name":
"c7025305deb34ae9af1be94f698e7949_slowlog_download__9d03b0a73ebd415eb2f692862f326cb7no1420230823024331727",
  "file_size": "719.0",
  "file_link": "****",
  "bucket_name": null,
  "created_at": 1692758611727,
  "updated_at": 1692758611727,
  "version": null,
  "status": "success",
  "message": null
}]
}]
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

# 4.8 SQL Throttling

## 4.8.1 Creating a SQL Throttling Task

### Function

This API is used to create a SQL throttling task based on the specific scope and type. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

- SQL ID-based and auto throttling is unavailable for distributed instances.
- SQL throttling cannot be performed for system-level users (such as **root**).

- Each instance supports a maximum of 1,000 throttling tasks.
- For a keyword-based throttling task, keywords are separated by commas (,), and the sequence of keywords is not distinguished.
- SQL throttling is available only for DB instances of version 8.0 or later.

## URI

POST [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/limit-task](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/limit-task)

**Table 4-255** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	Instance ID.

## Request Parameters

**Table 4-256** Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to <a href="#">obtain a user token</a> . After the request is processed, the value of <b>X-Subject-Token</b> in the message header is the token value.

Parameter	Mandatory	Type	Description
X-Language	No	String	Language. Default value: <b>en-us</b> Value range: <ul style="list-style-type: none"> <li>• <b>zh-cn</b></li> <li>• <b>en-us</b></li> </ul>

**Table 4-257** Request body parameters

Parameter	Mandatory	Type	Description
task_scope	Yes	String	Task scope. Currently, <b>SQL</b> and <b>SESSION</b> are supported.
start_time	No	String	Task start time. This parameter is mandatory when <b>task_scope</b> is set to <b>SQL</b> . Value range: two minutes later than or equal to the current time (UTC time) The format must be yyyy-mm-ddThh:mm:ss+0000.
end_time	No	String	Task end time. This parameter is mandatory when <b>task_scope</b> is set to <b>SQL</b> . Value range: later than the task start time. The format must be yyyy-mm-ddThh:mm:ss+0000.
limit_type	Yes	String	Throttling type. <ul style="list-style-type: none"> <li>• When <b>task_scope</b> is set to <b>SQL</b>, the value can be <b>SQL_ID</b> or <b>SQL_TYPE</b>.</li> <li>• When <b>task_scope</b> is set to <b>SESSION</b>, the value can be <b>SESSION_ACTIVE_MAX_COUNT</b>.</li> </ul>

Parameter	Mandatory	Type	Description
limit_type_value	Yes	String	Throttling type value. <ul style="list-style-type: none"> <li>When <b>limit_type</b> is set to <b>SQL_ID</b>, the value of this parameter is the SQL ID of the selected template.</li> <li>When <b>limit_type</b> is set to <b>SQL_TYPE</b>, the value of this parameter can be <b>select</b>, <b>update</b>, <b>insert</b>, <b>delete</b>, or <b>merge</b>.</li> <li>When <b>limit_type</b> is set to <b>SESSION_ACTIVE_MAX_COUNT</b>, the value of this parameter can only be <b>CPU_OR_MEMORY</b>.</li> </ul>
key_words	No	String	Keyword. This parameter is mandatory when <b>limit_type</b> is set to <b>SQL_TYPE</b> . You can enter 2 to 100 keywords and separate multiple keywords by commas (.). Each keyword can contain 2 to 64 characters and cannot start and end with a space. The specific characters ("{}") and <b>null</b> are not allowed.
task_name	Yes	String	Name of the SQL throttling task. The value can contain up to 100 characters. Only uppercase letters, lowercase letters, underscores (_), digits, and dollar signs (\$) are allowed.
sql_model	No	String	SQL template. If <b>limit_type</b> is set to <b>SQLID</b> , this parameter is mandatory.
parallel_size	Yes	Integer	Maximum concurrency. The value can be <b>0</b> or a positive integer. Value range: [0, 2147483647]
cpu_utilization	No	Integer	CPU usage threshold. The value is an integer ranging from [0, 100). This parameter is mandatory when <b>limit_type</b> is set to <b>SESSION_ACTIVE_MAX_COUNT</b> . This parameter and <b>memory_utilization</b> cannot be both set to <b>0</b> . If you only need one of them for throttling, set the other threshold to <b>0</b> .



Parameter	Mandatory	Type	Description
memory_utilization	No	Integer	Memory usage threshold. The value is an integer ranging from [0, 100). This parameter is mandatory when <b>limit_type</b> is set to <b>SESSION_ACTIVE_MAX_COUNT</b> . This parameter and <b>cpu_utilization</b> cannot be both set to <b>0</b> . If you only need one of them for throttling, set the other threshold to <b>0</b> .
databases	No	String	Databases of the instance. Databases are separated by commas (.). This parameter is mandatory when <b>limit_type</b> is set to <b>SQL_TYPE</b> .
node_infos	No	Array of objects	CN information. For details, see <a href="#">Table 4-258</a> . This parameter is mandatory when <b>limit_type</b> is set to <b>SQL_ID</b> .

**Table 4-258** CreateLimitTaskNodeOption

Parameter	Mandatory	Type	Description
node_id	Yes	String	Node ID.
sql_id	Yes	String	ID of the SQL statement executed on the node. If <b>limit_type</b> is set to <b>SQL_ID</b> , the value of this parameter must be the same as that of <b>limit_type_value</b> .

## Response Parameters

**Table 4-259** Response body parameters

Parameter	Type	Description
task_id	String	Throttling task ID.
task_scope	String	Throttling task scope.
limit_type	String	Throttling task type.
limit_type_value	String	Throttling task type value.

Parameter	Type	Description
databases	String	Databases of the instance. Databases are separated by commas (,).
task_name	String	Throttling task name.
sql_model	String	SQL template. This parameter is returned only when the task type is <b>SQL_ID</b> .
key_words	String	Keyword. This parameter is returned only when the task type is <b>SQL_TYPE</b> .
status	String	Throttling task status. The value can be <b>CREATING, UPDATING, DELETING, WAIT_EXECUTE, EXECUTING, TIME_OVER, DELETED, CREATE_FAILED, UPDATE_FAILED, DELETE_FAILED, EXCEPTION</b> or <b>NODE_SHUT_DOWN</b> .
instance_id	String	Instance ID.
rule_name	String	Rule name.
parallel_size	Integer	Maximum concurrency.
cpu_utilization	Integer	CPU usage threshold. This parameter is returned with only its integer part retained when the task type is <b>SESSION_ACTIVE_MAX_COUNT</b> .
memory_utilization	Integer	Memory usage threshold. This parameter is returned with only its integer part retained when the task type is <b>SESSION_ACTIVE_MAX_COUNT</b> .
start_time	String	Start time of the throttling task. The format is yyyy-mm-ddThh:mm:ssZ. This parameter is returned when <b>task_scope</b> is set to <b>SQL</b> .
end_time	String	End time of the throttling task. The format is yyyy-mm-ddThh:mm:ssZ. This parameter is returned when <b>task_scope</b> is set to <b>SQL</b> .
created	String	Creation time. The format is yyyy-mm-ddThh:mm:ss+0000.
updated	String	Update time. The format is yyyy-mm-ddThh:mm:ss+0000.
creator	String	Creator.
modifier	String	Modifier.
node_infos	Array of <a href="#">Table 4-260</a> objects	CN node information list. If the type is <b>SQLID</b> , this value is returned and is the same as the value of the request parameter <b>node_infos</b> .

Parameter	Type	Description
job_id	String	Job ID.

**Table 4-260** CreateLimitTaskNodeResult

Parameter	Type	Description
node_id	String	Node ID.
sql_id	String	ID of the SQL statement executed on the node.

## Example Request

- Creating a throttling task whose scope is SQL and type is SQL\_ID

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0611f1bd8b00d5d32f17c017f15b599f/instances/3d39c18788b54a919bab633874c159dfin14/limit-task
{
  "task_scope": "SQL",
  "start_time": "2023-06-06T01:47:20+0800",
  "end_time": "2023-06-07T01:47:20+0800",
  "limit_type": "SQL_ID",
  "limit_type_value": "39b6a1a",
  "task_name": "test1",
  "sql_model": "select * from a where b = ?",
  "parallel_size": 100,
  "node_infos": [ {
    "node_id": "46d996fdda594f58b17fe509061e0893no14",
    "sql_id": "39b6a1a"
  } ]
}
```

- Creating a throttling task whose scope is SQL and type is SQL\_TYPE

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0611f1bd8b00d5d32f17c017f15b599f/instances/3d39c18788b54a919bab633874c159dfin14/limit-task
{
  "task_scope": "SQL",
  "start_time": "2023-06-06T01:47:20+0800",
  "end_time": "2023-06-07T01:47:20+0800",
  "limit_type": "SQL_TYPE",
  "limit_type_value": "select",
  "task_name": "test1",
  "key_words": "table1,id",
  "parallel_size": 100,
  "databases": "test1"
}
```

- Creating a throttling task whose scope is SESSION and type is SESSION\_ACTIVE\_MAX\_COUNT

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0611f1bd8b00d5d32f17c017f15b599f/instances/3d39c18788b54a919bab633874c159dfin14/limit-task
{
  "task_name": "test",
  "task_scope": "SESSION",
  "limit_type": "SESSION_ACTIVE_MAX_COUNT",
  "limit_type_value": "CPU_OR_MEMORY",
}
```

```
"cpu_utilization" : 80,  
"memory_utilization" : 80,  
"parallel_size" : 100  
}
```

## Example Response

```
{  
  "task_id" : "59b6a1a278844ac48119d86512e0000",  
  "task_scope" : "SQL",  
  "task_name" : "test1",  
  "limit_type" : "SQL_TYPE",  
  "limit_type_value" : "select",  
  "instance_id" : "cb651ac71c5a447685ef981e44a0422fin14",  
  "key_words" : "test",  
  "databases" : "test1",  
  "status" : "creating",  
  "parallel_size" : 100,  
  "rule_name" : "dsa48119d86512e0000bin066a1a27",  
  "start_time" : "2023-12-30T02:00:00Z",  
  "end_time" : "2023-12-30T02:00:00Z",  
  "created" : "2023-12-30T02:00:00Z",  
  "updated" : "2023-12-30T02:00:00Z",  
  "creator" : "dbs_rds_guangzhou_l00417929_01",  
  "job_id" : "d8819ac11297598d06e591b5786aab86"  
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.8.2 Deleting a SQL Throttling Task

### Function

This API is used to delete a SQL throttling task. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

SQL throttling tasks cannot be deleted in batches.

### URI

DELETE [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/limit-task/{task\\_id}](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/limit-task/{task_id})

**Table 4-261** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
task_id	Yes	Throttling task ID.
instance_id	Yes	Instance ID.

## Request Parameters

**Table 4-262** Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to <a href="#">obtain a user token</a> . After the request is processed, the value of <b>X-Subject-Token</b> in the message header is the token value.
X-Language	No	String	Language. Default value: <b>en-us</b> Value range: <ul style="list-style-type: none"><li>• <b>zh-cn</b></li><li>• <b>en-us</b></li></ul>

## Response Parameters

None

## Example Request

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0611f1bd8b00d5d32f17c017f15b599f/instances/3d39c18788b54a919bab633874c159dfin14/limit-task/96854ba7-8d50-4a3c-8fd8-210a7390e9d1
```

## Example Response

None

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.8.3 Querying SQL Throttling Tasks

### Function

This API is used to query SQL throttling tasks based on search criteria. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/limit-task-list](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/limit-task-list)

**Table 4-263** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

Parameter	Mandatory	Description
instance_id	Yes	Instance ID.

**Table 4-264** Query parameters

Parameter	Mandatory	Type	Description
task_scope	No	String	Throttling task scope. Currently, SQL and SESSION are supported.
limit_type	No	String	Throttling type. The value can be <b>SQL_ID</b> , <b>SQL_TYPE</b> , or <b>SESSION_ACTIVE_MAX_COUNT</b> .
limit_type_value	No	String	Throttling type value. Fuzzy match is supported.
task_name	No	String	Throttling task name. Fuzzy match is supported.
sql_model	No	String	SQL template. Fuzzy match is supported.
rule_name	No	String	Rule name.
start_time	No	String	Start time of the throttling task in the format of yyyy-mm-ddThh:mm:ssZ (UTC time).
end_time	No	String	End time of the throttling task in the format of yyyy-mm-ddThh:mm:ssZ (UTC time).
offset	No	Integer	Index offset. If <b>offset</b> is set to <i>N</i> , the resource query starts from the <i>N</i> +1 data entry. The default value is <b>0</b> , indicating that the query starts from the first data entry. The value cannot be a negative number. Value range: <b>0</b> to <b>10000</b>
limit	No	Integer	Number of records to be queried. The default value is <b>10</b> . The value cannot be a negative number. The minimum value is <b>1</b> and the maximum value is <b>100</b> .

## Request Parameters

**Table 4-265** Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to <a href="#">obtain a user token</a> . After the request is processed, the value of <b>X-Subject-Token</b> in the message header is the token value.
X-Language	No	String	Language. Default value: <b>en-us</b> Value range: <ul style="list-style-type: none"><li>• <b>zh-cn</b></li><li>• <b>en-us</b></li></ul>

## Response Parameters

**Table 4-266** Response body parameters

Parameter	Type	Description
limit_task_list	Array of objects	Throttling task information in the list. For details, see <a href="#">Table 4-267</a> .
limit	Integer	Number of records to be queried.
offset	Integer	Index offset.
total_count	Integer	Total number of throttling tasks.

**Table 4-267** ListLimitTaskResponseResult

Parameter	Type	Description
task_id	String	Throttling task ID.
task_scope	String	Throttling task scope.
limit_type	String	Throttling task type.
limit_type_value	String	Throttling task type value.



Parameter	Type	Description
task_name	String	Throttling task name.
databases	String	Databases of the instance. Databases are separated by commas (,).
sql_model	String	SQL template. This parameter is returned only when the task type is <b>SQL_ID</b> .
key_words	String	Keyword. This parameter is returned only when the task type is <b>SQL_TYPE</b> .
status	String	Throttling task status. The value can be <b>CREATING, UPDATING, DELETING, WAIT_EXECUTE, EXECUTING, TIME_OVER, DELETED, CREATE_FAILED, UPDATE_FAILED, DELETE_FAILED, EXCEPTION</b> or <b>NODE_SHUT_DOWN</b> .
instance_id	String	Instance ID.
rule_name	String	Rule name.
parallel_size	Integer	Maximum concurrency.
start_time	String	Start time of the throttling task in the format of yyyy-mm-ddThh:mm:ss+0000 (UTC time).
end_time	String	End time of the throttling task in the format of yyyy-mm-ddThh:mm:ss+0000 (UTC time).
cpu_utilization	Integer	CPU usage. This parameter is returned only when the task type is <b>SESSION_ACTIVE_MAX_COUNT</b> .
memory_utilization	Integer	Memory usage. This parameter is returned only when the task type is <b>SESSION_ACTIVE_MAX_COUNT</b> .
created	String	Creation time in the format of yyyy-mm-ddThh:mm:ssZ (UTC time).
updated	String	Update time in the format of yyyy-mm-ddThh:mm:ssZ (UTC time).
creator	String	Creator.
modifier	String	Modifier.
node_infos	Array of objects	CN information. For details, see <a href="#">Table 4-268</a> .

**Table 4-268** ShowLimitTaskNodeOption

Parameter	Type	Description
node_id	String	Node ID.
sql_id	String	ID of the SQL statement executed on the node.

## Example Request

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0611f1bd8b00d5d32f17c017f15b599f/instances/3d39c18788b54a919bab633874c159dfin14/limit-task-list?offset=1&limit=10&limit_type=SQL_ID&task_name=test
```

## Example Response

```
{
  "limit_task_list": [ {
    "task_id": "59b6a1a278844ac48119d86512e0000",
    "task_scope": "SQL",
    "limit_type": "SQL_ID",
    "limit_type_value": 2348983611,
    "sql_model": "select * from table where id = {id}",
    "status": "creating",
    "key_words": null,
    "instance_id": "39b6a1a278844ac48119d86512e0000bin06",
    "parallel_size": 100,
    "rule_name": "dsa48119d86512e0000bin066a1a27",
    "databases": "test1",
    "task_name": "test1",
    "start_time": "2023-12-30T02:00:00Z",
    "end_time": "2023-12-30T02:00:00Z",
    "created": "2023-12-28T01:55:08Z",
    "updated": "2023-12-28T01:55:08Z",
    "creator": "test",
    "modifier": "null",
    "cpu_utilization": null,
    "memory_utilization": null,
    "node_infos": [ {
      "node_id": "cf521ccca2d74c9e89569a9828b6adcbno14",
      "sql_id": 2348983611
    } ]
  } ],
  "total_count": 1,
  "limit": 10,
  "offset": 1
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.8.4 Querying SQL Templates

### Function

This API is used to query SQL templates of a specified node. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/list-node-limit-sql-model](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/list-node-limit-sql-model)

**Table 4-269** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	String	Instance ID.

**Table 4-270** Query parameters

Parameter	Mandatory	Type	Description
node_id	Yes	String	Node ID.
sql_model	No	String	SQL template. The value can contain only uppercase letters, lowercase letters, underscores (_), digits, spaces, and the following special characters <code>*?+=;()&gt;&lt;,&lt;code&gt;.</code>

Parameter	Mandatory	Type	Description
offset	No	Integer	Index offset. If <b>offset</b> is set to <i>N</i> , the resource query starts from the <i>N</i> +1 data entry. The default value is <b>0</b> , indicating that the query starts from the first data entry. The value cannot be a negative number. Value range: <b>0</b> to <b>10000</b>
limit	No	Integer	Number of records to be queried. The default value is <b>10</b> . The value cannot be a negative number. The minimum value is <b>1</b> and the maximum value is <b>100</b> .

## Request Parameters

Table 4-271 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to <a href="#">obtain a user token</a> . After the request is processed, the value of <b>X-Subject-Token</b> in the message header is the token value.
X-Language	No	String	Language. Default value: <b>en-us</b> Value range: <ul style="list-style-type: none"><li>• <b>zh-cn</b></li><li>• <b>en-us</b></li></ul>

## Response Parameters

Table 4-272 Response body parameters

Parameter	Type	Description
node_limit_sql_model_list	Array of objects	Information about the SQL template for SQL throttling. For details, see <a href="#">Table 4-273</a> .

Parameter	Type	Description
limit	Integer	Number of records to be queried.
offset	Integer	Index offset.
total_count	Integer	Total number of SQL templates.

**Table 4-273** ListNodeLimitSqlModelResponseResult

Parameter	Type	Description
sql_id	String	SQL ID of the throttling task.
sql_model	String	SQL template of the throttling task.

## Example Request

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0611f1bd8b00d5d32f17c017f15b599f/instances/3d39c18788b54a919bab633874c159dfin14/list-node-limit-sql-model?node_id=46d996fdda594f58b17fe509061e0893no14&offset=0
```

## Example Response

```
{
  "node_limit_sql_model_list" : [ {
    "sql_id" : "3519660378",
    "sql_model" : "select * from table where id= ?"
  } ],
  "total_count" : 1,
  "limit" : 10,
  "offset" : 1
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.8.5 Modifying a SQL Throttling Task

### Function

This API is used to modify a SQL throttling task based on the specific scope and type. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

## URI

PUT [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/limit-task/{task\\_id}](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/limit-task/{task_id})

**Table 4-274** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	Instance ID.
task_id	Yes	Throttling task ID.

## Request Parameters

**Table 4-275** Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to <a href="#">obtain a user token</a> . After the request is processed, the value of <b>X-Subject-Token</b> in the message header is the token value.
X-Language	No	String	Language. Default value: <b>en-us</b> Value range: <ul style="list-style-type: none"><li>• <b>zh-cn</b></li><li>• <b>en-us</b></li></ul>

**Table 4-276** Request body parameters

Parameter	Mandatory	Type	Description
start_time	No	String	Task start time. This parameter is mandatory when <b>task_scope</b> is set to <b>SQL</b> . Value range: two minutes later than or equal to the current time (UTC time). The format must be yyyy-mm-ddThh:mm:ss+0000.
end_time	No	String	Task end time. This parameter is mandatory when <b>task_scope</b> is set to <b>SQL</b> . Value range: later than the task start time. The format must be yyyy-mm-ddThh:mm:ss+0000.
key_words	No	String	Keyword. This parameter is mandatory when <b>limit_type</b> is set to <b>SQL_TYPE</b> . You can enter 2 to 100 keywords and separate multiple keywords by commas (.). Each keyword can contain 2 to 64 characters and cannot start and end with a space. The specific characters ("{}") and <b>null</b> are not allowed.
task_name	No	String	Name of the SQL throttling task. The value can contain up to 100 characters. Only uppercase letters, lowercase letters, underscores (_), digits, and dollar signs (\$) are allowed.
parallel_size	No	Integer	Maximum concurrency. The value can be <b>0</b> or a positive integer. Value range: <b>[0, 2147483647]</b>

Parameter	Mandatory	Type	Description
cpu_utilization	No	Integer	<p>CPU usage threshold. The value is an integer ranging from [0, 100).</p> <p>This parameter is mandatory when <b>limit_type</b> is set to <b>SESSION_ACTIVE_MAX_COUNT</b>.</p> <p>This parameter and <b>memory_utilization</b> cannot be both set to 0. If you only need one of them for throttling, set the other threshold to 0.</p>
memory_utilization	No	Integer	<p>Memory usage threshold. The value is an integer ranging from [0, 100).</p> <p>This parameter is mandatory when <b>limit_type</b> is set to <b>SESSION_ACTIVE_MAX_COUNT</b>.</p> <p>This parameter and <b>cpu_utilization</b> cannot be both set to 0. If you only need one of them for throttling, set the other threshold to 0.</p>
databases	No	String	<p>Databases of the instance. Databases are separated by commas (,).</p> <p>This parameter is mandatory when <b>limit_type</b> is set to <b>SQL_TYPE</b>.</p>

## Response Parameters

**Table 4-277** Response body parameters

Parameter	Type	Description
task_id	String	Throttling task ID.
databases	String	Databases of the instance. Databases are separated by commas (,).
task_name	String	Throttling task name.
key_words	String	Keyword. This parameter is returned only when the task type is <b>SQL_TYPE</b> .
parallel_size	Integer	Maximum concurrency.
cpu_utilization	Integer	CPU usage threshold. This parameter is returned with only its integer part retained when the task type is <b>SESSION_ACTIVE_MAX_COUNT</b> .



Parameter	Type	Description
memory_utilization	Integer	Memory usage threshold. This parameter is returned with only its integer part retained when the task type is <b>SESSION_ACTIVE_MAX_COUNT</b> .
start_time	String	Start time of the throttling task. The format is yyyy-mm-ddThh:mm:ssZ. This parameter is returned when <b>task_scope</b> is set to <b>SQL</b> .
end_time	String	End time of the throttling task. The format is yyyy-mm-ddThh:mm:ssZ. This parameter is returned when <b>task_scope</b> is set to <b>SQL</b> .
rule_name	String	Rule name.
job_id	String	Job ID.

## Example Request

- Modifying a throttling task whose type is SQL\_ID

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0611f1bd8b00d5d32f17c017f15b599f/instances/3d39c18788b54a919bab633874c159dfin14/limit-task/96854ba7-8d50-4a3c-8fd8-210a7390e9d1
{
  "start_time": "2024-08-20T06:54:42+0800",
  "end_time": "2024-08-20T07:54:42+0800",
  "task_name": "SQLIdLimit",
  "parallel_size": 10
}
```

- Modifying a throttling task whose type is SQL\_TYPE

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0611f1bd8b00d5d32f17c017f15b599f/instances/3d39c18788b54a919bab633874c159dfin14/limit-task/96854ba7-8d50-4a3c-8fd8-210a7390e9d1
{
  "start_time": "2024-08-20T06:54:42+0800",
  "end_time": "2024-08-20T07:54:42+0800",
  "key_words": "version,type",
  "task_name": "KeywordLimit",
  "parallel_size": 10,
  "databases": "gaussdb_test3"
}
```

- Modifying a throttling task whose type is SESSION\_ACTIVE\_MAX\_COUNT

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0611f1bd8b00d5d32f17c017f15b599f/instances/3d39c18788b54a919bab633874c159dfin14/limit-task/96854ba7-8d50-4a3c-8fd8-210a7390e9d1
{
  "task_name": "ThresholdLimit",
  "parallel_size": 10,
  "cpu_utilization": 20,
  "memory_utilization": 20
}
```

## Example Response

- Throttling task whose type is SQL\_ID modified.

```
{
  "task_id": "bca08a79-8557-42c2-ab73-09a14d178c57",
  "task_name": "SQLIdLimit",
  "parallel_size": 10,
  "start_time": "2024-08-19T22:54:42Z",
  "end_time": "2024-08-19T23:54:42Z",
  "job_id": "d44bbbc3-4465-4079-ac71-d8e7ab0643a4"
}
```

- Throttling task whose type is SQL\_TYPE modified.

```
{
  "task_id": "ef8575c7-0133-43b4-8ab2-b950b9a6daaf",
  "databases": "gaussdb_test3",
  "task_name": "KeywordLimit",
  "key_words": "type,version",
  "parallel_size": 10,
  "start_time": "2024-08-19T22:54:42Z",
  "end_time": "2024-08-19T23:54:42Z",
  "job_id": "40e2e10f-6f4c-4883-9db7-5422f42187cc"
}
```

- Throttling task whose type is SESSION\_ACTIVE\_MAX\_COUNT modified.

```
{
  "task_id": "37b6232c-58ea-4d62-a5b5-54fc215c2115",
  "task_name": "ThresholdLimit",
  "parallel_size": 10,
  "cpu_utilization": 20,
  "memory_utilization": 20,
  "job_id": "0ec7109d-bc8f-41f6-9a78-a70f966739fc"
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.8.6 Querying SQL Throttling Tasks

### Function

This API is used to query SQL throttling tasks based on search criteria. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/limit-task/{task\\_id}](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/limit-task/{task_id})

**Table 4-278** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
task_id	Yes	Throttling task ID.
instance_id	Yes	Instance ID.

## Request Parameters

**Table 4-279** Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to <a href="#">obtain a user token</a> . After the request is processed, the value of <b>X-Subject-Token</b> in the message header is the token value.
X-Language	No	String	Language. Default value: <b>en-us</b> Value range: <ul style="list-style-type: none"><li>• <b>zh-cn</b></li><li>• <b>en-us</b></li></ul>

## Response Parameters

**Table 4-280** Response body parameters

Parameter	Type	Description
task_name	String	Throttling task name.
limit_type	String	Throttling task type.
parallel_size	Integer	Maximum concurrency.
start_time	String	Start time of the throttling task in the format of yyyy-mm-ddThh:mm:ss+0000 (UTC time).
end_time	String	End time of the throttling task in the format of yyyy-mm-ddThh:mm:ss+0000 (UTC time).
limit_count	Integer	Throttling times.
task_running_time	Integer	Running duration of a throttling task.
memory_utilization	Integer	Memory usage. This parameter is returned only when the task type is <b>SESSION_ACTIVE_MAX_COUNT</b> .
cpu_utilization	Integer	CPU usage. This parameter is returned only when the task type is <b>SESSION_ACTIVE_MAX_COUNT</b> .
rule_name	String	Rule name.
limit_task_rule_info_list	Array of objects	Nodes of throttling tasks. For details, see <a href="#">Table 4-281</a> .

**Table 4-281** LimitTaskRuleInfoList

Parameter	Type	Description
node_id	String	Node ID.
rule_id	String	Throttling task ID.
status	String	Throttling task status. The value can be <b>CREATING, UPDATING, DELETING, WAIT_EXECUTE, EXECUTING, TIME_OVER, DELETED, CREATE_FAILED, UPDATE_FAILED, DELETE_FAILED, EXCEPTION, or NODE_SHUT_DOWN</b> .

## Example Request

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0611f1bd8b00d5d32f17c017f15b599f/instances/3d39c18788b54a919bab633874c159dfin14/limit-task/96854ba7-8d50-4a3c-8fd8-210a7390e9d1
```

## Example Response

- Throttling tasks whose type is SQL\_ID queried.

```
{
  "task_name": "123",
  "limit_type": "SQL_ID",
  "parallel_size": 0,
  "start_time": "2024-08-19T07:12:31Z",
  "end_time": "2024-09-30T07:10:59Z",
  "limit_count": 1,
  "task_running_time": 16258,
  "rule_name": "bca08a79-8557-42c2-ab73-09a14d178c57",
  "limit_task_rule_info_list": [
    {
      "node_id": "e37a7df4ec694a3cbfeae1aee583d70fno14",
      "rule_id": "2",
      "status": "EXECUTING"
    }
  ]
}
```

- Throttling tasks whose type is SQL\_TYPE queried.

```
{
  "task_name": "123",
  "limit_type": "SQL_TYPE",
  "parallel_size": 0,
  "start_time": "2024-08-20T06:54:42Z",
  "end_time": "2024-09-09T06:53:43Z",
  "limit_count": 0,
  "task_running_time": 0,
  "rule_name": "476faedc-0583-4327-9f48-91fa1703e910",
  "limit_task_rule_info_list": [
    {
      "node_id": "e37a7df4ec694a3cbfeae1aee583d70fno14",
      "rule_id": "1",
      "status": "WAIT_EXCUTE"
    }
  ]
}
```

- Throttling tasks whose type is SESSION\_ACTIVE\_MAX\_COUNT queried.

```
{
  "task_name": "89",
  "limit_type": "SESSION_ACTIVE_MAX_COUNT",
  "parallel_size": 0,
  "limit_count": 0,
  "task_running_time": 16283,
  "memory_utilization": 1,
  "cpu_utilization": 0,
  "rule_name": "37b6232c-58ea-4d62-a5b5-54fc215c2115",
  "limit_task_rule_info_list": [
    {
      "node_id": "e37a7df4ec694a3cbfeae1aee583d70fno14",
      "rule_id": "3",
      "status": "EXECUTING"
    }
  ]
}
```

## Status Code

- Normal

- 200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.8.7 Synchronizing SQL Throttling Tasks

### Function

This API is used to synchronize SQL throttling tasks of an instance from the kernel plane to the management plane. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

POST [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/sync-limit-task](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/sync-limit-task)

**Table 4-282** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	String	Instance ID.

## Request Parameters

**Table 4-283** Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to <a href="#">obtain a user token</a> . After the request is processed, the value of <b>X-Subject-Token</b> in the message header is the token value.
X-Language	No	String	Language. Default value: <b>en-us</b> Value range: <ul style="list-style-type: none"><li>• <b>zh-cn</b></li><li>• <b>en-us</b></li></ul>

## Response Parameters

**Table 4-284** Response body parameters

Parameter	Type	Description
result	String	Synchronization result. The value can be <b>success</b> or <b>fail</b> .
instance_id	String	ID of the instance whose data is to be synchronized.
node_id	String	ID of the node whose data is to be synchronized. For a centralized instance, it indicates the ID of the primary node. For a distributed instance, it indicates the ID of the CN node.
total_count	Integer	Total number of synchronized data records.

## Example Request

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0611f1bd8b00d5d32f17c017f15b599f/instances/3d39c18788b54a919bab633874c159dfin14/sync-limit-task
{
}
```

## Example Response

```
{
  "result": "success",
  "instance_id": "ee95e4fd433d44a9b6dfa788149c8dd7in14",
  "node_id": "e37a7df4ec694a3cbfeae1aee583d70fno14",
  "total_count": 3
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

# 4.9 Database and Account Management

## 4.9.1 Creating a Database

### Function

This API is used to create a database in a specified DB instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

This API can only be used to create a single database. This operation cannot be performed when the instance is in any of the following statuses: creating, changing instance specifications, frozen, or abnormal.

### URI

POST [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/database](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/database)



**Table 4-285** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	Instance ID.

## Request Parameters

**Table 4-286** Parameter description

Parameter	Mandatory	Type	Description
name	Yes	String	Database name. The value can contain 1 to 63 characters, including letters, digits, and underscores (_). It cannot start with <b>pg</b> or a digit, and must be different from template database names. Template databases include <b>postgres</b> , <b>template0</b> , <b>template1</b> , and <b>templatem</b> .
character_set	No	String	Character set. The default value is <b>UTF8</b> .
owner	No	String	Database user. The default value is <b>root</b> . The value must be an existing username and must be different from system usernames. System users: <b>rdsAdmin</b> , <b>rdsMetric</b> , <b>rdsBackup</b> , and <b>rdsRepl</b> .

Parameter	Mandatory	Type	Description
template	No	String	Name of the database template. The value can be <b>template0</b> .
lc_collate	No	String	Database collation. The default value is <b>C</b> . <b>NOTICE</b> Comparison of the same string in different collations may have different results. For example, the execution result of <b>select 'a'&gt;'A'</b> ; is <b>false</b> when this parameter is set to <b>en_US.utf8</b> and is <b>true</b> when this parameter is set to <b>'C'</b> . If a database is migrated from "O" to GaussDB, this parameter needs to be set to <b>'C'</b> to meet your expectations. You can query the supported collations from the <b>pg_collation</b> table.
lc_ctype	No	String	Database classification. The default value is <b>C</b> .

## Response Parameters

None

## Example Request

Creating a database named **gaussdb\_test**

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/{instance_id}/database
{
  "name": "gaussdb_test",
  "owner": "test",
  "template": "template0",
  "character_set": "UTF8",
  "lc_collate": "en_US.UTF-8",
  "lc_ctype": "en_US.UTF-8"
}
```

## Example Response

None

## Status Code

- Normal  
200

- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.9.2 Creating a Database Account

### Function

This API is used to create a database account for a specified instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

- This operation cannot be performed when the instance is in any of the following statuses: creating, changing instance specifications, frozen, or abnormal.
- This API can only be used to create an account at a time.

### URI

POST [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/db-user](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/db-user)

**Table 4-287** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	Instance ID.

## Request Parameters

**Table 4-288** Parameter description

Parameter	Mandatory	Type	Description
name	Yes	String	<p>Name of the database user, which must be unique.</p> <p>The username contains 1 to 63 characters, including letters, digits, and underscores (_). It cannot start with <b>pg</b> or a digit and must be different from system usernames.</p> <p>System users: <b>rdsAdmin</b>, <b>rdsMetric</b>, <b>rdsBackup</b>, <b>rdsRepl</b>, and <b>root</b>.</p>
password	Yes	String	<p>Password of the database user.</p> <p>The value cannot be empty and contains 8 to 32 characters. It cannot be the same as the <b>name</b> value or the <b>name</b> value in reverse order. The value must contain at least three types of the following: uppercase letters, lowercase letters, digits, and special characters ~!@#%^*_-=+?, Enter a strong password to improve security, preventing security risks such as brute force cracking.</p>
is_login_only	No	boolean	<p>Whether the database account can only be used for login.</p> <p>Value:</p> <ul style="list-style-type: none"> <li>• <b>false</b> or left blank: The database account can only be used for login, database creation, and database account creation.</li> <li>• <b>true</b>: The database account can only be used for login.</li> </ul>

## Response Parameters

None

## Example Request

Creating a database account named **db**s

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/{instance_id}/db-user
{
  "name" : "dbs",
  "password" : "*****"
}
```

## Example Response

None

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.9.3 Creating a Database Schema

### Function

This API is used to create a database schema in a specified instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

This operation cannot be performed when the instance is in any of the following statuses: creating, changing instance specifications, frozen, or abnormal.

### URI

POST https://{Endpoint}/v3/{project\_id}/instances/{instance\_id}/schema

**Table 4-289** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
instance_id	Yes	Instance ID.

## Request Parameters

**Table 4-290** Parameter description

Parameter	Mandatory	Type	Description
db_name	Yes	String	<p>Database name. The name cannot be a template database and must be an existing database name. Template databases include <b>postgres</b>, <b>template0</b>, <b>template1</b>.</p>
schemas	Yes	Array of objects	<p>Schemas. Each element is the schema information associated with the database. A single request supports a maximum of 20 elements. For details, see <a href="#">Table 4-291</a>.</p>

**Table 4-291** schemas field data structure description

Parameter	Mandatory	Type	Description
name	Yes	String	<p>Schema name.</p> <p>The value can contain 1 to 63 characters. Only letters, digits, and underscores (_) are allowed. It cannot start with <b>pg</b> or a digit, and must be different from template database names and existing schema names. Template databases include <b>postgres</b>, <b>template0</b>, <b>template1</b>.</p> <p>Existing schemas include <b>public</b> and <b>information_schema</b>.</p>
owner	Yes	String	<p>Owner of the schema.</p> <p>The value cannot be a system user and must be an existing database username.</p> <p>System users: <b>rdsAdmin</b>, <b>rdsMetric</b>, <b>rdsBackup</b>, and <b>rdsRepl</b>.</p>

## Response Parameters

None

## Example Request

Creating multiple schemas in the **gaussdb\_test** database

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/{instance_id}/schema
{
  "db_name": "gaussdb_test",
  "schemas": [ {
    "name": "rds",
    "owner": "teste123"
  }, {
    "name": "rds001",
    "owner": "teste123"
  } ]
}
```

## Example Response

None

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.9.4 Configuring Permissions of Database Accounts

### Function

This API is used to configure permissions of database accounts for a specified DB instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

- This operation cannot be performed when the instance is in any of the following statuses: creating, changing instance specifications, frozen, or abnormal.
- By default, read-only users have the **create** and **usage** permissions on the public schemas.
- You can only authorize one schema to one user at a time.

### URI

POST [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/db-privilege](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/db-privilege)

**Table 4-292** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None



Parameter	Mandatory	Description
instance_id	Yes	Instance ID.

## Request Parameters

**Table 4-293** Parameter description

Parameter	Mandatory	Type	Description
db_name	Yes	String	Database name. The name cannot be a template database and must be an existing database name. Template databases include <b>postgres</b> , <b>template0</b> , <b>template1</b> .
users	Yes	Array of objects	Database accounts. Each element is a database account. A single request supports a maximum of 50 elements. For details, see <a href="#">Table 4-294</a> .

**Table 4-294** users field data structure description

Parameter	Mandatory	Type	Description
name	Yes	String	Database account. The value cannot be a system user and must be an existing account. System users: <b>rdsAdmin</b> , <b>rdsMetric</b> , <b>rdsBackup</b> , <b>rdsRepl</b> , and <b>root</b> .
readonly	Yes	Boolean	Permission of the database account. <ul style="list-style-type: none"> <li><b>true</b>: read only</li> <li><b>false</b>: read and write</li> </ul>

Parameter	Mandatory	Type	Description
schema_name	Yes	String	Schema name. The name cannot be <b>public</b> or <b>information_schema</b> , and must be an existing schema name.

## Example Request

Configuring permissions for multiple accounts of the **gaussdb\_test** database

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/{instance_id}/db-privilege
{
  "db_name": "gaussdb_test",
  "users": [ {
    "name": "rds",
    "readonly": false,
    "schema_name": "teste123"
  }, {
    "name": "rds001",
    "readonly": true,
    "schema_name": "teste134"
  }, {
    "name": "rds002",
    "readonly": false,
    "schema_name": "teste135"
  } ]
}
```

## Example Response

None

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.9.5 Resetting a Password for a Database Account

### Function

This API is used to reset a password for a database account. Before calling this API:

- Learn how to [authenticate](#) this API.

- Obtain the required [region and endpoint](#).

## Constraints

- This operation cannot be performed when the instance is in any of the following statuses: creating, changing instance specifications, frozen, or abnormal.
- This API can be used to reset the password of only one database account at a time.

## URI

PUT [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/db-user/password](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/db-user/password)

**Table 4-295** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	Instance ID.

## Request Parameters

**Table 4-296** Parameter description

Parameter	Mandatory	Type	Description
name	Yes	String	Username of the database. It cannot be system usernames. System users: <b>rdsAdmin</b> , <b>rdsMetric</b> , <b>rdsBackup</b> , and <b>rdsRepl</b> .

Parameter	Mandatory	Type	Description
password	Yes	String	<p>Password of the database account.</p> <p>Value:</p> <p>The value cannot be empty and contains 8 to 32 characters. It cannot be the same as the <b>name</b> value or the <b>name</b> value in reverse order. It also cannot be the same as the old password. The value must contain at least three types of the following: uppercase letters, lowercase letters, digits, and special characters ~!@#%^*-_+=? ,</p> <p>Enter a strong password to improve security, preventing security risks such as brute force cracking.</p>

## Response Parameters

None

## Example Request

Resetting the password for database account **root**

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/{instance_id}/db-user/password
{
  "name" : "root",
  "password" : "*****"
}
```

## Example Response

None

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.9.6 Querying Databases

### Function

This API is used to query databases of a specified instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/databases](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/databases)

**Table 4-297** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	String	<b>Explanation:</b> DB instance ID. <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

Parameter	Mandatory	Type	Description
offset	No	Integer	<p><b>Explanation:</b> Offset for pagination. The query starts from the next piece of data indexed by this parameter. For example, if this parameter is set to <b>1</b> and <b>limit</b> is set to <b>10</b>, only the 11th to 20th records on the 2nd page are displayed.</p> <p><b>Restrictions:</b> The value must be a non-negative number.</p> <p><b>Value range:</b> [0, 2<sup>31</sup>-1]</p> <p><b>Default value:</b> 0 (indicating that the query starts from the first data record.)</p>
limit	No	Integer	<p><b>Explanation:</b> Number of records displayed per page.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [1, 100]</p> <p><b>Default value:</b> 10</p>

## Request Parameters

None

## Response Parameters

Table 4-298 Parameter description

Parameter	Type	Description
databases	Array of objects	<p><b>Explanation:</b> Each element in the list indicates a database. For details, see <a href="#">Table 4-299</a>.</p>

Parameter	Type	Description
total_count	Integer	<p><b>Explanation:</b> Total number of records.</p> <p><b>Value range:</b> [0, 2<sup>31</sup> - 1]. The actual value depends on the number of instances.</p>

**Table 4-299** databases field data structure description

Parameter	Type	Description
name	String	<p><b>Explanation:</b> Database name.</p> <p><b>Value range:</b> None</p>
owner	String	<p><b>Explanation:</b> Database owner.</p> <p><b>Value range:</b> None</p>
character_set	String	<p><b>Explanation:</b> Character set used by the database, such as <b>UTF8</b>.</p> <p><b>Value range:</b> None</p>
collate_set	String	<p><b>Explanation:</b> Database collation, such as <b>en_US.UTF-8</b>.</p> <p><b>Value range:</b> None</p>
size	String	<p><b>Explanation:</b> Database size, in MB.</p> <p><b>Value range:</b> None</p>
datctype	String	<p><b>Explanation:</b> Character set used by the database, for example, <b>en_US.UTF-8</b>.</p> <p><b>Value range:</b> None</p>

Parameter	Type	Description
compatibility_type	String	<b>Explanation:</b> Database compatibility type, for example, <b>GaussDB</b> and <b>M</b> . <b>Value range:</b> None

## Example Request

Querying databases

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/{instance_id}/databases
```

## Example Response

Databases queried.

```
{
  "databases": [
    {
      "name": "gaussdb_test",
      "owner": "root",
      "size": "25 MB",
      "datatype": "en_US.UTF-8",
      "character_set": "UTF8",
      "collate_set": "en_US.UTF-8",
      "compatibility_type": "GaussDB"
    },
    {
      "name": "gaussdb_test1",
      "owner": "root",
      "size": "25 MB",
      "datatype": "en_US.UTF-8",
      "character_set": "UTF8",
      "collate_set": "en_US.UTF-8",
      "compatibility_type": "GaussDB"
    },
    {
      "name": "gaussdb_test2",
      "owner": "root",
      "size": "25 MB",
      "datatype": "en_US.UTF-8",
      "character_set": "UTF8",
      "collate_set": "en_US.UTF-8",
      "compatibility_type": "GaussDB"
    }
  ],
  "total_count": 3
}
```

## Status Code

- Normal  
200
- Abnormal



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

## Error Code

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

## 4.9.7 Querying Database Users

### Function

This API is used to query database users for a specified instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/db-users](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/db-users)

**Table 4-300** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

Parameter	Mandatory	Type	Description
instance_id	Yes	String	<b>Explanation:</b> Instance ID, which is the unique identifier of an instance. <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
offset	No	Integer	<b>Explanation:</b> Offset for pagination. The query starts from the next piece of data indexed by this parameter. For example, if this parameter is set to <b>1</b> and <b>limit</b> is set to <b>10</b> , only the 11th to 20th data records are displayed. <b>Restrictions:</b> None <b>Value range:</b> [0, 2 <sup>31</sup> -1] <b>Default value:</b> 0 (indicating that the query starts from the first data record.)
limit	No	Integer	<b>Explanation:</b> Number of records displayed per page. <b>Restrictions:</b> None <b>Value range:</b> [1, 100] <b>Default value:</b> 10

## Request Parameters

None

## Response Parameters

**Table 4-301** Parameter description

Parameter	Type	Description
users	Array of objects	<b>Explanation:</b> Each element in the list indicates a database user. For details, see <a href="#">Table 4-302</a> .
total_count	Integer	<b>Explanation:</b> Total number of records. <b>Value range:</b> [0, 2 <sup>31</sup> - 1]

**Table 4-302** users field data structure description

Parameter	Type	Description
name	String	<b>Explanation:</b> Username. <b>Value range:</b> None
attribute	Object	<b>Explanation:</b> Permission attributes of a user. For details, see <a href="#">Table 4-303</a> .
memberof	String	<b>Explanation:</b> Default permissions of a user. <b>Value range:</b> None
lock_status	Boolean	<b>Explanation:</b> Whether the user is locked. <b>Value range:</b> true or false

**Table 4-303** attribute field data structure description

Parameter	Type	Description
rolsuper	Boolean	<b>Explanation:</b> Check whether the user has the administrator permissions. <b>Value range:</b> true or false
rolinherit	Boolean	<b>Explanation:</b> Whether the user automatically inherits permissions of roles to which the user belongs. <b>Value range:</b> true or false
rolcreaterole	Boolean	<b>Explanation:</b> Whether the user can create other sub-users. <b>Value range:</b> true or false
rolcreatedb	Boolean	<b>Explanation:</b> Whether the user has the permissions to create databases. <b>Value range:</b> true or false
rolcanlogin	Boolean	<b>Explanation:</b> Whether the user has the permissions to log in to a database. <b>Value range:</b> true or false
rolconlimit	Integer	<b>Explanation:</b> Maximum number of concurrent connections to an instance. The value -1 indicates that there are no limitations on the number of concurrent connections. <b>Value range:</b> None
rolreplication	Boolean	<b>Explanation:</b> Whether the user is a replication role. <b>Value range:</b> true or false

Parameter	Type	Description
rolbypassrls	Boolean	<b>Explanation:</b> Whether the user bypasses each row-level security policy. <b>Value range:</b> true or false
rolpassworddeadline	String	<b>Explanation:</b> Password expiration time. <b>Value range:</b> None

## Example Request

Querying database users

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/{instance_id}/db-users
```

## Example Response

Database users queried.

```
{
  "users": [
    {
      "name": "root",
      "attribute": {
        "rolsuper": false,
        "rolinherit": true,
        "rolcreatorole": true,
        "rolcreatedb": true,
        "rolcanlogin": true,
        "rolconnlimit": -1,
        "rolreplication": false,
        "rolbypassrls": false,
        "rolpassworddeadline": ""
      },
      "memberof":
        "{gs_role_copy_files,gs_role_signal_backend,gs_role_tablespace,gs_role_replication,gs_role_account_lock}",
      "lock_status": false
    }
  ],
  "total_count": 1
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.9.8 Querying Database Schemas

### Function

This API is used to query database schemas of a specified DB instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

Databases cannot be queried when the DB instance is in the abnormal or frozen state.

### URI

GET [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/schemas?  
db\\_name={db\\_name}](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/schemas?db_name={db_name})

**Table 4-304** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

Parameter	Mandatory	Type	Description
instance_id	Yes	String	<p><b>Explanation:</b> Instance ID, which is the unique identifier of an instance.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
db_name	Yes	String	<p><b>Explanation:</b> Database name.</p> <p><b>Restrictions:</b> It must be different from template databases. Template databases include <b>postgres</b>, <b>template0</b>, <b>template1</b>.</p> <p><b>Value range:</b> None</p> <p><b>Default value:</b> None</p>
offset	No	Integer	<p><b>Explanation:</b> Offset for pagination. The query starts from the next piece of data indexed by this parameter. For example, if this parameter is set to <b>1</b> and <b>limit</b> is set to <b>10</b>, only the 11th to 20th records are displayed.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [0, 2<sup>31</sup>-1]</p> <p><b>Default value:</b> 0 (indicating that the query starts from the first data record.)</p>

Parameter	Mandatory	Type	Description
limit	No	Integer	<p><b>Explanation:</b> Number of records displayed per page.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [1, 100]</p> <p><b>Default value:</b> 10</p>

## Request Parameters

None

## Response Parameters

**Table 4-305** Parameter description

Parameter	Type	Description
database_schemas	Array of objects	<p><b>Explanation:</b> Database schema information. Each element in the list indicates a database schema. For details, see <a href="#">Table 4-306</a>.</p>
total_count	Integer	<p><b>Explanation:</b> Total number of database schemas.</p> <p><b>Value range:</b> [1, 2<sup>31</sup> - 1]</p>

**Table 4-306** database\_schemas field data structure description

Parameter	Type	Description
schema_name	String	<p><b>Explanation:</b> Schema name.</p> <p><b>Value range:</b> None</p>



Parameter	Type	Description
owner	String	<b>Explanation:</b> Schema owner. <b>Value range:</b> None

## Example Request

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/{instance_id}/schemas?db_name=dbname
```

## Example Response

```
{  "database_schemas" : [ {    "owner" : "root",    "schema_name" : "rds-test"  }, {    "owner" : "root",    "schema_name" : "testdb1"  } ],  "total_count" : 2}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.9.9 Deleting a Database

### Function

This API is used to delete a database from a specified DB instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

This API can only be used to delete a single database. This operation cannot be performed when the instance is in any of the following statuses: creating, changing instance specifications, frozen, or abnormal.

## URI

DELETE `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/database?database_name={database_name}`

**Table 4-307** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	Instance ID.
database_name	Yes	Database name. The name cannot be a template database and must be an existing database name. Template databases include <b>postgres</b> , <b>template0</b> , <b>template1</b> , and <b>templetem</b> .

## Request Parameters

None

## Response Parameters

None

## Example Request

Deleting the GaussDB database **gaussdb\_test**

```
DELETE https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/{instance_id}/database?database_name=gaussdb_test
```

## Example Response

```
{}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.9.10 Deleting a Schema

### Function

This API is used to delete a schema of a database in a specified instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

- This operation cannot be performed when the instance is in any of the following statuses: creating, changing instance specifications, frozen, or abnormal.
- This API can only be used to delete a schema at a time.

### URI

DELETE [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/schema](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/schema)

**Table 4-308** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	String	Instance ID.

## Request Parameters

**Table 4-309** Parameter description

Parameter	Mandatory	Type	Description
db_name	Yes	String	Database name. The name cannot be a template database and must be an existing database name. Template databases include <b>postgres</b> , <b>template0</b> , <b>template1</b> .

Parameter	Mandatory	Type	Description
schema	Yes	String	<p>Schema name.</p> <p>The name can contain 1 to 63 characters. Only letters, digits, and underscores (_) are allowed. It cannot start with <b>pg</b> or a digit, and must be different from template database names and existing schema names.</p> <p>Template databases include <b>postgres</b>, <b>template0</b>, <b>template1</b>.</p> <p>Existing schemas include <b>public</b> and <b>information_schema</b>.</p>

## Response Parameters

None

## Example Request

Deleting a schema from the **gaussdb\_test** database

```
DELETE https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/{instance_id}/schema
{
  "db_name": "gaussdb_test",
  "schema": "rds001"
}
```

## Example Response

None

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.9.11 Creating a Database Role

### Function

This API is used to create a database role for a specified instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

- This operation cannot be performed when the instance is in any of the following statuses: creating, changing instance specifications, frozen, or abnormal.
- This API can only be used to create a database role at a time.

### URI

POST [https://{Endpoint}/v3.1/{project\\_id}/instances/{instance\\_id}/db-role](https://{Endpoint}/v3.1/{project_id}/instances/{instance_id}/db-role)

**Table 4-310** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	String	Instance ID.

## Request Parameters

**Table 4-311** Parameter description

Parameter	Mandatory	Type	Description
name	Yes	String	Database role name, which must be unique.  The name can contain 1 to 63 characters. Only letters, digits, and underscores (_) are allowed. It cannot start with <b>pg</b> or a digit and must be different from system users or system roles.  System users or roles include <b>rdsAdmin</b> , <b>rdsMetric</b> , <b>rdsBackup</b> , <b>rdsRepl</b> , and <b>root</b> .
password	Yes	String	Database role password.  The value cannot be left blank and can contain 8 to 32 characters. It consists of at least three types of the following: uppercase letters, lowercase letters, digits, and special characters (~!@#%^*_-=+?,). The value cannot be the same as the <b>name</b> value or the <b>name</b> value in reverse order.  Enter a strong password to improve security, preventing security risks such as brute force cracking.

## Response Parameters

None

## Example Request

Creating a database role named **db**s

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.1/0483b6b16e954cb88930a360d2c4e663/instances/{instance_id}/db-role
{
  "name" : "dbs",
  "password" : "*****"
}
```

## Example Response

None

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.9.12 Querying Database Roles

### Function

This API is used to query database roles for a specified instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3.1/{project\\_id}/instances/{instance\\_id}/db-role](https://{Endpoint}/v3.1/{project_id}/instances/{instance_id}/db-role)

**Table 4-312** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None



Parameter	Mandatory	Type	Description
instance_id	Yes	String	<p><b>Explanation:</b> Instance ID, which is the unique identifier of an instance.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
offset	No	Integer	<p><b>Explanation:</b> Offset. The query starts from the next piece of data indexed by this parameter. For example, if this parameter is set to <b>1</b> and <b>limit</b> is set to <b>10</b>, only the 11th to 20th data records are displayed.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [0, 2<sup>31</sup>-1]</p> <p><b>Default value:</b> 0 (indicating that the query starts from the first data record.)</p>
limit	No	Integer	<p><b>Explanation:</b> Number of records displayed per page.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [1, 100]</p> <p><b>Default value:</b> 10</p>

## Request Parameters

None

## Response Parameters

**Table 4-313** Parameter description

Parameter	Type	Description
roles	Array of objects	<b>Explanation:</b> Each element in the list indicates a database user or role. For details, see <a href="#">Table 4-314</a> .
total_count	Integer	<b>Explanation:</b> Total number of records. <b>Value range:</b> [0, 2 <sup>31</sup> - 1]

**Table 4-314** roles field data structure description

Parameter	Type	Description
name	String	<b>Explanation:</b> User or role name. <b>Value range:</b> None
attribute	Object	<b>Explanation:</b> Permission attribute of the user or role. For details, see <a href="#">Table 4-315</a> .
memberof	String	<b>Explanation:</b> Default permission of the user or role. <b>Value range:</b> None
lock_status	Boolean	<b>Explanation:</b> Whether the user or role is locked. <b>Value range:</b> true or false

**Table 4-315** attribute field data structure description

Parameter	Type	Description
rolsuper	Boolean	<b>Explanation:</b> Whether the user or role has the administrator permissions. <b>Value range:</b> true or false
rolinherit	Boolean	<b>Explanation:</b> Whether the user or role automatically inherits permissions of roles to which the user belongs. <b>Value range:</b> true or false
rolcreatorole	Boolean	<b>Explanation:</b> Whether the user or role can create other sub-users. <b>Value range:</b> true or false
rolcreatedb	Boolean	<b>Explanation:</b> Whether the user or role has the permissions to create databases. <b>Value range:</b> true or false
rolcanlogin	Boolean	<b>Explanation:</b> Whether the user or role has the permissions to log in to a database. <b>Value range:</b> true or false
rolconlimit	Integer	<b>Explanation:</b> Maximum number of concurrent connections for a user or role to an instance. The value <b>-1</b> indicates that there are no limitations on the number of concurrent connections. <b>Value range:</b> None
rolreplication	Boolean	<b>Explanation:</b> Whether the user or role is a replication role. <b>Value range:</b> true or false

Parameter	Type	Description
rolbypassrls	Boolean	<p><b>Explanation:</b> Whether the user or role bypasses each row-level security policy.</p> <p><b>Value range:</b> true or false</p>
rolpassworddeadline	String	<p><b>Explanation:</b> Password expiration time of the user or role.</p> <p><b>Value range:</b> None</p>

## Example Request

Querying database roles

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.1/0483b6b16e954cb88930a360d2c4e663/instances/{instance_id}/db-role
```

## Example Response

Database roles queried.

```
{
  "roles": [
    {
      "name": "root",
      "attribute": {
        "rolsuper": false,
        "rolinherit": true,
        "rolcreatorole": true,
        "rolcreatedb": true,
        "rolcanlogin": true,
        "rolconnlimit": -1,
        "rolreplication": false,
        "rolbypassrls": false,
        "rolpassworddeadline": ""
      },
      "memberof":
        "{gs_role_copy_files,gs_role_signal_backend,gs_role_tablespace,gs_role_replication,gs_role_account_lock}",
      "lock_status": false
    }
  ],
  "total_count": 1
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.9.13 Configuring Permissions of a Database Role

### Function

This API is used to configure permissions of a database role for a specified instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

- This operation cannot be performed when the instance is in any of the following statuses: creating, changing instance specifications, frozen, or abnormal.
- By default, read-only users have the **create** and **usage** permissions on the public schemas.
- This API can only be used to configure permissions for a role at a time.
- This API is unavailable for GaussDB instances in the M-compatible mode.

### URI

POST [https://{Endpoint}/v3.1/{project\\_id}/instances/{instance\\_id}/db-privilege](https://{Endpoint}/v3.1/{project_id}/instances/{instance_id}/db-privilege)

**Table 4-316** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	String	Instance ID.

## Request

**Table 4-317** Parameter description

Parameter	Mandatory	Type	Description
db_name	Yes	String	Database name. The name cannot be a template database and must be an existing database name. Template databases include <b>postgres</b> , <b>template0</b> , and <b>template1</b> .
user	Yes	Object	Roles and permissions. For details, see <a href="#">Table 4-318</a> .

**Table 4-318** user field data structure description

Parameter	Mandatory	Type	Description
name	Yes	String	Database role name. The name cannot be a system user or system role and must be an existing user or role. System users or roles include <b>rdsAdmin</b> , <b>rdsMetric</b> , <b>rdsBackup</b> , <b>rdsRepl</b> , and <b>root</b> .
readonly	Yes	Boolean	Database permissions. <ul style="list-style-type: none"> <li><b>true</b>: read only</li> <li><b>false</b>: read and write</li> </ul>
schema	Yes	String	Schema name. The name cannot be a template database or system schema and must be an existing schema. Template databases include <b>postgres</b> , <b>template0</b> , and <b>template1</b> . System schemas include <b>public</b> and <b>information_schema</b> .

Parameter	Mandatory	Type	Description
default_privilege_grantee	No	String	<p>Database user or role name.</p> <p>The permissions of the user or role are granted to the role specified by the <b>name</b> field. The <b>readonly</b> field determines whether to grant the read-only permissions.</p> <p>The name cannot be a system user or system role and must be an existing user or role. System users or roles include <b>rdsAdmin</b>, <b>rdsMetric</b>, <b>rdsBackup</b>, <b>rdsRepl</b>, and <b>root</b>.</p>

## Example Request

Configuring permissions of a database role

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.1/0483b6b16e954cb88930a360d2c4e663/instances/{instance_id}/db-privilege
{
  "db_name": "gaussdb_test",
  "user": {
    "name": "rds",
    "schema": "rds001",
    "readonly": false,
    "default_privilege_grantee": ""
  }
}
```

## Example Response

None

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.10 Tag Management

### 4.10.1 Querying Tags of a Specific Instance

#### Function

This API is used to query user tags of a specified instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

#### URI

GET [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/tags](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/tags)

**Table 4-319** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	Instance ID.

#### Request Parameters

None

#### Response Parameters

**Table 4-320** Parameter description

Parameter	Type	Description
tags	Array of objects	User tags. For details, see <a href="#">Table 4-321</a> .



Parameter	Type	Description
total_count	Integer	Total number of records.

**Table 4-321** tags field data structure description

Parameter	Type	Description
key	String	Tag key.
value	Array of strings	Tag value.

## Example Request

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfdsae3435in14/tags
```

## Example Response

```
{
  "tags": [ {
    "key": "key1",
    "value": [ "value1", "value2" ]
  }, {
    "key": "key2",
    "value": [ "value2", "value3" ]
  } ],
  "total_count": 2
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.10.2 Querying Tags of a Project

### Function

This API is used to query all user tags in a project. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

## URI

GET [https://{Endpoint}/v3/{project\\_id}/tags](https://{Endpoint}/v3/{project_id}/tags)

**Table 4-322** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

## Request Parameters

None

## Response Parameters

**Table 4-323** Parameter description

Parameter	Type	Description
tags	Array of objects	All tags. For details, see <a href="#">Table 4-324</a> .

**Table 4-324** tags field data structure description

Parameter	Type	Description
key	String	Tag key. It can contain up to 36 Unicode characters and cannot be blank. Only digits, uppercase letters, lowercase letters, underscores (_), and hyphens (-) are allowed.
value	Array of strings	Tag value. It can contain up to 43 Unicode characters and can be an empty string. Only digits, uppercase letters, lowercase letters, underscores (_), periods (.), and hyphens (-) are allowed.

## Example Request

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/tags
```

## Example Response

```
{
  "tags": [ {
    "key": "key1",
    "value": [ "value1", "value2" ]
  }, {
    "key": "key2",
    "value": [ "value2", "value3" ]
  } ]
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.10.3 Querying Predefined Tags

### Function

This API is used to query predefined tags. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

```
GET https://{Endpoint}/v3/{project_id}/predefined-tags
```

**Table 4-325** Request Parameters

Parameter	Type	IN	Man dator y	Description
project_id	string	path	Yes	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>

## Request Parameters

None

## Response Parameters

**Table 4-326** Parameter description

Parameter	Type	Description
tags	Array of arrays	<p><b>Explanation:</b> All tags. For details, see <a href="#">Table 4-327</a>.</p>

**Table 4-327** tags field data structure description

Parameter	Type	Description
key	String	<p><b>Explanation:</b> Tag key.</p> <p><b>Value range:</b> None</p>
values	Array	<p><b>Explanation:</b> Tag value.</p> <p><b>Value range:</b> None</p>

## Example Request

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0549b4a43100d4f32f51c01c2fe4acdb/predefined-tags
```

## Example Response

```
{
  "tags": [ {
    "key": "RDS_DDS_EPS",
    "values": [ "RDS_DDS_TMS" ]
  } ]
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.10.4 Adding Tags for a DB Instance

### Function

This API is used to add user tags to a specified DB instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

```
POST https://{Endpoint}/v3/{project_id}/instances/{instance_id}/tags
```

**Table 4-328** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
instance_id	Yes	String	Instance ID.

## Request Parameters

**Table 4-329** Parameter description

Parameter	Mandatory	Type	Description
tags	Yes	Array of objects	User tags to be added. For details, see <a href="#">Table 4-330</a> .

**Table 4-330** tags parameter description

Parameter	Mandatory	Type	Description
key	Yes	String	<p>Tag key.</p> <p><b>NOTE</b> A tag key can contain up to 128 characters. It cannot start with <code>_sys_</code> or a space, and cannot end with a space. Only letters, digits, spaces, and the following special characters are allowed: <code>_:=-+@</code></p>

Parameter	Mandatory	Type	Description
value	Yes	String	Tag value. <b>NOTE</b> A tag value can contain up to 255 characters. Only letters, digits, spaces, and the following special characters are allowed: _:/=+-@

## Response Parameters

**Table 4-331** Parameter description

Parameter	Type	Description
instance_id	String	Instance ID.
instance_name	String	Instance name.

## Example Request

Creating a user tag whose key is 1 and value is 2

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfsdae3435in01/tags
{
  "tags": [{
    "key": "1",
    "value": "2"
  }]
}
```

## Example Response

```
{
  "instance_id": "dsfae23fsfsdae3435in01",
  "instance_name": "Gauss-a87h"
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.10.5 Deleting Tags of a DB Instance

### Function

This API is used to delete tags of a DB instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

DELETE [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/tag?key={key}](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/tag?key={key})

**Table 4-332** URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	String	Instance ID, which is compliant with the UUID format.

**Table 4-333** Query parameters

Parameter	Mandatory	Type	Description
key	Yes	String	Tag key.

### Request Parameters

None



## Response Parameters

**Table 4-334** Response body parameters

Parameter	Type	Description
result	String	Processing results.
instance_id	String	Instance ID.
instance_name	String	Instance name.

## Example Request

```
DELETE https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/cc6fd964d93f4003851dfc29d57d30a5in14/tag?key=demo
```

## Example Response

```
{
  "result": "succeed",
  "instance_id": "8475b0ed1ca149f2887952a27fda1739in14",
  "instance_name": "gaussdb-01"
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

# 4.11 Quota Management

## 4.11.1 Modifying Enterprise Project Quotas

### Function

This API is used to modify enterprise project quotas. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

## URI

PUT [https://{Endpoint}/v3/{project\\_id}/enterprise-projects/quotas](https://{Endpoint}/v3/{project_id}/enterprise-projects/quotas)

**Table 4-335** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

## Request Parameters

**Table 4-336** Parameter description

Parameter	Mandatory	Type	Description
eps_quotas	Yes	Array of objects	Enterprise quotas to be modified. For details, see <a href="#">Table 4-337</a> .

**Table 4-337** EpsQuotasOption parameter description

Parameter	Mandatory	Type	Description
enterprise_projects_id	Yes	String	Enterprise project ID.
instance_quota	No	Integer	Instance quota. Value: <i>Number of created instances</i> - <b>100,000</b>
vcpus_quota	No	Integer	CPU quota. Value: <b>Actually vCPUs</b> - <b>2,147,483,646</b> .

Parameter	Mandatory	Type	Description
ram_quota	No	Integer	Memory quota, in GB. Value: <i>Actually used memory</i> - <b>2,147,483,646</b> .
volume_quota	No	Integer	Storage quota, GB. Value: <i>Actually used storage</i> - <b>2,147,483,646</b> .

## Response Parameters

None

## Example Request

Configuring quotas for an enterprise project (1,000 instances, 100,000 vCPUs, 200,000 GB of memory, and 1,000,000 GB of storage)

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/enterprise-projects/quotas
{
  "eps_quotas": [
    {
      "enterprise_projects_id": "0",
      "instance_quota": 1000,
      "vcpus_quota": 100000,
      "ram_quota": 200000,
      "volume_quota": 1000000
    }
  ]
}
```

## Example Response

None

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.11.2 Querying Enterprise Project Quotas

### Function

This API is used to query enterprise project quotas. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

## URI

GET [https://{Endpoint}/v3/{project\\_id}/enterprise-projects/quotas](https://{Endpoint}/v3/{project_id}/enterprise-projects/quotas)

**Table 4-338** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
enterprise_project_id	No	String	Enterprise project ID. - Do not transfer this parameter if enterprise multi-project service is not enabled. - If enterprise multi-project service is enabled but this parameter is not transferred, the default enterprise project is used.
offset	No	Integer	Index offset. If <b>offset</b> is set to <i>N</i> , the resource query starts from the <i>N</i> +1 data entry. The default value is <b>0</b> , indicating that the query starts from the first data entry. The value cannot be a negative number. For example, if this parameter is set to <b>0</b> and <b>limit</b> is set to <b>10</b> , only the 1st to 10th records are displayed.

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of records to be queried. The default value is <b>100</b> . The value cannot be a negative number. The minimum value is <b>1</b> and the maximum value is <b>100</b> . For example, if this parameter is set to <b>10</b> , a maximum of 10 records can be displayed.

## Request Parameters

None

## Response Parameters

**Table 4-339** Parameter description

Parameter	Type	Description
eps_quotas	Array of objects	Enterprise project details. For details, see <a href="#">Table 4-340</a> .
total_count	Integer	Total number of records.

**Table 4-340** eps\_quotas field data structure description

Parameter	Type	Description
enterprise_project_id	String	Enterprise project ID.
enterprise_project_name	String	Enterprise project name.
instance_eps_quota	Integer	EPS instance quota. The value <b>-1</b> indicates that the quota is not limited.
vcpus_eps_quota	Integer	EPS compute quota. The value <b>-1</b> indicates that the quota is not limited.
ram_eps_quota	Integer	EPS memory quota in GB. The value <b>-1</b> indicates that the quota is not limited.
volume_eps_quota	Integer	EPS storage quota in GB. The value <b>-1</b> indicates that the quota is not limited.

Parameter	Type	Description
instance_used	Integer	Used EPS instance quota.
vcpus_used	Integer	Used EPS compute quota.
ram_used	Integer	Used EPS memory quota in GB.
volume_used	Integer	Used EPS storage quota, in GB.

## Example Request

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0611f1bd8b00d5d32f17c017f15b599f/enterprise-projects/quotas
```

## Example Response

```
{
  "eps_quotas" : [ {
    "enterprise_project_id" : "2c049d98-3347-494f-8767-99af6b3aa5f0",
    "enterprise_project_name" : "default",
    "instance_eps_quota" : 100,
    "vcpus_eps_quota" : 1500,
    "ram_eps_quota" : 20000,
    "volume_eps_quota" : 100000,
    "instance_used" : 33,
    "vcpus_used" : 1460,
    "ram_used" : 19680,
    "volume_used" : 8840
  }, {
    "enterprise_project_id" : "2c049d98-3347-494f-8767-99af6b3aa5f0",
    "enterprise_project_name" : "11111",
    "instance_eps_quota" : -1,
    "vcpus_eps_quota" : -1,
    "ram_eps_quota" : -1,
    "volume_eps_quota" : -1,
    "instance_used" : 2,
    "vcpus_used" : 54,
    "ram_used" : 384,
    "volume_used" : 680
  }, {
    "enterprise_project_id" : "bd91e1eb-2e33-4f17-a8d4-05eb2c805781",
    "enterprise_project_name" : "quota_at_gaussdbv5_test",
    "instance_eps_quota" : -1,
    "vcpus_eps_quota" : -1,
    "ram_eps_quota" : -1,
    "volume_eps_quota" : -1,
    "instance_used" : 1,
    "vcpus_used" : 240,
    "ram_used" : 1920,
    "volume_used" : 480
  } ],
  "total_count" : 3
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

# 4.12 Task Management

## 4.12.1 Obtaining Task Information

### Function

This API is used to obtain information about a task with a specified ID. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/jobs?id={id}](https://{Endpoint}/v3/{project_id}/jobs?id={id})

**Table 4-341** Request Parameters

Parameter	Type	Mandatory	Description
project_id	String	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

Parameter	Type	Mandatory	Description
id	String	Yes	<p><b>Explanation:</b> Task ID. This parameter value indicates the asynchronous task ID returned by APIs (except APIs for applying a parameter template and creating a manual backup).</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> UUID format</p> <p><b>Default value:</b> None</p>

## Request Parameters

None

## Response Parameters

**Table 4-342** Parameter description

Parameter	Type	Description
job	Object	<p><b>Explanation:</b> Task information. For details, see <a href="#">Table 4-343</a>.</p>

**Table 4-343** job field data structure description

Parameter	Type	Description
id	String	<p><b>Explanation:</b> Task ID.</p> <p><b>Value range:</b> UUID format</p>
name	String	<p><b>Explanation:</b> Task name.</p> <p><b>Value range:</b> None</p>



Parameter	Type	Description
status	String	<p><b>Explanation:</b> Task execution status</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• <b>Running:</b> The task is being executed.</li> <li>• <b>Completed:</b> The task is successfully executed.</li> <li>• <b>Failed:</b> The task fails to be executed.</li> </ul>
created	String	<p><b>Explanation:</b> Creation time in the "yyyy-mm-ddThh:mm:ssZ" format.</p> <p><b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. Example: 2021-07-12T09:22:04+0800.</p> <p><b>Value range:</b> None</p>
ended	String	<p><b>Explanation:</b> End time in the "yyyy-mm-ddThh:mm:ssZ" format.</p> <p><b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. Example: 2021-07-12T09:22:04+0800.</p> <p><b>Value range:</b> None</p>
progress	String	<p><b>Explanation:</b> Task execution progress.</p> <p><b>Value range:</b> None</p> <p><b>NOTE</b> The execution progress (such as "60%", indicating the task execution progress is 60%) is displayed only when the task is being executed. Otherwise, "" is returned.</p>
instance	Object	<p><b>Explanation:</b> Instance on which the task is executed.</p> <p>For details, see <a href="#">Table 4-344</a>.</p>

Parameter	Type	Description
fail_reason	String	<b>Explanation:</b> Task failure information. <b>Value range:</b> None

**Table 4-344** instance field data structure description

Parameter	Type	Description
id	String	<b>Explanation:</b> Instance ID, which is the unique identifier of an instance. <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.
name	String	<b>Explanation:</b> DB instance name. <b>Value range:</b> The value must start with a letter and can contain 4 to 64 characters. Only letters, digits, hyphens (-), and underscores (_) are allowed.

## Example Request

Obtaining information about a task with a specified ID

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0549b4a43100d4f32f51c01c2fe4acdb/jobs?id=5cbb8a90-2253-4cff-8a13-49aa8f31dfb5
```

## Example Response

Information queried.

```
{
  "job" : {
    "id" : "5cbb8a90-2253-4cff-8a13-49aa8f31dfb5",
    "name" : "CreateGaussDBV5Instance",
    "status" : "Completed",
    "created" : "2021-07-12T09:22:04+0800",
    "ended" : "2021-07-12T10:10:13+0800",
    "progress" : "",
    "instance" : {
      "id" : "b34f8c791f2643578510c093aa2351a8in14",
      "name" : "gauss-c1a3"
    },
  },
  "fail_reason" : null
}
```

```
}  
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.12.2 Querying Tasks

### Function

This API is used to query the tasks in the task center. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

The tasks of the last month can be queried at most.

### URI

GET [https://{Endpoint}/v3/{project\\_id}/tasks](https://{Endpoint}/v3/{project_id}/tasks)

**Table 4-345** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

Parameter	Mandatory	Type	Description
status	No	String	Task status. Value: <ul style="list-style-type: none"> <li>• <b>Running</b></li> <li>• <b>Completed</b></li> <li>• <b>Failed</b></li> </ul>
name	No	String	Task name. <ul style="list-style-type: none"> <li>• <b>CreateGaussDBV5Instance:</b> Creating a DB instance</li> <li>• <b>BackupSnapshotGaussDBV5Instance:</b> Creating a manual backup</li> <li>• <b>CloneGaussDBV5NewInstance:</b> Restoring data to a new DB instance</li> <li>• <b>RestoreGaussDBV5Instance:</b> Restoring data to the original DB instance</li> <li>• <b>RestoreGaussDBV5InstanceToExistedInst:</b> Restoring data to an existing DB instance</li> <li>• <b>DeleteGaussDBV5Instance:</b> Deleting a DB instance</li> <li>• <b>EnlargeGaussDBV5Volume:</b> Scaling up storage</li> <li>• <b>ResizeGaussDBV5Flavor:</b> Changing specifications</li> <li>• <b>GaussDBV5ExpandClusterCN:</b> Adding coordinator nodes</li> <li>• <b>GaussDBV5ExpandClusterDN:</b> Adding shards</li> </ul>
start_time	No	String	Start time. The value is a UNIX timestamp, in milliseconds. The time zone is UTC.
end_time	No	String	End time. The value is a UNIX timestamp, in milliseconds. The time zone is UTC.
offset	No	Integer	Index offset. If <b>offset</b> is set to <i>N</i> , the resource query starts from the <i>N</i> +1 data entry. The default value is <b>0</b> , indicating that the query starts from the first data entry. The value cannot be a negative number.

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of records to be queried. The default value is <b>100</b> . The value cannot be a negative number. The minimum value is <b>1</b> and the maximum value is <b>100</b> .

## Request Parameters

None

## Response Parameters

**Table 4-346** Parameter description

Parameter	Type	Description
tasks	Array of objects	Task list. For details, see <a href="#">Table 4-347</a> .
total_count	Integer	Number of tasks.

**Table 4-347** tasks field data structure description

Parameter	Type	Description
instance_info	Object	Information about the instance associated with the task. For details, see <a href="#">Table 4-348</a> .
job_id	String	Task ID.
name	String	Task name.
status	String	Task status.
process	String	Task progress, in percentage (%)
created_at	String	Creation time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the offset is <b>+0800</b> .

Parameter	Type	Description
ended_at	String	End time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the offset is <b>+0800</b> .
fail_reason	String	Failure cause.

**Table 4-348** instance\_info field data structure description

Parameter	Type	Description
instance_id	String	Instance ID.
instance_name	String	DB instance name.
instance_status	String	Instance status.

## Example Request

- Querying running tasks

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/
opengauss/v3/0611f1bd8b00d5d32f17c017f15b599f/tasks?
status=Running&name=CreateGaussDBV5Instance&offset=1&limit=10
```

- Querying completed tasks

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/
opengauss/v3/0611f1bd8b00d5d32f17c017f15b599f/tasks?
status=Completed&name=CreateGaussDBV5Instance&offset=1&limit=10
```

- Querying failed tasks

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/
opengauss/v3/0611f1bd8b00d5d32f17c017f15b599f/tasks?
status=Failed&name=CreateGaussDBV5Instance&offset=1&limit=10
```

## Example Response

Tasks queried.

```
{
  "tasks": [ {
    "instance_info": {
      "instance_id": "ce2dce50f365430abe161bab79495a6ein14",
      "instance_name": "gauss-6568-zzh",
      "instance_status": "creating"
    },
    "job_id": "03bc055a-135c-4245-8bd8-b0bc6d3350b3",
    "name": "CreateGaussDBV5Instance",
    "status": "Failed",
    "process": ""
  }
]
```

```
"created_at": "2022-08-05T08:15:07+0800",
"ended_at": "2022-08-09T03:06:52+0800",
"fail_reason": "500000"
}, {
  "instance_info": {
    "instance_id": "20ba433bd7ee40da9cf35064f04f9e4cin14",
    "instance_name": "gauss-7875-lt-m",
    "instance_status": "deleted"
  },
  "job_id": "2cc16e0b-75ab-4a28-9453-16517e990bba",
  "name": "DeleteGaussDBV5Instance",
  "status": "Completed",
  "process": "",
  "created_at": "2022-08-06T09:15:07+0800",
  "ended_at": "2022-08-10T03:06:52+0800",
  "fail_reason": null
} ],
"total_count": 2
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.12.3 Deleting a Task Record

### Function

This API is used to delete a task record. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

DELETE [https://{Endpoint}/v3/{project\\_id}/jobs/{job\\_id}](https://{Endpoint}/v3/{project_id}/jobs/{job_id})

**Table 4-349** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
job_id	Yes	String	Task ID.

## Request Parameters

None

## Response Parameters

None

## Example Request

Deleting a task record

```
DELETE https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/jobs/6b00c41d-d54f-4bcb-80da-566ccedc2b5d
```

## Example Response

Task record deleted.

```
{}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).



## Error Code

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

# 4.13 Recycle Bin

## 4.13.1 Modifying the Recycling Policy

### Function

This API is used to modify the recycling policy. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

PUT [https://{Endpoint}/v3/{project\\_id}/recycle-policy](https://{Endpoint}/v3/{project_id}/recycle-policy)

**Table 4-350** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

### Request Parameters

**Table 4-351** Parameter description

Parameter	Mandatory	Type	Description
recycle_policy	Yes	Object	Recycling policy. For details, see <a href="#">Table 4-352</a> .

**Table 4-352** recycle\_policy field data structure description

Parameter	Mandatory	Type	Description
retention_period_in_days	Yes	Integer	Deleted instance retention period. Value range: <b>1 to 7</b> .

## Response Parameters

**Table 4-353** Parameter description

Parameter	Type	Description
result	String	Modification result. <b>SUCCESS</b> indicates that the modification is successful.

## Example Request

Setting the retention period of deleted instances to 5 days

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0611f1bd8b00d5d32f17c017f15b599f/recycle-policy
{
  "recycle_policy": {
    "retention_period_in_days": 5
  }
}
```

## Response

```
{
  "result": "SUCCESS"
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.13.2 Querying the Recycling Policy

### Function

This API is used to query the recycling policy. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

## URI

GET [https://{Endpoint}/v3/{project\\_id}/recycle-policy](https://{Endpoint}/v3/{project_id}/recycle-policy)

**Table 4-354** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

## Request Parameters

None

## Response Parameters

**Table 4-355** Parameter description

Parameter	Type	Description
retention_period_in_days	String	<b>Explanation:</b> Deleted instance retention period. <b>Value range:</b> 1 to 7

## Example Request

Querying the recycling policy

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0611f1bd8b00d5d32f17c017f15b599f/recycle-policy
```

## Example Response

Recycling policy queried.

```
{  
  "retention_period_in_days": "5"  
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.13.3 Querying All DB Engine Instances in the Recycle Bin

### Function

This API is used to query all DB engine instances in the recycle bin. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3.1/{project\\_id}/recycle-instances](https://{Endpoint}/v3.1/{project_id}/recycle-instances)

**Table 4-356** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
instance_name	No	String	DB instance name.
offset	No	Integer	Index offset. If <b>offset</b> is set to <i>N</i> , the resource query starts from the <i>N</i> +1 data entry. The default value is <b>0</b> , indicating that the query starts from the first data entry. The value cannot be a negative number. For example, if this parameter is set to <b>0</b> and <b>limit</b> is set to <b>10</b> , only the 1st to 10th records are displayed.
limit	No	Integer	Number of records to be queried. The default value is <b>50</b> . The value cannot be a negative number. The minimum value is <b>1</b> and the maximum value is <b>50</b> . For example, if this parameter is set to <b>10</b> , a maximum of 10 records can be displayed.

## Request Parameters

None

## Response Parameters

**Table 4-357** Parameter description

Parameter	Type	Description
total_count	Integer	Total number of records.
instances	Array of objects	Information about all instances in the recycle bin. For details, see <a href="#">Table 4-358</a> .

**Table 4-358** instances field data structure description

Parameter	Type	Description
id	String	Instance ID.
name	String	DB instance name.
ha_mode	String	Deployment model. Value: <ul style="list-style-type: none"><li>• <b>Ha</b>: primary/standby deployment</li><li>• <b>Independent</b>: independent deployment</li><li>• <b>Combined</b>: combined deployment</li></ul>
engine_name	String	Engine name.
engine_version	String	Engine version.
pay_model	String	Billing mode. <b>0</b> : pay-per-use <b>1</b> : yearly/monthly
created_at	String	Creation time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the offset is shown as <b>+0800</b> .
deleted_at	String	Deletion time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the offset is shown as <b>+0800</b> .
volume_type	String	Disk type. Value: <ul style="list-style-type: none"><li>• <b>high</b>: high I/O</li><li>• <b>ultrahigh</b>: ultra-high I/O</li><li>• <b>essd</b>: extreme SSD</li></ul>

Parameter	Type	Description
volume_size	String	Disk size.
data_vip	String	Private IP address.
enterprise_project_id	String	Enterprise project ID. The value <b>0</b> indicates the default enterprise project.
enterprise_project_name	String	Enterprise project name.
backup_level	String	Backup level.
recycle_backup_id	String	Backup ID. (Backup ID in the backup information generated when the instance is deleted.)
recycle_status	String	Backup status in the recycle bin. Value: <ul style="list-style-type: none"><li>● <b>Running</b></li><li>● <b>Active</b></li></ul>
mode	String	Product type. Value: <ul style="list-style-type: none"><li>● <b>basic</b>: basic edition</li><li>● <b>standard</b>: standard edition</li><li>● <b>enterprise</b>: enterprise edition</li></ul>

## Example Request

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.1/619d3e78f61b4be68bc5aa0b59edcf7b/recycle-instances
```

## Example Response

```
{
  "total_count": 2,
  "instances": [ {
    "id": "21f20e55999947a9938ad0453b757e72in14",
    "name": "gaussdbv5_CCv20_bms_default_1_20220827012852",
    "ha_mode": "Ha",
    "engine_name": "gaussdbv5",
    "engine_version": "V2.0-2.3.0",
    "pay_model": 0,
    "created_at": "2022-08-09T09:26:44.000+08:00",
    "deleted_at": "2022-08-09T09:26:44.000+08:00",
    "volume_type": "localssd",
    "volume_size": "",
    "data_vip": "25.213.0.41 / 25.213.0.188 / 25.213.0.101 / 25.213.0.82",
    "enterprise_project_id": 0,
    "enterprise_project_name": null,
    "backup_level": null,
    "recycle_backup_id": "00b755ed678e41d18c74b28e2ad41bdcb14",
    "recycle_status": "Active",
    "mode": "enterprise"
  }
]
```

```
}, {
  "id": "a9df5b52b32e4571b1b6425a78a32956in14",
  "name": "ecs-lxy-backup-3",
  "ha_mode": "Ha",
  "engine_name": "gaussdbv5",
  "engine_version": "V2.0-2.3.0",
  "pay_model": 0,
  "created_at": "2022-08-09T09:26:44.000+08:00",
  "deleted_at": "2022-08-09T09:26:44.000+08:00",
  "volume_type": "ultrahigh",
  "volume_size": "",
  "data_vip": "173.202.10.246 / 173.202.10.205 / 173.202.10.175",
  "enterprise_project_id": 0,
  "enterprise_project_name": null,
  "backup_level": null,
  "recycle_backup_id": "ef393704ef0045d1b6226b6f2cdc48a7br14",
  "recycle_status": "Active",
  "mode": "enterprise"
}]
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

# 4.14 Plug-in Management

## 4.14.1 Querying the List of Supported Plug-ins

### Function

This API is used to query the list of supported plug-ins. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/instances/kernel-plugins](https://{Endpoint}/v3/{project_id}/instances/kernel-plugins)



**Table 4-359** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

## Request Parameters

**Table 4-360** Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to <a href="#">obtain a user token</a> . After the request is processed, the value of <b>X-Subject-Token</b> in the message header is the token value.
X-Language	No	String	Language. Default value: <b>en-us</b> Values: <ul style="list-style-type: none"><li>• <b>zh-cn</b></li><li>• <b>en-us</b></li></ul>

## Response Parameters

Table 4-361 Response parameters

Parameter	Type	Description
[Array element]	Array of strings	Plug-ins.

## Example Request

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0c8243400d37468bb4aed3cc94c2911d/instances/kernel-plugins
```

## Example Response

```
[ "postgis" ]
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.14.2 Querying the List of Plug-ins Installed on an Instance

### Function

This API is used to query the list of plug-ins installed on an instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{{Endpoint}}/v3/{{project\\_id}}/instances/{{instance\\_id}}/kernel-plugins](https://{{Endpoint}}/v3/{{project_id}}/instances/{{instance_id}}/kernel-plugins)

**Table 4-362** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	String	Instance ID.

## Request Parameters

**Table 4-363** Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to <a href="#">obtain a user token</a> . After the request is processed, the value of <b>X-Subject-Token</b> in the message header is the token value.
X-Language	No	String	Language. Default value: <b>en-us</b> Values: <ul style="list-style-type: none"><li>• <b>zh-cn</b></li><li>• <b>en-us</b></li></ul>

## Response Parameters

Table 4-364 Response parameters

Parameter	Type	Description
[Array element]	Array of strings	Plug-ins.

## Example Request

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0c8243400d37468bb4aed3cc94c2911d/instances/f9b5f9b296ec6808e067in14/kernel-plugins
```

## Example Response

```
[ "postgis" ]
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.14.3 Configuring the Plug-in License

### Function

This API is used to configure the plug-in license. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

PUT [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/kernel-plugin-license](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/kernel-plugin-license)

**Table 4-365** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
instance_id	Yes	String	Instance ID.

## Request Parameters

**Table 4-366** Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	<p>User token. You can obtain the token by calling the IAM API used to <a href="#">obtain a user token</a>.</p> <p>After the request is processed, the value of <b>X-Subject-Token</b> in the message header is the token value.</p>
X-Language	No	String	<p>Language. Default value: <b>en-us</b> Values:</p> <ul style="list-style-type: none"> <li>• <b>zh-cn</b></li> <li>• <b>en-us</b></li> </ul>

**Table 4-367** Request body parameters

Parameter	Mandatory	Type	Description
license_str	Yes	String	String corresponding to the license file.

## Response Parameters

**Table 4-368** Response parameters

Parameter	Type	Description
Value	String	If the response is normal, <b>SUCCESS</b> is returned.

## Example Request

Configuring the content of the license file of the plug-in

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0c8243400d37468bb4aed3cc94c2911d/instances/f9b5f9b296ec6808e067in14/kernel-plugins-license
{
  "license_str" : "90ca926757144a2d98d78f727dc56664"
}
```

## Example Response

```
"SUCCESS"
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.14.4 Installing a Plug-in

### Function

This API is used to install a database plug-in. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

## URI

POST [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/kernel-plugin](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/kernel-plugin)

**Table 4-369** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	String	Instance ID.

## Request Parameters

**Table 4-370** Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to <a href="#">obtain a user token</a> . After the request is processed, the value of <b>X-Subject-Token</b> in the message header is the token value.
X-Language	No	String	Language. Default value: <b>en-us</b> Value range: <ul style="list-style-type: none"><li>• <b>zh-cn</b></li><li>• <b>en-us</b></li></ul>

**Table 4-371** Request body parameters

Parameter	Mandatory	Type	Description
plugin_name	Yes	String	Plug-in package name. Only the PostGIS plug-in provided by Yukon is supported.
url	Yes	String	URL of the plug-in installation package. The URL must be a shared object URL of OBS buckets.
sha_256	Yes	String	SHA-256 string corresponding to the plug-in package.

## Response Parameters

**Table 4-372** Parameter description

Parameter	Type	Description
job_id	String	ID of the plug-in installation workflow.

## Example Request

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0c8243400d37468bb4aed3cc94c2911d/instances/f9b5f9b296ec6808e067in14/kernel-plugin
{
  "plugin_name": "postgis",
  "url": "xxxx.obs.bucket1",
  "sha_256": "791a8d68064ca3208b52ac2584b3b1ab89e4945069baf48e2b14ed5a7151889b"
}
```

## Example Response

```
{
  "job_id": "bf26cf3c-d046-4080-bb45-f114be7afa5f"
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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



## 4.14.5 Querying Plug-in Extensions of an Instance

### Function

This API is used to query plug-in extensions of an instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/plugin-extensions](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/plugin-extensions)

**Table 4-373** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	String	Instance ID.

## Request Parameters

**Table 4-374** Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to <a href="#">obtain a user token</a> . After the request is processed, the value of <b>X-Subject-Token</b> in the message header is the token value.
X-Language	No	String	Language. Default value: <b>en-us</b> Values: <ul style="list-style-type: none"><li>• <b>zh-cn</b></li><li>• <b>en-us</b></li></ul>

**Table 4-375** Request body parameters

Parameter	Mandatory	Type	Description
plugin_name	Yes	String	Plug-in package name. Only the PostGIS plug-in provided by Yukon is supported.
db_name	Yes	String	Database name.

## Response Parameters

**Table 4-376** Response parameters

Parameter	Type	Description
Object array	Array	Plug-in extension information. For details, see <a href="#">Table 4-377</a> .

**Table 4-377** Plug-in extension field description

Parameter	Type	Description
extension_name	String	Plug-in extension name.

Parameter	Type	Description
status	String	Plug-in extension status. <b>on</b> means to enable the extension, and <b>off</b> means to disable the extension.

## Example Request

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0c8243400d37468bb4aed3cc94c2911d/instances/f9b5f9b296ec6808e067in14/plugin-extensions?db_name=test_gis_pg&plugin_name=postgis
```

## Example Response

```
[ {  
  "extension_name": "postgis_raster",  
  "status": "on"  
}]
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 4.14.6 Configuring Plug-in Extensions

### Function

This API is used to enable or disable plug-in extensions for a specific database. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

POST [https://{{Endpoint}}/v3/{{project\\_id}}/instances/{{instance\\_id}}/config-plugin-extensions](https://{{Endpoint}}/v3/{{project_id}}/instances/{{instance_id}}/config-plugin-extensions)

**Table 4-378** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	String	Instance ID.

## Request Parameters

**Table 4-379** Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to <a href="#">obtain a user token</a> . After the request is processed, the value of <b>X-Subject-Token</b> in the message header is the token value.
X-Language	No	String	Language. Default value: <b>en-us</b> Values: <ul style="list-style-type: none"><li>• <b>zh-cn</b></li><li>• <b>en-us</b></li></ul>

**Table 4-380** Request body parameters

Parameter	Mandatory	Type	Description
plugin_name	Yes	String	Plug-in package name. Only the PostGIS plug-in provided by Yukon is supported.
db_list	Yes	Array of strings	List of database names.
extension_name	Yes	String	Plug-in extension name.
extension_action	Yes	String	Operation to be performed on the plug-in extension. <b>on</b> means to enable the extension, and <b>off</b> means to disable the extension.

## Response Parameters

**Table 4-381** Response parameters

Parameter	Type	Description
Value	String	If the response is normal, <b>SUCCESS</b> is returned.

## Example Request

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0c8243400d37468bb4aed3cc94c2911d/instances/f9b5f9b296ec6808e067in14/config-plugin-extensions
{
  "plugin_name": "postgis",
  "db_list": [ "test" ],
  "extension_name": "postgis",
  "extension_action": "on"
}
```

## Example Response

```
"SUCCESS"
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

# 5 Historical APIs

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## 5.1 DB Engine Versions and Specifications

### 5.1.1 Querying Instance Specifications (v3.1)

#### Function

This API is used to query instance specifications. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

#### URI

```
GET https://{Endpoint}/v3.1/{project_id}/flavors?  
limit={limit}&offset={offset}&ha_mode={ha_mode}&version={version}&spec_code  
={spec_code}
```

**Table 5-1** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
version	No	String	<p><b>Explanation:</b> DB version number. You can query the specifications supported by a specified DB version, for example, <b>1.4</b>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> None</p> <p><b>Default value:</b> None</p>
spec_code	No	String	<p><b>Explanation:</b> Specification code.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> None</p> <p><b>Default value:</b> None</p>



Parameter	Mandatory	Type	Description
ha_mode	No	String	<p><b>Explanation:</b> Instance type. You can query the specifications supported by a specified instance type.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>Centralized: <b>centralization_standard</b></li> <li>Distributed (independent deployment): <b>enterprise</b></li> </ul> <p><b>Default value:</b> None</p>
limit	No	Integer	<p><b>Explanation:</b> Number of records to be queried. For example, if this parameter is set to <b>10</b>, a maximum of 10 records can be displayed.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [1, 100]</p> <p><b>Default value:</b> 100</p>
offset	No	Integer	<p><b>Explanation:</b> Index offset. The query starts from the next piece of data indexed by this parameter. For example, if this parameter is set to <b>1</b> and <b>limit</b> is set to <b>10</b>, only the 2nd to 11th records are displayed.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [0, 2<sup>31</sup>-1]</p> <p><b>Default value:</b> 0 (indicating that the query starts from the first data record.)</p>

## Request Parameters

None

## Response Parameters

**Table 5-2** Parameter description

Parameter	Type	Description
flavors	Array of objects	<b>Explanation:</b> Specification details. For details, see <a href="#">Table 5-3</a> .
total	Integer	<b>Explanation:</b> Total number of records. <b>Value range:</b> [0, 2 <sup>31</sup> -1]

**Table 5-3** flavors description

Parameter	Type	Description
vcpus	String	<b>Explanation:</b> Number of vCPUs. <b>Value range:</b> None
ram	String	<b>Explanation:</b> Memory size in GB. <b>Value range:</b> None
spec_code	String	<b>Explanation:</b> Resource specification code. For details, see <a href="#">DB Instance Specifications</a> . <b>Value range:</b> None
availability_zone	Array of strings	<b>Explanation:</b> AZ supported by the specifications.

Parameter	Type	Description
az_status	Map<String,String>	<p><b>Explanation:</b>  <b>key</b> indicates the AZ ID, and <b>value</b> indicates the specification status in the AZ.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• <b>normal:</b> available.</li> <li>• <b>unsupported:</b> not supported.</li> <li>• <b>sellout:</b> sold out.</li> </ul>
version	String	<p><b>Explanation:</b>  DB engine version supported by the specifications.</p> <p><b>Value range:</b>  None</p>
name	String	<p><b>Explanation:</b>  DB engine.</p> <p><b>Value range:</b>  None</p>
group_type	String	<p><b>Explanation:</b>  Performance specifications.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• <b>normal:</b> dedicated (1:8)</li> <li>• <b>normal2:</b> dedicated (1:4)</li> <li>• <b>armFlavors:</b> Kunpeng dedicated (1:8)</li> <li>• <b>exclusive:</b> dedicated (1:4). It is only suitable for primary/standby instances of the basic edition.</li> <li>• <b>armExclusive:</b> Kunpeng dedicated (1:4). It is only suitable for primary/standby instances of the basic edition.</li> <li>• <b>economical:</b> favored (1:4)</li> <li>• <b>economical2:</b> favored (1:8)</li> <li>• <b>armFlavors2:</b> Kunpeng dedicated (1:4)</li> <li>• <b>general:</b> general-purpose (1:4)</li> </ul>

### Example Request

- Querying specifications of a primary/standby instance

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/
```

```
v3.1/0483b6b16e954cb88930a360d2c4e663/flavors?
offset=0&limit=10&ha_mode=centralization_standard&version=3.100&spec_code=gaussdb.opengauss.ee.km1.2xlarge.arm8.ha
```

- Querying specifications of a distributed instance

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/
v3.1/0483b6b16e954cb88930a360d2c4e663/flavors?
offset=0&limit=10&ha_mode=enterprise&version=3.100&spec_code=gaussdb.opengauss.ee.dn.m4.2xlarge.8.in
```

## Example Response

Instance specifications queried.

```
{
  "flavors": [
    {
      "vcpus": "2",
      "ram": "16",
      "availability_zone": [
        "az2xahz",
        "az1xahz",
        "az3xahz"
      ],
      "version": "1.4",
      "name": "GaussDB",
      "spec_code": "gaussdb.opengauss.ee.dn.m6.large.8.in",
      "az_status": {
        "az2xahz": "normal",
        "az1xahz": "normal",
        "az3xahz": "normal"
      },
      "group_type": "normal2"
    }
  ],
  "total": 1
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 5.1.2 Querying Instance Specifications (v3)

### Function

This API is used to query instance specifications. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

## URI

GET `https://{Endpoint}/v3/{project_id}/flavors?limit={limit}&offset={offset}&ha_mode={ha_mode}&version={version}&spec_code={spec_code}`

**Table 5-4** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
version	No	String	<b>Explanation:</b> DB version number. You can query the specifications supported by a specified DB version, for example, 3.208. <b>Restrictions:</b> None <b>Value range:</b> None <b>Default value:</b> None
spec_code	No	String	<b>Explanation:</b> Specification code, for example, 3.208. <b>Restrictions:</b> None <b>Value range:</b> None <b>Default value:</b> None

Parameter	Mandatory	Type	Description
ha_mode	No	String	<p><b>Explanation:</b> Instance type. You can query the specifications supported by a specified instance type.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>Primary/standby: <b>centralization_standard</b></li> <li>Distributed: <b>enterprise</b></li> </ul> <p><b>Default value:</b> None</p>
limit	No	Integer	<p><b>Explanation:</b> Number of records to be queried. For example, if this parameter is set to <b>10</b>, a maximum of 10 records can be displayed.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [1, 100]</p> <p><b>Default value:</b> 100</p>
offset	No	Integer	<p><b>Explanation:</b> Index offset. The query starts from the next piece of data indexed by this parameter. For example, if this parameter is set to <b>1</b> and <b>limit</b> is set to <b>10</b>, only the 2nd to 11th records are displayed.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [0, 2<sup>31</sup>-1]</p> <p><b>Default value:</b> 0 (indicating that the query starts from the first data record.)</p>

## Request Parameters

None

## Response Parameters

**Table 5-5** Response Parameters

Parameter	Type	Description
flavors	Array of objects	<b>Explanation:</b> Specification details. For details, see <a href="#">Table 5-6</a> .
total	integer	<b>Explanation:</b> Total number of records. <b>Value range:</b> [0, 2 <sup>31</sup> -1]

**Table 5-6** flavors description

Parameter	Type	Description
vcpus	string	<b>Explanation:</b> Number of vCPUs. <b>Value range:</b> None
ram	string	<b>Explanation:</b> Memory size in GB. <b>Value range:</b> None
spec_code	string	<b>Explanation:</b> Resource specification code. For details, see <a href="#">DB Instance Specifications</a> . <b>Value range:</b> None
availability_zone	Array of strings	<b>Explanation:</b> AZ supported by the specifications.

Parameter	Type	Description
az_status	Map<String,String>	<p><b>Explanation:</b>  <b>key</b> indicates the AZ ID, and <b>value</b> indicates the specification status in the AZ.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• <b>normal:</b> available.</li> <li>• <b>unsupported:</b> indicates that the specifications are not supported by the AZ.</li> <li>• <b>sellout:</b> indicates that the specifications in the AZ are sold out.</li> </ul>
version	string	<p><b>Explanation:</b>  DB engine version supported by the specifications.</p> <p><b>Value range:</b>  None</p>
name	string	<p><b>Explanation:</b>  DB engine.</p> <p><b>Value range:</b>  None</p>
group_type	string	<p><b>Explanation:</b>  Performance specifications.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• <b>normal:</b> dedicated (1:8)</li> <li>• <b>normal2:</b> dedicated (1:4)</li> <li>• <b>armFlavors:</b> Kunpeng dedicated (1:8)</li> <li>• <b>general:</b> general-purpose (1:4)</li> <li>• <b>armFlavors2:</b> Kunpeng dedicated (1:4)</li> <li>• <b>exclusive:</b> Dedicated (1:4). It is only suitable for primary/standby instances of the basic edition.</li> <li>• <b>armExclusive:</b> Kunpeng dedicated (1:4). It is only suitable for primary/standby instances of the basic edition.</li> <li>• <b>economical:</b> Favored (1:4)</li> <li>• <b>economical2:</b> Favored (1:8)</li> </ul>



## Example Request

Querying database specifications

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/flavors?offset=0&limit=10&ha_mode=centralization_standard&version=3.100&spec_code=gaussdb.opengauss.ee.dn.m4.2xlarge.8.in
```

## Example Response

```
{
  "flavors": [
    {
      "vcpus": "2",
      "ram": "16",
      "availability_zone": [
        "az2xahz",
        "az1xahz",
        "az3xahz"
      ],
      "version": "1.4",
      "name": "GaussDB",
      "spec_code": "gaussdb.opengauss.ee.dn.m6.large.8.in",
      "az_status": {
        "az2xahz": "normal",
        "az1xahz": "normal",
        "az3xahz": "normal"
      },
      "group_type": "normal2"
    }
  ],
  "total": 1
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 5.1.3 Querying DB Engines (v3)

### Function

This API is used to query DB engines. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/datastores](https://{Endpoint}/v3/{project_id}/datastores)

**Table 5-7** Parameter description

Name	Mandatory	Description
project_id	Yes	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>

## Request Parameters

None

## Response Parameters

**Table 5-8** Parameter description

Name	Type	Description
datastores	Array of objects	DB engines. For details, see <a href="#">Table 5-9</a> .

**Table 5-9** dataStores field data structure description

Parameter	Type	Description
supported_versions	Array of strings	Engine versions supported by the deployment model.
instance_model	String	Deployment model. Value range: <ul style="list-style-type: none"> <li><b>ha</b>: primary/standby</li> <li><b>independent</b>: independent</li> </ul>

## Example Request

Querying DB engines

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/datastores
```

## Example Response

```
DB engines queried.
{
  "datastores": [
    {
      "supported_versions": [
        "2.0",
        "2.3",
        "2.6",
        "2.9"
      ],
      "instance_mode": "ha"
    }
  ]
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

# 5.2 DB Instance Management

## 5.2.1 Creating a DB Instance (v3.1)

### Function

This API is used to create a GaussDB instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

```
POST https://{Endpoint}/v3.1/{project_id}/instances
```

**Table 5-10** Parameter description

Name	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

## Request Parameters

**Table 5-11** Request parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Instance name. Instances of the same type can have same names under the same tenant. The name must consist of 4 to 64 characters and start with a letter. Only letters (case-sensitive), digits, hyphens (-), and underscores (_) are allowed.
datastore	Yes	Object	Database information. For details, see <a href="#">Table 5-12</a> .
ha	Yes	Object	Instance deployment model. For details, see <a href="#">Table 5-13</a> .
configuration_id	No	String	Parameter template ID. If this parameter is not specified, the default parameter template is used and this parameter is not returned in the response body.

Parameter	Mandatory	Type	Description
port	No	String	Port number used by the database to provide services for external systems. If you do not configure this parameter, the default value <b>8000</b> is used. Value range: <b>1024 to 39998</b> . The following ports are not allowed: 2378, 2379, 2380, 4999, 5000, 5999, 6000, 6001, 8097, 8098, 12016, 12017, 20049, 20050, 21731, 21732, 32122, 32123, and 32124.
password	Yes	String	Database password. The password must: Consist of 8 to 32 characters, including at least three of the following: uppercase letters, lowercase letters, digits, and special characters (~!@#%^*_-=+?,.).  Enter a strong password to improve security, preventing security risks such as brute force cracking.
backup_strategy	No	Object	Backup policy. For details, see <a href="#">Table 5-14</a> .
enterprise_project_id	No	String	Enterprise project ID. This parameter is suitable only for enterprise tenants. For details, see <b>id</b> in the <b>enterprise_project field data structure</b> response table in <a href="#">Querying Enterprise Projects</a> of <i>Enterprise Management API Reference</i> .
disk_encryption_id	No	String	Key ID for disk encryption. This parameter is left blank by default. For details about key grant, see <a href="#">Creating a Grant</a> in <i>Data Encryption Workshop User Guide</i> .
flavor_ref	Yes	String	Specification code. The value cannot be left blank. To obtain its value, see the <b>spec_code</b> field in <a href="#">Querying Instance Specifications</a> .
volume	Yes	Object	Volume information. For details, see <a href="#">Table 5-15</a> .
region	Yes	String	Region ID. The value cannot be left blank. For details about how to obtain this parameter value, see <a href="#">Regions and Endpoints</a> .

Parameter	Mandatory	Type	Description
availability_zone	Yes	String	<p>AZ ID.</p> <p>The value cannot be left blank. You can deploy a GaussDB instance in the same AZ or different AZs, and use commas (,) to separate AZs.</p> <p>The value cannot be left blank. For details about how to obtain this parameter value, see <a href="#">Regions and Endpoints</a>.</p>
vpc_id	Yes	String	<p>VPC ID. To obtain this parameter value, use either of the following methods:</p> <ul style="list-style-type: none"> <li>• Method 1: Log in to the VPC console and view the VPC ID in the VPC details page.</li> <li>• Method 2: Query the VPC ID through the VPC API. For details, see <a href="#">Querying VPCs</a>.</li> <li>• Method 2: See "Querying VPCs" in <i>Virtual Private Cloud API Reference</i>.</li> </ul>
subnet_id	Yes	String	<p>Network ID of the subnet. To obtain this parameter value, use either of the following methods:</p> <ul style="list-style-type: none"> <li>• Method 1: Log in to VPC console and click the target subnet on the <b>Subnets</b> page. You can view the network ID on the displayed page.</li> <li>• Method 2: Query the subnet ID through the VPC API. For details, see <a href="#">Querying Subnets</a>.</li> <li>• Method 2: See "Querying Subnets" in <i>Virtual Private Cloud API Reference</i>.</li> </ul>

Parameter	Mandatory	Type	Description
security_group_id	Yes	String	Security group which the instance is associated with. If you do not need to specify a security group, contact customer service. <ul style="list-style-type: none"><li>• Method 1: Log in to VPC console. Choose <b>Access Control &gt; Security Groups</b> in the navigation pane on the left. On the displayed page, click the target security group. You can view the security group ID on the displayed page.</li><li>• Method 2: Query the security group through the VPC API. For details, see <a href="#">Querying Security Groups</a>.</li><li>• Method 2: See "Querying Security Groups" in <i>Virtual Private Cloud API Reference</i>.</li></ul>
charge_info	No	Object	Billing mode, which can be pay-per-use or yearly/monthly. For details, see <a href="#">Table 5-16</a> .
time_zone	No	String	UTC time zone. <ul style="list-style-type: none"><li>• If this parameter is not specified, GaussDB uses UTC in the International website by default.</li><li>• If this parameter is specified, the value ranges from UTC-12:00 to UTC+12:00 at the full hour. For example, the parameter can be <b>UTC+08:00</b> rather than <b>UTC+08:30</b>.</li></ul>
sharding_num	No	Integer	This parameter is available only for distributed instances. Number of shards. The value ranges from 1 to 9.
coordinator_num	No	Integer	This parameter is available only for distributed instances. Number of CNs. The value ranges from 1 to 9. The number of CNs cannot exceed twice the number of shards.
replica_num	No	Integer	Number of replicas. The value can be <b>3</b> . If this parameter is left blank, the default value <b>3</b> is used.

Parameter	Mandatory	Type	Description
enable_force_switch	No	Boolean	<p>Whether to forcibly promote a standby node to primary. The value can only be <b>true</b> or <b>false</b>. <b>true</b> indicates that the function is enabled, and <b>false</b> (default value) indicates that the function is disabled. This function is available only for instances of version 1.2.2 or later.</p> <p><b>NOTE</b> The function is suitable for the following scenario: When the primary node is faulty, a standby node is forcibly promoted to primary, ensuring the instance availability. When an instance is faulty, a forcible switchover enables the instance to run normally as soon as possible at the cost of losing some data. This is an escape method used when the instance is unavailable.</p>
enable_single_float_ip	No	Boolean	<p>Whether to enable single floating IP address policy. This parameter is only suitable for primary/standby instances.</p> <p>Value range:</p> <ul style="list-style-type: none"> <li>• <b>true</b>: This function is enabled. Only one floating IP address is bound to the primary node of a DB instance. If a primary/standby failover occurs, the floating IP address does not change.</li> <li>• <b>false</b> (default value): The function is disabled. Each node is bound to a floating IP address. If a primary/standby failover occurs, the floating IP addresses change.</li> </ul> <p><b>NOTE</b> This parameter is only available for primary/standby instances that run 3.206 or later versions.</p>

**Table 5-12** datastore field data structure description

Parameter	Mandatory	Type	Description
type	Yes	String	DB engine. Value: <b>GaussDB</b> . It is case-insensitive.



Parameter	Mandatory	Type	Description
version	No	String	DB engine version. If this parameter is not specified, the latest version is used by default. For details about the versions supported by GaussDB, see <a href="#">Querying DB Engine Versions</a> .

**Table 5-13** ha field data structure description

Parameter	Mandatory	Type	Description
mode	Yes	String	Deployment model. The value is case-insensitive and can be <b>enterprise</b> (enterprise edition) and <b>combined</b> (basic edition for combined deployment) for distributed instances and <b>centralization_standard</b> for primary/standby instances.
consistency	Yes	String	Transaction consistency type. The value is case-insensitive and can be: <ul style="list-style-type: none"> <li>• <b>strong</b>: strong consistency</li> <li>• <b>eventual</b>: eventual consistency</li> </ul>
replication_mode	Yes	String	Replication mode for the standby node. The value can only be set to <b>sync</b> , indicating that data is synchronized in synchronous mode.

Parameter	Mandatory	Type	Description
instance_mode	No	String	<p>Product type of the instance to be created. If this parameter is not specified, an instance of the enterprise edition will be created by default. To create an instance of the basic edition or ecosystem edition, you need to specify the parameter value.</p> <ul style="list-style-type: none"> <li>• <b>enterprise</b>: The instance of the enterprise edition will be created.</li> <li>• <b>basic</b>: The instance of the basic edition will be created.</li> <li>• <b>ecology</b>: The instance of the ecosystem edition will be created.</li> </ul>

**Table 5-14** backup\_strategy field data structure description

Parameter	Mandatory	Type	Description
start_time	Yes	String	<p>Backup time window. The creation of an automated backup will be triggered during the backup time window. The value cannot be left blank or negative. It must be a valid value in the "hh:mm-HH:MM" format. The current time is in the UTC format.</p> <ul style="list-style-type: none"> <li>• The <b>HH</b> value must be 1 greater than the <b>hh</b> value.</li> <li>• The values of <b>mm</b> and <b>MM</b> must be the same and must be set to <b>00</b>.</li> </ul> <p>Example value:</p> <ul style="list-style-type: none"> <li>• 08:00-09:00</li> <li>• 23:00-00:00</li> </ul>
keep_days	No	Integer	<p>Retention days for specific backup files. Value: <b>1</b> to <b>36500</b>. If this parameter is not specified, the default value <b>7</b> is used.</p>

**Table 5-15** volume field data structure description

Parameter	Mandatory	Type	Description
type	Yes	String	Disk type. <ul style="list-style-type: none"> <li>Value range: <b>ULTRAHIGH</b> (SSD storage) or <b>ESSD</b> (extreme SSD storage). The value is case-sensitive.</li> </ul>
size	Yes	Integer	Storage. For example, if this parameter is set to <b>40</b> , 40 GB of storage is allocated to the created instance. ECS deployment: The value is from (Number of shards x 40 GB) to (Number of shards x 24 TB) and must be a multiple of (Number of shards x 4 GB).

**Table 5-16** chargeInfo field data structure description

Parameter	Mandatory	Type	Description
charge_mode	Yes	String	Billing mode. <b>postPaid</b> : pay-per-use billing. <b>prePaid</b> : yearly/monthly billing.
period_type	No	String	Subscription period. Value range: <ul style="list-style-type: none"> <li><b>month</b>: The service is subscribed by month.</li> <li><b>year</b>: The service is subscribed by year.</li> </ul> <b>NOTE</b> This parameter is valid and mandatory only when <b>charge_mode</b> is set to <b>prePaid</b> .

Parameter	Mandatory	Type	Description
period_num	No	Integer	<p>This parameter is valid and mandatory only when <b>charge_mode</b> is set to <b>prePaid</b>.</p> <p>Value range:</p> <ul style="list-style-type: none"> <li>When <b>period_type</b> is set to <b>month</b>, the parameter value ranges from <b>1</b> to <b>9</b>.</li> <li>When <b>period_type</b> is set to <b>year</b>, the parameter value ranges from <b>1</b> to <b>3</b>.</li> </ul> <p>When a floating-point value is used, the value is automatically truncated to an integer.</p>
is_auto_renew	No	Boolean	<p>Whether automatic renewal is enabled for your yearly/monthly instance. If you enable this function, the order will be automatically paid during the subscription renewal. The default renewal period is one month for monthly subscription and one year for yearly subscription. The renewal period can be configured as needed.</p> <ul style="list-style-type: none"> <li><b>true</b>: Automatic renewal is enabled.</li> <li><b>false</b> (default value): Automatic renewal is disabled.</li> </ul>
is_auto_pay	No	Boolean	<p>Whether the order will be automatically paid after yearly/monthly instances are created. This parameter does not affect the payment mode of automatic renewal.</p> <ul style="list-style-type: none"> <li><b>true</b>: The order will be automatically paid.</li> <li><b>false</b> (default value): The order will be manually paid.</li> </ul>

## Response Parameters

**Table 5-17** Response parameters

Parameter	Type	Description
instance	Object	<p>Instance information.</p> <p>For details, see <a href="#">Table 5-18</a>.</p>

Parameter	Type	Description
job_id	String	Instance creation task ID. This parameter is returned only when pay-per-use instances are created.
order_id	String	Order ID. This parameter is only returned during the creation of yearly/monthly instances.

**Table 5-18** instance description

Parameter	Type	Description
id	String	Instance ID.
name	String	Instance name. Instances of the same type can have same names under the same tenant.  The value must consist of 4 to 64 characters and start with a letter. Only letters (case-insensitive), digits, hyphens (-), and underscores (_) are allowed.
status	String	Instance status. For example, <b>BUILD</b> indicates that the instance is being created.  This parameter is returned only when pay-per-use instances are created.
datastore	Object	Database information. For details, see <a href="#">Table 5-19</a> .
ha	Object	Database deployment model. For details, see <a href="#">Table 5-20</a> .
replica_num	Integer	Number of replicas.
port	String	Database port, which is the same as the request parameter.
backup_strategy	Object	Automated backup policy. For details, see <a href="#">Table 5-21</a> .
enterprise_project_id	String	Project ID.
flavor_ref	String	Specification code. The value cannot be left blank.

Parameter	Type	Description
volume	Object	Volume information. For details, see <a href="#">Table 5-22</a> .
region	String	Region ID.
availability_zone	String	AZ ID.
vpc_id	String	VPC ID.
subnet_id	String	Network ID of the subnet.
security_group_id	String	Security group which the instance is associated with.
charge_info	Object	Payment mode. For details, see <a href="#">Table 5-23</a> .

**Table 5-19** datastore field data structure description

Parameter	Type	Description
type	String	DB engine. Value: GaussDB
version	String	DB engine version.

**Table 5-20** ha field data structure description

Parameter	Type	Description
mode	String	Deployment model. The value is case-insensitive and can be <b>combined</b> (basic edition for combined deployment) and <b>enterprise</b> (enterprise edition) for distributed instances and <b>centralization_standard</b> for primary/standby instances.
replication_mode	String	Replication mode for the standby node. The value can only be set to <b>sync</b> , indicating that data is synchronized in synchronous mode.
consistency	String	(GaussDB reserved parameter) Transaction consistency type. Value range: <ul style="list-style-type: none"> <li>• <b>strong</b>: strong consistency</li> <li>• <b>eventual</b>: eventual consistency</li> </ul>

Parameter	Type	Description
consistency_protocol	String	Replica consistency protocol. The value can be <b>quorum</b> (default value) or <b>paxos</b> . If it is not specified, the default value is used.

**Table 5-21** backup\_strategy field data structure description

Parameter	Type	Description
start_time	String	<p>Backup time window. The creation of an automated backup will be triggered during the backup time window.</p> <p>The value cannot be left blank. It must be a valid value in the "hh:mm-HH:MM" format. The current time is in the UTC format.</p> <ul style="list-style-type: none"> <li>The <b>HH</b> value must be 1 greater than the <b>hh</b> value.</li> <li>The values of <b>mm</b> and <b>MM</b> must be the same and must be set to <b>00</b>.</li> </ul> <p>Example value:</p> <ul style="list-style-type: none"> <li>08:00-09:00</li> <li>23:00-00:00</li> </ul> <p>If <b>backup_strategy</b> in the request body is left blank, <b>02:00-03:00</b> is returned for <b>start_time</b> by default.</p>
keep_days	Integer	<p>Retention days for specific backup files.</p> <p>Value range: <b>1</b> to <b>732</b>. If the <b>backup_strategy</b> field is not specified in the request body, <b>keep_days</b> in the response body is set to 7 days by default.</p>

**Table 5-22** volume field data structure description

Parameter	Type	Description
type	String	<p>Disk type.</p> <p>Its value is case-sensitive and can be:</p> <ul style="list-style-type: none"> <li><b>ULTRAHIGH</b>, indicating SSD.</li> <li><b>ESSD</b>: indicates the extreme SSD.</li> </ul>
size	Integer	Storage.

**Table 5-23** charge\_Info field data structure description

Parameter	Type	Description
charge_mode	String	Billing mode. <b>postPaid</b> : pay-per-use billing. <b>prePaid</b> : yearly/monthly billing.
period_type	String	Subscription period. <b>month</b> : The service is subscribed by month. <b>year</b> : The service is subscribed by year. This parameter is valid and mandatory only when <b>charge_mode</b> is set to <b>prePaid</b> . Value range: <ul style="list-style-type: none"><li>• <b>month</b></li><li>• <b>year</b></li></ul>
period_num	Integer	This parameter is valid and mandatory only when <b>charge_mode</b> is set to <b>prePaid</b> . Value range: When <b>period_type</b> is set to <b>month</b> , the parameter value ranges from <b>1</b> to <b>9</b> . When <b>period_type</b> is set to <b>year</b> , the parameter value ranges from <b>1</b> to <b>3</b> .
is_auto_renew	Boolean	Whether automatic renewal is enabled for yearly/monthly instances. If you enable this function, the order will be automatically paid during the subscription renewal. The default renewal period is one month for monthly subscription and one year for yearly subscription. The renewal period can be configured as needed. <b>true</b> : indicates that the subscription is automatically renewed. <b>false</b> (default value): indicates that the subscription is not automatically renewed.



Parameter	Type	Description
is_auto_pay	Boolean	Whether the order will be automatically paid after yearly/monthly instances are created. This parameter does not affect the payment mode of automatic renewal.  <b>true</b> : indicates that the order is automatically paid from the account. <b>false</b> (default value): indicates that the order is manually paid from the account.

## Example Request

- Creating a distributed instance in the independent deployment (one-year yearly/monthly billing, DB engine 2.7, three AZs, three CNs, three shards, three replicas, and 8 vCPUs and 64 GB)

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.1/0483b6b16e954cb88930a360d2c4e663/instances
{
  "name": "user1-v3-independent-02",
  "datastore": {
    "type": "GaussDB",
    "version": "2.7"
  },
  "flavor_ref": "gaussdb.opengauss.ee.dn.m6.2xlarge.8.in",
  "volume": {
    "type": "ULTRAHIGH",
    "size": 120
  },
  "disk_encryption_id": "24ae42b5-4009-4ea2-b66a-0b211e424dab",
  "region": "aaa",
  "availability_zone": "bbb,ccc,ddd",
  "vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
  "subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
  "security_group_id": "c6123999-8532-421c-9db6-e078013ff58f",
  "backup_strategy": {
    "start_time": "17:00-18:00",
    "keep_days": 7
  },
  "charge_info": {
    "charge_mode": "prePaid",
    "period_type": "year",
    "period_num": 1
  },
  "password": "xxxxxx",
  "configuration_id": "",
  "enterprise_project_id": "",
  "time_zone": "UTC+08:00",
  "ha": {
    "mode": "enterprise",
    "consistency": "strong",
    "replication_mode": "sync"
  },
  "sharding_num": 3,
  "coordinator_num": 3,
  "replica_num": 3,
  "port": 8000,
```

```
"enable_force_switch":true
}
```

- Creating a primary/standby (1 primary + 2 standby) instance (pay-per-use billing, DB engine 2.7, single AZ, 8 vCPUs and 64 GB)

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/
v3.1/0483b6b16e954cb88930a360d2c4e663/instances
```

```
{
  "name": "user1-v3-ha-01",
  "datastore": {
    "type": "GaussDB",
    "version": "2.7"
  },
  "flavor_ref": "gaussdb.opengauss.ee.km1.2xlarge.arm8.ha",
  "volume": {
    "type": "ULTRAHIGH",
    "size": 120
  },
  "disk_encryption_id": "24ae42b5-4009-4ea2-b66a-0b211e424dab",
  "region": "aaa",
  "availability_zone": "bbb,bbb,bbb",
  "vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
  "subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
  "security_group_id": "c6123999-8532-421c-9db6-e078013ff58f",
  "backup_strategy": {
    "start_time": "17:00-18:00",
    "keep_days": 7
  },
  "charge_info": {
    "charge_mode": "postPaid"
  },
  "password": "xxxxxx",
  "configuration_id": "",
  "enterprise_project_id": "",
  "time_zone": "UTC+08:00",
  "ha": {
    "mode": "centralization_standard",
    "consistency": "strong",
    "replication_mode": "sync"
  },
  "replica_num": 3,
  "port": 8000,
  "enable_force_switch": true
}
```

- Creating a primary/standby (1 primary + 2 standby) instance (one-year yearly/monthly billing, DB engine 2, three AZs, 8 vCPUs and 64 GB)

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/
v3.1/0483b6b16e954cb88930a360d2c4e663/instances
```

```
{
  "name": "user1-v3-ha-02",
  "datastore": {
    "type": "GaussDB",
    "version": "2.7"
  },
  "flavor_ref": "gaussdb.opengauss.ee.km1.2xlarge.arm8.ha",
  "volume": {
    "type": "ULTRAHIGH",
    "size": 120
  },
  "disk_encryption_id": "24ae42b5-4009-4ea2-b66a-0b211e424dab",
  "region": "aaa",
  "availability_zone": "bbb,ccc,ddd",
  "vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
  "subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
  "security_group_id": "c6123999-8532-421c-9db6-e078013ff58f",
  "backup_strategy": {
    "start_time": "17:00-18:00",

```

```
    "keep_days": 7
  },
  "charge_info": {
    "charge_mode": "prePaid",
    "period_type": "year",
    "period_num": 1
  },
  "password": "xxxxxx",
  "configuration_id": "",
  "enterprise_project_id": "",
  "time_zone": "UTC+08:00",
  "ha": {
    "mode": "centralization_standard",
    "consistency": "strong",
    "replication_mode": "sync"
  },
  "replica_num": 3,
  "port": 8000,
  "enable_force_switch": true
}
```

## Example Response

- Distributed instance in the independent deployment (pay-per-use billing, DB engine 2.7, single AZ, 3 CNs, 3 shards, 3 replicas, 8 vCPUs and 64 GB) created.

```
{
  "instance": {
    "id": "ad8cd1440aa94a02ae4580fcbebb3143in14",
    "name": "user1-v3-independent-01",
    "status": "BUILD",
    "datastore": {
      "type": "GaussDB",
      "version": "2.7"
    },
    "ha": {
      "mode": "Enterprise",
      "replication_mode": "sync",
      "consistency": "strong"
    },
    "port": "8000",
    "volume": {
      "type": "ULTRAHIGH",
      "size": 120
    },
    "replica_num": 3,
    "region": "aaa",
    "backup_strategy": {
      "start_time": "17:00-18:00",
      "keep_days": 7
    },
    "enterprise_project_id": "0",
    "flavor_ref": "gaussdb.opengauss.ee.dn.m6.2xlarge.8.in",
    "availability_zone": "bbb,bbb,bbb",
    "vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
    "subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
    "security_group_id": "c6123999-8532-421c-9db6-e078013ff58f",
    "charge_info": {
      "charge_mode": "postPaid"
    }
  },
  "job_id": "30f2790a-a5b6-4a13-a5ab-733c746609af"
}
```

- Distributed instance (one-year yearly/monthly billing, DB engine 2.7, three AZs, three CNs, three shards, three replicas, 8 vCPUs and 64 GB) created.

```
{
  "instance": {
    "id": "ad8cd1440aa94a02ae4580fcbebb3143in14",
```

```
"name": "user1-v3-independent-02",
"datastore": {
  "type": "GaussDB",
  "version": "2.7"
},
"ha": {
  "mode": "Enterprise",
  "replication_mode": "sync",
  "consistency": "strong"
},
"port": "8000",
"volume": {
  "type": "ULTRAHIGH",
  "size": 120
},
"replica_num": 3,
"region": "aaa",
"backup_strategy": {
  "start_time": "17:00-18:00",
  "keep_days": 7
},
"enterprise_project_id": "0",
"flavor_ref": "gaussdb.opengauss.ee.dn.m6.2xlarge.8.in",
"availability_zone": "bbb,bbb,bbb",
"vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
"subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
"security_group_id": "c6123999-8532-421c-9db6-e078013ff58f",
"charge_info": {
  "charge_mode": "prePaid",
  "period_type": "year",
  "period_num": 1,
  "is_auto_renew": false,
  "is_auto_pay": false
}
},
"job_id": "30f2790a-a5b6-4a13-a5ab-733c746609af"
}
```

- Primary/Standby instance (1 primary + 2 standby, pay-per-use billing, DB engine 2.7, single AZ, 8 vCPUs and 64 GB) created.

```
{
  "instance": {
    "id": "ad8cd1440aa94a02ae4580fcbebb3143in14",
    "name": "user1-v3-ha-01",
    "status": "BUILD",
    "datastore": {
      "type": "GaussDB",
      "version": "2.7"
    },
    "ha": {
      "mode": "Enterprise",
      "replication_mode": "sync",
      "consistency": "strong"
    },
    "port": "8000",
    "volume": {
      "type": "ULTRAHIGH",
      "size": 120
    },
    "region": "aaa",
    "replica_num": 3,
    "backup_strategy": {
      "start_time": "17:00-18:00",
      "keep_days": 7
    },
    "enterprise_project_id": "0",
    "flavor_ref": "gaussdb.opengauss.ee.dn.m6.2xlarge.8.in",
  }
}
```

```
"availability_zone": "bbb,bbb,bbb",
"vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
"charge_info": {
  "charge_mode": "postPaid"
},
"subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
"security_group_id": "c6123999-8532-421c-9db6-e078013ff58f"
},
"job_id": "30f2790a-a5b6-4a13-a5ab-733c746609af"
}
```

- Primary/Standby instance (1 primary + 2 standby, one-year yearly/monthly billing, DB engine 2.7, three AZs, 8 vCPUs and 64 GB) created.

```
{
  "instance": {
    "id": "ad8cd1440aa94a02ae4580fcbebb3143in14",
    "name": "user1-v3-ha-02",
    "datastore": {
      "type": "GaussDB",
      "version": "2.7"
    },
    "ha": {
      "mode": "Enterprise",
      "replication_mode": "sync",
      "consistency": "strong"
    },
    "port": "8000",
    "volume": {
      "type": "ULTRAHIGH",
      "size": 120
    },
    "replica_num": 3,
    "region": "aaa",
    "backup_strategy": {
      "start_time": "17:00-18:00",
      "keep_days": 7
    },
    "enterprise_project_id": "0",
    "flavor_ref": "gaussdb.opengauss.ee.dn.m6.2xlarge.8.in",
    "availability_zone": "bbb,bbb,bbb",
    "vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
    "subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
    "security_group_id": "c6123999-8532-421c-9db6-e078013ff58f",
    "charge_info": {
      "charge_mode": "prePaid",
      "period_type": "year",
      "period_num": 1,
      "is_auto_renew": false,
      "is_auto_pay": false
    }
  },
  "job_id": "30f2790a-a5b6-4a13-a5ab-733c746609af"
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 5.2.2 Creating a DB Instance (v3)

### Function

This API is used to create a GaussDB instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

POST [https://{Endpoint}/v3/{project\\_id}/instances](https://{Endpoint}/v3/{project_id}/instances)

Table 5-24 Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

### Request Parameters

Table 5-25 Request parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Instance name. Instances of the same type can have same names under the same tenant. The name must consist of 4 to 64 characters and start with a letter. It can contain only letters (case-sensitive), digits, hyphens (-), and underscores (_).

Parameter	Mandatory	Type	Description
datastore	Yes	Object	Database information. For details, see <a href="#">Table 5-26</a> .
ha	Yes	Object	Instance deployment model. For details, see <a href="#">Table 5-27</a> .
configuration_id	No	String	Parameter template ID. If this parameter is not specified, the default parameter template is used and this parameter is not returned in the response body.
port	No	String	Port number used by the database to provide services for external systems, ranging from 1024 to 39998. If you do not configure this parameter, the default value <b>8000</b> is used. The following ports are not allowed: 2378, 2379, 2380, 4999, 5000, 5999, 6000, 6001, 8097, 8098, 12016, 12017, 20049, 20050, 21731, 21732, 32122, 32123, and 32124.
password	Yes	String	Database password. The GaussDB database password must: Consist of 8 to 32 characters, including at least three of the following: uppercase letters, lowercase letters, digits, and special characters ~!@#\$%^&*()-_+= []{};,:<.>/? Enter a strong password to improve security, preventing security risks such as brute force cracking.
backup_strategy	No	Object	Backup policy. For details, see <a href="#">Table 5-28</a> .
enterprise_project_id	No	String	Enterprise project ID. This parameter is suitable only for enterprise tenants. For details, see <b>id</b> in the <b>enterprise_project</b> field data structure table in <a href="#">Querying Enterprise Projects</a> of <i>Enterprise Management API Reference</i> .
disk_encryption_id	No	String	Key ID for disk encryption. The default value is empty.
flavor_ref	Yes	String	Specification code. The value cannot be empty. For details on how to obtain the GaussDB specification code, see <a href="#">DB Instance Specifications</a> .

Parameter	Mandatory	Type	Description
volume	Yes	Object	Volume information. For details, see <a href="#">Table 5-29</a> .
region	Yes	String	Region ID. The value cannot be empty. For details about how to obtain this parameter value, see <a href="#">Regions and Endpoints</a> .
availability_zone	Yes	String	AZ ID. The value cannot be empty. You can deploy GaussDB in the same AZ or across three different AZs, and use commas (,) to separate AZs. For example: <ul style="list-style-type: none"><li>• To deploy a DB instance in the same AZ, enter three same AZ IDs.</li><li>• To deploy a DB instance across three different AZs, enter three different AZ IDs.</li></ul> The value cannot be empty. For details about how to obtain this parameter value, see <a href="#">Regions and Endpoints</a> .
vpc_id	Yes	String	VPC ID. To obtain this parameter value, use the following methods: <ul style="list-style-type: none"><li>• Method 1: Log in to VPC console and view the VPC ID in the VPC details page.</li><li>• Method 2: Query the VPC ID through the VPC API. For details, see <a href="#">Querying VPCs</a>.</li><li>• Method 2: See "Querying VPCs" in <i>Virtual Private Cloud API Reference</i>.</li></ul>
subnet_id	Yes	String	Network ID of the subnet. To obtain this parameter value, use either of the following methods: <ul style="list-style-type: none"><li>• Method 1: Log in to VPC console and click the target subnet on the <b>Subnets</b> page. You can view the network ID on the displayed page.</li><li>• Method 2: Query the subnet ID through the VPC API. For details, see <a href="#">Querying Subnets</a>.</li><li>• Method 2: See "Querying Subnets" in <i>Virtual Private Cloud API Reference</i>.</li></ul>



Parameter	Mandatory	Type	Description
security_group_id	Yes	String	<p>Security group which the instance is associated with. To obtain this parameter value, use either of the following methods: If you do not need to specify a security group, contact customer service.</p> <ul style="list-style-type: none"> <li>Method 1: Log in to VPC console. Choose <b>Access Control &gt; Security Groups</b> in the navigation pane on the left. On the displayed page, click the target security group. You can view the security group ID on the displayed page.</li> <li>Method 2: Query the security group through the VPC API. For details, see <a href="#">Querying Security Groups</a>.</li> <li>Method 2: See "Querying Security Groups" in <i>Virtual Private Cloud API Reference</i>.</li> </ul>
charge_info	No	Object	<p>Billing mode, which can be pay-per-use or yearly/monthly. For details, see <a href="#">Table 5-30</a>.</p>
time_zone	No	String	<p>UTC time zone.</p> <ul style="list-style-type: none"> <li>If this parameter is not specified, GaussDB uses UTC in the International website by default.</li> <li>If this parameter is specified, the value ranges from UTC-12:00 to UTC+12:00 at the full hour. For example, the parameter can be <b>UTC+08:00</b> rather than <b>UTC+08:30</b>.</li> </ul>
sharding_num	No	Integer	<p>This parameter is available only for distributed instances. Number of shards. The value ranges from 1 to 9.</p>
coordinator_num	No	Integer	<p>This parameter is available only for distributed instances. Number of CNs. The value ranges from 1 to 9. The number of CNs cannot exceed twice the number of shards.</p>

Parameter	Mandatory	Type	Description
replica_num	No	Integer	Number of replicas. The value can be 2 or 3 (default). <b>NOTE</b> To use two-replica instance, ensure the instance version is 1.3.0 or later and submit an application by choosing <a href="#">Service Tickets &gt; Create Service Ticket</a> in the upper right corner of the management console.
enable_force_switch	No	Boolean	Whether to forcibly promote a standby node to primary. The value can only be <b>true</b> or <b>false</b> . <b>true</b> indicates that the function is enabled, and <b>false</b> indicates that the function is disabled. The function is disabled by default. Only 1.2.2 and later versions are supported. <b>NOTE</b> The function is suitable for the following scenario: When the primary node is faulty, a standby node is forcibly promoted to primary to provide services, ensuring the instance availability. When the instance is faulty, this function is used to recover services as soon as possible at the cost of partial data loss. You are not advised to use this function if you are not clear about the impact of data loss on services.

**Table 5-26** datastore field data structure description

Parameter	Mandatory	Type	Description
type	Yes	String	DB engine. Value: <b>GaussDB</b> . It is case-insensitive.
version	No	String	DB engine version. If this parameter is not specified, the latest version is used by default. For details, see <a href="#">Querying DB Engine Versions</a> .

**Table 5-27** ha field data structure description

Parameter	Mandatory	Type	Description
mode	Yes	String	Deployment model. Its value is <b>enterprise</b> for distributed instances and <b>centralization_standard</b> for primary/standby instances. It is case-insensitive.
consistency	Yes	String	Transaction consistency type. The value can be <b>strong</b> or <b>eventual</b> and is case-insensitive.
replication_mode	Yes	String	Replication mode for the standby node. Valid value: <b>sync</b> <b>NOTE</b> <b>sync</b> indicates synchronous replication.
instance_mode	No	String	Product type of the instance to be created. If this parameter is not specified, an instance of the enterprise edition will be created by default. To create an instance of the basic edition or ecosystem edition, you need to specify the parameter value. <ul style="list-style-type: none"> <li>• <b>enterprise</b>: The instance of the enterprise edition will be created.</li> <li>• <b>basic</b>: The instance of the basic edition will be created.</li> <li>• <b>ecology</b>: The instance of the ecosystem edition will be created.</li> </ul>

**Table 5-28** backup\_strategy field data structure description

Parameter	Mandatory	Type	Description
start_time	Yes	String	<p>Backup time window. The creation of an automated backup will be triggered during the backup time window.</p> <p>The value cannot be empty. It must be a valid value in the "hh:mm-HH:MM" format. The current time is in the UTC format.</p> <ul style="list-style-type: none"> <li>The <b>HH</b> value must be 1 greater than the <b>hh</b> value.</li> <li>The values of <b>mm</b> and <b>MM</b> must be the same and must be set to <b>00</b>.</li> </ul> <p>Example value:</p> <ul style="list-style-type: none"> <li>08:00-09:00</li> <li>23:00-00:00</li> </ul>
keep_days	No	Integer	<p>Retention days for specific backup files.</p> <p>Value: <b>0</b> to <b>732</b>. If this parameter is not specified or is set to <b>0</b>, the default value <b>7</b> is used.</p>

**Table 5-29** volume field data structure description

Parameter	Mandatory	Type	Description
type	Yes	String	<p>Disk type.</p> <p>Value range: <b>ULTRAHIGH</b> (SSD storage) or <b>ESSD</b> (extreme SSD storage). The value is case-sensitive.</p>
size	Yes	Integer	<p>Disk size. For example, if this parameter is set to <b>40</b>, 40 GB of storage is allocated to the created instance.</p> <p>ECS deployment: The value is from (Number of shards x 40 GB) to (Number of shards x 16 TB) and must be a multiple of (Number of shards x 4).</p>

**Table 5-30** chargeInfo field data structure description

Parameter	Mandatory	Type	Description
charge_mode	Yes	String	Billing mode. <b>postPaid</b> : pay-per-use billing. <b>prePaid</b> : yearly/monthly billing.
period_type	No	String	Subscription period. Value range: <ul style="list-style-type: none"><li>• <b>month</b>: The service is subscribed by month.</li><li>• <b>year</b>: The service is subscribed by year.</li></ul> <b>NOTE</b> This parameter is valid and mandatory only when <b>charge_mode</b> is set to <b>prePaid</b> .
period_num	No	Integer	This parameter is valid and mandatory only when <b>charge_mode</b> is set to <b>prePaid</b> . Value range: <ul style="list-style-type: none"><li>• When <b>period_type</b> is set to <b>month</b>, the parameter value ranges from <b>1</b> to <b>9</b>.</li><li>• When <b>period_type</b> is set to <b>year</b>, the parameter value ranges from <b>1</b> to <b>3</b>.</li></ul> When a floating-point value is used, the value is automatically truncated to an integer.
is_auto_renew	No	Boolean	Whether automatic renewal is enabled for yearly/monthly instances. If you enable this function, the order will be automatically paid during the subscription renewal. The default renewal period is one month for monthly subscription and one year for yearly subscription. The renewal period can be configured as needed. <ul style="list-style-type: none"><li>• <b>true</b>: Automatic renewal is enabled.</li><li>• <b>false</b>: Automatic renewal is disabled. The default value is <b>false</b>.</li></ul>

Parameter	Mandatory	Type	Description
is_auto_pay	No	Boolean	Whether the order will be automatically paid after yearly/monthly instances are created. This parameter does not affect the payment mode of automatic renewal. <ul style="list-style-type: none"><li>• <b>true</b>: The order will be automatically paid.</li><li>• <b>false</b>: The order will be manually paid. The default value is <b>false</b>.</li></ul>

## Response Parameters

Table 5-31 Response parameters

Parameter	Type	Description
instance	Object	Instance information. For details, see <a href="#">Table 5-32</a> .
job_id	String	Instance creation task ID. This parameter is returned only when pay-per-use instances are created.
order_id	String	Order ID. This parameter is returned only for the creation of yearly/monthly instances.

Table 5-32 instance description

Parameter	Type	Description
id	String	Instance ID.
name	String	Instance name. Instances of the same type can have same names under the same tenant. The value must consist of 4 to 64 characters and start with a letter. It is case-insensitive and contains only letters, digits, hyphens (-), and underscores (_).

Parameter	Type	Description
status	String	Instance status. For example, <b>BUILD</b> indicates that the instance is being created. This parameter is returned only when pay-per-use instances are created.
datastore	Object	Database information. For details, see <a href="#">Table 5-33</a> .
ha	Object	Database deployment model. For details, see <a href="#">Table 5-34</a> .
replica_num	Integer	Number of replicas.
port	String	Database port, which is the same as the request parameter.
backup_strategy	Object	Automated backup policy. For details, see <a href="#">Table 5-35</a> .
enterprise_project_id	String	Project ID.
flavor_ref	String	Specification code. The value cannot be empty. For details on how to obtain the GaussDB specification code, see <a href="#">DB Instance Specifications</a> .
volume	Object	Volume information. For details, see <a href="#">Table 5-36</a> .
region	String	Region ID.
availability_zone	String	AZ ID.
vpc_id	String	VPC ID.
subnet_id	String	Network ID of the subnet.
security_group_id	String	Security group to which the instance belongs.
charge_info	Object	Payment mode. For details, see <a href="#">Table 5-37</a> .

**Table 5-33** datastore field data structure description

Parameter	Type	Description
type	String	DB engine. Value:

Parameter	Type	Description
version	String	DB engine version.

**Table 5-34** ha field data structure description

Parameter	Type	Description
mode	String	Distributed deployment. The value can be <b>enterprise</b> (Enterprise Edition). Primary/standby deployment. The value is <b>centralization_standard</b> . It is case-insensitive.
replication_mode	String	Replication mode for the standby node. Valid value: <b>sync</b> . <b>NOTE</b> <b>sync</b> indicates synchronous replication.
consistency	String	(GaussDB reserved parameter) Transaction consistency type. The value can be <b>strong</b> or <b>eventual</b> .

**Table 5-35** backup\_strategy field data structure description

Parameter	Type	Description
start_time	String	Backup time window. The creation of an automated backup will be triggered during the backup time window. The value cannot be empty. It must be a valid value in the "hh:mm-HH:MM" format. The current time is in the UTC format. <ul style="list-style-type: none"> <li>The <b>HH</b> value must be 1 greater than the <b>hh</b> value.</li> <li>The values of <b>mm</b> and <b>MM</b> must be the same and must be set to <b>00</b>.</li> </ul> Example value: <ul style="list-style-type: none"> <li>08:00-09:00</li> <li>23:00-00:00</li> </ul> If <b>backup_strategy</b> in the request body is left blank, <b>02:00-03:00</b> is returned for <b>start_time</b> by default.



Parameter	Type	Description
keep_days	Integer	Retention days for specific backup files. The value ranges from 1 to 732. If the <b>backup_strategy</b> field is not specified in the request body, <b>keep_days</b> in the response body is set to 7 days by default.

**Table 5-36** volume field data structure description

Parameter	Type	Description
type	String	Disk type. Its value is case-sensitive and can be: <ul style="list-style-type: none"> <li>• <b>ULTRAHIGH</b>, indicating SSD.</li> <li>• <b>ESSD</b>: indicates the extreme SSD.</li> </ul>
size	Integer	Disk size. When creating a distributed instance, you need to specify the size to be a multiple of (Number of shards x 4 GB). Value range: (Number of shards x 40 GB) to (Number of shards x 16 TB).

**Table 5-37** charge\_info field data structure description

Parameter	Type	Description
charge_mode	String	Billing mode. <b>postPaid</b> : pay-per-use billing. <b>prePaid</b> : yearly/monthly billing.
period_type	String	Subscription period. <b>month</b> : The service is subscribed by month. <b>year</b> : The service is subscribed by year. This parameter is valid and mandatory only when <b>charge_mode</b> is set to <b>prePaid</b> . Value: <ul style="list-style-type: none"> <li>• <b>month</b></li> <li>• <b>year</b></li> </ul>

Parameter	Type	Description
period_num	Integer	This parameter is valid and mandatory only when <b>charge_mode</b> is set to <b>prePaid</b> . Value range: When <b>period_type</b> is set to <b>month</b> , the parameter value ranges from <b>1</b> to <b>9</b> . When <b>period_type</b> is set to <b>year</b> , the parameter value ranges from <b>1</b> to <b>3</b> .
is_auto_renew	Boolean	Whether automatic renewal is enabled for yearly/monthly instances. If you enable this function, the order will be automatically paid during the subscription renewal. The default renewal period is one month for monthly subscription and one year for yearly subscription. The renewal period can be configured as needed. <b>true</b> : indicates that the subscription is automatically renewed. <b>false</b> : indicates that the subscription is not automatically renewed. The default value is <b>false</b> .
is_auto_pay	Boolean	Whether the order will be automatically paid after yearly/monthly instances are created. This parameter does not affect the payment mode of automatic renewal. <b>true</b> : indicates that the order is automatically paid from the account. <b>false</b> : indicates that the order is manually paid from the account. The default value is <b>false</b> .

## Example Request

- Creating a distributed DB instance in the independent deployment (pay-per-use billing, DB engine 1.4, single AZ, three CNs, three shards, three replicas, and 8 vCPUs and 64 GB)

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances
{
  "name": "user1-v3-independent-01",
  "datastore": {
    "type": "GaussDB",
    "version": "1.4"
  },
  "flavor_ref": "gaussdb.opengauss.ee.dn.m6.2xlarge.8in",
  "volume": {
    "type": "ULTRAHIGH",
    "size": 120
  }
}
```

```
},
"disk_encryption_id": "24ae42b5-4009-4ea2-b66a-0b211e424dab",
"region": "aaa",
"availability_zone": "bbb,bbb,bbb",
"vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
"subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
"security_group_id": "c6123999-8532-421c-9db6-e078013ff58f",
"backup_strategy": {
  "start_time": "17:00-18:00",
  "keep_days": 7
},
"charge_info": {
  "charge_mode": "postPaid"
},
"password": "xxxxxx",
"configuration_id": "",
"enterprise_project_id": "",
"time_zone": "UTC+08:00",
"ha": {
  "mode": "enterprise",
  "consistency": "strong",
  "replication_mode": "sync"
},
"sharding_num": 3,
"coordinator_num": 3,
"replica_num": 3,
"port": 8000,
"enable_force_switch": true
}
```

- Creating a distributed DB instance in the independent deployment (one-year yearly/monthly billing, DB engine 1.4, three AZs, three CNs, three shards, three replicas, and 8 vCPUs and 64 GB)

<https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances>

```
{
  "name": "user1-v3-independent-02",
  "datastore": {
    "type": "GaussDB",
    "version": "1.4"
  },
  "flavor_ref": "gaussdb.opengauss.ee.dn.m6.2xlarge.8.in",
  "volume": {
    "type": "ULTRAHIGH",
    "size": 120
  },
  "disk_encryption_id": "24ae42b5-4009-4ea2-b66a-0b211e424dab",
  "region": "aaa",
  "availability_zone": "bbb,ccc,ddd",
  "vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
  "subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
  "security_group_id": "c6123999-8532-421c-9db6-e078013ff58f",
  "backup_strategy": {
    "start_time": "17:00-18:00",
    "keep_days": 7
  },
  "charge_info": {
    "charge_mode": "prePaid",
    "period_type": "year",
    "period_num": 1
  },
  "password": "xxxxxx",
  "configuration_id": "",
  "enterprise_project_id": "",
  "time_zone": "UTC+08:00",
  "ha": {
    "mode": "enterprise",
    "consistency": "strong",

```

```
    "replication_mode": "sync"
  },
  "sharding_num": 3,
  "coordinator_num": 3,
  "replica_num": 3,
  "port": 8000,
  "enable_force_switch": true
}
```

- Creating a primary/standby (1 primary + 2 standby) DB instance (pay-per-use billing, DB engine 1.4, single AZ, 8 vCPUs and 64 GB)

<https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances>

```
{
  "name": "user1-v3-ha-01",
  "datastore": {
    "type": "GaussDB",
    "version": "1.4"
  },
  "flavor_ref": "gaussdb.opengauss.ee.km1.2xlarge.arm8.ha",
  "volume": {
    "type": "ULTRAHIGH",
    "size": 120
  },
  "disk_encryption_id": "24ae42b5-4009-4ea2-b66a-0b211e424dab",
  "region": "aaa",
  "availability_zone": "bbb,bbb,bbb",
  "vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
  "subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
  "security_group_id": "c6123999-8532-421c-9db6-e078013ff58f",
  "backup_strategy": {
    "start_time": "17:00-18:00",
    "keep_days": 7
  },
  "charge_info": {
    "charge_mode": "postPaid",
  },
  "password": "xxxxxx",
  "configuration_id": "",
  "enterprise_project_id": "",
  "time_zone": "UTC+08:00",
  "ha": {
    "mode": "centralization_standard",
    "consistency": "strong",
    "replication_mode": "sync"
  },
  "replica_num": 3,
  "port": 8000,
  "enable_force_switch": true
}
```

- Creating a primary/standby (1 primary + 2 standby) DB instance (one-year yearly/monthly billing, DB engine 1.4, three AZs, 8 vCPUs and 64 GB)

<https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances>

```
{
  "name": "user1-v3-ha-02",
  "datastore": {
    "type": "GaussDB",
    "version": "1.4"
  },
  "flavor_ref": "gaussdb.opengauss.ee.km1.2xlarge.arm8.ha",
  "volume": {
    "type": "ULTRAHIGH",
    "size": 120
  },
  "disk_encryption_id": "24ae42b5-4009-4ea2-b66a-0b211e424dab",
  "region": "aaa",
```

```
"availability_zone": "bbb,ccc,ddd",
"vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
"subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
"security_group_id": "c6123999-8532-421c-9db6-e078013ff58f",
"backup_strategy": {
  "start_time": "17:00-18:00",
  "keep_days": 7
},
"charge_info": {
  "charge_mode": "prePaid",
  "period_type": "year",
  "period_num": 1
},
"password": "xxxxxx",
"configuration_id": "",
"enterprise_project_id": "",
"time_zone": "UTC+08:00",
"ha": {
  "mode": "centralization_standard",
  "consistency": "strong",
  "replication_mode": "sync"
},
"replica_num": 3,
"port": 8000,
"enable_force_switch": true
}
```

## Example Response

Instance of the enterprise edition created.

```
{
  "instance": {
    "id": "ad8cd1440aa94a02ae4580fcbbebb3143in14",
    "name": "user1-v3-independent",
    "status": "BUILD",
    "datastore": {
      "type": "",
      "version": "1.4"
    },
    "ha": {
      "mode": "Enterprise",
      "replication_mode": "sync",
      "consistency": "strong"
    },
    "port": "8000",
    "volume": {
      "type": "ULTRAHIGH",
      "size": 120
    },
    "replica_num": 3,
    "region": "aaa",
    "region": "aaa",
    "backup_strategy": {
      "start_time": "17:00-18:00",
      "keep_days": 7
    },
    "enterprise_project_id": "0",
    "flavor_ref": "gaussdb.opengauss.ee.dn.m6.2xlarge.8.in",
    "availability_zone": "bbb,bbb,bbb",
    "vpc_id": "1f011c32-2de2-4aa8-a161-9498dbcef329",
    "subnet_id": "54a44bec-e36f-441e-86bb-d749ace9c189",
    "security_group_id": "c6123999-8532-421c-9db6-e078013ff58f",
    "charge_info": {
      "charge_mode": "postPaid"
    }
  },
  "job_id": "30f2790a-a5b6-4a13-a5ab-733c746609af"
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 5.2.3 Querying DB Instances (v3.2)

### Function

This API is used to query DB instances and their details. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET `https://{Endpoint}/v3.2/{project_id}/instances?id={id}&name={name}&type={type}&datastore_type={datastore_type}&vpc_id={vpc_id}&subnet_id={subnet_id}&offset={offset}&limit={limit}`

**Table 5-38** Parameter description

Name	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

**Table 5-39** Query parameters

Parameter	Mandatory	Type	Description
id	No	String	Instance ID. The asterisk (*) is reserved for the system. If the instance ID starts with *, fuzzy match is performed based on the value following *. Otherwise, the exact match is performed based on the instance ID. The value cannot contain only asterisks (*).
name	No	String	Instance name. The asterisk (*) is reserved for the system. If the instance name starts with *, it indicates that fuzzy match is performed based on the value following *. Otherwise, the exact match is performed based on the instance name. The value cannot contain only asterisks (*).
type	No	String	Instance type. Its value is case-sensitive. Value range: <ul style="list-style-type: none"><li>• <b>Enterprise</b> (case-sensitive): distributed instances (in the independent deployment)</li><li>• <b>Centralization_standard</b> (case-sensitive): primary/standby instances</li></ul>
datastore_type	No	String	Database type. Its value is case-sensitive and can be <b>GaussDB</b> .
vpc_id	No	String	VPC ID. <ul style="list-style-type: none"><li>• Method 1: Log in to the VPC console and view the VPC ID in the VPC details page.</li><li>• Method 2: Query the VPC ID through the VPC API. For details, see <a href="#">Querying VPCs</a>.</li><li>• Method 2: See "Querying VPCs" in <i>Virtual Private Cloud API Reference</i>.</li></ul>

Parameter	Mandatory	Type	Description
subnet_id	No	String	Network ID of the subnet. <ul style="list-style-type: none"><li>• Method 1: Log in to VPC console and click the target subnet on the <b>Subnets</b> page. You can view the network ID on the displayed page.</li><li>• Method 2: Query the VPC ID through the VPC API. For details, see <a href="#">Querying Subnets</a>.</li><li>• Method 2: See "Querying Subnets" in <i>Virtual Private Cloud API Reference</i>.</li></ul>
offset	No	Integer	Index offset. If <b>offset</b> is set to <i>N</i> , the resource query starts from the N+1 data entry. The default value is <b>0</b> , indicating that the query starts from the first data entry. The value cannot be a negative number.
limit	No	Integer	Number of records to be queried. The default value is <b>100</b> . The value cannot be a negative number. The minimum value is <b>1</b> and the maximum value is <b>100</b> .



Parameter	Mandatory	Type	Description
tags	No	Array	<p>Tag key-value pairs of the instance.</p> <ul style="list-style-type: none"> <li>• <i>{key}</i> indicates the tag key. It must be unique and cannot be left blank. Each tag key can contain a maximum of 127 Unicode characters. <b>key</b> cannot be an empty string, a space, or left blank. Before using <b>key</b>, delete single-byte character (SBC) spaces before and after the value. The value cannot contain the following special characters: +/?#&amp;=,%</li> <li>• <i>{value}</i> indicates the tag value, which can be left blank. It can contain up to 255 Unicode characters. Before using <b>value</b>, delete SBC spaces before and after the value. The value cannot contain the following special characters: +/?#&amp;=,%</li> </ul> <p>If the value is left blank, it indicates <b>any_value</b> (querying any value).</p> <p>To query instances with multiple tag key-value pairs, separate the pairs with commas (.). A maximum of 10 key-value pairs are supported.</p>
charge_mode	No	String	<p>Billing mode.</p> <p>Value range:</p> <ul style="list-style-type: none"> <li>• <b>postPaid</b>: pay-per-use billing.</li> <li>• <b>prePaid</b>: yearly/monthly</li> </ul>

## Request Parameters

None

## Response Parameters

**Table 5-40** Response Parameters

Parameter	Type	Description
instances	Array of <a href="#">Table 5-41</a> objects	Instance information.
total_count	Integer	Total number of records.

**Table 5-41** instances

Parameter	Type	Description
id	String	Instance ID.
name	String	Instance name.

Parameter	Type	Description
status	String	<p>Instance status.</p> <p>Value:</p> <ul style="list-style-type: none"> <li>● If the value is <b>BUILD</b>, the instance is being created.</li> <li>● If the value is <b>ACTIVE</b>, the instance is normal.</li> <li>● If the value is <b>FAILED</b>, the instance is abnormal.</li> <li>● If the value is <b>FROZEN</b>, the instance is frozen.</li> <li>● If the value is <b>MODIFYING</b>, the storage is being scaled up or instance specifications are being changed.</li> <li>● If the value is <b>EXPANDING</b>, read replicas, CNs, or shards are being added to the instance.</li> <li>● If the value is <b>REBOOTING</b>, the instance is being rebooted.</li> <li>● If the value is <b>REDUCING</b>: read replicas are being deleted.</li> <li>● If the value is <b>UPGRADING</b>, the instance is being upgraded.</li> <li>● If the value is <b>RESTORING</b>, the instance is being restored.</li> <li>● If the value is <b>SWITCHOVER</b>, the primary/standby switchover is being performed.</li> <li>● If the value is <b>MIGRATING</b>, the instance is being migrated.</li> <li>● If the value is <b>BACKING UP</b>, the instance is being backed up.</li> <li>● If the value is <b>UPGRADE TO BE OBSERVED</b>, the instance upgrade is in the observation period.</li> <li>● If the value is <b>REDUCING REPLICATION</b>, the number of replicas is being reduced.</li> <li>● If the value is <b>STORAGE FULL</b>, the instance storage is full.</li> </ul>

Parameter	Type	Description
private_ips	Array of strings	Private IP address list. The value is an empty string until ECSs where CNs of distributed instances are deployed or ECSs where DNs of primary/standby instances are deployed are created.
public_ips	Array of strings	EIPs bound to the instance. This parameter cannot be left blank after an EIP is bound.
port	Integer	Database port number. The GaussDB database port ranges from 1024 to 39998 (excluding the following which are occupied by the system and cannot be used: 2378, 2379, 2380, 4999, 5000, 5999, 6000, 6001, 8097, 8098, 20049, 20050, 21731, and 21732). If this parameter is not specified, the default port number <b>8000</b> is used.
type	String	Instance type. The value is case-sensitive. <ul style="list-style-type: none"><li>• <b>Enterprise</b>: distributed instance (enterprise edition)</li></ul>
ha	<a href="#">Table 5-42</a> object	This parameter is returned for distributed and primary/standby instances.
replica_num	Integer	Number of replicas.
region	String	Region where the instance is deployed.
datastore	<a href="#">Table 5-43</a> object	Database information.
created	String	Creation time in the "yyyy-mm-dd hh:mm:ss timezone" format. <b>timezone</b> indicates the time zone. When the instance is being created, the value is the time when the creation request is delivered. After the instance is created, the value is the time when the creation is complete, for example, 2024-07-02 08:32:07 UTC.

Parameter	Type	Description
updated	String	Update time. The format is the same as that of the <b>created</b> field. The value is left blank unless the instance creation is complete.
db_user_name	String	Default username.
vpc_id	String	VPC ID.
subnet_id	String	Network ID of the subnet.
security_group_id	String	Security group ID.
flavor_ref	String	Specification code. To obtain its value, see the <b>spec_code</b> field in <a href="#">Querying Instance Specifications</a> .
flavor_info	<a href="#">Table 5-45</a> object	Flavor information.
volume	<a href="#">Table 5-46</a> object	Volume information.
switch_strategy	String	Database failover priority. If you do not configure failover priority during instance creation, this parameter will not be displayed. The value can be <b>Reliability</b> or <b>Availability</b> , indicating that the reliability or availability is given priority during the failover, respectively. If no failover priority is selected during the creation, the failover priority is not displayed.
backup_strategy	<a href="#">Table 5-47</a> object	Backup policy.
maintenance_window	String	Maintenance window in the UTC format.
nodes	Array of <a href="#">Table 5-48</a> objects	Instance node information.
disk_encryption_id	String	Disk encryption key ID. This parameter is displayed only when the instance disk is encrypted.
enterprise_project_id	String	Enterprise project tag ID. If an instance does not belong to any enterprise project, the default value is <b>0</b> .

Parameter	Type	Description
instance_mode	String	Instance type. <ul style="list-style-type: none"> <li>• <b>basic</b>: basic edition</li> <li>• <b>enterprise</b>: enterprise edition</li> </ul>
disk_encryption_id	String	Disk encryption key ID. This parameter is displayed only when the instance disk is encrypted.
charge_info	<a href="#">Table 5-49</a> object	Billing mode, which can be pay-per-use or yearly/monthly.
time_zone	String	Time zone.
tags	Array of <a href="#">Table 5-50</a> objects	Tags. This parameter is not returned if there is no tag.
disk_usage	String	Available disk usage of the instance. The value ranges from <b>0</b> to <b>1</b> and contains four decimal places.
mysql_compatibility	<a href="#">Table 14 mysql_compatibility</a> object	M compatibility configuration of the instance.

**Table 5-42** ha

Parameter	Type	Description
consistency	String	Database consistency type. It is only suitable for distributed instances. Value range: <ul style="list-style-type: none"> <li>• <b>strong</b>: strong consistency</li> <li>• <b>eventual</b>: eventual consistency</li> </ul>
replication_mode	String	Replication mode for the standby node. The value cannot be left blank. The value <b>sync</b> indicates that data is synchronized in synchronous mode.

**Table 5-43** datastore

Parameter	Type	Description
type	String	DB engine.

Parameter	Type	Description
version	String	Major version of the database.
complete_version	String	Minor version of the database.
target_version	String	Target version that the database is being upgraded to.
complete_kernel_version	String	Database kernel version.
hotfix_version_infos	Array of <a href="#">Table 5-44</a> objects	Hot patch information.

**Table 5-44** hotfix\_version\_infos

Parameter	Type	Description
version	String	Hot patch version.
upgrade_finished_time	String	List of time when the hot patch installation is complete. The time when the hot patch update is complete is expressed in the "yyyy-mm-dd hh:mm:ss timezone" format. <b>timezone</b> indicates the time zone.

**Table 5-45** flavor\_info

Parameter	Type	Description
vcpu	Integer	Number of vCPUs.
mem	Integer	Memory size.

**Table 5-46** volume

Parameter	Type	Description
type	String	Disk type. <b>ULTRAHIGH</b> (SSD storage) or <b>ESSD</b> (extreme SSD storage). The value is case-sensitive.
size	Integer	Disk size.

**Table 5-47** backup\_strategy

Parameter	Type	Description
start_time	String	Backup time window. The creation of an automated backup will be triggered during the backup time window. The time is in the UTC format.
keep_days	Integer	Number of days to retain the generated backup files. Value range: <b>1</b> to <b>732</b> .

**Table 5-48** nodes

Parameter	Type	Description
id	String	Node ID.
name	String	Node name.
role	String	Node type. <ul style="list-style-type: none"> <li>• <b>master</b>: primary node</li> <li>• <b>slave</b>: standby node</li> <li>• <b>secondary</b>: log node</li> <li>• <b>readreplica</b>: read replica.</li> </ul>
status	String	Node status. <b>BUILD_FAILED</b> : The node fails to be created.
availability_zone	String	AZ.
private_ip	String	Private IP address of the node. For distributed instances, this parameter is only valid for CNs. For primary/standby instances, this parameter is valid for all nodes. The parameter value is returned after an ECS is created.



Parameter	Type	Description
public_ip	String	EIP that has been bound. For distributed instances, this parameter is only valid for CNs. For primary/standby instances, this parameter is valid for all nodes. The parameter value is returned after an ECS is created and an EIP is bound to a DB instance.
component_names	String	Component information on the node (for example, <i>component ID.distributed ID</i> ). Separate information of multiple components with semicolons (;).

**Table 5-49** charge\_info

Parameter	Type	Description
charge_mode	String	Billing mode. Value range: <ul style="list-style-type: none"> <li>• <b>postPaid</b>: pay-per-use billing.</li> <li>• <b>prePaid</b>: yearly/monthly</li> </ul>

**Table 5-50** tags

Parameter	Type	Description
key	String	Tag key.
value	String	Tag value.

**Table 5-51** mysql\_compatibility

Parameter	Type	Description
port	String	Port for M compatibility.

## Example Request

- Querying instances based on search criteria

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.2/97b026aa9cc4417888c14c84a1ad9860/instances?
```

```
id=ed7cc6166ec24360a5ed5c5c9c2ed726in14&name=hy&type=Enterprise&datastore_type=GaussDB&vpc_id=19e5d45d-70fd-4a91-87e9-b27e71c9891f&subnet_id=bd51fb45-2dcb-4296-8783-8623bfe89bb7&offset=0&limit=10
```

- Querying all instances

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.2/97b026aa9cc4417888c14c84a1ad9860/instances
```

## Example Response

- Instances queried.

```
{
  "instances": [ {
    "id": "b331ed66cc3249f78bc20737308c01f4in14",
    "status": "ACTIVE",
    "name": "gauss-9e88",
    "port": 8000,
    "type": "enterprise",
    "ha": {
      "consistency": "strong",
      "replication_mode": "sync"
    },
    "region": "cn-xianhz-1",
    "datastore": {
      "type": "GaussDB",
      "version": "2.7",
      "complete_version": "2.7.2",
      "target_version": "3.208.0",
      "complete_kernel_version": "V500R002C10SPC610"
    },
    "created": "2021-01-15 01:46:40 UTC",
    "updated": "2021-01-15 02:05:03 UTC",
    "volume": {
      "type": "ULTRAHIGH",
      "size": 120
    },
    "nodes": [ {
      "id": "02ebf757aaf94074855f49cc6e0e4712no14",
      "name": "gauss-9e88_gaussdbv5cn_2",
      "role": "master",
      "status": "ACTIVE",
      "availability_zone": "az2xahz",
      "component_names": "cn_5001:"
    }, {
      "id": "0a87b8ecbfef46aba1409cfc0f0d5c34no14",
      "name": "gauss-9e88_gaussdbv5cn_0",
      "role": "master",
      "status": "ACTIVE",
      "availability_zone": "az2xahz",
      "component_names": "cn_5002:"
    }, {
      "id": "2d9fec1ab3834936b074d63acf48b1f2no14",
      "name": "gauss-9e88_gaussdbv5dn3_2",
      "role": "master",
      "status": "ACTIVE",
      "availability_zone": "az2xahz",
      "component_names": "dn_6003:60073"
    }, {
      "id": "48bb08a2d635435891ac0caa1c0bf2e3no14",
      "name": "gauss-9e88_gaussdbv5dn1_0",
      "role": "master",
      "status": "ACTIVE",
      "availability_zone": "az2xahz",
      "component_names": "dn_6001:60011"
    }, {
      "id": "5df830f652204827ada32f8bc28b107eno14",
      "name": "gauss-9e88_gaussdbv5dn1_1",
      "role": "slave",

```

```
"status": "ACTIVE",
"availability_zone": "az2xahz",
"component_names": "dn_6002:60011"
}, {
  "id": "8a97a246cee841b38c5b47290d4c9c38no14",
  "name": "gauss-9e88_gaussdbv5cn_1",
  "role": "master",
  "status": "ACTIVE",
  "availability_zone": "az2xahz",
  "component_names": "cn_5003:"
}, {
  "id": "8c1a3f8ecca4d9e9974a868bb6dd942no14",
  "name": "gauss-9e88_gaussdbv5dn2_0",
  "role": "master",
  "status": "ACTIVE",
  "availability_zone": "az2xahz",
  "component_names": "dn_6004:60042"
}, {
  "id": "9bd0c80b8a684cc9bd7d99dd5adffb07no14",
  "name": "gauss-9e88_gaussdbv5dn3_1",
  "role": "slave",
  "status": "ACTIVE",
  "availability_zone": "az2xahz",
  "component_names": "dn_6005:60073"
}, {
  "id": "9e2a3cd541e249d4af5aa57c5d3a7f39no14",
  "name": "gauss-9e88_gaussdbv5dn1_2",
  "role": "slave",
  "status": "ACTIVE",
  "availability_zone": "az2xahz",
  "component_names": "dn_6006:60011"
}, {
  "id": "b046d28989ec4ae5a1a9ab20fe65f248no14",
  "name": "gauss-9e88_gaussdbv5dn2_2",
  "role": "slave",
  "status": "ACTIVE",
  "availability_zone": "az2xahz",
  "component_names": "dn_6007:60042"
}, {
  "id": "b614cc12fd3742dbb230245f88a7bf00no14",
  "name": "gauss-9e88_gaussdbv5dn3_0",
  "role": "slave",
  "status": "ACTIVE",
  "availability_zone": "az2xahz",
  "component_names": "dn_6008:60073"
}, {
  "id": "caba8e88c3c84ae58202f1f589490611no14",
  "name": "gauss-9e88_gaussdbv5dn2_1",
  "role": "slave",
  "status": "ACTIVE",
  "availability_zone": "az2xahz",
  "component_names": "dn_6009:60042"
}
],
"private_ips": [ "192.168.28.81 / 192.168.27.52 / 192.168.16.253" ],
"public_ips": [ ],
"db_user_name": "root",
"vpc_id": "5f84a5c4-2f93-41de-8359-d7acedb585cc",
"subnet_id": "300036af-a92f-4e9e-8e9f-7d20e7878b05",
"security_group_id": "2dcfd40a-8f32-46b8-8a47-6cfab5eba163",
"flavor_ref": "gaussdb.opengauss.ee.dn.m6.large.8.in",
"flavor_info": {
  "vcpu": 2,
  "mem": 16
},
"switch_strategy": "Reliability",
"charge_info": {
  "charge_mode": "prePaid"
},
"backup_strategy": {
```

```
"start_time" : "19:00-20:00",
"keep_days" : 7
},
"maintenance_window" : "18:00-22:00",
"disk_encryption_id" : "24ae42b5-4009-4ea2-b66a-0b211e424dab",
"enterprise_project_id" : "6e76681b-a2f5-4c5f-97c5-ba4fd3c0dfb2",
"instance_mode" : "enterprise",
"time_zone" : "UTC+08:00",

"disk_usage" : "0.9890",
"mysql_compatibility" : {
  "port" : 3306
}
}, {
  "id" : "226b4afcfcc84c86bf1b9cb345d3b00fin14",
  "status" : "ACTIVE",
  "name" : "UTS-gauss-ad53-2C3D",
  "port" : 8000,
  "type" : "enterprise",
  "ha" : {
    "consistency" : "strong",
    "replication_mode" : "sync"
  },
  "region" : "cn-xianhz-1",
  "datastore" : {
    "type" : "GaussDB",
    "version" : "2.7",
    "complete_version" : "2.7.2",
    "complete_kernel_version" : "V500R002C10SPC610",
    "target_version" : "3.208.0",
    "hotfix_version_infos" : [ {
      "version" : "2.7.2.1",
      "upgrade_finished_time" : "2020-12-23 03:21:41 UTC"
    }, {
      "version" : "2.7.2.2",
      "upgrade_finished_time" : "2020-12-23 03:22:41 UTC"
    }
  ]
},
"created" : "2021-01-08 09:18:27 UTC",
"updated" : "2021-01-14 13:25:03 UTC",
"volume" : {
  "type" : "ULTRAHIGH",
  "size" : 120
},
"nodes" : [ {
  "id" : "07538a1def584cee99e2a5685eeab36ano14",
  "name" : "UTS-gauss-ad53-2C3D_gaussdbv5dn3_1",
  "role" : "slave",
  "status" : "ACTIVE",
  "availability_zone" : "az2xahz",
  "component_names" : "dn_6009:60072"
}, {
  "id" : "21f41baba1e2454f82331b7cb5aeabe5no14",
  "name" : "UTS-gauss-ad53-2C3D_gaussdbv5dn1_2",
  "role" : "master",
  "status" : "ACTIVE",
  "availability_zone" : "az2xahz",
  "component_names" : "dn_6008:60042"
}, {
  "id" : "2909771a3b3e4e3998f9388e77d22391no14",
  "name" : "UTS-gauss-ad53-2C3D_gaussdbv5dn1_0",
  "role" : "slave",
  "status" : "ACTIVE",
  "availability_zone" : "az2xahz",
  "component_names" : "dn_6007:60011"
}, {
  "id" : "2bd9a90a5da242a6b0743a7f597f6106no14",
  "name" : "UTS-gauss-ad53-2C3D_gaussdbv5dn2_2",
  "role" : "master",
```

```
"status": "ACTIVE",
"availability_zone": "az2xahz",
"component_names": "dn_6006:60042"
}, {
  "id": "77092f1dad74d3ea13d28269cdd3590no14",
  "name": "UTS-gauss-ad53-2C3D_gaussdbv5dn3_2",
  "role": "master",
  "status": "ACTIVE",
  "availability_zone": "az2xahz",
  "component_names": "dn_6005:60072"
}, {
  "id": "a46bfaa6d5a24355a60fce7432b964cano14",
  "name": "UTS-gauss-ad53-2C3D_gaussdbv5dn3_0",
  "role": "slave",
  "status": "ACTIVE",
  "availability_zone": "az2xahz",
  "component_names": "dn_6004:60072"
}, {
  "id": "aa5277736f3844e2a7adeb9de529e2b1no14",
  "name": "UTS-gauss-ad53-2C3D_gaussdbv5dn2_1",
  "role": "slave",
  "status": "ACTIVE",
  "availability_zone": "az2xahz",
  "component_names": "dn_6003:60042"
}, {
  "id": "b1d798e4ea7344dfa95032984bc6cf7no14",
  "name": "UTS-gauss-ad53-2C3D_gaussdbv5cn_1",
  "role": "master",
  "status": "ACTIVE",
  "availability_zone": "az2xahz",
  "component_names": "cn_5002:"
}, {
  "id": "b9a46540186f4c0781eabaa2a79594cbno14",
  "name": "UTS-gauss-ad53-2C3D_gaussdbv5dn1_1",
  "role": "slave",
  "status": "ACTIVE",
  "availability_zone": "az2xahz",
  "component_names": "dn_6002:60011"
}, {
  "id": "d283813030364060ab64371d50294977no14",
  "name": "UTS-gauss-ad53-2C3D_gaussdbv5dn2_0",
  "role": "slave",
  "status": "ACTIVE",
  "availability_zone": "az2xahz",
  "component_names": "dn_6001:60042"
}, {
  "id": "eb7bce29b2284cd290405eaddc1b1a1eno14",
  "name": "UTS-gauss-ad53-2C3D_gaussdbv5cn_0",
  "role": "master",
  "status": "FAILED",
  "availability_zone": "az2xahz",
  "component_names": "cn_5001:"
}
],
"private_ips": [ "192.168.30.44 / 192.168.29.231" ],
"public_ips": [ "10.154.217.248" ],
"db_user_name": "root",
"vpc_id": "5f84a5c4-2f93-41de-8359-d7acedb585cc",
"subnet_id": "300036af-a92f-4e9e-8e9f-7d20e7878b05",
"security_group_id": "2dcfd40a-8f32-46b8-8a47-6cfab5eba163",
"flavor_ref": "gaussdb.opengauss.ee.dn.m6.large.8.in",
"flavor_info": {
  "vcpu": 2,
  "mem": 16
},
"switch_strategy": "Reliability",
"charge_info": {
  "charge_mode": "prePaid"
},
"backup_strategy": {
```

```
    "start_time" : "18:00-19:00",
    "keep_days" : 7
  },
  "maintenance_window" : "18:00-22:00",
  "enterprise_project_id" : "0",
  "instance_mode" : "enterprise",
  "time_zone" : "UTC+08:00",
  "disk_usage" : "1.0000",
  "mysql_compatibility" : {
    "port" : 3306
  }
}, {
  "id" : "706c65c3dd7d497ab16f5b3a113690abin14",
  "status" : "ACTIVE",
  "name" : "UTS-gauss-7362",
  "port" : 8000,
  "type" : "enterprise",
  "ha" : {
    "replication_mode" : "sync"
  },
  "region" : "cn-xianhz-1",
  "datastore" : {
    "type" : "GaussDB",
    "version" : "2.7",
    "complete_version" : "2.7.2",
    "complete_kernel_version" : "V500R002C10SPC610",
    "target_version" : "3.208.0",
    "hotfix_version_infos" : [ {
      "version" : "2.7.2.1",
      "upgrade_finished_time" : "2020-12-23 03:21:41 UTC"
    }, {
      "version" : "2.7.2.2",
      "upgrade_finished_time" : "2020-12-23 03:22:41 UTC"
    } ]
  },
  "created" : "2020-12-23 03:21:41 UTC",
  "updated" : "2021-01-15 02:32:13 UTC",
  "volume" : {
    "type" : "ULTRAHIGH",
    "size" : 80
  },
  "nodes" : [ {
    "id" : "25b7f16ee4084b7884d52f1bdfab4e68no14",
    "name" : "UTS-gauss-7362_gaussdbv5dn1_2",
    "role" : "master",
    "status" : "ACTIVE",
    "availability_zone" : "az2xahz",
    "component_names" : "dn_6003:60011"
  }, {
    "id" : "ad6f02f31744422fa8ce487e81c9e7afno14",
    "name" : "UTS-gauss-7362_gaussdbv5cn_0",
    "role" : "master",
    "status" : "ACTIVE",
    "availability_zone" : "az2xahz",
    "component_names" : "cn_5001:"
  }, {
    "id" : "b30c56582bf44a548e3bb5b5af6c4773no14",
    "name" : "UTS-gauss-7362_gaussdbv5dn1_1",
    "role" : "slave",
    "status" : "ACTIVE",
    "availability_zone" : "az2xahz",
    "component_names" : "dn_6002:60011"
  }, {
    "id" : "f79ea0600cba42b2888bd9bd67e52a79no14",
    "name" : "UTS-gauss-7362_gaussdbv5dn1_0",
    "role" : "slave",
    "status" : "ACTIVE",
    "availability_zone" : "az2xahz",
    "component_names" : "dn_6001:60011"
  }
]
```

```
    },
    "private_ips": [ "192.168.26.70" ],
    "public_ips": [ ],

    "db_user_name": "root",
    "vpc_id": "5f84a5c4-2f93-41de-8359-d7acedb585cc",
    "subnet_id": "300036af-a92f-4e9e-8e9f-7d20e7878b05",
    "security_group_id": "2dcfd40a-8f32-46b8-8a47-6cfab5eba163",
    "flavor_ref": "gaussdb.opengauss.ee.dn.m6.large.8.in",
    "flavor_info": {
      "vcpu": 2,
      "mem": 16
    },
    "switch_strategy": "Reliability",
    "charge_info": {
      "charge_mode": "postPaid"
    },
    "backup_strategy": {
      "start_time": "16:00-17:00",
      "keep_days": 7
    },
    "maintenance_window": "18:00-22:00",
    "enterprise_project_id": "0",
    "instance_mode": "enterprise",
    "time_zone": "UTC+08:00",
    "disk_usage": "0.9940",
    "mysql_compatibility": {
      "port": 3306
    }
  }, {
    "id": "4ad42d079a3948d88c28d6236211b21ein14",
    "status": "ACTIVE",
    "name": "UTS-gauss-4336",
    "port": 8000,
    "type": "enterprise",
    "ha": {
      "replication_mode": "sync"
    },
    "region": "cn-xianhz-1",
    "datastore": {
      "type": "GaussDB",
      "version": "2.7",
      "complete_version": "2.7.2",
      "complete_kernel_version": "V500R002C10SPC610",
      "target_version": "3.208.0",
      "hotfix_version_infos": [ {
        "version": "2.7.2.1",
        "upgrade_finished_time": "2020-12-23 03:21:41 UTC"
      }, {
        "version": "2.7.2.2",
        "upgrade_finished_time": "2020-12-23 03:22:41 UTC"
      }
    ]
  },
  "created": "2020-12-03 14:28:53 UTC",
  "updated": "2021-01-14 13:20:10 UTC",
  "volume": {
    "type": "ULTRAHIGH",
    "size": 40
  },
  "nodes": [ {
    "id": "254dbda6f03643519ad64b39481bd11cno14",
    "name": "UTS-gauss-4336_gaussdbv5dn1_2",
    "role": "master",
    "status": "ACTIVE",
    "availability_zone": "az1xahz",
    "component_names": "dn_6001:60011"
  }, {
    "id": "6ad76d4db26443c2a93b280739a31558no14",
    "name": "UTS-gauss-4336_gaussdbv5dn1_1",
```

```

    "role" : "slave",
    "status" : "ACTIVE",
    "availability_zone" : "az1xahz",
    "component_names" : "dn_6002:60011"
  }, {
    "id" : "9fdebf821bdf444a8689b19c0ff588ceno14",
    "name" : "UTS-gauss-4336_gaussdbv5cn_0",
    "role" : "master",
    "status" : "FAILED",
    "availability_zone" : "az1xahz",
    "component_names" : "cn_5001:"
  }, {
    "id" : "dd64bdbbc02a542d88823b1582f772d25no14",
    "name" : "UTS-gauss-4336_gaussdbv5cn_1",
    "role" : "master",
    "status" : "ACTIVE",
    "availability_zone" : "az1xahz",
    "component_names" : "cn_5002:"
  }, {
    "id" : "de3c41461045466faf6c2b96eb709540no14",
    "name" : "UTS-gauss-4336_gaussdbv5dn1_0",
    "role" : "slave",
    "status" : "ACTIVE",
    "availability_zone" : "az1xahz",
    "component_names" : "dn_6001:60011"
  } ],
  "private_ips" : [ "192.168.30.93 / 192.168.29.232" ],
  "public_ips" : [ ],
  "db_user_name" : "root",
  "vpc_id" : "5f84a5c4-2f93-41de-8359-d7acedb585cc",
  "subnet_id" : "300036af-a92f-4e9e-8e9f-7d20e7878b05",
  "security_group_id" : "2dcfd40a-8f32-46b8-8a47-6cfab5eba163",
  "flavor_ref" : "gaussdb.opengauss.ee.dn.m6.large.8.in",
  "flavor_info" : {
    "vcpu" : 2,
    "mem" : 16
  },
  "switch_strategy" : "Reliability",
  "charge_info" : {
    "charge_mode" : "postPaid"
  },
  "backup_strategy" : {
    "start_time" : "18:00-19:00",
    "keep_days" : 7
  },
  "maintenance_window" : "18:00-22:00",
  "enterprise_project_id" : "0",
  "instance_mode" : "basic",
  "time_zone" : "UTC+08:00",
  "disk_usage" : "1.0000",
  "mysql_compatibility" : {
    "port" : 3306
  }
} ],
"total_count" : 4
}

```

- Instance details queried.

```

{
  "instances" : [ {
    "id" : "706c65c3dd7d497ab16f5b3a113690abin14",
    "status" : "ACTIVE",
    "name" : "UTS-gauss-7362",
    "port" : 8000,
    "type" : "enterprise",
    "ha" : {
      "replication_mode" : "sync"
    },
    "region" : "cn-xianhz-1",
    "datastore" : {

```



```
"type": "GaussDB",
"version": "2.7",
"complete_version": "2.7.2",
"complete_kernel_version": "V500R002C10SPC610",
"target_version": "3.208.0",
"hotfix_version_infos": [ {
  "version": "2.7.2.1",
  "upgrade_finished_time": "2020-12-23 03:21:41 UTC"
}, {
  "version": "2.7.2.2",
  "upgrade_finished_time": "2020-12-23 03:22:41 UTC"
} ]
},
"created": "2020-12-23 03:21:41 UTC",
"updated": "2021-01-15 02:32:13 UTC",
"volume": {
  "type": "ULTRAHIGH",
  "size": 80
},
"nodes": [ {
  "id": "25b7f16ee4084b7884d52f1bdfab4e68no14",
  "name": "UTS-gauss-7362_gaussdbv5dn1_2",
  "role": "master",
  "status": "ACTIVE",
  "availability_zone": "az2xahz",
  "component_names": "dn_6003:60011"
}, {
  "id": "ad6f02f31744422fa8ce487e81c9e7afno14",
  "name": "UTS-gauss-7362_gaussdbv5cn_0",
  "role": "master",
  "status": "ACTIVE",
  "availability_zone": "az2xahz",
  "component_names": "cn_6004:"
}, {
  "id": "b30c56582bf44a548e3bb5b5af6c4773no14",
  "name": "UTS-gauss-7362_gaussdbv5dn1_1",
  "role": "slave",
  "status": "ACTIVE",
  "availability_zone": "az2xahz",
  "component_names": "dn_6002:60011"
}, {
  "id": "f79ea0600cba42b2888bd9bd67e52a79no14",
  "name": "UTS-gauss-7362_gaussdbv5dn1_0",
  "role": "slave",
  "status": "ACTIVE",
  "availability_zone": "az2xahz",
  "component_names": "dn_6001:60011"
} ],
"private_ips": [ "192.168.26.70" ],
"public_ips": [ ],
"db_user_name": "root",
"vpc_id": "5f84a5c4-2f93-41de-8359-d7acedb585cc",
"subnet_id": "300036af-a92f-4e9e-8e9f-7d20e7878b05",
"security_group_id": "2dcfd40a-8f32-46b8-8a47-6cfab5eba163",
"flavor_ref": "gaussdb.opengauss.ee.dn.m6.large.8.in",
"flavor_info": {
  "vcpu": 2,
  "mem": 16
},
"switch_strategy": "Reliability",
"charge_info": {
  "charge_mode": "postPaid"
},
"backup_strategy": {
  "start_time": "16:00-17:00",
  "keep_days": 7
},
"maintenance_window": "18:00-22:00",
"disk_encryption_id": ""
```

```
"enterprise_project_id": "0",
"instance_mode": "enterprise",
"time_zone": "UTC+08:00",
"disk_usage": "0.9670"
}],
"total_count": 1
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 5.2.4 Querying DB Instances (v3.1)

### Function

This API is used to query instances according to search criteria. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3.1/{project\\_id}/instances?id={id}&name={name}&type={type}&datastore\\_type={datastore\\_type}&vpc\\_id={vpc\\_id}&subnet\\_id={subnet\\_id}&offset={offset}&limit={limit}](https://{Endpoint}/v3.1/{project_id}/instances?id={id}&name={name}&type={type}&datastore_type={datastore_type}&vpc_id={vpc_id}&subnet_id={subnet_id}&offset={offset}&limit={limit})

**Table 5-52** Parameter description

Parameter	Type	Mandatory	Description
project_id	String	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

Parameter	Type	Mandatory	Description
id	String	No	<p><b>Explanation:</b> Instance ID, which uniquely identifies an instance and is used to query instances in the instance list.</p> <p><b>Restrictions:</b> The asterisk (*) is reserved for the system. If the instance ID starts with *, it indicates that fuzzy match is performed based on the value following *. Otherwise, the exact match is performed based on the instance ID. The value cannot contain only asterisks (*).</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
name	String	No	<p><b>Explanation:</b> Instance name. You can query instances by instance name.</p> <p><b>Restrictions:</b> The asterisk (*) is reserved for the system. If the instance name starts with *, it indicates that fuzzy match is performed based on the value following *. Otherwise, the exact match is performed based on the instance name. The value cannot contain only asterisks (*).</p> <p><b>Value range:</b> The instance name must start with a letter and can contain 4 to 64 characters. Only letters, digits, hyphens (-), and underscores (_) are allowed.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory	Description
type	String	No	<p><b>Explanation:</b> Instance type. You can query instances by instance type.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• <b>Enterprise</b> (case-sensitive): distributed instances (in the independent deployment).</li> <li>• <b>Centralization_standard</b> (case-sensitive): primary/standby instances</li> </ul> <p><b>Default value:</b> None</p>
datastore_type	String	No	<p><b>Explanation:</b> Database type, which is case insensitive. You can query instances by database type.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> GaussDB</p> <p><b>Default value:</b> None</p>
vpc_id	String	No	<p><b>Explanation:</b> VPC ID. You can query instances by VPC where the instances are located. To obtain the value:</p> <ul style="list-style-type: none"> <li>• Method 1: Log in to the VPC console and view the VPC ID in the VPC details page.</li> <li>• Method 2: Query the VPC ID through the VPC API. For details, see <a href="#">Querying VPCs</a>.</li> <li>• Method 2: See the section "Querying VPCs" in the <i>Virtual Private Cloud API Reference</i>.</li> </ul> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> UUID format</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory	Description
subnet_id	String	No	<p><b>Explanation:</b> Network ID of the subnet. You can query DB instances by network ID of the subnet where the DB instances are located. To obtain the value:</p> <ul style="list-style-type: none"> <li>Method 1: Log in to VPC console and click the target subnet on the <b>Subnets</b> page. You can view the network ID on the displayed page.</li> <li>Method 2: See section "Querying Subnets" in the <i>Virtual Private Cloud API Reference</i>.</li> </ul> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> UUID format</p> <p><b>Default value:</b> None</p>
offset	Integer	No	<p><b>Explanation:</b> Index offset. The query starts from the next piece of data indexed by this parameter.</p> <p><b>Restrictions:</b> The value must be a non-negative number.</p> <p><b>Value range:</b> [0, 2<sup>31</sup>-1]</p> <p><b>Default value:</b> 0 (indicating that the query starts from the first data record.)</p>
limit	Integer	No	<p><b>Explanation:</b> Number of records to be queried.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [1, 100]</p> <p><b>Default value:</b> 100</p>

Parameter	Type	Mandatory	Description
tags	String	No	<p><b>Explanation:</b></p> <ul style="list-style-type: none"> <li>{key} indicates the tag key.</li> <li>{value} indicates the tag value.</li> </ul> <p>You can query instances by tag key and value.</p> <p><b>Restrictions:</b></p> <p>To query instances with multiple tag keys and values, separate key-value pairs with commas (,). A maximum of 20 key-value pairs are supported.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>Each tag key can contain up to 127 Unicode characters <b>key</b> cannot be an empty string, a space, or left blank. Before using <b>key</b>, delete single-byte character (SBC) spaces before and after the value. The value cannot contain the following special characters: +/?#&amp;=,%</li> <li>The tag value can be left blank. It can contain up to 255 Unicode characters. Before using <b>value</b>, delete SBC spaces before and after the value. The value cannot contain the following special characters: +/?#&amp;=,% If the value is left blank, it indicates <b>any_value</b> (querying any value).</li> </ul> <p><b>Default value:</b> None</p>
charge_mode	String	No	<p><b>Explanation:</b></p> <p>Billing mode. You can query DB instances by billing mode.</p> <p><b>Restrictions:</b></p> <p>None</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li><b>postPaid:</b> pay-per-use billing.</li> <li><b>prePaid:</b> yearly/monthly billing.</li> </ul> <p><b>Default value:</b> None</p>

## Request Parameters

None

## Response Parameters

**Table 5-53** Parameter description

Parameter	Type	Description
instances	Array of objects	<b>Explanation:</b> Instance information. For details, see <a href="#">Table 5-54</a> .
total_count	Integer	<b>Explanation:</b> Total number of records. <b>Value range:</b> [0, 2 <sup>31</sup> - 1]. The actual value depends on the number of instances in the instance list.

**Table 5-54** instances field data structure description

Parameter	Type	Description
id	String	<b>Explanation:</b> Instance ID, which is the unique identifier of an instance. <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.
name	String	<b>Explanation:</b> Instance name. <b>Value range:</b> The instance name must start with a letter and can contain 4 to 64 characters. Only letters, digits, hyphens (-), and underscores (_) are allowed.

Parameter	Type	Description
status	String	<p><b>Explanation:</b> Instance status.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• If the value is <b>BUILD</b>, the instance is being created.</li> <li>• If the value is <b>ACTIVE</b>, the instance is normal.</li> <li>• If the value is <b>FAILED</b>, the instance is abnormal.</li> <li>• If the value is <b>FROZEN</b>, the instance is frozen.</li> <li>• If the value is <b>MODIFYING</b>, the storage is being scaled up or instance specifications are being changed.</li> <li>• If the value is <b>EXPANDING</b>, read replicas, CNs, or shards are being added to the instance.</li> <li>• <b>REBOOTING</b>: The DB instance is being rebooted.</li> <li>• If the value is <b>REDUCING</b>: read replicas are being deleted.</li> <li>• If the value is <b>UPGRADING</b>, the instance is being upgraded.</li> <li>• If the value is <b>RESTORING</b>, the instance is being restored.</li> <li>• If the value is <b>SWITCHOVER</b>, the primary/standby switchover is being performed.</li> <li>• If the value is <b>MIGRATING</b>, the instance is being migrated.</li> <li>• If the value is <b>BACKING UP</b>, the instance is being backed up.</li> <li>• If the value is <b>UPGRADE TO BE OBSERVED</b>, the instance upgrade is in the observation period.</li> <li>• If the value is <b>REDUCING REPLICATION</b>, the number of replicas is being reduced.</li> <li>• If the value is <b>STORAGE FULL</b>, the instance storage is full.</li> </ul>



Parameter	Type	Description
private_ips	List<String>	<p><b>Explanation:</b> Private IP address list. The value is an empty string until ECSs where CNs of distributed instances are deployed or ECSs where DNSs of primary/standby instances are deployed are created.</p> <p><b>Value range:</b> None</p>
public_ips	List<String>	<p><b>Explanation:</b> EIPs bound to the instance. This parameter cannot be left blank after an EIP is bound.</p> <p><b>Value range:</b> None</p>
port	Integer	<p><b>Explanation:</b> Database port number.</p> <p><b>Value range:</b> The GaussDB database port is from 1024 to 39998 (excluding the following which are occupied by the system and cannot be used: 2378, 2379, 2380, 4999, 5000, 5999, 6000, 6001, 8097, 8098, 20049, 20050, 21731, and 21732).</p>
type	String	<p><b>Explanation:</b> Instance type. The value is case-sensitive.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• <b>Enterprise:</b> distributed instance (enterprise edition)</li> </ul>
ha	Object	<p><b>Explanation:</b> Instance high availability. For details, see <a href="#">Table 5-55</a>.</p>
replica_num	Integer	<p><b>Explanation:</b> Number of replicas.</p> <p><b>Value range:</b> None</p>
region	String	<p><b>Explanation:</b> Region where the instance is deployed.</p> <p><b>Value range:</b> None</p>

Parameter	Type	Description
datastore	Object	<b>Explanation:</b> Database information. For details, see <a href="#">Table 5-56</a> .
created	String	<b>Explanation:</b> Creation time in the "yyyy-mm-dd hh:mm:ss timezone" format. <b>timezone</b> indicates the time zone, for example, 2024-07-02 08:32:07 UTC. When the instance is being created, the value is the time when the creation request is delivered. After the instance is created, the value is the time when the creation is complete. <b>Value range:</b> None
updated	String	<b>Explanation:</b> Update time. The format is the same as that of the <b>created</b> field. For example: 2024-07-16 09:31:43 UTC The value is empty when no instance has been created. After an instance is created, the value is not empty. <b>Value range:</b> None
db_user_name	String	<b>Explanation:</b> Default username. <b>Value range:</b> root
vpc_id	String	<b>Explanation:</b> ID of the VPC where the instance is located. <b>Value range:</b> UUID format
subnet_id	String	<b>Explanation:</b> Network ID of the subnet, where the instance are located. <b>Value range:</b> UUID format

Parameter	Type	Description
security_group_id	String	<b>Explanation:</b> Security group ID. <b>Value range:</b> UUID format
flavor_ref	String	<b>Explanation:</b> Specification code. To obtain its value, see the <code>spec_code</code> field in <a href="#">Querying Instance Specifications</a> . <b>Value range:</b> None
flavor_info	Object	<b>Explanation:</b> Flavor information. For details, see <a href="#">Table 5-57</a> .
volume	Object	<b>Explanation:</b> Volume information. For details, see <a href="#">Table 5-58</a> .
switch_strategy	String	<b>Explanation:</b> Database failover priority. <b>Value range:</b> The value can be <b>Reliability</b> or <b>Availability</b> , indicating that the reliability or availability is given priority during the failover, respectively. If no failover priority is selected during the creation, the failover priority is not displayed.
backup_strategy	Object	<b>Explanation:</b> Backup policy. For details, see <a href="#">Table 5-59</a> .
maintenance_window	String	<b>Explanation:</b> Maintenance window in the UTC format. <b>Value range:</b> None
nodes	Array of objects	<b>Explanation:</b> Instance node information. For details, see <a href="#">Table 5-60</a> .

Parameter	Type	Description
disk_encryption_id	String	<p><b>Explanation:</b> Disk encryption key ID. This parameter is displayed only when the instance disk is encrypted.</p> <p><b>Value range:</b> None</p>
enterprise_project_id	String	<p><b>Explanation:</b> Enterprise project tag ID. If an instance does not belong to any enterprise project, the default value is <b>0</b>.</p> <p><b>Value range:</b> None</p>
instance_mode	String	<p><b>Explanation:</b> Product type.</p> <p><b>Value range:</b> <b>enterprise</b> indicates enterprise edition, <b>standard</b> indicates the standard edition, and <b>basic</b> indicates the basic edition.</p>
time_zone	String	<p><b>Explanation:</b> Time zone.</p> <p><b>Value range:</b> None</p>
charge_info	Object	<p><b>Explanation:</b> Billing mode, which can be pay-per-use or yearly/monthly. For details, see <a href="#">Table 5-61</a>.</p>
tags	Array of objects	<p><b>Explanation:</b> Tags. This parameter is not returned if there is no tag. For details, see <a href="#">Table 5-62</a>.</p>
backup_used_space	String	<p><b>Explanation:</b> Used backup space, in KB.</p> <p><b>Value range:</b> None</p>

Parameter	Type	Description
disk_usage	String	<p><b>Explanation:</b> Available disk usage of the instance. The returned value of this parameter is not a real-time value. The system updates data at 02:00 every day. It is not displayed for deleted instances.</p> <p><b>Value range:</b> 0 to 1. The value contains four decimal places.</p>

**Table 5-55** ha field data structure description

Parameter	Type	Description
consistency	String	<p><b>Explanation:</b> Transaction consistency type.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• <b>strong</b>: strong consistency</li> <li>• <b>eventual</b>: eventual consistency</li> </ul>
replication_mode	String	<p><b>Explanation:</b> Replication mode for the standby node.</p> <p><b>Value range:</b> The value can only be set to <b>sync</b>, indicating that data is synchronized in synchronous mode.</p>

**Table 5-56** datastore field data structure description

Parameter	Type	Description
type	String	<p><b>Explanation:</b> DB engine.</p> <p><b>Value range:</b> GaussDB</p>
version	String	<p><b>Explanation:</b> Major version of the database.</p> <p><b>Value range:</b> Two-digit version, for example, 3.208.</p>

Parameter	Type	Description
complete_version	String	<b>Explanation:</b> Major version of the database. <b>Value range:</b> Three-digit version, for example, 3.208.0.
hotfix_versions	String	<b>Explanation:</b> Hot patch version that has been upgraded. After the hot patch version is successfully upgraded, the value of this parameter cannot be left blank. <b>Value range:</b> None
target_version	String	<b>Explanation:</b> Target version that the database is being upgraded to. <b>Value range:</b> None
hotfix_finished_times	Array of strings	<b>Explanation:</b> List of time when the hot patch installation is complete. The time when the hot patch installation is complete is expressed in the "yyyy-mm-dd hh:mm:ss timezone" format. <b>timezone</b> indicates the time zone, for example, 2020-12-23 03:21:41 UTC.

**Table 5-57** flavor\_info field data structure description

Parameter	Type	Description
vcpu	Integer	<b>Explanation:</b> Number of vCPUs. <b>Value range:</b> None
mem	Integer	<b>Explanation:</b> Memory size in GB. <b>Value range:</b> None

**Table 5-58** volume field data structure description

Parameter	Type	Description
type	String	<b>Explanation:</b> Disk type. <b>Value range:</b> <b>ULTRAHIGH</b> (SSD storage) or <b>ESSD</b> (extreme SSD storage). The value is case-sensitive.
size	Integer	<b>Explanation:</b> Disk size. <b>Value range:</b> None

**Table 5-59** backup\_strategy field data structure description

Parameter	Type	Description
start_time	String	<b>Explanation:</b> Backup time window. The creation of an automated backup will be triggered during the backup time window. The value is the UTC time. The format is hh:mm-HH:MM, for example, 19:00-20:00. <b>Value range:</b> None
keep_days	Integer	<b>Explanation:</b> Number of days to retain the generated backup files. <b>Value range:</b> [1, 732]

**Table 5-60** nodes field data structure description

Parameter	Type	Description
id	String	<b>Explanation:</b> Node ID. <b>Value range:</b> The value can contain 36 characters. Only letters and digits are allowed.

Parameter	Type	Description
name	String	<b>Explanation:</b> Node name. <b>Value range:</b> The value must start with a letter. Only letters, digits, hyphens (-), and underscores (_) are allowed.
role	String	<b>Explanation:</b> Node type, indicating the role of a node in an instance. <b>Value range:</b> <ul style="list-style-type: none"><li>• <b>master:</b> primary node</li><li>• <b>slave:</b> standby node</li><li>• <b>secondary:</b> log node</li><li>• <b>readreplica:</b> read replica.</li></ul>
status	String	<b>Explanation:</b> Node status. <b>Value range:</b> <b>BUILD_FAILED:</b> The node fails to be created.
availability_zone	String	<b>Explanation:</b> AZ. <b>Value range:</b> None
private_ip	String	<b>Explanation:</b> Private IP address of the node. For distributed instances, this parameter is valid only for CNs. For primary/standby instances, this parameter is valid for all nodes. The parameter value is returned after an ECS is created. <b>Value range:</b> None



Parameter	Type	Description
public_ip	String	<p><b>Explanation:</b> EIP that has been bound. For distributed instances, this parameter is valid only for CNs. For primary/standby instances, this parameter is valid for all nodes. The parameter value is returned after an ECS is created and an EIP is bound to a DB instance.</p> <p><b>Value range:</b> None</p>
component_names	String	<p><b>Explanation:</b> Component information on the node (for example, cn_6001:60011). Separate information of multiple components with commas (,).</p> <p><b>Value range:</b> None</p>

**Table 5-61** charge\_info field data structure description

Parameter	Type	Description
charge_mode	String	<p><b>Explanation:</b> Billing mode.</p> <p><b>Value range:</b> <b>postPaid:</b> pay-per-use <b>prePaid:</b> yearly/monthly</p>

**Table 5-62** tags field data structure description

Parameter	Type	Description
key	String	<p><b>Explanation:</b> Tag key.</p> <p><b>Value range:</b> None</p>
value	String	<p><b>Explanation:</b> Tag value.</p> <p><b>Value range:</b> None</p>

## Example Request

- Querying all instances  
GET <https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.1/97b026aa9cc4417888c14c84a1ad9860/instances>
- Querying instances based on search criteria  
GET [https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.1/97b026aa9cc4417888c14c84a1ad9860/instances?id=ed7cc6166ec24360a5ed5c5c9c2ed726in01&name=hy&type=Ha&datastore\\_type=GaussDB&vpc\\_id=19e5d45d-70fd-4a91-87e9-b27e71c9891f&subnet\\_id=bd51fb45-2dcb-4296-8783-8623bfe89bb7&offset=0&limit=10&tags=rds001=001,rds002=002](https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.1/97b026aa9cc4417888c14c84a1ad9860/instances?id=ed7cc6166ec24360a5ed5c5c9c2ed726in01&name=hy&type=Ha&datastore_type=GaussDB&vpc_id=19e5d45d-70fd-4a91-87e9-b27e71c9891f&subnet_id=bd51fb45-2dcb-4296-8783-8623bfe89bb7&offset=0&limit=10&tags=rds001=001,rds002=002)

## Example Response

Instance information queried.

```
{
  "instances": [
    {
      "id": "b331ed66cc3249f78bc20737308c01f4in14",
      "status": "ACTIVE",
      "name": "gauss-9e88",
      "port": 8000,
      "type": "Enterprise",
      "ha": {
        "consistency": "strong",
        "replication_mode": "sync"
      },
      "region": "eu-de",
      "datastore": {
        "type": "GaussDB",
        "version": "2.7",
        "complete_version": "2.7.2",
        "hotfix_versions": "2.7.2.1,2.7.2.2",
        "target_version": "3.208.0",
        "hotfix_finished_times": [
          "2020-12-23 03:21:41 UTC",
          "2020-12-23 03:22:41 UTC"
        ]
      },
      "created": "2021-01-15 01:46:40 UTC",
      "updated": "2021-01-15 02:05:03 UTC",
      "volume": {
        "type": "ULTRAHIGH",
        "size": 120
      },
      "nodes": [
        {
          "id": "02ebf757aaf94074855f49cc6e0e4712no14",
          "name": "gauss-9e88_gaussdbv5cn_2",
          "role": "master",
          "status": "ACTIVE",
          "availability_zone": "az2xahz",
          "private_ip": "192.168.16.253",
          "component_names": "cn_5001:"
        },
        {
          "id": "0a87b8ecbfeb46aba1409cfc0f0d5c34no14",
          "name": "gauss-9e88_gaussdbv5cn_0",
          "role": "master",
          "status": "ACTIVE",
          "availability_zone": "az2xahz",
          "private_ip": "192.168.28.81",
          "component_names": "cn_5002:"
        },
        {
          "id": "2d9fec1ab3834936b074d63acf48b1f2no14",
          "name": "gauss-9e88_gaussdbv5dn3_2",

```

```
"role": "master",
"status": "ACTIVE",
"availability_zone": "az2xahz"
},
{
  "id": "48bb08a2d635435891ac0caa1c0bf2e3no14",
  "name": "gauss-9e88_gaussdbv5dn1_0",
  "role": "master",
  "status": "ACTIVE",
  "availability_zone": "az2xahz"
},
{
  "id": "5df830f652204827ada32f8bc28b107eno14",
  "name": "gauss-9e88_gaussdbv5dn1_1",
  "role": "slave",
  "status": "ACTIVE",
  "component_names": "dn_6002:60011",
  "availability_zone": "az2xahz"
},
{
  "id": "8a97a246cee841b38c5b47290d4c9c38no14",
  "name": "gauss-9e88_gaussdbv5cn_1",
  "role": "master",
  "status": "ACTIVE",
  "availability_zone": "az2xahz",
  "private_ip": "192.168.27.52",
  "component_names": "cn_5003:"
},
{
  "id": "8c1a3f8eicca4d9e9974a868bb6dd942no14",
  "name": "gauss-9e88_gaussdbv5dn2_0",
  "role": "master",
  "status": "ACTIVE",
  "component_names": "dn_6004:60042",
  "availability_zone": "az2xahz"
},
{
  "id": "9bd0c80b8a684cc9bd7d99dd5adffb07no14",
  "name": "gauss-9e88_gaussdbv5dn3_1",
  "role": "slave",
  "status": "ACTIVE",
  "component_names": "dn_6005:60073",
  "availability_zone": "az2xahz"
},
{
  "id": "9e2a3cd541e249d4af5aa57c5d3a7f39no14",
  "name": "gauss-9e88_gaussdbv5dn1_2",
  "role": "slave",
  "status": "ACTIVE",
  "component_names": "dn_6006:60011",
  "availability_zone": "az2xahz"
},
{
  "id": "b046d28989ec4ae5a1a9ab20fe65f248no14",
  "name": "gauss-9e88_gaussdbv5dn2_2",
  "role": "slave",
  "status": "ACTIVE",
  "component_names": "dn_6007:60042",
  "availability_zone": "az2xahz"
},
{
  "id": "b614cc12fd3742dbb230245f88a7bf00no14",
  "name": "gauss-9e88_gaussdbv5dn3_0",
  "role": "slave",
  "status": "ACTIVE",
  "component_names": "dn_6008:60073",
  "availability_zone": "az2xahz"
}
```

```
    },
    {
      "id": "caba8e88c3c84ae58202f1f589490611no14",
      "name": "gauss-9e88_gaussdbv5dn2_1",
      "role": "slave",
      "status": "ACTIVE",
      "component_names": "dn_6009:60042",
      "availability_zone": "az2xahz"
    }
  ],
  "private_ips": [
    "192.168.16.253 / 192.168.28.81 / 192.168.27.52"
  ],

  "replica_num": 3,
  "db_user_name": "root",
  "vpc_id": "5f84a5c4-2f93-41de-8359-d7acedb585cc",
  "subnet_id": "300036af-a92f-4e9e-8e9f-7d20e7878b05",
  "security_group_id": "2dcfd40a-8f32-46b8-8a47-6cfab5eba163",
  "flavor_ref": "gaussdb.opengauss.ee.dn.m6.large.8.in",
  "flavor_info": {
    "vcpu": 2,
    "mem": 16
  },
  "switch_strategy": "Reliability",
  "charge_info": {
    "charge_mode": "postPaid"
  },
  "backup_strategy": {
    "start_time": "19:00-20:00",
    "keep_days": 7
  },
  "maintenance_window": "18:00-22:00",
  "disk_encryption_id": "24ae42b5-4009-4ea2-b66a-0b211e424dab",
  "enterprise_project_id": "6e76681b-a2f5-4c5f-97c5-ba4fd3c0dfb2",
  "time_zone": "UTC+08:00",
  "instance_mode": "enterprise",
  "disk_usage": "0.9890",
  "backup_used_space": "37846"
},
{
  "id": "226b4afcfcc84c86bf1b9cb345d3b00fin14",
  "status": "ACTIVE",
  "name": "UTS-gauss-ad53-2C3D",
  "port": 8000,
  "type": "Enterprise",
  "ha": {
    "consistency": "strong",
    "replication_mode": "sync"
  },
  "region": "cn-xianhz-1",
  "datastore": {
    "type": "GaussDB",
    "version": "2.7",
    "complete_version": "2.7.2",
    "hotfix_versions": "2.7.2.1,2.7.2.2",
    "target_version": "3.208.0",
    "hotfix_finished_times": [
      "2020-12-23 03:21:41 UTC",
      "2020-12-23 03:22:41 UTC"
    ]
  },
  "created": "2021-01-08 09:18:27 UTC",
  "updated": "2021-01-14 13:25:03 UTC",
  "volume": {
    "type": "ULTRAHIGH",
    "size": 120
  },
  "nodes": [
```

```
{
  "id": "07538a1def584cee99e2a5685eeab36ano14",
  "name": "UTS-gauss-ad53-2C3D_gaussdbv5dn3_1",
  "role": "slave",
  "status": "ACTIVE",
  "availability_zone": "az2xahz"
},
{
  "id": "21f41baba1e2454f82331b7cb5aeabe5no14",
  "name": "UTS-gauss-ad53-2C3D_gaussdbv5dn1_2",
  "role": "master",
  "status": "ACTIVE",
  "component_names": "dn_6008:60042",
  "availability_zone": "az2xahz"
},
{
  "id": "2909771a3b3e4e3998f9388e77d22391no14",
  "name": "UTS-gauss-ad53-2C3D_gaussdbv5dn1_0",
  "role": "slave",
  "status": "ACTIVE",
  "component_names": "dn_6007:60011",
  "availability_zone": "az2xahz"
},
{
  "id": "2bd9a90a5da242a6b0743a7f597f6106no14",
  "name": "UTS-gauss-ad53-2C3D_gaussdbv5dn2_2",
  "role": "master",
  "status": "ACTIVE",
  "component_names": "dn_6006:60042",
  "availability_zone": "az2xahz"
},
{
  "id": "77092f1dadb74d3ea13d28269cdd3590no14",
  "name": "UTS-gauss-ad53-2C3D_gaussdbv5dn3_2",
  "role": "master",
  "status": "ACTIVE",
  "component_names": "dn_6005:60072",
  "availability_zone": "az2xahz"
},
{
  "id": "a46bfaa6d5a24355a60fce7432b964cano14",
  "name": "UTS-gauss-ad53-2C3D_gaussdbv5dn3_0",
  "role": "slave",
  "status": "ACTIVE",
  "component_names": "dn_6004:60072",
  "availability_zone": "az2xahz"
},
{
  "id": "aa5277736f3844e2a7adeb9de529e2b1no14",
  "name": "UTS-gauss-ad53-2C3D_gaussdbv5dn2_1",
  "role": "slave",
  "status": "ACTIVE",
  "component_names": "dn_6003:60042",
  "availability_zone": "az2xahz"
},
{
  "id": "b1d798e4ea7344dfa95032984bc6cfd7no14",
  "name": "UTS-gauss-ad53-2C3D_gaussdbv5cn_1",
  "role": "master",
  "status": "ACTIVE",
  "availability_zone": "az2xahz",
  "private_ip": "192.168.29.231",
  "component_names": "cn_5002:"
},
{
  "id": "b9a46540186f4c0781eabaa2a79594cbno14",
  "name": "UTS-gauss-ad53-2C3D_gaussdbv5dn1_1",
  "role": "slave",
  "status": "ACTIVE",

```

```
    "component_names": "dn_6002:60011",
    "availability_zone": "az2xahz"
  },
  {
    "id": "d283813030364060ab64371d50294977no14",
    "name": "UTS-gauss-ad53-2C3D_gaussdbv5dn_0",
    "role": "slave",
    "status": "ACTIVE",
    "component_names": "dn_6001:60042",
    "availability_zone": "az2xahz"
  },
  {
    "id": "eb7bce29b2284cd290405eaddc1b1a1eno14",
    "name": "UTS-gauss-ad53-2C3D_gaussdbv5cn_0",
    "role": "master",
    "status": "FAILED",
    "availability_zone": "az2xahz",
    "private_ip": "192.168.30.44",
    "component_names": "cn_5001:",
    "public_ip": "10.154.217.248"
  }
],
"private_ips": [
  "192.168.29.231 / 192.168.30.44"
],
"public_ips": [
  "10.154.217.248"
],
"replica_num": 3,
"db_user_name": "root",
"vpc_id": "5f84a5c4-2f93-41de-8359-d7acedb585cc",
"subnet_id": "300036af-a92f-4e9e-8e9f-7d20e7878b05",
"security_group_id": "2dcfd40a-8f32-46b8-8a47-6cfab5eba163",
"flavor_ref": "gaussdb.opengauss.ee.dn.m6.large.8.in",
"flavor_info": {
  "vcpu": 2,
  "mem": 16
},
"switch_strategy": "Reliability",
"charge_info": {
  "charge_mode": "postPaid"
},
"backup_strategy": {
  "start_time": "18:00-19:00",
  "keep_days": 7
},
"maintenance_window": "18:00-22:00",
"enterprise_project_id": "0",
"time_zone": "UTC+08:00",
"instance_mode": "enterprise",
"disk_usage": "1.0000",
"backup_used_space": "55824"
},
{
  "id": "7139e0eee4ac4922927f22e22114a548in14",
  "status": "ACTIVE",
  "name": "gauss-readonly",
  "port": 8000,
  "type": "centralization_standard",
  "ha": {
    "consistency": "strong",
    "replication_mode": "sync"
  },
  "region": "cn-xianhz-1",
  "datastore": {
    "type": "GaussDB",
    "version": "3.220",
    "complete_version": "3.220.0",
    "complete_kernel_version": "503.1.0.SPC1500",
```

```
    "target_version": "3.208.0",
    "hotfix_finished_times": [
      "2020-12-23 03:21:41 UTC",
      "2020-12-23 03:22:41 UTC"
    ]
  },
  "created": "2024-06-04 03:41:19 UTC",
  "updated": "2024-06-18 02:01:17 UTC",
  "volume": {
    "type": "ULTRAHIGH",
    "size": 40
  },
  "nodes": [
    {
      "id": "7fd28bb9a142491a8b0f57ef3c662a2ano14",
      "name": "gauss-readonly_readonly_4",
      "role": "readreplica",
      "status": "ACTIVE",
      "availability_zone": "az2xahz",
      "private_ip": "192.168.167.105",
      "component_names": "dn_6005:60011",
      "flavor_ref": "gaussdb.opengauss.ee.c3.xlarge.x864.ha",
      "flavor_info": {
        "vcpu": "4",
        "mem": "16"
      }
    },
    {
      "id": "c532d75f8ee44b4e8ef8bf291bf8ed98no14",
      "name": "gauss-readonly_readonly_3",
      "role": "readreplica",
      "status": "ACTIVE",
      "availability_zone": "az2xahz",
      "private_ip": "192.168.184.6",
      "component_names": "dn_6004:60011",
      "flavor_ref": "gaussdb.opengauss.ee.c3.xlarge.x864.ha",
      "flavor_info": {
        "vcpu": "4",
        "mem": "16"
      }
    },
    {
      "id": "1624226d9281469fa2fc865299b62999no14",
      "name": "gauss-readonly_root_1",
      "role": "slave",
      "status": "ACTIVE",
      "availability_zone": "az2xahz",
      "private_ip": "192.168.243.237",
      "component_names": "cm_2;dn_6002:60011,etcd_7002:"
    },
    {
      "id": "236b7fb1e28e4caba6cf90e4739ed4d8no14",
      "name": "gauss-readonly_root_0",
      "role": "master",
      "status": "ACTIVE",
      "availability_zone": "az2xahz",
      "private_ip": "192.168.232.222",
      "component_names": "cm_1;dn_6001:60011,etcd_7001:"
    },
    {
      "id": "bfe9bff81020427a983588f5e00c7832no14",
      "name": "gauss-readonly_root_2",
      "role": "slave",
      "status": "ACTIVE",
      "availability_zone": "az2xahz",
      "private_ip": "192.168.135.66",
      "component_names": "cm_3;dn_6003:60011,etcd_7003:"
    }
  ]
},
```

```
    "private_ips": [
      "192.168.167.105 / 192.168.184.6 / 192.168.243.237 / 192.168.232.222 / 192.168.135.66"
    ],
    "replica_num": 3,
    "db_user_name": "root",
    "vpc_id": "caacd96c-6643-4106-9fea-8cab88f556c08",
    "subnet_id": "be02c6ca-b3b9-423e-a472-fd043e19d7b7",
    "security_group_id": "6b95cf16-0555-4997-96c3-udb19ac24384",
    "flavor_ref": "gaussdb.opengauss.ee.c3.xlarge.x864.ha",
    "flavor_info": {
      "vcpu": 4,
      "mem": 16
    },
    "charge_info": {
      "charge_mode": "postPaid"
    },
    "backup_strategy": {
      "start_time": "18:00-19:00",
      "keep_days": 7
    },
    "maintenance_window": "18:00-22:00",
    "enterprise_project_id": "0",
    "time_zone": "UTC+08:00",
    "instance_mode": "basic",
    "backup_used_space": "1595991",
    "disk_usage": "0.6922"
  }
],
"total_count": 3
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 5.2.5 Querying DB Instances (v3)

### Function

This API is used to query instances according to search criteria. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/instances?  
id={id}&name={name}&type={type}&datastore\\_type={datastore\\_type}&vpc\\_id={vpc\\_id}&subnet\\_id={subnet\\_id}&offset={offset}&limit={limit}](https://{Endpoint}/v3/{project_id}/instances?id={id}&name={name}&type={type}&datastore_type={datastore_type}&vpc_id={vpc_id}&subnet_id={subnet_id}&offset={offset}&limit={limit})



**Table 5-63** Parameter description

Parameter	Type	Mandatory	Description
project_id	String	Yes	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
id	String	No	<p><b>Explanation:</b> Instance ID, which uniquely identifies an instance. You can query instances by instance ID.  The asterisk (*) is reserved for the system. If the instance ID starts with *, it indicates that fuzzy match is performed based on the value following *. Otherwise, the exact match is performed based on the instance ID. The value cannot contain only asterisks (*).</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory	Description
name	String	No	<p><b>Explanation:</b> DB instance name. You can query instances by instance name.</p> <p>The asterisk (*) is reserved for the system. If the instance name starts with *, it indicates that fuzzy match is performed based on the value following *. Otherwise, the exact match is performed based on the instance name. The value cannot contain only asterisks (*).</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value must start with a letter and contain 4 to 64 characters. Only letters, digits, hyphens (-), and underscores (_) are allowed.</p> <p><b>Default value:</b> None</p>
type	String	No	<p><b>Explanation:</b> Instance type. You can query instances by instance type.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• <b>Enterprise</b> (case-sensitive): distributed instances (in the independent deployment)</li> <li>• <b>Centralization_standard</b> (case-sensitive): primary/standby instances</li> </ul> <p><b>Default value:</b> None</p>
datastore_type	String	No	<p><b>Explanation:</b> Database type. Its value is case-insensitive. You can query the instances by database type.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> GaussDB</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory	Description
vpc_id	String	No	<p><b>Explanation:</b> VPC ID. You can query instances by VPC where the instances are located. To obtain the value:</p> <ul style="list-style-type: none"> <li>• Method 1: Log in to VPC console and view the VPC ID in the VPC details page.</li> <li>• Method 2: Query the VPC ID through the VPC API. For details, see <a href="#">Querying VPCs</a>.</li> <li>• Method 2: See "Querying VPCs" in <i>Virtual Private Cloud API Reference</i>.</li> </ul> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> UUID format</p> <p><b>Default value:</b> None</p>
subnet_id	String	No	<p><b>Explanation:</b> Network ID of the subnet. You can query instances by subnet.</p> <ul style="list-style-type: none"> <li>• Method 1: Log in to VPC console and click the target subnet on the <b>Subnets</b> page. You can view the network ID on the displayed page.</li> <li>• Method 2: See "Querying Subnets" in <i>Virtual Private Cloud API Reference</i>.</li> </ul> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> UUID format</p> <p><b>Default value:</b> None</p>
offset	Integer	No	<p><b>Explanation:</b> Index offset. The query starts from the next piece of data indexed by this parameter.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [0, 2<sup>31</sup>-1]</p> <p><b>Default value:</b> 0 (indicating that the query starts from the first data record.)</p>

Parameter	Type	Mandatory	Description
limit	Integer	No	<p><b>Explanation:</b> Number of records to be queried.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [1, 100]</p> <p><b>Default value:</b> 100</p>
tags	String	No	<p><b>Explanation:</b> Tag key-value pairs of the instance.</p> <ul style="list-style-type: none"> <li>• {key} indicates the tag key.</li> <li>• {value} indicates the tag value.</li> </ul> <p><b>Restrictions:</b> To query instances with multiple tag keys and values, separate key-value pairs with commas (,). A maximum of 20 key-value pairs are supported.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• Each tag key can contain up to 127 Unicode characters <b>key</b> cannot be an empty string, a space, or left blank. Before using <b>key</b>, delete single-byte character (SBC) spaces before and after the value. The value cannot contain the following special characters: +/?#&amp;=,%</li> <li>• The tag value can be left blank. It can contain up to 255 Unicode characters. Before using <b>value</b>, delete SBC spaces before and after the value. The value cannot contain the following special characters: +/?#&amp;=,% If the value is left blank, it indicates <b>any_value</b> (querying any value).</li> </ul> <p><b>Default value:</b> None</p>

## Request Parameters

None

## Response Parameters

**Table 5-64** Response parameters

Parameter	Type	Description
instances	Array of objects	<b>Explanation:</b> Instance information. For details, see <a href="#">Table 5-65</a> .
total_count	Integer	<b>Explanation:</b> Total number of records. <b>Value range:</b> [0, 2 <sup>31</sup> - 1]

**Table 5-65** instances field data structure description

Parameter	Type	Description
id	String	<b>Explanation:</b> Instance ID. <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.
name	String	<b>Explanation:</b> Instance name. <b>Value range:</b> The value must start with a letter and contain 4 to 64 characters. Only letters, digits, hyphens (-), and underscores (_) are allowed.

Parameter	Type	Description
status	String	<p><b>Explanation:</b> Instance status.</p> <p><b>Value range:</b> Value range:</p> <p>If the value is <b>BUILD</b>, the instance is being created.</p> <p>If the value is <b>ACTIVE</b>, the instance is normal.</p> <p>If the value is <b>FAILED</b>, the instance is abnormal.</p> <p>If the value is <b>FROZEN</b>, the instance is frozen.</p> <p>If the value is <b>MODIFYING</b>, the storage is being scaled up or instance specifications are being changed.</p> <p>If the value is <b>EXPANDING</b>, read replicas are being added to the instance or CNs or DNPs are being added to the instance.</p> <p>If the value is <b>REBOOTING</b>, the instance is being rebooted.</p> <p>If the value is <b>REDUCING</b>: read replicas are being deleted.</p> <p>If the value is <b>UPGRADING</b>, the instance is being upgraded.</p> <p>If the value is <b>RESTORING</b>, the instance is being restored.</p> <p>If the value is <b>SWITCHOVER</b>, the primary/standby switchover is being performed.</p> <p>If the value is <b>MIGRATING</b>, the instance is being migrated.</p> <p>If the value is <b>BACKING UP</b>, the instance is being backed up.</p> <p>If the value is <b>UPGRADE TO BE OBSERVED</b>, the instance upgrade is in the observation period.</p> <p>If the value is <b>REDUCING REPLICATION</b>, the number of replicas is being reduced.</p> <p>If the value is <b>STORAGE FULL</b>, the instance storage is full.</p>

Parameter	Type	Description
private_ips	List<String>	<b>Explanation:</b> Private IP address list. The value is an empty string until ECSs where CNs of distributed instances are deployed or ECSs where DNs of primary/standby instances are deployed are created.
public_ips	List<String>	<b>Explanation:</b> Public IP address list. This parameter cannot be left blank after an EIP is bound.
port	Integer	<b>Explanation:</b> Database port number. <b>Value range:</b> The GaussDB database port is from 1024 to 39998 (excluding the following which are occupied by the system and cannot be used: 2378, 2379, 2380, 4999, 5000, 5999, 6000, 6001, 8097, 8098, 20049, 20050, 21731, and 21732).
type	String	<b>Explanation:</b> Instance type. <b>Value range:</b> The value is case-sensitive. The value <b>Enterprise</b> indicates the distributed instance (Enterprise Edition).
ha	Object	<b>Explanation:</b> Instance high availability. It includes parameters for transaction consistency type and standby node's replication mode. For details, see <a href="#">Table 5-66</a> .
replica_num	Integer	<b>Explanation:</b> Number of replicas. <b>Value range:</b> None
region	String	<b>Explanation:</b> Region where the instance is deployed. <b>Value range:</b> None

Parameter	Type	Description
datastore	Object	<b>Explanation:</b> Database information. For details, see <a href="#">Table 5-67</a> .
created	String	<b>Explanation:</b> Creation time in the "yyyy-mm-dd hh:mm:ss timezone" format. <b>timezone</b> indicates the time zone, for example, 2024-07-16 09:31:43 UTC. When the instance is being created, the value is the time when the creation request is delivered. After the instance is created, the value is the time when the creation is complete. <b>Value range:</b> None
updated	String	<b>Explanation:</b> Update time. The format is the same as that of the <b>created</b> field, for example, 2024-07-16 09:31:43 UTC. The return value is empty when no DB instance has been created. After a DB instance is created, the value is not empty. <b>Value range:</b> None
db_user_name	String	<b>Explanation:</b> Default username. <b>Value range:</b> root
vpc_id	String	<b>Explanation:</b> ID of the VPC to which the instance belongs <b>Value range:</b> UUID format
subnet_id	String	<b>Explanation:</b> ID of the subnet associated with the instance. <b>Value range:</b> UUID format



Parameter	Type	Description
security_group_id	String	<b>Explanation:</b> Security group ID. <b>Value range:</b> UUID format
flavor_ref	String	<b>Explanation:</b> Specification code. For details on how to obtain the GaussDB specification code, see <a href="#">DB Instance Specifications</a> . <b>Value range:</b> None
flavor_info	Object	<b>Explanation:</b> Flavor information. For details, see <a href="#">Table 5-68</a> .
volume	Object	<b>Explanation:</b> Volume information. For details, see <a href="#">Table 5-69</a> .
switch_strategy	String	<b>Explanation:</b> Database failover priority. <b>Value range:</b> The value can be <b>Reliability</b> or <b>Availability</b> , indicating that the reliability or availability is given priority during the failover, respectively. If no failover priority is selected during the creation, the failover priority is not displayed.
backup_strategy	Object	<b>Explanation:</b> Backup policy. For details, see <a href="#">Table 5-70</a> .
maintenance_window	String	<b>Explanation:</b> Maintenance time window, which is the UTC time. The format is hh:mm-HH:MM, for example, 18:00-22:00. <b>Value range:</b> None
nodes	Array of objects	<b>Explanation:</b> Instance node information. For details, see <a href="#">Table 5-71</a> .

Parameter	Type	Description
disk_encryption_id	String	<b>Explanation:</b> Disk encryption key ID. This parameter is displayed only when the instance disk is encrypted. <b>Value range:</b> None
enterprise_project_id	String	<b>Explanation:</b> Enterprise project tag ID. <b>Value range:</b> If an instance does not belong to any enterprise project, the default value is <b>0</b> .
instance_mode	String	<b>Explanation:</b> Instance product type. <b>Value range:</b> <b>enterprise</b> indicates enterprise edition, <b>standard</b> indicates the standard edition, and <b>basic</b> indicates the basic edition.
time_zone	String	<b>Explanation:</b> Time zone. <b>Value range:</b> None
charge_info	Object	<b>Explanation:</b> Billing mode, which can be pay-per-use or yearly/monthly. For details, see <a href="#">Table 5-72</a> .
tags	Array of objects	<b>Explanation:</b> Tags. This parameter is not returned if there is no tag. For details, see <a href="#">Table 5-73</a> .

**Table 5-66** ha field data structure description

Parameter	Type	Description
consistency	String	<b>Explanation:</b> Transaction consistency type. <b>Value range:</b> The value can be <b>strong</b> or <b>eventual</b> , indicating strong consistency and eventual consistency, respectively.
replication_mode	String	<b>Explanation:</b> Replication mode for the standby node. <b>Value range:</b> The value can only be set to <b>sync</b> , indicating that data is synchronized in synchronous mode.

**Table 5-67** datastore field data structure description

Parameter	Type	Description
type	String	<b>Explanation:</b> DB engine. <b>Value range:</b> GaussDB
version	String	<b>Explanation:</b> DB engine version. <b>Value range:</b> The value depends on the DB engine version, for example, 8.200.

**Table 5-68** flavor\_info field data structure description

Parameter	Type	Description
vcpu	Integer	<b>Explanation:</b> Number of vCPUs. <b>Value range:</b> None

Parameter	Type	Description
mem	Integer	<b>Explanation:</b> Memory size in GB. <b>Value range:</b> None

**Table 5-69** volume field data structure description

Parameter	Type	Description
type	String	<b>Explanation:</b> Disk type. <b>Value range:</b> <b>ULTRAHIGH</b> (SSD storage) or <b>ESSD</b> (extreme SSD storage). The value is case-sensitive.
size	Integer	<b>Explanation:</b> Disk size. <b>Value range:</b> None

**Table 5-70** backup\_strategy field data structure description

Parameter	Type	Description
start_time	String	<b>Explanation:</b> Backup time window. The creation of an automated backup will be triggered during the backup time window. The value is the UTC time. The format is hh:mm-HH:MM, for example, 19:00-20:00. <b>Value range:</b> None
keep_days	Integer	<b>Explanation:</b> Number of days to retain the generated backup files. <b>Value range:</b> [1, 732]

**Table 5-71** nodes field data structure description

Parameter	Type	Description
id	String	<b>Explanation:</b> Node ID. <b>Value range:</b> The value can contain 36 characters. Only letters and digits are allowed.
name	String	<b>Explanation:</b> Node name. <b>Value range:</b> The value must start with a letter. Only letters, digits, hyphens (-), and underscores (_) are allowed.
role	String	<b>Explanation:</b> Node type, indicating the role of a node in an instance. <b>Value range:</b> <b>master</b> (primary node) or <b>slave</b> (standby node)
status	String	<b>Explanation:</b> Node status. <b>Value range:</b> <b>BUILD_FAILED:</b> The node fails to be created.
availability_zone	String	<b>Explanation:</b> AZ. <b>Value range:</b> None
private_ip	String	<b>Explanation:</b> Private IP address of the node. For distributed instances, this parameter is valid only for CNs. For primary/standby instances, this parameter is valid for all nodes. The parameter value is returned after an ECS is created. <b>Value range:</b> None

Parameter	Type	Description
public_ip	String	<p><b>Explanation:</b> EIP bound to the instance. For distributed instances, this parameter is valid only for CNs. For primary/standby instances, this parameter is valid for all nodes. The parameter value is returned after an ECS is created and an EIP is bound to a DB instance.</p> <p><b>Value range:</b> None</p>

**Table 5-72** chargeInfo field data structure description

Parameter	Mandatory	Type	Description
charge_mode	Yes	String	<p><b>Explanation:</b> Billing mode.</p> <p><b>Value range:</b> <b>postPaid:</b> pay-per-use <b>prePaid:</b> yearly/monthly</p>

**Table 5-73** tags field data structure description

Parameter	Type	Description
key	String	<p><b>Explanation:</b> Tag key.</p> <p><b>Value range:</b> None</p>
value	String	<p><b>Explanation:</b> Tag value.</p> <p><b>Value range:</b> None</p>

## Example Request

- Querying all instances

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/97b026aa9cc4417888c14c84a1ad9860/instances
```

- Querying instances based on search criteria

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/97b026aa9cc4417888c14c84a1ad9860/instances?id=ed7cc6166ec24360a5ed5c5c9c2ed726in01&name=hy&type=Ha&datastore_type=MySQL&vpc_id=19e5d45d-70fd-4a91-87e9-b27e71c9891f&subnet_id=bd51fb45-2dc6-4296-8783-8623bfe89bb7&offset=0&limit=10&tags=rds001=001,rds002=002
```

## Example Response

- Instance information queried.

```
{
  "instances": [
    {
      "id": "b331ed66cc3249f78bc20737308c01f4in14",
      "status": "ACTIVE",
      "name": "gauss-9e88",
      "port": 8000,
      "type": "Enterprise",
      "ha": {
        "consistency": "strong",
        "replication_mode": "sync"
      },
      "region": "eu-de",
      "region": "aaa",
      "datastore": {
        "type": "GaussDB",
        "version": "1.3"
      },
      "created": "2021-01-15 01:46:40 UTC",
      "updated": "2021-01-15 02:05:03 UTC",
      "volume": {
        "type": "ULTRAHIGH",
        "size": 120
      },
      "nodes": [
        {
          "id": "02ebf757aaf94074855f49cc6e0e4712no14",
          "name": "gauss-9e88_gaussdbv5cn_2",
          "role": "master",
          "status": "ACTIVE",
          "availability_zone": "az2xahz",
          "private_ip": "192.168.16.253"
        },
        {
          "id": "0a87b8ecbfefb46aba1409cfc0f0d5c34no14",
          "name": "gauss-9e88_gaussdbv5cn_0",
          "role": "master",
          "status": "ACTIVE",
          "availability_zone": "az2xahz",
          "private_ip": "192.168.28.81"
        },
        {
          "id": "2d9fec1ab3834936b074d63acf48b1f2no14",
          "name": "gauss-9e88_gaussdbv5dn3_2",
          "role": "master",
          "status": "ACTIVE",
          "availability_zone": "az2xahz"
        },
        {
          "id": "48bb08a2d635435891ac0caa1c0bf2e3no14",
          "name": "gauss-9e88_gaussdbv5dn1_0",
          "role": "master",
          "status": "ACTIVE",
          "availability_zone": "az2xahz"
        },
        {
          "id": "5df830f652204827ada32f8bc28b107eno14",
```

```
"name": "gauss-9e88_gaussdbv5dn1_1",
"role": "slave",
"status": "ACTIVE",
"availability_zone": "az2xahz"
},
{
  "id": "8a97a246cee841b38c5b47290d4c9c38no14",
  "name": "gauss-9e88_gaussdbv5cn_1",
  "role": "master",
  "status": "ACTIVE",
  "availability_zone": "az2xahz",
  "private_ip": "192.168.27.52"
},
{
  "id": "8c1a3f8eicca4d9e9974a868bb6dd942no14",
  "name": "gauss-9e88_gaussdbv5dn2_0",
  "role": "master",
  "status": "ACTIVE",
  "availability_zone": "az2xahz"
},
{
  "id": "9bd0c80b8a684cc9bd7d99dd5adffb07no14",
  "name": "gauss-9e88_gaussdbv5dn3_1",
  "role": "slave",
  "status": "ACTIVE",
  "availability_zone": "az2xahz"
},
{
  "id": "9e2a3cd541e249d4af5aa57c5d3a7f39no14",
  "name": "gauss-9e88_gaussdbv5dn1_2",
  "role": "slave",
  "status": "ACTIVE",
  "availability_zone": "az2xahz"
},
{
  "id": "b046d28989ec4ae5a1a9ab20fe65f248no14",
  "name": "gauss-9e88_gaussdbv5dn2_2",
  "role": "slave",
  "status": "ACTIVE",
  "availability_zone": "az2xahz"
},
{
  "id": "b614cc12fd3742dbb230245f88a7bf00no14",
  "name": "gauss-9e88_gaussdbv5dn3_0",
  "role": "slave",
  "status": "ACTIVE",
  "availability_zone": "az2xahz"
},
{
  "id": "caba8e88c3c84ae58202f1f589490611no14",
  "name": "gauss-9e88_gaussdbv5dn2_1",
  "role": "slave",
  "status": "ACTIVE",
  "availability_zone": "az2xahz"
}
},
"private_ips": [
  "192.168.16.253 / 192.168.28.81 / 192.168.27.52"
],

"replica_num": 3,
"db_user_name": "root",
"vpc_id": "5f84a5c4-2f93-41de-8359-d7acedb585cc",
"subnet_id": "300036af-a92f-4e9e-8e9f-7d20e7878b05",
"security_group_id": "2dcfd40a-8f32-46b8-8a47-6cfab5eba163",
"flavor_ref": "gaussdb.opengauss.ee.dn.m6.large.8.in",
"flavor_info": {
  "vcpu": 2,
  "mem": 16
}
```



```
    },
    "switch_strategy": "Reliability",
    "charge_info": {
      "charge_mode": "prePaid"
    },
    },
    "backup_strategy": {
      "start_time": "19:00-20:00",
      "keep_days": 7
    },
    },
    "maintenance_window": "18:00-22:00",
    "disk_encryption_id": "24ae42b5-4009-4ea2-b66a-0b211e424dab",
    "enterprise_project_id": "6e76681b-a2f5-4c5f-97c5-ba4fd3c0dfb2",
    "time_zone": "UTC+08:00",
    "instance_mode": "enterprise"
  },
  {
    "id": "226b4afcfcc84c86bf1b9cb345d3b00fin14",
    "status": "ACTIVE",
    "name": "UTS-gauss-ad53-2C3D",
    "port": 8000,
    "type": "Enterprise",
    "ha": {
      "consistency": "strong",
      "replication_mode": "sync"
    },
    "region": "cn-xianhz-1",
    "datastore": {
      "type": "GaussDB",
      "version": "1.3"
    },
    "created": "2021-01-08 09:18:27 UTC",
    "updated": "2021-01-14 13:25:03 UTC",
    "volume": {
      "type": "ULTRAHIGH",
      "size": 120
    },
    "nodes": [
      {
        "id": "07538a1def584cee99e2a5685eeab36ano14",
        "name": "UTS-gauss-ad53-2C3D_gaussdbv5dn3_1",
        "role": "slave",
        "status": "ACTIVE",
        "availability_zone": "az2xahz"
      },
      {
        "id": "21f41baba1e2454f82331b7cb5aeabe5no14",
        "name": "UTS-gauss-ad53-2C3D_gaussdbv5dn1_2",
        "role": "master",
        "status": "ACTIVE",
        "availability_zone": "az2xahz"
      },
      {
        "id": "2909771a3b3e4e3998f9388e77d22391no14",
        "name": "UTS-gauss-ad53-2C3D_gaussdbv5dn1_0",
        "role": "slave",
        "status": "ACTIVE",
        "availability_zone": "az2xahz"
      },
      {
        "id": "2bd9a90a5da242a6b0743a7f597f6106no14",
        "name": "UTS-gauss-ad53-2C3D_gaussdbv5dn2_2",
        "role": "master",
        "status": "ACTIVE",
        "availability_zone": "az2xahz"
      },
      {
        "id": "77092f1dadb74d3ea13d28269cdd3590no14",
        "name": "UTS-gauss-ad53-2C3D_gaussdbv5dn3_2",
        "role": "master",
```

```
    "status": "ACTIVE",
    "availability_zone": "az2xahz"
  },
  {
    "id": "a46bfaa6d5a24355a60fce7432b964cano14",
    "name": "UTS-gauss-ad53-2C3D_gaussdbv5dn3_0",
    "role": "slave",
    "status": "ACTIVE",
    "availability_zone": "az2xahz"
  },
  {
    "id": "aa5277736f3844e2a7adeb9de529e2b1no14",
    "name": "UTS-gauss-ad53-2C3D_gaussdbv5dn2_1",
    "role": "slave",
    "status": "ACTIVE",
    "availability_zone": "az2xahz"
  },
  {
    "id": "b1d798e4ea7344dfa95032984bc6cf7no14",
    "name": "UTS-gauss-ad53-2C3D_gaussdbv5cn_1",
    "role": "master",
    "status": "ACTIVE",
    "availability_zone": "az2xahz",
    "private_ip": "192.168.29.231"
  },
  {
    "id": "b9a46540186f4c0781eabaa2a79594cbno14",
    "name": "UTS-gauss-ad53-2C3D_gaussdbv5dn1_1",
    "role": "slave",
    "status": "ACTIVE",
    "availability_zone": "az2xahz"
  },
  {
    "id": "d283813030364060ab64371d50294977no14",
    "name": "UTS-gauss-ad53-2C3D_gaussdbv5dn2_0",
    "role": "slave",
    "status": "ACTIVE",
    "availability_zone": "az2xahz"
  },
  {
    "id": "eb7bce29b2284cd290405eaddc1b1a1eno14",
    "name": "UTS-gauss-ad53-2C3D_gaussdbv5cn_0",
    "role": "master",
    "status": "FAILED",
    "availability_zone": "az2xahz",
    "private_ip": "192.168.30.44",
    "public_ip": "10.154.217.248"
  }
],
"private_ips": [
  "192.168.29.231 / 192.168.30.44"
],
"public_ips": [
  "10.154.217.248"
],
"replica_num": 3,
"db_user_name": "root",
"vpc_id": "5f84a5c4-2f93-41de-8359-d7acedb585cc",
"subnet_id": "300036af-a92f-4e9e-8e9f-7d20e7878b05",
"security_group_id": "2dcfd40a-8f32-46b8-8a47-6cfab5eba163",
"flavor_ref": "gaussdb.opengauss.ee.dn.m6.large.8.in",
"flavor_info": {
  "vcpu": 2,
  "mem": 16
},
"switch_strategy": "Reliability",
"charge_info": {
  "charge_mode": "prePaid"
}
},
```

```
"backup_strategy": {
  "start_time": "18:00-19:00",
  "keep_days": 7
},
"maintenance_window": "18:00-22:00",
"enterprise_project_id": "0",
"time_zone": "UTC+08:00",
"instance_mode": "enterprise"
},
{
  "id": "706c65c3dd7d497ab16f5b3a113690abin14",
  "status": "ACTIVE",
  "name": "UTS-gauss-7362",
  "port": 8000,
  "type": "Enterprise",
  "ha": {
    "consistency": "strong",
    "replication_mode": "sync"
  },
  "region": "cn-xianhz-1",
  "datastore": {
    "type": "GaussDB",
    "version": "1.2"
  },
  "created": "2020-12-23 03:21:41 UTC",
  "updated": "2021-01-15 02:32:13 UTC",
  "volume": {
    "type": "ULTRAHIGH",
    "size": 80
  },
  "nodes": [
    {
      "id": "25b7f16ee4084b7884d52f1bdfab4e68no14",
      "name": "UTS-gauss-7362_gaussdbv5dn1_2",
      "role": "master",
      "status": "ACTIVE",
      "availability_zone": "az2xahz"
    },
    {
      "id": "ad6f02f31744422fa8ce487e81c9e7afno14",
      "name": "UTS-gauss-7362_gaussdbv5cn_0",
      "role": "master",
      "status": "ACTIVE",
      "availability_zone": "az2xahz",
      "private_ip": "192.168.26.70"
    },
    {
      "id": "b30c56582bf44a548e3bb5b5af6c4773no14",
      "name": "UTS-gauss-7362_gaussdbv5dn1_1",
      "role": "slave",
      "status": "ACTIVE",
      "availability_zone": "az2xahz"
    },
    {
      "id": "f79ea0600cba42b2888bd9bd67e52a79no14",
      "name": "UTS-gauss-7362_gaussdbv5dn1_0",
      "role": "slave",
      "status": "ACTIVE",
      "availability_zone": "az2xahz"
    }
  ],
  "private_ips": [
    "192.168.26.70"
  ],
  "db_user_name": "root",
  "vpc_id": "5f84a5c4-2f93-41de-8359-d7acedb585cc",
  "subnet_id": "300036af-a92f-4e9e-8e9f-7d20e7878b05",
  "security_group_id": "2dcfd40a-8f32-46b8-8a47-6cfab5eba163",
```

```
"flavor_ref": "gaussdb.opengauss.ee.dn.m6.large.8.in",
"flavor_info": {
  "vcpu": 2,
  "mem": 16
},
"switch_strategy": "Reliability",
"charge_info": {
  "charge_mode": "postPaid"
},
"backup_strategy": {
  "start_time": "16:00-17:00",
  "keep_days": 7
},
"maintenance_window": "18:00-22:00",
"enterprise_project_id": "0",
"time_zone": "UTC+08:00",
"instance_mode": "enterprise"
},
{
  "id": "4ad42d079a3948d88c28d6236211b21ein14",
  "status": "ACTIVE",
  "name": "UTS-gauss-4336",
  "port": 8000,
  "type": "Enterprise",
  "ha": {
    "consistency": "strong",
    "replication_mode": "sync"
  },
  "region": "cn-xianhz-1",
  "datastore": {
    "type": "GaussDB",
    "version": "1.2"
  },
  "created": "2020-12-03 14:28:53 UTC",
  "updated": "2021-01-14 13:20:10 UTC",
  "volume": {
    "type": "ULTRAHIGH",
    "size": 40
  },
  "nodes": [
    {
      "id": "254dbda6f03643519ad64b39481bd11cno14",
      "name": "UTS-gauss-4336_gaussdbv5dn1_2",
      "role": "master",
      "status": "ACTIVE",
      "availability_zone": "az1xahz"
    },
    {
      "id": "6ad76d4db26443c2a93b280739a31558no14",
      "name": "UTS-gauss-4336_gaussdbv5dn1_1",
      "role": "slave",
      "status": "ACTIVE",
      "availability_zone": "az1xahz"
    },
    {
      "id": "9fdeb821bdf444a8689b19c0ff588ceno14",
      "name": "UTS-gauss-4336_gaussdbv5cn_0",
      "role": "master",
      "status": "FAILED",
      "availability_zone": "az1xahz",
      "private_ip": "192.168.30.93"
    },
    {
      "id": "dd64bdbc02a542d88823b1582f772d25no14",
      "name": "UTS-gauss-4336_gaussdbv5cn_1",
      "role": "master",
      "status": "ACTIVE",
      "availability_zone": "az1xahz",
      "private_ip": "192.168.29.232"
    }
  ]
}
```

```
    },
    {
      "id": "de3c41461045466faf6c2b96eb709540no14",
      "name": "UTS-gauss-4336_gaussdbv5dn1_0",
      "role": "slave",
      "status": "ACTIVE",
      "availability_zone": "az1xahz"
    }
  ],
  "private_ips": [
    "192.168.30.93 / 192.168.29.232"
  ],

  "db_user_name": "root",
  "vpc_id": "5f84a5c4-2f93-41de-8359-d7acedb585cc",
  "subnet_id": "300036af-a92f-4e9e-8e9f-7d20e7878b05",
  "security_group_id": "2dcfd40a-8f32-46b8-8a47-6cfab5eba163",
  "flavor_ref": "gaussdb.opengauss.ee.dn.m6.large.8.in",
  "flavor_info": {
    "vcpu": 2,
    "mem": 16
  },
  "switch_strategy": "Reliability",
  "charge_info": {
    "charge_mode": "postPaid"
  },
  "backup_strategy": {
    "start_time": "18:00-19:00",
    "keep_days": 7
  },
  "maintenance_window": "18:00-22:00",
  "enterprise_project_id": "0",
  "time_zone": "UTC+08:00",
  "instance_mode": "enterprise"
}
],
"total_count": 4
}
```

- **Querying instance details**

```
{
  "instances": [
    {
      "id": "706c65c3dd7d497ab16f5b3a113690abin14",
      "status": "ACTIVE",
      "name": "UTS-gauss-7362",
      "port": 8000,
      "type": "Enterprise",
      "ha": {
        "consistency": "strong",
        "replication_mode": "sync"
      },
      "region": "aaa",
      "datastore": {
        "type": "GaussDB",
        "version": "1.4"
      },
      "created": "2020-12-23 03:21:41 UTC",
      "updated": "2021-01-15 02:32:13 UTC",
      "volume": {
        "type": "ULTRAHIGH",
        "size": 80
      },
      "nodes": [
        {
          "id": "25b7f16ee4084b7884d52f1bdfab4e68no14",
          "name": "UTS-gauss-7362_gaussdbv5dn1_2",
          "role": "master",
          "status": "ACTIVE",
          "region": "bbb",

```

```
    },
    {
      "id": "ad6f02f31744422fa8ce487e81c9e7afno14",
      "name": "UTS-gauss-7362_gaussdbv5cn_0",
      "role": "master",
      "status": "ACTIVE",
      "region": "bbb",
      "private_ip": "192.168.26.70"
    },
    {
      "id": "b30c56582bf44a548e3bb5b5af6c4773no14",
      "name": "UTS-gauss-7362_gaussdbv5dn1_1",
      "role": "slave",
      "status": "ACTIVE",
      "region": "bbb",
    },
    {
      "id": "f79ea0600cba42b2888bd9bd67e52a79no14",
      "name": "UTS-gauss-7362_gaussdbv5dn1_0",
      "role": "slave",
      "status": "ACTIVE",
      "region": "bbb",
    }
  ],
  "private_ips": [
    "192.168.26.70"
  ],

  "db_user_name": "root",
  "vpc_id": "5f84a5c4-2f93-41de-8359-d7acedb585cc",
  "subnet_id": "300036af-a92f-4e9e-8e9f-7d20e7878b05",
  "security_group_id": "2dcfd40a-8f32-46b8-8a47-6cfab5eba163",
  "flavor_ref": "gaussdb.opengauss.ee.dn.m6.2xlarge.8.in",
  "flavor_info": {
    "vcpu": 8,
    "mem": 64
  },
  "switch_strategy": "Reliability",
  "charge_info": {
    "charge_mode": "postPaid"
  },
  "backup_strategy": {
    "start_time": "16:00-17:00",
    "keep_days": 7
  },
  "maintenance_window": "18:00-22:00",
  "enterprise_project_id": "0",
  "time_zone": "UTC+08:00",
  "instance_mode": "enterprise"
}
],
"total_count": 1
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 5.2.6 Scaling Up Storage Space of a DB Instance

### Function

This API is used to scale up storage space of a DB instance. Before calling this API:

#### NOTICE

This API will be unavailable on March 31, 2025. You are advised to switch workloads to the new API ([Adding CNs and DN Shards and Scaling Up Storage](#)) before then.

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

- The storage space must be a multiple of the number of shards multiplied by 4 GB.
- All nodes must be available.

### URI

POST [https://{Endpoint}/gaussdb/v3/{project\\_id}/instances/{instance\\_id}/action](https://{Endpoint}/gaussdb/v3/{project_id}/instances/{instance_id}/action)

Table 5-74 Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	Instance ID.

## Request Parameters

**Table 5-75** Request parameters

Parameter	Mandatory	Type	Description
enlarge_volume	Yes	Object	Target storage space after scaling up. For details, see <a href="#">Table 5-76</a> .

**Table 5-76** enlarge\_volume field data structure description

Parameter	Mandatory	Type	Description
size	Yes	Integer	Storage space, which must always be an integral multiple of (Number of shards x 4 GB). Value range: (Number of shards x 40 GB) to (Number of shards x 16 TB).

## Response Parameters

**Table 5-77** Response parameters

Parameter	Type	Description
job_id	String	Task ID.

## Example Request

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/
opengauss/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfdae3435in01/action
{
  "enlarge_volume": {
    "size": 400
  }
}
```

## Example Response

```
{
  "job_id": "2b414788a6004883a02390e2eb0ea227"
}
```

## Status Code

- Normal  
202



- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 5.2.7 Deleting a DB Instance

### Function

This API is used to delete a DB instance. Before calling this API:

#### NOTICE

This API will be unavailable on March 31, 2025. You are advised to switch workloads to the new API ([Deleting a DB Instance](#)) before then.

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

DELETE [https://{Endpoint}/opengauss/v3/{project\\_id}/instances/{instance\\_id}](https://{Endpoint}/opengauss/v3/{project_id}/instances/{instance_id})

**Table 5-78** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	Instance ID.

## Request Parameters

None

## Response Parameters

Table 5-79 Response parameters

Parameter	Type	Description
job_id	String	ID of the DB instance deletion task.

## Example Request

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/  
opengauss/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsdsae3435in01
```

## Example Response

```
{  
  "job_id": "dff1d289-4d03-4942-8b9f-463ea07c000d"  
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 5.2.8 Adding CNs

### Function

This API is used to add CNs. Before calling this API:

---

#### NOTICE

This API will be unavailable on March 31, 2025. You are advised to switch workloads to the new API ([Adding CNs and DN Shards and Scaling Up Storage](#)) before then.

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

## Constraints

- The CN growth increment ranges from 1 to 9.
- The maximum number of CNs is 256.
- If you choose the single-AZ deployment during instance creation, add CNs in the same AZ.
- The number of CNs of a DB instance cannot exceed twice the number of shards.

## URI

POST [https://{Endpoint}/gaussdb/v3/{project\\_id}/instances/{instance\\_id}/action](https://{Endpoint}/gaussdb/v3/{project_id}/instances/{instance_id}/action)

**Table 5-80** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	Instance ID.

## Request Parameters

**Table 5-81** Request parameters

Parameter	Mandatory	Type	Description
expand_cluster	Yes	Object	For details, see <a href="#">Table 5-82</a> .

**Table 5-82** expand\_cluster field data structure description

Parameter	Mandatory	Type	Description
coordinators	Yes	Array	For details, see <a href="#">Table 5-83</a> .

**Table 5-83** azCode field data structure description

Parameter	Mandatory	Type	Description
az_code	Yes	String	AZs to which CNs are to be added.

## Response Parameters

**Table 5-84** Response parameters

Parameter	Type	Description
job_id	String	Task ID.

## Example Request

- Adding a CN

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsf23fsfdae3435in01/action
{
  "expand_cluster": {
    "coordinators": [
      {
        "az_code": "az1xahz"
      }
    ],
    "isAutoPay": 0
  }
}
```

- Adding CNs

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsf23fsfdae3435in01/action
{
  "expand_cluster": {
    "coordinators": [
      {
        "az_code": "az1xahz"
      },
      {
        "az_code": "az2xahz"
      }
    ]
  }
}
```

```
        "az_code": "az3xahz"
      }
    ]
  }
}
```

## Example Response

- Example response

```
{
  "job_id": "2b414788a6004883a02390e2eb0ea227"
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 5.2.9 Adding Shards

### Function

This API is used to add shards. Before calling this API:

#### NOTICE

This API will be unavailable on March 31, 2025. You are advised to switch workloads to the new API ([Adding CNs and DN Shards and Scaling Up Storage](#)) before then.

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

#### NOTE

Intermittent disconnection occurs when shards are being added. Exercise caution when performing this operation.

## Constraints

- The shard growth increment ranges from 1 to 9.
- The maximum number of shards is 256.

## URI

POST [https://{Endpoint}/gaussdb/v3/{project\\_id}/instances/{instance\\_id}/action](https://{Endpoint}/gaussdb/v3/{project_id}/instances/{instance_id}/action)

**Table 5-85** Parameter description

Name	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	Instance ID.

## Request Parameters

**Table 5-86** Request parameters

Name	Mandatory	Type	Description
expand_cluster	Yes	Object	For details, see <a href="#">Table 5-87</a> .

**Table 5-87** expand\_cluster field data structure description

Name	Mandatory	Type	Description
shard	Yes	Object	For details, see <a href="#">Table 5-88</a> .

**Table 5-88** count field data structure description

Name	Mandatory	Type	Description
count	Yes	Integer	Number of shards to be added.

## Response Parameters

Table 5-89 Response parameters

Name	Type	Description
job_id	String	Task ID.

## Example Request

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfdsae3435in01/action
{
  "expand_cluster": {
    "shard": {
      "count": 1
    }
  }
}
```

## Example Response

- Example response

```
{
  "job_id": "2b414788a6004883a02390e2eb0ea227"
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 5.2.10 Resetting a Database Password

### Function

This API is used to reset a database password. Before calling this API:

---

#### NOTICE

This API will be unavailable on March 31, 2025. You are advised to switch workloads to the new API ([Resetting a Database Password](#)) before then.

---

- Learn how to [authenticate](#) this API.

- Obtain the required [region and endpoint](#).

## URI

POST [https://{Endpoint}/gaussdb/v3/{project\\_id}/instances/{instance\\_id}/password](https://{Endpoint}/gaussdb/v3/{project_id}/instances/{instance_id}/password)

**Table 5-90** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	Instance ID.

## Request Parameters

**Table 5-91** Request parameters

Parameter	Mandatory	Type	Description
password	Yes	String	Password for user <b>root</b> . The password must: <ul style="list-style-type: none"><li>• Consist of 8 to 32 characters and contain at least three types of the following characters: uppercase letters, lowercase letters, digits, and special characters ~!@#\$\$%^*_-=+?,</li><li>• Support weak password verification.</li></ul>

## Response Parameters

None



## Example Request

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfsae3435in01/password
{
  "password": "*****"
}
```

## Example Response

```
{}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 5.2.11 Changing a DB Instance Name

### Function

This API is used to change a DB instance name. Before calling this API:

---

#### NOTICE

This API will be unavailable on March 31, 2025. You are advised to switch workloads to the new API ([Changing a DB Instance Name](#)) before then.

---

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

PUT [https://{{Endpoint}}/gaussdb/v3/{{project\\_id}}/instances/{{instance\\_id}}/name](https://{{Endpoint}}/gaussdb/v3/{{project_id}}/instances/{{instance_id}}/name)

**Table 5-92** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	Instance ID.

## Request Parameters

**Table 5-93** Request parameters

Parameter	Mandatory	Type	Description
name	Yes	String	DB instance name. Instances of the same type can have same names under the same tenant. The name must consist of 4 to 64 characters and start with a letter. It can contain only letters (case-sensitive), digits, hyphens (-), and underscores (_).

## Response Parameters

**Table 5-94** Response parameters

Parameter	Type	Description
job_id	String	Task ID for changing the instance name.

## Example Request

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfsdae3435in14/name
{
  "name": "instance-name"
}
```

## Example Response

```
{
  "job_id": "2b414788a6004883a02390e2eb0ea227"
}
```

## Status Code

- Normal  
202
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

# 5.3 Parameter Configuration

## 5.3.1 Modifying Parameters of a Specified DB Instance

### Function

This API is used to modify parameters in the parameter template of a specified DB instance. Before calling this API:

---

#### NOTICE

This API will be unavailable on March 31, 2025. You are advised to switch workloads to the new API ([Modifying Parameters of a Specified DB Instance](#)) before then.

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

- The values of the edited parameters must be within the default value range of the specified database version. For details about the range of parameter values, see "Modifying Parameters in a Parameter Template" in the *GaussDB User Guide*.

## URI

PUT [https://{Endpoint}/gaussdb/v3/{project\\_id}/instances/{instance\\_id}/configurations](https://{Endpoint}/gaussdb/v3/{project_id}/instances/{instance_id}/configurations)

**Table 5-95** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the project ID, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
instance_id	Yes	Instance ID.

## Request Parameters

**Table 5-96** Request parameters

Parameter	Mandatory	Type	Description
values	Yes	Map<String,String>	Parameter values defined by users based on a default parameter template For details, see <a href="#">Table 5-97</a> .

**Table 5-97** values field data structure description

Parameter	Mandatory	Type	Description
key	Yes	String	Parameter name. For example, for the <b>"failed_login_attempts": "4"</b> parameter, the key is <b>failed_login_attempts</b> .

Parameter	Mandatory	Type	Description
value	Yes	String	Parameter value. For example, for the <b>"failed_login_attempts": "4"</b> parameter, the value is <b>4</b> .

## Response Parameters

**Table 5-98** Response parameters

Parameter	Type	Description
restart_required	Boolean	Whether a reboot is required. <ul style="list-style-type: none"> <li>• <b>true</b>: A reboot is required.</li> <li>• <b>false</b>: A reboot is not required.</li> </ul>

## Example Request

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfsdae3435in01/configurations
{
  "values": {
    "xxx": "10",
    "yyy": "OFF"
  }
}
```

## Example Response

```
{
  "restart_required": false
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 5.3.2 Obtaining Parameter Templates (v3.1)

### Function

This API is used to obtain parameter templates, including all databases' default and custom parameter templates. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET `https://{Endpoint}/v3.1/{project_id}/configurations?offset={offset}&limit={limit}`

**Table 5-99** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

Parameter	Mandatory	Type	Description
offset	No	Integer	<p><b>Explanation:</b> Index offset. The query starts from the next piece of data indexed by this parameter. For example, if this parameter is set to <b>0</b> and <b>limit</b> is set to <b>10</b>, only the 1st to 10th records are displayed.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [0, 2<sup>31</sup>-1]</p> <p><b>Default value:</b> 0 (indicating that the query starts from the first data record.)</p>
limit	No	Integer	<p><b>Explanation:</b> Number of records to be queried. For example, if this parameter is set to <b>10</b>, a maximum of 10 records can be displayed.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [1, 100]</p> <p><b>Default value:</b> 100</p>

## Request Parameters

None

## Response Parameters

**Table 5-100** Parameter description

Parameter	Type	Description
configurations	Array of objects	<p><b>Explanation:</b> Parameter template information. For details, see <a href="#">Table 5-101</a>.</p>

Parameter	Type	Description
count	Integer	<b>Explanation:</b> Total number of records. <b>Value range:</b> [0, 2 <sup>31</sup> - 1]

**Table 5-101** configurations field data structure description

Parameter	Type	Description
id	String	<b>Explanation:</b> Parameter template ID, which is the unique ID of a parameter template. <b>Value range:</b> The value can contain 36 characters. Only letters and digits are allowed.
name	String	<b>Explanation:</b> Parameter template name. <b>Value range:</b> The value can contain 1 to 64 characters and is case-sensitive. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed
description	String	<b>Explanation:</b> Parameter template description. <b>Value range:</b> The value can contain up to 256 characters but cannot contain carriage return characters. The following special characters are not allowed: ! <"='>&
datastore_version	String	<b>Explanation:</b> Engine version. <b>Value range:</b> None
datastore_name	String	<b>Explanation:</b> Engine name. <b>Value range:</b> GaussDB



Parameter	Type	Description
ha_mode	String	<p><b>Explanation:</b> Instance type.</p> <p><b>Value range:</b> The value is case-sensitive. The value <b>Enterprise</b> indicates the distributed instance (Enterprise Edition).</p>
created	String	<p><b>Explanation:</b> Creation time in the "yyyy-MM-dd HH:mm:ss" format, for example, 2024-07-03 14:18:55.</p> <p><b>Value range:</b> None</p>
updated	String	<p><b>Explanation:</b> Update time in the "yyyy-MM-dd HH:mm:ss" format, for example, 2024-07-03 14:18:55.</p> <p><b>Value range:</b> None</p>
user_defined	Boolean	<p><b>Explanation:</b> Whether the parameter template is a custom template.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>● <b>false:</b> The parameter template is a default template.</li> <li>● <b>true:</b> The parameter template is a custom template.</li> </ul>

## Example Request

Querying parameter templates

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.1/0483b6b16e954cb88930a360d2c4e663/configurations?offset=1&limit=3
```

## Example Response

Parameter templates queried.

```
{
  "count": 3,
  "configurations": [
    {
      "id": "b000d7c91f1749da87315700793a11d4pr14",
      "name": "Default-GaussDB-EE-1.0-Dist-Combined (4 replicas)",
      "description": "Default parameter template for GaussDB-Enterprise Edition-1.0-Distributed-combined (4 replicas)",
      "created": "2022-03-23 07:20:11",
      "updated": "2022-03-23 07:20:11",
    }
  ]
}
```

```
"datastore_version": "1.0",
"datastore_name": "GaussDB",
"ha_mode": "combined",
"user_defined": false
},
{
  "id": "8d99f260ea1b4493a1b349e7abce5c09pr14",
  "name": "Default-Finance-Edition-GaussDB-1.3-Combined",
  "description": "Default parameter template for Finance Edition GaussDB 1.3-Combined",
  "created": "2022-03-23 07:20:11",
  "updated": "2022-03-23 07:20:11",
  "datastore_version": "1.1",
  "datastore_name": "GaussDB",
  "ha_mode": "combined",
  "user_defined": false
},
{
  "id": "0f44b65521a8414d8b8811df810d94ccpr14",
  "name": "Default-Finance-Disaster-GaussDB-1.3-Combined",
  "description": "Default parameter template for Finance Disaster GaussDB 1.3-Combined",
  "created": "2022-03-23 07:20:11",
  "updated": "2022-03-23 07:20:11",
  "datastore_version": "1.2",
  "datastore_name": "GaussDB",
  "ha_mode": "combined",
  "user_defined": false
}
]
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 5.3.3 Obtaining Parameter Templates (v3)

### Function

This API is used to obtain parameter templates, including all databases' default and custom parameter templates. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/configurations?offset={offset}&limit={limit}](https://{Endpoint}/v3/{project_id}/configurations?offset={offset}&limit={limit})

**Table 5-102** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
offset	No	Integer	<p><b>Explanation:</b> Index offset. For example, if this parameter is set to <b>0</b> and <b>limit</b> is set to <b>10</b>, only the 1st to 10th records are displayed.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [0, 2<sup>31</sup>-1]</p> <p><b>Default value:</b> 0 (indicating that the query starts from the first data record.)</p>
limit	No	Integer	<p><b>Explanation:</b> Number of records to be queried. For example, if this parameter is set to <b>10</b>, a maximum of 10 records can be displayed.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [1, 100]</p> <p><b>Default value:</b> 100</p>

## Request Parameters

None

## Response Parameters

**Table 5-103** Response parameters

Parameter	Type	Description
configurations	Array of objects	<b>Explanation:</b> Parameter template information. For details, see <a href="#">Table 5-104</a> .
count	Integer	<b>Explanation:</b> Total number of records. <b>Value range:</b> [0, 2 <sup>31</sup> - 1]

**Table 5-104** configurations field data structure description

Parameter	Type	Description
id	String	<b>Explanation:</b> Parameter template ID, which is the unique ID of a parameter template. <b>Value range:</b> The value can contain 36 characters. Only letters and digits are allowed.
name	String	<b>Explanation:</b> Parameter template name. <b>Value range:</b> The value can contain 1 to 64 characters and is case-sensitive. Only letters, digits, hyphens (-), underscores (_), and periods (.) are allowed
description	String	<b>Explanation:</b> Parameter template description. <b>Value range:</b> The value can contain up to 256 characters but cannot contain carriage return characters. The following special characters are not allowed: ! <"='>&

Parameter	Type	Description
datastore_version	String	<b>Explanation:</b> Engine version. <b>Value range:</b> None
datastore_name	String	<b>Explanation:</b> Engine name. <b>Value range:</b> GaussDB
ha_mode	String	<b>Explanation:</b> Instance type. <b>Value range:</b> The value is case-sensitive. The value <b>Enterprise</b> indicates the distributed instance (Enterprise Edition).
created	String	<b>Explanation:</b> Creation time in the "yyyy-MM-dd HH:mm:ss" format, for example, 2024-07-03 14:18:55. <b>Value range:</b> None
updated	String	<b>Explanation:</b> Update time in the "yyyy-MM-dd HH:mm:ss" format, for example, 2024-07-03 14:18:55. <b>Value range:</b> None
user_defined	Boolean	<b>Explanation:</b> Whether the parameter template is a custom template. <b>Value range:</b> <ul style="list-style-type: none"><li>• <b>false:</b> The parameter template is a default template.</li><li>• <b>true:</b> The parameter template is a custom template.</li></ul>

## Example Request

```
https://gaussdb-opengauss.cn-north-4.myhuaweicloud.com/v3/054b61972980d4552f0bc00ac8d3f5cd/
configurations?offset=1&limit=3
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/
configurations?offset=1&limit=3
```

## Example Response

Parameter templates queried.

```
{
  "count": 3,
  "configurations": [
    {
      "id": "b000d7c91f1749da87315700793a11d4pr14",
      "name": "Default-Enterprise-Edition-GaussDB-1.0-INDEP",
      "description": "Default parameter template for Enterprise Edition GaussDB 1.0-Independent",
      "created": "2022-03-23 07:20:11",
      "updated": "2022-03-23 07:20:11",
      "datastore_version": "1.0",
      "datastore_name": "GaussDB",
      "ha_mode": "enterprise",
      "user_defined": false
    },
    {
      "id": "8d99f260ea1b4493a1b349e7abce5c09pr14",
      "name": "Default-Enterprise-Edition-GaussDB-1.1-INDEP",
      "description": "Default parameter template for Enterprise Edition GaussDB 1.1-Independent",
      "created": "2022-03-23 07:20:11",
      "updated": "2022-03-23 07:20:11",
      "datastore_version": "1.1",
      "datastore_name": "GaussDB",
      "ha_mode": "enterprise",
      "user_defined": false
    },
    {
      "id": "0f44b65521a8414d8b8811df810d94ccpr14",
      "name": "Default-Enterprise-Edition-GaussDB-1.2-INDEP",
      "description": "Default parameter template for Enterprise Edition GaussDB 1.2-Independent",
      "created": "2022-03-23 07:20:11",
      "updated": "2022-03-23 07:20:11",
      "datastore_version": "1.2",
      "datastore_name": "GaussDB",
      "ha_mode": "enterprise",
      "user_defined": false
    }
  ]
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 5.3.4 Obtaining the Parameters of a Specified Instance (v3.1)

### Function

This API is used to obtain parameters of a specified DB instance. Before calling this API:

- Learn how to [authenticate](#) this API.

- Obtain the required [region and endpoint](#).

## URI

GET [https://{Endpoint}/v3.1/{project\\_id}/instances/{instance\\_id}/configurations](https://{Endpoint}/v3.1/{project_id}/instances/{instance_id}/configurations)

**Table 5-105** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	String	Instance ID.

## Request Parameters

**Table 5-106** Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to <a href="#">obtain a user token</a> . The value of the token is that of <b>X-Subject-Token</b> in the response header.
X-Language	No	String	Language. Default value: <b>en-us</b> Value range: <ul style="list-style-type: none"><li>• <b>zh-cn</b></li><li>• <b>en-us</b></li></ul>

## Response Parameters

**Table 5-107** Parameter description

Parameter	Type	Description
datastore_version	String	Engine version.
datastore_name	String	Engine name.
created	String	Creation time in the "yyyy-MM-dd HH:mm:ss" format.
updated	String	Update time in the "yyyy-MM-ddHH:mm:ss" format.
configuration_parameters	Array of objects	Parameters defined by users based on the default parameter templates. For details, see <a href="#">Table 5-108</a> .

**Table 5-108** configuration\_parameters field data structure description

Parameter	Type	Description
name	String	Parameter name.
value	String	Parameter value.
restart_required	Boolean	Whether a reboot is required after the parameter is modified.
value_range	String	Parameter value range.
type	String	Parameter type. The value can be <b>string</b> , <b>integer</b> , <b>boolean</b> , <b>list</b> , or <b>float</b> . Value range: <ul style="list-style-type: none"><li>• <b>string</b></li><li>• <b>integer</b></li><li>• <b>boolean</b></li><li>• <b>list</b></li><li>• <b>float</b></li></ul>
description	String	Parameter description.

## Example Request

Querying parameters of a specified instance



```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.1/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsdcae3435in14/configurations
```

## Example Response

Parameters of the instance queried.

```
{
  "created": "2022-04-11 10:46:59",
  "updated": "2022-04-11 10:46:59",
  "datastore_version": "2.0",
  "datastore_name": "GaussDB",
  "configuration_parameters": [
    {
      "name": "audit_system_object",
      "value": "12295",
      "type": "integer",
      "description": "Determines whether to audit the CREATE, DROP, and ALTER operations on GaussDB Kernel database objects. GaussDB Kernel database objects include databases, users, schemas, and tables. You can change the parameter value to audit only the operations on required database objects. During a forcible primary/standby failover, set audit_system_object to the maximum value and audit all DDL objects. If the parameter value is incorrectly changed, DDL audit logs will be lost. Contact customer service personnel to change it.",
      "restart_required": false,
      "value_range": "0-2097151"
    }
  ]
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 5.3.5 Obtaining the Parameters of a Specified DB Instance (v3)

### Function

This API is used to obtain parameters of a specified DB instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

```
GET https://{Endpoint}/v3/{project_id}/instances/{instance_id}/configurations
```

**Table 5-109** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
instance_id	Yes	String	<p><b>Explanation:</b> Instance ID.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>

## Request Parameters

None

## Response Parameters

**Table 5-110** Response parameters

Parameter	Type	Description
datastore_version	String	<p><b>Explanation:</b> Engine version.</p> <p><b>Value range:</b> None</p>

Parameter	Type	Description
datastore_name	String	<b>Explanation:</b> Engine name. <b>Value range:</b> None
created	String	<b>Explanation:</b> Creation time in the "yyyy-MM-dd HH:mm:ss" format, for example, 2024-05-14 07:31:11. <b>Value range:</b> None
updated	String	<b>Explanation:</b> Update time in the "yyyy-MM-ddHH:mm:ss" format, for example, 2024-05-14 07:31:11. <b>Value range:</b> None
configuration_parameters	Array of objects	<b>Explanation:</b> Parameters defined by users based on the default parameter templates. For details, see <a href="#">Table 5-111</a> .

**Table 5-111** configuration\_parameters field data structure description

Parameter	Type	Description
name	String	<b>Explanation:</b> Parameter name. <b>Value range:</b> None
value	String	<b>Explanation:</b> Parameter value. <b>Value range:</b> None
restart_required	Boolean	<b>Explanation:</b> Whether a reboot is required after the parameter is modified. <b>Value range:</b> <ul style="list-style-type: none"> <li>● <b>true:</b> A reboot is required.</li> <li>● <b>false:</b> A reboot is not required.</li> </ul>

Parameter	Type	Description
value_range	String	<b>Explanation:</b> Parameter value range. <b>Value range:</b> None
type	String	<b>Explanation:</b> Parameter type. <b>Value range:</b> <ul style="list-style-type: none"> <li>• string</li> <li>• integer</li> <li>• boolean</li> <li>• list</li> <li>• float</li> </ul>
description	String	<b>Explanation:</b> Parameter description. <b>Value range:</b> None

### Example Request

```
https://gaussdb-opengauss.cn-north-4.myhuaweicloud.com/v3/054b61972980d4552f0bc00ac8d3f5cd/instances/dsfae23fsfdsae3435in14/configurations
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfdsae3435in14/configurations
```

### Example Response

```
{
  "created": "2022-04-11 10:46:59",
  "updated": "2022-04-11 10:46:59",
  "datastore_version": "2.0",
  "datastore_name": "GaussDB",
  "configuration_parameters": [
    {
      "name": "audit_system_object",
      "value": "12295",
      "type": "integer",
      "description": "Whether to audit the CREATE, DROP, and ALTER operations on database objects",
      "restart_required": false,
      "value_range": "0-2097151"
    }
  ]
}
```

### Status Code

- Normal  
200

- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 5.3.6 Querying Details About a Parameter Template

### Function

This API is used to query details about a parameter template based on the parameter template ID. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/configurations/{config\\_id}](https://{Endpoint}/v3/{project_id}/configurations/{config_id})

**Table 5-112** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
config_id	Yes	String	Parameter template ID.

## Request Parameters

**Table 5-113** Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to <a href="#">obtain a user token</a> . The value of the token is that of <b>X-Subject-Token</b> in the response header.
X-Language	No	String	Language. Default value: <b>en-us</b> Value: <ul style="list-style-type: none"> <li>• <b>zh-cn</b></li> <li>• <b>en-us</b></li> </ul>

## Response Parameters

**Table 5-114** Parameter description

Parameter	Type	Description
id	String	Parameter template ID.
name	String	Parameter template name.
description	String	Parameter template description.
engine_version	String	Engine version.
instance_mode	String	Deployment model. Value range: <ul style="list-style-type: none"> <li>• <b>ha</b>: primary/standby</li> <li>• <b>independent</b>: independent</li> </ul>
created_at	String	Creation time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the offset is <b>+0800</b> .

Parameter	Type	Description
updated_at	String	Modification time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the offset is <b>+0800</b> .
configuration_parameters	Array of objects	Parameter details. For details about the parameters, see <a href="#">Table 5-115</a> .

**Table 5-115** configuration\_parameters field data structure description

Parameter	Type	Description
name	String	Name of a specific parameter.
value	String	Value of a specific parameter.
need_restart	Boolean	Whether the instance needs to be rebooted. <b>true</b> : Instance needs to be rebooted. <b>false</b> : Instance does not need to be rebooted.
readonly	Boolean	Whether the parameter is read-only. <b>true</b> : read only <b>false</b> : editable
value_range	String	Parameter value range.
data_type	String	Parameter type. The value can be <b>string</b> , <b>integer</b> , <b>boolean</b> , <b>list</b> , <b>all</b> , or <b>float</b> .
description	String	Parameter description.

## Example Request

Querying details about a parameter template

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/619d3e78f61b4be68bc5aa0b59edcf7b/configurations/3ca44134a16d4bbab8eb701e025b19f7pr14
```

## Example Response

Parameter template details queried.

```
{
  "id": "3ca44134a16d4bbab8eb701e025b19f7pr14",
  "name": "GaussDB_2b87a799-515",
  "description": "ParamGroup for instance.",
  "engine_version": "2.3",
```

```
"instance_mode": "ha",
"created_at": "2022-08-05T08:15:07+0800",
"updated_at": "2022-08-09T03:06:52+0800",
"configuration_parameters": [
  {
    "name": "audit_system_object",
    "value": "12294",
    "need_restart": false,
    "readonly": false,
    "value_range": "1-65536",
    "data_type": "integer",
    "description": "This parameter determines whether to audit the CREATE, DROP, and ALTER
operations on GaussDB Kernel database objects. GaussDB Kernel database objects include DATABASE,
USER, SCHEMA, and TABLE. You can change the value of this parameter to audit only the operations on
required database objects. In scenarios where a standby node is forcibly elected as primary, you are advised
to set audit_system_object to the maximum value and audit all DDL objects. Improper modification of this
parameter will cause loss of DDL audit logs. Contact the customer service to change the parameter value."
  }
]
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

# 5.4 Version Upgrade

## 5.4.1 Querying Versions That a DB Instance Can Be Upgraded To

### Function

This API is used to query versions that a DB instance can be upgraded to. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/db-upgrade/candidate-versions](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/db-upgrade/candidate-versions)



**Table 5-116** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
instance_id	Yes	String	Instance ID, which is compliant with the UUID format.

## Request Parameters

None

## Response Parameters

**Table 5-117** Response Parameters

Parameter	Type	Description
upgrade_type_list	Array of <a href="#">Table 5-118</a> objects	Upgrade types.
rollback_enabled	Boolean	<p>Whether rollback is supported.</p> <ul style="list-style-type: none"> <li><b>true:</b> Rollback is supported.</li> <li><b>false:</b> Rollback is not supported.</li> </ul>
source_version	String	Source instance version.
target_version	String	Target version. The target version is only returned when the instance is in the rolling upgrade phase, or no information is returned.

Parameter	Type	Description
roll_upgrade_progress	<a href="#">Table 5-120</a> object	DN or AZ information during the rolling upgrade.
upgrade_candidate_versions	Array of strings	Versions that can be upgraded to, including minor and major versions. An empty array is returned during a rolling upgrade.
hotfix_upgrade_candidate_versions	Array of strings	Hot patch versions that can be updated. An empty array is returned during a rolling upgrade.
hotfix_rollback_candidate_versions	Array of strings	Hot patch versions that can be rolled back. An empty array is returned during a rolling upgrade.
hotfix_upgrade_infos	Array of <a href="#">Table 5-121</a> objects	Information about hot patch versions that can be installed.
hotfix_rollback_infos	Array of <a href="#">Table 5-122</a> objects	Information about hot patch versions that can be rolled back.

**Table 5-118** upgrade\_type\_list

Parameter	Type	Description
upgrade_type	String	Upgrade type. <ul style="list-style-type: none"> <li>● <b>grey</b>: Gray upgrade</li> <li>● <b>inplace</b>: In-place upgrade</li> <li>● <b>hotfix</b>: Hot patch installation</li> </ul>
enable	Boolean	Whether the upgrade type is available. <ul style="list-style-type: none"> <li>● <b>true</b>: yes.</li> <li>● <b>false</b>: no.</li> </ul>
upgrade_action_list	Array of <a href="#">Table 5-119</a> objects	Upgrade actions.

Parameter	Type	Description
is_parallel_upgrade	Boolean	<p>Whether intra-AZ parallel upgrade is supported.</p> <ul style="list-style-type: none"> <li>• <b>true</b>: The current instance is in the rolling upgrade phase of the gray upgrade. The intra-AZ parallel upgrade is supported. Once this parameter is configured, it cannot be changed later.</li> <li>• <b>false</b>: The current instance is being upgraded. The intra-AZ parallel upgrade is not supported. Once this parameter is configured, it cannot be changed later.</li> <li>• <b>null</b>: The current instance is not in the upgrade process.</li> </ul>

**Table 5-119** upgrade\_action\_list

Parameter	Type	Description
upgrade_action	String	<p>Upgrade action.</p> <ul style="list-style-type: none"> <li>• <b>upgrade</b>: Rolling upgrade</li> <li>• <b>upgradeAutoCommit</b>: Auto-commit</li> <li>• <b>commit</b>: Commit</li> <li>• <b>rollback</b>: Rollback</li> </ul>
enable	Boolean	<p>Whether the upgrade action is available.</p> <ul style="list-style-type: none"> <li>• <b>true</b>: yes.</li> <li>• <b>false</b>: no.</li> </ul>

**Table 5-120** roll\_upgrade\_progress

Parameter	Type	Description
upgraded_dn_group_numbers	String	Number of shards that have been upgraded.
total_dn_group_numbers	String	Total number of shards.
not_fully_upgraded_az	String	AZs that have not been upgraded. Multiple AZs are separated by commas (.). For instances in the independent deployment, <b>null</b> is returned.

Parameter	Type	Description
already_upgraded_az	String	AZs that have upgraded. Multiple AZs are separated by commas (.). For instances in the independent deployment, <b>null</b> is returned.
az_description_map	Map<String,String>	AZ description.

**Table 5-121** hotfix\_upgrade\_infos

Parameter	Type	Description
version	String	Hot patch version.
common_patch	String	Patch type. Value range: <ul style="list-style-type: none"> <li>• <b>common</b>: common patch</li> <li>• <b>certain</b>: custom patch</li> </ul>
backup_sensitive	Boolean	Whether the patch is related to backups.
description	String	Description of the patch.

**Table 5-122** hotfix\_rollback\_infos

Parameter	Type	Description
version	String	Hot patch version.
common_patch	String	Patch type. Value range: <ul style="list-style-type: none"> <li>• <b>common</b>: common patch</li> <li>• <b>certain</b>: custom patch</li> </ul>
backup_sensitive	Boolean	Whether the patch is related to backups.
description	String	Description of the patch.

## Example Request

This API is used to query versions that a DB instance can be upgraded to. Before calling this API:

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/cc6fd964d93f4003851dfc29d57d30a5in14/db-upgrade/candidate-versions
```

## Example Response

Target version, shard status, and AZ status in the rolling upgrade returned.

```
{
  "upgrade_type_list": [
    {
      "upgrade_type": "grey",
      "upgrade_action_list": [
        {
          "upgrade_action": "commit",
          "enable": false
        },
        {
          "upgrade_action": "rollback",
          "enable": false
        },
        {
          "upgrade_action": "upgrade",
          "enable": true
        },
        {
          "upgrade_action": "upgradeAutoCommit",
          "enable": true
        }
      ],
      "enable": true,
      "is_parallel_upgrade": null
    },
    {
      "upgrade_type": "hotfix",
      "upgrade_action_list": null,
      "enable": false,
      "is_parallel_upgrade": null
    },
    {
      "upgrade_type": "inplace",
      "upgrade_action_list": [
        {
          "upgrade_action": "upgradeAutoCommit",
          "enable": true
        }
      ],
      "enable": true,
      "is_parallel_upgrade": null
    }
  ],
  "rollback_enabled": false,
  "source_version": "8.102.0",
  "target_version": null,
  "roll_upgrade_progress": {
    "not_fully_upgraded_az": "cn-southwest-244a,cn-southwest-244b,cn-southwest-244c",
    "already_upgraded_az": "",
    "az_description_map": {
      "cn-southwest-244c": "az3",
      "cn-southwest-244b": "az2",
      "cn-southwest-244a": "az1"
    }
  },
  "upgrade_candidate_versions": [
    "8.300.0",
    "8.103.0"
  ],
  "hotfix_upgrade_candidate_versions": [],
  "hotfix_rollback_candidate_versions": [],
  "hotfix_upgrade_infos": [],
  "hotfix_rollback_infos": []
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 5.4.2 Querying Upgrade Types and Versions That Instances Can Be Upgraded to in Batches

### Function

This API is used to query the available upgrade types and versions that instances can be upgraded to in batches. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

POST [https://{Endpoint}/v3/{project\\_id}/instances/db-upgrade/candidate-versions](https://{Endpoint}/v3/{project_id}/instances/db-upgrade/candidate-versions)

**Table 5-123** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None

## Request Parameters

**Table 5-124** Request body parameters

Parameter	Mandatory	Type	Description
instance_ids	No	Array of strings	Instance IDs for batch upgrade.

## Response Parameters

**Table 5-125** Response parameters

Parameter	Type	Description
upgrade_type_list	Array of <a href="#">Table 5-126</a> objects	Upgrade types. Array length: <b>0</b> to <b>1000</b>
target_version	String	Target version. The target version is only returned when the instance is in the rolling upgrade phase, or no information is returned. Minimum length: <b>0</b> Maximum characters: <b>1000</b>
upgrade_candidate_versions	Array of strings	Versions that can be upgraded, including major and minor versions. Minimum length: <b>0</b> Maximum characters: <b>1000</b> Array length: <b>0</b> to <b>1000</b>
hotfix_upgrade_infos	Array of <a href="#">Table 5-128</a> objects	Information about hot patch versions that can be installed. Array length: <b>0</b> to <b>1000</b>
hotfix_rollback_infos	Array of <a href="#">Table 5-128</a> objects	Information about hot patch versions that can be rolled back.

**Table 5-126** upgrade\_type\_list

Parameter	Type	Description
upgrade_type	String	Upgrade type. Value range: <ul style="list-style-type: none"> <li>● <b>grey</b>: Gray upgrade</li> <li>● <b>inplace</b>: In-place upgrade</li> <li>● <b>hotfix</b>: Hot patch installation</li> </ul>
enable	Boolean	Check if the upgrade type is available. <ul style="list-style-type: none"> <li>● <b>true</b>: yes.</li> <li>● <b>false</b>: no.</li> </ul>
upgrade_action_list	Array of <a href="#">Table 5-127</a> objects	Upgrade actions. Array length: <b>0</b> to <b>1000</b>
is_parallel_upgrade	Boolean	Whether intra-AZ parallel upgrade is supported. <ul style="list-style-type: none"> <li>● <b>true</b>: The current instance is in the rolling upgrade phase of the gray upgrade. The intra-AZ parallel upgrade is supported. Once this parameter is configured, it cannot be changed later.</li> <li>● <b>false</b>: The current instance is being upgraded. The intra-AZ parallel upgrade is not supported. Once this parameter is configured, it cannot be changed later.</li> <li>● <b>null</b>: The current instance is not in the upgrade process.</li> </ul>

**Table 5-127** upgrade\_action\_list

Parameter	Type	Description
upgrade_action	String	Upgrade action. Value range: <ul style="list-style-type: none"> <li>● <b>upgrade</b>: Upgrade</li> <li>● <b>upgradeAutoCommit</b>: Auto-commit</li> <li>● <b>commit</b>: Commit</li> <li>● <b>rollback</b>: Rollback</li> </ul>



Parameter	Type	Description
enable	Boolean	Check if the upgrade type is available. <ul style="list-style-type: none"> <li>• <b>true</b>: yes.</li> <li>• <b>false</b>: no.</li> </ul>

**Table 5-128** hotfix\_upgrade\_infos

Parameter	Type	Description
version	String	Hot patch version.
common_patch	String	Patch type. Value range: <ul style="list-style-type: none"> <li>• <b>common</b>: common patch</li> <li>• <b>certain</b>: custom patch</li> </ul>
backup_sensitive	Boolean	Whether the patch is related to backups. Value range: <ul style="list-style-type: none"> <li>• <b>true</b>: The patch is related to backups.</li> <li>• <b>false</b>: The patch is not related to backups.</li> </ul>
description	String	Description of the patch.

## Example Request

This API is used to query the available upgrade types and versions that instances can be upgraded to in batches. Before calling this API:

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/db-upgrade/candidate-versions
{
  "instance_ids" : [ "cc0ae5c47bf94834bf9e44138f7f995ain14", "aa0ae5c47bf94834bf9e44138f7f995ain14" ]
}
```

## Example Response

Available upgrade types and versions that instances can be upgraded to in batches queried.

```
{
  "upgrade_type_list": [
    {
      "upgrade_type": "grey",
      "upgrade_action_list": [
        {
          "upgrade_action": "commit",
```

```
        "enable": false
      },
      {
        "upgrade_action": "rollback",
        "enable": false
      },
      {
        "upgrade_action": "upgrade",
        "enable": true
      },
      {
        "upgrade_action": "upgradeAutoCommit",
        "enable": true
      }
    ],
    "enable": true,
    "is_parallel_upgrade": null
  },
  {
    "upgrade_type": "inplace",
    "upgrade_action_list": [
      {
        "upgrade_action": "upgradeAutoCommit",
        "enable": true
      }
    ],
    "enable": true,
    "is_parallel_upgrade": null
  },
  {
    "upgrade_type": "hotfix",
    "upgrade_action_list": [
      {
        "upgrade_action": "upgradeAutoCommit",
        "enable": false
      },
      {
        "upgrade_action": "rollback",
        "enable": false
      }
    ],
    "enable": false,
    "is_parallel_upgrade": null
  }
],
"upgrade_candidate_versions": [
  "8.302.90"
],
"target_version": null,
"hotfix_upgrade_infos": [],
"hotfix_rollback_infos": []
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 5.5 Backup Management

### 5.5.1 Configuring an Automated Backup Policy

#### Function

This API is used to configure an automated backup policy. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

#### URI

PUT [https://{Endpoint}/v3/{project\\_id}/instances/{instance\\_id}/backups/policy](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/backups/policy)

**Table 5-129** Parameter description

Name	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	Yes	Instance ID.

#### Request Parameters

**Table 5-130** Parameter description

Name	Mandatory	Type	Description
backup_policy	Yes	Object	Backup policy information. For details, see <a href="#">Table 5-131</a> .

**Table 5-131** backup\_policy field data structure description

Name	Mandatory	Type	Description
keep_days	Yes	Integer	Backup retention days. The value ranges from 1 to 36500.
start_time	Yes	String	<p>Backup time window. The creation of an automated backup will be triggered during the backup time window.</p> <p>The value cannot be empty. It must be a valid value in the "hh:mm-HH:MM" format. The current time is in the UTC format.</p> <p>The value of <b>HH</b> must be 1 greater than the value of <b>hh</b>. The values of <b>mm</b> and <b>MM</b> must be the same and must be <b>00</b>.</p> <p>Example value: 21:00-22:00</p> <p><b>NOTE</b> This parameter indicates the time period (in UTC format) during which backup is performed. For example, if the local backup time is 05:00-06:00 and the time zone is UTC+08:00, set the parameter value to <b>21:00-22:00</b>. If the time zone is UTC+04:00, set the value to <b>01:00-02:00</b>.</p>

Name	Mandatory	Type	Description
period	Yes	String	<p>Full backup period. An automated full backup is performed on the UTC date of each week.</p> <p>Value range: <b>1 to 7</b>. The value is a number separated by commas (,), indicating the days of the week.</p> <p>Example value:</p> <ul style="list-style-type: none"> <li>• <b>1,2,3,4</b> indicates that the backup period is Monday, Tuesday, Wednesday, and Thursday.</li> <li>• <b>1,2,3,4,5,6,7</b> indicates that an automated backup is performed every day from Monday to Sunday.</li> <li>• <b>1,3,5</b> indicates that an automated backup is performed on Monday, Wednesday, and Friday.</li> </ul> <p><b>NOTE</b> This parameter indicates the date (in UTC format) on which backup is performed. For example, if the local backup time is 05:00-06:00 on Monday and Tuesday, and the time zone is UTC+08:00, set the parameter value to <b>1,7</b>. If the time zone is UTC+04:00, set the value to <b>1,2</b>.</p>
differential_period	Yes	String	<p>Differential backup interval. Interval for automated differential backup.</p> <p>Its value can be <b>15, 30, 60, 180, 360, 720, or 1440</b>. The unit is minute.</p> <p>Example value: 30</p>

Name	Mandatory	Type	Description
rate_limit	No	Integer	Upload speed at which data is uploaded to OBS. <b>0 MB/s</b> indicates that the speed is not limited. The upload speed is related to the bandwidth. Value range: <b>0-1024</b> Minimum value: 0 MB/s
prefetch_block	No	Integer	Number of prefetch pages from the modified pages in the disk table file during a differential backup. When modified pages are adjacent (for example, with a bulk data load), you can set this parameter to a large value. When modified pages are scattered (for example, random update), you can set this parameter to a small value. The default value is <b>64</b> . Value: <b>1 to 8192</b> Minimum value: <b>1</b> . Maximum value: <b>8192</b>
file_split_size	No	Integer	Size by which full and differential backup files are split, in GB. The value is from <b>0 to 1024</b> , but it must be a multiple of 4. The default value is <b>4</b> . <b>0</b> indicates the size is not limited. Value range: <b>0-1024</b> Minimum value: <b>0</b> Maximum value: <b>1024</b>
filesplit_size	No	Integer	Size by which full and differential backup files are split. Deprecated field. Leave it blank.
enable_standby_backup	No	Boolean	Whether to enable backup on a standby node. (It is not suitable for single-node instances and instances earlier than 3.100.0.)

## Response Parameters

None

## Example Request

Configuring a backup policy for GaussDB (Set backup retention period to seven days and backup time window to 19:00-20:00)

```
PUT https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfdsae3435in14/backups/policy
{
  "backup_policy": {
    "keep_days": 7,
    "start_time": "19:00-20:00",
    "period": "1,2,3,4,5",
    "differential_period": "30",
    "rate_limit": 75,
    "prefetch_block": 64,
    "file_split_size": 4,
    "enable_standby_backup": false
  }
}
```

## Example Response

```
{}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 5.5.2 Querying Backups (v3.1)

### Function

This API is used to query backups of an instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

## Constraints

This API can be used to query only manual and automated full backups.

## URI

GET `https://{Endpoint}/v3.1/{project_id}/backups?instance_id={instance_id}&backup_id={backup_id}&backup_type={backup_type}&offset={offset}&limit={limit}&begin_time={begin_time}&end_time={end_time}`

**Table 5-132** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	No	String	<b>Explanation:</b> Instance ID, which uniquely identifies an instance and is used to query the backups of an instance. <b>Restrictions:</b> This parameter is mandatory when you query log backups. <b>Value range:</b> The value is compliant with the UUID format and can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None



Parameter	Mandatory	Type	Description
backup_id	No	String	<p><b>Explanation:</b> Backup ID, which uniquely identifies an instance backup and is used to query information about a backup.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value is compliant with the UUID format and can contain 36 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
backup_type	No	String	<p><b>Explanation:</b> Backup type.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• <b>auto:</b> instance-level automated full backup</li> <li>• <b>manual:</b> instance-level manual full backup</li> </ul> <p><b>Default value:</b> None</p>
offset	No	Integer	<p><b>Explanation:</b> Index offset. The query starts from the next piece of data indexed by this parameter.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [0, 10<sup>10</sup>-1]</p> <p><b>Default value:</b> 0 (indicating that the query starts from the first data record.)</p>

Parameter	Mandatory	Type	Description
limit	No	Integer	<p><b>Explanation:</b> Number of records to be queried.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [0, 100]</p> <p><b>Default value:</b> 100</p>
begin_time	No	String	<p><b>Explanation:</b> Query start time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between the calendar and the hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the offset is <b>+0800</b>. Example: 2022-05-09T16:01:10+0800.</p> <p><b>Restrictions:</b> This parameter can be used together with <b>end_time</b>. If <b>end_time</b> is not used, the backups created after <b>begin_time</b> are returned. If <b>end_time</b> is used, the backups created between <b>begin_time</b> and <b>end_time</b> are returned.</p> <p><b>Value range:</b> None</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory	Type	Description
end_time	No	String	<p><b>Explanation:</b> Query end time. The format is "yyyy-mm-ddThh:mm:ssZ" and the end time must be later than the start time. <b>T</b> is the separator between the calendar and the hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the offset is <b>+0800</b>. Example: 2022-05-09T16:01:10+0800.</p> <p><b>Restrictions:</b> This parameter can be used together with <b>begin_time</b>. If <b>begin_time</b> is not used, the backups created before <b>end_time</b> are returned. If <b>begin_time</b> is used, the backups created between <b>begin_time</b> and <b>end_time</b> are returned.</p> <p><b>Value range:</b> None</p> <p><b>Default value:</b> None</p>

## Request Parameters

None

## Response Parameters

Table 5-133 Parameter description

Parameter	Type	Description
backups	Array of objects	<p><b>Explanation:</b> Backup information. For details, see <a href="#">Table 5-134</a>.</p>

Parameter	Type	Description
total_count	Long	<p><b>Explanation:</b> Total number of backup files.</p> <p><b>Value range:</b> [0, 2<sup>63</sup> - 1]. The actual value depends on the number of backups in the backup list.</p>

**Table 5-134** backups field data structure description

Parameter	Type	Description
id	String	<p><b>Explanation:</b> Backup ID, which uniquely identifies a backup.</p> <p><b>Value range:</b> The value can contain 36 characters. Only letters and digits are allowed.</p>
name	String	<p><b>Explanation:</b> Backup name.</p> <p><b>Value range:</b> None</p>
description	String	<p><b>Explanation:</b> Description of the backup file.</p> <p><b>Value range:</b> The value can contain up to 256 characters but cannot contain carriage return characters. The following special characters are not allowed: ! &lt; " = ' &gt; &amp;</p>
begin_time	String	<p><b>Explanation:</b> Backup start time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between the calendar and the hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as <b>+0800</b>. Example: 2022-05-09T16:01:10+0800.</p> <p><b>Value range:</b> None</p>

Parameter	Type	Description
end_time	String	<b>Explanation:</b> Backup end time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between the calendar and the hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as <b>+0800</b> . Example: 2022-05-09T16:01:10+0800. <b>Value range:</b> None
status	String	<b>Explanation:</b> Backup status. <b>Value range:</b> <ul style="list-style-type: none"><li>● <b>BUILDING</b>: Backup in progress</li><li>● <b>COMPLETED</b>: Backup completed</li><li>● <b>FAILED</b>: Backup failed</li></ul>
size	Double	<b>Explanation:</b> Backup size in MB. <b>Value range:</b> The value is determined by the backup size.
type	String	<b>Explanation:</b> Backup type. <b>Value range:</b> <ul style="list-style-type: none"><li>● <b>auto</b>: instance-level automated full backup</li><li>● <b>manual</b>: instance-level manual full backup</li></ul>
datastore	Object	<b>Explanation:</b> Database information. For details, see <a href="#">Table 5-135</a> .
instance_id	String	<b>Explanation:</b> ID of the instance to which the backup belongs. <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.

**Table 5-135** datastore field data structure description

Parameter	Type	Description
type	String	<p><b>Explanation:</b> DB engine. The value is case-insensitive and can be:</p> <p><b>GaussDB</b></p> <p><b>Value range:</b> None</p>
version	String	<p><b>Explanation:</b> DB engine version. If this parameter is not specified, the latest version is used by default. To query supported DB engine versions, see <a href="#">Querying DB Engine Versions</a>.</p> <p><b>Value range:</b> None</p>

## Example Request

- Querying all backups

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.1/0483b6b16e954cb88930a360d2c4e663/backups
```

- Querying instances based on search criteria

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.1/0483b6b16e954cb88930a360d2c4e663/backups?instance_id=88be33e4c5a64ceba42b42da89310111in14&backup_id=88be1234c5a64ceba42b42da89310111br14&backup_type=auto&begin_time=2022-05-09T16:15:50+0800&end_time=2022-05-09T16:20:45+0800&limit=1&offset=1
```

## Example Response

Backups queried.

```
{
  "backups": [
    {
      "id": "a696cd25e4fc453aa503650225cece8bbr14",
      "name": "GaussDB-hly-ha-20220509080110906",
      "status": "FAILED",
      "size": 0.0,
      "type": "auto",
      "datastore": {
        "type": "GaussDB",
        "version": "1.4"
      },
      "begin_time": "2022-05-09T16:01:10+0800",
      "end_time": "2022-05-09T16:04:31+0800",
      "instance_id": "164abc6d35114095bb849d007b19db3bin14"
    },
    {
      "id": "5651c62a7f12461c98020dd3abfe24ccbr14",
      "name": "GaussDB-hly-master-20220509022658257",
```

```
    "status": "FAILED",
    "size": 0.0,
    "type": "auto",
    "datastore": {
      "type": "GaussDB",
      "version": "1.4"
    },
    "begin_time": "2022-05-09T10:26:58+0800",
    "end_time": "2022-05-09T10:30:17+0800",

    "instance_id": "fd26e3bf26e5467587eec857e4f66ef0in14"
  }
],
"total_count": 167
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 5.5.3 Querying Backups (v3)

### Function

This API is used to obtain backups of an instance. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

This API is used to query only manual and automated full backups.

### URI

```
GET https://{Endpoint}/v3/{project_id}/backups?
instance_id={instance_id}&backup_id={backup_id}&backup_type={backup_type}&of
fset={offset}&limit={limit}&begin_time={begin_time}&end_time={end_time}
```

**Table 5-136** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<p><b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
instance_id	No	String	<p><b>Explanation:</b> Instance ID, which uniquely identifies an instance and is used to query the backups of an instance.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>
backup_id	No	String	<p><b>Explanation:</b> Backup ID, which uniquely identifies an instance backup and is used to query information about a backup.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> The value is compliant with the UUID format and can contain 36 characters. Only letters and digits are allowed.</p> <p><b>Default value:</b> None</p>



Parameter	Mandatory	Type	Description
backup_type	No	String	<p><b>Explanation:</b> Backup type, which is used to query a certain type of backup.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• <b>auto:</b> automated full backup</li> <li>• <b>manual:</b> manual full backup</li> </ul> <p><b>Default value:</b> None</p>
offset	No	Integer	<p><b>Explanation:</b> Index offset. The query starts from the next piece of data indexed by this parameter.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [0, 10<sup>10</sup>-1]</p> <p><b>Default value:</b> 0 (indicating that the query starts from the first data record.)</p>
limit	No	Integer	<p><b>Explanation:</b> Number of records to be queried.</p> <p><b>Restrictions:</b> None</p> <p><b>Value range:</b> [0, 100]</p> <p><b>Default value:</b> 100</p>

Parameter	Mandatory	Type	Description
begin_time	No	String	<p><b>Explanation:</b></p> <p>Query start time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the offset is <b>+0800</b>. Example: 2022-05-09T16:01:10+0800.</p> <p><b>Restrictions:</b></p> <p>This parameter can be used together with <b>end_time</b>. If <b>end_time</b> is not used, the backups created after <b>begin_time</b> are returned. If <b>end_time</b> is used, the backups created between <b>begin_time</b> and <b>end_time</b> are returned.</p> <p><b>Value range:</b></p> <p>None</p> <p><b>Default value:</b></p> <p>None</p>

Parameter	Mandatory	Type	Description
end_time	No	String	<p><b>Explanation:</b> Query end time. The format is "yyyy-mm-ddThh:mm:ssZ" and the end time must be later than the start time. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the offset is <b>+0800</b>.</p> <p>Example: 2022-05-09T16:01:10+0800.</p> <p><b>Restrictions:</b> This parameter can be used together with <b>begin_time</b>. If <b>begin_time</b> is not used, the backups created before <b>end_time</b> are returned. If <b>begin_time</b> is used, the backups created between <b>begin_time</b> and <b>end_time</b> are returned.</p> <p><b>Value range:</b> None</p> <p><b>Default value:</b> None</p>

## Request Parameters

None

## Response Parameters

**Table 5-137** Response parameters

Parameter	Type	Description
backups	Array of objects	<p><b>Explanation:</b> Backup information. For details, see <a href="#">Table 5-138</a>.</p>

Parameter	Type	Description
total_count	Long	<p><b>Explanation:</b> Total number of backup files.</p> <p><b>Value range:</b> [0, 2<sup>63</sup> - 1]. The actual value depends on the number of backups in the backup list.</p>

**Table 5-138** backups field data structure description

Parameter	Type	Description
id	String	<p><b>Explanation:</b> Backup ID.</p> <p><b>Value range:</b> The value can contain 36 characters. Only letters and digits are allowed.</p>
name	String	<p><b>Explanation:</b> Backup name.</p> <p><b>Value range:</b> None</p>
description	String	<p><b>Explanation:</b> Description of the backup file.</p> <p><b>Value range:</b> The value can contain up to 256 characters but cannot contain carriage return characters. The following special characters are not allowed: ! &lt; " = ' &gt; &amp;</p>
begin_time	String	<p><b>Explanation:</b> Backup start time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as <b>+0800</b>. Example: 2022-05-09T16:01:10+0800.</p> <p><b>Value range:</b> None</p>

Parameter	Type	Description
end_time	String	<p><b>Explanation:</b> Backup end time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as <b>+0800</b>.</p> <p>Example: 2022-05-09T16:01:10+0800.</p> <p><b>Value range:</b> None</p>
status	String	<p><b>Explanation:</b> Backup status.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>● <b>BUILDING</b>: Backup in progress</li> <li>● <b>COMPLETED</b>: Backup completed</li> <li>● <b>FAILED</b>: Backup failed</li> </ul>
size	Double	<p><b>Explanation:</b> Backup size in MB.</p> <p><b>Value range:</b> The value is determined by the backup size.</p>
type	String	<p><b>Explanation:</b> Backup type.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>● <b>auto</b>: automated full backup</li> <li>● <b>manual</b>: manual full backup</li> </ul>
datastore	Object	<p><b>Explanation:</b> Database information. For details, see <a href="#">Table 5-139</a>.</p>
instance_id	String	<p><b>Explanation:</b> ID of the instance to which the backup belongs.</p> <p><b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed.</p>

**Table 5-139** datastore field data structure description

Parameter	Type	Description
type	String	<p><b>Explanation:</b> DB engine. The value is case-insensitive and can be:</p> <p><b>GaussDB</b></p> <p><b>Value range:</b> None</p>
version	String	<p><b>Explanation:</b> DB engine version. If this parameter is not specified, the latest version is used by default. To query supported DB engine versions, see <a href="#">Querying DB Engine Versions</a>.</p> <p>DB engine version. If this parameter is not specified, the latest version is used by default. To query supported DB engine versions, see <a href="#">Querying DB Engine Versions</a>.</p> <p><b>Value range:</b> None</p>

## Example Request

- Querying all backups

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/backups
```

- Querying instances based on search criteria

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/backups?instance_id=88be33e4c5a64ceba42b42da89310111in14&backup_id=88be1234c5a64ceba42b42da89310111br14&backup_type=auto&begin_time=2022-05-09T16:15:50+0800&end_time=2022-05-09T16:20:45+0800&limit=1&offset=1
```

## Example Response

```
{
  "backups": [
    {
      "id": "a696cd25e4fc453aa503650225cece8bbr14",
      "name": "GaussDB-hly-ha-20220509080110906",
      "description": null,
      "status": "FAILED",
      "size": 0.0,
      "type": "auto",
      "datastore": {
        "type": "GaussDB",
        "version": "1.4"
      },
      "begin_time": "2022-05-09T16:01:10+0800",
      "end_time": "2022-05-09T16:04:31+0800",
      "instance_id": "164abc6d35114095bb849d007b19db3bin14"
    }
  ]
}
```

```
    },  
    {  
      "id": "5651c62a7f12461c98020dd3abfe24ccbr14",  
      "name": "GaussDB-hly-master-20220509022658257",  
      "description": null,  
      "status": "FAILED",  
      "size": 0.0,  
      "type": "auto",  
      "datastore": {  
        "type": "GaussDB",  
        "version": "1.4"  
      },  
      "begin_time": "2022-05-09T10:26:58+0800",  
      "end_time": "2022-05-09T10:30:17+0800",  
      "instance_id": "fd26e3bf26e5467587eec857e4f66ef0in14"  
    }  
  ],  
  "total_count": 167  
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 5.5.4 Querying Instances That Can Be Used for Backups and Restorations

### Function

This API is used to query the instances that can be used for backups and restorations. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

The **restore\_time** and **backup\_id** parameters cannot be both left blank.

### URI

GET [https://{Endpoint}/v3/{project\\_id}/restorable-instances](https://{Endpoint}/v3/{project_id}/restorable-instances)

**Table 5-140** Parameter description

Parameter	Mandatory	Description
project_id	Yes	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
backup_id	No	Instance backup ID. You can use the backup ID to query the instance topology information and filter the queried instances (including the number of nodes and replicas of instances). If this parameter is left blank, <b>restore_time</b> is used.
restore_time	No	Specific point of time. If the backup ID is left blank, this parameter is used to query the instance topology information and filter the queried instances.
source_instance_id	No	ID of the DB instance to be restored. <ul style="list-style-type: none"><li>• If <b>backup_id</b> is not left blank, <b>source_instance_id</b> is optional.</li><li>• If <b>backup_id</b> is left blank and <b>restore_time</b> is not left blank, <b>source_instance_id</b> is mandatory.</li><li>• <b>source_instance_id</b> and <b>backup_id</b> cannot be both left blank.</li></ul>
offset	No	Index offset. If <b>offset</b> is set to <i>N</i> , the resource query starts from the <i>N</i> +1 data entry. The default value is <b>0</b> , indicating that the query starts from the first data entry. The value cannot be a negative number.
limit	No	Number of records to be queried. The default value is <b>100</b> . The value cannot be a negative number. The minimum value is <b>1</b> and the maximum value is <b>100</b> .



## Request Parameters

None

## Response Parameters

**Table 5-141** Parameter description

Parameter	Type	Description
instances	Array of Objects	Instances that can be used for backups and restorations. For details, see <a href="#">Table 5-142</a> .
total_count	Integer	Total number of queried instances.

**Table 5-142** instances parameter data structure description

Parameter	Type	Description
instance_name	String	DB instance name.
instance_id	String	Instance ID.
volume_type	String	Storage type.
data_volume_size	Number	Storage space, in GB
version	String	Instance version
mode	String	Deployment model. <ul style="list-style-type: none"> <li>• <b>Ha</b>: primary/standby deployment</li> <li>• <b>Independent</b>: independent deployment</li> </ul>
instance_mode	String	Instance model. <ul style="list-style-type: none"> <li>• <b>enterprise</b>: enterprise edition</li> <li>• <b>standard</b>: standard edition</li> <li>• <b>basic</b>: basic edition</li> </ul>

## Example Request

Querying instances that can be used for backups and restorations

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0611f1bd8b00d5d32f17c017f15b599f/restorable-instances?source_instance_id=88efb3753dc844829c380edff7798eecin14&backup_id=d3f223e9c35d450ea0692bdbff686e45br14
```

## Example Response

Instances that can be used for backups and restorations queried.

```
{
  "instances": [
    {
      "instance_name": "gaussdb",
      "instance_id": "3ea6d6463c9a4baf9a47c5b74464307cin14",
      "volume_type": "ULTRAHIGH",
      "data_volume_size": 500,
      "version": "8.102",
      "mode": "Ha",
      "instance_mode": "enterprise"
    }
  ],
  "total_count": 1
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

## 5.5.5 Querying Information About the Original Instance Based on a Specific Point of Time or a Backup File

### Function

This API is used to query the information of the original instance based on a specific point of time or a backup file. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### Constraints

The **restore\_time** and **backup\_id** parameters cannot be both left blank.

- If **backup\_id** is not left blank, the query is performed based on **backup\_id**.
- If **backup\_id** is left blank, the query is performed based on **restore\_time**.
- If **restore\_time** and **backup\_id** are both specified, the query is performed based on **backup\_id**.

### URI

GET [https://{Endpoint}/v3/{project\\_id}/instance-snapshot?  
instance\\_id={instance\\_id}&restore\\_time={restore\\_time}&backup\\_id={backup\\_id}](https://{Endpoint}/v3/{project_id}/instance-snapshot?instance_id={instance_id}&restore_time={restore_time}&backup_id={backup_id})

**Table 5-143** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_id	No	String	Original instance ID. If <b>restore_time</b> is specified, <b>instance_id</b> is mandatory.
restore_time	No	String	This parameter is mandatory when you want to view DB instance backups based on a specified point in time. Instance information at a time point in the UNIX timestamp format, in milliseconds. The time zone is UTC.
backup_id	No	String	Backup ID. This parameter is mandatory when a DB instance is restored using a backup ID.

## Request Parameters

None

## Response Parameters

**Table 5-144** Parameter description

Parameter	Type	Description
cluster_mode	String	Instance deployment model. Value: <ul style="list-style-type: none"><li>• <b>Ha</b>: primary/standby deployment</li><li>• <b>Independent</b>: independent deployment</li><li>• <b>Combined</b>: combined deployment</li></ul>
instance_model	String	Instance model. Value: <ul style="list-style-type: none"><li>• <b>basic</b>: basic edition</li><li>• <b>standard</b>: standard edition</li><li>• <b>enterprise</b>: enterprise edition</li></ul>
data_volume_size	String	Storage space, in GB.
solution	String	Solution template type. Value: <ul style="list-style-type: none"><li>• <b>single</b>: single node</li><li>• <b>double</b>: 1 primary + 1 standby (2 nodes)</li><li>• <b>triset</b>: 1 primary + 2 standby</li><li>• <b>logger</b>: 1 primary + 1 standby + 1 log</li><li>• <b>loggerdorado</b>: 1 primary + 1 standby + 1 log (shared storage)</li><li>• <b>quadruset</b>: 1 primary + 3 standby</li><li>• <b>hws</b>: distributed (independent deployment)</li></ul>
node_num	Integer	Number of nodes.
coordinator_num	Integer	Number of CNs.
sharding_num	Integer	Number of shards.
replica_num	Integer	Number of replicas.
engine_version	String	Engine version.

## Example Request

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instance-snapshot
```

## Example Response

```
{
  "cluster_mode": "Ha",
  "instance_mode": "enterprise",
  "data_volume_size": "200",
  "solution": "triset",
  "node_num": 3,
  "coordinator_num": 0,
  "sharding_num": 3,
  "replica_num": 3,
  "engine_version": "2.2.90"
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

# 5.6 Recycle Bin

## 5.6.1 Querying All DB Engine Instances in the Recycle Bin

### Function

This API is used to query all DB engine instances in the recycle bin. Before calling this API:

- Learn how to [authenticate](#) this API.
- Obtain the required [region and endpoint](#).

### URI

GET [https://{Endpoint}/v3/{project\\_id}/recycle-instances](https://{Endpoint}/v3/{project_id}/recycle-instances)

**Table 5-145** Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	<b>Explanation:</b> Project ID of a tenant in a region. For details about how to obtain the value, see <a href="#">Obtaining a Project ID</a> . <b>Restrictions:</b> None <b>Value range:</b> The value can contain 32 characters. Only letters and digits are allowed. <b>Default value:</b> None
instance_name	No	String	DB instance name.
offset	No	Integer	Index offset. If <b>offset</b> is set to <i>N</i> , the resource query starts from the <i>N</i> +1 data entry. The default value is <b>0</b> , indicating that the query starts from the first data entry. The value cannot be a negative number. For example, if this parameter is set to <b>0</b> and <b>limit</b> is set to <b>10</b> , only the 1st to 10th records are displayed.
limit	No	Integer	Number of records to be queried. The default value is <b>50</b> . The value cannot be a negative number. The minimum value is <b>1</b> and the maximum value is <b>50</b> . For example, if this parameter is set to <b>10</b> , a maximum of 10 records can be displayed.

## Request Parameters

None

## Response Parameters

**Table 5-146** Parameter description

Parameter	Type	Description
total_count	Integer	Total number of records.
instances	Array of objects	Information about all instances in the recycle bin. For details, see <a href="#">Table 5-147</a> .

**Table 5-147** instances field data structure description

Parameter	Type	Description
id	String	Instance ID.
name	String	DB instance name.
ha_mode	String	Deployment model. Value: <ul style="list-style-type: none"><li>• <b>Ha</b>: primary/standby deployment</li><li>• <b>Independent</b>: independent deployment</li><li>• <b>Combined</b>: combined deployment</li></ul>
engine_name	String	Engine name.
engine_version	String	Engine version.
pay_model	String	Billing mode. <b>0</b> : pay-per-use <b>1</b> : yearly/monthly
created_at	String	Creation time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the offset is shown as <b>+0800</b> .
deleted_at	String	Deletion time in the "yyyy-mm-ddThh:mm:ssZ" format. <b>T</b> is the separator between calendar and hourly notation of time. <b>Z</b> indicates the time zone offset. For example, in the Beijing time zone, the offset is shown as <b>+0800</b> .
volume_type	String	Disk type. Value range: <ul style="list-style-type: none"><li>• <b>high</b>: high I/O</li><li>• <b>ultrahigh</b>: ultra-high I/O</li><li>• <b>essd</b>: extreme SSD</li></ul>

Parameter	Type	Description
volume_size	String	Disk size.
data_vip	String	Private IP address.
enterprise_project_id	String	Enterprise project ID. The value <b>0</b> indicates the default enterprise project.
enterprise_project_name	String	Enterprise project name.
backup_level	String	Backup level.
recycle_backup_id	String	Backup ID. (Backup ID in the backup information generated when the instance is deleted.)
recycle_status	String	Backup status in the recycle bin. Value range: <ul style="list-style-type: none"><li>● <b>Running</b></li><li>● <b>Active</b></li></ul>
mode	String	Product type. Value range: <ul style="list-style-type: none"><li>● <b>basic</b>: basic edition</li><li>● <b>standard</b>: standard edition</li><li>● <b>enterprise</b>: enterprise edition</li></ul>

## Example Request

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/619d3e78f61b4be68bc5aa0b59edcf7b/recycle-instances
```

## Example Response

```
{
  "total_count": 2,
  "instances": [ {
    "id": "21f20e55999947a9938ad0453b757e72in14",
    "name": "gaussdbv5_CCv20_bms_default_1_20220827012852",
    "ha_mode": "Ha",
    "engine_name": "gaussdbv5",
    "engine_version": "2.3.0",
    "pay_model": 0,
    "created_at": "2022-08-09T09:26:44.000+08:00",
    "deleted_at": "2022-08-09T09:26:44.000+08:00",
    "volume_type": "localssd",
    "volume_size": "",
    "data_vip": "25.213.0.41 / 25.213.0.188 / 25.213.0.101 / 25.213.0.82",
    "enterprise_project_id": 0,
    "enterprise_project_name": null,
    "backup_level": null,
    "recycle_backup_id": "00b755ed678e41d18c74b28e2ad41bdcb14",
    "recycle_status": "Active",
    "mode": "enterprise"
  }
]
```



```
}, {  
  "id": "a9df5b52b32e4571b1b6425a78a32956in14",  
  "name": "ecs-lxy-backup-3",  
  "ha_mode": "Ha",  
  "engine_name": "gaussdbv5",  
  "engine_version": "2.3.0",  
  "pay_model": 0,  
  "created_at": "2022-08-09T09:26:44.000+08:00",  
  "deleted_at": "2022-08-09T09:26:44.000+08:00",  
  "volume_type": "ultrahigh",  
  "volume_size": "",  
  "data_vip": "173.202.10.246 / 173.202.10.205 / 173.202.10.175",  
  "enterprise_project_id": 0,  
  "enterprise_project_name": null,  
  "backup_level": null,  
  "recycle_backup_id": "ef393704ef0045d1b6226b6f2cdc48a7br14",  
  "recycle_status": "Active",  
  "mode": "enterprise"  
}]  
}
```

## Status Code

- Normal  
200
- Abnormal  
For details, see [Status Codes](#).

## Error Code

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

# 6 Permissions Policies and Supported Actions

---

## 6.1 Introduction

This chapter describes how to use Identity and Access Management (IAM) to implement fine-grained permissions management for your GaussDB. If your Huawei Cloud account does not need individual IAM users, then you may skip over this chapter.

By default, new IAM users do not have permissions assigned. You need to add a user to one or more groups, and attach permissions policies or roles to these groups. Users inherit permissions from the groups to which they are added and can perform specified operations on cloud services based on the permissions.

You can grant users permissions by using **roles** and **policies**. Roles are a type of coarse-grained authorization mechanism that defines permissions related to user responsibilities. Policies define API-based permissions for operations on specific resources under certain conditions, allowing for more fine-grained, secure access control of cloud resources.

### NOTE

Policy-based authorization is useful if you want to allow or deny the access to an API.

An account has all the permissions required to call all APIs, but IAM users must be assigned the required permissions. The permissions required for calling an API are determined by the actions supported by the API. Only users who have been granted permissions allowing the actions can call the API successfully. For example, if an IAM user queries GaussDB instances using an API, the user must have been granted permissions that allow the **GaussDB:instance:list** action.

## Supported Actions

System-defined policies can be directly used in IAM. You can also create custom policies and use them to supplement system-defined policies, implementing more refined access control. Actions 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: APIs that will be called for performing certain operations.
- Actions: Added to a custom policy to control permissions for specific operations.
- Related actions: Actions which a specific action depends on to take effect. When assigning permissions for the action to a user, you also need to assign permissions for the dependent actions.
- IAM projects or enterprise projects: Type of projects in which policies can be used to grant permissions. A policy can be applied to IAM projects, enterprise projects, or both. Policies that contain actions supporting both IAM and enterprise projects can be assigned to user groups and take effect in both IAM and Enterprise Management. Policies that only contain actions supporting IAM projects can be assigned to user groups and only take effect for IAM. Such policies will not take effect if they are assigned to user groups in Enterprise Management. For details about the differences between IAM and enterprise projects, see [Differences Between IAM Projects and Enterprise Projects](#).

 **NOTE**

The check mark (✓) and cross symbol (x) indicate that an action takes effect or does not take effect for the corresponding type of projects.

## 6.2 GaussDB Actions

**Table 6-1** DB instance management

Permission	Action	Authorization Scope	API
Creating a DB instance	gaussdb:instance:create gaussdb:param:list	<ul style="list-style-type: none"> <li>• Supported: IAM projects</li> <li>• Supported: Enterprise projects</li> </ul>	POST /v3/{project_id}/instances
Deleting a DB instance	gaussdb:instance:delete	<ul style="list-style-type: none"> <li>• Supported: IAM projects</li> <li>• Supported: Enterprise projects</li> </ul>	DELETE /v3/{project_id}/instances/{instance_id}
Querying DB instances	gaussdb:instance:list	<ul style="list-style-type: none"> <li>• Supported: IAM projects</li> <li>• Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/instances

Permission	Action	Authorization Scope	API
Resetting a database password	gaussdb:instance:modifyPasswd	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	POST /v3/{project_id}/instances/{instance_id}/password
Changing a DB instance name	gaussdb:instance:rename	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	PUT /v3/{project_id}/instances/{instance_id}/name
Rebooting a DB instance	gaussdb:instance:restart	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	POST /v3/{project_id}/instances/{instance_id}/restart
Switching roles of the primary and standby DN in shards	gaussdb:instanceswitchShard	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	POST /v3/{project_id}/instances/{instance_id}/switch-shard
Querying the components of a DB instance	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/instances/{instance_id}/components
Changing vCPUs and memory of a DB instance	gaussdb:instance:modifySpec	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	PUT /v3/{project_id}/instance/{instance_id}/flavor
Checking whether host load is unbalanced due to a primary/standby switchover	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/instances/{instance_id}/balance
Querying solution template settings	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/deployment-form

Permission	Action	Authorization Scope	API
Querying EIPs bound to a DB instance	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/instances/{instance_id}/public-ips?offset={offset}&limit={limit}
Validating password strength	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	POST /v3/{project_id}/weak-password-verification
Binding or unbinding an EIP	gaussdb:instance:bindPublicIp	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	POST /v3/{project_id}/instances/{instance_id}/nodes/{node_id}/public-ip
Querying the SSL certificate download address of a DB instance	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/instances/{instance_id}/ssl-cert/download-link
Querying the instance quotas of a tenant	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/project-quotas?type={type}

**Table 6-2** Parameter configuration

Permission	Action	Authorization Scope	API
Obtaining parameter templates	gaussdb:param:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/configurations?offset={offset}&limit={limit}

Permission	Action	Authorization Scope	API
Obtaining parameters of a specified DB instance	gaussdb:param:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/instances/{instance_id}/configurations
Modifying parameters of a specified DB instance	gaussdb:param:modify	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	PUT /v3/{project_id}/instances/{instance_id}/configurations
Creating a parameter template	gaussdb:param:create	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	POST /v3/{project_id}/configurations
Deleting a parameter template	gaussdb:param:delete	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	DELETE /v3/{project_id}/configurations/{config_id}
Querying details about a parameter template	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/configurations/{config_id}
Replicating a parameter template	gaussdb:param:create	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	POST /v3/{project_id}/configurations/{config_id}/copy
Resetting a parameter template	gaussdb:param:modify	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	POST /v3/{project_id}/configurations/{config_id}/reset
Obtaining the differences of two parameter templates	gaussdb:param:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	POST /v3/{project_id}/configurations/comparison

Permission	Action	Authorization Scope	API
Querying instances that a parameter template can be applied to	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/configurations/{config_id}/applicable-instances
Checking whether the parameter template name exists	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/configurations/name-validation?name={name}
Applying a parameter template	gaussdb:param:apply	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	PUT /v3/{project_id}/configurations/{config_id}/apply
Querying application records of a parameter template	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/configurations/{config_id}/applied-histories
Querying the change history of a parameter template	gaussdb:param:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/configurations/{config_id}/histories

**Table 6-3** Backup management

Permission	Action	Authorization Scope	API
Configuring an automated backup policy	gaussdb:instance:modifyBackupPolicy	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	PUT /v3/{project_id}/instances/{instance_id}/backups/policy
Querying an automated backup policy	gaussdb:backup:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/instances/{instance_id}/backups/policy

Permission	Action	Authorization Scope	API
Querying backups	gaussdb:backup:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/backups?instance_id={instance_id}&backup_id={backup_id}&backup_type={backup_type}&offset={offset}&limit={limit}&begin_time={begin_time}&end_time={end_time}
Creating a manual backup	gaussdb:backup:create	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	POST /v3/{project_id}/backups
Deleting a manual backup	gaussdb:backup:delete	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	DELETE /v3/{project_id}/backups/{backup_id}
Querying the restoration time range	gaussdb:backup:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/instances/{instance_id}/restore-time?date={date}
Restoring data to a new instance	gaussdb:instance:create	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	POST /v3/{project_id}/instances
Querying instances that can be used for backups and restorations	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/restorable-instances



Permission	Action	Authorization Scope	API
Querying information about the original DB instance based on a specific point of time or a backup file	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/instance-snapshot?instance_id={instance_id}&backup_id={backup_id}&restore_time={restore_time}

**Table 6-4** DB Engine versions and specifications

Permission	Action	Authorization Scope	API
Querying DB engine versions	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/datastore/versions
Querying database specifications	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/flavors?limit={limit}&offset={offset}&ha_mode={ha_mode}&version={version}&spec_code={spec_code}
Querying DB engines	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/datastores
Querying specifications that a DB instance can be changed to	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/instances/{instance_id}/available-flavors

**Table 6-5** Database and account management

Permission	Action	Authorization Scope	API
Creating a database	gaussdb:instance:createDatabase	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	POST /v3/{project_id}/instances/{instance_id}/database
Creating a database account	gaussdb:instance:createDatabaseUser	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	POST /v3/{project_id}/instances/{instance_id}/db-user
Creating a database schema	gaussdb:instance:createDatabaseSchema	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	POST /v3/{project_id}/instances/{instance_id}/schema
Configuring permissions of database accounts	gaussdb:instance:grantDatabasePrivilege	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	POST /v3/{project_id}/instances/{instance_id}/db-privilege
Resetting a password for a database account	gaussdb:instance:modifyDatabasePassword	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	PUT /v3/{project_id}/instances/{instance_id}/db-user/password
Querying databases	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/instances/{instance_id}/databases
Querying database users	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/instances/{instance_id}/db-users
Querying database schemas	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/instances/{instance_id}/schemas

**Table 6-6** Tag management

Permission	Action	Authorization Scope	API
Querying tags of a specific instance	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/instances/{instance_id}/tags
Querying tags of a project	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/tags
Querying predefined tags	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/predefined-tags
Adding tags for a DB instance	gaussdb:instance:dealTag	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	POST /v3/{project_id}/instances/{instance_id}/tags

**Table 6-7** Storage management

Permission	Action	Authorization Scope	API
Querying the storage usage of a DB instance	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/instances/{instance_id}/volume-usage
Querying the disk type of a DB instance	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/storage-type?version={version}&ha_mode={ha_mode}

**Table 6-8** Quota management

Permission	Action	Authorization Scope	API
Modifying enterprise project quotas	gaussdb:quota:modify	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	PUT /v3/{project_id}/enterprise-projects/quotas
Querying enterprise project quotas	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/enterprise-projects/quotas

**Table 6-9** Task management

Permission	Action	Authorization Scope	API
Obtaining task information	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/jobs?id={id}
Querying tasks	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/tasks
Deleting a task record	gaussdb:instance:deleteTaskRecord	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	DELETE /v3/{project_id}/jobs/{job_id}

**Table 6-10** Recycle bin

Permission	Action	Authorization Scope	API
Modifying the recycling policy	gaussdb:instance:setRecyclePolicy	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	PUT /v3/{project_id}/recycle-policy

Permission	Action	Authorization Scope	API
Querying the recycling policy	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/recycle-policy
Querying all DB engine instances in the recycle bin	gaussdb:instance:list	<ul style="list-style-type: none"> <li>Supported: IAM projects</li> <li>Supported: Enterprise projects</li> </ul>	GET /v3/{project_id}/recycle-instances

# 7 Appendix

## 7.1 Abnormal Request Results

Abnormal response description

Table 7-1 Abnormal response description

Name	Type	Description
error_code	String	Specifies the error returned when a task submission exception occurs. For details about error codes, see <a href="#">Error Codes</a> .
error_msg	String	Specifies the description of the error returned when a task submission exception occurs.

Response example

```
{
  "error_code": "DBS.200022",
  "error_msg": "The DB instance name already exists."
}
```

## 7.2 Status Codes

[Table 7-2](#) describes status codes.

**Table 7-2** Status codes

Status Code	Message	Description
100	Continue	The client should continue with its request. This interim response is used to inform the client that the initial part of the request has been received and has not yet been rejected by the server.
101	Switching Protocols	The protocol should be switched. The protocol can only be switched to a more advanced protocol. For example, the current HTTP protocol is switched to a later version.
200	OK	Request succeeded.
201	Created	The request for creating a resource or task has been fulfilled.
202	Accepted	The request has been accepted, but the processing has not been completed.
203	Non-Authoritative Information	Unauthorized information. The request is successful.
204	NoContent	The server has successfully processed the request, but has not returned any content. The 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.
206	Partial Content	The server has processed certain GET requests.
300	Multiple Choices	There are multiple options for the location of the requested resource. The response contains a list of resource characteristics and addresses from which the user or user agent (such as a browser) can choose the most appropriate one.
301	Moved Permanently	The requested resource has been assigned a new permanent URI, and the new URI is contained in the response.
302	Found	The requested resource was temporarily moved.
303	See Other	The response to the request can be found under a different URI and should be retrieved using a GET or POST method.

Status Code	Message	Description
304	Not Modified	The requested resource has not been modified. In such a case, there is no need to retransmit the resource since the client still has a previously-downloaded copy.
305	Use Proxy	The requested resource must be accessed through a proxy.
306	Unused	The HTTP status code is no longer used.
400	BadRequest	Invalid request. The client should not repeat the request without modifications.
401	Unauthorized	The status code is returned after the client provides the authentication information, indicating that the authentication information is incorrect or invalid.
402	Payment Required	This status code is reserved for future use.
403	Forbidden	The server understood the request, but is refusing to fulfill it. The client should not repeat the request without modifications.
404	NotFound	The requested resource cannot be found. The client should not repeat the request without modifications.
405	MethodNotAllowed	The method specified in the request is not supported for the requested resource. The client should not repeat the request without modifications.
406	Not Acceptable	The server cannot fulfill the request according to the content characteristics of the request.
407	Proxy Authentication Required	This status code is similar to 401, but indicates that the client must first authenticate itself with the proxy.
408	Request Time-out	The server timed out waiting for the request. The client may repeat the request without modifications at any later time.



Status Code	Message	Description
409	Conflict	The request could not be processed due to a conflict.  This status code indicates that the resource that the client attempts to create already exists, or the request fails to be processed because of the update of the conflict request.
410	Gone	The requested resource is no longer available. The requested resource has been deleted permanently.
411	Length Required	The server refuses to process the request without a defined Content-Length.
412	Precondition Failed	The server does not meet one of the preconditions that the requester puts on the request.
413	Request Entity Too Large	The request is larger than that a server is able to process. The server may close the connection to prevent the client from continuing the request. If the server temporarily cannot process the request, the response will contain a Retry-After header field.
414	Request-URI Too Large	The URI provided was too long for the server to process.
415	Unsupported Media Type	The server is unable to process the media format in the request.
416	Requested range not satisfied	The requested range is invalid.
417	Expectation Failed	The server fails to meet the requirements of the Expect request-header field.
422	UnprocessableEntity	The request is well-formed but is unable to be processed due to semantic errors.
429	TooManyRequests	The client has sent more requests than its rate limit is allowed within a given amount of time, or the server has received more requests than it is able to process within a given amount of time. In this case, it is advisable for the client to re-initiate requests after the time specified in the Retry-After header of the response expires.
500	InternalServerError	The server is able to receive the request but it could not understand the request.

Status Code	Message	Description
501	Not Implemented	The server does not support the requested function.
502	Bad Gateway	The server acting as a gateway or proxy receives an invalid response from a remote server.
503	ServiceUnavailable	The requested service is invalid. The client should not repeat the request without modifications.
504	ServerTimeout	The request cannot be fulfilled within a given time. The response will reach the client only if the request carries a timeout parameter.
505	HTTP Version not supported	The server does not support the HTTP protocol version used in the request.

## 7.3 Error Codes

The following table describes error codes.

**Table 7-3** Error code description

Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.200001	Parameter error.	Parameter error.	Check whether the transferred parameters or URLs are correct.
400	DBS.200004	Parameter error.	Parameter error.	Check whether the transferred parameters or URLs are correct.
400	DBS.200006	The request is null. Enter a request parameter.	The request is null. Enter a request parameter.	Enter a request parameter and try again later.
400	DBS.200021	Invalid DB instance name.	Invalid DB instance name.	Enter a valid instance name according to the instance name description.
400	DBS.200023	Storage space is out of range.	Storage space is out of range.	Check whether the storage space is correct.

Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.200024	Invalid region.	Invalid region.	Enter a correct region ID.
400	DBS.200025	Invalid AZ.	Invalid AZ.	Check whether the AZ parameter is correct and whether the AZ exists.
400	DBS.200026	Invalid storage type.	Invalid storage type.	Check whether the storage type is correct and meets the requirements.
400	DBS.200027	Storage space must be a multiple of 10.	Storage space must be a multiple of 10.	Check whether the storage space is a multiple of 10.
400	DBS.200040	The DB engine or version is not supported.	The DB engine or version is not supported.	Check whether the DB engine or version is supported.
400	DBS.200041	Invalid database version.	Invalid database version.	Check whether the database version is supported.
400	DBS.200042	The DB engine does not exist.	The DB engine or version is not supported.	Check whether the database type or version is correct.
400	DBS.200043	Invalid synchronize model.	Invalid synchronize model.	Check whether the synchronization mode is correct.
400	DBS.200048	Invalid VPC ID.	Invalid VPC ID.	Check whether the VPC ID is correct.
400	DBS.200049	Invalid subnet ID.	Invalid subnet ID.	Check whether the subnet ID is correct.
400	DBS.200051	Invalid HA mode.	Invalid HA mode.	Check whether the HA mode is correct.
400	DBS.200052	Invalid database root password.	Invalid database root password.	Check whether the password of user <b>root</b> meets the requirements.
400	DBS.200053	The selected specifications do not exist.	The selected specifications do not exist.	Check whether the selected specifications are correct.

Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.200054	Invalid specifications.	Invalid specifications.	Check whether the specification code is correct, whether the specification exists in the current AZ, and whether the specification is supported.
400	DBS.200056	The maximum number of nodes has been reached.	The maximum number of nodes has been reached.	Check whether the maximum number of nodes has been reached.
400	DBS.200063	Invalid cluster mode.	Invalid cluster mode.	Check whether the cluster mode is valid.
400	DBS.200068	This is a weak password. Please enter a strong password.	This is a weak password. Enter a strong password.	Enter a strong password as promoted.
400	DBS.200085	The quota is insufficient.	The quota is insufficient.	Check whether the quota is sufficient.
400	DBS.200086	This operation is not allowed by the DB instance status.	This operation is not allowed by the DB instance status.	Check whether the instance status or the ongoing operation on the instance conflicts with the request.
400	DBS.200087	The number of tags added for the DB instance has reached the quota.	The number of tags added for the DB instance has reached the quota.	Check whether the number of tags added for the DB instance has reached the quota.
400	DBS.200098	The tag already exists.	The tag already exists.	Check whether the tag exists.
400	DBS.200175	The engine version is not permitted to enable force switch.	Switchover cannot be enabled in the current engine version.	Check whether the engine version is later than 1.2.2.
400	DBS.200203	Failed to query the DB instance.	Failed to query the DB instance.	Check whether the queried instance exists or query the instance again.

Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.20 0302	Storage space must be a multiple of 10.	Storage space must be a multiple of 10.	Check whether the storage space is a multiple of 10.
400	DBS.20 0303	The scale-up times have reached the maximum value.	The scale-up times have reached the maximum value.	Check whether the number of scale-out times reaches the maximum value.
400	DBS.20 0306	The new storage space must be greater than or equal to the original storage space.	The new storage space must be greater than or equal to the original storage space.	Check whether the new storage space must be greater than or equal to the original storage space.
400	DBS.20 0308	The new storage space after scaling up cannot be greater than that of the primary DB instance.	The new storage space after scaling up cannot be greater than that of the primary DB instance.	Check whether the new storage space after scaling up is greater than that of the primary instance.
400	DBS.20 0405	Parameter error.	Parameter error.	Check whether the transferred parameters or URLs are correct.
400	DBS.20 0461	The parameter value is out of range.	The parameter value is out of range.	Check whether the parameter value is out of range.
400	DBS.20 0475	New password should not equal to the old one.	New password should not equal to the old one.	Check whether the new password meets the requirements.
400	DBS.20 0504	Invalid database version.	Invalid database version.	Check whether the database version is supported.
400	DBS.20 0506	Invalid KMS key ID.	Invalid KMS.	Check whether the KMS is correct.

Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.20 0507	The KMS key is invalid or has been deleted.	The KMS key is invalid or has been deleted.	Check whether the KMS is correct.
400	DBS.20 0543	The job does not exist.	The job does not exist.	Check whether the job is correct.
400	DBS.20 0823	The database does not exist.	The database does not exist.	Check whether the database name is valid.
400	DBS.20 0824	The database account does not exist.	The database account does not exist.	Check whether the database username is valid.
400	DBS.20 0825	Modifying permission is not allowed on read replicas.	Modifying permission is not allowed on read replicas.	Check whether you have the permission to perform this operation.
400	DBS.20 0943	Agent async request failed.	Failed to invoke the agent asynchronous request.	Check whether the Agent connection is normal.
400	DBS.20 1004	The backup type does not exist.	The backup type does not exist.	Check the backup type.
400	DBS.20 1014	This operation is not allowed by the DB instance status.	This operation is not allowed by the DB instance status.	Check whether the instance status or the ongoing operation on the instance conflicts with the request.
400	DBS.20 1019	The restoration task does not exist.	The restoration task does not exist.	Check whether there is a restoration task or data confirmation after restoration is required.
400	DBS.20 1035	The database name must be different from the original and target database names.	The database name must be different from the original and target database names.	Check whether the database name is correct.

Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.20 1101	Invalid backup cycle.	Invalid backup cycle.	Check whether the backup cycle is correct and meets the requirements.
400	DBS.20 1103	Invalid backup start time.	Invalid backup start time.	Check whether the backup start time meets the requirements and whether the requirements between the backup start time and end time are correct.
400	DBS.20 1106	Invalid retention days.	Invalid retention days.	Check whether the retention days are valid.
400	DBS.20 1203	The backup file does not exist.	The backup file does not exist.	Check whether the backup exists and matches the instance.
400	DBS.20 1207	The DB engine or version is not supported.	The DB engine or version is not supported.	Check whether the DB engine or version is supported.
400	DBS.20 1208	The operation is not allowed by the backup status.	The operation is not allowed by the backup status.	View the operation constraints and perform operations according to the constraints.
400	DBS.20 1210	Invalid backup name.	Invalid backup name.	Check whether the backup object name is valid.
400	DBS.21 2002	Incorrect parameter group quota.	Incorrect parameter template quota.	Check whether parameter template quota is configured correctly.
400	DBS.21 2003	Operation not allowed.	Operation not allowed.	Check whether the instance status or the ongoing operation on the instance conflicts with the request.
400	DBS.21 2004	Parameter group update error.	Parameter template update error.	Check whether the parameter is correctly specified.
400	DBS.21 2005	The node does not belong to the group.	The node does not belong to the group.	Check whether the node and the group to which the node belongs are correct.
400	DBS.21 2007	The DB engine does not exist.	The DB engine does not exist.	Check whether the DB engine is correct.

Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.21 2008	The DB engine is not supported.	The DB engine is not supported.	Check whether the DB engine is supported.
400	DBS.21 2009	Task processing failed.	Task processing failed.	Try again later or contact technical support.
400	DBS.21 2010	The parameter group is being applied.	The parameter template is being applied.	Try again later.
400	DBS.21 2011	Application failed.	Application failed.	Try again or contact technical support.
400	DBS.21 2012	The parameter does not exist.	The parameter does not exist.	Check whether the parameter is correctly specified.
400	DBS.21 2014	The node does not have a default parameter group.	The node does not have a default parameter template.	Check the default parameter template.
400	DBS.21 2015	Partial success.	Partial success	Check the failure cause or contact technical support.
400	DBS.21 2016	Parameter update failed.	Parameter update failed.	Check whether the parameter is correctly specified.
400	DBS.21 2017	Invalid parameter.	Invalid parameter.	Check whether the parameter is correctly specified.
400	DBS.21 2025	Update failed.	Update failed.	Check the update failure cause or contact technical support.
400	DBS.21 2030	The parameter template name already exists.	The parameter template name already exists.	Check whether the parameter is correctly specified.
400	DBS.21 2032	The parameter template has been applied.	The parameter template has been applied.	Check whether the parameter template is correct.



Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.21 2037	Parameters are incorrectly set.	Parameters are incorrectly set.	Check whether the parameter settings are correct.
400	DBS.21 6028	Insufficient internal resource quota.	Insufficient internal resource quota.	Check whether the internal resource quota is sufficient.
400	DBS.21 6030	The queried node does not belong to the current instance.	The queried node does not belong to the current instance.	Check whether the node information is correct.
400	DBS.28 0001	Parameter error.	Parameter error.	Check whether the parameter is correctly specified.
400	DBS.28 0006	The request is null. Enter a request parameter.	The request is null. Enter a request parameter.	Check whether the request parameter is correct.
400	DBS.28 0124	Invalid backup file id	The backup file ID is invalid.	Check whether the backup file ID is valid.
400	DBS.28 0127	Invalid backup description.	Invalid backup description.	Check whether the backup description is valid.
400	DBS.28 0128	The database information of the DB instance is not found. Check the database name to see whether the instance database information exists.	The database information of the DB instance cannot be found.	Check whether the database name is correct.
400	DBS.28 0203	This is a weak password. Please enter a strong password.	This is a weak password. Enter a strong password.	Enter a strong password as promoted.

Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.28 0204	Invalid parameter.	Invalid parameter.	Check whether the parameter is correctly specified.
400	DBS.28 0214	Invalid retention days.	Invalid retention days.	Check whether the retention days are valid.
400	DBS.28 0215	Invalid backup cycle.	Invalid backup cycle.	Check whether the backup cycle is valid.
400	DBS.28 0216	Invalid backup start time.	Invalid backup start time.	Check whether the backup start time is valid.
400	DBS.28 0234	Invalid DB instance name.	Invalid DB instance name.	Check whether the instance name is valid.
400	DBS.28 0235	Invalid database type.	Invalid database type.	Check whether the database type is correct.
400	DBS.28 0236	Invalid database version.	Invalid database version.	Check whether the database version is correct.
400	DBS.28 0237	Datastore not specified.	Datastore not specified.	Check whether the datastore is valid.
400	DBS.28 0238	The DB engine or version is not supported.	The DB engine or version is not supported.	Check whether the DB engine or version is supported.
400	DBS.28 0239	Invalid specifications.	Invalid specifications.	Check whether the selected specifications are correct.
400	DBS.28 0241	Invalid storage type.	Invalid storage type.	Check whether the storage type is correct and meets the requirements.
400	DBS.28 0242	Storage space is out of range.	Storage space is out of range.	Check whether the storage space is correct.
400	DBS.28 0246	Invalid database root password.	Invalid database root password.	Check whether the password of user <b>root</b> meets the requirements.
400	DBS.28 0250	Invalid backup retention days.	The retention period of backup files is invalid.	Check whether the retention days are valid.

Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.28 0251	Invalid backup cycle.	Invalid backup cycle.	Check whether the backup cycle meets the requirements.
400	DBS.28 0253	Invalid backup start time.	Invalid backup start time.	Check whether the backup start time meets the requirements and whether the requirements between the backup start time and end time are correct.
400	DBS.28 0270	The parameter does not exist.	The parameter does not exist.	Check whether the parameter is correctly specified.
400	DBS.28 0271	The parameter value is out of range.	The parameter value is out of range.	Check whether the parameter is correctly specified.
400	DBS.28 0272	The tag key must be unique.	The tag key must be unique.	Check whether the tag key is unique.
400	DBS.28 0277	Invalid object name.	The object name is invalid.	Check whether the object name is valid.
400	DBS.28 0285	Invalid AZ.	Invalid AZ.	Check whether the AZ parameter is correct and whether the AZ exists.
400	DBS.28 0288	Invalid FlavorRef.	Invalid flavor.	Check whether the flavor is valid.
400	DBS.28 0311	Invalid storage space size.	Invalid storage space.	Check whether the storage space is valid.
400	DBS.28 0325	Invalid storage information.	Invalid storage information.	Check whether the storage information is valid.
400	DBS.28 0342	Invalid cluster mode.	Invalid cluster mode.	Check whether the cluster mode is valid.
400	DBS.28 0364	Invalid database port.	Invalid database port.	Check whether the database port is valid.
400	DBS.28 0365	Invalid billing mode.	Invalid billing mode.	Check whether the billing mode is correct.
400	DBS.28 0402	Invalid HA mode.	Invalid HA mode.	Check whether the HA mode is valid.

Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.280404	Invalid DB instance ID or node ID format.	Invalid DB instance ID or node ID format.	Check whether the instance ID is valid.
400	DBS.280407	Invalid node ID.	The node ID is invalid.	Check whether the node ID is valid.
400	DBS.280416	Invalid backup end time.	Invalid backup end time.	Check whether the backup end time is valid.
400	DBS.280432	Invalid duration for yearly/monthly DB instances.	Invalid duration for yearly/monthly DB instances.	Check whether the yearly/monthly duration is correct.
400	DBS.280433	Invalid enterprise project ID.	Invalid enterprise project ID.	Check whether the enterprise project ID is valid.
400	DBS.280434	Invalid specification code.	Invalid specification code.	Check whether the specification code is valid.
400	DBS.280439	Invalid records. The number of records must be an integer less than or equal to 100.	Invalid value. Enter a positive integer of no more than 100.	Check whether the number of queried records is valid.
400	DBS.280440	Invalid offset, please enter a non negative integer.	Invalid offset. Enter a positive integer or zero.	Check whether the offset is valid.
400	DBS.280447	Invalid time zone.	The time zone is invalid.	Check whether the parameter is correctly specified.
400	DBS.280448	The storage type is sold out.	Storage type sold out.	Select another storage type or switch to another AZ or region.

Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.280449	This operation cannot be performed because the object is frozen.	Operation not allowed on frozen objects.	Unfreeze the instance and perform the operation again.
400	DBS.280450	The DB instance specifications are sold out.	Instance specifications sold out.	Select another specifications or switch to another AZ or region.
400	DBS.280600	Invalid coordinator node quantity.	Invalid number of coordinating nodes.	Check whether the number of coordinator nodes is valid.
400	DBS.280601	Invalid shard quantity.	Invalid shard quantity.	Check whether the number of shards is valid.
400	DBS.280604	Invalid number of added shards for cluster capacity expansion.	Invalid number of added shards.	Check whether the number of shards to be added is valid.
400	DBS.280618	Differential backup cycle invalid.	Differential backup cycle invalid.	Check whether the differential backup cycle is valid.
400	DBS.280628	Invalid replica count.	Invalid number of replicas.	Check whether the number of replicas is valid.
400	DBS.280629	The database version does not support two-replica instances.	The database version does not support two-replica instances.	Check whether the number of replicas is valid, or change the database version and try again.
400	DBS.280630	Two-replica instances can only be deployed within a single AZ.	Two-replica instances can only be deployed within a single AZ.	Check whether the two-replica instances are deployed within a single AZ.
400	DBS.280631	Invalid database name.	Invalid database name.	Check whether the database name is valid.

Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.280632	Invalid schema.	Invalid schema.	Check whether the database schema is valid.
400	DBS.280633	Invalid source node group.	Invalid source node group.	Check whether the source node group is valid.
400	DBS.280634	Invalid target node group.	Invalid target node group.	Check whether the target node group is valid.
400	DBS.280635	Invalid Solution	The solution is invalid.	Check whether the parameter is correctly specified.
400	DBS.290000	Parameter error.	Parameter error.	Check whether the transferred parameters or URLs are correct and meet the requirements.
400	DBS.290001	Parameter error.	Parameter error.	Check whether the parameter is correctly specified.
403	DBS.200010	The DB instance ID or user ID may be null, or the operation is not authorized.	The DB instance ID or user ID may be null, or the operation is not authorized.	Check whether the instance ID or user ID is correct, or whether the access permissions are authorized.
403	DBS.200044	Resource not found or permission denied.	Resource not found or permission denied.	Change the resource ID or check the access permissions.
403	DBS.200174	No permission to enable force switch.	No permissions to configure forcible switchover.	Check whether you have permissions to configure forcible switchover.
403	DBS.200604	The DB instance ID or user ID may be null, or the operation is not authorized.	The DB instance ID or user ID may be null, or the operation is not authorized.	Check whether the instance ID or user ID is correct, or whether the access permissions are authorized.

Status Code	Error Code	Error Message	Description	Troubleshooting
403	DBS.200810	You are not allowed to create databases on read replicas.	You are not allowed to create databases on read replicas.	Check what operations are allowed on read replicas.
403	DBS.200819	You are not allowed to delete database users on read replicas.	You are not allowed to delete database users on read replicas.	Check what operations are allowed on read replicas.
403	DBS.280020	The account is restricted.	Your account is restricted.	Check whether the account has sufficient permissions.
400	DBS.280800	This operation is not allowed by the cluster status.	This operation is not allowed by the cluster status.	Check whether the cluster is running properly.
400	DBS.280804	This operation is not allowed for primary/standby instances with kernel version 1.x	This operation is not allowed for primary/standby instances with kernel version 1.x.	Check the kernel version of the instance. Upgrade the kernel version if necessary.
400	DBS.280828	The component ID must be the standby DN ID.	The component ID must be the standby DN ID.	Check the component ID status. The primary DN ID is not allowed.
403	DBS.201003	Resource not found or permission denied.	Resource not found or permission denied.	Change the resource ID or check the required access permissions.
403	DBS.280015	Resource not found or permission denied.	Resource not found or permission denied.	Change the resource ID or check the required access permissions.
403	DBS.280056	Invalid token.	Invalid token.	Check whether the token is correct, or obtain a new token and try again.

Status Code	Error Code	Error Message	Description	Troubleshooting
404	DBS.200002	The DB instance does not exist.	The DB instance does not exist.	Check whether the tenant has the DB instance, whether the DB instance name or ID is correct, and whether the DB instance exists.
404	DBS.200008	The ECS information of the DB instance cannot be found.	The ECS information of the DB instance cannot be found.	Check whether the instance ECS is normal.
404	DBS.200013	The original DB instance does not exist.	The original DB instance does not exist.	Check whether the original instance exists.
404	DBS.200045	The DB instance does not exist.	The DB instance does not exist.	Check whether the tenant has the DB instance, whether the DB instance name or ID is correct, and whether the DB instance exists.
404	DBS.200050	The security group does not exist or does not belong to the VPC.	The security group does not exist or does not belong to the VPC.	Check whether the security group is correctly configured.
404	DBS.200408	The DB instance abnormal, no normal nodes.	The instance is abnormal and no normal node exists.	Check the instance or node status.
404	DBS.200470	The region or AZ does not exist.	The region or AZ does not exist.	Enter a correct region ID or an AZ.
404	DBS.200501	The subnet does not exist or does not belong to the VPC.	The subnet does not exist or does not belong to the VPC.	Check whether the subnet is correct.



Status Code	Error Code	Error Message	Description	Troubleshooting
404	DBS.200503	The VPC does not exist or does not belong to the user.	The VPC does not exist or does not belong to the user.	Check whether the VPC is correct.
404	DBS.200602	The DB instance does not exist.	The DB instance does not exist.	Check whether the tenant has the DB instance, whether the DB instance name or ID is correct, and whether the DB instance exists.
404	DBS.201010	The backup file does not exist.	The backup file does not exist.	Check whether the backup exists and matches the instance.
404	DBS.201028	The DB instance does not exist.	The DB instance does not exist.	Check whether the tenant has the DB instance, whether the DB instance name or ID is correct, and whether the DB instance exists.
404	DBS.212001	The parameter group does not exist.	The parameter template does not exist.	Check whether the parameter template exists.
404	DBS.212013	The object does not exist.	The object does not exist.	Check whether the object exists.
404	DBS.290002	The selected specifications do not exist.	The selected specifications do not exist.	Check whether the selected specifications are correct.
404	DBS.290005	The DB instance does not exist.	The DB instance does not exist.	Check whether the tenant has the DB instance, whether the DB instance name or ID is correct, and whether the DB instance exists.
404	DBS.290011	The DB instance does not exist.	The DB instance does not exist.	Check whether the tenant has the DB instance, whether the DB instance name or ID is correct, and whether the DB instance exists.

Status Code	Error Code	Error Message	Description	Troubleshooting
404	DBS.290013	Resource not found.	Resource not found.	Check whether the transferred parameters are correct and whether the DB instance exists.
409	DBS.200011	Another operation is being performed on the DB instance or the DB instance is faulty.	Another operation is being performed on the DB instance or the DB instance is faulty.	Check whether the instance status or the ongoing operation on the instance conflicts with the request.
409	DBS.200019	This operation conflicts with the currently running task, please troubleshoot by yourself.	This operation conflicts with the task that is being performed.	Check whether the instance status or the ongoing operation on the instance conflicts with the request.
409	DBS.200022	The DB instance name already exists.	The DB instance name already exists.	Enter an instance name that is different from existing instance names.
409	DBS.200047	Another operation is being performed on the DB instance or the DB instance is faulty.	Another operation is being performed on the DB instance or the DB instance is faulty.	Check whether the instance status or the ongoing operation on the instance conflicts with the request.
409	DBS.200316	This operation cannot be performed because the DB instance status is Storage full.	This operation cannot be performed because the DB instance status is <b>Storage full</b> .	Check whether the instance storage space is full.
409	DBS.200402	Invalid operation.	Invalid operation.	Check whether the operation is valid.

Status Code	Error Code	Error Message	Description	Troubleshooting
409	DBS.20 0826	The database name already exists.	The database name already exists.	Check whether the database name is valid.
409	DBS.20 0827	The database user already exists.	The database user already exists.	Check whether the database user is valid.
409	DBS.20 0828	Built-in database accounts cannot be edited.	This is an internal account of the database and cannot be operated by users.	Check whether you have required operation permissions.
409	DBS.20 1201	The backup name already exists.	The backup name already exists.	Check whether the object exists.
409	DBS.20 1202	Another operation is being performed on the DB instance or the DB instance is faulty.	Another operation is being performed on the DB instance or the DB instance is faulty.	Check whether the instance status or the ongoing operation on the instance conflicts with the request.
409	DBS.20 1205	Backup is in progress, please wait.	Backup is in progress.	Wait until the backup is complete and try again.
409	DBS.21 2006	Another operation is being performed on the DB instance or the DB instance is faulty.	Another operation is being performed on the DB instance or the DB instance is faulty.	Check whether the instance status or the ongoing operation on the instance conflicts with the request.

Status Code	Error Code	Error Message	Description	Troubleshooting
409	DBS.212033	Failed to change parameter template values because the DB instance is currently being operated.	Failed to change parameter template values because the DB instance is currently being operated.	Check whether the instance status or the ongoing operation on the instance conflicts with the request.
409	DBS.280011	This operation cannot be performed because the DB instance is abnormal or has been deleted.	The DB instance is abnormal or has been deleted.	Check whether the instance status is normal or whether the instance has been deleted.
409	DBS.280406	Operation not allowed by the DB instance type or status.	Operation not allowed by the DB instance type or status.	Check whether the instance status or the ongoing operation on the instance conflicts with the request.
413	DBS.200046	The number of DB instances has reached the quota.	The number of DB instances has reached the quota.	Check whether the number of DB instances has reached the quota.
413	DBS.290003	The number of DB instances has reached the quota.	The number of DB instances has reached the quota.	Check whether the number of DB instances has reached the quota.
422	DBS.212019	The parameter cannot be processed.	Parameter error.	Check whether the parameter is correctly specified.
500	DBS.108000	Server failure.	Server failure.	Contact the customer service administrator or try again.
500	DBS.108002	Server failure.	Server failure.	Contact the customer service administrator or try again.
500	DBS.108005	Server failure.	Server failure.	Contact the customer service administrator or try again.

Status Code	Error Code	Error Message	Description	Troubleshooting
500	DBS.20 0005	Server failure.	Server failure.	Contact the customer service administrator or try again.
500	DBS.20 0208	Server failure.	Server failure.	Contact the customer service administrator or try again.
500	DBS.20 0811	Failed to create the database.	Failed to create the database.	Check the failure cause or contact technical support.
500	DBS.20 0821	Failed to modify database user permissions.	Failed to modify database user permissions.	Check whether you have required permissions.
500	DBS.21 3002	Failed to process the request.	Failed to process the request.	Contact the customer service administrator or try again.
500	DBS.21 3004	Failed to process the request.	Failed to process the request.	Contact the customer service administrator or try again.
500	DBS.29 0006	Failed to process the request.	Failed to process the request.	Contact the customer service administrator or try again.
500	DBS.29 0015	Failed to process the request.	Failed to process the request.	Contact the customer service administrator or try again.
400	DBS.28 0266	Storage space must be a multiple of 10.	Storage space must be a multiple of 10.	Check whether the storage space is a multiple of 10.
400	DBS.28 0611	The storage space must be a multiple of (Number of shards x 40 GB).	The storage space must be a multiple of (Number of shards x 40 GB).	Check whether the storage space meets requirements.
400	DBS.28 0612	Storage space excess max limit for current shard number.	The selected storage space exceeds the upper limit.	Check whether the storage space meets requirements.
400	DBS.28 0243	Invalid region.	Invalid region.	Enter a correct region ID.

Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.200505	The subnet does not exist or does not belong to the VPC.	The subnet does not exist or does not belong to the VPC.	Enter a correct subnet and try again later.
404	DBS.200502	The security group does not exist or does not belong to the VPC.	The security group does not exist or does not belong to the VPC.	Enter a correct security group and try again later.
400	DBS.200065	Invalid retention days.	Invalid retention days.	Check whether the retention days are valid.
400	DBS.280602	Invalid HA consistency.	Invalid HA consistency.	Check whether the HA consistency is valid.
400	DBS.280262	Invalid synchronize model.	Invalid synchronize model.	Check whether the synchronize model is valid.
400	DBS.200057	Invalid parameter template ID.	Invalid parameter template ID.	Enter a correct parameter template ID and try again later.
404	DBS.200058	The parameter template does not exist.	The parameter template does not exist.	Check whether the parameter template exists.
400	DBS.200059	Invalid database port.	Invalid database port.	Check whether the database port is valid.
400	DBS.280654	The Ha instance is not supported to cancel parallel restore.	Parallel restoration cannot be canceled for primary/standby DB instances.	Cancel parallel restoration in the request body based on the <i>API Reference</i> .
400	DBS.280613	Please use specifications of data nodes.	Use the specifications of data nodes.	Check whether the specifications of data nodes are correct.
404	DBS.200355	Resource not found.	Resource not found.	Check whether the resources exist and try again.

Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.20 0061	Invalid billing mode.	Invalid billing mode.	Check whether the billing mode is valid.
400	DBS.20 1218	The backup file is not manual.	The backup file is not a manual backup file.	Select a manual backup file.
404	DBS.28 0022	The DB instance does not exist.	The DB instance does not exist.	Check whether the tenant has the DB instance, whether the DB instance name or ID is correct, and whether the DB instance exists.
400	DBS.28 0408	Invalid project ID.	Invalid project ID.	Check whether the project ID is valid.
400	DBS.28 0607	Exceeding the upper limit of data nodes number in a single expand request.	The number of data nodes to be added at a time exceeds the upper limit.	Check whether the number of data nodes to be added at a time reaches the upper limit.
400	DBS.20 0082	The available IP addresses in the selected subnet are insufficient.	The available IP addresses in the selected subnet are insufficient.	Enter a correct subnet where there are available IP addresses and try again later.
400	DBS.28 0606	Expanding coordinator nodes and data nodes at the same time is not supported currently.	Coordinator nodes and data nodes cannot be added at the same time.	View the related constraints and try again.
400	DBS.28 0608	Exceeding the upper limit of coordinator nodes number in a single expand request.	The number of coordinator nodes to be added at a time exceeds the upper limit.	Check whether the number of coordinator nodes to be added at a time reaches the upper limit.

Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.280609	Expand cluster request must contain at least one node type to expand.	At least one type of node needs to be added.	View the related constraints and try again.
400	DBS.301024	The backup file is not normal.	The backup file status is abnormal.	Check the status of the backup file.
400	DBS.280651	Failed to create all DB schemas.	Failed to create all DB schemas.	Check the input schema parameters and try again.
400	DBS.280652	Failed to create some DB schemas.	Failed to create some DB schemas.	Check the input schema parameters and try again.
400	DBS.200029	Incorrect username or password parameter.	Incorrect username or password.	Enter the correct username and password.
400	DBS.280132	Database name not entered.	The database name is not specified.	Enter a database name.
400	DBS.280661	Illegal instance specification, which does not exist or does not match the instance	Illegal instance specification, which does not exist or does not match the instance.	Check the input specification parameters based on the instance.
400	DBS.280626	DR relationship established between primary and DR instances.	A DR relationship has been established between primary and DR instances.	Check whether a DR relationship has been established between primary and DR instances.
400	DBS.280638	The DR relationship does not exist.	The DR relationship does not exist.	Check whether the DR relationship exists.



Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.280806	Cross-region DR operation failed.	Cross-region DR operation failed.	Check whether the project ID of the current region is valid.
400	DBS.280667	Invalid shard component ID.	Invalid shard component ID.	Check whether the component ID is valid.
400	DBS.280668	Component IDs are from the same shard.	Component IDs are from the same shard.	Check whether component IDs are from different shards.
400	DBS.280676	The component ID does not belong to the current node ID.	The component ID does not belong to the current node ID.	Check whether the component ID belongs to the corresponding node ID during the primary/standby DN switchover.
400	DBS.200478	Failed to change the password.	Failed to change the password.	Check whether the password is correct.
400	DBS.200062	Invalid database username.	Invalid database username.	Enter a valid database username.
400	DBS.280653	Invalid database template. Use the template0.	Invalid database template. Use the template0.	Enter a valid template name.
400	DBS.200064	Invalid retention days.	Invalid retention days.	Set the retention period to a valid value.
400	DBS.06010001	Instance status is invalid.	The instance status is invalid.	Check the instance status.
400	DBS.06020003	An operation that conflicts with the current operation is in progress.	An operation that conflicts with the current operation is in progress.	Check whether another operation is being performed on the instance.

Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.06 020152	Incremental restoration in progress for the primary instance. Perform this operation when there is no DR relationship.	Incremental restoration in progress for the DR instance. Select an instance without a DR relationship as DR instance.	Check the DR status of the current instance.
400	DBS.06 020153	Incremental restoration failed for the DR instance. Perform this operation when there is no DR relationship.	Incremental restoration failed for the DR instance. Select an instance without a DR relationship as DR instance.	Check the DR status of the current instance.
400	DBS.06 020154	Promotion to primary in progress for the DR instance. Perform this operation when there is no DR relationship.	Promotion to primary in progress for the DR instance. Perform this operation when there is no DR relationship.	Check the DR status of the current instance.
400	DBS.06 020175	Incremental synchronization failed for the primary instance. Perform this operation when incremental synchronization is in progress.	Incremental synchronization failed for the primary instance. Perform this operation when incremental synchronization is in progress.	Incremental synchronization failed for the primary instance. Perform this operation when incremental synchronization is in progress.

Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.06 020177	Switchover failed for the DR instance. Perform this operation when incremental restoration is in progress.	Switchover failed for the DR instance. Perform this operation when incremental restoration is in progress.	Switchover failed for the DR instance. Perform this operation when incremental restoration is in progress.
400	DBS.06 020180	Incremental restoration failed for the DR instance. Perform this operation when incremental restoration is in progress.	Incremental restoration failed for the DR instance. Perform this operation when incremental restoration is in progress.	Incremental restoration failed for the DR instance. Perform this operation when incremental restoration is in progress.
400	DBS.06 020161	The xlog_keep_radio field is invalid.	The <b>xlog_keep_radio</b> field is invalid.	The <b>xlog_keep_radio</b> field is invalid.
400	DBS.06 020162	This operation is not supported.	This operation is not supported.	This operation is not supported.
400	DBS.06 280105	This feature is not enabled.	This feature is not enabled.	Enable the feature on the O&M management platform.
400	DBS.06 010013	Parameter error: \${parameterName}\${parameterValue}	The parameter is invalid.	Enter a valid parameter value.
400	DBS.21 6003	Permission denied.	No permission.	Check whether the account has sufficient permissions.
400	DBS.06 280032	New OS does not match original instance.	New OS does not match original instance.	Check whether the OS of the new DB instance matches that of the original DB instance.

Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.06 280033	The selected deployment model of the \$ {resourceType} type cannot be created.	The selected deployment model cannot be created.	Check whether the current resource type supports the creation of the instance.
400	DBS.06 010018	Failed to obtain the instance volume information.	The disk information fails to be obtained.	Check whether the remote interface for obtaining disk information is successfully invoked or whether an exception occurs during disk information processing.
400	DBS.06 010033	The current node type or role does not support this operation.	The current node type or role does not support this operation.	Select a CN or a DN whose role type is read-only, primary, or standby.
400	DBS.06 010035	The component ID does not exist.	The component ID does not exist.	Check the component ID parameter.
400	DBS.06 010036	The pidstat system command is not supported.	The pidstat system command is not supported.	The pidstat system command is not supported.
400	DBS.06 010041	None of the configuration parameter values to be modified are changed.	All modified parameter values remain unchanged.	Enter a value that is different from the current value.
403	DBS.06 010037	Insufficient permissions for the KMS key.	Insufficient permissions for the KMS key.	Contact the key administrator to grant sufficient permissions.
400	DBS.28 0659	Illegal number of grayscale upgrade shard, please check the parameters.	The number of shards for the gray upgrade is invalid.	Check whether the parameter is correctly specified.

Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.06 013034	The maximum number of nodes that can be stopped must not exceed half of the total number.	The number of stopped nodes cannot exceed half of the total number.	Check the instance node type.
400	DBS.06 013039	Single node instance not support the operation.	This operation is not allowed for single-node instances.	Check the instance node type.
400	DBS.06 020109	This operation is not supported because \$ {paramName} is not enabled. Contact customer service.	Operation not supported because \$ {paramName} is disabled. Contact customer service.	Contact customer service to enable the feature.
400	DBS.20 0920	The number of batch operation exceeds the maximum. Please check.	The number of objects included in a batch operation exceeds the maximum.	Reduce the length of the request parameter.
400	DBS.06 013057	license configuration failure	Failed to configure the license.	Check whether the license is correctly configured.
400	DBS.06 013061	config license extensions failed	Failed to configure the plug-in extensions.	Check whether the constraints for configuring extensions are met.
400	DBS.06 013062	The plugin is not installed. Install the plugin first.	The required plug-in is not installed. Install the plug-in first.	Install the plug-in.

Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.06 013068	Plug-ins cannot be installed for instances running on Huawei Cloud EulerOS.	Plug-ins cannot be installed for instances running Huawei Cloud EulerOS.	Install the plug-in on an instance running EulerOS.
400	DBS.06 013069	Plug-ins cannot be installed for distributed instances.	Plug-ins cannot be installed for distributed instances.	Install the plug-in on a primary/standby instance.

## 7.4 Obtaining a Project ID

### Scenarios

When calling APIs, you need to specify the project ID in some URLs. To do so, you need to obtain the project ID using either of the following methods:

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

### Obtaining the Project ID by Calling an API

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

The API used to obtain a project ID is **GET https://{Endpoint}/v3/projects**. *{Endpoint}* is the IAM endpoint and can be obtained from [Regions and Endpoints](#). For details about API authentication, see [Authentication](#).

The following is an example response. **id** indicates the project ID, and **name** indicates the project name.

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

```
    "enabled": true
  }
],
"links": {
  "next": null,
  "previous": null,
  "self": "https://www.example.com/v3/projects"
}
```

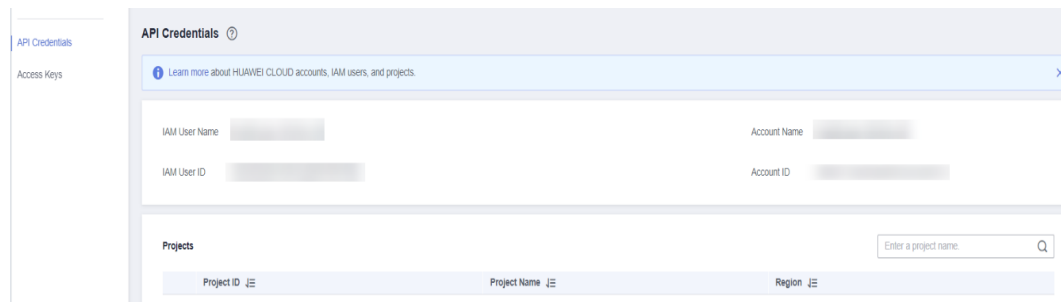
## Obtaining a Project ID from the Console

**Step 1** Register yourself on the management console and log in to it.

**Step 2** Hover the mouse over the username in the upper right corner and select **My Credentials** from the drop-down list.

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

Figure 7-1 Viewing project IDs



----End

## 7.5 Replication Mode Table

Replication mode table

Replication Mode	Description	Remarks
sync	Synchronous	N/A

## 7.6 DB Instance Specifications

This section describes the GaussDB instance specifications.

**Table 7-4** Instance specifications

Edition Type	Deployment Type	Specification Type	Specification Code	vCPUs	Memory (GB)
Enterprise edition	Distributed	Dedicated (1:4) (x86 architecture)	gaussdb.opengauss.ee.dn.c3.2xlarge.4.in	8	32
			gaussdb.opengauss.ee.dn.c3.4xlarge.4.in	16	64
			gaussdb.opengauss.ee.dn.c3.6xlarge.4.in	24	96
			gaussdb.opengauss.ee.dn.c3.8xlarge.4.in	32	128
			gaussdb.opengauss.ee.dn.c3.12xlarge.4.in	48	192
			gaussdb.opengauss.ee.dn.c3.24xlarge.4.in	96	384
		Dedicated (1:8) (x86 architecture)	gaussdb.opengauss.ee.dn.m6.2xlarge.8.in	8	64
			gaussdb.opengauss.ee.dn.m6.4xlarge.8.in	16	128
			gaussdb.opengauss.ee.dn.m6.6xlarge.8.in	24	192
			gaussdb.opengauss.ee.dn.m6.8xlarge.8.in	32	256
			gaussdb.opengauss.ee.dn.m6.12xlarge.8.in	24	384
			gaussdb.opengauss.ee.dn.m6.16xlarge.8.in	64	512
		Kunpeng dedicated (1:4) (Arm architecture)	gaussdb.opengauss.ee.dn.kc1.2xlarge.arm4.in	8	32
			gaussdb.opengauss.ee.dn.kc1.4xlarge.arm4.in	16	64
			gaussdb.opengauss.ee.dn.kc1.6xlarge.arm4.in	24	96
			gaussdb.opengauss.ee.dn.kc1.8xlarge.arm4.in	32	128
			gaussdb.opengauss.ee.dn.kc1.12xlarge.arm4.in	28	192



Edition Type	Deployment Type	Specification on Type	Specification Code	vCPUs	Memory (GB)	
			gaussdb.opengauss.ee.dn.kc1.24xlarge.arm4.in	96	384	
		Kunpeng dedicated (1:8) (Arm architecture)	gaussdb.opengauss.ee.dn.km1.2xlarge.arm8.in	8	64	
			gaussdb.opengauss.ee.dn.km1.4xlarge.arm8.in	16	128	
			gaussdb.opengauss.ee.dn.km1.6xlarge.arm8.in	24	192	
			gaussdb.opengauss.ee.dn.km1.8xlarge.arm8.in	32	256	
			gaussdb.opengauss.ee.dn.km1.12xlarge.arm8.in	48	384	
			gaussdb.opengauss.ee.dn.km1.15xlarge.arm8.in	60	480	
	Primary/Standby		Dedicated (1:4) (x86 architecture)	gaussdb.opengauss.ee.c3.xlarge.x864.ha	4	16
				gaussdb.opengauss.ee.c3.2xlarge.x864.ha	8	32
				gaussdb.opengauss.ee.c3.4xlarge.x864.ha	16	64
				gaussdb.opengauss.ee.c3.6xlarge.x864.ha	24	96
				gaussdb.opengauss.ee.c3.8xlarge.x864.ha	32	128
				gaussdb.opengauss.ee.c3.12xlarge.x864.ha	48	192
				gaussdb.opengauss.ee.c3.24xlarge.x864.ha	86	384
			Dedicated (1:8) (x86 architecture)	gaussdb.opengauss.ee.m6.xlarge.x868.ha	4	32
				gaussdb.opengauss.ee.m6.2xlarge.x868.ha	8	64

Edition Type	Deployment Type	Specification Type	Specification Code	vCPUs	Memory (GB)
			gaussdb.opengauss.ee.m6.4xlarge.x868.ha	16	128
			gaussdb.opengauss.ee.m6.6xlarge.x868.ha	24	192
			gaussdb.opengauss.ee.m6.8xlarge.x868.ha	32	256
			gaussdb.opengauss.ee.m6.12xlarge.x868.ha	48	384
			gaussdb.opengauss.ee.m6.16xlarge.x868.ha	64	512
		Kunpeng dedicated (1:4) (Arm architecture)	gaussdb.opengauss.ee.kc1.xlarge.arm4.ha <b>NOTE</b> It is only suitable for primary/standby DB instances of version 3.208 or later.	4	16
			gaussdb.opengauss.ee.kc1.2xlarge.arm4.ha	8	32
			gaussdb.opengauss.ee.kc1.4xlarge.arm4.ha	16	64
			gaussdb.opengauss.ee.kc1.6xlarge.arm4.ha	24	96
			gaussdb.opengauss.ee.kc1.8xlarge.arm4.ha	32	128
			gaussdb.opengauss.ee.kc1.12xlarge.arm4.ha	48	192
			gaussdb.opengauss.ee.kc1.24xlarge.arm4.ha	96	384
			Kunpeng dedicated (1:8) (Arm architecture)	gaussdb.opengauss.ee.km1.2xlarge.arm8.ha	8
		gaussdb.opengauss.ee.km1.4xlarge.arm8.ha		16	128
		gaussdb.opengauss.ee.km1.6xlarge.arm8.ha		24	192
		gaussdb.opengauss.ee.km1.8xlarge.arm8.ha		32	256

Edition Type	Deployment Type	Specification Type	Specification Code	vCPUs	Memory (GB)
			gaussdb.opengauss.ee.km1.12xlarge.arm8.ha	48	384
			gaussdb.opengauss.ee.km1.15xlarge.arm8.ha	60	480
Basic edition	Distributed	Dedicated (1:4) (x86 architecture)	gaussdb.bs.c6.4xlarge.x864.co	16	64
			gaussdb.bs.c6.8xlarge.x864.co	32	128
			gaussdb.bs.c6.16xlarge.x864.co	64	256
		Dedicated (1:8) (x86 architecture)	gaussdb.bs.m6.4xlarge.x868.co	16	128
			gaussdb.bs.m6.8xlarge.x868.co	32	256
			gaussdb.bs.m6.16xlarge.x868.co	64	512
		Kunpeng dedicated (1:4) (Arm architecture)	gaussdb.bs.kc1.4xlarge.arm4.co	16	64
			gaussdb.bs.kc1.8xlarge.arm4.co	32	128
			gaussdb.bs.km1.4xlarge.arm8.co	16	128
	Kunpeng dedicated (1:8) (Arm architecture)	gaussdb.bs.km1.8xlarge.arm8.co	32	256	
		gaussdb.bs.km1.15xlarge.arm8.co	60	480	
	Primary/Standby	Dedicated (1:4) (x86 architecture)	gaussdb.bs.c6.xlarge.x864.ha	4	16
			gaussdb.bs.c6.2xlarge.x864.ha	8	32
			gaussdb.bs.c6.4xlarge.x864.ha	16	64
gaussdb.bs.c6.8xlarge.x864.ha			32	128	

Edition Type	Deployment Type	Specification Type	Specification Code	vCPUs	Memory (GB)
			gaussdb.bs.c6.16xlarge.x864.ha	64	256
		Kunpeng dedicated (1:4) (Arm architecture)	gaussdb.bs.kc1.xlarge.arm4.ha	4	16
			gaussdb.bs.kc1.2xlarge.arm4.ha	8	32
			gaussdb.bs.kc1.4xlarge.arm4.ha	16	64
			gaussdb.bs.kc1.8xlarge.arm4.ha	32	128
		General-purpose (1:4) (x86 architecture)	gaussdb.bs.s6.xlarge.x864.ha	4	16
			gaussdb.bs.s6.2xlarge.x864.ha	8	32