

**GaussDB
24.3.0**

API Reference

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1 Before You Start

1.1 Overview

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-up 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](#).

1.2 API Calling

GaussDB supports Representational State Transfer (REST) APIs, allowing you to call APIs using HTTPS. For details about API calling, see [API Overview](#).

1.3 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](#).

1.4 Constraints

For more constraints, see API description.

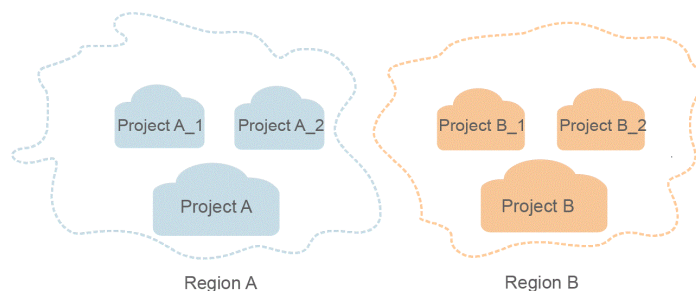
1.5 Concepts

- 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.
	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
	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.
	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.
	Storage Management	Query database disk type.
	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.
	Tag Management	Query instance tags, query project tags, query predefined tags, and add tags for instances.
	Quota Management	Modify enterprise project quotas and query enterprise project quotas
	Task Management	Obtain task information, query tasks, and delete a task record.
	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

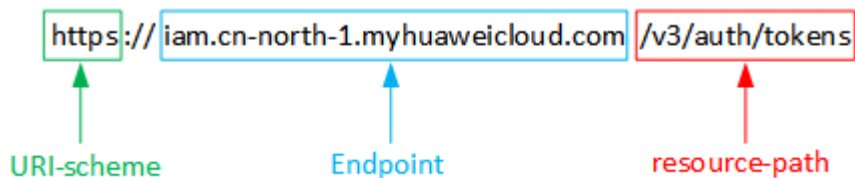
Parameter	Description
URI-scheme	Protocol used to transmit requests. All APIs use HTTPS.
Endpoint	Domain name or IP address of the server bearing the REST service. The endpoint varies between services in different regions. It can be obtained from Regions and Endpoints . For example, the endpoint of IAM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

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, ? limit=10 indicates that a maximum of 10 data records will be displayed.

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

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

Figure 3-1 Example URI



NOTE

To simplify the URI display, 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 https is 443 .	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 application/json . 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 Obtaining a Project ID .	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 obtain a user token . This API is the only one that does not require authentication. After the request is processed, the value of X-Subject-Token in the message header is the token value.	No This parameter is mandatory for token authentication.	The following is part of an example token: MIIPAgYJKoZlhvcNAQc- Co...ggg1BBIINPXsidG9rZ

 **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": "xxxxxxx"
    }
  }
}
```

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 → MIIVXQYJKoZIhvcNAQcCoIIVTjCCGEOCAQExDTALBgIghkgBZQMEAgEwgharBgkqhkiG9w0BBwGgghacBIIWmHsidG9rZW4iOansiZXhwaXJlc19hdCI6IjwMTktMDItMTNUMC
fj3KJs6YgKnpVNRbW2eZ5eb78SZOkajACgkIQ1wi4JIGzrpd18LGXK5bdfq4lqHCYb8P4NaYONYejeAgzVefYtLWT1GSO0zxKZmlQHq82HBqHdglZO9fuEbL5dMhdavj+33wEI
xHRCE9I87o+k9-
j+CMZSEB7bUGd5Uj6eRASXl1jipPEGA270g1FruooL6jggIFkNPQuFSOU8+uSsttVwRtnfsc+qTp22Rkd5MCqFGQ8LcuUxC3a+9CMBnOintWW7oeRUUVhVpxk8pxiX1wTEboX-
RzT6MUbpvGw-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

Table 4-1 Parameter description

Name	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .

Request Parameters

None

Response Parameters

Table 4-2 Response parameter description

Name	Type	Description
versions	Array of strings	Supported database version.

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}/v3.1/{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	Project ID of a tenant in a region. For details about how to obtain it, see Obtaining a Project ID .
version	No	String	Database version. You can query the specifications supported by a specified DB version, for example, 1.4 .
spec_code	No	String	Specification code.
ha_mode	No	String	Instance type. You can query the specifications supported by a specified instance type. <ul style="list-style-type: none">• Primary/standby: centralization_standard• Distributed (independent deployment): enterprise
limit	No	Integer	Number of records to be queried. The default value is 100 . The value cannot be a negative number. The minimum value is 1 and the maximum value is 100 . For example, if this parameter is set to 10 , a maximum of 10 records can be displayed.
offset	No	Integer	Index offset. If offset is set to N , the resource query starts from the $N+1$ piece of data. The value is 0 by default, indicating that the query starts from the first piece of data. The value cannot be a negative number. For example, if this parameter is set to 1 and limit is set to 10 , only the 2nd to 11th records are displayed.

Request Parameters

None

Response Parameters

Table 4-4 Parameter description

Name	Type	Description
flavors	Array of objects	Specification details. For details, see Table 4-5 .
total	Integer	Total number of records.

Table 4-5 flavors description

Name	Type	Description
vcpus	String	Number of vCPUs.
ram	String	Memory size in GB.
spec_code	String	Resource specification code.
availability_zone	Array of strings	AZ supported by the specifications.
az_status	Map<String,String>	key indicates the AZ ID, and value indicates the specification status in the AZ. Its value can be any of the following: <ul style="list-style-type: none">• normal: available.• unsupported: not supported.• sellout: sold out.
version	String	DB engine version supported by the specifications.
name	String	DB engine.

Name	Type	Description
group_type	String	Performance specifications. Its value can be any of the following: <ul style="list-style-type: none">• normal: general-enhanced• normal2: general-enhanced II• armFlavors: Kunpeng general-enhanced• dedicatenormal: exclusive x86• armlocalsd: general-purpose Kunpeng• normallocalsd: general-purpose x86• general: general-purpose• dedicated: dedicated, which is only suitable for cloud SSDs• rapid: dedicated, which is only suitable for extreme SSDs

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](#).

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/{project_id}/datastores

Table 4-6 Parameter description

Name	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .

Request Parameters

None

Response Parameters

Table 4-7 Parameter description

Name	Type	Description
datastores	Array of objects	DB engines. For details, see Table 4-8 .

Table 4-8 dataStores field data structure description

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

Example Request

Querying DB engines

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

Example Response

DB engines queried.

```
{
  "datastores": [
    {
      "instance_mode": "ha",
      "supported_versions": [
        "2.0",
        "2.3",
        "2.6",
        "2.9"
      ]
    }
  ]
}
```

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	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	String	DB instance ID.
limit	No	Integer	Number of records to be queried. The default value is 100 . The value cannot be a negative number. The minimum value is 1 and the maximum value is 100 . For example, if this parameter is set to 10 , a maximum of 10 records can be displayed.
offset	No	Integer	Index offset. If offset is set to <i>N</i> , the resource query starts from the <i>N</i> +1 piece of data. The value is 0 by default, indicating that the query starts from the first piece of data. The value cannot be a negative number. For example, if this parameter is set to 1 and limit is set to 10 , 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 Table 4-11 .
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_cpde	string	Resource specification code, for example, gaussdb.opengauss.ee.dn.m6.4xlarge.8.in
az_status	Map<String,String>	key indicates the AZ ID, and value indicates the specification status in the AZ. Its value can be any of the following: <ul style="list-style-type: none">• normal: available.• unsupported: not supported.• sellout: sold out.

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/dsfae23fsfdsae3435in14/available-flavors
```

Example Response

Instance specifications queried.

```
{
  "flavors": [ {
    "spec_cpde": "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

Table 4-12 Parameter description

Name	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
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",  "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	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
version	Yes	String	DB version number. To obtain the DB version number, see Querying DB Engine Versions .
ha_mode	No	String	Instance Type. enterprise : distributed deployment centralization_standard (case-insensitive): primary/standby deployment Value: <ul style="list-style-type: none"> enterprise centralization_standard

Request Parameters

None

Response Parameters

Table 4-15 Response parameters

Parameter	Type	Description
storage_type	Array of objects	Storage type information. For details, see Table 4-16 .

Table 4-16 storage_type field data structure description

Parameter	Type	Description
name	String	Storage type. Its value can be: <ul style="list-style-type: none"> ULTRAHIGH: indicates the SSD. ESSD: indicates the extreme SSD.

Parameter	Type	Description
az_status	map<String, String>	key indicates the AZ ID, and value indicates the specification status in the AZ. Its value can be any of the following: <ul style="list-style-type: none">● normal: on sale.● unsupported: not supported.● sellout: sold out.
support_compute_group_type	List<String>	Performance specifications. Its value can be any of the following: <ul style="list-style-type: none">● normal: general-enhanced● normal2: general-enhanced II● armFlavors: Kunpeng general computing-plus● armFlavors2Shared: Kunpeng general computing-plus II (shared)

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
```

- 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
```

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

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 4-17 Parameter description

Name	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain it, see Obtaining a Project ID .

Request Parameters

Table 4-18 Request parameters

Name	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 (_).
datastore	Yes	Object	Database information. For details, see Table 4-19 .
ha	Yes	Object	Instance deployment model. For details, see Table 4-20 .
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. It cannot be set to the default value 8000 . 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 Table 4-21 .

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

Name	Mandatory	Type	Description
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">• Method 1: Log in to VPC console and click the target subnet on the Subnets page. You can view the network ID on the displayed page.• Method 2: Query the subnet ID through the VPC API. For details, see Querying Subnets.• Method 2: See the section "Querying Subnets" in the <i>Virtual Private Cloud API Reference</i>.
security_group_id	Yes	String	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. <ul style="list-style-type: none">• Method 1: Log in to VPC console. Choose Access Control > Security Groups 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.• Method 2: Query the security group through the VPC API. For details, see Querying Security Groups.• Method 2: See the section "Querying Security Groups" in the <i>Virtual Private Cloud API Reference</i>.
charge_info	No	Object	Billing type, which can be pay-per-use or yearly/monthly. For details, see Table 4-23 .
time_zone	No	String	UTC time zone. <ul style="list-style-type: none">• If this parameter is not specified, GaussDB uses UTC in the International website by default.• 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 UTC+08:00 rather than UTC+08:30.

Name	Mandatory	Type	Description
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 3. If this parameter is left blank, the default value is 3.
enable_force_switch	No	Boolean	<p>Whether to forcibly promote a standby node to primary. The value can only be true or false. true indicates that the function is enabled, and false indicates that the function is disabled. The function is disabled by default. Only 1.2.2 and later versions are supported.</p> <p>NOTE 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.</p>
enable_single_float_ip	No	Boolean	<p>Whether to enable single floating IP address policy, which is only suitable for primary/standby instances.</p> <p>Value:</p> <ul style="list-style-type: none"> • true: 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. • false (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. <p>NOTE This parameter is only available for primary/standby instances that run 3.206 or later versions.</p>

Table 4-19 datastore field data structure description

Name	Mandatory	Type	Description
type	Yes	String	DB engine. Value: GaussDB . It is case-insensitive.
version	No	String	Database version. If this parameter is not specified, the latest version is used by default. For details, see Querying DB Engine Versions .

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 enterprise (enterprise edition) for distributed instances and centralization_standard for primary/standby instances.
consistency	Yes	String	Transaction consistency type. The value is case-insensitive and can be: <ul style="list-style-type: none"> • strong: strong consistency • eventual: eventual consistency
replication_mode	Yes	String	Replication mode for the standby node. Value: sync NOTE sync indicates synchronous replication.

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 empty 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"> The HH value must be 1 greater than the hh value. The values of mm and MM must be the same and must be set to 00. <p>Example value:</p> <ul style="list-style-type: none"> 08:00-09:00 23:00-00:00
keep_days	No	Integer	<p>Retention days for specific backup files.</p> <p>Value: 1 to 36500. If this parameter is not specified, the default value 7 is used.</p>

Table 4-22 volume field data structure description

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

Table 4-23 chargeInfo field data structure description

Name	Mandatory	Type	Description
charge_mode	Yes	String	Billing mode. postPaid : pay-per-use billing. prePaid : yearly/monthly billing.
period_type	No	String	Subscription period. Value: <ul style="list-style-type: none"> • month: The service is subscribed by month. • year: The service is subscribed by year. NOTE This parameter is valid and mandatory only when charge_mode is set to prePaid .
period_num	No	Integer	This parameter is valid and mandatory only when charge_mode is set to prePaid . Value: <ul style="list-style-type: none"> • When period_type is set to month, the parameter value ranges from 1 to 9. • When period_type is set to year, the parameter value ranges from 1 to 3. When a floating-point value is transferred, 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"> • true: Automatic renewal is enabled. • false: Automatic renewal is disabled. The default value is false.

Name	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">• true: The order will be automatically paid.• false: The order will be manually paid. The default value is false.

Response Parameters

Table 4-24 Response parameters

Name	Type	Description
instance	Object	Instance information. For details, see Table 4-25 .
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	DB 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 (_).

Name	Type	Description
status	String	Instance status. For example, BUILD 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 Table 4-26 .
ha	Object	Database deployment model. For details, see Table 4-27 .
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 Table 4-28 .
enterprise_project_id	String	Project ID.
flavor_ref	String	Specification code. The value cannot be empty.
volume	Object	Volume information. For details, see Table 4-29 .
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 Table 4-30 .

Table 4-26 datastore field data structure description

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

Table 4-27 ha field data structure description

Name	Type	Description
mode	String	Deployment model. The value is case-insensitive and can be enterprise (enterprise edition) for distributed instances and centralization_standard for primary/standby instances.
replication_mode	String	Replication mode for the standby node. Value: sync . NOTE sync indicates synchronous replication.
consistency	String	Transaction consistency type. This parameter is reserved for GaussDB. Value: <ul style="list-style-type: none"> • strong: strong consistency • eventual: eventual consistency
consistency_protocol	String	Replica consistency protocol. Value: quorum (default value) or paxos . 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	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"> • The HH value must be 1 greater than the hh value. • The values of mm and MM must be the same and must be set to 00. Example value: <ul style="list-style-type: none"> • 08:00-09:00 • 23:00-00:00 If backup_strategy in the request body is empty, 02:00-03:00 is returned for start_time by default.

Name	Type	Description
keep_days	Integer	Retention days for specific backup files. Value: 1 to 732 If the backup_strategy field is not specified in the request body, keep_days in the response body is set to 7 days by default.

Table 4-29 volume field data structure description

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

Table 4-30 charge_info field data structure description

Name	Type	Description
charge_mode	String	Billing mode. postPaid : pay-per-use billing. prePaid : yearly/monthly billing.
period_type	String	Subscription period. month : The service is subscribed by month. year : The service is subscribed by year. This parameter is valid and mandatory only when charge_mode is set to prePaid . Value: <ul style="list-style-type: none"> • month • year
period_num	Integer	This parameter is valid and mandatory only when charge_mode is set to prePaid . Value: When period_type is set to month , the parameter value ranges from 1 to 9 . When period_type is set to year , the parameter value ranges from 1 to 3 .

Name	Type	Description
is_auto_renew	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>true: indicates that the subscription is automatically renewed. false: indicates that the subscription is not automatically renewed. The default value is false.</p>
is_auto_pay	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>true: indicates that the order is automatically paid from the account. false: indicates that the order is manually paid from the account. The default value is false.</p>

Example Request

- Creating a distributed DB 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) DB 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) 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/v3.1/0483b6b16e954cb88930a360d2c4e663/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 DB 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": "ad8cd1440aa94a02ae4580fcbbebb3143in14",
    "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 DB instance (one-year yearly/monthly billing, DB engine 2.7, three AZs, 3 CNs, 3 shards, 3 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 DB 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
  },
  "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"
}
```

- Primary/Standby DB 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
202
- Abnormal
For details, see [Status Codes](#).

Error Code

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

4.3.2 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

Table 4-31 Parameter description

Name	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	Instance ID.

Request

Table 4-32 Parameter description

Name	Mandatory	Type	Description
expand_cluster	No	Object	This parameter is mandatory when you add CNs or shards. For details, see Table 4-33 .
enlarge_volume	No	Object	New storage space after scaling up. This parameter is mandatory for scaling up storage. For details, see Table 4-36 .
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">• true: indicates that the order is automatically paid from the account.• false (default value): indicates that the order is manually paid from the account.

Table 4-33 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 Table 4-34 .
shard	No	Shard object	This parameter is mandatory for adding shards. For details, see Table 4-35 .

Table 4-34 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 Regions and Endpoints .

Table 4-35 shard parameter description

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

Table 4-36 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 4-37 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](#).

4.3.3 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}

Table 4-38 Parameter description

Name	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	Instance ID.

Request Parameters

None

Response Parameters

Table 4-39 Parameter description

Name	Type	Description
job_id	String	ID of the instance deletion task.

Name	Type	Description
order_id	string	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.

Example Request

Deleting a DB instance

```
DELETE https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfdsae3435in01
```

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](#).

4.3.4 Querying DB Instances

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}`

Table 4-40 Parameter description

Name	Type	Mandatory	Description
project_id	String	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
id	String	No	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 (*).
name	String	No	DB 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	String	No	Instance type to be queried. Currently, the following values are supported: <ul style="list-style-type: none">• Enterprise (case-sensitive): distributed instances (in the independent deployment).• Centralization_standard (case-sensitive): primary/standby instances.
datastore_type	String	No	Database type. Its value is case-insensitive. GaussDB
vpc_id	String	No	VPC ID. To obtain this parameter value, use the following methods: <ul style="list-style-type: none">• Method 1: Log in to VPC console and view the VPC ID in the VPC details page.• Method 2: Query the VPC ID through the VPC API. For details, see Querying VPCs.• Method 2: See the section "Querying VPCs" in the <i>Virtual Private Cloud API Reference</i>.

Name	Type	Mandatory	Description
subnet_id	String	No	<p>Network ID of the subnet.</p> <ul style="list-style-type: none"> Method 1: Log in to VPC console and click the target subnet on the Subnets page. You can view the network ID on the displayed page. Method 2: See the section "Querying Subnets" in the <i>Virtual Private Cloud API Reference</i>.
offset	Integer	No	<p>Index offset. If offset is set to <i>N</i>, the resource query starts from the <i>N+1</i> piece of data. The value is 0 by default, indicating that the query starts from the first piece of data. The value cannot be a negative number.</p>
limit	Integer	No	<p>Number of records to be queried. The default value is 100. The value cannot be a negative number. The minimum value is 1 and the maximum value is 100.</p>
tags	String	No	<p>Queries based on the instance tag keys and values.</p> <ul style="list-style-type: none"> <i>{key}</i> indicates the tag key. It contains up to 127 Unicode characters. key cannot be an empty string, a space, or left blank. Before using key, delete single-byte character (SBC) spaces before and after the value. The value cannot contain the following special characters: <code>+/?#&=,%</code> <i>{value}</i> indicates the tag value, which can be empty. Tag value, which contains up to 255 Unicode characters. Before using value, delete SBC spaces before and after the value. The value cannot contain the following special characters: <code>+/?#&=,%</code> If the value is empty, it indicates any_value (querying any value). <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>
charge_mode	String	No	<p>Billing mode.</p> <p>Value:</p> <ul style="list-style-type: none"> postPaid: pay-per-use billing. prePaid: yearly/monthly billing.

Request Parameters

None

Response Parameters

Table 4-41 Parameter description

Name	Type	Description
instances	Array of objects	Instance information. For details, see Table 4-42 .
total_count	Integer	Total number of records.

Table 4-42 instances field data structure description

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

Name	Type	Description
status	String	<p>Instance status.</p> <p>Value:</p> <ul style="list-style-type: none"> • If the value is BUILD, the instance is being created. • If the value is ACTIVE, the instance is normal. • If the value is FAILED, the instance is abnormal. • If the value is FROZEN, the instance is frozen. • If the value is MODIFYING, the storage is being scaled up or instance specifications are being changed. • If the value is EXPANDING, read replicas, CNs, or shards are being added to the instance. • REBOOTING: The DB instance is being rebooted. • If the value is REDUCING: read replicas are being deleted. • If the value is UPGRADING, the instance is being upgraded. • If the value is RESTORING, the instance is being restored. • If the value is SWITCHOVER, the primary/standby switchover is being performed. • If the value is MIGRATING, the instance is being migrated. • If the value is BACKING UP, the instance is being backed up. • If the value is UPGRADE TO BE OBSERVED, the instance upgrade is in the observation period. • If the value is REDUCING REPLICATION, the number of replicas is being reduced. • If the value is STORAGE FULL, the instance storage is full.
private_ips	List<String>	<p>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.</p>

Name	Type	Description
public_ips	List<String>	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 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	Instance type. The value is case-sensitive. <ul style="list-style-type: none">• Enterprise: distributed instance (enterprise edition)
ha	Object	Instance high availability. For details, see Table 4-43 .
replica_num	Integer	Number of replicas.
region	String	Region where the instance is deployed.
datastore	Object	Database information. For details, see Table 4-44 .
created	String	Creation time in the "yyyy-mm-dd hh:mm:ss timezone" format. timezone 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.
updated	String	Update time. The format is the same as that of the created field. The value is empty when the instance is being created. After the instance is created, the value is not empty.
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 Querying Instance Specifications .

Name	Type	Description
flavor_info	Object	Flavor information. For details, see Table 4-45 .
volume	Object	Volume information. For details, see Table 4-46 .
switch_strategy	String	Database switchover policy. The value can be Reliability or Availability , indicating the reliability first and availability first, respectively. If no switchover policy is selected during the creation, the switchover policy is not displayed.
backup_strategy	Object	Backup policy. For details, see Table 4-47 .
maintenance_window	String	Maintenance window in the UTC format.
nodes	Array of objects	Instance node information. For details, see Table 4-48 .
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 0 .
instance_mode	String	enterprise indicates enterprise edition, standard indicates the standard edition, and basic indicates the basic edition.
time_zone	String	Time zone.
charge_info	Object	Billing type, which can be pay-per-use or yearly/monthly. For details, see Table 4-49 .
tags	Array of objects	Tags. This parameter is not returned if there is no tag. For details, see Table 4-50 .
backup_used_space	String	Used backup space, in KB.

Name	Type	Description
disk_usage	String	Available disk usage of the instance. The value ranges from 0 to 1 and contains four decimal places. 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.

Table 4-43 ha field data structure description

Name	Type	Description
consistency	String	Transaction consistency type. Value: <ul style="list-style-type: none"> • strong: strong consistency • eventually: eventual consistency
replication_mode	String	Replication mode for the standby node. The value cannot be empty. sync . NOTE sync indicates synchronous replication.

Table 4-44 datastore field data structure description

Name	Type	Description
type	String	DB engine.
version	String	Major version of the database. The value is a two-digit number.
complete_version	String	Minor version of the database. The value is a three-digit number.
hotfix_versions	String	Hot patch version that has been upgraded. After the hot patch version is successfully upgraded, the value of this parameter cannot be empty.

Table 4-45 flavor_info field data structure description

Name	Type	Description
vcpu	Integer	Number of vCPUs.

Name	Type	Description
mem	Integer	Memory size in GB.

Table 4-46 volume field data structure description

Name	Type	Description
type	String	Disk type.
size	Integer	Disk size.

Table 4-47 backup_strategy field data structure description

Name	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 4-48 nodes field data structure description

Name	Type	Description
id	String	Node ID.
name	String	Node name.
role	String	Node type. Value: <ul style="list-style-type: none">• master: primary node• slave: standby node
status	String	Node status.
availability_zone	String	AZ.
private_ip	String	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.

Name	Type	Description
public_ip	String	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.
component_names	String	Component information on the node (for example, cn_6001:60011). Separate information of multiple components with commas (,).

Table 4-49 charge_info field data structure description

Name	Type	Description
charge_mode	String	Billing mode. postPaid : pay-per-use prePaid : yearly/monthly

Table 4-50 tags field data structure description

Name	Type	Description
key	String	Tag key.
value	String	Tag value.

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=bd51fb45-2dc8-4296-8783-8623bfe89bb7&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"
  },
  "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:",
      "private_ip": "192.168.16.253"
    },
    {
      "id": "0a87b8ecbf46aba1409cfc0f0d5c34no14",
      "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",
      "component_names": "dn_6002:60011",
      "availability_zone": "az2xahz"
    },
    {
      "id": "8a97a246cee841b38c5b47290d4c9c38no14",
      "name": "gauss-9e88_gaussdbv5cn_1",
      "role": "master",

```



```
    "status": "ACTIVE",
    "availability_zone": "az2xahz",
    "component_names": "cn_5003:",
    "private_ip": "192.168.27.52"
  },
  {
    "id": "8c1a3f8ecca4d9e9974a868bb6dd942no14",
    "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": "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": "2.7",
    "complete_version": "2.7.2",
    "hotfix_versions": "2.7.2.1,2.7.2.2"
  },
  "created": "2021-01-08 09:18:27 UTC",
  "updated": "2021-01-14 13:25:03 UTC",
  "volume": {
    "type": "ULTRAHIGH",
    "size": 120
  },
  "nodes": [
    {
      "id": "07538a1def584cee99e2a5685eeeab36ano14",
      "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": "77092f1dad74d3ea13d28269cdd3590no14",
      "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",
      "component_names": "cn_5002:",
      "private_ip": "192.168.29.231"
    },
    {
      "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_gaussdbv5dn2_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",
      "component_names": "cn_5001:",
      "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": "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"
}
],
"total_count": 2
}
```

Status Code

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

Error Code

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

4.3.5 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

Table 4-51 Parameter description

Name	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	DB instance ID.

Request Parameters

Table 4-52 Parameter description

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

Response Parameters

None

Example Request

Changing the password of user **root**

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfsdae3435in01/password
{
  "password": "*****"
}
```

Example Response

```
{}
```

Status Code

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

Error Code

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

4.3.6 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

Table 4-53 Parameter description

Name	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	Instance ID.

Request Parameters

Table 4-54 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 4-55 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/dsfae23fsfsae3435in14/name
{
  "name": "instance-name"
}
```

Example Response

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

Status Code

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

Error Code

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

4.3.7 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 4-56 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	String	Instance ID.

Request Parameters

None

Response Parameters

Table 4-57 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  
{  
  "enable_alt": "on"  
}
```

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 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

Table 4-58 Parameter description

Name	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	DB instance ID.

Request Parameters

Table 4-59 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 Table 4-60 .

Table 4-60 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 Querying the Components of a DB Instance .

Response Parameters

Table 4-61 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](#).

4.3.9 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

Table 4-62 Parameter description

Name	Type	Mandatory	Description
project_id	String	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	String	Yes	DB instance ID.
limit	Integer	No	Number of records to be queried. The default value is 100 . The value cannot be a negative number. The minimum value is 1 and the maximum value is 100 . For example, if this parameter is set to 10 , a maximum of 10 records can be displayed.
offset	Integer	No	Index offset. If offset is set to <i>N</i> , the resource query starts from the <i>N</i> +1 piece of data. The value is 0 by default, indicating that the query starts from the first piece of data. The value cannot be a negative number. For example, if this parameter is set to 0 and limit is set to 10 , only the 1st to 10th records are displayed.
component_type	String	No	Component type. If this parameter is ALL (default value), all types of components are queried. CM : CMS components Value: <ul style="list-style-type: none">• ALL• CN• DN• CM• GTM• ETCD

Name	Type	Mandatory	Description
availability_zone_id	String	No	ID of the AZ where the primary component is located. The default value is ALL , 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 4-63 Parameter description

Name	Type	Description
nodes	Array of objects	Component details. For details, see Table 4-64 .
total_count	Integer	Total number of records.

Table 4-64 nodes description

Name	Type	Description
id	String	Node ID.
components	Array of objects	Component information under the instance node. For details, see Table 4-65 .
name	String	Node name.
availability_zone_id	String	Code of the AZ where the node is located.

Name	Type	Description
description	String	AZ description.
status	String	Node status.

Table 4-65 components description

Name	Type	Description
id	String	<p>Component ID.</p> <ul style="list-style-type: none"> ● Global Transaction Manager (GTM): manages the status of transactions. ● Cluster Management Server (CMS): manages the instance status. ● Data Node (DN): Stores and queries table data. ● Coordinator nodes (CNs): stores database metadata, distributes and executes query tasks, and then returns the query results from DNs to applications. ● Editable Text Configuration Daemon (ETCD): serves as a distributed key-value storage system used for configuration sharing and service discovery (registration and search).
role	String	<p>Node role.</p> <ul style="list-style-type: none"> ● master: primary node ● slave: standby node
status	String	<p>Component status.</p> <ul style="list-style-type: none"> ● Primary: primary component ● Normal: The component is normal. ● Down: The component is abnormal. ● Standby: standby component ● StateFollower: standby ETCD ● StateLeader: primary ETCD ● StateCandidate: arbitration ETCD
distributed_id	String	<p>Group ID. This parameter is used to identify DNs in the same shard. For other components, the value is an empty string.</p>

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

Instance components queried.

```
{
  "nodes": [
    {
      "components": [
        {
          "id": "cm_1",
          "role": "master",
          "status": "Primary",
          "distributed_id": ""
        },
        {
          "id": "etcd_7001",
          "role": "master",
          "status": "StateLeader",
          "distributed_id": ""
        },
        {
          "id": "dn_6001",
          "role": "master",
          "status": "Primary",
          "distributed_id": "60011"
        }
      ],
      "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": ""
        },
        {
          "id": "etcd_7003",
          "role": "slave",
          "status": "StateFollower",
          "distributed_id": ""
        },
        {
          "id": "dn_6003",
          "role": "slave",
          "status": "Standby",
          "distributed_id": "60011"
        }
      ],
      "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": ""
    },
    {
      "id": "etcd_7002",
      "role": "slave",
      "status": "StateFollower",
      "distributed_id": ""
    },
    {
      "id": "dn_6002",
      "role": "slave",
      "status": "Standby",
      "distributed_id": "60011"
    }
  ],
  "id": "d6c6c6e6b48c41d79d99d7240751d744no14",
  "name": "gauss-9e1a_root_1",
  "availability_zone_id": "cn-southwest-244a",
  "description": "az1",
  "status": "normal"
},
"total_count": 3
}
```

Status Code

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

Error Code

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

4.3.10 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

Table 4-66 Parameter description

Name	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain it, see Obtaining a Project ID .
instance_id	Yes	Instance ID.

Request Parameters

Table 4-67 Parameter description

Name	Mandatory	Type	Description
flavor_ref	Yes	String	New specification code. For details on how to obtain the specification code, see Table 7-4 . To obtain its value, see Querying Instance Specifications .
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">• true: indicates that the order is automatically paid from the account.• false: indicates that the order is manually paid from the account. The default value is false.

Response Parameters

Table 4-68 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](#).

4.3.11 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

Table 4-69 Parameter description

Name	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	DB instance ID.

Request Parameters

None

Response Parameters

Table 4-70 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">• true: balanced.• false: unbalanced.

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/dsf23fsfsae3435in14/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](#).

4.3.12 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
```

Table 4-71 Parameter description

Name	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	No	DB instance ID.

Name	Mandatory	Description
solution	No	Solution template name. triset : HA (1 primary + 2 standby)

Request Parameters

None

Response Parameters

Table 4-72 Parameter description

Name	Type	Description
initial_node_num	Integer	Number of initial nodes. If solution is set to triset , this parameter is returned. Otherwise, null is returned.
solution	String	Solution template name.
shard_num	Integer	Number of shards.
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](#).

4.3.13 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 4-73 Parameter description

Name	Type	Mandatory	Description
project_id	String	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	String	Yes	DB instance ID.
offset	Integer	No	Index offset. If offset is set to <i>N</i> , the resource query starts from the <i>N</i> +1 piece of data. The value is 0 by default, indicating that the query starts from the first piece of data. The value cannot be a negative number.
limit	Integer	No	Number of records to be queried. The default value is 50 . The value cannot be a negative number. The minimum value is 1 and the maximum value is 50 .

Request Parameters

None

Response Parameters

Table 4-74 Parameter description

Name	Type	Description
public_ips	Array of objects	EIPs bound to an instance. For details, see Table 4-75 .
total_count	Integer	Total number of records.

Table 4-75 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. T is the separator between calendar and hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the offset is +08:00 .

Example Request

Querying EIPs bound to a DB instance

```
GET https://gaussdb-opengauss.cn-north-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](#).

4.3.14 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

Table 4-76 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .

Request Parameters

Table 4-77 Parameter description

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

Response Parameters

Table 4-78 Parameter description

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

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](#).

4.3.15 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

Table 4-79 Parameter description

Name	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	DB instance ID.
node_id	Yes	Node ID.

Request Parameters

Table 4-80 Parameter description

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

Response Parameters

Table 4-81 Parameter description

Name	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](#).

4.3.16 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

Table 4-82 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	String	Instance ID.

Request Parameters

None

Response Parameters

Table 4-83 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://dbs-download.obs.cn-north-1.myhuaweicloud.com/rds/
Certificate_Download.zip"
}
```

Status Code

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

Error Code

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

4.3.17 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 4-84 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .

Request Parameters

None

Response Parameters

Table 4-85 Parameter description

Parameter	Type	Description
quotas	object	Instance quota of a tenant. For details, see Table 4-86 .

Table 4-86 quotas

Parameter	Type	Description
resources	Array of objects	Resource objects. For details, see Table 4-87 .

Table 4-87 resources

Parameter	Type	Description
type	String	Quota of a specified type. instance : indicates the instance quota.
used	Integer	Number of created resources.
quota	Integer	Maximum resource quota.

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](#).

4.3.18 Querying the Top I/O List

Function

This API is used to query top I/Os of instance database processes and return the results associated with session information.

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

Constraints

The resource type and operating system 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 4-88 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	String	Instance ID.
node_id	Yes	String	Node ID. It must be a CN or a DN node of a non-log role, and the node status must be normal. To obtain the value, see Querying the Components of a DB Instance .

Parameter	Mandatory	Type	Description
component_id	Yes	String	Component ID. It must be a CN or a DN component of a non-log role. To obtain the value, see Querying the Components of a DB Instance . <ul style="list-style-type: none">• Data Node (DN): Stores and queries table data.• Coordinator nodes (CNs): stores database metadata, distributes and executes query tasks, and then returns the query results from DNs to applications.
top_io_num	No	Integer	Number of top I/O threads to be queried in the database process. The default value is 20 . The result of associating the TOP I/O thread with the session information is returned. The number of returned results cannot exceed the value of this parameter.
sort_condition	No	String	Top I/O sorting condition. Value: <ul style="list-style-type: none">• read• write

Request Parameters

None

Response Parameters

Table 4-89 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 Table 4-90 .

Table 4-90 top_io_infos field data structure description

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

4.3.19 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

Table 4-91 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	String	Instance ID, which is compliant with the UUID format.

Request Parameters

None

Response Parameters

Table 4-92 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 Table 4-93 objects	Node information list.

Table 4-93 CnInfoBeforeReduce

Parameter	Type	Description
id	String	Node ID.
name	String	Node name.
status	String	Node status. <ul style="list-style-type: none">● normal: The node is normal.● abnormal: The node is abnormal.● creating: The node is being created.● createfail: The node fails to be created.
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](#).

4.3.20 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

Table 4-94 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	String	Instance ID, which is compliant with the UUID format.

Request Parameters

None

Response Parameters

Table 4-95 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.
percents	Array of integers	Percentages of available storage that you can choose from.

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,
  "trigger_available_percent" : 20,
  "min_volume_size" : 160,
  "max_volume_size" : 240
}
```

Status Code

- Normal
200

- 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}/v3.1/{project_id}/configurations?
offset={offset}&limit={limit}](https://{Endpoint}/v3.1/{project_id}/configurations?offset={offset}&limit={limit})

Table 4-96 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
offset	No	Integer	Index offset. If offset is set to <i>N</i> , the resource query starts from the <i>N</i> +1 piece of data. The value is 0 by default, indicating that the query starts from the first piece of data. The value cannot be a negative number. For example, if this parameter is set to 0 and limit is set to 10 , 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 100 . The value cannot be a negative number. The minimum value is 1 and the maximum value is 100 . For example, if this parameter is set to 10 , a maximum of 10 records can be displayed.

Request Parameters

None

Response Parameters

Table 4-97 Parameter description

Parameter	Type	Description
configurations	Array of objects	Parameter template information. For details, see Table 4-98 .
count	Integer	Total number of records.

Table 4-98 configurations field data structure description

Parameter	Type	Description
id	String	Parameter template ID.
name	String	Parameter template name.
description	String	Parameter template description.
datastore_version	String	Engine version.
datastore_name	String	Engine name.
ha_mode	String	Instance type.
created	String	Creation time in the "yyyy-MM-dd HH:mm:ss" format.
updated	String	Update time in the "yyyy-MM-dd HH:mm:ss" format.

Parameter	Type	Description
user_defined	Boolean	Whether the parameter template is a custom template. <ul style="list-style-type: none">• false: The parameter template is a default template.• true: The parameter template is a custom template.

Example Request

Obtaining 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](#).

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}/v3.1/{project_id}/instances/{instance_id}/configurations

Table 4-99 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	String	Instance ID.

Request Parameters

None

Response Parameters

Table 4-100 Parameter description

Parameter	Type	Description
datastore_version	String	Engine version.

Parameter	Type	Description
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 Table 4-101 .

Table 4-101 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 string , integer , boolean , list , or float . Value: <ul style="list-style-type: none">• string• integer• boolean• list• float
description	String	Parameter description.

Example Request

Obtaining parameters of a specified DB instance

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3.1/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfsdae3435in14/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](#).

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

Table 4-102 Parameter description

Name	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	Instance ID.

Request Parameters

Table 4-103 Parameter description

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

Response Parameters

Table 4-104 Parameter description

Name	Type	Description
restart_required	Boolean	Whether the instance needs to be rebooted. <ul style="list-style-type: none">• true: indicates that the instance needs to be rebooted.• false: indicates that the instance does not need to be rebooted.

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/
dsfae23fsfdsae3435in01/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/
dsfae23fsfdsae3435in01/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
}
```
- Parameter modified (The instance needs to be rebooted).

```
{
  "restart_required": true
}
```

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

Table 4-105 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .

Request Parameters

Table 4-106 Parameter description

Name	Mandatory	Type	Description
name	Yes	String	Parameter template name. 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 Querying DB Engine Versions . For details, see Table 4-107 .

Table 4-107 datastore parameter description

Name	Mandatory	Type	Description
engine_version	Yes	String	DB engine version.
instance_mode	Yes	String	Deployment model. Value: <ul style="list-style-type: none">• ha: primary/standby• independent: distributed independent deployment

Response Parameters

Table 4-108 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. T is the separator between calendar and hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the offset is shown as +0800 .

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}

Table 4-109 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
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/{*project_id*}/configurations/{*config_id*}

Table 4-110 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
config_id	Yes	String	Parameter template ID.

Request Parameters

None

Response Parameters

Table 4-111 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_model	String	Deployment model. Value: <ul style="list-style-type: none">● ha: primary/standby● independent: independent
created_at	String	Creation time in the "yyyy-mm-ddThh:mm:ssZ" format. T is the separator between calendar and hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the offset is +0800 .
updated_at	String	Modification time in the "yyyy-mm-ddThh:mm:ssZ" format. T is the separator between calendar and hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the offset is +0800 .

Parameter	Type	Description
configuration_parameters	Array of objects	Parameter details. For details about the parameters, see Table 4-112 .

Table 4-112 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. true: Instance needs to be rebooted. false: Instance does not need to be rebooted.
readonly	Boolean	Whether the parameter is read-only. true: read only false: editable
value_range	String	Parameter value range.
data_type	String	Parameter type. The value can be string , integer , boolean , list , or float .
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](#).

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

Table 4-113 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
config_id	Yes	String	ID of the parameter template to be replicated.

Request Parameters

Table 4-114 Parameter description

Name	Mandatory	Type	Description
name	Yes	String	Name of the replicated 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 4-115 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

Table 4-116 Parameter description

Name	Type	Mandatory	Description
project_id	String	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
config_id	String	Yes	Parameter template ID.

Request Parameters

None

Response Parameters

None

Example Request

Resetting a parameter template

```
POST https://gaussdb-opengauss.cn-north-4.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

Table 4-117 Parameter description

Name	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .

Request Parameters

Table 4-118 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.

Response Parameters

Table 4-119 Parameter description

Parameter	Type	Description
differences	Array of objects	Differences between parameter templates. For details, see Table 4-120 .

Table 4-120 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

Table 4-121 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
config_id	Yes	String	Parameter template ID.
offset	No	Integer	Index offset. If offset is set to <i>N</i> , the resource query starts from the <i>N</i> +1 piece of data. The value is 0 by default, indicating that the query starts from the first piece of data. The value cannot be a negative number. For example, if this parameter is set to 0 and limit is set to 10 , 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 100 . The value cannot be a negative number. The minimum value is 1 and the maximum value is 100 . For example, if this parameter is set to 10 , a maximum of 10 records can be displayed.

Request Parameters

None

Response Parameters

Table 4-122 Parameter description

Parameter	Type	Description
instances	Array of objects	Parameter template information. For details, see Table 4-123 .
total_count	Integer	Total number of records.

Table 4-123 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.

```
{
  "total_count": 2,
```

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

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}](https://{Endpoint}/v3/{project_id}/configurations/name-validation?name={name})

Table 4-124 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .

Parameter	Mandatory	Type	Description
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 4-125 Parameter description

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

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

Table 4-126 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
config_id	Yes	String	Parameter template ID.

Request Parameters

Table 4-127 Parameter description

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

Response Parameters

Table 4-128 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

Table 4-129 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
config_id	Yes	String	Parameter template ID.

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

Request Parameters

None

Response Parameters

Table 4-130 Parameter description

Parameter	Type	Description
histories	Array of objects	Application records. For details, see Table 4-131 .
total_count	Integer	Total number of records.

Table 4-131 histories field data structure description

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

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

Example Request

Querying application records of a parameter template

URI example

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

Example Response

Application records of the parameter template queried.

```
{
  "total_count": 2,
  "histories": [
    {
      "instance_id": "1995a67680474481b3e42ac1474e32e0in14",
      "instance_name": "gauss-a283",
      "apply_result": "SUCCESS",
      "applied_at": "2022-08-09T03:06:52+0800",
      "error_code": null
    },
    {
      "instance_id": "8303819fd8744ef69f34595e9710a33din14",
      "instance_name": "gauss-2423-lt-master",
      "apply_result": "FAILED",
      "applied_at": "2022-08-09T03:06:52+0800",
      "error_code": "DBS.280005"
    }
  ]
}
```

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

Table 4-132 Parameter description

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

Request Parameters

None

Response Parameters

Table 4-133 Parameter description

Parameter	Type	Description
histories	Array of objects	Parameter template information. For details, see Table 4-134 .
total_count	Integer	Total number of records.

Table 4-134 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"> • SUCCESS • FAILED
updated_at	String	Modification time in the "yyyy-mm-ddThh:mm:ssZ" format. T is the separator between calendar and hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the offset is +0800 .

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/{project_id}/instances/{instance_id}/db-upgrade/candidate-versions

Table 4-135 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	String	Instance ID, which is compliant with the UUID format.

Request Parameters

None

Response Parameters

Table 4-136 Response body parameters

Parameter	Type	Description
upgrade_type_list	Array of Table 4-137 objects	Upgrade types.
rollback_enabled	Boolean	Whether rollback is supported. <ul style="list-style-type: none">● true: Rollback is supported.● false: Rollback is not supported.
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.
roll_upgrade_progress	Table 4-139 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 upgraded. 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.

Table 4-137 upgrade_type_list

Parameter	Type	Description
upgrade_type	String	Upgrade type. <ul style="list-style-type: none">● grey: Gray upgrade● inplace: In-place upgrade● hotfix: Hot patch upgrade

Parameter	Type	Description
enable	Boolean	Whether the upgrade type is available. <ul style="list-style-type: none"> • true: yes • false: no
upgrade_action_list	Array of Table 4-138 objects	Upgrade actions.

Table 4-138 upgrade_action_list

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

Table 4-139 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, null is returned.
already_upgraded_az	String	AZs that have upgraded. Multiple AZs are separated by commas (.). For instances in the independent deployment, null is returned.
az_description_map	Map<String,String>	AZ description.

Example Request

Querying versions that a DB instance can be upgraded to

```
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": "inplace",
    "enable": true,
    "upgrade_action_list": [ {
      "upgrade_action": "upgradeAutoCommit",
      "enable": true
    } ]
  }, {
    "upgrade_type": "grey",
    "enable": false
  } ],
  "rollback_enabled": true,
  "target_version": "3.200.0",
  "roll_upgrade_progress": {
    "upgraded_dn_group_numbers": null,
    "total_dn_group_numbers": null,
    "not_fully_upgraded_az": "cn-southwest-244c",
    "already_upgraded_az": "cn-southwest-244b,cn-southwest-244a",
    "az_description_map": {
      "az1.dc1": "AZ1",
      "az0.dc0": "az1"
    }
  },
  "upgrade_candidate_versions": [ ],
  "hotfix_upgrade_candidate_versions": [ ],
  "hotfix_rollback_candidate_versions": [ ]
}
```

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 upgrade.

- 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 either 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 upgrade
 - Auto-commit: Hot patches are automatically upgraded 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

Table 4-140 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .

Parameter	Mandatory	Type	Description
instance_id	Yes	String	Instance ID, which is compliant with the UUID format.

Request Parameters

Table 4-141 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">• inplace: In-place upgrade• grey: Gray upgrade• hotfix: Hot patch upgrade
upgrade_action	No	String	Instance upgrade action. The value is case-sensitive. For the in-place upgrade, this parameter is optional. For the gray upgrade, this parameter can be set to upgradeAutoCommit , upgrade , commit , or rollback . For the hot patch upgrade, this parameter can be set to upgradeAutoCommit or rollback . <ul style="list-style-type: none">• upgradeAutoCommit: Auto-commit• upgrade: Rolling upgrade• commit: Commit• rollback: Rollback
target_version	No	String	Target version that the instance will be upgraded to. <ul style="list-style-type: none">• In a hot patch upgrade, multiple hot patch versions can be configured.

Parameter	Mandatory	Type	Description
upgrade_shard_num	No	Integer	Number of shards to be upgraded in a gray upgrade for a distributed instance. This parameter is mandatory when upgrade action is set to upgrade (rolling upgrade). The value cannot be greater than the number of shards that have not been upgraded.
upgrade_az	No	String	AZ to be upgraded in a gray upgrade. This parameter is mandatory when upgrade action is set to upgrade (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.

Response Parameters

Table 4-142 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 upgrade

- Upgrading hot patches

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

```
cc6fd964d93f4003851dfc29d57d30a5in14/db-upgrade
{
  "upgrade_type": "hotfix",
  "target_version": "xxx,xxx,xxx",
  "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": "xxx,xxx,xxx",
  "upgrade_action": "rollback"
}
```

• Gray upgrade

a. 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"
}
```

b. Setting **upgrade_action** to **upgrade**

i. Configuring required parameters

```
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,
}
```

ii. Rollin 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"
}
```

iii. Committing the upgrade when the instance is in the rolling upgrade phase and all shards are upgraded (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](#).

4.6 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/{project_id}/instances/{instance_id}/backups/policy

Table 4-143 Parameter description

Name	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .

Name	Mandatory	Description
instance_id	Yes	Instance ID.

Request Parameters

Table 4-144 Parameter description

Name	Mandatory	Type	Description
backup_policy	Yes	Object	Backup policy information For details, see Table 4-145 .

Table 4-145 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	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. The value of HH must be 1 greater than the value of hh . The values of mm and MM must be the same and must be 00 . Example value: 21:00-22:00

Name	Mandatory	Type	Description
period	Yes	String	<p>Full backup period. An automated full backup will be created on the specified days of the week.</p> <p>The value is a number separated by commas (,), indicating the days of the week. For example, 1,2,3,4 indicates that the backup period is Monday, Tuesday, Wednesday, and Thursday.</p>
differential_period	Yes	String	<p>Differential backup interval. Interval for automatic differential backup.</p> <p>Its value can be 15, 30, 60, 180, 360, 720, or 1440. The unit is minute.</p> <p>Example value: 30</p>
rate_limit	No	Integer	<p>Upload speed at which data is uploaded to OBS. 0 MB/s indicates that the speed is not limited. The upload speed is related to the bandwidth.</p> <p>Value range: 0-1024</p> <p>Minimum value: 0 MB/s</p>
prefetch_block	No	Integer	<p>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 64.</p> <p>Value: 1 to 8192</p> <p>Minimum value: 1.</p> <p>Maximum value: 8192</p>

Name	Mandatory	Type	Description
file_split_size	No	Integer	Size by which full and differential backup files are split, in GB. The value is from 0 to 1024 , but it must be a multiple of 4. The default value is 4 . 0 indicates the size is not limited. Value range: 0-1024 Minimum value: 0 Maximum value: 1024
filesplit_size	No	Integer	Size by which full and differential backup files are split. Discarded 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/dsfae23fsfsdae3435in14/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 4-146 Parameter description

Name	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	Instance ID.

Request Parameters

None

Response Parameters

Table 4-147 Parameter description

Parameter	Type	Description
backup_policy	Object	Backup policy information. For details, see Table 4-148 .

Table 4-148 backup_policy field data structure description

Parameter	Type	Description
keep_days	Integer	Full backup retention days. Value: 1 to 732 Minimum value: 1 Maximum value: 732
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">• The HH value must be 1 greater than the hh value.• The values of mm and MM must be the same and must be set to 00.
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.
differential_period	String	(This field has been discarded.) 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. 0 MB/s 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 64 .
filesplit_size	Integer	This field has been discarded.
file_split_size	Integer	Size by which full and differential backup files are split, in GB. The value is from 0 to 1024 , but it must be a multiple of 4. The default value is 4 . 0 indicates the size is not limited.

Parameter	Type	Description
enable_standby_backup	Boolean	Whether to enable backup on a standby node. <ul style="list-style-type: none">● true: This function is enabled.● false: This function is disabled.

Example Request

Querying an automated backup policy

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsf23fsfsdae3435in14/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}/v3.1/{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 4-149 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	No	String	Instance ID, which is compliant with the UUID format. This parameter is mandatory when you query log backups.
backup_id	No	String	Backup ID, which is compliant with the UUID format.
backup_type	No	String	Backup type. Value: <ul style="list-style-type: none">• auto: instance-level automated full backup• manual: instance-level manual full backup• Log_Xbsa: XBSA log backup
offset	No	Integer	Index offset. If offset is set to <i>N</i> , the resource query starts from the <i>N</i> +1 piece of data. The value is 0 by default, indicating that the query starts from the first piece of data. The value cannot be a negative number. Minimum value: 0

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of records to be queried. The default value is 100 . The value cannot be a negative number. The minimum value is 1 and the maximum value is 100 . Minimum value: 1 Maximum value: 100
begin_time	No	String	Query start time in the "yyyy-mm-ddThh:mm:ssZ" format. T is the separator between calendar and hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the offset is +0800 . This parameter must be used together with end_time .
end_time	No	String	Query end time. The format is "yyyy-mm-ddThh:mm:ssZ" and the end time must be later than the start time. T is the separator between calendar and hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the offset is +0800 . This parameter must be used together with begin_time .

Request Parameters

None

Response Parameters

Table 4-150 Parameter description

Parameter	Type	Description
backups	Array of objects	Backup information. For details, see Table 4-151 .
total_count	Long	Total number of backup files.

Table 4-151 backups field data structure description

Parameter	Type	Description
id	String	Backup ID.
name	String	Backup name.
description	String	Description of the backup file.
begin_time	String	Backup start time in the "yyyy-mm-ddThh:mm:ssZ" format. T is the separator between calendar and hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as +0800 .
end_time	String	Backup end time in the "yyyy-mm-ddThh:mm:ssZ" format. T is the separator between calendar and hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as +0800 .
status	String	Backup status. Value: <ul style="list-style-type: none">● BUILDING: Backup in progress● COMPLETED: Backup completed● FAILED: Backup failed
size	Double	Backup size in MB.
type	String	Backup type. Value: <ul style="list-style-type: none">● auto: instance-level automated full backup● manual: instance-level manual full backup
datastore	Object	Database information. For details, see Table 4-152 .
instance_id	String	DB instance ID.

Table 4-152 datastore field data structure description

Parameter	Type	Description
type	String	DB engine. The value is case-insensitive and can be: GaussDB

Parameter	Type	Description
version	String	DB engine version. If this parameter is not specified, the latest version is used by default. To query supported DB engine versions, see Querying DB Engine Versions .

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",
      "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](#).

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

Table 4-153 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .

Request Parameters

Table 4-154 Parameter description

Parameter	Mandatory	Type	Description
instance_id	Yes	String	DB instance ID.

Parameter	Mandatory	Type	Description
name	Yes	String	Backup name. It must contain 4 to 64 characters and start with a letter. Only letters (case-sensitive), digits, hyphens (-), and underscores (_) are allowed. Minimum characters: 4 Maximum characters: 64
description	No	String	Backup description. It contains up to 256 characters and cannot contain special characters (>!"&'=). Maximum characters: 256

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 4-155 Response body parameters

Parameter	Type	Description
backup	Object	Backup information. For details, see Table 4-156 .
job_id	String	Task ID.

Table 4-156 backup field data structure description

Parameter	Type	Description
id	String	Backup ID.
name	String	Backup name.
description	String	Backup description.

Parameter	Type	Description
begin_time	String	Backup start time in the "yyyy-mm-ddThh:mm:ssZ" format. T is the separator between calendar and hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the offset is +0800 .
status	String	Backup status. Value: <ul style="list-style-type: none">● BUILDING: Backup in progress● COMPLETED: Backup completed● FAILED: Backup failed
type	String	Backup type. Value: manual (manual full backup).
instance_id	String	DB instance ID.

Example Response

```
{
  "backup": {
    "id": "e76112bf2074871bf54cb8df5af7f64br14",
    "name": "backuppwqwq32",
    "description": "manual 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

Table 4-157 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	String	Instance ID.

Request Parameters

None

Response Parameters

Table 4-158 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/dsfae23fsfsae3435in14/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 4-159 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
backup_id	Yes	String	Backup ID.

Request Parameters

None

Response Parameters

None

Example Request

Deleting a manual backup

```
DELETE https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/backups/e28d08754b1a490fb2b3540ed013a7fbb14
```

Example Response

Manual backup deleted.

```
{}
```

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}

Table 4-160 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
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 4-161 Parameter description

Parameter	Type	Description
restore_time	Array of objects	Restoration time ranges. For details, see Table 4-162 .

Table 4-162 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.
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 4-163 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .

Request Parameters

Table 4-164 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 (_).
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">To deploy a DB instance in the same AZ, enter three same AZ IDs.To deploy a DB instance across three different AZs, enter three different AZ IDs. The value cannot be empty. For details about how to obtain this parameter value, see Regions and Endpoints .
flavor_ref	Yes	String	Specification code. The value cannot be empty. To obtain its value, see Querying Instance Specifications .
volume	Yes	Object	Volume information. For details, see Table 4-165 .
disk_encryption_id	No	String	Key ID for disk encryption. The default value is empty.

Parameter	Mandatory	Type	Description
vpc_id	Yes	String	<p>VPC ID. To obtain this parameter value, use the following methods:</p> <ul style="list-style-type: none"> • Method 1: Log in to VPC console and view the VPC ID in the VPC details page. • Method 2: Query the VPC ID through the VPC API. For details, see Querying VPCs. • Method 2: See the section "Querying VPCs" in the <i>Virtual Private Cloud API Reference</i>.
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"> • Method 1: Log in to VPC console and click the target subnet on the Subnets page. You can view the network ID on the displayed page. • Method 2: Query the subnet ID through the VPC API. For details, see Querying Subnets. • Method 2: See the section "Querying Subnets" in the <i>Virtual Private Cloud API Reference</i>.

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:</p> <ul style="list-style-type: none"> • Method 1: Log in to VPC console. Choose Access Control > Security Groups 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. • Method 2: Query the security group through the VPC API. For details, see Querying Security Groups. • Method 2: See the section "Querying Security Groups" in the <i>Virtual Private Cloud API Reference</i>.
password	Yes	String	<p>Database password.</p> <p>The GaussDB database password must:</p> <p>Consist of 8 to 32 characters, including at least three 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>
charge_info	No	Object	<p>Billing mode, which can be pay-per-use or yearly/monthly. For details, see Table 4-166.</p>
backup_strategy	No	Object	<p>Automated backup policy. For details, see Table 4-168.</p>
restore_point	Yes	Object	<p>Restoration information. For details, see Table 4-167.</p>

Parameter	Mandatory	Type	Description
enable_parallel_restore	No	Boolean	Whether to support concurrent restoration of backup files. If this parameter is not configured, enterprise edition instances do not support this function by default, and primary/standby instances support this function 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.
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 8000 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">• If this parameter is not specified, GaussDB uses UTC in the International website by default.• 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 UTC+08:00 rather than UTC+08:30.

Parameter	Mandatory	Type	Description
enable_force_switch	No	Boolean	<p>Whether to forcibly promote a standby node to primary. The value can only be true or false.</p> <p>true: The function is enabled. false: (default value) The function is disabled. Only 1.2.2 and later versions are supported.</p> <p>NOTE 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.</p>

Table 4-165 volume field data structure description

Parameter	Mandatory	Type	Description
type	Yes	String	<p>Disk type.</p> <p>LOCALSSD indicates the local SSD and is available for primary/standby instances. ULTRAHIGH indicates the cloud disk and is available for distributed instances in the independent deployment. The value is case-sensitive.</p> <p>ULTRAHIGH: local disk. ESSD: extreme SSD.</p>

Parameter	Mandatory	Type	Description
size	Yes	Integer	Storage space, which must be at least equal to that of the original DB instance. For example, if this parameter is set to 40 , 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 4-166 charge_info field data structure description

Parameter	Mandatory	Type	Description
charge_mode	Yes	String	Billing mode. postPaid : pay-per-use billing. prePaid : yearly/monthly billing.
period_type	No	string	Subscription period type. month : The service is subscribed by month. year : The service is subscribed by year. This parameter is valid and mandatory only when charge_mode is set to prePaid .
period_num	No	integer	This parameter is valid and mandatory only when charge_mode is set to prePaid . Value range: When period_type is set to month , the parameter value ranges from 1 to 9 . When period_type is set to year , the parameter value ranges from 1 to 3 . When a floating-point value is transferred, the value is automatically truncated to an integer.

Parameter	Mandatory	Type	Description
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. true : indicates that the subscription is automatically renewed. false : indicates that the subscription is not automatically renewed. The default value is false .
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. true : indicates that the order is automatically paid from the account. false : indicates that the order is manually paid from the account. The default value is false .

Table 4-167 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.

Parameter	Mandatory	Type	Description
type	No	String	Restoration type. Value: <ul style="list-style-type: none"> • backup: indicates data is restored using backups. In this mode, type is optional and backup_id is mandatory. • timestamp: indicates data is restored using point-in-time recovery (PITR). In this mode, type is mandatory and restore_time is mandatory. Value: <ul style="list-style-type: none"> • backup • timestamp
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 4-168 backup_strategy field data structure description

Parameter	Mandatory	Type	Description
start_time	Yes	String	Discarded field. Leave it blank.
keep_days	No	Integer	Discarded field. Leave it blank.

Response Parameters

Table 4-169 Parameter description

Parameter	Type	Description
instance	Object	Instance information. For details, see Table 4-170 .
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 4-170 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, BUILD indicates that the instance is being created.
datastore	Object	Database information. For details, see Table 4-171 .
ha	Object	Instance deployment model. For details, see Table 4-172 .
port	String	Database port. The default value is 8000 .
enterprise_project_id	String	Project ID.
volume	Object	Volume information. For details, see Table 4-173 .
backup_strategy	Object	Automated backup policy. For details, see Table 4-174 .
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 Regions and Endpoints .
flavor_ref	String	Specification code.
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 Regions and Endpoints .
vpc_id	String	VPC ID.
subnet_id	String	Subnet ID.
security_group_id	String	Security group ID.

Parameter	Type	Description
charge_info	Object	Billing mode, which can be pay-per-use or yearly/monthly. For details, see Table 4-175 .

Table 4-171 datastore field data structure description

Parameter	Type	Description
type	String	DB engine. Value: Value: <ul style="list-style-type: none"> • GaussDB
version	String	DB engine version.

Table 4-172 ha field data structure description

Parameter	Type	Description
mode	String	For distributed instances, the return value is enterprise (enterprise edition). For primary/standby instances, the return value is centralization_standard (primary/standby edition).
replication_mode	String	Replication mode for the standby node. Value: sync . NOTE sync indicates synchronous replication. Value: <ul style="list-style-type: none"> • sync
consistency	String	(GaussDB reserved parameter) Transaction consistency type. The value can be strong or eventual . Value: <ul style="list-style-type: none"> • strong • eventual

Table 4-173 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"> ● ULTRAHIGH: indicates the SSD. ● ESSD: indicates the extreme SSD. Value: <ul style="list-style-type: none"> ● ULTRAHIGH ● ESSD
size	Integer	Disk size. When restoring 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 4-174 backup_strategy field data structure description

Parameter	Type	Description
start_time	String	This field has been discarded.
keep_days	Integer	This field has been discarded.

Table 4-175 charge_info field data structure description

Parameter	Type	Description
charge_mode	String	Billing mode. postPaid : pay-per-use billing. prePaid : yearly/monthly billing.
period_type	string	Subscription period type. month : The service is subscribed by month. year : The service is subscribed by year. This parameter is valid and mandatory only when charge_mode is set to prePaid .
period_num	integer	This parameter is valid and mandatory only when charge_mode is set to prePaid . Value range: When period_type is set to month , the parameter value ranges from 1 to 9 . When period_type is set to year , the parameter value ranges from 1 to 3 .

Parameter	Type	Description
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. true : indicates that the subscription is automatically renewed. false : indicates that the subscription is not automatically renewed. The default value is false .
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. true : indicates that the order is automatically paid from the account. false (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": "d8e6ca5a624745bcb546a227aa3ae1cf14",
    "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 empty.

URI

GET https://{Endpoint}/v3/{project_id}/restorable-instances

Table 4-176 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
source_instance_id	Yes	ID of the DB instance to be restored.
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 empty, restore_time is used.
restore_time	No	Specific point of time. If the backup ID is empty, this parameter is used to query the instance topology information and filter the queried instances.
offset	No	Index offset. If offset is set to <i>N</i> , the resource query starts from the <i>N</i> +1 piece of data. The value is 0 by default, indicating that the query starts from the first piece of data. The value cannot be a negative number.
limit	No	Number of records to be queried. The default value is 100 . The value cannot be a negative number. The minimum value is 1 and the maximum value is 100 .

Request Parameters

None

Response Parameters

Table 4-177 Parameter description

Parameter	Type	Description
instances	Array of Objects	Instances that can be used for backups and restorations. For details, see Table 4-178 .

Parameter	Type	Description
total_count	Integer	Total number of queried instances.

Table 4-178 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	Number	Instance version
mode	String	Deployment model. <ul style="list-style-type: none"> • Ha: primary/standby deployment • Independent: independent deployment
instance_mode	String	Instance model. <ul style="list-style-type: none"> • enterprise: enterprise edition • standard: standard edition • basic: basic edition

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=88efb3753dc844829c380edff7798eein14&backup_id=d3f223e9c35d450ea0692bdbff686e45br14
```

Example Response

Instances that can be used for backups and restorations queried.

```
{
  "instances": [ {
    "instance_name": "gaussdb_hzx",
    "instance_id": "3ea6d6463c9a4baf9a47c5b74464307cin14",
    "volume_type": "ULTRAHIGH",
    "data_volume_size": 500,
```

```
"version" : 1.3,  
"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 are mutually exclusive. When the API is called, only one of them can be configured. It means that the two parameters cannot be configured or left empty at the same time.

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 4-179 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	No	String	Original instance ID.

Parameter	Mandatory	Type	Description
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 4-180 Parameter description

Parameter	Type	Description
cluster_mode	String	Instance deployment model. Value: <ul style="list-style-type: none"> ● Ha: primary/standby deployment ● Independent: independent deployment ● Combined: combined deployment
instance_model	String	Instance model. Value: <ul style="list-style-type: none"> ● basic: basic edition ● standard: standard edition ● enterprise: enterprise edition
data_volume_size	String	Storage space, in GB

Parameter	Type	Description
solution	String	Solution template type. Value: <ul style="list-style-type: none">● single: single node● double: 1 primary + 1 standby (2 nodes)● triset: 1 primary + 2 standby● logger: 1 primary + 1 standby + 1 log● loggerdorado: 1 primary + 1 standby + 1 log (shared storage)● quadruset: 1 primary + 3 standby● hws: distributed (independent deployment)
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](#).

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

Table 4-181 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	String	Instance ID.

Request Parameters

None

Response Parameters

Table 4-182 Response Parameters

Parameter	Type	Description
status	String	Whether error log collection is enabled. <ul style="list-style-type: none">• ON: enabled• OFF: disabled

Example Request

```
GET https://gaussdb-opengauss.cn-north-4.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/0317e6bbae534b8eb8f74f0eafc1d3din01/error-log/switch/status
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/0317e6bbae534b8eb8f74f0eafc1d3din01/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
```

Table 4-183 Request path parameters

Parameter	Type	Mandatory	Description
project_id	String	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	String	Yes	Instance ID.

Table 4-184 Request query parameters

Parameter	Type	Mandatory	Description
offset	Integer	No	Index offset. If offset is set to <i>N</i> , the resource query starts from the <i>N</i> +1 piece of data. The value is 0 by default, indicating that the query starts from the first piece of data. The value cannot be a negative number. For example, if this parameter is set to 0 and limit is set to 10 , only the 1st to 10th records are displayed.
limit	Integer	No	Number of records to be queried. The default value is 10 . The value cannot be a negative number. The minimum value is 1 and the maximum value is 100 . For example, if this parameter is set to 10 , a maximum of 10 records can be displayed.
start_time	String	Yes	Start time in the "yyyy-mm-ddThh:mm:ssZ" format. T is the separator between calendar and hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the offset is +0800 .
end_time	String	Yes	End time in the "yyyy-mm-ddThh:mm:ssZ" format. T is the separator between calendar and hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the offset is +0800 . Only error logs generated in the past 30 days can be queried.

Request Parameters

None

Response Parameters

Table 4-185 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 Table 4-186 .

Table 4-186 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.

- 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

Table 4-187 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	String	Instance ID, which is compliant with the UUID format.

Request Parameters

None

Response Parameters

Table 4-188 Response body parameters

Parameter	Type	Description
list	Array of SlowLogDownloadInfo objects	Downloaded slow query log information. For details, see Table 4-189 .

Table 4-189 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
200
- 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.

- 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

Table 4-190 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	String	Instance ID, which is compliant with the UUID format.

Request Parameters

None

Response Parameters

Table 4-191 Response body parameters

Parameter	Type	Description
list	Array of SlowLogDownloadInfo objects	Downloaded slow query log information. For details, see Table 4-192 .

Table 4-192 SlowLogDownloadInfo field data structure description

Parameter	Type	Description
id	String	Slow query log ID.
instance_id	String	Instance ID.

Parameter	Type	Description
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 Database and Account Management

4.8.1 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

Table 4-193 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	Instance ID.

Request Parameters

Table 4-194 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 pg or a digit, and must be different from template library names. Template libraries include postgres , template0 , and template1 .
character_set	No	String	Character set. The default value is UTF8 .
owner	No	String	Database user. The default value is root . The value must be an existing username and must be different from system usernames. System users: rdsAdmin , rdsMetric , rdsBackup , and rdsRepl .
template	No	String	Name of the database template. The value can be template0 .
lc_collate	No	String	Database collocation. The default value is C . NOTICE Comparison of the same string in different collations may have different results. For example, the execution result of select 'a'>'A' ; is false when this parameter is set to en_US.utf8 and is true when this parameter is set to 'C' . If a database is migrated from "O" to GaussDB, this parameter needs to be set to 'C' to meet your expectations. You can query the supported collations from the pg_collation table.

Parameter	Mandatory	Type	Description
lc_ctype	No	String	Database classification. The default value is C .

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](#).

4.8.2 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

Table 4-195 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	Instance ID.

Request Parameters

Table 4-196 Parameter description

Parameter	Mandatory	Type	Description
name	Yes	String	Database username. The username contains 1 to 63 characters, including letters, digits, and underscores (_). It cannot start with pg or a digit and must be different from system usernames. System users: rdsAdmin , rdsMetric , rdsBackup , rdsRepl , and root .

Parameter	Mandatory	Type	Description
password	Yes	String	<p>Password of the database account.</p> <p>The value cannot be empty and contains 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 name value or the name value in reverse order.</p> <p>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"> • false or left blank: The database account can only be used for login, database creation, and database account creation. • true: The database account can only be used for login.

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](#).

4.8.3 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 4-197 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	Instance ID.

Request Parameters

Table 4-198 Parameter description

Parameter	Mandatory	Type	Description
db_name	Yes	String	Database name. The database name contains 1 to 63 characters, including letters, digits, and underscores (_). It cannot start with pg or a digit, and must be different from template library names. Template libraries include postgres , template0 , and template1 .
schemas	Yes	Array of objects	Schemas. Each element is the schema information associated with the database. A single request supports a maximum of 20 elements. For details, see Table 4-199 .

Table 4-199 schemas field data structure description

Parameter	Mandatory	Type	Description
name	Yes	String	Schema name. The value contains 1 to 63 characters, including letters, digits, and underscores (_). It cannot start with pg or a digit, and must be different from template library names and existing schema names. Template libraries include postgres , template0 , and template1 . Existing schemas include public and information_schema.

Parameter	Mandatory	Type	Description
owner	Yes	String	Database owner. The value contains 1 to 63 characters. It cannot start with pg or a digit and must be different from system usernames. System users: rdsAdmin , rdsMetric , rdsBackup , and rdsRepl .

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](#).

4.8.4 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 permissions of one schema to one account at a time.

URI

POST https://{Endpoint}/v3/{project_id}/instances/{instance_id}/db-privilege

Table 4-200 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	DB instance ID.

Request

Table 4-201 Parameter description

Parameter	Mandatory	Type	Description
db_name	Yes	String	Database name. The database name contains 1 to 63 characters, including letters, digits, and underscores (_). It cannot start with pg or a digit, and must be different from template library names. Template libraries include postgres , template0 , and template1 .
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 Table 4-202 .

Table 4-202 users field data structure description

Parameter	Mandatory	Type	Description
name	Yes	String	Database account. The database account name contains 1 to 63 characters, including letters, digits, and underscores (_). It cannot start with pg or a digit and must be different from system usernames. System users: rdsAdmin , rdsMetric , rdsBackup , rdsRepl , and root .
readonly	Yes	Boolean	Permission of the database account. <ul style="list-style-type: none"> • true: read only • false: read and write

Parameter	Mandatory	Type	Description
schema_name	Yes	String	<p>Schema name.</p> <p>The value cannot be empty and contains 1 to 63 characters, including letters, digits, and underscores (_). It cannot start with pg or a digit, and must be different from template library names and existing schema names. This parameter is mandatory.</p> <p>The template libraries include postgres, template0, template1, public, and information_schema.</p>

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](#).

4.8.5 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

Table 4-203 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	Instance ID.

Request Parameters

Table 4-204 Parameter description

Parameter	Mandatory	Type	Description
name	Yes	String	Username of the database. It cannot be system usernames. System users: rdsAdmin , rdsMetric , rdsBackup , and rdsRepl .

Parameter	Mandatory	Type	Description
password	Yes	String	Password of the database account. Value: The value cannot be empty and contains 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 name value or the name value in reverse order. Enter a strong password to improve security, preventing security risks such as brute force cracking.

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](#).

4.8.6 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

Table 4-205 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	String	DB instance ID.
offset	No	Integer	Page number. If offset is set to <i>N</i> , the resource query starts from the <i>N</i> +1 page. The value is 0 by default, indicating that the query starts from the first piece of data in the first page. The value cannot be a negative number. For example, if this parameter is set to 1 and limit is set to 10 , only the 11th to 20th records in the 2nd page are displayed.
limit	No	Integer	Number of records displayed on each page. Value range: 1 to 100 . Default value: 10 .

Request Parameters

None

Response Parameters

Table 4-206 Parameter description

Parameter	Type	Description
databases	Array of objects	Each element in the list indicates a database. For details, see Table 4-207 .
total_count	Integer	Total number of records.

Table 4-207 databases field data structure description

Parameter	Type	Description
name	String	Database name.
owner	String	Database owner.
character_set	String	Character set used by the database, such as UTF8 .
collate_set	String	Database collation, such as en_US.UTF-8 .
size	String	Database size.

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": "rds-test",
    "character_set": "utf8",
    "owner": "root",
    "collate_set": "en_US.UTF-8",
    "size": 10777247
  }, {
    "name": "testdb1",
    "character_set": "utf8",
    "owner": "root",
    "collate_set": "en_US.UTF-8",
    "size": 10777247
  }, {
    "name": "tt",
    "character_set": "utf8",
    "owner": "root",
```



```
"collate_set" : "en_US.UTF-8",
"size" : 10777247
}],
"total_count" : 3
}
```

Status Code

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

Error Code

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

4.8.7 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

Table 4-208 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	String	DB instance ID.

Parameter	Mandatory	Type	Description
offset	No	Integer	Page number. If offset is set to N , the resource query starts from the $N+1$ page. The value is 0 by default, indicating that the query starts from the first piece of data in the first page. The value cannot be a negative number. For example, if this parameter is set to 1 and limit is set to 10 , only the 11th to 20th records in the 2nd page are displayed.
limit	No	Integer	Number of records displayed on each page. Value range: 1 to 100 . Default value: 10 .

Request Parameters

None

Response Parameters

Table 4-209 Parameter description

Parameter	Type	Description
users	Array of objects	Each element in the list indicates a database user. For details, see Table 4-210 .
total_count	Integer	The total number of database users.

Table 4-210 users field data structure description

Parameter	Type	Description
name	String	Username.
attributes	Object	Permission attributes of a user. For details, see Table 4-211 .
memberof	String	Default permissions of a user.

Table 4-211 attributes field data structure description

Parameter	Type	Description
rolsuper	Boolean	Whether the user has the administrator permissions. The value can be true or false .
rolinherit	Boolean	Whether the user automatically inherits the permissions of the role to which the user belongs. The value can be true or false .
rolcreatorole	Boolean	Whether the user can create other sub-users. The value can be true or false .
rolcreatedb	Boolean	Whether the user can create a database. The value can be true or false .
rolcanlogin	Boolean	Whether the user can log in to the database. The value can be true or false .
rolconlimit	Integer	Maximum number of concurrent connections to an instance. The value -1 indicates that there are no limitations on the number of concurrent connections.
rolreplication	Boolean	Whether the user is a replication role. The value can be true or false .
rolbypassrls	Boolean	Whether the user bypasses each row-level security policy. The value can be true or false .

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",
      "attributes": {
        "rolsuper": false,
        "rolinherit": true,
        "rolcreatorole": true,
        "rolcreatedb": true,
        "rolcanlogin": true,
        "rolconlimit": -1,
        "rolreplication": false,
        "rolbypassrls": false
      },
      "memberof":
        "{gs_role_copy_files,gs_role_signal_backend,gs_role_tablespace,gs_role_replication,gs_role_account_lock}"
    }
  ]
}
```

```
}
],
"total_count": 1
}
```

Status Code

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

Error Code

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

4.8.8 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}

Table 4-212 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	String	DB instance ID.
db_name	Yes	String	Database name. It must be different from template libraries. Template libraries include postgres , template0 , and template1 .

Parameter	Mandatory	Type	Description
offset	No	Integer	Page number. If offset is set to N , the resource query starts from the $N+1$ page. The value is 0 by default, indicating that the query starts from the first piece of data in the first page. The value cannot be a negative number. For example, if this parameter is set to 1 and limit is set to 10 , only the 11th to 20th records in the 2nd page are displayed.
limit	No	Integer	Number of records displayed on each page. Value range: 1 to 100 . Default value: 10 .

Request Parameters

None

Response Parameters

Table 4-213 Parameter description

Parameter	Type	Description
database_schemas	Array of objects	Database schema. Each element in the list indicates a database schema. For details, see Table 4-214 .
total_count	Integer	Total number of database schemas.

Table 4-214 database_schemas field data structure description

Parameter	Type	Description
schema_name	String	Schema name.
owner	String	Schema owner.

Example Request

```
GET https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/{instance_id}/schemas?db_name=dbname
```

Example Response

```
{
  "database_schemas" : [ {
    "schema_name" : "rds-test",
    "owner" : "root"
  }, {
    "schema_name" : "testdb1",
    "owner" : "root"
  } ],
  "total_count" : 2
}
```

Status Code

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

Error Code

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

4.8.9 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}](https://{Endpoint}/v3/{project_id}/instances/{instance_id}/database?database_name={database_name})

Table 4-215 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	Instance ID.

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={database_name}
{
  "database_name": "gaussdb_test"
}
```

Response

```
{}
```

Status Code

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

Error Code

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

4.8.10 Starting a Database

Function

This API is used to start a database 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

Table 4-216 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	String	Instance ID, which is compliant with the UUID format.

Request Parameters

Table 4-217 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 empty, the instance is started.

Response Parameters

Table 4-218 Response body parameters

Parameter	Type	Description
job_id	String	ID of the asynchronous task for starting the database.

Example Request

```
POST https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/054e292c9880d4992f02c0196d3ea468/instances/d8e6ca5a624745bcb546a227aa3ae1cf14/db-startup
{
  "node_ids": [ "a4e6ca5a624745bcb546a227aa373kcf14", "b6e6ca5a624745bcb546a229si3ae1cf14" ]
}
```

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](#).

4.9 Tag Management

4.9.1 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

Table 4-219 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	Instance ID.

Request Parameters

None

Response Parameters

Table 4-220 Parameter description

Parameter	Type	Description
tags	Array of objects	User tags. For details, see Table 4-221 .
total_count	Integer	Total number of records.

Table 4-221 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/dsfae23fsfsae3435in14/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](#).

4.9.2 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

Table 4-222 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .

Request Parameters

None

Response Parameters

Table 4-223 Parameter description

Parameter	Type	Description
tags	Array of objects	All tags. For details, see Table 4-224 .

Table 4-224 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](#).

4.9.3 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 4-225 Request Parameters

Parameter	Type	IN	Mandatory	Description
project_id	string	path	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .

Request Parameters

None

Response Parameters

Table 4-226 Parameter description

Parameter	Type	Description
tags	Array of arrays	All tags. For details, see Table 4-227 .

Table 4-227 tags field data structure description

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

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](#).

4.9.4 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 4-228 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	String	Instance ID.

Request Parameters

Table 4-229 Parameter description

Parameter	Mandatory	Type	Description
tags	Yes	Array of objects	User tags to be added. For details, see Table 4-230 .

Table 4-230 tags parameter description

Parameter	Mandatory	Type	Description
key	Yes	String	Tag key. NOTE A tag key can contain up to 128 characters. Only letters, digits, spaces, and special characters (<code>_.:=-@</code>) are allowed. It cannot start with <code>_sys_</code> or a space, and cannot end with a space.
value	Yes	String	Tag value. NOTE A tag value can contain up to 255 characters. Only letters, digits, spaces, and special characters (<code>_.:=-@</code>) are allowed.

Response Parameters

Table 4-231 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/dsf23fsfsdae3435in01/tags
{
  "tags": [{
    "key": "1",
    "value": "2"
  }]
}
```

Example Response

```
{
  "instance_id": "dsf23fsfsdae3435in01",
  "instance_name": "Gauss-a87h"
}
```

Status Code

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

Error Code

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

4.9.5 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}

Table 4-232 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	String	Instance ID, which is compliant with the UUID format.

Table 4-233 Query parameters

Parameter	Mandatory	Type	Description
key	Yes	String	Tag key.

Request Parameters

None

Response Parameters

Table 4-234 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](#).

4.10 Quota Management

4.10.1 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

Table 4-235 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .

Request Parameters

Table 4-236 Parameter description

Parameter	Mandatory	Type	Description
eps_quotas	Yes	Array of objects	Enterprise quotas to be modified. For details, see Table 4-237 .

Table 4-237 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 - 100,000</i>
vcpus_quota	No	Integer	CPU quota. Value: Actually vCPUs - 2,147,483,646.
ram_quota	No	Integer	Memory quota, in GB. Value: <i>Actually used memory - 2,147,483,646.</i>
volume_quota	No	Integer	Storage quota, GB. Value: <i>Actually used storage - 2,147,483,646.</i>

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](#).

4.10.2 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

Table 4-238 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
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 offset is set to <i>N</i> , the resource query starts from the <i>N</i> +1 piece of data. The value is 0 by default, indicating that the query starts from the first piece of data. The value cannot be a negative number. For example, if this parameter is set to 0 and limit is set to 10 , 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 100 . The value cannot be a negative number. The minimum value is 1 and the maximum value is 100 . For example, if this parameter is set to 10 , a maximum of 10 records can be displayed.

Request Parameters

None

Response Parameters

Table 4-239 Parameter description

Parameter	Type	Description
eps_quotas	Array of objects	Enterprise project details. For details, see Table 4-240 .
total_count	Integer	Total number of records.

Table 4-240 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 -1 indicates that the quota is not limited.
vcpus_eps_quota	Integer	EPS compute quota. The value -1 indicates that the quota is not limited.
ram_eps_quota	Integer	EPS memory quota in GB. The value -1 indicates that the quota is not limited.
volume_eps_quota	Integer	EPS storage quota in GB. The value -1 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](#).

4.11 Task Management

4.11.1 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}`

Table 4-241 Request Parameters

Parameter	Type	Mandatory	Description
project_id	String	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
id	String	Yes	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).

Request Parameters

None

Response Parameters

Table 4-242 Parameter description

Parameter	Type	Description
job	Object	Task information. For details, see Table 4-243 .

Table 4-243 job field data structure description

Parameter	Type	Description
id	String	Task ID.
name	String	Task name.
status	String	Task execution status Value: <ul style="list-style-type: none">• Running: The task is being executed.• Completed: The task is successfully executed.• Failed: The task fails to be executed.
created	String	Creation time in the "yyyy-mm-ddThh:mm:ssZ" format. T is the separator between calendar and hourly notation of time. Z indicates the time zone offset.
ended	String	End time in the "yyyy-mm-ddThh:mm:ssZ" format. T is the separator between calendar and hourly notation of time. Z indicates the time zone offset.
progress	String	Task execution progress. NOTE 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.
instance	Object	Instance on which the task is executed. For details, see Table 4-244 .
fail_reason	String	Task failure information.

Table 4-244 instance field data structure description

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

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](#).

4.11.2 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
```


Table 4-245 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
status	No	String	Task status. Value: <ul style="list-style-type: none">• Running• Completed• Failed
name	No	String	Task name. <ul style="list-style-type: none">• CreateGaussDBV5Instance: Creating a DB instance• BackupSnapshotGaussDBV5Instance: Creating a manual backup• CloneGaussDBV5NewInstance: Restoring data to a new DB instance• RestoreGaussDBV5Instance: Restoring data to the original DB instance• RestoreGaussDBV5InstanceToExistedInst: Restoring data to an existing DB instance• DeleteGaussDBV5Instance: Deleting a DB instance• EnlargeGaussDBV5Volume: Scaling up storage• ResizeGaussDBV5Flavor: Changing specifications• GaussDBV5ExpandClusterCN: Adding coordinator nodes• GaussDBV5ExpandClusterDN: Adding shards
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.

Parameter	Mandatory	Type	Description
offset	No	Integer	Index offset. If offset is set to <i>N</i> , the resource query starts from the <i>N</i> +1 piece of data. The value is 0 by default, indicating that the query starts from the first piece of data. The value cannot be a negative number.
limit	No	Integer	Number of records to be queried. The default value is 100 . The value cannot be a negative number. The minimum value is 1 and the maximum value is 100 .

Request Parameters

None

Response Parameters

Table 4-246 Parameter description

Parameter	Type	Description
tasks	Array of objects	Task list. For details, see Table 4-247 .
total_count	Integer	Number of tasks.

Table 4-247 tasks field data structure description

Parameter	Type	Description
instance_info	Object	Information about the instance associated with the task. For details, see Table 4-248 .
job_id	String	Task ID.
name	String	Task name.
status	String	Task status.

Parameter	Type	Description
process	String	Task progress, in percentage (%)
fail_reason	String	Failure cause.

Table 4-248 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": null,
    "fail_reason": "An exception occurs when the ECS processes services"
  }, {
    "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" : null,
"fail_reason" : null
}],
"total_count" : 2
}
```

Status Code

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

Error Code

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

4.11.3 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}

Table 4-249 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
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](#).

4.12 Recycle Bin

4.12.1 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

Table 4-250 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .

Request Parameters

Table 4-251 Parameter description

Parameter	Mandatory	Type	Description
recycle_policy	Yes	Object	Recycling policy. For details, see Table 4-252 .

Table 4-252 recycle_policy field data structure description

Parameter	Mandatory	Type	Description
retention_period_in_days	Yes	Integer	Deleted instance retention period. Value range: 1 to 7.

Response Parameters

Table 4-253 Parameter description

Parameter	Type	Description
result	String	Modification result. SUCCESS 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](#).

4.12.2 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`

Table 4-254 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .

Request Parameters

None

Response Parameters

Table 4-255 Parameter description

Parameter	Type	Description
retention_period_in_days	String	Deleted instance retention period. Value: 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](#).

4.12.3 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/{project_id}/recycle-instances

Table 4-256 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_name	No	String	DB instance name.

Parameter	Mandatory	Type	Description
offset	No	Integer	Index offset. If offset is set to N , the resource query starts from the $N+1$ piece of data. The value is 0 by default, indicating that the query starts from the first piece of data. The value cannot be a negative number. For example, if this parameter is set to 0 and limit is set to 10 , only the 1st to 10th records are displayed.
limit	No	Integer	Number of records to be queried. The default value is 50 . The value cannot be a negative number. The minimum value is 1 and the maximum value is 50 . For example, if this parameter is set to 10 , a maximum of 10 records can be displayed.

Request Parameters

None

Response Parameters

Table 4-257 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 Table 4-258 .

Table 4-258 instances field data structure description

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

Parameter	Type	Description
ha_mode	String	Deployment model. Value: <ul style="list-style-type: none">● Ha: primary/standby deployment● Independent: independent deployment
engine_name	String	Engine name.
engine_version	String	Engine version.
pay_model	String	Billing mode. 0 : pay-per-use 1 : yearly/monthly
created_at	String	Creation time in the "yyyy-mm-ddThh:mm:ssZ" format. T is the separator between calendar and hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the offset is shown as +0800 .
deleted_at	String	Deletion time in the "yyyy-mm-ddThh:mm:ssZ" format. T is the separator between calendar and hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the offset is shown as +0800 .
volume_type	String	Disk type. Value: <ul style="list-style-type: none">● high: high I/O● ultrahigh: ultra-high I/O● essd: extreme SSD
volume_size	String	Disk size.
data_vip	String	Private IP address.
enterprise_project_id	String	Enterprise project ID. The value 0 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.)

Parameter	Type	Description
recycle_status	String	Backup status in the recycle bin. Value: <ul style="list-style-type: none"> ● Running ● Active
mode	String	Instance model. Value: <ul style="list-style-type: none"> ● basic: basic edition ● standard: standard edition ● enterprise: enterprise edition

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": "00b755ed678e41d18c74b28e2ad41bdcbr14",
    "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](#).

5 Historical APIs

5.1 DB Engine Versions and Specifications

5.1.1 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/{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	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
version	No	String	DB version number. You can query the specifications supported by a specified DB version, for example, 1.4 .
spec_code	No	String	Specification code.

Parameter	Mandatory	Type	Description
ha_mode	No	String	Instance type. You can query the specifications supported by a specified instance type. Primary/standby: centralization_standard Distributed: enterprise
limit	No	Integer	Number of records to be queried. The default value is 100 . The value cannot be a negative number. The minimum value is 1 and the maximum value is 100 . For example, if this parameter is set to 10 , a maximum of 10 records can be displayed.
offset	No	Integer	Index offset. If offset is set to <i>N</i> , the resource query starts from the <i>N</i> +1 piece of data. The value is 0 by default, indicating that the query starts from the first piece of data. The value cannot be a negative number. For example, if this parameter is set to 1 and limit is set to 10 , only the 2nd to 11th records are displayed.

Request Parameters

None

Response Parameters

Table 5-2 Response Parameters

Parameter	Type	Description
flavors	Array of objects	Specification details. For details, see Table 5-3 .
total	integer	Total number of records.

Table 5-3 flavors description

Parameter	Type	Description
vcpus	string	Number of vCPUs.

Parameter	Type	Description
ram	string	Memory size in GB.
spec_code	string	Resource specification code. For details, see DB Instance Specifications .
availability_zone	Array of strings	AZ supported by the specifications.
az_status	Map<String,String>	key indicates the AZ ID, and value indicates the specification status in the AZ. Its value can be any of the following: <ul style="list-style-type: none">• normal: available.• unsupported: indicates that the specifications are not supported by the AZ.• sellout: indicates that the specifications in the AZ are sold out.
version	string	DB engine version supported by the specifications.
name	string	DB engine.
group_type	string	Performance specifications. Its value can be any of the following: <ul style="list-style-type: none">• normal: general-enhanced• normal2: general-enhanced II• armFlavors: Kunpeng general-enhanced• dedicatenormal: exclusive x86• armlocalssd: standard Kunpeng• normallocalssd: standard x86• general: general-purpose• dedicated: dedicated, which is only supported for cloud SSDs• rapid: dedicated, which is only supported for extreme SSDs

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](#).

5.2 DB Instance Management

5.2.1 Creating a DB Instance

Function

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

NOTICE

This API will be unavailable on March 31, 2025. You are advised to switch workloads to the new API ([Creating a DB Instance](#)) before then.

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

URI

POST https://{Endpoint}/opengauss/v3/{project_id}/instances

Table 5-4 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .

Request Parameters

Table 5-5 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 (_).
datastore	Yes	Object	Database information. For details, see Table 5-6 .
ha	Yes	Object	Instance deployment model. For details, see Table 5-7 .
configuration_id	No	String	Parameter template ID. If this parameter is not specified, the default parameter template is used.
port	No	String	Database port.
password	Yes	String	Database password. The password cannot be empty and must contain 8 to 32 characters, containing 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.

Parameter	Mandatory	Type	Description
backup_strategy	No	Object	Backup policy. For details, see Table 5-8 .
enterprise_project_id	No	String	Enterprise project ID. This parameter is suitable only for enterprise tenants.
flavor_ref	Yes	String	Specification code. The value cannot be empty. To obtain its value, see Querying Instance Specifications .
volume	Yes	Object	Volume information. For details, see Table 5-9 .
region	Yes	String	Region ID. The value cannot be empty. For details about how to obtain this parameter value, see Regions and Endpoints .
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">To deploy a DB instance in the same AZ, enter three same AZ IDs.To deploy a DB instance across three different AZs, enter three different AZ IDs. The value cannot be empty. For details about how to obtain this parameter value, see Regions and Endpoints .
vpc_id	Yes	String	VPC ID. To obtain this parameter value, use either of the following methods: <ul style="list-style-type: none">Method 1: Log in to VPC console and view the VPC ID in the VPC details page.Method 2: See the section "Querying VPCs" in the <i>Virtual Private Cloud API Reference</i>.

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"> Method 1: Log in to VPC console and click the target subnet on the Subnets page. You can view the network ID on the displayed page. Method 2: See the section "Querying Subnets" in the <i>Virtual Private Cloud API Reference</i>.
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"> Method 1: Log in to VPC console. Choose Access Control > Security Groups 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. Method 2: Query the security group through the VPC API. For details, see Querying Security Groups. Method 2: See the section "Querying Security Groups" in the <i>Virtual Private Cloud API Reference</i>.
charge_info	No	Object	<p>Billing type, which is only pay-per-use. For details, see Table 5-10.</p>
time_zone	No	String	<p>UTC time zone.</p> <ul style="list-style-type: none"> If this parameter is not specified, GaussDB uses UTC in the International website by default. 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 UTC+08:00 rather than UTC+08:30.

Table 5-6 datastore field data structure description

Parameter	Mandatory	Type	Description
type	Yes	String	DB engine. Value: GaussDB.
version	No	String	DB engine version. If this parameter is not specified, the latest version is used by default. The following versions are supported: <ul style="list-style-type: none">• 1.1• 1.2• 1.3• 1.4• 2.3

Table 5-7 ha field data structure description

Parameter	Mandatory	Type	Description
mode	Yes	String	Distributed deployment model. The value enterprise (Enterprise Edition) and is case-insensitive.
replication_mode	Yes	String	Replication mode for the standby node. Value: sync NOTE sync indicates synchronous replication.
consistency	Yes	String	Transaction consistency type. The value can be strong or eventual and is case-insensitive.

Table 5-8 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"> The HH value must be 1 greater than the hh value. The values of mm and MM must be the same and must be set to any of the following: 00, 15, 30, or 45. <p>Example value:</p> <ul style="list-style-type: none"> 08:15-09:15 23:00-00:00
keep_days	No	Integer	<p>Retention days for specific backup files. The value ranges from 1 to 732. The default value 7.</p>

Table 5-9 volume field data structure description

Parameter	Mandatory	Type	Description
type	Yes	String	<p>Disk type.</p> <p>The value is ULTRAHIGH (case-sensitive), indicating the SSD.</p>
size	Yes	Integer	<p>Disk size. For example, if this parameter is set to 40, 40 GB of storage is allocated to the created instance.</p> <p>: 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 5-10 chargeInfo field data structure description

Parameter	Mandatory	Type	Description
charge_mode	Yes	String	Billing mode. The value can only be postPaid , indicating pay-per-use billing.

Response Parameters

Table 5-11 Response parameters

Parameter	Type	Description
instance	Object	Instance information. For details, see Table 5-12 .
job_id	String	Instance creation task ID. This parameter is returned only when pay-per-use instances are created.

Table 5-12 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 value must consist of 4 to 64 characters and starts with a letter. It is case-insensitive and contains only letters, digits, hyphens (-), and underscores (_).
status	String	Instance status. For example, BUILD 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 Table 5-13 .
ha	Object	Database deployment model. For details, see Table 5-14 .

Parameter	Type	Description
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 Table 5-15 .
enterprise_project_id	String	Project ID.
flavor_ref	String	Specification code. The value cannot be empty.
volume	Object	Volume information. For details, see Table 5-16 .
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. Only pay-per-use is supported. For details, see Table 5-17 .

Table 5-13 datastore field data structure description

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

Table 5-14 ha field data structure description

Parameter	Type	Description
mode	String	Distributed deployment model. The value enterprise (Enterprise Edition) and is case-insensitive.

Parameter	Type	Description
replication_mode	String	Replication mode for the standby node. Value: <ul style="list-style-type: none"> • sync. NOTE <ul style="list-style-type: none"> • sync indicates synchronous replication.
consistency	String	(GaussDB reserved parameter) Transaction consistency type. The value can be strong or eventual .

Table 5-15 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"> • The HH value must be 1 greater than the hh value. • The values of mm and MM must be the same and must be set to any of the following: 00, 15, 30, or 45. Example value: <ul style="list-style-type: none"> • 08:15-09:15 • 23:00-00:00 If backup_strategy in the request body is empty, 02:00-03:00 is returned for start_time by default.
keep_days	Integer	Retention days for specific backup files. The value ranges from 1 to 732. If backup_strategy in the request body is empty, 7 is returned for keep_days by default.

Table 5-16 volume field data structure description

Parameter	Type	Description
type	String	Disk type. The value is ULTRAHIGH (case-sensitive), indicating the SSD.
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 5-17 chargeInfo field data structure description

Parameter	Type	Description
charge_mode	String	Billing information, which is pay-per-use.

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/
opengauss/v3/0483b6b16e954cb88930a360d2c4e663/instances
{
  "name": "user1-v3-independent-01",
  "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,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/
opengauss/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/
opengauss/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/
opengauss/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

Creating an instance of the enterprise edition

```
{
  "instance": {
    "id": "ad8cd1440aa94a02ae4580fcb3143in14",
    "name": "user1-v3-independent",
    "status": "BUILD",
    "datastore": {
      "type": "GaussDB",
      "version": "1.4"
    },
    "ha": {
      "mode": "Enterprise",
      "replication_mode": "sync",
      "consistency": "strong"
    },
    "port": "8000",
    "volume": {
      "type": "ULTRAHIGH",
      "size": 120
    },
    "replica_num": 3,
    "backup_strategy": {
      "start_time": "17:00-18:00",
      "keep_days": 7
    },
    "flavor_ref": "gaussdb.opengauss.ee.dn.m6.2xlarge.8.in",
    "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](#).

5.2.2 Creating a DB Instance

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

Table 5-18 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .

Request Parameters

Table 5-19 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 (_).
datastore	Yes	Object	Database information. For details, see Table 5-20 .
ha	Yes	Object	Instance deployment model. For details, see Table 5-21 .
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, ranging from 1024 to 39998. It cannot be set to the default value 8000 . 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 Table 5-22 .
enterprise_project_id	No	String	Enterprise project ID. This parameter is suitable only for enterprise tenants. For details, see id in the enterprise_project field data structure table in the section Querying Enterprise Projects of the <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 DB Instance Specifications .
volume	Yes	Object	Volume information. For details, see Table 5-23 .
region	Yes	String	Region ID. The value cannot be empty. For details about how to obtain this parameter value, see Regions and Endpoints .

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"> To deploy a DB instance in the same AZ, enter three same AZ IDs. To deploy a DB instance across three different AZs, enter three different AZ IDs. <p>The value cannot be empty. For details about how to obtain this parameter value, see Regions and Endpoints.</p>
vpc_id	Yes	String	<p>VPC ID. To obtain this parameter value, use the following methods:</p> <ul style="list-style-type: none"> Method 1: Log in to VPC console and view the VPC ID in the VPC details page. Method 2: Query the VPC ID through the VPC API. For details, see Querying VPCs. Method 2: See the section "Querying VPCs" in the <i>Virtual Private Cloud API Reference</i>.
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"> Method 1: Log in to VPC console and click the target subnet on the Subnets page. You can view the network ID on the displayed page. Method 2: Query the subnet ID through the VPC API. For details, see Querying Subnets. Method 2: See the section "Querying Subnets" in the <i>Virtual Private Cloud API Reference</i>.

Parameter	Mandatory	Type	Description
security_group_id	Yes	String	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. <ul style="list-style-type: none">• Method 1: Log in to VPC console. Choose Access Control > Security Groups 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.• Method 2: Query the security group through the VPC API. For details, see Querying Security Groups.• Method 2: See the section "Querying Security Groups" in the <i>Virtual Private Cloud API Reference</i>.
charge_info	No	Object	Billing type, which can be pay-per-use or yearly/monthly. For details, see Table 5-24 .
time_zone	No	String	UTC time zone. <ul style="list-style-type: none">• If this parameter is not specified, GaussDB uses UTC in the International website by default.• 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 UTC+08:00 rather than UTC+08:30.
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.

Parameter	Mandatory	Type	Description
replica_num	No	Integer	Number of replicas. The value can be 2 or 3 (default). NOTE To use two-replica instance, ensure the instance version is 1.3.0 or later and submit an application by choosing Service Tickets > Create Service Ticket 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 true or false . true indicates that the function is enabled, and false indicates that the function is disabled. The function is disabled by default. Only 1.2.2 and later versions are supported. NOTE 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 5-20 datastore field data structure description

Parameter	Mandatory	Type	Description
type	Yes	String	DB engine. Value: GaussDB 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 Querying DB Engine Versions .

Table 5-21 ha field data structure description

Parameter	Mandatory	Type	Description
mode	Yes	String	Deployment model. Its value is enterprise for distributed instances and centralization_standard for primary/standby instances. It is case-insensitive.
consistency	Yes	String	Transaction consistency type. The value can be strong or eventual and is case-insensitive.
replication_mode	Yes	String	Replication mode for the standby node. Valid value: sync NOTE sync indicates synchronous replication.

Table 5-22 backup_strategy field data structure description

Parameter	Mandatory	Type	Description
start_time	Yes	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"> The HH value must be 1 greater than the hh value. The values of mm and MM must be the same and must be set to 00. Example value: <ul style="list-style-type: none"> 08:00-09:00 23:00-00:00
keep_days	No	Integer	Retention days for specific backup files. Value: 0 to 732 . If this parameter is not specified or is set to 0 , the default value 7 is used.

Table 5-23 volume field data structure description

Parameter	Mandatory	Type	Description
type	Yes	String	Disk type. Value: ULTRAHIGH (SSD storage) or ESSD (extreme SSD storage). The value is case-sensitive.
size	Yes	Integer	Disk size. For example, if this parameter is set to 40 , 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 16 TB) and must be a multiple of (Number of shards x 4).

Table 5-24 chargeInfo field data structure description

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

Parameter	Mandatory	Type	Description
period_num	No	Integer	<p>This parameter is valid and mandatory only when charge_mode is set to prePaid.</p> <p>Value:</p> <ul style="list-style-type: none"> When period_type is set to month, the parameter value ranges from 1 to 9. When period_type is set to year, the parameter value ranges from 1 to 3. <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> <ul style="list-style-type: none"> true: Automatic renewal is enabled. false: Automatic renewal is disabled. The default value is false.
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"> true: The order will be automatically paid. false: The order will be manually paid. The default value is false.

Response Parameters

Table 5-25 Response parameters

Parameter	Type	Description
instance	Object	<p>Instance information.</p> <p>For details, see Table 5-26.</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 returned only for the creation of yearly/monthly instances.

Table 5-26 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 starts with a letter. It is case-insensitive and contains only letters, digits, hyphens (-), and underscores (_).
status	String	Instance status. For example, BUILD 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 Table 5-27 .
ha	Object	Database deployment model. For details, see Table 5-28 .
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 Table 5-29 .
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 DB Instance Specifications .

Parameter	Type	Description
volume	Object	Volume information. For details, see Table 5-30 .
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 Table 5-31 .

Table 5-27 datastore field data structure description

Parameter	Type	Description
type	String	DB engine. Value:
version	String	DB engine version.

Table 5-28 ha field data structure description

Parameter	Type	Description
mode	String	Distributed deployment. The value can be enterprise (Enterprise Edition). Primary/standby deployment. The value is centralization_standard . It is case-insensitive.
replication_mode	String	Replication mode for the standby node. Valid value: sync . NOTE sync indicates synchronous replication.
consistency	String	(GaussDB reserved parameter) Transaction consistency type. The value can be strong or eventual .

Table 5-29 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 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"> The HH value must be 1 greater than the hh value. The values of mm and MM must be the same and must be set to 00. <p>Example value:</p> <ul style="list-style-type: none"> 08:00-09:00 23:00-00:00 <p>If backup_strategy in the request body is empty, 02:00-03:00 is returned for start_time by default.</p>
keep_days	Integer	<p>Retention days for specific backup files.</p> <p>The value ranges from 1 to 732. If the backup_strategy field is not specified in the request body, keep_days in the response body is set to 7 days by default.</p>

Table 5-30 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"> ULTRAHIGH, indicating SSD. ESSD: indicates the extreme SSD.
size	Integer	<p>Disk size.</p> <p>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).</p>

Table 5-31 charge_Info field data structure description

Parameter	Type	Description
charge_mode	String	Billing mode. postPaid : pay-per-use billing. prePaid : yearly/monthly billing.
period_type	String	Subscription period. month : The service is subscribed by month. year : The service is subscribed by year. This parameter is valid and mandatory only when charge_mode is set to prePaid . Value: <ul style="list-style-type: none">• month• year
period_num	Integer	This parameter is valid and mandatory only when charge_mode is set to prePaid . Value: When period_type is set to month , the parameter value ranges from 1 to 9 . When period_type is set to year , the parameter value ranges from 1 to 3 .
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. true : indicates that the subscription is automatically renewed. false : indicates that the subscription is not automatically renewed. The default value is false .
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. true : indicates that the order is automatically paid from the account. false : indicates that the order is manually paid from the account. The default value is false .

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.8.in",
  "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

Creating an instance of the enterprise edition

```
{
  "instance": {
    "id": "ad8cd1440aa94a02ae4580fcb3143in14",
    "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

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}

Table 5-32 Parameter description

Parameter	Type	Mandatory	Description
project_id	String	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .

Parameter	Type	Mandatory	Description
id	String	No	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 (*).
name	String	No	DB 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	String	No	Instance type to be queried. Currently, the following values are supported: <ul style="list-style-type: none">• Enterprise (case-sensitive): distributed instances (in the independent deployment).• Centralization_standard (case-sensitive): primary/standby instances.
datastore_type	String	No	Database type. Its value is case-insensitive. GaussDB
vpc_id	String	No	VPC ID. To obtain this parameter value, use the following methods: <ul style="list-style-type: none">• Method 1: Log in to VPC console and view the VPC ID in the VPC details page.• Method 2: Query the VPC ID through the VPC API. For details, see Querying VPCs.• Method 2: See the section "Querying VPCs" in the <i>Virtual Private Cloud API Reference</i>.
subnet_id	String	No	Network ID of the subnet. <ul style="list-style-type: none">• Method 1: Log in to VPC console and click the target subnet on the Subnets page. You can view the network ID on the displayed page.• Method 2: See the section "Querying Subnets" in the <i>Virtual Private Cloud API Reference</i>.

Parameter	Type	Mandatory	Description
offset	Integer	No	Index offset. If offset is set to <i>N</i> , the resource query starts from the <i>N</i> +1 piece of data. The value is 0 by default, indicating that the query starts from the first piece of data. The value cannot be a negative number.
limit	Integer	No	Number of records to be queried. The default value is 100 . The value cannot be a negative number. The minimum value is 1 and the maximum value is 100 .
tags	String	No	<p>Queries based on the instance tag keys and values.</p> <ul style="list-style-type: none"> <i>{key}</i> indicates the tag key. It contains up to 127 Unicode characters. key cannot be an empty string, a space, or left blank. Before using key, delete single-byte character (SBC) spaces before and after the value. The value cannot contain the following special characters: +/?#&=,% <i>{value}</i> indicates the tag value, which can be empty. Tag value, which contains up to 255 Unicode characters. Before using value, delete SBC spaces before and after the value. The value cannot contain the following special characters: +/?#&=,% If the value is empty, it indicates any_value (querying any value). <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>

Request Parameters

None

Response Parameters

Table 5-33 Response parameters

Parameter	Type	Description
instances	Array of objects	Instance information. For details, see Table 5-34 .

Parameter	Type	Description
total_count	Integer	Total number of records.

Table 5-34 instances field data structure description

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

Parameter	Type	Description
status	String	<p>Instance status.</p> <p>Valid value:</p> <p>If the value is BUILD, the instance is being created.</p> <p>If the value is ACTIVE, the instance is normal.</p> <p>If the value is FAILED, the instance is abnormal.</p> <p>If the value is FROZEN, the instance is frozen.</p> <p>If the value is MODIFYING, the storage is being scaled up or instance specifications are being changed.</p> <p>If the value is EXPANDING, read replicas are being added to the instance or CNs or DNPs are being added to the instance.</p> <p>If the value is REBOOTING, the instance is being rebooted.</p> <p>If the value is REDUCING: read replicas are being deleted.</p> <p>If the value is UPGRADING, the instance is being upgraded.</p> <p>If the value is RESTORING, the instance is being restored.</p> <p>If the value is SWITCHOVER, the primary/standby switchover is being performed.</p> <p>If the value is MIGRATING, the instance is being migrated.</p> <p>If the value is BACKING UP, the instance is being backed up.</p> <p>If the value is UPGRADE TO BE OBSERVED, the instance upgrade is in the observation period.</p> <p>If the value is REDUCING REPLICATION, the number of replicas is being reduced.</p> <p>If the value is STORAGE FULL, the instance storage is full.</p>

Parameter	Type	Description
private_ips	List<String>	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.
public_ips	List<String>	Public IP address list. This parameter cannot be left blank after an EIP is bound.
port	Integer	Database port number. 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	Instance type. The value is case-sensitive. The value Enterprise indicates the distributed instance (Enterprise Edition).
ha	Object	Instance high availability. For details, see Table 5-35 .
replica_num	Integer	Number of replicas.
region	String	Region where the instance is deployed.
datastore	Object	Database information. For details, see Table 5-36 .
created	String	Creation time in the "yyyy-mm-dd hh:mm:ss timezone" format. timezone 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.
updated	String	Update time. The format is the same as that of the created field. The value is empty when the instance is being created. After the instance is created, the value is not empty.
db_user_name	String	Default username.
vpc_id	String	VPC ID.
subnet_id	String	Network ID of the subnet.

Parameter	Type	Description
security_group_id	String	Security group ID.
flavor_ref	String	Specification code. For details on how to obtain the GaussDB specification code, see DB Instance Specifications .
flavor_info	Object	Flavor information. For details, see Table 5-37 .
volume	Object	Volume information. For details, see Table 5-38 .
switch_strategy	String	Database switchover policy. The value can be Reliability or Availability , indicating the reliability first and availability first, respectively. If no switchover policy is selected during the creation, the switchover policy is not displayed.
backup_strategy	Object	Backup policy. For details, see Table 5-39 .
maintenance_window	String	Maintenance window in the UTC format.
nodes	Array of objects	Instance node information. For details, see Table 5-40 .
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 0 .
instance_mode	String	enterprise indicates enterprise edition, standard indicates the standard edition, and basic indicates the basic edition.
time_zone	String	Time zone.
charge_info	Object	Billing type, which can be pay-per-use or yearly/monthly. For details, see Table 5-41 .
tags	Array of objects	Tags. This parameter is not returned if there is no tag. For details, see Table 5-42 .

Table 5-35 ha field data structure description

Parameter	Type	Description
consistency	String	Transaction consistency type. The value can be strong or eventual , indicating strong consistency and eventual consistency, respectively.
replication_mode	String	Replication mode for the standby node. The value cannot be empty. sync . NOTE sync indicates synchronous replication.

Table 5-36 datastore field data structure description

Parameter	Type	Description
type	String	DB engine.
version	String	DB engine version.

Table 5-37 flavor_info field data structure description

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

Table 5-38 volume field data structure description

Parameter	Type	Description
type	String	Disk type.
size	Integer	Disk size.

Table 5-39 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 time is in the UTC format.

Parameter	Type	Description
keep_days	Integer	Number of days to retain the generated backup files. Value range: 1-732.

Table 5-40 nodes field data structure description

Name	Type	Description
id	String	Node ID.
name	String	Node name.
role	String	Node type. The value can be master or slave , indicating the primary node and standby node respectively.
status	String	Node status.
availability_zone	String	AZ.
private_ip	String	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.
public_ip	String	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.

Table 5-41 chargeInfo field data structure description

Parameter	Mandatory	Type	Description
charge_mode	Yes	String	Billing mode. postPaid : pay-per-use prePaid : yearly/monthly

Table 5-42 tags field data structure description

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

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=bd51fb45-2dc4-4296-8783-8623bfe89bb7&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": "0a87b8ecbf46aba1409cfc0f0d5c34no14",
          "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": "226b4afcc84c86bf1b9cb345d3b00fin14",
  "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": "9fdebf821bdf444a8689b19c0ff588ceno14",
    "name": "UTS-gauss-4336_gaussdbv5cn_0",
    "role": "master",
    "status": "FAILED",
    "availability_zone": "az1xahz",
    "private_ip": "192.168.30.93"
  },
  {
    "id": "dd64bdbbc02a542d88823b1582f772d25no14",
    "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](#).

5.2.4 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

Table 5-43 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	Instance ID.

Request Parameters

Table 5-44 Request parameters

Parameter	Mandatory	Type	Description
enlarge_volume	Yes	Object	Target storage space after scaling up. For details, see Table 5-45 .

Table 5-45 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 5-46 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](#).

5.2.5 Deleting a DB Instance

Function

This API is used to delete a DB instance.

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}

Table 5-47 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	Instance ID.

Request Parameters

None

Response Parameters

Table 5-48 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/dsf23fsfdsae3435in01
```

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](#).

5.2.6 Querying DB Instances

Function

This API is used to query instances according to search criteria. Before calling this API:

NOTICE

This API will be unavailable on March 31, 2025. You are advised to switch workloads to the new API ([Querying DB Instances](#)) before then.

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

URI

GET https://{Endpoint}/opengauss/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 5-49 Parameter description

Parameter	Type	Mandatory	Description
project_id	String	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
id	String	No	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 (*).
name	String	No	DB 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	String	No	Instance type to be queried.
datastore_type	String	No	Database type. Its value is case-insensitive. GaussDB
vpc_id	String	No	VPC ID. <ul style="list-style-type: none">Method 1: Log in to VPC console and view the VPC ID in the VPC details page.Method 2: See the section "Querying VPCs" in the <i>Virtual Private Cloud API Reference</i>.
subnet_id	String	No	Network ID of the subnet. <ul style="list-style-type: none">Method 1: Log in to VPC console and click the target subnet on the Subnets page. You can view the network ID on the displayed page.Method 2: See the section "Querying Subnets" in the <i>Virtual Private Cloud API Reference</i>.

Parameter	Type	Mandatory	Description
offset	Integer	No	Index offset. If offset is set to <i>N</i> , the resource query starts from the <i>N</i> +1 piece of data. The value is 0 by default, indicating that the query starts from the first piece of data. The value cannot be a negative number.
limit	Integer	No	Number of records to be queried. The default value is 100 . The value cannot be a negative number. The minimum value is 1 and the maximum value is 100 .

Request Parameters

None

Response Parameters

Table 5-50 Response parameters

Parameter	Type	Description
instances	Array of objects	Instance information. For details, see Table 5-51 .
total_count	Integer	Total number of records.

Table 5-51 instances field data structure description

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

Parameter	Type	Description
status	String	Instance status. Value: If the value is BUILD , the instance is being created. If the value is ACTIVE , the instance is normal. If the value is FAILED , the instance is abnormal. If the value is FROZEN , the instance is frozen. If the value is EXPANDING , nodes are being added to the instance. If the value is REBOOTING , the instance is being rebooted. If the value is UPGRADING , the instance is being upgraded. If the value is RESTORING , the instance is being restored. If the value is BACKING UP , the instance is being backed up. If the value is STORAGE FULL , the instance storage is full.
private_ips	List<String>	Private IP address list. It is a blank string unless a CN is created on the ECS.
public_ips	List<String>	Public IP address list. This parameter cannot be left blank after an EIP is bound.
port	Integer	Database port number. The GaussDB database port . The default value is 8000 .
type	String	Instance type.
ha	Object	Returned when a distributed instance is obtained. For details, see Table 5-52 .
region	String	Region where the instance is deployed.
datastore	Object	Database information. For details, see Table 5-53 .

Parameter	Type	Description
created	String	Creation time in the "yyyy-mm-dd hh:mm:ss timezone" format. timezone 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.
updated	String	Update time. The format is the same as that of the created field. The value is empty when the instance is being created. After the instance is created, the value is not empty.
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 Querying Instance Specifications .
flavor_info	Object	Flavor information. For details, see Table 5-54 .
volume	Object	Volume information. For details, see Table 5-55 .
switch_strategy	String	Database switchover policy. The value can be reliability or availability , indicating the reliability first and availability first, respectively.
backup_strategy	Object	Backup policy. For details, see Table 5-56 .
maintenance_window	String	Maintenance window in the UTC format.
nodes	Array of objects	Instance node information. For details, see Table 5-57 .
related_instance	Array of objects	List of associated instances. This parameter is not suitable for GaussDB.
disk_encryption_id	String	Disk encryption key ID.

Parameter	Type	Description
enterprise_project_id	String	Enterprise project ID. If an instance does not belong to any enterprise project, the default value is 0 .
instance_mode	String	basic indicates the basic edition and enterprise indicates the enterprise edition.
time_zone	String	Time zone.
charge_info	Object	Billing information, which is pay-per-use by default. For details, see Table 5-58 .
tags	Array of objects	Tag list. If there is no tag in the list, an empty array is returned.

Table 5-52 ha field data structure description

Parameter	Type	Description
consistency	String	Transaction consistency type. The value can be strong or eventual , indicating strong consistency and eventual consistency, respectively.
replication_mode	String	Replication mode for the standby node. The value cannot be empty. sync . NOTE sync indicates synchronous replication.

Table 5-53 datastore field data structure description

Parameter	Type	Description
type	String	DB engine.
version	String	DB engine version.

Table 5-54 flavor_info field data structure description

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

Table 5-55 volume field data structure description

Parameter	Type	Description
type	String	Disk type.
size	Integer	Disk size.

Table 5-56 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 time is in the UTC format.
keep_days	Integer	Number of days to retain the generated backup files. The value ranges from 0 to 732. If the value is 0 , the automated backup policy is not configured or has been disabled.

Table 5-57 nodes field data structure description

Name	Type	Description
id	String	Node ID.
name	String	Node name.
role	String	Node type. The value can be master or slave , indicating the primary node and standby node respectively.
status	String	Node status.
availability_zone	String	AZ.

Table 5-58 chargeInfo field data structure description

Parameter	Mandatory	Type	Description
charge_mode	Yes	String	Billing mode. Value: postPaid : pay-per-use billing.

Example Request

- Querying all instances

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

- Querying instances according to search criteria

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/opengauss/v3/97b026aa9cc4417888c14c84a1ad9860/instances?id=ed7cc6166ec24360a5ed5c5c9c2ed726in14&name=hy&type=Ha&datastore_type=MySQL&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

- DB instances queried.

```
{
  "instances": [
    {
      "id": "b331ed66cc3249f78bc20737308c01f4in14",
      "status": "ACTIVE",
      "name": "gauss-9e88",
      "port": 8000,
      "type": "enterprise",
      "ha": {
        "consistency": "strong",
        "replication_mode": "sync"
      },
      "region": "aaa",
      "datastore": {
        "type": "GaussDB",
        "version": "1.4"
      },
      "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": "bbb"
        },
        {
          "id": "0a87b8ecbf46aba1409cfc0f0d5c34no14",
          "name": "gauss-9e88_gaussdbv5cn_0",

```

```
    "role": "master",
    "status": "ACTIVE",
    "availability_zone": "bbb"
  },
  {
    "id": "2d9fec1ab3834936b074d63acf48b1f2no14",
    "name": "gauss-9e88_gaussdbv5dn3_2",
    "role": "master",
    "status": "ACTIVE",
    "availability_zone": "bbb"
  },
  {
    "id": "48bb08a2d635435891ac0caa1c0bf2e3no14",
    "name": "gauss-9e88_gaussdbv5dn1_0",
    "role": "master",
    "status": "ACTIVE",
    "availability_zone": "bbb"
  },
  {
    "id": "5df830f652204827ada32f8bc28b107eno14",
    "name": "gauss-9e88_gaussdbv5dn1_1",
    "role": "slave",
    "status": "ACTIVE",
    "availability_zone": "bbb"
  },
  {
    "id": "8a97a246cee841b38c5b47290d4c9c38no14",
    "name": "gauss-9e88_gaussdbv5cn_1",
    "role": "master",
    "status": "ACTIVE",
    "availability_zone": "bbb"
  },
  {
    "id": "8c1a3f8eicca4d9e9974a868bb6dd942no14",
    "name": "gauss-9e88_gaussdbv5dn2_0",
    "role": "master",
    "status": "ACTIVE",
    "availability_zone": "bbb"
  },
  {
    "id": "9bd0c80b8a684cc9bd7d99dd5adffb07no14",
    "name": "gauss-9e88_gaussdbv5dn3_1",
    "role": "slave",
    "status": "ACTIVE",
    "availability_zone": "bbb"
  },
  {
    "id": "9e2a3cd541e249d4af5aa57c5d3a7f39no14",
    "name": "gauss-9e88_gaussdbv5dn1_2",
    "role": "slave",
    "status": "ACTIVE",
    "availability_zone": "bbb"
  },
  {
    "id": "b046d28989ec4ae5a1a9ab20fe65f248no14",
    "name": "gauss-9e88_gaussdbv5dn2_2",
    "role": "slave",
    "status": "ACTIVE",
    "availability_zone": "bbb"
  },
  {
    "id": "b614cc12fd3742dbb230245f88a7bf00no14",
    "name": "gauss-9e88_gaussdbv5dn3_0",
    "role": "slave",
    "status": "ACTIVE",
    "availability_zone": "bbb"
  },
  {
    "id": "caba8e88c3c84ae58202f1f589490611no14",
```



```
    "name": "gauss-9e88_gaussdbv5dn2_1",
    "role": "slave",
    "status": "ACTIVE",
    "availability_zone": "bbb"
  }
],
"tags": [],
"private_ips": [
  "192.168.28.81 / 192.168.27.52 / 192.168.16.253"
],
"public_ips": [],
"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",
"related_instance": [],
"disk_encryption_id": "24ae42b5-4009-4ea2-b66a-0b211e424dab",
"enterprise_project_id": "6e76681b-a2f5-4c5f-97c5-ba4fd3c0dfb2",
"time_zone": "UTC+08:00",
"instance_mode": "enterprise",
"order_id": "CS2101150917EUW8N"
},
{
  "id": "226b4afcfcc84c86bf1b9cb345d3b00fin14",
  "status": "ACTIVE",
  "name": "UTS-gauss-ad53-2C3D",
  "port": 8000,
  "type": "enterprise",
  "ha": {
    "consistency": "strong",
    "replication_mode": "sync"
  },
  "region": "aaa",
  "datastore": {
    "type": "GaussDB",
    "version": "1.4"
  },
  "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"
  },
  {
    "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_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",
  "related_instance": [],
  "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": {
    "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"
    },
    {
      "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",
  "related_instance": [],
  "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": {
    "replication_mode": "sync"
  },
  "region": "cn-xianhz-1",
  "datastore": {
    "type": "GaussDB",
    "version": "1.4"
  },
  "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": "9fdebf821bdf444a8689b19c0ff588ceno14",
      "name": "UTS-gauss-4336_gaussdbv5cn_0",
      "role": "master",
      "status": "FAILED",
      "availability_zone": "az1xahz"
    },
    {
      "id": "dd64bdbc02a542d88823b1582f772d25no14",
      "name": "UTS-gauss-4336_gaussdbv5cn_1",
      "role": "master",
      "status": "ACTIVE",
      "availability_zone": "az1xahz"
    },
    {
      "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",
  "related_instance": [],
  "enterprise_project_id": "0",
  "time_zone": "UTC+08:00",
  "instance_mode": "enterprise",
}
],
"total_count": 4
}
```

- **Querying instance details**

Status Code

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

Error Code

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

5.2.7 Adding CNs

Function

This API is used to add CNs.

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

Table 5-59 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	Instance ID.

Request Parameters

Table 5-60 Request parameters

Parameter	Mandatory	Type	Description
expand_cluster	Yes	Object	For details, see Table 5-61 .

Table 5-61 expand_cluster field data structure description

Parameter	Mandatory	Type	Description
coordinators	Yes	Array	For details, see Table 5-62 .

Table 5-62 azCode field data structure description

Parameter	Mandatory	Type	Description
az_code	Yes	String	AZs to which CNs are to be added.

Response Parameters

Table 5-63 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](#).

5.2.8 Adding Shards

Function

This API is used to add shards.

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

Table 5-64 Parameter description

Name	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	Instance ID.

Request Parameters

Table 5-65 Request parameters

Name	Mandatory	Type	Description
expand_cluster	Yes	Object	For details, see Table 5-66 .

Table 5-66 expand_cluster field data structure description

Name	Mandatory	Type	Description
shard	Yes	Object	For details, see Table 5-67 .

Table 5-67 count field data structure description

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

Response Parameters

Table 5-68 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](#).

5.2.9 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

Table 5-69 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .

Parameter	Mandatory	Description
instance_id	Yes	Instance ID.

Request Parameters

Table 5-70 Request parameters

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

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](#).

5.2.10 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

Table 5-71 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	Instance ID.

Request Parameters

Table 5-72 Request parameters

Parameter	Mandatory	Type	Description
name	Yes	String	DB instance name. DB 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 5-73 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/dsfae23fsfsae3435in14/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

Table 5-74 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	Instance ID.

Request Parameters

Table 5-75 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 Table 5-76 .

Table 5-76 values field data structure description

Parameter	Mandatory	Type	Description
key	Yes	String	Parameter name. For example, for the "failed_login_attempts": "4" parameter, the key is failed_login_attempts .

Parameter	Mandatory	Type	Description
value	Yes	String	Parameter value. For example, for the "failed_login_attempts": "4" parameter, the value is 4 .

Response Parameters

Table 5-77 Response parameters

Parameter	Type	Description
restart_required	Boolean	Whether a reboot is required. <ul style="list-style-type: none"> • true: A reboot is required. • false: A reboot is not required.

Example Request

```
https://gaussdb-opengauss.ap-southeast-1.myhuaweicloud.com/v3/0483b6b16e954cb88930a360d2c4e663/instances/dsfae23fsfdsae3435in01/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

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}

Table 5-78 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
offset	No	Integer	Index offset. If offset is set to <i>N</i> , the resource query starts from the <i>N</i> +1 piece of data. The value is 0 by default, indicating that the query starts from the first piece of data. The value cannot be a negative number. For example, if this parameter is set to 0 and limit is set to 10 , only the 1st to 10th records are displayed.
limit	No	Integer	Number of records to be queried. The default value is 100 . The value cannot be a negative number. The minimum value is 1 and the maximum value is 100 . For example, if this parameter is set to 10 , a maximum of 10 records can be displayed.

Request Parameters

None

Response Parameters

Table 5-79 Response parameters

Parameter	Type	Description
configurations	Array of objects	Parameter template information. For details, see Table 5-80 .
count	Integer	Total number of records.

Table 5-80 configurations field data structure description

Parameter	Type	Description
id	String	Parameter template ID.
name	String	Parameter template name.
description	String	Parameter template description.
datastore_version	String	Engine version.
datastore_name	String	Engine name.
ha_mode	String	Instance type.
created	String	Creation time in the "yyyy-MM-dd HH:mm:ss" format.
updated	String	Update time in the "yyyy-MM-dd HH:mm:ss" format.
user_defined	Boolean	Whether the parameter template is a custom template. <ul style="list-style-type: none">● false: The parameter template is a default template.● true: The parameter template is a custom template.

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:

```
{
  "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](#).

5.3.3 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/{project_id}/instances/{instance_id}/configurations

Table 5-81 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	String	Instance ID.

Request Parameters

None

Response Parameters

Table 5-82 Response parameters

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 Table 5-83 .

Table 5-83 configuration_parameters field data structure description

Parameter	Type	Description
name	String	Parameter name.
value	String	Parameter value.

Parameter	Type	Description
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 string , integer , boolean , list , or float . Value: <ul style="list-style-type: none">● string● integer● boolean● list● float
description	String	Parameter description.

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](#).

5.4 Backup Management

5.4.1 Configuring an Automated Backup Policy

Function

This API is used to configure an automated backup policy. Before calling this API:

NOTICE

This API will be unavailable on March 31, 2025. You are advised to switch workloads to the new API ([Configuring an Automated Backup Policy](#)) 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}/backups/policy

Table 5-84 Parameter description

Parameter	Mandatory	Description
project_id	Yes	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .
instance_id	Yes	Instance ID.

Request Parameters

Table 5-85 Parameter description

Parameter	Mandatory	Type	Description
backup_policy	Yes	Object	Backup policy information. For details, see Table 5-86 .

Table 5-86 backup_policy field data structure description

Parameter	Mandatory	Type	Description
keep_days	Yes	Integer	Backup retention days. The value ranges from 1 to 732.
start_time	Yes	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. The value of HH must be 1 greater than the value of hh . The values of mm and MM must be the same and must be 00 . Example value: 21:00-22:00
period	Yes	String	Full backup period. An automated full backup will be created on the specified days of the week. The value is a number separated by commas (,), indicating the days of the week. For example, 1,2,3,4 indicates that the backup period is Monday, Tuesday, Wednesday, and Thursday.
differential_period	Yes	String	Interval for automated differential backups. The value is 15, 30, 60, 180, 360, 720, or 1440 in minute. Example value: 30

Response Parameters

None

Example Request

<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"
  }
}
```

Example Response

None

Status Code

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

Error Code

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

5.4.2 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/{project_id}/backups?](https://{Endpoint}/v3/{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})
[instance_id={instance_id}&backup_id={backup_id}&backup_type={backup_type}&ofset={offset}&limit={limit}&begin_time={begin_time}&end_time={end_time}](https://{Endpoint}/v3/{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 5-87 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID .

Parameter	Mandatory	Type	Description
instance_id	No	String	Instance ID.
backup_id	No	String	Backup ID, which is compliant with the UUID format.
backup_type	No	String	Backup type. Value: <ul style="list-style-type: none">• auto: automated full backup• manual: manual full backup
offset	No	Integer	Index offset. If offset is set to <i>N</i> , the resource query starts from the <i>N</i> +1 piece of data. The value is 0 by default, indicating that the query starts from the first piece of data. The value cannot be a negative number. Minimum value: 0
limit	No	Integer	Number of records to be queried. The default value is 100 . The value cannot be a negative number. The minimum value is 1 and the maximum value is 100 . Minimum value: 1 Maximum value: 100
begin_time	No	String	Query start time in the "yyyy-mm-ddThh:mm:ssZ" format. T is the separator between calendar and hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the offset is +0800 . This parameter must be used together with end_time .

Parameter	Mandatory	Type	Description
end_time	No	String	Query end time. The format is "yyyy-mm-ddThh:mm:ssZ" and the end time must be later than the start time. T is the separator between calendar and hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the offset is +0800 . This parameter must be used together with begin_time .

Request Parameters

None

Response Parameters

Table 5-88 Response parameters

Parameter	Type	Description
backups	Array of objects	Backup information. For details, see Table 5-89 .
total_count	Long	Total number of backup files.

Table 5-89 backups field data structure description

Parameter	Type	Description
id	String	Backup ID.
name	String	Backup name.
description	String	Description of the backup file.
begin_time	String	Backup start time in the "yyyy-mm-ddThh:mm:ssZ" format. T is the separator between calendar and hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as +0800 .

Parameter	Type	Description
end_time	String	Backup end time in the "yyyy-mm-ddThh:mm:ssZ" format. T is the separator between calendar and hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as +0800 .
status	String	Backup status. Value: <ul style="list-style-type: none"> ● BUILDING: Backup in progress ● COMPLETED: Backup completed ● FAILED: Backup failed
size	Double	Backup size in MB.
type	String	Backup type. Value: <ul style="list-style-type: none"> ● auto: automated full backup ● manual: manual full backup
datastore	Object	Database information. For details, see Table 5-90 .
instance_id	String	Instance ID.

Table 5-90 datastore field data structure description

Parameter	Type	Description
type	String	DB engine. The value is case-insensitive and can be: GaussDB
version	String	DB engine version. If this parameter is not specified, the latest version is used by default. To query supported DB engine versions, see Querying DB Engine Versions .

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=88be1234c5a64ceba42b42da8931  
0111br14&backup_type=auto&begin_time=2022-05-09T16:15:50+0800&end_time=2022-05-09T16:20:4  
5+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](#).

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"> • Supported: IAM projects • Supported: Enterprise projects 	POST /v3/{project_id}/instances
Deleting a DB instance	gaussdb:instance:delete	<ul style="list-style-type: none"> • Supported: IAM projects • Supported: Enterprise projects 	DELETE /v3/{project_id}/instances/{instance_id}
Querying DB instances	gaussdb:instance:list	<ul style="list-style-type: none"> • Supported: IAM projects • Supported: Enterprise projects 	GET /v3/{project_id}/instances

Permission	Action	Authorization Scope	API
Resetting a database password	gaussdb:instance:modifyPasswd	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	POST /v3/{project_id}/instances/{instance_id}/password
Changing a DB instance name	gaussdb:instance:rename	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	PUT /v3/{project_id}/instances/{instance_id}/name
Rebooting a DB instance	gaussdb:instance:restart	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	GET /v3/{project_id}/instances/{instance_id}/balance
Querying solution template settings	gaussdb:instance:list	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	POST /v3/{project_id}/weak-password-verification
Binding or unbinding an EIP	gaussdb:instance:bindPublicIp	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	GET /v3/{project_id}/project-quotas?type={type}

Table 6-2 Parameter configuration

Permissions	Action	Authorization Scope	API
Obtaining parameter templates	gaussdb:param:list	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	GET /v3/{project_id}/configurations?offset={offset}&limit={limit}

Permissions	Action	Authorization Scope	API
Obtaining parameters of a specified DB instance	gaussdb:param:list	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	GET /v3/{project_id}/instances/{instance_id}/configurations
Modifying parameters of a specified DB instance	gaussdb:param:modify	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	PUT /v3/{project_id}/instances/{instance_id}/configurations
Creating a parameter template	gaussdb:param:create	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	POST /v3/{project_id}/configurations
Deleting a parameter template	gaussdb:param:delete	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	DELETE /v3/{project_id}/configurations/{config_id}
Querying details about a parameter template	gaussdb:instance:list	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	GET /v3/{project_id}/configurations/{config_id}
Replicating a parameter template	gaussdb:param:create	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	POST /v3/{project_id}/configurations/{config_id}/copy
Resetting a parameter template	gaussdb:param:modify	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	POST /v3/{project_id}/configurations/{config_id}/reset
Obtaining the differences of two parameter templates	gaussdb:param:list	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	POST /v3/{project_id}/configurations/comparison

Permissions	Action	Authorization Scope	API
Querying instances that a parameter template can be applied to	gaussdb:instance:list	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	GET /v3/{project_id}/configurations/name-validation?name={name}
Applying a parameter template	gaussdb:param:apply	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	PUT /v3/{project_id}/configurations/{config_id}/apply
Querying application records of a parameter template	gaussdb:instance:list	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	PUT /v3/{project_id}/instances/{instance_id}/backups/policy
Querying an automated backup policy	gaussdb:backup:list	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	POST /v3/{project_id}/backups
Deleting a manual backup	gaussdb:backup:delete	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	DELETE /v3/{project_id}/backups/{backup_id}
Querying the restoration time range	gaussdb:backup:list	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	POST /v3/{project_id}/instances
Querying instances that can be used for backups and restorations	gaussdb:instance:list	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	GET /v3/{project_id}/datastore/versions
Querying database specifications	gaussdb:instance:list	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	GET /v3/{project_id}/datastores
Querying specifications that a DB instance can be changed to	gaussdb:instance:list	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	POST /v3/{project_id}/instances/{instance_id}/database
Creating a database account	gaussdb:instance:createDatabaseUser	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	POST /v3/{project_id}/instances/{instance_id}/db-user
Creating a database schema	gaussdb:instance:createDatabaseSchema	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	POST /v3/{project_id}/instances/{instance_id}/schema
Configuring permissions of database accounts	gaussdb:instance:grantDatabasePrivilege	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	PUT /v3/{project_id}/instances/{instance_id}/db-user/password
Querying databases	gaussdb:instance:list	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	GET /v3/{project_id}/instances/{instance_id}/databases
Querying database users	gaussdb:instance:list	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	GET /v3/{project_id}/instances/{instance_id}/db-users
Querying database schemas	gaussdb:instance:list	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	GET /v3/{project_id}/instances/{instance_id}/tags
Querying tags of a project	gaussdb:instance:list	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	GET /v3/{project_id}/tags
Querying predefined tags	gaussdb:instance:list	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	GET /v3/{project_id}/predefined-tags
Adding tags for a DB instance	gaussdb:instance:dealTag	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	PUT /v3/{project_id}/enterprise-projects/quotas
Querying enterprise project quotas	gaussdb:instance:list	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	GET /v3/{project_id}/jobs?id={id}
Querying tasks	gaussdb:instance:list	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	GET /v3/{project_id}/tasks
Deleting a task record	gaussdb:instance:deleteTaskRecord	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	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"> Supported: IAM projects Supported: Enterprise projects 	PUT /v3/{project_id}/recycle-policy

Permission	Action	Authorization Scope	API
Querying the recycling policy	gaussdb:instance:list	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	GET /v3/{project_id}/recycle-policy
Querying all DB engine instances in the recycle bin	gaussdb:instance:list	<ul style="list-style-type: none"> Supported: IAM projects Supported: Enterprise projects 	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 Error Codes .
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 root 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 parameters are 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 root 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 Storage full .	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.

Status Code	Error Code	Error Message	Description	Troubleshooting
500	DBS.108005	Server failure.	Server failure.	Contact the customer service administrator or try again.
500	DBS.200005	Server failure.	Server failure.	Contact the customer service administrator or try again.
500	DBS.200208	Server failure.	Server failure.	Contact the customer service administrator or try again.
500	DBS.200811	Failed to create the database.	Failed to create the database.	Check the failure cause or contact technical support.
500	DBS.200821	Failed to modify database user permissions.	Failed to modify database user permissions.	Check whether you have required permissions.
500	DBS.213002	Failed to process the request.	Failed to process the request.	Contact the customer service administrator or try again.
500	DBS.213004	Failed to process the request.	Failed to process the request.	Contact the customer service administrator or try again.
500	DBS.290006	Failed to process the request.	Failed to process the request.	Contact the customer service administrator or try again.
500	DBS.290015	Failed to process the request.	Failed to process the request.	Contact the customer service administrator or try again.
400	DBS.280266	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.280611	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.

Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.280612	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.280243	Invalid region.	Invalid region.	Enter a correct region ID.
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> .

Status Code	Error Code	Error Message	Description	Troubleshooting
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.
400	DBS.200061	Invalid billing mode.	Invalid billing mode.	Check whether the billing mode is valid.
400	DBS.201218	The backup file is not manual.	The backup file is not a manual backup file.	Select a manual backup file.
404	DBS.280022	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.280408	Invalid project ID.	Invalid project ID.	Check whether the project ID is valid.
400	DBS.280607	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.200082	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.280606	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.

Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.280608	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.
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.

Status Code	Error Code	Error Message	Description	Troubleshooting
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.
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.

Status Code	Error Code	Error Message	Description	Troubleshooting
400	DBS.06 020003	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.
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.

Status Code	Error Code	Error Message	Description	Troubleshooting
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.
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 <code>xlog_keep_radio</code> field is invalid.	The <code>xlog_keep_radio</code> field is invalid.	The <code>xlog_keep_radio</code> 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.

Status Code	Error Code	Error Message	Description	Troubleshooting
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.
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.

Status Code	Error Code	Error Message	Description	Troubleshooting
403	DBS.06010037	Insufficient permissions for the KMS key.	Insufficient permissions for the KMS key.	Contact the key administrator to grant sufficient permissions.
400	DBS.280659	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.
400	DBS.06013034	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.06013039	Single node instance not support the operation.	This operation is not allowed for single-node instances.	Check the instance node type.

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](#).

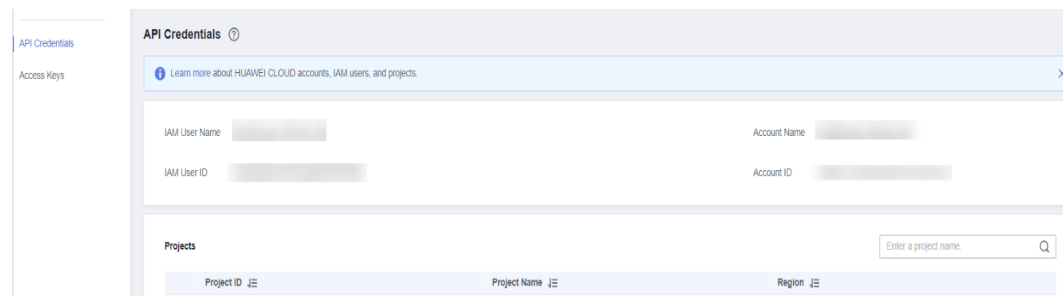
The following is an example response. **id** indicates the project ID, and **name** indicates the project name.

```
{
  "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 DB instance specifications

Specification Type	Deployment	Specification Code	vCPUs	Memory (GB)
General - enhanced II (x86)	Distributed	gaussdb.opengauss.ee.dn.m6.xlarge.8.in NOTE This specification is not available for production environments, and you can submit a service ticket to request it at Service Tickets > Create Service Ticket in the upper right corner of the management console.	4	32
		gaussdb.opengauss.ee.dn.c3.2xlarge.x864.in	8	32
		gaussdb.opengauss.ee.dn.m6.2xlarge.8.in	8	64
		gaussdb.opengauss.ee.dn.c3.4xlarge.x864.in	16	64
		gaussdb.opengauss.ee.dn.m6.4xlarge.8.in	16	128
		gaussdb.opengauss.ee.dn.c3.8xlarge.x864.in	32	128
		gaussdb.opengauss.ee.dn.m6.8xlarge.8.in	32	256
		gaussdb.opengauss.ee.dn.m6.16xlarge.8.in	64	512
		Primary/Standby	gaussdb.opengauss.ee.c3.xlarge.x864.ha	4
	gaussdb.opengauss.ee.m6.xlarge.x868.ha		4	32
	gaussdb.opengauss.ee.c3.2xlarge.x864.ha		8	32

Specification Type	Deployment	Specification Code	vCPUs	Memory (GB)
		gaussdb.opengauss.ee.m6.2xlarge.x868.ha NOTE Only primary/standby instances that run 2.6 or later versions can be used in the production environment.	8	64
		gaussdb.opengauss.ee.c3.4xlarge.x864.ha	16	64
		gaussdb.opengauss.ee.m6.4xlarge.x868.ha	16	128
		gaussdb.opengauss.ee.c3.8xlarge.x864.ha	32	128
		gaussdb.opengauss.ee.m6.8xlarge.x868.ha	32	256
		gaussdb.opengauss.ee.m6.16xlarge.x868.ha	64	512
Kunpeng general computing-plus (Arm)	Distributed	gaussdb.opengauss.ee.dn.km1.xlarge.arm8.in NOTE This specification is not available for production environments and you can submit a service ticket to request it at Service Tickets > Create Service Ticket in the upper right corner of the management console.	4	32
		gaussdb.opengauss.ee.dn.kc1.2xlarge.arm4.in	8	32
		gaussdb.opengauss.ee.dn.km1.2xlarge.arm8.in	8	64
		gaussdb.opengauss.ee.dn.kc1.4xlarge.arm4.in	16	64
		gaussdb.opengauss.ee.dn.km1.4xlarge.arm8.in	16	128
		gaussdb.opengauss.ee.dn.kc1.8xlarge.arm4.in	32	128
		gaussdb.opengauss.ee.dn.km1.8xlarge.arm8.in	32	256

Specification Type	Deployment	Specification Code	vCPUs	Memory (GB)
		gaussdb.opengauss.ee.dn.km1.15xlarge.arm8.in	60	480
	Primary/Standby	gaussdb.opengauss.ee.kc1.xlarge.arm4.ha	4	16
		gaussdb.opengauss.ee.kc1.2xlarge.arm4.ha	8	32
		gaussdb.opengauss.ee.km1.2xlarge.arm8.ha	8	64
		NOTE Only primary/standby instances that run 2.6 or later versions can be used in the production environment.		
		gaussdb.opengauss.ee.kc1.4xlarge.arm4.ha	16	64
		gaussdb.opengauss.ee.km1.4xlarge.arm8.ha	16	128
		gaussdb.opengauss.ee.kc1.8xlarge.arm4.ha	32	128
		gaussdb.opengauss.ee.km1.8xlarge.arm8.ha	32	256
		gaussdb.opengauss.ee.km1.15xlarge.arm8.ha	60	480

8 Change History

Release Date	Description
2024-04-20	Modified the following content: <ul style="list-style-type: none">• Added Querying CNs.• Added Querying Storage Autoscaling Policies of a DB Instance.• Added Querying the Restoration Time Range.• Added Creating a Slow Query Log Download Task.• Added Querying Downloaded Slow Query Log Information.• Added Querying Versions That a DB Instance Can be Upgraded to.• Added Upgrading the Kernel Version of a DB Instance.• Added Starting a Database.• Added Querying the Top I/O List.• Added Deleting Tags of a DB Instance.• Added Querying Whether Error Log Collection Is Enabled.• Added Querying the Link for Downloading Error Logs.
2023-12-30	Modified the following content: <ul style="list-style-type: none">• Added Changing a DB Instance Name.• Added the request parameters <code>engine_name</code>, <code>enterprise_project_name</code>, <code>backup_level</code>, and <code>volume_size</code> in Querying All DB Engine Instances in the Recycle Bin.
2023-12-22	Added error code DBS.200085.
2020-10-30	This issue is the first official release.