

## Scalable File Service

# API Reference (Kuala Lumpur Region)

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# 1 Before You Start

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## 1.1 Overview

Welcome to *Scalable File Service API Reference*. Scalable File Service (SFS) is a network attached storage (NAS) service that provides scalable, high-performance file storage. With SFS, you can enjoy shared file access spanning multiple Elastic Cloud Servers (ECSs), Bare Metal Servers (BMSs), and containers created on Cloud Container Engine (CCE).

This document describes how to use application programming interfaces (APIs) to perform operations on SFS resources, such as creating, querying, deleting, and updating a file system. For details about all supported operations, see [2 API Overview](#).

If you plan to access SFS through an API, ensure that you are familiar with SFS concepts. For details, see section "Service Overview" in the *Scalable File Service User Guide*.

## 1.2 API Calling

SFS supports Representational State Transfer (REST) APIs, allowing you to call APIs using HTTPS requests. For details about API calling, see [3 Calling APIs](#).

## 1.3 Endpoints

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

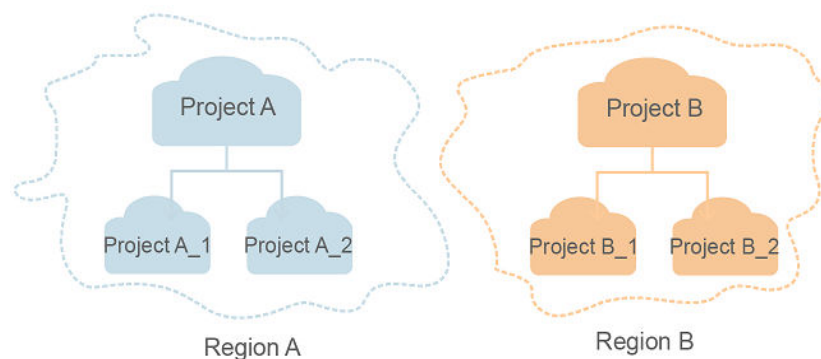
## 1.4 Constraints

- The numbers of file systems that you can create and their capacities are determined by your quotas. To view or increase the quotas, see the "Quotas" section in the *Scalable File Service User Guide*.
- For more constraints, see API description.

## 1.5 Concepts

- **Account**  
An account is created upon successful registration. The account has full access permissions for all of its cloud services and resources. It can be used to reset user passwords and grant user permissions. The account is a payment entity, which should not be used directly to perform routine management. For security purposes, create Identity and Access Management (IAM) users and grant them permissions for routine management.
- **User**  
An IAM user is created by an account in IAM to use cloud services. Each IAM user has its own identity credentials (password and access keys).  
API authentication requires information such as the account name, username, and password.
- **Region**  
A region is a geographic area in which cloud resources are deployed. Availability zones (AZs) in the same region can communicate with each other over an intranet, while AZs in different regions are isolated from each other. Deploying cloud resources in different regions can better suit certain user requirements or comply with local laws or regulations.
- **AZ**  
An AZ comprises of one or more physical data centers equipped with independent ventilation, fire, water, and electricity facilities. Computing, network, storage, and other resources in an AZ are logically divided into multiple clusters. AZs within a region are interconnected using high-speed optical fibers to allow you to build cross-AZ high-availability systems.
- **Project**  
A project corresponds to a region. Default projects are defined to group and physically isolate resources (including computing, storage, and network resources) across regions. Users can be granted permissions in a default project to access all resources under their accounts in the region associated with the project. If you need more refined access control, create subprojects under a default project and create resources in subprojects. Then you can assign users the permissions required to access only the resources in the specific subprojects.

**Figure 1-1** Project isolation model



- Enterprise project

Enterprise projects group and manage resources across regions. Resources in different enterprise projects are logically isolated. An enterprise project can contain resources of multiple regions, and resources can be added to or removed from enterprise projects.

For details about enterprise projects and about how to obtain enterprise project IDs, see *Enterprise Management User Guide*.

# 2 API Overview

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By using the SFS Turbo APIs, you can create, delete, query SFS Turbo file systems as well as expanding the capacity of an SFS Turbo file system.

**Table 2-1** API classification

Type	Subtype	Description
SFS Turbo APIs	Lifecycle management	Include creating file systems, deleting file systems, querying file system lists, and querying file system details.
SFS Turbo APIs	Storage capacity management	Expand the capacity of a specified file system.
SFS Turbo APIs	Connection management	Change the security group bound to an SFS Turbo file system.



# 3 Calling APIs

## 3.1 Making an API Request

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

### Request URI

A request URI is in the following format:

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

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

**Table 3-1** URI parameter description

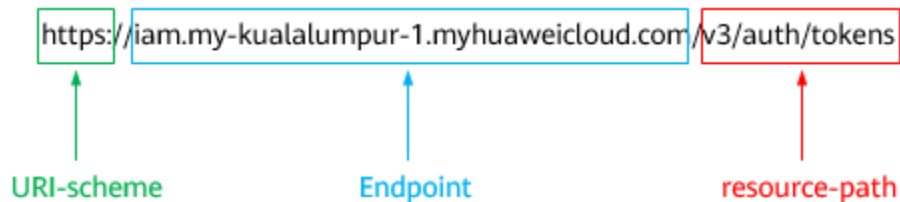
Parameter	Description
URI-scheme	Protocol used to transmit requests. All APIs use HTTPS.
Endpoint	Domain name or IP address of the server bearing the REST service. The endpoint varies between services in different regions. It can be obtained from <b>Regions and Endpoints</b> . For example, the endpoint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

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

For example, to obtain an IAM token in the **AP-Kuala Lumpur-OP6** region, obtain the endpoint of IAM (**iam.my-kualalumpur-1.myhuaweicloud.com**) for this region and the **resource-path** (**/v3/auth/tokens**) in the URI of the API used to **obtain a user token**. Then, construct the URI as follows:

```
https://iam.my-kualalumpur-1.myhuaweicloud.com/v3/auth/tokens
```

**Figure 3-1** Example URI



**NOTE**

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

## Request Methods

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

**Table 3-2** HTTP methods

Method	Description
GET	Requests the server to return specified resources.
PUT	Requests the server to update specified resources.
POST	Requests the server to add resources or perform special operations.
DELETE	Requests the server to delete specified resources, for example, an object.
HEAD	Same as GET except that the server must return only the response header.

Method	Description
PATCH	Requests the server to update partial content of a specified resource. If the resource does not exist, a new resource will be created.

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

POST https://iam.my-kualalumpur-1.myhuaweicloud.com/v3/auth/tokens

## Request Header

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

Common request header fields are as follows.

**Table 3-3** Common request header fields

Parameter	Description	Mandatory	Example Value
Host	Specifies the server domain name and port number of the resources being requested. The value can be obtained from the URL of the service API. The value is in the format of <i>Hostname:Port number</i> . If the port number is not specified, the default port is used. The default port number for <b>https</b> is <b>443</b> .	No This field is mandatory for AK/SK authentication.	code.test.com or code.test.com:443
Content-Type	Specifies the type (or format) of the message body. The default value <b>application/json</b> is recommended. Other values of this field will be provided for specific APIs if any.	Yes	application/json
Content-Length	Specifies the length of the request body. The unit is byte.	No	3495

Parameter	Description	Mandatory	Example Value
X-Project-Id	Specifies the project ID. Obtain the project ID by following the instructions in <a href="#">8.3 Obtaining a Project ID</a> .	No	e9993fc787d94b6c886cbaa340f9c0f4
X-Auth-Token	Specifies the user token. It is a response to the API for <a href="#">obtaining a user token</a> (This is the only API that does not require authentication). After the request is processed, the value of <b>X-Subject-Token</b> in the response header is the token value.	No This field is mandatory for token authentication.	The following is part of an example token: MIIPAgYJKoZlhvcNAQcCo...ggg1BBIINPXsidG9rZ

 **NOTE**

In addition to supporting authentication using tokens, APIs support authentication using AK/SK, which uses SDKs to sign a request. During the signature, the **Authorization** (signature authentication) and **X-Sdk-Date** (time when a request is sent) headers are automatically added in the request.

For more details, see "Authentication Using AK/SK" in [3.2 Authentication](#).

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

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

### (Optional) Request Body

This part is optional. The body of a request is often sent in a structured format as specified in the **Content-Type** header field. The request body transfers content except the request header.

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

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

 NOTE

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

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

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

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

## 3.2 Authentication

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

- Token authentication: Requests are authenticated using tokens.
- AK/SK authentication: Requests are encrypted using AK/SK pairs. AK/SK authentication is recommended because it is more secure than token authentication.

### Token Authentication

 NOTE

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

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

A cloud service can be deployed as either a project-level service or global service.

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

IMS is a project-level service. When you call the API, set **auth.scope** in the request body to **project**.

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

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

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

## AK/SK Authentication

### NOTE

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

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

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

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

 NOTE

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

## 3.3 Response

### Status Code

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

A status code is a group of digits, ranging from 1xx to 5xx. It indicates the status of a request. For more information, see [8.1 Status Codes](#).

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

### Response Header

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

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

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

```
connection → keep-alive
content-type → application/json
date → Tue, 12 Feb 2019 06:52:13 GMT
server → Web Server
strict-transport-security → max-age=31536000; includeSubdomains;
transfer-encoding → chunked
via → proxy A
x-content-type-options → nosniff
x-download-options → noopen
x-frame-options → SAMEORIGIN
x-iam-trace-id → 218d45ab-d674-4995-af3a-2d0255ba41b5
x-subject-token → MIiYXQYJKoZIhvcNAQcCoIIYtjCCGEOCAQExDTALBglghkgBZQMEAgEwgharBgkqhkiG9w0BBwGgghacBIIWmHsidG9rZW4iOansiZXhwaXJlc19hdCI6IjwMTktMDItMTNUMC
fj3KJs6YgKnpVNRbW2eZ5eb78SZ0kqjACgkqlqO1wi4JlGzrpd18LGXK5bdfq4lqHCYb8P4NaYONYejeAgz/VeFYtLWT1GSO0zxKZmiQHQj82HBqHdglZO9fuEbL5dMhdavj+33wEI
xHRCE9I87o+k9-
j+CMZSEB7bUGd5Uj6eRASXl1jipPEGA270g1FruooL6jgglFKNPQuFSOU8+uSsttVwRtnfsC+qTp22Rkd5MCqFGQ8LcuUxC3a+9CMBnOintWW7oeRUvhVpxk8pxiX1wTEboX-
RzT6MUbvpvGw-oPNFYxjECKnoH3HRozv0vN--n5d6Nbxg==
x-xss-protection → 1; mode=block;
```

### (Optional) Response Body

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

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

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

```

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

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

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



# 4 Getting Started

This section describes how to use APIs by calling an API to create an SFS Turbo file system.

## NOTE

The token obtained from IAM is valid for only 24 hours. If you want to use one token for authentication, you can cache it to avoid frequently calling.

## Involved APIs

If you use a token for authentication, you must obtain the token and add **X-Auth-Token** to the request header of the API when making a call. The following APIs are involved in the request for creating an SFS Turbo file system:

- API for obtaining tokens from IAM
- API for creating an SFS Turbo file system. For details, see [5.1.1 Creating a File System](#).

## Procedure

**Step 1** Obtain the token by following instructions in [3.2 Authentication](#).

**Step 2** Add **X-Auth-Token** to the request header.

**Step 3** Specify the following parameters in the request body:

```
{
  "share": {
    "name": "sfs-turbo-test",
    "share_proto": "NFS",
    "share_type": "STANDARD",
    "size": 100,
    "availability_zone": "az1",
    "vpc_id": "d651ea2b-2b20-4c6d-8bbf-2adcec18dac9",
    "subnet_id": "b8884abe-f47b-4917-9f6c-f64825c365db",
    "security_group_id": "8c4ebbd0-6edf-4aae-8353-81ce6d06e1f4"
  }
}
```

**Step 4** Send the request **POST** [https://Endpoint of SFS Turbo/v1/{project\\_id}/sfs-turbo/shares](https://Endpoint of SFS Turbo/v1/{project_id}/sfs-turbo/shares).

**Step 5** After the request is successfully responded, the ID and name of the SFS Turbo file system are returned.

If the request fails, an error code and error information are returned. For details about the error codes, see the abnormal return values of the corresponding API.

Query SFS Turbo file system details based on the returned file system ID. For details, see [5.1.4 Querying Details About a Single File System](#).

If the returned status of the file system is **200**, the SFS Turbo file system is successfully created. For details about the return values of request exceptions, see the abnormal return values of the corresponding API. For other statuses, see [7.1 SFS Turbo File System Statuses](#).

You can query and delete an SFS Turbo file system based on the file system ID.

----End

## Configuration Example

If the token has been obtained, you can run the following **curl** command to create an SFS Turbo file system:

```
curl -k -i -X POST -H "X-Auth-Token: token_value" -H "Content-Type: application/json" -d '{"share": {"name": "sfs-turbo-test", "share_proto": "NFS", "share_type": "STANDARD", "size": 100, "availability_zone": "az1", "vpc_id": "d651ea2b-2b20-4c6d-8bbf-2adcec18dac9", "subnet_id": "b8884abe-f47b-4917-9f6c-f64825c365db", "security_group_id": "8c4ebbd0-6edf-4aae-8353-81ce6d06e1f4"}}' "https://127.0.0.1:8979/v1/xxx/bx/bex5cfx41f0a08ay915fd79240d/sfs-turbo/shares"
```

# 5 SFS Turbo APIs

---

## 5.1 Lifecycle Management

### 5.1.1 Creating a File System

#### Function

This API is used to create an SFS Turbo file system.

#### URI

- URI format  
POST /v1/{project\_id}/sfs-turbo/shares
- Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain the project ID, see <a href="#">8.3 Obtaining a Project ID</a> .

#### Request Header

The operation message header is the same as that of a common request. For details, see [Table 3-3](#).

#### Request

- Parameter description

Parameter	Mandatory	Type	Description
share	Yes	Object	Specifies information about an SFS Turbo file system. For details about the parameters, see the <a href="#">description of the share field</a> .

- Description of the **share** field

Parameter	Mandatory	Type	Description
name	Yes	String	Specifies the name of an SFS Turbo file system. The value contains 4 to 64 characters and must start with a letter. This value can contain letters (case insensitive), digits, hyphens (-), and underscores (_), and cannot contain other special characters.
share_protocol	Yes	String	Specifies the protocol for sharing file systems. The valid value is <b>NFS</b> . Network File System (NFS) is a distributed file system protocol that allows different computers and operating systems to share data over a network.

Parameter	Mandatory	Type	Description
share_type	Yes	String	Specifies the file system type. The valid values are <b>STANDARD</b> and <b>PERFORMANCE</b> . <b>STANDARD</b> : Standard file system, corresponding to the media of SAS disks. <b>PERFORMANCE</b> : Performance file system, corresponding to the media of SSD disks.
size	Yes	Int	For a common file system, the value of capacity ranges from 500 to 32768 (in the unit of GB). For an enhanced file system where the <b>expand_type</b> field is specified for <b>metadata</b> , the capacity ranges from 10240 to 327680. For details about <b>metadata</b> , see <a href="#">Description of the metadata field</a> .
availability_zone	Yes	String	Specifies the code of the AZ where the file system is located. For details about the code, see <b>Regions and Endpoints</b> .
vpc_id	Yes	String	Specifies the VPC ID of a tenant in a region. You can obtain the VPC ID from the console or by following the instructions provided in "Querying VPCs" in .

Parameter	Mandatory	Type	Description
subnet_id	Yes	String	Specifies the network ID of the subnet of a tenant in a VPC. You can obtain the network ID from the VPC console or by following the instructions provided in "Querying Subnets" in <i>Virtual Private Cloud API Reference</i> .
security_group_id	Yes	String	Specifies the security group ID of a tenant in a region. You can obtain the security group ID from the console or by following the instructions provided in "Querying Security Groups" in <i>Virtual Private Cloud API Reference</i> .
backup_id	No	String	Specifies the backup ID. This parameter is mandatory when you create a file system from a backup. This is not supported by the current version.
description	No	String	Specifies the file system description. The length is 0-255 characters. This is not supported by the current version.

Parameter	Mandatory	Type	Description
metadata	No	Object	Specifies the metadata information used to create the file system. The value consists of one or more key and value pairs organized as a dictionary of strings. For details about the parameters, see the <a href="#">description of field metadata</a> .

- Description of the **metadata** field

Parameter	Mandatory	Type	Description
expand_type	No	String	Specifies the extension type. The current valid value is <b>bandwidth</b> , indicating that an enhanced file system is created. For details about the differences between different types of SFS Turbo file systems, see "Recommended Configurations".
crypt_key_id	No	String	Specifies the ID of a KMS professional key when an encrypted file system is created. The key ID can be obtained from the console of Data Encryption Workshop (DEW) or by referring to section "Querying the Information About a CMK" in the <i>Data Encryption Workshop API Reference</i> .

 NOTE

- The regions mentioned above are the same region. Currently, cross-region configuration is not supported.
- SFS Turbo will create two private IP addresses and one virtual IP address under the subnet you specified.
- To ensure normal use, SFS Turbo will enable the inbound rules for ports **111**, **445**, **2049**, **2051**, **2052**, and **20048** in the security group you specified.
- An ECS cannot access file systems on VPCs other than the one where the ECS resides. Make sure that you enter the ID of the VPC when creating a file system to be the VPC where the ECS resides for mounting the file system.

- Example request

```
{
  "share": {
    "name": "sfs-turbo-test",
    "share_proto": "NFS",
    "share_type": "STANDARD",
    "size": 100,
    "availability_zone": "az1",
    "vpc_id": "d651ea2b-2b20-4c6d-8bbf-2adcec18dac9",
    "subnet_id": "b8884abe-f47b-4917-9f6c-f64825c365db",
    "security_group_id": "8c4ebbd0-6edf-4aae-8353-81ce6d06e1f4"
  }
}
```

## Response

- Parameter description

Parameter	Type	Description
id	String	Specifies the ID of an SFS Turbo file system.
name	String	Specifies the name of an SFS Turbo file system.
status	String	Specifies the status of an SFS Turbo file system. For details, see <a href="#">7.1 SFS Turbo File System Statuses</a> .

- Example response

```
{
  "id": "708c017c-54b5-429a-a098-7692e23fa518",
  "name": "sfs-turbo-test",
  "status": "100"
}
```

## Status Codes

- Normal

202

- Abnormal

For details, see [8.1 Status Codes](#).



## 5.1.2 Deleting a File System

### Function

This API is used to delete an SFS Turbo file system.

### URI

- URI format  
DELETE /v1/{project\_id}/sfs-turbo/shares/{share\_id}
- Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain the project ID, see <a href="#">8.3 Obtaining a Project ID</a> .
share_id	Yes	String	Specifies the ID of an SFS Turbo file system.

### Request Header

The operation message header is the same as that of a common request. For details, see [Table 3-3](#).

### Request

- None

### Response

- None

### Status Codes

- Normal  
202
- Abnormal

For details, see [8.1 Status Codes](#).

## 5.1.3 Querying Details About All File Systems

### Function

This API is used to query details about all SFS Turbo file systems.

## URI

- URI format  
GET /v1/{project\_id}/sfs-turbo/shares/detail?limit={limit}&offset={offset}
- Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain the project ID, see <a href="#">8.3 Obtaining a Project ID</a> .
limit	No (query parameter)	Int	Specifies the number of returned file systems. This parameter takes effect when both <b>limit</b> and <b>offset</b> are used.
offset	No (query parameter)	Int	Specifies the offset of the number of queried file systems. This parameter takes effect when both <b>limit</b> and <b>offset</b> are used.

## Request Header

The operation message header is the same as that of a common request. For details, see [Table 3-3](#).

## Request

- Parameter description  
None
- Example request  
None

## Response

- Parameter description

Parameter	Type	Description
shares	Array of objects	Specifies the list of SFS Turbo file systems. For details, see the <a href="#">description of the share field</a> .
count	Int	Specifies the number of SFS Turbo file systems.

- Description of the **share** field

Parameter	Type	Description
id	String	Specifies the ID of an SFS Turbo file system.
name	String	Specifies the name of the SFS Turbo file system.
status	String	Specifies the status of the SFS Turbo file system. For details, see <a href="#">7.1 SFS Turbo File System Statuses</a> .
sub_status	String	Specifies the sub-status of the SFS Turbo file system. For details, see <a href="#">7.2 SFS Turbo File System Substatuses</a> .
version	String	Specifies the version ID of an SFS Turbo file system.
created_at	String	Specifies the creation time. UTC time, for example: 2018-11-19T04:02:03
export_location	String	Specifies the mount point of the SFS Turbo file system.
action_progress	Object	Specifies the creation progress of the SFS Turbo file system. For details, see <a href="#">Description of field action_progress</a> .
share_type	String	Specifies the type of the SFS Turbo file system. The value can be <b>STANDARD</b> or <b>PERFORMANCE</b> .
region	String	Specifies the region of the SFS Turbo file system.
availability_zone	String	Specifies the code of the AZ where the SFS Turbo file system is located.

Parameter	Type	Description
az_name	String	Specifies the name of the AZ where the SFS Turbo file system is located.
vpc_id	String	Specifies the VPC ID specified by the user.
subnet_id	String	Specifies the network ID of the subnet specified by the user.
security_group_id	String	Specifies the ID of a security group specified by the user.
size	String	Specifies the total capacity of the SFS Turbo file system in the unit of GB.
pay_model	String	Billing mode of the SFS Turbo file system.
avail_capacity	String	Specifies the available capacity of the SFS Turbo file system in the unit of GB.
share_proto	String	Specifies the protocol type of the SFS Turbo file system. The current value is <b>NFS</b> .
expand_type	String	For an enhanced file system, <b>bandwidth</b> is returned for this field. Otherwise, <b>bandwidth</b> is not returned.

- Description of field **action\_progress**

Parameter	Type	Description
CREATING	string	Specifies the file system creation progress.

- Example response

```
{
  "shares": [
    {
      "id": "8fba8253-c914-439d-ae8b-d5c89d0bf5e8",
      "name": "sfs-turbo-8468",
      "status": "200",
      "version": "1.0.0",
      "region": "north-1",
      "created_at": "2018-11-19T04:02:03",
      "export_location": "192.168.0.90:/",
      "action_progress": {},
      "share_type": "STANDARD",
      "sub_status": "230",
      "availability_zone": "az1.dc1",
    }
  ]
}
```

```
"az_name": "az1",
"vpc_id": "b24e39e1-bc0c-475b-ae0c-aef9cf240af3",
"subnet_id": "86fc01ea-8ec8-409d-ba7a-e0ea16d4fd97",
"security_group_id": "50586458-aec9-442c-bb13-e08ddc6f1b7a",
"size": "500.00",
"pay_model": "0",
"avail_capacity": "500.00",
"share_proto": "NFS"
},
{
  "id": "65f2d30b-7b4e-4786-9608-4324faef6646",
  "name": "sfs-turbo-df12",
  "status": "200",
  "version": "1.0.0",
  "actions": [],
  "region": "north-1",
  "created_at": "2018-11-15T02:32:10",
  "export_location": "192.168.0.197:/",
  "action_progress": {},
  "share_type": "STANDARD",
  "availability_zone": "az1.dc1",
  "az_name": "az1",
  "vpc_id": "b24e39e1-bc0c-475b-ae0c-aef9cf240af3",
  "subnet_id": "86fc01ea-8ec8-409d-ba7a-e0ea16d4fd97",
  "security_group_id": "50586458-aec9-442c-bb13-e08ddc6f1b7a",
  "size": "500.00",
  "pay_model": "0",
  "avail_capacity": "500.00",
  "share_proto": "NFS"
}
]
"count": 2
}
```

## Status Codes

- Normal

200

- Abnormal

For details, see [8.1 Status Codes](#).

## 5.1.4 Querying Details About a Single File System

### Function

This API is used to query details about an SFS Turbo file system.

### URI

- URI format  
GET /v1/{project\_id}/sfs-turbo/shares/{share\_id}
- Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain the project ID, see <a href="#">8.3 Obtaining a Project ID</a> .
share_id	Yes	String	Specifies the ID of an SFS Turbo file system.

## Request Header

The operation message header is the same as that of a common request. For details, see [Table 3-3](#).

## Request

- Parameter description  
None
- Example request  
None

## Response

- Parameter description

Parameter	Type	Description
id	String	Specifies the ID of an SFS Turbo file system.
name	String	Specifies the name of the SFS Turbo file system.
status	String	Specifies the status of the SFS Turbo file system. For details, see <a href="#">7.1 SFS Turbo File System Statuses</a> .
sub_status	String	Specifies the sub-status of the SFS Turbo file system. For details, see <a href="#">7.2 SFS Turbo File System Substatuses</a> .
version	String	Specifies the version ID of an SFS Turbo file system.
created_at	String	Specifies the creation time. UTC time, for example: 2018-11-19T04:02:03

Parameter	Type	Description
export_location	String	Specifies the mount point of the SFS Turbo file system.
action_progress	Object	Specifies the creation progress of the SFS Turbo file system. For details, see <a href="#">Description of field action_progress</a> .
share_type	String	Specifies the type of the SFS Turbo file system. The value can be <b>STANDARD</b> or <b>PERFORMANCE</b> .
region	String	Specifies the region of the SFS Turbo file system.
availability_zone	String	Specifies the code of the AZ where the SFS Turbo file system is located.
az_name	String	Specifies the name of the AZ where the SFS Turbo file system is located.
vpc_id	String	Specifies the VPC ID specified by the user.
subnet_id	String	Specifies the network ID of the subnet specified by the user.
security_group_id	String	Specifies the ID of a security group specified by the user.
size	String	Specifies the total capacity of the SFS Turbo file system in the unit of GB.
avail_capacity	String	Specifies the available capacity of the SFS Turbo file system in the unit of GB.
pay_model	String	Billing mode of the SFS Turbo file system.
share_proto	String	Specifies the protocol type of the SFS Turbo file system. The current value is <b>NFS</b> .
expand_type	String	For an enhanced file system, <b>bandwidth</b> is returned for this field. Otherwise, <b>bandwidth</b> is not returned.

- Description of field **action\_progress**

Parameter	Type	Description
CREATING	string	Specifies the file system creation progress.

- Example response

```
{
  "id": "8fba8253-c914-439d-ae8b-d5c89d0bf5e8",
  "name": "sfs-turbo-8468",
  "status": "200",
  "version": "1.0.0",
  "region": "north-1",
  "created_at": "2018-11-19T04:02:03",
  "export_location": "192.168.0.90:/",
  "action_progress": {},
  "share_type": "STANDARD",
  "sub_status": "330",
  "availability_zone": "az1.dc1",
  "az_name": "az1",
  "vpc_id": "b24e39e1-bc0c-475b-ae0c-ae9cf240af3",
  "subnet_id": "86fc01ea-8ec8-409d-ba7a-e0ea16d4fd97",
  "security_group_id": "50586458-aec9-442c-bb13-e08ddc6f1b7a",
  "size": "500.00",
  "avail_capacity": "500.00",
  "share_proto": "NFS"
}
```

## Status Codes

- Normal

200

- Abnormal

For details, see [8.1 Status Codes](#).

## 5.2 Storage Capacity Management

### 5.2.1 Expanding the Capacity of a File System

#### Function

This API is used to expand the capacity of an SFS Turbo file system. Capacity expansion is an asynchronous operation. You can check whether the expansion is successful by checking field **sub\_status** returned by [Querying Details About a Single File System](#). If the value of the sub-status is **221**, the expansion is successful.

#### URI

- URI format  
POST /v1/{project\_id}/sfs-turbo/shares/{share\_id}/action
- Parameter description



Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain the project ID, see <a href="#">8.3 Obtaining a Project ID</a> .
share_id	Yes	String	Specifies the ID of an SFS Turbo file system.

## Request Header

The operation message header is the same as that of a common request. For details, see [Table 3-3](#).

## Request

- Parameter description

Parameter	Mandatory	Type	Description
extend	Yes	Object	Specifies the <b>extend</b> object. For details, see the <a href="#">parameter in the extend field</a> .

- Parameter in the **extend** field

Parameter	Mandatory	Type	Description
new_size	Yes	Int	Specifies the post-expansion capacity (GB) of the shared file system. The capacity expansion step is greater than or equal to 100 GB.  For a common file system, the value of capacity ranges from 500 to 32768.

- Example request

```
{
  "extend": {
    "new_size": 500
  }
}
```

## Response

- Parameter description

Parameter	Type	Description
id	String	Specifies the ID of an SFS Turbo file system.
name	String	Specifies the name of an SFS Turbo file system.

- Example response

```
{  
  "id": "67d4bd5e-7b2f-4c24-9a0b-c0038940c6f8",  
  "name": "sfs-turbo-cts"  
}
```

## Status Codes

- Normal

202

- Abnormal

For details, see [8.1 Status Codes](#).

# 5.3 Connection Management

## 5.3.1 Changing a Security Group

### Function

This API is used to change the security group bound to an SFS Turbo file system. Security group change is an asynchronous task. You can determine whether the security group status is changed based on the **sub\_status** field returned in [5.1.4 Querying Details About a Single File System](#). If the **sub\_status** field is **232**, the security group has been successfully modified.

### URI

- URI format  
POST /v1/{project\_id}/sfs-turbo/shares/{share\_id}/action
- Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID. For details about how to obtain the project ID, see <a href="#">8.3 Obtaining a Project ID</a> .
share_id	Yes	String	Specifies the ID of an SFS Turbo file system.

## Request

- Parameter description

Parameter	Mandatory	Type	Description
change_security_group	Yes	Object	Specifies the <b>change_security_group</b> object. For details, see the <a href="#">change_security_group parameter description</a> .

- change\_security\_group parameter description

Parameter	Mandatory	Type	Description
security_group_id	Yes	String	Specifies the ID of the security group to be modified.

- Example request

```
{
  "change_security_group": {
    "security_group_id": "26f6b565-240e-43c3-8867-03f0bd975433"
  }
}
```

## Response

- Parameter description

Parameter	Type	Description
id	String	Specifies the ID of the SFS Turbo file system.

- Example response

```
{
  "id": "67d4bd5e-7b2f-4c24-9a0b-c0038940c6f8"
}
```

## Status Codes

- Normal

202

- Abnormal

For details, see [8.1 Status Codes](#).

# 6 Permissions Policies and Supported Actions

---

## 6.1 Supported Actions

## 6.1.1 SFS Turbo Actions

### File Systems

Permission	API	Action	Dependent Permission	IAM Project	Enterprise Project
Creating a File System	POST /v1/{project_id}/sfs-turbo/shares	sfsturbo:shares:createShare	<ul style="list-style-type: none"> <li>You must have VPC-related permissions when creating an SFS Turbo instance, including the permissions for verifying VPCs, subnets, and security groups, creating virtual IP addresses and ports, and creating security group rules. You must add the following action: <ul style="list-style-type: none"> <li>"vpc:*:*"</li> </ul> </li> <li>The KMS Administrator permission needs to be configured for the encrypted instance in the project.</li> <li>If you have deployed and subscribed to Dedicated Distributed Storage Service (DSS) and want to</li> </ul>	√	√

Permission	API	Action	Dependent Permission	IAM Project	Enterprise Project
			create SFS Turbo file systems, add the following actions: <ul style="list-style-type: none"> <li>- "dss*:get",</li> <li>- "dss*:list",</li> <li>- "dss*:count"</li> </ul>		
Querying Details About All File Systems	GET /v1/{project_id}/sfs-turbo/shares/detail	sfsturbo:shares:getAllShares	-	√	√
Querying Details About a File System	GET /v1/{project_id}/sfs-turbo/shares/{share_id}	sfsturbo:shares:getShare	-	√	√

Permission	API	Action	Dependent Permission	IAM Project	Enterprise Project
Deleting a File System	DELETE /v1/{project_id}/sfs-turbo/shares/{share_id}	sfsturbo:shares:deleteShare	<ul style="list-style-type: none"> <li>To delete an SFS Turbo instance, you must have VPC-related permissions, including the permissions for deleting virtual IP addresses, ports, and security group rules. You must add the following action: <ul style="list-style-type: none"> <li>"vpc:*:*"</li> </ul> </li> <li>If you have deployed and subscribed to DSS and want to create SFS Turbo file systems, add the following actions: <ul style="list-style-type: none"> <li>"dss:*:get",</li> <li>"dss:*:list",</li> <li>"dss:*:count"</li> </ul> </li> </ul>	√	√

## File System Expansion

Permission	API	Action	IAM Project	Enterprise Project
Expanding the Capacity of a File System	POST /v1/{project_id}/sfs-turbo/shares/{share_id}/action	sfsturbo:shares:shareAction	√	√



## APIs for Console Only

Permission	API	Action	Dependent Permission	IAM Project	Enterprise Project
Changing a Security Group	For Console only	sfsturbo:shares:shareAction	To modify a security group, you must have the following permissions: <ul style="list-style-type: none"> <li>vpc:securityGroups:*</li> <li>vpc:securityGroupRules:*</li> </ul>	√	√
Querying the SFS Turbo Quota	For Console only	sfsturbo:shares:getQuota	-	√	√
Obtaining the AZ Information	For Console only	sfsturbo:shares:getAZInfo	-	√	√
Obtaining SFS Turbo Specifications	For Console only	sfsturbo:shares:getFlavors	-	√	√
Checking the Name of a File System	For Console only	sfsturbo:shares:checkShareName	-	√	√

# 7 Common Parameters

---

## 7.1 SFS Turbo File System Statuses

- SFS Turbo file system status elements

Returned Value	Description
100	CREATING: The file system is being created.
200	ACTIVE: The file system is active. An SFS Turbo file system can be mounted in this status.
300	FAILED: The job failed.
303	CREATE_FAILED: The cluster failed to be created.
400	DELETED: The cluster has been deleted.
800	FROZEN: The cluster has been frozen.

## 7.2 SFS Turbo File System Substatuses

- SFS Turbo file system substatus elements

Returned Value	Description
121	Expanding the capacity online.
221	Online capacity expansion succeeded.
321	Failed to perform online capacity expansion.

# 8 Appendix

## 8.1 Status Codes

- Normal

Returned Value	Description
200 OK	Specifies the normal response for the GET and PUT operations.
201 Created	Specifies the normal response for the POST operation.
202 Accepted	The request has been accepted for processing.
204 No Content	Specifies the normal response for the DELETE operation.

- Abnormal

Returned Value	Description
400 Bad Request	The server failed to process the request.
401 Unauthorized	You must enter a username and the password to access the requested page.
403 Forbidden	Access to the requested page is forbidden.
404 Not Found	The requested page was not found.
405 Method Not Allowed	You are not allowed to use the method specified in the request.
406 Not Acceptable	The response generated by the server could not be accepted by the client.

Returned Value	Description
407 Proxy Authentication Required	You must use the proxy server for authentication. Then the request can be processed.
408 Request Timeout	The request timed out.
409 Conflict	The request could not be processed due to a conflict.
500 Internal Server Error	The request is not completed because of a service error.
501 Not Implemented	The request is not completed because the server does not support the requested function.
502 Bad Gateway	The request is not completed because the server receives an invalid response from an upstream server.
503 Service Unavailable	The request is not completed because the service is unavailable.
504 Gateway Timeout	A gateway timeout error occurred.

## 8.2 Error Codes

Status Code	Error Code	Error Message	Description	Solution
400	SFS.TURBO.0001	Parameter error	Invalid parameters.	Use valid parameters and try again.
404	SFS.TURBO.0002	Cluster not found	The requested object does not exist or you do not have permissions to access it.	Use valid parameters and try again.
400	SFS.TURBO.0003	Invalid name	Invalid name.	Use valid parameters and try again.
400	SFS.TURBO.0004	Invalid vpc	Invalid VPC.	Use valid parameters and try again.

Status Code	Error Code	Error Message	Description	Solution
500	SFS.TURBO.0005	Internal server error	Internal error.	Contact technical support.
400	SFS.TURBO.0006	Invalid subnet	Invalid subnet.	Use valid parameters and try again.
400	SFS.TURBO.0007	Invalid share type	Invalid file system type.	Use valid parameters and try again.
400	SFS.TURBO.0008	Invalid size	Unsupported file system size.	Use valid parameters and try again.
400	SFS.TURBO.0009	Name has existed	The file system name already exists.	Use valid parameters and try again.
400	SFS.TURBO.0010	Quota exceeds	Insufficient quota.	Submit a service order to increase quota.
400	SFS.TURBO.0011	Cluster is doing something	Another operation is being performed on the file system.	Wait until that operation is complete and try again.
400	SFS.TURBO.0016	Res tag count already reach max value	The maximum number of tags has been reached for the resource.	Delete unnecessary tags.
400	SFS.TURBO.0017	Invalid tag key param	The length of the resource tag key is invalid.	Use valid parameters and try again.
400	SFS.TURBO.0018	Invalid tag value param	The length of the resource tag value is invalid.	Use valid parameters and try again.
400	SFS.TURBO.0024	Operation is not allowed	Unsupported operation.	Contact technical support.

Status Code	Error Code	Error Message	Description	Solution
400	SFS.TURBO.0025	Invalid tag key param	The resource tag key contains invalid characters.	Use valid parameters and try again.
400	SFS.TURBO.0026	Invalid tag value param	The resource tag value contains invalid characters.	Use valid parameters and try again.
400	SFS.TURBO.0027	Invalid security group	Invalid security group.	Use valid parameters and try again.
400	SFS.TURBO.0028	Invalid crypt key	Invalid KMS key.	Use valid parameters and try again.
400	SFS.TURBO.0029	Subnet has not enough ips	Insufficient IP addresses in the subnet.	Use valid parameters and try again.
400	SFS.TURBO.0030	Ecs resource not enough	The ECS specification is sold out in the selected AZ.	Change the AZ and try again.

## 8.3 Obtaining a Project ID

### Scenarios

A project ID is required for some URLs when an API is called. Therefore, you need to obtain a project ID in advance. Two methods are available:

- [Obtain the Project ID by Calling an API](#)
- [Obtain the Project ID from the Console](#)

### Obtain the Project ID by Calling an API

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

The API used to obtain a project ID is GET <https://{Endpoint}/v3/projects>. {Endpoint} is the IAM endpoint and can be obtained from [Regions and Endpoints](#). For details about API authentication, see [3.2 Authentication](#).

The following is an example response. The value of **id** is the project ID.

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

## Obtain a Project ID from the Console

To obtain a project ID from the console, perform the following operations:

1. Log in to the management console.
2. Click the username and select **My Credentials** from the drop-down list.

On the **My Credentials** page, view the project ID (value in the **Project ID** column).

# A Change History

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Released On	Description
2022-08-16	This issue is the first official release.