



## Key Management Service

# API Reference

Date 2019-03-13

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# 1 API Usage Guidelines

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Public cloud APIs comply with the RESTful API design principles. REST-based Web services are organized into resources. Each resource is identified by one or more Uniform Resource Identifiers (URIs). An application accesses a resource based on the resource's Unified Resource Locator (URL). A URL is usually in the following format: *https://Endpoint/uri*. In the URL, **uri** indicates the resource path, that is, the API access path.

Public cloud APIs use HTTPS as the transmission protocol. Requests/Responses are transmitted by using JSON messages, with media type represented by **Application/json**.

For details about how to use APIs, see [API Usage Guidelines](#).

# 2 APIs

## 2.1 Creating a CMK

### Function

This API is used to create customer master keys (CMKs) used to encrypt data encryption keys (DEKs).

 **NOTE**

Default Master Keys are created by services integrated with KMS. Names of Default Master Keys end with **/default**. Therefore, in naming your CMKs, do not choose those ending with **/default**.

### URI

- URI format  
POST /v1.0/{project\_id}/kms/create-key
- Parameter description

| Parameter  | Mandatory | Type   | Description |
|------------|-----------|--------|-------------|
| project_id | Yes       | String | Project ID  |

### Requests

Request parameters

| Parameter | Type   | Mandatory | Description  |
|-----------|--------|-----------|--|
| key_alias | String | Yes       | Alias of a non-default master key (The alias's length ranges from 1 to 255 characters and matches the regular expression <code>^[a-zA-Z0-9:/_-]{1,255}\$</code> . In addition, it must be different from the alias of a Default Master Key created by the system.) |

| Parameter       | Type   | Mandatory | Description   |
|-----------------|--------|-----------|---|
| key_description | String | No        | CMK description (The value ranges from 0 to 255 characters.)  |
| origin          | string | No        | Origin of a CMK. The default value is <b>kms</b> . The following values are enumerated: <ul style="list-style-type: none"> <li>● <b>kms</b> indicates that the CMK material is generated by KMS.</li> <li>● <b>external</b> indicates that the CMK material is imported.</li> </ul> |
| sequence        | String | No        | 36-byte serial number of a request message<br>Example:<br>919c82d4-8046-4722-9094-35c3c6524cff  |

## Responses

Response parameters

| Parameter | Type   | Mandatory | Description    |
|-----------|--------|-----------|----------------|
| key_id    | String | Yes       | CMK ID         |
| domain_id | String | Yes       | User domain ID |

## Examples

The following example describes how to create a CMK with an alias of **test**.

- Example request

```
{
  "key_alias": "test"
}
```

- Example response

```
{
  "key_info": {
    "key_id": "bb6a3d22-dc93-47ac-b5bd-88df7ad35f1e",
    "domain_id": "b168fe00ff56492495a7d22974df2d0b"
  }
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

[Table 2-1](#) lists the normal status code returned by the response.

**Table 2-1** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.2 Enabling a CMK

### Function

This API allows you to enable a CMK. Only an enabled CMK can be used.

#### NOTE

Only a disabled CMK can be enabled.

### URI

- URI format  
POST /v1.0/{project\_id}/kms/enable-key
- Parameter description

| Parameter  | Mandatory | Type   | Description |
|------------|-----------|--------|-------------|
| project_id | Yes       | String | Project ID  |

### Requests

Request parameters

| Parameter | Type   | Mandatory | Description   |
|-----------|--------|-----------|---|
| key_id    | String | Yes       | 36-byte ID of a CMK that matches the regular expression <code>^[0-9a-z]{8}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{12}\$</code><br>Example: 0d0466b0-e727-4d9c-b35d-f84bb474a37f |
| sequence  | String | No        | 36-byte serial number of a request message<br>Example: 919c82d4-8046-4722-9094-35c3c6524cff   |

## Responses

Response parameters

| Parameter | Type   | Mandatory | Description   |
|-----------|--------|-----------|---|
| key_id    | String | Yes       | CMK ID  |
| key_state | String | Yes       | CMK status: <ul style="list-style-type: none"> <li>● <b>2</b> indicates that the CMK is enabled.</li> <li>● <b>3</b> indicates that the CMK is disabled.</li> <li>● <b>4</b> indicates that the CMK is scheduled for deletion.</li> </ul> |

## Examples

The following example describes how to enable a CMK whose ID is **0d0466b0-e727-4d9c-b35d-f84bb474a37f**.

- Example request

```
{
  "key_id": "0d0466b0-e727-4d9c-b35d-f84bb474a37f"
}
```

- Example response

```
{
  "key_info": {
    "key_id": "0d0466b0-e727-4d9c-b35d-f84bb474a37f",
    "key_state": "2"
  }
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

[Table 2-2](#) lists the normal status code returned by the response.

**Table 2-2** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).



## 2.3 Disabling a CMK

### Function

This API allows you to disable a CMK. A disabled CMK cannot be used.

 **NOTE**

Only an enabled CMK can be disabled.

### URI

- URI format  
POST /v1.0/{project\_id}/kms/disable-key
- Parameter description

| Parameter  | Mandatory | Type   | Description |
|------------|-----------|--------|-------------|
| project_id | Yes       | String | Project ID  |

### Requests

Request parameters

| Parameter | Type   | Mandatory | Description   |
|-----------|--------|-----------|---|
| key_id    | String | Yes       | 36-byte ID of a CMK that matches the regular expression <code>^[0-9a-z]{8}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{12}\$</code><br>Example: 0d0466b0-e727-4d9c-b35d-f84bb474a37f |
| sequence  | String | No        | 36-byte serial number of a request message<br>Example:<br>919c82d4-8046-4722-9094-35c3c6524cff  |

### Responses

Response parameters

| Parameter | Type   | Mandatory | Description |
|-----------|--------|-----------|-------------|
| key_id    | String | Yes       | CMK ID      |

| Parameter | Type   | Mandatory | Description   |
|-----------|--------|-----------|---|
| key_state | String | Yes       | CMK status: <ul style="list-style-type: none"> <li>● <b>2</b> indicates that the CMK is enabled.</li> <li>● <b>3</b> indicates that the CMK is disabled.</li> <li>● <b>4</b> indicates that the CMK is scheduled for deletion.</li> </ul> |

## Examples

The following example describes how to disable a CMK whose ID is **0d0466b0-e727-4d9c-b35d-f84bb474a37f**.

- Example request

```
{
  "key_id": "0d0466b0-e727-4d9c-b35d-f84bb474a37f"
}
```

- Example response

```
{
  "key_info": {
    "key_id": "0d0466b0-e727-4d9c-b35d-f84bb474a37f",
    "key_state": "3"
  }
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

[Table 2-3](#) lists the normal status code returned by the response.

**Table 2-3** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.4 Scheduling the Deletion of a CMK

### Function

This API enables you to schedule the deletion of a CMK. A CMK can be scheduled to be deleted after 7 to 1096 days.

### URI

- URI format  
POST /v1.0/{project\_id}/kms/schedule-key-deletion
- Parameter description

| Parameter  | Mandatory | Type   | Description |
|------------|-----------|--------|-------------|
| project_id | Yes       | String | Project ID  |

### Requests

Request parameters

| Parameter    | Type   | Mandatory | Description   |
|--------------|--------|-----------|---|
| key_id       | String | Yes       | 36-byte ID of a CMK that matches the regular expression <code>^[0-9a-z]{8}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{12}\$</code><br>Example: 0d0466b0-e727-4d9c-b35d-f84bb474a37f |
| pending_days | String | Yes       | Number of days after which a CMK is scheduled to be deleted (The value ranges from <b>7</b> to <b>1096</b> .)   |
| sequence     | String | No        | 36-byte serial number of a request message<br>Example:<br>919c82d4-8046-4722-9094-35c3c6524cf   |

### Responses

Response parameters

| Parameter | Type   | Mandatory | Description |
|-----------|--------|-----------|-------------|
| key_id    | String | Yes       | CMK ID      |

| Parameter | Type   | Mandatory | Description   |
|-----------|--------|-----------|---|
| key_state | String | Yes       | CMK status: <ul style="list-style-type: none"> <li>● <b>2</b> indicates that the CMK is enabled.</li> <li>● <b>3</b> indicates that the CMK is disabled.</li> <li>● <b>4</b> indicates that the CMK is scheduled for deletion.</li> </ul> |

## Examples

The following example describes how to schedule deletion of a CMK whose ID is **0d0466b0-e727-4d9c-b35d-f84bb474a37f**.

- Example request

```
{
  "key_id": "0d0466b0-e727-4d9c-b35d-f84bb474a37f",
  "pending_days": "7"
}
```

- Example response

```
{
  "key_id": "0d0466b0-e727-4d9c-b35d-f84bb474a37f",
  "key_state": "4"
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

[Table 2-4](#) lists the normal status code returned by the response.

**Table 2-4** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.5 Canceling the Scheduled Deletion of a CMK

### Function

This API enables you to cancel the scheduled deletion of a CMK.

 **NOTE**

You can cancel the scheduled deletion for a CMK only when the CMK's status is **Scheduled deletion**.

## URI

- URI format  
POST /v1.0/{project\_id}/kms/cancel-key-deletion
- Parameter description

| Parameter  | Mandatory | Type   | Description |
|------------|-----------|--------|-------------|
| project_id | Yes       | String | Project ID  |

## Requests

Request parameters

| Parameter | Type   | Mandatory | Description   |
|-----------|--------|-----------|---|
| key_id    | String | Yes       | 36-byte ID of a CMK that matches the regular expression <code>^[0-9a-z]{8}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{12}\$</code><br>Example: 0d0466b0-e727-4d9c-b35d-f84bb474a37f |
| sequence  | String | No        | 36-byte serial number of a request message<br>Example: 919c82d4-8046-4722-9094-35c3c6524cff   |

## Responses

Response parameters

| Parameter | Type   | Mandatory | Description   |
|-----------|--------|-----------|---|
| key_id    | String | Yes       | CMK ID  |
| key_state | String | Yes       | CMK status: <ul style="list-style-type: none"> <li>• <b>2</b> indicates that the CMK is enabled.</li> <li>• <b>3</b> indicates that the CMK is disabled.</li> <li>• <b>4</b> indicates that the CMK is scheduled for deletion.</li> </ul> |

## Examples

The following example describes how to cancel the scheduled deletion of a CMK whose ID is **0d0466b0-e727-4d9c-b35d-f84bb474a37f**.

- Example request

```
{
  "key_id": "0d0466b0-e727-4d9c-b35d-f84bb474a37f"
}
```

- Example response

```
{
  "key_id": "0d0466b0-e727-4d9c-b35d-f84bb474a37f",
  "key_state": "3"
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

[Table 2-5](#) lists the normal status code returned by the response.

**Table 2-5** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.6 Querying the List of CMKs

### Function

This API allows you to query the list of all CMKs.

### URI

- URI format  
POST /v1.0/{project\_id}/kms/list-keys
- Parameter description

| Parameter  | Mandatory | Type   | Description |
|------------|-----------|--------|-------------|
| project_id | Yes       | String | Project ID  |

## Requests

### Request parameters

| Parameter | Type   | Mandatory | Description   |
|-----------|--------|-----------|---|
| limit     | String | No        | This parameter specifies the number of entries returned. If the specified number is smaller than the actual number of existing entries, <b>true</b> will be returned for the response parameter <b>truncated</b> , indicating that the query results will be displayed in separate pages. The value is within the range of the maximum number of CMKs, for example, <b>100</b> .  |
| marker    | String | No        | This parameter marks the starting location in a pagination query. If the <b>truncated</b> value is <b>true</b> , you can send consecutive requests to obtain more record entries. The <b>marker</b> value must be set to the <b>next_marker</b> value in the response, for example, <b>10</b> .   |
| key_state | string | No        | State of a CMK that matches the regular expression <b>^[1-5]{1}\$</b> . The following values are enumerated: <ul style="list-style-type: none"> <li>● <b>1</b> indicates that the CMK is waiting to be activated.</li> <li>● <b>2</b> indicates that the CMK is enabled.</li> <li>● <b>3</b> indicates that the CMK is disabled.</li> <li>● <b>4</b> indicates that the CMK is scheduled for deletion.</li> <li>● <b>5</b> indicates that the CMK is waiting to be imported.</li> </ul> |
| sequence  | String | No        | 36-byte serial number of a request message<br>Example: 919c82d4-8046-4722-9094-35c3c6524cff   |

## Responses

### Response parameters

| Name        | Type      | Mandatory | Description  |
|-------------|-----------|-----------|--|
| keys        | JSONArray | Yes       | List of CMK IDs  |
| key_details | JSONArray | Yes       | List of CMK details. For format details, see the responses in <a href="#">Querying the Information About a CMK</a> . |

| Name        | Type    | Mandatory | Description  |
|-------------|---------|-----------|--|
| next_marker | String  | Yes       | This parameter indicates the <b>marker</b> value required for obtaining the next page of query results. If the <b>truncated</b> value is <b>false</b> , the <b>next_marker</b> parameter is left blank.  |
| total       | Integer | Yes       | Total number of keys.  |
| truncated   | String  | Yes       | This parameter indicates whether there are more results displayed in another page. <ul style="list-style-type: none"><li>● If the value is <b>true</b>, there are more results.</li><li>● If the value is <b>false</b>, the current page is the last page.</li></ul> |

## Examples

The following shows an example when **limit** is set to "" and **marker** is set to "".

- Example request

```
{
  "limit": "",
  "marker": ""
}
```

- Example response

```
{
  "keys": [
    "0d0466b0-e727-4d9c-b35d-f84bb474a37f",
    "2e258389-bb1e-4568-a1d5-e1f50adf70ea"
  ],
  "key_details": [
    {
      "key_id": "0d0466b0-e727-4d9c-b35d-f84bb474a37f",
      "domain_id": "00074811d5c27c4f8d48bb91e4a1dcfd",
      "key_alias": "caseuirpr",
      "realm": "aaaa",
      "key_description": "123",
      "creation_date": "1502799822000",
      "scheduled_deletion_date": "",
      "key_state": "2",
      "default_key_flag": "0",
      "key_type": "1",
      "expiration_time": "1501578672000",
      "origin": "kms"
    },
    {
      "key_id": "2e258389-bb1e-4568-a1d5-e1f50adf70ea",
      "domain_id": "00074811d5c27c4f8d48bb91e4a1dcfd",
      "key_alias": "casehvniz",
      "realm": "aaaa",
      "key_description": "234",
      "creation_date": "1502799820000",
      "scheduled_deletion_date": "",
      "key_state": "2",
      "default_key_flag": "0",
      "key_type": "1",
      "expiration_time": "1501578673000",
      "origin": "kms"
    }
  ]
}
```



```

    ],
    "next_marker": "",
    "truncated": "false",
    "total":2
  }

```

or

```

{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}

```

## Status Codes

[Table 2-6](#) lists the normal status code returned by the response.

**Table 2-6** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.7 Querying the Information About a CMK

### Function

This API allows you to query the details about a CMK.

### URI

- URI format  
POST /v1.0/{project\_id}/kms/describe-key
- Parameter description

| Parameter  | Mandatory | Type   | Description |
|------------|-----------|--------|-------------|
| project_id | Yes       | String | Project ID  |

### Requests

Request parameters

| Parameter | Type   | Mandatory | Description   |
|-----------|--------|-----------|---|
| key_id    | String | Yes       | 36-byte ID of a CMK that matches the regular expression <code>^[0-9a-z]{8}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{12}\$</code><br>Example: 0d0466b0-e727-4d9c-b35d-f84bb474a37f |
| sequence  | String | No        | 36-byte serial number of a request message<br>Example: 919c82d4-8046-4722-9094-35c3c6524cff   |

## Responses

### Response parameters

| Parameter               | Type   | Mandatory | Description  |
|-------------------------|--------|-----------|--|
| key_id                  | String | Yes       | CMK ID   |
| domain_id               | String | Yes       | User domain ID   |
| key_alias               | String | Yes       | Alias of a CMK   |
| realm                   | String | Yes       | Region where a CMK resides   |
| key_description         | String | Yes       | Description of a CMK   |
| creation_date           | String | Yes       | Time when a key is created. The value is a timestamp expressed in the number of seconds since 00:00:00 UTC on January 1, 1970.                   |
| scheduled_deletion_date | String | Yes       | Time when a key will be deleted as scheduled. The value is a timestamp expressed in the number of seconds since 00:00:00 UTC on January 1, 1970. |

| Parameter        | Type   | Mandatory | Description  |
|------------------|--------|-----------|--|
| key_state        | String | Yes       | State of a CMK: <ul style="list-style-type: none"><li>● <b>1</b> indicates that the CMK is waiting to be activated.</li><li>● <b>2</b> indicates that the CMK is enabled.</li><li>● <b>3</b> indicates that the CMK is disabled.</li><li>● <b>4</b> indicates that the CMK is scheduled for deletion.</li><li>● <b>5</b> indicates that the CMK is waiting to be imported.</li></ul> |
| default_key_flag | String | Yes       | Identification of a Master Key. The value <b>1</b> indicates a Default Master Key, and the value <b>0</b> indicates a CMK.   |
| key_type         | String | Yes       | Type of a CMK  |
| expiration_time  | string | Yes       | Expiration time of the key material. It is expressed in the form of a time stamp, the total number of seconds since January 1, 1970.<br>Example: 1550291833  |
| origin           | string | Yes       | Origin of a CMK. The default value is <b>kms</b> . The following values are enumerated: <ul style="list-style-type: none"><li>● <b>kms</b> indicates that the CMK material is generated by KMS.</li><li>● <b>external</b> indicates that the CMK material is imported.</li></ul>   |

## Examples

The following example describes how to query the information of a CMK whose ID is **0d0466b0-e727-4d9c-b35d-f84bb474a37f**.

- Example request

```
{
  "key_id": "0d0466b0-e727-4d9c-b35d-f84bb474a37f"
}
```

- Example response

```
{
  "key_info": {
    "key_id": "0d0466b0-e727-4d9c-b35d-f84bb474a37f",
    "domain_id": "b168fe00ff56492495a7d22974df2d0b",
    "key_alias": "kms_test",
    "realm": "aaa",
  }
}
```

```
"key_description": "",
"creation_date": "1472442386000",
"scheduled_deletion_date": "",
"key_state": "2",
"default_key_flag": "0",
"key_type": "1",
"expiration_time": "1501578672000",
"origin": "kms"
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

[Table 2-7](#) lists the normal status code returned by the response.

**Table 2-7** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.8 Creating a Random Number

### Function

This API allows you to obtain a random number whose length can be up to 512 bits.

### URI

- URI format  
POST /v1.0/{project\_id}/kms/gen-random
- Parameter description

| Parameter  | Mandatory | Type   | Description |
|------------|-----------|--------|-------------|
| project_id | Yes       | String | Project ID  |

### Requests

Request parameters

| Parameter          | Type   | Mandatory | Description  |
|--------------------|--------|-----------|--|
| random_data_length | String | Yes       | Number of bits of a random number. The value is <b>512</b> .                                   |
| sequence           | String | No        | 36-byte serial number of a request message<br>Example:<br>919c82d4-8046-4722-9094-35c3c6524cff |

## Responses

Response parameters

| Parameter   | Type   | Mandatory | Description  |
|-------------|--------|-----------|--|
| random_data | String | Yes       | Random numbers are expressed in hexadecimal format. Two characters indicate one byte. Length of a random number must be consistent with the <b>random_data_length</b> value entered by a user. |

## Examples

The following example describes how to create a random number with the length of **512** bits.

- Example request

```
{
  "random_data_length": "512"
}
```

- Example response

```
{
  "random_data":
  "5791C223E87124AB9FC29B5A8AC60BE4B98D168F47A58BB2A88833E40D6ED32D57E2AAB541049
  2EB25096873F9CE3D45E0D22F820A5AB4EEADC33A1A6AE780F1"
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

[Table 2-8](#) lists the normal status code returned by the response.

**Table 2-8** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.9 Creating a DEK

### Function

This API allows you to create a DEK. A returned result includes the plaintext and the ciphertext of a DEK.

### URI

- URI format  
POST /v1.0/{project\_id}/kms/create-datakey
- Parameter description

| Parameter  | Mandatory | Type   | Description |
|------------|-----------|--------|-------------|
| project_id | Yes       | String | Project ID  |

### Requests

Request parameters

| Parameter          | Type   | Mandatory | Description   |
|--------------------|--------|-----------|---|
| key_id             | String | Yes       | 36-byte ID of a CMK that matches the regular expression <code>^[0-9a-z]{8}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{12}\$</code><br>Example: 0d0466b0-e727-4d9c-b35d-f84bb474a37f                                   |
| encryption_context | dict   | No        | Key-value pairs with a maximum length of 8192 characters. This parameter is used to record resource context information, excluding sensitive information.<br>Example:<br><code>{"Key1":"Value1","Key2":"Value2"}</code> |
| datakey_length     | String | Yes       | Number of bits of a key. The value is <b>512</b> .  |

| Parameter | Type   | Mandatory | Description  |
|-----------|--------|-----------|--|
| sequence  | String | No        | 36-byte serial number of a request message<br>Example:<br>919c82d4-8046-4722-9094-35c3c6524cff |

## Responses

Response parameters

| Parameter   | Type   | Mandatory | Description   |
|-------------|--------|-----------|---|
| key_id      | String | Yes       | CMK ID  |
| plain_text  | String | Yes       | The plaintext of a DEK is expressed in hexadecimal format, and two characters indicate one byte.  |
| cipher_text | String | Yes       | The ciphertext of a DEK is expressed in hexadecimal format, and two characters indicate one byte. |

## Examples

The following example describes how to create a DEK whose ID is **0d0466b0-e727-4d9c-b35d-f84bb474a37f** and length is **512** bits.

- Example request

```
{
  "key_id": "0d0466b0-e727-4d9c-b35d-f84bb474a37f",
  "datakey_length": "512"
}
```

- Example response

```
{
  "key_id": "0d0466b0-e727-4d9c-b35d-f84bb474a37f",
  "plain_text":
"8151014275E426C72EE7D44267EF11590DCE0089E19863BA8CC832187B156A72A5A17F17B5EF0
D525872C59ECEB72948AF85E18427F8BE0D46545C979306C08D",
  "cipher_text":
"020098009EEAFCE122CAA5927D2E020086F9548BA1675FDB022E4ECC01B96F2189CF4B85E7835
7E73E1CEB518DAF7A4960E7C7DE8885ED3FB2F1471ABF400119CC1B20BD3C4A9B80AF590EFD0AE
DABFDBB0E2B689DA7B6C9E7D3C5645FCD9274802586BE63779471F9156F2CDF07CD8412FFBE923
0643034363662302D653732372D346439632D623335642D663834626234373461333766000000
045B05321483BD9F9561865EE7DFE9BE267A42EB104E98C16589CE46940B18E52"
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

**Table 2-9** lists the normal status code returned by the response.

**Table 2-9** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.10 Creating a Plaintext-Free DEK

### Function

This API allows you to create a plaintext-free DEK, that is, the returned result of this API includes only the plaintext of the DEK.

### URI

- URI format  
POST /v1.0/{project\_id}/kms/create-datakey-without-plaintext
- Parameter description

| Parameter  | Mandatory | Type   | Description |
|------------|-----------|--------|-------------|
| project_id | Yes       | String | Project ID  |

### Requests

Request parameters

| Parameter | Type   | Mandatory | Description   |
|-----------|--------|-----------|---|
| key_id    | String | Yes       | 36-byte ID of a CMK that matches the regular expression <code>^[0-9a-z]{8}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{12}\$</code><br>Example: 0d0466b0-e727-4d9c-b35d-f84bb474a37f |



| Parameter          | Type   | Mandatory | Description   |
|--------------------|--------|-----------|---|
| encryption_context | dict   | No        | Key-value pairs with a maximum length of 8192 characters. This parameter is used to record resource context information, excluding sensitive information.<br><br>Example:<br>{"Key1": "Value1", "Key2": "Value2"} |
| datakey_length     | String | Yes       | Number of bits of a key. The value is <b>512</b> .  |
| sequence           | String | No        | 36-byte serial number of a request message<br><br>Example:<br>919c82d4-8046-4722-9094-35c3c6524cff  |

## Responses

Response parameters

| Parameters  | Type   | Mandatory | Description   |
|-------------|--------|-----------|---|
| key_id      | String | Yes       | CMK ID  |
| cipher_text | String | Yes       | The ciphertext of a DEK is expressed in hexadecimal format, and two characters indicate one byte. |

## Examples

The following example describes how to create a plaintext free DEK whose ID is **0d0466b0-e727-4d9c-b35d-f84bb474a37f**.

- Example request

```
{
  "key_id": "0d0466b0-e727-4d9c-b35d-f84bb474a37f",
  "datakey_length": "512"
}
```

- Example response

```
{
  "key_id": "0d0466b0-e727-4d9c-b35d-f84bb474a37f",
  "cipher_text":
  "020098005CDC28E29EC3230AA42E8985FBABA095037D6474C64519C9B564AB28B15739C88E7E8
  87500D1094973C2DC16353DB7ED3946C73339517AB1E983D521F9E9D700DC5D9C42F557EBF3F60
  8E3CBEE0BC68136EE7D2A49117E00332BAC4AE4ED805EB6068FA900C5A8019BFE2C2651BE3E13
  0643034363662302D653732372D346439632D623335642D663834626234373461333766000000
  0F160727EBDB83400C21D80D713B49D3A2C37F24AE160E7BB3DAC025ADC0C45E3"
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

```
}  
}
```

## Status Codes

**Table 2-10** lists the normal status code returned by the response.

**Table 2-10** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.11 Encrypting a DEK

### Function

This API enables you to encrypt a DEK using a specified CMK.

### URI

- URI format  
POST /v1.0/{project\_id}/kms/encrypt-datakey
- Parameter description

| Parameter  | Mandatory | Type   | Description |
|------------|-----------|--------|-------------|
| project_id | Yes       | String | Project ID  |

### Requests

Request parameters

| Parameter | Type   | Mandatory | Description   |
|-----------|--------|-----------|---|
| key_id    | String | Yes       | 36-byte ID of a CMK that matches the regular expression <code>^[0-9a-z]{8}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{12}\$</code><br>Example: 0d0466b0-e727-4d9c-b35d-f84bb474a37f |



```
9979B43003D2320D9F0E8EA9831A92759FB4B",
  "datakey_plain_length": "64"
}
```

- Example response

```
{
  "key_id": "0d0466b0-e727-4d9c-b35d-f84bb474a37f",
  "cipher_text":
  "020098005273E14E6E8E95F5463BECDC27E80AF820B9FC086CB47861899149F67CF07DAFF2810
  B7D27BDF19AB7632488E0926A48DB2FC85BEA905119411B46244C5E6B8036C60A0B0B4842FFE69
  94518E89C19B1C1D688D9043BCD6053EA7BA0652642CE59F2543C80669139F4F71ABB9BD9A2433
  0643034363662302D653732372D346439632D623335642D663834626234373461333766000000
  0D34457984F9730D57F228C210FD22CA6017913964B21D4ECE45D81092BB9112E",
  "datakey_length": "64"
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

[Table 2-11](#) lists the normal status code returned by the response.

**Table 2-11** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.12 Decrypting a DEK

### Function

This API enables you to decrypt a DEK using a specified CMK.

 **NOTE**

Decrypted data is the result in the encrypted data.

### URI

- URI format  
POST /v1.0/{project\_id}/kms/decrypt-datakey
- Parameter description

| Parameter  | Mandator<br>y | Type   | Description |
|------------|---------------|--------|-------------|
| project_id | Yes           | String | Project ID  |

## Requests

### Request parameters

| Parameter             | Type   | Mandatory | Description   |
|-----------------------|--------|-----------|---|
| key_id                | String | Yes       | 36-byte ID of a CMK that matches the regular expression <code>^[0-9a-z]{8}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{12}\$</code><br>Example: 0d0466b0-e727-4d9c-b35d-f84bb474a37f                           |
| encryption_context    | dict   | No        | Key-value pairs with a maximum length of 8192 characters. This parameter is used to record resource context information, excluding sensitive information.<br>Example:<br>{ "Key1": "Value1", "Key2": "Value2" } |
| cipher_text           | String | Yes       | This parameter indicates the hexadecimal character string of the DEK ciphertext and the metadata. The value is the <b>cipher_text</b> value in the encryption result of a DEK.                                  |
| datakey_cipher_length | String | Yes       | Number of bytes of a key. The value is <b>64</b> .  |
| sequence              | String | No        | 36-byte serial number of a request message<br>Example:<br>919c82d4-8046-4722-9094-35c3c6524cff  |

## Responses

### Response parameters

| Parameter      | Type   | Mandatory | Description   |
|----------------|--------|-----------|---|
| data_key       | String | Yes       | Hexadecimal character string of the plaintext of a DEK  |
| datakey_length | String | Yes       | Number of bytes in the length of the plaintext of a DEK |



Exception status code. For details, see [Status Codes](#).

## 2.13 Querying the Number of Instances

### Function

This API is used to query the number of instances, that is, the number of CMKs created.

#### NOTE

Default Master Keys are automatically created by services and are not included in this query.

### URI

- URI format  
GET /v1.0/{project\_id}/kms/user-instances
- Parameter description

| Parameter  | Mandatory | Type   | Description |
|------------|-----------|--------|-------------|
| project_id | Yes       | String | Project ID  |

### Requests

None

### Responses

Response parameters

| Parameter    | Type    | Mandatory | Description                |
|--------------|---------|-----------|----------------------------|
| instance_num | integer | Yes       | Number of non-default CMKs |

### Examples

Example response

```
{
  "instance_num": 15
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

**Table 2-13** lists the normal status code returned by the response.

**Table 2-13** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.14 Querying the Quota of a User

### Function

This API is used to query the quota of a user, that is, the allocated total number of CMKs that can be created by a user and the number of CMKs that has been created by the user.

 **NOTE**

The quota does not include Default Master Keys.

### URI

- URI format  
GET /v1.0/{project\_id}/kms/user-quotas
- Parameter description

| Parameter  | Mandatory | Type   | Description |
|------------|-----------|--------|-------------|
| project_id | Yes       | String | Project ID  |

### Requests

None

### Responses

Response parameters

| Parameter | Type       | Mandatory | Description         |
|-----------|------------|-----------|---------------------|
| quotas    | JSONObject | Yes       | Quota list          |
| resources | JSONArray  | Yes       | Resource quota list |



| Parameter | Type    | Mandatory | Description  |
|-----------|---------|-----------|--|
| type      | string  | Yes       | Quota type.<br>Enumerated values: <ul style="list-style-type: none"> <li>● <b>CMK</b> indicates a Customer Master Key.</li> <li>● <b>grant_per_CMK</b> indicates the number of grants that can be created on a CMK.</li> </ul> |
| used      | integer | Yes       | Used quota   |
| quota     | integer | Yes       | Total quota  |

## Examples

- Example response

```
{
  "quotas": {
    "resources": [
      {
        "type": "CMK",
        "used": 15,
        "quota": 20
      },
      {
        "type": "grant_per_CMK",
        "used": 15,
        "quota": 100
      }
    ]
  }
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

[Table 2-14](#) lists the normal status code returned by the response.

**Table 2-14** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.15 Changing the Alias of a CMK

### Function

This API enables you to change the alias of a CMK.

 **NOTE**

- A Default Master Key (the alias suffix of which is **/default**) does not allow alias changes.
- A CMK in **Scheduled deletion** status does not allow alias changes.

### URI

- URI format  
POST /v1.0/{project\_id}/kms/update-key-alias
- Parameter description

| Parameter  | Mandatory | Type   | Description |
|------------|-----------|--------|-------------|
| project_id | Yes       | string | Project ID  |

### Requests

Request parameters

| Parameter | Type   | Mandatory | Description   |
|-----------|--------|-----------|---|
| key_id    | string | Yes       | 36-byte ID of a CMK that matches the regular expression <code>^[0-9a-z]{8}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{12}\$</code><br>Example: 0d0466b0-e727-4d9c-b35d-f84bb474a37f |
| key_alias | string | Yes       | Alias of a CMK whose length is 1 to 255 characters and which matches the regular expression <code>^[a-zA-Z0-9:/_]{1,255}\$</code> . Suffix of the alias cannot be <b>/default</b> .   |
| sequence  | string | No        | 36-byte serial number of a request message<br>Example: 919c82d4-8046-4722-9094-35c3c6524cff   |

## Responses

Response parameters

| Parameter | Type   | Mandatory | Description    |
|-----------|--------|-----------|----------------|
| key_id    | string | Yes       | CMK ID         |
| key_alias | string | Yes       | Alias of a CMK |

## Examples

The following is an example about how to modify a CMK whose alias ID is **bb6a3d22-dc93-47ac-b5bd-88df7ad35f1e** and alias is **test**.

- Example request

```
{
  "key_alias": "test",
  "key_id": "bb6a3d22-dc93-47ac-b5bd-88df7ad35f1e"
}
```

- Example response

```
{
  "key_info": {
    "key_id": "bb6a3d22-dc93-47ac-b5bd-88df7ad35f1e",
    "key_alias": "test"
  }
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

[Table 2-15](#) lists the normal status code returned by the response.

**Table 2-15** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.16 Changing the Description of a CMK

### Function

This API enables you to change the description of a CMK.

 **NOTE**

- A Default Master Key (the alias suffix of which is **/default**) does not allow alias changes.
- A CMK in **Scheduled deletion** status does not allow description changes.

## URI

- URI format  
POST /v1.0/{project\_id}/kms/update-key-description
- Parameter description

| Parameter  | Mandatory | Type   | Description |
|------------|-----------|--------|-------------|
| project_id | Yes       | string | Project ID  |

## Requests

Request parameters

| Parameter       | Type   | Mandatory | Description   |
|-----------------|--------|-----------|---|
| key_id          | string | Yes       | 36-byte ID of a CMK that matches the regular expression <code>^[0-9a-z]{8}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{12}\$</code><br>Example: 0d0466b0-e727-4d9c-b35d-f84bb474a37f |
| key_description | string | Yes       | CMK description (The value ranges from 0 to 255 characters.)  |
| sequence        | string | No        | 36-byte serial number of a request message<br>Example: 919c82d4-8046-4722-9094-35c3c6524cff   |

## Response

Response parameters

| Parameter       | Type   | Mandatory | Description          |
|-----------------|--------|-----------|----------------------|
| key_id          | string | Yes       | CMK ID               |
| key_description | string | Yes       | Description of a CMK |

## Examples

The following is an example about how to modify a CMK whose alias ID is **bb6a3d22-dc93-47ac-b5bd-88df7ad35f1e** and description is **test**.

- Example request

```
{
  "key_id": "bb6a3d22-dc93-47ac-b5bd-88df7ad35f1e",
  "key_description": "test"
}
```

- Example response

```
{
  "key_info": {
    "key_id": "bb6a3d22-dc93-47ac-b5bd-88df7ad35f1e",
    "key_description": "test"
  }
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

[Table 2-16](#) lists the normal status code returned by the response.

**Table 2-16** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.17 Creating a Grant

### Function

This API enables you to create a grant to grant permissions on a CMK to a user so that the user can perform operations on the CMK.

 **NOTE**

A Default Master Key (the alias suffix of which is **/default**) does not allow permission granting.

### URI

- URI format  
POST /v1.0/{project\_id}/kms/create-grant
- Parameter description

| Parameter  | Mandator<br>y | Type   | Description |
|------------|---------------|--------|-------------|
| project_id | Yes           | string | Project ID  |

## Requests

### Request parameters

| Parameter          | Type     | Mandatory | Description   |
|--------------------|----------|-----------|---|
| key_id             | string   | Yes       | 36-byte ID of a CMK that matches the regular expression <code>^[0-9a-z]{8}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{12}\$</code><br>Example: 0d0466b0-e727-4d9c-b35d-f84bb474a37f   |
| grantee_principal  | string   | Yes       | 32-byte ID of a user to which permissions are granted that matches the regular expression <code>^[a-zA-Z0-9_-]{32}\$</code><br>Example:<br>0d0466b00d0466b00d0466b00d0466b0   |
| operations         | string[] | Yes       | Permissions that can be granted<br>Values: <b>create-datakey</b> , <b>create-datakey-without-plaintext</b> , <b>encrypt-datakey</b> , <b>decrypt-datakey</b> , <b>describe-key</b> , <b>create-grant</b> , <b>retire-grant</b><br><b>create-grant</b> cannot be the only value. |
| name               | string   | No        | Name of a grant which can be 1 to 255 characters in length and matches the regular expression <code>^[a-zA-Z0-9:/_-]{1,255}\$</code>  |
| retiring_principal | string   | No        | 32-byte ID of a user who can retire a grant that matches the regular expression <code>^[a-zA-Z0-9_-]{32}\$</code><br>Example:<br>0d0466b00d0466b00d0466b00d0466b0   |
| sequence           | string   | No        | 36-byte serial number of a request message<br>Example:<br>919c82d4-8046-4722-9094-35c3c6524cff  |

## Responses

Response parameters

| Parameter | Type   | Mandatory | Description           |
|-----------|--------|-----------|-----------------------|
| grant_id  | string | Yes       | 64-byte ID of a grant |

## Examples

The following example shows how to grant the **describe-key**, **create-datakey**, and **encrypt-datakey** permissions of CMK (ID: **bb6a3d22-dc93-47ac-b5bd-88df7ad35f1e**) to the user whose ID is **13gg44z4g2sglzk0egw0u726zoyzvrs8**. The authorization name is **my\_grant**, and the user (ID: **13gg44z4g2sglzk0egw0u726zoyzvrs8**) can retire a grant.

- Example request

```
{
  "key_id": "bb6a3d22-dc93-47ac-b5bd-88df7ad35f1e",
  "operations": [
    "describe-key",
    "create-datakey",
    "encrypt-datakey"
  ],
  "grantee_principal": "13gg44z4g2sglzk0egw0u726zoyzvrs8",
  "name": "my_grant",
  "retiring_principal": "13gg44z4g2sglzk0egw0u726zoyzvrs8"
}
```

- Example response

```
{
  "grant_id":
  "7c9a3286af4fcca5f0a385ad13e1d21a50e27b6dbcab50f37f30f93b8939827d"
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

**Table 2-17** lists the normal status code returned by the response.

**Table 2-17** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.18 Revoking a Grant

### Function

This API allows you to revoke a grant.

 **NOTE**

Only the user who created the CMK can revoke a grant.

### URI

- URI format  
POST /v1.0/{project\_id}/kms/revoke-grant
- Parameter description

| Parameter  | Mandatory | Type   | Description |
|------------|-----------|--------|-------------|
| project_id | Yes       | string | Project ID  |

### Requests

Request parameters

| Parameter | Type   | Mandatory | Description   |
|-----------|--------|-----------|---|
| key_id    | string | Yes       | 36-byte ID of a CMK that matches the regular expression <code>^[0-9a-z]{8}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{12}\$</code><br>Example: 0d0466b0-e727-4d9c-b35d-f84bb474a37f |
| grant_id  | string | Yes       | 64-byte ID of a grant that meets the regular expression <code>^[A-Fa-f0-9]{64}\$</code><br>Example:<br>7c9a3286af4cca5f0a385ad13e1d21a50e27b6dbcab50f37f30f93b8939827d                |
| sequence  | string | No        | 36-byte serial number of a request message<br>Example:<br>919c82d4-8046-4722-9094-35c3c6524cff  |

### Responses

Response parameters



None

## Examples

The following example describes how to revoke a grant whose grant ID is **7c9a3286af4fcca5f0a385ad13e1d21a50e27b6dbcab50f37f30f93b8939827d** and the CMK ID is **bb6a3d22-dc93-47ac-b5bd-88df7ad35f1e**.

- Example request

```
{
  "key_id": "bb6a3d22-dc93-47ac-b5bd-88df7ad35f1e",
  "grant_id": "7c9a3286af4fcca5f0a385ad13e1d21a50e27b6dbcab50f37f30f93b8939827d"
}
```

- Example response

```
{
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

[Table 2-18](#) lists the normal status code returned by the response.

**Table 2-18** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.19 Retiring a Grant

### Function

This API enables users to retire a grant.

For example, user A grants operation permissions on CMK **A/key** to user B and authorizes user C to retire the grant. By doing this, users A, B, and C all can cancel the permissions. After the canceling, user B does not have permissions on CMK **A/key** any more.

**NOTICE**

The following are allowed to call this API:

- The user who granted the permissions
- The user indicated by parameter **retiring\_principal**
- The user indicated by parameter **grantee\_principal** when **retire-grant** has been selected

## URI

- URI format  
POST /v1.0/{project\_id}/kms/retire-grant
- Parameter description

| Parameter  | Mandatory | Type   | Description |
|------------|-----------|--------|-------------|
| project_id | Yes       | string | Project ID  |

## Requests

Request parameters

| Parameter | Type   | Mandatory | Description   |
|-----------|--------|-----------|---|
| key_id    | string | Yes       | 36-byte ID of a CMK that matches the regular expression <code>^[0-9a-z]{8}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{12}\$</code><br>Example: 0d0466b0-e727-4d9c-b35d-f84bb474a37f |
| grant_id  | string | Yes       | 64-byte ID of a grant that meets the regular expression <code>^[A-Fa-f0-9]{64}\$</code><br>Example:<br>7c9a3286af4cca5f0a385ad13e1d21a50e27b6dbcab50f37f30f93b8939827d                |
| sequence  | string | No        | 36-byte serial number of a request message<br>Example:<br>919c82d4-8046-4722-9094-35c3c6524cff  |

## Responses

Response parameters

None

## Examples

The following example describes how to retire a grant whose grant ID is **7c9a3286af4fcca5f0a385ad13e1d21a50e27b6dbcab50f37f30f93b8939827d** and the CMK ID is **bb6a3d22-dc93-47ac-b5bd-88df7ad35f1e**.

- Example request

```
{
  "key_id": "bb6a3d22-dc93-47ac-b5bd-88df7ad35f1e",
  "grant_id": "7c9a3286af4fcca5f0a385ad13e1d21a50e27b6dbcab50f37f30f93b8939827d"
}
```

- Example response

```
{
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

[Table 2-19](#) lists the normal status code returned by the response.

**Table 2-19** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.20 Querying Grants on a CMK

### Function

This API enables you to query grants on a CMK.

### URI

- URI format  
POST /v1.0/{project\_id}/kms/list-grants
- Parameter description

| Parameter  | Mandatory | Type   | Description |
|------------|-----------|--------|-------------|
| project_id | Yes       | string | Project ID  |

## Requests

### Request parameters

| Parameter | Type   | Mandatory | Description   |
|-----------|--------|-----------|---|
| key_id    | string | Yes       | 36-byte ID of a CMK that matches the regular expression <code>^[0-9a-z]{8}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{12}\$</code><br>Example: 0d0466b0-e727-4d9c-b35d-f84bb474a37f   |
| limit     | string | No        | This parameter specifies the number of entries returned. If the specified number is smaller than the actual number of existing entries, <b>true</b> will be returned for the response parameter <b>truncated</b> , indicating that the query results will be displayed in separate pages.<br><br>The value is within the range of the maximum number of grants, for example, <b>100</b> . |
| marker    | string | No        | This parameter marks the starting location in a pagination query.<br><br>If the <b>truncated</b> value is <b>true</b> , you can send consecutive requests to obtain more record entries. The <b>marker</b> value must be set to the <b>next_marker</b> value in the response, for example, <b>10</b> .  |
| sequence  | string | No        | 36-byte serial number of a request message<br>Example:<br>919c82d4-8046-4722-9094-35c3c6524cff  |

## Responses

- Response parameters

| Parameter   | Type      | Mandatory | Description  |
|-------------|-----------|-----------|--|
| grants      | JSONArray | Yes       | List of grants   |
| next_marker | string    | Yes       | This parameter indicates the <b>marker</b> value required for obtaining the next page of query results.<br><br>If the <b>truncated</b> value is <b>false</b> , the <b>next_marker</b> parameter is left blank. |

| Parameter | Type    | Mandatory | Description   |
|-----------|---------|-----------|---|
| truncated | string  | Yes       | This parameter indicates whether there are more results displayed in another page. <ul style="list-style-type: none"> <li>● If the value is <b>true</b>, there are more results.</li> <li>● If the value is <b>false</b>, the current page is the last page.</li> </ul> |
| total     | Integer | Yes       | This parameter indicates the total number of grants.  |

- Parameters of grants

| Parameter         | Type     | Mandatory | Description   |
|-------------------|----------|-----------|---|
| key_id            | string   | Yes       | 36-byte ID of a CMK that matches the regular expression <code>^[0-9a-z]{8}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{12}\$</code><br>Example: 0d0466b0-e727-4d9c-b35d-f84bb474a37f   |
| grant_id          | string   | Yes       | 64-byte ID of a grant that meets the regular expression <code>^[A-Fa-f0-9]{64}\$</code><br>Example:<br>7c9a3286af4fcca5f0a385ad13e1d21a50e27b6dbcab50f37f30f93b8939827d   |
| grantee_principal | string   | Yes       | 32-byte ID of a user to which permissions are granted that matches the regular expression <code>^[a-zA-Z0-9_-]{32}\$</code><br>Example:<br>0d0466b00d0466b00d0466b00d0466b0   |
| operations        | string[] | Yes       | Permissions that can be granted. Values: <b>create-datakey</b> , <b>create-datakey-without-plaintext</b> , <b>encrypt-datakey</b> , <b>decrypt-datakey</b> , <b>describe-key</b> , <b>create-grant</b> , <b>retire-grant</b><br><b>create-grant</b> cannot be the only value. |
| issuing_principal | string   | Yes       | 32-byte ID of a user who created a grant that matches the regular expression <code>^[a-zA-Z0-9_-]{32}\$</code><br>Example:<br>0d0466b00d0466b00d0466b00d0466b0  |

| Parameter          | Type   | Mandatory | Description   |
|--------------------|--------|-----------|---|
| creation_date      | string | Yes       | Creation time. The value is a timestamp expressed in the number of seconds since 00:00:00 UTC on January 1, 1970.<br>Example: 1497341531000                       |
| name               | string | No        | Name of a grant which can be 1 to 255 characters in length and matches the regular expression <code>^[a-zA-Z0-9:/_]{1,255}\$</code>                               |
| retiring_principal | string | No        | 32-byte ID of a user who can retire a grant that matches the regular expression <code>^[a-zA-Z0-9_-]{32}\$</code><br>Example:<br>0d0466b00d0466b00d0466b00d0466b0 |

## Examples

The following example describes how to query the grant list of a CMK whose ID is **0d0466b0-e727-4d9c-b35d-f84bb474a37f**.

- Example request

```
{
  "key_id": "0d0466b0-e727-4d9c-b35d-f84bb474a37f",
  "limit": "",
  "marker": ""
}
```

- Example response

```
{
  "grants": [
    {
      "key_id": "bb6a3d22-dc93-47ac-b5bd-88df7ad35f1e",
      "grant_id":
"7c9a3286af4fcca5f0a385ad13e1d21a50e27b6dbcab50f37f30f93b8939827d",
      "operations":
["describe-key", "create-datakey", "encrypt-datakey"],
      "grantee_principal": "13gg44z4g2sglzk0egw0u726zoyzvrs8",
      "retiring_principal": "13gg44z4g2sglzk0egw0u726zoyzvrs8",
      "issuing_principal": "e4hkeeea506ex3wgnzyhi656n8hx8xa3",
      "name": "my_grant",
      "creation_date": "1497341531000"
    }
  ],
  "next_marker": "",
  "truncated": "false",
  "total": 1
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

**Table 2-20** lists the normal status code returned by the response.

**Table 2-20** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.21 Querying Grants That Can Be Retired

### Function

This API enables you to query grants that can be retired.

### URI

- URI format  
POST /v1.0/{project\_id}/kms/list-retirable-grants
- Parameter description

| Parameter  | Mandatory | Type   | Description |
|------------|-----------|--------|-------------|
| project_id | Yes       | string | Project ID  |

### Requests

Request parameters

| Parameter | Type   | Mandatory | Description   |
|-----------|--------|-----------|---|
| limit     | string | No        | This parameter specifies the number of entries returned. If the specified number is smaller than the actual number of existing entries, <b>true</b> will be returned for the response parameter <b>truncated</b> , indicating that the query results will be displayed in separate pages.<br><br>The value is within the range of the maximum number of grants, for example, <b>100</b> . |
| marker    | string | No        | This parameter marks the starting location in a pagination query.<br><br>If the <b>truncated</b> value is <b>true</b> , you can send consecutive requests to obtain more record entries. The <b>marker</b> value must be set to the <b>next_marker</b> value in the response, for example, <b>10</b> .  |

| Parameter | Type   | Mandatory | Description  |
|-----------|--------|-----------|--|
| sequence  | string | No        | 36-byte serial number of a request message<br>Example:<br>919c82d4-8046-4722-9094-35c3c6524cff |

## Responses

Response parameters

| Name        | Type      | Mandatory | Description   |
|-------------|-----------|-----------|---|
| grants      | JSONArray | Yes       | List of grants. For format details, see the response returned from the grant querying interface.  |
| next_marker | string    | Yes       | This parameter indicates the <b>marker</b> value required for obtaining the next page of query results.<br>If the <b>truncated</b> value is <b>false</b> , the <b>next_marker</b> parameter is left blank.  |
| truncated   | string    | Yes       | This parameter indicates whether there are more results displayed in another page. <ul style="list-style-type: none"> <li>● If the value is <b>true</b>, there are more results.</li> <li>● If the value is <b>false</b>, the current page is the last page.</li> </ul> |
| total       | Integer   | Yes       | This parameter indicates the total number of grants.  |

## Examples

The following example describes how to query the list of grants that can be retired.

- Example request

```
{
  "limit": "",
  "marker": ""
}
```

- Example response

```
{
  "grants": [
    {
      "key_id": "bb6a3d22-dc93-47ac-b5bd-88df7ad35f1e",
      "grant_id": "7c9a3286af4fcca5f0a385ad13e1d21a50e27b6dbcab50f37f30f93b8939827d",
      "operations":
        ["describe-key", "create-datakey", "encrypt-datakey"],
      "grantee_principal": "13gg44z4g2sglzk0egw0u726zoyzvrs8",
      "retiring_principal": "13gg44z4g2sglzk0egw0u726zoyzvrs8",
      "issuing_principal": "e4hkeeea506ex3wgnzyhi656n8hx8xa3",
      "name": "my_grant",
    }
  ]
}
```



```
    "creation_date": "1497341531000"
  }],
  "next_marker": "",
  "truncated": "false",
  "total": 1
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

[Table 2-21](#) lists the normal status code returned by the response.

**Table 2-21** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.22 Obtaining CMK Import Parameters

### Function

This API enables you to obtain necessary parameters to import a CMK, including a CMK import token and a CMK encryption public key.

 **NOTE**

The returned public key type is RSA\_2048 by default.

### URI

- URI format  
POST /v1.0/{project\_id}/kms/get-parameters-for-import
- Parameter description

| Parameter  | Mandatory | Type   | Description |
|------------|-----------|--------|-------------|
| project_id | Yes       | string | Project ID  |

### Requests

Request parameters

| Parameter          | Type   | Mandatory | Description  |
|--------------------|--------|-----------|--|
| key_id             | string | Yes       | 36-byte ID of a CMK that matches the regular expression <code>^[0-9a-z]{8}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{12}\$</code><br>Example: 0d0466b0-e727-4d9c-b35d-f84bb474a37f                      |
| wrapping_algorithm | string | Yes       | Encryption algorithm for CMK material. The following values are enumerated: <ul style="list-style-type: none"> <li>● RSAES_PKCS1_V1_5</li> <li>● RSAES_OAEP_SHA_1</li> <li>● RSAES_OAEP_SHA_256</li> </ul> |
| sequence           | string | No        | 36-byte serial number of a request message<br>Example: 919c82d4-8046-4722-9094-35c3c6524cff  |

## Responses

Response parameters

| Parameter       | Type   | Mandatory | Description   |
|-----------------|--------|-----------|---|
| key_id          | string | Yes       | ID of a CMK in Base64 format  |
| import_token    | string | Yes       | CMK import token  |
| expiration_time | string | Yes       | Expiration time of the import parameter. The value is a timestamp expressed in the number of seconds since 00:00:00 UTC on January 1, 1970. |
| public_key      | string | Yes       | Public key (in Base64 format) used to encrypt CMK material  |

## Examples

The following example describes how to obtain the imported parameter of a CMK (ID: **bb6a3d22-dc93-47ac-b5bd-88df7ad35f1e**; encryption algorithm: **RSAES\_OAEP\_SHA\_1**).

- Example request

```
{
  "key_id": "bb6a3d22-dc93-47ac-b5bd-88df7ad35f1e",
  "wrapping_algorithm": "RSAES_OAEP_SHA_1"
}
```

## ● Example response

```
{
  "key_id": "bb6a3d22-dc93-47ac-b5bd-88df7ad35f1e",

  "import_token": "AACIBjY2ZTQxYjBmLTY3ZWItNDU4Ny04OTIxLWVhZTVhZjg5NDZmYQAAuihvPN
7Hly3uhp7cWw4cfuwDIem9mGwaIl7/HTx10+8ENsRR4FB7DCR+zG1s7UIZMAZRLx7LD1lkXY
+rfn5ibDOOHZkoIiVSh+9u7xtC5m/
mNpIFeyqumxHei2I8CNdsNuJtjLV5bDU3tQrIkj72HCWpC0k9yflZSvi3yCwD4wyULXBsYwUa76bTK
85MIZNGGtqfOyV6w74MT6m70gLhog8r7oWe6Gbof58uyYfFMbc
+s0OpkzMjv1v11HApyOTijled26VgboGbpM9QvgjxC7mQEJpzQeg1/
uNiziAG0YKo7wuD2mojwMBnr+XGJrrFgmd00pUaK+53KtDr8dtpGrVfJ
+0zvebA45c4A4VfvaQQDCI5nJvB2Zz3LM4oiullVt+0xrwDJYn9KRNZto2/zsGzrc/
iBVASKE2UpIH7IikALJuDNr1a8MVP51zxdEOI+905U207HLOsIw1DKMXx3CFao+4qLTb20
+Mq6xMQUwR2pwLcQA1cw+BypJe4XE3z4fqFej06VzjX5yd5pDVQ19eAzr9RgvSCi/IuyefFUci
+aX7xB4jx5MNwej3aePsOC9afsxXBulhFyGgS/dZoPQ9kyG5TE2ELqAN6obERYoiZcyvq8RW9w/
uItLS99nGjwVe3U1yW4P6ColV+u7ygWxXm/Zs
+QTJHUDw12ysbrebnN9PLNJSPhbBmuLJiMX02xtDAItlmeB2hGLqW+Mj/
n1jF5rnt5eXrNiG94pHZEvbp2BEDawJrRpaGj15C984WVw8ja/
ZrTYfWklcNKW84cLvJX19vxsuUp3/ZYKh32M/ORUT46o6KtB/
xEltkadJiSBBK4utuxQ8wO5UXW6FRkmAuV2naxhF6Obk7kEKYnuj4jxWAODtL9GcoNwq04y1SXj/
ZzaYbqXo1034fjyz3QG5ZChXGgg52+wPj2LBDjUv1riuARg7cATgdqq9c6aifrgQAj0QgVp9Gv/
8c7PRzjzfh2vRwOZqpLSuCD5sIWFSGc/RLxf1YntNx98Jo
+PjRTWbyuZNIh2xOrpG0oKyklgiFITqOTuQ6UL768HgVJPRP4CgkgF7v65QpYaYgPvkJvwOb7j2VMr
5VoykTipt7R2Xvh2LMY6wBW+HA0rw8V7ebc8/
KaH3CKGTdYL2MIfb0lxjyNplUeBKu8zYshFWfp7BUQsflAFMQyp2FhO7PGMygvqY0LLzDphVvBjpfC
O4VqHZ/iOSDzL8vuEA
+OX8XLhZp9Kb7JPIJf1fEz21x3K8YvOJeRxUfOgVvBhpKu7KUDvnrW1R9rDX4adD4EC3mgP42SumA
MYvFBKb6BgOkGALtHgHrKKSdw4DW56ANua30ZjEJ1ZVFtNyU0UJ34jsY0uJPi6QujBHQzFbCp01
9Jx8Mi+LtkN3e8S1+4pvIfj7t+t9Xu03oDhD0J65qhHlpNF/
NFrVp3KLmXFyXTWpGeczXzZvDp7Wmu5TnDSozN/AbzBuyWASyZpLvgsf1xwewMmM1Gw/UX/
WVPQdN51zWjhT1Dcy4ar8OozYtQeQ2ItSH1UaPjX0hW3BA1GYjW42+Vjy0VSLkIk/
n61N9KwTTTGAw+BvftImzGnfFM7fTCMJ3Jnx9nTn6+fbnhoXXfGHjOgPZ208VEI1G5YHS+HN/
JYyAkkj8G2+bsZmKfX9VMbYRGNTPrghjAeY/Hh8V+/
ZhUSR3pPnblhr30SePGYgQPUGmnoTRHulCHRfOMcvu9nQ1P855DNpoE7fYi
+7N9xulwFTB3DHTgUW8yuwtt
+q6LJZQMUGfmJLhBBf05FK1SxpR49IaJ0uQc7fsVYcPECL2aH8ueBqVgVQtEebWG6q0XTIrhqmaPt1
Qx9rVP8oEvPZ99yfb+8TZCT0B9WNqCotxijWqH3eyePY0Hb/AAxB34GjH1gni4NjwEI6LVX
+jSGb2ATy4Bd6ckonhGO9uwvW3WaPX214+GZvPdmv0pN60XfQ9B4I1/
RLIek6h6+2WEmB4i8qsvjgWfDD7DEhq6YN1Q/44NqUdDjrVCozBxXyDOab5t5dsWCvfgXruGa/
wq711kH7K76s7TeL0a3pc0H5zt8qU/UT7uoLv0G7H+vVulGmqc15pbsHYxTqNtSu2w9OBQ6PC8g
+MCS/fnXIcAhS7Lmvy8TFK4x0N+MhZqVbozVW37apCXFg6m1I9N0Sa4=",
  "expiration_time": 1501578672,

  "public_key": "MIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAnJQqE9GorZ16XM1OQngJ
fU0SgkMKJpL9W
+byIebeKgmDt2I6oVSPckk9y3JiaGjXKYlepawob9b61IRR97Bcr4Sf2p3J6J3gpiYGp1Ai3495rYF
+FSZAxW+VDOzbN3vig6SVxcP1PXtaKzQbtNfn1Ih+rvSMJpVI3MFHh51WjEn8L/
XprrLy1FqHSSvgB99qwiPw1ZGTL5XGsrIpCV3/ah8u+5VGoIUJZTt1zK6OQdkFH9fxwIahYvLI8/
yjrWFLtJuApr7aIrhRN0iDBINxddNh8M0A9sIFoS3D5RNKITjIKIM1/GVz+mHaPjK+91M/
b7JrNvinFCMQDGrb/1qoGQIDAQAB"
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

**Table 2-22** lists the normal status code returned by the response.

**Table 2-22** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.23 Importing CMK Material

### Function

This API allows you to import CMK material.

### URI

- URI format  
POST /v1.0/{project\_id}/kms/import-key-material
- Parameter description

| Parameter  | Mandatory | Type   | Description |
|------------|-----------|--------|-------------|
| project_id | Yes       | string | Project ID  |

### Requests

Request parameters

| Parameter              | Type   | Mandatory | Description   |
|------------------------|--------|-----------|---|
| key_id                 | string | Yes       | 36-byte ID of a CMK that matches the regular expression <code>^[0-9a-z]{8}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{12}\$</code><br>Example: 0d0466b0-e727-4d9c-b35d-f84bb474a37f |
| import_token           | string | Yes       | CMK import token in Base64 format that matches the regular expression <code>^[0-9a-zA-Z+/=]{200,6144}\$</code>  |
| encrypted_key_material | string | Yes       | Encrypted CMK material in Base64 format that matches the regular expression <code>^[0-9a-zA-Z+/=]{344,360}\$</code>   |

| Parameter       | Type   | Mandatory | Description   |
|-----------------|--------|-----------|---|
| expiration_time | long   | No        | Expiration time of the key material. The value is a timestamp expressed in the number of seconds since 00:00:00 UTC on January 1, 1970. KMS will delete the key material within 24 hours after the expiration.<br>Example: 1550291833 |
| sequence        | string | No        | 36-byte serial number of a request message<br>Example:<br>919c82d4-8046-4722-9094-35c3c6524cff  |

## Responses

Response parameters

None

## Examples

The following example describes how to import the CMK material and the import-token to the CMK whose ID is **bb6a3d22-dc93-47ac-b5bd-88df7ad35f1e**, and set the expiration time of the CMK material to **1521578672**.

- Example request

```
{
  "key_id": "bb6a3d22-dc93-47ac-b5bd-88df7ad35f1e",

  "import_token": "AACIBjY2ZTQxYjBmLTU3ZWItNDU4Ny04OTIxLWVhZTVhZjg5NDZmYQAAuihvPN
7Hly3uhp7cWw4cfuwDIem9mGwaI17/HTx10+8ENsRR4FB7DCR+zG1s7UIZMAZRLx7LD11kXY
+rfN5ibDOOHZkoIiVSh+9u7xtC5m/
mNpIFeyqumxHei2I8CNdsNuJtjLV5bDU3tQrIkj72HCWpC0k9yflZSvi3yCwD4wyULXBsYwUa76bTK
85MIZNGGtqfOyV6w74MT6m70gLhog8r7oWe6Gbof58uyYfFMbc
+500pkzMjv1v11HApyOTijled26VgbgoGbPm9Qvgjxc7mQEJpzQeg1/
uNiziAG0YKo7wuD2mojwMBnr+XGJrrFgmd00pUaK+53KtDr8dtpGrVfJ
+0zvebA45c4A4VfvaQQDCI5nJvB2Zz3LM4oiu11Vt+0xrwDJYn9KRNZto2/zsGzrc/
iBVASKE2UpIH7IikALJuDnrla8MVP5lzxde0I+905U207HLOsIw1DKMXx3CFao+4qLTb20
+Mq6xMQUwR2pwLcQA1cw+BypJe4XE3z4fqFej06VzjX5yd5pDVQ19eAzc9RgvSCi/IuyefFUci
+aX7xB4jx5MNwej3aePsOC9afsXBulhFyGgS/dzoPQ9kyG5TE2ELqAN6obERYoiZcyvq8RW9w/
uItLS99nGjwVe3UlyW4P6ColV+u7ygWxXm/Zs
+QTJHUDwl2ysbrebnN9PLNJSphBmuLJiMX02xtDAItlmeB2hGLqW+Mj/
n1jF5rnt5eXrNiG94pHZEvbp2BEDawJrRpaGj15C984WVw8ja/
ZrTYfWklcNKW84cLvJXl9vxsuUp3/ZYKh32M/ORUT46o6KtB/
xEltkadJiSBBK4utuxQ8wO5UXW6FRkmAuV2naxhF6Obk7kEKYnuj4jxWAOdtL9GcoNwq04y1SXj/
ZzaYbqXo1034fjyz3QG5ZChXGgg52+wPj2LBDjUv1riuARg7cATgdqq9c6aifrQAj0QgVp9Gv/
8c7PRzjzfh2vRwOZqpLSuCD5sIWFSGc/RLxf1YntNx98Jo
+PjRTWbyuZNIh2xOrpG0oKyklgiFITqOTuQ6UL768HgVJPRP4CgkgF7v65QpYaYgPvkJvwOb7j2VMr
5VoykTipt7R2Xvh2LMY6wBW+HA0rw8V7ebc8/
KaH3CkGTdYL2MI Fb01xjyNplUeBKU8zYshFWfp7BUQsf1AFMQyp2Fh07PGMygvqY0LLzDphVvBjpfC
O4VqHZ/iOSDzL8vuEA
+OX8XLhZp9Kb7JPIJf1fEz21x3K8YvOJeRxUfOgVvBhpKu7KUDvnrW1R9rDX4adD4EC3mgP42SumA
MYvFBKb6BgOkGAlTgHgLRKksDw4DW56ANua30ZjeKJ1ZVftnyU0UJ34jsY0uJPI6QujBhQuZfBcP01
9Jx8Mi+LtkN3e8S1+4pvIfj7t+t9Xu03oDhD0J65ghlNP/
NFrVP3KLMXfYXTWpGeczXxZvDp7Wmu5TnDSozN/AbzBuyWASyZpLvgsf1xwewMmM1Gw/UX/
WVPQdN51zWjhT1Dcy4ar8OozYtQeQ2ItSH1UaPjXohW3BA1GYjW42+Vjy0VSLk1iK/
```

```
n6lN9KwTTTgAbW+BvftImzGnfFM7ftCMJ3Jnx9nTn6+fbnhoXXfGHjOgPZ208VEI1G5YHS+HN/
JYyAkkj8G2+bsZmKfX9VMbYRGNTPrghjAEY/Hh8V+/
ZhUSR3pPnblhr30SePGYgQPUGmnoTRHulCHRfOMcVU9nQ1P855DNpoe7fYi
+7N9xulwFTB3DhtgUW8yuwtt
+q6LJZQMUGfmJLhBBf05FK1SxpR49IaJ0uQc7fsVYcPECL2aH8ueBqVGvQtEebWG6q0XTIrhqmaPt1
Qx9rVP8oEvPZ99yfb+8TZCT0B9WNqCotxijWqH3eyePY0Hb/AAXB34GjH1gni4NjwEI6LVX
+jSGb2ATy4Bd6ckonhGO9uwvW3WaPX214+GZvPdmv0pN60XfQ9B4I1/
RLIek6h6+2WEmB4i8qsvjgWfDD7DEhq6YN1Q/44NqUddjrVCozBxXyDOab5t5dsWCvfGXruGa/
wq7I1kH7K76s7TeL0a3pc0H5zt8qU/UT7uoLv0G7H+vVulGmqc15pbsHYxTqNtSu2w9OBQ6PC8g
+MCS/fnXIcAhs7Lmvy8TFK4x0N+MhZqVbozVW37apCXFg6m1I9N0Sa4=",
  "encrypted_key_material": "K+ixymt190e
+B5Rdan89KjDslBIOeXrIwzkYHGz3ods7FDXDkogqbWwwJg5wQ6zjUbEvsR/+Fi
+A0SSkhhqtijivOKHu4Z86RWjOCBdr9es+ZhJ0zYBNMN+7Rf2fd9vxb873Q7VBkJRyH1hi3Wh
+kLmDW4rpWZm4+YGctWylz7ZKbV1KBlhSNLdtZzT4nxUraOp7Die4HgUUsjzTOr/
0s7lyF6o2eysreIzI1+GbpCft0WpRsn2Ng++ntgOcwOf2zOC9o/tjraXevGw
+Dwt4cjF4znnFf0LPQ2YvpNUo248LjAGxdFvzUABNzfYSj3RZ0K3wQCNAcXU3HYw==",
  "expiration_time": 1521578672
}
```

- Example response

```
{
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

[Table 2-23](#) lists the normal status code returned by the response.

**Table 2-23** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.24 Deleting CMK Material

### Function

This API allows you to delete CMK material.

### URI

- URI format  
POST /v1.0/{project\_id}/kms/delete-imported-key-material
- Parameter description

| Parameter  | Mandatory | Type   | Description |
|------------|-----------|--------|-------------|
| project_id | Yes       | string | Project ID  |

## Requests

Request parameters

| Parameter | Type   | Mandatory | Description   |
|-----------|--------|-----------|---|
| key_id    | string | Yes       | 36-byte ID of a CMK that matches the regular expression <code>^[0-9a-z]{8}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{12}\$</code><br>Example: 0d0466b0-e727-4d9c-b35d-f84bb474a37f |
| sequence  | string | No        | 36-byte serial number of a request message<br>Example: 919c82d4-8046-4722-9094-35c3c6524cff   |

## Responses

Response parameters

None

## Examples

The following example describes how to delete the material of a CMK (ID: **0d0466b0-e727-4d9c-b35d-f84bb474a37f**).

- Example request

```
{
  "key_id": "0d0466b0-e727-4d9c-b35d-f84bb474a37f"
}
```

- Example response

```
{
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

[Table 2-24](#) lists the normal status code returned by the response.

**Table 2-24** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.25 Querying CMK Instances

### Function

This API allows you to query CMK instances.

You can use the tag filtering function to query the detailed information about a specified CMK.

### URI

- URI format  
POST /v1.0/{project\_id}/kms/resource\_instances/action
- Parameter description

| Parameter  | Type   | Mandatory | Description |
|------------|--------|-----------|-------------|
| project_id | string | Yes       | Project ID  |

### Requests

Request parameters



| Parameter | Type      | Mandatory | Description  |
|-----------|-----------|-----------|--|
| tags      | JSONArray | No        | <p>list of tags, including tag keys and tag values.</p> <ul style="list-style-type: none"> <li>● <b>key</b> indicates the tag key. A CMK can have a maximum of 10 keys, and each of them is unique and cannot be empty. A key cannot have duplicate values. The value of <b>key</b> contains a maximum of 36 characters.</li> <li>● <b>value</b> indicates the tag value. Each tag value can contain a maximum of 43 characters. The relationship between values is <b>AND</b>.</li> </ul> |
| limit     | string    | No        | <p>Number of queried records. If <b>action</b> is set to <b>count</b>, this parameter does not need to be set. If <b>action</b> is set to <b>filter</b>, the default value is <b>10</b>.</p> <p>The value ranges from 1 to 1000.</p>   |

| Parameter | Type      | Mandatory | Description  |
|-----------|-----------|-----------|--|
| offset    | string    | No        | <p>Index location. The query starts from the next piece of data indexed by this parameter. When data on the first page is queried, the value of this parameter queried on previous page is contained. If <b>action</b> is <b>count</b>, this parameter does not need to be set. If <b>action</b> is set to <b>filter</b>, the default value is <b>0</b>.</p> <p>The value must be a numeral and cannot be a negative number.</p> |
| action    | string    | Yes       | <p>Operation ID, which can be set to <b>filter</b> or <b>count</b>.</p> <ul style="list-style-type: none"> <li>● <b>filter</b>: indicates filtering.</li> <li>● <b>count</b>: indicates the number of queried records.</li> </ul>  |
| matches   | JSONArray | No        | <p>Search field.</p> <ul style="list-style-type: none"> <li>● <b>key</b> indicates the field to be matched, for example, <b>resource_name</b>.</li> <li>● <b>value</b> indicates the value to be matched, which contains a maximum of 255 characters and cannot be empty.</li> </ul>   |

| Parameter | Type   | Mandatory | Description   |
|-----------|--------|-----------|---|
| sequence  | string | No        | 36-byte serial number of a request message<br><br>Example:<br>919c82d4-8046-4722-9094-35c3c6524cf |

## Responses

- Response parameters

| Parameter   | Type      | Mandatory | Description             |
|-------------|-----------|-----------|-------------------------|
| resources   | JSONArray | Yes       | Resource instance list  |
| total_count | Integer   | Yes       | Total number of records |

- Description of the **resource** field

| Parameter       | Type      | Mandatory | Description   |
|-----------------|-----------|-----------|---|
| resource_id     | string    | Yes       | Resource ID   |
| resource_detail | string    | Yes       | Resource details. JSON character string. For details, see responses in <a href="#">Querying the Information About a CMK</a> . |
| tags            | JSONArray | Yes       | Lists of tags. If there is no tag, the array is empty by default.   |
| resource_name   | string    | Yes       | Resource name. This parameter is an empty string by default.  |

## Examples

The following example describes how to query key instances.

- Example request

```
{
  "offset": "100",
  "limit": "100",
  "action": "filter",
  "matches": [
    {
      "key": "resource_name",
      "value": "resource1"
    }
  ],
  "tags": [
    {
      "key": "key1",
      "values": [
        "value1",
        "value2"
      ]
    }
  ]
}
```

- Example response

```
{
  "resources": [{
    "resource_id": "90c03e67-5534-4ed0-acfa-89780e47a535",
    "resource_detail": {
      "key_id": "90c03e67-5534-4ed0-acfa-89780e47a535",
      "domain_id": "4B688Fb77412Aee5570E7ecdbeB5afdc",
      "key_alias": "tagTest_xmdmi",
      "key_description": "123",
      "creation_date": 1521449277000,
      "scheduled_deletion_date": "",
      "key_state": 2,
      "default_key_flag": 0,
      "key_type": 1
    },
    "resource_name": "tagTest_xmdmi",
    "tags": [{
      "key": "$",
      "value": "testValue!"
    }, {
      "key": "1",
      "value": "ccwZ"
    }, {
      "key": "1&",
      "value": "testValue!"
    }, {
      "key": "abcd",
      "value": "1&"
    }, {
      "key": "efg",
      "value": "1&"
    }, {
      "key": "faregbqer",
      "value": "AAaa00-99"
    }, {
      "key": "fcwefwq",
      "value": "$"
    }, {
      "key": "fwqegqwrq",
      "value": "1&"
    }, {
      "key": "haha",
      "value": "qzzahnzgoqbkabppdehnbrrgbrkvlxkkfoosqyhdydq"
    }, {
      "key": "quapxpysduboguiluwargcgmvngxinianbhl",
      "value": "testValue!"
    }
  ]
}]
"total_count": "1"}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

[Table 2-25](#) lists the normal status code returned by the response.

**Table 2-25** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.26 Querying CMK Tags

### Function

This API allows you to query tags of a specified CMK.

TMS may use this API to query all tags of a specified CMK.

### URI

- URI format  
GET /v1.0/{project\_id}/kms/{key\_id}/tags
- Parameter description

| Parameter  | Type   | Mandatory | Description  |
|------------|--------|-----------|--|
| project_id | string | Yes       | Project ID   |
| key_id     | String | Yes       | 36-byte ID of a CMK that matches the regular expression <code>^[0-9a-z]{8}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{12}\$</code><br>Example:<br>0d0466b0-e727-4d9c-b35d-f84bb474a37f |

## Requests

Request parameters

None

## Responses

Response parameters

| Parameter   | Type      | Mandatory | Description  |
|-------------|-----------|-----------|--|
| tags        | JSONArray | Yes       | <p>list of tags, including tag keys and tag values.</p> <ul style="list-style-type: none"> <li>● <b>key</b> indicates the tag key. a CMK can have a maximum of 10 keys, and each of them is unique and cannot be empty. A key cannot have duplicate values. The value of <b>key</b> contains a maximum of 36 characters.</li> <li>● <b>value</b> indicates the tag value. Each tag value can contain a maximum of 43 characters. The relationship between values is <b>AND</b>.</li> </ul> |
| existTagNum | int       | Yes       | Number of key tags.  |

## Examples

The following example describes how to query CMK tags.

- Example request  
None
- Example response

```
{
  "tags": [
    {
      "key": "key1",
      "value": "value1"
    },
  ],
}
```

```

    {
      "key": "key2",
      "value": "value3"
    }
  ],
  "existTagsNum": 2
}

```

or

```

{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}

```

## Status Codes

**Table 2-26** lists the normal status code returned by the response.

**Table 2-26** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.27 Querying Project Tags

### Function

This API enables you to query all tag sets of a specified project.

### URI

- URI format  
GET /v1.0/{project\_id}/kms/tags
- Parameter description

| Parameter  | Type   | Mandatory | Description |
|------------|--------|-----------|-------------|
| project_id | string | Yes       | Project ID  |

### Requests

Request parameters

None

### Responses

Response parameters

| Parameter | Type      | Mandatory | Description  |
|-----------|-----------|-----------|--|
| tags      | JSONArray | Yes       | <p>list of tags, including tag keys and tag values.</p> <ul style="list-style-type: none"> <li>● <b>key</b> indicates the tag key. A CMK can have a maximum of 10 keys, and each of them is unique and cannot be empty. A key cannot have duplicate values. The value of <b>key</b> contains a maximum of 36 characters.</li> <li>● <b>value</b> indicates the tag value. Each tag value can contain a maximum of 43 characters. The relationship between values is <b>AND</b>.</li> </ul> |

## Examples

The following example describes how to query project tags.

- Example request  
None
- Example response

```

{
  "tags": [
    {
      "key": "key1",
      "values": [
        "value1",
        "value2"
      ]
    },
    {
      "key": "key2",
      "values": [
        "value1",
        "value2"
      ]
    }
  ]
}

```

or



```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

[Table 2-27](#) lists the normal status code returned by the response.

**Table 2-27** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.28 Adding or Deleting CMK Tags in Batches

### Function

This API enables you to add or delete CMK tags in batches.

### URI

- URI format  
POST /v1.0/{project\_id}/kms/{key\_id}/tags/action
- Parameter description

| Parameter  | Mandatory | Type   | Description  |
|------------|-----------|--------|--|
| project_id | Yes       | string | Project ID   |
| key_id     | Yes       | String | 36-byte ID of a CMK that matches the regular expression <code>^[0-9a-z]{8}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{12}\$</code><br>Example:<br>0d0466b0-e727-4d9c-b35d-f84bb474a37f |

## Requests

Request parameters

| Parameter | Type      | Mandatory | Description  |
|-----------|-----------|-----------|--|
| tags      | JSONArray | Yes       | <p>list of tags, including tag keys and tag values.</p> <ul style="list-style-type: none"> <li>● <b>key</b> indicates the tag key. a CMK can have a maximum of 10 keys, and each of them is unique and cannot be empty. A key cannot have duplicate values. The value of <b>key</b> contains a maximum of 36 characters.</li> <li>● <b>value</b> indicates the tag value. Each tag value can contain a maximum of 43 characters. The relationship between values is <b>AND</b>.</li> </ul> |
| action    | string    | Yes       | <p>Operation ID.<br/>The value can be <b>create</b> or <b>delete</b>.</p>  |
| sequence  | string    | No        | <p>36-byte serial number of a request message<br/>Example:<br/>919c82d4-8046-4722-9094-35c3c6524cf</p>   |

## Responses

Response parameters

None

## Examples

The following example describes how to add tags, the keys and values of which are **key1**, **key**, **value1**, and **value3** respectively.

- Example request

```
{
  "action": "create",
  "tags": [
    {
      "key": "key1",
      "value": "value1"
    },
    {
      "key": "key",
      "value": "value3"
    }
  ]
}
```

or

```
{
  "action": "delete",
  "tags": [
    {
      "key": "key1",
      "value": "value1"
    },
    {
      "key": "key2",
      "value": "value3"
    }
  ]
}
```

- Example response

```
{
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

[Table 2-28](#) lists the normal status code returned by the response.

**Table 2-28** Status codes

| Status Code | Status     | Description   |
|-------------|------------|---|
| 204         | No Content | The request is processed successfully and no content is returned. |

Exception status code. For details, see [Status Codes](#).

## 2.29 Adding a CMK Tag

### Function

This API allows you to add a CMK tag.

### URI

- URI format  
POST /v1.0/{project\_id}/kms/{key\_id}/tags
- Parameter description

| Parameter  | Type   | Mandatory | Description  |
|------------|--------|-----------|--|
| project_id | string | Yes       | Project ID   |
| key_id     | string | Yes       | 36-byte ID of a CMK that matches the regular expression <code>^[0-9a-z]{8}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{12}\$</code><br>Example:<br>0d0466b0-e727-4d9c-b35d-f84bb474a37f |

### Requests

- Request parameters

| Parameter | Type         | Mandatory | Description  |
|-----------|--------------|-----------|--|
| tag       | resource_tag | Yes       | Included tag   |
| sequence  | string       | No        | 36-byte serial number of a request message<br>Example:<br>919c82d4-8046-4722-9094-35c3c6524cff |

- Description of the **resource\_tag** field

| Parameter | Type   | Mandatory | Description   |
|-----------|--------|-----------|---|
| key       | string | Yes       | Key. The value contains a maximum of 36 characters. The value of <b>key</b> cannot be empty, and cannot contain the following characters: ASCII (0-31) and *<> =    |
| value     | string | Yes       | Value. Each value contains a maximum of 43 Unicode characters and can be an empty string. The value cannot contain the following characters: ASCII (0-31) and *<> = |

## Responses

Response parameters

None

## Examples

The following example describes how to add a tag, the key and value of which are **DEV** and **DEV1** respectively.

- Example request

```
{
  "tag": {
    {
      "key": "DEV",
      "value": "DEV1"
    }
  }
}
```

- Example response

```
{
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

**Table 2-29** lists the normal status code returned by the response.

**Table 2-29** Status codes

| Status Code | Status     | Description   |
|-------------|------------|---|
| 204         | No Content | The request is processed successfully and no content is returned. |

Exception status code. For details, see [Status Codes](#).

## 2.30 Deleting a CMK Tag

### Function

This API enables you to delete a CMK tag.

### URI

- URI format  
DELETE /v1.0/{project\_id}/kms/{key\_id}/tags/{key}
- Parameter description

| Parameter  | Mandatory | Type   | Description  |
|------------|-----------|--------|--|
| project_id | Yes       | string | Project ID   |
| key_id     | Yes       | string | 36-byte ID of a CMK that matches the regular expression <code>^[0-9a-z]{8}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{4}-[0-9a-z]{12}\$</code><br>Example:<br>0d0466b0-e727-4d9c-b35d-f84bb474a37f |
| key        | Yes       | string | Tag key  |

## Requests

Request parameters

| Parameter | Type   | Mandatory | Description  |
|-----------|--------|-----------|--|
| sequence  | string | No        | 36-byte serial number of a request message<br><br>Example:<br>919c82d4-8046-472<br>2-9094-35c3c6524cf<br>f |

## Responses

Response parameters

None

## Examples

Example response

```
{
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

[Table 2-30](#) lists the normal status code returned by the response.

**Table 2-30** Status codes

| Status Code | Status     | Description   |
|-------------|------------|---|
| 204         | No Content | The request is processed successfully and no content is returned. |

Exception status code. For details, see [Status Codes](#).

## 2.31 Querying All API Versions

### Function

This API is used to query the API versions.

## URI

- URI format  
GET /
- Parameter description  
None

## Requests

None

## Responses

Response parameters

| Parameter   | Type      | Mandatory | Description  |
|-------------|-----------|-----------|--|
| versions    | JSONArray | Yes       | The list of all versions   |
| id          | String    | Yes       | Version number, for example, <b>v1.0</b>   |
| links       | JSON      | Yes       | JSON object  |
| href        | String    | Yes       | API URL.   |
| rel         | String    | Yes       | The default value is <b>self</b> .   |
| version     | String    | Yes       | If the APIs of this version support microversions, the supported maximum microversion is returned. If the microversion is not supported, empty character string is returned.   |
| status      | String    | Yes       | Version status. Valid values are as follows: <ul style="list-style-type: none"> <li>● <b>CURRENT</b>: widely used version</li> <li>● <b>SUPPORT</b>: earlier version which is still supported</li> <li>● <b>DEPRECATED</b>: deprecated version which may be deleted later</li> </ul> |
| updated     | String    | Yes       | Version release time, which must be UTC time. For example, the release time of v1 is 2014-06-28T12:20:21Z.   |
| min_version | String    | No        | If the APIs of this version support microversions, the supported minimum microversion is returned. If the microversion is not supported, empty character string is returned.   |



## Examples

The following describes how to query the version information.

- Example request  
None
- Example response

```
{
  "versions":
  [
    {
      "id": "v1.0",
      "links":
      [
        {
          "href": "https://kms.eu-de.otc.t-systems.com/v1.0/",
          "rel": "self"
        }
      ],
      "min_version": "",
      "status": "CURRENT",
      "version": "",
      "updated": "2018-09-05T08:18:05Z"
    }
  ]
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

[Table 2-31](#) lists the normal status code returned by the response.

**Table 2-31** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

## 2.32 Querying a Specified API Version

### Function

This API is used to query the version of an API.

## URI

- URI format  
GET /{version\_id}
- Parameter description

| Parameter  | Mandatory | Type   | Description |
|------------|-----------|--------|-------------|
| version_id | Yes       | string | Version ID  |

## Requests

None

## Responses

Response parameters

| Parameter | Type   | Mandatory | Description  |
|-----------|--------|-----------|--|
| version   | JSON   | Yes       | Version information  |
| id        | String | Yes       | Version number, for example, <b>v1.0</b>   |
| links     | JSON   | Yes       | JSON object  |
| href      | String | Yes       | API URL.   |
| rel       | String | Yes       | The default value is <b>self</b> .   |
| version   | String | Yes       | If the APIs of this version support microversions, the supported maximum microversion is returned. If the microversion is not supported, empty character string is returned.   |
| status    | String | Yes       | Version status. Valid values are as follows: <ul style="list-style-type: none"> <li>● <b>CURRENT</b>: widely used version</li> <li>● <b>SUPPORT</b>: earlier version which is still supported</li> <li>● <b>DEPRECATED</b>: deprecated version which may be deleted later</li> </ul> |
| updated   | String | Yes       | Version release time, which must be UTC time. For example, the release time of v1.0 is 2014-06-28T12:20:21Z.   |

| Parameter   | Type   | Mandatory | Description  |
|-------------|--------|-----------|--|
| min_version | String | No        | If the APIs of this version support microversions, the supported minimum microversion is returned. If the microversion is not supported, empty character string is returned. |

## Examples

The following uses the **v1.0** version as an example.

- Example request  
None
- Example response

```
{
  "version":
  {
    "id": "v1.0",
    "links":
    [
      {
        "href": "https://kms.eu-de.otc.t-systems.com/v1.0/",
        "rel": "self"
      }
    ],
    "min_version": "",
    "status": "CURRENT",
    "version": "",
    "updated": "2018-09-05T08:18:05Z"
  }
}
```

or

```
{
  "error": {
    "error_code": "KMS.XXXX",
    "error_msg": "XXX"
  }
}
```

## Status Codes

[Table 2-32](#) lists the normal status code returned by the response.

**Table 2-32** Status codes

| Status Code | Status | Description                     |
|-------------|--------|---------------------------------|
| 200         | OK     | Request processed successfully. |

Exception status code. For details, see [Status Codes](#).

# A Appendix

## A.1 Status Codes

| Status Code | Status                | Description   |
|-------------|-----------------------|---|
| 200         | OK                    | Request processed successfully.                                   |
| 204         | No Content            | The request is processed successfully and no content is returned. |
| 400         | Bad Request           | The request parameter is incorrect.                               |
| 403         | Forbidden             | The server understood the request, but is refusing to fulfill it. |
| 404         | Not Found             | The requested resource does not exist or not found.               |
| 500         | Internal Server Error | Internal service error.   |

## A.2 Error Code

### Introduction

A customized message is returned when errors, such as 400 or 500 errors, occur in an extended public cloud API. This section describes error codes and their meanings.

### Response Format

- HTTP status code
- Response example

```
{  
  "error": {  
    "error_code": "KMS.0101",
```

```
    "error_msg": "kms error."  
  }  
}
```

## Error Code Description

| Module   | Error Code  | Description  |
|----------|---|--|
| Common   | KMS.0101  | KMS error.   |
|          | KMS.0102  | Abnormal KMS I/O.  |
|          | KMS.0201  | Invalid request URL.   |
|          | KMS.0202  | The JSON format of the request message is invalid.                   |
|          | KMS.0203  | The request message length has exceeded the upper limit.             |
|          | KMS.0204  | The request message lacks required parameters.                       |
|          | KMS.0205  | Invalid <b>key_id</b> .  |
|          | KMS.0206  | Invalid <b>sequence</b> .  |
|          | KMS.0207  | The key does not exist.  |
|          | KMS.0208  | Invalid <b>encryption_context</b> .                                  |
|          | KMS.0209  | The key has been disabled and cannot be used.                        |
|          | KMS.0210  | The key is in the <b>Pending deletion</b> status and cannot be used. |
|          | KMS.0211  | Default Master Keys does not support this operation.                 |
|          | KMS.0301  | The value of <b>X-Auth-Token</b> is null or invalid.                 |
|          | KMS.0302  | Invalid <b>X-Auth-Token</b> .  |
|          | KMS.0303  | <b>X-Auth-Token</b> has expired.                                     |
|          | KMS.0305  | Invalid <b>X-Auth-Token Project Name</b> .                           |
|          | KMS.0306  | The user has no permission to access the key.                        |
|          | KMS.0307  | The user role has no permission to access the API.                   |
|          | KMS.0308  | Invalid <b>XXX</b> .   |
| KMS.0309 | The key must be an imported one.                    |  |
| KMS.0310 | The key is not in the <b>Pending import</b> status. |  |
| KMS.0401 | The tag list cannot be empty.                       |  |

| Module                           | Error Code | Description  |
|----------------------------------|------------|--|
|                                  | KMS.0402   | Invalid value for the <b>value</b> field in the <b>match</b> parameter.                    |
|                                  | KMS.0403   | Invalid value for the <b>key</b> field in the <b>match</b> parameter.                      |
|                                  | KMS.0404   | Invalid value for the <b>action</b> field.   |
|                                  | KMS.0405   | Invalid value of the <b>value</b> field in the <b>tag</b> parameter.                       |
|                                  | KMS.0406   | Invalid value for the <b>key</b> field in the <b>tag</b> parameter.                        |
|                                  | KMS.0407   | Invalid tag list length.   |
|                                  | KMS.0408   | Invalid value for the <b>resourceType</b> field.   |
|                                  | KMS.0409   | The total number of tags has exceeded the upper limit.                                     |
|                                  | KMS.0410   | Invalid length of the <b>value</b> field in the <b>tag</b> parameter.                      |
|                                  | KMS.0411   | Invalid length of the <b>key</b> field in the <b>tag</b> parameter.                        |
|                                  | KMS.0412   | Invalid length of the key list in the <b>tag</b> parameter.                                |
|                                  | KMS.0413   | Invalid length of the value list in the <b>tag</b> parameter has exceeded the upper limit. |
|                                  | KMS.0417   | The value of <b>offset</b> must be greater than or equal to <b>0</b> .                     |
|                                  | KMS.0418   | <b>offset</b> is not required.   |
| Creating a CMK                   | KMS.1101   | Invalid <b>key_alias</b> .   |
|                                  | KMS.1102   | Invalid <b>realm</b> .   |
|                                  | KMS.1103   | Invalid <b>key_description</b> .   |
|                                  | KMS.1104   | Existing CMK alias.  |
|                                  | KMS.1105   | The number of keys has reached the upper limit.  |
| Enabling a CMK                   | KMS.1201   | The key is not disabled.   |
| Disabling a CMK                  | KMS.1301   | The key is not enabled.  |
| Scheduling the deletion of a CMK | KMS.1401   | The deletion of CMKs can be scheduled by 7 to 1096 days in advance.                        |
|                                  | KMS.1402   | The key is in the <b>Pending deletion</b> status.  |

| Module                                    | Error Code | Description  |
|---|------------|--|
| Canceling the scheduled deletion of a CMK | KMS.1501   | The key is not in the <b>Pending deletion</b> status.                |
| Querying the list of CMKs                 | KMS.1601   | The value of <b>limit</b> falls beyond the range.                    |
|   | KMS.1602   | The value of <b>marker</b> must be greater than or equal to 0.       |
| Creating a random number                  | KMS.1801   | <b>random_data_length</b> must contain 512 bits.                     |
| Creating a DEK                            | KMS.1901   | <b>datakey_length</b> must contain 512 bits.                         |
| Creating a plaintext-free DEK             | KMS.2001   | <b>datakey_length</b> must contain 512 bits.                         |
| Encrypting a DEK                          | KMS.2101   | Invalid <b>plain_text</b> .  |
|   | KMS.2102   | <b>datakey_plain_length</b> must contain 64 bytes.                   |
|   | KMS.2103   | Hash verification of the data encryption key failed.                 |
| Decrypting a DEK                          | KMS.2201   | Invalid <b>cipher_text</b> .   |
|   | KMS.2202   | <b>datakey_cipher_length</b> must contain 64 bytes.                  |
|   | KMS.2203   | Hash verification of the data encryption key failed.                 |
| Changing the alias of a CMK               | KMS.1101   | Invalid <b>key_alias</b> .   |
|   | KMS.1104   | Existing CMK alias.  |
| Changing the description of a CMK         | KMS.1103   | Invalid <b>key_description</b> .                                     |
| Creating a grant                          | KMS.2401   | <b>create-grant</b> cannot be the only granted operation permission. |
|   | KMS.2402   | Invalid principal for creating/retiring a grant.                     |
|   | KMS.2403   | Failed to create a grant.  |
|   | KMS.2404   | No more permissions can be granted for the CMK.                      |
|   | KMS.2405   | You cannot grant any more permissions to the principal.              |
| Querying grants on a CMK                  | KMS.1601   | The value of <b>limit</b> falls beyond the range.                    |
|   | KMS.1602   | The value of <b>marker</b> must be greater than or equal to 0.       |

| Module                              | Error Code | Description  |
|-------------------------------------|------------|--|
| Querying grants that can be retired | KMS.1601   | The value of <b>limit</b> falls beyond the range.  |
|                                     | KMS.1602   | The value of <b>marker</b> must be greater than or equal to 0.   |
| Revoking a grant                    | KMS.2501   | The grant does not exist.  |
|                                     | KMS.2502   | The <b>grant_id</b> value does not match the <b>key_id</b> value.  |
| Retiring a grant                    | KMS.2501   | The grant does not exist.  |
|                                     | KMS.2502   | The <b>grant_id</b> value does not match the <b>key_id</b> value.  |
| Importing CMK material              | KMS.2601   | Invalid token.   |
|                                     | KMS.2602   | The expiration time of an imported key must be later than the current time.  |
|                                     | KMS.2603   | The <b>key_id</b> does not match the <b>key_id</b> value in the token.   |
|                                     | KMS.2604   | The length of the external key in plaintext must be 32 bits.   |
|                                     | KMS.2605   | Token verification failed.   |
|                                     | KMS.2606   | When you re-import the material of a deleted CMK, the external key in plaintext must be consistent with that imported earlier. |
| Deleting CMK material               | KMS.2701   | CMK material can be deleted only when the CMK is in <b>Enabled</b> or <b>Disabled</b> status.                                  |

## A.3 API Permissions

### A.3.1 KMS Management

| API   | API Function                     | Permission      |
|---|----------------------------------|-----------------|
| POST /v1.0/{project_id}/kms/create-key            | Creates a CMK.                   | kms:cmk:create  |
| POST /v1.0/{project_id}/kms/enable-key            | Enables a CMK.                   | kms:cmk:enable  |
| POST /v1.0/{project_id}/kms/disable-key           | Disables a CMK.                  | kms:cmk:disable |
| POST /v1.0/{project_id}/kms/schedule-key-deletion | Schedules the deletion of a CMK. | kms:cmk:update  |



| API  | API Function                                    | Permission          |
|--|---|---------------------|
| POST /v1.0/{project_id}/kms/cancel-key-deletion              | Cancels the scheduled deletion of a CMK.        | kms:cmk:update      |
| POST /v1.0/{project_id}/kms/list-keys                        | Queries the list of CMKs.                       | kms:cmk:list        |
| POST /v1.0/{project_id}/kms/describe-key                     | Queries the CMK information.                    | kms:cmk:get         |
| POST /v1.0/{project_id}/kms/gen-random                       | Generates a random number.                      | kms:cmk:generate    |
| POST /v1.0/{project_id}/kms/create-datakey                   | Creates a DEK.                                  | kms:dek:create      |
| POST /v1.0/{project_id}/kms/create-datakey-without-plaintext | Creates a plaintext-free DEK.                   | kms:dek:create      |
| POST /v1.0/{project_id}/kms/encrypt-datakey                  | Encrypts a DEK.                                 | kms:dek:crypto      |
| POST /v1.0/{project_id}/kms/decrypt-datakey                  | Decrypts a DEK.                                 | kms:dek:crypto      |
| GET /v1.0/{project_id}/kms/user-instances                    | Queries the number of instances.                | kms:cmk:getInstance |
| GET /v1.0/{project_id}/kms/user-quotas                       | Queries the user quota.                         | kms:cmk:getQuota    |
| POST /v1.0/{project_id}/kms/update-key-alias                 | Modifies the CMK alias.                         | kms:cmk:update      |
| POST /v1.0/{project_id}/kms/update-key-description           | Modifies the description of a CMK.              | kms:cmk:update      |
| POST /v1.0/{project_id}/kms/create-grant                     | Creates a grant.                                | kms:grant:create    |
| POST /v1.0/{project_id}/kms/revoke-grant                     | Revokes a grant.                                | kms:grant:revoke    |
| POST /v1.0/{project_id}/kms/retire-grant                     | Retires a grant.                                | kms:grant:retire    |
| POST /v1.0/{project_id}/kms/list-grants                      | Queries the grant list of a CMK.                | kms:grant:list      |
| POST /v1.0/{project_id}/kms/list-retirable-grants            | Queries the list of grants that can be retired. | kms:grant:list      |
| POST /v1.0/{project_id}/kms/encrypt-data                     | Encrypts data.                                  | kms:cmk:crypto      |
| POST /v1.0/{project_id}/kms/decrypt-data                     | Decrypts data.                                  | kms:cmk:crypto      |

| API  | API Function                            | Permission              |
|--|---|-------------------------|
| POST /v1.0/{project_id}/kms/get-parameters-for-import    | Obtains parameters for importing a key. | kms:cmk:getMaterial     |
| POST /v1.0/{project_id}/kms/import-key-material          | Imports key material.                   | kms:cmk:importMaterial  |
| POST /v1.0/{project_id}/kms/delete-imported-key-material | Deletes key material.                   | kms:cmk:deleteMaterial  |
| POST /v1.0/{project_id}/kms/enable-key-rotation          | Enables key rotation.                   | kms:cmk:enableRotation  |
| POST /v1.0/{project_id}/kms/update-key-rotation-interval | Modifies the rotation interval.         | kms:cmk:updateRotation  |
| POST /v1.0/{project_id}/kms/disable-key-rotation         | Disables key rotation.                  | kms:cmk:disableRotation |
| POST /v1.0/{project_id}/kms/get-key-rotation-status      | Queries the key rotation status.        | kms:cmk:getRotation     |
| POST /v1.0/{project_id}/kms/resource_instances/action    | Queries key resource instances.         | kms:cmkTag:listInstance |
| GET /v1.0/{project_id}/kms/{key_id}/tags                 | Queries tags of a key.                  | kms:cmkTag:list         |
| GET /v1.0/{project_id}/kms/tags                          | Queries the project tags.               | kms:cmkTag:list         |
| POST /v1.0/{project_id}/kms/{key_id}/tags/action         | Adds or deletes key tags in batches.    | kms:cmkTag:batch        |
| POST /v1.0/{project_id}/kms/{key_id}/tags                | Adds tags to a key.                     | kms:cmkTag:create       |
| POST /v1.0/{project_id}/kms/{key_id}/tags/{key}          | Deletes tags of a key.                  | kms:cmkTag:delete       |

# B Change History

| Release Date | Description  |
|--------------|--|
| 2019-03-13   | Added section "API Permissions".   |
| 2018-09-30   | <ul style="list-style-type: none"><li>● Added section "Querying All API Versions."</li><li>● Added section "Querying a Specified API Version."</li></ul>   |
| 2018-07-30   | Modified section "Error Codes": added error codes KMS.0417, KMS.0418, and their descriptions.  |
| 2018-07-12   | Modified the descriptions about status codes returned following each request. The normal status codes and exception status codes are described separately. |
| 2018-07-04   | Modified section "Status Codes": added status code <b>204</b> and its description.   |
| 2018-05-11   | Modified the description of the <b>resource_detail</b> parameter in the section "Querying CMK Instances".  |

| Release Date | Description  |
|--------------|--|
| 2018-03-30   | <ul style="list-style-type: none"><li>● Added the section "Obtaining CMK Import Parameters".</li><li>● Added the section "Importing CMK Material".</li><li>● Added the section "Deleting CMK Material".</li><li>● Added the section "Querying CMK Instances".</li><li>● Added the section "Querying CMK Tags".</li><li>● Added the section "Querying Project Tags".</li><li>● Added the section "Adding or Deleting CMK Tags in Batches".</li><li>● Added the section "Adding a CMK Tag".</li><li>● Added the section "Deleting a CMK Tag".</li><li>● Optimized error codes and modified the section "Error Codes".<ul style="list-style-type: none"><li>- Added error codes KMS.0309, KMS.0310, and KMS.0401-KMS.0413 to the common error codes.</li><li>- Added error codes and their description for importing CMK material.</li><li>- Added error codes and their description for deleting CMK material.</li></ul></li></ul> |

| Release Date | Description   |
|--------------|---|
| 2017-10-30   | <ul style="list-style-type: none"> <li>● Added the section "Creating a Grant".</li> <li>● Added the section "Revoking a Grant".</li> <li>● Added the section "Retiring a Grant".</li> <li>● Added the section "Querying Grants on a CMK".</li> <li>● Added the section "Querying Grants That Can Be Retired".</li> <li>● Optimized request parameter description in the section "Creating a CMK".</li> <li>● Optimized request and response parameter description in the section "Querying the List of CMKs".</li> <li>● Optimized response parameter description in the section "Querying the Information About a CMK".</li> <li>● Optimized response parameter description in the section "Creating a Random Number".</li> <li>● Optimized response parameter description in the section "Querying the Quota of a User".</li> <li>● Optimized error codes and modified the section "Error Codes". <ul style="list-style-type: none"> <li>- Added public error code KMS.0308 and its description.</li> <li>- Added error codes and their description for creating a grant.</li> <li>- Added error codes and their description for querying grants on a CMK.</li> <li>- Added error codes and their description for querying grants that can be retired.</li> <li>- Added error codes and their description for revoking a grant.</li> <li>- Added error codes and their description for retiring a grant.</li> </ul> </li> </ul> |
| 2017-06-30   | <ul style="list-style-type: none"> <li>● Added sections "Changing the Alias of a CMK" and "Changing the Description of a CMK".</li> <li>● Optimized the type of parameter <b>keys</b> in the section "Querying the List of CMKs".</li> <li>● Optimized response parameter tables in sections "Querying the Number of Instances" and "Querying Quotas".</li> <li>● Optimized error codes and modified the section "Error Code". <ul style="list-style-type: none"> <li>- Added error codes and their description for changing the alias of a CMK.</li> <li>- Added error codes and their description for changing the description of a CMK.</li> </ul> </li> </ul>   |
| 2017-02-08   | Added sections "Querying the Number of Instances" and "Querying Quotas".  |

| Release Date | Description  |
|--------------|--|
| 2016-12-30   | <ul style="list-style-type: none"><li>● Optimized error codes and modified the section "Error Codes".</li><li>● Added description about parameter <b>encryption_context</b> to the following sections:<ul style="list-style-type: none"><li>- "Creating a DEK"</li><li>- "Creating a Plaintext-Free DEK"</li><li>- "Encrypting a DEK"</li><li>- "Decrypting a DEK"</li></ul></li></ul> |
| 2016-10-29   | This is the first official release.  |