

Scalable File Service API Reference

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1

Before You Start

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 [Service Overview](#).

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 [Quotas](#).
- 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

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

For details, see [Region and AZ](#).

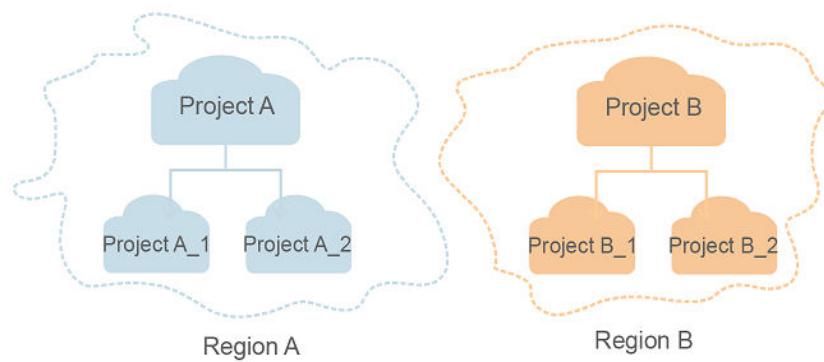
- AZ

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

APIs provided by SFS include SFS APIs, SFS Turbo APIs, and native OpenStack APIs.

These APIs allow you to use all SFS functions.

The call frequency limit of SFS Capacity-Oriented APIs is 400 calls/minute. If you call a large number of APIs at a time, some APIs may fail to be called. You are advised to evenly arrange API calls.

Some SFS Capacity-Oriented APIs are the same as those provided by OpenStack Manila of the Mitaka version. For details about how to use them, visit the community:

<https://docs.openstack.org/api-ref/shared-file-system/>

For details about whether an SFS Capacity-Oriented API supports Enterprise Project, see [API Permissions](#).

If the description about an API in this document differs from that in the community, the description in this document is used.

SFS Capacity-Oriented APIs

Table 2-1 API overview

File System Type	Type	Subtype	Description
SFS	SFS API	Tag management	You can use APIs in this category to tag your shared file system, making them easier to be managed.
SFS	Native OpenStack API	API version queries	You can use APIs in this category to query the versions and details of all APIs.
		File systems	You can use APIs in this category to create shared file systems and obtain detailed information about them, such as the shared paths.

File System Type	Type	Subtype	Description
		File system access rules	You can use APIs in this category to add, modify, and delete file system access rules, such as configuring VPC.
		Quota management	If the number of created shared file systems reaches the upper limit, you can increase quota by using APIs in this category.
		Capacity expansion and reduction	If you want to change the capacity of a created shared file system, you can use APIs in this category to expand or reduce the capacity.

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

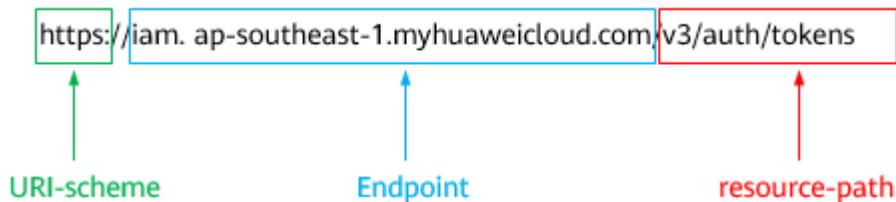
Parameter	Description
URI-scheme	Protocol used to transmit requests. All APIs use HTTPS.
Endpoint	Domain name or IP address of the server bearing the REST service. The endpoint varies between services in different regions. It can be obtained from Regions and Endpoints . For example, the endpoint of IAM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

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

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

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

Figure 3-1 Example URI



NOTE

To simplify the URI display 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.ap-southeast-1.myhuaweicloud.com/v3/auth/tokens
```

Request Header

You can also add additional header fields to a request, such as the fields required by a specified URI or HTTP method. For example, 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 https is 443 .	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 application/json 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 13.5 Obtaining a Project ID .	No This field is mandatory for requests that use AK/SK authentication in the Dedicated Cloud (DeC) scenario or multi-project scenario.	e9993fc787d94b6c886cbba340f9c0f4
X-Auth-Token	Specifies the user token. It is a response to the API for obtaining a user token (This is the only API that does not require authentication). After the request is processed, the value of X-Subject-Token in the response header is the token value.	No This field is mandatory for token authentication.	The following is part of an example token: MIIPAgYJKoZIhvcNAQcCo...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.ap-southeast-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 (for example, JSON or XML) 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 xxxxxxxxxxxxxxxx (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.ap-southeast-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": "xxxxxxxxxxxxxx"
      }
    }
  }
}
```

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.

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", // IAM user name  
          "password": "*****", // IAM user password  
          "domain": {  
            "name": "domainname" // Name of the account to which the IAM user belongs  
          }  
        }  
      }  
    },  
    "scope": {  
      "project": {  
        "name": "xxxxxxx" // Project name  
      }  
    }  
  }  
}
```

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.ap-southeast-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](#).



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 [13.1 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 → noopener
x-frame-options → SAMEORIGIN
x-iam-trace-id → 218d45ab-d674-4995-af3a-2d0255ba41b5
x-subject-token
→ MIIYXQYJKoZIhvNAQcCoIYTjCCGEoCAQEExDTALBglhgkBGZQMEAqEwgharBgkqhkiG9w0BBwGgg hacBIIWmHsidG9rZW4iOnsiZXhwaxJlc19hdCI6ijlwMTktMDItMTNUMCfj3Kj6vgKnpVNRbW2eZSeb78S2OqkjACgkklqO1wi4JlGzpd18LGK5txldfq4lqHCYb8P4NaY0NYejcAgzjVeFIytLWT1GSO0zxKZmlQHQj82HBqHdgIZ09fuEbL5dMhdavj+33wElxHRE9187o+k9-
j+CMZSEB7buUGd5Uj6eRASX1jipPEGA270g1FruoL6jqqlFkNPQuFSOU8+u5sttVwRtnfsC+qTp22Rkd5MCqFGQ8LcuUxC3a+9CM8nOintWW7oeRUvhVpxk8pxiX1wTEboX-RzT6MUbpvGw-oPNFYxJECKnoH3Hrozv0vN--n5d6Nbkg=+
x-xss-protection → 1; mode=block;
```

(Optional) Response Body

The body of a response is often returned in a structured format (for example, JSON or XML) as specified in the **Content-Type** header field. The response body transfers content except the response header.

The following is part of the response body for the API used to [obtain a user token](#).

```
{
  "token": {
```

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

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

```
{ "error_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 Calling APIs (SFS 3.0 Capacity-Oriented)

4.1 Constructing a Request

This section describes the structure of a REST API request.

Request URI

SFS uses URI to locate specific file systems and their parameters. Use URIs when you want to operate resources.

The following provides a common URI format. The parameters in square brackets [] are optional.

`protocol://[filesystem.]domain[:port]/[?param]`

Table 4-1 URI parameters

Parameter	Description	Mandatory
protocol	Protocol used for sending requests, which can be either HTTP or HTTPS. HTTPS is a protocol that ensures secure access to resources. SFS supports both HTTP and HTTPS.	Yes
filesystem	Resource path of a file system, identifying only one file system in SFS	No
domain	Domain name or IP address of the server for saving resources	Yes
port	Port enabled for protocols used for sending requests. The value varies with software server deployment. If no port number is specified, the protocol uses the default value. Each transmission protocol has its default port number. For example, HTTP uses port number 80 and HTTPS uses port number 443 by default. In SFS, HTTP port number is 80 and that of HTTPS is 443 .	No

Parameter	Description	Mandatory
param	A specific resource contained by a file system. Default value of this parameter indicates that the file system itself is obtained.	No

NOTICE

All API requests except those for the file system list must contain the file system name. Based on the DNS resolution performance and reliability, SFS requires that the file system name must be placed in front of the **domain** when a request carrying a file system name is constructed to form a third-level domain name, also mentioned as virtual hosting access domain name.

Request Method

HTTP methods, which are also called operations or actions, specify the type of operations that you are requesting.

Table 4-2 HTTP request methods supported by SFS

Method	Description
GET	Requests the server to return specific resources, for example, to list file systems.
PUT	Requests the server to update specific resources, for example, creating file systems.
POST	Requests a server to add resources or perform special operations.
DELETE	Requests the server to delete specified resources, for example, file systems.
HEAD	Same as GET except that the server must return only the response header.
OPTIONS	Requests the server to check whether the user has the permissions to operate a resource.

Request Headers

Refers to optional and additional request fields, for example a field required by a specific URI or HTTP method. **Table 4-3** describes some common request header fields.

Table 4-3 Common request headers

Header	Description	Mandatory
Authorization	Signature information contained in a request message Type: string No default value. Conditional: optional for anonymous requests and required for other requests.	Conditionally required
Content-Length	The message length (excluding headers) defined in RFC 2616 Type: string No default value. Conditional: required for PUT requests and those requests that load XML content.	Conditionally required
Content-Type	The content type of the requested resource, for example, text/plain Type: string No default value.	No
Date	The time when a request is initiated, for example, Wed, 27 Jun 2018 13:39:15 +0000 . Type: string No default value. Conditional: optional for anonymous requests or those requests containing header x-obs-date , required for other requests.	Conditionally required
Host	The host address, for example, filesystem.sfs.region.myhuaweicloud.com . Type: string No default value.	Yes

(Optional) Request Body

A request body is generally sent in a structured format (for example, JSON or XML). It corresponds to **Content-Type** in the request header and is used to transfer content other than the request header. If the request body contains Chinese characters, these characters must be coded in UTF-8.

The request body varies according to the APIs. Certain APIs do not require the request body, such as the GET and DELETE APIs.

Sending a Request

There are two methods to initiate requests based on the constructed request messages:

- **cURL**
cURL is a command-line tool used to perform URL operations and transmit information. cURL acts as an HTTP client that can send HTTP requests to the server and receive response messages. cURL is applicable to API debugging. For more information about cURL, visit <https://curl.haxx.se/>. cURL cannot calculate signatures. When cURL is used, only anonymous public SFS resources can be accessed.
- **Coding**
You can use code to make API calls, and to assemble, send, and process request messages. It can be implemented by coding.

4.2 Authentication

4.2.1 User Signature Authentication

SFS signs a request using AK/SK. When a client is sending a request to SFS, the message header must contain the SK, request time, request type, and other information of the signature.

- **AK:** access key ID, which is a unique identifier associated with a secret access key (SK). The AK and SK are used together to obtain an encrypted signature for a request. Format example: **HCY8BGCN1YM5ZWYOK1MH**
- **SK:** secret access key, which is used together with the AK to sign requests, identify a request sender, and prevent the request from being modified. Format example: **9zYwf1uabSQY0JTnFqbUqG7vcfqYBaTdXde2GUcq**

A user can obtain the AK and SK from IAM. For details, see [13.4 Obtaining Access Keys \(AK/SK\)](#).

SFS provides the signature calculation method based on the application scenario [4.2.2 Authentication of Signature in a Header](#).

Table 4-4 shows the user signature verification process in which a signature is carried in a header. For details about the parameters and code examples of authentication of signature in a header, see [4.2.2 Authentication of Signature in a Header](#).

Table 4-4 Signature calculation and verification procedure

Procedure	Example
Signature calculation	1. Construct an HTTP message. PUT /HTTP/1.1 Host: filesystem.sfs.region.myhuaweicloud.com Date: Tue, 04 Jun 2019 06:54:59 GMT Content-Type: text/plain Content-Length: 5913

Procedure	Example
2. Calculate StringToSign based on the signature rule.	StringToSign = HTTP-Verb + "\n" + Content-MD5 + "\n" + Content-Type + "\n" + Date + "\n" + CanonicalizedHeaders + CanonicalizedResource
3. Prepare the AK and SK.	AK: ***** SK: *****
4. Calculate Signature .	Signature = Base64(HMAC-SHA1(SecretAccessKeyID , UTF-8-Encoding-Of(StringToSign)))
5. Add a signature header and send the request to SFS.	PUT /object HTTP/1.1 Host: filesystem.sfs.region.myhuaweicloud.com Date: Tue, 04 Jun 2019 06:54:59 GMT Content-Type: text/plain Content-Length: 5913 Authorization: OBS AccessKeyID:Signature
Signature authentication	PUT / HTTP/1.1 Host: filesystem.sfs.region.myhuaweicloud.com Date: Tue, 04 Jun 2019 06:54:59 GMT Content-Type: text/plain Content-Length: 5913 Authorization: OBS AccessKeyID:Signature
7. Obtain the SK based on the AK in the request.	Obtain the AK from the authorization header and obtain the SK of the user from IAM.
8. Calculate StringToSign based on the signature rule.	StringToSign = HTTP-Verb + "\n" + Content-MD5 + "\n" + Content-Type + "\n" + Date + "\n" + CanonicalizedHeaders + CanonicalizedResource
9. Calculate Signature .	Signature = Base64(HMAC-SHA1(SecretAccessKeyID , UTF-8-Encoding-Of(StringToSign)))
10. Authenticate the signature.	Verify that the value of Signature in the authorization header is the same as the value of Signature calculated by the server. If the two values are the same, the signature verification is successful. If the two values are different, the signature verification fails.

4.2.2 Authentication of Signature in a Header

For all SFS 3.0 Capacity-Oriented API operations, the identity authentication can be done by carrying signatures in headers.

In the header, the signature is carried in the authorization header field of the HTTP message. The format of the message header is as follows:

Authorization: OBS AccessKeyID:signature

The signature algorithm process is as follows:

1. Construct the request character string (StringToSign).
2. Perform UTF-8 encoding on the result obtained from the preceding step.
3. Use the SK to perform the HMAC-SHA1 signature calculation on the result obtained from step 2.
4. Perform Base64 encoding on the result of step 3 to obtain the signature.

The StringToSign is constructed according to the following rules. **Table 4-5** describes the parameters.

```
StringToSign =  
    HTTP-Verb + "\n" +  
    Content-MD5 + "\n" +  
    Content-Type + "\n" +  
    Date + "\n" +  
    CanonicalizedHeaders + CanonicalizedResource
```

Table 4-5 Parameters required for constructing a StringToSign

Parameter	Description
HTTP-Verb	An HTTP request method supported by the REST API. The value can be an HTTP verb such as PUT , GET , or DELETE .
Content-MD5	The base64-encoded 128-bit MD5 digest of the message according to RFC 1864. This parameter can be empty.
Content-Type	The message type, for example, text/plain . If a request does not contain this header field, this parameter will be processed as an empty string.
Date	The time when a request is initiated. This parameter uses the RFC 1123 time format. If the deviation between the time specified by this parameter and the server time is over 15 minutes, the server returns error 403. This parameter is an empty string when the x-obs-date is specified.

Parameter	Description
CanonicalizedHeaders	<p>The SFS request header field in an HTTP request header, referring to header fields started with x-obs-, for example, x-obs-date, x-obs-acl, and x-obs-meta-*.</p> <ol style="list-style-type: none">1. All characters of keywords in a request header field must be converted to lowercase letters (content values must be case sensitive, for example, x-obs-storage-class:STANDARD). If a request contains multiple header fields, these fields should be organized by keyword in the alphabetical order from a to z.2. If multiple header fields in a request have the same prefix, combine the header fields into one. For example, x-obs-meta-name:name1 and x-obs-meta-name:name2 should be reorganized into x-obs-meta-name:name1,name2. Use comma to separate the values.3. Keywords in the request header field cannot contain non-ASCII or unrecognizable characters, which are also not advisable for values in the request header field. If the two types of characters are necessary, they should be encoded and decoded on the client side. Either URL encoding or Base64 encoding is acceptable, but the server does not perform decoding.4. Delete meaningless spaces and tabs in a header field. For example, x-obs-meta-name: name (with a meaningless space in the front of name) must be changed to x-obs-meta-name:name.5. Each header field occupies a separate line.
CanonicalizedResource	<p>The SFS resource specified by an HTTP request. This parameter is constructed as follows:</p> <p><File system name + Object name> + [Subresource 1] + [Subresource 2] + ...</p> <ol style="list-style-type: none">1. File system name and object name, for example, /filesystem/object. If no object name is specified, the entire file system is listed, for example, /filesystem/. If file system name is not specified either, the value of this field is /.2. If a subresource (such as ?sfsacl) exists, the subresource must be added.3. If there are multiple subresources, sort them in the alphabetical order from a to z, and use & to combine the subresources. <p>NOTE</p> <ul style="list-style-type: none">• A subresource is unique. Do not add subresources with the same keyword (for example, key=value1&key=value2) in the same request URL. In this case, signature is computed only based on the first subresource, and only the value of the first subresource takes effect on the actual service.

The following table provides some examples of generating StringToSign.

Table 4-6 Obtaining the ACL of a file system

Request Header	StringToSign
GET /?sfsacl HTTP/1.1 Host: filesystem.sfs. <i>region</i> .myhuaweicloud.co m Date: Sat, 12 Oct 2015 08:12:38 GMT	GET \n \n\nSat, 12 Oct 2015 08:12:38 GMT\n/filesystem/?sfsacl

Content-MD5 Algorithm in Java

```
import java.security.MessageDigest;
import sun.misc.BASE64Encoder;
import java.io.UnsupportedEncodingException;
import java.security.NoSuchAlgorithmException;

public class Md5{
    public static void main(String[] args) {
        try {
            String exampleString = "blog";
            MessageDigest messageDigest = MessageDigest.getInstance("MD5");
            BASE64Encoder encoder = new BASE64Encoder();
            String contentMd5 = encoder.encode(messageDigest.digest(exampleString.getBytes("utf-8")));
            System.out.println("Content-MD5:" + contentMd5);
        } catch (NoSuchAlgorithmException | UnsupportedEncodingException e)
        {
            e.printStackTrace();
        }
    }
}
```

The signature is generated as follows based on the StringToSign and SK. The hash-based message authentication code algorithm (HMAC algorithm) is used to generate the signature.

Signature = Base64(HMAC-SHA1(YourSecretAccessKeyID, UTF-8-Encoding-Of(StringToSign)))

For example, to create a file system named **newfilesystem2** in a region, the client request format is as follows:

```
PUT / HTTP/1.1
Host: newfilesystem2.sfs.region.myhuaweicloud.com
Content-Length: length
Date: Fri, 06 Jul 2018 03:45:51 GMT
x-obs-acl:private
x-obs-storage-class:STANDARD
Authorization: OBS UDSIAMSTUBTEST000254:ydH8ffpcbS6YpeOMcEZfn0wE90c=
<CreateBucketConfiguration xmlns="http://sfs.region.myhuaweicloud.com/doc/2015-06-30/">
  <Location>region</Location>
</CreateBucketConfiguration>
```

Signature Algorithm in Java

```
import java.io.UnsupportedEncodingException;
import java.net.URLEncoder;
```

```
import java.security.InvalidKeyException;
import java.security.NoSuchAlgorithmException;
import java.util.ArrayList;
import java.util.Arrays;
import java.util.Base64;
import java.util.Collections;
import java.util.HashMap;
import java.util.List;
import java.util.Locale;
import java.util.Map;
import java.util.TreeMap;

import javax.crypto.Mac;
import javax.crypto.spec.SecretKeySpec;

import org.omg.CosNaming.IstringHelper;

public class SignDemo {

    private static final String SIGN_SEP = "\n";

    private static final String SFS_PREFIX = "x-obs-";

    private static final String DEFAULT_ENCODING = "UTF-8";

    private static final List<String> SUB_RESOURCES = Collections.unmodifiableList(Arrays.asList(
        "CDNNotifyConfiguration", "acl", "append", "attnname", "backtosource", "cors", "customdomain",
        "delete",
        "deletebucket", "directcoldaccess", "encryption", "inventory", "length", "lifecycle", "location",
        "logging",
        "metadata", "modify", "name", "notification", "orchestration", "partNumber", "policy", "position",
        "quota",
        "rename", "replication", "requestPayment", "response-cache-control", "response-content-
disposition",
        "response-content-encoding", "response-content-language", "response-content-type", "response-
expires",
        "restore", "select", "storageClass", "storagePolicy", "storageinfo", "tagging", "torrent", "truncate",
        "uploadId", "uploads", "versionId", "versioning", "versions", "website", "x-image-process",
        "x-image-save-bucket", "x-image-save-object", "x-obs-security-token"));

    private String ak;

    private String sk;

    public String urlEncode(String input) throws UnsupportedEncodingException
    {
        return URLEncoder.encode(input, DEFAULT_ENCODING)
            .replaceAll("%7E", "~") //for browser
            .replaceAll("%2F", "/")
            .replaceAll("%20", "+");
    }

    private String join(List<?> items, String delimiter)
    {
        StringBuilder sb = new StringBuilder();
        for (int i = 0; i < items.size(); i++)
        {
            String item = items.get(i).toString();
            sb.append(item);
            if (i < items.size() - 1)
            {
                sb.append(delimiter);
            }
        }
        return sb.toString();
    }

    private boolean isValid(String input) {
```

```
        return input != null && !input.equals("");
    }

    public String hamcSha1(String input) throws NoSuchAlgorithmException, InvalidKeyException,
UnsupportedEncodingException {
        SecretKeySpec signingKey = new SecretKeySpec(this.sk.getBytes(DEFAULT_ENCODING), "HmacSHA1");
        Mac mac = Mac.getInstance("HmacSHA1");
        mac.init(signingKey);
        return Base64.getEncoder().encodeToString(mac.doFinal(input.getBytes(DEFAULT_ENCODING)));
    }

    private String stringToSign(String httpMethod, Map<String, String[]> headers, Map<String, String>
queries,
        String bucketName, String objectName) throws Exception{
        String contentMd5 = "";
        String contentType = "";
        String date = "";

        TreeMap<String, String> canonicalizedHeaders = new TreeMap<String, String>();

        String key;
        List<String> temp = new ArrayList<String>();
        for(Map.Entry<String, String[]> entry : headers.entrySet()) {
            key = entry.getKey();
            if(key == null || entry.getValue() == null || entry.getValue().length == 0) {
                continue;
            }

            key = key.trim().toLowerCase(Locale.ENGLISH);
            if(key.equals("content-md5")) {
                contentMd5 = entry.getValue()[0];
                continue;
            }

            if(key.equals("content-type")) {
                contentType = entry.getValue()[0];
                continue;
            }

            if(key.equals("date")) {
                date = entry.getValue()[0];
                continue;
            }

            if(key.startsWith(OBS_PREFIX)) {

                for(String value : entry.getValue()) {
                    if(value != null) {
                        temp.add(value.trim());
                    }
                }
                canonicalizedHeaders.put(key, this.join(temp, ","));
                temp.clear();
            }
        }

        if(canonicalizedHeaders.containsKey("x-obs-date")) {
            date = "";
        }

        // handle method/content-md5/content-type/date
        StringBuilder stringToSign = new StringBuilder();
        stringToSign.append(httpMethod).append(SIGN_SEP)
        .append(contentMd5).append(SIGN_SEP)
        .append(contentType).append(SIGN_SEP)
        .append(date).append(SIGN_SEP);

        // handle canonicalizedHeaders
```

```
for(Map.Entry<String, String> entry : canonicalizedHeaders.entrySet()) {
    stringToSign.append(entry.getKey()).append(":").append(entry.getValue()).append(SIGN_SEP);
}

// handle CanonicalizedResource
stringToSign.append("/");
if(this.isValid(bucketName)) {
    stringToSign.append(bucketName).append("/");
    if(this.isValid(objectName)) {
        stringToSign.append(this.urlEncode(objectName));
    }
}

TreeMap<String, String> canonicalizedResource = new TreeMap<String, String>();
for(Map.Entry<String, String> entry : queries.entrySet()) {
    key = entry.getKey();
    if(key == null) {
        continue;
    }

    if(SUB_RESOURCES.contains(key)) {
        canonicalizedResource.put(key, entry.getValue());
    }
}

if(canonicalizedResource.size() > 0) {
    stringToSign.append("?");
    for(Map.Entry<String, String> entry : canonicalizedResource.entrySet()) {
        stringToSign.append(entry.getKey());
        if(this.isValid(entry.getValue())) {
            stringToSign.append("=").append(entry.getValue());
        }
    }
}

// System.out.println(String.format("StringToSign:%s%s", SIGN_SEP, stringToSign.toString()));

return stringToSign.toString();
}

public String headerSignature(String httpMethod, Map<String, String[]> headers, Map<String, String> queries,
    String bucketName, String objectName) throws Exception {

    //1. stringToSign
    String stringToSign = this.stringToSign(httpMethod, headers, queries, bucketName, objectName);

    //2. signature
    return String.format("OBS %s:%s", this.ak, this.hamcSha1(stringToSign));
}

public String querySignature(String httpMethod, Map<String, String[]> headers, Map<String, String> queries,
    String bucketName, String objectName, long expires) throws Exception {
    if(headers.containsKey("x-obs-date")) {
        headers.put("x-obs-date", new String[] {String.valueOf(expires)});
    }else {
        headers.put("date", new String[] {String.valueOf(expires)});
    }
    //1. stringToSign
    String stringToSign = this.stringToSign(httpMethod, headers, queries, bucketName, objectName);

    //2. signature
    return this.urlEncode(this.hamcSha1(stringToSign));
}

public static void main(String[] args) throws Exception {
```

```
SignDemo demo = new SignDemo();
demo.ak = "<your-access-key-id>";
demo.sk = "<your-secret-key-id>";

String bucketName = "bucket-test";
String objectName = "hello.jpg";
Map<String, String[]> headers = new HashMap<String, String[]>();
headers.put("date", new String[] {"Sat, 12 Oct 2015 08:12:38 GMT"});
headers.put("x-obs-acl", new String[] {"private"});
Map<String, String> queries = new HashMap<String, String>();
queries.put("acl", null);

System.out.println(demo.headerSignature("PUT", headers, queries, bucketName, objectName));
}

}
```

The calculation result of the signature is as follows (it varies with the execution time): YdH8ffpcbS6YpeOMcEZfn0wE90c=

Signature Algorithm in Python

```
import sys
import os
import hashlib
import hmac
import binascii
from datetime import datetime
IS_PYTHON2 = sys.version_info.major == 2 or sys.version < '3'
"""Hard-coded or plaintext SecretAccessKeyID is risky. For security purposes, encrypt your access key and store it in the configuration file or environment variables. In this example, SecretAccessKeyID is stored in the environment variables for identity authentication. Before running the code in this example, configure environment variable SECRET_ACCESS_KEY_ID."""
yourSecretAccessKeyID = os.environ.get('SECRET_ACCESS_KEY_ID')
httpMethod = "PUT"
contentType = "application/xml"
# "date" is the time when the request was actually generated
date = datetime.utcnow().strftime('%a, %d %b %Y %H:%M:%S GMT')
canonicalizedHeaders = "x-obs-acl:private\n"
CanonicalizedResource = "/newfilesystem2"
canonical_string = httpMethod + "\n" + "\n" + contentType + "\n" + date + "\n" + canonicalizedHeaders + CanonicalizedResource
if IS_PYTHON2:
    hashed = hmac.new(yourSecretAccessKeyID, canonical_string, hashlib.sha1)
    encode_canonical = binascii.b2a_base64(hashed.digest())[:-1]
else:
    hashed = hmac.new(yourSecretAccessKeyID.encode('UTF-8'), canonical_string.encode('UTF-8'), hashlib.sha1)
    encode_canonical = binascii.b2a_base64(hashed.digest())[:-1].decode('UTF-8')
print encode_canonical
```

The calculation result of the signature is as follows (it varies with the execution time): YdH8ffpcbS6YpeOMcEZfn0wE90c=

Signature Algorithm in the C Programming Language

[Download](#) the sample code for calculating the signature in the C programming language.

1. The API for calculating the signature is contained in the **sign.h** header file.
2. The sample code for calculating the signature is contained in the **main.c** header file.

Signature Mismatch Error Handling

During an SFS API call, if the following error is reported,

Status code: 403 Forbidden

Error code: SignatureDoesNotMatch

Error message: The request signature we calculated does not match the signature you provided. Check your key and signing method.

Contact technical support.

4.2.3 Signature Generators

SFS offers visualized tools for you to easily generate signatures.

Table 4-7 Signature generators

Calculation Method	How to Obtain
Authenticating the signature in a header	Visit Generate Header .

During an SFS API call, if the following error is reported,

Status code: 403 Forbidden

Error code: SignatureDoesNotMatch

Error message: The request signature we calculated does not match the signature you provided. Check your key and signing method.

Contact technical support.

4.3 Returned Values

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

Status Codes

A status code is a group of digits ranging from 2xx (indicating successes) to 4xx or 5xx (indicating errors). It indicates the status of a response. For more information, see [13.1 Status Codes](#).

Response Headers

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

For details about common response headers, see [Table 4-8](#).

Table 4-8 Common response headers

Header	Description
Content-Length	The length (in bytes) of the response body. Type: string Default value: none
Connection	Indicates whether the connection to the server is a long connection or a short connection. Type: string Valid values: keep-alive close Default value: none
Date	The date and time at which OBS responds to the request. Type: string Default value: none
ETag	128-bit MD5 digest of the Base64 code of an object. ETag is the unique identifier of the object content. It can be used to identify whether the object content is changed. For example, if ETag value is A when an object is uploaded and the ETag value has changed to B when the object is downloaded, it indicates that the object content is changed. The actual ETag is the hash value of the object, which only reflects the changed content rather than the metadata. An uploaded object or copied object has a unique ETag after being encrypted using MD5. If an object is uploaded in the multipart mode, the MD5 splits ETag regardless of the encryption method. In this case, the ETag is not an MD5 digest. Type: string
x-obs-id-2	A special symbol that helps troubleshoot faults. Type: string Default value: none
x-obs-request-id	The value created by OBS to uniquely identify the request. OBS uses this value to troubleshoot faults. Type: string Default value: none

(Optional) Response Body

A response body is generally returned in a structured format (for example, JSON or XML), corresponding to **Content-Type** in the response header, and is used to transfer content other than the response header.

5 Getting Started (SFS Capacity-Oriented)

Scenarios

SFS provides high-performance network-attached storage (NAS) that is scalable on demand. A shared file system can be shared with multiple Elastic Cloud Servers (ECSs) and Bare Metal Servers (BMSs). If you need a fully hosted shared file storage and want to access a file system on multiple ECSs, SFS is perfect for you.

The following describes how to call the API for [8.2.1 Creating a Shared File System](#). For details, see [3.1 Making an API Request](#).

Prerequisites

You need to plan the region where a file system resides and determine the endpoint for calling an API based on the region. It can be obtained from [Regions and Endpoints](#).

Creating a Shared File System

The following is the sample code about how to create a shared file system with the simplest configurations:

```
{  
    "share": {  
        "description": "test description",  
        "share_type": "default",  
        "name": "share_London",  
        "metadata": {  
            "key1": "value1",  
            "key2": "value2"  
        },  
        "share_proto": "NFS",  
        "size": 10,  
        "is_public": false  
    }  
}
```

- **description**: Specifies the description of the shared file system, which adds remarks to the shared file system.
- **share_type**: Specifies the name of a share type. A share type is used to specify the type of the storage service to be allocated.
- **share_proto**: Specifies the protocol types of the shared file system.

- **name:** Specifies the custom name of the shared file system. For example, **share_London**.
- **size:** Specifies the size (in GB) of the shared file system.
- **is_public:** Specifies the visibility level of the shared file system. If it is set to **true**, the file system can be seen publicly. If it is set to **false**, the file system can be seen privately. The default value is **false**.
- **metadata:** Specifies the metadata information of the shared file system. The value consists of one or more key and value pairs organized as a dictionary of strings.

Creating an Encrypted Shared File System

You can also encrypt a shared file system. You only need to add parameters related to encryption of a shared file system to the metadata of the request body. The following is an example:

```
{  
    "share": {  
        "share_type": null,  
        "name": "test",  
        "snapshot_id": null,  
        "description": "test description",  
        "metadata": {  
            "#sfs_crypt_key_id": "9130c90d-73b8-4203-b790-d49f98d503df",  
            "#sfs_crypt_domain_id": "3b2d9670690444c582942801ed7d457b",  
            "#sfs_crypt_alias": "sfs/default"  
        },  
        "share_proto": "NFS",  
        "share_network_id": null,  
        "size": 1,  
        "is_public": false  
    }  
}
```

- **#sfs_crypt_key_id:** Specifies the encryption key ID. If **#sfs_crypt_key_id**, **#sfs_crypt_domain_id**, and **#sfs_crypt_alias** exist at the same time, the data encryption function is enabled.
- **#sfs_crypt_domain_id:** Specifies the tenant domain ID. If **#sfs_crypt_domain_id**, **#sfs_crypt_key_id**, and **#sfs_crypt_alias** exist at the same time, the data encryption function is enabled.
- **#sfs_crypt_alias:** Specifies the encryption key alias. If **#sfs_crypt_alias**, **#sfs_crypt_key_id**, and **#sfs_crypt_domain_id** exist at the same time, the data encryption function is enabled.

6 Getting Started (SFS Turbo)

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
- For details about how to create an SFS Turbo file system, see [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**.

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 [Querying Details About a 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 [12.1 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-4917-9f6cf64825c365db", "security_group_id": "8c4ebbd0-6edf-4aae-8353-81ce6d06e1f4"}' "https://127.0.0.1:8979/v1/xxxxbex5cfx41f0a08ay915fd79240d/sfs-turbo/shares"
```

7

Getting Started (SFS 3.0 Capacity-Oriented)

7.1 Creating a File System

Scenarios

A file system is a container that store files in SFS. You need to create a file system before storing data in SFS.

The following describes how to call the API for [10.1.1 Creating a File System](#) in a region. For details, see [4 Calling APIs \(SFS 3.0 Capacity-Oriented\)](#).

Prerequisites

- You have obtained the AK and SK. For details, see [13.4 Obtaining Access Keys \(AK/SK\)](#).
- You have planned the region where you want to create a file system and obtained the endpoint required for API calls. For details, see [Regions and Endpoints](#).

Once a region is determined, it cannot be modified after the bucket is created.

Creating a File System Named filesystem001 in the a1 Region

In this example, an Apache HttpClient is used.

```
package com.fsclient;
```

```
import java.io.*;
import java.net.HttpURLConnection;
import java.net.URL;
import java.util.List;
import java.util.Map;
```

```
public class TestMain {
```

```
    // Obtain an AK/SK pair using environment variables or import it in other ways. Using hard coding may
    // result in leakage.
```

```
    // Obtain an AK/SK pair on the management console.
```

```
    public static String accessKey = System.getenv("HUAWEICLOUD_SDK_AK");
```

```
    public static String securityKey = System.getenv("HUAWEICLOUD_SDK_SK");
```

```
public static String region = "cn-east-3"; // The region where you plan to create the file system.

public static String endpoint = "sfs3.a1.region.com"; // The network address of SFS 3.0.

public static String createSfsBody =
    "<CreateBucketConfiguration>\n" +
    "  <Location>" + region + "</Location>\n" +
    "</CreateBucketConfiguration>";

public static void main(String[] str) {

    createFileSystem();

}

private static void createFileSystem() {
    // The file system name.
    String fileSystemName = "example-sfs-001";

    String httpMethod = "PUT";
    String date = DateUtils.formatDate(System.currentTimeMillis());
    String contentType = "application/xml";

    /*Calculate the signature based on the request.*/
    String contentMD5 = "";
    String canonicalizedHeaders = "x-obs-bucket-type:SFS";
    String canonicalizedResource = "/" + fileSystemName ;

    // Content-MD5 and Content-Type fields do not contain line breaks. The data format is RFC 1123,
    which is the same as the time in the request.
    String stringToSign = httpMethod + "\n" +
        contentMD5 + "\n" +
        contentType + "\n" +
        date + "\n" +
        canonicalizedHeaders + "\n" + canonicalizedResource;

    System.out.printf("StringToSign:\n[%s]\n\n", stringToSign);

    HttpURLConnection conn = null;

    try {
        String signature = Signature.signWithHmacSha1(securityKey, stringToSign);
        String authorization= "OBS " + accessKey + ":" + signature;
        System.out.printf("authorization:%s\n\n", authorization);

        URL url = new URL("http://" + endpoint + "/" + fileSystemName);
        conn = (HttpURLConnection) url.openConnection();

        // Add a signature header.
        conn.setRequestMethod(httpMethod);
        conn.setRequestProperty("Date", date);
        conn.setRequestProperty("Content-Type", contentType);
        conn.setRequestProperty("x-obs-bucket-type", "SFS");
        conn.setRequestProperty("Authorization", authorization);
        conn.setDoOutput(true);

        // Add a body.
        OutputStream out = conn.getOutputStream();
        out.write(createSfsBody.getBytes());
        out.flush();
        out.close();

        String status = conn.getHeaderField(null);
        System.out.println(status);

        // Output the response message.
        Map<String, List<String>> headers = conn.getHeaderFields();
        for (Map.Entry<String, List<String>> entry : headers.entrySet()) {
            String key = entry.getKey();
            List<String> values = entry.getValue();
        }
    }
}
```

```
        if (key != null) {
            for (String value : values) {
                System.out.println(key + ": " + value);
            }
        }
    }
    // Handle the request error.
    int statusCode = conn.getResponseCode();
    if (statusCode != HttpURLConnection.HTTP_OK && statusCode != HttpURLConnection.HTTP_NO_CONTENT) {
        InputStream errorStream = conn.getErrorStream();
        BufferedReader reader = new BufferedReader(new InputStreamReader(errorStream));
        StringBuilder responseBody = new StringBuilder();
        String line;
        while ((line = reader.readLine()) != null) {
            responseBody.append(line);
        }
        reader.close();

        System.out.println("Error: " + responseBody);
    }
} catch (IOException e) {
    e.printStackTrace();
} finally {
    if (conn != null){
        conn.disconnect();
    }
}
}
```

The format of the **Date** header field **DateUtils** is as follows:

```
package com.sfsclient;

import java.text.DateFormat;
import java.text.SimpleDateFormat;
import java.util.Locale;
import java.util.TimeZone;

public class DateUtils {

    public static String formatDate(long time)
    {
        DateFormat serverDateFormat = new SimpleDateFormat("EEE, dd MMM yyyy HH:mm:ss z",
        Locale.ENGLISH);
        serverDateFormat.setTimeZone(TimeZone.getTimeZone("GMT"));
        return serverDateFormat.format(time);
    }
}
```

The method of calculating the signature character string is as follows:

```
package com.sfsclient;

import javax.crypto.Mac;
import javax.crypto.spec.SecretKeySpec;
import java.io.UnsupportedEncodingException;
import java.security.NoSuchAlgorithmException;
import java.security.InvalidKeyException;
import java.util.Base64;

public class Signature {
    public static String signWithHmacSha1(String sk, String canonicalString) throws
UnsupportedEncodingException {
        try {
            SecretKeySpec signingKey = new SecretKeySpec(sk.getBytes("UTF-8"), "HmacSHA1");

```

```
        Mac mac = Mac.getInstance("HmacSHA1");
        mac.init(signingKey);
        return Base64.getEncoder().encodeToString(mac.doFinal(canonicalString.getBytes("UTF-8")));
    } catch (NoSuchAlgorithmException | InvalidKeyException | UnsupportedEncodingException e) {
        e.printStackTrace();
    }
    return null;
}
```

7.2 Listing File Systems

Scenarios

If you want to view information about all file systems created by yourself, you can call the API for listing file systems.

The following describes how to call the API for [10.1.3 Listing File Systems](#). For details, see [7 Getting Started \(SFS 3.0 Capacity-Oriented\)](#).

Prerequisites

- You have obtained the AK and SK. For details, see [13.4 Obtaining Access Keys \(AK/SK\)](#).
- You have specified the region where you want to list file systems and obtained the endpoint required for API calls. For details, see [Regions and Endpoints](#).

Listing File Systems in the a1 Region

In this example, an Apache HttpClient is used.

```
package com.sfsclient;

import java.io.*;
import java.net.HttpURLConnection;
import java.net.URL;
import java.util.List;
import java.util.Map;

public class TestMain {
    //Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using hard
    coding may result in leakage.
    //Obtain an AK/SK pair on the management console.
    public static String accessKey = "ACCESS_KEY_ID";
    public static String securityKey = "SECRET_ACCESS_KEY_ID";
    public static String endpoint = "sfs3.a1.region.com"; // The network address of SFS 3.0.

    public static void main(String[] str) {
        createFileSystem();

    }
    private static void listFileSystem() {
        String httpMethod = "GET";
        String date = DateUtils.formatDate(System.currentTimeMillis());

        /**Calculate the signature based on the request.*/
        String contentMD5 = "";
        String contentType = "";
        String canonicalizedHeaders = "x-obs-bucket-type:SFS";
        String canonicalizedResource = "/" ;
```

```
// Content-MD5 and Content-Type fields do not contain line breaks. The data format is RFC 1123,  
which is the same as the time in the request.  
String stringToSign = httpMethod + "\n" +  
    contentMD5 + "\n" +  
    contentType + "\n" +  
    date + "\n" +  
    canonicalizedHeaders + "\n" + canonicalizedResource;  
  
System.out.printf("StringToSign:\n[%s]\n\n", stringToSign);  
  
HttpURLConnection conn = null;  
  
try {  
    String signature = Signature.signWithHmacSha1(securityKey, stringToSign);  
    String authorization= "OBS " + accessKey + ":" + signature;  
    System.out.printf("authorization:%s\n\n", authorization);  
  
    // Create an HTTP request.  
    URL url = new URL("http://" + endpoint);  
    conn = (HttpURLConnection) url.openConnection();  
  
    // Add a signature header.  
    conn.setRequestMethod(httpMethod);  
    conn.setRequestProperty("Date", date);  
    conn.setRequestProperty("Content-Type", contentType);  
    conn.setRequestProperty("x-obs-bucket-type", "SFS");  
    conn.setRequestProperty("Authorization", authorization);  
    conn.setDoOutput(true);  
  
    String status = conn.getHeaderField(null);  
    System.out.println(status);  
  
    // Output the response message.  
    Map<String, List<String>> headers = conn.getHeaderFields();  
    for (Map.Entry<String, List<String>> entry : headers.entrySet()) {  
        String key = entry.getKey();  
        List<String> values = entry.getValue();  
        if (key != null) {  
            for (String value : values) {  
                System.out.println(key + ": " + value);  
            }  
        }  
    }  
    // Process the returned content.  
    int statusCode = conn.getResponseCode();  
    if (statusCode == HttpURLConnection.HTTP_OK) {  
        InputStream responseStream = conn.getInputStream();  
        BufferedReader reader = new BufferedReader(new InputStreamReader(responseStream));  
  
        StringBuilder responseBody = new StringBuilder();  
        String line;  
        while ((line = reader.readLine()) != null) {  
            responseBody.append(line);  
        }  
        reader.close();  
  
        System.out.println("responseBody: " + responseBody);  
    } else {  
        System.out.println("Error: " + statusCode);  
    }  
} catch (IOException e) {  
    e.printStackTrace();  
} finally {  
    if (conn != null){  
        conn.disconnect();  
    }  
}
```

The format of the **Date** header field **DateUtils** is as follows:

```
package com.sfsclient;

import java.text.DateFormat;
import java.text.SimpleDateFormat;
import java.util.Locale;
import java.util.TimeZone;

public class DateUtils {

    public static String formatDate(long time)
    {
        DateFormat serverDateFormat = new SimpleDateFormat("EEE, dd MMM yyyy HH:mm:ss z",
        Locale.ENGLISH);
        serverDateFormat.setTimeZone(TimeZone.getTimeZone("GMT"));
        return serverDateFormat.format(time);
    }
}
```

The method of calculating the signature character string is as follows:

```
package com.sfsclient;

import javax.crypto.Mac;
import javax.crypto.spec.SecretKeySpec;
import java.io.UnsupportedEncodingException;
import java.security.NoSuchAlgorithmException;
import java.security.InvalidKeyException;
import java.util.Base64;

public class Signature {
    public static String signWithHmacSha1(String sk, String canonicalString) throws
UnsupportedEncodingException {
        try {
            SecretKeySpec signingKey = new SecretKeySpec(sk.getBytes("UTF-8"), "HmacSHA1");
            Mac mac = Mac.getInstance("HmacSHA1");
            mac.init(signingKey);
            return Base64.getEncoder().encodeToString(mac.doFinal(canonicalString.getBytes("UTF-8")));
        } catch (NoSuchAlgorithmException | InvalidKeyException | UnsupportedEncodingException e) {
            e.printStackTrace();
        }
        return null;
    }
}
```

8 SFS Capacity-Oriented APIs

8.1 API Version Queries

8.1.1 Querying All API Versions

Function

This API is used to query all available versions of APIs provided by SFS.

To support function extension, SFS APIs can be distinguished by version. SFS has two types API version IDs:

Major version: Independent URL. For example: **v1** and **v2**.

Microversion: with the HTTP request header **X-Openstack-Manila-Api-Version: Microversion ID**. For example: **X-Openstack-Manila-Api-Version: 2.4**.

NOTE

This API does not require authentication.

URI

- GET /
- Parameter description

None

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
GET https://{endpoint}/

Response

- Parameter description

Parameter	Type	Description
versions	Array of objects	Lists objects of all available API versions, including v1 and v2 .

- Description of the **version** field

Parameter	Type	Description
id	String	Specifies the common name of the version.
updated	String	Specifies the UTC time when the API is last modified. The format is YYYY-MM-DDTHH:MM:SSZ.
status	String	Specifies the API version status, including: <ul style="list-style-type: none">• CURRENT: indicates that the current API is the preferred version.• SUPPORTED: indicates that the current version is an earlier version which is still supported.• DEPRECATED: indicates that the current version is a deprecated version that may be deleted later.
links	Array of objects	Specifies the links of shared file systems. For details, see the description of the links field.
media-types	Array of objects	Specifies the media types supported by the API. For details, see the description of the media-types field.
version	String	If the API in the current version supports microversions, this parameter is the latest microversion. If microversions are not supported, this parameter is an empty string.
min_version	String	If the API in the current version supports microversions, this parameter is the earliest microversion. If microversions are not supported, this parameter is an empty string.

- Description of the **links** field

Parameter	Type	Description
href	String	Specifies the API access path, which is used as a reference.
type	String	Specifies the type of the text returned by the reference API.
rel	String	Specifies the additional description on links.

- Description of the **media-types** field

Parameter	Type	Description
base	String	Specifies the basic text type.
type	String	Specifies the text type.

- Example response

```
{
  "versions": [
    {
      "status": "CURRENT",
      "updated": "2015-08-27T11:33:21Z",
      "links": [
        {
          "href": "http://docs.openstack.org/",
          "type": "text/html",
          "rel": "describedby"
        },
        {
          "href": "https://sfs.region.www.t-systems.com/v2/",
          "rel": "self"
        }
      ],
      "min_version": "2.0",
      "version": "2.28",
      "media-types": [
        {
          "base": "application/json",
          "type": "application/vnd.openstack.share+json;version=1"
        }
      ],
      "id": "v2.0"
    }
  ]
}
```

Status Codes

- Normal

300

- Abnormal

Status Code	Description
400 Bad Request	The server failed to process the request.

Status Code	Description
400 Bad Request	Invalid input: The post-deduction capacity must be larger than 0 and smaller than the current capacity. (Current capacity: XX ; post-deduction capacity: XX)
400 Bad Request	Invalid input: The post-expansion capacity must be larger than the current capacity. (Current capacity: XX ; post-expansion capacity: XX)
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.
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 request is invalid.
503 Service Unavailable	The request is not completed because the service is unavailable.
504 Gateway Timeout	A gateway timeout error occurred.

8.1.2 Querying Details About an API Version

Function

This API is used for querying details about an API version.

URI

- GET /{api_version}/
- Parameter description

Parameter	Mandatory	Type	Description
api_version	Yes	String	Specifies the API version, which can be v1 or v2 .

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
GET https://{endpoint}/v2/

Response

- Parameter description

Parameter	Type	Description
versions	Object	List objects of all available API versions

- Description of the **version** field

Parameter	Type	Description
id	String	Specifies the common name of the version.
updated	String	Specifies the UTC time when the API is last modified. The format is YYYY-MM-DDTHH:MM:SSZ.

Parameter	Type	Description
status	String	Specifies the API version status, including: <ul style="list-style-type: none">• CURRENT: indicates that the current API is the preferred version.• SUPPORTED: indicates that the current version is an earlier version which is still supported.• DEPRECATED: indicates that the current version is a deprecated version that may be deleted later.
links	Array of objects	Specifies the links of shared file systems. For details, see the description of the links field.
media-types	Array of objects	Specifies the media types supported by the API. For details, see the description of the media-types field.
version	String	If the API in the current version supports microversions, this parameter is the latest microversion. If microversions are not supported, this parameter is an empty string.
min_version	String	If the API in the current version supports microversions, this parameter is the earliest microversion. If microversions are not supported, this parameter is an empty string.

- Description of the **links** field

Parameter	Type	Description
href	String	Specifies the API access path, which is used as a reference.
type	String	Specifies the type of the text returned by the reference API.
rel	String	Specifies the additional description on links.

- Description of the **media-types** field

Parameter	Type	Description
base	String	Specifies the basic text type.
type	String	Specifies the text type.

- Example response

```
{  
    "versions": [  
        {  
            "status": "CURRENT",  
            "updated": "2015-08-27T11:33:21Z",  
            "links": [  
                {  
                    "href": "http://docs.openstack.org/",  
                    "type": "text/html",  
                    "rel": "describedby"  
                },  
                {  
                    "href": "https://sfs.region.www.t-systems.com/v2/",  
                    "rel": "self"  
                }  
            ],  
            "min_version": "2.0",  
            "version": "2.28",  
            "media-types": [  
                {  
                    "base": "application/json",  
                    "type": "application/vnd.openstack.share+json;version=1"  
                }  
            ],  
            "id": "v2.0"  
        }  
    ]  
}
```

Status Codes

- Normal
200
- Abnormal

Status Code	Description
400 Bad Request	The server failed to process the request.
400 Bad Request	Invalid input: The post-deduction capacity must be larger than 0 and smaller than the current capacity. (Current capacity: XX; post-deduction capacity: XX)
400 Bad Request	Invalid input: The post-expansion capacity must be larger than the current capacity. (Current capacity: XX; post-expansion capacity: XX)
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.

Status Code	Description
406 Not Acceptable	The response generated by the server could not be accepted by the client.
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 request is invalid.
503 Service Unavailable	The request is not completed because the service is unavailable.
504 Gateway Timeout	A gateway timeout error occurred.

8.2 File Systems

8.2.1 Creating a Shared File System

Function

This API is used to create a shared file system. After the file system is created, you need to mount the file system to ECSs to achieve shared file storage. For details about mounting the file system, see [SFS Getting Started](#).

 NOTE

This API is an asynchronous API. If the returned status code is **200**, the API request is successfully delivered and received. Later, you can query the status and path of the shared file system by referring to [8.2.4 Querying Details About a Shared File System](#) to identify whether the creation is complete and successful. If the status of the shared file system becomes **available** or the shared path is generated, the creation is successful.

 NOTICE

After a shared file system is created successfully, it can be used only after you add share access rules by referring to [8.3.1 Adding a File System Access Rule](#).

URI

- POST /v2/{project_id}/shares
- Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID of the operator. For details about how to obtain the project ID, see 13.5 Obtaining a Project ID .

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	For details, see the description of the share field.

- Description of the **share** field

Parameter	Mandatory	Type	Description
share_proto	Yes	String	Specifies the file sharing protocol. The value can be NFS (for Linux OS).
size	Yes	Integer	Specifies the size (GB) of the shared file system. The applied capacity of the shared file system cannot be larger than the allowed quota. To view the allowed quota, see 8.4 Quota Management .
name	No	String	Specifies the name of the shared file system, which contains 0 to 255 characters and can contain only letters, digits, hyphens (-), and underscores (_).
description	No	String	Specifies the description of the shared file system, which contains 0 to 255 characters and can contain only letters, digits, hyphens (-), and underscores (_).

Parameter	Mandatory	Type	Description
is_public	No	Boolean	(Supported by API versions from v2.8 to v2.42). Specifies whether a file system can be publicly seen. If it is set to true , the file system can be seen publicly. If it is set to false , the file system can be seen privately. The default value is false .
availability_zone	No	String	Specifies the availability zone name. If this parameter is left blank, the default availability zone will be used. If the default availability zone contains no storage resources, the creation of the shared file system fails. The value contains 0 to 255 characters.
metadata	No	Object	<p>Specifies the metadata information used to create the shared file system. The value consists of one or more key and value pairs organized as a dictionary of strings. For details, see the description of the metadata field.</p> <p>CAUTION</p> <ul style="list-style-type: none">For security concerns, the API for modifying the metadata field is not opened yet. Therefore, ensure that the parameters and values are correct when creating a shared file system with data encryption using the metadata field.Unless otherwise specified (for example, <code>#sfs_crypt_key_id</code>), the keys that comply with the following rules in the metadata field are for internal use of the system. Do not customize the settings to avoid internal system errors caused by conflicts with system predefined keys.<ul style="list-style-type: none">Key <code>share_used</code>Keys that start with <code>#sfs</code>

- Description of **metadata** fields (creating a shared file system with the encryption function)

When creating a shared file system with the encryption function, obtain the key ID, domain ID, and key alias of the encryption key using the HTTPS

request by referring to section **Querying the List of CMKs** in the *Data Encryption Workshop API Reference*. Then, in the **metadata** field, set the key-value pairs according to the following table. Ensure that the key-value pairs in the **metadata** field are correct.

To create a shared file system with the encryption function, all parameters in the following table are mandatory. If the encryption function is not needed, these parameters are optional.

Key	Value Type	Mandatory	Description
#sfs_crypt_key_id	String	Yes	Specifies the encryption key ID. If this field, #sfs_crypt_domain_id , and #sfs_crypt_alias exist at the same time, the data encryption function is enabled.
#sfs_crypt_domain_id	String	Yes	Specifies the tenant domain ID. If this field, #sfs_crypt_key_id , and #sfs_crypt_alias exist at the same time, the data encryption function is enabled.
#sfs_crypt_alias	String	Yes	Specifies the encryption key alias. If this field, #sfs_crypt_key_id , and #sfs_crypt_domain_id exist at the same time, the data encryption function is enabled.

NOTE

- You are advised to use the default key **sfs/default** to create an encrypted shared file system. For details, see section "File System Encryption" and "Encryption" in the *Scalable File Service User Guide*.
- When you create a file system with an enterprise project ID, the following key is required in the metadata.

Key	Value Type	Mandatory	Description
enterprise_project_id	String	Yes	Specifies the enterprise project ID. When the Enterprise Project function is enabled, enterprise_project_id is used as a key for specifying the enterprise project ID of the shared file system.

- Example request: POST https://
{endpoint}/v2/16e1ab15c35a457e9c2b2aa189f544e1/shares
Creating a 1-GB NFS file system that can only be seen privately

```
{  
    "share": {  
        "name": "test",  
        "description": "test description",  
        "share_proto": "NFS",  
        "share_network_id": null,  
        "size": 1,  
        "is_public": false  
    }  
}
```
- Example request (creating a shared file system with data encryption function): POST https://
{endpoint}/v2/16e1ab15c35a457e9c2b2aa189f544e1/
shares
Creating a 1-GB, encrypted NFS file system that can only be seen privately

```
{  
    "share": {  
        "name": "test",  
        "description": "test description",  
        "metadata": {  
            "#sfs_crypt_key_id": "9130c90d-73b8-4203-b790-d49f98d503df",  
            "#sfs_crypt_domain_id": "3b2d9670690444c582942801ed7d457b",  
            "#sfs_crypt_alias": "sfs/default"  
        },  
        "share_proto": "NFS",  
        "share_network_id": null,  
        "size": 1,  
        "is_public": false  
    }  
}
```
- Example request (with Enterprise Project enabled): POST https://
{endpoint}/v2/16e1ab15c35a457e9c2b2aa189f544e1/shares
Creating a 1-GB NFS file system that can only be seen privately and adding it
to an enterprise project

```
{  
    "share": {  
        "share_type": null,  
        "name": "test",  
        "snapshot_id": null,  
        "description": "test description",  
        "metadata": {  
            "enterprise_project_id": "9130c90d-73b8-4203-b790-d49f98d503df"  
        },  
        "share_proto": "NFS",  
        "share_network_id": null,  
        "size": 1,  
        "is_public": false  
    }  
}
```

Response

- Parameter description

Parameter	Type	Description
share	Object	For details, see the description of the share field.

- Description of the **share** field

Parameter	Type	Description
links	Array	Specifies the links of shared file systems.
availability_zone	String	Specifies the availability zone.
share_server_id	String	Specifies the ID for managing share services.
id	String	Specifies the ID of the shared file system.
size	Integer	Specifies the size (GB) of the shared file system.
project_id	String	Specifies the ID of the project to which the shared file system belongs.
metadata	Object	Sets one or more metadata key and value pairs as a dictionary of strings. The value of the share_used key indicates the file system used capacity, in bytes. The value of the enterprise_project_id key indicates the ID of the enterprise project that the file system belongs to.
status	String	Specifies the status of the shared file system.
description	String	Describes the shared file system.
host	String	Specifies the name of the host.
name	String	Specifies the name of the shared file system.
created_at	String	Specifies the date and time stamp when the shared file system was created.
share_proto	String	Specifies the protocol for sharing file systems.
share_type_name	String	Specifies the storage service type assigned for the shared file system, such as high-performance storage (composed of SSDs) and large-capacity storage (composed of SATA disks). This field is supported by API v2.6 and later versions.
share_type	String	Specifies the ID of the file system type.
volume_type	String	Specifies the volume type. The definition of this parameter is the same as that of share_type .

Parameter	Type	Description
export_locations	Array	Lists the mount locations. Currently, only a single mount location is supported. This parameter exists only when X-Openstack-Manila-Api-Version specified in the request header is smaller than 2.9 .
export_location	String	Specifies the mount location. This parameter exists only when X-Openstack-Manila-Api-Version specified in the request header is smaller than 2.9 .
is_public	Boolean	Specifies the visibility level of the shared file system. If true is returned, the file system can be seen publicly. If false is returned, the file system can be seen privately. The default value is false .

- Example response

```
{
  "share": {
    "status": "creating",
    "project_id": "16e1ab15c35a457e9c2b2aa189f544e1",
    "name": "share_London",
    "share_type": "25747776-08e5-494f-ab40-a64b9d20d8f7",
    "availability_zone": "az1.dc1",
    "created_at": "2015-09-18T10:25:24.533287",
    "export_location": null,
    "links": [
      {
        "href": "http://192.168.198.54:8786/v2/16e1ab15c35a457e9c2b2aa189f544e1/shares/011d21e2-fbc3-4e4a-9993-9ea223f73264",
        "rel": "self"
      },
      {
        "href": "http://192.168.198.54:8786/16e1ab15c35a457e9c2b2aa189f544e1/shares/011d21e2-fbc3-4e4a-9993-9ea223f73264",
        "rel": "bookmark"
      }
    ],
    "share_network_id": null,
    "export_locations": [],
    "share_proto": "NFS",
    "host": null,
    "volume_type": "default",
    "snapshot_id": null,
    "is_public": true,
    "metadata": {
      "project": "my_app",
      "aim": "doc"
    },
    "id": "011d21e2-fbc3-4e4a-9993-9ea223f73264",
    "size": 1,
    "description": "My custom share London"
  }
}
```

 NOTE

When the client receives the system response, the shared file system is still being created. For this reason, the shared path cannot be queried immediately. You can use the API of [Querying Mount Locations of a Shared File System](#) to query the shared path after the creation is complete.

Status Codes

- Normal

200

- Abnormal

Status Code	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.
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.
413 Quota Exceeded	Insufficient user quota.
500 Internal Server Error	Failed to complete the request because of an internal service error.
501 Not Implemented	Failed to complete the request because the server does not support the requested function.
502 Bad Gateway	Failed to complete the request because the request is invalid.
503 Service Unavailable	Failed to complete the request because the service is unavailable.
504 Gateway Timeout	A gateway timeout error occurred.

8.2.2 Querying All Shared File Systems

Function

This API is used to list the basic information of all shared file systems.

URI

- GET /v2/{project_id}/shares?
all_tenants={all_tenants}&status={status}&limit={limit}&offset={offset}&sort_key={sort_key}&sort_dir={sort_dir}&project_id={project_id}&is_public={is_public}
- Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID of the operator. For details about how to obtain the project ID, see 13.5 Obtaining a Project ID .
all_tenants	No (query parameter)	Boolean	This parameter is available only to users with administrator permissions. Specifies whether to list shared file systems of all tenants. To list shared file systems of all tenants, set it to 1 . To list shared file systems only of the current tenant, set it to 0 .
project_id	No (query parameter)	String	This parameter is available only to users with administrator permissions. Specifies the ID of the project to which the shared file system belongs. This parameter needs to be used together with all_tenants .

Parameter	Mandatory	Type	Description
status	No (query parameter)	String	<p>Filters shared file systems by status. Possible values are:</p> <ul style="list-style-type: none">• creating: The shared file system is being created.• error: The shared file system fails to be created.• available: The shared file system is available.• deleting: The shared file system is being deleted.• error_deleting: The shared file system fails to be deleted.• extending: The shared file system is being expanded.• extending_error: The shared file system fails to be expanded.• shrinking: The shared file system is being shrunk.• shrinking_error: The shared file system fails to be shrunk.• shrinking_possible_data_loss_error: The shared file system fails to be shrunk due to data loss.• manage_starting: Shared file system management starts.• manage_error: The shared file system fails to be managed.• unmanage_starting: Canceling shared file system management starts.• unmanage_error: Failed to cancel shared file system management.• unmanaged: The shared file system is not managed.
limit	No (query parameter)	Integer	Specifies the maximum number of shared file systems that can be returned. If this parameter is not specified, all the shared file systems are returned by default.

Parameter	Mandatory	Type	Description
offset	No (query parameter)	Integer	Specifies the offset to define the start point of shared file system listing. The value must be greater than or equal to 0 .
sort_key	No (query parameter)	String	Specifies the keyword for sorting the queried shared file systems. Possible values are id , status , size , host , share_proto , availability_zone_id , user_id , project_id , created_at , updated_at , display_name , name , share_type_id , share_network_id , and snapshot_id . By default, the value is sorted by created_at .
sort_dir	No (query parameter)	String	Specifies the direction to sort shared file systems. Possible values are asc (ascending) and desc (descending).
is_public	No (query parameter)	String	When this parameter is set to true , the current tenant can query all its own shared file systems and other tenants' shared file systems whose is_public is set to true . When this parameter is set to false , the current tenant can query only the shared file systems owned by the tenant.
enterprise_project_id	No (query parameter)	String	Specifies the enterprise project to which the shared file systems are bound. To query the current user's shared file systems binding to all enterprise projects, use the all_granted_eps parameter.

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

GET https://[{endpoint}](#)/v2/16e1ab15c35a457e9c2b2aa189f544e1/shares

Response

- Parameter description

Parameter	Type	Description
shares	Array of objects	For details, see the description of the share field.

- Description of the **share** field

Parameter	Type	Description
id	String	Specifies the ID of the shared file system.
links	Array of objects	Specifies the request link information of the shared file system.
name	String	Specifies the name of the shared file system.

- Example response

```
{  
    "shares": [  
        {  
            "id": "1390cb29-539b-4926-8953-d8d6b106071a",  
            "links": [  
                {  
                    "href": "https://192.168.196.47:8796/v2/f24555bfcf3146ca936d21bcb548687e/shares/  
1390cb29-539b-4926-8953-d8d6b106071a",  
                    "rel": "self"  
                },  
                {  
                    "href": "https://192.168.196.47:8796/f24555bfcf3146ca936d21bcb548687e/shares/  
1390cb29-539b-4926-8953-d8d6b106071a",  
                    "rel": "bookmark"  
                }  
            ],  
            "name": null  
        }  
    ]  
}
```

Status Codes

- Normal

200

- Abnormal

Status Code	Description
400 Bad Request	The server failed to process the request.

Status Code	Description
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.
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	Failed to complete the request because of an internal service error.
501 Not Implemented	Failed to complete the request because the server does not support the requested function.
502 Bad Gateway	Failed to complete the request because the request is invalid.
503 Service Unavailable	Failed to complete the request because the service is unavailable.
504 Gateway Timeout	A gateway timeout error occurred.

8.2.3 Querying Details About All Shared File Systems

Function

This API is used to query the details about all shared file systems.

URI

- GET /v2/{project_id}/shares/detail?
all_tenants={all_tenants}&project_id={project_id}&status={status}&limit={limit}&offset={offset}&sort_key={sort_key}&sort_dir={sort_dir}&is_public={is_public}&name={name}
- Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID of the operator. For details about how to obtain the project ID, see 13.5 Obtaining a Project ID .
all_tenants	No (query parameter)	Integer	(Administrators only) Specifies whether to list shared file systems of all tenants. To list shared file systems of all tenants, set it to 1 . To list shared file systems only of the current tenant, set it to 0 .
project_id	No (query parameter)	String	Specifies the ID of the tenant who creates the shared file system. This parameter is used together with all_tenants .
status	No (query parameter)	String	Filters shared file systems by status. Possible values are creating , error , available , deleting , error_deleting , manage_starting , manage_error , unmanage_starting , unmanage_error , unmanaged , extending , extending_error , shrinking , shrinking_error , and shrinking_possible_data_loss_error .
limit	No (query parameter)	Integer	Specifies the maximum number of shared file systems that can be returned.
offset	No (query parameter)	Integer	Specifies the offset to define the start point of shared file system listing.
sort_key	No (query parameter)	String	Specifies the keyword for sorting the queried shared file systems. Possible values are id , status , size , host , share_proto , availability_zone_id , user_id , project_id , created_at , updated_at , display_name , name , share_type_id , share_network_id , and snapshot_id .

Parameter	Mandatory	Type	Description
sort_dir	No (query parameter)	String	Specifies the direction to sort shared file systems. Possible values are asc (ascending) and desc (descending).
is_public	No (query parameter)	String	When this parameter is set to true , the current tenant can query all its own shared file systems and other tenants' shared file systems whose is_public is set to true . When this parameter is set to false , the current tenant can query only the shared file systems owned by the tenant.
enterprise_project_id	No (query parameter)	String	Specifies the enterprise project to which the shared file systems are bound. To query the current user's shared file systems binding to all enterprise projects, use the all_granted_eps parameter.
name	No (query parameter)	String	Specifies the field used for fuzzy filtering based on the name of a shared file system. This field is supported by API v2.36 and later versions.

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 the share objects.

- Description of the **share** field

Parameter	Type	Description
links	Array	Specifies the links of shared file systems.
availability_zone	String	Specifies the availability zone.
share_server_id	String	Specifies the ID for managing share services.
share_network_id	String	Specifies the ID of the share network. This parameter is reserved, because share network management is not supported currently.
snapshot_id	String	Specifies the ID of the source snapshot that is used to create the shared file system. This parameter is reserved, because snapshots are not supported currently.
snapshot_support	Boolean	Specifies whether snapshots are supported. This parameter is reserved, because snapshots are not supported currently. This field is supported by API v2.2 and later versions.
id	String	Specifies the ID of the shared file system.
size	Integer	Specifies the size (GB) of the shared file system.
consistency_group_id	String	Specifies the ID of the consistency group. This parameter is reserved, because consistency groups are not supported currently. This field is supported by API versions from v2.31 to v2.42.
project_id	String	Specifies the ID of the project to which the shared file system belongs.
metadata	Object	Sets one or more metadata key and value pairs as a dictionary of strings. The value of the share_used key indicates the file system used capacity, in bytes. The used capacity will not be displayed if less than 1 MB of the SFS Capacity-Oriented file system is used. The value of the enterprise_project_id key indicates the ID of the enterprise project that the file system belongs to.
status	String	Specifies the status of the shared file system.

Parameter	Type	Description
task_state	String	Specifies the data migration status. This parameter is reserved, because data migration is not supported currently. This field is supported by API v2.5 and later versions.
has_replicas	Boolean	Specifies whether replicas exist. This parameter is reserved, because replication is not supported currently. This field is supported by API versions from v2.11 to v2.42.
replication_type	String	Specifies the replication type. This parameter is reserved, because replication is not supported currently. This field is supported by API versions from v2.11 to v2.42.
description	String	Describes the shared file system.
host	String	Specifies the name of the host.
name	String	Specifies the name of the shared file system.
created_at	String	Specifies the date and time stamp when the shared file system was created.
share_proto	String	Specifies the protocol for sharing file systems.
share_type_name	String	Specifies the storage service type assigned for the shared file system, such as high-performance storage (composed of SSDs) and large-capacity storage (composed of SATA disks). This field is supported by API v2.6 and later versions.
share_type	String	Specifies the ID of the file system type.
volume_type	String	Specifies the volume type. The definition of this parameter is the same as that of share_type .
export_locations	Array	Lists the mount locations. Currently, only a single mount location is supported. This parameter exists only when X-Openstack-Manila-Api-Version specified in the request header is smaller than 2.9 .
export_location	String	Specifies the mount location. This parameter exists only when X-Openstack-Manila-Api-Version specified in the request header is smaller than 2.9 .

Parameter	Type	Description
is_public	Boolean	Specifies the visibility level of the shared file system. If true is returned, the file system can be seen publicly. If false is returned, the file system can be seen privately. The default value is false .

- Example response

```
{
  "shares": [
    {
      "links": [
        {
          "href": "https://192.168.170.97:8796/v2/61b01a94b84448cfac2424e46553d7e7/shares/54d0bac6-45c8-471c-bf0d-16ffd81ef88a",
          "rel": "self"
        },
        {
          "href": "https://192.168.170.97:8796/61b01a94b84448cfac2424e46553d7e7/shares/54d0bac6-45c8-471c-bf0d-16ffd81ef88a",
          "rel": "bookmark"
        }
      ],
      "export_location": "sfs.dong.com:/share-e1c2d35e",
      "availability_zone": "az1.dc1",
      "share_network_id": null,
      "snapshot_id": null,
      "id": "54d0bac6-45c8-471c-bf0d-16ffd81ef88a",
      "size": 1,
      "share_type": "default",
      "": null,
      "project_id": "da0f615c35eb4d72812d1547a77b5394",
      "metadata": {
        "share_used": "1048576000000",
      },
      "status": "available",
      "description": "test description",
      "export_locations": ["sfs.dong.com:/share-e1c2d35e"],
      "host": "DJ01@9656beb1-7ce2-4c46-9911-ecd51ab632bf#9656beb1-7ce2-4c46-9911-ecd51ab632bf",
      "is_public": false,
      "name": "cl01",
      "created_at": "2017-07-07T03:15:06.858662",
      "share_proto": "NFS",
      "volume_type": "default"
    }
  ]
}
```

Status Codes

- Normal
200
- Abnormal

Status Code	Description
400 Bad Request	The server failed to process the request.

Status Code	Description
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.
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	Failed to complete the request because of an internal service error.
501 Not Implemented	Failed to complete the request because the server does not support the requested function.
502 Bad Gateway	Failed to complete the request because the request is invalid.
503 Service Unavailable	Failed to complete the request because the service is unavailable.
504 Gateway Timeout	A gateway timeout error occurred.

8.2.4 Querying Details About a Shared File System

Function

This API is used to query the details about a shared file system.

URI

- GET /v2/{project_id}/shares/{share_id}
- Parameter description

Parameter	Mandatory	Type	Description
share_id	Yes	String	Specifies the ID of the shared file system.

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID of the operator. For details about how to obtain the project ID, see 13.5 Obtaining a Project ID .

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
share	Object	Specifies the share objects.

- Description of the **share** field

Parameter	Type	Description
links	Array	Specifies the links of shared file systems.
availability_zone	String	Specifies the availability zone.
share_server_id	String	Specifies the ID for managing share services.
share_network_id	String	Specifies the ID of the share network. This parameter is reserved, because share network management is not supported currently.
snapshot_id	String	Specifies the ID of the source snapshot that is used to create the shared file system. This parameter is reserved, because snapshots are not supported currently.

Parameter	Type	Description
snapshot_support	Boolean	Specifies whether snapshots are supported. This parameter is reserved, because snapshots are not supported currently. This field is supported by API v2.2 and later versions.
id	String	Specifies the ID of the shared file system.
size	Integer	Specifies the size (GB) of the shared file system.
consistency_group_id	String	Specifies the ID of the consistency group. This parameter is reserved, because consistency groups are not supported currently. This field is supported by API versions from v2.31 to v2.42.
project_id	String	Specifies the ID of the project to which the shared file system belongs.
metadata	Object	Sets one or more metadata key and value pairs as a dictionary of strings. The value of the share_used key indicates the file system used capacity, in bytes. The used capacity will not be displayed if less than 1 MB of the SFS Capacity-Oriented file system is used. The value of the enterprise_project_id key indicates the ID of the enterprise project that the file system belongs to.
status	String	Specifies the status of the shared file system.
task_state	String	Specifies the data migration status. This parameter is reserved, because data migration is not supported currently. This field is supported by API v2.5 and later versions.
has_replicas	Boolean	Specifies whether replicas exist. This parameter is reserved, because replication is not supported currently. This field is supported by API versions from v2.11 to v2.42.
replication_type	String	Specifies the replication type. This parameter is reserved, because replication is not supported currently. This field is supported by API versions from v2.11 to v2.42.
description	String	Describes the shared file system.

Parameter	Type	Description
host	String	Specifies the name of the host.
name	String	Specifies the name of the shared file system.
created_at	String	Specifies the date and time stamp when the shared file system was created.
share_proto	String	Specifies the protocol for sharing file systems.
share_type_name	String	Specifies the storage service type assigned for the shared file system, such as high-performance storage (composed of SSDs) and large-capacity storage (composed of SATA disks). This field is supported by API v2.6 and later versions.
share_type	String	Specifies the ID of the file system type.
volume_type	String	Specifies the volume type. The definition of this parameter is the same as that of share_type .
export_locations	Array	Lists the mount locations. Currently, only a single mount location is supported. This parameter exists only when X-Openstack-Manila-Api-Version specified in the request header is smaller than 2.9 .
export_location	String	Specifies the mount location. This parameter exists only when X-Openstack-Manila-Api-Version specified in the request header is smaller than 2.9 .
is_public	Boolean	Specifies the visibility level of the shared file system. If true is returned, the file system can be seen publicly. If false is returned, the file system can be seen privately. The default value is false .

- Example response

```
{  
  "share": {  
    "status": "available",  
    "share_type_name": "sla",  
    "description": "My custom share London",  
    "links": [  
      {  
        "href": "https://192.168.196.47:8796/v2/07412155bf474db9a2f697fd978593d7/shares/  
f26d867f-9876-433d-8db2-25d210f29309",  
        "rel": "self"  
      },  
      {  
        "href": "https://192.168.196.47:8796/07412155bf474db9a2f697fd978593d7/shares/  
f26d867f-9876-433d-8db2-25d210f29309",  
        "rel": "self"  
      }  
    ]  
  }  
}
```

```
        "rel": "bookmark"
    },
    "availability_zone": "az1.dc1",
    "share_network_id": null,
    "share_server_id": null,
    "share_group_id": null,
    "host": "DJ38@a4588256-3880-4136-b3c9-4c3aade8a84b#a4588256-3880-4136-
b3c9-4c3aade8a84b",
    "revert_to_snapshot_support": null,
    "access_rules_status": "active",
    "snapshot_id": null,
    "create_share_from_snapshot_support": null,
    "is_public": false,
    "task_state": null,
    "snapshot_support": true,
    "id": "f26d867f-9876-433d-8db2-25d210f29309",
    "size": 1,
    "source_share_group_snapshot_member_id": null,
    "user_id": "daa3f8f8d7254465841da769298a76f6",
    "name": "luzhongguo_1",
    "share_type": "8ae4e74e-83f4-4980-8ab8-e637f9294e0b",
    "has_replicas": false,
    "replication_type": null,
    "created_at": "2018-12-25T08:45:22.525899",
    "share_proto": "NFS",
    "volume_type": "sla",
    "mount_snapshot_support": null,
    "project_id": "07412155bf474db9a2f697fd978593d7",
    "metadata": {
        "share_key": "test",
        "share_used": "1"
    }
}
```

Status Codes

- Normal
200
- Abnormal

Status Code	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.
407 Proxy Authentication Required	You must use the proxy server for authentication. Then the request can be processed.

Status Code	Description
408 Request Timeout	The request timed out.
409 Conflict	The request could not be processed due to a conflict.
500 Internal Server Error	Failed to complete the request because of an internal service error.
501 Not Implemented	Failed to complete the request because the server does not support the requested function.
502 Bad Gateway	Failed to complete the request because the request is invalid.
503 Service Unavailable	Failed to complete the request because the service is unavailable.
504 Gateway Timeout	A gateway timeout error occurred.

8.2.5 Querying Mount Locations of a Shared File System

Function

This API is used to query mount locations of a shared file system.

NOTE

This API exists only when **X-Openstack-Manila-Api-Version** in the request header is greater than or equal to 2.9. The following is an example request sent by the **curl** command: curl -k -i -X GET https://192.168.196.47:8786/v2/13c7ff9a479c4e3599f4331d9e4a1835/shares/2a8c5470-d5d9-4fe1-b9fc-66a15a162e41/export_locations -H "X-Openstack-Manila-Api-Version: 2.9" -H "X-Auth-Token: \$token" -H "Accept: application/json"

URI

- GET /v2/{project_id}/shares/{share_id}/export_locations
- Parameter description

Parameter	Mandatory	Type	Description
share_id	Yes	String	Specifies the ID of the shared file system.
project_id	Yes	String	Specifies the project ID of the operator. For details about how to obtain the project ID, see 13.5 Obtaining a Project ID .

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
export_locations	Array of strings	Specifies the export_location objects.

- Description of field **export_location**

Parameter	Type	Description
id	String	Specifies the ID of the mount location of the shared file system.
share_instance_id	String	Specifies the ID of the shared file system.
path	String	Specifies the path that will be used when the shared file system is mounted.
is_admin_only	Boolean	Specifies whether the shared file system is only visible to administrators and its owner. Possible values are true (only visible to administrators and its owner) and false (visible to all users).
preferred	Boolean	Identifies which mount locations are most efficient and are used preferentially when multiple mount locations exist.

- Example response

NFS file system:

```
{  
  "export_locations": [  
    {  
      "path": "NFS:sfs-nas1.dong.com:/share-236b936a",  
      "id": "b03d2aac-aecd-409a-af07-5d1b9024241c",  
      "preferred": false  
    }  
  ]  
}
```

Status Codes

- Normal
200
- Abnormal

Status Code	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.

8.2.6 Modifying a Shared File System

Function

This API is used to modify the name and description of a shared file system.

URI

- PUT /v2/{project_id}/shares/{share_id}
- Parameter description

Parameter	Mandatory	Type	Description
share_id	Yes	String	Specifies the ID of the shared file system.
project_id	Yes	String	Specifies the project ID of the operator. For details about how to obtain the project ID, see 13.5 Obtaining a Project ID .

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 the share objects.

- Description of the **share** field

Parameter	Mandatory	Type	Description
display_name	No	String	Specifies the new name of the shared file system. The value consists of 0 to 255 characters.
display_description	No	String	Describes the shared file system. The value contains 0 to 255 characters.
is_public	No	Boolean	(Supported by API v2.8 and later versions.) Specifies whether a file system can be publicly seen. If it is set to true , the file system can be seen publicly. If it is set to false , the file system can be seen privately. The default value is false .

- Example request

Modifying a shared file system (with the file system name changed to **testshare** and description to **test**):

```
{  
    "share": {  
        "display_name": "testshare",  
        "display_description": "test"  
    }  
}
```

Response

- Parameter description

Parameter	Type	Description
share	Object	Specifies the share objects.

- Description of the **share** field

Parameter	Type	Description
links	Array	Specifies the links of shared file systems.
availability_zone	String	Specifies the availability zone.
share_server_id	String	Specifies the ID for managing share services.

Parameter	Type	Description
share_network_id	String	Specifies the ID of the share network. This parameter is reserved, because share network management is not supported currently.
snapshot_id	String	Specifies the ID of the source snapshot that is used to create the shared file system. This parameter is reserved, because snapshots are not supported currently.
snapshot_support	Boolean	Specifies whether snapshots are supported. This parameter is reserved, because snapshots are not supported currently.
id	String	Specifies the ID of the shared file system.
size	Integer	Specifies the size (GB) of the shared file system.
consistency_group_id	String	(Supported by API versions from v2.31 to v2.42.) Specifies the ID of a consistency group. This parameter is reserved, because consistency groups are not supported currently.
project_id	String	Specifies the ID of the project to which the shared file system belongs.
metadata	Object	Sets one or more metadata key and value pairs as a dictionary of strings. The value of the share_used key indicates the file system used capacity, in bytes. The value of the enterprise_project_id key indicates the ID of the enterprise project that the file system belongs to.
status	String	Specifies the status of the shared file system.
task_state	String	Specifies the data migration status. This parameter is reserved, because data migration is not supported currently.
has_replicas	Boolean	(Supported by API versions from v2.11 to v2.42.) Specifies whether any replication exists. This parameter is reserved, because replication is not supported currently.
replication_type	String	(Supported by API versions from v2.11 to v2.42.) Specifies the replication type. This parameter is reserved, because replication is not supported currently.

Parameter	Type	Description
description	String	Describes the shared file system.
host	String	Specifies the name of the host.
name	String	Specifies the name of the shared file system.
created_at	String	Specifies the date and time stamp when the shared file system was created.
access_rules_status	String	(Supported by API versions from v2.10 to v2.27.) Specifies the configuration status of the access rule. Possible values are active (effective), error (configuration failed), and syncing (configuration in progress).
share_proto	String	Specifies the protocol for sharing file systems.
volume_type	String	Specifies the volume type. The definition of this parameter is the same as that of share_type .
share_type_name	String	Specifies the storage service type assigned for the shared file system, such as high-performance storage (composed of SSDs) and large-capacity storage (composed of SATA disks).
share_type	String	Specifies the ID of the file system type.
export_locations	Array	Lists the mount locations. Currently, only a single mount location is supported. This parameter exists only when X-Openstack-Manila-Api-Version specified in the request header is smaller than 2.8 .
export_location	String	Specifies the mount location. This parameter exists only when X-Openstack-Manila-Api-Version specified in the request header is smaller than 2.8 .
is_public	Boolean	(Supported by API versions from v2.8 to v2.42.) Specifies whether a file system can be publicly seen. If it is set to true , the file system can be seen publicly. If it is set to false , the file system can be seen privately. The default value is false .
source_share_group_snapshot_member_id	String	(Supported by API v2.31 and later versions.) Specifies the ID of a consistency snapshot source. Currently, the consistency group is not supported. This field is reserved.

Parameter	Type	Description
revert_to_sn apshot_supp ort	Boolean	(Supported by API v2.27 and later versions.) Specifies whether reversion to snapshot is supported. Currently, snapshot is not supported. This field is reserved.
create_share _from_sna pshot_supp ort	Boolean	(Supported by API v2.24 and later versions.) Specifies whether creating file systems from snapshot is supported. Currently, snapshot is not supported. This field is reserved.
mount_snap shot_supp ort	Boolean	(Supported by API v2.32 and later versions.) Specifies whether snapshot mounting is supported. Currently, snapshot is not supported. This field is reserved.
user_id	String	(Supported by API v2.16 and later versions.) Specifies the user ID.

- Example response

```
{  
    "share": {  
        "status": "available",  
        "share_type_name": "sla",  
        "description": "test",  
        "links": [  
            {  
                "href": "https://192.168.196.47:8796/v2/07412155bf474db9a2f697fd978593d7/shares/f26d867f-9876-433d-8db2-25d210f29309",  
                "rel": "self"  
            },  
            {  
                "href": "https://192.168.196.47:8796/07412155bf474db9a2f697fd978593d7/shares/f26d867f-9876-433d-8db2-25d210f29309",  
                "rel": "bookmark"  
            }  
        ],  
        "availability_zone": "az1.dc1",  
        "share_network_id": null,  
        "share_server_id": null,  
        "share_group_id": null,  
        "host": "DJ38@a4588256-3880-4136-b3c9-4c3aade8a84b#a4588256-3880-4136-b3c9-4c3aade8a84b",  
        "revert_to_snapshot_support": null,  
        "access_rules_status": "active",  
        "snapshot_id": null,  
        "create_share_from_snapshot_support": null,  
        "is_public": true,  
        "task_state": null,  
        "snapshot_support": true,  
        "id": "f26d867f-9876-433d-8db2-25d210f29309",  
        "size": 1,  
        "source_share_group_snapshot_member_id": null,  
        "user_id": "daaa3f8f8d7254465841da769298a76f6",  
        "name": "manila share",  
        "share_type": "8ae4e74e-83f4-4980-8ab8-e637f9294e0b",  
        "has_replicas": false,  
        "replication_type": null,  
        "created_at": "2018-12-25T08:45:22.525899",  
        "share_proto": "NFS",  
        "volume_type": "sla",  
    }  
}
```

```
"mount_snapshot_support": null,  
"project_id": "07412155bf474db9a2f697fd978593d7",  
"metadata": {  
    "share_key": "test",  
    "share_used": "1",  
}  
}
```

Status Codes

- Normal
200
- Abnormal

Status Code	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.
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	Failed to complete the request because of an internal service error.
501 Not Implemented	Failed to complete the request because the server does not support the requested function.
502 Bad Gateway	Failed to complete the request because the request is invalid.
503 Service Unavailable	Failed to complete the request because the service is unavailable.
504 Gateway Timeout	A gateway timeout error occurred.

8.2.7 Deleting a Shared File System

Function

This API is used to delete a shared file system.

NOTE

This API is an asynchronous API. If the returned status code is **202**, the API request is successfully delivered and received. Later, you can query the shared file system by referring to [8.2.4 Querying Details About a Shared File System](#) to identify whether the deletion is complete and successful.

URI

- `DELETE /v2/{project_id}/shares/{share_id}`
- Parameter description

Parameter	Mandatory	Type	Description
share_id	Yes	String	Specifies the ID of the shared file system.
project_id	Yes	String	Specifies the project ID of the operator. For details about how to obtain the project ID, see 13.5 Obtaining a Project ID .

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

- Example response
None

Status Codes

- Normal
202
- Abnormal

Status Code	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.
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	Failed to complete the request because of an internal service error.
501 Not Implemented	Failed to complete the request because the server does not support the requested function.
502 Bad Gateway	Failed to complete the request because the request is invalid.
503 Service Unavailable	Failed to complete the request because the service is unavailable.
504 Gateway Timeout	A gateway timeout error occurred.

8.3 File System Access Rules

8.3.1 Adding a File System Access Rule

Function

This API is used to add a file system access rule.



- This API is an asynchronous API. If the returned status code is **200**, the API request is successfully delivered and received. Later, you can refer to [8.3.3 Querying File System Access Rules](#) to check whether the access rule is added successfully.

URI

- POST /v2/{project_id}/shares/{share_id}/action?
vpc_ip_base_acl={vpc_ip_base_acl}
- Parameter description

Parameter	Mandatory	Type	Description
share_id	Yes	String	Specifies the ID of the shared file system.
project_id	Yes	String	Specifies the project ID of the operator. For how to obtain the project ID, see 13.5 Obtaining a Project ID .
vpc_ip_base_acl	No	String	Specifies the identifier used with IP address-based authorization. Currently, only enable is available, which indicates that an access rule used with IP address-based authorization will be created. NOTICE To ensure compatibility, if this parameter is left blank or set to a value other than enable , you can still use this API to create an access rule used with IP address-based authorization. However, this method of creation has been discarded and will not be maintained in the future.

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
os-allow_access	Yes	Object	Specifies the os-allow_access objects.

- Description of field **os-allow_access**

Parameter	Mandatory	Type	Description
access_level	No	String	Specifies the access level of the file system. Possible values are ro (read-only) and rw (read-write). The default value is rw (read-write).
access_type	Yes	String	Specifies the storage access method. <ul style="list-style-type: none">• If the NFS protocol is used, specify cert.• If multiple protocols are used, specify cert. <p>Note</p> <ol style="list-style-type: none">1. Value user indicates storage access using username.2. Value cert indicates storage access using VPC ID and IP address.

- Example request (IP address-based authorization)

```
POST /v2/{project_id}/shares/{share_id}/action?vpc_ip_base_acl=enable
```

Adding a file system access rule (value of the rule parameter

0560a527-0e77-40a6-

aa3b-110beecad368#127.0.0.1#1#all_squash,root_squash):

```
{  
    "allow_access": {  
        "access_to": "0560a527-0e77-40a6-aa3b-110beecad368#127.0.0.1#1#all_squash,root_squash",  
        "access_type": "cert",  
        "access_level": "rw"  
    }  
}
```

NOTICE

When creating the share access rule for an IP address-based authorization scenario.

1. The **X-Openstack-Manila-Api-Version** parameter must be specified for the request header, and the value of **X-Openstack-Manila-Api-Version** must be from 2.28 to 2.42.
2. The **vpc_ip_base_acl** parameter must be added in the request URL and the value of **vpc_ip_base_acl** must be set to **enable**. To ensure compatibility, if this parameter is left blank or set to a value other than **enable**, you can still use this API to create an access rule used with IP address-based authorization. However, this method of creation has been discarded and will not be maintained in the future.

Response

- Parameter description

Parameter	Type	Description
access	Object	Specifies the access objects. If the access rule is not updated, this value is null .

- Description of the **access** field

Parameter	Type	Description
share_id	String	Specifies the ID of the shared file system to which the access rule is added.
access_type	String	Specifies the type of the access rule.
access_to	String	Specifies the object that the backend grants or denies access.
access_level	String	Specifies the level of the access rule.
id	String	Specifies the ID of the access rule.
state	String	Specifies the status of the access rule. If the API version is earlier than 2.28, the status of the access rule is new , active , or error . In versions from 2.28 to 2.42, the status of the access rule is queued_to_apply , applying , active , error , queued_to_deny , or denying .

Status Codes

- Normal
200
- Abnormal

Status Code	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.

Status Code	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	Failed to complete the request because of an internal service error.
501 Not Implemented	Failed to complete the request because the server does not support the requested function.
502 Bad Gateway	Failed to complete the request because the request is invalid.
503 Service Unavailable	Failed to complete the request because the service is unavailable.
504 Gateway Timeout	A gateway timeout error occurred.

8.3.2 Deleting a File System Access Rule

Function

This API is used to delete a file system access rule.



This API is an asynchronous API. If the returned status code is **202**, the API request is successfully delivered and received. Later, you can refer to [8.3.3 Querying File System Access Rules](#) to identify whether the access rule is deleted successfully.

URI

- POST /v2/{project_id}/shares/{share_id}/action
- Parameter description

Parameter	Mandatory	Type	Description
share_id	Yes	String	Specifies the ID of the shared file system.
project_id	Yes	String	Specifies the project ID of the operator. For details about how to obtain the project ID, see 13.5 Obtaining a Project ID .

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
os-deny_access	Yes	Object	Specifies the os-deny_access object.

- Description of field **os-deny_access**

Parameter	Mandatory	Type	Description
access_id	Yes	String	Specifies the ID of the access rule of the shared file system. The value contains 1 to 36 characters.

- Example request

Deleting a file system access rule (rule ID: **418e3cf4-08c3-4ed2-a29a-ceffa346b3b8**):

```
{  
    "os-deny_access": {  
        "access_id": "418e3cf4-08c3-4ed2-a29a-ceffa346b3b8"  
    }  
}
```

Response

- Parameter description

None

- Example response

None

Status Codes

- Normal
202
- Abnormal

Status Code	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.

Status Code	Description
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.
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	Failed to complete the request because of an internal service error.
501 Not Implemented	Failed to complete the request because the server does not support the requested function.
502 Bad Gateway	Failed to complete the request because the request is invalid.
503 Service Unavailable	Failed to complete the request because the service is unavailable.
504 Gateway Timeout	A gateway timeout error occurred.

8.3.3 Querying File System Access Rules

Function

This API is used to query the access rules of a shared file system.

URI

- POST /v2/{project_id}/shares/{share_id}/action
- Parameter description

Parameter	Mandatory	Type	Description
share_id	Yes	String	Specifies the ID of the shared file system.

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID of the operator. For details about how to obtain the project ID, see 13.5 Obtaining a Project ID .

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
os-access_list	Yes	Object	Specifies the os-access_list object. To view access rules, set this value to null .

- Example request

```
{  
    "os-access_list": null  
}
```

Response

- Description

Parameter	Type	Description
access_list	Array of objects	Lists the access rules.

- Description of field **access_list**

Parameter	Type	Description
access_type	String	Specifies the type of the access rule.
access_to	String	Specifies the object that the backend grants or denies access.
access_level	String	Specifies the level of the access rule.

Parameter	Type	Description
state	String	Specifies the status of the access rule. If the API version is earlier than 2.28, the status of the access rule is new , active , or error . In versions from 2.28 to 2.42, the status of the access rule is queued_to_apply , applying , active , error , queued_to_deny , or denying .
id	String	Specifies the ID of the access rule.

- Example response

```
{  
    "access_list": [  
        {  
            "access_level": "rw",  
            "state": "active",  
            "id": "85417bed-5e26-4c99-8c0c-92c95b5c640e",  
            "access_type": "cert",  
            "access_to": "a91556b7-c7c8-4273-915e-2729e04cdb01",  
        },  
        {  
            "access_level": "rw",  
            "state": "active",  
            "id": "2ecbeb0b-b2ba-41f1-ba63-0666548925b9",  
            "access_type": "cert",  
            "access_to": "0560a527-0e77-40a6-aa3b-110beecd368#0.0.0/0#0#all_squash,root_squash",  
            "created_at": "2017-07-07T03:15:06.858662",  
            "updated_at": "2018-07-07T03:15:06.858662"  
        },  
        {  
            "access_level": "rw",  
            "state": "active",  
            "id": "24615391-d58d-4a74-ac5a-520233c9c396",  
            "access_type": "cert",  
            "access_to": "0560a527-0e77-40a6-  
aa3b-110beecd368#192.168.196.47#1#all_squash,root_squash",  
        }  
    ]  
}
```

Status Codes

- Normal
 - 200
- Abnormal

Status Code	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.

Status Code	Description
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.
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	Failed to complete the request because of an internal service error.
501 Not Implemented	Failed to complete the request because the server does not support the requested function.
502 Bad Gateway	Failed to complete the request because the request is invalid.
503 Service Unavailable	Failed to complete the request because the service is unavailable.
504 Gateway Timeout	A gateway timeout error occurred.

8.4 Quota Management

Function

This API is used to query quota information.

URI

- GET /v2/{project_id}/os-quota-sets/{project_id}
- Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID of the operator. For details about how to obtain the project ID, see 13.5 Obtaining a Project ID .

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the ID of the tenant whose quotas are to be queried, updated, or deleted. This ID differs from the first project ID (the administrative tenant ID) contained in the URI.

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
quota_set	Object	Specifies the quota_set objects.

- Description of field **quota_set**

Parameter	Type	Description
gigabytes	Integer	Specifies the capacity in gigabytes allowed for each tenant.
snapshots	Integer	Specifies the number of snapshots allowed for each tenant.
shares	Integer	Specifies the number of shared file systems allowed for each tenant.
snapshot_gigabytes	Integer	Specifies the snapshot capacity in gigabytes allowed for each tenant.
id	String	Specifies the ID of the tenant for which you manage quotas.
share_networks	Integer	Specifies the number of share networks allowed for each tenant.

- Example response

```
{  
    "quota_set": {  
        "gigabytes": -1,  
        "snapshots": -1,  
        "snapshot_gigabytes": -1,  
        "shares": -1,  
        "id": "da0f615c35eb4d72812d1547a77b5394",  
        "share_networks": 10  
    }  
}
```

Status Codes

- Normal

200

- Abnormal

Status Code	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.
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	Failed to complete the request because of an internal service error.
501 Not Implemented	Failed to complete the request because the server does not support the requested function.
502 Bad Gateway	Failed to complete the request because the request is invalid.
503 Service Unavailable	Failed to complete the request because the service is unavailable.
504 Gateway Timeout	A gateway timeout error occurred.

8.5 Expansion and Shrinking

8.5.1 Expanding a Shared File System

Function

This API is used to expand the capacity of a shared file system.

NOTE

This API is an asynchronous API. If the returned status code is **202**, the API request is successfully delivered and received. Later, you can refer to [8.2.4 Querying Details About a Shared File System](#) to identify whether the shared file system is expanded successfully.

URI

- POST /v2/{project_id}/shares/{share_id}/action
- Parameter description

Parameter	Mandatory	Type	Description
share_id	Yes	String	Specifies the ID of the shared file system.
project_id	Yes	String	Specifies the project ID of the operator. For details about how to obtain the project ID, see 13.5 Obtaining a Project ID .

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
os-extend	Yes	Object	Specifies the os-extend object.

- Description of field **os-extend**

Parameter	Mandatory	Type	Description
new_size	Yes	Integer	Specifies the new capacity (GB) of the shared file system.

- Example request

Expanding the capacity of a shared file system to 2 GB:

```
{  
    "os-extend": {  
        "new_size": 2  
    }  
}
```

Response

- Parameter description
None
- Example response
None

Status Codes

- Normal
202
- Abnormal

Status Code	Description
400 Bad Request	The server failed to process the request.
400 Bad Request	Invalid input: The post-deduction capacity must be larger than 0 and smaller than the current capacity. (Current capacity: XX; post-deduction capacity: XX)
400 Bad Request	Invalid input: The post-expansion capacity must be larger than the current capacity. (Current capacity: XX; post-expansion capacity: XX)
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.

Status Code	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	Failed to complete the request because of an internal service error.
501 Not Implemented	Failed to complete the request because the server does not support the requested function.
502 Bad Gateway	Failed to complete the request because the request is invalid.
503 Service Unavailable	Failed to complete the request because the service is unavailable.
504 Gateway Timeout	A gateway timeout error occurred.

8.5.2 Shrinking a Shared File System

Function

This API is used to shrink the capacity of a shared file system.



This API is an asynchronous API. If the returned status code is **202**, the API request is successfully delivered and received. Later, you can refer to [8.2.4 Querying Details About a Shared File System](#) to identify whether the shared file system is shrunk successfully.

URI

- POST /v2/{project_id}/shares/{share_id}/action
- Parameter description

Parameter	Mandatory	Type	Description
share_id	Yes	String	Specifies the ID of the shared file system.
project_id	Yes	String	Specifies the project ID of the operator. For details about how to obtain the project ID, see 13.5 Obtaining a Project ID .

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
os-shrink	Yes	Object	Specifies the os-shrink object.

- Description of field **os-shrink**

Parameter	Mandatory	Type	Description
new_size	Yes	Integer	Specifies the new capacity (GB) of the shared file system.

- Example request

Reducing the capacity of a shared file system to 1 GB:

```
{  
    "os-shrink": {  
        "new_size": 1  
    }  
}
```

Response

- Parameter description

None

- Example response

None

Status Codes

- Normal

202

- Abnormal

Status Code	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.

Status Code	Description
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.
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	Failed to complete the request because of an internal service error.
501 Not Implemented	Failed to complete the request because the server does not support the requested function.
502 Bad Gateway	Failed to complete the request because the request is invalid.
503 Service Unavailable	Failed to complete the request because the service is unavailable.
504 Gateway Timeout	A gateway timeout error occurred.

8.6 Tag Management

8.6.1 Adding a Tag to a Shared File System

Function

This API is used to add a tag to a specified shared file system.

A shared file system can have a maximum of 10 tags.

The keys of multiple tags added to a shared file system must be unique.

This API is idempotent. If the key to be added has already been added to the shared file system, the tag is updated.

URI

- POST /v2/{project_id}/sfs/{share_id}/tags
- Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID of the operator. For details about how to obtain the project ID, see 13.5 Obtaining a Project ID .
share_id	Yes	String	Specifies the ID of the shared 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
tag	Yes	Resource_tag	Specifies the tag.

- Description of field **resource_tag**

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. The value can contain a maximum of 36 characters. The key cannot be left blank and cannot contain non-printable ASCII characters (0-31) or the following characters: =*<>\, /
value	Yes	String	Specifies the tag value. The value contains a maximum of 43 characters and can be an empty string. It cannot contain non-printable ASCII characters (0-31) or the following characters: =*<>\, /

- Example request

Adding a tag (key1, value1) to a shared file system

```
{  
    "tag" : {  
        "key" : "key1",  
        "value" : "value1"  
    }  
}
```

Response

- Parameter description
None
- Example response
None

Status Codes

- Normal
204
- Abnormal

Status Code	Description
400 Bad Request	Invalid value.
401 Unauthorized	Authentication failed.
403 Forbidden	Access to the requested page is forbidden.
404 Not Found	The requested resource was not found.
500 Internal Server Error	The request is not completed because of a service error.

8.6.2 Deleting a Tag from a Shared File System

Function

This API is used to delete a tag from a specified shared file system.

NOTE

If the key to be deleted does not exist in the shared file system, error 404 is returned after API calling.

URI

- `DELETE /v2/{project_id}/sfs/{share_id}/tags/{key}`
- Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID of the operator. For details about how to obtain the project ID, see 13.5 Obtaining a Project ID .
share_id	Yes	String	Specifies the ID of the shared file system.

Parameter	Mandatory	Type	Description
key	Yes	String	<p>Specifies the tag key. The value can contain a maximum of 36 characters. The key cannot be left blank and cannot contain non-printable ASCII characters (0-31) or the following characters: =*<> \, /</p> <p>NOTICE When calling this API to delete a tag, if the tag key contains special characters that are not directly resolved by the URL, the key needs to be escaped.</p>

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
None
- Example response
None

Status Codes

- Normal
204
- Abnormal

Status Code	Description
400 Bad Request	Invalid value.
401 Unauthorized	Authentication failed.
403 Forbidden	Access to the requested page is forbidden.
404 Not Found	The requested resource was not found.

Status Code	Description
500 Internal Server Error	The request is not completed because of a service error.

8.6.3 Querying Tags of a Shared File System

Function

This API is used to query all tags of a specified shared file system.

URI

- GET /v2/{project_id}/sfs/{share_id}/tags
- Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID of the operator. For details about how to obtain the project ID, see 13.5 Obtaining a Project ID .
share_id	Yes	String	Specifies the ID of the shared 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
tags	Array of resource_tags	Specifies the list of tags.

Parameter	Type	Description
sys_tags	Array of resource_tags	<p>Only the op_service permission can obtain this field.</p> <p>1. Currently, only one resource_tag structure key is used, _sys_enterprise_project_id.</p> <p>2. Currently, key contains only one value. 0 indicates the default enterprise project.</p> <p>This field cannot be returned in non-op_service scenarios.</p>

- Description of field **resource_tag**

Parameter	Type	Description
key	String	Specifies the tag key.
value	String	Specifies the tag value.

- Example response

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

Status Codes

- Normal
 - 200
- Abnormal

Status Code	Description
400 Bad Request	Invalid value.
401 Unauthorized	Authentication failed.
403 Forbidden	Access to the requested page is forbidden.
404 Not Found	The requested resource was not found.
500 Internal Server Error	The request is not completed because of a service error.

8.6.4 Querying Tags of All File Systems of a Tenant

Function

This API is used to query the tags of all file systems of a tenant.

URI

- GET /v2/{project_id}/sfs/tags
- Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID of the operator. For details about how to obtain the project ID, see 13.5 Obtaining a Project ID .

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
tags	Array of tags	Specifies the list of tags.

- Description of the **tag** field

Parameter	Type	Description
key	String	Specifies the key of the tag.
values	Array of strings	Lists the values of the tag. The value is a list of tag values of all shared file systems of a tenant. Only one of the same tag values is displayed.

- Example response

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

Status Codes

- Normal
200
- Abnormal

Status Code	Description
400 Bad Request	Invalid value.
401 Unauthorized	Authentication failed.
403 Forbidden	Access to the requested page is forbidden.
404 Not Found	The requested resource was not found.
500 Internal Server Error	The request is not completed because of a service error.

8.6.5 Batch Adding Tags to a Shared File System

Function

This API is used to batch add tags to a shared file system.

A shared file system can have a maximum of 10 tags.

The keys of multiple tags added to a shared file system must be unique.

This API is idempotent. If the key to be added has already been added to the shared file system, the tag is updated.

URI

- POST /v2/{project_id}/sfs/{share_id}/tags/action
- Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID of the operator. For details about how to obtain the project ID, see 13.5 Obtaining a Project ID .

Parameter	Mandatory	Type	Description
share_id	Yes	String	Specifies the ID of the shared 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
action	Yes	String	Specifies the operation identifier. Possible values are create and delete . Use create to batch add tags to a specified shared file system.
tags	No	Array of resource_tags	Specifies the tag list. This parameter is mandatory when the tenant permission is used. For the op_service permission, choose either this field or sys_tags .
sys_tags	No	Array of resource_tags	Specifies the system tag list. This field is available only to the op_service permission. Choose either this field or tags . Only one resource_tag structure key, _sys_enterprise_project_id , is used in TMS calls. The value is ID or 0 . Value 0 indicates the default enterprise project.

- Description of field **resource_tag**

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. The value can contain a maximum of 36 characters. The key cannot be left blank and cannot contain non-printable ASCII characters (0-31) or the following characters: =*<>\\ /

Parameter	Mandatory	Type	Description
value	Yes	String	Specifies the tag value. The value contains a maximum of 43 characters and can be an empty string. It cannot contain non-printable ASCII characters (0-31) or the following characters: =*<>\\ /

- Example request

Batch adding tags (key1, value1 and key2, value2) to a shared file system

```
{  
    "action": "create",  
    "tags": [  
        {  
            "key": "key1",  
            "value": "value1"  
        },  
        {  
            "key": "key2",  
            "value": "value2"  
        }  
    ]  
}
```

Response

- Parameter description
None
- Example response
None

Status Codes

- Normal
204
- Abnormal

Status Code	Description
400 Bad Request	Invalid value.
401 Unauthorized	Authentication failed.
403 Forbidden	Access to the requested page is forbidden.
404 Not Found	The requested resource was not found.
500 Internal Server Error	The request is not completed because of a service error.

8.6.6 Batch Deleting Tags from a Shared File System

Function

This API is used to batch delete tags from a specified shared file system.

This API is idempotent. If the tags to be deleted do not exist on the shared file system, the deletion is regarded as successful by default.

URI

- POST /v2/{project_id}/sfs/{share_id}/tags/action
- Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID of the operator. For details about how to obtain the project ID, see 13.5 Obtaining a Project ID .
share_id	Yes	String	Specifies the ID of the shared 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
action	Yes	String	Specifies the operation identifier. Possible values are create and delete . Use delete to batch delete tags from a specified shared file system.
tags	Yes	Array of resource_tags	Specifies the tag list.

- Description of field **resource_tag**

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. The value can contain a maximum of 36 characters. This parameter cannot be left blank.
value	No	String	Specifies the tag value. The value contains a maximum of 43 characters and can be an empty string. If the value is not an empty string, the tag is located and deleted based on the key and value. If the value is an empty string, the tag is located and deleted based on the key.

- Example request

Batch deleting tags (key1, value1; key2; key3) from a shared file system

```
{  
    "action": "delete",  
    "tags": [  
        {  
            "key": "key1",  
            "value": "value1"  
        },  
        {  
            "key": "key2"  
        },  
        {  
            "key": "key3",  
            "value": ""  
        }  
    ]  
}
```

Response

- Parameter description
None
- Example response
None

Status Codes

- Normal
204
- Abnormal

Status Code	Description
400 Bad Request	Invalid value.
401 Unauthorized	Authentication failed.

Status Code	Description
403 Forbidden	Access to the requested page is forbidden.
404 Not Found	The requested resource was not found.
500 Internal Server Error	The request is not completed because of a service error.

8.6.7 Querying Shared File Systems by Tag

Function

This API is used to query shared file systems by tag.

URI

- POST /v2/{project_id}/sfs/resource_instances/action
- Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID of the operator. For details about how to obtain the project ID, see 13.5 Obtaining a Project ID .

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
offset	No	String	Specifies the index location. The value is a character string consisting of 0 and positive integers. The default value is 0. The first record in the query result is the offset+1 record that meets the query criteria.

Parameter	Mandatory	Type	Description
limit	No	String	<p>Specifies the maximum number of query records. The value is a character string consisting of integers. The default value is 1000. The value ranges from 1 to 1000.</p> <p>The number of returned records cannot exceed the value of limit.</p>
action	Yes	String	<p>Specifies the operation identifier. Possible values are filter and count.</p> <p>Use filter to query details of a shared file system using tags.</p>
matches	No	Array of matches	Specifies the file system query field. If this parameter is left null, all shared file systems of the tenant are searched by default.
tags	No	Array of tags	<p>Specifies the tag search field, which is a list of tags. Only shared file systems containing all the listed tags can be returned. Tags in this search criteria are in the AND relationship.</p> <p>Specifically, a shared file system can be searched only when it meets all the tag search criteria. In the key-values structure of each tag search condition, tag values are in the OR relationship.</p> <p>If the value of tags is not specified, all shared file systems meet the requirement of this tag search field.</p> <p>This field contains a maximum of 10 tag keys and each tag key has a maximum of 10 tag values. The tag value corresponding to each tag key can be an empty array but the structure cannot be missing. Tag keys must be unique. Tag values in a key-values structure must be unique.</p>

Parameter	Mandatory	Type	Description
tags_any	No	Array of tags	Specifies the tag search field, which is a list of tags. Shared file systems that contain any listed tag will be returned. Tags in this search criteria are in the OR relationship. Specifically, a shared file system can be searched as long as it meets one tag search condition. In the key-values structure of each tag search condition, tag values are in the OR relationship. If the value of tags_any is not specified, all shared file systems meet the requirement of this tag search field. This field contains a maximum of 10 tag keys and each tag key has a maximum of 10 tag values. The tag value corresponding to each tag key can be an empty array but the structure cannot be missing. Tag keys must be unique. Tag values in a key-values structure must be unique.
not_tags	No	Array of tags	Specifies the tag search field, which is a list of tags. Only shared file systems that contain none of the listed tags will be returned. Tags in this search criteria are in the NOR relationship. Specifically, a shared file system can be searched only when it does not meet any tag search criteria. In the key-values structure of each tag search condition, tag values are in the OR relationship. If the value of not_tags is not specified, all shared file systems meet the requirement of this tag search field. This field contains a maximum of 10 tag keys and each tag key has a maximum of 10 tag values. The tag value corresponding to each tag key can be an empty array but the structure cannot be missing. Tag keys must be unique. Tag values in a key-values structure must be unique.

Parameter	Mandatory	Type	Description
not_tags_any	No	Array of tags	Specifies the tag search field, which is a list of tags. Shared file systems that do not contain any of the listed tags will be returned. Tags in this search criteria are in the NAND relationship. Specifically, a shared file system can be searched as long as it does not meet one tag search condition. In the key-values structure of each tag search condition, tag values are in the OR relationship. If the value of not_tags_any is not specified, all shared file systems meet the requirement of this tag search field. This field contains a maximum of 10 tag keys and each tag key has a maximum of 10 tag values. The tag value corresponding to each tag key can be an empty array but the structure cannot be missing. Tag keys must be unique. Tag values in a key-values structure must be unique.
sys_tags	No	Array of tags	Only the op_service permission can use this field to filter resources. <ol style="list-style-type: none">Currently, TMS can invoke only one tag structure key, _sys_enterprise_project_id.Currently, key contains only one value. 0 indicates the default enterprise project.sys_tags and tenant tag filtering conditions (tags, tags_any, not_tags, and not_tags_any) cannot be used at the same time.

NOTICE

In the request parameters, tag search fields **tags**, **tags_any**, **not_tags**, and **not_tags_any** are optional and can be combined with each other. Such tag search fields are in the AND relationship.

-
- Description of the **match** field

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the key. The value is fixed to resource_name .
value	Yes	String	Specifies the value. value indicates the name of a shared file system. An empty string specifies an exact match and only shared file systems whose names are empty can be queried. A non-empty string specifies a fuzzy query (case insensitive). The value can contain a maximum of 255 characters.

- Description of the **tag** field

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the key of the tag. A tag key can contain a maximum of 127 characters. This parameter cannot be left blank.
values	Yes	Array of strings	Lists the values. Each value can contain a maximum of 255 characters. If the value is left empty, any value is matched. The values are in the OR relationship.

- Example request

Querying shared file systems using tag (key1, value2)

```
{  
    "offset": "0",  
    "limit": "100",  
    "action": "filter",  
    "matches": [  
        {"key": "resource_name",  
         "value": "share_name"}],  
    "tags": [  
        {"key": "key1",  
         "values": ["value2"]},  
        {"key": "key2",  
         "values": []}],  
    "tags_any": [  
        {"key": "key3",  
         "values": ["value3"]},  
        {"key": "key4",  
         "values": []}],  
    "not_tags": [{"key": "key5",  
                 "values": []}]}  
}
```

```
        "values": ["value5"]
    },
    "key": "key6",
    "values": []
},
"not_tags_any": [
    {
        "key": "key7",
        "values": ["value7", "value8"]
    },
    {
        "key": "key9",
        "values": []
    }
]
```

- Example request (without passing **matches**)

```
{
    "offset": "0",
    "limit": "100",
    "action": "filter",
    "tags": [
        {
            "key": "key1",
            "values": ["value2"]
        },
        {
            "key": "key2",
            "values": []
        }
]
```

- Example request (without passing **limit** and **offset**)

```
{
    "action": "filter",
    "matches": [
        {
            "key": "resource_name",
            "value": "share_name"
        }
    ],
    "tags": [
        {
            "key": "key1",
            "values": ["value2"]
        },
        {
            "key": "key2",
            "values": []
        }
]
```

- Example request (without passing **tags**, **not_tags**, **tags_any**, and **not_tags_any**)

```
{
    "offset": "0",
    "limit": "100",
    "action": "filter",
    "matches": [
        {
            "key": "resource_name",
            "value": "share_name"
        }
]
```

- Example request (with the **action** field only)

```
{
    "action": "filter"
}
```

Response

- Parameter description

Parameter	Type	Description
resources	Array of resources	Specifies the list of shared file systems that meet the query criteria.
total_count	Integer	Specifies the total number of shared file systems that meet the query criteria. NOTE total_count specifies the total number of shared file systems that meet the query criteria, instead of the number returned after you set offset and limit .

- Data structure of the **resource** field

Parameter	Type	Description
resource_id	String	Specifies the ID of the shared file system.
resource_detail	Object	Specifies the resource details. The value is a resource object, used for extension. This value is left empty by default.
tags	Array of resource_tags	Specifies the list of tags. If no tags exist, the value is an empty array by default.
sys_tags	Array of tags	Only the op_service permission can obtain this field. <ol style="list-style-type: none">Currently, only one tag structure key is used, _sys_enterprise_project_id.Currently, key contains only one value. 0 indicates the default enterprise project. This field cannot be returned in non-op_service scenarios.
resource_name	String	Specifies the resource name.

- Data structure of the **resource_tag** field

Parameter	Type	Description
key	String	Specifies the tag key. The value can contain a maximum of 36 characters. This parameter cannot be left blank. It cannot contain non-printable ASCII characters (0-31) or the following characters: =*<>\, /

Parameter	Type	Description
value	String	Specifies the tag value. The value contains a maximum of 43 characters and can be an empty string. It cannot contain non-printable ASCII characters (0-31) or the following characters: =*<>\, /

- Example response

```
{  
    "resources": [  
        {  
            "resource_detail": {},  
            "resource_id": "b1f3f06f-344d-446b-a4bf-647a225debae",  
            "resource_name": "share_name",  
            "tags": [  
                {  
                    "key": "key1",  
                    "value": "value1"  
                },  
                {  
                    "key": "key2",  
                    "value": "value2"  
                }  
            ],  
            "total_count": 1  
        }  
    ]  
}
```

Status Codes

- Normal
200
- Abnormal

Status Code	Description
400 Bad Request	Invalid value.
401 Unauthorized	Authentication failed.
403 Forbidden	Access to the requested page is forbidden.
404 Not Found	The requested resource was not found.
500 Internal Server Error	The request is not completed because of a service error.

8.6.8 Querying the Number of Shared File Systems by Tag

Function

This API is used to query the number of shared file systems by tag.

URI

- POST /v2/{project_id}/sfs/resource_instances/action
- Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID of the operator. For details about how to obtain the project ID, see 13.5 Obtaining a Project ID .

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
action	Yes	String	Specifies the operation identifier. Possible values are filter and count . Use count to query the number of share instances based on tags.
matches	No	Array of matches	Specifies the file system query field. If this parameter is left null, all shared file systems of the tenant are searched by default.

Parameter	Mandatory	Type	Description
tags	No	Array of tags	<p>Specifies the tag search field, which is a list of tags. Only shared file systems containing all the listed tags can be returned. Tags in this search criteria are in the AND relationship.</p> <p>Specifically, a shared file system can be searched only when it meets all the tag search criteria. In the key-values structure of each tag search condition, tag values are in the OR relationship.</p> <p>If the value of tags is not specified, all shared file systems meet the requirement of this tag search field.</p> <p>This field contains a maximum of 10 tag keys and each tag key has a maximum of 10 tag values. The tag value corresponding to each tag key can be an empty array but the structure cannot be missing. Tag keys must be unique. Tag values in a key-values structure must be unique.</p>
tags_any	No	Array of tags	<p>Specifies the tag search field, which is a list of tags. Shared file systems that contain any listed tag will be returned.</p> <p>Tags in this search criteria are in the OR relationship. Specifically, a shared file system can be searched as long as it meets one tag search condition. In the key-values structure of each tag search condition, tag values are in the OR relationship.</p> <p>If the value of tags_any is not specified, all shared file systems meet the requirement of this tag search field.</p> <p>This field contains a maximum of 10 tag keys and each tag key has a maximum of 10 tag values. The tag value corresponding to each tag key can be an empty array but the structure cannot be missing.</p> <p>Tag keys must be unique. Tag values in a key-values structure must be unique.</p>

Parameter	Mandatory	Type	Description
not_tags	No	Array of tags	Specifies the tag search field, which is a list of tags. Only shared file systems that contain none of the listed tags will be returned. Tags in this search criteria are in the NOR relationship. Specifically, a shared file system can be searched only when it does not meet any tag search criteria. In the key-values structure of each tag search condition, tag values are in the OR relationship. If the value of not_tags is not specified, all shared file systems meet the requirement of this tag search field. This field contains a maximum of 10 tag keys and each tag key has a maximum of 10 tag values. The tag value corresponding to each tag key can be an empty array but the structure cannot be missing. Tag keys must be unique. Tag values in a key-values structure must be unique.
not_tags_any	No	Array of tags	Specifies the tag search field, which is a list of tags. Shared file systems that do not contain any of the listed tags will be returned. Tags in this search criteria are in the NAND relationship. Specifically, a shared file system can be searched as long as it does not meet one tag search condition. In the key-values structure of each tag search condition, tag values are in the OR relationship. If the value of not_tags_any is not specified, all shared file systems meet the requirement of this tag search field. This field contains a maximum of 10 tag keys and each tag key has a maximum of 10 tag values. The tag value corresponding to each tag key can be an empty array but the structure cannot be missing. Tag keys must be unique. Tag values in a key-values structure must be unique.

Parameter	Mandatory	Type	Description
sys_tags	No	Array of tags	<p>Only the op_service permission can use this field to filter resources.</p> <ol style="list-style-type: none">Currently, TMS can invoke only one tag structure key, _sys_enterprise_project_id.Currently, key contains only one value. 0 indicates the default enterprise project.sys_tags and tenant tag filtering conditions (tags, tags_any, not_tags, and not_tags_any) cannot be used at the same time.

NOTICE

In the request parameters, tag search fields **tags**, **tags_any**, **not_tags**, and **not_tags_any** are optional and can be combined with each other. Such tag search fields are in the AND relationship.

- Description of the **match** field

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the key. The value is fixed to resource_name .
value	Yes	String	Specifies the value. value indicates the name of a shared file system. An empty string specifies an exact match and only shared file systems whose names are empty can be queried. A non-empty string specifies a fuzzy query (case insensitive). The value can contain a maximum of 255 characters.

- Description of the **tag** field

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the key of the tag. A tag key can contain a maximum of 127 characters. This parameter cannot be left blank.

Parameter	Mandatory	Type	Description
values	Yes	Array of strings	Lists the values. Each value can contain a maximum of 255 characters. If the value is left empty, any value is matched. The values are in the OR relationship.

- Example request

Querying the number of shared file systems (file system name **share_name**) using tag (key1, value2)

```
{
    "action": "count",
    "matches": [
        {
            "key": "resource_name",
            "value": "share_name"
        }
    ],
    "tags": [
        {
            "key": "key1",
            "values": ["value2"]
        },
        {
            "key": "key2",
            "values": []
        }
    ],
    "tags_any": [
        {
            "key": "key3",
            "values": ["value3"]
        },
        {
            "key": "key4",
            "values": []
        }
    ],
    "not_tags": [
        {
            "key": "key5",
            "values": ["value5"]
        },
        {
            "key": "key6",
            "values": []
        }
    ],
    "not_tags_any": [
        {
            "key": "key7",
            "values": ["value7", "value8"]
        },
        {
            "key": "key9",
            "values": []
        }
    ]
}
```

- Example request (without passing **matches**)

Querying the number of shared file systems using tag (key1, value2)

```
{
    "action": "count",
    "tags": [
        {
            "key": "key1",
            "values": ["value2"]
        },
        {
            "key": "key2",
            "values": []
        }
    ]
}
```

- Example request (without passing **tags**, **not_tags**, **tags_any**, and **not_tags_any**)

```
Querying the number of shared file systems (file system name share_name)
{
    "action": "count",
    "matches": [
        {
            "key": "resource_name",
            "value": "share_name"
        }
    ]
}
```

- Example request (with the **action** field only)

```
Querying the total number of shared file systems of the tenant
{
    "action": "count"
}
```

Response

- Parameter description

Parameter	Type	Description
total_count	Integer	Specifies the total number of shared file systems that meet the query criteria.

- Example response

```
{
    "total_count":1
}
```

Status Codes

- Normal
200
- Abnormal

Status Code	Description
400 Bad Request	Invalid value.
401 Unauthorized	Authentication failed.
403 Forbidden	Access to the requested page is forbidden.
404 Not Found	The requested resource was not found.
500 Internal Server Error	The request is not completed because of a service error.

8.7 AZ

8.7.1 Querying Availability Zones

Function

This API is used to list availability zones (AZs).

NOTE

Query the API version. For details, see [Querying All API Versions](#). If the value of **version** is less than or equal to 2.6, add the request header **X-Openstack-Manila-Api-Version: Micro version number**, for example, **X-Openstack-Manila-Api-Version: 2.4**.

URI

- GET /v2/{project_id}/availability-zones?share_az={share_az}
- Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID of the operator. For details about how to obtain the project ID, see 13.5 Obtaining a Project ID .
share_az	No (query parameter)	Boolean	If this parameter is set to true , the current tenant can query AZs where shared file systems can be created. If this parameter is set to false , all AZs can be queried, regardless of whether shared file systems can be created there.

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
availability_zones	Array of objects	List of availability zones

- Description of field **availability_zone**

Parameter	Type	Description
id	String	Specifies the ID of the AZ.
name	String	Specifies the AZ name.
created_at	String	Specifies the creation time of an AZ.
updated_at	String	Specifies the modification time of an AZ.

- Example response

```
{  
  "availability_zones": [  
    {  
      "updated_at": null,  
      "created_at": "2018-07-10T19:11:49.831107",  
      "id": "ddafcb71-face-4526-a637-9768d19b20f3",  
      "name": "az1.dc1"  
    }  
  ]  
}
```

Status Codes

- Normal
 - 200
- Abnormal

Status Code	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.

Status Code	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 request is invalid.
503 Service Unavailable	The request is not completed because the service is unavailable.
504 Gateway Timeout	A gateway timeout error occurred.

9 SFS Turbo APIs

9.1 Lifecycle Management

9.1.1 Deleting a File System

Function

This API is used to delete a file system.

URI

DELETE /v1/{project_id}/sfs-turbo/shares/{share_id}

Table 9-1 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID
share_id	Yes	String	File system ID

Request Parameters

Table 9-2 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Account token
Content-Type	Yes	String	MIME type

Response Parameters

None

Example Requests

Deleting the file system whose ID is **77ba6f4b-6365-4895-8dda-bc7142af4dde**

```
DELETE HTTPS://{{endpoint}}/v1/{{project_id}}/sfs-turbo/shares/77ba6f4b-6365-4895-8dda-bc7142af4dde
```

Example Responses

None

Status Codes

Status Code	Description
202	File system deletion request delivered.

Error Codes

See [Error Codes](#).

9.1.2 Querying Details About a File System

Function

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

URI

```
GET /v1/{{project_id}}/sfs-turbo/shares/{{share_id}}
```

Table 9-3 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID
share_id	Yes	String	File system ID

Request Parameters

Table 9-4 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Account token
Content-Type	Yes	String	MIME type

Response Parameters

Status code: 200

Table 9-5 Response body parameters

Parameter	Type	Description
action_progress	ActionProgress object	Task progress of the SFS Turbo file system, for example, the file system creation progress
version	String	Version of the SFS Turbo file system
avail_capacity	String	Available capacity of the SFS Turbo file system, in GB
availability_zone	String	Code of the AZ where the SFS Turbo file system resides
az_name	String	Name of the AZ where the SFS Turbo file system resides
created_at	String	Time when the file system was created. UTC time, for example: 2018-11-19T04:02:03
crypt_key_id	String	ID of the encryption key specified by the user. This parameter is not returned for non-encrypted file systems.
expand_type	String	File system extension type. If the requested file system is an enhanced file system, bandwidth will be returned. Or, this parameter is not returned.
export_location	String	Location where the SFS Turbo file system is mounted
id	String	ID of the SFS Turbo file system
name	String	Name of the SFS Turbo file system specified during creation

Parameter	Type	Description
pay_model	String	Billing mode of the SFS Turbo file system. Value 0 indicates pay-per-use, and 1 indicates yearly/monthly subscription. Enumeration values: <ul style="list-style-type: none">• 0• 1
region	String	Region where the SFS Turbo file system resides
security_group_id	String	ID of the security group specified by the user
share_proto	String	Protocol used by the SFS Turbo file system. The valid value is NFS .
share_type	String	Storage class of the SFS Turbo file system. Valid values are STANDARD and PERFORMANCE .
size	String	Total capacity of the SFS Turbo file system, in GB
status	String	SFS Turbo file system status. The value can be as follows: 100 (creating), 200 (available), 303 (creation failed), and 800 (frozen)
sub_status	String	Sub-status of the SFS Turbo file system. The value can be as follows: 121 (expanding capacity), 132 (changing security group), 137 (adding authorized VPC), 138 (deleting VPC), 150* (adding target), 151 (deleting target) 221 (expansion succeeded), 232 (security group changed), 237 (VPC added), 238 (VPC deleted), 250 (target added), 251* (target deleted) 321 (expansion failed), 332 (changing security group failed), 337 (adding VPC failed), 338 (deleting VPC failed), 350 (adding target failed), 351 (deleting target failed)
subnet_id	String	ID of the subnet specified by the user
vpc_id	String	ID of the VPC specified by the user
enterprise_project_id	String	ID of the enterprise project to which the SFS Turbo file system is added
tags	Array of ResourceTag objects	Tag list

Table 9-6 ActionProgress

Parameter	Type	Description
CREATING	String	File system creation progress

Table 9-7 ResourceTag

Parameter	Type	Description
key	String	<p>Tag key. It can contain a maximum of 36 characters. It cannot be left blank and cannot contain the following characters: ASCII (0-31), equal signs (=), asterisks (*), left angle brackets (<), right angle brackets (>), backslashes (\), commas (,), vertical bars (), and slashes (/). It can contain only letters, digits, hyphens (-), and underscores (_).</p> <p>Minimum: 1 Maximum: 36</p>
value	String	<p>Tag value. It can contain a maximum of 43 characters and can be left blank. It cannot contain the following characters: ASCII (0-31), equal signs (=), asterisks (*), left angle brackets (<), right angle brackets (>), backslashes (\), commas (,), vertical bars (), and slashes (/). It can contain only letters, digits, hyphens (-), and underscores (_).</p> <p>Minimum: 0 Maximum: 43</p>

Example Requests

Querying the file system whose ID is **77ba6f4b-6365-4895-8dda-bc7142af4dde**

```
GET HTTPS://[endpoint]/v1/[project_id]/sfs-turbo/shares/77ba6f4b-6365-4895-8dda-bc7142af4dde
```

Example Responses

Status code: 200

Response body for querying a file system

```
{  
    "id" : "8fba8253-c914-439d-ae8b-d5c89d0bf5e8",  
    "name" : "sfs-turbo-8468",  
    "status" : "200",  
    "version" : "1.0.0",  
}
```

```
"region" : "cn-north-4",
"availability_zone" : "cn-north-4a",
"az_name" : "cn-north-4a",
"created_at" : "2018-11-19T04:02:03",
"export_location" : "192.168.0.90:/",
"action_progress" : { },
"share_type" : "STANDARD",
"sub_status" : "221",
"vpc_id" : "b24e39e1-bc0c-475b-ae0c-aef9cf240af3",
"subnet_id" : "86fc01ea-8ec8-409d-ba7a-e0ea16d4fd97",
"security_group_id" : "50586458-aec9-442c-bb13-e08ddc6f1b7a",
"size" : "600.00",
"avail_capacity" : "600.00",
"pay_model" : "0",
"share_proto" : "NFS"
}
```

Status Codes

Status Code	Description
200	Response body for querying a file system

Error Codes

See [Error Codes](#).

9.1.3 Updating a File System

Function

This API is used to update the cold data eviction period of a file system.

Constraints

This API is only supported for SFS Turbo HPC file systems.

URI

PUT /v1/{project_id}/sfs-turbo/shares/{share_id}

Table 9-8 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID
share_id	Yes	String	File system ID

Request Parameters

Table 9-9 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Account token
Content-Type	Yes	String	MIME type

Table 9-10 Request body parameters

Parameter	Mandatory	Type	Description
action	Yes	String	Operation type. Only config_gc_time is supported currently.
gc_time	Yes	Integer	Cold data eviction duration. The unit is hour. The value ranges from 1 to 100000000 . The default value is 60 hours.

Response Parameters

Status code: 200

Table 9-11 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID

Table 9-12 Response body parameters

Parameter	Type	Description
gc_time	Integer	File system cold data eviction duration

Status code: 404

Table 9-13 Response body parameters

Parameter	Type	Description
errCode	String	Error code Minimum: 8 Maximum: 36
errMsg	String	Error description Minimum: 2 Maximum: 512

Status code: 500

Table 9-14 Response body parameters

Parameter	Type	Description
errCode	String	Error code Minimum: 8 Maximum: 36
errMsg	String	Error description Minimum: 2 Maximum: 512

Example Requests

```
{  
    "action" : "config_gc_time",  
    "gc_time" : 5  
}
```

Example Responses

Status code: 200

Task submitted

```
{  
    "gc_time" : 10  
}
```

Status code: 404

Error response

```
{  
    "errCode" : "SFS.TURBO.0002",  
    "errMsg" : "share not exist"  
}
```

Status code: 500

Error response

```
{  
  "errCode" : "SFS.TURBO.0005",  
  "errMsg" : "Internal server error"  
}
```

Status Codes

Status Code	Description
200	Task submitted
404	Error response
500	Error response

Error Codes

See [Error Codes](#).

9.1.4 Creating a File System

Function

This API is used to create a file system.

URI

POST /v1/{project_id}/sfs-turbo/shares

Table 9-15 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID

Request Parameters

Table 9-16 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Account token
Content-Type	Yes	String	MIME type

Table 9-17 Request body parameters

Parameter	Mandatory	Type	Description
share	Yes	Share object	Request body for creating a file system
bss_param	No	BssInfo object	Yearly/Monthly billing mode. This parameter is mandatory.

Table 9-18 Share

Parameter	Mandatory	Type	Description
availability_zone	Yes	String	Code of the AZ where the file system resides
description	No	String	Description of the file system, which can contain 0 to 255 characters. This parameter is not supported by the current version. Minimum: 0 Maximum: 255
enterprise_project_id	No	String	ID of the enterprise project to which the file system will be added
metadata	No	Metadata object	Metadata of the file system. The value consists of key and value pairs as a directory of strings.
name	Yes	String	Name of the SFS Turbo file system. The name contains 4 to 64 characters and must start with a letter. It can contain letters (case insensitive), digits, hyphens (-), and underscores (_), and cannot contain other special characters. Minimum: 4 Maximum: 64
security_group_id	Yes	String	Security group ID of a tenant in a region

Parameter	Mandatory	Type	Description
share_proto	Yes	String	File sharing protocol. The valid value is NFS . Network File System (NFS) is a distributed file system protocol that allows different computers and operating systems to share data over a network.
share_type	Yes	String	File system type. Valid values are STANDARD and PERFORMANCE . General: Use STANDARD for Standard and Standard Enhanced file systems, and PERFORMANCE for Performance and Performance Enhanced file systems. HPC: This field is not verified. Use either STANDARD or PERFORMANCE . HPC Cache: This field is not verified. Use either STANDARD or PERFORMANCE .

Parameter	Mandatory	Type	Description
size	Yes	Integer	<p>For a General (Standard or Performance) file system, the capacity ranges from 500 to 32768, in GB. For a General (Standard Enhanced or Performance Enhanced) file system, whose expand_type field under metadata is set to bandwidth, the capacity ranges from 10240 to 327680, in GiB. For an HPC file system, whose expand_type field under metadata is set to hpc, the capacity ranges from 3686 (or 1228) to 1048576, in GiB. For an HPC file system of the 20 MB/s/TiB storage class, the minimum capacity is 3686 GiB. For an HPC file system with another storage class, the minimum capacity is 1228 GiB. The capacity of an HPC file system must be a multiple of 1.2 TiB, and the value must be rounded down after being converted to GiB. For example, use 3686 GiB for a 3.6 TiB HPC file system, 4915 GiB for a 4.8 TiB file system, and 8601 GiB for a 8.4 TiB file system. For an HPC Cache file system, whose expand_type field under metadata is set to hpc_cache, the capacity ranges from 4096 to 1048576, in GiB. The minimum capacity varies depending on the bandwidth, and the expansion increment is 1 TiB. For example, if the bandwidth is 2 GB/s, the minimum capacity is 4 TiB, which is 4,096 GiB. If the bandwidth is 4 GB/s, the minimum capacity is 8 TiB, which is 8,192 GiB. If the bandwidth is 8 GB/s, the minimum capacity is 16 TiB, which is 16,384 GiB.</p> <p>Minimum: 500</p> <p>Maximum: 1048576</p>

Parameter	Mandatory	Type	Description
subnet_id	Yes	String	Subnet ID of a tenant in a VPC
vpc_id	Yes	String	VPC ID of a tenant in a region
backup_id	No	String	Backup ID. This parameter is mandatory if you create a file system from a backup.
tags	No	Array of ResourceTag objects	Tag list

Table 9-19 Metadata

Parameter	Mandatory	Type	Description
crypt_key_id	No	String	ID of a KMS professional key. This parameter is used if you want to create an encrypted file system.
dedicated_flavor	No	String	VM flavor used for creating a dedicated file system
dedicated_storage_id	No	String	ID of the dedicated distributed storage used when creating a dedicated file system
expand_type	No	String	Extension type. This parameter is mandatory when an enhanced, HPC, or HPC Cache file system is created. Use bandwidth if you are creating an enhanced (Standard - Enhanced or Performance - Enhanced) file system. Use hpc if you are creating an HPC file system. Use hpc_cache if you are creating an HPC Cache file system.

Parameter	Mandatory	Type	Description
hpc_bw	No	String	File system bandwidth specifications. This parameter is mandatory when an HPC or HPC Cache file system is created. Use 20M , 40M , 125M , 250M , 500M , or 1000M if you are creating an HPC file system. Use 2G , 4G , 8G , 16G , 24G , 32G , or 48G if you are creating an HPC Cache file system.

Table 9-20 ResourceTag

Parameter	Mandatory	Type	Description
key	Yes	String	<p>Tag key. It can contain a maximum of 36 characters. It cannot be left blank and cannot contain the following characters: ASCII (0-31), equal signs (=), asterisks (*), left angle brackets (<), right angle brackets (>), backslashes (\), commas (,), vertical bars (), and slashes (/). It can contain only letters, digits, hyphens (-), and underscores (_).</p> <p>Minimum: 1 Maximum: 36</p>
value	Yes	String	<p>Tag value. It can contain a maximum of 43 characters and can be left blank. It cannot contain the following characters: ASCII (0-31), equal signs (=), asterisks (*), left angle brackets (<), right angle brackets (>), backslashes (\), commas (,), vertical bars (), and slashes (/). It can contain only letters, digits, hyphens (-), and underscores (_).</p> <p>Minimum: 0 Maximum: 43</p>

Table 9-21 BssInfo

Parameter	Mandatory	Type	Description
is_auto_renew	No	Long	Whether to enable automatic renewal Enumeration values: <ul style="list-style-type: none">• 0• 1
period_num	Yes	Long	Yearly/Monthly subscription terms Minimum: 1 Maximum: 11
period_type	Yes	Long	Yearly/Monthly subscription type. The value can be 2 (monthly subscription) or 3 (yearly subscription). Enumeration values: <ul style="list-style-type: none">• 2• 3
is_auto_pay	No	Long	Whether to automatically pay for the order Enumeration values: <ul style="list-style-type: none">• 0• 1

Response Parameters

Status code: 202

Table 9-22 Response body parameters

Parameter	Type	Description
id	String	ID of the created SFS Turbo file system
name	String	Name of the created SFS Turbo file system
status	String	Status of the SFS Turbo file system

Example Requests

- General: Creating a 500-GB SFS Turbo Standard file system, with file system name set to **sfs-turbo-test**, protocol **NFS**, AZ code **cn-north-4a**, security group ID **8c4ebbd0-6edf-4aae-8353-xxx**, subnet ID **b8884abe-f47b-4917-9f6c-xxx**, and VPC ID **d651ea2b-2b20-4c6d-8bbf-xxx**

POST HTTPS://[endpoint]/v1/[project_id]/sfs-turbo/shares

```
{  
  "share": {  
    "name": "sfs-turbo-test",  
    "availability_zone": "cn-north-4a",  
    "security_group_id": "8c4ebbd0-6edf-4aae-8353-xxx",  
    "share_proto": "NFS",  
    "share_type": "STANDARD",  
    "size": 500,  
    "subnet_id": "b8884abe-f47b-4917-9f6c-xxx",  
    "vpc_id": "d651ea2b-2b20-4c6d-8bbf-xxx"  
  }  
}
```

- General + dedicated scenario: Creating a 500-GB SFS Turbo Standard file system, with file system name set to **sfs-turbo-dedicated-test**, protocol **NFS**, AZ code **cn-north-4a**, dedicated storage pool ID **198f0704-xxx-4d85-xxx-c25caa4d3264**, dedicated ECS flavor **c6.xlarge.2**, security group ID **8c4ebbd0-6edf-4aae-8353-xxx**, subnet ID **b8884abe-f47b-4917-9f6c-xxx**, and VPC ID **d651ea2b-2b20-4c6d-8bbf-xxx**

POST HTTPS://[endpoint]/v1/[project_id]/sfs-turbo/shares

```
{  
  "share": {  
    "name": "sfs-turbo-dedicated-test",  
    "availability_zone": "cn-north-4a",  
    "security_group_id": "8c4ebbd0-6edf-4aae-8353-xxx",  
    "share_proto": "NFS",  
    "share_type": "STANDARD",  
    "size": 500,  
    "subnet_id": "b8884abe-f47b-4917-9f6c-xxx",  
    "vpc_id": "d651ea2b-2b20-4c6d-8bbf-xxx",  
    "metadata": {  
      "dedicated_flavor": "c6.xlarge.2",  
      "dedicated_storage_id": "198f0704-xxx-4d85-xxx-c25caa4d3264"  
    }  
  }  
}
```

- HPC: Creating a 3,686-GB SFS Turbo HPC file system, with file system name set to **sfs-turbo-hpc-test**, protocol **NFS**, file system specifications **125 MB/s/TiB**, AZ code **cn-north-4a**, security group ID **8c4ebbd0-6edf-4aae-8353-xxx**, subnet ID **b8884abe-f47b-4917-9f6c-xxx**, and VPC ID **d651ea2b-2b20-4c6d-8bbf-xxx**

POST HTTPS://[endpoint]/v1/[project_id]/sfs-turbo/shares

```
{  
  "share": {  
    "name": "sfs-turbo-test",  
    "availability_zone": "cn-north-4a",  
    "security_group_id": "8c4ebbd0-6edf-4aae-8353-xxx",  
    "share_proto": "NFS",  
    "share_type": "STANDARD",  
    "size": 3686,  
    "subnet_id": "b8884abe-f47b-4917-9f6c-xxx",  
    "vpc_id": "d651ea2b-2b20-4c6d-8bbf-xxx",  
    "metadata": {  
      "expand_type": "hpc",  
    }  
  }  
}
```

- ```
 "hpc_bw" : "125M"
 }
}
}

● HPC Cache: Creating a 4,096-GB SFS Turbo HPC Cache file system, with file system name set to sfs-turbo-hpccache-test, protocol NFS, file system bandwidth 2 GB/s, AZ code cn-north-4a, security group ID 8c4ebbd0-6edf-4aae-8353-xxx, subnet ID b8884abe-f47b-4917-9f6c-xxx, and VPC ID d651ea2b-2b20-4c6d-8bbf-xxx
```

POST `HTTPS://[endpoint]/v1/[project_id]/sfs-turbo/shares`

```
{
 "share" : {
 "name" : "sfs-turbo-test",
 "availability_zone" : "cn-north-4a",
 "security_group_id" : "8c4ebbd0-6edf-4aae-8353-xxx",
 "share_proto" : "NFS",
 "share_type" : "PERFORMANCE",
 "size" : 4096,
 "subnet_id" : "b8884abe-f47b-4917-9f6c-xxx",
 "vpc_id" : "d651ea2b-2b20-4c6d-8bbf-xxx",
 "metadata" : {
 "expand_type" : "hpc_cache",
 "hpc_bw" : "2G"
 }
 }
}
```

## Example Responses

**Status code: 202**

Response body for creating a file system

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

## Status Codes

| Status Code | Description                              |
|-------------|------------------------------------------|
| 202         | Response body for creating a file system |

## Error Codes

See [Error Codes](#).

## 9.1.5 Obtaining the File System List

### Function

This API is used to obtain the file system list.

## URI

GET /v1/{project\_id}/sfs-turbo/shares/detail

**Table 9-23** Path Parameters

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

**Table 9-24** Query Parameters

| Parameter | Mandatory | Type | Description                                                                                                        |
|-----------|-----------|------|--------------------------------------------------------------------------------------------------------------------|
| limit     | No        | Long | Number of the file systems returned. The maximum value is <b>200</b> .<br>Minimum: <b>0</b><br>Maximum: <b>200</b> |
| offset    | No        | Long | Offset where the file system listing starts<br>Minimum: <b>0</b>                                                   |

## Request Parameters

**Table 9-25** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

## Response Parameters

Status code: 200

**Table 9-26** Response body parameters

| Parameter | Type                                       | Description                      |
|-----------|--------------------------------------------|----------------------------------|
| shares    | Array of <a href="#">ShareInfo</a> objects | List of SFS Turbo file systems   |
| count     | Integer                                    | Number of SFS Turbo file systems |

**Table 9-27 ShareInfo**

| Parameter         | Type                  | Description                                                                                                                                                                                                                               |
|-------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| action_progress   | ActionProgress object | Task progress of the SFS Turbo file system, for example, the file system creation progress                                                                                                                                                |
| version           | String                | Version of the SFS Turbo file system                                                                                                                                                                                                      |
| avail_capacity    | String                | Available capacity of the SFS Turbo file system, in GB                                                                                                                                                                                    |
| availability_zone | String                | Code of the AZ where the SFS Turbo file system resides                                                                                                                                                                                    |
| az_name           | String                | Name of the AZ where the SFS Turbo file system resides                                                                                                                                                                                    |
| created_at        | String                | Time when the file system was created. UTC time, for example: 2018-11-19T04:02:03                                                                                                                                                         |
| crypt_key_id      | String                | ID of the encryption key specified by the user. This parameter is not returned for non-encrypted file systems.                                                                                                                            |
| expand_type       | String                | File system extension type. If the requested file system is an enhanced file system, <b>bandwidth</b> will be returned. Or, this parameter is not returned.                                                                               |
| export_location   | String                | Location where the SFS Turbo file system is mounted                                                                                                                                                                                       |
| id                | String                | ID of the SFS Turbo file system                                                                                                                                                                                                           |
| name              | String                | Name of the SFS Turbo file system specified during creation                                                                                                                                                                               |
| pay_model         | String                | Billing mode of the SFS Turbo file system. Value <b>0</b> indicates pay-per-use, and <b>1</b> indicates yearly/monthly subscription.<br>Enumeration values: <ul style="list-style-type: none"><li>• <b>0</b></li><li>• <b>1</b></li></ul> |
| region            | String                | Region where the SFS Turbo file system resides                                                                                                                                                                                            |
| security_group_id | String                | ID of the security group specified by the user                                                                                                                                                                                            |
| share_proto       | String                | Protocol used by the SFS Turbo file system. The valid value is <b>NFS</b> .                                                                                                                                                               |
| share_type        | String                | Storage class of the SFS Turbo file system. Valid values are <b>STANDARD</b> and <b>PERFORMANCE</b> .                                                                                                                                     |

| Parameter             | Type                                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| size                  | String                                       | Total capacity of the SFS Turbo file system, in GB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| status                | String                                       | SFS Turbo file system status. The value can be as follows: <b>100</b> (creating), <b>200</b> (available), <b>303</b> (creation failed), and <b>800</b> (frozen)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| sub_status            | String                                       | Sub-status of the SFS Turbo file system. The value can be as follows: <b>121</b> (expanding capacity), <b>132</b> (changing security group), <b>137</b> (adding authorized VPC), <b>138</b> (deleting VPC), <b>150*</b> (adding target), <b>151</b> (deleting target) <b>221</b> (expansion succeeded), <b>232</b> (security group changed), <b>237</b> (VPC added), <b>238</b> (VPC deleted), <b>250</b> (target added), <b>251*</b> (target deleted) <b>321</b> (expansion failed), <b>332</b> (changing security group failed), <b>337</b> (adding VPC failed), <b>338</b> (deleting VPC failed), <b>350</b> (adding target failed), <b>351</b> (deleting target failed) |
| subnet_id             | String                                       | ID of the subnet specified by the user                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| vpc_id                | String                                       | ID of the VPC specified by the user                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| enterprise_project_id | String                                       | ID of the enterprise project to which the SFS Turbo file system is added                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| tags                  | Array of <a href="#">ResourceTag</a> objects | Tag list                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

**Table 9-28** ActionProgress

| Parameter | Type   | Description                   |
|-----------|--------|-------------------------------|
| CREATING  | String | File system creation progress |

**Table 9-29 ResourceTag**

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | String | <p>Tag key.</p> <p>It can contain a maximum of 36 characters.</p> <p>It cannot be left blank and cannot contain the following characters: ASCII (0-31), equal signs (=), asterisks (*), left angle brackets (&lt;), right angle brackets (&gt;), backslashes (\), commas (,), vertical bars ( ), and slashes (/). It can contain only letters, digits, hyphens (-), and underscores (_).</p> <p>Minimum: <b>1</b></p> <p>Maximum: <b>36</b></p> |
| value     | String | <p>Tag value.</p> <p>It can contain a maximum of 43 characters and can be left blank.</p> <p>It cannot contain the following characters: ASCII (0-31), equal signs (=), asterisks (*), left angle brackets (&lt;), right angle brackets (&gt;), backslashes (\), commas (,), vertical bars ( ), and slashes (/). It can contain only letters, digits, hyphens (-), and underscores (_).</p> <p>Minimum: <b>0</b></p> <p>Maximum: <b>43</b></p>  |

## Example Requests

Querying file systems in the project whose ID  
**e1e45b08f3ea4480ab4655ef9c7160ba**

GET `HTTPS://{{endpoint}}/v1/e1e45b08f3ea4480ab4655ef9c7160ba/sfs-turbo/shares/detail`

## Example Responses

**Status code: 200**

Response body for querying the file system list

```
{
 "shares" : [{
 "id" : "8fba8253-c914-439d-ae8b-d5c89d0bf5e8",
 "name" : "sfs-turbo-8468",
 "status" : "100",
 "version" : "1.0.0",
 "region" : "north-1",
 "created_at" : "2018-11-19T04:02:03",
 "export_location" : "192.168.0.90:/",
 "action_progress" : {
 "CREATING" : "22%"
 },
 "share_type" : "STANDARD",
 }]}
```

```
"sub_status" : "",
"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",
 "region" : "north-1",
 "created_at" : "2018-11-15T02:32:10",
 "export_location" : "192.168.0.197:/",
 "share_type" : "STANDARD",
 "sub_status" : "",
 "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"
}]
}
```

## Status Codes

| Status Code | Description                                     |
|-------------|-------------------------------------------------|
| 200         | Response body for querying the file system list |

## Error Codes

See [Error Codes](#).

## 9.2 Storage Capacity Management

### 9.2.1 Expanding the Capacity of a File System

#### Function

This API is used to expand the capacity of a file system.

#### URI

POST /v1/{project\_id}/sfs-turbo/shares/{share\_id}/action

**Table 9-30** Path Parameters

| Parameter  | Mandatory | Type   | Description    |
|------------|-----------|--------|----------------|
| project_id | Yes       | String | Project ID     |
| share_id   | Yes       | String | File system ID |

## Request Parameters

**Table 9-31** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

**Table 9-32** Request body parameters

| Parameter | Mandatory | Type          | Description      |
|-----------|-----------|---------------|------------------|
| extend    | Yes       | Extend object | Object of extend |

**Table 9-33** Extend

| Parameter     | Mandatory | Type                                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------|-----------|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| new_size      | Yes       | Integer                                       | <p>New capacity of the file system, in GiB</p> <p>For a General (standard or performance) file system, the capacity ranges from <b>500</b> to <b>32768</b> (in GiB), and the expansion increment is 100 GiB.</p> <p>For a General (standard enhanced or performance enhanced) file system, the capacity ranges from <b>10240</b> to <b>327680</b> (in GiB), and the expansion increment is 100 GiB.</p> <p>For an HPC file system, the capacity must be a multiple of 1.2 TiB. The value ranges from <b>3686</b> to <b>1048576</b> in GiB. The capacity must be converted to GiB and rounded down to the nearest integer. For example, use 4915 GiB for a 4.8 TiB file system and 8601 GiB for a 8.4 TiB file system.</p> <p>For an HPC Cache file system, the capacity ranges from <b>4096</b> to <b>1048576</b> (in GiB) and must be converted to GiB. The expansion increment is 1 TiB.</p> <p>Minimum: <b>500</b></p> <p>Maximum: <b>1048576</b></p> |
| new_bandwidth | No        | Long                                          | New bandwidth, in GB. Only HPC Cache file systems support bandwidth change. The following bandwidths are supported: <b>2G, 4G, 8G, 16G, 24G, 32G</b> and <b>48G</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| bss_param     | No        | <a href="#"><b>BssInfoExtended</b></a> object | Expansion billing details of yearly/monthly resources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

**Table 9-34** BssInfoExtend

| Parameter   | Mandatory | Type | Description                                                                                                                |
|-------------|-----------|------|----------------------------------------------------------------------------------------------------------------------------|
| is_auto_pay | No        | Long | Whether to enable automatic payment<br>Enumeration values: <ul style="list-style-type: none"><li>• 0</li><li>• 1</li></ul> |

## Response Parameters

**Status code: 202**

**Table 9-35** Response body parameters

| Parameter | Type   | Description                       |
|-----------|--------|-----------------------------------|
| id        | String | ID of the SFS Turbo file system   |
| name      | String | Name of the SFS Turbo file system |

## Example Requests

Expanding the capacity of a file system to 1,000 GB

```
{
 "extend": {
 "new_size": 1000
 }
}
```

## Example Responses

**Status code: 202**

Response body for expanding the capacity of a file system

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

## Status Codes

| Status Code | Description                                               |
|-------------|-----------------------------------------------------------|
| 202         | Response body for expanding the capacity of a file system |

## Error Codes

See [Error Codes](#).

# 9.3 Connection Management

## 9.3.1 Changing the Security Group Associated with a File System

### Function

This API is used to change the security group associated with an SFS Turbo file system. Security group change is an asynchronous task. You can check whether the security group is changed based on the value of **sub\_status** returned after calling the API to query details of a file system. If value **232** is returned, the security group has been changed.

### URI

POST /v1/{project\_id}/sfs-turbo/shares/{share\_id}/action

**Table 9-36** Path Parameters

| Parameter  | Mandatory | Type   | Description    |
|------------|-----------|--------|----------------|
| project_id | Yes       | String | Project ID     |
| share_id   | Yes       | String | File system ID |

### Request Parameters

**Table 9-37** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

**Table 9-38** Request body parameters

| Parameter             | Mandatory | Type                                       | Description                            |
|-----------------------|-----------|--------------------------------------------|----------------------------------------|
| change_security_group | Yes       | <a href="#">ChangeSecurityGroup</a> object | Object of <b>change_security_group</b> |

**Table 9-39** ChangeSecurityGroup

| Parameter         | Mandatory | Type   | Description                            |
|-------------------|-----------|--------|----------------------------------------|
| security_group_id | Yes       | String | ID of the security group to be changed |

## Response Parameters

Status code: 202

**Table 9-40** Response body parameters

| Parameter | Type   | Description                     |
|-----------|--------|---------------------------------|
| id        | String | ID of the SFS Turbo file system |

## Example Requests

Changing the security group of a file system (target security group ID **26f6b565-240e-43c3-8867-03f0bd975433**)

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

## Example Responses

Status code: 202

ID of the SFS Turbo file system

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

## Status Codes

| Status Code | Description                     |
|-------------|---------------------------------|
| 202         | ID of the SFS Turbo file system |

## Error Codes

See [Error Codes](#).

## 9.4 Tag Management

### 9.4.1 Deleting a Tag of a File System

#### Function

This API is used to delete a tag of a specified file system. If the key to be deleted does not exist, error 404 will be returned.

#### URI

DELETE /v1/{project\_id}/sfs-turbo/{share\_id}/tags/{key}

**Table 9-41** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | Project ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| share_id   | Yes       | String | File system ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| key        | Yes       | String | Tag key, which can contain a maximum of 36 characters. It cannot be left blank and cannot contain the following characters: ASCII (0-31), equal signs (=), asterisks (*), left angle brackets (<), right angle brackets (>), backslashes (\), commas (,), vertical bars ( ), and slashes (/). It can contain only letters, digits, hyphens (-), and underscores (_). When this API is called to delete a tag, if the tag key contains special characters that cannot be directly resolved by the URL, the key needs to be escaped. |

#### Request Parameters

**Table 9-42** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |

| Parameter    | Mandatory | Type   | Description |
|--------------|-----------|--------|-------------|
| Content-Type | Yes       | String | MIME type   |

## Response Parameters

None

## Example Requests

Deleting tags whose key is **test** for the file system whose ID is **77ba6f4b-6365-4895-8dda-bc7142af4dde**

```
DELETE HTTPS://{{endpoint}}/v1/{{project_id}}/sfs-turbo/77ba6f4b-6365-4895-8dda-bc7142af4dde/tags/test
```

## Example Responses

None

## Status Codes

| Status Code | Description              |
|-------------|--------------------------|
| 204         | File system tag deleted. |

## Error Codes

See [Error Codes](#).

## 9.4.2 Querying Tags of a File System

### Function

This API is used to query all tags of a specified file system.

### URI

```
GET /v1/{{project_id}}/sfs-turbo/{{share_id}}/tags
```

**Table 9-43** Path Parameters

| Parameter  | Mandatory | Type   | Description    |
|------------|-----------|--------|----------------|
| project_id | Yes       | String | Project ID     |
| share_id   | Yes       | String | File system ID |

## Request Parameters

**Table 9-44** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

## Response Parameters

**Status code: 200**

**Table 9-45** Response body parameters

| Parameter | Type                                               | Description                                                                                                                                                                                                                                                                                                                                                            |
|-----------|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tags      | Array of<br><a href="#">ResourceTag</a><br>objects | Tag list                                                                                                                                                                                                                                                                                                                                                               |
| sys_tags  | Array of<br><a href="#">ResourceTag</a><br>objects | Only users with the op_service permission can obtain this field.<br><br>1. This field currently contains only one resource_tag structure key, <b>_sys_enterprise_project_id</b> .<br>2. The key contains only value <b>0</b> currently, which indicates the default enterprise project.<br><br>This field is not returned for users without the op_service permission. |

**Table 9-46** ResourceTag

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | String | Tag key.<br><br>It can contain a maximum of 36 characters.<br>It cannot be left blank and cannot contain the following characters: ASCII (0-31), equal signs (=), asterisks (*), left angle brackets (<), right angle brackets (>), backslashes (\), commas (,), vertical bars ( ), and slashes (/). It can contain only letters, digits, hyphens (-), and underscores (_).<br>Minimum: <b>1</b><br>Maximum: <b>36</b> |

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value     | String | <p>Tag value.<br/>It can contain a maximum of 43 characters and can be left blank.<br/>It cannot contain the following characters: ASCII (0-31), equal signs (=), asterisks (*), left angle brackets (&lt;), right angle brackets (&gt;), backslashes (\), commas (,), vertical bars ( ), and slashes (/). It can contain only letters, digits, hyphens (-), and underscores (_).</p> <p>Minimum: <b>0</b><br/>Maximum: <b>43</b></p> |

## Example Requests

Querying tags of the file system whose ID is **77ba6f4b-6365-4895-8dda-bc7142af4dde**

GET HTTPS://[endpoint]/v1/v1/{project\_id}/sfs-turbo/77ba6f4b-6365-4895-8dda-bc7142af4dde/tags

## Example Responses

**Status code: 200**

Response body for query all tags of a specified file system

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

## Status Codes

| Status Code | Description                                                 |
|-------------|-------------------------------------------------------------|
| 200         | Response body for query all tags of a specified file system |

## Error Codes

See [Error Codes](#).

## 9.4.3 Querying Tags of All File Systems of a Tenant

### Function

This API is used to query the tags of all file systems of a tenant.

### URI

GET /v1/{project\_id}/sfs-turbo/tags

**Table 9-47** Path Parameters

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

### Request Parameters

**Table 9-48** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

### Response Parameters

Status code: 200

**Table 9-49** Response body parameters

| Parameter | Type                 | Description |
|-----------|----------------------|-------------|
| tags      | Array of Tag objects | Tag list    |

**Table 9-50** Tag

| Parameter | Type   | Description                                                                                                    |
|-----------|--------|----------------------------------------------------------------------------------------------------------------|
| key       | String | Tag key.<br>It can contain a maximum of 127 characters. It cannot be left blank.<br>Minimum: 1<br>Maximum: 127 |

| Parameter | Type             | Description                                                                                                                                                                                         |
|-----------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| values    | Array of strings | Tag values. Each value can contain a maximum of 255 characters. An empty list of values can match with any value. All values of a tag key are in the OR relationship.<br>Minimum: 0<br>Maximum: 255 |

## Example Requests

Query tags of all file systems in the project whose ID is  
**e1e45b08f3ea4480ab4655ef9c7160ba**

GET `HTTPS://[endpoint]/v1/e1e45b08f3ea4480ab4655ef9c7160ba/sfs-turbo/tags`

## Example Responses

**Status code: 200**

Response body for querying a file system

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

## Status Codes

| Status Code | Description                              |
|-------------|------------------------------------------|
| 200         | Response body for querying a file system |

## Error Codes

See [Error Codes](#).

## 9.4.4 Adding a Tag for a File System

### Function

This API is used to add a tag to a specified file system. A maximum of 10 tags can be added to one file system. Tag keys added to the same file system must be unique. This API is idempotent. If the file system already has the key to be added, the tag will be updated.

## URI

POST /v1/{project\_id}/sfs-turbo/{share\_id}/tags

**Table 9-51** Path Parameters

| Parameter  | Mandatory | Type   | Description    |
|------------|-----------|--------|----------------|
| project_id | Yes       | String | Project ID     |
| share_id   | Yes       | String | File system ID |

## Request Parameters

**Table 9-52** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

**Table 9-53** Request body parameters

| Parameter | Mandatory | Type               | Description                                  |
|-----------|-----------|--------------------|----------------------------------------------|
| tag       | Yes       | ResourceTag object | Description of the <b>resource_tag</b> field |

**Table 9-54** ResourceTag

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | Yes       | String | <p>Tag key.</p> <p>It can contain a maximum of 36 characters.</p> <p>It cannot be left blank and cannot contain the following characters: ASCII (0-31), equal signs (=), asterisks (*), left angle brackets (&lt;), right angle brackets (&gt;), backslashes (\), commas (,), vertical bars ( ), and slashes (/). It can contain only letters, digits, hyphens (-), and underscores (_).</p> <p>Minimum: <b>1</b></p> <p>Maximum: <b>36</b></p> |
| value     | Yes       | String | <p>Tag value.</p> <p>It can contain a maximum of 43 characters and can be left blank.</p> <p>It cannot contain the following characters: ASCII (0-31), equal signs (=), asterisks (*), left angle brackets (&lt;), right angle brackets (&gt;), backslashes (\), commas (,), vertical bars ( ), and slashes (/). It can contain only letters, digits, hyphens (-), and underscores (_).</p> <p>Minimum: <b>0</b></p> <p>Maximum: <b>43</b></p>  |

## Response Parameters

None

## Example Requests

Creating a file system tag, with tag value set to **key1** and tag key **value1**

```
{
 "tag": {
 "key": "key1",
 "value": "value1"
 }
}
```

## Example Responses

None

## Status Codes

| Status Code | Description                   |
|-------------|-------------------------------|
| 204         | Tag adding request delivered. |

## Error Codes

See [Error Codes](#).

## 9.4.5 Batch Adding Tags to a File System

### Function

This API is used to batch add tags for a specified file system.

A maximum of 10 tags can be added to one file system. Tag keys added to the same file system must be unique. This API is idempotent. If the file system already has the key to be added, the tag will be updated.

### URI

POST /v1/{project\_id}/sfs-turbo/{share\_id}/tags/action

**Table 9-55** Path Parameters

| Parameter  | Mandatory | Type   | Description    |
|------------|-----------|--------|----------------|
| project_id | Yes       | String | Project ID     |
| share_id   | Yes       | String | File system ID |

### Request Parameters

**Table 9-56** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

**Table 9-57** Request body parameters

| Parameter | Mandatory | Type                                         | Description                                                                                                                                                                                                                     |
|-----------|-----------|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| action    | Yes       | String                                       | <p>Operation identifier. The value is <b>create</b>. Use <b>create</b> if you want to batch add tags to a file system.</p> <p>Enumeration values:</p> <ul style="list-style-type: none"><li>• <b>create</b></li></ul>           |
| tags      | No        | Array of <a href="#">ResourceTag</a> objects | Tag list. This field is mandatory for users. For users with the op_service permission, choose either this field or <b>sys_tags</b> .                                                                                            |
| sys_tags  | No        | Array of <a href="#">ResourceTag</a> objects | System tag list. This field is available only to users with the op_service permission. Choose either this field or <b>tags</b> . Only one resource_tag structure key, <b>_sys_enterprise_project_id</b> , is used in TMS calls. |

**Table 9-58** ResourceTag

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | Yes       | String | <p>Tag key.</p> <p>It can contain a maximum of 36 characters.</p> <p>It cannot be left blank and cannot contain the following characters: ASCII (0-31), equal signs (=), asterisks (*), left angle brackets (&lt;), right angle brackets (&gt;), backslashes (\), commas (,), vertical bars ( ), and slashes (/). It can contain only letters, digits, hyphens (-), and underscores (_).</p> <p>Minimum: <b>1</b></p> <p>Maximum: <b>36</b></p> |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value     | Yes       | String | <p>Tag value.</p> <p>It can contain a maximum of 43 characters and can be left blank.</p> <p>It cannot contain the following characters: ASCII (0-31), equal signs (=), asterisks (*), left angle brackets (&lt;), right angle brackets (&gt;), backslashes (\), commas (,), vertical bars ( ), and slashes (/). It can contain only letters, digits, hyphens (-), and underscores (_).</p> <p>Minimum: <b>0</b></p> <p>Maximum: <b>43</b></p> |

## Response Parameters

None

## Example Requests

Batch adding tags for a file system, with tag key of the first tag set to **key1**, tag value of the first tag **value1**, tag key of the second tag **key2**, and tag value of the second tag **value1**

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

## Example Responses

None

## Status Codes

| Status Code | Description             |
|-------------|-------------------------|
| 204         | File system tags added. |

## Error Codes

See [Error Codes](#).

# 9.5 Name Management

## 9.5.1 Changing the Name of a File System

### Function

This API is used to change the name of an SFS Turbo file system.

### URI

POST /v1/{project\_id}/sfs-turbo/shares/{share\_id}/action

**Table 9-59** Path Parameters

| Parameter  | Mandatory | Type   | Description    |
|------------|-----------|--------|----------------|
| project_id | Yes       | String | Project ID     |
| share_id   | Yes       | String | File system ID |

### Request Parameters

**Table 9-60** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

**Table 9-61** Request body parameters

| Parameter   | Mandatory | Type                             | Description                          |
|-------------|-----------|----------------------------------|--------------------------------------|
| change_name | Yes       | <a href="#">ShareName</a> object | SFS Turbo file system to be modified |

**Table 9-62 ShareName**

| Parameter | Mandatory | Type   | Description                                      |
|-----------|-----------|--------|--------------------------------------------------|
| name      | Yes       | String | Name of the SFS Turbo file system to be modified |

## Response Parameters

None

## Example Requests

Changing the name of an SFS Turbo file system to **sfs-turbo-test1**

```
{
 "change_name" : {
 "name" : "sfs-turbo-test1"
 }
}
```

## Example Responses

None

## Status Codes

| Status Code | Description                          |
|-------------|--------------------------------------|
| 204         | Request successful                   |
| 400         | Invalid parameter                    |
| 500         | Internal error                       |
| 409         | The file system name already exists. |

## Error Codes

See [Error Codes](#).

# 9.6 Directory Management

## 9.6.1 Creating Quotas for a Directory

### Function

This API is used to create quotas for a directory.

## Constraints

Only empty directories can have quotas configured. Root directories of the SFS Turbo file systems' OBS targets cannot have quotas configured.

## URI

POST /v1/{project\_id}/sfs-turbo/shares/{share\_id}/fs/dir-quota

**Table 9-63** Path Parameters

| Parameter  | Mandatory | Type   | Description    |
|------------|-----------|--------|----------------|
| project_id | Yes       | String | Project ID     |
| share_id   | Yes       | String | File system ID |

## Request Parameters

**Table 9-64** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

**Table 9-65** Request body parameters

| Parameter | Mandatory | Type    | Description                                       |
|-----------|-----------|---------|---------------------------------------------------|
| path      | Yes       | String  | Valid full path of an existing directory          |
| capacity  | No        | Integer | Size of the directory, in MB                      |
| inode     | No        | Integer | Maximum number of inodes allowed in the directory |

## Response Parameters

**Status code: 200**

**Table 9-66** Response body parameters

| Parameter | Type   | Description                              |
|-----------|--------|------------------------------------------|
| path      | String | Valid full path of an existing directory |

| Parameter     | Type    | Description                                                                                             |
|---------------|---------|---------------------------------------------------------------------------------------------------------|
| capacity      | Integer | Size of the directory, in MB                                                                            |
| inode         | Integer | Maximum number of inodes allowed in the directory                                                       |
| used_capacity | Integer | Used size of the directory, in MB. This parameter is returned only for SFS Turbo HPC file systems.      |
| used_inode    | Integer | Number of used inodes in the directory. This parameter is returned only for SFS Turbo HPC file systems. |

**Status code: 400****Table 9-67** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

**Status code: 409****Table 9-68** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

**Status code: 500**

**Table 9-69** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

## Example Requests

Creating quotas for the **/data/test** directory, with the capacity quota set to **1024** MB and number of inodes set to **100000**.

```
{
 "path" : "/data/test",
 "capacity" : 1024,
 "inode" : 100000
}
```

## Example Responses

### Status code: 200

Directory quotas created

```
{
 "path" : "/data/test",
 "capacity" : 1024,
 "inode" : 100000
}
```

### Status code: 400

Error response

```
{
 "errCode" : "SFS.TURBO.0102",
 "errMsg" : "Path is not directory"
}
```

### Status code: 409

Error response

```
{
 "errCode" : "SFS.TURBO.0112",
 "errMsg" : "quota already exist"
}
```

### Status code: 500

Error response

```
{
 "errCode" : "SFS.TURBO.0005",
 "errMsg" : "Internal server error"
}
```

## Status Codes

| Status Code | Description              |
|-------------|--------------------------|
| 200         | Directory quotas created |
| 400         | Error response           |
| 409         | Error response           |
| 500         | Error response           |

## Error Codes

See [Error Codes](#).

### 9.6.2 Updating Quotas of a Directory

#### Function

This API is used to update quotas of a directory.

#### URI

PUT /v1/{project\_id}/sfs-turbo/shares/{share\_id}/fs/dir-quota

**Table 9-70** Path Parameters

| Parameter  | Mandatory | Type   | Description    |
|------------|-----------|--------|----------------|
| project_id | Yes       | String | Project ID     |
| share_id   | Yes       | String | File system ID |

#### Request Parameters

**Table 9-71** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

**Table 9-72** Request body parameters

| Parameter | Mandatory | Type    | Description                                       |
|-----------|-----------|---------|---------------------------------------------------|
| path      | Yes       | String  | Valid full path of an existing directory          |
| capacity  | No        | Integer | Size of the directory, in MB                      |
| inode     | No        | Integer | Maximum number of inodes allowed in the directory |

## Response Parameters

**Status code: 200**

**Table 9-73** Response body parameters

| Parameter     | Type    | Description                                                                                             |
|---------------|---------|---------------------------------------------------------------------------------------------------------|
| path          | String  | Valid full path of an existing directory                                                                |
| capacity      | Integer | Size of the directory, in MB                                                                            |
| inode         | Integer | Maximum number of inodes allowed in the directory                                                       |
| used_capacity | Integer | Used size of the directory, in MB. This parameter is returned only for SFS Turbo HPC file systems.      |
| used_inode    | Integer | Number of used inodes in the directory. This parameter is returned only for SFS Turbo HPC file systems. |

**Status code: 400**

**Table 9-74** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

### Status code: 403

**Table 9-75** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

### Status code: 500

**Table 9-76** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

## Example Requests

Updating quotas of the **/data/test** directory, with the capacity quota set to **1024** MB and number of inodes set to **100000**.

```
{
 "path" : "/data/test",
 "capacity" : 1024,
 "inode" : 100000
}
```

## Example Responses

### Status code: 200

Directory quotas updated

```
{
 "path" : "/data/test",
 "capacity" : 1024,
 "inode" : 100000
}
```

### Status code: 400

### Error response

```
{
 "errCode" : "SFS.TURBO.0102",
 "errMsg" : "Path is not directory"
}
```

### Status code: 403

### Error response

```
{
 "errCode" : "SFS.TURBO.0113",
 "errMsg" : "dir not create quota"
}
```

### Status code: 500

### Error response

```
{
 "errCode" : "SFS.TURBO.0005",
 "errMsg" : "Internal server error"
}
```

## Status Codes

| Status Code | Description              |
|-------------|--------------------------|
| 200         | Directory quotas updated |
| 400         | Error response           |
| 403         | Error response           |
| 500         | Error response           |

## Error Codes

See [Error Codes](#).

### 9.6.3 Querying Quotas of a Directory

#### Function

This API is used to query quotas of a directory.

#### URI

GET /v1/{project\_id}/sfs-turbo/shares/{share\_id}/fs/dir-quota

**Table 9-77** Path Parameters

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

| Parameter | Mandatory | Type   | Description    |
|-----------|-----------|--------|----------------|
| share_id  | Yes       | String | File system ID |

**Table 9-78** Query Parameters

| Parameter | Mandatory | Type   | Description                              |
|-----------|-----------|--------|------------------------------------------|
| path      | Yes       | String | Valid full path of an existing directory |

## Request Parameters

**Table 9-79** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

## Response Parameters

**Status code: 200**

**Table 9-80** Response body parameters

| Parameter     | Type    | Description                                                                                             |
|---------------|---------|---------------------------------------------------------------------------------------------------------|
| path          | String  | Valid full path of an existing directory                                                                |
| capacity      | Integer | Size of the directory, in MB                                                                            |
| inode         | Integer | Maximum number of inodes allowed in the directory                                                       |
| used_capacity | Integer | Used size of the directory, in MB. This parameter is returned only for SFS Turbo HPC file systems.      |
| used_inode    | Integer | Number of used inodes in the directory. This parameter is returned only for SFS Turbo HPC file systems. |

**Status code: 400**

**Table 9-81** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

**Status code: 500****Table 9-82** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

## Example Requests

Querying the quotas of the directory **/data/test** in the file system whose ID is **77ba6f4b-6365-4895-8dda-bc7142af4ddw**

```
GET HTTPS://{{endpoint}}/v1/{{project_id}}/sfs-turbo/shares/77ba6f4b-6365-4895-8dda-bc7142af4ddw/fs/dir-quota?path=/data/test
```

## Example Responses

**Status code: 200**

Directory quotas queried

```
{
 "path" : "/data/test",
 "capacity" : 1024,
 "inode" : 100000
}
```

**Status code: 400**

Error response

- {  
 "errCode" : "SFS.TURBO.0102",

```
 "errMsg" : "Path is not directory"
 }
```

#### Status code: 500

Error response

```
{
 "errCode" : "SFS.TURBO.0005",
 "errMsg" : "Internal server error"
}
```

### Status Codes

| Status Code | Description              |
|-------------|--------------------------|
| 200         | Directory quotas queried |
| 400         | Error response           |
| 500         | Error response           |

### Error Codes

See [Error Codes](#).

## 9.6.4 Deleting Quotas of a Directory

### Function

This API is used to delete quotas of a directory.

### Constraints

Only empty directories can have their quotas deleted.

### URI

DELETE /v1/{project\_id}/sfs-turbo/shares/{share\_id}/fs/dir-quota

**Table 9-83** Path Parameters

| Parameter  | Mandatory | Type   | Description    |
|------------|-----------|--------|----------------|
| project_id | Yes       | String | Project ID     |
| share_id   | Yes       | String | File system ID |

## Request Parameters

**Table 9-84** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

**Table 9-85** Request body parameters

| Parameter | Mandatory | Type   | Description                              |
|-----------|-----------|--------|------------------------------------------|
| path      | Yes       | String | Valid full path of an existing directory |

## Response Parameters

Status code: 400

**Table 9-86** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

Status code: 500

**Table 9-87** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

## Example Requests

Deleting the quotas of the directory **/data/test** in the file system whose ID is **77ba6f4b-6365-4895-8dda-bc7142af4ddw**

```
DELETE HTTPS://'{endpoint}/v1/{project_id}/sfs-turbo/shares/77ba6f4b-6365-4895-8dda-bc7142af4ddw/fs/
dir-quota
{
 "path" : "/data/test"
}
```

## Example Responses

### Status code: 400

Error response

```
{
 "errCode" : "SFS.TURBO.0102",
 "errMsg" : "Path is not directory"
}
```

### Status code: 500

Error response

```
{
 "errCode" : "SFS.TURBO.0005",
 "errMsg" : "Internal server error"
}
```

## Status Codes

| Status Code | Description              |
|-------------|--------------------------|
| 204         | Directory quotas deleted |
| 400         | Error response           |
| 500         | Error response           |

## Error Codes

See [Error Codes](#).

## 9.6.5 Creating a Directory

### Function

This API is used to create a directory.

## URI

POST /v1/{project\_id}/sfs-turbo/shares/{share\_id}/fs/dir

**Table 9-88** Path Parameters

| Parameter  | Mandatory | Type   | Description    |
|------------|-----------|--------|----------------|
| project_id | Yes       | String | Project ID     |
| share_id   | Yes       | String | File system ID |

## Request Parameters

**Table 9-89** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

**Table 9-90** Request body parameters

| Parameter | Mandatory | Type   | Description                              |
|-----------|-----------|--------|------------------------------------------|
| path      | Yes       | String | Valid full path of an existing directory |

| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|-----------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| mode      | No        | Long | Directory permissions, which range from <b>0</b> to <b>777</b> *. The default value is <b>755</b> . The first digit indicates the permissions of the directory owner, the second digit indicates the permissions of the user group to which the directory belongs, and the third digit indicates the permissions of other users. The directory owner is specified by UID, and the user group to which the directory belongs is specified by GID. Users who are not the directory owner and not in the user group to which the directory belongs are other users. For example, in 755, the first digit 7 indicates that the directory owner has the read, write, and execute permissions on the directory, the second digit 5 indicates that the user group to which the directory belongs has the read and execute permissions on the directory, and the third digit 5 indicates that other users have the read and execute permissions on the directory.<br>Minimum: <b>0</b> |
| uid       | No        | Long | ID of the directory owner. The default value is <b>0</b> . The value ranges from <b>0</b> to <b>4,294,967,294</b> ( $2^{32}-2$ ).<br>Minimum: <b>0</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| gid       | No        | Long | ID of the user group to which the directory belongs. The default value is <b>0</b> . The value ranges from <b>0</b> to <b>4,294,967,294</b> ( $2^{32}-2$ ).<br>Minimum: <b>0</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

## Response Parameters

Status code: 400

**Table 9-91** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

**Status code: 409****Table 9-92** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

**Status code: 500****Table 9-93** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

## Example Requests

Creating a directory whose full path is **/date/test**{  
  "path" : "/date/test"  
}

## Example Responses

### Status code: 400

Error response

```
{
 "errCode" : "SFS.TURBO.0122",
 "errMsg" : "invalid mode"
}
```

### Status code: 409

Conflict directory

```
{
 "errCode" : "SFS.TURBO.0114",
 "errMsg" : "path already exist"
}
```

### Status code: 500

Error response

```
{
 "errCode" : "SFS.TURBO.0005",
 "errMsg" : "Internal server error"
}
```

## Status Codes

| Status Code | Description        |
|-------------|--------------------|
| 204         | Directory created  |
| 400         | Error response     |
| 409         | Conflict directory |
| 500         | Error response     |

## Error Codes

See [Error Codes](#).

### 9.6.6 Checking Whether a Directory Exists

#### Function

This API is used to query whether a directory exists.

#### URI

GET /v1/{project\_id}/sfs-turbo/shares/{share\_id}/fs/dir

**Table 9-94** Path Parameters

| Parameter  | Mandatory | Type   | Description    |
|------------|-----------|--------|----------------|
| project_id | Yes       | String | Project ID     |
| share_id   | Yes       | String | File system ID |

**Table 9-95** Query Parameters

| Parameter | Mandatory | Type   | Description                              |
|-----------|-----------|--------|------------------------------------------|
| path      | Yes       | String | Full path of the directory to be queried |

## Request Parameters

**Table 9-96** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

## Response Parameters

Status code: 200

**Table 9-97** Response body parameters

| Parameter | Type   | Description                |
|-----------|--------|----------------------------|
| path      | String | Full path of the directory |

| Parameter | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| mode      | Long | Directory permissions. This field is returned only for HPC and Cache file systems. The third digit indicates the permissions of the directory owner, the fourth digit indicates the permissions of the user group to which the directory belongs, and the fifth digit indicates the permissions of other users. The directory owner is specified by UID, and the user group to which the directory belongs is specified by GID. Users who are not the directory owner and not in the user group to which the directory belongs are other users. For example, in 40755, the third digit 7 indicates that the directory owner has the read, write, and execute permissions on the directory, the fourth digit 5 indicates that the user group to which the directory belongs has the read and execute permissions on the directory, and the fifth digit 5 indicates that other users have the read and execute permissions on the directory.<br>Minimum: 0 |
| uid       | Long | ID of the directory owner. This field is returned only for HPC and Cache file systems.<br>Minimum: 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| gid       | Long | ID of the user group to which the directory belongs. This field is returned only for HPC and Cache file systems.<br>Minimum: 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

**Status code: 400****Table 9-98** Response body parameters

| Parameter | Type   | Description                                     |
|-----------|--------|-------------------------------------------------|
| errCode   | String | Error code<br>Minimum: 8<br>Maximum: 36         |
| errMsg    | String | Error description<br>Minimum: 2<br>Maximum: 512 |

**Status code: 404**

**Table 9-99** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

**Status code: 500**

**Table 9-100** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

## Example Requests

Querying whether the directory **/date/test** can be found in the file system whose ID is **77ba6f4b-6365-4895-8dda-bc7142af4dde**

```
GET HTTPS://{{endpoint}}/v1/{{project_id}}/sfs-turbo/shares/{{share_id}}/fs/dir?path=/date/test
```

## Example Responses

**Status code: 200**

Query results

```
{
 "path" : "/date/test"
}
```

**Status code: 400**

Error response

```
{
 "errCode" : "SFS.TURBO.0100",
 "errMsg" : "invalid path"
}
```

**Status code: 404**

Directory not found

```
{
 "errCode" : "SFS.TURBO.0101",
 "errMsg" : "path not exist"
}
```

**Status code: 500**

Error response

```
{
 "errCode" : "SFS.TURBO.0005",
 "errMsg" : "Internal server error"
}
```

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Query results       |
| 400         | Error response      |
| 404         | Directory not found |
| 500         | Error response      |

## Error Codes

See [Error Codes](#).

### 9.6.7 Deleting a Directory

#### Function

This API is used to delete a directory.

#### Constraints

This API is only supported for file systems created after June 1, 2023. Deleting a directory from a file system is a risky operation. Once deleted, the directory cannot be recovered. Ensure that the directory you specify is the one you want to delete.

#### URI

DELETE /v1/{project\_id}/sfs-turbo/shares/{share\_id}/fs/dir

**Table 9-101** Path Parameters

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

| Parameter | Mandatory | Type   | Description    |
|-----------|-----------|--------|----------------|
| share_id  | Yes       | String | File system ID |

## Request Parameters

**Table 9-102** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

**Table 9-103** Request body parameters

| Parameter | Mandatory | Type   | Description                              |
|-----------|-----------|--------|------------------------------------------|
| path      | Yes       | String | Valid full path of an existing directory |

## Response Parameters

**Status code: 400**

**Table 9-104** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

**Status code: 500**

**Table 9-105** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

## Example Requests

Deleting the `/test` directory

```
{
 "path" : "/test"
}
```

## Example Responses

**Status code: 500**

Error response

```
{
 "errCode" : "SFS.TURBO.0005",
 "errMsg" : "Internal server error"
}
```

## Status Codes

| Status Code | Description               |
|-------------|---------------------------|
| 202         | Deletion request accepted |
| 400         | Error response            |
| 500         | Error response            |

## Error Codes

See [Error Codes](#).

## 9.7 Permissions Management

## 9.7.1 Creating a Permission Rule

### Function

This API is used to create a permission rule.

### URI

POST /v1/{project\_id}/sfs-turbo/shares/{share\_id}/fs/perm-rules

**Table 9-106** Path Parameters

| Parameter  | Mandatory | Type   | Description    |
|------------|-----------|--------|----------------|
| project_id | Yes       | String | Project ID     |
| share_id   | Yes       | String | File system ID |

### Request Parameters

**Table 9-107** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

**Table 9-108** Request body parameters

| Parameter | Mandatory | Type                                                          | Description                                                                |
|-----------|-----------|---------------------------------------------------------------|----------------------------------------------------------------------------|
| rules     | Yes       | Array of<br><a href="#">OnePermRuleRequestInfo</a><br>objects | Permission rule details. A maximum of five rules can be created at a time. |

**Table 9-109** OnePermRuleRequestInfo

| Parameter | Mandatory | Type   | Description                                                                                                        |
|-----------|-----------|--------|--------------------------------------------------------------------------------------------------------------------|
| ip_cidr   | No        | String | IP address or IP address range of the object to be authorized. Once configured, this parameter cannot be modified. |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rw_type   | No        | String | Read/write permission of the object to be authorized. The value can be <b>rw</b> (read and write permission) or <b>ro</b> (read only permission). The default value is <b>rw</b> .                                                                                                                                                                                                                                                                                                                                                          |
| user_type | No        | String | File system access permission granted to the user of the object to be authorized. The value can be <b>no_root_squash</b> , <b>root_squash</b> , or <b>all_squash</b> . Value <b>no_root_squash</b> allows the root user on the client to access the file system as <b>root</b> . Value <b>root_squash</b> allows the root user on the client to access the file system as <b>nfsnobody</b> . Value <b>all_squash</b> allows any user on the client to access the file system as <b>nfsnobody</b> . The default value is <b>all_squash</b> . |

## Response Parameters

Status code: 200

**Table 9-110** Response body parameters

| Parameter | Type                                                     | Description             |
|-----------|----------------------------------------------------------|-------------------------|
| rules     | Array of <a href="#">OnePermRuleResponseInfo</a> objects | Permission rule details |

**Table 9-111** OnePermRuleResponseInfo

| Parameter | Type   | Description                                             |
|-----------|--------|---------------------------------------------------------|
| id        | String | Permission rule ID                                      |
| ip_cidr   | String | IP address or IP address range of the authorized object |

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rw_type   | String | Read/write permission of the authorized object. The value can be <b>rw</b> (read and write permission) or <b>ro</b> (read only permission). The default value is <b>rw</b> .                                                                                                                                                                                                                                                                                                                                                          |
| user_type | String | File system access permission granted to the user of the authorized object. The value can be <b>no_root_squash</b> , <b>root_squash</b> , or <b>all_squash</b> . Value <b>no_root_squash</b> allows the root user on the client to access the file system as <b>root</b> . Value <b>root_squash</b> allows the root user on the client to access the file system as <b>nfsnobody</b> . Value <b>all_squash</b> allows any user on the client to access the file system as <b>nfsnobody</b> . The default value is <b>all_squash</b> . |

**Status code: 400****Table 9-112** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

**Status code: 500****Table 9-113** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

## Example Requests

```
{
 "rules" : [{
 "ip_cidr" : "192.168.0.0/16",
 "rw_type" : "rw",
 "user_type" : "no_root_squash"
 }, {
 "ip_cidr" : "192.32.0.0/16",
 "rw_type" : "rw",
 "user_type" : "no_root_squash"
 }]
}
```

## Example Responses

### Status code: 200

Successful creation

```
{
 "rules" : [{
 "id" : "1131ed520xxxxxbedb6e57xxxxxxxx",
 "ip_cidr" : "192.32.0.0/16",
 "rw_type" : "rw",
 "user_type" : "no_root_squash"
 }, {
 "id" : "1131ed520xxxxxbedb6e57xxxxxxxx",
 "ip_cidr" : "192.32.0.1",
 "rw_type" : "rw",
 "user_type" : "no_root_squash"
 }]
}
```

### Status code: 400

Error response

```
{
 "errCode" : "SFS.TURBO.0001",
 "errMsg" : "Rules not allowed empty"
}
```

### Status code: 500

Error response

```
{
 "errCode" : "SFS.TURBO.0005",
 "errMsg" : "Internal server error"
}
```

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful creation |
| 400         | Error response      |
| 500         | Error response      |

## Error Codes

See [Error Codes](#).

## 9.7.2 Querying Permission Rules of a File System

### Function

This API is used to query the permission rules of a file system.

### URI

GET /v1/{project\_id}/sfs-turbo/shares/{share\_id}/fs/perm-rules

**Table 9-114** Path Parameters

| Parameter  | Mandatory | Type   | Description    |
|------------|-----------|--------|----------------|
| project_id | Yes       | String | Project ID     |
| share_id   | Yes       | String | File system ID |

### Request Parameters

**Table 9-115** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

### Response Parameters

**Status code: 200**

**Table 9-116** Response body parameters

| Parameter | Type                                                     | Description                 |
|-----------|----------------------------------------------------------|-----------------------------|
| rules     | Array of <a href="#">OnePermRuleResponseInfo</a> objects | Permission rule information |

**Table 9-117** OnePermRuleResponseInfo

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id        | String | Permission rule ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| ip_cidr   | String | IP address or IP address range of the authorized object                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| rw_type   | String | Read/write permission of the authorized object. The value can be <b>rw</b> (read and write permission) or <b>ro</b> (read only permission). The default value is <b>rw</b> .                                                                                                                                                                                                                                                                                                                                                          |
| user_type | String | File system access permission granted to the user of the authorized object. The value can be <b>no_root_squash</b> , <b>root_squash</b> , or <b>all_squash</b> . Value <b>no_root_squash</b> allows the root user on the client to access the file system as <b>root</b> . Value <b>root_squash</b> allows the root user on the client to access the file system as <b>nfsnobody</b> . Value <b>all_squash</b> allows any user on the client to access the file system as <b>nfsnobody</b> . The default value is <b>all_squash</b> . |

**Status code: 500**

**Table 9-118** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

## Example Requests

Querying the permission rules of the file system whose ID is  
**77ba6f4b-6365-4895-8dda-bc7142af4dde**

```
GET HTTPS://[endpoint]/v1/[project_id]/sfs-turbo/shares/77ba6f4b-6365-4895-8dda-bc7142af4dde/fs/perm-rules
```

## Example Responses

**Status code: 200**

Successful query

```
{
 "rules" : [{
 "id" : "1131ed520xxxxxebedb6e57xxxxxxxx",
 "ip_cidr" : "192.168.0.0/16",
 "rw_type" : "rw",
 "user_type" : "no_root_squash"
 }, {
 "id" : "1231ed520xxxxxebedb6e57xxxxxxxx",
 "ip_cidr" : "192.32.0.0/16",
 "rw_type" : "rw",
 "user_type" : "no_root_squash"
 }]
}
```

**Status code: 500**

Error response

```
{
 "errCode" : "SFS.TURBO.0005",
 "errMsg" : "Internal server error"
}
```

## Status Codes

| Status Code | Description      |
|-------------|------------------|
| 200         | Successful query |
| 500         | Error response   |

## Error Codes

See [Error Codes](#).

### 9.7.3 Querying a Permission Rule of a File System

#### Function

This API is used to query a specific permission rule of a file system.

#### URI

GET /v1/{project\_id}/sfs-turbo/shares/{share\_id}/fs/perm-rules/{rule\_id}

**Table 9-119** Path Parameters

| Parameter  | Mandatory | Type   | Description        |
|------------|-----------|--------|--------------------|
| project_id | Yes       | String | Project ID         |
| share_id   | Yes       | String | File system ID     |
| rule_id    | Yes       | String | Permission rule ID |

## Request Parameters

**Table 9-120** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

## Response Parameters

**Status code: 200**

**Table 9-121** Response body parameters

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id        | String | Permission rule ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| ip_cidr   | String | IP address or IP address range of the authorized object                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| rw_type   | String | Read/write permission of the authorized object. The value can be <b>rw</b> (read and write permission) or <b>ro</b> (read only permission). The default value is <b>rw</b> .                                                                                                                                                                                                                                                                                                                                                          |
| user_type | String | File system access permission granted to the user of the authorized object. The value can be <b>no_root_squash</b> , <b>root_squash</b> , or <b>all_squash</b> . Value <b>no_root_squash</b> allows the root user on the client to access the file system as <b>root</b> . Value <b>root_squash</b> allows the root user on the client to access the file system as <b>nfsnobody</b> . Value <b>all_squash</b> allows any user on the client to access the file system as <b>nfsnobody</b> . The default value is <b>all_squash</b> . |

**Status code: 400**

**Table 9-122** Response body parameters

| Parameter | Type   | Description                                           |
|-----------|--------|-------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b> |

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

### Status code: 500

**Table 9-123** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

## Example Requests

Querying details about the permission rule whose ID is **11abef677ac40f46644d1d5fcf2424a4** for the file system whose ID is **77ba6f4b-6365-4895-8dda-bc7142af4dde**

```
GET HTTPS://[endpoint]/v1/[project_id]/sfs-turbo/shares/77ba6f4b-6365-4895-8dda-bc7142af4dde/fs/perm-rules/11abef677ac40f46644d1d5fcf2424a4
```

## Example Responses

### Status code: 200

Successful query

```
{
 "id" : "1131ed520xxxxxebedb6e57xxxxxxxx",
 "ip_cidr" : "192.168.0.0/16",
 "rw_type" : "rw",
 "user_type" : "no_root_squash"
}
```

### Status code: 400

Error response

```
{
 "errCode" : "SFS.TURBO.0001",
 "errMsg" : "Invalid rule id"
}
```

### Status code: 500

Error response

```
{
 "errCode": "SFS.TURBO.0005",
 "errMsg": "Internal server error"
}
```

## Status Codes

| Status Code | Description      |
|-------------|------------------|
| 200         | Successful query |
| 400         | Error response   |
| 500         | Error response   |

## Error Codes

See [Error Codes](#).

### 9.7.4 Modifying a Permission Rule

#### Function

This API is used to modify a permission rule.

#### URI

PUT /v1/{project\_id}/sfs-turbo/shares/{share\_id}/fs/perm-rules/{rule\_id}

**Table 9-124** Path Parameters

| Parameter  | Mandatory | Type   | Description        |
|------------|-----------|--------|--------------------|
| project_id | Yes       | String | Project ID         |
| share_id   | Yes       | String | File system ID     |
| rule_id    | Yes       | String | Permission rule ID |

#### Request Parameters

**Table 9-125** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

**Table 9-126** Request body parameters

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_cidr   | No        | String | IP address or IP address range of the object to be authorized. Once configured, this parameter cannot be modified.                                                                                                                                                                                                                                                                                                                                                                                                                          |
| rw_type   | No        | String | Read/write permission of the object to be authorized. The value can be <b>rw</b> (read and write permission) or <b>ro</b> (read only permission). The default value is <b>rw</b> .                                                                                                                                                                                                                                                                                                                                                          |
| user_type | No        | String | File system access permission granted to the user of the object to be authorized. The value can be <b>no_root_squash</b> , <b>root_squash</b> , or <b>all_squash</b> . Value <b>no_root_squash</b> allows the root user on the client to access the file system as <b>root</b> . Value <b>root_squash</b> allows the root user on the client to access the file system as <b>nfsnobody</b> . Value <b>all_squash</b> allows any user on the client to access the file system as <b>nfsnobody</b> . The default value is <b>all_squash</b> . |

## Response Parameters

Status code: 200

**Table 9-127** Response body parameters

| Parameter | Type   | Description                                                                                                                                                                  |
|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id        | String | Permission rule ID                                                                                                                                                           |
| ip_cidr   | String | IP address or IP address range of the authorized object                                                                                                                      |
| rw_type   | String | Read/write permission of the authorized object. The value can be <b>rw</b> (read and write permission) or <b>ro</b> (read only permission). The default value is <b>rw</b> . |

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| user_type | String | File system access permission granted to the user of the authorized object. The value can be <b>no_root_squash</b> , <b>root_squash</b> , or <b>all_squash</b> . Value <b>no_root_squash</b> allows the root user on the client to access the file system as <b>root</b> . Value <b>root_squash</b> allows the root user on the client to access the file system as <b>nfsnobody</b> . Value <b>all_squash</b> allows any user on the client to access the file system as <b>nfsnobody</b> . The default value is <b>all_squash</b> . |

**Status code: 400**

**Table 9-128** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

**Status code: 500**

**Table 9-129** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

## Example Requests

```
{
 "rw_type": "rw",
 "user_type": "no_root_squash"
}
```

## Example Responses

### Status code: 200

Successful creation

```
{
 "id" : "1131ed520xxxxxebdb6e57xxxxxxxx",
 "ip_cidr" : "192.32.0.0/16",
 "rw_type" : "rw",
 "user_type" : "no_root_squash"
}
```

### Status code: 400

Error response

```
{
 "errCode" : "SFS.TURBO.0001",
 "errMsg" : "Invalid rule id"
}
```

### Status code: 500

Error response

```
{
 "errCode" : "SFS.TURBO.0005",
 "errMsg" : "Internal server error"
}
```

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful creation |
| 400         | Error response      |
| 500         | Error response      |

## Error Codes

See [Error Codes](#).

### 9.7.5 Deleting a Permissions Rule

#### Function

This API is used to delete a permission rule.

#### URI

DELETE /v1/{project\_id}/sfs-turbo/shares/{share\_id}/fs/perm-rules/{rule\_id}

**Table 9-130** Path Parameters

| Parameter  | Mandatory | Type   | Description        |
|------------|-----------|--------|--------------------|
| project_id | Yes       | String | Project ID         |
| share_id   | Yes       | String | File system ID     |
| rule_id    | Yes       | String | Permission rule ID |

## Request Parameters

**Table 9-131** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

## Response Parameters

**Status code: 400**

**Table 9-132** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

**Status code: 500**

**Table 9-133** Response body parameters

| Parameter | Type   | Description                                           |
|-----------|--------|-------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b> |

| Parameter | Type   | Description                                     |
|-----------|--------|-------------------------------------------------|
| errMsg    | String | Error description<br>Minimum: 2<br>Maximum: 512 |

## Example Requests

Deleting the permission rule whose ID is **11abef677ac40f46644d1d5fcf2424a4** for the file system whose ID is **77ba6f4b-6365-4895-8dda-bc7142af4dde**

```
DELETE HTTPS://{{endpoint}}/v1/{{project_id}}/sfs-turbo/shares/77ba6f4b-6365-4895-8dda-bc7142af4dde/fs/perm-rules/11abef677ac40f46644d1d5fcf2424a4
```

## Example Responses

**Status code: 500**

Error response

```
{
 "errCode": "SFS.TURBO.0005",
 "errMsg": "Internal server error"
}
```

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 204         | Successful deletion |
| 400         | Error response      |
| 500         | Error response      |

## Error Codes

See [Error Codes](#).

## 9.7.6 Creating and Binding the LDAP Configuration

### Function

This API is used to create and bind the LDAP configuration.

### Constraints

**base\_dn** and **url** cannot be empty.

## URI

POST /v1/{project\_id}/sfs-turbo/shares/{share\_id}/fs/ldap

**Table 9-134** Path Parameters

| Parameter  | Mandatory | Type   | Description    |
|------------|-----------|--------|----------------|
| project_id | Yes       | String | Project ID     |
| share_id   | Yes       | String | File system ID |

## Request Parameters

**Table 9-135** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

**Table 9-136** Request body parameters

| Parameter        | Mandatory | Type   | Description                                                                                                                                            |
|------------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| url              | Yes       | String | URL of the LDAP server                                                                                                                                 |
| base_dn          | Yes       | String | Base DN                                                                                                                                                |
| user_dn          | No        | String | User DN                                                                                                                                                |
| password         | No        | String | LDAP authentication password                                                                                                                           |
| vpc_id           | No        | String | ID of the VPC which the specified LDAP server can be connected to. This parameter is required only when the SFS Turbo file system is used across VPCs. |
| filter_condition | No        | String | Filter criteria. This is a reserved field and is not supported currently.                                                                              |

## Response Parameters

**Status code: 200**

**Table 9-137** Response body parameters

| Parameter | Type   | Description                                                    |
|-----------|--------|----------------------------------------------------------------|
| job_id    | String | ID of an asynchronous task for creating the LDAP configuration |

**Status code: 400****Table 9-138** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

**Status code: 500****Table 9-139** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

## Example Requests

Creating and binding an LDAP server

```
{
 "url": "ldap://192.168.xx.xx:60000",
 "base_dn": "dc=huawei,dc=com",
 "user_dn": "cn=admin,dc=huawei,dc=com",
 "password": "pwdxxxxxx"
}
```

## Example Responses

### Status code: 200

Request accepted

```
{
 "job_id" : "72362dxxxx04d419dbd5e6d9fe5xxxx"
}
```

### Status code: 400

Client error

```
{
 "errCode" : "SFS.TURBO.0001",
 "errMsg" : "Invalid rule id"
}
```

### Status code: 500

Internal error

```
{
 "errCode" : "SFS.TURBO.0005",
 "errMsg" : "Internal server error"
}
```

## Status Codes

| Status Code | Description      |
|-------------|------------------|
| 200         | Request accepted |
| 400         | Client error     |
| 500         | Internal error   |

## Error Codes

See [Error Codes](#).

### 9.7.7 Querying the LDAP Configuration

#### Function

This API is used to query the LDAP configuration.

#### URI

GET /v1/{project\_id}/sfs-turbo/shares/{share\_id}/fs/ldap

**Table 9-140** Path Parameters

| Parameter  | Mandatory | Type   | Description    |
|------------|-----------|--------|----------------|
| project_id | Yes       | String | Project ID     |
| share_id   | Yes       | String | File system ID |

## Request Parameters

**Table 9-141** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

## Response Parameters

**Status code: 200**

**Table 9-142** Response body parameters

| Parameter        | Type   | Description                                                               |
|------------------|--------|---------------------------------------------------------------------------|
| url              | String | URL of the LDAP server                                                    |
| base_dn          | String | Base DN                                                                   |
| user_dn          | String | User DN                                                                   |
| filter_condition | String | Filter criteria. This is a reserved field and is not supported currently. |

**Status code: 500**

**Table 9-143** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

## Example Requests

None

## Example Responses

### Status code: 200

Successful query

```
{
 "url" : "ldap://192.168.xx.xx:60000",
 "base_dn" : "dc=huawei,dc=com",
 "user_dn" : "cn=admin,dc=huawei,dc=com"
}
```

### Status code: 500

Error response

```
{
 "errCode" : "SFS.TURBO.0005",
 "errMsg" : "Internal server error"
}
```

## Status Codes

| Status Code | Description      |
|-------------|------------------|
| 200         | Successful query |
| 500         | Error response   |

## Error Codes

See [Error Codes](#).

## 9.7.8 Modifying the LDAP Configuration

### Function

This API is used to modify the LDAP configuration.

### URI

PUT /v1/{project\_id}/sfs-turbo/shares/{share\_id}/fs/ldap

**Table 9-144** Path Parameters

| Parameter  | Mandatory | Type   | Description    |
|------------|-----------|--------|----------------|
| project_id | Yes       | String | Project ID     |
| share_id   | Yes       | String | File system ID |

## Request Parameters

**Table 9-145** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

**Table 9-146** Request body parameters

| Parameter        | Mandatory | Type   | Description                                                               |
|------------------|-----------|--------|---------------------------------------------------------------------------|
| url              | No        | String | URL of the LDAP server                                                    |
| base_dn          | No        | String | Base DN                                                                   |
| user_dn          | No        | String | User DN                                                                   |
| password         | No        | String | LDAP authentication password                                              |
| vpc_id           | No        | String | ID of the VPC                                                             |
| filter_condition | No        | String | Filter criteria. This is a reserved field and is not supported currently. |

## Response Parameters

**Status code: 200**

**Table 9-147** Response body parameters

| Parameter | Type   | Description                                                    |
|-----------|--------|----------------------------------------------------------------|
| job_id    | String | ID of an asynchronous task for creating the LDAP configuration |

**Status code: 400**

**Table 9-148** Response body parameters

| Parameter | Type   | Description                                           |
|-----------|--------|-------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b> |

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

### Status code: 500

**Table 9-149** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

## Example Requests

```
{
 "url" : "ldap://192.168.xx.xx:60000",
 "base_dn" : "dc=huawei,dc=com",
 "user_dn" : "cn=admin,dc=huawei,dc=com",
 "password" : "pwdxxxxxx",
 "vpc_id" : "26f6b565-xxxx-XXXX-xxxx-03f0bd975433"
}
```

## Example Responses

### Status code: 200

Updating

```
{
 "job_id" : "72362dxxxxa04d419dbd5e6d9fe5xxxx"
}
```

### Status code: 400

Error response

```
{
 "errCode" : "SFS.TURBO.0001",
 "errMsg" : "Invalid rule id"
}
```

### Status code: 500

Error response

```
{
 "errCode" : "SFS.TURBO.0005",
}
```

```
 "errMsg" : "Internal server error"
 }
```

## Status Codes

| Status Code | Description    |
|-------------|----------------|
| 200         | Updating       |
| 400         | Error response |
| 500         | Error response |

## Error Codes

See [Error Codes](#).

### 9.7.9 Deleting the LDAP Configuration

#### Function

This API is used to delete the LDAP configuration.

#### URI

DELETE /v1/{project\_id}/sfs-turbo/shares/{share\_id}/fs/ldap

**Table 9-150** Path Parameters

| Parameter  | Mandatory | Type   | Description    |
|------------|-----------|--------|----------------|
| project_id | Yes       | String | Project ID     |
| share_id   | Yes       | String | File system ID |

#### Request Parameters

**Table 9-151** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

#### Response Parameters

**Status code: 200**

**Table 9-152** Response body parameters

| Parameter | Type   | Description                                                    |
|-----------|--------|----------------------------------------------------------------|
| job_id    | String | ID of an asynchronous task for creating the LDAP configuration |

**Status code: 400****Table 9-153** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

**Status code: 500****Table 9-154** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

## Example Requests

None

## Example Responses

**Status code: 200**

Deleting

```
{
 "job_id" : "72362dxxxxa04d419dbd5e6d9fe5xxxx"
}
```

**Status code: 400**

Error response

```
{
 "errCode" : "SFS.TURBO.0001",
 "errMsg" : "Invalid rule id"
}
```

**Status code: 500**

Error response

```
{
 "errCode" : "SFS.TURBO.0005",
 "errMsg" : "Internal server error"
}
```

**Status Codes**

| Status Code | Description    |
|-------------|----------------|
| 200         | Deleting       |
| 400         | Error response |
| 500         | Error response |

**Error Codes**See [Error Codes](#).

## 9.8 Task Management

### 9.8.1 Querying Details About a Task

**Function**

This API is used to query the execution status of an SFS Turbo asynchronous task.

**URI**

GET /v1/{project\_id}/sfs-turbo/jobs/{job\_id}

**Table 9-155** Path Parameters

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

## Request Parameters

**Table 9-156** Request header parameters

| Parameter    | Mandatory | Type   | Description   |
|--------------|-----------|--------|---------------|
| X-Auth-Token | Yes       | String | Account token |
| Content-Type | Yes       | String | MIME type     |

## Response Parameters

Status code: 200

**Table 9-157** Response header parameters

| Parameter    | Type   | Description |
|--------------|--------|-------------|
| X-request-id | String | Request ID  |

**Table 9-158** Response body parameters

| Parameter   | Type                                                | Description                                                                                   |
|-------------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------|
| status      | String                                              | Task status, which can be <b>success</b> , <b>running</b> , <b>failed</b> , or <b>waiting</b> |
| job_id      | String                                              | Task ID                                                                                       |
| job_type    | String                                              | Task type                                                                                     |
| begin_time  | String                                              | Task start time in UTC format, for example, <b>'2016-01-02 15:04:05'</b>                      |
| end_time    | String                                              | Task end time in UTC format, for example, <b>'2016-01-02 15:04:05'</b>                        |
| error_code  | String                                              | Error code returned if the task execution fails                                               |
| fail_reason | String                                              | Cause of the task execution failure                                                           |
| sub_jobs    | Array of<br><a href="#">GetSubJobDetail</a> objects | List of subtasks                                                                              |

**Table 9-159** GetSubJobDetail

| Parameter   | Type   | Description                                                                                      |
|-------------|--------|--------------------------------------------------------------------------------------------------|
| status      | String | Subtask status, which can be <b>success</b> , <b>running</b> , <b>failed</b> , or <b>waiting</b> |
| job_id      | String | Task ID                                                                                          |
| job_type    | String | Subtask type                                                                                     |
| begin_time  | String | Task start time in UTC format, for example, <b>'2016-01-02 15:04:05'</b>                         |
| end_time    | String | Task end time in UTC format, for example, <b>'2016-01-02 15:04:05'</b>                           |
| error_code  | String | Error code returned if the task execution fails                                                  |
| fail_reason | String | Cause of the task execution failure                                                              |

**Status code: 400****Table 9-160** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

**Status code: 404****Table 9-161** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

### Status code: 500

**Table 9-162** Response body parameters

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| errCode   | String | Error code<br>Minimum: <b>8</b><br>Maximum: <b>36</b>         |
| errMsg    | String | Error description<br>Minimum: <b>2</b><br>Maximum: <b>512</b> |

## Example Requests

None

## Example Responses

### Status code: 200

Response body parameters

```
{
 "job_id" : "26f6b565-xxxx-XXXX-xxxx-03f0bd975433",
 "status" : "success",
 "job_type" : "bind_ldap",
 "begin_time" : "2023-07-26 09:33:58",
 "end_time" : "2023-07-26 09:33:58"
}
```

### Status code: 400

Client error

```
{
 "errCode" : "SFS.TURBO.0001",
 "errMsg" : "parameter error"
}
```

### Status code: 404

Resource not found

```
{
 "errCode" : "SFS.TURBO.0001",
 "errMsg" : "parameter error"
}
```

### Status code: 500

Internal error

```
{
 "errCode" : "SFS.TURBO.0005",
 "errMsg" : "Internal server error"
}
```

## Status Codes

| Status Code | Description              |
|-------------|--------------------------|
| 200         | Response body parameters |
| 400         | Client error             |
| 404         | Resource not found       |
| 500         | Internal error           |

## Error Codes

See [Error Codes](#).

# 10 SFS 3.0 Capacity-Oriented APIs

## 10.1 File Systems

### 10.1.1 Creating a File System

#### Function

This API is used to create a file system.

#### URI

PUT /

#### Request Parameters

**Table 10-1** Request header parameters

| Parameter           | Mandatory | Type   | Description                                                                                                                                                    |
|---------------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Authorization       | Yes       | String | The signature information.                                                                                                                                     |
| Date                | Yes       | String | The request time.                                                                                                                                              |
| x-obs-az-redundancy | No        | String | The AZ redundancy, single-AZ or multi-AZ.                                                                                                                      |
| x-obs-bucket-type   | Yes       | String | The header used to specify the file system creation.<br>Enumerated value: <ul style="list-style-type: none"><li>• <b>SFS</b>: creating a file system</li></ul> |
| Host                | Yes       | String | The host address.                                                                                                                                              |
| x-obs-epid          | No        | String | The enterprise project ID.                                                                                                                                     |

**Table 10-2** Request body parameter

| Parameter | Mandatory | Type   | Description |
|-----------|-----------|--------|-------------|
| Location  | No        | String | The region. |

## Response Parameters

This response uses common headers. For details, see [Table 4-8](#).

## (Optional) Response Body

A response body contains information other than the response header. It is usually sent in a structured format (JSON or XML) defined by the response header parameter **Content-type**.

## Example Request

Creating a file system in example (with the host address and enterprise project ID 0):

```
PUT / HTTP/1.1
Host: example-sfs-01.sfs3.example.region.com:443
Date: Wed, 07 Jun 2023 02:38:09 GMT
x-obs-bucket-type: SFS
Authorization: OBS FNXE1B77SXDIB3TFMSZZ:0Xsnu4hJVOI7VWH0wlQczVN+rbg=
Content-Length: 85
x-obs-epid: 0

<CreateBucketConfiguration>
 <Location>example</Location>
</CreateBucketConfiguration>
```

## Example Response

```
HTTP/1.1 200 OK
Server: OBS
X-Obs-Request-Id: 0000018893B8058EC0470388BE6EDE88
Location: /example-sfs-01
X-Obs-Id-2: 32AAAQAAEABSAgAAEAABAAAQAAEABCTRa4voOUvr50ncznQT/hligMxL4so2z
Date: Wed, 07 Jun 2023 02:38:11 GMT
Content-Length: 0
```

## Status Codes

Status Code	Description
200	The file system is created.

## Error Codes

See [13.3 SFS 3.0 Capacity-Oriented Error Codes](#).

## 10.1.2 Deleting a File System

### Function

This API is used to delete a file system.

### URI

DELETE /

### Request Parameters

**Table 10-3** Request header parameters

Parameter	Mandatory	Type	Description
Authorization	Yes	String	The signature header field.
Date	Yes	String	The request time.
Host	Yes	String	The host address.

### Response Parameters

This response uses common headers. For details, see [Table 4-8](#).

### Example Request

```
DELETE / HTTP/1.1
User-Agent: curl/7.29.0
Accept: */
Date: WED, 01 Jul 2015 02:31:25 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC;jZiAT8Vx4azWEvPRMWi0X5BpJMA=
```

### Example Response

```
HTTP/1.1 204 No Content
Server: OBS
X-Obs-Request-Id: 0000018893B8081DC047305E783867DD
X-Obs-Id-2: 32AAAQAAEABSkAgAAEAABAAQAAEABCT5UWgsaro3EEEnOsNEzf8w8dnydR+Eak
Date: WED, 01 Jul 2015 02:31:25 GMT
```

### Status Codes

Status Code	Description
204	The file system is deleted.

### Error Codes

See [13.3 SFS 3.0 Capacity-Oriented Error Codes](#).

## 10.1.3 Listing File Systems

### Function

This API is used to list file systems.

### URI

GET /

### Request Parameters

**Table 10-4** Request header parameters

Parameter	Mandatory	Type	Description
x-obs-bucket-type	Yes	String	The header used to specify the content to be obtained. Enumerated value: <ul style="list-style-type: none"><li>• <b>SFS</b>: listing all file systems</li></ul>
Authorization	Yes	String	The signature information.
Date	Yes	String	The request time.
Host	Yes	String	The host address.

### Response Parameters

**Status code: 200**

**Table 10-5** Response body parameters

Parameter	Type	Description
Owner	<a href="#">Owner</a> object	File system owner information, including the tenant ID.
Buckets	<a href="#">Buckets</a> object	The list of file systems owned by the user.

**Table 10-6** Owner

Parameter	Type	Description
ID	String	The domain ID (account ID) of a user.

**Table 10-7** Buckets

Parameter	Type	Description
Bucket	<b>Bucket</b> object	Detailed file system information.

**Table 10-8** Bucket

Parameter	Type	Description
Name	String	The name of a file system.
CreationDate	String	The time when a file system was created.
Location	String	The location of a file system.

## Example Request

```
GET / HTTP/1.1 Date: date
x-obs-bucket-type: SFS
Authorization: authorization
```

## Example Response

```
HTTP/1.1 200 OK
Server: OBS
X-Obs-Request-Id: 0000018893B8126DC048B06DD3816BD4
X-Obs-Id-2: 32AAAQAAEABAAAQAAEABAAAQAAEABCTMZh3Thi7lcDxuGWu9Qtp9PjbYXa7lb
Date: Wed, 07 Jun 2023 02:38:14 GMT
Content-Type: application/xml
Content-Length: 377

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ListAllMyBucketsResult xmlns="http://obs.example.region.com/doc/2015-06-30/">
 <Owner>
 <ID>783fc6652cf246c096ea836694f71855</ID>
 </Owner>
 <Buckets>
 <Bucket>
 <Name>examplebucket01</Name>
 <CreationDate>2018-06-21T09:15:01.032Z</CreationDate>

 <Location>example-region-1</Location>
 <BucketType>SFS</BucketType>
 </Bucket>
 <Bucket>
 <Name>examplebucket02</Name>
 <CreationDate>2018-06-22T03:56:33.700Z</CreationDate>

 <Location>example-region-2</Location>
 <BucketType>SFS</BucketType>
 </Bucket>
 </Buckets>
</ListAllMyBucketsResult>
```

## Status Codes

Status Code	Description
200	The file systems are obtained.

## Error Codes

See [13.3 SFS 3.0 Capacity-Oriented Error Codes](#).

# 10.2 File System Access Rules

## 10.2.1 Configuring a File System ACL

### Function

This API is used to configure a file system ACL.



After the ACL is configured, the configuration takes about 30 second to take effect.

### URI

PUT /

**Table 10-9** Query parameter

Parameter	Mandatory	Type	Description
sfsacl	Yes	String	/

### Request Parameters

**Table 10-10** Request header parameters

Parameter	Mandatory	Type	Description
Date	Yes	String	The request time.
Authorization	Yes	String	The signature information.
Host	Yes	String	The host address.

**Table 10-11** Request body parameter

Parameter	Mandatory	Type	Description
Statement	No	Array of <b>Statement</b> objects	Unique identification

**Table 10-12** Statement

Parameter	Mandatory	Type	Description
Sid	No	String	The statement ID.
Action	Yes	String	The allowed statement action. Enumerated values: <ul style="list-style-type: none"><li>• <b>FullControl</b>: read/write</li><li>• <b>Read</b>: read-only</li></ul>
Effect	Yes	String	The effect specifying that the statement permission is <b>Allow</b> . Enumerated value: <ul style="list-style-type: none"><li>• <b>Allow</b></li></ul>
Condition	Yes	<b>Condition</b> object	The conditions for a statement to take effect.

**Table 10-13** Condition

Parameter	Mandatory	Type	Description
SourceVpc	Yes	String	A specified VPC ID.
VpcSourceIp	No	Array of strings	A specified IP address or IP address range. This parameter is currently not supported.

## Response Parameters

This response uses common headers. For details, see [Table 4-8](#).

## Example Request

Configuring a file system ACL (granting the read/write permissions for IP addresses **127.0.0.1/24** and **192.168.1.85/24** in VPC **241dbf6b-dc5d-41b2-9108-ca5e56b48386**):

```
PUT /?fsacl HTTP/1.1
Host: examplefilesystem.sfs3.example.region.com
```

```
Date: WED, 01 Jul 2015 02:32:25 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:jZiAT8Vx4azWEvPRMWi0X5BpJMA=

{
 "Statement": [
 {
 "Sid": "Stmt1375240018061",
 "Action": "FullControl",
 "Effect": "Allow",
 "Condition": {
 "SourceVpc": "241dbf6b-dc5d-41b2-9108-ca5e56b48386",
 "VpcSourceIp": ["127.0.0.1/24", "192.168.1.85/24"]
 }
 }
]
}
```

## Example Response

```
HTTP/1.1 204 OK
Server: OBS
X-Obs-Request-Id: 0000018893B8073AC04721AA7EE3408B
X-Obs-Id-2: 32AAAQAAEABSAgAAEAABAAAQAAEABCS5QDe0QLbFNz6FXoKuXHzD2wS0eJQaj
Date: Wed, 07 Jun 2023 02:38:11 GMT
```

## Status Codes

Status Code	Description
204	The file system ACL is configured.

## Error Codes

See [13.3 SFS 3.0 Capacity-Oriented Error Codes](#).

## 10.2.2 Obtaining File System ACL Information

### Function

This API is used to obtain the ACL information of a file system.

### URI

GET /

**Table 10-14** Query parameter

Parameter	Mandatory	Type	Description
sfsacl	Yes	String	/

## Request Parameters

**Table 10-15** Request header parameters

Parameter	Mandatory	Type	Description
Date	Yes	String	The request time.
Authorization	Yes	String	The signature information.
Host	Yes	String	The host address.

## Response Parameters

Status code: 200

**Table 10-16** Response body parameter

Parameter	Type	Description
Statement	Array of <b>Statement</b> objects	Unique identification

**Table 10-17** Statement

Parameter	Type	Description
Sid	String	The statement ID.
Action	String	The allowed statement action. Enumerated values: <ul style="list-style-type: none"><li>• <b>FullControl</b>: read/write</li><li>• <b>Read</b>: read-only</li></ul>
Effect	String	The effect specifying that the statement permission is <b>Allow</b> . Enumerated value: <ul style="list-style-type: none"><li>• <b>Allow</b></li></ul>
Condition	<b>Condition</b> object	The conditions for a statement to take effect.

**Table 10-18** Condition

Parameter	Type	Description
SourceVpc	String	A specified VPC ID.

Parameter	Type	Description
VpcSourceIp	Array of strings	A specified IP address or IP address range. This parameter is currently not supported.

## Example Request

```
GET /?sfsacl HTTP/1.1
Host: example-sfs-01.sfs3.example.region.com:443
Date: Wed, 07 Jun 2023 03:31:46 GMT
Authorization: OBS FNXE1B77SXDIB3TFMSZZ:eUqPlHnPDWGDTlgyLmsALA86wys=
```

## Example Response

```
HTTP/1.1 200 OK
Server: OBS
Content-Type: application/json
Content-Length: 131
Date: Wed, 07 Jun 2023 03:31:59 GMT
X-Obs-Request-Id: 0000018893E94B65C046B527778F8F14
X-Obs-Id-2: 32AAAQAAEABAAAQAAEABAAAQAAEABCSc2lEdSHcA04319WknB1DD5BdBKuGr1
{
 "Statement": [
 {
 "Condition": {
 "SourceVpc": "f85adabc-a387-4d1d-94cf-65ef9034f752"
 },
 "Action": "FullControl",
 "Effect": "Allow",
 "Sid": ""
 }
]
}
```

## Status Codes

Status Code	Description
200	The file system ACL is obtained.

## Error Codes

See [13.3 SFS 3.0 Capacity-Oriented Error Codes](#).

### 10.2.3 Deleting a File System ACL

#### Function

This API is used to delete a file system ACL.

#### URI

DELETE /

**Table 10-19** Query parameter

Parameter	Mandatory	Type	Description
sfsacl	Yes	String	/

## Request Parameters

**Table 10-20** Request header parameters

Parameter	Mandatory	Type	Description
Date	Yes	String	The request time.
Authorization	Yes	String	The signature information.
Host	Yes	String	The host address.

## Response Parameters

This response uses common headers. For details, see [Table 4-8](#).

## Example Request

```
DELETE /?sfsacl HTTP/1.1
Host: examplefilesystem.sfs3.example.region.com
Date: WED, 01 Jul 2015 02:36:06 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:jZiAT8Vx4azWEvPRMWi0X5BpJMA=
```

## Example Response

```
HTTP/1.1 204 No Content
Server: OBS
X-Obs-Id-2: 32AAQAEEAABSAgAAEAABAAAQAAEABCSj4dxiqb1Lw50CTjVQeV3ebh3QQ6PAj
X-Obs-Request-Id: 0000018893B807D5C0472A6161D87032
Date: WED, 01 Jul 2015 02:36:06 GMT
```

## Status Codes

Status Code	Description
204	The file system ACL is deleted.

## Error Codes

See [13.3 SFS 3.0 Capacity-Oriented Error Codes](#).

# 11

# Permissions Policies and Supported Actions

## 11.1 Introduction

This section describes fine-grained permissions management for your SFS resources. If your Huawei Cloud account does not need individual IAM users, then you may skip over this section.

By default, new IAM users do not have permissions assigned. You need to add a user to one or more groups, and attach permissions policies or roles to these groups. Users inherit permissions from the groups to which they are added and can perform specified operations on cloud services based on the permissions.

You can grant users permissions by using roles and policies. Roles are a type of coarse-grained authorization mechanism that defines permissions related to user responsibilities. Policies define API-based permissions for operations on specific resources under certain conditions, allowing for more fine-grained, secure access control of cloud resources.

### NOTE

- Policy-based authorization is useful if you want to allow or deny the access to an API.

Each account has all the permissions required to call all APIs, but IAM users must be assigned the required permissions. The permissions required for calling an API are determined by the actions supported by the API. Only users who have been granted permissions allowing the actions can call the API successfully. For example, if an IAM user wants to query ECSs using an API, the user must have been granted permissions that allow the `ecs:servers:list` action.

## Supported Actions

SFS provides system-defined policies that can be directly used in IAM. You can also create custom policies and use them to supplement system-defined policies, implementing more refined access control. Operations supported by policies are specific to APIs. The following are common concepts related to policies:

- Permissions: Statements in a policy that allow or deny certain operations.
- APIs: REST APIs that can be called by a user who has been granted specific permissions.
- Actions: Specific operations that are allowed or denied.
- Related actions: Actions on which a specific action depends to take effect. When assigning permissions for the action to a user, you also need to assign permissions for the related actions.
- IAM projects/Enterprise projects: Authorization scope of a custom policy. A custom policy can be applied to IAM projects or enterprise projects or both. Policies that contain actions for both IAM and enterprise projects can be used and applied for both IAM and Enterprise Management. Policies that only contain actions for IAM projects can be used and applied to IAM only. For details about the differences between IAM and enterprise projects, see [Differences Between IAM and Enterprise Management](#).

-  **NOTE**

The check mark (✓) and cross symbol (✗) indicate that an action takes effect or does not take effect for the corresponding type of projects.

SFS supports the following actions that can be defined in custom policies:

- **Shared File Systems**, including actions supported by all SFS file system APIs, such as the APIs for creating file systems, querying file system lists, querying details about a single file system, modifying file systems, and deleting file systems.
- **Capacity Expansion or Reduction**, including actions supported by the SFS file system expanding and shrinking APIs, such as the APIs for expanding or shrinking a shared file system.
- **11.2.2 SFS Turbo Actions**, including actions supported by all SFS Turbo file system APIs, such as the APIs for creating file systems, querying file system lists, querying details about a single file system, and deleting file systems.

## 11.2 Supported Actions

### 11.2.1 SFS Actions

#### API Version Querying

Permission	API	Action	IAM Project	Enterprise Project
Querying the API Version (Native OpenStack API)	GET /	-	✗	✗

Permission	API	Action	IAM Project	Enterprise Project
Querying the API Version (Native OpenStack API)	GET /{api_version}/	-	x	x

## Shared File Systems

Permission	API	Action	IAM Project	Enterprise Project
Creating a Shared File System (Native OpenStack API)	POST /v2/{project_id}/shares	sfs:shares:createShare	✓	✓
Querying All Shared File Systems (Native OpenStack API)	GET /v2/{project_id}/shares	sfs:shares:getShare	✓	✓
Querying Details About All Shared File Systems (Native OpenStack API)	GET /v2/{project_id}/shares/detail	sfs:shares:getAllSharesDetail	✓	✓
Querying Details About a Shared File System (Native OpenStack API)	GET /v2/{project_id}/shares/{share_id}	sfs:shares:getShareDetail	✓	✓

Permission	API	Action	IAM Project	Enterprise Project
Querying Mount Locations of a Shared File System (Native OpenStack API)	GET /v2/{project_id}/shares/{share_id}/export_locations	sfs:shares:getSharesExportLocations	✓	✓
Modifying a Shared File System (Native OpenStack API)	PUT /v2/{project_id}/shares/{share_id}	sfs:shares:updateShare	✓	✓
Deleting a Shared File System (Native OpenStack API)	DELETE /v2/{project_id}/shares/{share_id}	sfs:shares:deleteShare	✓	✓

## Share Access Rules

Permission	API	Action	IAM Project	Enterprise Project
Adding Share Access Rules (Native OpenStack API)	POST /v2/{project_id}/shares/{share_id}/action	sfs:shares:ShareAction	✓	✓
Deleting Share Access Rules (Native OpenStack API)	POST /v2/{project_id}/shares/{share_id}/action	sfs:shares:ShareAction	✓	✓

Permission	API	Action	IAM Project	Enterprise Project
Querying Share Access Rules (Native OpenStack API)	POST /v2/{project_id}/shares/{share_id}/action	sfs:shares:ShareAction	√	√

## Quota Management

Permission	API	Action	IAM Project	Enterprise Project
Querying the Tenant Quota (Native OpenStack API)	GET /v2/{project_id}/os-quota-sets/{project_id}	sfs:quotas:getOSQuotaSets	√	✗

## Capacity Expansion or Reduction

Permission	API	Action	IAM Project	Enterprise Project
Expanding a Shared File System (Native OpenStack API)	POST /v2/{project_id}/shares/{share_id}/action	sfs:shares:ShareAction	√	√
Shrinking a Shared File System (Native OpenStack API)	POST /v2/{project_id}/shares/{share_id}/action	sfs:shares:ShareAction	√	√

## Tags for a Shared File System

Permission	API	Action	IAM Project	Enterprise Project
Adding a Tag to a Shared File System	POST /v2/{project_id}/sfs/{share_id}/tags	sfs:tags:addShareTags	√	✗
Deleting a Tag from a Shared File System	DELETE /v2/{project_id}/sfs/{share_id}/tags/{key}	sfs:tags:deleteShareTags	√	✗
Querying Tag Information About a Shared File System	GET /v2/{project_id}/sfs/{share_id}/tags	sfs:tags:getShareTags	√	✗
Querying Tags of a Tenant's All Shared File Systems	GET /v2/{project_id}/sfs/tags	sfs:tags:getAllTags	√	✗
Batch Adding Tags to a Shared File System	POST /v2/{project_id}/sfs/{share_id}/tags/action	sfs:tags:batchShareTags	√	✗
Batch Deleting Tags from a Shared File System	POST /v2/{project_id}/sfs/{share_id}/tags/action	sfs:tags:batchShareTags	√	✗
Querying Details About a Shared File System Based on Tags	POST /v2/{project_id}/sfs/resource_instances/action	sfs:tags:getShareByTags	√	✗

Permission	API	Action	IAM Project	Enterprise Project
Querying the Number of Shared File Systems Based on Tags	POST /v2/{project_id}/sfs/resource_instances/action	sfs:tags:getShareByTags	√	✗

## AZ

Permission	API	Action	IAM Project	Enterprise Project
Querying AZs (Native OpenStack API)	GET /v2/{project_id}/availability-zones?share_az={share_az}	sfs:availabilityZones:getAvailabilityZones	√	✗

## 11.2.2 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: - "dss:*:get", - "dss:*:list", - "dss:*:count"		
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	-	✓	✓

# 12 Common Parameters

## 12.1 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.

## 12.2 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.

# 13 Appendix

## 13.1 Status Codes

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

- 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.

Returned Value	Description
406 Not Acceptable	The response generated by the server could not be accepted by the client.
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.

## 13.2 SFS Turbo Error Codes

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

Status Code	Error Code	Error Message	Description	Solution
400/404	SFS.TURBO.0001	Parameter error	Invalid parameters.	Use valid parameters and try again.
400/404	SFS.TURBO.0002	Cluster not found	The requested object is not found 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.

Status Code	Error Code	Error Message	Description	Solution
400	SFS.TURBO.0004	Invalid vpc	Invalid VPC.	Use valid parameters and try again.
400/500	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.
409	SFS.TURBO.0009	Name has existed	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.
400/403	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.0012	Operation is not allowed	A yearly/monthly file system cannot be resized or deleted via API.	Manage yearly/monthly file systems on the console.
400	SFS.TURBO.0015	do not have the operation permission	Insufficient permissions.	Apply for the required permissions.

Status Code	Error Code	Error Message	Description	Solution
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.
404	SFS.TURBO.0019	Invalid Job Id	Invalid job ID.	Use a valid job ID.
400	SFS.TURBO.0020	Invalid flavor	Invalid flavor.	Use a valid flavor.
400	SFS.TURBO.0021	file system not match	Unmatched type. The background disk type is not supported by this file system type.	Ensure that the background disk type is supported by the file system type.
400	SFS.TURBO.0022	backup name already exists	The backup name already exists.	Change the backup name.
400	SFS.TURBO.0023	Invalid flavor ref	Invalid specification code.	Use a valid specification code.
400	SFS.TURBO.0024	Operation is not allowed	Unsupported operation.	Contact technical support.
400	SFS.TURBO.0025	Invalid tag key param	The resource tag key contains invalid characters.	Use valid parameters and try again.

Status Code	Error Code	Error Message	Description	Solution
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.
400	SFS.TURBO.0031	cache type not exist	The cache type is not found.	Use a valid cache type.
400	SFS.TURBO.0032	EVS Resource Not Enough	Insufficient EVS resources.	Enlarge EVS resources.
500	SFS.TURBO.0033	Get Client Ips Error	Failed to obtain client IP addresses.	Try again. If the fault persists, contact technical support.
400	SFS.TURBO.0034	dedicated storage resource not enough	Insufficient resources in the dedicated storage pool.	Expand the storage pool.
400	SFS.TURBO.0035	The current type does not support backup.	Unsupported type for backup.	Unsupported type for backup.

Status Code	Error Code	Error Message	Description	Solution
500	SFS.TURBO.0036	Failed to obtain the used capacity of the directory	Failed to obtain the used capacity of the directory.	Try again. If the fault persists, contact technical support.
400	SFS.TURBO.0037	Operation conflict, client retry	Operation conflict.	Try again with valid operations.
400	SFS.TURBO.0038	unknown error	Unknown error.	Contact technical support.
400	SFS.TURBO.0039	The VIP quota is insufficient	Insufficient virtual IP address quota.	Apply for a higher quota.
400	SFS.TURBO.0040	Insufficient Security Group Quota	Insufficient security group quota.	Apply for a higher quota.
400	SFS.TURBO.0041	Operation is not allowed	File system version too early.	Contact technical support.
404	SFS.TURBO.0042	Invalid NIC ID	The specified NIC ID is not found or is empty.	Use valid parameters and try again.
400	SFS.TURBO.0100	Invalid file system path	Invalid file system path.	Use a valid file system path.
404	SFS.TURBO.0101	The file system path does not exist	The file system path is not found.	Select a valid file system path.
400	SFS.TURBO.0102	The file system path is not a directory	The file system path is not a directory.	Select a valid file system path.
400	SFS.TURBO.0103	The file system is being processed	The file system is being processed.	Wait until the processing is complete.

Status Code	Error Code	Error Message	Description	Solution
500	SFS.TURBO.0104	Failed to import or export OBS data	Failed to import or export OBS data.	Try again. If the fault persists, contact technical support.
500	SFS.TURBO.0105	Failed to obtain OBS import and export task data	Failed to obtain the OBS import and export data.	Try again. If the fault persists, contact technical support.
400	SFS.TURBO.0106	The OBS task does not exist	The OBS task is not found.	Select an existing OBS task or create an OBS task.
400	SFS.TURBO.0107	OBS protocol error	Backend parameter <b>type</b> is incorrectly configured.	Contact technical support.
400	SFS.TURBO.0108	The OBS endpoint name is incorrect	Incorrect OBS domain name.	Contact technical support.
400	SFS.TURBO.0109	The OBS bucket name is incorrect	Incorrect OBS bucket name.	Use the correct OBS bucket name.
400	SFS.TURBO.0110	OBS agent error	The import or export task failed.	Contact technical support.
400	SFS.TURBO.0111	The OBS configuration list is empty	The OBS configuration list is empty.	Use valid OBS configuration information.

## 13.3 SFS 3.0 Capacity-Oriented Error Codes

If an API calling fails, no result data is returned. You can locate the cause of the error according to the error code of each API. If an API calling fails, HTTP status code 3xx, 4xx or 5xx is returned. The response body contains the specific error code and information. If you are unable to identify the cause of an error, contact

customer service and provide the error code so that we can help you solve the problem as soon as possible.

## Error Response Syntax

When an error occurs, the response header information contains:

- Content-Type: application/xml
- HTTP error status code 3xx, 4xx, or 5xx

The response body also contains information about the error. The following is an error response example that shows common elements in the Representational State Transfer (REST) error response body.

```
<?xml version="1.0" encoding="UTF-8"?>
<Error>
<Code>NoSuchKey</Code>
<Message>The resource you requested does not exist</Message>
<Resource>/example-filesystem/object</Resource>
<RequestId>001B21A61C6C0000013402C4616D5285</RequestId>
<HostId>RkRCRDJENDc5MzdGQkQ4OY3MTI4NTQ3NDk2Mjg0M0FB
QUFBQUFBYmJiYmJiYmJD</HostId>
</Error>
```

**Table 13-1** describes the meaning of each element.

**Table 13-1** Error response elements

Element	Description
Error	Root element that describes the error in an XML response body
Code	HTTP return code that corresponds to the error in the XML response body. For details about error codes, see <a href="#">Table 13-2</a> .
Message	Error details in the XML response body. For details about error messages, see <a href="#">Table 13-2</a> .
RequestId	ID of the request whose error response is returned. The ID is used for locating the error.
HostId	ID of the server that returns an error response
Resource	File system or object related to an error.

### NOTE

Some error responses contain more detailed information. It is recommended that all error information be logged for easier rectification of errors.

## Description

If SFS encounters an error when processing a request, a response containing the error code and description will be returned. [Table 13-2](#) describes the error codes of SFS 3.0 Capacity-Oriented.

**Table 13-2** Error codes

Status Code	Error Code	Error Message	Solution
301 Moved Permanently	PermanentRedirect	The requested file system can be accessed only through the specified address. Send subsequent requests to the address.	Send the request to the returned redirection address.
301 Moved Permanently	WebsiteRedirect	The website request lacks <b>bucketName</b> .	Put the file system name in the request and try again.
307 Moved Temporarily	TemporaryRedirect	Temporary redirection. If the DNS is updated, the request is redirected to the file system.	The system automatically redirects the request or sends the request to the redirection address.
400 Bad Request	BadDigest	The object content MD5 value specified by the client is inconsistent with that received by the system.	Check whether the MD5 value carried in the header is the same as that calculated by the message body.
400 Bad Request	BadDomainName	The domain name is invalid.	Use a valid domain name.
400 Bad Request	BadRequest	Invalid request parameters.	Modify the parameters according to the error details in the message body.
400 Bad Request	CustomDomainAlreadyExist	The configured domain already exists.	It has been configured and does not need to be configured again.
400 Bad Request	CustomDomainNotExist	Delete the domain that does not exist.	It is not configured or has been deleted. You do not need to delete it.
400 Bad Request	EntityTooLarge	The size of the object uploaded using the POST method exceeds the upper limit.	Modify the conditions specified in the upload policy or reduce the object size.

Status Code	Error Code	Error Message	Solution
400 Bad Request	EntityTooSmall	The size of the object uploaded using the POST method does not reach the lower limit.	Modify the conditions specified in the upload policy or increase the object size.
400 Bad Request	IllegalLocationConstraintException	A request without <b>Location</b> is sent for creating a file system in a non-default region.	Send the file system creation request to the default region, or send the request with the <b>Location</b> of a non-default region.
400 Bad Request	IncompleteBody	No complete request body is received due to network or other problems.	Upload the object again.
400 Bad Request	IncorrectNumberOfFilesInPostRequest	Each POST request must contain one file to be uploaded.	Carry a file to be uploaded.
400 Bad Request	InvalidArgumentException	Invalid parameter.	Modify the parameter according to the error details in the message body.
400 Bad Request	InvalidBucket	The file system to be accessed does not exist.	Try again with another file system name.
400 Bad Request	InvalidBucketAlias	The file system alias in the request is too long or contains special characters that are not allowed.	Try again with another file system alias.
400 Bad Request	InvalidBucketName	The file system name in the request is too long or contains special characters that are not allowed.	Try again with another file system name.
400 Bad Request	InvalidEncryptionAlgorithmError	Incorrect encryption algorithm. The object cannot be decrypted due to incorrect encryption header carried when downloading the SSE-C encrypted object.	Carry the correct encryption header when downloading the object.

Status Code	Error Code	Error Message	Solution
400 Bad Request	InvalidLocationConstraint	The specified <b>Location</b> in the file system creation request is invalid or does not exist.	Correct the <b>Location</b> in the file system creation request.
400 Bad Request	InvalidPart	One or more specified parts are not found. The parts may not be uploaded or the specified entity tags (ETags) do not match the parts' ETags.	Merge the parts correctly according to the ETags.
400 Bad Request	InvalidPartOrder	Parts are not listed in ascending order by part number.	Sort the parts in ascending order and merge them again.
400 Bad Request	InvalidPolicyDocument	The content of the form does not meet the conditions specified in the policy document.	Modify the policy in the constructed form according to the error details in the message body and try again.
400 Bad Request	InvalidRedirectLocation	Invalid redirect location.	Specifies the correct IP address.
400 Bad Request	InvalidRequest	Invalid request.	Modify the parameter according to the error details in the message body.
400 Bad Request	InvalidRequestBody	The request body is invalid. The request requires a message body but no message body is uploaded.	Upload the message body in the correct format.
400 Bad Request	InvalidTargetBucketForLogging	The delivery group has no ACL permission for the target file system.	Configure the ACL for the target file system and try again.
400 Bad Request	KeyTooLongError	The provided key is too long.	Use a shorter key.
400 Bad Request	KMS.DisabledException	The customer master key (CMK) is disabled in SSE-KMS mode.	Replace the key and try again, or contact with the technical support.

Status Code	Error Code	Error Message	Solution
400 Bad Request	KMS.NotFoundException	The customer master key (CMK) does not exist in SSE-KMS mode.	Retry with the correct CMK.
400 Bad Request	MalformedACLError	The provided XML file is in an incorrect format or does not meet format requirements.	Use the correct XML format to retry.
400 Bad Request	MalformedError	The XML format in the request is incorrect.	Use the correct XML format to retry.
400 Bad Request	MalformedLoggingStatus	The XML format of <b>Logging</b> is incorrect.	Use the correct XML format to retry.
400 Bad Request	MalformedPolicy	The bucket policy does not pass.	Modify the file system policy according to the error details returned in the message body.
400 Bad Request	MalformedQuotaError	The Quota XML format is incorrect.	Use the correct XML format to retry.
400 Bad Request	MalformedXML	An XML file of a configuration item is in incorrect format.	Use the correct XML format to retry.
400 Bad Request	MaxMessageLengthExceeded	Copying an object does not require a message body in the request.	Remove the message body and retry.
400 Bad Request	MetadataTooLarge	The size of the metadata header has exceeded the upper limit.	Reduce the size of the metadata header.
400 Bad Request	MissingRegion	No region contained in the request and no default region defined in the system.	Carry the region information in the request.
400 Bad Request	MissingRequestBodyError	This error code is returned after you send an empty XML file.	Provide the correct XML file.
400 Bad Request	MissingRequiredHeader	Required headers are missing in the request.	Provide required headers.

Status Code	Error Code	Error Message	Solution
400 Bad Request	MissingSecurityHeader	A required header is not provided.	Provide required headers.
400 Bad Request	TooManyBuckets	You have attempted to create more file systems than allowed.	Delete some file systems and try again.
400 Bad Request	TooManyBucketAliases	You have attempted to create more file system aliases than allowed.	Delete some file system aliases and try again.
400 Bad Request	TooManyCustomDomains	Too many user accounts are configured.	Delete some user accounts and try again.
400 Bad Request	TooManyWrongSignature	The request is rejected due to high-frequency errors.	Replace the Access Key and try again.
400 Bad Request	UnexpectedContent	The request requires a message body which is not carried by the client, or the request does not require a message body but the client carries the message body.	Try again according to the instruction.
400 Bad Request	UserKeyMustBeSpecified	This operation is available only to specific users.	Contact technical support.
400 Bad Request	ContentSHA256Mismatch	The object's SHA-256 value calculated by the client is different from that calculated by the server.	Check whether the SHA-256 value calculated by the client is correct.
403 Forbidden	AccessDenied	Access denied, because the request does not carry a date header or the header format is incorrect.	Provide a correct date header in the request.
403 Forbidden	AccessForbidden	Insufficient permission. No CORS configuration exists for the file system or the CORS rule does not match.	Modify the CORS configuration of the file system or send the matched OPTIONS request based on the CORS configuration of the file system.

Status Code	Error Code	Error Message	Solution
403 Forbidden	AllAccessDisabled	You have no permission to perform the operation. The file system name is forbidden.	Try again with another file system name.
403 Forbidden	DeregisterUserId	The user has been deregistered.	Top up or re-register.
403 Forbidden	InArrearOrInsufficientBalance	The subscriber owes fees or the account balance is insufficient, and the subscriber does not have the permission to perform an operation.	Top up.
403 Forbidden	InsufficientStorageSpace	Insufficient storage space.	If the quota is exceeded, increase quota or delete some objects.
403 Forbidden	InvalidAccessKeyId	The access key ID provided by the customer does not exist in the system.	Provide correct access key Id.
403 Forbidden	InvalidObjectState	You need to restore ArchiveCold objects first before downloading them.	Restore the object first.
403 Forbidden	NotSignedUp	Your account is not in the system. The account must be registered before you can use it.	Register OBS.

Status Code	Error Code	Error Message	Solution
403 Forbidden	RequestTimeTooSkewed	<p>There was a large time offset between the OBS server time and the time when the client initiated a request.</p> <p>For security purposes, OBS verifies the time offset between the client and server. If the offset is longer than 15 minutes, the OBS server will reject your requests and this error message is reported.</p>	Check whether there is a large time offset between the client time and server time. If there is, adjust the client time based on your local time (UTC) and try again.
403 Forbidden	SignatureDoesNotMatch	The provided signature does not match the signature calculated by the system.	Check your secret access key and signature algorithm. For details, <a href="#">Why Don't the Signatures Match?</a>
403 Forbidden	VirtualHostDomainRequired	Virtual hosting access domain name is not used.	Use the virtual hosting access domain name. For details, see <a href="#">4.1 Constructing a Request</a> .
403 Forbidden	Unauthorized	The user has not been authenticated in real name.	Authenticate the user's real name and try again.
403 Forbidden	RequestPayerDenied	This is a requester-pays file system.	Carry the header <b>x-obs-request-payer: requester</b> in the access request.
404 Not Found	NoSuchBucket	The specified file system does not exist.	Create a file system and perform the operation again.
404 Not Found	NoSuchBucketAlias	The specified file system alias does not exist.	Create a file system alias and perform the operation again.
404 Not Found	NoSuchBucketPolicy	No file system policy exists.	Configure a file system policy.
404 Not Found	NoSuchCORSConfiguration	No CORS configuration exists.	Configure CORS first.

Status Code	Error Code	Error Message	Solution
404 Not Found	NoSuchCustomDomain	The requested user account does not exist.	Set a user account first.
404 Not Found	NoSuchKey	The specified key does not exist.	Upload the object first.
404 Not Found	NoSuchLifecycleConfiguration	The requested lifecycle rule does not exist.	Configure a lifecycle rule first.
404 Not Found	NoSuchUpload	The specified multipart upload does not exist. The upload ID does not exist or the multipart upload has been terminated or completed.	Use the existing part or reinitialize the part.
404 Not Found	NoSuchVersion	The specified version ID does not match any existing version.	Use a correct version ID.
404 Not Found	NoSuchWebsiteConfiguration	The requested website does not exist.	Configure the website first.
405 Method Not Allowed	MethodNotAllowed	The specified method is not allowed against the requested resource. The message "Specified method is not supported." is returned.	The method is not allowed.
408 Request Timeout	RequestTimeout	The socket connection to the server has no read or write operations within the timeout period.	Check the network and try again, or contact technical support.
409 Conflict	BucketAliasAlreadyExists	The requested file system alias already exists. The file system namespace is shared by all users.	Try again with another file system alias.
409 Conflict	BucketAliasInUse	The requested alias cannot be deleted because it has been bound to a file system.	Unbind the alias from the file system and then delete the alias.

Status Code	Error Code	Error Message	Solution
409 Conflict	BucketAlreadyBindAlias	The requested file system has been bound to an alias. Each file system can be bound to only one file system alias.	Change the file system.
409 Conflict	BucketAlreadyExists	The requested file system name already exists. The file system namespace is shared by all users.	Try again with another file system name.
409 Conflict	BucketAlreadyOwnedByYou	Your previous request for creating the named file system succeeded and you already own it.	No further action is required.
409 Conflict	BucketNotEmpty	The file system you tried to delete is not empty.	Delete the objects in the file system and then delete the file system.
409 Conflict	InvalidBucketState	Invalid file system status. If cross-region replication is configured, file system versioning cannot be disabled.	Keep file system versioning enabled or cancel cross-region replication.
409 Conflict	OperationAborted	A conflicting operation is being performed on this resource. Retry later.	Try again later.
409 Conflict	ServiceNotSupported	The request method is not supported by the server.	Not supported by the server. Contact technical support.
411 Length Required	MissingContentLength	The HTTP header Content-Length is not provided.	Provide the Content-Length header.
412 Precondition Failed	PreconditionFailed	At least one of the specified preconditions is not met.	Modify according to the condition prompt in the returned message body.
416 Client Requested Range Not Satisfiable	InvalidRange	The requested range cannot be obtained.	Retry with the correct range.

Status Code	Error Code	Error Message	Solution
500 Internal Server Error	InternalError	An internal error occurs. Retry later.	Contact technical support.
501 Not Implemented	ServiceNotImplemented	The request method is not implemented by the server.	Not supported currently. Contact technical support.
503 Service Unavailable	ServiceUnavailable	The server is overloaded or has internal errors.	Try later or contact technical support.
503 Service Unavailable	SlowDown	Too frequent requests.	Reduce your request frequency.

**Table 13-3 OEF error codes**

Status Code	Error Code	Error Message	Solution
500 Internal Server Error	SYS.0001	Internal service error.	Contact technical support.
404 Not Found	SYS.0003	Unsupported API.	Use another API.
401 Unauthorized	SYS.0004	Unauthenticated request.	Contact technical support.
403 Forbidden	SYS.0005	No access permission.	Contact technical support.
400 Bad Request	SYS.0006	Incorrect request format.	Check the request format.
400 Bad Request	SYS.0007	Invalid request for range download.	Contact technical support.
500 Internal Server Error	SYS.0008	Token expired.	Use a valid token.
431 Request Header Fields Too Large	SYS.0009	The number of headers in the HTTP request exceeds the upper limit.	Reduce the number of headers in the HTTP request.
400 Bad Request	SYS.0010	Invalid request parameters.	Check the request parameters.
429 Too Many Requests	SYS.0011	The number of requests has exceeded the upper limit.	Reduce the number of requests.
400 Bad Request	SYS.0012	The request body is oversized.	Reduce the request body size.

Status Code	Error Code	Error Message	Solution
403 Forbidden	SYS.0013	Token update is required due to permission changes.	Update the token.
404 Not Found	SYS.0014	The file system does not exist.	Try again with another file system name.
404 Not Found	SYS.0015	The object does not exist.	Try with another object name.
500 Internal Server Error	SYS.0016	OBS access error.	Contact technical support.
500 Internal Server Error	SYS.0018	Internal request error. Possible causes: incorrect request format or network disconnection.	Check the request format and network connectivity.
500 Internal Server Error	SYS.0019	Failed to access the file system policy.	Contact technical support.
500 Internal Server Error	SYS.0020	Failed to access the background task management service.	Contact technical support.
403 Forbidden	SYS.0021	Restricted account.	Top up your account.
403 Forbidden	SYS.0022	Account frozen.	Top up or register a new account.
400 Bad Request	SYS.0023	Incorrect region.	Try with another region name.
500 Internal Server Error	SYS.0024	Failed to access an authorized service.	Contact technical support.
500 Internal Server Error	SYS.0025	Incorrect response content.	Contact technical support.
500 Internal Server Error	SYS.0026	Incorrect read response content.	Contact technical support.
400 Bad Request	SYS.0027	The agency does not have any permissions.	Contact technical support.
400 Bad Request	SYS.0028	The agency does not exist.	Try with another agency.
400 Bad Request	SYS.0029	Invalid OBS region domain name.	Try with another OBS region domain name.

Status Code	Error Code	Error Message	Solution
400 Bad Request	SYS.0030	OBS region domain name is not matched.	Try with another OBS region domain name.
500 Internal Server Error	SYS.0031	Failed to authorize OBS to automatically create an agency.	Contact technical support.
500 Internal Server Error	SYS.0032	Failed to authorize OBS to automatically modify an agency.	Contact technical support.
500 Internal Server Error	SYS.0033	Failed to grant OBS to automatically create custom permissions.	Contact technical support.
500 Internal Server Error	SYS.0034	Failed to grant OBS to automatically query custom permissions.	Contact technical support.
500 Internal Server Error	SYS.0035	Failed to grant OBS to automatically update custom permissions.	Contact technical support.
400 Bad Request	SYS.0036	Invalid project ID.	Try with another project ID.
400 Bad Request	SYS.0037	Insufficient permissions granted to the agency.	Contact technical support.
400 Bad Request	SYS.0038	Multi-range download is not supported.	Contact technical support.
500 Internal Server Error	SYS.0039	Invalid account ID.	Enter the correct tenant ID.
500 Internal Server Error	SYS.0040	An error occurred when initializing the SDK client.	Contact technical support.
400 Bad Request	SYS.0041	Failed to replace the magic parameter.	Contact technical support.
500 Internal Server Error	SYS.0042	Server processing times out.	Contact technical support.
500 Internal Server Error	SYS.0043	Failed to deserialize the JSON character string.	Contact technical support.
500 Internal Server Error	SYS.0044	An error occurred when obtaining the internal cache status.	Contact technical support.

Status Code	Error Code	Error Message	Solution
404 Not Found	Fetch.0001	The task does not exist.	Try with another task ID.
500 Internal Server Error	Fetch.0003	Task persistence failed.	Contact technical support.
400 Bad Request	Fetch.0004	The to-be-downloaded object already exists in the file system.	Download another object or overwrite the existing one.
400 Bad Request	Fetch.0005	Failed to download the object from the source site.	Contact technical support.

## 13.4 Obtaining Access Keys (AK/SK)



To access SFS using access keys as an IAM user, the programmatic access must be enabled. For details, see [Viewing or Modifying IAM User Information](#).

When calling an API, you need to use the AK/SK to verify the signature. To obtain the AK/SK, perform the following steps:

- Step 1** Log in to the console.
- Step 2** Hover the cursor on the username in the upper right corner and select **My Credentials** from the drop-down list.
- Step 3** On the **My Credentials** page, click **Manage Access Keys**.
- Step 4** In the navigation pane, select **Access Keys**.
- Step 5** Click **Add Access Key**. The **Add Access Key** dialog box is displayed.
- Step 6** Enter the password for login.
- Step 7** Enter the authentication code received in your email or mobile phone.



For users created through IAM, if no email address or mobile number is specified during user creation, only the login password needs to be authenticated.

- Step 8** Click **OK** to download the access key file.



Keep the AK/SK file properly to prevent information leakage.

----End

## 13.5 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 a project ID by calling the API used to [query projects based on 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 **API Credentials** page, view the project ID in the project list.

Figure 13-1 Viewing the project ID

The screenshot shows the 'API Credentials' page in the HUAWEI CLOUD console. On the left, there's a sidebar with 'My Credentials' (selected), 'API Credentials' (selected), and 'Access Keys'. The main area is titled 'API Credentials' with a sub-section 'Learn more about HUAWEI CLOUD accounts, IAM users, and projects.' Below this are fields for 'IAM User Name' and 'Account Name', and 'IAM User ID' and 'Account ID'. A search bar 'Enter a project name.' with a magnifying glass icon is also present. The 'Projects' section lists two entries:

Project ID	Project Name	Region
[Redacted]	ap-southeast-1	AP-Hong Kong
[Redacted]	ap-southeast-3	AP-Singapore

# A Change History

Released On	Description
2023-12-20	This issue is the fifth official release, which incorporates the following change:  Added descriptions about SFS 3.0 Capacity-Oriented file systems.
2023-08-15	This issue is the fourth official release, which incorporates the following change:  Added section "Permissions Management" in SFS Turbo APIs.
2023-05-15	This issue is the third official release, which incorporates the following change:  Added section "Directory Management" in SFS Turbo APIs.
2019-05-30	This issue is the second official release, which incorporates the following changes: <ul style="list-style-type: none"><li>● Added section "API permissions."</li><li>● Added the support for SFS Turbo. Added the section "SFS Turbo APIs."</li><li>● Added the enterprise project function. Related parameters and fields are added to sections "API Overview", "Creating a Shared File System", and "Querying Details About All Shared File Systems."</li><li>● Added the support for the CIFS protocol and related parameters and fields.</li><li>● Added the support for the encryption function and related parameters and fields.</li></ul>
2017-12-31	This issue is the first official release.