

Data Replication Service

API Reference

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1 Before You Start

[1.1 Overview](#)

[1.2 API Calling](#)

[1.3 Endpoints](#)

[1.4 Constraints](#)

[1.5 Basic Concepts](#)

1.1 Overview

Welcome to Data Replication Service (DRS). DRS is a stable, secure, and efficient cloud service for online database migration and real-time database synchronization. You can create a migration task to migrate data from a source database to a destination database.

This document describes how to use application programming interfaces (APIs) to perform operations in DRS, such as creating, querying, obtaining, and deleting resources. For details about all supported operations, see [2 API Overview](#).

Before calling DRS APIs, ensure that you have understood the concepts related to DRS. For more information, see [Service Overview](#).

1.2 API Calling

- DRS provides Representational State Transfer (REST) APIs.
- You can call APIs through HTTPS.
- For details, see [3 Calling APIs](#).

1.3 Endpoints

- An endpoint is the **request address** for calling an API.
- Endpoints vary depending on services and regions.
- You can also query the endpoints of all services on "Regions and Endpoints".

Table 1-1 Regions supported by DRS v3 APIs

Region Name	Region	Endpoint	Protocol
EU-Dublin	eu-west-101	iam.myhuaweicloud.eu	HTTPS

1.4 Constraints

- The number of DRS tasks that you can create is determined by your quota. For details, see [Service Quota](#).
- DRS v3 APIs support only MySQL-to-MySQL migration and synchronization, MongoDB-to-DDS migration, MySQL-to-Kafka synchronization, TaurusDB-to-Kafka synchronization, GaussDB-to-GaussDB synchronization, GaussDB-to-Kafka synchronization, PostgreSQL-to-PostgreSQL synchronization, and MySQL-to-MySQL disaster recovery. For scenarios in open beta testing, problems may occur during the use of APIs. Exercise caution when calling APIs.
- DRS v5 APIs support only migration from Redis to GeminiDB Redis, migration from Redis Cluster to GeminiDB Redis, synchronization from MySQL to MySQL, and synchronization from Oracle to GaussDB Distributed. Exercise caution when calling v5 APIs.

1.5 Basic Concepts

Account

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

IAM User

An IAM user is created using an account to use cloud services. Each IAM 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.

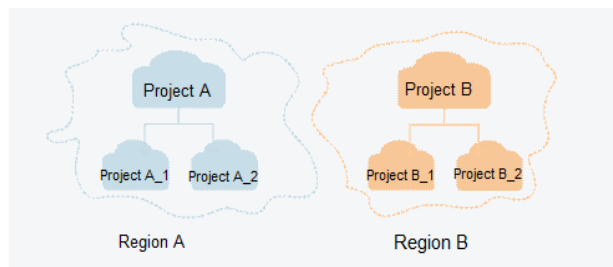
AZ

An AZ comprises one or multiple physical data centers equipped with independent ventilation, fire, water, and electricity facilities. Computing, network, storage, and other resources in an AZ are logically divided into multiple clusters. AZs within a region are interconnected using high-speed optical fibers to allow users to build cross-AZ high-availability systems.

Project

A project corresponds to a Huawei Cloud region. Default projects are defined to group and physically isolate resources (including computing, storage, and network resources) across regions. You can grant users permissions in a default project to access all resources in the region associated with the project. If you need more refined access control, create subprojects under a default project and purchase resources in subprojects. Then you can assign users the permissions required to access only the resources in the specific subprojects.

Figure 1-1 Project isolating model



2 API Overview

DRS provides REST APIs. With DRS APIs, you can use all the functions of DRS, including creating migration tasks, obtaining task details, obtaining the migration task list, and deleting migration tasks.

Table 2-1 v3 APIs

Type	Subtype	Description
DRS APIs (v3)	Quotas	The APIs are used to query quotas.
DRS APIs (v3)	Public API management	The APIs are used to create a task, test the connection, perform a pre-check, query task details and progress, create a comparison task, delete a task, retry a task, and stop a task.
DRS APIs (v3)	Real-Time migration management	The APIs are used to obtain migration users of the source database and update user information.
DRS APIs (v3)	Real-time synchronization management	The APIs are used to process data and set the synchronization policy.
DRS APIs (v3)	Real-time disaster recovery management	The APIs are used to perform a primary/standby switchover and query RPO, RTO, DR monitoring data, and DR initialization progress.

Table 2-2 DRS APIs (v5)

Type	Subtype	Description
DRS APIs (v5)	Resource management	The APIs are used to query available link information.

Type	Subtype	Description
DRS APIs (v5)	Task management	The common APIs are used to create, query, update, and delete tasks.
DRS APIs (v5)	Comparison management	The APIs are used to query the comparison policy, health comparison list, and data-level streaming comparison list.
DRS APIs (v5)	Management of tasks created asynchronously in batches	The common APIs are used to asynchronously create tasks in batches, and submit, query, and update the tasks created asynchronously in batches.
DRS APIs (v5)	Database object configuration	The APIs are used to query database object information and import object files.
DRS APIs (v5)	Task details	The APIs are used to query task details.
DRS APIs (v5)	Task operations	The APIs are used to perform task operations.
DRS APIs (v5)	Enterprise project management	This API is used to query enterprise projects.
DRS APIs (v5)	Data processing	The APIs are used to update data processing rules, query data processing rules, and verify data filtering rules.
DRS APIs (v5)	Tag management	The APIs are used to add, delete, and query tags.

3 Calling APIs

- 3.1 Making an API Request
- 3.2 Authentication
- 3.3 Returned Values

3.1 Making an API Request

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

Request URI

A request URI consists of the following parts:

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

Table 3-1 Request 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 .
resource-path	API access path 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 .
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.

 NOTE

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

Request Method

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

Table 3-2 Request Method

Method	Description
GET	Requests a server to return specified resources.
PUT	Requests a server to update specified resources.
POST	Requests a server to add a resource or perform special operations.
DELETE	Requests a server to delete specified resources, for example, an object.
HEAD	Same as GET except that the server must return only the response header.
PATCH	Requests a server to update partial content of a specified resource. If the resource does not exist, the PATCH method creates a resource.

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://{Endpoint}/v3/auth/tokens
```

Request Headers

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

Table 3-3 describes common request headers need to be added to requests.

Table 3-3 Common request headers

Name	Description	Mandatory	Example
Content-Type	Specifies the MIME type of the request body.	Yes	The default value is application/json . Other values will be described in the specific APIs.
Content-Length	Length of the request body. The unit is byte.	• Optional for POST or PUT requests. • Must be left blank for GET requests.	3495
X-Auth-Token	Specifies a user token. This field is mandatory when token authentication is used. User token is a response to the API for obtaining a user token (only this API does not require authentication).	Yes	-
X-Language	Request language type.	No	en-us

 NOTE

For details about other headers, see the HTTP protocol.

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://{Endpoint}/v3/auth/tokens
Content-Type: application/json
```

Request Body

The body of a request is often sent in a structured format as specified in the **Content-Type** header field. If the request body contains full-width characters, these characters must be coded in UTF-8.

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

In the case of the API used to 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 ***projectname*** with the actual values. You can obtain a project name from [Regions and Endpoints](#).

NOTE

The **scope** parameter specifies where a token takes effect. You can set **scope** to an account or a project under an account. You can set scope to an account or a project under an account. For details, see [Obtaining a User Token Through Password Authentication](#).

```
POST https://{Endpoint}/v3/auth/tokens
Content-Type: application/json

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

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

3.2 Authentication

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

- AK/SK-based authentication. Requests are encrypted using an access key ID (AK)/secret access key (SK).
- Token authentication: Requests are authenticated using tokens.

AK/SK Authentication

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

- AK: access key ID. which is a unique identifier associated with a secret access key and is used together with a secret access key to sign requests cryptographically.
- SK: secret access key. It is used together with an access key ID to identify a sender who initiates a request and to cryptographically sign requests, preventing the request from being modified.

 CAUTION

- 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.
- APIG checks the time format and compares the time with the time when APIG receives the request. If the time difference exceeds 15 minutes, APIG will reject the request. The local time on the client must be synchronized with the clock server to avoid a large offset in the value of the **X-Sdk-Date** request header.

The following uses a [demo](#) to show how to sign a request and use an HTTP client to send an HTTPS request. If you do not need the demo project, visit the following URL to download the API Gateway signing SDK:

- Step 1** Create an AK/SK pair. If an AK/SK pair has been generated, skip this step. Find the downloaded AK/SK file, which is usually named **credentials.csv**.
1. Log in to ManageOne Operation Portal.
 2. Click the username in the upper-right corner and select **My Settings** from the drop-down list.
 3. On the **My Settings** page, click the **Access Keys** tab.
 4. Click **Add Access Key** to create an AK/SK pair.
 5. Click **OK** to download the access key file.
 6. Obtain the AK and SK from the **credentials.csv** file.

 CAUTION

- Each user can create up to two access keys.
- For security purposes, access keys are automatically downloaded only when they are generated for the first time and cannot be obtained from the management console later. Keep them properly.

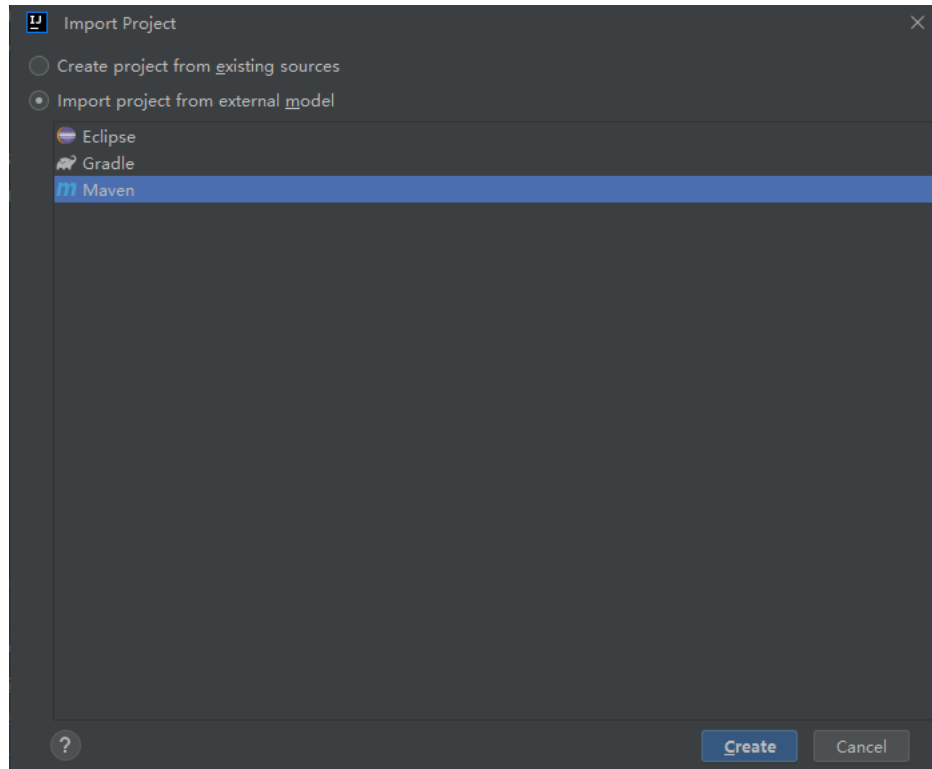
Step 2 Download and decompress the demo project.

Step 3 Start IDEA and choose **File > New > Project from Existing Sources**.

Select the decompressed **ApiGateway-java-sdk-x.x.x** folder, and click **OK** to import the sample project.

Step 4 On the **Import Project** page, select **Import project from external model**.

Select **Maven** and click **Create**.



Step 5 You can create a project in the current window or a new window. In this example, click **New Window**.

Step 6 Modify the API request information in `HttpClientDemo.java`.

1. This example stores AK and SK in environment variables. Before running this example, set the environment variables **HUAWEICLOUD_SDK_AK** and **HUAWEICLOUD_SDK_SK** in the local environment. The following uses Linux as an example to describe how to set the AK/SK obtained in [Step 1](#) as environment variables.
 - a. Open the terminal and run the following command to open the environment variable configuration file:

```
vi ~/.bashrc
```
 - b. Add the following environment variables to the file, save the file, and exit the editor:

```
export HUAWEICLOUD_SDK_AK="Obtained AK"
export HUAWEICLOUD_SDK_SK="Obtained SK"
```
 - c. Run the following command to bring the modification into effect:

```
source ~/.bashrc
```
2. Replace the API information and configured environment variables in the **HttpClientDemo.java** file.

As shown in the following code, replace the information in bold with the actual values.

```
public class HttpClientDemo {
    private static final Logger LOGGER = LoggerFactory.getLogger(HttpClientDemo.class);
    public static void main(String[] args) throws Exception {
        // Create a new request.
        Request httpClientRequest = new Request();
        try {
            // Set the request parameters.
            // AppKey, AppSecret, Method and Url are required parameters.
            // Directly writing AK/SK in code is risky. For security, encrypt your AK/SK and store them in
```

```
the configuration file or environment variables.
// In this example, the AK/SK are stored in environment variables for identity authentication.
// Before running this example, set environment variables HUAWEICLOUD_SDK_AK and
HUAWEICLOUD_SDK_SK.
httpClientRequest.setKey(System.getenv("HUAWEICLOUD_SDK_AK"));
httpClientRequest.setSecret(System.getenv("HUAWEICLOUD_SDK_SK"));
// Set a request method for http request.
httpClientRequest.setMethod("POST");
// Set a request URL in the format of https://{Endpoint}/{URI}.
httpClientRequest.setUrl("put your request url here");
httpClientRequest.addHeader("Content-Type", "text/plain");
// Set a body for http request.
httpClientRequest.setBody("put your request body here");
} catch (Exception e) {
    LOGGER.error(e.getMessage());
    return;
}
CloseableHttpClient client = null;
try {
    // Sign the request.
    HttpRequestBase signedRequest = Client.sign(httpClientRequest,
Constant.SIGNATURE_ALGORITHM_SDK_HMAC_SHA256);
    if (Constant.DO_VERIFY) {
        // create httpClient and verify ssl certificate
        HostName.setUrlHostName(httpClientRequest.getHost());
        client = (CloseableHttpClient)
SSLCipherSuiteUtil.createHttpClientWithVerify(Constant.INTERNATIONAL_PROTOCOL);
    } else {
        // create httpClient and do not verify ssl certificate
        client = (CloseableHttpClient)
SSLCipherSuiteUtil.createHttpClient(Constant.INTERNATIONAL_PROTOCOL);
    }
    HttpResponse response = client.execute(signedRequest);
    // Print the body of the response.
    HttpEntity resEntity = response.getEntity();
    if (resEntity != null) {
        LOGGER.info("Processing Body with name: {} and value: {}",
System.getProperty("line.separator"),
        EntityUtils.toString(resEntity, "UTF-8"));
    }
} catch (Exception e) {
    LOGGER.error(e.getMessage());
} finally {
    if (client != null) {
        client.close();
    }
}
}
```

Step 7 Run **HttpClientDemo.java** to sign the request, access the API, and print the result.

If the AK or SK has changed, APIG returns an error message.

-----End

Token Authentication

NOTE

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

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

A cloud service can be deployed globally or at the project level.

- A project-level service requires a project-level token. When you call the API, set **auth.scope** in the request body to **project**.
- A global service requires a global token. When you call the API, set **auth.scope** in the request body to **domain**.

A project-level token is required for calling APIs of the DRS service. As such, set **auth.scope** in the request body to **project** when you call the API for [obtaining a user token](#).

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

In section [3.1 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://{Endpoint}/v3/auth/projects
Content-Type: application/json
X-Auth-Token: ABCDEFJ....
```

3.3 Returned Values

Status Code

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

A status code is a group of digits, ranging from 1xx to 5xx. It indicates the status of a request. For more information, see [A.8 Status Code](#).

For example, if status code 201 is returned for calling the API used to obtain a user token, the request is successful.

Response Header

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

Figure 3-1 shows the response header fields for the API used to obtain a user token is called. 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 3-1 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-lam-trace-id → 218d45ab-d674-4995-a13a-2d0255ba41b5

x-subject-token
→ MIDYXQVJKozZlhvCNAQCc0lYtJCCEoCAQExDTALBglghkgB8ZQMEEAgEwgharBglghkiG9w08BwGgghacBIIWmHsidG9vZW4iOnsiZ0hwaXJlc19hZC16jwMTktMDhtMTNUMC
fj3KjdYgYknpVNRbW2eZ5eb78SZ0kqJACgklqQ1wi4JGzrpd18LGXX5bldtq4lqHCYb8P4NaY0NYejcAgzIVeFYtLWT1GSO0zxKZmlQHq82H8qHdgZ09fuEbL5dMhdawj+33wEI
xHRCe987o+k9-
j+CMZSEB7bUgd5Uj6eRASX01jPpEgAZ70g1Fruool6jagfKfNPQuFSOU8+uSttVwRtnfC+qTp22Rkd5MCqFGQ8LcuUxC3a+9CM8nOintWW7oeRUvhVpx8pniXlwTEboX-
RzT6MUlbpvGw-oPNFYuEckH3Hrozv0vN--n5d6Nbg==

x-xss-protection → 1; mode=block;
```

Response Body

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

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

```
{
  "token": {
    "expires_at": "2019-02-13T06:52:13.855000Z",
    "methods": [
      "password"
    ],
    "catalog": [
      {
        "endpoints": [
          {
            "region_id": "eu-west-101",
            .....

```

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

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

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

4 Getting Started

[4.1 Task Creation Process](#)

[4.2 Task Creation Example](#)

4.1 Task Creation Process

Process of Creating a Migration Task

Figure 4-1 Process of creating a real-time migration task

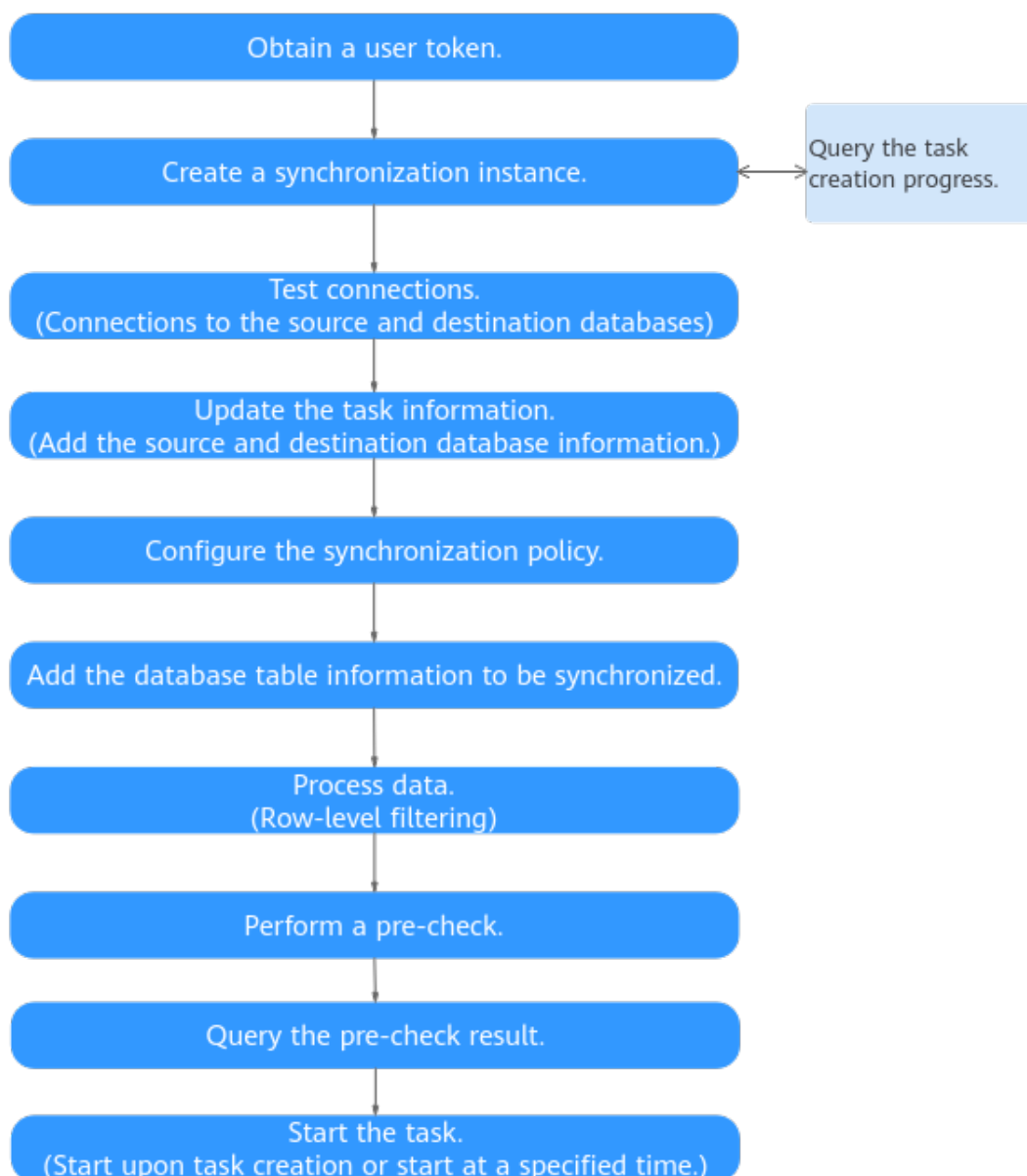


- **Obtaining a User Token:** Call an IAM API to obtain a user token.
- **6.1.1 Creating Tasks in Batches:** Create a migration task.
- **5.2.2 Querying Task Progress in Batches:** Query the status of a task.
- **6.1.2 Testing Connections in Batches:** Test connections to the source and destination databases.
- **6.1.4 Modifying Tasks in Batches:** Modify the task name or description and set exception notification information.
- **6.2.1 Updating Migrated User Information in Batches** and **6.1.5 Selecting Database Objects in Batches:** Update the user and role information and select the database or table to be migrated.

- **6.1.6 Performing a Batch Pre-Check:** Perform a pre-check.
- **6.1.7 Querying Pre-check Results in Batches:** View the pre-check result. After the pre-check is passed, go to the next step.
- **6.1.9 Obtaining Database Parameters in Batches:** Obtain the parameters of the source and destination databases.
- **6.1.11 Starting Tasks in Batches:** Start a real-time migration task.

Process of Creating a Real-Time Synchronization Task

Figure 4-2 Process of creating a real-time synchronization task



- **Obtaining a User Token:** Call an IAM API to obtain a user token.
- **6.1.1 Creating Tasks in Batches:** Create a synchronization task.
- **5.2.2 Querying Task Progress in Batches:** Query the status of a task.

- **6.1.2 Testing Connections in Batches:** Test connections to the source and destination databases.
- **6.1.4 Modifying Tasks in Batches:** Modify the task name or description and set exception notification information.
- **6.3.2 Configuring Synchronization Policies in Batches:** Configure the synchronization policies, including the conflict policy, DROP Database filtering, and object synchronization scope.
- **6.1.5 Selecting Database Objects in Batches:** Select the database or table to be synchronized.
- **6.3.1 Processing Data in Batches:** Add rules for the selected objects.
- **6.1.6 Performing a Batch Pre-Check:** Perform a pre-check.
- **6.1.7 Querying Pre-check Results in Batches:** View the pre-check result. After the pre-check is passed, go to the next step.
- **6.1.11 Starting Tasks in Batches:** Start a real-time synchronization task.

Process of Creating a Real-Time DR Task

Figure 4-3 Process of creating a real-time DR task



- **Obtaining a User Token:** Call an IAM API to obtain a user token.
- **6.1.1 Creating Tasks in Batches:** Create a DR task.
- **5.2.2 Querying Task Progress in Batches:** Query the status of a task.
- **6.1.2 Testing Connections in Batches:** Test connections to the source and destination databases.
- **6.1.4 Modifying Tasks in Batches:** Modify the task name or description and set exception notification information.
- **6.1.8 Setting Flow Control for Tasks:** Configure the rate limit for a DR task.
- **6.1.6 Performing a Batch Pre-Check:** Perform a pre-check.
- **6.1.7 Querying Pre-check Results in Batches:** View the pre-check result. After the pre-check is passed, go to the next step.
- **6.1.9 Obtaining Database Parameters in Batches:** Obtain the parameters of the source and destination databases.
- **6.1.11 Starting Tasks in Batches:** Start a real-time DR task.

4.2 Task Creation Example

This section describes how to create a real-time migration task by calling an API.

Involved APIs

- API for obtaining tokens from IAM
Obtain a token and add **X-Auth-Token** to the request header of API calls.
- API used to create a real-time migration task.

Procedure

- Step 1** Obtain the token by referring to [3.2 Authentication](#).
- Step 2** Obtain the DRS endpoints.
- Before calling this API, obtain the required region and endpoint.
- Step 3** Obtain the project ID of a user in a region. For details, see [A.5 Obtaining a Project ID](#).
- Step 4** Send POST `https://{DRS endpoint}/v3/{projectId}/jobs`.
- Step 5** Add **X-Auth-Token** to the request header. The value is user token.
- Step 6** Add the **Content-Type** key to the request header. The value of **Content-Type** is `application/json`.
- Step 7** Specify the following parameters in the request body:

NOTE

For details about the API used for creating DB instances, see [6.1.1 Creating Tasks in Batches](#).

```
{
  "bind_eip": true, //Check whether an EIP has been bound to the replication instance in the public network
  scenario.
  "db_use_type": "migration", //The usage type. The value can be migration (real-time migration), sync
  (real-time synchronization), or cloudDataGuard (real-time DR). This parameter is mandatory.
```

```
    "description": "", //Task description
    "engine_type": "mysql", //The engine type. The value can be mysql, mongodb, gaussdbv5, or
cloudDataGuard-mysql.
    "is_target_readonly": true, //Specifies whether the destination instance is readable only.
    "job_direction": "up", //Task direction. The value can be up or down.
    "name": "DRS-2057", //Task name. This parameter is mandatory.
    "net_type": "eip", // Network type. This parameter is mandatory and the value can be vpn, vpc, or eip.
    "node_type": "high", //Specification type. This parameter is mandatory.
    "source_endpoint": {}, //Information body of the source database. This parameter is mandatory.
    "db_type": "mysql", //The database type. The value can be mysql, mongodb, gaussdbv5, or gaussdbv5.
This parameter is mandatory.
  },
  "target_endpoint": {}, //Information body of the destination database
  "db_type": "mysql", //Database type. This parameter is mandatory.
  "inst_id": "63e0699063494a8a93798f38abf3247ein01", // RDS instance ID. This parameter is mandatory
when the database is an RDS DB instance.
  "region": "eu-west-101" // The region where the RDS DB instance is located. This parameter is
mandatory when the database is an RDS DB instance.
  },
  "task_type": "FULL_INCR_TRANS" //Task mode. The value can be FULL_TRANS or FULL_INCR_TRANS.
}
```

If the request fails, an error code and error message are returned. For details, see section [A.3 Error Code](#).

----End

5 APIs V3.0 (Recommended)

- 5.1 Quotas
- 5.2 Public API Management
- 5.3 Real-Time Disaster Recovery

5.1 Quotas

5.1.1 Querying Resource Quotas

Function

This API is used to query quotas of a tenant.

URI

GET /v3/{project_id}/quotas

Table 5-1 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 5-2 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type. Default value: en-us Values: • en-us • zh-cn

Response Parameters

Status code: 200

Table 5-3 Response body parameters

Parameter	Type	Description
quotas	Object	Quota information. For details, see Table 5-4 .

Table 5-4 Data structure description of field **quotas**

Parameter	Type	Description
resource	Object	Quota information. For details, see Table 5-5 .

Table 5-5 Data structure description of field **resource**

Parameter	Type	Description
type	String	Quota type information.
min	Integer	Minimum value of the quota.
max	Integer	Maximum value of the quota.

Parameter	Type	Description
quota	Integer	Actual value of the user quota.
used	Integer	Used quota.

Example Request

Example of querying quotas

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/quotas
```

Example Response

Status code: 200

OK

```
{
  "quotas" : {
    "resource" : {
      "type" : "instances",
      "min" : 0,
      "max" : 9999,
      "quota" : 9999,
      "used" : 41
    }
  }
}
```

Status Code

Status Code	Description
200	OK

Error Code

For details, see [A.3 Error Code](#).

5.2 Public API Management

5.2.1 Querying AZs in Which Flavors Are Not Sold Out

Function

This API is used to query AZs where flavors are not sold out.

URI

POST /v3/{project_id}/available-zone

Table 5-6 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 5-7 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type. Default value: en-us Enumerated values: • en-us • zh-cn

Table 5-8 Request body parameters

Parameter	Mandatory	Type	Description
engine_type	Yes	String	Engine type of a DRS task.
db_use_type	Yes	String	The migration scenario. The value can be migration (real-time migration), sync (real-time synchronization), or cloudDataGuard (real-time disaster recovery). Enumerated values: • migration • sync • cloudDataGuard

Parameter	Mandatory	Type	Description
job_direction	Yes	String	Task direction. Values: • up: to-the-cloud scenarios and the current cloud is the standby cloud in the DR. • down: out-of-cloud scenarios and the current cloud is the active cloud in the DR. • non-dbs: self-built databases.
node_type	Yes	String	Flavor type.
multi_write	No	String	Whether the DR mode is dual-active. If this parameter is left blank, the default value is false .

Response Parameters

Status code: 200

Table 5-9 Response body parameters

Parameter	Type	Description
az_infos	Array of objects	AZ information. For details, see Table 5-10 .

Table 5-10 Data structure description of field **az_infos**

Parameter	Type	Description
code	String	AZ ID.
name	String	AZ name.
status	String	AZ status.

Example Request

Example of querying AZs for MySQL synchronization

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/available-zone  
{
```



```
"engine_type" : "mysql",  
"db_use_type" : "sync",  
"job_direction" : "up",  
"node_type" : "medium"  
}
```

Example Response

Status code: 200

OK

```
{  
  "az_infos": [ {  
    "code": "az1xahz",  
    "name": "az1xahz",  
    "status": "DISABLED"  
  }, {  
    "code": "az2xahz",  
    "name": "az2",  
    "status": "ENABLED"  
  }, {  
    "code": "az3xahz",  
    "name": "az3",  
    "status": "ENABLED"  
  }, {  
    "code": "az4xahz",  
    "name": "az4",  
    "status": "ENABLED"  
  } ]  
}
```

Status Code

Status Code	Description
200	OK

Error Code

For details, see [A.3 Error Code](#).

5.2.2 Querying Task Progress in Batches

Function

This API is used to query the full progress and incremental delay information in batches based on the task ID.

URI

POST /v3/{project_id}/jobs/batch-progress

Table 5-11 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 5-12 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 5-13 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of strings	Request for querying task progress in batches.

Response Parameters

Status code: 200

Table 5-14 Response body parameters

Parameter	Type	Description
count	Integer	Total number.

Parameter	Type	Description
results	Array of objects	Response body for querying the migration progress in batches. For details, see Table 5-15 .

Table 5-15 Data structure description of field **results**

Parameter	Type	Description
job_id	String	Task ID.
progress	String	Migration percentage.
incr_trans_delay	String	Incremental migration delay (unit: s).
incr_trans_delay_millis	String	Incremental migration delay (unit: ms).
task_mode	String	Task mode. Values: • FULL_TRANS: full migration • INCR_TRANS: incremental migration • FULL_INCR_TRANS: full+incremental migration In the single-active DR scenario, only FULL_INCR_TRANS is available.
transfer_statuses	String	Task status.
process_time	String	Migration time in timestamp format.
remaining_time	String	Estimated remaining time.
progress_map	Map<String, ProgressInfo >	Data, structure, and index migration progress information body. For details, see Table 5-16 .
error_code	String	Error code.
error_msg	String	Error message.

Table 5-16 Data structure description of field **progress_map**

Parameter	Type	Description
completed	String	Progress.

Parameter	Type	Description
remaining_time	String	Estimated remaining time.

Example Request

Example of querying the DR progress:

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-progress
```

```
{
  "jobs" : [ "8d0e8e36-a618-490d-8a46-8c61ac9jb502" ]
}
```

Example Response

Status code: 200

OK

- Example response 1 for querying the DR progress:

```
{
  "count" : 1,
  "results" : [ {
    "progress" : "100",
    "job_id" : "8d0e8e36-a618-490d-8a46-8c61ac9jb502",
    "incre_trans_delay" : "0",
    "task_mode" : "FULL_INCR_TRANS",
    "transfer_status" : "INCR_TRANSFER_STARTED",
    "process_time" : "1608274919000",
    "remaining_time" : "0"
  } ]
}
```

- Example response 2 for querying the DR progress:

```
{
  "count" : 2,
  "results" : [ {
    "progress" : "100",
    "job_id" : "edae91cb-5892-49b6-a529-4921fb26jb21",
    "incre_trans_delay" : "0",
    "task_mode" : "FULL_INCR_TRANS",
    "transfer_status" : "INCR_TRANSFER_STARTED",
    "process_time" : "1594864576000",
    "remaining_time" : "10"
  }, {
    "progress" : "0",
    "job_id" : "f95c5d83-d0c9-42bd-b295-38c31cd1jb15",
    "incre_trans_delay" : "-1",
    "task_mode" : "FULL_INCR_TRANS",
    "transfer_status" : "FULL_TRANSFER_COMPLETE",
    "process_time" : "0",
    "remaining_time" : "0",
    "progress_map" : {
      "struct" : {
        "completed" : "94%",
        "remaining_time" : null
      },
      "data" : {
        "completed" : "100%",
        "remaining_time" : null
      },
      "index" : {
```

```
    "completed" : "100%",  
    "remaining_time" : null  
  }  
}  
}]  
}
```

Status Code

Status Code	Description
202	Accepted
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

5.3 Real-Time Disaster Recovery

5.3.1 Querying RPO and RTO in Batches

Function

This API is used to query Recovery Point Objective (RPO) and Recovery Time Objective (RTO).

URI

POST /v3/{project_id}/jobs/batch-rpo-and-rto

Table 5-17 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 5-18 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 5-19 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of strings	Request for querying the IDs of RPO and RTO tasks in batches.

Response Parameters

Status code: 202

Table 5-20 Response body parameters

Parameter	Type	Description
count	Integer	Total number.
results	Array of objects	Response body set for querying RPO and RTO in batches. For details, see Table 5-21 .

Table 5-21 Data structure description of field **results**

Parameter	Type	Description
job_id	String	Task ID.

Parameter	Type	Description
rpo_info	Object	RPO information. For details, see Table 5-22 .
rto_info	Object	RTO information. For details, see Table 5-22 .
error_code	String	Error code.
error_msg	String	Error message.

Table 5-22 Data structure description of fields **rpo_info** and **rto_info**

Parameter	Type	Description
check_point	String	Check point.
delay	String	Delay (unit: ms).
gtid_set	String	GTID.
time	String	Current time. The format is yyyy-MM-dd HH:mm:ss.

Example Request

Example of querying RPO and RTO in batches:

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-rpo-and-rto
{
  "jobs" : [ "8d0e8e36-a618-490d-8a46-8c61ac9jb502" ]
}
```

Example Response

Status code: 202

Accepted

```
{
  "count" : 1,
  "results" : [ {
    "job_id" : "8d0e8e36-a618-490d-8a46-8c61ac9jb502",
    "rpo_info" : {
      "delay" : "0",
      "time" : "2020-12-18 15:47:05",
      "gtid_set" : "NA",
      "check_point" : "mysql-bin.000514:197"
    },
    "rto_info" : {
      "delay" : "0",
      "time" : "2020-12-18 15:47:05",
      "gtid_set" : "NA",
      "check_point" : "mysql-bin.000514:197"
    }
  }
]
```

```
}]  
}
```

Status Code

Status Code	Description
202	Accepted
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6 APIs V3.0 (Deprecated)

- 6.1 Public API Management
- 6.2 Real-Time Migration Management
- 6.3 Real-Time Synchronization Management
- 6.4 Real-Time Disaster Recovery Management

6.1 Public API Management

6.1.1 Creating Tasks in Batches

Function

This API is used to create real-time migration, real-time synchronization, and real-time DR tasks in batches based on different request parameters.

Constraints

You can call a maximum of 10 APIs in batches.

URI

POST /v3/{project_id}/jobs/batch-creation

Table 6-1 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-2 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type. The default value is en-us . Values: • en-us • zh-cn

Table 6-3 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of objects	Request body for creating tasks. For details, see Table 6-4 .

Table 6-4 Data structure description of field **jobs**

Parameter	Mandatory	Type	Description
name	Yes	String	The task name. The task name can be 4 to 50 characters in length and must start with a letter. It is case-insensitive and can contain only letters, digits, hyphens (-), and underscores (_). • Minimum length: 4 characters • Maximum length: 50 characters

Parameter	Mandatory	Type	Description
db_use_type	Yes	String	Migration scenario. Values: • migration: real-time migration. • sync: real-time synchronization. • cloudDataGuard: real-time disaster recovery.

Parameter	Mandatory	Type	Description
engine_type	Yes	String	Engine type of a DRS task. Values: • mysql: migration and synchronization from MySQL to MySQL • mongodb: migration from MongoDB to DDS • cloudDataGuard-mysql: DR from MySQL to MySQL • gaussdbv5: GaussDB synchronization • mysql-to-kafka: synchronization from MySQL to Kafka • taurus-to-kafka: synchronization from TaurusDB to Kafka • gaussdbv5ha-to-kafka: synchronization from GaussDB Centralized to Kafka • postgresql: synchronization from PostgreSQL to PostgreSQL • oracle-to-gaussdbv5: synchronization from Oracle to GaussDB Distributed • oracle-to-gaussdbv5ha: synchronization from Oracle to GaussDB Centralized • gaussdbv5-to-oracle: synchronization from GaussDB Distributed to Oracle • gaussdbv5ha-to-oracle: synchronization from GaussDB Centralized to Oracle • gaussdbv5-to-kafka: synchronization from GaussDB Distributed to Kafka

Parameter	Mandatory	Type	Description
job_direction	Yes	String	Task direction. Values: • up: to-the-cloud scenarios and DR scenarios where the current cloud is the standby. • down: out-of-cloud scenarios and DR scenarios where the current cloud is the active. • non-dbs: self-built databases.
bind_eip	No	Boolean	Whether to bind an EIP. This parameter is mandatory and set to true when the network type is EIP.
customize_subnet_id	Yes	String	The ID of the subnet where the DRS instance resides, which corresponds to the network ID of the subnet created in the VPC of the destination database. The value is in UUID format.
product_id	No	String	Product ID.
is_target_read_only	No	Boolean	Whether the destination DB instance can be read-only. This parameter is valid only when the destination DB instance is a MySQL DB instance and the job_direction value is up . In the DR scenario, this parameter is mandatory and set to true if the current cloud is a standby cloud. If this parameter is not specified, the default value is true .
net_type	Yes	String	Network type. Value: • vpn • vpc • eip The VPC network cannot be selected in the DR scenario.

Parameter	Mandatory	Type	Description
node_type	Yes	String	Specifications. Values: • micro: minimum specifications. • small: small specifications. • medium: medium specifications. • high: large specifications. • xlarge: ultra-large specifications. • 2xlarge: maximum specifications. The values supported in a specific scenario can be obtained through the API for Querying Available Node Specifications.
node_num	No	Integer	The number of nodes. For a MongoDB database, this parameter indicates the number of source shards. This parameter is mandatory when the source database is a cluster. The value ranges from 1 to 32. The default value is 2 for MySQL dual-active DR. For a MongoDB database, this parameter indicates the number of source shards. This parameter is mandatory when the source database is a cluster. The value ranges from 1 to 32.
source_endpoint	Yes	Object	The source database information. For details, see Table 6-5.
target_endpoint	Yes	Object	The destination database information. For details, see Table 6-5.

Parameter	Mandatory	Type	Description
task_type	Yes	String	Task mode. The default value is FULL_INCR_TRANS. Values: • FULL_TRANS: full migration • FULL_INCR_TRANS: full +incremental migration • INCR_TRANS: incremental migration In the single-active DR scenario, only FULL_INCR_TRANS is available.
tags	No	Array of object	Tag information. Up to 20 tags can be added. For details, see Table 6-7.
description	No	String	Task description. The task description can contain a maximum of 256 characters and cannot contain the following special characters: ! <>'&"\
multi_write	No	Boolean	• This parameter is mandatory when db_use_type is set to cloudDataGuard. If the DR type is dual-active, the value of multi_write is true. Otherwise, the value is false. • If db_use_type is set to other values, multi_write is optional. Default value: false
sys_tags	No	Array of object	Enterprise project. If this parameter is not specified, the value is default. The key must be _sys_enterprise_project_id, and the value is the enterprise project ID. Only one enterprise project can be selected. For details, see Table 6-7.

Parameter	Mandatory	Type	Description
expired_days	No	String	After a task is in the abnormal status for a period of time, the task is automatically stopped. The unit is day. The value ranges from 14 to 100. If this parameter is not transferred, the default value is 14 .
master_az	No	String	AZ where the primary task is located. You can obtain the value by calling the API for querying AZs where flavors are not sold out. • This parameter takes effect when both master_az and slave_az are specified. • MySQL and gaussdbv5ha-to-kafka scenarios are supported.
slave_az	No	String	AZ where the standby task is located. You can obtain the value by calling the API for querying AZs where flavors are not sold out. • This parameter takes effect when both master_az and slave_az are specified. • MySQL and gaussdbv5ha-to-kafka scenarios are supported.
charging_mode	No	String	Billing Mode: Pay-per-use is used by default. Values: • period: indicates the monthly/yearly billing. • on_demand: indicates the pay-per-use billing. NOTE • If db_use_type is set to migration, the yearly/monthly billing is not supported. • The engine_type can be set to mysql, cloudDataGuard-mysql, postgresql, or gaussdbv5ha-to-kafka.

Parameter	Mandatory	Type	Description
period_order	No	Object	Yearly/Monthly information. For details, see Table 6-8 . NOTE This parameter is mandatory when charging_mode is set to period .
public_ip_list	No	Array of objects	Information about a specified EIP. For details, see Table 6-9 .
is_open_fast_clean	No	Boolean	Specifies whether to enable binlog clearing for RDS for MySQL or RDS for MariaDB. If this parameter is not transferred, the default value false is used, indicating that quick binlog clearing is disabled.

Table 6-5 Data structure description of fields **source_endpoint** and **target_endpoint**

Parameter	Mandatory	Type	Description
db_type	No	String	Database type. Values: • mysql: MySQL • mongodb: MongoDB • gaussdbv5: GaussDB Distributed • gaussdbv5ha: GaussDB Centralized • kafka: Kafka • postgresql: PostgreSQL • oracle: Oracle
az_code	No	String	azCode of the AZ where the database is located.

Parameter	Mandatory	Type	Description
region	No	String	Region where the DB instance is located. This parameter is mandatory when the database is a cloud instance, for example, an RDS instance. In DR scenarios, if job_direction is set to down , this parameter is mandatory in source_endpoint . If job_direction is set to up , this parameter is mandatory in target_endpoint .
inst_id	No	String	DB instance ID. This parameter is mandatory when the database is a cloud instance, for example, an RDS instance. In DR scenarios, if job_direction is set to down , this parameter is mandatory in source_endpoint . If job_direction is set to up , this parameter is mandatory in target_endpoint .
vpc_id	No	String	ID of the VPC where the database is located.
subnet_id	No	String	ID of the subnet where the database is located.
security_group_id	No	String	ID of the security group to which the database belongs.
project_id	No	String	If the database is a cloud DB instance, set this parameter to the project ID in the region where the DB instance is located. Otherwise, set this parameter to the project ID in the region where the current task is located. For details, see A.5 Obtaining a Project ID .

Parameter	Mandatory	Type	Description
db_name	No	String	The service name. This parameter is mandatory when the source database is an Oracle database. The database name can be a maximum of 128 characters in length and cannot contain the following special characters: !<>&\'\"
db_password	No	String	Database password.
db_port	No	Integer	Database port. The value is an integer ranging from 1 to 65535.
db_user	No	String	Database user.
inst_name	No	String	RDS instance name.
ip	No	String	Database IP address.
mongo_ha_mode	No	String	Mongo HA mode.
safe_mode	No	Integer	Running mode of an MRS cluster. Values: ● 0: Normal cluster ● 1: Security cluster
ssl_cert_password	No	String	SSL certificate password. The certificate file name extension is .p12.
ssl_cert_checksum	No	String	The checksum value of the SSL certificate, which is used for backend verification. This parameter is mandatory for secure connection to the source database.
ssl_cert_key	No	String	SSL certificate content, which is encrypted using Base64.
ssl_cert_name	No	String	SSL certificate name.
ssl_link	No	Boolean	Whether SSL is enabled.
topic	No	String	Kafka topic name.

Parameter	Mandatory	Type	Description
cluster_mode	No	String	For MongoDB 4.0 or later, if the cluster instance cannot obtain the IP address of the sharded node, set source_endpoint to Sharding4.0+ . Default value: Sharding4.0+ Value: Sharding4.0+
kafka_security_config	No	Object	This parameter is only for Kafka security authentication. For details, see Table 6-6 .

Table 6-6 Data structure description of field **kafka_security_config**

Parameter	Mandatory	Type	Description
type	No	String	Security protocol. This parameter is mandatory for security authentication. The corresponding field for Kafka is security.protocol. • PLAINTEXT: No security authentication mode is available. You only need to enter an IP address and a port number. • SASL_PLAINTEXT: The SASL mechanism is used to connect to Kafka, and you need to configure SASL parameters. • SSL: The SSL encryption is used to connect to Kafka, and you need to configure SSL parameters. • SASL_SSL: The SASL and SSL encryption authentication modes are used. You need to configure SSL and SASL parameters. Enumerated values: • PLAINTEXT • SASL_PLAINTEXT • SASL_SSL • SSL
trust_store_key_name	No	String	Certificate name. This parameter is mandatory when the security protocol is set to SSL or SASL_SSL.
trust_store_key	No	String	Value of the security certificate after Base64 transcoding. This parameter is mandatory when the security protocol is set to SSL or SASL_SSL.
trust_store_password	No	String	Certificate password. This parameter is mandatory when a password is set for the certificate.

Parameter	Mandatory	Type	Description
endpoint_algorithm	No	String	Host name endpoint identification algorithm, which specifies the endpoint identification algorithm for verifying the server host name using the server certificate. If this parameter is left blank, host name verification is disabled. The corresponding field for Kafka is ssl.endpoint.identification.algorithm .
sasl_mechanism	No	String	SASL mechanism used for client connection. The corresponding field for Kafka is sasl.mechanism . The values are as follows: • GSSAPI • PLAIN • SCRAM-SHA-256 • SCRAM-SHA-512
delegation_to_kens	No	Boolean	Whether to use token authentication. This parameter is valid only when the security protocol is set to SASL_SSL or SASL_PLAINTEXT and the SASL mechanism is set to SCRAM-SHA-256 or SCRAM-SHA-512 .
enable_key_store	No	Boolean	Whether to enable two-way SSL authentication.
key_store_key	No	String	Keystore certificate. This parameter is mandatory when two-way SSL authentication is enabled.
key_store_key_name	No	String	Keystore certificate name. This parameter is mandatory when two-way SSL authentication is enabled.
key_store_password	No	String	Keystore certificate password. This parameter is mandatory when a password is set for the certificate. The corresponding field for Kafka is ssl.keystore.password .

Parameter	Mandatory	Type	Description
set_private_key_password	No	Boolean	Whether to set the keystore private key password. The default value is false .
key_password	No	String	Keystore private key password. This parameter is mandatory when two-way SSL authentication is enabled and set_private_key_password is set to true . The corresponding field for Kafka is ssl.key.password .

Table 6-7 Data structure description of fields **tags** and **sys_tags**

Parameter	Mandatory	Type	Description
key	No	String	Tag key. The value can contain a maximum of 36 characters, including letters, digits, underscores (_), and hyphens (-).
value	No	String	Tag value. The value can contain a maximum of 43 characters, including letters, digits, underscores (_), and hyphens (-).

Table 6-8 Data structure description of field **period_order**

Parameter	Mandatory	Type	Description
period_type	No	Integer	Subscription period type. Values: • 2: indicates that the service is subscribed by month. • 3: indicates that the service is subscribed by year. NOTE This parameter is available and mandatory only when charging_mode is set to period .

Parameter	Mandatory	Type	Description
period_num	No	Integer	Number of subscription periods. Values: • If period_type is set to 2 (month), the value ranges from 1 to 9. • If period_type is set to 3 (year), the value ranges from 1 to 3. NOTE • This parameter is available and mandatory only when charging_mode is set to period. • The value of period_num must be a positive integer.
is_auto_renew	No	Integer	Whether auto renewal is enabled. Values: • 0: The subscription is not automatically renewed. • true: The subscription is automatically renewed. NOTE This parameter is available only when charging_mode is set to period. If this parameter is not specified, automatic renewal is disabled by default.

Table 6-9 Data structure description of field **public_ip_list**

Parameter	Mandatory	Type	Description
id	Yes	String	ID of a specified EIP.
public_ip	Yes	String	EIP.

Parameter	Mandatory	Type	Description
type	Yes	String	Type of a task with an EIP bound. - In a primary/standby task, master indicates the primary task, and slave indicates the standby task. - In other cases, the value is fixed to master. Enumerated values: master slave

Response Parameters

Status code: 202

Table 6-10 Response body parameters

Parameter	Type	Description
results	Array of objects	The response body for creating tasks in batches. For details, see Table 6-11 .
count	Integer	Total number of records.

Table 6-11 Data structure description of field results

Parameter	Type	Description
id	String	Task ID.
child_ids	Array of strings	Subtask ID set. This parameter is returned when there are subtasks.
name	String	Task name.
status	String	Task status.
create_time	String	Creation time (timestamp).
error_code	String	Error code.
error_msg	String	Error message.

Example Request

- Creating to-the-cloud MySQL migration tasks in batches, in which **task_type** is set to **FULL_INCR_TRANS**, and **net_type** is set to **eip**

<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-creation>

```
{
  "jobs": [ {
    "name": "DRS-9228",
    "node_type": "high",
    "engine_type": "mysql",
    "net_type": "eip",
    "job_direction": "up",
    "db_use_type": "migration",
    "task_type": "FULL_INCR_TRANS",
    "customize_sutnet_id": "352ad828-3467-4f03-987a-c55a5a9dd417",
    "source_endpoint": {
      "db_type": "mysql"
    },
    "target_endpoint": {
      "region": "eu-west-101",
      "db_type": "mysql",
      "inst_id": "e05a3679efe241d8b5dee80b17c1a863in01"
    },
    "is_target_readonly": false,
    "bind_eip": true
  } ]
}
```

- Creating real-time MySQL DR tasks in batches (current cloud as standby), in which **net_type** is set to **eip**

<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-creation>

```
{
  "jobs": [ {
    "name": "DRS-api-test",
    "engine_type": "cloudDataGuard-mysql",
    "net_type": "eip",
    "node_type": "high",
    "job_direction": "up",
    "source_endpoint": {
      "db_type": "mysql"
    },
    "target_endpoint": {
      "region": "eu-west-101",
      "db_type": "mysql",
      "inst_id": "e05a3679efe241d8b5dee80b17c1a863in01",
      "project_id": "054ba152d480d55b2f5dc0069e7ddef0"
    },
    "is_target_readonly": true,
    "bind_eip": true,
    "db_use_type": "cloudDataGuard",
    "task_type": "FULL_INCR_TRANS",
    "customize_sutnet_id": "352ad828-3467-4f03-987a-c55a5a9dd417",
    "multi_write": false
  } ]
}
```

- Creating to-the-cloud DDS replica set migration tasks in batches, in which **task_type** is set to **FULL_INCR_TRANS**, and **net_type** is set to **eip**

<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-creation>

```
{
  "jobs": [ {
    "name": "DRS-3371-linxiaolu",
    "node_type": "high",
    "engine_type": "mongodb",
    "net_type": "eip",
    "job_direction": "up",
  } ]
}
```

```
"db_use_type": "migration",
"task_type": "FULL_INCR_TRANS",
"customize_sutnet_id": "faf513f3-7a88-4a5c-bec7-238699c29c17",
"source_endpoint": {
  "db_type": "mongodb"
},
"target_endpoint": {
  "region": "eu-west-101",
  "db_type": "mongodb",
  "inst_id": "3cadd5a0ef724f55ac7fa5bcb5f4fc5fin02"
},
"bind_eip": true
}]
}
```

- Creating a MySQL primary/standby synchronization task, in which **task_type** is set to **FULL_INCR_TRANS**, and **net_type** is set to **eip**

<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-creation>

```
{
  "jobs": [ {
    "name": "DRS-linxiaolu-test3",
    "engine_type": "mysql",
    "net_type": "eip",
    "node_type": "high",
    "job_direction": "up",
    "source_endpoint": {
      "db_type": "mysql"
    },
    "target_endpoint": {
      "region": "eu-west-101",
      "db_type": "mysql",
      "inst_id": "64e8d7a31afa476ca85609a17af83765in01",
      "project_id": "054ba152d480d55b2f5dc0069e7ddef0"
    },
    "bind_eip": true,
    "db_use_type": "sync",
    "task_type": "FULL_INCR_TRANS",
    "customize_sutnet_id": "0cf77cfb-3785-4065-a9c4-74b7bb2df071",
    "master_az": "az2xahz",
    "slave_az": "az3xahz"
  } ]
}
```

Example Response

Status code: 202

Accepted

```
{
  "results": [ {
    "id": "e11eaf8f-71ef-4fad-8890-aed7572ajb11",
    "name": "DRS-9228",
    "status": "CREATING",
    "create_time": "1599188556112"
  } ],
  "count": 1
}
```

Status Code

Status Code	Description
202	Accepted

Status Code	Description
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.2 Testing Connections in Batches

Function

This API is used to test connections in batches.

Constraints

- After the task is created, you can test the connection only when the task status is **CONFIGURATION**.
- In the dual-active DR scenario, the backward task can be executed only when the forward task is in **INCRE_TRANSFER_STARTED** state. The parent task cannot call the API.
- You can call a maximum of 10 APIs in batches.

URI

POST /v3/{project_id}/jobs/batch-connection

Table 6-12 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-13 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-14 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of objects	List of requests for testing connections in batches. For details, see Table 6-15 .

Table 6-15 Data structure description of field **jobs**

Parameter	Mandatory	Type	Description
id	Yes	String	DRS task ID, which can be obtained from the task list or task details page.
net_type	Yes	String	Network type. Value: • vpn • vpc • eip
db_type	Yes	String	Database type. Value: • mysql: MySQL • mongodb: MongoDB • gaussdbv5: GaussDB Distributed • gaussdbv5ha: GaussDB Centralized • kafka: Kafka • postgresql: PostgreSQL • oracle: Oracle
ip	Yes	String	Database IP address.

Parameter	Mandatory	Type	Description
db_port	No	Integer	Database port number. This parameter must be set to 0 for the Mongo and DDS databases.
inst_id	No	String	DB instance ID. This parameter is mandatory when the database is a cloud instance, for example, an RDS instance.
db_user	Yes	String	Database account.
db_password	Yes	String	Database password.
ssl_link	No	Boolean	Whether SSL is enabled. If this parameter is set to true , you need to set parameters related to the SSL certificate.
ssl_cert_key	No	String	SSL certificate content, which is a character string encrypted using BASE64 after the SSL certificate is obtained. This parameter is mandatory when ssl_link is set to true .
ssl_cert_name	No	String	SSL certificate name. This parameter is mandatory when ssl_link is set to true .
ssl_cert_check_sum	No	String	The checksum value of the SSL certificate content encrypted using SHA256 after the SSL certificate is obtained, which is used for backend verification. This parameter is mandatory when ssl_link is set to true .
ssl_cert_password	No	String	The SSL certificate password. The certificate file name extension is .p12 and requires a password.
vpc_id	No	String	ID of the VPC where the database is located. This parameter is mandatory when the network type is set to VPC.
subnet_id	No	String	ID of the subnet where the database is located. This parameter is mandatory when the network type is set to VPC.

Parameter	Mandatory	Type	Description
end_point_type	Yes	String	Source database: so . Destination database: ta . Default value: so Values: • so • ta
region	No	String	Region where the DB instance is located. This parameter is mandatory when the database is a cloud instance, for example, an RDS instance.
project_id	No	String	Project ID of the region where the user is located.
db_name	No	String	Database user name, which is the DDS authentication database or the service name of the Oracle database.
kafka_security_config	No	Object	This parameter is only for Kafka security authentication. For details, see Table 6-16 .

Table 6-16 Data structure description of field **kafka_security_config**

Parameter	Mandatory	Type	Description
type	No	String	Security protocol. This parameter is mandatory for security authentication. The corresponding field for Kafka is security.protocol. • PLAINTEXT: No security authentication mode is available. You only need to enter an IP address and a port number. • SASL_PLAINTEXT: The SASL mechanism is used to connect to Kafka, and you need to configure SASL parameters. • SSL: The SSL encryption is used to connect to Kafka, and you need to configure SSL parameters. • SASL_SSL: The SASL and SSL encryption authentication modes are used. You need to configure SSL and SASL parameters. Enumerated values: • PLAINTEXT • SASL_PLAINTEXT • SASL_SSL • SSL
trust_store_key_name	No	String	Certificate name. This parameter is mandatory when the security protocol is set to SSL or SASL_SSL.
trust_store_key	No	String	Value of the security certificate after Base64 transcoding. This parameter is mandatory when the security protocol is set to SSL or SASL_SSL.
trust_store_password	No	String	Certificate password. This parameter is mandatory when security authentication is used.

Parameter	Mandatory	Type	Description
endpoint_algorithm	No	String	Host name endpoint identification algorithm, which specifies the endpoint identification algorithm for verifying the server host name using the server certificate. If this parameter is left blank, host name verification is disabled. The corresponding field for Kafka is ssl.endpoint.identification.algorithm .
sasl_mechanism	No	String	SASL mechanism used for client connection. This parameter is mandatory when the authentication type is set to SASL_PLAINTEXT or SASL_SSL . The corresponding field for Kafka is sasl.mechanism . The values are as follows: • GSSAPI • PLAIN • SCRAM-SHA-256 • SCRAM-SHA-512
delegation_to_kerberos	No	Boolean	Whether to use token authentication. This parameter is valid only when the security protocol is set to SASL_SSL or SASL_PLAINTEXT and the SASL mechanism is set to SCRAM-SHA-256 or SCRAM-SHA-512 .
enable_key_store	No	Boolean	Whether to enable two-way SSL authentication.
key_store_key	No	String	Keystore certificate. This parameter is mandatory when two-way SSL authentication is enabled.
key_store_key_name	No	String	Keystore certificate name. This parameter is mandatory when two-way SSL authentication is enabled.

Parameter	Mandatory	Type	Description
key_store_password	No	String	Keystore certificate password. This parameter is mandatory when a password is set for the certificate. The corresponding field for Kafka is ssl.keystore.password .
set_private_key_password	No	Boolean	Whether to set the keystore private key password. The default value is false .
key_password	No	String	Keystore private key password. This parameter is mandatory when two-way SSL authentication is enabled and set_private_key_password is set to true . The corresponding field for Kafka is ssl.key.password .

Response Parameters

Status code: 200

Table 6-17 Response body parameters

Parameter	Type	Description
results	Array of objects	Response body set for the batch test connection. For details, see Table 6-18 .
count	Integer	Total number of records.

Table 6-18 Data structure description of field **results**

Parameter	Type	Description
id	String	Task ID.
status	String	Test result. Value: • success: indicates that the connection test is successful. • failed: indicates that the connection test fails.
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error message.
success	Boolean	Whether the request is successful.

Example Request

- Testing connections for a DDS real-time migration task in which the destination database is DDS

<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-connection>

```
{
  "jobs": [ {
    "id": "140b5236-88ad-43c8-811c-1268453jb101",
    "ip": "192.168.4.66:8635,192.168.4.83:8635",
    "net_type": "eip",
    "db_type": "mongodb",
    "db_port": 0,
    "db_user": "root",
    "db_password": "*****",
    "inst_id": "3cadd5a0ef724f55ac7fa5bcb5f4fc5fin02",
    "project_id": "0549a6a31000d4e82fd1c00c3d6f2d76",
    "region": "eu-west-101",
    "end_point_type": "ta"
  } ]
}
```

- Testing connections for an RDS for MySQL real-time migration task in which the destination database is RDS for MySQL

<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-connection>

```
{
  "jobs": [ {
    "id": "140b5236-88ad-43c8-811c-1268453jb101",
    "ip": "192.168.0.131",
    "net_type": "eip",
    "db_type": "mysql",
    "db_port": 3306,
    "db_user": "root",
    "db_password": "*****",
    "inst_id": "e05a3679efe241d8b5dee80b17c1a863in01",
    "project_id": "054ba152d480d55b2f5dc0069e7ddef0",
    "region": "eu-west-101",
    "end_point_type": "ta"
  } ]
}
```

- Testing connections for a MySQL real-time migration task in which the source database is not RDS

<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-connection>

```
{
  "jobs": [ {
    "id": "140b5236-88ad-43c8-811c-1268453jb101",
    "ip": "192.168.0.27",
    "net_type": "eip",
    "db_type": "mysql",
    "db_port": 3306,
    "db_user": "root",
    "db_password": "*****",
    "ssl_link": false,
    "end_point_type": "so"
  } ]
}
```

- Creating a real-time synchronization task from MySQL to Kafka and setting the Kafka authentication mode to PLAINTEXT

<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-connection>

```
{
  "jobs": [
    {
      "id": "3bc38fe4-da50-4aad-903e-5db76d8jb20i",
      "ip": "xxxxxxx:xxxx",
      "net_type": "eip",
      "db_type": "kafka",
      "project_id": "5237e10fe9aa4ad5b16b6a5245248314",
      "end_point_type": "ta",
      "kafka_security_config": {
        "type": "PLAINTEXT"
      }
    }
  ]
}
```

- Creating a real-time synchronization task from MySQL to Kafka and setting the Kafka authentication mode to SASL_PLAINTEXT

<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-connection>

```
{
  "jobs": [
    {
      "id": "3bc38fe4-da50-4aad-903e-5db76d8jb20i",
      "ip": "xxxxxxx:xxxx",
      "net_type": "eip",
      "db_type": "kafka",
      "db_user": "xxxxxxx",
      "db_password": "xxxxxxx",
      "project_id": "5237e10fe9aa4ad5b16b6a5245248314",
      "end_point_type": "ta",
      "kafka_security_config": {
        "type": "SASL_PLAINTEXT",
        "sas_l_mechanism": "PLAIN"
      }
    }
  ]
}
```

- Creating a real-time synchronization task from MySQL to Kafka and setting the Kafka authentication mode to SSL

<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-connection>

```
{
  "jobs": [
    {
      "id": "3bc38fe4-da50-4aad-903e-5db76d8jb20i",
      "ip": "xxxxxxx:xxxx",
      "net_type": "eip",
      "db_type": "kafka",
      "project_id": "5237e10fe9aa4ad5b16b6a5245248314",
      "end_point_type": "ta",
      "kafka_security_config": {
        "type": "SSL",
        "trust_store_key_name": "client.truststore.jks",
        "trust_store_key": "xxxxxx",
        "trust_store_password": "xxxxxx",
        "endpoint_algorithm": "",
        "enable_key_store": false
      }
    }
  ]
}
```

- Creating a real-time synchronization task from MySQL to Kafka and setting the Kafka authentication mode to SASL_SSL

<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-connection>

```
{
  "jobs": [
    {
      "id": "3bc38fe4-da50-4aad-903e-5db76d8jb20i",
      "ip": "xxxxxx:xxxx",
      "net_type": "eip",
      "db_type": "kafka",
      "db_user": "xxxxxx",
      "db_password": "xxxxxx",
      "project_id": "5237e10fe9aa4ad5b16b6a5245248314",
      "end_point_type": "ta",
      "kafka_security_config": {
        "type": "SSL",
        "trust_store_key_name": "client.truststore.jks",
        "trust_store_key": "xxxxxx",
        "trust_store_password": "xxxxxx",
        "endpoint_algorithm": "",
        "enable_key_store": false
      }
    }
  ]
}
```

Example Response

Status code: 200

OK

```
{
  "results": [ {
    "success": true,
    "id": "140b5236-88ad-43c8-811c-1268453jb101",
    "status": "success"
  } ],
  "count": 1
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.3 Testing Connections in Batches (Cluster Mode)

Function

- This API is used to test connections in cluster mode.
- This API is used to test connections for primary and standby tasks.
- This API is used to change user passwords for task in multi-task mode.

Constraints

- After the task is created, you can test the connection only when the task status is **CONFIGURATION**.
- You can call a maximum of 10 APIs in batches.

URI

POST /v3/{project_id}/jobs/cluster/batch-connection

Table 6-19 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-20 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-21 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of objects	Requests for testing cluster connections in batches. For details, see Table 6-22 .

Table 6-22 Data structure description of field **jobs**

Parameter	Mandatory	Type	Description
action	Yes	String	Specific operation to be performed.
job_id	Yes	String	Task ID. (In cluster mode, the value is the ID of the parent task.).
property	Yes	String	The parameter that corresponds to the operation. NOTE Combine the parameters in Table 6-23 into a JSON file and escape the JSON file.

Table 6-23 property field description

Name	Mandatory	Type	Description
dbtype	Yes	String	Database type.
dbport	Yes	Integer	Database port. The value is 0 for the MongoDB engine.
ssllink	Yes	boolean	Whether the connection is an SSL connection. Valid values: • true • false
nettype	Yes	String	Network type. Valid values: • vpn • vpc • eip

Name	Mandatory	Type	Description
endpointtype	Yes	String	Endpoint type. Valid values: • so: indicates the source database. • ta: indicates the destination database. • ls: indicates the sharded database. If the source database is a cluster database, the endpointtype value corresponding to the database IP address is so, and the endpointtype value corresponding to the sharded database is ls.
ip	Yes	String	Database IP address.
dbName	Yes	String	Database name.
instid	No	String	DB instance ID. This parameter is mandatory for cloud DB instances.
dbuser	Yes	String	Database username.
dbpassword	Yes	String	Database password.
sslcertkey	No	String	Content of the SSL certificate. This parameter is required for SSL connection.
sslcertname	No	String	Name of the SSL certificate. This parameter is required for SSL connection.
sslcertchecksum	No	String	Checksum value of the SSL certificate content, which is required for SSL connections.
kafkaSecurityConfig	No	Object	This parameter is mandatory when the Kafka authentication mode is set to a security authentication mode. For details, see Table 6-24 .

Table 6-24 Data structure description of field **kafkaSecurityConfig**

Parameter	Mandatory	Type	Description
type	No	String	Security protocol. This parameter is mandatory for security authentication. The corresponding field for Kafka is security.protocol. • PLAINTEXT: No security authentication mode is available. You only need to enter an IP address and a port number. • SASL_PLAINTEXT: The SASL mechanism is used to connect to Kafka, and you need to configure SASL parameters. • SSL: The SSL encryption is used to connect to Kafka, and you need to configure SSL parameters. • SASL_SSL: The SASL and SSL encryption authentication modes are used. You need to configure SSL and SASL parameters. Enumerated values: • PLAINTEXT • SASL_PLAINTEXT • SASL_SSL • SSL
trust_store_key_name	No	String	Certificate name. This parameter is mandatory when the security protocol is set to SSL or SASL_SSL.
trust_store_key	No	String	Value of the security certificate after Base64 transcoding. This parameter is mandatory when the security protocol is set to SSL or SASL_SSL.
trust_store_password	No	String	Certificate password. This parameter is mandatory when the security protocol is set to SSL or SASL_SSL.

Parameter	Mandatory	Type	Description
endpoint_algorithm	No	String	Host name endpoint identification algorithm, which specifies the endpoint identification algorithm for verifying the server host name using the server certificate. If this parameter is left blank, host name verification is disabled. The corresponding field for Kafka is ssl.endpoint.identification.algorithm .
sasl_mechanism	No	String	SASL mechanism used for client connection. The corresponding field for Kafka is sasl.mechanism . The values are as follows: • GSSAPI • PLAIN • SCRAM-SHA-256 • SCRAM-SHA-512
delegation_to_kens	No	Boolean	Whether to use token authentication. This parameter is valid only when the security protocol is set to SASL_SSL or SASL_PLAINTEXT and the SASL mechanism is set to SCRAM-SHA-256 or SCRAM-SHA-512 .
enable_key_store	No	Boolean	Whether to enable two-way SSL authentication.
key_store_key	No	String	Keystore certificate. This parameter is mandatory when two-way SSL authentication is enabled.
key_store_key_name	No	String	Keystore certificate name. This parameter is mandatory when two-way SSL authentication is enabled.
key_store_password	No	String	Keystore certificate password. This parameter is mandatory when two-way SSL authentication is enabled. The corresponding field for Kafka is ssl.keystore.password .

Parameter	Mandatory	Type	Description
set_private_key_password	No	Boolean	Whether to set the keystore private key password. The default value is false .
key_password	No	String	Keystore private key password. This parameter is mandatory when two-way SSL authentication is enabled and set_private_key_password is set to true . The corresponding field for Kafka is ssl.key.password .

Response Parameters

Status code: 200

Table 6-25 Response body parameters

Parameter	Type	Description
results	Array of objects	Response body set for the batch test connection. For details, see Table 6-26 .
count	Integer	Total number of records.

Table 6-26 Data structure description of field **results**

Parameter	Type	Description
id	String	Task ID.
status	String	Test result. Value: • true: indicates that the connection test is successful. • false: indicates that the connection test fails.
error_code	String	Error code.
error_msg	String	Error message.
success	Boolean	Whether the request is successful.

Example Request

- Testing connections for a MySQL primary/standby task
<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/cluster/batch-connection>

```
{
  "jobs": [{
    "action": "testConnection",
    "job_id": "0ac45233-8de7-4f02-9de1-d71cab7jb201",
    "property": "[{"ip":"192.168.2.232:3306","dbtype":"mysql","dbuser":"root","dbpassword":"*****","ssllink":false,"projectId":"054ba152d480d55b2f5dc0069e7ddef0","region":"cn-xianhz-1","nettype":"eip","endpointtype":"so"}]"
  }]
}
```
- Testing connections for a task in which the source database is DDS cluster
<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/cluster/batch-connection>

```
{
  "jobs" : [ {
    "action" : "testConnection",
    "job_id" : "35d0d60b-4605-4686-b35d-3a3d059fjb15",
    "property" : "[{"dbtype":"mongodb","dbport":0,"ssllink":false,"nettype":"eip","endpointtype":"so","encrypt":{"elementId":"encrypt_switch","offLabel":"OFF","onLabel":"ON"},"disable":false,"ip":"192.168.7.217:8635","dbName":"admin","dbuser":"rwuser","dbpassword":"*****"},"dbtype":"mongodb","dbport":0,"ssllink":false,"nettype":"eip","endpointtype":"so","encrypt":{"elementId":"encrypt_switch","offLabel":"OFF","onLabel":"ON"},"disable":false,"ip":"192.168.7.72:8635","dbName":"admin","dbuser":"rwuser","dbpassword":"*****"},"ip":"192.168.7.37:8635","nettype":"eip","dbtype":"mongodb","dbport":0,"dbuser":"rwuser","dbpassword":"*****","ssllink":false,"sslcertkey":"","sslcertname":"","sslcertchecksum":"","endpointtype":"ls","dbName":"admin"}]"
  } ]
}
```
- Creating a real-time primary/standby synchronization task from MySQL to Kafka and setting the Kafka authentication mode to SASL_PLAINTEXT
<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/cluster/batch-connection>

```
{
  "jobs": [
    {
      "action": "testConnection",
      "job_id": "f85c660b-c4d0-4571-ac53-629d906jb20i",
      "property": "[{"ip":"xxxxxx:xxxx","dbtype":"kafka","dbuser":"xxxxxx","dbpassword":"xxxxxx","ssllink":false,"projectId":"5237e10fe9aa4ad5b16b6a5245248314","region":"region-1","vpcid":"f7ea6af9-dee8-456f-b3d7-0cc34b4c9cbf","subnetid":"b04c1704-5bd9-4195-9bda-ea2a14e0537e","kafkaSecurityConfig":{"type":"SASL_PLAINTEXT","sasl_mechanism":"PLAIN"},"nettype":"vpc","dbUseType":"sync","endpointtype":"ta"}]"
    }
  ]
}
```

Example Response

Status code: 200

OK

```
{
  "results": [ {
    "id": "0eb704d0-5a1c-4cbd-b675-91152f06jb11",
    "status": "true"
  } ],
  "count": 1
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.4 Modifying Tasks in Batches

Function

This API is used to modify task names or descriptions in batches and set exception notification.

Constraints

- After the test of connections to the source and destination databases is successful, you need to call this API. Enter the source and destination database information according to the example. Otherwise, errors may occur in subsequent tasks.
- This API can be invoked when the task name, description, or exception notification is modified but the task is not in the stopped or deleted state.
- This API is invoked after connections to the source and destination databases are tested. The task must be in **CONFIGURATION** state. In the dual-active DR scenario, the parent task cannot call the API.
- You can call a maximum of 10 APIs in batches.

URI

PUT /v3/{project_id}/jobs/batch-modification

Table 6-27 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-28 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-29 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of objects	Request body for modifying tasks. For details, see Table 6-30 .

Table 6-30 Data structure description of field **jobs**

Parameter	Mandatory	Type	Description
job_id	Yes	String	Task ID.
description	No	String	Task description. This parameter is mandatory when you modify the task description. Minimum length: 0 character Maximum length: 256
name	No	String	Task name. Set this parameter when you need to change the task name.
alarm_notify	No	Object	Set exception notification. For details, see Table 6-31 .

Parameter	Mandatory	Type	Description
task_type	No	String	Task mode. Values: • FULL_TRANS: full migration • INCR_TRANS: incremental migration • FULL_INCR_TRANS: full +incremental migration NOTE This parameter can be modified only for MySQL-to-TaurusDB synchronization tasks in the configuring or incremental state.
source_endpoint	No	Object	Source database information. This parameter is mandatory for calling the API after the connection test. For details, see Table 6-33 .
target_endpoint	No	Object	Destination database information. This parameter is mandatory for calling the API after the connection test. For details, see Table 6-33 .
node_type	No	String	Specifications. Values: • micro: minimum specifications. • small: small specifications. • medium: medium specifications. • high: large specifications. • xlarge: ultra-large specifications. • 2xlarge: maximum specifications. The values supported in a specific scenario can be obtained through the API for Querying Available Node Specifications .

Parameter	Mandatory	Type	Description
engine_type	No	String	Engine type of a DRS task. This parameter is mandatory when this API is invoked to modify a task after the connection test. Values: • mysql: migration and synchronization from MySQL to MySQL • mongodb: migration from MongoDB to DDS • cloudDataGuard-mysql: DR from MySQL to MySQL • gaussdbv5: GaussDB synchronization • mysql-to-kafka: synchronization from MySQL to Kafka • taurus-to-kafka: synchronization from TaurusDB to Kafka • gaussdbv5ha-to-kafka: synchronization from GaussDB Centralized to Kafka • postgresql: synchronization from PostgreSQL to PostgreSQL • oracle-to-gaussdbv5: synchronization from Oracle to GaussDB Distributed • oracle-to-gaussdbv5ha: synchronization from Oracle to GaussDB Centralized • gaussdbv5-to-oracle: synchronization from GaussDB Distributed to Oracle • gaussdbv5ha-to-oracle: synchronization from GaussDB Centralized to Oracle • gaussdbv5-to-kafka: synchronization from

Parameter	Mandatory	Type	Description
			GaussDB Distributed to Kafka
net_type	No	String	Network type. This parameter is mandatory after the connection test. Values: • vpn • vpc • eip
store_db_info	No	Boolean	Whether to save the database information. This parameter is mandatory when the API is called after the connection test.
is_recreate	No	Boolean	Whether the task is a rebuilding task.
job_direction	No	String	Task direction. This parameter is mandatory after the connection test. Values: • up: to-the-cloud scenarios and the current cloud is the standby cloud in the DR. • down: out-of-cloud scenarios and the current cloud is the active cloud in the DR. • non-dbs: self-built databases.
is_target_read only	No	Boolean	Whether the destination DB instance can be read-only.

Parameter	Mandatory	Type	Description
replace_definer	No	Boolean	Whether to migrate all Definers to the user. MySQL databases support this setting. This parameter is mandatory when this API is invoked to modify a task after the connection test. Values: • true: The Definers of all source database objects will be migrated to the user. Other users do not have permissions on database objects unless they are authorized. • false: The Definers of all source database objects will not be changed. You need to migrate all accounts and permissions of the source database in the next step.
tags	No	Array of object	Specifies the tag information. For details, see Table 6-35 .
db_use_type	No	String	Migration type. Values: • migration: real-time migration. • sync: real-time synchronization. • cloudDataGuard: real-time disaster recovery.
product_id	No	String	Product ID.

Table 6-31 Data structure description of field **alarm_notify**

Parameter	Mandatory	Type	Description
delay_time	No	Long	Subscription delay, in seconds. • Minimum value: 1 • Maximum value: 3600 • Default value: 0

Parameter	Mandatory	Type	Description
rto_delay	No	Long	Recovery Time Objective (RTO) delay, in seconds. • Minimum value: 1 • Maximum value: 3600 • Default value: 0
rpo_delay	No	Long	Recovery Point Objective (RPO) delay, in seconds. • Minimum value: 1 • Maximum value: 3600 • Default value: 0
alarm_to_user	No	Boolean	Whether to notify users of alarms. The default value is false .
subscriptions	No	Array of objects	Receiving method and message body. Up to two receiving modes and message bodies are supported. For details, see Table 6-32 .

Table 6-32 Data structure description of field **subscriptions**

Parameter	Mandatory	Type	Description
endpoints	No	Array of strings	List of mobile numbers or email addresses. Use commas (,) to separate multiple mobile numbers or email addresses. Up to 10 mobile numbers or email addresses are supported.
protocol	No	String	Receiving method. Values: • sms: SMS message • email: email.

Table 6-33 Data structure description of fields **source_endpoint** and **target_endpoint**

Parameter	Mandatory	Type	Description
db_type	No	String	Database type. This parameter is mandatory when this API is invoked to modify a task after the connection test. Values: • mysql: MySQL • mongodb: MongoDB • gaussdbv5: GaussDB Distributed • gaussdbv5ha: GaussDB Centralized • kafka: Kafka • postgresql: PostgreSQL • oracle: Oracle
az_code	No	String	Code of the AZ where the database is located.
region	No	String	Region where the DB instance is located. This parameter is mandatory when the database is a cloud instance, for example, an RDS instance. In DR scenarios, if job_direction is set to down , this parameter is mandatory in source_endpoint . If job_direction is set to up , this parameter is mandatory in target_endpoint .
inst_id	No	String	ID of the DB instance. This parameter is mandatory when the database is a cloud instance, for example, an RDS instance. In DR scenarios, if job_direction is set to down , this parameter is mandatory in source_endpoint . If job_direction is set to up , this parameter is mandatory in target_endpoint .
vpc_id	No	String	ID of the VPC where the database is located.
subnet_id	No	String	ID of the subnet where the database is located.

Parameter	Mandatory	Type	Description
security_group_id	No	String	ID of the security group to which the database belongs.
project_id	No	String	If the database is a cloud DB instance, set this parameter to the project ID in the region where the DB instance is located. Otherwise, set this parameter to the project ID in the region where the current task is located. For details, see A.5 Obtaining a Project ID .
db_name	No	String	The service name. This parameter is mandatory when the source database is an Oracle database. If this parameter is required, you need to manually create the corresponding database. The database name can be a maximum of 128 characters in length and cannot contain the following special characters: ! <>&'\"
db_password	No	String	Database password. NOTE This parameter is mandatory when this API is invoked to modify a task after the connection test of other engines except the engine that does not require a password.
db_port	No	Integer	Database port. The value is an integer ranging from 1 to 65535.
db_user	No	String	Database user. NOTE This parameter is mandatory when this API is invoked to modify a task after the connection test of other engines except the engine that does not require a username.
inst_name	No	String	RDS instance name.

Parameter	Mandatory	Type	Description
ip	No	String	Database IP address. NOTE This parameter is mandatory when this API is invoked to modify a task after the connection test.
mongo_ha_mode	No	String	Mongo HA mode.
safe_mode	No	Integer	Running mode of an MRS cluster. Values: • 0: Normal cluster • 1: Security cluster
ssl_cert_password	No	String	SSL certificate password. The certificate file name extension is .p12.
ssl_cert_checksum	No	String	The checksum value of the SSL certificate, which is used for backend verification. This parameter is mandatory for secure connection to the source database.
ssl_cert_key	No	String	SSL certificate content, which is encrypted using Base64.
ssl_cert_name	No	String	SSL certificate name.
ssl_link	No	Boolean	Whether SSL is enabled.
topic	No	String	Kafka topic name.
cluster_mode	No	String	For MongoDB 4.0 or later, if the cluster instance cannot obtain the IP address of the sharded node, set cluster_mode in source_endpoint to Sharding4.0+ . Default value: Sharding4.0+ Value: Sharding4.0+
kafka_security_config	No	Object	This parameter is only for Kafka security authentication. For details, see Table 6-34 .

Table 6-34 Data structure description of field **kafka_security_config**

Parameter	Mandatory	Type	Description
type	No	String	Security protocol. This parameter is mandatory for security authentication. The corresponding field for Kafka is security.protocol. • PLAINTEXT: No security authentication mode is available. You only need to enter an IP address and a port number. • SASL_PLAINTEXT: The SASL mechanism is used to connect to Kafka, and you need to configure SASL parameters. • SSL: The SSL encryption is used to connect to Kafka, and you need to configure SSL parameters. • SASL_SSL: The SASL and SSL encryption authentication modes are used. You need to configure SSL and SASL parameters. Enumerated values: • PLAINTEXT • SASL_PLAINTEXT • SASL_SSL • SSL
trust_store_key_name	No	String	Certificate name. This parameter is mandatory when the security protocol is set to SSL or SASL_SSL.
trust_store_key	No	String	Value of the security certificate after Base64 transcoding. This parameter is mandatory when the security protocol is set to SSL or SASL_SSL.
trust_store_password	No	String	Certificate password. This parameter is mandatory when a password is set for the certificate.

Parameter	Mandatory	Type	Description
endpoint_algorithm	No	String	Host name endpoint identification algorithm, which specifies the endpoint identification algorithm for verifying the server host name using the server certificate. If this parameter is left blank, host name verification is disabled. The corresponding field for Kafka is ssl.endpoint.identification.algorithm .
sasl_mechanism	No	String	SASL mechanism used for client connection. The corresponding field for Kafka is sasl.mechanism . The values are as follows: • GSSAPI • PLAIN • SCRAM-SHA-256 • SCRAM-SHA-512
delegation_to_kens	No	Boolean	Whether to use token authentication. This parameter is valid only when the security protocol is set to SASL_SSL or SASL_PLAINTEXT and the SASL mechanism is set to SCRAM-SHA-256 or SCRAM-SHA-512 .
enable_key_store	No	Boolean	Whether to enable two-way SSL authentication.
key_store_key	No	String	Keystore certificate. This parameter is mandatory when two-way SSL authentication is enabled.
key_store_key_name	No	String	Keystore certificate name. This parameter is mandatory when two-way SSL authentication is enabled.
key_store_password	No	String	Keystore certificate password. This parameter is mandatory when a password is set for the certificate. The corresponding field for Kafka is ssl.keystore.password .

Parameter	Mandatory	Type	Description
set_private_key_password	No	Boolean	Whether to set the keystore private key password. The default value is false .
key_password	No	String	Keystore private key password. This parameter is mandatory when two-way SSL authentication is enabled and set_private_key_password is set to true . The corresponding field for Kafka is ssl.key.password .

Table 6-35 Data structure description of field **tags**

Parameter	Mandatory	Type	Description
key	No	String	Tag key. The value can contain a maximum of 36 characters, including letters, digits, underscores (_), and hyphens (-). Set this parameter when you need to modify a tag.
value	No	String	Tag value. The value can contain a maximum of 43 characters, including letters, digits, underscores (_), and hyphens (-). Set this parameter when you need to modify a tag.

Response Parameters

Status code: 200

Table 6-36 Response body parameters

Parameter	Type	Description
count	Integer	Total number.
results	Array of objects	List of tasks that are modified in batches. For details, see Table 6-37 .

Table 6-37 Data structure description of field **results**

Parameter	Type	Description
id	String	Task ID.
status	String	Status Values: ● success: The task is successful. ● failed: The task fails.
error_code	String	Error code.
error_msg	String	Error message.

Example Request

- Changing task names of specified instances in batches
<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-modification>

```
{
  "jobs": [ {
    "job_id": "140b5236-88ad-43c8-811c-1268453jb101",
    "name": "testName"
  } ]
}
```
- Setting task exception notifications for specified instances in batches
<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-modification>

```
{
  "jobs": [ {
    "job_id": "8d0e8e36-a618-490d-8a46-8c61ac9jb502",
    "alarm_notify": {
      "delay_time": 0,
      "rto_delay": 0,
      "rpo_delay": 0,
      "alarm_to_user": false,
      "subscriptions": [ {
        "protocol": "sms",
        "endpoints": [ "150*****" ]
      }, {
        "protocol": "email",
        "endpoints": [ "abc@huawei.com" ]
      } ]
    }
  } ]
}
```
- Changing task names and descriptions of specified instances in batches
<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-modification>

```
{
  "jobs": [ {
    "job_id": "140b5236-88ad-43c8-811c-1268453jb101",
    "name": "testName",
    "description": "test description"
  } ]
}
```
- Calling the API after the MySQL connection test
<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-modification>

```
{
  "jobs": [{
```

```
"job_id": "1fded2ab-ce99-4b0e-9cc9-9ce7e17jb101",
"name": "DRS-5646-linxiaolu",
"source_endpoint": {
  "ip": "192.168.0.27",
  "db_port": "3306",
  "db_user": "root",
  "db_password": "*****",
  "ssl_link": false,
  "db_type": "mysql",
  "project_id": "054ba152d480d55b2f5dc0069e7ddef0"
},
"target_endpoint": {
  "region": "eu-west-101",
  "db_type": "mysql",
  "db_user": "root",
  "db_password": "*****",
  "project_id": "054ba152d480d55b2f5dc0069e7ddef0",
  "inst_id": "3def1ac7f8ab4ae48d7c025339f80414in01"
},
"node_type": "high",
"engine_type": "mysql",
"store_db_info": true,
"net_type": "eip",
  "job_direction": "up",
"replace_definer": true
}}
}
```

- Calling the API after the connection test for the migration task from MongoDB to DDS is successful.

<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-modification>

```
{
  "jobs": [{
    "job_id": "741d91cf-67e8-4126-ad0f-32f6cccb105",
    "name": "DRS-4513",
    "source_endpoint": {
      "ip": "192.168.11.231:8635,192.168.10.12:8635",
      "db_port": 0,
      "db_user": "rwuser",
      "db_password": "*****",
      "ssl_link": false,
      "db_type": "mongodb",
      "project_id": "0549a6a31000d4e82fd1c00c3d6f2d76",
      "db_name": "admin"
    },
    "target_endpoint": {
      "region": "eu-west-101",
      "db_type": "mongodb",
      "db_user": "rwuser",
      "db_password": "*****",
      "project_id": "0549a6a31000d4e82fd1c00c3d6f2d76",
      "inst_id": "3cadd5a0ef724f55ac7fa5bcb5f4fc5fin02"
    },
    "node_type": "high",
    "engine_type": "mongodb",
    "net_type": "eip",
      "job_direction": "up",
    "store_db_info": true
  }]
}
```

- Changing the synchronization mode of specified tasks in batches

<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-modification>

```
{
  "jobs": [
    {
      "job_id": "140b5236-88ad-43c8-811c-1268453jb101",
```

```
    "task_type": "FULL_INCR_TRANS"  
  }  
]  
}
```

Example Response

Status code: 200

OK

```
{  
  "results": [ {  
    "id": "efa2bd29-8780-494f-a2ee-188b003ejb11",  
    "status": "success"  
  } ],  
  "count": 1  
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.5 Selecting Database Objects in Batches

Function

This API is used to select the databases or tables to be migrated.

Constraints

- Only real-time migration and real-time synchronization support object selection.
- After a task is created, the task status is **CONFIGURATION**. The task can be invoked only after the test of connections to the source and destination databases is successful and the API for modifying the task is invoked.
- You can call a maximum of 10 APIs in batches.

URI

PUT /v3/{project_id}/jobs/batch-select-objects

Table 6-38 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-39 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-40 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of objects	Request task ID list for updating database objects in batches. For details, see Table 6-41 .

Table 6-41 Data structure description of field **jobs**

Parameter	Mandatory	Type	Description
job_id	Yes	String	Task ID.

Parameter	Mandatory	Type	Description
selected	No	Boolean	Whether to select an object. If this parameter is not set, the default value is No . Yes : Customize the objects to be migrated. No : Migrate all VMs.
sync_database	No	Boolean	Whether to perform database-level synchronization.
job	No	Array of objects	Data object selection information. This parameter is mandatory when selected is set to true . For details, see Table 6-42 .

Table 6-42 Data structure description of field **job**

Parameter	Mandatory	Type	Description
id	No	String	When object_type is set to database , this parameter indicates the database name. If object_type is set to table or view , set the field value by referring to the example.
parent_id	No	String	Database name. This parameter is mandatory when object_type is set to table or view .
object_type	No	String	Type. Values: • database • table • schema • view
object_name	No	String	Database object name, database name, table name, and view name.

Parameter	Mandatory	Type	Description
select	No	String	Whether to migrate the database objects. true indicates that the database objects will be migrated. false indicates that the database objects will not be migrated. partial indicates some tables in the database will be migrated. If this parameter is not specified, the default value is false .
object_alias_name	No	String	Alias, which is the new mapped name. This parameter is used only for synchronization tasks.

Response Parameters

Status code: 202

Table 6-43 Response body parameters

Parameter	Type	Description
all_counts	Long	Total number.
results	Array of objects	Response list for selecting objects in batches. For details, see Table 6-44 .

Table 6-44 Data structure description of field **results**

Parameter	Type	Description
job_id	String	Task ID.
status	Boolean	The status that indicates that objects are selected.
error_code	String	Error code.
error_msg	String	Error message.

Example Request

- Selecting specified databases and tables for migration
`https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-select-objects`

```
{
  "jobs": [ {
    "job": [ {
      "id": "fastunit",
      "parent_id": null,
      "object_name": "fastunit",
      "object_type": "database",
      "select": "partial",
      "object_alias_name": null
    }, {
      "id": "fastunit-*-coll",
      "parent_id": "fastunit",
      "object_name": "coll",
      "object_type": "table",
      "select": "true",
      "object_alias_name": null
    }, {
      "id": "ycy1",
      "parent_id": null,
      "object_name": "ycy1",
      "object_type": "database",
      "select": "partial",
      "object_alias_name": null
    }, {
      "id": "ycy1-*-coll",
      "parent_id": "ycy1",
      "object_name": "coll",
      "object_type": "table",
      "select": "true",
      "object_alias_name": null
    }, {
      "id": "ycy1-*-collcount",
      "parent_id": "ycy1",
      "object_name": "collcount",
      "object_type": "table",
      "select": "true",
      "object_alias_name": null
    } ],
    "job_id": "57fd2692-0ebe-4714-9b59-fe7aa65djb15",
    "selected": true
  } ]
}
```

- Selecting all objects for migration

<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-select-objects>

```
{
  "jobs": [ {
    "job": [ ],
    "job_id": "e59f5eef-2bcc-4461-b9ac-10aded44jb15",
    "selected": false
  } ]
}
```

Example Response

Status code: 202

Accepted

```
{
  "all_counts": 1,
  "results": [{
    "job_id": "4d700f6f-9a17-47e0-a7d6-1bc2155jb101",
    "status": true
  }]
}
```


Status Code

Status Code	Description
202	Accepted
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.6 Performing a Batch Pre-Check

Function

This API is used to perform batch pre-check to check whether the migration, synchronization, DR can be performed.

Constraints

- After a task is created, the task status is **CONFIGURATION**. The task can be invoked only after the test of connections to the source and destination databases is successful and the API for modifying the task is invoked.
- In the dual-active DR scenario, when the forward task status is **INCRE_TRANSFER_STARTED**, the backward task does not need to call this API, and the parent task cannot call this API.
- You can call a maximum of 10 APIs in batches.

URI

POST /v3/{project_id}/jobs/batch-precheck

Table 6-45 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-46 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-47 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of objects	The list of batch pre-check requests. For details, see Table 6-48 .

Table 6-48 Data structure description of field **jobs**

Parameter	Mandatory	Type	Description
job_id	Yes	String	Task ID.
precheck_mode	Yes	String	Pre-check mode. Values: • forStartJob: This value is specified when the task is started for the first time during task configuration. • forRetryJob: This value is transferred for pre-check after object editing or retry after task failure during incremental task execution. NOTE Specify the value based on the task status. Otherwise, the pre-check may fail, affecting task startup.

Response Parameters

Status code: 200

Table 6-49 Response body parameters

Parameter	Type	Description
results	Array of objects	Pre-check response body. For details, see Table 6-50 .
count	Integer	Total number.

Table 6-50 Data structure description of field **results**

Parameter	Type	Description
id	String	Task ID.
precheck_id	String	Pre-check ID.
status	String	Success or failure status. Values: • success • failed
error_code	String	Error code.
error_msg	String	Error message.

Example Request

Performing a pre-check for a MySQL real-time migration task

`https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-precheck`

```
{
  "jobs" : [ {
    "job_id" : "140b5236-88ad-43c8-811c-1268453jb101",
    "precheck_mode" : "forStartJob"
  } ]
}
```

Example Response

Status code: 200

OK

```
{
  "results" : [ {
    "id" : "140b5236-88ad-43c8-811c-1268453jb101",
    "status" : "success",
    "precheck_id" : "140b5236-88ad-43c8-811c-1268453jb101"
  } ],
  "count" : 1
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.7 Querying Pre-check Results in Batches

Function

This API is used to query the pre-check results of tasks in batches.

Constraints

- This API can be called only when the pre-check API is invoked.

URI

POST /v3/{project_id}/jobs/batch-precheck-result

Table 6-51 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-52 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.

Parameter	Mandatory	Type	Description
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-53 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of strings	Request for querying pre-check results in batches. The value cannot be empty. The values must comply with the UUID rule. The task ID must be unique.

Response Parameters

Status code: 200

Table 6-54 Response body parameters

Parameter	Type	Description
results	Array of objects	Response body set for querying pre-check results in batches. For details, see Table 6-55 .
count	Integer	Total number of records.

Table 6-55 Data structure description of field **results**

Parameter	Type	Description
precheck_id	String	ID of the task for querying the pre-check result.
result	Boolean	Whether the pre-check items are passed. true : indicates that the pre-check is passed. The task can be started only after the pre-check is passed.
process	String	Pre-check progress, in percentage.

Parameter	Type	Description
total_passed_rate	String	Percentage of passed pre-checks.
rds_instance_id	String	RDS DB instance ID.
job_direction	String	Task direction. Values: • up: to-the-cloud scenarios and the current cloud is the standby cloud in the DR. • down: out-of-cloud scenarios and the current cloud is the active cloud in the DR. • non-dbs: self-built databases.
precheck_result	Array of object	Pre-check results. For details, see Table 6-56 .
error_msg	String	Error message.
error_code	String	Error code.

Table 6-56 Data structure description of field **precheck_result**

Parameter	Type	Description
item	String	Check item.
result	String	Check results. Values: • PASSED • ALARM • FAILED
failed_reason	String	Failure cause.
data	String	Encrypted data.
raw_error_msg	String	Row error message.
group	String	Check item group.
failed_sub_jobs	Array of objects	Information about failed subtasks. For details, see Table 6-57 .

Table 6-57 Data structure description of field **failed_sub_jobs**

Parameter	Type	Description
id	String	ID of the subtask that fails to pass the pre-check.
name	String	The name of the subtask that fails to pass the pre-check.
check_result	String	Check results.

Example Request

- Querying pre-check results for a DDS real-time migration task
`https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-precheck-result`

```
{
  "jobs": [ "a281f62f-4631-45d6-a2d3-679a9f4jb105" ]
}
```
- Querying pre-check results for a MySQL real-time migration task
`https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-precheck-result`

```
{
  "jobs": [ "140b5236-88ad-43c8-811c-1268453jb101" ]
}
```

Example Response

Status code: 200

OK

- Example response for querying the pre-check result during real-time MySQL migration:

```
{
  "count": 1,
  "results": [ {
    "result": true,
    "process": "100%",
    "precheck_id": "140b5236-88ad-43c8-811c-1268453jb101",
    "total_passed_rate": "100%",
    "rds_instance_id": "e05a3679efe241d8b5dee80b17c1a863in01",
    "job_direction": "up",
    "precheck_result": [ {
      "item": "dstDbDiskSize",
      "result": "PASSED",
      "data": "{\"diskSizeTimes\":\"1.5\",\"dstVolumeSize\":\"37660000000\",\"srcIndexSize\":\"0\",\"size\": \"0\",\"srcIndexAmount\":\"0\"}",
      "group": "db_disk_size"
    }, {
      "item": "checkIncrSrcDbExistedInDstDb",
      "result": "PASSED",
      "group": "db_params"
    }, {
      "item": "dbCharacterSetConsistency",
      "result": "PASSED",
      "group": "db_params"
    }, {
      "item": "dbClockConsistency",
      "result": "PASSED",
      "group": "db_params"
    }
  ]
}
```

```

}, {
  "item" : "dbCollationServerConsistency",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "dbIsolationLevelConsistency",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "dbParamConsistency",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "dbServerUuidConsistency",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "dstMaxAllowedPacketCheck",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "hasForeignKeyOnUnselectedTable",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "innodbStrictModeConsistency",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "isUserRequireSslLink",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "sqlModeConsistency",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "sqlModeNoEngine",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "srcBinlogFormatCheck",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "srcBinlogRowImageCheck",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "srcDbBinlogExpireLogsDays",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "srcDbBinlogsOff",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "srcDbExistUnsupportEngineTable",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "srcDbIndexKeyLength",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "srcDbNameContainsUnsupportedSymbols",
  "result" : "PASSED",
  "group" : "db_params"
}, {

```



```
"item" : "srcDbServerIdCheck",
"result" : "PASSED",
"group" : "db_params"
}, {
  "item" : "srcDstTableNameCaseSensitiveCheck",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "srcHasNoPkTableWhenTgtHasInvisiblePk",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "srcRoutinesWithoutPrivilegeCheck",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "srcTableNameContainsNonAscii",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "srcTriggerAndEventCheck",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "srcViewNameContainsNonAscii",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "srclogSlaveUpdatesCheck",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "userRequirementsIsEnoughForDefiner",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "userSelectObjectsCheck",
  "result" : "PASSED",
  "group" : "db_params"
}, {
  "item" : "dstStatusCheck",
  "result" : "PASSED",
  "data" : "",
  "group" : "db_target_status",
  "failed_reason" : ""
}, {
  "item" : "dstDbPrivilegesIsEnough",
  "result" : "PASSED",
  "group" : "db_user_privilege"
}, {
  "item" : "srcDbPrivilegesIsEnoughForIncr",
  "result" : "PASSED",
  "group" : "db_user_privilege"
}, {
  "item" : "dbVersionMeetRequirement",
  "result" : "PASSED",
  "group" : "db_version"
}, {
  "item" : "dstDbVersionSupport",
  "result" : "PASSED",
  "group" : "db_version"
}, {
  "item" : "srcDbVersionSupport",
  "result" : "PASSED",
  "group" : "db_version"
}, {
  "item" : "dstDbConnection",
  "result" : "PASSED",
  "group" : "network"
```

```
    }, {  
      "item": "srcDbConnection",  
      "result": "PASSED",  
      "group": "network"  
    }  
  ]  
}
```

- Example response for querying the pre-check result during real-time DDS migration:

```
{  
  "count": 1,  
  "results": [ {  
    "result": true,  
    "process": "100%",  
    "precheck_id": "a281f62f-4631-45d6-a2d3-679a9f4jb105",  
    "total_passed_rate": "100%",  
    "rds_instance_id": "3cadd5a0ef724f55ac7fa5bcb5f4fc5fin02",  
    "job_direction": "up",  
    "precheck_result": [ {  
      "item": "dstDbDiskSize",  
      "result": "PASSED",  
      "data": "{ 'size': '5263360', 'dstVolumeSize': '19089431762', 'diskSizeTimes': '1.5' }",  
      "group": "db_disk_size"  
    }, {  
      "item": "srcAndDstCappedCollConsistency",  
      "result": "PASSED",  
      "group": "db_object_conflict_check"  
    }, {  
      "item": "srcCollAlreadyExistedInDstColl",  
      "result": "PASSED",  
      "group": "db_object_conflict_check"  
    }, {  
      "item": "srcViewAlreadyExistedInDstView",  
      "result": "PASSED",  
      "group": "db_object_conflict_check"  
    }, {  
      "item": "rolesDependentCheck",  
      "result": "PASSED",  
      "group": "db_object_dependency_check"  
    }, {  
      "item": "usersDependentCheck",  
      "result": "PASSED",  
      "group": "db_object_dependency_check"  
    }, {  
      "item": "srcCollHasTtlIndex",  
      "result": "ALARM",  
      "data": "{ 'srcHasTtlIndexColls': '\\fastunit.ttlsuoyin\\' }",  
      "group": "db_params",  
      "failed_reason": "SRC_HAS_TTL_INDEXES"  
    }, {  
      "item": "dbSslConsistency",  
      "result": "PASSED",  
      "group": "db_params"  
    }, {  
      "item": "dstChunkNumCheck",  
      "result": "PASSED",  
      "group": "db_params"  
    }, {  
      "item": "mongoTypeFitTransferMode",  
      "result": "PASSED",  
      "group": "db_params"  
    }, {  
      "item": "srcCollIndexNumCheck",  
      "result": "PASSED",  
      "group": "db_params"  
    }, {  
      "item": "srcCollNameContainsUnsupportedSymbols",  
      "result": "PASSED",  
      "group": "db_params"  
    }  
  ]  
}
```

```
{
  "item": "srcDbInstancesEmpty",
  "result": "PASSED",
  "group": "db_params"
}, {
  "item": "srcDbNameContainsUnsupportedSymbols",
  "result": "PASSED",
  "group": "db_params"
}, {
  "item": "srcIdIndexCheck",
  "result": "PASSED",
  "group": "db_params"
}, {
  "item": "userSelectObjectsCheck",
  "result": "PASSED",
  "group": "db_params"
}, {
  "item": "dstStatusCheck",
  "result": "PASSED",
  "data": "",
  "group": "db_target_status",
  "failed_reason": ""
}, {
  "item": "dstDbPrivilegesIsEnough",
  "result": "PASSED",
  "group": "db_user_privilege"
}, {
  "item": "srcDbPrivilegesIsEnough",
  "result": "PASSED",
  "group": "db_user_privilege"
}, {
  "item": "dbVersionMeetRequirement",
  "result": "PASSED",
  "group": "db_version"
}, {
  "item": "dstDbVersionSupport",
  "result": "PASSED",
  "group": "db_version"
}, {
  "item": "srcDbVersionSupport",
  "result": "PASSED",
  "group": "db_version"
}, {
  "item": "dstDbConnection",
  "result": "PASSED",
  "group": "network"
}, {
  "item": "srcDbConnection",
  "result": "PASSED",
  "group": "network"
}, {
  "item": "srcShardKeyConfiguration",
  "result": "ALARM",
  "data": "{ \"notConfigShardIndexColls\": \"ycsb.usertable,mgo.mycollection7,mgo.mycollection9,mgo.mycollection5,mgo.mycollection4,mgo.mycollection3,mgo.mycollection,mgo.mycollection8,mgo.mycollection2,mgo.mycollection6,testdb3.testuk,testdb3.coll2,testdb3.coll6,testdb3.coll1,testdb3.Coll1,testdb3.testuk2,testdb3.coll5,testdb3.coll4,testdb1.coll6,testdb1.coll1,testdb1.testuk2,testdb1.coll2,testdb1.testuk,testdb1.coll5,testdb1.coll4,testdb1.Coll1,Testdb5.coll1,Testdb5.collx,Testdb5.Coll1,fastunit.gudingjihe,fastunit.geohaystack,fastunit.coll,fastunit.w eiysuoyin,fastunit.testSpecial\\\\\\\\u4E2D\\\\\\\\u6587~!@#%^&*(*)_+=[\\\";:;?',fastunit.log,fastunit.twoD,fastunit.lianhesuoyin,fastunit.xishusuoyin,fastunit.quanwensuoyin,fastunit.ttlsuoyin,fastunit.putongsuoyin,fastunit.collcount,fastunit.shuzusuoyin,fastunit.twodsphere,fastunit.qiantaowendangsuoyin,fastunit.indexpartial\\\"}]",
  "group": "src_info_check",
  "failed_reason": "SRC_INSTANCE_TYPE_IS_REPLICA_SET"
}, {
  "item": "checkBalanceStatus",
  "result": "PASSED",
  "group": "src_info_check"
}
```

```
}, {
  "item": "srcMongoInstanceType",
  "result": "PASSED",
  "group": "src_info_check"
}]
}]
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.8 Setting Flow Control for Tasks

Function

This API is used to enable or disable flow control for tasks. By default, the migration speed is not limited after a task is created.

- You can customize the maximum migration speed.
- If the migration speed is not limited, the outbound bandwidth of the source database is maximally used, which causes read consumption on the source database accordingly. For example, if the outbound bandwidth of the source database is 100 MB/s and 80% bandwidth is used, the I/O consumption on the source database is 80 MB/s.

Constraints

- You can set the time range based on your service requirements. Flow can be controlled all day or during specific time ranges. The default value is **All day**.
- A maximum of ten time ranges can be set, and they cannot overlap.
- The start time cannot be the same as the end time.
- If the start time is 16:00 and the end time is 15:59, the bandwidth is limited for the whole day.
- If **speed_limit** is set to [], the speed is not limited.
- The minute in the start time is ignored. The end time must be ended with 59. For example, 03:59 is equivalent to 04:00 (UTC) and the hour is a two-digit number.
- In the dual-active DR scenario, the parent task cannot call the API.
- This API cannot be used when the task mode is **INCR_TRANS**.

URI

PUT /v3/{project_id}/jobs/batch-limit-speed

Table 6-58 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-59 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-60 Request body parameters

Parameter	Mandatory	Type	Description
speed_limits	Yes	Array of objects	Speed limit in DR. For details, see Table 6-61 .

Table 6-61 Data structure description of field **speed_limits**

Parameter	Mandatory	Type	Description
job_id	Yes	String	Task ID.

Parameter	Mandatory	Type	Description
speed_limit	Yes	Array of objects	Request body of flow control information. For details, see Table 6-62 .

Table 6-62 Data structure description of field **speed_limit**

Parameter	Mandatory	Type	Description
begin	Yes	String	Start time (UTC) of flow control. The start time is an integer in hh:mm format and the minutes part is ignored. hh indicates the hour, for example, 01:00.
end	Yes	String	End time (UTC) in the format of hh:mm, for example, 15:59. The value must end with 59.
speed	Yes	String	Speed. The value ranges from 1 to 9,999, in MB/s.
is_utc	No	Boolean	Whether the UTC time is used.

Response Parameters

Status code: 200

Table 6-63 Response body parameters

Parameter	Type	Description
count	Integer	Total number.
results	Array of objects	List of tasks that are modified in batches. For details, see Table 6-64 .

Table 6-64 Data structure description of field **results**

Parameter	Type	Description
id	String	Task ID.
status	String	Status Values: ● success: The task is successful. ● failed: The task fails.

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

Example Request

Set flow control for DR tasks in batches, in which **speed** is set to **15 MB/s**

https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-limit-speed

```
{
  "speed_limits" : [ {
    "job_id" : "7d0504f1-aba3-435f-914f-936b861jb502",
    "speed_limit" : [ {
      "begin" : "16:00",
      "end" : "15:59",
      "speed" : "15"
    } ]
  } ]
}
```

Example Response

Status code: 200

OK

```
{
  "results" : [ {
    "id" : "efa2bd29-8780-494f-a2ee-188b003ejb11",
    "status" : "success"
  } ],
  "count" : 1
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.9 Obtaining Database Parameters in Batches

Function

To ensure that service applications are not affected after the migration, DRS provides parameter comparison to help you compare parameters between the

source and destination databases. This API is used to obtain database parameters of the source and destination databases.

Constraints

- Only MySQL migration and MySQL DR support parameter comparison.
- This API can be called only when **job_direction** is set to **up** and the task status is **CONFIGURATION**.
- In the dual-active DR scenario, the parent task cannot call the API.
- The value of **innodb_buffer_pool_size** is set to not exceed 70% of the total memory of the destination database. If you set a larger value for this parameter, the destination database startup may fail. To adjust the value to suit your services, view [Parameters for Comparison](#).

URI

POST /v3/{project_id}/jobs/batch-get-params

Table 6-65 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-66 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-67 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of strings	Request body for querying tasks in batches.
refresh	Yes	String	Whether to obtain database parameters again. 1 indicates yes, and 0 indicates no (obtaining parameters from the cache). Set this parameter to 1 when this API is called for the first time.

Response Parameters

Status code: 202

Table 6-68 Response body parameters

Parameter	Type	Description
params_list	Array of objects	Response body for querying database parameters. For details, see Table 6-69 .
count	Integer	Total number.

Table 6-69 Data structure description of field **params_list**

Parameter	Type	Description
params	Array of objects	Data parameter information body. For details, see Table 6-70 .

Table 6-70 Data structure description of field **params**

Parameter	Type	Description
compare_result	String	Parameter comparison result. Values: • true • false
data_type	String	Type

Parameter	Type	Description
group	String	Metric Type Values: • common: common parameter. • performance: performance parameter.
key	String	Parameter name
need_restart	String	Whether the instance needs to be restarted. Values: • true • false
source_value	String	Source database parameter value.
target_value	String	Parameter value of the destination database.
value_range	String	Value Range
error_code	String	Error code.
error_message	String	Error message.

Example Request

Example of the request body for obtaining database parameters in batches:

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-get-params
```

```
{
  "jobs" : [ "140b5236-88ad-43c8-811c-1268453jb101" ],
  "refresh": 1
}
```

Example Response

Status code: 202

Accepted

```
{
  "count" : 1,
  "params_list" : [ {
    "params" : [ {
      "group" : "performance",
      "key" : "binlog_cache_size",
      "source_value" : "16384",
      "target_value" : "32768",
      "compare_result" : "false",
      "data_type" : "figure",
      "value_range" : "4096-16777216",
      "need_restart" : "false"
    }, {
      "group" : "performance",
      "key" : "binlog_stmt_cache_size",
      "source_value" : "32768",
      "target_value" : "32768",
      "compare_result" : "true",

```

```
"data_type" : "figure",
"value_range" : "4096-16777216",
"need_restart" : "false"
}, {
  "group" : "performance",
  "key" : "bulk_insert_buffer_size",
  "source_value" : "8388608",
  "target_value" : "8388608",
  "compare_result" : "true",
  "data_type" : "figure",
  "value_range" : "0-18446744073709551615",
  "need_restart" : "false"
}, {
  "group" : "common",
  "key" : "character_set_server",
  "source_value" : "utf8",
  "target_value" : "utf8",
  "compare_result" : "true",
  "data_type" : null,
  "value_range" : "utf8|latin1|gbk|utf8mb4",
  "need_restart" : "true"
}, {
  "group" : "common",
  "key" : "collation_server",
  "source_value" : "utf8_general_ci",
  "target_value" : "utf8_general_ci",
  "compare_result" : "true",
  "data_type" : null,
  "value_range" : "latin1_german1_ci|latin1_swedish_ci|latin1_danish_ci|latin1_german2_ci|latin1_bin|
latin1_general_ci|latin1_general_cs|latin1_spanish_ci|gbk_chinese_ci|gbk_bin|utf8_general_ci|utf8_bin|
utf8_unicode_ci|utf8_icelandic_ci|utf8_latvian_ci|utf8_romanian_ci|utf8_slovenian_ci|utf8_polish_ci|
utf8_estonian_ci|utf8_spanish_ci|utf8_swedish_ci|utf8_turkish_ci|utf8_czech_ci|utf8_danish_ci|
utf8_lithuanian_ci|utf8_slovak_ci|utf8_spanish2_ci|utf8_roman_ci|utf8_persian_ci|utf8_esperanto_ci|
utf8_hungarian_ci|utf8_sinhala_ci|utf8mb4_general_ci|utf8mb4_bin|utf8mb4_unicode_ci|utf8mb4_icelandic_ci|
utf8mb4_latvian_ci|utf8mb4_romanian_ci|utf8mb4_slovenian_ci|utf8mb4_polish_ci|utf8mb4_estonian_ci|
utf8mb4_spanish_ci|utf8mb4_swedish_ci|utf8mb4_turkish_ci|utf8mb4_czech_ci|utf8mb4_danish_ci|
utf8mb4_lithuanian_ci|utf8mb4_slovak_ci|utf8mb4_spanish2_ci|utf8mb4_roman_ci|utf8mb4_persian_ci|
utf8mb4_esperanto_ci|utf8mb4_hungarian_ci|utf8mb4_sinhala_ci",
  "need_restart" : "true"
}, {
  "group" : "common",
  "key" : "connect_timeout",
  "source_value" : "10",
  "target_value" : "10",
  "compare_result" : "true",
  "data_type" : null,
  "value_range" : "2-31536000",
  "need_restart" : "false"
}, {
  "group" : "common",
  "key" : "explicit_defaults_for_timestamp",
  "source_value" : "OFF",
  "target_value" : "OFF",
  "compare_result" : "true",
  "data_type" : null,
  "value_range" : "ON|OFF",
  "need_restart" : "true"
}, {
  "group" : "performance",
  "key" : "innodb_buffer_pool_size",
  "source_value" : "536870912",
  "target_value" : "536870912",
  "compare_result" : "true",
  "data_type" : "figure",
  "value_range" : "5242880-2147483648",
  "need_restart" : "true"
}, {
  "group" : "common",
  "key" : "innodb_flush_log_at_trx_commit",
```

```
"source_value" : "1",
"target_value" : "1",
"compare_result" : "true",
"data_type" : null,
"value_range" : "0|1|2",
"need_restart" : "false"
}, {
  "group" : "common",
  "key" : "innodb_lock_wait_timeout",
  "source_value" : "50",
  "target_value" : "50",
  "compare_result" : "true",
  "data_type" : null,
  "value_range" : "1-1073741824",
  "need_restart" : "false"
}, {
  "group" : "performance",
  "key" : "key_buffer_size",
  "source_value" : "16777216",
  "target_value" : "16777216",
  "compare_result" : "true",
  "data_type" : "figure",
  "value_range" : "8-9223372036854771712",
  "need_restart" : "false"
}, {
  "group" : "performance",
  "key" : "long_query_time",
  "source_value" : "1.000000",
  "target_value" : "1.000000",
  "compare_result" : "true",
  "data_type" : "figure",
  "value_range" : "0.03-3600",
  "need_restart" : "false"
}, {
  "group" : "common",
  "key" : "max_connections",
  "source_value" : "800",
  "target_value" : "800",
  "compare_result" : "true",
  "data_type" : null,
  "value_range" : "1-100000",
  "need_restart" : "false"
}, {
  "group" : "common",
  "key" : "net_read_timeout",
  "source_value" : "30",
  "target_value" : "30",
  "compare_result" : "true",
  "data_type" : null,
  "value_range" : "1-31536000",
  "need_restart" : "false"
}, {
  "group" : "common",
  "key" : "net_write_timeout",
  "source_value" : "60",
  "target_value" : "60",
  "compare_result" : "true",
  "data_type" : null,
  "value_range" : "1-31536000",
  "need_restart" : "false"
}, {
  "group" : "performance",
  "key" : "read_buffer_size",
  "source_value" : "262144",
  "target_value" : "262144",
  "compare_result" : "true",
  "data_type" : "figure",
  "value_range" : "8192-2147479552",
  "need_restart" : "false"
}
```

```
}, {
  "group": "performance",
  "key": "read_rnd_buffer_size",
  "source_value": "524288",
  "target_value": "524288",
  "compare_result": "true",
  "data_type": "figure",
  "value_range": "1-2147483647",
  "need_restart": "false"
}, {
  "group": "performance",
  "key": "sort_buffer_size",
  "source_value": "262144",
  "target_value": "262144",
  "compare_result": "true",
  "data_type": "figure",
  "value_range": "32768-18446744073709551615",
  "need_restart": "false"
}, {
  "group": "performance",
  "key": "sync_binlog",
  "source_value": "1",
  "target_value": "1",
  "compare_result": "true",
  "data_type": "figure",
  "value_range": "0-4294967295",
  "need_restart": "false"
}, {
  "group": "common",
  "key": "tx_isolation",
  "source_value": "REPEATABLE-READ",
  "target_value": "REPEATABLE-READ",
  "compare_result": "true",
  "data_type": null,
  "value_range": "READ-UNCOMMITTED|READ-COMMITTED|REPEATABLE-READ|SERIALIZABLE",
  "need_restart": "false"
}
}]
}
```

Status Code

Status Code	Description
202	Accepted
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.10 Modifying Database Parameters

Function

This API is to modify database parameters.

Constraints

- This API can be called only for MySQL migration and MySQL DR.
- This API can be called only when **job_direction** is set to **up** and the task status is **CONFIGURATION**.
- This API can be called only after the API in [6.1.9 Obtaining Database Parameters in Batches](#) is successfully called.
- In the dual-active DR scenario, the parent task cannot call the API.

URI

POST /v3/{project_id}/jobs/{job_id}/params

Table 6-71 Path parameters

Parameter	Mandatory	Type	Description
job_id	Yes	String	Task ID.
project_id	Yes	String	Project ID of a tenant in a region For details about how to obtain the project ID, see A.5 Obtaining a Project ID .

Request Parameters

Table 6-72 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-73 Request body parameters

Parameter	Mandatory	Type	Description
group	Yes	String	Parameter Groups Values: • common • performance
params	Yes	Array of objects	Information about the parameters to be modified. For details, see Table 6-74 .

Table 6-74 Data structure description of field **params**

Parameter	Mandatory	Type	Description
key	Yes	String	Database parameter name.
target_value	Yes	String	Parameter value of the destination database.

Response Parameters

Status code: 202

Table 6-75 Response body parameters

Parameter	Type	Description
success	Boolean	Whether the parameters are modified.
should_restart	String	Whether the instance needs to be restarted. Values: • true • false
error_code	String	Error code.
error_msg	String	Error message.

Example Request

Changing the value of **binlog_stmt_cache_size** to **32678** and **bulk_insert_buffer_size** to **8388608**

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/140b5236-88ad-43c8-811c-1268453jb101/params
```

```
{  
  "group": "performance",
```

```
"params" : [ {  
  "key" : "binlog_stmt_cache_size",  
  "target_value" : "32678"  
}, {  
  "key" : "bulk_insert_buffer_size",  
  "target_value" : "8388608"  
}  
]
```

Example Response

Status code: 202

Accepted

```
{  
  "success" : true,  
  "should_restart" : "false"  
}
```

Status Code

Status Code	Description
202	Accepted
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.11 Starting Tasks in Batches

Function

This API is used to start real-time migration, synchronization, and disaster recovery tasks in batches.

Constraints

- This API can be called only after all tasks are configured. For details, see [4.1 Task Creation Process](#).
- In the dual-active DR scenario, this operation can be performed only when the forward task status is **INCRE_TRANSFER_STARTED** and **RPO&RTO** is less than 60s. For backward tasks, this operation can be performed only after all tasks are configured. The parent task does not support this operation.
- When a yearly/monthly task created using APIs is started, an order is created and automatically paid.

URI

POST /v3/{project_id}/jobs/batch-starting

Table 6-76 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-77 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-78 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of objects	Request list for starting tasks in batches. For details, see Table 6-79 .

Table 6-79 Data structure description of field **jobs**

Parameter	Mandatory	Type	Description
job_id	Yes	String	Task ID.
is_only_init_task	No	Boolean	Specifies whether to initialize a task only.

Parameter	Mandatory	Type	Description
start_time	No	String	Task start time. The timestamp is accurate to milliseconds, for example, 1608188903063. If the value is empty, the task is started immediately.

Response Parameters

Status code: 202

Table 6-80 Response body parameters

Parameter	Type	Description
results	Array of StartJobResp objects	List of real-time disaster recovery tasks that are started in batches.
count	Integer	Total number.

Table 6-81 StartJobResp

Parameter	Type	Description
id	String	Task ID.
status	String	Status Values: • success • failed
order_id	String	Order ID. NOTE This parameter is returned for yearly/monthly tasks created using APIs.
error_code	String	Error code.
error_msg	String	Error message.

Example Request

Starting specified DR tasks in batches

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-starting
{
  "jobs" : [ {
```

```
{
  "job_id" : "140b5236-88ad-43c8-811c-1268453jb101"
}
```

Example Response

Status code: 202

Accepted

```
{
  "count" : 1,
  "results" : [ {
    "id" : "140b5236-88ad-43c8-811c-1268453jb101",
    "status" : "success"
  } ]
}
```

Status Code

Status Code	Description
202	Accepted
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.12 Resuming or Retrying Tasks in Batches

Function

- This API is used to retry failed tasks.
- You can resume a suspended task.
- In the dual-active DR scenario, the parent task cannot call the API.

URI

POST /v3/{project_id}/jobs/batch-retry-task

Table 6-82 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-83 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-84 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of objects	List of requests for resuming upload tasks in batches. For details, see Table 6-85 .

Table 6-85 Data structure description of field **jobs**

Parameter	Mandatory	Type	Description
job_id	Yes	String	Task ID.
is_sync_re_edit	No	Boolean	This parameter is mandatory when a task is resumed or retried and must be set to true .

Response Parameters

Status code: 200

Table 6-86 Response body parameters

Parameter	Type	Description
results	Array of objects	List of tasks that can be resumed in batches. For details, see Table 6-87 .
count	Integer	Total number.

Table 6-87 Data structure description of field **results**

Parameter	Type	Description
id	String	Task ID.
status	String	Status
error_code	String	Error code.
error_msg	String	Error message.

Example Request

Resuming specified tasks in batches

```
https://{endpoint}/v3/054babbbde80d4602f5cc0043a40ed8c/jobs/batch-retry-task
{
  "jobs" : [ {
    "job_id" : "140b5236-88ad-43c8-811c-1268453jb101"
  } ]
}
```

Example Response

Status code: 200

OK

```
{
  "results" : [ {
    "id" : "140b5236-88ad-43c8-811c-1268453jb101",
    "status" : "success"
  } ],
  "count" : 1
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.13 Pausing Tasks in Batches

Function

This API is used to pause tasks in batches.

Constraints

- You can pause a task that is being migrated, being synchronized, or being used for disaster recovery.
- In the dual-active DR scenario, the parent task cannot call the API.

URI

POST /v3/{project_id}/jobs/batch-pause-task

Table 6-88 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-89 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: en-us zh-cn

Table 6-90 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of objects	The value cannot contain empty objects. The value of job_id must comply with the UUID rule. For details, see Table 6-91 .

Table 6-91 Data structure description of field **jobs**

Parameter	Mandatory	Type	Description
job_id	Yes	String	Task ID.
pause_mode	Yes	String	Pause type. target : Stop replay. all : Stop log capturing and replay. Values: • target • all

Response Parameters

Status code: 200

Table 6-92 Response body parameters

Parameter	Type	Description
results	Array of objects	List of tasks to be suspended in batches. For details, see Table 6-93 .
count	Integer	Total number.

Table 6-93 Data structure description of field **results**

Parameter	Type	Description
id	String	Task ID.
status	String	Pause result.
error_code	String	Error code.
error_msg	String	Error message.

Example Request

Pausing specified tasks in batches

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-pause-task

{
  "jobs": [ {
    "job_id": "8d0e8e36-a618-490d-8a46-8c61ac9jb502",
    "pause_mode": "target"
  } ]
}
```

Example Response

Status code: 200

OK

```
{
  "results": [ {
    "id": "8d0e8e36-a618-490d-8a46-8c61ac9jb502",
    "status": "success"
  } ],
  "count": 1
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.14 Stopping or Deleting Tasks in Batches

Function

This API is used to stop tasks in batches or delete real-time migration, real-time synchronization, and real-time DR tasks.

After a yearly/monthly task is started, unsubscribe from the order and then call this API to delete the task. For details, see [Unsubscribing from a Yearly/Monthly Task](#).

Constraints

- Only tasks in the **CREATE_FAILED**, **RELEASE_RESOURCE_COMPLETE**, or **RELEASE_CHILD_TRANSFER_COMPLETE** state can be deleted. To delete a task in other states, stop the task first.

- The parent task can call the API only in the dual-active DR scenario.

URI

DELETE /v3/{project_id}/jobs/batch-jobs

Table 6-94 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-95 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-96 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of objects	List of requests for stopping or deleting tasks in batches. For details, see Table 6-97 .

Table 6-97 Data structure description of field **jobs**

Parameter	Mandatory	Type	Description
delete_type	Yes	String	The value can be terminate , force_terminate , or delete . terminate indicates that the migration task is stopped, force_terminate indicates that the migration task is forcibly stopped, and delete indicates that the migration task is deleted. Values: • terminate • force_terminate • delete NOTE You need to manually unsubscribe from a yearly/monthly task, and then set delete_type to delete to delete the task.
job_id	Yes	String	Task ID.
is_show_break_point_position	No	Boolean	Specifies whether to display breakpoint information when a real-time migration, synchronization, or DR task with MySQL serving as the source is complete. The default value is null , indicating that the breakpoint information is not displayed.

Response Parameters

Status code: 202

Table 6-98 Response body parameters

Parameter	Type	Description
results	Array of objects	Response body set for stopping or deleting tasks in batches. For details, see Table 6-99 .
count	Integer	Total number.

Table 6-99 Data structure description of field **results**

Parameter	Type	Description
id	String	Task ID.
status	String	Status Values: • success • failed
error_code	String	Error code.
error_msg	String	Error message.

Example Request

- Stopping two specified tasks
`https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-jobs`

```
{
  "jobs": [ {
    "delete_type": "terminate",
    "job_id": "4c6ac8c0-2f51-426a-97b2-cb2c668jb201"
  }, {
    "delete_type": "terminate",
    "job_id": "6211d20d-0006-41da-836e-db3301ajb20b"
  } ]
}
```
- Deleting a specified task
`https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-jobs`

```
{
  "jobs": [ {
    "delete_type": "delete",
    "job_id": "140b5236-88ad-43c8-811c-1268453jb101"
  } ]
}
```
- Displaying breakpoint information when a task is complete
`https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-jobs`

```
{
  "jobs": [{
    "delete_type": "terminate",
    "job_id": "6211d20d-0006-41da-836e-db3301ajb20b",
    "is_show_breakpoint_position": true
  } ]
}
```

Example Response

Status code: 202

Accepted

- Example response for stopping a task

```
{
  "count": 2,
  "results": [ {
    "id": "4c6ac8c0-2f51-426a-97b2-cb2c668jb201",
    "status": "success"
  } ]
}
```

```
}, {  
  "id" : "6211d20d-0006-41da-836e-db3301ajb20b",  
  "status" : "failed",  
  "error_code" : "DRS.M01504",  
  "error_msg" : "Another operation is being performed on the migration task or the migration task is  
abnormal. Try again later."  
}]  
}
```

- Example response for deleting a task

```
{  
  "count" : 1,  
  "results" : [ {  
    "id" : "140b5236-88ad-43c8-811c-1268453jb101",  
    "status" : "success"  
  } ]  
}
```

Status Code

Status Code	Description
202	Accepted
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.15 Changing the Passwords of the Source and Destination Databases in Batches

Function

This API is used to change the passwords of the source and destination databases after a task is started.

Constraints

- This API can be called only when the task is in the **STARTJOBING**, **STARTJOB_FAILED**, **FULL_TRANSFER_STARTED**, **FULL_TRANSFER_FAILED**, **FULL_TRANSFER_COMPLETE**, **INCRE_TRANSFER_STARTED**, **INCRE_TRANSFER_FAILED** or **PAUSING** state.
- In the dual-active DR scenario, the parent task cannot call the API.

URI

PUT /v3/{project_id}/jobs/batch-modify-pwd

Table 6-100 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-101 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-102 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of objects	List of database passwords to be changed in batches. For details, see Table 6-103 .

Table 6-103 Data structure description of field **jobs**

Parameter	Mandatory	Type	Description
db_password	Yes	String	Database password.

Parameter	Mandatory	Type	Description
end_point_type	Yes	String	Type. so indicates the source database. ta indicates the destination database. Values: • so • ta
job_id	Yes	String	Task ID.
kerberos	No	Object	Information required for Kerberos authentication. For details, see Table 6-104 .

Table 6-104 Data structure description of field **kerberos**

Parameter	Mandatory	Type	Description
krb5_conf_file	No	String	krb5 configuration file.
key_tab_file	No	String	Key file.
domain_name	No	String	Domain name.
user_principal	No	String	Kerberos user object.

Response Parameters

Status code: 200

Table 6-105 Response body parameters

Parameter	Type	Description
count	Integer	Total number.
results	Array of objects	List of tasks that are modified in batches. For details, see Table 6-106 .

Table 6-106 Data structure description of field **results**

Parameter	Type	Description
id	String	Task ID.

Parameter	Type	Description
status	String	Status Values: ● success: The task is successful. ● failed: The task fails.
end_point_type	String	Type. so indicates the source database. ta indicates the destination database.
error_code	String	Error code.
error_msg	String	Error message.

Example Request

Changing the passwords of the source and destination databases of specified tasks in batches

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-modify-pwd
```

```
{
  "jobs" : [ {
    "db_password" : "*****#",
    "end_point_type" : "so",
    "job_id" : "25df459d-a37c-41b9-bc2b-8c00ba32jb52"
  }, {
    "db_password" : "*****#",
    "end_point_type" : "ta",
    "job_id" : "25df459d-a37c-41b9-bc2b-8c00ba32jb52"
  } ]
}
```

Example Response

Status code: 200

OK

```
{
  "results" : [ {
    "id" : "8d0e8e36-a618-490d-8a46-8c61ac9jb502",
    "status" : "success",
    "end_point_type" : "so"
  }, {
    "id" : "8d0e8e36-a618-490d-8a46-8c61ac9jb502",
    "status" : "success",
    "end_point_type" : "ta"
  } ],
  "count" : 2
}
```

Status Code

Status Code	Description
200	OK

Status Code	Description
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.16 Setting Definers in Batches

Function

The API is used to set whether to migrate Definers to the user in batches.

- If you select **Yes**, the Definers of all source database objects will be migrated to the user. Other users do not have permissions on database objects unless they are authorized.
- If you select **No**, the Definers of all source database objects will not be changed. You need to migrate all accounts and permissions of the source database in the next step.

Constraints

This API can be called only when the task status is **CONFIGURATION**.

URI

POST /v3/{project_id}/jobs/batch-replace-definer

Table 6-107 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-108 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-109 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of objects	List of requests for setting replaceDefiners in batches. For details, see Table 6-110 .

Table 6-110 Data structure description of field **jobs**

Parameter	Mandatory	Type	Description
job_id	Yes	String	Task ID.
replace_definer	Yes	Boolean	Whether to replace the definer with the destination database user.

Response Parameters

Status code: 200

Table 6-111 Response body parameters

Parameter	Type	Description
count	Integer	Total number.

Parameter	Type	Description
results	Array of objects	List of tasks that are modified in batches. For details, see Table 6-112 .

Table 6-112 Data structure description of field **results**

Parameter	Type	Description
id	String	Task ID.
status	String	Status Values: ● success: The task is successful. ● failed: The task fails.
error_code	String	Error code.
error_msg	String	Error message.

Example Request

Setting definers for specified tasks in batches

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-replace-definer
{
  "jobs" : [ {
    "job_id" : "7c685701-bfb5-4bb9-89f1-d0567f5jb502",
    "replace_definer" : true
  } ]
}
```

Example Response

Status code: 200

OK

```
{
  "count" : 1,
  "results" : [ {
    "id" : "7c685701-bfb5-4bb9-89f1-d0567f5jb502",
    "status" : "success"
  } ]
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.17 Creating a Comparison Task

Function

This API is used to create a comparison task

Constraints

In the current version, a comparison task can be created only when the task is in the **INCRE_TRANSFER_STARTED** state. The parent task cannot call the API.

URI

POST /v3/{project_id}/jobs/create-compare-task

Table 6-113 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-114 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.

Parameter	Mandatory	Type	Description
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-115 Request body parameters

Parameter	Mandatory	Type	Description
job_id	Yes	String	Task ID.
object_level_compare_type	No	String	Object-level comparison type. If the value is empty, the object-level comparison is not created. If both object_level_compare_type and data_level_compare_info are left empty, only the created comparison task list is queried. Value: objects
data_level_compare_info	No	Object	Data-level comparison information. If no data-level comparison is created, this parameter does not need to be transferred. If both object_level_compare_type and data_level_compare_info are left empty, only the created comparison task list is queried. For details, see Table 6-116 .

Table 6-116 Data structure description of field **data_level_compare_info**

Parameter	Mandatory	Type	Description
conflict_policy	Yes	String	Only one unfinished data-level comparison task can exist. This field determines how to process unfinished data-level comparison tasks. cancel : Cancel the unfinished task and create a new one. keep : Retain the unfinished task. Values: • cancel • keep
compare_type	Yes	String	Data-level comparison type. lines : indicates row comparison. contents : indicates value comparison. Values: • lines • contents NOTE Object-level comparison and value comparison cannot be performed at the same time.
compare_mode	No	String	Data-level comparison mode. If the value is empty, the object information needs to be transferred in compare_object_infos or compare_object_infos_with_token . quick_comparison : indicates quick comparison, which can be used only by whitelisted users. Default value: quick_comparison Value: quick_comparison
start_time	No	String	Start time of a comparison task. If the value is empty, the task is started immediately.

Parameter	Mandatory	Type	Description
compare_object_infos	No	Array of objects	Data-level comparison object. In non-quick comparison mode, either compare_object_infos or compare_object_infos_with_token must be specified based on the migration scenario. For details, see Table 6-117 .
compare_object_infos_with_token	No	Array of objects	Object for data-level comparison (Cassandra DR only, with token information). In non-quick comparison mode, either compare_object_infos or compare_object_infos_with_token must be specified based on the migration scenario. For details, see Table 6-118 .

Table 6-117 Data structure description of field **compare_object_infos**

Parameter	Mandatory	Type	Description
db_name	Yes	String	Database name.
table_name	No	Array of strings	List of table names in the database.

Table 6-118 Data structure description of field **compare_object_infos_with_token**

Parameter	Mandatory	Type	Description
db_name	Yes	String	Database name.
table_name_with_token	No	Array of objects	List of tables (with tokens) in the database. For details, see Table 6-119 .

Table 6-119 Data structure description of field **table_name_with_token**

Parameter	Mandatory	Type	Description
table_name	Yes	String	Table name
min_token	No	String	Min token of a table.

Parameter	Mandatory	Type	Description
max_token	No	String	Max token of a table.

Response Parameters

Status code: 200

Table 6-120 Response body parameters

Parameter	Type	Description
job_id	String	Task ID
object_level_compare_create_result	Object	Result of creating an object-level comparison task. For details, see Table 6-121 .
data_level_compare_create_result	Object	Result of creating a data-level comparison task. For details, see Table 6-121 .
error_code	String	Error code.
error_msg	String	Error message.

Table 6-121 Data structure description of fields
object_level_compare_create_result and **data_level_compare_create_result**

Parameter	Type	Description
compare_task_id	String	After the comparison task is created, the ID of the comparison task is returned for querying the result of the comparison task.
error_code	String	Error code.
error_msg	String	Error message.

Example Request

Creating object-level comparison and data-level row comparison tasks

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/create-compare-task
{
  "job_id": "94800607-3cd8-4f7d-a340-63a10f8jb502",
  "object_level_compare_type": "objects",
  "data_level_compare_info": {
    "conflict_policy": "keep",
    "compare_type": "lines",
    "compare_mode": null,
  }
}
```

```
"start_time" : null,
"compare_object_infos" : [ {
  "db_name" : "may_5",
  "table_name" : [ "table_name_0", "table_name_1" ]
} ]
}
```

Example Response

Status code: 200

OK

```
{
  "job_id" : "94800607-3cd8-4f7d-a340-63a10f8jb502",
  "object_level_compare_create_result" : {
    "compare_task_id" : "dc1683d9-bdf2-4be9-967f-6ef0953369bc"
  },
  "data_level_compare_create_result" : {
    "compare_task_id" : "08cad1f8-9de2-42fa-b8ce-6c36daf730f6"
  }
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.18 Querying Comparison Results

Function

This API is used to query the comparison result.

Constraints

This API can be called only after the API in [6.1.17 Creating a Comparison Task](#) is successfully called.

URI

POST /v3/{project_id}/jobs/query-compare-result

Table 6-122 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-123 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-124 Request body parameters

Parameter	Mandatory	Type	Description
job_id	Yes	String	Task ID
object_level_compare_id	No	String	ID of the object-level comparison task that requests the query result.
line_compare_id	No	String	ID of the row comparison task that requests the query result.
content_compare_id	No	String	ID of the value comparison task that requests the query result.

Parameter	Mandatory	Type	Description
current_page	Yes	Integer	Current page number for pagination query, which is valid for the query result of comparison tasks.
per_page	Yes	Integer	Number of records on each page. This parameter is valid only for query results of comparison tasks.

Response Parameters

Status code: 200

Table 6-125 Response body parameters

Parameter	Type	Description
job_id	String	Task ID
object_level_compare_results	Object	Object-level comparison result. For details, see Table 6-126 .
line_compare_results	Object	Row comparison result. For details, see Table 6-129 .
content_compare_results	Object	Value comparison result. For details, see Table 6-133 .
compare_task_list_results	Object	List of comparison tasks. For details, see Table 6-139 .
error_code	String	Error code.
error_msg	String	Error message.

Table 6-126 Data structure description of field **object_level_compare_results**

Parameter	Type	Description
compare_task_id	String	ID of an object-level comparison task.
object_compare_overview	Array of objects	Overview of object comparison results. For details, see Table 6-127 .

Parameter	Type	Description
object_compare_details	Map<String,Array< ObjectCompareResultDetails >>	Object comparison result details. The key value is the object type in the object comparison result overview. For details, see Table 6-128 .
error_code	String	Error code.
error_msg	String	Error message.

Table 6-127 Data structure description of field **object_compare_overview**

Parameter	Type	Description
object_type	String	Object type. Values: • DB-database • TABLE-table • VIEW-view • EVENT-event • ROUTINE - stored procedure and function • INDEX: index • TRIGGER: trigger • SYNONYM - synonym • FUNCTION-function • PROCEDURE: stored procedure • TYPE: user-defined type • RULE-rule • DEFAULT_TYPE: default value • PLAN_GUIDE-execution plan • CONSTRAINT-constraint • FILE_GROUP-file group • PARTITION_FUNCTION-partition function • PARTITION_SCHEME-partition scheme • TABLE_COLLATION-table sorting rule • EXTENSIONS - Plugin

Parameter	Type	Description
object_compare_result	String	Comparison result. Values: • CONSISTENT: consistent • INCONSISTENT: inconsistent • COMPARING: The comparison is in progress • WAITING_FOR_COMPARISON: waiting for comparison • FAILED_TO_COMPARE: comparison failure • TARGET_DB_NOT_EXIT-Destination database does not exist • CAN_NOT_COMPARE-Cannot be compared
target_count	Integer	Number of objects of this type in the destination database.
source_count	Integer	Number of objects of this type in the source database.
diff_count	Integer	Number of differences between the source and destination databases.

Table 6-128 Data structure description of field **object_compare_details**

Parameter	Type	Description
source_db_name	String	Source database name.
target_db_name	String	Destination database name.
source_db_value	String	Value in the source database.
target_db_value	String	Value in the destination database.
error_message	String	Error message.

Table 6-129 Data structure description of field **line_compare_results**

Parameter	Type	Description
compare_task_id	String	ID of a row comparison task.

Parameter	Type	Description
line_compare_overview	Array of objects	Row comparison result overview. For details, see Table 6-130 .
line_compare_overview_count	Integer	Row comparison result overview.
line_compare_details	Array of objects	Row comparison result details. For details, see Table 6-131 .
error_code	String	Error code.
error_msg	String	Error message.

Table 6-130 Data structure description of field **line_compare_overview**

Parameter	Type	Description
source_db_name	String	Source database name.
target_db_name	String	Destination database name.
line_compare_result	String	Comparison result. Values: • CONSISTENT: consistent • INCONSISTENT: inconsistent • COMPARING: The comparison is in progress • WAITING_FOR_COMPARISON: waiting for comparison • FAILED_TO_COMPARE: comparison failure • TARGET_DB_NOT_EXIST-Destination database does not exist • CAN_NOT_COMPARE-Cannot be compared

Table 6-131 Data structure description of field **line_compare_details**

Parameter	Type	Description
source_db_name	String	Source database name.
line_compare_detail	Array of objects	Row comparison details of the tables in the database. For details, see Table 6-132 .

Parameter	Type	Description
line_compare_detail_count	Integer	Total number of row comparison results in the database.

Table 6-132 Data structure description of field **line_compare_detail**

Parameter	Type	Description
source_table_name	String	Table name of the source database.
target_table_name	String	Table name of the destination database.
source_row_num	Integer	Number of table rows in the source database.
target_row_num	Integer	Number of table rows in the destination database.
diff_row_num	Integer	Difference between the tables in the source and destination databases.
line_compare_result	String	Comparison result. Values: • CONSISTENT: consistent • INCONSISTENT: inconsistent • COMPARING: The comparison is in progress • WAITING_FOR_COMPARISON: waiting for comparison • FAILED_TO_COMPARE: comparison failure • TARGET_DB_NOT_EXIST-Destination database does not exist • CAN_NOT_COMPARE-Cannot be compared
message	String	Additional information.

Table 6-133 Data structure description of field **content_compare_results**

Parameter	Type	Description
compare_task_id	String	ID of a value comparison task.
content_compare_overview	Array of objects	Content comparison result overview. For details, see Table 6-134 .

Parameter	Type	Description
content_compare_overview_count	Integer	Total number of value comparison results.
content_compare_details	Array of objects	Value comparison result details. For details, see Table 6-135 .
content_compare_diffs	Array of objects	The value comparison results are different. For details, see Table 6-137 .
error_code	String	Error code.
error_msg	String	Error message.

Table 6-134 Data structure description of field **content_compare_overview**

Parameter	Type	Description
source_db_name	String	Source database name.
target_db_name	String	Destination database name.
content_compare_result	String	Comparison result. Values: • CONSISTENT: consistent • INCONSISTENT: inconsistent • COMPARING: The comparison is in progress • WAITING_FOR_COMPARISON: waiting for comparison • FAILED_TO_COMPARE: comparison failure • TARGET_DB_NOT_EXIST-Destination database does not exist • CAN_NOT_COMPARE-Cannot be compared

Table 6-135 Data structure description of field **content_compare_details**

Parameter	Type	Description
source_db_name	String	Source database name.
content_compare_detail	Array of objects	Value comparison details of the tables in the database. For details, see Table 6-136 .

Parameter	Type	Description
content_compare_detail_count	Integer	Total number of value comparison results.
content_uncompare_detail	Array of objects	Value comparison details of tables in the database (tables that cannot be compared). For details, see Table 6-136 .
content_uncompare_detail_count	Integer	Total number of value comparison results (tables that cannot be compared).

Table 6-136 Data structure description of fields **content_compare_detail** and **content_uncompare_detail**

Parameter	Type	Description
source_db_name	String	Source database name.
target_db_name	String	Destination database name.
source_table_name	String	Source database name.
target_table_name	String	Name of a table in the destination database.
source_row_num	Integer	Number of rows in the table of the source database.
target_row_num	Integer	Number of rows in the table of the destination database.
diff_row_num	Integer	Difference between the tables in the source and destination databases.
line_compare_result	String	Row comparison result. Values: ● CONSISTENT: consistent ● INCONSISTENT: inconsistent ● COMPARING: The comparison is in progress ● WAITING_FOR_COMPARISON: waiting for comparison ● FAILED_TO_COMPARE: comparison failure ● TARGET_DB_NOT_EXIT-Destination database does not exist ● CAN_NOT_COMPARE-Cannot be compared

Parameter	Type	Description
content_compare_result	String	Value comparison result. Values: • CONSISTENT: consistent • INCONSISTENT: inconsistent • COMPARING: The comparison is in progress • WAITING_FOR_COMPARISON: waiting for comparison • FAILED_TO_COMPARE: comparison failure • TARGET_DB_NOT_EXIT-Destination database does not exist • CAN_NOT_COMPARE-Cannot be compared
message	String	Provides additional information.

Table 6-137 Data structure description of field **content_compare_diffs**

Parameter	Type	Description
source_db_name	String	Source database name.
source_table_name	String	Table name of the source database.
content_compare_diff	Array of objects	The value comparison results are different. For details, see Table 6-138 .
content_compare_diff_count	Integer	Total number of differences in the value comparison result.

Table 6-138 Data structure description of field **content_compare_diff**

Parameter	Type	Description
target_select_sql	String	Query the SQL statements of the destination database.
source_select_sql	String	Query the SQL statements of the source database.
source_key_value	Array of strings	Key value list of the source database.
target_key_value	Array of strings	Key value list of the destination database.

Table 6-139 Data structure description of field **compare_task_list_results**

Parameter	Type	Description
compare_task_list	Array of objects	List of comparison tasks. For details, see Table 6-140 .
compare_task_list_count	Integer	Total number of comparison tasks.
error_msg	String	Error message.
error_code	String	Error code.

Table 6-140 Data structure description of field **compare_task_list**

Parameter	Type	Description
compare_task_id	String	ID of a comparison task.
compare_type	String	Type of a comparison task.
compare_task_status	String	Status of a comparison task. Values: ● RUNNING: The instance is running. ● WAITING_FOR_RUNNING: waiting to be started ● SUCCESSFUL: complete ● FAILED: The migration task failed. ● CANCELLED: canceled ● TIMEOUT_INTERRUPT: timeout interrupt ● FULL_DOING: Full verification is in progress ● INCRE_DOING: incremental verification in progress
create_time	String	Comparison start time
end_time	String	Comparison end time

Example Request

Request for querying the comparison result:

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/query-compare-result

{
  "job_id" : "94800607-3cd8-4f7d-a340-63a10f8jb502",
  "object_level_compare_id" : "dc1683d9-bdf2-4be9-967f-6ef0953369bc",
  "line_compare_id" : "d45d569d-0a80-4cef-a412-da2a3bcd9b7",
  "content_compare_id" : "79e206e6-13eb-4556-8cd5-c994c9cbd4e6",
  "current_page" : 1,
```

```
"per_page" : 2
}
```

Example Response

Status code: 200

OK

```
{
  "job_id" : "c6e65e6a-de99-4112-9697-7c1923ajb201",
  "object_level_compare_results" : {
    "compare_task_id" : "dc1683d9-bdf2-4be9-967f-6ef0953369bc",
    "object_compare_overview" : [ {
      "object_type" : "DB",
      "object_compare_result" : "CONSISTENT",
      "source_count" : 1,
      "target_count" : 1,
      "diff_count" : 0
    }, {
      "object_type" : "INDEX",
      "object_compare_result" : "CONSISTENT",
      "source_count" : 12,
      "target_count" : 12,
      "diff_count" : 0
    }, {
      "object_type" : "TABLE",
      "object_compare_result" : "CONSISTENT",
      "source_count" : 6,
      "target_count" : 6,
      "diff_count" : 0
    } ],
    "object_compare_details" : {
      "TABLE" : [ {
        "source_db_name" : "may_5",
        "target_db_name" : "may_5",
        "source_db_value" : "add_table_name_0",
        "target_db_value" : "add_table_name_0"
      }, {
        "source_db_name" : "may_5",
        "target_db_name" : "may_5",
        "source_db_value" : "table_name_3",
        "target_db_value" : "table_name_3"
      } ],
      "INDEX" : [ {
        "source_db_name" : "may_5",
        "target_db_name" : "may_5",
        "source_db_value" : "`add_table_name_0`.PRIMARY",
        "target_db_value" : "`add_table_name_0`.PRIMARY"
      }, {
        "source_db_name" : "may_5",
        "target_db_name" : "may_5",
        "source_db_value" : "`add_table_name_0`.bak0",
        "target_db_value" : "`add_table_name_0`.bak0"
      } ],
      "DB" : [ {
        "source_db_name" : "may_5",
        "target_db_name" : "may_5",
        "source_db_value" : "may_5",
        "target_db_value" : "may_5"
      } ]
    }
  },
  "line_compare_results" : {
    "compare_task_id" : "d45d569d-0a80-4cef-a412-da2a3bcd9b7",
    "line_compare_overview" : [ {
      "source_db_name" : "may_5",
      "target_db_name" : "may_5",
      "line_compare_result" : "INCONSISTENT"
    } ]
  }
}
```

```
    } ],
    "line_compare_overview_count" : 1,
    "line_compare_details" : [ {
      "source_db_name" : "may_5",
      "line_compare_detail" : [ {
        "source_table_name" : "table_name_0",
        "source_row_num" : 0,
        "target_table_name" : "table_name_0",
        "target_row_num" : 1,
        "diff_row_num" : 1,
        "line_compare_result" : "INCONSISTENT"
      }, {
        "source_table_name" : "table_name_1",
        "source_row_num" : 0,
        "target_table_name" : "table_name_1",
        "target_row_num" : 0,
        "diff_row_num" : 0,
        "line_compare_result" : "CONSISTENT"
      } ],
      "line_compare_detail_count" : 2
    } ]
  },
  "content_compare_results" : {
    "compare_task_id" : "79e206e6-13eb-4556-8cd5-c994c9cbd4e6",
    "content_compare_overview" : [ {
      "source_db_name" : "may_5",
      "target_db_name" : "may_5",
      "content_compare_result" : "INCONSISTENT"
    } ],
    "content_compare_overview_count" : 1,
    "content_compare_details" : [ {
      "source_db_name" : "may_5",
      "content_compare_detail" : [ {
        "source_db_name" : "may_5",
        "target_db_name" : "may_5",
        "source_table_name" : "table_name_0",
        "target_table_name" : "table_name_0",
        "source_row_num" : 0,
        "target_row_num" : 1,
        "diff_row_num" : 1,
        "line_compare_result" : "INCONSISTENT",
        "content_compare_result" : "INCONSISTENT"
      }, {
        "source_db_name" : "may_5",
        "target_db_name" : "may_5",
        "source_table_name" : "table_name_1",
        "target_table_name" : "table_name_1",
        "source_row_num" : 0,
        "target_row_num" : 0,
        "diff_row_num" : 0,
        "line_compare_result" : "CONSISTENT",
        "content_compare_result" : "CONSISTENT"
      } ],
      "content_compare_detail_count" : 2,
      "content_uncompare_detail" : [ ],
      "content_uncompare_detail_count" : 0
    } ],
    "content_compare_diffs" : [ {
      "source_db_name" : "may_5",
      "source_table_name" : "table_name_0",
      "content_compare_diff" : [ {
        "target_key_value" : [ "5" ],
        "target_select_sql" : "select * from may_5.table_name_0 where id = 5"
      } ],
      "content_compare_diff_count" : 1
    } ]
  },
  "compare_task_list_results" : {
    "compare_task_list_count" : 8,
```

```
"compare_task_list" : [ {  
  "compare_task_id" : "08cad1f8-9de2-42fa-b8ce-6c36daf730f6",  
  "compare_type" : "contents",  
  "compare_task_status" : "SUCCESSFUL",  
  "create_time" : "1607766111833",  
  "end_time" : "1607766310812"  
}, {  
  "compare_task_id" : "dc1683d9-bdf2-4be9-967f-6ef0953369bc",  
  "compare_type" : "object_comparison",  
  "compare_task_status" : "SUCCESSFUL",  
  "create_time" : "1607766110535",  
  "end_time" : "1607766127373"  
}  
]  
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.19 Querying Tasks of a Tenant

Function

This API is used to query tenant tasks by engine type, network type, task status, task name, or task ID.

URI

POST /v3/{project_id}/jobs

Table 6-141 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-142 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-143 Request body parameters

Parameter	Mandatory	Type	Description
cur_page	Yes	Integer	Current page. Set the value to 0 to obtain all items. If per_page is set to 0 , cur_page can only be set to 0 or 1 . Default value: 1
per_page	Yes	Integer	Number of records on each page. If this parameter is set to 0 , cur_page can only be set to 0 or 1 . • Default value: 10 • Minimum value: 0 • Maximum value: 100
db_use_type	Yes	String	Migration scenario. The value can be migration (real-time migration), sync (real-time synchronization), or cloudDataGuard (real-time disaster recovery). Values: • migration • sync • cloudDataGuard

Parameter	Mandatory	Type	Description
engine_type	No	String	Engine type of a DRS task. Default value: mysql Values: • mysql: migration and synchronization from MySQL to MySQL • mongodb: migration from MongoDB to DDS • cloudDataGuard-mysql: DR from MySQL to MySQL • gaussdbv5: GaussDB synchronization • mysql-to-kafka: synchronization from MySQL to Kafka • taurus-to-kafka: synchronization from TaurusDB to Kafka • gaussdbv5ha-to-kafka: synchronization from GaussDB Centralized to Kafka • postgresql: synchronization from PostgreSQL to PostgreSQL • oracle-to-gaussdbv5: synchronization from Oracle to GaussDB Distributed • oracle-to-gaussdbv5ha: synchronization from Oracle to GaussDB Centralized • gaussdbv5-to-oracle: synchronization from GaussDB Distributed to Oracle • gaussdbv5ha-to-oracle: synchronization from GaussDB Centralized to Oracle • gaussdbv5-to-kafka: synchronization from GaussDB Distributed to Kafka

Parameter	Mandatory	Type	Description
enterprise_project_id	No	String	Enterprise project. If no value is specified, this parameter is set to null . This parameter cannot be left blank. When enterprise project is enabled, this parameter can be set.
name	No	String	Name or ID. You can enter a maximum of 100 task IDs separated by commas (,).
net_type	No	String	Network type. Values: • vpn • vpc • eip
service_name	No	String	Service name.

Parameter	Mandatory	Type	Description
status	No	String	Task status. • CREATING: The task is being created. • CREATE_FAILED: The task fails to be created. • CONFIGURATION: The task is being configured. • STARTJOBING: The task is being started. • WAITING_FOR_START: The task is waiting to be started. • START_JOB_FAILED: The task fails to be started. • PAUSING: The task is paused. • FULL_TRANSFER_STARTED: Full migration or synchronization starts. Initialization is in progress in the DR scenario. • FULL_TRANSFER_FAILED: Full migration or synchronization fails. Initialization fails in the DR scenario. • FULL_TRANSFER_COMPLETE: Full migration or synchronization is complete. Initialization is complete in the DR scenario. • INCRE_TRANSFER_STARTED: Incremental migration or synchronization starts. The DR task is in progress. • INCRE_TRANSFER_FAILED: Incremental migration or synchronization fails. A DR exception occurs. • RELEASE_RESOURCE_STARTED: The task is being stopped. • RELEASE_RESOURCE_FAILED: The task fails to be stopped.

Parameter	Mandatory	Type	Description
			• RELEASE_RESOURCE_COMPLETE: The task is stopped. • REBUILD_NODE_STARTED: The task is being recovered. • REBUILD_NODE_FAILED: The task fails to be recovered. • CHANGE_JOB_STARTED: The task is being changed. • CHANGE_JOB_FAILED: The task fails to be changed. • DELETED: The task is deleted. • CHILD_TRANSFER_STARTING: The subtask is being started. • CHILD_TRANSFER_STARTED: The subtask is being migrated. • CHILD_TRANSFER_COMPLETE: The subtask migration is complete. • CHILD_TRANSFER_FAILED: The subtask fails to be migrated. • RELEASE_CHILD_TRANSFER_STARTED: The subtask is being stopped. • RELEASE_CHILD_TRANSFER_COMPLETE: The subtask is stopped. • NODE_UPGRADE_START: The upgrade starts. • NODE_UPGRADE_COMPLETE: The upgrade is complete. • NODE_UPGRADE_FAILED: The upgrade fails. Enumerated values: • CREATING • CREATE_FAILED • CONFIGURATION • STARTJOBING • WAITING_FOR_START

Parameter	Mandatory	Type	Description
			• START_JOB_FAILED • PAUSING • FULL_TRANSFER_STARTED • FULL_TRANSFER_FAILED • FULL_TRANSFER_COMPLETE • INCRE_TRANSFER_STARTED • INCRE_TRANSFER_FAILED • RELEASE_RESOURCE_STARTED • RELEASE_RESOURCE_FAILED • RELEASE_RESOURCE_COMPLETE • REBUILD_NODE_STARTED • REBUILD_NODE_FAILED • CHANGE_JOB_STARTED • CHANGE_JOB_FAILED • DELETED • CHILD_TRANSFER_STARTING • CHILD_TRANSFER_STARTED • CHILD_TRANSFER_COMPLETE • CHILD_TRANSFER_FAILED • RELEASE_CHILD_TRANSFER_STARTED • RELEASE_CHILD_TRANSFER_COMPLETE • NODE_UPGRADE_START • NODE_UPGRADE_COMPLETE • NODE_UPGRADE_FAILED
tags	No	Map<String,String>	Tags. For details, see Table 6-7 .

Parameter	Mandatory	Type	Description
instance_ids	No	Array of strings	List of database instance IDs. The default value is null , indicating that database instance IDs are not used for task filtering.
instance_ip	No	String	IP address of the database instance bound to the DRS. The default value is "", indicating that the IP address of the database instance bound to the DRS is not used for task filtering.

Response Parameters

Status code: 200

Table 6-144 Response body parameters

Parameter	Type	Description
total_record	Integer	Total number of tasks
jobs	Array of objects	Task details. For details, see Table 6-145 .

Table 6-145 Data structure description of field **jobs**

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

Parameter	Type	Description
status	String	Task status. • CREATING: The task is being created. • CREATE_FAILED: The task fails to be created. • CONFIGURATION: The task is being configured. • STARTJOBING: The task is being started. • WAITING_FOR_START: The task is waiting to be started. • START_JOB_FAILED: The task fails to be started. • PAUSING: The task is paused. • FULL_TRANSFER_STARTED: Full migration or synchronization starts. Initialization is in progress in the DR scenario. • FULL_TRANSFER_FAILED: Full migration or synchronization fails. Initialization fails in the DR scenario. • FULL_TRANSFER_COMPLETE: Full migration or synchronization is complete. Initialization is complete in the DR scenario. • INCRE_TRANSFER_STARTED: Incremental migration or synchronization starts. The DR task is in progress. • INCRE_TRANSFER_FAILED: Incremental migration or synchronization fails. A DR exception occurs. • RELEASE_RESOURCE_STARTED: The task is being stopped. • RELEASE_RESOURCE_FAILED: The task fails to be stopped. • RELEASE_RESOURCE_COMPLETE: The task is stopped. • REBUILD_NODE_STARTED: The task is being recovered. • REBUILD_NODE_FAILED: The task fails to be recovered. • CHANGE_JOB_STARTED: The task is being changed. • CHANGE_JOB_FAILED: The task fails to be changed. • DELETED: The task is deleted. • CHILD_TRANSFER_STARTING: The subtask is being started.

Parameter	Type	Description
		• CHILD_TRANSFER_STARTED: The subtask is being migrated. • CHILD_TRANSFER_COMPLETE: The subtask migration is complete. • CHILD_TRANSFER_FAILED: The subtask fails to be migrated. • RELEASE_CHILD_TRANSFER_STARTED: The subtask is being stopped. • RELEASE_CHILD_TRANSFER_COMPLETE: The subtask is stopped. • NODE_UPGRADE_START: The upgrade starts. • NODE_UPGRADE_COMPLETE: The upgrade is complete. • NODE_UPGRADE_FAILED: The upgrade fails. Enumerated values: • CREATING • CREATE_FAILED • CONFIGURATION • STARTJOBING • WAITING_FOR_START • START_JOB_FAILED • PAUSING • FULL_TRANSFER_STARTED • FULL_TRANSFER_FAILED • FULL_TRANSFER_COMPLETE • INCRE_TRANSFER_STARTED • INCRE_TRANSFER_FAILED • RELEASE_RESOURCE_STARTED • RELEASE_RESOURCE_FAILED • RELEASE_RESOURCE_COMPLETE • REBUILD_NODE_STARTED • REBUILD_NODE_FAILED • CHANGE_JOB_STARTED • CHANGE_JOB_FAILED • DELETED • CHILD_TRANSFER_STARTING • CHILD_TRANSFER_STARTED • CHILD_TRANSFER_COMPLETE • CHILD_TRANSFER_FAILED

Parameter	Type	Description
		• RELEASE_CHILD_TRANSFER_STARTED • RELEASE_CHILD_TRANSFER_COMPLETE • NODE_UPGRADE_START • NODE_UPGRADE_COMPLETE • NODE_UPGRADE_FAILED
description	String	Task description.
create_time	String	Time when a task is created
engine_type	String	Engine type of a DRS task. Values: • mysql: migration and synchronization from MySQL to MySQL • mongodb: migration from MongoDB to DDS • cloudDataGuard-mysql: DR from MySQL to MySQL • gaussdbv5: GaussDB synchronization • mysql-to-kafka: synchronization from MySQL to Kafka • taurus-to-kafka: synchronization from TaurusDB to Kafka • gaussdbv5ha-to-kafka: synchronization from GaussDB Centralized to Kafka • postgresql: synchronization from PostgreSQL to PostgreSQL • oracle-to-gaussdbv5: synchronization from Oracle to GaussDB Distributed • oracle-to-gaussdbv5ha: synchronization from Oracle to GaussDB Centralized • gaussdbv5-to-oracle: synchronization from GaussDB Distributed to Oracle • gaussdbv5ha-to-oracle: synchronization from GaussDB Centralized to Oracle • gaussdbv5-to-kafka: synchronization from GaussDB Distributed to Kafka
net_type	String	Network type. Values: • vpn • vpc • eip
billing_tag	Boolean	Billing tag.

Parameter	Type	Description
job_direction	String	Task direction. Values: • up: to-the-cloud scenarios and the current cloud is the standby cloud in the DR. • down: out-of-cloud scenarios and the current cloud is the active cloud in the DR. • non-dbs: self-built databases.
db_use_type	String	Task scenario. Values: • migration: real-time migration. • sync: real-time synchronization. • cloudDataGuard: real-time disaster recovery.
task_type	String	Task mode. Values: • FULL_TRANS: full migration • FULL_INCR_TRANS: full+incremental migration • INCR_TRANS: incremental migration
children	Array of objects	Subtask information body. For details, see Table 6-146 .
node_newFramework	Boolean	Whether the framework is a new framework.
job_action	Object	The matrix of task operation commands. For details, see Table 6-147 .

Table 6-146 Data structure description of field **children**

Parameter	Type	Description
billing_tag	Boolean	Billing tag.
create_time	String	Time when a task is created
db_use_type	String	Replication scenario. Values: • migration: real-time migration. • sync: real-time synchronization. • cloudDataGuard: real-time disaster recovery.
description	String	Task description.

Parameter	Type	Description
engine_type	String	Engine type of a DRS task. Values: • mysql: migration and synchronization from MySQL to MySQL • mongodb: migration from MongoDB to DDS • cloudDataGuard-mysql: DR from MySQL to MySQL • gaussdbv5: GaussDB synchronization • mysql-to-kafka: synchronization from MySQL to Kafka • taurus-to-kafka: synchronization from TaurusDB to Kafka • gaussdbv5ha-to-kafka: synchronization from GaussDB Centralized to Kafka • postgresql: synchronization from PostgreSQL to PostgreSQL • oracle-to-gaussdbv5: synchronization from Oracle to GaussDB Distributed • oracle-to-gaussdbv5ha: synchronization from Oracle to GaussDB Centralized • gaussdbv5-to-oracle: synchronization from GaussDB Distributed to Oracle • gaussdbv5ha-to-oracle: synchronization from GaussDB Centralized to Oracle • gaussdbv5-to-kafka: synchronization from GaussDB Distributed to Kafka
error_msg	String	Task failure cause.
id	String	Task ID.
job_direction	String	Migration direction. Values: • up: The current cloud is the standby cloud in the DR and to-the-cloud scenarios. • down: The current cloud is the active cloud in the DR and out-of-cloud scenarios. • non-dbs: self-built databases.
name	String	Task name.
net_type	String	Network type. Values: • vpc • vpn • eip

Parameter	Type	Description
node_newFramework	Boolean	New framework

Parameter	Type	Description
status	String	Task status. • CREATING: The task is being created. • CREATE_FAILED: The task fails to be created. • CONFIGURATION: The task is being configured. • STARTJOBING: The task is being started. • WAITING_FOR_START: The task is waiting to be started. • START_JOB_FAILED: The task fails to be started. • PAUSING: The task is paused. • FULL_TRANSFER_STARTED: Full migration or synchronization starts. Initialization is in progress in the DR scenario. • FULL_TRANSFER_FAILED: Full migration or synchronization fails. Initialization fails in the DR scenario. • FULL_TRANSFER_COMPLETE: Full migration or synchronization is complete. Initialization is complete in the DR scenario. • INCRE_TRANSFER_STARTED: Incremental migration or synchronization starts. The DR task is in progress. • INCRE_TRANSFER_FAILED: Incremental migration or synchronization fails. A DR exception occurs. • RELEASE_RESOURCE_STARTED: The task is being stopped. • RELEASE_RESOURCE_FAILED: The task fails to be stopped. • RELEASE_RESOURCE_COMPLETE: The task is stopped. • REBUILD_NODE_STARTED: The task is being recovered. • REBUILD_NODE_FAILED: The task fails to be recovered. • CHANGE_JOB_STARTED: The task is being changed. • CHANGE_JOB_FAILED: The task fails to be changed. • DELETED: The task is deleted. • CHILD_TRANSFER_STARTING: The subtask is being started.

Parameter	Type	Description
		• CHILD_TRANSFER_STARTED: The subtask is being migrated. • CHILD_TRANSFER_COMPLETE: The subtask migration is complete. • CHILD_TRANSFER_FAILED: The subtask fails to be migrated. • RELEASE_CHILD_TRANSFER_STARTED: The subtask is being stopped. • RELEASE_CHILD_TRANSFER_COMPLETE: The subtask is stopped. • NODE_UPGRADE_START: The upgrade starts. • NODE_UPGRADE_COMPLETE: The upgrade is complete. • NODE_UPGRADE_FAILED: The upgrade fails. Enumerated values: • CREATING • CREATE_FAILED • CONFIGURATION • STARTJOBING • WAITING_FOR_START • START_JOB_FAILED • PAUSING • FULL_TRANSFER_STARTED • FULL_TRANSFER_FAILED • FULL_TRANSFER_COMPLETE • INCRE_TRANSFER_STARTED • INCRE_TRANSFER_FAILED • RELEASE_RESOURCE_STARTED • RELEASE_RESOURCE_FAILED • RELEASE_RESOURCE_COMPLETE • REBUILD_NODE_STARTED • REBUILD_NODE_FAILED • CHANGE_JOB_STARTED • CHANGE_JOB_FAILED • DELETED • CHILD_TRANSFER_STARTING • CHILD_TRANSFER_STARTED • CHILD_TRANSFER_COMPLETE • CHILD_TRANSFER_FAILED

Parameter	Type	Description
		• RELEASE_CHILD_TRANSFER_STARTED • RELEASE_CHILD_TRANSFER_COMPLETE • NODE_UPGRADE_START • NODE_UPGRADE_COMPLETE • NODE_UPGRADE_FAILED
task_type	String	Task mode. Values: • FULL_TRANS: full migration • FULL_INCR_TRANS: full+incremental migration • INCR_TRANS: incremental migration
job_action	Object	The matrix of task operation commands. For details, see Table 6-147 .

Table 6-147 Data structure description of field **job_action**

Parameter	Type	Description
available_actions	Array of strings	The collection of operation commands that can be executed for a task. Values: • CREATE: indicates the operation command for creating a task. • CHOOSE_OBJECT: indicates the operation command for selecting an object. • PRE_CHECK: indicates the operation command for pre-check. • CHANGE_MODE: indicates the operation command for changing the task mode. • FREE_RESOURCE: indicates the operation command for releasing resources. • MODIFY_DB_CONFIG: indicates the operation command for modifying database configurations. • RESET_DB_PWD: indicates the operation command for resetting the password of the source or destination database. • MODIFY_CONFIGURATION: indicates the operation command for modifying task configurations. • PAUSE: indicates the operation command for pausing a task. • START: indicates the operation command for starting a task. • CHANGE: indicates the operation command for modifying a task. • RETRY: indicates the operation command for retrying a task. • RESET: indicates the operation command for resetting a task. • DELETE: indicates the operation command for deleting a task. • QUERY_PRE_CHECK: indicates the operation command for performing a pre-check. • SWITCH_OVER: indicates the operation command for performing a DR switchover. • START_INCR: indicates the operation command for starting an incremental Cassandra task.

Parameter	Type	Description
		• MODIFY_TASK_NUMBER: indicates the operation command for modifying the number of Cassandra threads. • CONTINUE_JOB: indicates the operation command for resuming a failed or stopped task from Oracle to GaussDB distributed. • STOP_JOB: indicates the operation command for stopping a task from Oracle to GaussDB distributed. • CONTINUE_CAPTURE: indicates the operation command for starting data capture for a task from Oracle to GaussDB distributed. • STOP_CAPTURE: indicates the operation command for stopping data capture for a task from Oracle to GaussDB distributed. • CONTINUE_APPLY: indicates the operation command for starting data replay for a task from Oracle to GaussDB distributed. • STOP_APPLY: indicates the operation command for stopping data replay for a task from Oracle to GaussDB distributed. • PAY_ORDER: indicates the operation command for paying yearly/monthly orders. • UNSUBSCRIBE: indicates the operation command for unsubscribing from yearly/monthly subscriptions. • TO_PERIOD: indicates the operation command for changing the billing mode from pay-per-use to yearly/monthly. • TO_RENEW: indicates the operation command for renewing a yearly/monthly subscription. • ORDER_INFO: indicates the operation command for querying order details. • CHANGE_FLAVOR: indicates the operation command for changing task specifications. • CLONE: indicates the operation command for cloning a task.

Parameter	Type	Description
unavailable_actions	Array of strings	The collection of operation commands that cannot be executed for a task. Values: • CREATE: indicates the operation command for creating a task. • CHOOSE_OBJECT: indicates the operation command for selecting an object. • PRE_CHECK: indicates the operation command for pre-check. • CHANGE_MODE: indicates the operation command for changing the task mode. • FREE_RESOURCE: indicates the operation command for releasing resources. • MODIFY_DB_CONFIG: indicates the operation command for modifying database configurations. • RESET_DB_PWD: indicates the operation command for resetting the password of the source or destination database. • MODIFY_CONFIGURATION: indicates the operation command for modifying task configurations. • PAUSE: indicates the operation command for pausing a task. • START: indicates the operation command for starting a task. • CHANGE: indicates the operation command for modifying a task. • RETRY: indicates the operation command for retrying a task. • RESET: indicates the operation command for resetting a task. • DELETE: indicates the operation command for deleting a task. • QUERY_PRE_CHECK: indicates the operation command for performing a pre-check. • SWITCH_OVER: indicates the operation command for performing a DR switchover. • START_INCR: indicates the operation command for starting an incremental Cassandra task. • MODIFY_TASK_NUMBER: indicates the operation command for modifying the number of Cassandra threads.

Parameter	Type	Description
		• CONTINUE_JOB: indicates the operation command for resuming a failed or stopped task from Oracle to GaussDB distributed. • STOP_JOB: indicates the operation command for stopping a task from Oracle to GaussDB distributed. • CONTINUE_CAPTURE: indicates the operation command for starting data capture for a task from Oracle to GaussDB distributed. • STOP_CAPTURE: indicates the operation command for stopping data capture for a task from Oracle to GaussDB distributed. • CONTINUE_APPLY: indicates the operation command for starting data replay for a task from Oracle to GaussDB distributed. • STOP_APPLY: indicates the operation command for stopping data replay for a task from Oracle to GaussDB distributed. • PAY_ORDER: indicates the operation command for paying yearly/monthly orders. • UNSUBSCRIBE: indicates the operation command for unsubscribing from yearly/monthly subscriptions. • TO_PERIOD: indicates the operation command for changing the billing mode from pay-per-use to yearly/monthly. • TO_RENEW: indicates the operation command for renewing a yearly/monthly subscription. • ORDER_INFO: indicates the operation command for querying order details. • CHANGE_FLAVOR: indicates the operation command for changing task specifications. • CLONE: indicates the operation command for cloning a task.
current_action	String	The current operation. Values: • SWITCH_OVER: indicates that a DR switchover is in progress. • STOP_JOB: indicates that a task is being paused.

Example Request

- Example of querying the real-time synchronization task list:
`https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs`

```
{
  "cur_page": 1,
  "db_use_type": "sync",
  "engine_type": "",
  "name": "",
  "net_type": "",
  "per_page": 5,
  "status": ""
}
```
- Example of querying the real-time migration task list:
`https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs`

```
{
  "cur_page": 1,
  "db_use_type": "migration",
  "engine_type": "",
  "name": "",
  "net_type": "",
  "per_page": 5,
  "status": ""
}
```
- Example of querying the real-time synchronization tasks based on the database instance ID:
`https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs`

```
{
  "cur_page": 1,
  "db_use_type": "sync",
  "engine_type": "",
  "enterprise_project_id": "",
  "name": "",
  "net_type": "",
  "per_page": 5,
  "instance_ids": [ "id1", "id2" ],
  "status": ""
}
```
- Example of querying the real-time synchronization tasks based on the database instance IP address:
`https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs`

```
{
  "cur_page": 1,
  "db_use_type": "sync",
  "engine_type": "",
  "enterprise_project_id": "",
  "name": "",
  "net_type": "",
  "per_page": 5,
  "instance_ip": "127.0.0.1",
  "status": ""
}
```
- Querying the real-time synchronization task list using multiple task IDs
`https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs`

```
{
  "cur_page": 1,
  "db_use_type": "sync",
  "engine_type": "",
  "name": "bee869bc-15c0-4b3b-a34b-bf0d5efjb201,c2a61a77-6e55-4cd8-8be1-a562cc6jb201",
  "net_type": "",
  "per_page": 100,
}
```

```
"status": ""  
}
```

Example Response

Status code: 200

OK

- Example response for querying the real-time migration tasks:

```
{  
  "jobs" : [ {  
    "id" : "24834eb6-be30-464e-a299-f7aa730jb101",  
    "name" : "DRS-3999-lws",  
    "status" : "INCRE_TRANSFER_FAILED",  
    "description" : "",  
    "create_time" : "2020-12-21 10:57:49",  
    "error_msg" : "service LOGMANAGER failed, cause by: Unable to connect to DBMS: url=jdbc:mysql://  
172.22.74.56:3306?  
useUnicode=true&allowLoadLocalInfile=false&characterEncoding=UTF-8&connectTimeout=5000&useS  
SL=false&allowPublicKeyRetrieval=true&verifyServerCertificate=false&serverTimezone=UTC user=root",  
    "engine_type" : "mysql",  
    "net_type" : "eip",  
    "billing_tag" : false,  
    "job_direction" : "up",  
    "db_use_type" : "migration",  
    "task_type" : "FULL_INCR_TRANS",  
    "node_newFramework" : false  
    "job_action":{  
      "available_actions": [  
        "CREATE",  
        "CHOOSE_OBJECT",  
        "PRE_CHECK",  
        "CHANGE_MODE",  
        "FREE_RESOURCE",  
        "MODIFY_DB_CONFIG",  
        "RESET_DB_PWD",  
        "MODIFY_CONFIGURATION",  
        "PAUSE",  
        "RETRY",  
        "RESET",  
      ],  
      "unavailable_actions": [  
        "START",  
        "CHANGE",  
        "DELETE",  
        "QUERY_PRE_CHECK",  
        "SWITCH_OVER",  
        "MODIFY_SPECIFICATION_ID",  
        "START_INCR",  
        "MODIFY_TASK_NUMBER",  
        "CONTINUE_JOB",  
        "STOP_JOB",  
        "CONTINUE_CAPTURE",  
        "STOP_CAPTURE",  
        "CONTINUE_APPLY",  
        "API_CONFIGURATION_ACTION",  
        "STOP_APPLY",  
        "PAY_ORDER",  
        "UNSUBSCRIBE",  
        "TO_PERIOD",  
        "TO_RENEW",  
        "ORDER_INFO",  
        "CHANGE_FLAVOR",  
        "CLONE"  
      ]  
    }  
  }  
], {
```

```
"id" : "140b5236-88ad-43c8-811c-1268453jb101",
"name" : "DRS-0042-linxiaolu",
"status" : "CONFIGURATION",
"description" : "",
"create_time" : "2020-12-19 16:23:24",
"engine_type" : "mysql",
"net_type" : "eip",
"billing_tag" : false,
"job_direction" : "up",
"db_use_type" : "migration",
"task_type" : "FULL_INCR_TRANS",
"node_newFramework" : false
"job_action": {
  "available_actions": [
    "CREATE",
    "START",
    "CHANGE",
    "CHOOSE_OBJECT",
    "PRE_CHECK",
    "CHANGE_MODE",
    "FREE_RESOURCE",
    "MODIFY_DB_CONFIG",
    "API_CONFIGURATION_ACTION"
  ],
  "unavailable_actions": [
    "RETRY",
    "RESET",
    "DELETE",
    "QUERY_PRE_CHECK",
    "SWITCH_OVER",
    "MODIFY_SPECIFICATION_ID",
    "RESET_DB_PWD",
    "MODIFY_CONFIGURATION",
    "PAUSE",
    "JUMP_RETRY",
    "START_INCR",
    "MODIFY_TASK_NUMBER",
    "CONTINUE_JOB",
    "STOP_JOB",
    "CONTINUE_CAPTURE",
    "STOP_CAPTURE",
    "CONTINUE_APPLY",
    "STOP_APPLY",
    "PAY_ORDER",
    "UNSUBSCRIBE",
    "TO_PERIOD",
    "TO_RENEW",
    "ORDER_INFO",
    "CHANGE_FLAVOR",
    "CLONE"
  ]
}
}, {
  "id" : "7f8e6f74-72d2-4ddd-bb8f-6c41397jb101",
  "name" : "DRS-0796",
  "status" : "RELEASE_RESOURCE_COMPLETE",
  "description" : "",
  "create_time" : "2020-12-18 10:48:11",
  "engine_type" : "mysql",
  "net_type" : "eip",
  "billing_tag" : false,
  "job_direction" : "non-dbs",
  "db_use_type" : "migration",
  "task_type" : "FULL_INCR_TRANS",
  "node_newFramework" : false
  "job_action": {
    "available_actions": [
      "CREATE",
      "DELETE",
```

```
    "PRE_CHECK",
    "CHANGE_MODE",
    "MODIFY_DB_CONFIG",
    "CLONE"
  ],
  "unavailable_actions": [
    "FREE_RESOURCE",
    "START",
    "CHANGE",
    "CHOOSE_OBJECT",
    "RETRY",
    "RESET",
    "QUERY_PRE_CHECK",
    "SWITCH_OVER",
    "MODIFY_SPECIFICATION_ID",
    "RESET_DB_PWD",
    "MODIFY_CONFIGURATION",
    "PAUSE",
    "JUMP_RETRY",
    "START_INCR",
    "MODIFY_TASK_NUMBER",
    "CONTINUE_JOB",
    "STOP_JOB",
    "CONTINUE_CAPTURE",
    "STOP_CAPTURE",
    "CONTINUE_APPLY",
    "STOP_APPLY",
    "PAY_ORDER",
    "UNSUBSCRIBE",
    "TO_PERIOD",
    "TO_RENEW",
    "ORDER_INFO",
    "CHANGE_FLAVOR"
  ]
}
}, {
  "id" : "14d88eeb-ee7e-4d30-a46e-a5ec8eajb101",
  "name" : "masj-mysql_migration_down-1",
  "status" : "INCRE_TRANSFER_STARTED",
  "description": "[using] api test 2\n1. This API is used to configure the source and destination database information. Before selecting a table, you must perform this operation. \n2. If the description of a task in the configuration is successfully modified, 202 success is returned. \n3. If the description of a task in an incremental migration fails to be modified, 202 failed DRS.M01504\nAnother operation is being performed on the migration task or the migration task is abnormal. Try again later./",
  "create_time" : "2020-12-15 15:43:02",
  "engine_type" : "mysql",
  "net_type" : "eip",
  "billing_tag" : true,
  "job_direction" : "down",
  "db_use_type" : "migration",
  "task_type" : "FULL_INCR_TRANS",
  "node_newFramework" : false
  "job_action":{
    "available_actions": [
      "CREATE",
      "CHOOSE_OBJECT",
      "PRE_CHECK",
      "CHANGE_MODE",
      "FREE_RESOURCE",
      "MODIFY_DB_CONFIG",
      "RESET_DB_PWD",
      "MODIFY_CONFIGURATION",
      "PAUSE",
    ],
    "unavailable_actions": [
      "START",
      "RETRY",
      "RESET",
      "CHANGE",
    ]
  }
}
```

```
"DELETE",
"QUERY_PRE_CHECK",
"SWITCH_OVER",
"MODIFY_SPECIFICATION_ID",
"START_INCR",
"MODIFY_TASK_NUMBER",
"CONTINUE_JOB",
"STOP_JOB",
"CONTINUE_CAPTURE",
"STOP_CAPTURE",
"CONTINUE_APPLY",
"API_CONFIGURATION_ACTION",
"STOP_APPLY",
"PAY_ORDER",
"UNSUBSCRIBE",
"TO_PERIOD",
"TO_RENEW",
"ORDER_INFO",
"CHANGE_FLAVOR",
"CLONE"
]
}
}, {
  "id" : "d54691d2-f105-434d-a75d-809b017jb101",
  "name" : "masj-2-mysql_migration_down",
  "status" : "CONFIGURATION",
  "description": "[using] api test 2\n1. This API is used to configure the source and destination database information. Before selecting a table, you must perform this operation. \n2. If the description of a task in the configuration is successfully modified, 202 success is returned. \n3. If the description of a task in an incremental migration fails to be modified, 202 failed DRS.M01504\nAnother operation is being performed on the migration task or the migration task is abnormal. Try again later./",
  "create_time" : "2020-12-14 21:39:07",
  "engine_type" : "mysql",
  "net_type" : "eip",
  "billing_tag" : false,
  "job_direction" : "down",
  "db_use_type" : "migration",
  "task_type" : "FULL_INCR_TRANS",
  "node_newFramework" : false
  "job_action": {
    "available_actions": [
      "CREATE",
      "START",
      "CHANGE",
      "CHOOSE_OBJECT",
      "PRE_CHECK",
      "CHANGE_MODE",
      "FREE_RESOURCE",
      "MODIFY_DB_CONFIG",
      "API_CONFIGURATION_ACTION"
    ],
    "unavailable_actions": [
      "RETRY",
      "RESET",
      "DELETE",
      "QUERY_PRE_CHECK",
      "SWITCH_OVER",
      "MODIFY_SPECIFICATION_ID",
      "RESET_DB_PWD",
      "MODIFY_CONFIGURATION",
      "PAUSE",
      "JUMP_RETRY",
      "START_INCR",
      "MODIFY_TASK_NUMBER",
      "CONTINUE_JOB",
      "STOP_JOB",
      "CONTINUE_CAPTURE",
      "STOP_CAPTURE",
      "CONTINUE_APPLY",
```

```
        "STOP_APPLY",
        "PAY_ORDER",
        "UNSUBSCRIBE",
        "TO_PERIOD",
        "TO_RENEW",
        "ORDER_INFO",
        "CHANGE_FLAVOR",
        "CLONE"
    ]
}
}],
"total_record" : 7
}
```

- Example response for querying the real-time synchronization tasks:

```
{
  "jobs" : [ {
    "id" : "7994aac9-0a15-4fdb-bcc5-667f088jb20b",
    "name" : "DRS-8200",
    "status" : "CREATE_FAILED",
    "description" : "",
    "create_time" : "2020-12-21 18:02:36",
    "error_msg" : "system error!",
    "engine_type" : "oracle-to-mysql",
    "net_type" : "eip",
    "billing_tag" : false,
    "job_direction" : "up",
    "db_use_type" : "sync",
    "task_type" : "FULL_INCR_TRANS",
    "node_newFramework" : false
    "job_action": {
      "available_actions": [
        "CREATE",
        "DELETE",
        "START",
        "CHANGE",
        "CHOOSE_OBJECT",
        "PRE_CHECK",
        "CHANGE_MODE",
        "MODIFY_DB_CONFIG",
        "API_CONFIGURATION_ACTION"
      ],
      "unavailable_actions": [
        "FREE_RESOURCE",
        "RETRY",
        "RESET",
        "QUERY_PRE_CHECK",
        "SWITCH_OVER",
        "MODIFY_SPECIFICATION_ID",
        "RESET_DB_PWD",
        "MODIFY_CONFIGURATION",
        "PAUSE",
        "JUMP_RETRY",
        "START_INCR",
        "MODIFY_TASK_NUMBER",
        "CONTINUE_JOB",
        "STOP_JOB",
        "CONTINUE_CAPTURE",
        "STOP_CAPTURE",
        "CONTINUE_APPLY",
        "STOP_APPLY",
        "PAY_ORDER",
        "UNSUBSCRIBE",
        "TO_PERIOD",
        "TO_RENEW",
        "ORDER_INFO",
        "CHANGE_FLAVOR",
        "CLONE"
      ]
    }
  }
]
```

```
}, {
  "id" : "f463331d-e079-4689-bbef-4553202jb20b",
  "name" : "DRS-1285",
  "status" : "CONFIGURATION",
  "description" : "",
  "create_time" : "2020-12-21 17:19:38",
  "engine_type" : "oracle-to-mysql",
  "net_type" : "eip",
  "billing_tag" : false,
  "job_direction" : "up",
  "db_use_type" : "sync",
  "task_type" : "FULL_INCR_TRANS",
  "node_newFramework" : false
  "job_action": {
    "available_actions": [
      "CREATE",
      "START",
      "CHANGE",
      "CHOOSE_OBJECT",
      "PRE_CHECK",
      "CHANGE_MODE",
      "FREE_RESOURCE",
      "MODIFY_DB_CONFIG",
      "API_CONFIGURATION_ACTION"
    ],
    "unavailable_actions": [
      "RETRY",
      "RESET",
      "DELETE",
      "QUERY_PRE_CHECK",
      "SWITCH_OVER",
      "MODIFY_SPECIFICATION_ID",
      "RESET_DB_PWD",
      "MODIFY_CONFIGURATION",
      "PAUSE",
      "JUMP_RETRY",
      "START_INCR",
      "MODIFY_TASK_NUMBER",
      "CONTINUE_JOB",
      "STOP_JOB",
      "CONTINUE_CAPTURE",
      "STOP_CAPTURE",
      "CONTINUE_APPLY",
      "STOP_APPLY",
      "PAY_ORDER",
      "UNSUBSCRIBE",
      "TO_PERIOD",
      "TO_RENEW",
      "ORDER_INFO",
      "CHANGE_FLAVOR",
      "CLONE"
    ]
  }
}, {
  "id" : "7f13c511-c35b-4f82-92ae-83bcfb0jb201",
  "name" : "DRS-9383",
  "status" : "CONFIGURATION",
  "description" : "",
  "create_time" : "2020-12-21 17:18:44",
  "engine_type" : "mysql",
  "net_type" : "eip",
  "billing_tag" : false,
  "job_direction" : "up",
  "db_use_type" : "sync",
  "task_type" : "FULL_INCR_TRANS",
  "node_newFramework" : false
  "job_action": {
    "available_actions": [
      "CREATE",
```



```

"START",
"CHANGE",
"CHOOSE_OBJECT",
"PRE_CHECK",
"CHANGE_MODE",
"FREE_RESOURCE",
"MODIFY_DB_CONFIG",
"API_CONFIGURATION_ACTION"
],
"unavailable_actions": [
"RETRY",
"RESET",
"DELETE",
"QUERY_PRE_CHECK",
"SWITCH_OVER",
"MODIFY_SPECIFICATION_ID",
"RESET_DB_PWD",
"MODIFY_CONFIGURATION",
"PAUSE",
"JUMP_RETRY",
"START_INCR",
"MODIFY_TASK_NUMBER",
"START_INCR",
"MODIFY_TASK_NUMBER",
"START_INCR",
"MODIFY_TASK_NUMBER",
"START_INCR",
"MODIFY_TASK_NUMBER",
"START_INCR",
"MODIFY_TASK_NUMBER",
"START_INCR",
"MODIFY_TASK_NUMBER",
"START_INCR",
"MODIFY_TASK_NUMBER",
"START_INCR",
"MODIFY_TASK_NUMBER",
"START_INCR",
"MODIFY_TASK_NUMBER",
"START_INCR",
"MODIFY_TASK_NUMBER",
"START_INCR",
"MODIFY_TASK_NUMBER",
"START_INCR",
"MODIFY_TASK_NUMBER",
"START_INCR",
"MODIFY_TASK_NUMBER",
"START_INCR",
"MODIFY_TASK_NUMBER",
"CONTINUE_JOB",
"STOP_JOB",
"CONTINUE_CAPTURE",
"STOP_CAPTURE",
"CONTINUE_APPLY",
"STOP_APPLY",
"PAY_ORDER",
"UNSUBSCRIBE",
"TO_PERIOD",
"TO_RENEW",
"ORDER_INFO",
"CHANGE_FLAVOR",
"CLONE"
]
}
}, {
"id" : "7686e879-46a4-4d6b-bda9-5540424jb201"

```

```
"name" : "DRS-9272",
"status" : "CONFIGURATION",
"description" : "",
"create_time" : "2020-12-21 16:53:36",
"engine_type" : "mysql",
"net_type" : "eip",
"billing_tag" : false,
"job_direction" : "up",
"db_use_type" : "sync",
"task_type" : "FULL_INCR_TRANS",
"node_newFramework" : false
"job_action": {
  "available_actions": [
    "CREATE",
    "START",
    "CHANGE",
    "CHOOSE_OBJECT",
    "PRE_CHECK",
    "CHANGE_MODE",
    "FREE_RESOURCE",
    "MODIFY_DB_CONFIG",
    "API_CONFIGURATION_ACTION"
  ],
  "unavailable_actions": [
    "RETRY",
    "RESET",
    "DELETE",
    "QUERY_PRE_CHECK",
    "SWITCH_OVER",
    "MODIFY_SPECIFICATION_ID",
    "RESET_DB_PWD",
    "MODIFY_CONFIGURATION",
    "PAUSE",
    "JUMP_RETRY",
    "START_INCR",
    "MODIFY_TASK_NUMBER",
    "CONTINUE_JOB",
    "STOP_JOB",
    "CONTINUE_CAPTURE",
    "STOP_CAPTURE",
    "CONTINUE_APPLY",
    "STOP_APPLY",
    "PAY_ORDER",
    "UNSUBSCRIBE",
    "TO_PERIOD",
    "TO_RENEW",
    "ORDER_INFO",
    "CHANGE_FLAVOR",
    "CLONE"
  ]
}
}, {
  "id" : "5b2c2ec8-430e-4de0-937b-9d9547ajb201",
  "name" : "DRS-2899",
  "status" : "RELEASE_RESOURCE_COMPLETE",
  "description" : "",
  "create_time" : "2020-12-21 16:24:24",
  "engine_type" : "mysql",
  "net_type" : "eip",
  "billing_tag" : false,
  "job_direction" : "up",
  "db_use_type" : "sync",
  "task_type" : "FULL_INCR_TRANS",
  "node_newFramework" : false
  "job_action": {
    "available_actions": [
      "CREATE",
      "DELETE",
      "PRE_CHECK",
```

```
    "CHANGE_MODE",
    "MODIFY_DB_CONFIG",
    "CLONE"
  ],
  "unavailable_actions": [
    "FREE_RESOURCE",
    "START",
    "CHANGE",
    "CHOOSE_OBJECT",
    "RETRY",
    "RESET",
    "QUERY_PRE_CHECK",
    "SWITCH_OVER",
    "MODIFY_SPECIFICATION_ID",
    "RESET_DB_PWD",
    "MODIFY_CONFIGURATION",
    "PAUSE",
    "JUMP_RETRY",
    "START_INCR",
    "MODIFY_TASK_NUMBER",
    "CONTINUE_JOB",
    "STOP_JOB",
    "CONTINUE_CAPTURE",
    "STOP_CAPTURE",
    "CONTINUE_APPLY",
    "STOP_APPLY",
    "PAY_ORDER",
    "UNSUBSCRIBE",
    "TO_PERIOD",
    "TO_RENEW",
    "ORDER_INFO",
    "CHANGE_FLAVOR"
  ]
}
}],
"total_record" : 18
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.20 Querying Task Details in Batches

Function

This API is used to query task details in batches by task ID.

Constraints

You can call a maximum of 10 APIs in batches.

URI

POST /v3/{project_id}/jobs/batch-detail

Table 6-148 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-149 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-150 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of strings	Querying task details in batches
page_req	No	Object	Pagination information. For details, see Table 6-151 .

Table 6-151 Data structure description of field **page_req**

Parameter	Mandatory	Type	Description
cur_page	No	Integer	Current page number, which cannot exceed the maximum number of pages. (Number of pages = Number of transferred job IDs/Number of tasks on each page) • Minimum value: 1. • Default value: 1
per_page	No	Integer	Number of items on each page. If this parameter is set to 0 , all items are obtained. • Minimum value: 0 • Maximum value: 100 • Default value: 5

Response Parameters

Status code: 200

Table 6-152 Response body parameters

Parameter	Type	Description
count	Integer	Number of tasks.
results	Array of objects	Task details. For details, see Table 6-153 .

Table 6-153 Data structure description of field **results**

Parameter	Type	Description
id	String	Task ID.
parent_id	String	Parent task ID.
name	String	Task name.

Parameter	Type	Description
status	String	Task status. • CREATING: The task is being created. • CREATE_FAILED: The task fails to be created. • CONFIGURATION: The task is being configured. • STARTJOBING: The task is being started. • WAITING_FOR_START: The task is waiting to be started. • START_JOB_FAILED: The task fails to be started. • PAUSING: The task is paused. • FULL_TRANSFER_STARTED: Full migration or synchronization starts. Initialization is in progress in the DR scenario. • FULL_TRANSFER_FAILED: Full migration or synchronization fails. Initialization fails in the DR scenario. • FULL_TRANSFER_COMPLETE: Full migration or synchronization is complete. Initialization is complete in the DR scenario. • INCRE_TRANSFER_STARTED: Incremental migration or synchronization starts. The DR task is in progress. • INCRE_TRANSFER_FAILED: Incremental migration or synchronization fails. A DR exception occurs. • RELEASE_RESOURCE_STARTED: The task is being stopped. • RELEASE_RESOURCE_FAILED: The task fails to be stopped. • RELEASE_RESOURCE_COMPLETE: The task is stopped. • REBUILD_NODE_STARTED: The task is being recovered. • REBUILD_NODE_FAILED: The task fails to be recovered. • CHANGE_JOB_STARTED: The task is being changed. • CHANGE_JOB_FAILED: The task fails to be changed. • DELETED: The task is deleted. • CHILD_TRANSFER_STARTING: The subtask is being started.

Parameter	Type	Description
		• CHILD_TRANSFER_STARTED: The subtask is being migrated. • CHILD_TRANSFER_COMPLETE: The subtask migration is complete. • CHILD_TRANSFER_FAILED: The subtask fails to be migrated. • RELEASE_CHILD_TRANSFER_STARTED: The subtask is being stopped. • RELEASE_CHILD_TRANSFER_COMPLETE: The subtask is stopped. • NODE_UPGRADE_START: The upgrade starts. • NODE_UPGRADE_COMPLETE: The upgrade is complete. • NODE_UPGRADE_FAILED: The upgrade fails. Enumerated values: • CREATING • CREATE_FAILED • CONFIGURATION • STARTJOBING • WAITING_FOR_START • START_JOB_FAILED • PAUSING • FULL_TRANSFER_STARTED • FULL_TRANSFER_FAILED • FULL_TRANSFER_COMPLETE • INCRE_TRANSFER_STARTED • INCRE_TRANSFER_FAILED • RELEASE_RESOURCE_STARTED • RELEASE_RESOURCE_FAILED • RELEASE_RESOURCE_COMPLETE • REBUILD_NODE_STARTED • REBUILD_NODE_FAILED • CHANGE_JOB_STARTED • CHANGE_JOB_FAILED • DELETED • CHILD_TRANSFER_STARTING • CHILD_TRANSFER_STARTED • CHILD_TRANSFER_COMPLETE • CHILD_TRANSFER_FAILED

Parameter	Type	Description
		• RELEASE_CHILD_TRANSFER_STARTED • RELEASE_CHILD_TRANSFER_COMPLETE • NODE_UPGRADE_START • NODE_UPGRADE_COMPLETE • NODE_UPGRADE_FAILED
description	String	Description.
create_time	String	Creation time, in timestamp format.
task_type	String	Task mode. Values: • FULL_TRANS: full migration • INCR_TRANS: incremental migration • FULL_INCR_TRANS: full+incremental migration
source_endpoint	Object	Source database information. For details, see Table 6-154 .
dmq_endpoint	Object	DMQ information body. For details, see Table 6-154 .
source_sharding	Array of objects	Information about the physical source database. For details, see Table 6-154 .
target_endpoint	Object	Information body of the destination database. For details, see Table 6-154 .
net_type	String	Network type. Values: • vpn • vpc • eip
failed_reason	String	Failure cause.
inst_info	Object	Replication instance information. For details, see Table 6-156 .
actual_start_time	String	Start time, in timestamp format.
full_transfer_completion_time	String	Full migration completion time, in timestamp format.
update_time	String	Update time, in timestamp format.

Parameter	Type	Description
job_direction	String	Task direction. Values: • up: The current cloud is the standby cloud in the DR and to-the-cloud scenarios. • down: The current cloud is the active cloud in the DR and out-of-cloud scenarios. • non-dbs: self-built databases.
db_use_type	String	Migration scenario Values: • migration: real-time migration. • sync: real-time synchronization. • cloudDataGuard: real-time disaster recovery.
need_restart	Boolean	Whether the instance needs to be restarted.
is_target_read_only	Boolean	Whether the destination instance is restricted to read-only.
conflict_policy	String	Conflict policy. Values: • stop: The conflict fails. • overwrite: Conflicting data is overwritten. • ignore: The conflict is ignored.
filter_ddl_policy	String	DDL filtering policy. Values: • drop_database: Filters DDLs. • drop_databasefilter_all: Filters out all DLLs. • "": No filter.
speed_limit	Array of objects	Migration speed limit. For details, see Table 6-157 .
schema_type	String	Migration schemes. Values: • Replication: primary/standby replication. • Tungsten: parses logs. • PGBaseBackup: PostgreSQL backup.
node_num	String	The number of nodes.
object_switch	Boolean	Whether to select objects.
master_job_id	String	Main task ID
full_mode	String	Full snapshot mode.
struct_trans	Boolean	Whether to migrate the structure.
index_trans	Boolean	Whether to migrate indexes.

Parameter	Type	Description
replace_definer	Boolean	Whether to replace the definer with the user of the destination database.
migrate_user	Boolean	Whether to migrate users.
sync_database	Boolean	Whether to perform database-level synchronization.
error_code	String	Error code.
error_message	String	Error message.
target_root_db	Object	Information about the root node database of the destination instance. For details, see Table 6-158 .
az_code	String	AZ where the node is located.
vpc_id	String	VPC to which the node belongs.
subnet_id	String	Subnet where the node is located.
security_group_id	String	Security group to which the node belongs.
multi_write	Boolean	Whether the task is a multi-active DR task. The value is true when the task is a dual-active DR task.
support_ip_v6	Boolean	Whether IPv6 is supported
inherit_id	String	Inherited task ID.
gtid	String	GTID set of breakpoints.
alarm_notify	Object	Exception notification settings. For details, see Table 6-159 .
is_multi_az	Boolean	Whether the task is a primary/standby task.
az_name	String	AZ name of the node.
master_az	String	Primary AZ of the primary/standby task.
slave_az	String	Standby AZ of the primary/standby task.
node_role	String	Primary/Standby role of a task.
incr_start_position	String	Start point of an incremental task.

Parameter	Type	Description
period_order	Object	Yearly/Monthly information. For details, see Table 6-161 . NOTE This parameter is returned only for yearly/monthly tasks.
object_infos	Array of objects	Synchronized object information. For details, see Table 6-162 .
original_job_direction	String	Task direction. Values: • up: to-the-cloud scenarios and the current cloud is the standby cloud in the DR. • down: out-of-cloud scenarios and the current cloud is the active cloud in the DR. • non-dbs: self-built databases.
data_transformation	Object	Data filtering configuration information. For details, see Table 6-163 .
tags	Array of objects	Task tag. For details, see Table 6-168 .
public_ip_list	Array of objects	Information about a specified EIP. For details, see Table 6-169 .
bind_public_ip_state	String	Whether an EIP is successfully bound.
children	Array of objects	In the case of multiple tasks, if an EIP fails to be bound to a subtask, the subtask information is returned. For details, see Table 6-170 .
is_open_fast_clean	Boolean	Specifies whether to enable binlog clearing for RDS for MySQL or RDS for MariaDB.

Table 6-154 Data structure description of fields **source_endpoint**, **dmq_endpoint**, **source_sharding**, and **target_endpoint**

Parameter	Type	Description
db_type	String	Database type. Values: • mysql: MySQL • mongodb: MongoDB • gaussdbv5: GaussDB Distributed • gaussdbv5ha: GaussDB Centralized • kafka: Kafka • postgresql: PostgreSQL • oracle: Oracle
az_code	String	Code of the AZ where the database is located.
region	String	Region where the DB instance is located. This parameter is mandatory when the database is a cloud instance, for example, an RDS instance.
inst_id	String	DB instance ID. This parameter is mandatory when the database is a cloud instance, for example, an RDS instance.
vpc_id	String	ID of the VPC where the database is located.
subnet_id	String	ID of the subnet where the database is located.
security_group_id	String	ID of the security group to which the database belongs.
project_id	String	ID of the project to which the DB instance belongs.
db_name	String	The service name. This parameter is mandatory when the source database is an Oracle database. The database name can be a maximum of 128 characters in length and cannot contain the following special characters: !<>&\'\"
db_password	String	Database password.
db_port	Integer	Database port. The value is an integer ranging from 1 to 65535.
db_user	String	Database user.
inst_name	String	RDS instance name.
ip	String	Database IP address.
mongo_ha_mode	String	Mongo HA mode.

Parameter	Type	Description
safe_mode	Integer	Running mode of an MRS cluster. Values: ● 0: Normal cluster ● 1: Security cluster
ssl_cert_password	String	SSL certificate password. The certificate file name extension is .p12.
ssl_cert_checksum	String	The checksum value of the SSL certificate, which is used for backend verification. This parameter is mandatory for secure connection to the source database.
ssl_cert_key	String	SSL certificate content, which is encrypted using Base64.
ssl_cert_name	String	SSL certificate name.
ssl_link	Boolean	Whether SSL is enabled.
topic	String	Kafka topic name.
cluster_mode	String	For MongoDB 4.0 or later, if the cluster instance cannot obtain the IP address of the sharded node, set source_endpoint to Sharding4.0+ . Default value: Sharding4.0+ Enumerated value: Sharding4.0+
kafka_security_config	Object	This parameter is only for Kafka security authentication. For details, see Table 6-155 .

Table 6-155 Data structure description of field **kafka_security_config**

Parameter	Type	Description
type	String	Security protocol. This parameter is mandatory for security authentication. The corresponding field for Kafka is security.protocol. • PLAINTEXT: No security authentication mode is available. You only need to enter an IP address and a port number. • SASL_PLAINTEXT: The SASL mechanism is used to connect to Kafka, and you need to configure SASL parameters. • SSL: The SSL encryption is used to connect to Kafka, and you need to configure SSL parameters. • SASL_SSL: The SASL and SSL encryption authentication modes are used. You need to configure SSL and SASL parameters. Enumerated values: • PLAINTEXT • SASL_PLAINTEXT • SASL_SSL • SSL
trust_store_key_name	String	Certificate name. This parameter is mandatory when the security protocol is set to SSL or SASL_SSL .
trust_store_key	String	Value of the security certificate after Base64 transcoding. This parameter is mandatory when the security protocol is set to SSL or SASL_SSL .
trust_store_password	String	Certificate password. This parameter is mandatory when a password is set for the certificate.
endpoint_algorithm	String	Host name endpoint identification algorithm, which specifies the endpoint identification algorithm for verifying the server host name using the server certificate. If this parameter is left blank, host name verification is disabled. The corresponding field for Kafka is ssl.endpoint.identification.algorithm .

Parameter	Type	Description
sasl_mechanism	String	SASL mechanism used for client connection. The corresponding field for Kafka is sasl.mechanism . The values are as follows: • GSSAPI • PLAIN • SCRAM-SHA-256 • SCRAM-SHA-512
delegation_to_kens	Boolean	Whether to use token authentication. This parameter is valid only when the security protocol is set to SASL_SSL or SASL_PLAINTEXT and the SASL mechanism is set to SCRAM-SHA-256 or SCRAM-SHA-512 .
enable_key_store	Boolean	Whether to enable two-way SSL authentication.
key_store_key	String	Keystore certificate. This parameter is mandatory when two-way SSL authentication is enabled.
key_store_key_name	String	Keystore certificate name. This parameter is mandatory when two-way SSL authentication is enabled.
key_store_password	String	Keystore certificate password. This parameter is mandatory when a password is set for the certificate. The corresponding field for Kafka is ssl.keystore.password .
set_private_key_password	Boolean	Whether to set the keystore private key password. The default value is false .
key_password	String	Keystore private key password. This parameter is mandatory when two-way SSL authentication is enabled and set_private_key_password is set to true . The corresponding field for Kafka is ssl.key.password .

Table 6-156 Data structure description of field **inst_info**

Parameter	Type	Description
engine_type	String	Engine type of a DRS task. Values: • mysql: migration and synchronization from MySQL to MySQL • mongodb: migration from MongoDB to DDS • cloudDataGuard-mysql: DR from MySQL to MySQL • gaussdbv5: GaussDB synchronization • mysql-to-kafka: synchronization from MySQL to Kafka • taurus-to-kafka: synchronization from TaurusDB to Kafka • gaussdbv5ha-to-kafka: synchronization from GaussDB Centralized to Kafka • postgresql: synchronization from PostgreSQL to PostgreSQL • oracle-to-gaussdbv5: synchronization from Oracle to GaussDB Distributed • oracle-to-gaussdbv5ha: synchronization from Oracle to GaussDB Centralized • gaussdbv5-to-oracle: synchronization from GaussDB Distributed to Oracle • gaussdbv5ha-to-oracle: synchronization from GaussDB Centralized to Oracle • gaussdbv5-to-kafka: synchronization from GaussDB Distributed to Kafka
inst_type	String	DB instance type. Value: high
ip	String	Private IP address of the replication instance.
public_ip	String	EIP of the replication instance.
start_time	String	Scheduled start time of a replication instance task.
status	String	Replication instance status. Values: • active • deleted
volume_size	Integer	Storage space of a replication instance.

Table 6-157 Data structure description of field **speed_limit**

Parameter	Type	Description
begin	String	Start time of flow control.
end	String	End time of flow control.
is_utc	Boolean	Whether the UTC time is used.
speed	String	Flow control

Table 6-158 Data structure description of field **target_root_db**

Parameter	Type	Description
db_name	String	Database name.
db_encoding	String	Encoding format

Table 6-159 Data structure description of field **alarm_notify**

Parameter	Type	Description
subscriptions	Array of objects	SMN information. For details, see Table 6-160 .
topic_name	String	Topic name.
delay_time	Long	Subscription delay.
rto_delay	Long	RTO delay.
rpo_delay	Long	RPO delay.
alarm_to_user	Boolean	Whether to notify users of alarms.

Table 6-160 Data structure description of field **subscriptions**

Parameter	Type	Description
endpoints	Array of strings	SMS or email list.
protocol	String	Notification methods. sms : SMS; email : Email. Enumerated value: • sms • email

Table 6-161 Data structure description of field **period_order**

Parameter	Type	Description
status	String	Order status.
order_id	String	Order ID.
charging_mode	Integer	Billing mode. Values: • 0: indicates the monthly/yearly billing. • 1: indicates the pay-per-use billing.
period_type	Integer	Subscription period type. Values: • 2: indicates that the service is subscribed by month. • 3: indicates that the service is subscribed by year.
period_num	Integer	Number of subscription periods. Values: • If period_type is set to 2 (month), the value ranges from 1 to 9. • If period_type is set to 3 (year), the value ranges from 1 to 3.
is_auto_renew	Integer	Whether auto renewal is enabled. Values: • 0: indicates that auto renewal is disabled. • 1: indicates that auto renewal is enabled.
eff_time	String	Time when the resource takes effect (time when the resource is created). The value is UTC time in yyyy-MM-ddTHH:mm:ssZ (2016-06-28T00:00:00Z) format.
exp_time	String	Time when the resource expires. If the resource is renewed, it indicates the expiration time after the renewal. The value is UTC time in yyyy-MM-ddTHH:mm:ssZ (2016-03-28T00:00:00Z) format.

Table 6-162 Data structure description of field **object_infos**

Parameter	Type	Description
id	String	When type is set to database , this parameter indicates the database name. If type is set to table or view , set the field value by referring to the example.
parent_id	String	When type is set to table or view , this parameter indicates the database name.
type	String	Type. Values: • database • table • schema • view
name	String	Database object name, including the database name, table name, and view name.
alias_name	String	Alias, which is the new mapped name.

Table 6-163 Data structure description of field **data_transformation**

Parameter	Type	Description
total_count	Long	Total number of data filtering criteria.
filter_conditions	Array of objects	Data filtering configuration information. Constraints: A maximum of 10,000 data filtering criteria can be returned. For details, see Table 6-164 .

Table 6-164 Data structure description of field **filter_conditions**

Parameter	Type	Description
transformation_info	Object	Common configuration for data filtering. For details, see Table 6-166 .
config_transformation	Object	Advanced configuration for data filtering. For details, see Table 6-167 .
data_transformation_object_infos	Array of objects	Data filtering object information. For details, see Table 6-165 .

Table 6-165 Data structure description of field **data_transformation_object_infos**

Parameter	Mandatory	Type	Description
id	No	String	Database object, database table name, and processing type. For example, the format is db1-**-tb1-***-conditionFilter-- .
data_transformation_type	No	String	• The processing rule value is contentConditionalFilter. • The configuration rule value is configConditionalFilter. Values: – contentConditionalFilter – configConditionalFilter
schema_name	No	String	Name of the schema for data processing.
table_name	No	String	Name of the table for data processing.

Table 6-166 Data structure description of field **transformation_info**

Parameter	Mandatory	Type	Description
transformation_type	Yes	String	• The processing rule value is contentConditionalFilter. • The configuration rule value is configConditionalFilter. Values: – contentConditionalFilter – configConditionalFilter
value	Yes	String	Filter criteria. The processing rule value is a SQL statement, and the configuration rule value is config . The value contains a maximum of 256 characters.

Table 6-167 Data structure description of field **config_transformation**

Parameter	Mandatory	Type	Description
db_table_name	Yes	String	<i>Database-name.Table-name</i> , for example, lxl_test1.test_1 , where lxl_test1 is the database name and test_1 is the table name.
db_name	Yes	String	Database name. The value contains a maximum of 256 characters.
table_name	Yes	String	Table name. The value contains a maximum of 256 characters.
col_names	Yes	String	Column name. The value contains a maximum of 256 characters.
prim_key_or_index	Yes	String	Primary key or unique index. The value contains a maximum of 256 characters.
indexs	Yes	String	Index that requires optimization. The value contains a maximum of 256 characters.
values	Yes	String	Filtering criteria. The value contains a maximum of 256 characters.

Table 6-168 Data structure description of field **tags**

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

Table 6-169 Data structure description of field **public_ip_list**

Parameter	Type	Description
id	String	ID of a specified EIP.
public_ip	String	EIP.

Parameter	Type	Description
type	String	Type of a task with an EIP bound. • In a primary/standby task, master indicates the primary task, and slave indicates the standby task. • In other cases, the value is fixed to master. Enumerated values: • master • slave

Table 6-170 Data structure description of field **children**

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

Example Request

Request for querying task details:

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-detail
```

```
{
  "jobs" : [ "24834eb6-be30-464e-a299-f7aa730jb101", "140b5236-88ad-43c8-811c-1268453jb101" ],
  "page_req" : {
    "cur_page" : 1,
    "per_page" : 10
  }
}
```

Example Response

Status code: 200

OK

```
{
  "count" : 2,
  "results" : [ {
    "id" : "24834eb6-be30-464e-a299-f7aa730jb101",
    "name" : "DRS-3999-lws",
    "status" : "STARTJOBING",
    "description" : "",
    "create_time" : "1608519469412",
    "task_type" : "FULL_INCR_TRANS",
    "source_endpoint" : {
      "ip" : "172.22.74.56",
      "region" : "eu-west-101",
      "db_type" : "mysql",
      "db_port" : 3306,
      "ssl_link" : false,
      "project_id" : "054ba152d480d55b2f5dc0069e7ddef0",
      "db_user" : "root"
    }
  }
]
```

```
},
"target_endpoint": {
  "ip": "172.21.176.219",
  "region": "eu-west-101",
  "db_type": "mysql",
  "db_port": 3306,
  "ssl_link": false,
  "inst_id": "3ef57dbcc8db478a9e346d26ef2575bfin01",
  "project_id": "054ba152d480d55b2f5dc0069e7ddef0",
  "inst_name": "rds-lws-target",
  "db_user": "root",
  "vpc_id": "0ff8df7b-f0e9-4b16-ac16-1db3dacb69e4",
  "subnet_id": "f857d371-2f03-4622-85f6-2b7d42d0d82c"
},
"inst_info": {
  "ip": "172.16.213.101",
  "inst_type": "high",
  "engine_type": "mysql",
  "volume_size": 100,
  "public_ip": "*****",
  "start_time": "0"
},
"actual_start_time": "1608520069393",
"update_time": "1608520068979",
"job_direction": "up",
"db_use_type": "migration",
"need_restart": false,
"is_target_readonly": true,
"speed_limit": [ ],
"schema_type": "Tungsten",
"object_switch": true,
"replace_definer": true,
"migrate_user": false,
"az_code": "az2xahz",
"vpc_id": "0ff8df7b-f0e9-4b16-ac16-1db3dacb69e4",
"subnet_id": "f857d371-2f03-4622-85f6-2b7d42d0d82c",
"security_group_id": "d90c971b-4b9d-402c-9c59-5c239389b8dd",
"support_ip_v6": false,
"original_job_direction": "up",
"is_open_fast_clean": true,
"object_infos": [{
  "id": "test",
  "type": "database",
  "name": "test",
  "select": "true"
}, {
  "id": "test-*.table01",
  "type": "table",
  "name": "table01",
  "select": "true",
  "parent_id": "test"
}]
}, {
  "id": "140b5236-88ad-43c8-811c-1268453jb101",
  "name": "DRS-0042-linxiaolu",
  "status": "CONFIGURATION",
  "description": "",
  "create_time": "1608366204171",
  "task_type": "FULL_INCR_TRANS",
  "source_endpoint": {
    "ip": "192.168.0.27",
    "region": "eu-west-101",
    "db_type": "mysql",
    "db_port": 3306,
    "ssl_link": false,
    "project_id": "054ba152d480d55b2f5dc0069e7ddef0",
    "db_user": "root"
  },
  "target_endpoint": {
```

```
"ip" : "192.168.0.131",
"region" : "eu-west-101",
"db_type" : "mysql",
"db_port" : 3306,
"ssl_link" : false,
"inst_id" : "e05a3679efe241d8b5dee80b17c1a863in01",
"project_id" : "054ba152d480d55b2f5dc0069e7ddef0",
"inst_name" : "rds-1417-lxl",
"db_user" : "root",
"vpc_id" : "65f0391c-0582-44a6-aa50-248f97ed82e1",
"subnet_id" : "352ad828-3467-4f03-987a-c55a5a9dd417"
},
"inst_info" : {
  "ip" : "192.168.0.229",
  "status" : "ACTIVE",
  "inst_type" : "high",
  "engine_type" : "mysql",
  "volume_size" : 100,
  "public_ip" : "10.154.219.72",
  "start_time" : "0"
},
"actual_start_time" : "1608369232412",
"full_transfer_complete_time" : "1608369510202",
"update_time" : "1608517066434",
"job_direction" : "up",
"db_use_type" : "migration",
"need_restart" : false,
"is_target_readonly" : true,
"speed_limit" : [ ],
"schema_type" : "Tungsten",
"object_switch" : false,
"replace_definer" : true,
"migrate_user" : false,
"tags": [{
  "key1" : "value1",
  "key2" : "value2"
}],
"az_code" : "az2xahz",
"vpc_id" : "65f0391c-0582-44a6-aa50-248f97ed82e1",
"subnet_id" : "352ad828-3467-4f03-987a-c55a5a9dd417",
"security_group_id" : "d90c971b-4b9d-402c-9c59-5c239389b8dd",
"support_ip_v6" : false,
"original_job_direction": "up",
"object_infos": [{
  "id": "test2",
  "type": "database",
  "name": "test2",
  "select": "true"
}, {
  "id": "test2-*-table02",
  "type": "table",
  "name": "table02",
  "select": "true",
  "parent_id": "test2"
}]
},
"data_transformation": {
  "total_count": 2,
  "filter_conditions": [
    {
      "data_transformation_object_infos": [
        {
          "id": "test02-*-table02-*-conditionFilter--",
          "db_name": "test02",
          "table_name": "table02",
          "data_transformation_type": "contentConditionalFilter"
        }
      ]
    }
  ],
  "transformation_info": {
```



```
        "value": "id1<1",
        "transformation_type": "contentConditionalFilter"
    },
    {
        "data_transformation_object_infos": [
            {
                "id": "test02-*-*table01-*-*---configConditionFilter--",
                "db_name": "test02",
                "table_name": "test01",
                "data_transformation_type": "configConditionalFilter"
            }
        ],
        "transformation_info": {
            "value": "config",
            "transformation_type": "configConditionalFilter"
        },
        "config_transformation": {
            "indexes": "id",
            "values": "id <= 6",
            "db_table_name": "test02.table01",
            "db_name": "test02",
            "table_name": "table01",
            "col_names": "id",
            "prim_key_or_index": "id"
        }
    }
]
```

Status Code

Status Code	Description
200	OK

Error Code

For details, see [A.3 Error Code](#).

6.1.21 Querying Task Statuses in Batches

Function

This API is used to query task statuses in batches by task ID.

URI

POST /v3/{project_id}/jobs/batch-status

Table 6-171 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-172 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-173 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of strings	Querying task details in batches
page_req	No	Object	Pagination information. For details, see Table 6-174 .

Table 6-174 Data structure description of field **page_req**

Parameter	Mandatory	Type	Description
cur_page	No	Integer	Current page number, which cannot exceed the maximum number of pages. (Number of pages = Number of transferred job IDs/Number of tasks on each page) • Minimum value: 1. • Default value: 1
per_page	No	Integer	Number of items on each page. If this parameter is set to 0 , all items are obtained. • Minimum value: 0 • Maximum value: 100 • Default value: 5

Response Parameters

Status code: 200

Table 6-175 Response body parameters

Parameter	Type	Description
results	Array of objects	Task status information For details, see Table 6-176 .
count	Integer	Number of returned tasks.

Table 6-176 Data structure description of field **results**

Parameter	Type	Description
id	String	Task ID.

Parameter	Type	Description
status	String	Task status. • CREATING: The task is being created. • CREATE_FAILED: The task fails to be created. • CONFIGURATION: The task is being configured. • STARTJOBING: The task is being started. • WAITING_FOR_START: The task is waiting to be started. • START_JOB_FAILED: The task fails to be started. • PAUSING: The task is paused. • FULL_TRANSFER_STARTED: Full migration or synchronization starts. Initialization is in progress in the DR scenario. • FULL_TRANSFER_FAILED: Full migration or synchronization fails. Initialization fails in the DR scenario. • FULL_TRANSFER_COMPLETE: Full migration or synchronization is complete. Initialization is complete in the DR scenario. • INCRE_TRANSFER_STARTED: Incremental migration or synchronization starts. The DR task is in progress. • INCRE_TRANSFER_FAILED: Incremental migration or synchronization fails. A DR exception occurs. • RELEASE_RESOURCE_STARTED: The task is being stopped. • RELEASE_RESOURCE_FAILED: The task fails to be stopped. • RELEASE_RESOURCE_COMPLETE: The task is stopped. • REBUILD_NODE_STARTED: The task is being recovered. • REBUILD_NODE_FAILED: The task fails to be recovered. • CHANGE_JOB_STARTED: The task is being changed. • CHANGE_JOB_FAILED: The task fails to be changed. • DELETED: The task is deleted. • CHILD_TRANSFER_STARTING: The subtask is being started.

Parameter	Type	Description
		• CHILD_TRANSFER_STARTED: The subtask is being migrated. • CHILD_TRANSFER_COMPLETE: The subtask migration is complete. • CHILD_TRANSFER_FAILED: The subtask fails to be migrated. • RELEASE_CHILD_TRANSFER_STARTED: The subtask is being stopped. • RELEASE_CHILD_TRANSFER_COMPLETE: The subtask is stopped. • NODE_UPGRADE_START: The upgrade starts. • NODE_UPGRADE_COMPLETE: The upgrade is complete. • NODE_UPGRADE_FAILED: The upgrade fails. Enumerated values: • CREATING • CREATE_FAILED • CONFIGURATION • STARTJOBING • WAITING_FOR_START • START_JOB_FAILED • PAUSING • FULL_TRANSFER_STARTED • FULL_TRANSFER_FAILED • FULL_TRANSFER_COMPLETE • INCRE_TRANSFER_STARTED • INCRE_TRANSFER_FAILED • RELEASE_RESOURCE_STARTED • RELEASE_RESOURCE_FAILED • RELEASE_RESOURCE_COMPLETE • REBUILD_NODE_STARTED • REBUILD_NODE_FAILED • CHANGE_JOB_STARTED • CHANGE_JOB_FAILED • DELETED • CHILD_TRANSFER_STARTING • CHILD_TRANSFER_STARTED • CHILD_TRANSFER_COMPLETE • CHILD_TRANSFER_FAILED

Parameter	Type	Description
		• RELEASE_CHILD_TRANSFER_STARTED • RELEASE_CHILD_TRANSFER_COMPLETE • NODE_UPGRADE_START • NODE_UPGRADE_COMPLETE • NODE_UPGRADE_FAILED
error_code	String	Error code.
error_message	String	Error message.

Example Request

Example of querying task statuses in batches:

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-status

{
  "jobs" : [ "9a470239-2308-4bb5-a6bc-1040402fjb21", "dc67695a-ee3e-49b8-a022-a099bd81jb21" ],
  "page_req" : {
    "cur_page" : 1,
    "per_page" : 10
  }
}
```

Example Response

Status code: 200

OK

```
{
  "results" : [ {
    "id" : "9a470239-2308-4bb5-a6bc-1040402fjb21",
    "status" : "INCRE_TRANSFER_STARTED"
  }, {
    "id" : "dc67695a-ee3e-49b8-a022-a099bd81jb21",
    "status" : "INCRE_TRANSFER_FAILED"
  } ],
  "count" : 2
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.22 Configuring Exception Notifications

Function

- This API is used to set alarm information in batches. This parameter cannot be set for stopped tasks.
- You can select an existing SMN topic or manually enter a mobile number or email address.

URI

POST /v3/{project_id}/jobs/batch-set-smn

Table 6-177 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-178 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type. Default value: en-us Enumerated values: • en-us • zh-cn
Content-Type	Yes	String	Content type, which is application/json. The default value is application/json .

Table 6-179 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of objects	Task information. For details, see Table 6-180 .
alarm_notify_info	Yes	Object	Notification method and information. For details, see Table 6-181 .

Table 6-180 Data structure description of field **jobs**

Parameter	Mandatory	Type	Description
job_id	Yes	String	Task ID.
status	Yes	String	Task status.

Parameter	Mandatory	Type	Description
engine_type	Yes	String	Engine type of a DRS task. The value can be: • mysql: migration and synchronization from MySQL to MySQL • mongodb: migration from MongoDB to DDS • cloudDataGuard-mysql: DR from MySQL to MySQL • gaussdbv5: GaussDB synchronization • mysql-to-kafka: synchronization from MySQL to Kafka • taurus-to-kafka: synchronization from TaurusDB to Kafka • gaussdbv5ha-to-kafka: synchronization from GaussDB Centralized to Kafka • postgresql: synchronization from PostgreSQL to PostgreSQL • oracle-to-gaussdbv5: synchronization from Oracle to GaussDB Distributed • oracle-to-gaussdbv5ha: synchronization from Oracle to GaussDB Centralized • gaussdbv5-to-oracle: synchronization from GaussDB Distributed to Oracle • gaussdbv5ha-to-oracle: synchronization from GaussDB Centralized to Oracle • gaussdbv5-to-kafka: synchronization from GaussDB Distributed to Kafka

Table 6-181 Data structure description of field **alarm_notify_info**

Parameter	Mandatory	Type	Description
subscriptions	No	Array of objects	Entered when the mobile number or email address is manually entered. For details, see Table 6-182 .
topic_urn	No	String	Topic resource ID.
delay_time	No	Long	Subscription delay.
rto_delay	No	Long	RTO delay.
rpo_delay	No	Long	RPO delay.
alarm_to_user	No	Boolean	Whether to notify users of abnormal alarms. If this parameter is not specified, the default value is false .

Table 6-182 Data structure description of field **subscriptions**

Parameter	Mandatory	Type	Description
endpoints	No	Array of strings	SMS or email list.
protocol	No	String	Notification methods. sms : SMS; email : Email. Enumerated values: • sms • email

Response Parameters

Status code: 200

Table 6-183 Response body parameters

Parameter	Type	Description
results	Array of objects	Response body for inputting SMN. For details, see Table 6-184 .
count	Integer	Total number of input SMNs.

Table 6-184 Data structure description of field **results**

Parameter	Type	Description
id	String	Task ID.
status	String	Task status.
error_code	String	Error code.
error_msg	String	Error message.

Example Request

- Associating an existing SMN topic with a MySQL task that is being configuring

`https://{endpoint}/v3/0ac6eb2c8000d2ee2fd9c006dededbe6/jobs/batch-set-smn`

```
{
  "jobs" : [ {
    "job_id" : "c7296a3b-0d9f-424c-8d74-816ca62jb2a2",
    "status" : "CONFIGURATION",
    "engine_type" : "mysql"
  } ],
  "alarm_notify_info" : {
    "topic_urn" : "urn:smn:eu-west-7:04f9aca88c00d3202fd4c01ed679daf0:drs-zw",
    "delay_time" : 1200
  }
}
```

- Manually entering the mobile number and email address for an incremental task

`https://{endpoint}/v3/0ac6eb2c8000d2ee2fd9c006dededbe6/jobs/batch-set-smn`

```
{
  "jobs" : [ {
    "job_id" : "2b36da5c-44a7-41af-8889-247b14djb2a2",
    "status" : "INCRE_TRANSFER_STARTED",
    "engine_type" : "oracle-to-gaussdbv5"
  } ],
  "alarm_notify_info" : {
    "subscriptions" : [ {
      "protocol" : "sms",
      "endpoints" : [ "12345678910" ]
    }, {
      "protocol" : "email",
      "endpoints" : [ "123456@abc.com" ]
    } ],
    "delay_time" : 100
  }
}
```

Example Response

Status code: 200

OK

```
{
  "count" : 1,
  "results" : [ {
    "id" : "ed3723ca-d34a-42b0-9829-0baef12jb20b",
    "status" : "success"
  } ]
}
```

```
}]  
}
```

Status Code

Status Code	Description
200	OK

Error Code

For details, see [A.3 Error Code](#).

6.1.23 Querying Available Node Specifications

Function

This API is used to query available node specifications.

URI

GET /v3/{project_id}/node-type

Table 6-185 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details, see A.5 Obtaining a Project ID .

Table 6-186 Query parameters

Parameter	Mandatory	Type	Description
engine_type	Yes	String	Engine type of a DRS task. Values: • mysql: migration and synchronization from MySQL to MySQL • mongodb: migration from MongoDB to DDS • cloudDataGuard-mysql: DR from MySQL to MySQL • gaussdbv5: GaussDB synchronization • mysql-to-kafka: synchronization from MySQL to Kafka • taurus-to-kafka: synchronization from TaurusDB to Kafka • gaussdbv5ha-to-kafka: synchronization from GaussDB Centralized to Kafka • postgresql: synchronization from PostgreSQL to PostgreSQL
db_use_type	Yes	String	Migration scenario. Values: • migration: real-time migration • sync: real-time synchronization • cloudDataGuard: real-time disaster recovery
job_direction	Yes	String	Migration direction. Values: • up: to the cloud • down: out of the cloud • non-dbs: self-built databases
is_use_sellout_info	No	Boolean	Whether to check if resources are sold out. Default value: false

Parameter	Mandatory	Type	Description
is_multi_write	No	Boolean	Whether dual-active disaster recovery is used. Default value: false

Request Parameters

Table 6-187 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	No	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type. Default value: en-us Enumerated values: • en-us • zh-cn

Response Parameters

Status code: 200

Table 6-188 Response body parameters

Parameter	Type	Description
node_types	Array of objects	Node specification list. For details, see Table 6-189 .

Table 6-189 Data structure description of field **node_types**

Parameter	Type	Description
node_type	String	Specifications.
is_sellout	Boolean	Whether specifications are sold out.

Example Request

Querying available node specifications

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/node_type?  
db_use_type=sync&engine_type=mysql&job_direction=up&is_multi_write=false&is_use_sellout_info=true
```

Example Response

Status code: 200

OK

```
{  
  "node_types": [ {  
    "is_sellout": false,  
    "node_type": "micro"  
  }, {  
    "is_sellout": false,  
    "node_type": "small"  
  }, {  
    "is_sellout": false,  
    "node_type": "medium"  
  }, {  
    "is_sellout": false,  
    "node_type": "high"  
  }, {  
    "is_sellout": false,  
    "node_type": "xlarge"  
  } ]  
}
```

Status code: 400

Bad Request

```
{  
  "error_code": "DRS.M00202",  
  "error_msg": "The value of job_direction is invalid."  
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.24 Querying the LTS Configuration

Function

This API is used to query the LTS configuration of a task.

URI

GET /v3/{project_id}/jobs/{job_id}/lts-log-switch

Table 6-190 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region.
job_id	Yes	String	Task ID.

Request Parameters

Table 6-191 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	No	String	The content type. Its value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type.

Response Parameters

Status code: 200

Table 6-192 Response body parameters

Parameter	Type	Description
job	job object	LTS information.

Table 6-193 job

Parameter	Type	Description
log_group_id	String	Log group ID.
log_stream_id	String	Log stream ID.
lts_enabled	Boolean	Whether to enable LTS.

Example Requests

Querying the LTS configuration of a task

```
https://{endpoint}/v3/5237e10fe9aa4ad5b16b6a5245248314/jobs/1a3ce2ab-5f24-4322-8939-b9e0ef4jb2b3/lts-log-switch
```

Example Responses

Status code: 200

OK

```
{
  "job" : {
    "log_group_id" : "dfc5d3ee-ca8d-44c6-81b0-28f6c843048b",
    "log_stream_id" : "f6774c34-73c0-4808-902e-952d83f4804b",
    "lts_enabled" : true
  }
}
```

Status Code

Status Code	Description
200	OK

Error Code

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

6.1.25 Updating the LTS Configuration

Function

This API is used to update the LTS configuration of a task.

URI

```
PUT /v3/{project_id}/jobs/{job_id}/lts-log-switch
```

Table 6-194 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region.
job_id	Yes	String	Task ID.

Request Parameters

Table 6-195 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. Its value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type.

Table 6-196 Request body parameters

Parameter	Mandatory	Type	Description
job	No	job object	LTS information.

Table 6-197 job

Parameter	Mandatory	Type	Description
log_group_id	No	String	Log group ID.
log_stream_id	No	String	Log stream ID.
lts_enabled	No	Boolean	Whether to enable LTS.

Response Parameters

Status code: 200

OK

None

Example Requests

Updating the LTS configuration of a task

```
https://{endpoint}/v3/5237e10fe9aa4ad5b16b6a5245248314/jobs/1a3ce2ab-5f24-4322-8939-b9e0ef4jb2b3/
lts-log-switch

{
  "job" : {
    "log_group_id" : "dfc5d3ee-ca8d-44c6-81b0-28f6c843048b",
    "log_stream_id" : "f6774c34-73c0-4808-902e-952d83f4804b",
    "lts_enabled" : true
  }
}
```

Example Responses

None

Status Code

Status Code	Description
200	OK

Error Code

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

6.1.26 Querying Data-level Table Comparison Tasks

Function

This API is used to query data-level table comparison tasks.

URI

GET /v3/{project_id}/jobs/{job_id}/table/compare

Table 6-198 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details, see A.5 Obtaining a Project ID .
job_id	Yes	String	Task ID.

Table 6-199 Query parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of items displayed per page. Default value: 1000
offset	No	Integer	Offset, which is the position where the query starts. The value must be no less than 0. Default value: 0

Request Parameters

Table 6-200 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type. Default value: en-us Enumerated values: • en-us • zh-cn

Response Parameters

Status code: 200

Table 6-201 Response body parameters

Parameter	Type	Description
compare_jobs	Array of objects	Table comparison task details. For details, see Table 6-202 .
count	Long	Number of tasks.

Table 6-202 Data structure description of field **compare_jobs**

Parameter	Type	Description
id	String	ID of a comparison task.
type	String	Comparison type. • lines: row comparison. • contents: value comparison. • random: sampling comparison. This function is available only for tasks from GaussDB Distributed to GaussDB Distributed, GaussDB Distributed to PostgreSQL, and GaussDB Centralized to PostgreSQL.

Parameter	Type	Description
options	Map<String,String>	Configuration item for a comparison task. The value is a key-value pair. Value comparison supports the following configuration items: • Comparison method. The key is contentCompareType. The value dynamic indicates a dynamic comparison, and the value static indicates a static comparison. • LOB comparison policy. The key is lobCompare. The value ignore indicates LOB data is ignored, and the value length indicates that LOB length is compared. Row comparison supports the following configuration items: • Comparison policy configuration, which is applicable to many-to-one synchronization. The key is comparePolicy. The value normal indicates a one-to-one comparison, and the value manyToOne indicates a many-to-one comparison.
start_time	String	Start time in UTC format, for example, 2020-09-01T18:50:20Z .
end_time	String	End time in UTC format, for example, 2020-09-01T18:50:20Z .
status	String	Status of a comparison task. • RUNNING: The comparison task is in progress. • WAITING_FOR_RUNNING: The comparison task is waiting to be started. • SUCCESSFUL: The comparison task is complete. • FAILED: The comparison task failed. • CANCELLED: The comparison task is canceled. • TIMEOUT_INTERRUPT: The comparison task timed out. • FULL_DOING: Full verification is in progress. • INCRE_DOING: Incremental verification is in progress.

Parameter	Type	Description
export_status	String	Status of the exported comparison result. • INIT: indicates that the comparison result export is in the initial status. • EXPORTING: indicates that the comparison result is being exported. • EXPORT_COMPLETE: indicates that the comparison result is exported. • EXPORT_COMMON_FAILED: indicates that the comparison result fails to be exported.
report_remain_seconds	Long	Remaining validity period of the exported comparison result.
compare_job_tag	Map<String,String>	Tag of a comparison task. This parameter is returned only when a comparison policy is configured.
proportion_value	String	Sampling ratio. Set this parameter when the comparison type is set to sampling comparison.

Example Request

Querying data-level table comparison tasks

https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/{job_id}/table/compare?offset=0&limit=10

Example Response

Status code: 200

OK

```
{
  "count" : 2,
  "compareJobs" : [ {
    "id" : "48c6acb4-1473-48fd-8676-df3705758c27",
    "type" : "lines",
    "options" : { },
    "status" : "SUCCESSFUL",
    "start_time" : "2024-03-14T06:30:14Z",
    "end_time" : "2024-03-14T06:31:14Z",
    "export_status" : "INIT",
    "report_remain_seconds" : -1
  }, {
    "id" : "9e01bd96-e627-4538-a545-5f31d1c88e94",
    "type" : "lines",
    "options" : { },
    "status" : "SUCCESSFUL",
    "start_time" : "2024-03-14T06:30:14Z",
    "end_time" : "2024-03-14T06:31:14Z",
    "export_status" : "INIT",
    "report_remain_seconds" : -1,
    "proportion_value" : "1"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "DRS.M00202",
  "error_msg" : "The value of jobId is invalid."
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.27 Creating a Data-level Table Comparison Task

Function

This API is used to create a data-level table comparison task.

URI

POST /v3/{project_id}/jobs/{job_id}/table/compare

Table 6-203 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details, see A.5 Obtaining a Project ID .
job_id	Yes	String	Task ID.

Request Parameters

Table 6-204 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type. Default value: en-us Enumerated values: • en-us • zh-cn

Table 6-205 Request body parameters

Parameter	Mandatory	Type	Description
type	Yes	String	Comparison type. • lines: row comparison. • contents: value comparison. • random: sampling comparison. This function is available only for tasks from GaussDB Distributed to GaussDB Distributed, GaussDB Distributed to PostgreSQL, and GaussDB Centralized to PostgreSQL.
start_time	No	String	Start time of a comparison task. The value is in timestamp format. If the value is empty, the task is started immediately.

Parameter	Mandatory	Type	Description
compare_mode	No	String	Data-level comparison mode. If this parameter is left empty, object information needs to be transferred in compare_object or compare_object_with_token . quick_comparison indicates a quick comparison. Value: quick_comparison Default value: quick_comparison
compare_object	No	Array of objects	Data-level comparison object. For details, see Table 6-206 .
options	No	Map<String,String>	Configuration item for a comparison task. The value is a key-value pair. Value comparison supports the following configuration items: - Comparison method. The key is contentCompareType. The value dynamic indicates a dynamic comparison, and the value static indicates a static comparison. - LOB comparison policy. The key is lobCompare. The value ignore indicates LOB data is ignored, and the value length indicates that LOB length is compared. Row comparison supports the following configuration items: - Comparison policy configuration, which is applicable to many-to-one synchronization. The key is comparePolicy. The value normal indicates a one-to-one comparison, and the value manyToOne indicates a many-to-one comparison.

Parameter	Mandatory	Type	Description
compare_object_with_token	No	Array of objects	Object for data-level comparison (Cassandra DR only, with token information). For details, see Table 6-207 .
compare_task_num	No	Integer	Number of comparison task threads. This parameter is available only for tasks of cloudDataGuard-cassandra and cloudDataGuard-gausscassandra-to-gausscassandra.
compare_transformation_infos	No	Array of objects	Data filtering information. For details, see Table 6-209 .
proportion_value	No	Double	Sampling ratio. Set this parameter when the comparison type is set to sampling comparison.

Table 6-206 Data structure description of field **compare_object**

Parameter	Mandatory	Type	Description
db_name	Yes	String	Database name.
table_name	No	Array of strings	List of table names in the database.

Table 6-207 Data structure description of field **compare_object_with_token**

Parameter	Mandatory	Type	Description
db_name	Yes	String	Database name.
table_name_with_token	No	Array of objects	List of tables (with tokens) in the database. For details, see Table 6-208 .

Table 6-208 Data structure description of field **table_name_with_token**

Parameter	Mandatory	Type	Description
table_name	Yes	String	Table name.

Parameter	Mandatory	Type	Description
min_token	No	String	Min token of a table.
max_token	No	String	Max token of a table.

Table 6-209 Data structure description of field **compare_transformation_infos**

Parameter	Mandatory	Type	Description
object_info	Yes	Array of objects	Object information. For details, see Table 6-210 .
transformation_info	Yes	Object	Data filtering information. For details, see Table 6-211 .

Table 6-210 Data structure description of field **object_info**

Parameter	Mandatory	Type	Description
id	No	String	- Database name and table name. For example, the format is t_auto_db--users, where t_auto_db is the database name and users is the table name. - Database name, schema name, and table name. For example, the format is t_auto_db--schema1--users, where t_auto_db is the database name, schema1 is the schema name, and users is the table name.

Table 6-211 Data structure description of field **transformation_info**

Parameter	Mandatory	Type	Description
transformation_type	Yes	String	Processing rule. The value is contentConditionalFilter .
value	Yes	String	Filtering condition. The value is an SQL condition statement, for example, id>100 . The value contains a maximum of 256 characters.

Response Parameters

Status code: 202

Table 6-212 Response body parameters

Parameter	Type	Description
id	String	ID of a comparison task.

Example Request

- Creating a data-level sampling comparison task
`https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/{job_id}/table/compare`

```
{
  "compare_object" : [ {
    "db_name" : "t_auto_db",
    "table_name" : [ ]
  } ],
  "options" : { },
  "proportion_value" : 20.1,
  "type" : "random"
}
```
- Creating a data-level dynamic value comparison task
`https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/{job_id}/table/compare`

```
{
  "compare_object" : [ {
    "db_name" : "t_auto_db",
    "table_name" : [ ]
  } ],
  "options" : {
    "contentCompareType" : "dynamic"
  },
  "start_time" : "1809366237000",
  "type" : "contents"
}
```
- Creating a row comparison task with data filtering enabled
`https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/{job_id}/table/compare`

```
{
  "compare_object" : [ ],
  "compare_transformation_infos" : [ {
    "object_info" : [ {
      "id" : "t_auto_db-**-test-**-users"
    } ],
    "transformation_info" : {
      "transformationType" : "contentConditionalFilter",
      "value" : "id>100"
    }
  } ],
  "type" : "lines"
}
```

Example Response

Status code: 202

OK

```
{
  "id" : "6a0deb4a-ce39-449b-8c49-e0eed954c155"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "DRS.M00202",
  "error_msg" : "The value of jobId is invalid."
}
```

Status Code

Status Code	Description
202	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.28 Canceling a Comparison Task

Function

This API is used to cancel a comparison task.

URI

DELETE /v3/{project_id}/jobs/{job_id}/compare/{compare_job_id}

Table 6-213 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details, see A.5 Obtaining a Project ID .
job_id	Yes	String	Task ID.
compare_job_id	Yes	String	ID of a comparison task.

Request Parameters

Table 6-214 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type. Default value: en-us Enumerated values: • en-us • zh-cn

Response Parameters

None

Example Request

Canceling a comparison task

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/f8688cfa-4e05-406f-a2e6-37a773cjb20y/compare/48c6acb4-1473-48fd-8676-df3705758c27
```

Example Response

Status code: 200

OK

```
{}
```

Status code: 400

Bad Request

```
{
  "error_code" : "DRS.M00202",
  "error_msg" : "The value of jobId is invalid."
}
```

Status Code

Status Code	Description
200	OK

Status Code	Description
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.29 Immediately Starting a Data-level Table Comparison Task

Function

This API is used to immediately start a data-level table comparison task.

URI

POST /v3/{project_id}/jobs/{job_id}/table/compare/{compare_job_id}

Table 6-215 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details, see A.5 Obtaining a Project ID .
job_id	Yes	String	Task ID.
compare_job_id	Yes	String	ID of a comparison task.

Request Parameters

Table 6-216 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.

Parameter	Mandatory	Type	Description
X-Language	No	String	Request language type. Default value: en-us Enumerated values: • en-us • zh-cn

Response Parameters

None

Example Request

Immediately starting a data-level table comparison task

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/f8688cfa-4e05-406f-a2e6-37a773cjb20y/
table/compare/48c6acb4-1473-48fd-8676-df3705758c27
```

Example Response

Status code: 200

OK

```
{ }
```

Status code: 400

Bad Request

```
{
  "error_code" : "DRS.M00202",
  "error_msg" : "The value of jobId is invalid."
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.30 Querying the Row Comparison Overview

Function

This API is used to query the row comparison overview.

URI

GET /v3/{project_id}/jobs/{job_id}/compare/{compare_job_id}/line-overview

Table 6-217 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details, see A.5 Obtaining a Project ID .
job_id	Yes	String	Task ID.
compare_job_id	Yes	String	ID of a comparison task.

Table 6-218 Query parameters

Parameter	Mandatory	Type	Description
status	No	Integer	Comparison status. ● 0: The comparison result is inconsistent. ● 2: The comparison result is consistent. ● 3: The destination database table does not exist. ● 4: The comparison failed. ● 5: The comparison task is in progress. ● 6: The comparison task is waiting to be started. ● 7: The comparison task is canceled. ● 8: The source database is empty. ● 9: The destination database is empty. ● 10: Both the source and destination databases are empty. ● 11: The source table does not exist. ● 12: The destination table does not exist. ● 13: Neither the source table nor the destination table exists. ● 14: Failed to connect to the source database. ● 15: Failed to connect to the destination database. ● 16: SQL execution timed out on the source database. ● 17: SQL execution timed out on the destination database. ● 18: A source database SQL execution error occurred. ● 19: A destination database SQL execution error occurred.

Parameter	Mandatory	Type	Description
			• 20: Neither the source database nor the destination database exists. • 21: The source database does not exist. • 22: The destination database does not exist. • 23: The number of rows exceeds 100 million, and the comparison cannot be performed. • 27: The comparison task timed out.
limit	No	Integer	Number of items displayed per page. Default value: 1000
offset	No	Integer	Offset, which is the position where the query starts. The value must be no less than 0. Default value: 0

Request Parameters

Table 6-219 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type. Default value: en-us Enumerated values: • en-us • zh-cn

Response Parameters

Status code: 200

Table 6-220 Response body parameters

Parameter	Type	Description
total_count	Integer	Number of comparison items.
data_compare_overview_infos	Array of objects	Information list. For details, see Table 6-221 .

Table 6-221 Data structure description of field **data_compare_overview_infos**

Parameter	Type	Description
source_db_name	String	Source database name.
target_db_name	String	Destination database name.

Parameter	Type	Description
status	Integer	Comparison status. ● 0: The comparison result is inconsistent. ● 2: The comparison result is consistent. ● 3: The destination database table does not exist. ● 4: The comparison failed. ● 5: The comparison task is in progress. ● 6: The comparison task is waiting to be started. ● 7: The comparison task is canceled. ● 8: The source database is empty. ● 9: The destination database is empty. ● 10: Both the source and destination databases are empty. ● 11: The source table does not exist. ● 12: The destination table does not exist. ● 13: Neither the source table nor the destination table exists. ● 14: Failed to connect to the source database. ● 15: Failed to connect to the destination database. ● 16: SQL execution timed out on the source database. ● 17: SQL execution timed out on the destination database. ● 18: A source database SQL execution error occurred. ● 19: A destination database SQL execution error occurred. ● 20: Neither the source database nor the destination database exists. ● 21: The source database does not exist. ● 22: The destination database does not exist. ● 23: The number of rows exceeds 100 million, and the comparison cannot be performed. ● 27: The comparison task timed out.
compare_num	Integer	Total number of tables.
compare_end_num	Integer	Number of completed tables.

Parameter	Type	Description
data_inconsistent_num	Integer	Number of inconsistent tables.
uncomparable_num	Integer	Number of tables that cannot be compared.

Example Request

Querying the row comparison overview

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/f8688cfa-4e05-406f-a2e6-37a773cjb20y/table/compare/48c6acb4-1473-48fd-8676-df3705758c27/line-overview?offset=0&limit=10&status=2
```

Example Response

Status code: 200

OK

```
{
  "total_count" : 1,
  "data_compare_overview_infos" : [ {
    "status" : 2,
    "source_db_name" : "my_db",
    "target_db_name" : "my_db",
    "compare_num" : 16,
    "compare_end_num" : 16,
    "data_inconsistent_num" : 0,
    "uncomparable_num" : 0
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "DRS.M00202",
  "error_msg" : "The value of jobId is invalid."
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.31 Querying Row Comparison Details

Function

This API is used to query row comparison details.

URI

GET /v3/{project_id}/jobs/{job_id}/compare/{compare_job_id}/line-detail

Table 6-222 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details, see A.5 Obtaining a Project ID .
job_id	Yes	String	Task ID.
compare_job_id	Yes	String	ID of a comparison task.

Table 6-223 Query parameters

Parameter	Mandatory	Type	Description
status	No	Integer	Comparison status. ● 0: The comparison result is inconsistent. ● 2: The comparison result is consistent. ● 3: The destination database table does not exist. ● 4: The comparison failed. ● 5: The comparison task is in progress. ● 6: The comparison task is waiting to be started. ● 7: The comparison task is canceled. ● 8: The source database is empty. ● 9: The destination database is empty. ● 10: Both the source and destination databases are empty. ● 11: The source table does not exist. ● 12: The destination table does not exist. ● 13: Neither the source table nor the destination table exists. ● 14: Failed to connect to the source database. ● 15: Failed to connect to the destination database. ● 16: SQL execution timed out on the source database. ● 17: SQL execution timed out on the destination database. ● 18: A source database SQL execution error occurred. ● 19: A destination database SQL execution error occurred.

Parameter	Mandatory	Type	Description
			• 20: Neither the source database nor the destination database exists. • 21: The source database does not exist. • 22: The destination database does not exist. • 23: The number of rows exceeds 100 million, and the comparison cannot be performed. • 27: The comparison task timed out.
type	No	String	Type. • compare: Items that can be compared. • unCompare: Items that cannot be compared.
db_name	No	String	Source database name.
target_db_name	No	String	Destination database name.
query_table_name	No	String	Keyword for filtering table names.
limit	No	Integer	Number of items displayed per page. Default value: 1000
offset	No	Integer	Offset, which is the position where the query starts. The value must be no less than 0. Default value: 0

Request Parameters

Table 6-224 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type. Default value: en-us Enumerated values: • en-us • zh-cn

Response Parameters

Status code: 200

Table 6-225 Response body parameters

Parameter	Type	Description
total_count	Integer	Comparison quantity.
table_line_compare_result_infos	Array of objects	Comparison information list. For details, see Table 6-226 .

Table 6-226 Data structure description of field TableLineCompareResultInfo

Parameter	Type	Description
source_table_name	String	Table name of the source database.
source_row_num	Long	Number of table rows in the source database.
target_table_name	String	Table name of the destination database.
target_row_num	Long	Number of table rows in the destination database.
difference_row_num	Long	Row differences.

Parameter	Type	Description
status	Integer	Comparison status. ● 0: The comparison result is inconsistent. ● 2: The comparison result is consistent. ● 3: The destination database table does not exist. ● 4: The comparison failed. ● 5: The comparison task is in progress. ● 6: The comparison task is waiting to be started. ● 7: The comparison task is canceled. ● 8: The source database is empty. ● 9: The destination database is empty. ● 10: Both the source and destination databases are empty. ● 11: The source table does not exist. ● 12: The destination table does not exist. ● 13: Neither the source table nor the destination table exists. ● 14: Failed to connect to the source database. ● 15: Failed to connect to the destination database. ● 16: SQL execution timed out on the source database. ● 17: SQL execution timed out on the destination database. ● 18: A source database SQL execution error occurred. ● 19: A destination database SQL execution error occurred. ● 20: Neither the source database nor the destination database exists. ● 21: The source database does not exist. ● 22: The destination database does not exist. ● 23: The number of rows exceeds 100 million, and the comparison cannot be performed. ● 27: The comparison task timed out.
compare_line_config_filter	String	Row filtering condition.

Example Request

Querying row comparison details

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/f8688cfa-4e05-406f-a2e6-37a773cjb20y/
table/compare/48c6acb4-1473-48fd-8676-df3705758c27/line-detail?offset=0&limit=10
```

Example Response

Status code: 200

OK

```
{
  "total_count" : 2,
  "table_line_compare_result_infos" : [ {
    "source_table_name" : "tb2",
    "source_row_num" : 2434882,
    "target_table_name" : "tb2",
    "target_row_num" : 2434882,
    "difference_row_num" : 0,
    "status" : 2
  }, {
    "source_table_name" : "tb1",
    "source_row_num" : 1,
    "target_table_name" : "tb1",
    "target_row_num" : 1,
    "difference_row_num" : 0,
    "status" : 2
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "DRS.M00202",
  "error_msg" : "The value of jobId is invalid."
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.32 Querying the Value Comparison Overview

Function

This API is used to query the value comparison overview.

URI

GET /v3/{project_id}/jobs/{job_id}/compare/{compare_job_id}/content-overview

Table 6-227 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details, see A.5 Obtaining a Project ID .
job_id	Yes	String	Task ID.
compare_job_id	Yes	String	ID of a comparison task.

Table 6-228 Query parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of items displayed per page. Default value: 1000
offset	No	Integer	Offset, which is the position where the query starts. The value must be no less than 0. Default value: 0

Request Parameters

Table 6-229 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.

Parameter	Mandatory	Type	Description
X-Language	No	String	Request language type. Default value: en-us Enumerated values: • en-us • zh-cn

Response Parameters

Status code: 200

Table 6-230 Response body parameters

Parameter	Type	Description
total_count	Integer	Comparison quantity.
content_compare_result_infos	Array of objects	Information list. For details, see Table 6-231 .

Table 6-231 Data structure description of field **content_compare_result_infos**

Parameter	Type	Description
source_db	String	Source database name.
target_db	String	Destination database name.

Parameter	Type	Description
status	Integer	Comparison status. ● 0: The comparison result is inconsistent. ● 2: The comparison result is consistent. ● 3: The destination database table does not exist. ● 4: The comparison failed. ● 5: The comparison task is in progress. ● 6: The comparison task is waiting to be started. ● 7: The comparison task is canceled. ● 8: The source database is empty. ● 9: The destination database is empty. ● 10: Both the source and destination databases are empty. ● 11: The source table does not exist. ● 12: The destination table does not exist. ● 13: Neither the source table nor the destination table exists. ● 14: Failed to connect to the source database. ● 15: Failed to connect to the destination database. ● 16: SQL execution timed out on the source database. ● 17: SQL execution timed out on the destination database. ● 18: A source database SQL execution error occurred. ● 19: A destination database SQL execution error occurred. ● 20: Neither the source database nor the destination database exists. ● 21: The source database does not exist. ● 22: The destination database does not exist. ● 23: The number of rows exceeds 100 million, and the comparison cannot be performed. ● 27: The comparison task timed out.
compare_num	Integer	Total number of tables.
compare_end_num	Integer	Number of completed tables.

Parameter	Type	Description
data_inconsistent_num	Integer	Number of inconsistent tables.
uncomparable_num	Integer	Number of tables that cannot be compared.

Example Request

Querying the value comparison overview

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/f8688cfa-4e05-406f-a2e6-37a773cjb20y/table/compare/48c6acb4-1473-48fd-8676-df3705758c27/content-overview?limit=10&offset=0
```

Example Response

Status code: 200

OK

```
{
  "total_count" : 1,
  "content_compare_result_infos" : [ {
    "status" : 2,
    "source_db" : "tb1",
    "target_db" : "tb1",
    "compare_num" : 16,
    "compare_end_num" : 16,
    "data_inconsistent_num" : 0,
    "uncomparable_num" : 0
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "DRS.M00202",
  "error_msg" : "The value of jobId is invalid."
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.33 Querying Value Comparison Details

Function

This API is used to query value comparison details.

URI

GET /v3/{project_id}/jobs/{job_id}/compare/{compare_job_id}/content-detail

Table 6-232 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details, see A.5 Obtaining a Project ID .
job_id	Yes	String	Task ID.
compare_job_id	Yes	String	ID of a comparison task.

Table 6-233 Query parameters

Parameter	Mandatory	Type	Description
target_db_name	No	String	Destination database name.
db_name	No	String	Source database name.
type	No	String	Type. compare : Items that can be compared. unCompare : Items that cannot be compared.
limit	No	Integer	Number of items displayed per page. Default value: 1000
offset	No	Integer	Offset, which is the position where the query starts. The value must be no less than 0. Default value: 0

Request Parameters

Table 6-234 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type. Default value: en-us Enumerated values: • en-us • zh-cn

Response Parameters

Status code: 200**Table 6-235** Response body parameters

Parameter	Type	Description
total_count	Integer	Comparison quantity.
content_compare_result_infos	Array of objects	Comparison information list. For details, see Table 6-236 .

Table 6-236 Data structure description of field **content_compare_result_info**

Parameter	Type	Description
source_db	String	Source database name.
target_db	String	Destination database name.
source_table_name	String	Table name of the source database.
target_table_name	String	Table name of the destination database.
source_row_number	Long	Number of table rows in the source database.

Parameter	Type	Description
target_row_num	Long	Number of table rows in the destination database.
difference_row_num	Long	Difference between the tables in the source and destination databases.
line_compare_result	Boolean	Row comparison result. • true: consistent. • false: inconsistent.
content_compare_result	Boolean	Value comparison result. • true: consistent. • false: inconsistent.
message	String	Additional information.
compare_line_config_filter	String	Row filtering condition.
status	Integer	Full comparison status. -1: The comparison is in progress. -2: The comparison is complete. -3: The comparison is to be started. -4: The comparison is canceled.
complete_shard_count	Integer	Number of compared shards.
total_shard_count	Integer	Total number of shards.
progress	Double	Comparison progress.

Example Request

Querying value comparison details

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/f8688cfa-4e05-406f-a2e6-37a773cjb20y/table/compare/48c6acb4-1473-48fd-8676-df3705758c27/content-detail?limit=10&offset=0
```

Example Response

Status code: 200

OK

```
{
  "total_count" : 2,
  "content_compare_result_infos" : [ {
    "source_db" : "db2",
    "source_table_name" : "tb2",
    "source_row_num" : 2434882,
    "target_db" : "db2",
```

```
"target_table_name" : "tb2",
"target_row_num" : 2434882,
"difference_row_num" : 0,
"line_compare_result" : true,
"content_compare_result" : true,
"status" : 2,
"complete_shard_count" : 21,
"total_shard_count" : 21,
"progress" : 100
}, {
  "source_db" : "db1",
  "source_table_name" : "tb1",
  "source_row_num" : 1,
  "target_db" : "db1",
  "target_table_name" : "tb1",
  "target_row_num" : 1,
  "difference_row_num" : 0,
  "line_compare_result" : true,
  "content_compare_result" : true,
  "status" : 2,
  "complete_shard_count" : 21,
  "total_shard_count" : 21,
  "progress" : 100
}]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "DRS.M00202",
  "error_msg" : "The value of jobId is invalid."
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.34 Querying Value Comparison Differences

Function

This API is used to query value comparison differences.

URI

GET /v3/{project_id}/jobs/{job_id}/compare/{compare_job_id}/content-difference

Table 6-237 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details, see A.5 Obtaining a Project ID .
job_id	Yes	String	Task ID.
compare_job_id	Yes	String	ID of a comparison task.

Table 6-238 Query parameters

Parameter	Mandatory	Type	Description
table_name	No	String	Table name.
db_name	No	String	Source database name.
limit	No	Integer	Number of records displayed on each page. The maximum value is 1000 . Minimum value: 1 Maximum value: 1000 Default value: 1000
offset	No	Integer	Offset, which is the position where the query starts. The value must be no less than 0. Default value: 0

Request Parameters

Table 6-239 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.

Parameter	Mandatory	Type	Description
X-Language	No	String	Request language type. Default value: en-us Enumerated values: • en-us • zh-cn

Response Parameters

Status code: 200

Table 6-240 Response body parameters

Parameter	Type	Description
count	Long	Total number of records.
target_meta_is_null	Long	Inconsistency details: The objects were found only in the source database.
source_meta_is_null	Long	Inconsistency details: The objects were found only in the destination database.
source_target_meta_not_null	Long	Inconsistency details: The objects were found in the source and destination databases.
contents_infos	Array of objects	List of detailed information. For details, see Table 6-241 .

Table 6-241 Data structure description of field **contents_infos**

Parameter	Type	Description
source_key_value	Array of strings	Key value list of the source database.
target_key_value	Array of strings	Key value list of the destination database.
select_sql	String	Query the SQL statements of the source database.
target_select_sql	String	Query the SQL statements of the destination database.

Example Request

Querying value comparison differences

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/f8688cfa-4e05-406f-a2e6-37a773cjb20y/compare/48c6acb4-1473-48fd-8676-df3705758c27/content-difference?limit=10&offset=0
```

Example Response

Status code: 200

OK

```
{
  "count" : 1,
  "target_meta_is_null" : 0,
  "source_meta_is_null" : 0,
  "source_target_meta_not_null" : 1,
  "contents_infos" : [ {
    "source_key_value" : [ "id=5" ],
    "target_key_value" : [ "id=5" ],
    "select_sql" : "select * from db1.tb1 where id=5",
    "target_select_sql" : "select * from db1.tb1 where id=5"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "DRS.10000010",
  "error_msg" : "Task not found. Check the task ID."
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.35 Creating an Object-level Comparison Task

Function

This API is used to create an object-level comparison task.

URI

POST /v3/{project_id}/jobs/{job_id}/object/compare

Table 6-242 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details, see A.5 Obtaining a Project ID .
job_id	Yes	String	Task ID.

Request Parameters

Table 6-243 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type. Default value: en-us Enumerated values: • en-us • zh-cn

Table 6-244 Request body parameters

Parameter	Mandatory	Type	Description
compare_task_num	No	Integer	Number of comparison task threads. This parameter is available only for tasks of cloudDataGuard-cassandra and cloudDataGuard-gausscassandra-to-gausscassandra.

Response Parameters

None

Example Request

Creating an object-level comparison task

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/a2b4999c-0acf-45eb-843d-5c1cdb2jb201/object/compare
{
  "compare_task_num" : 2
}
```

Example Response

Status code: 202

OK

```
{ }
```

Status code: 400

Bad Request

```
{
  "error_code" : "DRS.10000024",
  "error_msg" : "Another operation is being performed on the migration task or the migration task is abnormal."
}
```

Status Code

Status Code	Description
202	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.36 Querying the Overview of an Object Comparison Task

Function

This API is used to query the overview of an object comparison task.

URI

GET /v3/{project_id}/jobs/{job_id}/object/compare

Table 6-245 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details, see A.5 Obtaining a Project ID .
job_id	Yes	String	Task ID.

Request Parameters

Table 6-246 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type. Default value: en-us Enumerated values: • en-us • zh-cn

Response Parameters

Status code: 200

Table 6-247 Response body parameters

Parameter	Type	Description
create_time	String	Time when a comparison task is created. The value is a UTC time, for example, 2024-04-09T07:00:57Z .
start_time	String	Time when a comparison task starts. The value is a UTC time, for example, 2024-04-09T07:00:57Z .

Parameter	Type	Description
status	String	Status of a comparison task. Value: • RUNNING: The comparison task is in progress. • WAITING_FOR_RUNNING: The comparison task is waiting to be started. • SUCCESSFUL: The comparison task is complete. • FAILED: The comparison task fails. • CANCELLED: The comparison task is canceled. • TIMEOUT_INTERRUPT: The comparison task times out. • FULL_DOING: Full verification is in progress. • INCRE_DOING: Incremental verification is in progress.
export_status	String	Status of generating a comparison result file. The values are as follows: • INIT: indicates that the comparison result export is in the initial status. • EXPORTING: indicates that the comparison result is being exported. • EXPORT_COMPLETE: indicates that the comparison result is exported. • EXPORT_COMMON_FAILED: indicates that the comparison result fails to be exported.
report_remain_seconds	Long	Remaining validity period of a comparison result file, in seconds. If the report is not generated, -1 is returned.
compare_job_id	String	ID of a comparison task.
error_msg	String	Failure cause.
compare_result	Array of objects	Comparison result. For details, see Table 6-248 .

Table 6-248 Data structure description of field **compare_result**

Parameter	Type	Description
type	String	Object type. The values are as follows: • DB: indicates a database. • TABLE: indicates a table. • VIEW: indicates a view. • EVENT: indicates an event. • ROUTINE: indicates a stored procedure and function. • INDEX: indicates an index. • TRIGGER: indicates a trigger. • SYNONYM: indicates a synonym. • FUNCTION: indicates a function. • PROCEDURE: indicates a stored procedure. • TYPE: indicates a user-defined type. • RULE: indicates a rule. • DEFAULT_TYPE: indicates a default value. • PLAN_GUIDE: indicates an execution plan. • CONSTRAINT: indicates a constraint. • FILE_GROUP: indicates a file group. • PARTITION_FUNCTION: indicates a partition function. • PARTITION_SCHEME: indicates a partition scheme. • TABLE_COLLATION: indicates table collation. • EXTENSIONS: indicates a plug-in.
source_count	Long	Number of objects of this type in the source database.
target_count	Long	Number of objects of this type in the destination database.
status	Integer	Comparison result. The value 0 indicates that the result is inconsistent, the value 2 indicates that the result is consistent, and the value 3 indicates the comparison is incomplete.

Example Request

Querying the overview of an object comparison task

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/f8688cfa-4e05-406f-a2e6-37a773cjb20y/object/compare
```

Example Response

Status code: 200

OK

```
{
  "status": "SUCCESSFUL",
  "create_time": "2024-04-02T06:17:56Z",
  "compare_result": [ {
    "type": "DB",
    "status": 2,
    "source_count": 2,
    "target_count": 2
  }, {
    "type": "TABLE",
    "status": 2,
    "source_count": 2,
    "target_count": 2
  }, {
    "type": "INDEX",
    "status": 2,
    "source_count": 2,
    "target_count": 2
  }, {
    "type": "TABLE_COLLATION",
    "status": 2,
    "source_count": 2,
    "target_count": 2
  } ],
  "start_time": "2024-04-02T06:17:49Z",
  "export_status": "INIT",
  "report_remain_seconds": -1,
  "compare_job_id": "bfcdc4d9-f0ae-4108-be42-6974d60cd1d2"
}
```

Status code: 400

Bad Request

```
{
  "error_code": "DRS.10000010",
  "error_msg": "Task not found. Check the task ID."
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.37 Querying Details About an Object Comparison Task

Function

This API is used to query details about an object comparison task.

URI

GET /v3/{project_id}/jobs/{job_id}/object/compare/{compare_type}

Table 6-249 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details, see A.5 Obtaining a Project ID .
job_id	Yes	String	Task ID.

Parameter	Mandatory	Type	Description
compare_type	Yes	String	Object type, which can be: • DB: indicates a database. • TABLE: indicates a table. • VIEW: indicates a view. • EVENT: indicates an event. • ROUTINE: indicates a stored procedure and function. • INDEX: indicates an index. • TRIGGER: indicates a trigger. • SYNONYM: indicates a synonym. • FUNCTION: indicates a function. • PROCEDURE: indicates a stored procedure. • TYPE: indicates a user-defined type. • RULE: indicates a rule. • DEFAULT_TYPE: indicates a default value. • PLAN_GUIDE: indicates an execution plan. • CONSTRAINT: indicates a constraint. • FILE_GROUP: indicates a file group. • PARTITION_FUNCTION: indicates a partition function. • PARTITION_SCHEME: indicates a partition scheme. • TABLE_COLLATION: indicates table collation.

Table 6-250 Query parameters

Parameter	Mandatory	Type	Description
compare_job_id	No	String	ID of a comparison task. If this parameter is not specified, the latest comparison task information is returned by default.
limit	No	Integer	Number of records displayed on each page. The maximum value is 1000 . Minimum value: 1 Maximum value: 1000 Default value: 1000
offset	No	Integer	Offset, which is the position where the query starts. The value must be no less than 0. Default value: 0

Request Parameters

Table 6-251 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type. Default value: en-us Enumerated values: • en-us • zh-cn

Response Parameters

Status code: 200

Table 6-252 Response body parameters

Parameter	Type	Description
count	Integer	Comparison quantity.
compare_detail	Array of objects	Object comparison details. For details, see Table 6-253 .

Table 6-253 Data structure description of field **compare_detail**

Parameter	Type	Description
source_db_name	String	Source database name.
target_db_name	String	Destination database name.
source_db_value	String	Value in the source database.
target_db_value	String	Value in the destination database.
status	Integer	Comparison result. The value 0 indicates that the result is inconsistent, the value 2 indicates that the result is consistent, and the value 3 indicates the comparison is incomplete.
error_message	String	Error message.

Example Request

Querying table comparison details about an object comparison task

https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/f8688cfa-4e05-406f-a2e6-37a773cjb20y/object/compare/TABLE

Example Response

Status code: 200

OK

```
{
  "count" : 1,
  "compare_detail" : [ {
    "source_db_value" : "tb1",
    "target_db_value" : "tb1",
    "source_db_name" : "db1",
    "target_db_name" : "db1",
    "status" : 2
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "DRS.10000010",
  "error_msg" : "Task not found. Check the task ID."
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.38 Exporting the Result File of a Comparison Task

Function

This API is used to export the comparison result file.

URI

POST /v3/{project_id}/jobs/{job_id}/compare/result/file

Table 6-254 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details, see A.5 Obtaining a Project ID .
job_id	Yes	String	Task ID.

Request Parameters

Table 6-255 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type. Default value: en-us Enumerated values: • en-us • zh-cn
Region	Yes	String	Region ID.

Table 6-256 Request body parameters

Parameter	Mandatory	Type	Description
compare_type	Yes	String	Type of a comparison task. • contents: value comparison. • lines: row comparison. • random: sampling comparison. • objects_comparison: object-level comparison.
compare_job_id	No	String	ID of a comparison task. This parameter is mandatory in value comparison, sampling comparison, and row comparison scenarios.
time_zone	No	String	Time zone, for example, GMT +08:00. This parameter is used to generate the current time identifier and is added to a file name.

Response Parameters

None

Example Request

- Exporting the result file of an object comparison task
`https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/f8688cfa-4e05-406f-a2e6-37a773cjb20ycompare/result/file`

```
{
  "compare_type": "objects_comparison"
}
```
- Exporting the result file of a value comparison task
`https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/f8688cfa-4e05-406f-a2e6-37a773cjb20ycompare/result/file`

```
{
  "compare_type": "contents",
  "compare_job_id": "9406224c-8063-436a-8fe2-796d87f054dc"
}
```

Example Response

Status code: 200

OK

```
""
```

Status code: 400

Bad Request

```
{
  "error_code": "DRS.10000010",
  "error_msg": "Task not found. Check the task ID."
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.1.39 Downloading the Result File of a Comparison Task

Function

This API is used to download the comparison result file.

URI

GET `/v3/{project_id}/jobs/{job_id}/compare/result/file`

Table 6-257 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region. For details, see A.5 Obtaining a Project ID .
job_id	Yes	String	Task ID.

Table 6-258 Query parameters

Parameter	Mandatory	Type	Description
compare_type	No	String	Type of a comparison task. • contents: value comparison. • lines: row comparison. • random: sampling comparison. • objects_comparison: object-level comparison.
compare_job_id	No	String	ID of a comparison task. This parameter is mandatory in value comparison, sampling comparison, and row comparison scenarios.

Request Parameters

Table 6-259 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.

Parameter	Mandatory	Type	Description
X-Language	No	String	Request language type. Default value: en-us Enumerated values: • en-us • zh-cn
Region	No	String	Region ID.

Table 6-260 Request body parameters

Parameter	Mandatory	Type	Description
compare_type	Yes	String	Type of a comparison task. • contents: value comparison. • lines: row comparison. • random: sampling comparison. • objects_comparison: object-level comparison. • repair_data: data repair.
compare_job_id	No	String	ID of a comparison task. This parameter is mandatory in value comparison, sampling comparison, and row comparison scenarios.
time_zone	No	String	Time zone, for example, GMT +08:00. This parameter is used to generate the current time identifier and is added to a file name.

Response Parameters

None

Example Request

Downloading the result file of a comparison task

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/f8688cfa-4e05-406f-a2e6-37a773cjb20ycompare/result/file?compare_type=objects_comparison
```

Example Response

Status code: 200

OK

The response body is in the file stream format, and the downloaded file is in the .xlsx format.

Status code: 400

Bad Request

```
{
  "error_code" : "DRS.10000010",
  "error_msg" : "Task not found. Check the task ID."
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.2 Real-Time Migration Management

6.2.1 Updating Migrated User Information in Batches

Function

This API is used to set the users and roles to be migrated in batches.

Constraints

This API is supported only in migration scenarios and PostgreSQL synchronization.

URI

PUT /v3/{project_id}/jobs/batch-update-user

Table 6-261 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-262 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-263 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of objects	Requests for updating migrated users in batches. For details, see Table 6-264 .

Table 6-264 Data structure description of field **jobs**

Parameter	Mandatory	Type	Description
job_id	Yes	String	Task ID.
password	No	String	Global password.

Parameter	Mandatory	Type	Description
list	No	Array of objects	User migration information. This parameter is mandatory when a user is migrated. For details, see Table 6-265 .
user_roles	No	Array of objects	Role migration information. This parameter is mandatory when a user is migrated. For details, see Table 6-266 .
is_set_password	Yes	Boolean	Whether to set a password
is_migrate_user	Yes	Boolean	Whether to migrate users.
is_sync_object_privilege	No	Boolean	Whether to synchronize permissions. If this parameter is not specified, the default value is false . This parameter is used for PostgreSQL synchronization.

Table 6-265 Data structure description of field list

Name	Mandatory	Type	Description
id	Yes	String	User ID.
account	Yes	String	User.
comment	No	String	Description.
is_transfer	Yes	Boolean	Whether migration is supported.
privileges	No	Array of strings	Permissions.
password	No	String	Password.
is_set_password	No	Boolean	Whether to reset the password.
roles	Yes	Array of strings	Role.
selected	Yes	Boolean	Whether to select.

Table 6-266 Data structure description of field **user_roles**

Name	Mandatory	Type	Description
role	Yes	String	Role.
comment	No	String	Description.
is_transfer	Yes	Boolean	Whether migration is supported.
privileges	Yes	String	Permissions.
inherits_roles	No	Array of strings	Inherited roles.
selected	No	Boolean	Whether to select. If this parameter is left blank, migration is not performed by default.

Response Parameters

Status code: 200

Table 6-267 Response body parameters

Parameter	Type	Description
all_counts	Integer	Total number.
results	Array of objects	Migrate user information. For details, see Table 6-268 .

Table 6-268 Data structure description of field **results**

Parameter	Type	Description
job_id	String	Task ID.
is_global_password	String	Whether to use the global password.
message	String	Error code.
user_list	Array of objects	User list data. For details, see Table 6-269 .
roles_list	Array of objects	Role list data. For details, see Table 6-270 .
is_success	Boolean	Whether the request is successful.

Table 6-269 Data structure description of field **user_list**

Parameter	Type	Description
id	String	Account ID.
account	String	Account.
comment	String	Description.
is_transfer	Boolean	Whether to migrate.
privileges	Array of strings	Permissions.
password	String	Password.
roles	Array of strings	Role of the user.
selected	Boolean	Whether to select.
no_privileges	String	User permissions cannot be synchronized.
parent_account	String	Parent user
no_parent_account	String	The parent user with the parent-child relationship cannot be synchronized.

Table 6-270 Data structure description of field **roles_list**

Parameter	Type	Description
role	String	Role.
comment	String	Description.
is_transfer	Boolean	Whether to migrate.
privileges	String	Permissions.
inherits_roles	Array of strings	Inherited role.
selected	Boolean	Whether to select.

Example Request

- Setting users to be migrated for a specified task
`https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-update-user`

```
{
  "jobs": [{
    "is_migrate_user": true,
    "is_set_password": false,
    "job_id": "36c368d7-c03f-46e1-839a-b5c5bddjb105",
```

```
    "list": [{
      "account": "admin.testuser2",
      "comment": "",
      "id": "admin.testuser2",
      "is_set_password": true,
      "is_transfer": true,
      "password": null,
      "privileges": null,
      "roles": ["admin.clusterAdmin"],
      "selected": true
    },
    {
      "password": "",
      "user_roles": [{
        "comment": "",
        "inherits_roles": [
          "admin.roletest1",
          "admin.roletest3",
          "fastunit.roletest1"
        ],
        "is_transfer": true,
        "privileges": "[{u'resource': {u'cluster': True}, u'actions': [u'addShard']}, {u'resource': {u'db': u'fastunit', u'collection': u'coll'}, u'actions': [u'find', u'insert', u'remove', u'update']}, {u'resource': {u'db': u'mgo', u'collection': u'mycollection3'}, u'actions': [u'insert', u'remove', u'update']}, {u'resource': {u'db': u'', u'collection': u''}, u'actions': [u'find']}, {u'resource': {u'db': u'admin', u'collection': u''}, u'actions': [u'find']}]",
        "role": "admin.roletest4",
        "selected": true
      }
    ]
  }
}
```

- Setting users that do not need to be migrated for a specified task
[https://\[endpoint\]/v3/0549a6a31000d4e82fd1c00c3d6f2d76/jobs/batch-update-user](https://[endpoint]/v3/0549a6a31000d4e82fd1c00c3d6f2d76/jobs/batch-update-user)

```
{
  "jobs": [ {
    "is_migrate_user": false,
    "is_set_password": false,
    "job_id": "a281f62f-4631-45d6-a2d3-679a9f4jb105"
  } ]
}
```

Example Response

Status code: 200

OK

```
{
  "all_counts": 1,
  "results": [ {
    "job_id": "71604be1-f441-42f1-a09f-c5a52f0djb15",
    "is_success": true
  } ]
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.2.2 Obtaining Migration Users of the Source Database

Function

This API is used to query the user information of the source database.

Constraints

This parameter is available only in the migration scenario and PostgreSQL synchronization.

NOTE

This API can be called only after the task is created and the connections to the source and destination databases are successful.

URI

GET /v3/{project_id}/jobs/{job_id}/get-src-user

Table 6-271 Path parameters

Parameter	Mandatory	Type	Description
job_id	Yes	String	Task ID.
project_id	Yes	String	Project ID of a tenant in a region For details about how to obtain the project ID, see A.5 Obtaining a Project ID .

Request Parameters

Table 6-272 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.

Parameter	Mandatory	Type	Description
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Response Parameters

Status code: 200

Table 6-273 Response body parameters

Parameter	Type	Description
job_id	String	Task ID.
is_global_pass word	String	Whether to use the global password.
message	String	Error code.
user_list	Array of objects	User list data. For details, see Table 6-274 .
roles_list	Array of objects	Role list data. For details, see Table 6-275 .
is_success	Boolean	Whether the request is successful.

Table 6-274 Data structure description of field **user_list**

Parameter	Type	Description
id	String	Account ID.
account	String	Account.
comment	String	Description.
is_transfer	Boolean	Whether migration is supported.
privileges	String	Permissions.
password	String	Password.
roles	Array of strings	Role of the user.
selected	Boolean	Whether to select.

Parameter	Type	Description
no_privileges	String	User permissions cannot be synchronized.
parent_account	String	Parent user
no_parent_account	String	The parent user with the parent-child relationship cannot be synchronized.

Table 6-275 Data structure description of field **roles_list**

Parameter	Type	Description
role	String	Role.
comment	String	Description.
is_transfer	Boolean	Whether migration is supported.
privileges	String	Permissions.
inherits_roles	Array of strings	Inherited role.
selected	Boolean	Whether to select.

Example Request

```
https://{endpoint}/v3/0549a6a31000d4e82fd1c00c3d6f2d76/jobs/7f3aaf02-b994-4450-b3fb-6314aa9jb105/  
get-src-user
```

Example Response

Status code: 200

OK

```
{  
  "message": "SUCCESS",  
  "user_list": [ {  
    "id": "admin.testuser2",  
    "account": "admin.testuser2",  
    "comment": "",  
    "privileges": null,  
    "password": null,  
    "roles": [ "admin.clusterAdmin" ],  
    "selected": null,  
    "is_transfer": true  
  }, {  
    "id": "admin.test_inc_admin_mgo",  
    "account": "admin.test_inc_admin_mgo",  
    "comment": "",  
    "privileges": null,  
    "password": null,  
    "roles": [ "mgo.read", "admin.readAnyDatabase", "local.read" ],  
    "selected": null,  
    "is_transfer": true  
  }  
]
```

```
{
  "id": "fastunit.test_full_fastunit_noread",
  "account": "fastunit.test_full_fastunit_noread",
  "comment": "",
  "privileges": null,
  "password": null,
  "roles": [ "admin.readAnyDatabase" ],
  "selected": null,
  "is_transfer": true
}, {
  "id": "admin.test_full",
  "account": "admin.test_full",
  "comment": "",
  "privileges": null,
  "password": null,
  "roles": [ "fastunit.read", "admin.readAnyDatabase" ],
  "selected": null,
  "is_transfer": true
} ],
"roles_list": [ {
  "role": "admin.roletest4",
  "comment": "",
  "privileges": "GRANT SELECT, INSERT, UPDATE, DELETE, CREATE, DROP, RELOAD, PROCESS,
REFERENCES, INDEX, ALTER, SHOW DATABASES, CREATE TEMPORARY TABLES, LOCK TABLES, EXECUTE,
REPLICATION SLAVE, REPLICATION CLIENT, CREATE VIEW, SHOW VIEW, CREATE ROUTINE, ALTER
ROUTINE, CREATE USER, EVENT, TRIGGER ON *.* GRANT XA_RECOVER_ADMIN ON *.*",
  "selected": null,
  "is_transfer": true,
  "inherits_roles": [ "admin.roletest1", "admin.roletest3", "fastunit.roletest1" ]
} ]
}
```

Status Code

Status Code	Description
200	OK

Error Code

For details, see [A.3 Error Code](#).

6.3 Real-Time Synchronization Management

6.3.1 Processing Data in Batches

Function

This API is used to add rules for data processing.

Constraints

- You can call the API for starting a task only after the task is created and database objects are selected. For details, see [4.1 Task Creation Process](#).
- Each table has only one verification rule.

- The Oracle source database supports a maximum of 20,000 tables at a time, and the MySQL source database supports a maximum of 10,000 tables at a time.
- Standard SQL statements can be used to filter records. The filter criteria cannot contain packages, functions, variables, or constants specific to a DB engine.

URI

POST /v3/{project_id}/jobs/batch-transformation

Table 6-276 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-277 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-278 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of objects	Requests for adding data processing rules in batches. For details, see Table 6-279 .

Table 6-279 Data structure description of field **jobs**

Parameter	Mandatory	Type	Description
job_id	No	String	Task ID.
object_info	No	Array of objects	Object information. This parameter is mandatory when a processing rule is generated. For details, see Table 6-280 .
transformation_info	Yes	Object	Processing information. For details, see Table 6-281 .
config_transformation	No	Object	- Configuration information. If there are multiple associated tables, generate multiple configuration rules. The data that meets the configuration conditions is temporarily stored in the cache and used in the data filtering scenario. - The database name and table name can contain digits, letters, and underscores (_). - Ensure that the column names, primary keys, and indexes are the same as those in the source database. For details, see Table 6-282 .

Table 6-280 Data structure description of field **object_info**

Parameter	Mandatory	Type	Description
id	No	String	Database name and database table name. For example, the format is lxl_test1-*-test_1 , where lxl_test1 is the database name and test_1 is the table name.
select	No	String	Whether to select advanced configuration. The value is true .

Table 6-281 Data structure description of field **transformation_info**

Parameter	Mandatory	Type	Description
transformation_type	Yes	String	- The processing rule value is contentConditionalFilter. - The configuration rule value is configConditionalFilter. Values: contentConditionalFilter configConditionalFilter
value	Yes	String	Filter criteria. The processing rule value is a SQL statement, and the configuration rule value is config . The value contains a maximum of 256 characters.

Table 6-282 Data structure description of field **config_transformation**

Parameter	Mandatory	Type	Description
db_table_name	Yes	String	<i>Database-name.Table-name</i> , for example, lxl_test1.test_1 , where lxl_test1 is the database name and test_1 is the table name.
db_name	Yes	String	Database name. The value contains a maximum of 256 characters.
table_name	Yes	String	Table name The value contains a maximum of 256 characters.
col_names	Yes	String	Column name The value contains a maximum of 256 characters.
prim_key_or_index	Yes	String	Primary key or unique index The value contains a maximum of 256 characters.
indexs	Yes	String	Index that requires optimization. The value contains a maximum of 256 characters.

Parameter	Mandatory	Type	Description
values	Yes	String	Filtering criteria. The value contains a maximum of 256 characters.

Response Parameters

Status code: 200

Table 6-283 Response body parameters

Parameter	Type	Description
results	Array of objects	Batch data processing response list. For details, see Table 6-284 .
count	integer	Total number.

Table 6-284 Data structure description of field **results**

Parameter	Type	Description
id	String	Task ID.
status	String	Status Values: • success • failed
error_code	String	Error code.
error_msg	String	Error message.

Example Request

- Generating configuration rules for MySQL synchronization task data
`https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-transformation`

```
{
  "jobs": [ {
    "job_id": "e894593d-5e0a-4652-af7e-1b0c239jb201",
    "object_info": [ ],
    "transformation_info": {
      "transformation_type": "configConditionalFilter",
      "value": "config"
    },
    "config_transformation": {
      "col_names": "id,name",
      "db_name": "lxl_test1",
      "db_table_name": "lxl_test1.test_1",
      "indexes": "name",
      "prim_key_or_index": "id",
      "table_name": "test_1",
    }
  }
]
```

```
    "values" : "name like '%a%'"  
  }  
} ]  
}
```

- Generating processing rules for MySQL synchronization task data, in which the table name is **lxl_test1.test_1**, and the filtering condition is **id>5**.

<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-transformation>

```
{  
  "jobs" : [ {  
    "job_id" : "e894593d-5e0a-4652-af7e-1b0c239jb201",  
    "object_info" : [ {  
      "id" : "lxl_test1-*-*test_1",  
      "select" : "true"  
    } ],  
    "transformation_info" : {  
      "transformation_type" : "contentConditionalFilter",  
      "value" : "id>5"  
    }  
  }  
} ]  
}
```

Example Response

Status code: 200

OK

```
{  
  "count" : 1,  
  "results" : [ {  
    "id" : "e894593d-5e0a-4652-af7e-1b0c239jb201",  
    "status" : "success"  
  } ]  
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.3.2 Configuring Synchronization Policies in Batches

Function

- This API is used to configure synchronization policies in batches, including conflict policies, DROP Database filtering, and object synchronization scope.
- This API is used to configure Kafka synchronization policies.

Constraints

- This API can be called only after a task is created, the task status is **CONFIGURATION**, the test of connections to the source and destination databases is successful, and the API for modifying the task is successfully called.
- Kafka synchronization policies can be configured for the following data flow scenarios: synchronization from PostgreSQL to Kafka, from Oracle to Kafka, from GaussDB to Kafka, from TaurusDB to Kafka, and from MySQL to Kafka.
- TaurusDB-to-Kafka synchronization and MySQL-to-Kafka synchronization allow you to modify the Kafka policy configuration when the task is in the **INCRE_TRANSFER_STARTED** state. After the configuration is modified, you can edit the synchronization objects only when the task status changes to **INCRE_TRANSFER_STARTED**.

URI

POST /v3/{project_id}/jobs/batch-sync-policy

Table 6-285 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-286 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-287 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of objects	List of requests for setting synchronization policies in batches. For details, see Table 6-288 .

Table 6-288 Data structure description of field **jobs**

Parameter	Mandatory	Type	Description
job_id	Yes	String	Task ID.
conflict_policy	No	String	Conflict policy. Values: ● ignore: Ignore the conflict. ● overwrite: Overwrite the existing data with the conflicting data. ● stop: Report an error.
filter_ddl_policy	No	String	DDL filtering policy. Value: drop_database
ddl_trans	No	Boolean	Whether to synchronize DDL during incremental synchronization.
index_trans	No	Boolean	Whether to synchronize indexes during incremental synchronization.

Parameter	Mandatory	Type	Description
topic_policy	No	String	Topic synchronization policy. This parameter is mandatory when destination database is Kafka. Values for synchronization from GaussDB Distributed to Kafka: • 0: A specified topic • 1: Automatically generated using the <i>database_name-schema_name-table_name</i> format • 2: Automatically generated based on the database name • 3: Automatically generated using the <i>database_name-schema_name</i> format • 4: Automatically generated using the <i>database_name-DN_sequence_number</i> format Values for synchronization from GaussDB Centralized to Kafka and from PostgreSQL to Kafka: • 0: A specified topic • 1: Automatically generated using the <i>database_name-schema_name-table_name</i> format • 2: Automatically generated based on the database name • 3: Automatically generated using the <i>database_name-schema_name</i> format Values for synchronization from Oracle to Kafka: • 0: A specified topic • 1: Automatically generated using the <i>schema_name-table_name</i> format • 3: Automatically generated based on the schema name

Parameter	Mandatory	Type	Description
			Values for synchronization from MySQL to Kafka: • 0: A specified topic • 1: Auto-generated topics Values for synchronization from TaurusDB to Kafka: • 0: A specified topic • 1: Auto-generated topics
topic	No	String	Topic name. This parameter is mandatory when topic_policy is set to 0 . Ensure that the topic exists.

Parameter	Mandatory	Type	Description
partition_policy	No	String	The policy for synchronizing topics to the Kafka partitions. This parameter is mandatory when the destination database is Kafka. • 0: Partitions are differentiated by the hash values of <i>database_name.schema_name.table_name</i>. • 1: Topics are synchronized to partition 0. • 2: Partitions are identified by the hash values of the primary key. • 3: Partitions are differentiated by the hash values of <i>database_name.schema_name</i>. • 4: Partitions are differentiated by the hash values of <i>database_name.DN_sequence_number</i>. (This value is only available for synchronization from GaussDB Distributed to Kafka.) • 5: Partitions are differentiated by the hash values of non-primary-key columns. When topic_policy is set to 0, the value can be 0, 1, 2, 3, 4, or 5. When topic_policy is set to 1, the value can be 1, 2, or 5. When topic_policy is set to 2, the value can be 0, 1, 3, or 4. When topic_policy is set to 3, the value can be 0 or 1. When topic_policy is set to 4, the value can be 0, 1, or 3.

Parameter	Mandatory	Type	Description
kafka_data_format	No	String	Data format delivered to Kafka. Available options: • json • avro • json_c If this parameter is left blank, the default value is json. NOTE • The value can be json and json_c for synchronization from MySQL to Kafka and TaurusDB to Kafka. • The value can be json and avro for other synchronization scenarios.

Parameter	Mandatory	Type	Description
topic_name_format	No	String	The topic name format. This parameter is required if topic_policy is set to 1, 2, or 3. Values for synchronization from PostgreSQL to Kafka and synchronization from GaussDB Centralized to Kafka: • If topic_policy is set to 1, the topic name supports the database and schema names as variables. Other characters are considered as constants. \$database\$ indicates the database name, and \$schema\$ indicates the schema name. The default value is <i>\$database\$-\$schema\$</i>. • If topic_policy is set to 2, the topic name supports the database name as a variable. Other characters are regarded as constants. If this parameter is left blank, the default value is \$database\$. • If topic_policy is set to 3, the topic name supports the names of database, schema, and table as variables. Other characters are considered as constants. \$database\$ indicates the database name, \$schema\$ indicates the schema name, and \$tablename\$ indicates the table name. The default value is <i>\$database\$-\$schema\$-\$tablename\$</i>. Values for synchronization from Oracle to Kafka: • If topic_policy is set to 1, the topic name supports the schema and table names as variables. Other characters are considered

Parameter	Mandatory	Type	Description
			as constants. Replace <code>\$schema\$</code> with the schema name and <code>\$tablename\$</code> with the table name. If this parameter is left blank, the default value is <code>\$schema\$-\$tablename\$</code>. • If topic_policy is set to 3, the topic name supports the schema name as variables. Other characters are considered as constants. Replace <code>\$schema\$</code> with the schema name. If this parameter is left blank, the default value is <code>\$schema\$</code>. Values for synchronization from MySQL to Kafka and TaurusDB to Kafka: • If topic_policy is set to 1, the topic name supports the database and table names as variables. Other characters are considered as constants. Replace <code>\$database\$</code> with the database name and <code>\$tablename\$</code> with the table name. If this parameter is left blank, the default value is <code>\$database\$-\$tablename\$</code>.
partitions_num	No	String	Number of partitions. The value ranges from 1 to 2147483647. This parameter is mandatory if topic_policy is set to 1 , 2 , or 3 . If this parameter is left blank, the default value is 1 .
replication_factor	No	String	Number of replicas. The value ranges from 1 to 32767. This parameter is mandatory if topic_policy is set to 1 , 2 , or 3 . If this parameter is left blank, the default value is 1 .

Parameter	Mandatory	Type	Description
is_fill_materialized_view	No	Boolean	Whether to fill the materialized view in the PostgreSQL full migration/synchronization phase. If this parameter is not specified, the default value is false .
export_snapshot	No	Boolean	Whether to export data in snapshot mode in the PostgreSQL full migration/synchronization phase. If this parameter is not specified, the default value is false .
slot_name	No	String	Replication slot name. This parameter is mandatory for tasks from GaussDB Primary/Standby to Kafka. This parameter is optional for an incremental synchronization task with PostgreSQL serving as the source database.

Parameter	Mandatory	Type	Description
file_and_position	No	String	- When MySQL serves as the source database, run show master status to obtain the start point of the source database and set File and Position as prompted. For example, mysql-bin.000277:805, in which the file name can contain only 1 to 60 characters and cannot contain the following special character <>&:'"/\, the file number can contain only 3 to 20 digits, the binlog event position can contain only 1 to 20 digits, and the total length cannot exceed 100 characters. The value is in the format of File_name.file_number:Event_position. - When MongoDB serves as the source database, the source database logs are obtained from within the time range of the oplog, starting with the current start position. To check whether the start position is within the oplog time range, run db.getReplicationInfo() for a non-cluster instance, and for a cluster instance, run db.watch([], {startAtOperationTime: Timestamp(xx, xx)}), where xx is the start position you specified. The value is in the format of timestamp:incr. The values of timestamp and incr are integers ranging from 1 to 2,147,483,647.

Parameter	Mandatory	Type	Description
gtid_set	No	String	- This parameter is mandatory for tasks whose source database is MySQL. Run show master status to obtain the start point of the source database and set Executed_Gtid_Set as prompted. (If the source database is MySQL 5.5, synchronization tasks are not supported.) - Enter a maximum of 2048 characters. Chinese characters and the following special characters are not allowed: < > & " ' / \\
ddl_topic	No	String	Topic for storing DDLs. This parameter is mandatory when Kafka is the destination database and ddl_trans is set to true . Value: name of an existing topic in the destination database.

Response Parameters

Status code: 200

Table 6-289 Response body parameters

Parameter	Type	Description
count	Integer	Total number.
results	Array of objects	List of returned synchronization policies that are configured in batches. For details, see Table 6-290 .

Table 6-290 Data structure description of field **results**

Parameter	Type	Description
id	String	Task ID.

Parameter	Type	Description
status	String	Status Values: ● success: The task is successful. ● failed: The task fails.
error_code	String	Error code.
error_msg	String	Error message.

Example Request

- Configuring synchronization task policies in batches, in which **conflict_policy** is set to **ignore**, **ddl_trans** is set to **true**, and **filter_ddl_policy** is set to **drop_database**

<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-sync-policy>

```
{
  "jobs": [{
    "conflict_policy": "ignore",
    "ddl_trans": true,
    "filter_ddl_policy": "drop_database",
    "index_trans": true,
    "job_id": "19557d51-1ee6-4507-97a6-8f69164jb201"
  }]
}
```

- Configuring MySQL incremental synchronization task policies in batches:

<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-sync-policy>

```
{
  "jobs": [
    {
      "conflict_policy": "ignore",
      "ddl_trans": true,
      "filter_ddl_policy": "drop_database",
      "index_trans": true,
      "job_id": "19557d51-1ee6-4507-97a6-8f69164jb201",
      "file_and_position": "mysql-bin.000019:197",
      "gtid_set": "e4979f26-4bc3-11ee-b279-fa163ef21d64:1-23"
    }
  ]
}
```

Example Response

Status code: 200

OK

```
{
  "results": [ {
    "id": "19557d51-1ee6-4507-97a6-8f69164jb201",
    "status": "success"
  } ],
  "count": 1
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.3.3 Advanced Settings

Function

This API is used to change the values of tuning parameters.

URI

PUT /v3/{project_id}/job/{job_id}/tuning-params/modify-params

Table 6-291 Path 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 A.5 Obtaining a Project ID .
job_id	Yes	String	Task ID of a tenant in a region. If the task is a primary/standby task, the parent task ID is used. For details about how to obtain the task ID, see A.7 Obtaining a Task ID .

Request Parameters

Table 6-292 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The value is application/json .

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type. Default value: en-us Enumerated values: • en-us • zh-cn

Table 6-293 Request body parameters

Parameter	Mandatory	Type	Description
full_sync	No	Map<String,String>	Names and values of full migration parameters.
incre_capture	No	Map<String,String>	Names and values of incremental capture parameters.
incre_apply	No	Map<String,String>	Names and values of incremental replay parameters.
incre_relay	No	Map<String,String>	Names and values of incremental log extraction parameters. slotAdvanceInterval : the interval for advancing the logical replication slot of the source database.
recovery	No	Boolean	Initialization parameter. The value must be set to true for the first invoking. In other cases, this parameter is not specified.

Response Parameters

Status code: 200

Table 6-294 Response body parameters

Parameter	Type	Description
full_sync	Array of objects	Full migration tuning parameters. For details, see Table 6-295 .
incre_capture	Array of objects	Incremental capture tuning parameters. For details, see Table 6-295 .
incre_apply	Array of objects	Incremental replay tuning parameters. For details, see Table 6-295 .
incre_relay	Array of objects	Incremental log extraction tuning parameters. For details, see Table 6-295 .
modify_result	String	Whether the parameter modification is successful.

Table 6-295 Data structure description of fields **full_sync**, **incre_capture**, **incre_apply**, and **incre_relay**

Parameter	Type	Description
param_name	String	Parameter name.
param_value	String	Parameter value.
availability	String	Available or not.
range	String	Parameter value range.

Example Request

- Setting the interval for advancing the logical replication slot of the specified source database for the task from GaussDB Centralized to Kafka

```
https://{endpoint}/v3/054c06d8aa00d39e2f6cc00176952b8b/job/  
1e3f710f-4df3-4fc9-8a29-0ec72c5jb2b3/tuning-params/modify-params
```

```
{  
  "incre_relay" : {  
    "slotAdvanceInterval" : "5"  
  }  
}
```

- Example of initializing advanced parameters

```
https://{endpoint}/v3/054c06d8aa00d39e2f6cc00176952b8b/job/  
1e3f710f-4df3-4fc9-8a29-0ec72c5jb2b3/tuning-params/modify-params
```

```
{  
  "recovery" : true  
}
```

Example Response

Status code: 200

OK

```
{
  "full_sync" : [ ],
  "incre_capture" : [ ],
  "incre_apply" : [ ],
  "incre_relay" : [ {
    "param_name" : "slotAdvanceInterval",
    "param_value" : "5"
  } ],
  "modify_result" : "success"
}
```

Status Code

Status Code	Description
200	OK

Error Code

For details, see [A.3 Error Code](#).

6.3.4 Querying Advanced Settings

Function

This API is used to query advanced settings.

URI

GET /v3/{project_id}/job/{job_id}/tuning-params/query-params

Table 6-296 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region.
job_id	Yes	String	Task ID. If the task is a primary/standby task, the parent task ID is used.

Request Parameters

Table 6-297 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	No	String	The content type. Its value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type.

Response Parameters

Status code: 200**Table 6-298** Response body parameters

Parameter	Type	Description
full_sync	Array of TuningParameter objects	Full migration tuning parameters.
incr_capture	Array of TuningParameter objects	Incremental capture tuning parameters.
incr_apply	Array of TuningParameter objects	Incremental replay tuning parameters.
incr_relay	Array of TuningParameter objects	Incremental log extraction tuning parameters.
modify_result	String	Whether a parameter is successfully modified. This field is not returned when you query the parameter.

Table 6-299 TuningParameter

Parameter	Type	Description
param_name	String	Parameter name.
param_value	String	Parameter value.
availability	String	Available or not.

Parameter	Type	Description
range	String	Value range.

Example Requests

Querying advanced settings

```
https://{endpoint}/v3/5237e10fe9aa4ad5b16b6a5245248314/job/da57dc88-1f98-4671-986b-1044e7cjb2b3/  
tuning-params/query-params
```

Example Responses

Status code: 200

OK

```
{  
  "incre_capture" : [ {  
    "param_name" : "hisKmsInfo",  
    "param_value" : " ",  
    "availability" : "true"  
  } ],  
  "incre_relay" : [ {  
    "param_name" : "fetchLogByTable",  
    "param_value" : "false",  
    "availability" : "true",  
    "range" : "true,false"  
  }, {  
    "param_name" : "excludeUsers",  
    "param_value" : " ",  
    "availability" : "true"  
  }, {  
    "param_name" : "slotAdvanceInterval",  
    "param_value" : "1",  
    "availability" : "true",  
    "range" : "[1,2147483647]"  
  } ]  
}
```

Status Code

Status Code	Description
200	OK

Error Code

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

6.4 Real-Time Disaster Recovery Management

6.4.1 Performing Primary/Standby Switchovers in Batches

Function

This API is used to perform primary/standby switchovers in batches.

Constraints

This API only applies to tasks in the **Disaster recovery in progress** or **Disaster recovery failed** status. A switchover can be performed when the DR database can be properly connected. Dual-active DR does not support the switchover.

URI

POST /v3/{project_id}/jobs/batch-switchover

Table 6-300 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-301 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-302 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of strings	IDs of batch primary/standby switchover tasks.

Response Parameters

Status code: 202

Table 6-303 Response body parameters

Parameter	Type	Description
results	Array of objects	Returned of batch primary/standby switchover tasks. For details, see Table 6-304 .
count	Integer	Total number.

Table 6-304 Data structure description of field **results**

Parameter	Type	Description
job_id	String	Task ID.
updated_at	String	Update time, in the format yyyy-MM-dd'T'HH:mm:ss'Z'.
source_db	Object	Source database. For details, see Table 6-305 .
target_db	Object	Destination database. For details, see Table 6-305 .
job_direction	String	Task direction. Values: • up: The current cloud is the standby cloud in the DR and to-the-cloud scenarios. • down: The current cloud is the active cloud in the DR and out-of-cloud scenarios. • non-dbs: self-built databases.
is_target_read_only	Boolean	Whether the destination database is read-only.
error_msg	String	Error message
error_code	String	Error code

Table 6-305 Data structure description of fields **source_db** and **target_db**

Parameter	Type	Description
id	String	Database ID.
obj_id	String	Object ID
instance_name	String	Name of the RDS DB instance.
db_type	String	Database type. Values: • mysql • mongodb
db_user	String	Database user.
db_password	String	Database password.
manage_ip	String	Management IP address.
traffic_ip	String	Traffic IP address.
db_port	Integer	Database port.
region	String	Region where the RDS DB instance is located.
created_at	String	Creation date, in the format yyyy-MM-dd'T'HH:mm:ss'Z'.
updated_at	String	Modification date, in the format yyyy-MM-dd'T'HH:mm:ss'Z'.
ip	String	Private IP address of the replication instance.
public_ip	String	EIP of the replication instance.
az_code	String	AZ code.
security_group_id	String	ID of the security group to which the source database belongs.
subnet_id	String	ID of the subnet where the source database is located.
vpc_id	String	ID of the VPC where the source database is located.
volume_size	Long	Storage space of a replication instance.
full_trans_user_pwd	String	Ciphertext password of the user for full migration.
incremental_trans_user_pwd	String	Ciphertext password of the incremental migration user.
ssl_link	Boolean	Whether SSL is enabled.
ssl_cert_key	String	SSL certificate content.

Parameter	Type	Description
ssl_cert_name	String	SSL certificate name.
ssl_cert_check_sum	String	Checksum value of the SSL certificate content.
ssl_cert_password	String	SSL certificate password, in ciphertext.
db_version	String	Database version.
mongo_ha_mode	String	Mongo HA mode. Values: ● Sharding: cluster. ● ReplicaSet: replica set. ● ReplicaSingle: single node.
project_id	String	Project ID of an RDS DB instance.
cluster_mode	String	Cluster mode. Values: ● Single: single-node RDS. ● Ha: primary and standby RDS. ● GR: RDS Finance Edition. ● Sharding: MongoDB cluster or DDM mode. The default value is Sharding. ● ReplicaSet: MongoDB replica set. ● Replica: RDS read replica. ● ReplicaSingle: MongoDB single node. ● Cluster: cluster. ● Independent: GaussDB independent mode. ● Combined: GaussDB combined mode. ● Distributed: TaurusDB distributed.
instance_id	String	RDS DB instance ID.
db_name	String	Oracle service name.
topic	String	Name of the mrskafka topic.
safe_mode	Integer	Whether to enable Kerberos authentication for MRSKafka. Values: ● 0: non-security authentication. ● 1: security authentication.
kerberos_vo	Object	Information required for Kerberos authentication. For details, see Table 6-306 .
multi_write_db_id	String	ID of the multi-write database.

Table 6-306 Data structure description of field **kerberos_vo**

Parameter	Type	Description
krb5_conf_file	String	krb5 configuration file.
key_tab_file	String	Key file.
domain_name	String	Domain name.
user_principal	String	Kerberos user object.

Example Request

Performing primary/standby switchovers in batches

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-switchover
{
  "jobs" : [ "8d0e8e36-a618-490d-8a46-8c61ac9jb502" ]
}
```

Example Response

Status code: 202

Accepted

```
{
  "count" : 1,
  "results" : [ {
    "job_id" : "8d0e8e36-a618-490d-8a46-8c61ac9jb502",
    "updated_at" : "2020-12-18T06:38:37Z",
    "source_db" : {
      "id" : "2706a49b-6dd0-4b70-b2a8-36cf0034703d",
      "region" : "eu-west-101",
      "ip" : "192.168.1.144",
      "topic" : null,
      "obj_id" : "0b51710fd4e54d6bb90ab91bf68f86efno01",
      "instance_name" : "rds-zw-source",
      "db_type" : "mysql",
      "db_user" : "root",
      "db_password" : "*****#",
      "manage_ip" : null,
      "traffic_ip" : "192.168.1.144",
      "db_port" : 3306,
      "created_at" : "2020-12-16T12:09:54Z",
      "updated_at" : "2020-12-18T06:33:09Z",
      "public_ip" : null,
      "az_code" : "az3xahz",
      "security_group_id" : "652cbe2d-d487-407e-b666-d01948b33879",
      "subnet_id" : "c6f66ccb-be7a-499e-aa8a-1389355e67a8",
      "vpc_id" : "7c73a425-885b-4e54-a0e6-ef9ee271a1db",
      "volume_size" : null,
      "full_trans_user_pwd" : "*****",
      "increment_trans_user_pwd" : "*****",
      "ssl_link" : false,
      "ssl_cert_key" : null,
      "ssl_cert_name" : null,
      "ssl_cert_check_sum" : null,
    }
  ]
}
```

```
{
  "ssl_cert_password" : null,
  "db_version" : "5.7.31",
  "mongo_ha_mode" : null,
  "project_id" : "054ba152d480d55b2f5dc0069e7ddef0",
  "cluster_mode" : "Single",
  "instance_id" : "3efbb0f1241f429e8e1d8f99ab094c7ain01",
  "db_name" : null,
  "safe_mode" : null,
  "kerberos_vo" : null,
  "multi_write_db_id" : null
},
"target_db" : {
  "id" : "81ca3c57-029b-4a37-8f2d-2ee5f128ef9d",
  "region" : "eu-west-101",
  "ip" : "192.168.1.60",
  "topic" : null,
  "obj_id" : "b46e908dbbb44bb3b17f0a75c908d1d7no01",
  "instance_name" : "rds-zw-target",
  "db_type" : "mysql",
  "db_user" : "root",
  "db_password" : "*****",
  "manage_ip" : null,
  "traffic_ip" : "192.168.1.60",
  "db_port" : 3306,
  "created_at" : "2020-12-16T12:09:55Z",
  "updated_at" : "2020-12-18T06:33:08Z",
  "public_ip" : null,
  "az_code" : "az3xahz",
  "security_group_id" : "652cbe2d-d487-407e-b666-d01948b33879",
  "subnet_id" : "c6f66ccb-be7a-499e-aa8a-1389355e67a8",
  "vpc_id" : "7c73a425-885b-4e54-a0e6-ef9ee271a1db",
  "volume_size" : 40,
  "full_trans_user_pwd" : "*****",
  "increment_trans_user_pwd" : "*****",
  "ssl_link" : false,
  "ssl_cert_key" : null,
  "ssl_cert_name" : null,
  "ssl_cert_check_sum" : null,
  "ssl_cert_password" : null,
  "db_version" : "5.7.31",
  "mongo_ha_mode" : null,
  "project_id" : "054ba152d480d55b2f5dc0069e7ddef0",
  "cluster_mode" : "Single",
  "instance_id" : "a3ab61173b1b4533b8c3dfc2bb3ec828in01",
  "db_name" : null,
  "safe_mode" : null,
  "kerberos_vo" : null,
  "multi_write_db_id" : null
},
"job_direction" : "down",
"is_target_readonly" : false
}]
}
```

Status Code

Status Code	Description
202	Accepted
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.4.2 Querying DR Monitoring Data

Function

This API is used to query DR monitoring data based on the task ID.

Constraints

You can call a maximum of 10 APIs in batches.

URI

POST /v3/{project_id}/jobs/disaster-recovery-monitoring-data

Table 6-307 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-308 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-309 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of strings	Task query request body.

Response Parameters

Status code: 200

Table 6-310 Response body parameters

Parameter	Type	Description
results	Array of objects	DR monitoring data response body set. For details, see Table 6-311 .
count	Integer	Total number of queries.

Table 6-311 Data structure description of field **results**

Parameter	Type	Description
id	String	Task ID.
data_guard_minitor	object	DR task monitoring data. For details, see Table 6-312 .

Table 6-312 Data structure description of field **data_guard_minitor**

Parameter	Type	Description
bandwidth	String	Bandwidth.
cpuUsed_percent	String	CPU usage.
dst_delay	Long	Delay of the destination database.
dst_io	String	Destination database I/O.
dst_normal	Boolean	Connection status of the destination database.
dst_offset	String	Offset of the destination database.
dst_rps	String	destination database RPS.
mem_used_in_MB	String	Memory usage

Parameter	Type	Description
node_mem_inMB	Long	Total memory size of a node.
node_offset	String	Offset of the replication instance.
node_volume_inGB	Long	Total disk size of a node.
sr_delay	Long	Delay of the source database.
sr_offset	String	Offset of the source database.
src_io	String	Source database I/O.
src_normal	Boolean	Connection status of the source database.
src_rps	String	Source database RPS.
trans_inMB	String	Amount of migrated data
trans_lines	String	Number of rows to be migrated.
volume_used_inGB	String	Disk usage.
migration_bytes_per_second	Long	Number of bytes migrated per second.

Example Request

Example of querying DR monitoring data:

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/disaster-recovery-monitoring-data
{
  "jobs" : [ "9a470239-2308-4bb5-a6bc-1040402fjb21" ]
}
```

Example Response

Status code: 200

OK

```
{
  "results" : [ {
    "id" : "b683ea69-a29c-456f-952f-2b682180jb52",
    "data_guard_minitor" : {
      "src_normal" : true,
      "dst_normal" : true,
      "sr_offset" : "mysql-bin.000445:191",
      "node_offset" : "mysql-bin.000445:191",
      "dst_offset" : "N/A",
      "sr_delay" : 0,
      "dst_delay" : 81046806,
      "src_rps" : "0",
      "src_io" : "0.0",
      "bandwidth" : "37",
```



```
"dst_rps" : "0",
"dst_io" : "0.0",
"trans_inMB" : "0",
"trans_lines" : "0",
"volume_used_inGB" : "5",
"mem_used_inMB" : "2166",
"cpuUsed_percent" : "1.4",
"node_volume_inGB" : 100,
"node_mem_inMB" : 8192,
"migration_bytes_per_second": 789456
}
}],
"count" : 1
}
```

Status Code

Status Code	Description
200	OK
400	Bad Request

Error Code

For details, see [A.3 Error Code](#).

6.4.3 Querying the DR Initialization Progress in Batches

Function

This API is used to query the DR initialization progress in batches based on the task ID. Virtual IDs cannot be queried.

URI

POST /v3/{project_id}/jobs/batch-struct-process

Table 6-313 Path 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 A.5 Obtaining a Project ID .

Request Parameters

Table 6-314 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-315 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of strings	Request body for querying tasks in batches.

Response Parameters

Status code: 200

Table 6-316 Response body parameters

Parameter	Type	Description
results	Array of objects	DR initialization progresses queried in batches. For details, see Table 6-317 .
count	Integer	Total number.

Table 6-317 Data structure description of field **results**

Parameter	Type	Description
job_id	String	Task ID.
error_code	String	Error code.

Parameter	Type	Description
error_message	String	Error message.
struct_process	Object	Information about the DR initialization progress. For details, see Table 6-318 .

Table 6-318 Data structure description of field **struct_process**

Parameter	Type	Description
create_time	String	Data generation time.
result	Array of objects	Comparison result. For details, see Table 6-319 .

Table 6-319 Data structure description of field **result**

Parameter	Type	Description
type	String	Object type.
status	Integer	Status
src_count	Integer	Number of source objects.
dst_count	Integer	Number of destination objects.
start_time	Long	Start time.
end_time	Long	End time.

Example Request

Example of querying details about DR initialization objects in batches:

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-struct-process
{
  "jobs" : [ "0ea5c5a0-e1b5-4421-80a9-7c9ff27jb502" ]
}
```

Example Response

Status code: 200

OK

```
{
  "count" : 1,
```

```
"results": [ {
  "job_id": "8ee21a0b-fff5-46b4-a6dd-6c54d5djb201",
  "struct_process": {
    "result": [ {
      "type": "table",
      "status": 2,
      "src_count": 0,
      "dst_count": 0,
      "start_time": 1608097599000,
      "end_time": 1608097600000
    }, {
      "type": "view",
      "status": 2,
      "src_count": 0,
      "dst_count": 0,
      "start_time": 1608097599000,
      "end_time": 1608097600000
    }, {
      "type": "table_structure",
      "status": 2,
      "src_count": 0,
      "dst_count": 0,
      "start_time": 1608097599000,
      "end_time": 1608097600000
    }, {
      "type": "database",
      "status": 2,
      "src_count": 1,
      "dst_count": 1,
      "start_time": 1608097599000,
      "end_time": 1608097600000
    }, {
      "type": "function",
      "status": 2,
      "src_count": 0,
      "dst_count": 0,
      "start_time": 1608097599000,
      "end_time": 1608097600000
    }, {
      "type": "procedure",
      "status": 2,
      "src_count": 0,
      "dst_count": 0,
      "start_time": 1608097599000,
      "end_time": 1608097600000
    }, {
      "type": "table_indexes",
      "status": 2,
      "src_count": 0,
      "dst_count": 0,
      "start_time": 1608097599000,
      "end_time": 1608097600000
    }
  ],
  "create_time": "1608429670521"
}
}]
}
```

Status Code

Status Code	Description
200	OK

Error Code

For details, see [A.3 Error Code](#).

6.4.4 Querying DR Initialization Object Details in Batches

Function

This API is used to query details about DR initialization objects in batches by task ID.

URI

POST /v3/{project_id}/jobs/{type}/batch-struct-detail

Table 6-320 Path 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 A.5 Obtaining a Project ID .
type	Yes	String	Supported migration object types. Values: • database • schema • table • view • procedure • trigger • index • table_indexs • table_structure

Request Parameters

Table 6-321 Request header parameters

Parameter	Mandatory	Type	Description
Content-Type	Yes	String	The content type. The default value is application/json .

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token obtained from IAM.
X-Language	No	String	Request language type Default value: en-us Values: • en-us • zh-cn

Table 6-322 Request body parameters

Parameter	Mandatory	Type	Description
jobs	Yes	Array of strings	Querying task details in batches
page_req	No	Object	Pagination information. For details, see Table 6-323 .

Table 6-323 Data structure description of field **page_req**

Parameter	Mandatory	Type	Description
cur_page	No	Integer	Current page number, which cannot exceed the maximum number of pages. (Number of pages = Number of items/ Number of tasks on each page) The default value is 1 .
per_page	No	Integer	Number of items on each page. If this parameter is set to 0 , all items are obtained. • Minimum value: 0 • Maximum value: 100 • Default value: 5

Response Parameters

Status code: 200

Table 6-324 Response body parameters

Parameter	Type	Description
count	Integer	Total number.
results	Array of objects	DR initialization object details that are queried in batches. For details, see Table 6-325 .

Table 6-325 Data structure description of field **results**

Parameter	Type	Description
job_id	String	Task ID.
error_code	String	Error code.
error_message	String	Error message.
struct_detail	Object	Details about the DR initialization objects. For details, see Table 6-326 .

Table 6-326 Data structure description of field **struct_detail**

Parameter	Type	Description
total_record	Long	Total number of tasks
create_time	String	Data generation time
list	Array of objects	Comparison result. For details, see Table 6-327 .

Table 6-327 Data structure description of field **list**

Parameter	Type	Description
progress	Integer	Progress.
src_DB	String	Source database name. If the source database has a three-layer structure, the format of the value is database.schema.
src_TB	String	Source object name.
dst_DB	String	Destination database name.
dst_TB	String	Destination object name.

Example Request

Example of querying details about DR initialization objects in batches:

```
https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/database/batch-struct-detail

{
  "jobs" : [ "0ea5c5a0-e1b5-4421-80a9-7c9ff27jb502" ],
  "page_req" : {
    "cur_page" : 1,
    "per_page" : 10
  }
}
```

Example Response

Status code: 200

OK

```
{
  "count" : 1,
  "results" : [ {
    "job_id" : "8d0e8e36-a618-490d-8a46-8c61ac9jb502",
    "struct_detail" : {
      "list" : [ {
        "progress" : 100,
        "src_DB" : "test1",
        "src_TB" : "test1",
        "dst_DB" : "test1",
        "dst_TB" : "test1"
      } ],
      "total_record" : 1,
      "create_time" : "1608429484785"
    }
  ]
}
```

Status Code

Status Code	Description
200	OK

Error Code

For details, see [A.3 Error Code](#).

7 Application Examples

[7.1 Querying Task Statuses in Batches](#)

[7.2 Querying Task Details in Batches](#)

[7.3 Starting Tasks in Batches](#)

7.1 Querying Task Statuses in Batches

Scenarios

This section describes how to query the status of all tasks of a tenant by calling the API described in [6.1.21 Querying Task Statuses in Batches](#).

Procedure

- Step 1** Call an IAM API to obtain a user token by referring to [3.2 Authentication](#).
- Step 2** Obtain the ID of the task to be queried by referring to [A.7 Obtaining a Task ID](#).
- Step 3** URI format: `/v3/{project_id}/jobs/batch-status`

- Example request:

POST: `https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-status`

Obtain the endpoint from Regions and Endpoints.

- Request example:

`https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-status`

```
{
  "jobs": [ "9a470239-2308-4bb5-a6bc-1040402fjb21", "dc67695a-ee3e-49b8-a022-a099bd81jb21" ],
  "page_req": {
    "cur_page": 1,
    "per_page": 10
  }
}
```

- Example Response:

```
{
  "results": [ {
    "id": "9a470239-2308-4bb5-a6bc-1040402fjb21",
```

```
"status" : "INCRE_TRANSFER_STARTED"
}, {
  "id" : "dc67695a-ee3e-49b8-a022-a099bd81jb21",
  "status" : "INCRE_TRANSFER_FAILED"
}],
"count" : 2
}
```

----End

7.2 Querying Task Details in Batches

Scenarios

This section describes how to query task details of a tenant by calling the API described in [6.1.20 Querying Task Details in Batches](#).

Procedure

- Step 1** Call an IAM API to obtain a user token by referring to [3.2 Authentication](#).
- Step 2** Obtain the ID of the task to be queried by referring to [A.7 Obtaining a Task ID](#).
- Step 3** URI format: `/v3/{project_id}/jobs/batch-detail`

- Example request:

POST: `https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-detail`

Obtain the endpoint from Regions and Endpoints.

- Request example:

`https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-detail`

```
{
  "jobs" : [ "24834eb6-be30-464e-a299-f7aa730jb101", "140b5236-88ad-43c8-811c-1268453jb101" ],
  "page_req" : {
    "cur_page" : 1,
    "per_page" : 10
  }
}
```

- Example Response:

```
{
  "count" : 2,
  "results" : [ {
    "id" : "24834eb6-be30-464e-a299-f7aa730jb101",
    "name" : "DRS-3999-lws",
    "status" : "STARTJOBING",
    "description" : "",
    "create_time" : "1608519469412",
    "task_type" : "FULL_INCR_TRANS",
    "source_endpoint" : {
      "ip" : "172.22.74.56",
      "region" : "eu-west-101",
      "db_type" : "mysql",
      "db_port" : 3306,
      "ssl_link" : false,
      "project_id" : "054ba152d480d55b2f5dc0069e7ddef0",
      "db_user" : "root"
    },
    "target_endpoint" : {
      "ip" : "172.21.176.219",
      "region" : "eu-west-101",

```

```
"db_type": "mysql",
"db_port": 3306,
"ssl_link": false,
"inst_id": "3ef57dbcc8db478a9e346d26ef2575bfin01",
"project_id": "054ba152d480d55b2f5dc0069e7ddef0",
"inst_name": "rds-lws-target",
"db_user": "root",
"vpc_id": "0ff8df7b-f0e9-4b16-ac16-1db3dacb69e4",
"subnet_id": "f857d371-2f03-4622-85f6-2b7d42d0d82c"
},
"inst_info": {
  "ip": "172.16.213.101",
  "inst_type": "high",
  "engine_type": "mysql",
  "volume_size": 100,
  "public_ip": "*****",
  "start_time": "0"
},
"actual_start_time": "1608520069393",
"update_time": "1608520068979",
"job_direction": "up",
"db_use_type": "migration",
"need_restart": false,
"is_target_readonly": true,
"speed_limit": [ ],
"schema_type": "Tungsten",
"object_switch": true,
"replace_definer": true,
"migrate_user": false,
"az_code": "az2xahz",
"vpc_id": "0ff8df7b-f0e9-4b16-ac16-1db3dacb69e4",
"subnet_id": "f857d371-2f03-4622-85f6-2b7d42d0d82c",
"security_group_id": "d90c971b-4b9d-402c-9c59-5c239389b8dd",
"support_ip_v6": false,
"original_job_direction": "up",
"is_open_fast_clean": true,
"object_infos": [{
  "id": "test",
  "type": "database",
  "name": "test",
  "select": "true"
}, {
  "id": "test-*.table01",
  "type": "table",
  "name": "table01",
  "select": "true",
  "parent_id": "test"
}]
}, {
  "id": "140b5236-88ad-43c8-811c-1268453jb101",
  "name": "DRS-0042-linxiaolu",
  "status": "CONFIGURATION",
  "description": "",
  "create_time": "1608366204171",
  "task_type": "FULL_INCR_TRANS",
  "source_endpoint": {
    "ip": "192.168.0.27",
    "region": "eu-west-101",
    "db_type": "mysql",
    "db_port": 3306,
    "ssl_link": false,
    "project_id": "054ba152d480d55b2f5dc0069e7ddef0",
    "db_user": "root"
  },
  "target_endpoint": {
    "ip": "192.168.0.131",
    "region": "eu-west-101",
    "db_type": "mysql",
    "db_port": 3306,
```

```
"ssl_link" : false,
"inst_id" : "e05a3679efe241d8b5dee80b17c1a863in01",
"project_id" : "054ba152d480d55b2f5dc0069e7ddef0",
"inst_name" : "rds-1417-lxl",
"db_user" : "root",
"vpc_id" : "65f0391c-0582-44a6-aa50-248f97ed82e1",
"subnet_id" : "352ad828-3467-4f03-987a-c55a5a9dd417"
},
"inst_info" : {
  "ip" : "192.168.0.229",
  "status" : "ACTIVE",
  "inst_type" : "high",
  "engine_type" : "mysql",
  "volume_size" : 100,
  "public_ip" : "10.154.219.72",
  "start_time" : "0"
},
"actual_start_time" : "1608369232412",
"full_transfer_complete_time" : "1608369510202",
"update_time" : "1608517066434",
"job_direction" : "up",
"db_use_type" : "migration",
"need_restart" : false,
"is_target_readonly" : true,
"speed_limit" : [ ],
"schema_type" : "Tungsten",
"object_switch" : false,
"replace_definer" : true,
"migrate_user" : false,
"tags": [{
  "key1" : "value1",
  "key2" : "value2"
}],
"az_code" : "az2xahz",
"vpc_id" : "65f0391c-0582-44a6-aa50-248f97ed82e1",
"subnet_id" : "352ad828-3467-4f03-987a-c55a5a9dd417",
"security_group_id" : "d90c971b-4b9d-402c-9c59-5c239389b8dd",
"support_ip_v6" : false,
"original_job_direction": "up",
"object_infos": [{
  "id": "test2",
  "type": "database",
  "name": "test2",
  "select": "true"
}, {
  "id": "test2-**-table02",
  "type": "table",
  "name": "table02",
  "select": "true",
  "parent_id": "test2"
}]
}],
"data_transformation": {
  "total_count": 2,
  "filter_conditions": [
    {
      "data_transformation_object_infos": [
        {
          "id": "test02-**-table02-**-conditionFilter--",
          "db_name": "test02",
          "table_name": "table02",
          "data_transformation_type": "contentConditionalFilter"
        }
      ],
      "transformation_info": {
        "value": "id1<1",
        "transformation_type": "contentConditionalFilter"
      }
    }
  ],
}
```

```
{
  "data_transformation_object_infos": [
    {
      "id": "test02-*--table01-*---configConditionFilter--",
      "db_name": "test02",
      "table_name": "test01",
      "data_transformation_type": "configConditionalFilter"
    }
  ],
  "transformation_info": {
    "value": "config",
    "transformation_type": "configConditionalFilter"
  },
  "config_transformation": {
    "indexs": "id",
    "values": "id <= 6",
    "db_table_name": "test02.table01",
    "db_name": "test02",
    "table_name": "table01",
    "col_names": "id",
    "prim_key_or_index": "id"
  }
}
]
```

----End

7.3 Starting Tasks in Batches

Scenarios

This section describes how to **start multiple configuration tasks** by calling an API.

Procedure

- Step 1** Call an IAM API to obtain a user token by referring to [3.2 Authentication](#).
- Step 2** Obtain the ID of the task to be queried by referring to [A.7 Obtaining a Task ID](#).
- Step 3** URI format: /v3/{project_id}/jobs/batch-starting

- Example request:

POST: <https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-starting>

Obtain the endpoint from Regions and Endpoints.

- Request example:

<https://{endpoint}/v3/054ba152d480d55b2f5dc0069e7ddef0/jobs/batch-starting>

```
{
  "jobs": [ {
    "job_id": "140b5236-88ad-43c8-811c-1268453jb101"
  } ]
}
```

- Example Response:

```
{
  "count": 1,
  "results": [ {
```

```
"id" : "140b5236-88ad-43c8-811c-1268453jb101",  
"status" : "success"  
}]  
}
```

----End

8 Permissions Policies and Supported Actions

[8.1 Permissions Policies and Supported Actions](#)

[8.2 DRS Actions](#)

8.1 Permissions Policies and Supported Actions

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

A policy is a set of permissions defined in JSON format. By default, new IAM users do not have any permissions. You need to add a user to one or more groups and assign permission policies to these groups. The user then inherits permissions from the groups it is a member of. This process is called authorization. After authorization, the user can perform specified operations on Anti-DDoS based on the permissions. For details about the syntax structure and example of a policy, see "Permissions Management" in the *Data Replication Service*.

There are fine-grained policies and role-based access control (RBAC) policies. An RBAC policy consists of permissions for an entire service. Users in a group with such a policy assigned are granted all of the permissions required for that service. A fine-grained policy consists of API-based permissions for operations on specific resource types. Fine-grained policies, as the name suggests, allow for more fine-grained control than RBAC policies.

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 the task list using an API, the user must have been granted permissions that allow the **drs:migrationJob:list** action.

Supported Actions

Operations supported by a fine-grained policy are specific to APIs. The following describes the headers of the actions provided in this section:

- Permissions: defined by actions in a custom policy.
- APIs: REST APIs that can be called in a custom policy.
- Action: Specific operations that are allowed or denied.
- Related actions: Actions on which a specific action depends 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 for both IAM and enterprise projects can be used and take effect for both IAM and Enterprise Management. Policies that only contain actions for IAM projects can be used and only take effect for IAM. For details about the differences between IAM and enterprise projects, see [Differences Between IAM and Enterprise Management](#).

8.2 DRS Actions

NOTE

The check mark (√) indicates that an action takes effect. The cross mark (x) indicates that an action does not take effect.

Table 8-1 Service function

Permission	API	Action	IAM Project	Enterprise Project
Creating tasks in batches	POST /v3/{project_id}/jobs/batch-creation	drs:migrationJobs:create (To create an instance, you need to configure the RDS ReadOnlyAccess, VPC FullAccess, and SMN FullAccess permissions in the project.)	√	√

Permission	API	Action	IAM Project	Enterprise Project
Stopping and deleting tasks in batches	DELETE /v3/{project_id}/jobs/batch-jobs	drs:migrationJobs:delete (To stop or delete an instance, you need to configure the RDS ReadOnlyAccess, VPC FullAccess, and SMN FullAccess permissions in the project.)	√	√
Testing connections in batches	POST /v3/{project_id}/jobs/batch-connection	drs:migrationJobs:connect (To test the connection, you need to configure the VPC FullAccess permission in the project.)	√	√
Querying objects selected in batches	PUT /v3/{project_id}/jobs/batch-select-objects	drs:migrationJobs:select (To obtain object selection information, you need to configure the RDS FullAccess and DAS FullAccess permissions in the project.)	√	√
Querying RPO and RTO information in batches	POST /v3/{project_id}/jobs/batch-rpo-and-rto	drs:dataGuardJob:list	√	√
Performing primary/standby switchovers in batches	POST /v3/{project_id}/jobs/batch-switchover	drs:disasterRecoveryJob:switchover	√	√
Testing connections in batches (cluster mode)	POST /v3/{project_id}/jobs/cluster/batch-connection	drs:migrationJobs:connect (To test the connection, you need to configure the VPC FullAccess permission in the project.)	√	√

Permission	API	Action	IAM Project	Enterprise Project
Performing a batch pre-check	POST /v3/{project_id}/jobs/batch-precheck	drs:migrationJob:action	√	√
Querying pre-check results in batches	POST /v3/{project_id}/jobs/batch-precheck-result	drs:migrationJob:get	√	√
Setting flow control for tasks	PUT /v3/{project_id}/jobs/batch-limit-speed	drs:migrationJobs:update	√	√
Obtaining database parameters in batches	POST /v3/{project_id}/jobs/batch-get-params	drs:databaseParameters:get	√	√
Resuming or retrying tasks in batches	POST /v3/{project_id}/jobs/batch-retry-task	drs:migrationJob:action	√	√
Pausing tasks in batches	POST /v3/{project_id}/jobs/batch-starting	drs:migrationJob:action	√	√
Modifying tasks in batches	PUT /v3/{project_id}/jobs/batch-modification	drs:migrationJob:modify	√	√
Changing the passwords of the source and destination databases in batches	PUT /v3/{project_id}/jobs/batch-modify-pwd	drs:migrationJobs:update	√	√
Setting definers in batches	POST /v3/{project_id}/jobs/batch-replace-definer	drs:migrationJob:updateJobConfig	√	√
Creating comparison tasks in batches	POST /v3/{project_id}/jobs/batch-create-compar	drs:migrationCompareJob:create	√	√

Permission	API	Action	IAM Project	Enterprise Project
Querying comparison results in batches	POST /v3/{project_id}/jobs/batch-compare-result	drs:CompareJob:getResult	√	√
Querying task progress in batches	POST /v3/{project_id}/jobs/batch-progress	drs:migrationJobs:getProgress	√	√
Querying tasks of a tenant	POST /v3/{project_id}/jobs	DRS ReadOnlyAccess	√	√
Querying DR monitoring data	POST /v3/{project_id}/jobs/disaster-recovery-monitoring-data	drs:disasterRecoveryJob:get	√	√
Querying the DR initialization progress in batches	POST /v3/{project_id}/jobs/batch-struct-process	drs:disasterRecoveryJob:get	√	√
Querying DR initialization object details in batches	POST /v3/{project_id}/jobs/{type}/batch-struct-detail	drs:disasterRecoveryJob:get	√	√
Updating migrated user information in batches	PUT /v3/{project_id}/jobs/batch-update-user	drs:migrationJob:modifyUserInfo	√	√
Modifying database parameters	POST /v1.0/{projectId}/jobs/{jobId}/params	drs:dataBaseParams:modify (Configure the RDS ReadOnlyAccess, VPC FullAccess, SMN FullAccess and DAS FullAccess permissions.)	√	√
Processing data in batches	POST /v3/{project_id}/jobs/batch-transformation	drs:migrationJob:action	√	√

Permission	API	Action	IAM Project	Enterprise Project
Starting tasks in batches	POST /v3/{project_id}/jobs/batch-starting	drs:migrationJob:action	√	√
Querying task details in batches	POST /v3/{project_id}/jobs/batch-detail	drs:migrationJob:get	√	√
Querying task statuses in batches	POST /v3/{project_id}/jobs/batch-status	drs:migrationJob:get	√	√

A Appendix

A.1 Abnormal Request Results

- Abnormal response description

Table A-1 Abnormal response description

Name	Type	Description
error_code	String	Specifies the error code returned when the API response is abnormal. For details, see section A.3 Error Code .
error_msg	String	Specifies the description of the error returned when the API response is abnormal.

- Example Response:

```
{
  "error_code": "DRS.M00201",
  "error_msg": "The %s parameter is empty."
}
{
  "error_code": "DRS.M00202",
  "error_msg": "The value of %s is invalid."
}
```

A.2 HTTP Status Codes for General Requests

- Normal

Table A-2 Return codes for successful requests

Status Code	Description
200	Request succeeded.
202	Asynchronous requests (such as performing a task) are submitted successfully.

- Abnormal

Table A-3 Return codes for failed requests

Status Code	Description
400 Bad Request	The server fails to process the request.
401 Unauthorized	You must enter the username and password to access the requested page.
403 Forbidden	You are forbidden to access the page requested.
404 Not Found	The server could not find the requested page.
405 Method Not Allowed	The method specified in the request is not allowed.
409 Conflict	The request cannot be processed due to conflicts.
413 Request Entity Too Large	The request exceeds the resource quota.
415 Unsupported Media Type	Content-Type contained in the request header is not application/json .
422 Unprocessable Entity	Parameter or object in the request cannot be identified.
500 Internal Server Error	Failed to complete the request. The server is abnormal.
501 Not Implemented	Failed to complete the request. The server does not support the requested function.
503 Service Unavailable	Failed to complete the request. The system is currently unavailable.

A.3 Error Code

If an error occurs during API calling, no results will be returned. You can locate the error cause based on error codes of each API. If an error occurs, an HTTP status

code is returned. The returned message body contains a specific error code and error message.

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

Table A-4 Error codes

Statu s Code	Error Codes	Error Message	Description	Troubleshooting
422	DRS.M0 0002	The returned result is empty.	The returned result is empty.	Check the request parameters or task status.
422	DRS.M0 0004	Service is abnormal. Check logs.	Service is abnormal. Check logs.	If the service is abnormal, contact technical support.
400	DRS.M0 0007	Invalid request parameter.	Invalid request parameter.	Check the request parameters.
403	DRS.M0 0100	Invalid token.	Failed to pass IAM authentication.	Check the user token information.
404	DRS.M0 0101	The user role is empty.	The user role is empty.	Check the role information of the user.
403	DRS.M0 0102	You do not have sufficient permissions.	Insufficient permissions.	Check the DRS permissions of the current user.
401	DRS.M0 0103	You do not have operation permissions. Check account permissions on IAM.	Operation denied. Check your account permissions on IAM.	Check the DRS permissions of the current user.
400	DRS.M0 0105	User restricted.	User restricted.	Check the DRS permissions of the current user.
400	DRS.M0 0200	Parameter error.	Invalid parameters.	Check the request parameters.
400	DRS.M0 0201	The parameter %s is empty.	The parameter %s is empty.	Check the request parameters.
400	DRS.M0 0202	The value of parameter %s is invalid.	The value of parameter %s is invalid.	Check the request parameters.
400	DRS.M0 0210	The value of Page is invalid, %s	Invalid page value, %s.	Check the request page parameters.

Statu s Code	Error Codes	Error Message	Description	Troubleshooting
400	DRS.M0 0211	The value of Page exceeds the upper limit.	The number of pages exceeds the upper limit.	Check the request page parameters.
403	DRS.M0 0261	Invalid project ID.	Invalid project ID.	Check the value of project ID in the request.
400	DRS.M0 0269	The tag key must be unique.	The tag key cannot be duplicated.	Check whether the tag key is unique.
400	DRS.M0 0270	The tag key or value is too long.	The tag key or value exceeds the maximum length allowed.	Check the length of the tag key or value in the request.
400	DRS.M0 0271	The number of tags exceeds the limit.	The maximum number of tags has been reached.	Check the number of tags in the request.
400	DRS.M0 0273	Invalid parameter. The parameter contains %s.	Invalid parameter. %s exists in the parameter.	Check the request parameters.
422	DRS.M0 0277	The task name already exists.	The task name already exists.	Change the task name.
400	DRS.M0 0289	Missing query result: %s	No query result is found.	Check the request parameters.
400	DRS.M0 0298	Job does not exist, please check job id.	The job does not exist. Check the job ID.	Check the request parameters.
400	DRS.M0 0299	Only one jobId is allowed.	Only one job ID can be transferred.	Check the request parameters.
400	DRS.M0 0300	Invalid request, %s	Invalid request. %s.	Check the request parameters.
400	DRS.M0 0301	There are duplicate %s in request.	The request contains duplicate task IDs.	Check the request parameters.
400	DRS.M0 0302	The transfer schema is invalid, please refer to supported transfer schema.	Invalid migration scheme.	Check the request parameters.

Statu s Code	Error Codes	Error Message	Description	Troubleshooting
400	DRS.M0 0303	The corresponding parameter is not obtained from the cache.	Failed to obtain corresponding parameters from the cache.	Check the request parameters.
400	DRS.M0 0304	This API cannot be called in the current task status.	API cannot be invoked in current state of the task.	Check the current task status.
400	DRS.M0 0305	Parameter error:%s	Parameter error: %s.	Check the request parameters.
400	DRS.M0 0306	Start time cannot be the same as end time.	The start time cannot be the same as the end time.	Check the request parameters.
400	DRS.M0 0307	Only subtasks can invoke this interface.	Only subtasks can use this API.	Change the task ID.
400	DRS.M0 0308	Only parent tasks can invoke this interface.	Only parent tasks can use this API.	Change the task ID.
400	DRS.M0 0401	%s is not support re-editing of synchronization tasks.	%s does not support re-editing synchronization tasks.	Change the task ID.
400	DRS.M0 0402	The subtask already exists.	The subtask already exists.	Change the task ID.
400	DRS.M0 0403	This task does not support flow control.	This task does not support flow control.	Change the task ID.
422	DRS.M0 0414	The value for Logical Copy Slot Advance Interval must be between 1 and 999.	The interval for advancing the logical replication slot must range from 1 to 999.	Change the interval for advancing the logical replication slot.
422	DRS.M0 1501	Service error.	The server is abnormal.	If the service is abnormal, contact technical support.

Statu s Code	Error Codes	Error Message	Description	Troubleshooting
202	DRS.M0 1504	Another operation is being performed on the migration task or the migration task is abnormal.	Other operations are being performed on the migration task or the migration task is faulty. Try again later.	Check the current task status.
400	DRS.M0 5003	Task information not found.	Task information cannot be queried.	Check the task ID in the request.
400	DRS.M0 5004	The task has been deleted or the resource has been released.	The task has been deleted or resources have been released.	Check the current task status.
422	DRS.M0 5006	Invalid RDS DB instance.	Invalid RDS DB instance.	Check the RDS instance ID in the request.
200	DRS.M0 5066	Failed to create instance!	Failed to create an instance.	Contact technical support.
400	DRS.M0 6007	The DB instance cannot be left blank.	The DB instance is null or "".	Check the RDS instance ID in the request.
422	DRS.M0 6011	Failed to obtain RDS information.	Obtain RDS DB instance information failed.	Check the RDS instance ID in the request.
422	DRS.M0 6020	The destination DB instance has been set to read/write by the migration task %s and cannot be used.	The destination DB instance cannot be used because it has been set to read/write by the migration task %s.	Check the RDS instance ID in the request.
422	DRS.M0 6021	The destination DB instance has been set to read/write by the synchronization task %s and cannot be used.	The destination DB instance cannot be used because it has been set to read/write by the synchronization task %s.	Check the RDS instance ID in the request.

Statu s Code	Error Codes	Error Message	Description	Troubleshooting
400	DRS.MO 7000	Data processing rule already exists.	Data processing rule already exists.	Modify the data processing rule in the request.
200	DRS.KE0 001	Failed to connect to the database network.	Database connection failed.	Check the network configuration between the database and the replication instance.
200	DRS.KE0 002	The username or password is incorrect.	The username or password is incorrect.	Check the username and password.
200	DRS.KE0 003	The port cannot be accessed.	The port cannot be accessed.	Check the database port.
200	DRS.KE0 004	Connection failed.Handling suggestion: Please check the security group/firewall/SSL configuration of the database.	Connection failed.	Check the security group, firewall, and SSL configuration of the database.
200	DRS.KE0 005	The database user must allow remote connections.Handl ing suggestion: Run CREATE USER 'Account'@'%' IDENTIFIED BY 'Password' to create a user that allows remote connections. After the migration, delete this user.	The database user must allow remote connections.	Run CREATE USER'Account'@'% ' IDENTIFIED BY 'Password' to create a user that allows remote connections. After the migration is complete, delete the user.

Statu s Code	Error Codes	Error Message	Description	Troubleshooting
200	DRS.KE0006	The remote connection permission is not configured in pg_hba.conf for the replication instance and database user. Handling suggestion: Add \"host all ***(dbuser) 0.0.0.0/0 password\" to the pg_hba.conf configuration file to grant the remote connection permission to the user and restart the database. After the migration is complete, delete this record and restart the database again.	The remote connection permission is not configured in pg_hba.conf for the replication instance and database user.	Add \"host all ***(dbuser) 0.0.0.0/0 password\" to the pg_hba.conf configuration file to grant the remote connection permission to the user, and restart the database. After the migration is complete, delete this record and restart the database again.
200	DRS.KE0007	The database user does not have the login permission. Handling suggestion: Run alter role ***(dbuser) login to grant the login permission.	The database user does not have the login permission.	Run alter role ***(dbuser) login to grant the login permission.
200	DRS.KE0008	The specified source database does not exist. Handling suggestion: Create a database or enter an existing database name.	The specified source database was not found.	Create a database or enter an existing database name.

Statu s Code	Error Codes	Error Message	Description	Troubleshooting
200	DRS.KE0009	The SSL CA certificate does not exist.Handling suggestion: Contact technical support.	The SSL CA certificate was not found.	Contact technical support.
200	DRS.KE0010	SSL is not enabled or the certificate is invalid. Handling suggestion: Enable SSL or upload a valid SSL CA certificate.	SSL is disabled or the certificate is invalid.	Enable SSL or upload a valid SSL CA certificate.
200	DRS.KE0011	The source database does not have the Microsoft SQL Server replication component installed.	The source database does not have the Microsoft SQL Server replication component installed.	Install the Microsoft SQL Server replication component.
200	DRS.KE0012	The user does not have the permission to access the database.	The user does not have the permission to access the database.	Grant the permission to access the database to the user.
200	DRS.KE0013	Insufficient permissions.	Insufficient permissions.	Grant the permission to access the database to the user.
200	DRS.KE0014	Internal error.	Internal error.	Contact technical support.
200	DRS.KE0015	The network connection between the replication instance and database is faulty.	The network connection between the replication instance and the database is faulty.	Contact technical support.

Status Code	Error Codes	Error Message	Description	Troubleshooting
200	DRS.KE0016	Failed to connect to the database. In the postgresql.conf file, the listen_addresses parameter value or port number is incorrect. Handling suggestion: In postgres.conf, set listen_addresses to * or change the port number to the correct value. Then, restart the database for the modification to take effect.	Failed to connect to the database. In the postgresql.conf file, the listen_addresses parameter value or port number is incorrect.	In postgres.conf, set listen_addresses to * or change the port number to the correct value. Then, restart the database to apply the change.
200	DRS.KE0017	The IP address cannot be pinged. Handling suggestion: See migration preparations in the DRS Best Practices.	The IP address cannot be pinged.	See migration preparations in the <i>DRS Best Practices</i> .
200	DRS.KE0018	Failed to resolve the domain name.	Failed to resolve the domain name.	See migration preparations in the <i>DRS Best Practices</i> .
200	DRS.KE0019	Failure cause: The subnets of any of the source, destination, or replication (synchronization or disaster recovery) instances in different VPCs overlap.	The subnet CIDR blocks of any of the source, destination, or replication (synchronization or disaster recovery) instances in different VPCs overlap.	See migration preparations in the <i>DRS Best Practices</i> .
200	DRS.KE0020	Incorrect replica set name.	The replica set name is incorrect.	Contact technical support.

Statu s Code	Error Codes	Error Message	Description	Troubleshooting
200	DRS.KE0 021	The source database cannot connect to the port of the replication instance.Handling suggestion: Modify the firewall and security group configurations of the source and destination databases to enable the source database to connect to the port of the replication instance. See migration preparations in the DRS Best Practices.	The source database cannot connect to the port of the replication instance.	Modify the firewall and security group configurations of the source and destination databases to enable the source database to connect to the port of the replication instance. See migration preparations in the <i>DRS Best Practices</i> .
200	DRS.KE0 022	The SSL certificate is incorrect.Handling suggestion: Upload a correct SSL certificate.	The SSL certificate is incorrect.	Upload a correct SSL certificate.
200	DRS.KE0 023	The DRS EIP is not in the whitelist of the source database.Handling suggestion: Add the DRS EIP to the whitelist of the source database.	The EIP of the DRS instance is not added to the whitelist of the source database.	Add the EIP of the DRS instance to the whitelist of the source database.
200	DRS.KE0 030	The service name is incorrect.Handling suggestion: Check whether the service name is correct before the connection test.	The database service name is incorrect.	Check whether the database service name specified in the connection test is correct.

Statu s Code	Error Codes	Error Message	Description	Troubleshooting
200	DRS.KE0 031	Query failed.Handling suggestion: Check whether the migration account has sufficient permissions.	Query failed.	Check whether the migration account has sufficient permissions.
200	DRS.KE0 032	The Oracle certificate is incorrect.Handling suggestion: Upload a correct Oracle certificate.	The Oracle certificate is incorrect.	Upload a correct Oracle certificate.
200	DRS.KE0 033	The username, password, or authentication database of the source database is incorrect.Handling suggestion: Check that the input username, password, and authentication database for the connection test are correct.	The username, password, or authentication database of the source database is incorrect.	Check whether the username, password, and authentication database entered for the connection test are correct.
200	DRS.KE0 034	The username, password, or authentication database of the destination database is incorrect.Handling suggestion: Check that the input username, password, and authentication database for the connection test are correct.	The username, password, or authentication database of the destination database is incorrect.	Check whether the username, password, and authentication database entered for the connection test are correct.
200	DRS.KE0 035	The database middleware is not a MySQL sharding middleware.	The database middleware is not a MySQL sharding middleware.	Contact technical support.

Status Code	Error Codes	Error Message	Description	Troubleshooting
200	DRS.KE0036	SSL must be enabled when the database password plugin caching_sha2_password is verified.Handling suggestion: Enable SSL or create a user.	SSL must be enabled when the database password plugin cache_sha2_password is verified.	Enable SSL or create a user.
200	DRS.KE0037	The username or password is incorrect.Handling suggestion: Check that the input username and password for the connection test are correct.	The username or password is incorrect.	Check whether the username and password for the connection test are correct.
200	DRS.KE0038	The account is locked.Handling suggestion: Contact technical support to unlock the account.	The account is locked.	Contact technical support to unlock the account.
200	DRS.KE0039	The database cannot be connected because the client IP address is not in the whitelist.Handling suggestion: Use an account with the ALTER SYSTEM permission and execute the following SQL statement: alter system add hba entry (hostssl [Username] [Subnet of the RDS instance]);	The database cannot be connected because the client IP address is not in the whitelist.	Use an account with the ALTER SYSTEM permission to run the following SQL statement: alter system add hba entry (hostssl [username] [subnet CIDR block where RDS is located]).

Statu s Code	Error Codes	Error Message	Description	Troubleshooting
200	DRS.KE0040	The kafka brokers is not available.	The Kafka node is unavailable.	Contact technical support.
200	DRS.KE0041	The kafka is not available.	Kafka is unavailable.	Contact technical support.
200	DRS.KE0042	The kafka topic is not existed.	The Kafka topic does not exist.	Contact technical support.
200	DRS.KE0043	The user does not have the permission to create connections. Grant the required permission to the user and try again.	The user does not have the permission to create connections.	Grant the required permissions to the user and try again.
200	DRS.KE0044	The parameters for test connection contains non-ascii character. Handling suggestion: Please check test connection parameters, use user info without NON-ASCII characters to test connection.	The parameters for testing the connection contain non-ASCII characters.	Check the connection test parameters and use the user information without non-ASCII characters to test the connection.
200	DRS.KE0045	The user account is locked.	The user account is locked.	Contact technical support.
200	DRS.KE0046	The IP address that the user requested to establish a connection is not monitored by the database.	The IP address used by the user to request to set up a connection is not monitored by the database.	Contact technical support.

Statu s Code	Error Codes	Error Message	Description	Troubleshooting
200	DRS.KE0 047	The queue name is not exist.Handling suggestion: Check that the input queue name for the connection test are correct.	The queue name does not exist.	Check whether the name of the queue entered for the connection test is correct.
200	DRS.KE0 048	Failed to connect to the database.	Failed to connect to the database.	Contact technical support.
200	DRS.KE0 049	Database user privilege is not enough.	The database user does not have sufficient permissions.	Contact technical support.
200	DRS.KE0 050	The PDB database is not open.	Failed to open the PDB database.	Open the PDB database.
200	DRS.KE0 051	The PDB database does not exist.	The PDB database does not exist.	Contact technical support.
200	DRS.KE0 052	Versions earlier than Oracle 12c do not support PDB.	Versions earlier than Oracle 12c do not support PDB.	Contact technical support.
200	DRS.KE0 053	Entered Oracle user has insufficient permissions.	The entered Oracle user does not have sufficient permissions.	Contact technical support.
200	DRS.KE0 054	Agent Connection Failed.Handling suggestion: Please check whether the logical replication agent is enabled or IP address and port number of the logical replication agent is correct.	Failed to connect to the agent.	Check whether the logical replication agent is enabled or whether the IP address and port number of the logical replication agent are correct.
200	DRS.KE0 055	Password has expired.Handling suggestion: Please reset the password.	The password has expired.	Reset the password.

Status Code	Error Codes	Error Message	Description	Troubleshooting
200	DRS.KE0056	The current instance does not support connections on multiple IP addresses during synchronization. Possible cause: The current instance is connected to a node through multiple IP addresses, which can cause a task to fail. Handling suggestion: Select a stable node, enter the single IP address of the node, and try to connect to the instance again.	Data synchronization does not allow the instance to be connected using multiple IP addresses.	Select a stable node, enter the single IP address of the node, and try to connect to the instance again.
200	DRS.KE0057	The Kafka user name or password is incorrect.	The Kafka username or password is incorrect.	Check the username and password.
200	DRS.KE0058	The Kafka encryption certificate or certificate password is incorrect.	The Kafka encryption certificate or certificate password is incorrect.	Check the username, password, or certificate.
200	DRS.KE0059	The connected DB engine does not match the DB engine supported by the task.	The connected DB engine does not match the DB engine supported by the task.	Contact technical support.

Statu s Code	Error Codes	Error Message	Description	Troubleshooting
200	DRS.KE0060	Test connection is succeeded.Handling suggestion: The Oracle database is a RAC cluster. You are advised to use the SCAN IP address as the connection. For details, see here.	The connection test is successful.	The Oracle database is a RAC cluster. You are advised to use the SCAN IP address for the connection.
200	DRS.KE0061	Possible reasons are:1. The node status is abnormal.2. The primary node information is not specified.3. The whitelist of pg_hba.conf is not configured.4.The network is abnormal.	Failed to test the connection. The possible causes are as follows: 1. The node is abnormal. 2. The primary node information is not specified. 3. The pg_hba.conf whitelist is not configured. 4. The network is abnormal.	Contact technical support.
200	DRS.KE0062	The archived space is full, need to release.	The archive space is full and resources need to be released.	Clear the archive space.
200	DRS.KE0063	The database query result is empty. The database does not have a table or does not have the SELECT permission on the table.	The database query result is empty because the database has no tables or you do not have the SELECT permissions on the tables.	Contact technical support.

Statu s Code	Error Codes	Error Message	Description	Troubleshooting
200	DRS.KE0 064	The account password has expired.Handling suggestion: Changing the Expired Status of a User to OPEN.Refer to the modification statement: UPDATE SYS.USER \$ SET ASTATUS = 0 WHERE NAME = 'user_name'.	The account password has expired.	Change the expiration status of the user to OPEN . For details, see the following statement: UPDATE SYS.USER\$ SET ASTATUS = 0 WHERE NAME = 'user_name'
200	DRS.KE0 065	Database access denied. Handling suggestion: 1.Check whether the database name is correct before the connection test. 2.Check whether the DB2 database listening port number is correct. 3.Check whether the DB2 server is stopped. 4.Check whether the Firewall is stopped.	Access to the database is denied.	1. Check whether the database name is correct before the connection test. 2. Check whether the listening port number of the DB2 database is correct. 3. Check whether the DB2 server is stopped. 4. Check whether the firewall is disabled.
200	DRS.KE0 066	The number of DRS task shards must be the same as the actual number of GaussDB shard nodes.	The number of DRS task shards must be the same as the actual number of GaussDB shard nodes.	Contact technical support.
200	DRS.KE0 067	Cannot open user default database.	Failed to open the default database of the account.	Contact technical support.
200	DRS.KE0 068	The GTID format is incorrect.	The GTID format is incorrect.	Contact technical support.

Status Code	Error Codes	Error Message	Description	Troubleshooting
200	DRS.KE0069	The specified point is unavailable, the specified point must be between the task start point and the current point.	The specified point is unavailable. The specified point must be between the task start point and the current point.	Contact technical support.
200	DRS.KE0070	Connection failed.Handling suggestion: Please check the security group/firewall/SSL configuration/pg_hba.conf whitelist of the database.	Connection failed.	Check the security group, firewall, SSL configuration, and pg_hba.conf whitelist of the database.

Table A-5 Error codes of v5 APIs

Status Code	Error Codes	Error Message	Description	Troubleshooting
400	DRS.10000001	Failed	Failed to process the request.	Contact technical support.
400	DRS.10020000	Parameter error:%s	Parameter error: %s.	Check the request parameters.
400	DRS.10020001	Parameter %s is null	The parameter %s is empty.	Check the request parameters.
400	DRS.10020002	The value of parameter %s is invalid.	The parameter %s has an invalid value.	Check the request parameters.
400	DRS.10000010	The task does not exist. Check the task ID.	The task does not exist. Check the task ID.	Check the task ID.
400	DRS.10000011	The database is abnormal.	A database error occurred.	Contact technical support.
400	DRS.10000012	The start time cannot be the same as the end time.	The start time cannot be the same as the end time.	Change the time in the request.

Status Code	Error Codes	Error Message	Description	Troubleshooting
400	DRS.10010000	The start time cannot be the same as the end time.	The start time cannot be the same as the end time.	Change the time in the request.
400	DRS.10010002	Async job param checking, Please wait param check complete and resubmit.	The parameters of the task created asynchronously are being verified. Submit the task after the parameter verification is complete.	Submit the task after the parameter verification is complete.
400	DRS.10010004	Submit job failed.	Failed to submit the task.	Contact technical support.
400	DRS.10010006	Create job failed.	Failed to create the task.	Contact technical support.
400	DRS.10010007	Test connection failed.	Failed to test the connection.	Contact technical support.
400	DRS.10010009	Set policy config failed,%s	Failed to set the task policy, %ss.	Check the task policy.
400	DRS.10010010	Set progressing data failed,%s	Failed to set data processing rules, %s.	Check the data processing rules.
400	DRS.10010011	Set user migration data failed,%s	Failed to set user migration, %s.	Check the user migration settings.
400	DRS.10010012	Precheck failed,%s	Pre-check failed, %s.	Contact technical support.
400	DRS.10010013	Database param modify success, please restart the database.	Parameters of the DB instance are modified. Restart the database.	Restart the database.
400	DRS.10010014	Start job failed,%s	Failed to start the task, %s.	Contact technical support.
400	DRS.10010016	%s is an EPS system tag and cannot be added manually.	%s is an EPS system tag and cannot be manually added.	Check the tag parameter.

Status Code	Error Codes	Error Message	Description	Troubleshooting
400	DRS.10010024	Param check failed,%s	Parameter verification failed, %s.	Check the parameter.
400	DRS.10010025	The current API does not support this %s engine type now.	The current APIs do not support this type of engine.	Modify the request parameters.
400	DRS.10010026	Reset job failed,%s.	Failed to reset the task, %s.	Contact technical support.
400	DRS.10010027	Restart job failed,%s.	Failed to retry the task, %s.	Contact technical support.
400	DRS.10010028	Pause job failed,%s.	Failed to pause the task, %s.	Contact technical support.
400	DRS.10010029	Terminate job failed,%s.	Failed to stop the task, %s.	Contact technical support.
400	DRS.10010030	Delete job failed,%s.	Failed to delete the task, %s.	Contact technical support.
400	DRS.10010031	Test connection timeout.	Connection testing timed out.	Contact technical support.
400	DRS.10010032	Failed to create the comparison task,%s.	Failed to create the comparison task, %s.	Contact technical support.
400	DRS.10010033	Query progress failed,%s.	Failed to query the task progress, %s.	Contact technical support.
400	DRS.10020072	Invalid projectId.	Invalid project ID.	Check the project ID.
400	DRS.10020077	Duplicate task name.	Duplicate task name.	Check the task name.
400	DRS.10030000	Excel content is empty.	The Excel file to be uploaded is empty.	Check the Excel file.
400	DRS.10030001	Excel file size is too large, exceeds the threshold %s.	The size of the Excel file to be uploaded exceeds the threshold %s.	Check the size of the Excel file.

Statu s Code	Error Codes	Error Message	Description	Troubleshooting
400	DRS.100 30002	Excel has more than one sheet.	The Excel file to be uploaded contains more than one sheet.	Check the number of files in the Excel.
400	DRS.100 30003	The object name is invalid.	The object name is invalid.	Check the object name.
400	DRS.100 30004	Support the file name extension can be ZIP, JSON, TXT, or Excel 2007 or later (with the file name extension .xlsx/.xls).	Files in the format of ZIP, JSON, TXT, and Excel 2007 or later (with the file name extension .xlsx or .xls) can be imported.	Check the format of the Excel file.
400	DRS.100 30005	Export excel fail.	Failed to export the Excel file.	Contact technical support.
400	DRS.100 30006	The file name format is %s.	The file name can contain only %s.	Check the file name.
400	DRS.100 30007	The supported file format is .xls or .xlsx. Please check.	The file format must be .xls or .xlsx .	Check the file format.
400	DRS.100 30008	Failed to download the file.	Failed to download the file.	Contact technical support.
400	DRS.100 30009	Failed to export data, because %s.	Failed to export data due to %s.	Contact technical support.
400	DRS.100 30010	The information of imported database is empty. Please check.	The database information is empty.	Check the imported file.
400	DRS.100 30011	The number of selection database exceeds the limit of 5000.	More than 5000 databases are selected.	Check the imported file.
400	DRS.100 30012	Failed to import the Excel file.	Failed to import the Excel file.	Contact technical support.
400	DRS.100 20111	The length exceeds %s.	The length exceeds %s.	Check the parameter length.

Status Code	Error Codes	Error Message	Description	Troubleshooting
400	DRS.10060015	Task is waiting for running.	The task is waiting for running.	Check the parameter length.
400	DRS.10130014	The number of DRS job has exceeded the system security capacity limit!	The number of DRS tasks exceeds the system capacity.	Contact technical support to expand the system capacity as soon as possible.

A.4 Task Statuses

Table A-6 Task Statuses

Status	Description
CREATING	The schema is being created.
CREATE_FAILED	Creation failed
CONFIGURATION	Configuring
STARTJOBING	Starting
WAITING_FOR_START	The task is being started.
START_JOB_FAILED	Failed to start one or more tasks.
PAUSING	The task is being paused.
FULL_TRANSFER_STARTED	Full migration is in progress, and the DR scenario is initialized.
FULL_TRANSFER_FAILED	Full migration failed. Initialization failed in the DR scenario.
FULL_TRANSFER_COMPLETE	Full migration is complete, and the initialization is complete in the DR scenario.
INCRE_TRANSFER_STARTED	Incremental migration is being performed, and the DR task is in progress.
INCRE_TRANSFER_FAILED	Incremental migration fails and a DR exception occurs.
RELEASE_RESOURCE_STARTED	Completing
RELEASE_RESOURCE_FAILED	Stopping task failed

Status	Description
RELEASE_RESOURCE_COMPLETE	Completed
CHANGE_JOB_STARTED	The task is being modified.
CHANGE_JOB_FAILED	Modifying task failed
CHILD_TRANSFER_STARTING	The subtask is being started.
CHILD_TRANSFER_STARTED	The subtask is being migrated.
CHILD_TRANSFER_COMPLETE	The subtask migration is complete.
CHILD_TRANSFER_FAILED	Failed to migrate the subtask.
RELEASE_CHILD_TRANSFER_STARTED	The subtask is being completed.
RELEASE_CHILD_TRANSFER_COMPLETE	The subtask is complete.

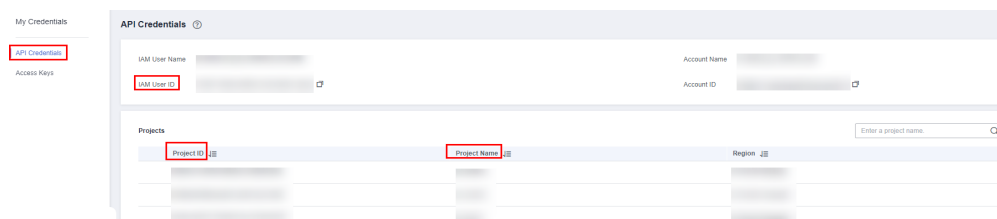
A.5 Obtaining a Project ID

Obtaining a Project ID from the Console

A project ID needs to be specified in the URLs of some APIs. Therefore, you need to obtain a project ID before calling such APIs. To do so, perform the following operations:

- Step 1** Sign up and log in to the management console.
- Step 2** Click the username and choose **My Credentials** from the drop-down list.
- Step 3** On the **API Credentials** page, view the project ID in the project list.

Figure A-1 Obtaining the Project ID



If there are multiple projects in one region, expand **Region** and view subproject IDs in the **Project ID** column.

----End

Obtaining the Project ID by Calling an API

You can also 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/**, where *{endpoint}* indicates the IAM endpoint. You can obtain the IAM endpoint from [Regions and Endpoints](#). For details about API authentication, see [3.2 Authentication](#).

The following is an example response. The value of **id** is the project ID.

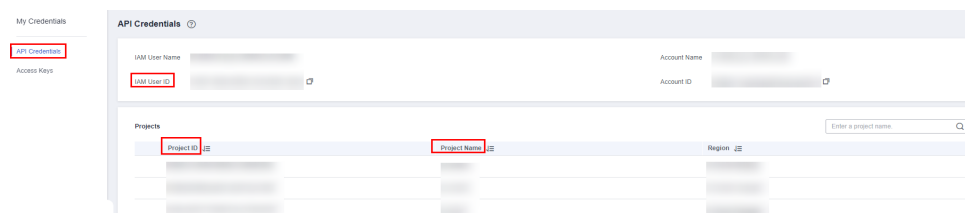
```
{
  "projects": [
    {
      "domain_id": "65382450e8f64ac0870cd180d14e684b",
      "is_domain": false,
      "parent_id": "65382450e8f64ac0870cd180d14e684b",
      "name": "eu-west-101",
      "description": "",
      "links": {
        "next": null,
        "previous": null,
        "self": "https://www.example.com/v3/projects/a4a5d4098fb4474fa22cd05f897d6b99"
      },
      "id": "a4a5d4098fb4474fa22cd05f897d6b99",
      "enabled": true
    }
  ],
  "links": {
    "next": null,
    "previous": null,
    "self": "https://www.example.com/v3/projects"
  }
}
```

A.6 Obtaining an Account ID

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

- Step 1** Sign up and log in to the management console.
- Step 2** Click the username and choose **My Credentials** from the drop-down list.
On the **API Credentials** page, view **Account ID**.

Figure A-2 Obtaining the account ID



----End

A.7 Obtaining a Task ID

A task ID is required for some URLs when an API is called. This section describes how to obtain a task ID.

Obtaining a Task ID from the Console

Step 1 You have logged in to the DRS management console.

Step 2 In the task list, view the task ID.

Alternatively, click the task name and view the task ID on the **Basic Information** tab.

Figure A-3 Basic information

Basic Information

Synchronization Progress

Process Data

Synchronization Mapping

Synchronization Logs

Abnormal Records

Tags

Task Information

Task Name

Auto_DRS_MySQL

Task ID

da806624-13ed-4f51-95a7

Task Created

May 08, 2021 10:29:08 GMT+08:00

Description

--

Scheduled Start Time

--

Started

May 08, 2021 11:03:21 GMT+08:00

Enterprise Project

----End

Obtaining a Task ID Through an API

You can also obtain the task ID by calling the API in [6.1.1 Creating Tasks in Batches](#).

The following is an example response after a task is successfully created. In the response, **id** indicates the task ID.

```
{
  "results": [ {
    "id": "e11eaf8f-71ef-4fad-8890-aed7572ajb11",
    "name": "DRS-9228",
    "status": "CREATING",
    "create_time": "1599188556112"
  } ],
  "count": 1
}
```

A.8 Status Code

[Table A-7](#) describes status codes.

Table A-7 Status code

Status Code	Code	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.

Status Code	Code	Description
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	Retrieve a location. The response to the request can be found under a different URI and should be retrieved using a GET or POST method.
304	Not Modified	The requested resource has not been modified. In such 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.

Status Code	Code	Description
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 request is rejected. The server has received and understood the request; yet it refused to respond, because the request is set to deny access. Do not retry the request before modification.
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.
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.

Status Code	Code	Description
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 satisfiable	The requested range is invalid.
417	Expectation Failed	The server fails to meet the requirements of the Expect request-header field.
422	UnprocessableEntity	The request is well-formed but is unable to be processed due to semantic errors.
429	TooManyRequests	The client 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.
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.

Status Code	Code	Description
505	HTTP Version not supported	The server does not support the HTTP protocol version used in the request.