Data Security Center

API Reference

Issue 11

Date 2021-12-13



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1 Before You Start

1.1 Overview

Data Security Center (DSC) is a latest-generation cloud data security management platform that protects your assets with functions such as risk classification, sensitive data identification, watermark source tracing, and static data masking. DSC monitors data security and gives you a comprehensive view of your data security on the cloud.

This document describes how to use the APIs provided by DSC to perform operations such as database watermarking, image watermarking, and data masking.

Ensure you are familiar with DSC concepts before you use these APIs. For details, see **Service Overview**.

1.2 API Calling

DSC supports Representational State Transfer (REST) APIs, allowing you to call APIs using HTTPS. For more information, see **Calling APIs**.

1.3 Endpoints

An endpoint is the **request address** for calling an API. Endpoints vary depending on services and regions. For the endpoints of all services, see **Regions and Endpoints**.

The following table describes the endpoint of DSC.

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Table 1-1 DSC endpoint

Region Name	Region	Endpoint	Protocol
CN South-Guangzhou	cn-south-1	sdg.cn-south-1.myhuaweicloud.com	HTTPS
CN North-Beijing1	cn-north-1	sdg.cn-north-1.myhuaweicloud.com	HTTPS
CN North-Beijing4	cn-north-4	sdg.cn-north-4.myhuaweicloud.com	HTTPS
CN East-Shanghai1	cn-east-3	sdg.cn-east-3.myhuaweicloud.com	HTTPS
CN East-Shanghai2	cn-east-2	sdg.cn-east-2.myhuaweicloud.com	HTTPS
CN North-Ulanqab1	cn-north-9	sdg.cn-north-9.myhuaweicloud.com	HTTPS

1.4 Limitations and Constraints

- Table 1-2 lists the document and image watermarks supported by the DSC.

Table 1-2 Supported document/image watermark types

Document/Image Watermark Carrier	Office (Windows and macOS)	WPS (Windows, macOS, Linux, and mobile OSs)	Adobe Reader	Chrome and Edge	Foxit PDF
PDF		√	√	√	√
WORD	√	√			
EXCEL	√	√			
PPT	√	√			

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NOTE

The symbol √ indicates that the carrier is supported by software.

- DSC APIs do not support inserting or extracting watermarks for OBS data. To perform watermark-related operations on OBS bucket data, store the data to the local PC and then call DSC APIs. The watermarked document will be returned in the response body.
- For more details of API constraints, see the API Description section.

1.5 Basic Concepts

- Account

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

- User

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

  An IAM user can view the account ID and user ID on the **My Credentials** page of the console. The account name, username, and password will be required for API authentication.

- Region

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

  For details, see **Region and AZ**.

- Availability Zone (AZ)

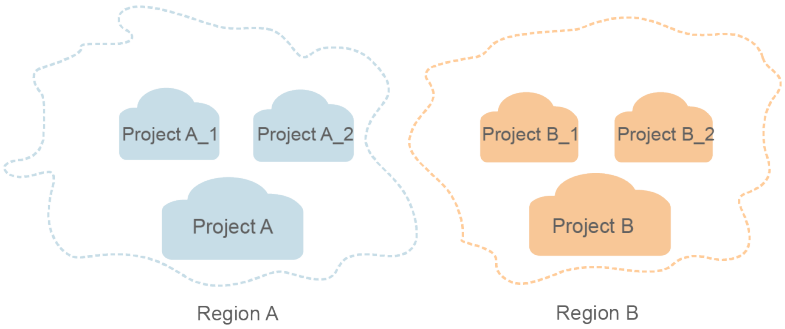
  An AZ comprises one or multiple physical data centers equipped with independent ventilation, fire, water, and electricity facilities. Compute, network, storage, and other resources in an AZ are logically divided into multiple clusters. AZs within a region are interconnected using high-speed optical fibers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

- Project

  Projects group and isolate compute, storage, and network resources across physical regions. A default project is provided for each region, and subprojects can be created under each default project. Users can be granted permissions to access all resources in a specific project. For more refined access control, create subprojects under a project and create resources in the subprojects. Users can then be assigned permissions to access only specific resources in the subprojects.

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Figure 1-1 Project isolation model



1.6 Selecting an API Type

DSC provides V1 APIs.

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2 Calling APIs

2.1 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. The obtained token can then be used to authenticate the calling of other APIs.

Request URI

A request URI is in the following format:

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

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

- **URI-scheme**:

  Protocol used to transmit requests. All APIs use HTTPS.

- **Endpoint**:

  Domain name or IP address of the server bearing the REST service. The endpoint varies between services in different regions. It can be obtained from **Regions and Endpoints**.

  For example, the endpoint of IAM in the **CN North-Beijing1** region is **iam.cn-north-1.myhuaweicloud.com**.

- **resource-path**:

  Access path of an API for performing a specified operation. Obtain the path from the URI of an API. For example, the **resource-path** of the API used to obtain a user token is **/v3/auth/tokens**.

- **query-string**:

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

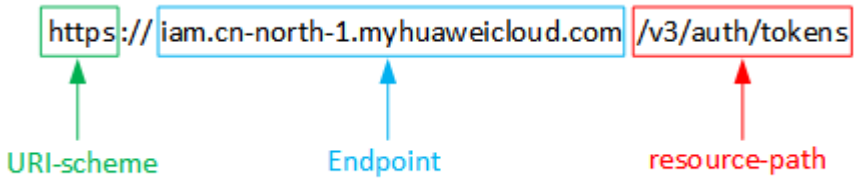
For example, to obtain an IAM token in the **CN North-Beijing1** region, obtain the endpoint of IAM (**iam.cn-north-1.myhuaweicloud.com**) for this region and the

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resource-path (**/v3/auth/tokens**) in the URI of the API used to **obtain a user token**. Then, construct the URI as follows:

```
https://iam.cn-north-1.myhuaweicloud.com/v3/auth/tokens
```

Figure 2-1 Example URI



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 Methods

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

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

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

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

Request Header

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

Common request header fields are as follows:

- **Content-Type**: specifies the request body type or format. This field is mandatory and its default value is **application/json**. Other values of this field will be provided for specific APIs if any.
- **X-Auth-Token**: specifies a user token only for token-based API authentication. The user token is a response to the API used to **obtain a user token**. This API is the only one that does not require authentication.

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

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

```
POST https://iam.cn-north-1.myhuaweicloud.com/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. The request body transfers content except the request header.

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. Set ***username*** to the name of a user, ***domainname*** to the name of the account that the user belongs to, ************* to the user's login password, and ***xxxxxxxxxxxxxxxxx*** to the project name, such as **cn-north-1**. You can learn more information about projects from **Regions and Endpoints**. Check the value of the **Region** column.

> **NOTE**
>
> The **scope** parameter specifies where a token takes effect. You can set **scope** to an account or a project under an account. In the following example, the token takes effect only for the resources in a specified project. For more information about this API, see **Obtaining a User Token**.

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

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

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```
    }
  }
}
```

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. This token can then be used to authenticate the calling of other APIs.

2.2 Authentication

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

- Token-based authentication: Requests are authenticated using a token.
- AK/SK-based authentication: Requests are authenticated by encrypting the request body using an AK/SK pair. This method is recommended because it provides higher security than token-based authentication.

Token-based 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.

The token can be obtained by calling the required API. For more information, see **Obtaining a User Token**. A project-level token is required for calling this API, that is, **auth.scope** must be set to **project** in the request body. Example:

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

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

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```
Content-Type: application/json
X-Auth-Token: ABCDEFJ....
```

AK/SK-based Authentication

NOTE

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

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

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

In AK/SK-based authentication, you can use an AK/SK to sign requests based on the signature algorithm or use the signing SDK to sign requests. For details about how to sign requests and use the signing SDK, see **API Signature Guide**.

NOTICE

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

2.3 Response

Status Codes

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

A status code is a group of numbers ranging from 1xx to 5xx. It indicates the status of a response. For more information, see **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

A response header corresponds to a request header, for example, **Content-Type**.

Figure 2-2 shows the response header for the API of **obtaining a user token**, in which **x-subject-token** is the desired user token. Then, you can use the token to authenticate the calling of other APIs.

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



(Optional) Response Body

A response body is generally returned in a structured format, corresponding to the **Content-Type** in the response header, and is used to transfer content other than the response header.

The following shows part of the response body for the API to **obtain a user token**. For the sake of space, only part of the content is displayed here.

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

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

```
{
    "error": {
        "message": "The request you have made requires authentication.",
        "title": "Unauthorized"
    }
}
```

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

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3 API Description

3.1 Data Watermarking

3.1.1 Injecting a Data Watermark

Function

This API is used to dynamically inject a watermark into the JSON body.

URI

POST /v1/{project_id}/sdg/database/watermark/embed

Table 3-1 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID.

Request Parameters

Table 3-2 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

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Table 3-3 Request body parameters

Parameter	Mandatory	Type	Description
watermark_content	Yes	String	Watermark content
watermark_key	Yes	String	Watermark key
columns	Yes	Array of **Columns** objects	List of field types. The number of field types in a list cannot exceed 100. At least two fields must be included. primary_key set to true indicates the primary key and primary_key set to false indicates watermark injection.
data	Yes	Array of Map<String,Object> objects	Content of a field, which can contain a maximum of 2000 characters.

Table 3-4 Columns

Parameter	Mandatory	Type	Description
name	Yes	String	Field name, which can contain a maximum of 256 characters.
type	Yes	String	Field type. Enumeration values: • **INTEGER** • **STRING** • **DOUBLE**
primary_key	Yes	Boolean	Whether a field in the database table is a primary key.

Response Parameters

Status code: 200

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Table 3-5 Response body parameters

Parameter	Type	Description
marked_data	Array of Map<String,Object> objects	Watermarked data

Status code: 400

Table 3-6 Response body parameters

Parameter	Type	Description
error_code	String	Error Code
error_msg	String	Error Message

Example Requests

```
POST https://{endpoit}/v1/{project_id}/sdg/database/watermark/embed

{
  "watermark_content" : "test12345678test",
  "watermark_key" : "keyword",
  "columns" : [ {
    "name" : "item1",
    "type" : "INTERGER",
    "primary_key" : true
  }, {
    "name" : "item2",
    "type" : "INTEGER",
    "primary_key" : false
  } ],
  "data" : [ {
    "item1" : 0,
    "item2" : 3
  }, {
    "item1" : 1,
    "item2" : 4
  } ]
}
```

Example Responses

Status code: 200

Request successful.

```
{
  "marked_data" : [ {
    "item2" : 3,
    "item1" : "test"
  }, {
    "item2" : 5,
    "item1" : "test"
  } ]
}
```

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Status code: 400

Parameter error.

```
{
  "error_code" : "DSC.00000004",
  "error_msg" : "Invalid parameter"
}
```

Status Codes

Status Code	Description
200	Request successful.
400	Parameter error.

Error Codes

See **Error Codes**.

3.1.2 Extracting a Data Watermark

Function

This API is used to extract a data watermark.

URI

POST /v1/{project_id}/sdg/database/watermark/extract

Table 3-7 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID.

Request Parameters

Table 3-8 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

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Table 3-9 Request body parameters

Parameter	Mandatory	Type	Description
watermark_key	Yes	String	Watermark key
columns	Yes	Array of **Columns** objects	Field type list, which cannot exceed 100.
data	Yes	Array of Map<String,Object> objects	Watermark data records, which cannot exceed 30,000.

Table 3-10 Columns

Parameter	Mandatory	Type	Description
name	Yes	String	Field name, which can contain a maximum of 256 characters.
type	Yes	String	Field type. Enumeration values: • **INTEGER** • **STRING** • **DOUBLE**
primary_key	Yes	Boolean	Whether a field in the database table is a primary key.

Response Parameters

Status code: 200

Table 3-11 Response body parameters

Parameter	Type	Description
watermarks	Array of strings	List of watermarks extracted. The uploaded data may include different watermarks. All watermarks extracted are returned, and the number of watermarks cannot exceed 100.

Status code: 400

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Table 3-12 Response body parameters

Parameter	Type	Description
error_code	String	Error Code
error_msg	String	Error Message

Example Requests

```
POST https://{endpoint}/v1/{project_id}/sdg/database/watermark/extract

{
  "watermark_key" : "key",
  "columns" : {
    "name" : "col",
    "type" : "INTEGER",
    "primary_key" : false
  },
  "data" : {
    "col" : 0.1
  }
}
```

Example Responses

Status code: 200

Request successful.

```
{
  "watermarks" : [ "watermark" ]
}
```

Status code: 400

Parameter error.

```
{
  "error_code" : "DSC.00000004",
  "error_msg" : "Invalid parameter"
}
```

Status Codes

Status Code	Description
200	Request successful.
400	Parameter error.

Error Codes

See **Error Codes**.

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3.2 Sensitive Data Discovery

3.2.1 Querying the Identification Task List

Function

This API is used to query the identification task list.

URI

GET /v1/{project_id}/sdg/scan/jobs

Table 3-13 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID

Table 3-14 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Integer	Page number
limit	No	Integer	Page size
content	No	String	Content
start_time	No	String	This parameter is currently unavailable.
end_time	No	String	This parameter is currently unavailable.

Request Parameters

None

Response Parameters

Status code: 200

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Table 3-15 Response body parameters

Parameter	Type	Description
tasks	Array of **ScanJob** objects	List of identification tasks
total	Long	Total number of tasks

Table 3-16 ScanJob

Parameter	Type	Description
id	String	Task ID
name	String	Task name
rule_groups	Array of strings	Rule group used by a task
cycle	String	Task execution type Enumeration values: • **ONCE** • **DAY** • **WEEK** • **MONTH**
status	String	Task status Enumeration values: • **INIT** • **WAITING** • **RUNNING** • **FAILED** • **STOPPED** • **FINISHED** • **TERMINATED**
last_run_time	Long	Last execution time
create_time	Long	Task creation time
last_scan_risk	String	Risk level according to the last identification
use_nlp	Boolean	Whether NLP is used for identification
open	Boolean	Whether the task is started
topic_urn	String	SMN topic
start_time	Long	Task start time

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Status code: 400

Table 3-17 Response body parameters

Parameter	Type	Description
error_code	String	Error Code
error_msg	String	Error Message

Example Requests

Querying the Identification Task List

```
GET /v1/{project_id}/sdg/scan/jobs
```

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "task" : [ {
    "id" : "xxxxxxx",
    "name" : "ScanDemo",
    "cycle" : "ONCE",
    "status" : "FINISHED",
    "open" : true,
    "rule_groups" : [ "PCI" ],
    "last_run_time" : 1634612489173,
    "create_time" : 1630982438506,
    "last_scan_risk" : "HIGH",
    "use_nlp" : false,
    "topic_urn" : "",
    "start_time" : 1630983532673
  } ]
}
```

Status code: 400

Invalid request

```
{
  "error_code" : "dsc.40000011",
  "error_msg" : "Invalid parameter"
}
```

Status Codes

Status Code	Description
200	OK
400	Invalid request

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Error Codes

See **Error Codes**.

3.2.2 Querying the Result of an Identification Task

Function

This API is used to query the result of a specified identification task.

URI

GET /v1/{project_id}/sdg/scan/job/{job_id}/results

Table 3-18 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID
job_id	Yes	String	Task ID

Table 3-19 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Integer	Page number
limit	No	Integer	Page size
type	No	String	Asset type Enumeration values: • **DATABASE** • **OBS** • **BIGDATA**
start_time	No	String	This parameter is currently unavailable.
end_time	No	String	This parameter is currently unavailable.

Request Parameters

None

Response Parameters

Status code: 200

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Table 3-20 Response body parameters

Parameter	Type	Description
job_id	String	Task ID
job_name	String	Task name
type	String	Asset type
db_scan_result	**DbScanResult** object	Result of identification tasks for databases
obs_scan_result	**ObsScanResult** object	Result of the identification task for OBS
es_scan_result	**EsScanResult** object	Result of the identification task for Elasticsearch

Table 3-21 DbScanResult

Parameter	Type	Description
total	Integer	Total number of results
db_scan_results	Array of **DbScanResultInfo** objects	Result list of identification tasks for databases

Table 3-22 DbScanResultInfo

Parameter	Type	Description
task_id	String	Task ID
db_name	String	Database name
table_id	String	Table ID
table_name	String	Table name
risk_level	Integer	Risk level
sensitive_data_type	Array of strings	Matched rules
match_info	Array of **DbMatchInfo** objects	Matched rules of table columns

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Table 3-23 DbMatchInfo

Parameter	Type	Description
column_name	String	Column name
rule_name	String	Name of the matched rule
rule_id	String	ID of the matched rule
rule_risk_level	Integer	Risk level of the matched rule
column_line	Array of integers	Columns of risk data

Table 3-24 ObsScanResult

Parameter	Type	Description
total	Integer	Total number of results
db_scan_results	Array of **ObsScanResultInfo** objects	Result list of the identification task for OBS

Table 3-25 ObsScanResultInfo

Parameter	Type	Description
task_id	String	Task ID
bucket_id	String	OBS bucket ID
bucket_name	String	OBS bucket name
file_path	String	Directory
file_name	String	File name
md5	String	File MD5
risk_level	Integer	Risk level
sensitive_data_type	Array of strings	Sensitive data types

Table 3-26 EsScanResult

Parameter	Type	Description
total	Integer	Total number of results

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Parameter	Type	Description
db_scan_results	Array of **EsScanResultInfo** objects	Result list of the identification task for Elasticsearch

Table 3-27 EsScanResultInfo

Parameter	Type	Description
task_id	String	Task ID
index_name	String	Index name
type_id	String	Type ID
type_name	String	Type name
risk_level	Integer	Risk level
sensitive_data_type	Array of strings	Sensitive data type
match_info	Array of **EsMatchInfo** objects	Details of matched rules

Table 3-28 EsMatchInfo

Parameter	Type	Description
field_name	String	Data field name
rule_name	String	Rule name
rule_id	String	Rule ID
rule_risk_level	Integer	Risk level of the matched rule

Status code: 400

Table 3-29 Response body parameters

Parameter	Type	Description
error_code	String	Error Code
error_msg	String	Error Message

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Example Requests

Querying the Result of an Identification Task

```
GET /v1/{project_id}/sdg/scan/job/{job_id}/results
```

Example Responses

Status code: 200

OK

```
{
  "job_id" : "xxxxxx",
  "job_name" : "xxxxxx",
  "type" : "DATABASE",
  "db_scan_result" : {
    "total" : 1,
    "db_scan_results" : [ {
      "task_id" : "xxxxxx",
      "db_name" : "xxxxxx",
      "table_id" : "xxxxxx",
      "table_name" : "student",
      "risk_level" : 6,
      "sensitive_data_type" : [ "xxxxxx", "xxxxxx" ],
      "match_info" : [ {
        "column_name" : "phone",
        "rule_name" : "xxxxxx",
        "rule_id" : "xxxxxx",
        "rule_risk_level" : 6,
        "column_line" : [ 1, 3 ]
      }, {
        "column_name" : "email",
        "rule_name" : "xxxxxx",
        "rule_id" : "xxxxxx",
        "rule_risk_level" : 1,
        "column_line" : [ 1, 3 ]
      } ]
    } ]
  },
  "obs_scan_result" : null,
  "es_scan_result" : null
}
```

Status code: 400

Invalid request

```
{
  "error_code" : "dsc.40000011",
  "error_msg" : "Invalid parameter"
}
```

Status Codes

Status Code	Description
200	OK
400	Invalid request

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Error Codes

See **Error Codes**.

3.3 Dynamic Data Masking

3.3.1 Masking Sensitive Data

Function

This API is used to mask sensitive data.

URI

POST /v1/{project_id}/data/mask

Table 3-30 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID.

Request Parameters

Table 3-31 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 3-32 Request body parameters

Parameter	Mandatory	Type	Description
mask_strategies	Yes	Array of **MaskStrategies** objects	List of sensitive data masking policies. The number of masking policies in a list cannot exceed 100. Each policy corresponds to a field.
data	Yes	Array of Map<String,Object> objects	Data list

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Table 3-33 MaskStrategies

Parameter	Mandatory	Type	Description
name	Yes	String	Field name, which can contain a maximum of 256 characters.
algorithm	Yes	String	Name of a sensitive data masking algorithm. For details, see "Configuring a Dynamic Sensitive Data Masking Policy" in the appendix. Enumeration values: • **SHA256** • **SHA512** • **AES** • **PRESNM** • **MASKNM** • **PRESXY** • **MASKXY** • **SYMBOL** • **KEYWORD** • **NUMERIC**
parameters	No	Map<String,Object>	Parameters for configuring a sensitive data masking algorithm. For details, see "Configuring a Dynamic Sensitive Data Masking Policy" in the appendix.

Response Parameters

Status code: 200

Table 3-34 Response body parameters

Parameter	Type	Description
masked_data	Array of Map<String,Object> objects	List of masked data. The data structure is the same as that in the request.

Status code: 400

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Table 3-35 Response body parameters

Parameter	Type	Description
error_code	String	Error Code
error_msg	String	Error Message

Example Requests

```
POST https://{endpoint}/v1/{project_id}/data/mask

{
  "mask_strategies" : {
    "name" : "col",
    "algorithm" : "KEYWORD",
    "parameters" : {
      "key" : "keyword",
      "target" : "target"
    }
  },
  "data" : {
    "col" : "keyword"
  }
}
```

Example Responses

Status code: 200

Sensitive data masked.

```
{
  "masked_data" : [ {
    "col" : "target"
  } ]
}
```

Status code: 400

Invalid request.

```
{
  "error_code" : "DSC.00000004",
  "error_msg" : "Invalid parameter"
}
```

Status Codes

Status Code	Description
200	Sensitive data masked.
400	Invalid request.

Error Codes

See **Error Codes**.

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3.4 Image Watermarking

3.4.1 Injecting Watermarks into Images

Function

This API is used to inject watermarks into the uploaded images. Only JPG, JPEG, JPE, PNG, BMP, DIB, RLE, TIFF, TIF, PPM, WEBP, TGA, TPIC, and GIF images are supported.

URI

POST /v1/{project_id}/image/watermark/embed

Table 3-36 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID.

Request Parameters

Table 3-37 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 3-38 FormData parameters

Parameter	Mandatory	Type	Description
file	Yes	File	Image into which watermarks are to be injected. The width and height must be greater than 512 pixels.
blind_watermark	Yes	String	Content of invisible watermarks

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Response Parameters

Status code: 400

Table 3-39 Response body parameters

Parameter	Type	Description
error_code	String	Error Code
error_msg	String	Error Message

Example Requests

NOTE

Submit the request using the form. The "file" indicates a specified document.

```
POST /v1/{project_id}/sdg/image/watermark/embed HTTP/1.1

{
  "blind_watermark" : "testWaterMark",
  "file" : "test.PNG"
}
```

Example Responses

Status code: 200

Request successful.

```
"{\"Watermarked image\"}"
```

Status code: 400

Invalid request.

```
{
  "error_code" : "DSC.00000007",
  "error_msg" : "File format error"
}
```

Status Codes

Status Code	Description
200	Request successful.
400	Invalid request.

Error Codes

See **Error Codes**.

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3.4.2 Extracting Image Watermarks

Function

This API is used to extract the invisible watermarks from an image.

URI

POST /v1/{project_id}/image/watermark/extract

Table 3-40 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID.

Request Parameters

Table 3-41 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 3-42 FormData parameters

Parameter	Mandatory	Type	Description
file	Yes	File	Image from which invisible watermarks are to be extracted.
mark_len	No	String	Length of the watermark to be extracted. The length of mark_len is greater than 0 and less than 32.

Response Parameters

Status code: 200

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Table 3-43 Response body parameters

Parameter	Type	Description
watermark	String	Invisible watermark. The length cannot exceed 32 characters.

Status code: 400

Table 3-44 Response body parameters

Parameter	Type	Description
error_code	String	Error Code
error_msg	String	Error Message

Example Requests

NOTE

Submit the request using the form. The "file" indicates a specified document.

```
POST /v1/{project_id}/sdg/image/watermark/extract HTTP/1.1

{
  "file" : "test.PNG"
}
```

Example Responses

Status code: 200

Request successful.

```
{
  "watermark" : "mark!"
}
```

Status code: 400

Invalid request.

```
{
  "error_code" : "DSC.00000007 ",
  "error_msg" : "File format error"
}
```

Status Codes

Status Code	Description
200	Request successful.
400	Invalid request.

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Error Codes

See **Error Codes**.

3.5 Document Watermarking

3.5.1 Injecting a Watermark into a Document

Function

This API is used to inject a watermark into a document.

URI

POST /v1/{project_id}/sdg/doc/watermark/embed

Table 3-45 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID.

Request Parameters

Table 3-46 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

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Table 3-47 FormData parameters

Parameter	Mandatory	Type	Description
doc_type	Yes	String	Type of the document into which a watermark is injected. Enumeration values: • **WORD** • **EXCEL** • **PDF** • **PPT**
file_password	No	String	Password for opening a file, which can contain a maximum of 256 characters. Opening a watermarked file does not require a password. If an Office Word document requires a password for read or domain control, you need to enter the password to open the file.
marked_file_password	No	String	Set a password for the file after the watermark is added. The maximum length is 256 characters. The file is not encrypted by default and does not require a password.
readonly_password	No	String	Set a password for reading the file after the watermark is added. The maximum length is 256 characters. By default, the file is not encrypted for reading and does not require a password.
visible_watermark	No	String	Visible watermark content.
font_size	No	String	Font size of a visible watermark. The value ranges from 1 to 100, and the default value is 50.
rotation	No	String	Font angle of a visible watermark, in anticlockwise direction. The value range is [0, 90], and the default value is 45.

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Parameter	Mandatory	Type	Description
opacity	No	String	Transparency of a visible watermark. The value range is [0, 1], and the default value is 0.3.
blind_watermark	No	String	Invisible watermark content.
file	Yes	File	Document into which a watermark is injected.
image_mark	No	File	Image added in the document as the watermark. The image must be in the PNG or JPG format and cannot exceed 1 MB. The value of name in Content-Disposition in the API request must be set to image_mark.
visible_type	No	String	Type of visible watermark. The default value of this field is TEXT. If this field is set to IMAGE: • the image must be in the PNG or JPG format and cannot exceed 1 MB, • the value of name in Content-Disposition in the API request must be set to image_mark, • the fields visible_watermark, font_size, rotation, and opacity will not take effect. The text watermark will be overspread over the whole page while the image watermark will be displayed in the middle of the page. Enumeration values: • **TEXT** • **IMAGE**

Response Parameters

Status code: 400

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Table 3-48 Response body parameters

Parameter	Type	Description
error_code	String	Error Code
error_msg	String	Error Message

Example Requests

NOTE

Submit the request using the form. The "file" indicates a specified document.

```
POST /v1/{project_id}/sdg/doc/watermark/embed

{
  "file" : "test.doc",
  "doc_type" : "WORD",
  "opacity" : "0.1",
  "font_size" : "30",
  "rotation" : "45",
  "blind_watermark" : "blind_watermark",
  "visible_watermark" : "visible_watermark"
}
```

Example Responses

Status code: 200

Request successful.

```
"{\"Watermarked document\"}"
```

Status code: 400

Invalid request.

```
{
  "error_code" : "DSC.00000007 ",
  "error_msg" : "File format error"
}
```

Status Codes

Status Code	Description
200	Request successful.
400	Invalid request.

Error Codes

See **Error Codes**.

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3.5.2 Extracting a Document Watermark

Function

This API is used to extract a document watermark.

URI

POST /v1/{project_id}/sdg/doc/watermark/extract

Table 3-49 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID.

Request Parameters

Table 3-50 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token, which can be obtained by calling the IAM API (value of X-Subject-Token in the response header).

Table 3-51 FormData parameters

Parameter	Mandatory	Type	Description
doc_type	Yes	String	Type of the document from which a watermark needs to be extracted. Enumeration values: • **WORD** • **EXCEL** • **PDF** • **PPT**

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Parameter	Mandatory	Type	Description
file_password	No	String	Password for opening a file, which can contain a maximum of 256 characters. Opening a watermarked file does not require a password. If an Office Word document requires a password for read or domain control, you need to enter the password to open the file.
file	Yes	File	File to be uploaded for watermark extraction.

Response Parameters

Status code: 200

Table 3-52 Response body parameters

Parameter	Type	Description
watermark	String	Invisible watermark. The length cannot exceed 32 characters.

Status code: 400

Table 3-53 Response body parameters

Parameter	Type	Description
error_code	String	Error Code
error_msg	String	Error Message

Example Requests

NOTE

Submit the request using the form. The "file" indicates a specified document.

```
POST /v1/{project_id}/sdg/doc/watermark/extract

{
  "file" : "testMarked.doc",
  "doc_type" : "WORD"
}
```

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Example Responses

Status code: 200

Request successful.

```
{
  "watermark" : "mark!"
}
```

Status code: 400

Invalid request.

```
{
  "error_code" : "DSC.00000007",
  "error_msg" : "File format error"
}
```

Status Codes

Status Code	Description
200	Request successful.
400	Invalid request.

Error Codes

See **Error Codes**.

3.6 API Calling Records

3.6.1 Querying OpenAPI Calls

Function

This API is used to query OpenAPI calling records.

URI

GET /v1/{project_id}/openapi/called-records

Table 3-54 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID

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Table 3-55 Query parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Page size. The default value is 1000, and the maximum value is 2000.
called_url	No	String	URL of the calling records. Example: /v1/{project_id}/sdg/database/watermark/embed
start_time	No	Long	Start time of the calling records (Unix timestamp in milliseconds). Example: 0
end_time	No	Long	End time of the calling records (Unix timestamp in milliseconds). Example: 1638515803572
marker	No	String	Marker of the next page. This parameter is not required for the first page. You need to set this parameter to a return value in the first page of the query results for the next page.

Request Parameters

None

Response Parameters

Status code: 200

Table 3-56 Response body parameters

Parameter	Type	Description
total	Integer	Total number of API calls
succeed	Integer	Number of successful calls
failed	Integer	Number of failed calls
openapi_called_records	Array of **OpenApiCalledRecord** objects	List of OpenAPI calls
next_marker	String	Marker of the next page

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Table 3-57 OpenApiCalledRecord

Parameter	Type	Description
user_name	String	Name of the user that called the APIs
user_id	String	ID of the user that called the APIs
domain_name	String	Domain name of the API calls
domain_id	String	Domain IDs of the API calls
request_url	String	URL of the API calls
request_method	String	HTTP request method
response_code	String	HTTP request code
fail_reason	String	Failure cause
timestamp	Long	Time of the calls (Unix timestamp, in milliseconds)

Status code: 400

Table 3-58 Response body parameters

Parameter	Type	Description
error_code	String	Error Code
error_msg	String	Error Message

Example Requests

Querying OpenAPI Calls

```
GET /v1/{project_id}/openapi/called-records
```

Example Responses

Status code: 200

OK

```
{
  "total" : 11,
  "succeed" : 11,
  "failed" : 0,
  "openapi_called_records" : [ {
    "user_name" : "xxxxxxxxxxxx",
    "user_id" : "xxxxxxxxxxxxxxxx",
    "domain_name" : "xxxxxxxxxxxxxxxx",
    "domain_id" : "xxxxxxxxxxxxxxxxxx",
```

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```
    "request_url" : "/v1/xxxxxxxxxxxxxxxxxxxxxxxxxxxx/sdg/doc/watermark/embed",
    "request_method" : "POST",
    "response_code" : "200",
    "fail_reason" : "",
    "timestamp" : 1638427576524
  } ],
  "next_marker" : "xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"
}
```

Status code: 400

Invalid request

```
{
  "error_code" : "dsc.40000011",
  "error_msg" : "Invalid parameter"
}
```

Status Codes

Status Code	Description
200	OK
400	Invalid request

Error Codes

See **Error Codes**.

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A Appendixes

A.1 Status Codes

Code	Status	Description
200	OK	Request successful.
400	Bad Request	Request failed. Modify the request and then try again.
401	Unauthorized	Authentication failed. The authentication information provided by the client is incorrect or invalid.
403	Forbidden	Request rejected. Modify the request and then try again. The server has received and understood the request; yet it refused to respond, because the request is set to deny access.
404	NotFound	Cannot find the requested resource. Modify the request and then try again.
500	InternalServerError	Internal error. The server is able to receive the request but it could not understand the request.

A.2 Error Codes

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

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Status Code	Error Codes	Error Message	Description	Solution
400	DSC.00000001	The project ID is not in the trust list	The project ID is not in the trust list!	Try again. If the operation fails, contact the technical support.
400	DSC.00000002	Internal service error	Internal service error!	Try again. If the operation fails, contact the technical support.
400	DSC.00000003	Failed to read the upload file	Failed to read the upload file!	Check the file type and size.
400	DSC.00000004	Invalid parameter	Invalid parameter!	Check the parameter settings.
400	DSC.00000005	Invalid project id	Invalid project id!	Try again. If the operation fails, contact the technical support.
400	DSC.00000006	File size exceeds maximum limit	File size exceeds maximum limit!	Check the file size.
400	DSC.00000007	File format error	File format error!	Check the file format.
400	DSC.00000008	Upload file is empty	Upload file is empty!	Check whether the file is empty.
400	DSC.00000009	There are many tasks at present. Please try again later	There are many tasks at present. Please try again later!	Try again. If the operation fails, contact the technical support.
400	DSC.00000010	Image watermark file is empty	Image watermark file is empty!	Add a graphic file.
400	DSC.00000011	Image watermark file exceeds maximum limit	Image watermark file exceeds maximum limit!	limit the size of the graphic file.

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Status Code	Error Codes	Error Message	Description	Solution
400	DSC.00000012	Invalid project image watermark file type	Invalid project image watermark file type!	Upload a .png or .jpg file.
400	DSC.00000013	Invalid Auth	Invalid Auth!	Use a valid token.
400	DSC.00000014	Order DSC prossional version	Order DSC prossional version!	Order DSC prossional version first.
400	mask.20000001	Unknown error	Unknown error!	Try again. If the operation fails, contact the technical support.
400	mask.20000002	Internal service error	Internal service error!	Try again. If the operation fails, contact the technical support.
400	mask.20000003	Invalid parameter	Invalid parameter!	Pass a correct parameter.
400	mask.20000004	Mask data failed	Mask data failed!	Check the parameter settings.
400	watermark.10000001	Unknown error	Unknown error!	Try again. If the operation fails, contact the technical support.
400	watermark.10000002	Internal service error	Internal service error!	Try again. If the operation fails, contact the technical support.
400	watermark.10000003	Failed to read the upload file	Failed to read the upload file!	Check the file type and size.
400	watermark.10000004	Invalid parameter	Invalid parameter!	Check the parameter settings.
400	watermark.10000005	Watermark not found	Watermark not found!	Check whether the file contains a wartermark.

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Status Code	Error Codes	Error Message	Description	Solution
400	watermark.10000006	File size exceeds maximum limit	File size exceeds maximum limit!	Check the file size.
400	watermark.10000007	File format error	File format error!	Check the file format.
400	watermark.10000008	Upload file is empty	Upload file is empty!	Check whether the file is empty.
400	watermark.10000009	Wrong password	Wrong password!	Check whether the file password is correct.
400	watermark.10000010	The ".doc" format file does not support the watermark feature currently	The ".doc" format file does not support the watermark feature currently!	Check the file format.
400	watermark.10000011	The ".xls" format file does not support the visible watermark feature currently	The ".xls" format file does not support the visible watermark feature currently!	Check the file format.
400	watermark.10000012	The ".ppt" format file does not support the visible watermark feature currently	The ".ppt" format file does not support the visible watermark feature currently!	Check the file format.
400	watermark.10000013	No watermark specified	No watermark specified!	Check whether the data wartermarking parameters are set.
400	watermark.10000014	There are many tasks at present. Please try again later	There are many tasks at present. Please try again later!	Try again. If the operation fails, contact the technical support.

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Status Code	Error Codes	Error Message	Description	Solution
400	watermark.10000015	Blind watermark already exists	Blind watermark already exists!	Check whether the file contains an invisible watermark.
400	watermark.10000016	There is not enough channel capacity to embed the watermark	There is not enough channel capacity to embed the watermark!	Check the file size.
400	watermark.10000017	Image channel capacity is too small to embed watermark	Image channel capacity is too small to embed watermark!	Try again. If the operation fails, contact the technical support.
400	watermark.10000018	Currently does not support embedding watermark to image below 512 pixels	Currently does not support embedding watermark to image below 512 pixels!	Please upload image larger than 512 pixels, or contact customer service.

A.3 Obtaining a Project ID

Obtaining a Project ID by Calling an API

You can obtain the project ID by calling the API used to **query project information based on the specified criteria**.

The API used to obtain a project ID is GET https://{Endpoint}/v3/projects. **{Endpoint}** is the IAM endpoint and can be obtained from **Regions and Endpoints**. For details about API authentication, see **Authentication**.

In the following example, **id** indicates the project ID.

```
{
    "projects": [
        {
            "domain_id": "65382450e8f64ac0870cd180d14e684b",
            "is_domain": false,
            "parent_id": "65382450e8f64ac0870cd180d14e684b",
            "name": "xxxxxxxx",
            "description": "",
            "links": {
                "next": null,
                "previous": null,
                "self": "https://www.example.com/v3/projects/a4a5d4098fb4474fa22cd05f897d6b99"
```

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```
        },
        "id": "a4a5d4098fb4474fa22cd05f897d6b99",
        "enabled": true
    }
  ],
  "links": {
    "next": null,
    "previous": null,
    "self": "https://www.example.com/v3/projects"
  }
}
```

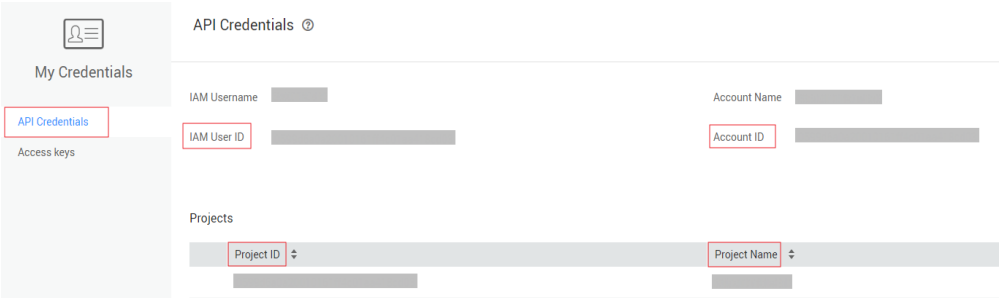

Obtaining a Project ID from the Console

A project ID is required for some URLs when an API is called. To obtain a project ID, perform the following operations:

1. Log in to the management console.
2. Click the username and choose **Basic Information** from the drop-down list.
3. On the **Account Info** page, click **Manage** next to **Security Credentials**.

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

Figure A-1 Viewing project IDs



A.4 Configuring a Dynamic Sensitive Data Masking Policy

A.4.1 SHA-256/512

SHA-256/512, message-digest algorithms, are used by DSC to compute a digest from a string in a specified field.

Request Parameters

Table A-1 Parameter description

Parameter	Mandatory	Type	Description
algorithm	Yes	String	Algorithm type, for example, **SHA-256** and **SHA-512**

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Parameter	Mandatory	Type	Description
parameters	Yes	Object	Parameter, which can be ignored

Example Request

```
{
"mask_strategies": [
{
"name": "col1",
"algorithm": "SHA256",
"parameters": {}
}
],
"data": [
{
"col1": "test"
]
}
```

A.4.2 AES

Encrypt the character string using the AES encryption algorithm.

AES algorithm configurations: The initial vector (IV) is a 16-byte random number. The encryption mode is GCM. PKCS7-Padding (CMS-Padding) is recommended.

In the encryption and data masking result, the first 16 bytes of an encrypted string is the initialization vector (IV) and the rest is the enciphered text. The ciphertext is in binary format. The ciphertext entered into the masking engine is encoded using Base64 and stored in the database as a character string.

Request Parameters

Table A-2 Parameter description

Parameter	Mandatory	Type	Description
algorithm	Yes	String	Algorithm type, for example, **AES**
parameters	Yes	For details, see **Table A-3**.	Parameters for configuring a data masking algorithm

Table A-3 Parameters for configuring a data masking algorithm

Parameter	Mandatory	Type	Description
key	Yes	String	AES algorithm key

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Parameter	Mandatory	Type	Description
len	Yes	String	Key group length Currently, only **128**, **192**, and **256** are supported.

Example Request

```
{
"mask_strategies": [
{
"name": "col1",
"algorithm": "AES",
"parameters": {
"key": "df643533b90b6926c9bff63cc16173db",
"len": "128"
}
}
],
"data": [
{
"col1": "test"
}
]
}
```

A.4.3 PRESNM

Retain the first *n* and last *m* characters and mask the content in the middle part of the specified character string.

Request Parameters

Table A-4 Parameter description

Parameter	Mandatory	Type	Description
algorithm	Yes	String	Algorithm type, for example, **PRESNM**
parameters	Yes	For details, see **Table A-5**.	Parameters for configuring a data masking algorithm

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Table A-5 Parameters for configuring a data masking algorithm

Parameter	Mandatory	Type	Description
type	Yes	String	Character masking methods are described as follows: • **CHAR**: Character masking • **RAND**: Random masking
method	Yes	String	Masking method If **type** is set to **RAND**, this parameter can be set as follows: • **CHAR**: Replace the data to be masked with characters. • **DIGITAL**: Replace the data to be masked with numbers. • **BOTH**: Replace the data to be masked with letters and numbers.
n	Yes	Int	Retain the first *n* characters.
m	Yes	Int	Retain the last *m* characters.

Example Request

```
{
   "mask_strategies": [
      {
         "name": "col1",
         "algorithm": "PRESNM",
         "parameters": {
            "type": "CHAR",
            "n": 1,
            "m": 1,
            "method": "*"
         }
      }
   ],
   "data": [
      {
         "col1": "test"
      }
   ]
}
Or
{
   "mask_strategies": [
```

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```
    {
      "name": "col1",
      "algorithm": "PRESNM",
      "parameters": {
        "type": "RAND",
        "n": 1,
        "m": 1,
        "method": "BOTH"
      }
    }
  ],
  "data": [
    {
      "col1": "test"
    }
  ]
}
```

A.4.4 MASKNM

Mask the first *n* and last *m* characters and retain the content in the middle part of the specified character string.

Request Parameters

Table A-6 Parameter description

Parameter	Mandatory	Type	Description
algorithm	Yes	String	Algorithm type, for example, **MASKNM**
parameters	Yes	For details, see **Table A-7**.	Parameters for configuring a data masking algorithm

Table A-7 Parameters for configuring a data masking algorithm

Parameter	Mandatory	Type	Description
type	Yes	String	Character masking methods are described as follows: • **CHAR**: Character masking • **RAND**: Random masking

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Parameter	Mandatory	Type	Description
method	Yes	String	Masking method If **type** is set to **RAND**, this parameter can be set as follows: • **CHAR**: Replace the data to be masked with characters. • **DIGITAL**: Replace the data to be masked with numbers. • **BOTH**: Replace the data to be masked with letters and numbers.
n	Yes	Int	Mask the first *n* characters.
m	Yes	Int	Mask the last *m* characters.

Example Request

```
{
   "mask_strategies": [
      {
         "name": "col1",
         "algorithm": "MASKNM",
         "parameters": {
            "type": "CHAR",
            "n": 1,
            "m": 1,
            "method": "*"
         }
      }
   ],
   "data": [
      {
         "col1": "test"
      }
   ]
}
Or
{
   "mask_strategies": [
      {
         "name": "col1",
         "algorithm": "MASKNM",
         "parameters": {
            "type": "RAND",
            "n": 1,
            "m": 1,
            "method": "BOTH"
         }
      }
   ],
   "data": [
```

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```
    {
      "col1": "test"
    }
  ]
}
```

A.4.5 PRESXY

Retain the specified character string from *x* to *y* and mask the rest characters.

Request Parameters

Table A-8 Parameter description

Parameter	Mandatory	Type	Description
algorithm	Yes	String	Algorithm type, for example, **PRESXY**
parameters	Yes	For details, see **Table A-9**.	Parameters for configuring a data masking algorithm

Table A-9 Parameters for configuring a data masking algorithm

Parameter	Mandatory	Type	Description
type	Yes	String	Character masking methods are described as follows: • **CHAR**: Character masking • **RAND**: Random masking
method	Yes	String	Masking method If **type** is set to **RAND**, this parameter can be set as follows: • **CHAR**: Replace the data to be masked with characters. • **DIGITAL**: Replace the data to be masked with numbers. • **BOTH**: Replace the data to be masked with letters and numbers.

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Parameter	Mandatory	Type	Description
x	Yes	Int	Start position of retained characters
y	Yes	Int	End position of retained characters

Example Request

```
{
   "mask_strategies": [
      {
         "name": "col1",
         "algorithm": "PRESXY",
         "parameters": {
            "type": "CHAR",
            "x": 1,
            "y": 1,
            "method": "*"
         }
      }
   ],
   "data": [
      {
         "col1": "test"
      }
   ]
}
Or
{
   "mask_strategies": [
      {
         "name": "col1",
         "algorithm": "PRESXY",
         "parameters": {
            "type": "RAND",
            "x": 1,
            "y": 1,
            "method": "CHAR"
         }
      }
   ],
   "data": [
      {
         "col1": "test"
      }
   ]
}
```

A.4.6 MASKXY

Mask the specified character string from *x* to *y* and retain the rest characters.

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Request Parameters

Table A-10 Parameter description

Parameter	Mandatory	Type	Description
algorithm	Yes	String	Algorithm type, for example, MASKXY
Parameters for configuring a data masking algorithm	Yes	For details, see **Table A-11**.	Parameters for configuring a data masking algorithm

Table A-11 Parameters for configuring a data masking algorithm

Parameter	Mandatory	Type	Description
type	Yes	String	Character masking methods are described as follows: • **CHAR**: Character masking • **RAND**: Random masking
method	Yes	String	Masking method If **type** is set to **RAND**, this parameter can be set as follows: • **CHAR**: Replace the data to be masked with characters. • **DIGITAL**: Replace the data to be masked with numbers. • **BOTH**: Replace the data to be masked with letters and numbers.
x	Yes	Int	Start position of masked characters
y	Yes	Int	End position of masked characters

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Example Request

```
{
   "mask_strategies": [
      {
         "name": "col1",
         "algorithm": "MASKXY",
         "parameters": {
            "type": "CHAR",
            "x": 1,
            "y": 1,
            "method": "*"
         }
      }
   ],
   "data": [
      {
         "col1": "test"
      }
   ]
}
Or
{
   "mask_strategies": [
      {
         "name": "col1",
         "algorithm": "MASKXY",
         "parameters": {
            "type": "RAND",
            "x": 1,
            "y": 1,
            "method": "CHAR"
         }
      }
   ],
   "data": [
      {
         "col1": "test"
      }
   ]
}
```

A.4.7 SYMBOL

Mask the content before or after a special character and retain the rest characters.

Request Parameters

Table A-12 Parameter description

Parameter	Mandatory	Type	Description
algorithm	Yes	String	Algorithm type, for example, **SYMBOL**
parameters	Yes	For details, see **Table A-13**.	Parameters for configuring a data masking algorithm

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Table A-13 Parameters for configuring a data masking algorithm

Parameter	Mandatory	Type	Description
type	Yes	String	Character masking methods are described as follows: • **CHAR**: Character masking • **RAND**: Random masking
method	Yes	String	Masking method If **type** is set to **RAND**, this parameter can be set as follows: • **CHAR**: Replace the data to be masked with characters. • **DIGITAL**: Replace the data to be masked with numbers. • **BOTH**: Replace the data to be masked with letters and numbers.
direction	Yes	Int	Masking direction **0**: Mask the content before a special character. **1**: Mask the content after a special character.
symbol	Yes	String	Specified special character

Example Request

```
{
   "mask_strategies": [
      {
         "name": "col1",
         "algorithm": "SYMBOL",
         "parameters": {
            "type": "CHAR",
            "direction": 1,
            "symbol": "@",
            "method": "x"
         }
      }
   ],
   "data": [
      {
         "col1": "test"
      }
   ]
```

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```
}
Or
{
   "mask_strategies": [
      {
         "name": "col1",
"algorithm": "SYMBOL", // Parameter for configuring a data masking algorithm
         "parameters": {
            "type": "RAND",
            "direction": 0,
            "symbol": "@",
            "method": "CHAR"
         }
      }
   ],
   "data": [
      {
         "col1": "test"
      }
   ]
}
```

A.4.8 KEYWORD

Replace the keyword specified in a character string.

Request Parameters

Table A-14 Parameter description

Parameter	Mandatory	Type	Description
algorithm	Yes	String	Algorithm type, for example, **KEYWORD**
parameters	Yes	For details, see **Table A-15**.	Parameters for configuring a data masking algorithm

Table A-15 Parameters for configuring a data masking algorithm

Parameter	Mandatory	Type	Description
key	Yes	String	Specified keyword
target	Yes	String	Value replaced with

Example Request

```
{
   "mask_strategies": [
      {
         "name": "col1",
         "algorithm": "KEYWORD",
         "parameters": {
"key": "Keyword",
"target": "Target character string"
         }
```

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```
    }
  ],
  "data": [
    {
"col1": "Keyword"
    }
  ]
}
```

A.4.9 NUMERIC

Round down a field of the numeric type to the nearest integer.

Request Parameters

Table A-16 Parameter description

Parameter	Mandatory	Type	Description
algorithm	Yes	String	Algorithm type, for example, **NUMERIC**
parameters	Yes	For details, see **Table A-17**	Parameters for configuring a data masking algorithm

Table A-17 Parameter for configuring a data masking algorithm

Parameter	Mandatory	Type	Description
value	Yes	Double	Value of the numeric field to rounded downed, which can only be an integer or a decimal and must be greater than 0

Example Request

```
{
  "mask_strategies": [
    {
      "name": "col1",
      "algorithm": " NUMERIC",
      "parameters": {
        "value": 0.05
      }
    }
  ],
  "data": [
    {
      "col1": "test"
    }
  ]
}
```

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B Change History

Date	Description
2021-12-13	This issue is the eleventh official release. Updated the Injecting a "Watermark into a Document" section.
2021-11-10	This issue is the tenth official release. • Modified **Endpoints**. • Added APIs related to sensitive data discovery.
2021-09-28	This issue is the ninth official release, which incorporates the following change: APIs are optimized based on specifications.
2021-09-14	This issue is the eighth official release, which incorporates the following change: Modified **Endpoints**.
2021-09-09	This issue is the seventh official release, which incorporates the following change: Added restrictions on watermarks in **Limitations and Constraints**.
2021-07-22	This issue is the sixth official release, which incorporates the following change: Optimized the APIs.
2021-04-28	This issue is the fifth official release, which incorporates the following change: Optimized APIs based on specifications.
2021-04-16	This issue is the fourth official release, which incorporates the following change: Standardized the error codes according to the related specifications.

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Date	Description
2021-04-07	This issue is the third official release, which incorporates the following change: Added section "Image Watermarking".
2021-03-11	This issue is the second official release, which incorporates the following change: Modified section "Document Watermarking", allowing you to add watermarks to PPT files.
2020-11-24	This issue is the first official release.

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