

Alibaba Cloud Object Storage Service

Tools

Issue: 20190221

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Generic conventions

Table -1: Style conventions

| Style | Description | Example |
|---|--|--|
|  | This warning information indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results. |  Danger: Resetting will result in the loss of user configuration data. |
|  | This warning information indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results. |  Warning: Restarting will cause business interruption. About 10 minutes are required to restore business. |
|  | This indicates warning information, supplementary instructions, and other content that the user must understand. |  Notice: Take the necessary precautions to save exported data containing sensitive information. |
| | This indicates supplemental instructions, best practices, tips, and other content that is good to know for the user. |  Note: You can use Ctrl + A to select all files. |
| > | Multi-level menu cascade. | Settings > Network > Set network type |
| Bold | It is used for buttons, menus, page names, and other UI elements. | Click OK . |
| Courier font | It is used for commands. | Run the <code>cd /d C:/windows</code> command to enter the Windows system folder. |
| <i>Italics</i> | It is used for parameters and variables. | <code>bae log list --instanceid Instance_ID</code> |
| [] or [a b] | It indicates that it is an optional value, and only one item can be selected. | <code>ipconfig [-all -t]</code> |

| Style | Description | Example |
|---------------------------------------|--|------------------------------------|
| <code>{}</code> or <code>{a b}</code> | It indicates that it is a required value, and only one item can be selected. | <code>swich {stand slave}</code> |

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1 OSS tool list

Apart from the console, OSS also has the following frequently-used tools that can help you use OSS efficiently.

| Tool | Description | Note |
|-----------------------------------|--|---|
| <i>ossbrowser</i> | A graphical object management tool which supports Windows, Linux, and Mac platforms. | An official tool providing features similar to what Windows Explorer has to offer. You can easily browse, upload, and download files, and perform resumable upload . |
| <i>ossutil</i> | A command line management tool which provides convenient, concise, and rich object management commands. | An official tool which supports Linux, Windows , and Mac platforms. It is not dependent on any third-party components and requires no installation. |
| <i>osscmd</i> | A command line management tool which provides complete bucket and object management commands. | An official tool based on Python 2.5 to 2.7 versions, which supports multiple platforms. OSSutil is expected to become a future substitution of OSScmd. We strongly recommend <i>ossutil</i> unless you require the bucket management feature which is not provided in OSSutil. |
| <i>ossfs</i> | Mount buckets to local file systems. You can operate on the objects in OSS through the local file system to achieve data access and sharing. | An official tool which supports Linux. |

| Tool | Description | Note |
|-----------------------------------|--|---|
| ossftp | An FTP tool. It manages objects in OSS through the FTP protocol. You can operate on OSS through FileZilla, WinSCP, FlashFXP, and other FTP clients. OSSFTP is essentially an FTP server. It receives FTP requests and maps operations on files and folders to operations on OSS. | An official tool based on Python2.7 and later versions, which supports Windows, Linux, and Mac. |
| ossimport | A data synchronization tool which can synchronize files stored locally or in a third-party cloud to the OSS. | An official tool. It is dependent on JRE7 or later versions and supports Windows and Linux platforms. |
| Ram Policy Editor | OSS Authorization Policy automation production tool. This tool is strongly recommended when you need to generate your own Authorization Policy. | Official tools. Web page edition. Browser chrome, Firefox, Safari are supported. |
| ossprobe | A tool for checking network issues. It provides suggestions for common errors. When an error occurs during your environment's access to OSS, we recommend you use this tool to check the issue first. | An official tool which supports Windows, Linux, and Mac. |
| oss-emulator | Lightweight OSS service simulator for debugging and performance testing based on OSS applications. | An official tool which supports Windows, Linux, and Mac. |

2 ossbrowser

2.1 Permission management

Log on to ossbrowser as a RAM user

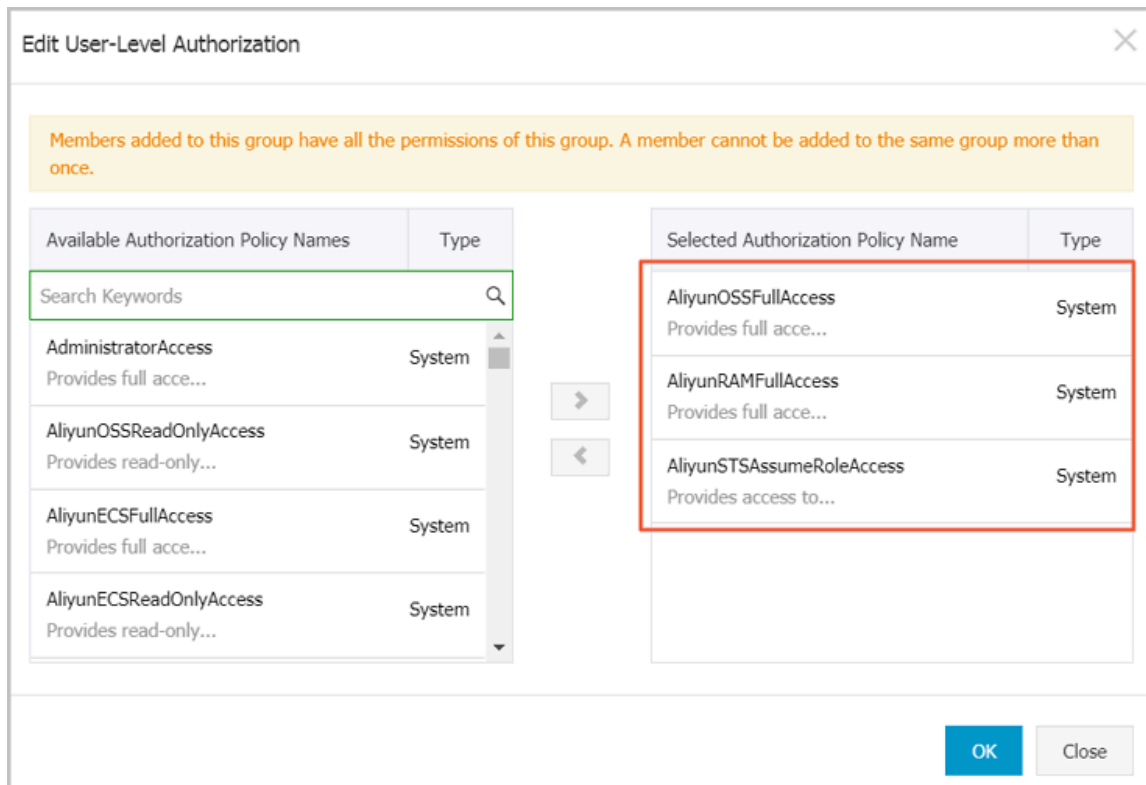
To ensure data security, we recommend that you log on to ossbrowser by using the AccessKey (AK) of a RAM user. To log on to ossbrowser, follow these steps:

1. Create a RAM user and an AK. For more information, see [Create a RAM user](#).

RAM users can be classified into two types based on their permissions:

- **Administrator RAM user:** Indicates a RAM user with administration permissions. For example, a RAM user that can manage all buckets and authorize other RAM users is an administrator RAM user. You can log on to the RAM console with your Alibaba Cloud account to create an administrator RAM

user and grant permissions to the administrator RAM user, as shown in the following figure.



- **Operator RAM user:** Indicates a RAM user that only has the read-only permission on a bucket or a directory. The administrator can [Grant permissions with a simple policy](#) to authorize a RAM user.



Note:

You can grant lower-level permissions to RAM users. For details, see [Access control](#).

2. Set the following parameters to log on to ossbrowser:

- **Endpoint:** Use the default value.
- **AccessKeyId and AccessKeySecret:** Enter the AK of the RAM user.
- **Preset OSS Path:**
 - Administrator RAM users with administration permissions on all buckets: No configuration is required.
 - Operator RAM users: Configurations are required. Enter the path of the OSS bucket or sub-directory that you want to access (the RAM user must have

permission to access the OSS bucket or sub-directory). The path format is as follows: oss:// bucket name/sub-directory name/.

- **Remember:** Select to save the AK. When you log on to ossbrowser later, you can simply click AK Histories and select the saved AK instead of entering the AK repeatedly. Do not select this option if you use a shared computer.

The screenshot shows the 'Token Login' tab of the ossbrowser interface. It contains the following fields and controls:

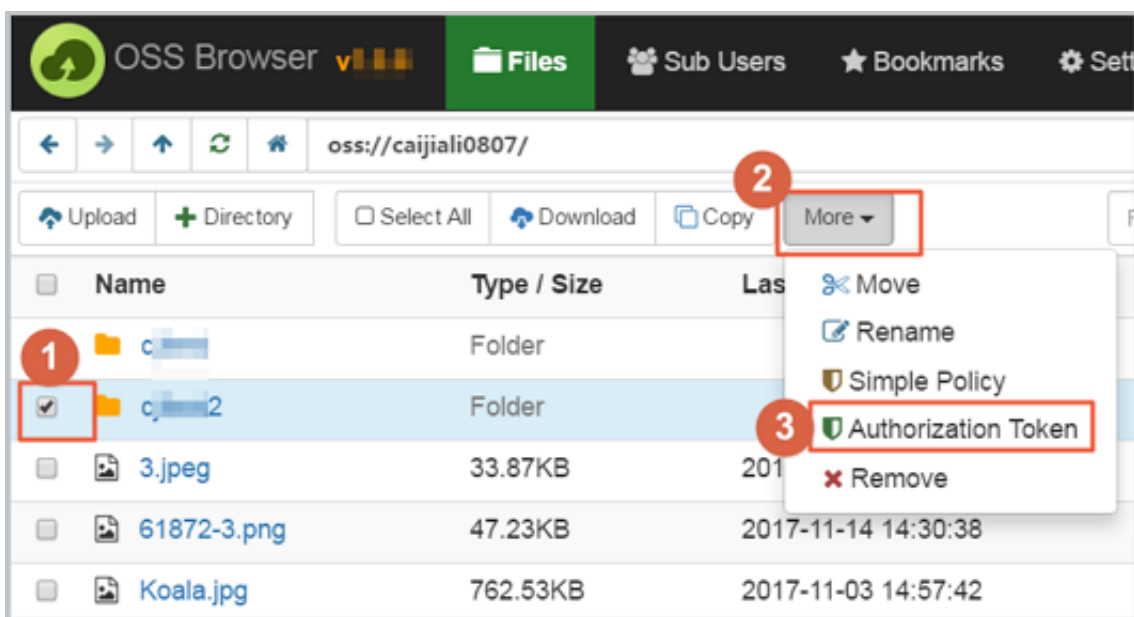
- Endpoint:** A text input field with a red asterisk and a help icon. A 'Customize' button is to its right.
- AccessKeyId:** A text input field with a red asterisk.
- AccessKeySecret:** A text input field with a red asterisk and a masked password (dots).
- Preset OSS Path:** A text input field with a red asterisk and a help icon, highlighted with a red rectangular border.
- Region:** A dropdown menu showing 'East China 1(H'.
- Description:** A text input field.
- Remember:** A checked checkbox with a help icon.
- Login:** A blue button.
- AK H:** A grey button.

Log on to ossbrowser with a temporary authorization code

You can use a temporary authorization code to log on to ossbrowser. You can provide authorized users with a temporary authorization code to allow them to access a directory under your bucket temporarily before the authorization code expires. The temporary authorization code automatically becomes invalid after it expires.

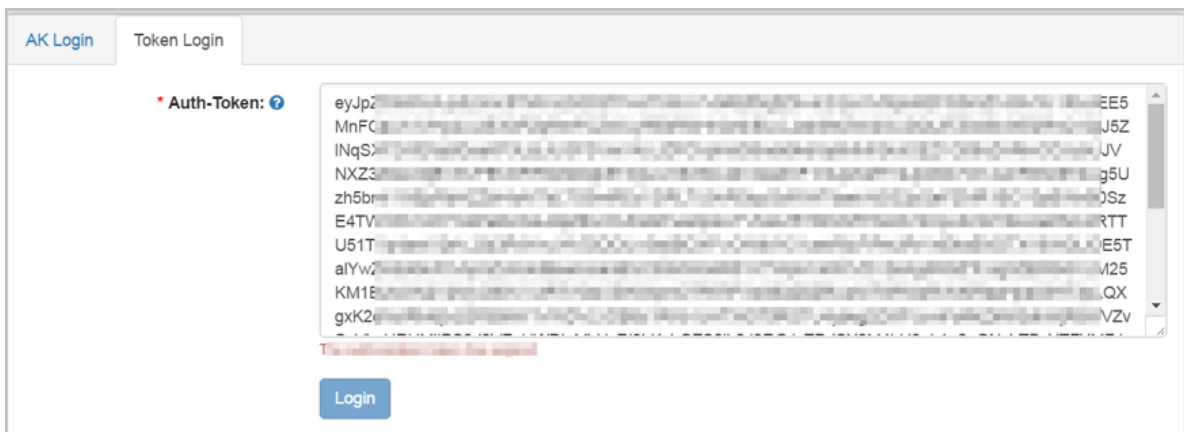
1. Generate a temporary authorization code.

Use the AK of an administrator RAM user to log on to ossbrowser. Select the object or directory to be accessed temporarily by the authorized users, and generate a temporary authorization code, as shown in the following figure.



2. Log on to ossbrowser with the authorization code.

The temporarily authorized users can use the authorization code to log on to ossbrowser before it expires, as shown in the following figure.



Grant permissions with a simple policy

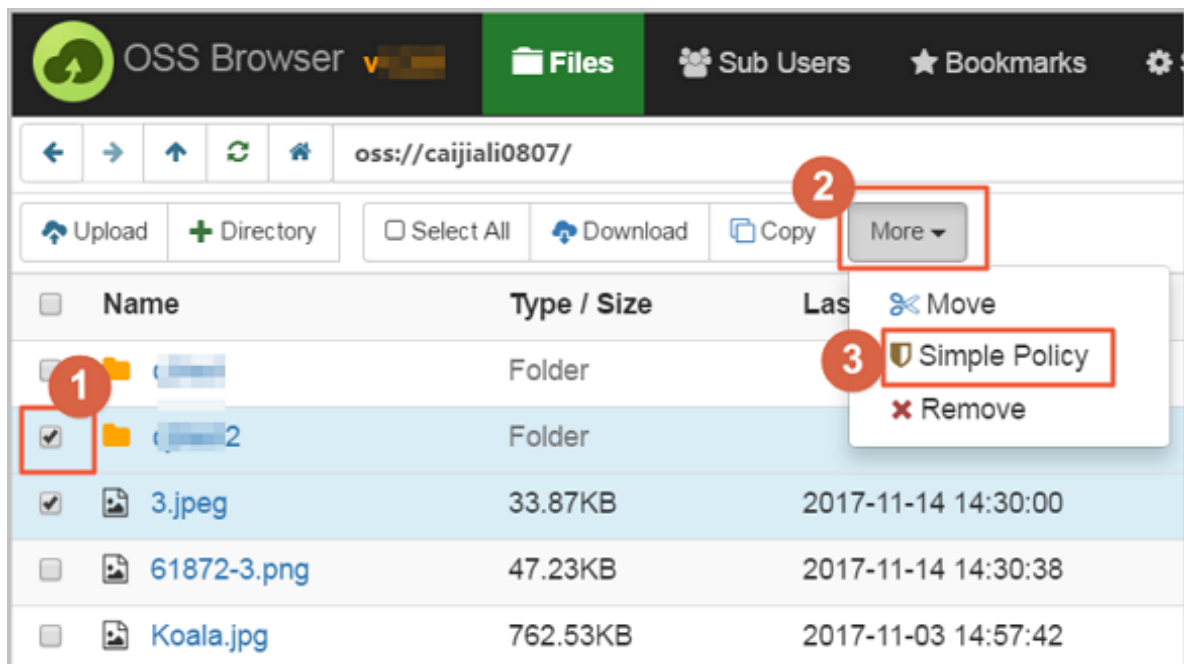
After logging on to ossbrowser as an administrator RAM user, you can Grant permissions with a simple policy to create an operator RAM user, or grant an operator RAM user the read-only or read/write permission on a bucket or a directory.



Note:

Alibaba Cloud ossbrowser provides simple policy authorization, which is an access control feature based on the Alibaba Cloud RAM service. You can also log on to the RAM console through the official website of Alibaba Cloud to manage your RAM user more precisely.

1. Select one or more objects or directories to be accessed temporarily by the authorized users and then click Simple Policy, as shown in the following figure.



2. On the Simplify policy authorization dialog box, select Privileges.
3. You can also grant permissions to an existing operator RAM user or create a new operator RAM user in this dialog box.



Notice:

To use simple policy authorization, you must log on to ossbrowser by using the AK of an RAM user that has the RAM configuration permission, for example, the AK of an administrator RAM user that has the RAM configuration permission.



The policy is generated in text. You can view, copy, and use the text as needed. For example, you can copy the policy text and use it to edit the authorization rules for RAM users and roles in the RAM console.

2.2 Quick start

ossbrowser is a graphical management tool developed by Alibaba Cloud. It provides features similar to those of Windows Explorer. Using ossbrowser, you can view, upload, download, and manage objects with ease.

Procedure

1. Download and install ossbrowser.

| Supported platform | Download link |
|--------------------|----------------------------|
| Window x32 | Window x32 |
| Window x64 | Window x64 |
| MAC | MAC |
| Linux x64 | Linux x64 |

2. Start and log on to ossbrowser.

3. Manage buckets. You can create a bucket, delete a bucket, modify the ACL for a bucket, and manage the fragments in a bucket.

4. Manage objects. You can upload (resumable), download (resumable), delete, copy, move, rename, search for, and preview an object, and modify the ACL or set an HTTP header for an object.

3 ossutil

3.1 Quick Start

Ossutil allows you to manage OSS data easily using the command line. The current version does not provide complete bucket management and multipart management functions. These functions are available in subsequent versions. If you need these functions, you can use the `osscmd` command line tool instead.

Download the tool

- Current version
 - Current version: 1.4.2
- Runtime environment
 - Windows/Linux/Mac
 - Supporting architecture
 - x86 (32bit, 64bit)
- Download the binary program
 - [Linux x86 32bit] [ossutil32](#)
 - [Linux x86 64bit] [ossutil64](#)
 - [Windows x86 32bit] [ossutil32.zip](#)
 - [Windows x86 64bit] [ossutil64.zip](#)
 - [mac x86 64bit] [ossutilmac64](#)

- Install and use the binary program

Download the binary program or corresponding compressed package for your operating system and run the binary program. (If the binary program is not an executable file, run `chmod 755 ossutil` to make it executable.) That is:

- For a Linux system: `./ossutil`
- For a Window system, either of the following two methods can be used (64-bit operating system as an example):
 - Decompress the package, double-click the bat file, and enter `ossutil64.exe`.
 - Decompress the package, run cmd to enter the directory where the binary program resides, and enter `ossutil64.exe`.
- For a MAC system: `./ossutilmac64`

Quick start

- Set ossutil language

When running commands of ossutil, you can use the `-L` option to set the language. The value can be CH or EN, that is, Chinese or English. The value is case insensitive. The default value is CH (Chinese). The default language CH (Chinese), if CH (Chinese), you need to make sure that your system is UTF-8 encoded, otherwise it may display chaotic code.

For example:

`./ossutil help ls` is used to display the ls help in the default language.

`./ossutil help ls -L ch` is used to display the ls help in Chinese.

`./ossutil help ls -L en` is used to display the ls help in English.

`./ossutil config -L ch` is used to run an interactive configuration command of ossutil config. The prompt language is Chinese.

`./ossutil config -L en` is used to run an interactive configuration command of ossutil config. The prompt language is English.



Note:

Errors output by ossutil are in English by default, which are not affected by the preceding options.

- Obtain the command list

```
./ossutil or ./ossutil help
```

```

$./ossutil
Usage: ossutil [command] [args...] [options...]
Run ossutil help to display the command help.
Commands:
  mb          cloud_url [options]
             Creates a bucket.
  ls          [cloud_url] [options]
             Lists buckets or objects.
  rm          cloud_url [options]
             Deletes a bucket or object.
  stat       cloud_url [options]
             Displays the description of a bucket or object.
  set-acl    cloud_url [acl] [options]
             Sets the ACL for a bucket or object.
  set-meta   cloud_url [meta] [options]
             Sets the meta information of the uploaded objects.
  cp         src_url dest_url [options]
             Uploads, downloads, or copies objects.
  restore    cloud_url [options]
             Restores an object from the frozen state to the readable
state.
  create-symlink cloud_url target_url [options]
             Creates a symbolic link.
  read-symlink cloud_url [options]
             Reads the description of a symbolic link file.
Additional Commands:
  help      [command]
             Obtains the help document of a command.
  config    [options]
             Creates a configuration file to store configuration items.
  hash      file_url [options]
             Computes the crc64 or MD5 of a local file.
  update    [options]
             Updates ossutil.

```

```

$./ossutil -L en
Usage: ossutil [command] [args...] [options...]
Please use 'ossutil help command' to show help of command
Commands:
  mb          cloud_url [options]
             Make Bucket
  ls          [cloud_url] [options]
             List Buckets or Objects
  rm          cloud_url [options]
             Remove Bucket or Objects
  stat       cloud_url [options]
             Display meta information of bucket or objects
  set-acl    cloud_url [acl] [options]
             Set acl on bucket or objects
  set-meta   cloud_url [meta] [options]
             set metadata on already uploaded objects
  cp         src_url dest_url [options]
             Upload, Download, or Copy Objects
  restore    cloud_url [options]
             Restore Frozen State Object to Read Ready Status
  create-symlink cloud_url target_url [options]
             Create symlink of object
  read-symlink cloud_url [options]

```

```

    Display meta information of symlink object
Additional Commands:
  help          [command]
                Get help about commands
  config        [options]
                Create configuration file to store credentials
  hash          file_url [options]
                Get crc64 or md5 of local file
  update        [options]
                Update ossutil

```

- **View the help document of a command**

`./ossutil help cmd` You are strongly advised to run the help command to view the help document before running a command.

```

./ossutil help config -L ch
SYNOPSIS
  Creates a configuration file to store configuration items.
SYNTAX
  ossutil config [-e endpoint] [-i id] [-k key] [-t token] [-L
language] [--output-dir outdir] [-c file]
DETAIL DESCRIPTION
  This command is used to create a configuration file, store
  customized configuration items in the configuration file, and
  provide access information when the OSS is accessed using the
  configuration items. (Whether a command requires configuration items
  depends on whether it supports the --config-file option. For more
  information, see the command help.)
  You can specify the path for storing the configuration file. The
  default path is /home/admin/.ossutilconfig. If the configuration
  file (for example, a) exists, ossutil stores "a" in a.bak, creates
  file a again, and writes file a to the configuration. If a.bak
  already exists, it is overwritten by file "a".
  NOTE:
  (1) If the specified path of the configuration file is not the
  default path, set the --config-file option to your specified path
  of the configuration file. (If the --config-file option is not
  specified, the /home/admin/.ossutilconfig path is read by default
  when the command is run.)
  (2) Some configuration items can be set using options, such
  as the --endpoint and --access-key-id options, when a command is
  run (for more information about the options, see the help for each
  command). If you specify the options when running a command and
  configure the information in the configuration file, the priority is
  options > configuration file.
  (3) If you specify the --endpoint, --access-key-id, --access-
  key-secret, and --sts-token options when running a command, ossutil
  does not forcibly require a configuration file.
Usage:
  This command can be used in 1) interactive mode or 2) non-
  interactive mode. The interactive mode is recommended because it
  guarantees higher security.
  1) ossutil config [-c file]
     This mode supports interactive information configuration.
  Ossutil interactively asks you about the following information:
  (1) config file
     Specifies the path of a configuration file. If you press
  Enter, ossutil uses the default configuration file in
  /home/admin/.ossutilconfig.
     If you specify a configuration file, set the --config-
  file option to the path of your configuration file when running the

```

command. For more information about commands that support the `--config-file` option, see the help of each command.

(2) language

During first configuration (the configuration file does not exist), ossutil requires you to set the language. The value can be CH (Chinese) or EN (English). If you press Enter, ossutil configures the language based on the value of the `--language` option. If you do not set the `--language` option, ossutil sets the language to CH by default.

If a configuration file exists, ossutil configures the language based on the specified language option and language information in the configuration file.

Ossutil reads the language option from the configuration file during operating. If this option does not exist or is invalid, the ossutil sets the language to CH by default.

NOTE: This configuration item takes effect after the `config` command is successfully run. When the `config` command is executed, the displayed language is not affected by your configuration.

(3) endpoint, accessKeyID, accessKeySecret

Enter indicates that a configuration item is skipped.

NOTE: The endpoint must be a second-level domain (SLD), for example, `oss.aliyuncs.com`.

The preceding options are required.

(4) stsToken

To access the OSS using a temporary token, specify this option. Otherwise, press Enter to skip this option.

(5) outputDir

This option is used to configure the path of the directory where the output files reside. In interactive mode, configuration of this option is not supported. However, this option is valid in the configuration file.

The default directory of the `outputDir` option is `ossutil_output` of the current directory. Ossutil generates all output files in this folder during operating. Currently, the output files include the report files that record operation errors of each file when exceptions occur for batch operations by running the `cp` command.

For more information about the `outputDir` option and report files, see the `cp` command help.

NOTE: If the `outputDir` option does not exist, ossutil automatically creates the directory when generating output files. If the `outputDir` option exists but is not a directory, an error is reported.

The following interactive `Bucket-Endpoint` and `Bucket-Cname` options are removed, but they are still valid in the configuration file.

(6) Bucket-Endpoint

The `Bucket-Endpoint` option is used to independently configure the endpoint for each specified bucket. This option is before the default endpoint configuration in the configuration file.

In this version, ossutil removes the `Bucket-Endpoint` pair configuration in interactive mode. However, this configuration item is still valid in the configuration file. Therefore, if you want to independently specify the endpoint for each bucket, you can make configuration in the configuration file. NOTE: The endpoint must be an SLD, for example, `oss.aliyuncs.com`.

If the `Bucket-Endpoint` option is specified, ossutil searches for the endpoint corresponding to a bucket in the option when performing operations on the bucket. If being found, the endpoint overwrites the endpoint in the basic configuration. However, if the `--endpoint` option is specified when the command is run, the `--endpoint` option has the highest priority.

(7) Bucket-Cname

The Bucket-Cname option is used to independently configure the CNAME domain name (CDN domain) for each specified bucket. This option is before the configurations of the Bucket-Endpoint option and endpoint in the configuration file.

In this version, ossutil removes the Bucket-Cname pair configuration in interactive mode. However, this configuration item is still valid in the configuration file. Therefore, if you want to independently specify the CNAME domain name for each bucket, you can make configuration in the configuration file.

If the Bucket-Cname option is specified, ossutil searches for the CNAME domain name corresponding to a bucket in the option when performing operations on the bucket. If being found, the CNAME domain name overwrites the endpoints in the Bucket-Endpoint option and basic configuration. However, if the --endpoint option is specified when the command is run, the --endpoint option has the highest priority.

Priority: --endpoint > Bucket-Cname > Bucket-Endpoint > endpoint > default endpoint

2) ossutil config options

If you specify any options except the --language and --config-file options when running the command, the command enters the non-interactive mode. All configuration items are specified using options.

Configuration file format:

```
[Credentials]
  language = CH
  endpoint = oss.aliyuncs.com
  accessKeyID = your_key_id
  accessKeySecret = your_key_secret
  stsToken = your_sts_token
  outputDir = your_output_dir
[Bucket-Endpoint]
  bucket1 = endpoint1
  bucket2 = endpoint2
...
[Bucket-Cname]
  bucket1 = cname1
  bucket2 = cname2
...
```

SAMPLE

```
ossutil config
ossutil config -e oss-cn-hangzhou.aliyuncs.com -c ~/.myconfig
```

OPTIONS

```
-c, --config-file
  Specifies the configuration file path of ossutil. Ossutil reads configuration from the configuration file during startup and writes configuration to the file using the config command.
-e, --endpoint
  Specifies the basic endpoint configuration of ossutil (the option value overwrites the corresponding settings in the configuration file). It must be an SLD.
-i, --access-key-id
  Specifies the AccessKeyID used to access the OSS (the option value overwrites the corresponding settings in the configuration file).
-k, --access-key-secret
  Specifies the AccessKeySecret used to access the OSS (the option value overwrites the corresponding settings in the configuration file).
-t, --sts-token
  Specifies the STSToken used to access the OSS (the option value overwrites the corresponding settings in the configuration file). It is optional.
--output-dir=ossutil_output
```

Specifies the directory in which output files are located . The output files include the report files generated when errors occur for copying files in batches using the cp command. (For more information about the report files, see the cp command help.) The default value is the ossutil_output sub-directory in the current directory.

-L CH, --language=CH

Specifies the language of ossutil. The value can be CH or EN , and the default value is CH. If the value is CH, make sure that your system is UTF-8 encoded.

• Configure ossutil

When using a command to access the OSS, configure the AccessKey pair first. For more information about the AccessKey pair, see [RAM and STS introduction](#).

ossutil can be configured to interactive mode or non-interactive mode.

To view the help document of the configuration command, run `ossutil help config`.

- Configure ossutil in interactive mode

```
./ossutil config
```

```
$/ossutil config -L ch
```

This command is used to create a configuration file and store configuration information in it.

You can specify the path for storing the configuration file. The default path is /home/admin/.ossutilconfig. If you press Enter, the default path is used. If you specify another path, set the --config-file option to this path when running the command.

- Configure ossutil in non-interactive mode

```
./ossutil config -e oss.aliyuncs.com -i your_id -k your_key
```

3.2 View all supported options

You can use the -h option to view all options supported by ossutil.

```
$/ossutil -h
```

Usage of ossutil:

Options:

```
-s --short-format      Used to display the short format. If this
option is not specified, the long format is displayed by default.
--snapshot-path=      Used to accelerate incremental uploading
of files in batches in some scenarios. (File downloading and copying
do not support this option currently.) This option is used when
ossutil uses the cp command to upload files. Ossutil takes a snapshot
of file uploads and stores it in the specified directory. It will
read the snapshot from the specified directory for incremental
upload when this option is used the next time. The specified snapshot
directory must be a writable directory in the local file system.
If the directory does not exist, ossutil creates a file to record
the snapshot information. If the directory already exists, ossutil
```

reads the snapshot information in the directory, performs incremental uploading accordingly, and updates the snapshot information. (Ossutil only uploads files that fail to be uploaded last time and have been locally modified.) NOTE: By using this option, the local lastModifiedTime of files that have been successfully uploaded is recorded and compared with that of files to be uploaded next time to determine whether to skip uploading of same files. When using this option, ensure that the corresponding objects on the OSS are not modified during the two uploading periods. In other scenarios than this one, use the --update option to incrementally upload files in batches. In addition, ossutil does not actively delete the snapshot information under snapshot-path. To avoid too much snapshot information, clear snapshot-path when confirming that the snapshot information is useless

- `-j --jobs=` Specifies the number of concurrent tasks when multiple files are operated. The value ranges from 1 to 10000, and the default value is 5.
- `-v --version` Used to display ossutil version (1.0.0.Beta2) and exit.
- `--output-dir=` Specifies the directory in which output files are located. The output files include the report file generated when an error occurs for copying files in batches using the cp command. (For details about the report file, refer to the cp command help.) The default value is the ossutil_output sub-directory in the current directory.
- `--parallel=` Specifies the number of concurrent tasks operated in a single file. The value ranges from 1 to 10000. The default value is determined by ossutil based on the operation type and file size.
- `-L --language=` Specifies the language of ossutil. The value can be CH or EN, and the default value is CH.
- `-t --sts-token=` Specifies the STSToken used to access the OSS (the option value will overwrite the corresponding settings in the configuration file). It is optional.
- `-m --multipart` Indicates that the operation objects are the incomplete Multipart events in the bucket, rather than the default objects.
- `-b --bucket` Used to operate a bucket, confirming that an operation is for the bucket.
- `--delete` Used to delete an operation.
- `-e --endpoint=` Specifies the basic endpoint configuration of ossutil (the option value will overwrite the corresponding settings in the configuration file). It must be a second-level domain.
- `-k --access-key-secret=` Specifies the AccessKeySecret used to access the OSS (the option value will overwrite the corresponding settings in the configuration file).
- `--bigfile-threshold=` Specifies the threshold for enabling the resumable data transfer for large files. The value ranges from 0 B to 9223372036854775807 B, and the default value is 100 MB.
- `--retry-times=` Specifies the number of retries when an error occurs. The value ranges from 1 to 500, and the default value is 3.
- `-a --all-type` Indicates that the operation objects are the objects and incomplete Multipart events in the bucket.
- `-r --recursive` Indicates a recursive operation. If this option is specified, commands supporting this option will operate on all objects meeting the criteria in the bucket. Otherwise, the commands operate only on a single object specified in the URL.
- `-f --force` Indicates a forcible operation without asking.
- `-u --update` Indicates an update operation.
- `-c --config-file=` Specifies the configuration file path of ossutil. Ossutil reads configuration from the configuration file

during startup and writes configuration to the file using the `config` command.

```

-i  --access-key-id=      Specifies the AccessKeyID used to access
the OSS (the option value will overwrite the corresponding settings in
the configuration file).
  --acl=                  Used to configure the ACL.
-d  --directory          Used to return files and sub-directories
in the current directory, rather than recursively displaying all
objects in all sub-directories.
  --checkpoint-dir=      Specifies the checkpoint directory path
(the default value is .ossutil_checkpoint). If a resumable data
transfer fails, ossutil automatically creates this directory and
records the checkpoint information in the directory. If a resumable
data transfer succeeds, ossutil deletes this directory. If this option
is specified, ensure that the specified directory can be deleted.
  --type=                 Specifies the calculation type. The value
can be crc64 or md5, and the default value is crc64.
-h  --help               Show usage message

```

All commands of `ossutil` supports part of the preceding options. Use the `ossutil help` command to check options supported by each command.

3.3 Bucket-related commands

`Ossutil` allows you to create, list, and delete buckets, and set the ACL for a bucket. Other bucket management functions are not supported currently. If you want to use these functions, see [osscmd](#).

Before running these commands, run the `config` command to configure the AccessKey pair.

- Create a bucket

```
ossutil mb oss://bucket [--acl=acl] [--storage-class sc] [-c file]
```

If the ACL is not specified, the bucket has the private permission by default. After a bucket is created, `ossutil` prints the consumed time and exits. Otherwise, `ossutil` outputs error information. You can use the `--storage-class` option to specify the storage mode.

Run `ossutil help mb` to view help information about creating a bucket.

```
./ossutil mb oss://test
```

```
0.220478(s) elapsed
```

- **Delete a bucket**

Before you delete a bucket, note the following:

- The `-b` option must be specified for deleting a bucket.
- The deleted bucket will not longer belong to you and may be re-created by another user.
- Once deleted, data in the bucket cannot be recovered.
- If no data is stored in your bucket, run the following command to delete the bucket:

```
ossutil rm oss://bucket -b
```

```
./ossutil rm oss://test -b
Do you really mean to remove the Bucket: test(y or N)? y
0.220478(s) elapsed
```

- If your bucket contains objects or multipart data, delete all data before deleting the bucket. You can run the following command to delete all data and your bucket:

```
ossutil rm oss://bucket -bar
```

Run `ossutil help rm` to view help information about deleting a bucket.

- **List buckets**

```
./ossutil ls or ./ossutil ls oss://
```

Use the `-s` option to display the short format. Run `ossutil help ls` to view more help information.

```
./ossutil ls
CreationTime                Region    StorageClass
BucketName
2016-10-21 16:18:37 +0800 CST    oss-cn-hangzhou    Archive
oss://go-sdk-test-bucket-xyz-for-object
2016-12-01 15:06:21 +0800 CST    oss-cn-hangzhou    Standard
oss://ossutil-test
2016-07-18 17:54:49 +0800 CST    oss-cn-hangzhou    Standard
oss://ossutilconfig
2016-07-20 10:36:24 +0800 CST    oss-cn-hangzhou    IA
oss://ossutilupdate
2016-11-14 13:08:36 +0800 CST    oss-cn-hangzhou    IA
oss://yyyyy
2016-08-25 09:06:10 +0800 CST    oss-cn-hangzhou    Archive
oss://ztzt
2016-11-21 21:18:39 +0800 CST    oss-cn-hangzhou    Archive
oss://ztztzt
Bucket Number is: 7
```

```
0.252174(s) elapsed
```

- **List files in a bucket**

Ossutil can list the objects and UploadIDs in a bucket. The objects are displayed by default. You can use the `-m` option to display the UploadIDs and use the `-a` option to display the objects and UploadIDs simultaneously.

- **List the objects**

```
./ossutil ls oss://bucket
```

```

$ ./ossutil ls oss://ossutil-test
LastModifiedTime                               Size(B)  StorageClass  ETAG
ObjectName
2016-12-01 15:06:37 +0800 CST                   10363812   Standard
61DE142E5AFF9A6748707D4A77BFBCFB              oss://ossutil-test/a1
2016-12-01 15:06:42 +0800 CST                   10363812   Standard
61DE142E5AFF9A6748707D4A77BFBCFB              oss://ossutil-test/a2
2016-12-01 15:06:45 +0800 CST                   10363812   Standard
61DE142E5AFF9A6748707D4A77BFBCFB              oss://ossutil-test/a3
Object Number is: 3
0.007379(s) elapsed

```

- **List the objects and multipart**

```
./ossutil ls oss://bucket -a
```

```

$ ossutil ls oss://bucket1 -a
LastModifiedTime                               Size(B)  StorageClass  ETAG
ObjectName
2015-06-05 14:06:29 +0000 CST                   201933     Standard
7E2F4A7F1AC9D2F0996E8332D5EA5B41              oss://bucket1/dir1/obj11
2015-06-05 14:36:21 +0000 CST                   201933     Standard
6185CA2E8EB8510A61B3A845EAFE4174              oss://bucket1/obj1
2016-04-08 14:50:47 +0000 CST                   6476984    Standard
4F16FDAE7AC404CEC8B727FCC67779D6              oss://bucket1/sample.txt
Object Number is: 3
InitiatedTime                                  UploadID
ObjectName
2017-01-13 03:45:26 +0000 CST                   15754AF7980C4DFB8193F190837520BB
oss://bucket1/obj1
2017-01-13 03:43:13 +0000 CST                   2A1F9B4A95E341BD9285CC42BB950EE0
oss://bucket1/obj1
2017-01-13 03:45:25 +0000 CST                   3998971ACAF94AD9AC48EAC1988BE863
oss://bucket1/obj2
2017-01-20 11:16:21 +0800 CST                   A20157A7B2FEC4670626DAE0F4C0073C
oss://bucket1/tobj
UploadId Number is: 4
0.191289(s) elapsed

```

Use the `-s` option to display the short format.

Use the `-d` option to display content in the level 1 directory.

```

$ ossutil ls oss://bucket1 -d
oss://bucket1/obj1

```

```

oss://bucket1/sample.txt
oss://bucket1/dir1/
Object and Directory Number is: 3
UploadID                               ObjectName
15754AF7980C4DFB8193F190837520BB     oss://bucket1/obj1
2A1F9B4A95E341BD9285CC42BB950EE0     oss://bucket1/obj1
3998971ACAF94AD9AC48EAC1988BE863     oss://bucket1/obj2
A20157A7B2FEC4670626DAE0F4C0073C     oss://bucket1/tobj
UploadId Number is: 4
0.119884(s) elapsed

```

- Set the ACL for a bucket

When a bucket is created, the default ACL for the bucket is private. You can run the `set-acl` command to modify the ACL for a bucket. You must specify the `-b` option when setting the ACL for a bucket.

Grant the private permission for bucket1:

```
./ossutil set-acl oss://bucket1 private -b
```

Run the help set `set-acl` command to view more information about setting the ACL.

3.4 Object-related commands

Ossutil allows you to upload/download/copy a file, set the ACL and meta of an object, and view the meta information of an object.

Run the `config` command to configure the AccessKey pair before running these commands.

- Upload/Download/Copy a file

You are strongly advised to use `ossutil help cp` to view the help information before running the `cp` command.

When running the `cp` command to upload/download/copy a file, use the `-r` option to copy a folder. Ossutil implements multipart upload by default for large files and

supports resumable data transfers (the threshold of large files for which multipart upload is enabled can be set using the `--bigfile-threshold` option.)

Use the `-f` option to forcibly upload a file by default. If a file exists with the same name on the target end, the file is overwritten directly.

If an error occurs to a file during file uploading/downloading/copying in batches, ossutil logs the error information in the report file by default, skips this file, and performs operations on other files. For more information, see `ossutil help cp`.



Note:

Ossutil does not continue to copy other files if the bucket does not exist, or if the permission verification result is invalid due to an incorrect AccessKeyID or AccessKeySecret.

Ossutil supports the incremental uploading policies `--update` and `--snapshot-path` in specific scenarios. For more information, see `ossutil help cp`.

From ossutil 1.0.0.Beta1, `crc64` is enabled by default during file uploading.

- Upload a single file:

```
./ossutil cp a oss://ossutil-test
Succeed: Total num: 1, size: 230. OK num: 1(upload 1 files).
0.699795(s) elapsed
```

- Upload a folder:

```
./ossutil cp -r dir oss://ossutil-test
Succeed: Total num: 35, size: 464,606. OK num: 35(upload 34 files
, 1 directories).
0.896320(s) elapsed
```

• Modify the storage class of an object



Notice:

To modify the storage class of an object that is less than or equal to 5 GB, run the `set-meta` command. To modify the storage class of an object that is greater than 5 GB, run the `cp` command.

- You can run the `set-meta` command to modify the storage class of an object.

■ Run the following command to set the storage class of a single object to IA:

```
./ossutil set-meta oss://hello-hangzws/0104_6.jpg X-Oss-Storage-Class:IA -u
```

■ Run the following command to set the storage class of all objects in a folder to Standard:

```
./ossutil set-meta oss://hello-hangzws/abc/ X-Oss-Storage-Class:Standard -r -u
```

- You can run the `cp` command to upload an object while using the `--meta` option to modify the storage class of the object.

■ Run the following command to upload a single file and set the storage class of the file to IA:

```
ossutil cp ~/Downloads/sys.log oss://hello-hangzws/test/ --meta X-oss-Storage-Class:IA
```

■ Run the following command to upload a folder and set the storage class of all files in the folder to IA:

```
./ossutil cp ~/libs3/ oss://hello-hangzws/test/ --meta X-oss-Storage-Class:IA -r
```

■ Run the following command to modify the storage class of an existing object to Archive:

```
./ossutil cp oss://hello-hangzws/0104_6.jpg oss://hello-hangzws/0104_6.jpg --meta X-oss-Storage-Class:Archive
```

■ Run the following command to modify the storage class of all objects in an existing folder to Standard:

```
./ossutil cp oss://hello-hangzws/test/ oss://hello-hangzws/test/ --meta X-oss-Storage-Class:Standard -r
```



Notice:

- The storage class of an object cannot be changed from Archive to other classes by running the `set-meta` or `cp` command. You must run the `restore`

command first to change the storage class of the object to IA, and then run the `set-meta` or `cp` command to change the storage class of the object to other classes.

- An object is considered as overwritten and may be charged when you run the `cp` command to overwrite the object. An object of the IA or Archive class will be charged if it is overwritten within 30 and 60 days separately after it is created. For example, if you change the storage class of an object from IA to Archive or Standard by running the `cp` command 10 days after the object is created, early deletion fees for 20 days will be charged.

- Performance tuning for uploading, downloading, or copying a file

In the `cp` command, the `--jobs` and `--parallel` options are used to control the number of concurrent operations. If the default number of concurrent operations set by `ossutil` cannot meet the performance requirement, you can modify the values of the two options to adjust the performance.

- The `--jobs` option controls the number of concurrent operations enabled among files when multiple files are uploaded, downloaded, or copied.
- The `--parallel` option controls the number of concurrent operations enabled for a large file when the large file is uploaded/downloaded/copied in the multipart method.

By default, `ossutil` calculates the number of concurrent operations based on the file size (this option does not work for small files, and the threshold for large files to be uploaded/downloaded/copied in the multipart method can be controlled by the `--bigfile-threshold` option). When large files are uploaded/downloaded/copied in batches, the actual number of concurrent operations is calculated by multiplying the number of jobs by the number of parallel operations.



Warning:

- We recommend that you adjust the number of concurrent operations to a value smaller than 100 if the resources of your ECS instance or server (such as network bandwidth, memory, and CPU) are limited. If the resources are not fully occupied, you can try to set the concurrent operations to a larger value.
- If there are too many concurrent operations, the uploading, downloading, and copying performance of `ossutil` may degrade, or an EOF error may occur due to

inter-thread resource switching and snatching. To resolve this issue, you must adjust the values of `--jobs` and `--parallel` based on the actual conditions. To perform pressure testing, set the two options to small values first, and slowly adjust them to the optimal values.

- Configure the ACL of an object

Ossutil uses the `set-acl` command to configure the ACL of an object. You can use the `-r` option to configure the ACLs of objects in batches.

For more information, see `ossutil help set-acl`.

```
./ossutil set-acl oss://dest/a private
0.074507(s) elapsed
```

Configure the ACLs of objects in batches:

```
./ossutil set-acl oss://dest/a private -r
Do you really mean to recursively set acl on objects of oss://dest/a
(y or N)? y
Succeed: Total 3 objects. Setted acl on 3 objects.
0.963934(s) elapsed
```

- Configure the meta of an object

Ossutil uses the `set-meta` command to configure the meta information of an object. You can use the `-r` option to configure the metas of objects in batches.

For more information, see `ossutil help set-meta`.

```
./ossutil set-meta oss://dest/a x-oss-object-acl:private -u
```

- View the object description (meta)

Ossutil uses the `stat` command to view the object description (meta).

For more information, see `ossutil help stat`.

```
./ossutil stat oss://dest/a
ACL : default
Accept-Ranges : bytes
Content-Length : 230
Content-Md5 : +5vbQC/MSQK0xXSiyKBZog==
Content-Type : application/octet-stream
Etag : FB9BDB402FCC4902B4C574A2C8A059A2
Last-Modified : 2017-01-13 15:14:22 +0800 CST
Owner : aliyun
X-Oss-Hash-Crc64ecma : 12488808046134286088
X-Oss-Object-Type : Normal
```



```
0.125417(s) elapsed
```

- Restore an object from the frozen state to the readable state

Ossutil uses the `restore` command to restore an object from the frozen state to the readable state. You can use the `-r` option to restore objects from the frozen state to the readable state in batches.

For more information, see `ossutil help restore`.

```
./ossutil restore oss://utiltest/a
0.037729(s) elapsed
```

- Create a symbolic link

Ossutil uses the `create-symlink` command to create a symbolic link.

For more information, see `ossutil help create-symlink`.

```
./ossutil create-symlink oss://utiltest/b a
0.037729(s) elapsed
```

- Read the description of a symbolic link file

Ossutil uses the `read-symlink` command to read the description of a symbolic link file.

For more information, see `ossutil help read-symlink`.

```
./ossutil read-symlink oss://utiltest/b
Etag           : D7257B62AA6A26D66686391037B7D61A
Last-Modified  : 2017-04-26 15:34:27 +0800 CST
X-Oss-Symlink-Target : a
0.112494(s) elapsed
```

3.5 Multipart-related commands

Ossutil allows you to list the uploaded files and unfinished upload tasks (UploadIDs) in multipart uploads, and delete the upload files and unfinished upload tasks (UploadIDs) of a specified object.

For more information about the multipart upload, see [Multipart upload](#).



Note:

When uploading/copying a large file, ossutil automatically uses resumable upload without running the `UploadPart` command.

- List an UploadID

Run the `ls` command with the `-m` option to list all unfinished upload tasks

(UploadIDs) of an object with a specified prefix, and run the `ls` command with the `-a` option to list all uploaded files and unfinished upload tasks (UploadIDs) of an object with a specified prefix.

```
$ ossutil ls oss://bucket1/obj1 -m
InitiatedTime          UploadID
  ObjectName
2017-01-13 03:45:26 +0000 CST    15754AF7980C4DFB8193F190837520BB
  oss://bucket1/obj1
2017-01-13 03:43:13 +0000 CST    2A1F9B4A95E341BD9285CC42BB950EE0
  oss://bucket1/obj1
UploadId Number is: 2
0.070070(s) elapsed
```

```
$ ossutil ls oss://bucket1/obj1 -a
LastModifiedTime      Size(B)  StorageClass  ETAG
  ObjectName
2015-06-05 14:36:21 +0000 CST    241561      Standard
6185CA2E8EB8510A61B3A845EAFE4174  oss://bucket1/obj1/test.txt
2016-04-08 14:50:47 +0000 CST    6476984     Standard
4F16FDAE7AC404CEC8B727FCC67779D6  oss://bucket1/obj1/sample.
txt
Object Number is: 2
InitiatedTime          UploadID
  ObjectName
2017-01-13 03:45:26 +0000 CST    15754AF7980C4DFB8193F190837520BB
  oss://bucket1/obj1
2017-01-13 03:43:13 +0000 CST    2A1F9B4A95E341BD9285CC42BB950EE0
  oss://bucket1/obj1
UploadId Number is: 2
0.091229(s) elapsed
```

- Delete the data of a specified object

Run the `rm` command to delete the unfinished upload tasks (UploadIDs) of a specified object.

For example, if `bucket1` contains the following objects, run the `ls` command to list all uploaded files and unfinished upload tasks (UploadIDs):

```
$ ossutil ls oss://bucket1 -a
LastModifiedTime      Size(B)  StorageClass  ETAG
  ObjectName
2015-06-05 14:06:29 +0000 CST    201933      Standard
7E2F4A7F1AC9D2F0996E8332D5EA5B41  oss://bucket1/dir1/obj11
2015-06-05 14:36:21 +0000 CST    241561      Standard
6185CA2E8EB8510A61B3A845EAFE4174  oss://bucket1/obj1/test.txt
2016-04-08 14:50:47 +0000 CST    6476984     Standard
4F16FDAE7AC404CEC8B727FCC67779D6  oss://bucket1/sample.txt
Object Number is: 3
InitiatedTime          UploadID
  ObjectName
```

```
2017-01-13 03:45:26 +0000 CST 15754AF7980C4DFB8193F190837520BB
oss://bucket1/obj1
2017-01-13 03:43:13 +0000 CST 2A1F9B4A95E341BD9285CC42BB950EE0
oss://bucket1/obj1
2017-01-13 03:45:25 +0000 CST 3998971ACAF94AD9AC48EAC1988BE863
oss://bucket1/obj2
2017-01-20 11:16:21 +0800 CST A20157A7B2FEC4670626DAE0F4C0073C
oss://bucket1/tobj
UploadId Number is: 4
0.191289(s) elapsed
```

Run the `rm` command with the `-m` option to delete the specified unfinished upload tasks (UploadIDs):

```
./ossutil rm -m oss://bucket1/obj1/test.txt
Succeed: Total 1 uploadIds. Removed 1 uploadIds.
0.900715(s) elapsed
```

Run the `rm` command with the `-m` and `-r` options to delete all unfinished upload tasks (UploadIDs) with a specified prefix:

```
./ossutil rm -m oss://bucket1/ob -r
Do you really mean to remove recursively multipart uploadIds of oss:
bucket1/ob(y or N)? y
Succeed: Total 4 uploadIds. Removed 4 uploadIds.
1.922915(s) elapsed
```

Run the `rm` command with the `-a` and `-r` options to delete all uploaded files and unfinished upload tasks (UploadIDs) with a specified prefix:

```
./ossutil rm oss://hello-hangzws-1/obj -a -r
Do you really mean to remove recursively objects and multipart
uploadIds of oss://obj(y or N)? y
Succeed: Total 1 objects, 3 uploadIds. Removed 1 objects, 3
uploadIds.
```

4 ossimport

4.1 Architecture and configuration

Overview

The OssImport tool allows you to migrate data stored locally or in other cloud storage systems to the OSS. It has the following features:

- Supports a rich variety of data sources including local drives, Qiniu, Baidu BOS, AWS S3, Azure Blob, Youpai Cloud, Tencent Cloud COS, Kingsoft KS3, HTTP, and OSS, and can be expanded as needed.
- Supports resumable data transfers.
- Supports throttling.
- Supports migrating objects after a specified time point or with a specified prefix.
- Supports parallel data uploads and downloads.
- Supports standalone and distributed modes. The standalone mode is easy to deploy and use, and the distributed mode is suitable for large-scale data migration.

Environment

- Java 1.7 and later

Architecture

The OssImport has two deployment modes available: standalone mode and distributed mode.

- The standalone mode is sufficient for small-scale data migration which smaller than 30 TB. [Download](#)
- Distributed mode is recommended for larger data migrations. [Download](#)
- Standalone

The master, worker, tracker, and console run on the same machine. There is only one worker in the system. We have encapsulated and optimized the deployment and execution of the standalone mode and the standalone deployment and

execution are both easy. In standalone mode, the master, worker, tasktracker, and console modules are packaged into `ossimport2.jar`.

The file structure in standalone mode is as follows:

```

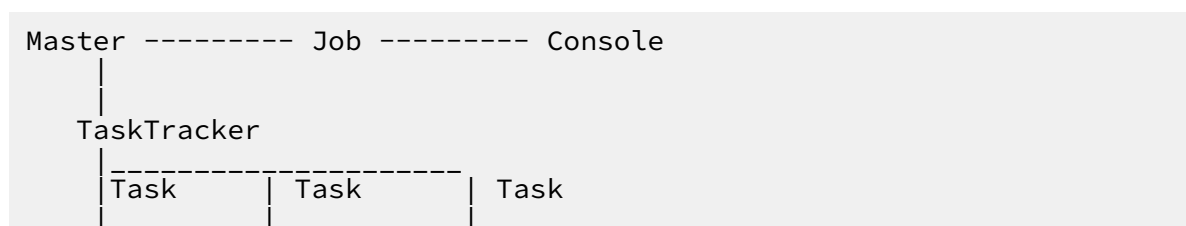
ossimport
├── bin
│   └── ossimport2.jar # The JAR including master, worker, tracker,
│       and console modules
├── conf
│   ├── local_job.cfg # Standalone job configuration file
│   └── sys.properties # Configuration file for the system running
├── console.bat # Windows command line, which can run
distributed call-in tasks
├── console.sh # Linux command line, which can run
distributed call-in tasks
├── import.bat # The configuration file for one-click
import and execution in Windows is the data migration job configured
in conf/local_job.cfg, including start, migration, validation, and
retry
├── import.sh # The configuration file of one-click import
and execution in Linux is the data migration job configured in conf
/local_job.cfg, including start, migration, validation, and retry
├── logs # Log directory
└── README.md # Description documentation. We recommend
that you carefully read the documentation before using this feature

```

Note:

- The `import.bat` or `import.sh` file is a one-click import script and can be run directly after you complete modification to `local_job.cfg`.
 - The `console.bat` or `console.sh` is the command line tool and can be used for distributed execution of commands.
 - Run scripts or commands in the `ossimport` directory, that is, the directory at the same level as the `*.bat/*.sh` file.
- **Distributed**

The OssImport is based on the master-worker distributed architecture, as shown in the following figure:



Worker Worker Worker

In the figure:

- **Job:** The data migration jobs submitted by users. For users, one job corresponds to one configuration file `job.cfg`.
- **Task:** A job can be divided into multiple tasks by data size and number of files. Each task migrates a portion of files. The minimal unit for dividing a job into tasks is a file. One file cannot be split into multiple tasks.

The OssImport tool modules are listed in the following table:

| Role | Description |
|--------|---|
| Master | <p>The master is responsible for splitting a job into multiple tasks by data size and number of files. The data size and number of files can be configured in <code>sys.properties</code>. The detailed process for splitting a job into multiple tasks is as follows:</p> <ol style="list-style-type: none"> 1. The master node scans the full list of files to be migrated from the local/ other cloud storage devices. 2. The master splits the full file list into tasks by data size and the number of files and each task is responsible for the migration or validation for a part of files. |
| Worker | <ul style="list-style-type: none"> - The worker is responsible for file migration and data validation of tasks. It pulls the specific file from the data source and uploads the file to the specified directory to the OSS. You can specify the data source to be migrated and the OSS configuration in <code>job.cfg</code> or <code>local_job.cfg</code>. - Worker data migration supports limiting traffic and specifying the number of concurrent tasks. You can configure the settings in <code>sys.properties</code>. |

| Role | Description |
|-------------|--|
| TaskTracker | TaskTracker is abbreviated to Tracker. It is responsible for distributing tasks and tracking task statuses. |
| Console | The console is responsible for interacting with users and receiving command display results. It supports system management commands such as deploy, start, and stop, and job management commands such as submit, retry, and clean. |

In distributed mode, you can start multiple worker nodes for data migration. Tasks are evenly allocated to the worker nodes and one worker node can run multiple tasks. One machine can only start one worker node. The master is started at the same time as the first worker node configured in `workers`, and the tasktracker and console also run on the machine.

The file structure in distributed mode is as follows:

```

ossimport
Miss -- Bin
├── console.jar      # The JAR package of the console module
├── master.jar      # The JAR package of the master module
├── tracker.jar     # The JAR package of the tracker module
├── worker.jar      # The JAR package of the worker module
├── conf
│   ├── job.cfg     # The template of the job configuration file
│   └── sys.properties # Configuration file for the system running
├── parameters
│   └── workers     # Worker list
├── console.sh      # The command line tool. Currently it only
│   └── supports Linux
├── logs           # Log directory
└── README.md      # Description documentation. We recommend
    └── that you carefully read the documentation before using the feature

```

Note:

- The distributed command line tool `console.sh` currently only supports Linux and does not support Windows.

Configuration files

In standalone mode, two configuration files are used: `sys.properties` and `local_job.cfg`. In distributed mode, three configuration files are used: `sys.properties`,

`local_job.cfg`, and `workers`. Specifically, `local_job.cfg` and `job.cfg` are identical, except in name. The `workers` file is exclusive to the distributed environment.

- `sys.properties`

System running parameters.

| Field | Meaning | Description |
|-----------------------------|---------------------------------------|--|
| <code>workingDir</code> | Working directory. | <ul style="list-style-type: none"> - The directory after the tool kit is extracted. - Do not modify this option in standalone mode. - The working directory for each machine in distributed mode must be the same. |
| <code>workerUser</code> | The worker machine SSH user name. | <ul style="list-style-type: none"> - If you have configured <code>privateKeyFile</code>, the <code>privateKeyFile</code> is used in priority. - If <code>privateKeyFile</code> is not configured, the <code>workerUser/workerPassword</code> combination is used. - Do not modify this option in standalone mode. |
| <code>workerPassword</code> | The worker machine SSH user password. | Do not modify this option in standalone mode. |

| Field | Meaning | Description |
|----------------|-----------------------------------|--|
| privateKeyFile | The file path of the private key. | <ul style="list-style-type: none"> - If you have established an SSH channel, you can specify the public key file path. Otherwise, leave it empty. - If you have configured privateKeyFile, the privateKeyFile is given priority. - If privateKeyFile is not configured, the workerUser/workerPassword is used. - Do not modify this option in the standalone mode. |
| sshPort | The SSH port. | The default value is 22. It does not usually need to be changed. Do not modify this option in standalone mode. |

| Field | Meaning | Description |
|-----------------------------------|---|---|
| workerTaskThreadNum | The maximum number of threads for the worker to run tasks. | <ul style="list-style-type: none"> - This parameter is related to the machine memory and network. Recommended value is 60. - The value can be increased, for example to 150 for physical machines. If the network bandwidth is already full, do not increase the value further. - If the network is poor, lower the value as appropriate to, for example, 30. This way, you can avoid the time-out of a large number of requests from request competition. |
| workerMaxThroughput(KB/s) | The data migration traffic ceiling on the worker node. | This value limits the traffic. The default value 0 indicates that no traffic limitations are imposed. |
| dispatcherThreadNum | The number of threads for task distribution and status confirmation of the tracker. | The default value must be enough. You don't need to change the default value if you have no special requirements. |
| workerAbortWhenUncatchedException | Whether to skip or cancel in case of an unknown error. | Unknown errors are skipped by default. |
| workerRecordMd5 | Whether to use metadata x-oss-meta-md5 to log the MD5 value of the migrated file in the OSS. The default setting is no. | It is mainly used for file data validation using MD5. |

- job.cfg

Data migration job configuration. The local_job.cfg and job.cfg options are identical except in name.

| Field | Meaning | Description |
|---------------|--|--|
| jobName | The job name, a string. | <ul style="list-style-type: none"> - The unique identifier of the job. The naming rule is [a-zA-Z0-9_-]{4,128}. It supports the submission of multiple jobs of different names. - If you submit a job with the same name as another job, the system prompts that the job already exists. You are not allowed to submit a job of the same name before you clean the original job with the name. |
| jobType | The job type, a string. | <p>There are two types: import and audit. The default value is import.</p> <ul style="list-style-type: none"> - import: Run the data migration and validate the migrated data for consistency. - audit: Only validate data consistency. |
| isIncremental | Whether to enable incremental migration mode, a Boolean value. | <ul style="list-style-type: none"> - Default value: False. - If it is set to true, incremental data is rescanned at the interval specified by incrementalModeInterval (unit: second) and synchronized to the OSS. |

| Field | Meaning | Description |
|---------------------------------------|--|--|
| <p>incrementalModeInterval</p> | <p>Synchronization interval in incremental mode, an integer value. Unit: second.</p> | <p>Valid when isIncremental=true. The minimum configurable interval is 900 seconds. We do not recommend you configure it to a value smaller than 3,600 seconds as that wastes a large number of requests and lead to additional system overhead.</p> |
| <p>importSince</p> | <p>Migrate data later than this time value, an integer value. Unit: second.</p> | <ul style="list-style-type: none"> - This time value is a Unix timestamp, that is, the number of seconds since UTC 00:00 on January 1, 1970. You can get the value through the date +%s command. - The default value is 0, indicating to migrate all the data. |

| Field | Meaning | Description |
|---------|--|--|
| srcType | The synchronization source type, a string. Case sensitive. | <p>Currently this parameter supports 10 types including local, oss, qiniu, bos, ks3, s3, youpai, HTTP, cos, and azure.</p> <ul style="list-style-type: none"> - local: Migrate data from a local file to the OSS. You only need to enter the srcPrefix for this option and do not need to enter srcAccessKey, srcSecretKey, srcDomain, and srcBucket. - Migrate data from one bucket to another. - qiniu: Migrate data from Qiniu cloud storage to the OSS. - bos: Migrate data from Baidu cloud storage to the OSS. - ks3: Migrate data from Kingsoft cloud storage to the OSS. - s3: Migrate data from AWS S3 to the OSS. - youpai: Migrate data from Youpai Cloud to the OSS. - HTTP: Migrate data to the OSS through the provided HTTP link list. - cos: Migrate data from the Tencent cloud storage COS to the OSS. - azure: Migrate data from Azure Blob to the OSS. |

| Field | Meaning | Description |
|--------------|---------------------------------|--|
| srcAccessKey | The source AccessKey, a string. | Enter the AccessKey of the data source if srcType is set to oss, qiniu, baidu, ks3, or s3. <ul style="list-style-type: none">- or the local and HTTP types, this option can be left empty.- For youpai and azure types, enter the AccountName. |
| srcSecretKey | The source SecretKey, a string. | Enter the SecretKey of the data source if srcType is set to oss, qiniu, baidu, ks3, or s3. <ul style="list-style-type: none">- For the local and HTTP types, this option can be left empty.- youpai: Enter the operator password.- azure: Enter the AccountKey. |

| Field | Meaning | Description |
|-----------|------------------|--|
| srcDomain | Source endpoint. | <p>This configuration item is not required if the srcType is set to local or HTTP.</p> <ul style="list-style-type: none"> - oss: The domain name obtained from the console. It is a second-level domain name without the bucket prefix. A full list can be found at domain name list. - qiniu: The domain name of the corresponding bucket obtained from the Qiniu console. - bos: The Baidu BOS domain name, such as <code>http://bj.bcebos.com</code> or <code>http://gz.bcebos.com</code>. - ks3: Kingsoft KS3 domain name, such as <code>http://kss.ksyun.com</code>, <code>http://ks3-cn-beijing.ksyun.com</code> or <code>http://ks3-us-west-1.ksyun.com</code>. - The S3 and AWS S3 domain names of various regions can be found at S3 Endpoint. - youpai: The domain name of the Youpai Cloud, such as automatic identification of the optimal channel of <code>http://v0.api.upyun.com</code>, or telecommunication line <code>http://v1.api.upyun.com</code>, or China Unicom or China |

| Field | Meaning | Description |
|---------------|---|---|
| srcBucket | The name of the source bucket or the container. | This configuration item is not required if the srcType is set to local or HTTP. azure: Enter the container name in Azure Blob, and enter the bucket name for others. |
| srcPrefix | The source prefix, a string . The default value is empty. | If the srcType is set to local, enter the local directory in full, separated, and ended by /, such as c:/example/ or /data/example/. If the srcType is oss, qiniu, bos, ks3, youpai, or s3, the value is the prefix of the object to be synchronized, without the bucket name, such as data/to/oss/. If you want to synchronize all the objects, leave the srcPrefix empty. |
| destAccessKey | The destination AccessKey, a string. | To view the OSS AccessKeyID, log on to the console . . |
| destSecretKey | The destination SecretKey, a string. | To view the OSS AccessKeySecret, log on to the console . . |
| destDomain | Destination endpoint, a string. | Obtained from the console . It is a second-level domain name without the bucket prefix. A full list can be found at domain name list. . |
| destBucket | The destination bucket, a string. | The OSS bucket name. It does not need to end with /. |

| Field | Meaning | Description |
|------------|---|---|
| destPrefix | The destination prefix, a string. The default value is empty. | <ul style="list-style-type: none"> - The destination prefix . The default value is empty in which case the objects are placed in the destination bucket. - If you want to synchronize data to a specific directory on the OSS, end the prefix with /, such as data/in/oss/. - Note that the OSS does not support / as the object prefix, so do not set destPrefix to start with /. - A local file in the path srcPrefix+relativePath is migrated to destDomain/destBucket/destPrefix + relativePath on the OSS. - An object on the cloud in the path srcDomain/srcBucket/srcPrefix+relativePath is migrated to destDomain/destBucket/destPrefix + relativePath on the OSS. |

| Field | Meaning | Description |
|----------------------|--|---|
| taskObjectCountLimit | The maximum number of files in a task, an integer. The default value is 10,000. | This configuration option affects the concurrency of the executed jobs. Generally the configuration is set to the total number of files/total number of workers/number of migration threads (workerTaskThreadNum) and the maximum number is 50,000. If the total number of files is unknown, use the default value. |
| taskObjectSizeLimit | The maximum data size in a task, an integer. Unit: bytes. The default value is 1 GB. | This configuration option affects the concurrency of the executed jobs. Generally the configuration is set to the total data size/total number of workers/number of migration threads (workerTaskThreadNum). If the total data size is unknown, use the default value. |
| isSkipExistFile | Whether to skip the existing objects during data migration, a Boolean value. | If it is set to true, the objects are skipped according to the size and LastModifiedTime. If it is set to false, the existing objects are overwritten. The default value is false. This option is invalid when jobType is set to audit. |

| Field | Meaning | Description |
|-------------------------|---|---|
| scanThreadCount | The number of threads for parallel file scanning, an integer. The default value is 1. | This configuration option is related to file scanning efficiency. Do not modify the configuration if you have no special requirements. |
| maxMultiThreadScanDepth | The maximum allowable depth of directories for the parallel scan, an integer. The default value is 1. | <ul style="list-style-type: none"> - The default value of 1 indicates parallel scan on top-level directories. - Do not modify this configuration if you have no special requirements. If the value is configured too large, the job may fail to run normally. |
| appId | The appId of the Tencent COS, an integer. | Valid when srcType is set to cos. |

| Field | Meaning | Description |
|------------------|--|--|
| httpListFilePath | The absolute path of the HTTP list file, a string. | <ul style="list-style-type: none"> - Valid when srcType is set to HTTP. When the source is an HTTP link address, you are required to provide the absolute path of the file with the HTTP link address as the content , such as c:/example/http.list. - The HTTP link in the file must be divided into two columns separated by spaces, representing the prefix and the relative path on the OSS after the upload respectively, such as c:/example/http.list which contains the following content: http://mingdi-hz.oss-cn-hangzhou.aliyuncs.com/aa/ bb.jpg http://mingdi-hz.oss-cn-hangzhou.aliyuncs.com/cc/dd.jpg. The object names for the two rows after they are migrated to the OSS are destPrefix + bb.jpg and destPrefix + cc/dd.jpg respectively. |

• Workers

The workers is exclusive to the distributed mode and every IP address is a row, such as:

```
192.168.1.6
192.168.1.7
```

192.168.1.8

Note:

- In the preceding configuration, the 192.168.1.6 in the first line must be master, that is, the master, worker, and TaskTracker are started on 192.168.1.6 and the console also needs to be executed on the machine.
- Make sure that the user name, logon mode, and working directory of multiple worker modes are the same.

Configuration file example

The data migration task profile for a distributed deployment is shown in the following table, and the configuration file name for a stand-alone machine is `local_job.cfg`, there is no difference between a configuration item and a distributed deployment.

| Migration type | Configuration File | Description: |
|--|--------------------|--|
| Migrate locally to OSS | <i>job.cfg</i> | Srcprefix is an absolute path at the end of/, such D : /work/oss/data/, /home/user/work/oss/data/ |
| Migrating from seven bull cloud storage to OSS | <i>job.cfg</i> | Srcprefix and DESTIN prefix can be configured to be empty; if not empty, end with / such as destPrefix =docs/ |
| Transfer from Baidu Bos to OSS | <i>job.cfg</i> | Srcprefix and DESTIN prefix can be configured to be empty; if not empty, end with /, such as destPrefix =docs/ |
| Migrating from AWS S3 to OSS | <i>job.cfg</i> | <i>domain names</i> for S3 |
| Move from cloud storage to OSS again | <i>job.cfg</i> | Srcaccesskey/Scanner enters the operator account number and password |

| Migration type | Configuration File | Description: |
|-----------------------------------|-------------------------|--|
| Migrating from Tencent COs to OSS | job.cfg | Srcdomain please follow V4 version, such as <code>srcDomain=sh</code> . Srcprefix can be empty, when not empty, start and end with /, such as <code>srcPrefix=/docs/</code> |
| Migrating from azure blob to OSS | job.cfg | Srcaccesskey/srcsecretkey fill storage cun chu and key; srcdomain enters connection string Endpointsuffix, such as <code>core.chinacloudapi.cn</code> . |
| Migrating from OSS to OSS | job.cfg | It is suitable for data migration between different regions, between Different Storage types , and between different prefixes; it is recommended to deploy on ECS and use domain names with internal to save on traffic. |

4.2 Standalone deployment

Download

Standalone deployment supports Linux and Windows.

Download the tool for standalone deployment: [ossimport-2.3.3.zip](#). Download the tool to a local directory and use the tool or the `unzip` command to unzip the files. The file structure after unzipping is as follows:

```

ossimport
├── bin
│   └── ossimport2.jar # The JAR including master, worker, tracker,
and console modules
├── conf
│   ├── local_job.cfg # The job configuration file
│   └── sys.properties # Configuration file of the system running
parameters
├── console.bat # Windows command line, which can run
distributed call-in tasks
└── console.sh # Linux command line, which can run distribute
d call-in tasks

```

```
|— import.bat          # The configuration file for one-click import
and execution in Windows is the data migration job configured in conf/
local_job.cfg, including start, migration, validation, and retry
|— import.sh          # The configuration file for one-click import
and execution in Linux is the data migration job configured in conf/
local_job.cfg, including start, migration, validation, and retry
|— logs              # Log directory
|— README.md         # Description documentation. We recommend that
you carefully read the documentation before using the feature
```

Configuration

The standalone version has two configuration files: `conf/sys.properties` and `conf/local_job.cfg`.

- Do not change the configuration items in `conf/sys.properties`: `workingDir`, `workerUserName`, `workerPassword`, and `privateKeyFile`.
- Do not change the `conf/local_job.cfg` name and location. Do not change the `jobName` configuration item.

Configure other items appropriately.



Note:

Confirm the parameters in `sys.properties` and `local_job.cfg` before submitting the job. The parameters in the job are not allowed to be changed after the job is submitted.

Running

In standalone mode, a data migration job has two execution modes: one-click import and step-by-step execution.

One-click import encapsulates all the steps and data migration can then be completed following the prompts of the script.



Note:

We strongly recommend one-click import for new users.

Step-by-step execution includes executing the starting service, submitting the job and retrying failed tasks.

- **One-click import**

1. To run one-click import, run `import.bat` in `cmd.exe` in Windows, and run `bash import.sh` in Linux.
2. If you previously run this job, you are asked if you want to continue the job from the last breakpoint or if you want to run a new synchronization job. If you initiate a new data migration job, or have modified the synchronized source end/destination end, run the synchronization job again.
3. After a job starts in Windows, a new `cmd` window appears showing the synchronization job in progress and the log. The job status in the old window is refreshed every 10 seconds. Do not close these two windows during the data migration process. In Linux, the preceding process is run in the background.
4. When the job is complete, if a task failed, you are asked if you want to retry. Enter `y` to retry or `n` to skip this step and exit.
5. To see why the upload failed, open the file `master/jobs/local_test/failed_tasks/<tasktaskid>/audit.log` and check the cause of the failure.

- **Step-by-step execution**

1. Clear jobs with the same name. If you have run job with the same name before and want to run the job again, first clear the job with the same name. If you have never run the job or you want to retry a failed job, do not run the clear command. In Windows, run `console.bat clean` in `cmd.exe`. In Linux, run `bash console.sh clean`.
2. Submit the data migration job. The OssImport does not support submitting jobs of the same name. If jobs with the same name exist, clear the job with the same name first. The configuration file for the submitted job is `conf/local_job.cfg`

- , and the default job name is `local_test`. To submit a job, run `console.bat submit` in `cmd.exe` in Windows, and run `bash console.sh submit` in Linux.
3. Start the service. Run `console.bat start` in `cmd.exe` in Windows, and run `bash console.sh start` in Linux.
 4. View the job status. Run `console.bat start` in `cmd.exe` in Windows, and run `bash console.sh start` in Linux.
 5. Retry a failed task. Tasks may fail due to network issues or other causes. Only failed tasks are retried. Run `console.bat retry` in `cmd.exe` in Windows, and run `bash console.sh retry`.
 6. Stop the service. Close the window `%JAVA_HOME%/bin/java.exe` in Windows, and run `bash console.sh stop` in Linux.

**Note:**

We recommend that you use one-click import for data migration if you have no special requirements.

- Common causes of failure
 - A file in the source directory was modified during the upload process. This cause is indicated by a `SIZE_NOT_MATCH` error in `log/audit.log`. In this case, the old file has been uploaded successfully, but the changes have not been synchronized to the OSS.
 - A source file was deleted during the upload process, leading to download failure.
 - A source file name does not conform to naming rules of the OSS (file name cannot start with / or be empty), leading to upload failure.
 - The data source file failed to be downloaded.
 - The program exited unexpectedly and the job status is `Abort`. If this happens, contact after-sales technical support.
- Job statuses and logs

After a job is submitted, the master splits the job into tasks, the workers run the tasks and the tracker collects the task statuses. After a job is completed, the `ossimport` directory contains the following:

```
ossimport
├── bin
│   └── ossimport2.jar    # The standalone version JAR
```

```
├── conf
│   ├── local_job.cfg           # The job configuration file
│   └── sys.properties          # Configuration file of the system running
├── parameters
│   ├── console.sh              # The command line tool
│   └── import.sh                # One-click import script
├── logs
│   ├── import.log              # Archive logs
│   ├── job_stat.log            # Job status record
│   ├── ossimport2.log          # Running log of the standalone version
│   └── submit.log              # Job submission record
├── master
│   └── jobqueue                 # Store jobs that have not been
fully split
│   └── jobs                     # Store the job running status
│       ├── local_test          # Job name
│       ├── checkpoints          # The checkpoint record of the
master splitting the job to tasks
│       ├── 034DC9DD2860B0CFE884242BC6FF92E7.cpt
│       ├── dispatched          # Tasks that have been assigned to
the workers but haven't been fully run
│       │   ├── localhost
│       ├── failed_tasks        # Tasks that failed to run
│       ├── pending_tasks       # Tasks that have not been assigned
│       └── succeed_tasks       # Tasks that run successfully
│           └── A41506C07BF1DF2A3EDB4CE31756B93F_1499744514501@
localhost
├── view the error causes in the log
│   ├── audit.log                # The task running log. You can
view the error file list
│   ├── DONE                    # Mark of successful tasks
│   ├── error.list               # The task error list. You can
The content is Failed or Completed
│   ├── STATUS                   # The task status marker file.
information
│   └── TASK                      # The task description
├── worker                       # Status of the task being run by the worker. After
running, tasks are managed by the master
│   └── jobs
│       └── local_test
│           └── tasks
```

Note:

- For job running information, view `log/ossimport2.log`.
- For the task failure cause, view `master/jobs/${JobName}/failed_tasks/${TaskName}/audit.log`.
- For failed task files, view `master/jobs/${JobName}/failed_tasks/${TaskName}/error.list`.

FAQ

See [FAQ](#).

4.3 Distributed deployment

Download

Distributed deployment currently only supports Linux, and does not support Windows.

Download the tool for distributed deployment: [ossimport-2.3.3.tar.gz](#).

Download the tool to a local directory and use the command `tar -zxvf ossimport-2.3.2.tar.gz -C $HOME/ossimport` to unzip the files. The file structure after the unzipping is as follows:

```

ossimport
├── bin
│   ├── console.jar    # The JAR package of the console module
│   ├── master.jar     # The JAR package of the master module
│   ├── tracker.jar    # The JAR package of the tracker module
│   └── worker.jar     # The JAR package of the worker module
├── conf
│   ├── job.cfg        # The template of the job configuration file
│   └── sys.properties # Configuration file of the system running
├── parameters
│   └── workers        # Worker list
├── console.sh        # The command line tool. Currently it only
├── supports Linux
├── logs              # Log directory
├── README.md         # Description documentation. Read it carefully
└── before use

```

Note:

- **OSS_IMPORT_HOME:** The root directory of the OssImport. By default the directory is the `$HOME/ossimport` in the unzip command. You can also run the command `export OSS_IMPORT_HOME=<dir>` or modify the system configuration file `$HOME/.bashrc` to set the directory.
- **OSS_IMPORT_WORK_DIR:** The OssImport working directory. You can specify the directory through the configuration item `workingDir` in `conf/sys.properties`. The recommended values is `$HOME/ossimport/workdir`.
- Use absolute paths for `OSS_IMPORT_HOME` or `OSS_IMPORT_WORK_DIR`, such as `/home/<user>/ossimport` or `/home/<user>/ossimport/workdir`.

Configuration

The distributed version has three configuration files: `conf/sys.properties`, `conf/job.cfg` and `conf/workers`. For descriptions of the configuration items, see the **Introduction** chapter.

- `conf/job.cfg`: The configuration file template for the job in distributed mode. Modify the values according to the actual parameters before data migration.
- `conf/sys.properties`: The configuration file for the system run parameters, such as the working directory and the worker running parameters
- `conf/workers`: The worker list.

Note:

- Confirm the parameters in `sys.properties` and `job.cfg` before submitting the job. The parameters in the job are not allowed to be changed after the job is submitted.
- Determine the worker list `workers` before starting the service. After the service is started, workers are not allowed to be added or deleted.

Running

- Run commands

In distributed deployment, the general steps for job execution are as follows:

- Modify the job configuration file.
- Deploy the service.

Run `bash console.sh deploy` in Linux.

**Note:**

Make sure the configuration files `Conf/job.cfg` and `CONF/workers` have been modified before deployment.

- Clear jobs of the same name.

If you ran a job of the same name before and want to run the job again, clear the job with the same name first. If you have never run the job or you want to retry a failed job, do not run the clear command. Run `bash console.sh clean job_name` in Linux.

- Submit the data migration job.

The OssImport does not support submitting jobs of the same name. If jobs with the same name exist, use the `clean` command to clean the job with the same name first. To submit a job, you must specify the job configuration file. The job' s configuration file template is at `conf/job.cfg`. We recommend

that you modify the settings based on the template. Run `bash console.sh submit [job_cfg_file]` in Linux and submit the job with the configuration file `job_cfg_file`. The `job_cfg_file` is an optional parameter. If not specified, the parameter is `$OSS_IMPORT_HOME/conf/job.cfg` by default. The `$OSS_IMPORT_HOME` is by default the directory where the `console.sh` file is located.

- Start the migration service.

Run `bash console.sh start` in Linux.

- View the job state.

Run `bash console.sh stat` in Linux.

- Retry failed tasks.

Tasks may fail to run because of network issues or other causes. Only failed tasks are retried. Run `bash console.sh retry [job_name]` in Linux. The `job_name` is an optional parameter which specifies to retry tasks of the job named `job_name`. If the `job_name` parameter is not specified, failed tasks of all jobs are retried.

- Stop the migration job.

Run `bash console.sh stop` in Linux.

Note:

- When the `bash console.sh` parameter has an error, the `console.sh` automatically prompts the command format.
- We recommend that you use absolute paths for directories of the configuration file and submitted jobs.
- The configuration for jobs (that is, the configuration items in `job.cfg`) cannot be modified after submitted.

- Common causes of job failure

- A file in the source directory was modified during the upload process. This cause is indicated by a `SIZE_NOT_MATCH` error in `log/audit.log`. In this case, the old

file has been uploaded successfully, but the changes have not been synchronized to the OSS.

- A source file was deleted during the upload process, leading to the download failure.
- A source file name does not conform to naming rules of the OSS (file name cannot start with / or be empty), leading to the upload failure to the OSS.
- The data source file fails to be downloaded.
- The program exits unexpectedly and the job state is Abort. If this happens, contact after-sales technical support.

• Job states and logs

After a job is submitted, the master splits the job into tasks, the workers run the tasks and the tracker collects the task states. After a job is completed, the workdir directory contains the following:

```

workdir
├── bin
│   ├── console.jar    # The JAR package of the console module
│   ├── master.jar     # The JAR package of the master module
│   ├── tracker.jar    # The JAR package of the tracker module
│   └── worker.jar     # The JAR package of the worker module
├── conf
│   ├── job.cfg        # The template of the job configuration file
│   └── sys.properties # Configuration file of the system running
├── parameters
│   └── workers        # Worker list
├── logs
│   ├── import.log    # Archive logs
│   ├── master.log    # Master logs
│   ├── tracker.log   # Tracker logs
│   └── worker.log    # Worker logs
├── master
│   └── jobqueue       # Store jobs that have not been
fully split
│   └── jobs           # Store the job running state
│       └── xxttooss  # Job name
│           ├── checkpoints # The checkpoint record that the
master splits the job to tasks
│               └── 0
│                   └── ED09636A6EA24A292460866AFDD7A89A.cpt
│   └── dispatched    # Tasks that have been assigned to
the workers but haven't been fully run
│       └── 192.168.1.6
│   └── failed_tasks  # Tasks that failed to run
│       └── A41506C07BF1DF2A3EDB4CE31756B93F_1499348973217@
192.168.1.6
├── audit.log        # The task running log. You
can view the error causes in the log
├── DONE            # Mark of successful tasks. If
the task fails, the mark is empty
├── error.list      # The task error list. You can
view the error file list

```

```

├── STATUS          # The task state mark file.
├── The content is Failed or Completed, indicating that the task failed
├── or succeeded
├── information
│   ├── TASK          # The task description
│   ├── pending_tasks # Tasks that have not been assigned
│   └── succeed_tasks # Tasks that run successfully
│       └── A41506C07BF1DF2A3EDB4CE31756B93F_1499668462358@
│           └── 192.168.1.6
│               ├── audit.log # The task running log. You can
│               ├── view the error causes in the log
│               ├── DONE      # Mark of successful tasks
│               ├── error.list # Task error list. If the task
│               ├── is successful, the list is empty
│               ├── STATUS    # The task state mark file. The
│               ├── content is Failed or Completed, indicating that the task failed or
│               ├── succeeded
│               └── TASK      # The task description
├── information
├── worker # state of the task being run by the worker. After
├── running, tasks are managed by the master
├── jobs
│   ├── local_test2
│   │   └── tasks
│   └── local_test_4
│       └── tasks

```

Note:

- For the job running state, view logs/tracker.log. For the worker running logs, view logs/worker.log. For the master running logs, view logs/master.log.
- For the task failure cause, view master/jobs/\${JobName}/failed_tasks/\${TaskName}/audit.log.
- For failed task files, view master/jobs/\${JobName}/failed_tasks/\${TaskName}/error.list.

FAQ

See [FAQ](#).

4.4 FAQ

- 1. **UnsupportedClassVersionError**

Exception Executing command:

```

Exception in thread "main" java.lang.UnsupportedClassVersionError:
com.aliyun/ossimport2/OSSImport2 : Unsupported major.minor version
51.0
    at java.lang.ClassLoader.defineClass1(Native Method)
    at java.lang.ClassLoader.defineClassCond(ClassLoader.java:
631)
    at java.lang.ClassLoader.defineClass(ClassLoader.java:615)
    at com.simontuffs.onejar.JarClassLoader.defineClass(
JarClassLoader.java:693)

```

```

    at com.simontuffs.onejar.JarClassLoader.findClass(JarClassLo
ader.java:599)
    at java.lang.ClassLoader.loadClass(ClassLoader.java:306)
    at java.lang.ClassLoader.loadClass(ClassLoader.java:247)
    at com.simontuffs.onejar.Boot.run(Boot.java:300)
    at com.simontuffs.onejar.Boot.main(Boot.java:159)

```

Cause: the Java version is too low to be updated to 1.7 or later.

- **2. InvocationTargetException**

Submit task reporting exceptions using the submit command:

```

Exception in thread "main" java.lang.reflect.InvocationTargetExce
ption
    at sun.reflect.NativeMethodAccessorImpl.invoke0(Native
Method)
    at sun.reflect.NativeMethodAccessorImpl.invoke(NativeMeth
odAccessorImpl.java:62)
    at sun.reflect.DelegatingMethodAccessorImpl.invoke(
DelegatingMethodAccessorImpl.java:43)
    at java.lang.reflect.Method.invoke(Method.java:497)
    at com.simontuffs.onejar.Boot.run(Boot.java:306)
    at com.simontuffs.onejar.Boot.main(Boot.java:159)
Caused by: java.lang.NullPointerException
    at com.aliyun.ossimport2.config.JobConfig.load(JobConfig.
java:44)
    at com.aliyun.ossimport2.OSSImport2.doSubmitJob(OSSImport2.
java:289)
    at com.aliyun.ossimport2.OSSImport2.main(OSSImport2.java:
120)
    ... 6 more

```

Reason: Check to see if the items in the configuration file are deleted or commented out, please enter items that do not need to be configured after the equal sign and do not need to be deleted.

- **3. too many open files**

Reason: `ulimit -n` view system handle.

- If the value is less than 10 thousand, you can restart the process through `ulimit -n 65536`;
- If it was already set up relatively large, then use `sudo losf -n` to troubleshoot which processes have opened the handle.

- **4 Windows return seconds after Windows starts**

Cause: Most cases are caused by Java not installed or version less than 1.7, or by configuration file errors.

- 5. No jobs is running or finished

When the `submit` command completes the task, use `stat`. View task status always displays:

```
bash console.sh stat
[WARN] List files dir not exist : /home/<user>/ossimport/workdir/
master/jobs/
no jobs is running or finished.
```

Reason:

- The job was just submitted, and the master needs to scan the list of files first, when the task is not actually generated and distributed, printing the log is normal;
 - After a long period of time, the error is still printed, usually without `start` .Command to start the process or to exit unexpectedly after the process has started. If you do not start the service, you only need to use `start`; otherwise, take a look `logs/ossimport.log`, find the cause of the exception and resolve it before you start the service process.
- 6. The `STAT` command always displays `scanfinished: false`

Observe whether the total number of tasks is increasing:

- If there is more in the process, it is that the file list of the job is not complete, there are also new files in the list;
 - Always unchanged, `scanfinished` will never be true if the job is configured with incremental Mode To scan the list of files regularly, depending on the interval configured by the user, check for new or modified documents;
 - If it is not an incremental mode, the number of tasks does not increase, and the log is checked for exceptions.
- 7. The service process was dropped, but the log did not output the exception

Reason: if the machine's available memory is less than 2 GB, the big probability is that there's not enough memory to be killed. Check the `dmsg`. Log whether there is a record of insufficient memory to be killed.

- 8. What needs to be done to restart the service after the process has been hung or killed?

Call `start` directly The command starts the service, and the job that has been submitted does not need to be resubmitted, as long as it does not call the `clean`

command, all submitted jobs have breakpoint records that do not redo the work that has been done.

- 9. Complete the task the OSS console displays a smaller amount of data than the source

There is no change in the size of the bucket in the OSS console after the job has all been successfully uploaded or used locally. The size of `du` statistics varies greatly. Cause: the amount of Bucket data in the OSS console is delayed for 1 hour to update. `du` The command counts the block size, which is larger than the actual file, you can count the true size of the local directory by referring to the following command: `ls -lR <directory absolute path> | grep "\-rw" | awk '{sum+= $5}END{print sum}'`.

- 10. How do I handle the failed tasks shown by stat?

Generally, you can use the `retry` command to try again.

- 11. After some failed tasks, repeated retry won't succeed.

Reason: view the file `$work_dir/master/jobs/$jobName/failed_tasks/$taskName/error.list` Get the relative path of the failed file, check if the file has permission to access, whether it is deleted, is flexible, whether garbled file name, etc.

- 12. How do I upload a file with a bad file name to OSS?

Need to first use `export LANG="<your file name encode>", ls use encode>`, `ls` after checking the file name. Command to clear the original job and resubmit the job again with the `submit` command.

- 13. `java.nio.file.AccessDeniedException`

Exception reported: `ava.nio.file.AccessDeniedException`. Cause: There is no permission to access the configuration file directory.

- 14. Task status displays 0, but job display completes

The task status displays 0, but the job display completes as follows:

```
[2015-12-28 16:12:35] [INFO] JobName:dir_data
[2015-12-28 16:12:35] [INFO] Pending Task Count:0
[2015-12-28 16:12:35] [INFO] Dispatched Task Count:0
[2015-12-28 16:12:35] [INFO] Succeed Task Count:0
[2015-12-28 16:12:35] [INFO] Failed Task Count:0
[2015-12-28 16:12:35] [INFO] Is Scan Finished:true
```

```
[2015-12-28 16:12:35] [INFO] JobState:SUCCEED
```

Reason:

- The `srcPrefix` fills in the error, resulting in the `List` not coming out of the file;
 - There are only directories and no files under `srcPrefix`, because the concept of directories is simulated by OSS, will not be truly uploaded.
- 15. The bucket you are attempting to access must be addressed using the specified endpoint

Log reporting exception:

```
Exception:com.aliyun.oss.OSSException: The bucket you are attempting
to access must be addressed using the specified endpoint. Please
send all future requests to this endpoint.
<Error>
  <Code>AccessDenied</Code>
  <Message>The bucket you are attempting to access must be addressed
using the specified endpoint. Please send all future requests to
this endpoint.</Message>
  <RequestId>56EA98DE815804**21B23EE6</RequestId>
  <HostId>my-oss-bucket.oss-cn-qingdao.aliyuncs.com</HostId>
  <Bucket>my-oss-bucket</Bucket>
  <Endpoint>oss-cn-hangzhou.aliyuncs.com</Endpoint>
</Error>
```

Reason: `srcDomain` of Bucket Or `destDomain` fill in the error, please follow the list of domain names Fill in the correct domain name.

- 16. The request signature we calculated does not match the signature you provided

Log reporting exception:

```
Exception:com.aliyun.oss.OSSException: The request signature we
calculated does not match the signature you provided. Check your key
and signing method.
[ErrorCode]: SignatureDoesNotMatch
[RequestId]: xxxxxxxx
[HostId]: xxx.oss-cn-shanghai.aliyuncs.com
```

Reason: Check whether the `destAccessKey`和`destSecretKey` and the scanner are wrong. Please refer [Access control](#).

- 17. `InvocationTargetException`

submit command submit task times exception:

```
submit job:/disk2/ossimport2/local_job.cfg
Exception in thread "main" java.lang.reflect.InvocationTargetExce
ption
    at sun.reflect.NativeMethodAccessorImpl.invoke0(Native
Method)
    at sun.reflect.NativeMethodAccessorImpl.invoke(NativeMeth
odAccessorImpl.java:57)
```

```

    at sun.reflect.DelegatingMethodAccessorImpl.invoke(
DelegatingMethodAccessorImpl.java:43)
    at java.lang.reflect.Method.invoke(Method.java:606)
    at com.simontuffs.onejar.Boot.run(Boot.java:306)
    at com.simontuffs.onejar.Boot.main(Boot.java:159)
Caused by: java.lang.NullPointerException
    at com.aliyun.ossimport2. OSSImport2.doSubmitJob(OSSImport2.
java:289)
    at com.aliyun.ossimport2. OSSImport2.main(OSSImport2.java:
120)
    ... 6 more

```

Reason: Check Configuration item `workingdir` in `conf/sys.properties` Whether to configure, configure correctly, and verify that the configuration file path is the correct path.

- 18. Do you support setting up agents?

This feature is not supported.

- 19. Why is it expensive for OSS to migrate to OSS?

Refer to [endpoint](#) The domain name in the help, After configuring the internal network domain name, will not charge the traffic fee, but the cost of the number of visits is still charging.

- 20. The synchronization process shows that the source file does not exist

Reason: The Master first lists the list of files, and then moves the data according to the list of files. When list When you finish, certain files on the source end are deleted, you will find that the source file does not exist. This type of file is skipped and output to the error list.

- 21. Turn on incremental mode, will the OSS be deleted after locally deleted?

Turns on incremental mode, if the OSSS is deleted after local deletion, the delete operation is not synchronized.

- 22. Turn on incremental mode, some new documents are not synchronized

The incremental mode uses the last modification of the contrast file to determine whether the file is incremental. Some operations of the file system won't modify the last modified time of objects, such as `cp` and `mv` in Windows, and `mv` and `rsync` with `-t` or `-a` options in Linux. Data changes from these operations are not detected or synchronized to the OSS.

- 23. The number of tasks shooting the migration has always shown 0

Reasons: again, the more complex, mainly divided into two situations:

- ```
[2016-07-21 10:21:46] [INFO] [name=YoupaiList, totalRequest=1729925, avgLatency=38, recentLatency=300000]
```

This log, if the `recentLatency=300000`, is generally normal. List, beat list is slow, usually run up to 30 seconds of timeout, 30 seconds to list out a few files to return a few files, such as the case slowly list tasks It is normal to come out;

- The `recentLatency` is very small, and the general case is that the account password is wrong, and so on, because another error in the SDK returns only null ), Does not return the error result, so you can only get another error code that is returned by catching the package.
- 24. What do `srcAccessKey`和`srcSecretKey` and `fig` fill in again during the migration

Fill in the operator's account number and password. .

- 25. HTTP is always displayed during another shot migration Error 429

Also shot to limit the SDK access interval, if the access is a little faster, it will limit the speed, please contact us again for Customer Service Release restrictions.

Ossimport itself will try this situation again.

- 26. The execution of Unknown command "Java", Unknown command "nohup" and so on.

Reason: The command used is not installed, please use `yum` or `apt-get` or `zypper` Wait for the command to install the corresponding command.

- 27. Task does not match configuration file

The job configuration file appears to be correct, but running looks pretty different from the job profile configuration. Only `sys.properties` properties Changes and then reboots to take effect, and once the job's configuration file is submitted, the modification does not take effect and is required Clean drops the original job, and then resubmits the new configuration file.

- 28. The bucket name “xxx/xx” is invalid

Log reporting exception:

```
java.lang.IllegalArgumentException: The bucket name "xxx/xx" is invalid. A bucket name must: 1) be comprised of lower-case
```

```
characters, numbers or dash(-); 2) start with lower case or numbers
; 3) be between 3-63 characters long.
```

**Reason:** check if the `destBucket` configuration item (s) are filling correctly, and the bucket is not carrying / and other paths.

- 29. `com.aliyun.oss.ClientException: Unknown`

**Log reporting exception:**

```
com.aliyun.oss.ClientException: Unknown
[ErrorCode]: NonRepeatableRequest
[RequestId]: Cannot retry request with a non-repeatable request
entity. The cause lists the reason the original request failed.
```

As well as, usually when the network is full, `ossimport` will try again, if you still fail after retrying, you can call after the task is complete `The retry command` retries again.

- 30. `Connect to xxx.oss-cn-beijing-internal.aliyuncs.com:80 timed out`

**Log reporting exception:**

```
Unable to execute HTTP request: Connect to xxx.oss-cn-beijing-
internal.aliyuncs.com:80 timed out
[ErrorCode]: ConnectionTimeout
[RequestId]: Unknown
```

**Reason:** Non-ECS machines cannot use the internal domain name.

- 31. `The specified bucket is not valid`

**Log reporting exception:**

```
com.aliyun.oss.OSSEException: The specified bucket is not valid.
[ErrorCode]: InvalidBucketName
[RequestId]: 57906B4DD0EBAB0FF553D661
[HostId]: you-bucket.you-bucketoss-cn-hangzhou-internal.aliyuncs.com
```

**Reason:** From the configuration file `The destDomian` configured domain name cannot have a bucket name.

- 32. `Can the srcPrefix in the configuration file specify a file individually?`

No, `srcPrefix` only supports directories or prefix levels, A single file upload can be done with other, simpler tools.

- 33. `Unable to execute HTTP request: The Difference between ... is too large.`

**Log reporting exception:**

```
Unable to execute HTTP request: The Difference between the request
time and the current time is too large.
[ErrorCode]: RequestTimeTooSkewed
```

```
[RequestId]: xxxxxxxx
```

**Reason:**

- The Local Machine Time is not good, with a difference of more than 15 minutes from the server time, which is mostly the case.
- It may be that the concurrency is too high, especially for high CPU usage, leading to slow upload during concurrency.
- 34. No route to host

An error is shown in the logs: `No route to host`. This is probably caused by network interruptions due to a local firewall or iptables.

- 35. Unknown http list file format

The error is displayed using the http mode log because the specified HTTP list file is not in the right format:

- One reason is that the files may be copied from another system. You can use the `mac2unix` or `doc2unix` command to convert the file formats.
- There are some rows in the file that do not meet the rules, such as a row with fewer than two columns.
- 36. The boject key `"/xxxxx.jpg"` is invalid

**Log reporting exception:**

```
Exception:java.lang.IllegalArgumentException: The boject key "/xxxxx.jpg" is invalid. An object name should be between 1 - 1023 bytes long when encoded as UTF-8 and cannot contain LF or CR os unsupported chars in XML1.0, and cannot begin with "/" or "\".
```

**Reason:**

- Checks whether the `srcPrefix` is as a directory but does not end in;
- Check that the `destPrefix` starts with/or.

## 5 RAM Policy Editor

---

### Address

[RAM Policy Editor](#)

### Usage

RAM authorization policies are composed of several rules. Using the RAM policy editor, you can add or delete rules one by one in the interface, and then a JSON file is automatically generated for the policy. After adding all the policy rules, copy the JSON file and paste it in the created authorization policy content box on the Access Control console.

In the RAM policy editor, you must set these fields for each rule: Effect, Actions, Resources, and Conditions.

- Effect

Specify whether access to this rule is allowed or denied.

- Actions

Specify resource access actions. You can select one or more actions. Generally, it is sufficient to use the wildcard action provided for users:

- `oss:*` allows all actions
- `oss:Get*` allows all read actions
- `oss:Put*` allows all write actions

For more information, see [RAM Policy Editor README](#).



- Resources

Specify the resources of the OSS authorized to access. You can specify multiple ones, and each would be represented in the following format:

- A bucket: `my-bucket` (with no permission on objects in the bucket)
- All objects in a bucket: `my-bucket/*` (with no permission on the bucket itself, such as `ListObjects`)
- A directory in a bucket: `my-bucket/dir` (with no permission on objects under `dir/`)
- All objects under a directory in a bucket: `my-bucket/dir/*` (with no permission on `dir`, such as `ListObjects`)
- Complete resource path: `acs:oss:*:1234:my-bucket/dir`, 1234 is the user ID (viewed in the console)

### EnablePath

When you want to grant permissions to a directory, you usually need to grant the `List` permission on its upper level directory. For example, if you want to grant read and write permissions to `my-bucket/users/dir/*`, you also need to grant the following permissions so as to view this directory in the console (or in other tools):

```
ListObjects my-bucket
ListObjects my-bucket/users
ListObjects my-bucket/users/dir
```

When the `EnablePath` option is selected, the preceding permissions are automatically added.

- Conditions

Specify the conditions that must be met for authorized access. You can specify multiple ones.

For more information, see [RAM Policy Editor README](#).

### Example

To grant all permissions for `my-bucket` and its files:

# RAM Policy Editor v1.1.0

Chinese Star 2

## Add Rules

**Effect**

**Actions**

**Resources**   

- After entering a resource name , **press Enter** for confirmation
- Example: my-bucket, my-bucket/dir/
- [More...](#)

**EnablePath**  Automatically add the parent directory permissions ?

**Conditions (Optional)**

## Authorization Policy

```
{
 "Version": "1",
 "Statement": []
}
```

## List of Rules

| Effect | Actions | Resources | Conditions |
|--------|---------|-----------|------------|
|--------|---------|-----------|------------|

For more examples, see [RAM Policy Editor README](#).

# 6 ossftp

---

## 6.1 Quick installation for OSS FTP

### Introduction

The OSS FTP is a special FTP server that maps the operations on files and folders into your OSS instance upon receiving a common FTP request. This utility allows you to use the FTP protocol to manage files stored on your OSS instance.



#### Note:

OSS SDK is designed for the production environment, and OSS FTP is mainly for individual users.

- Key features
  - **Cross-Platform:** This utility can run on Windows, Linux, and Mac operating systems, either 32 or 64 bit, either on a graphic or command-line interface.
  - **Free of Installation:** You can run this utility directly after extraction.
  - **Free of Configuration:** You can run the utility without any further configurations.
  - **Transparent:** The FTP utility was written in Python, so you can see the complete source code. We will soon make the open source available on GitHub.
- Key functions
  - Supports file/folder upload, download, delete, and other operations
  - Supports multipart upload of large files
  - Supports most FTP commands and can satisfy daily needs



#### Note:

- Currently, for the ease of installation and deployment, OSS FTP V1.0 does not support TLS encryption. The FTP protocol implements plaintext transmission. To prevent password leaks, we recommend that you run the FTP server and client on the same machine and access using 127.0.0.1:port.
- The utility does not support rename and move operations.

- Do not include any Chinese characters in the extract-to path of the installation package.
- The FTP server's management control page may fail to be opened on early IE browsers.
- Supported Python versions: Python 2.6 and Python 2.7

## Downloads

- Windows: [ossftp-1.0.3-win.zip](#)

Now that Python 2.7 is not installed on Windows by default, it is contained in the installation package and is ready for use after extraction, without the hassle of installation and configuration.

- Linux/Mac: [ossftp-1.0.3-linux-mac.zip](#)

Because Python 2.7 or Python 2.6 is installed on Linux and Mac systems by default, the installation packages for Linux and Mac do not contain an executable Python program, but only relevant dependent libraries.

## Running

First, extract the downloaded file. Then, select an appropriate running mode based on environmental conditions.

- Windows: Double-click start.vbs to run it.
- Linux: Start the terminal and run it.

```
$ bash start.sh
```

- Mac: Double-click start.command or run it on a terminal.

```
$ bash start.command
```

The preceding process starts an FTP server, which listens to port 2048 at 127.0.0.1 by default. In addition, for ease of control over the status of the FTP server, the program also activates a web server, which listens to port 8192 at 127.0.0.1. If your system has a graphic interface, the control page is automatically opened.



### Note:

In most situations, you do not need to configure any settings before running the FTP server. If you make any configuration, remember to restart it to make the changes take effect.

## Connecting to the FTP Server

We recommend using the *FileZilla Client* to connect to the FTP server. After download and installation, connect to the FTP server as follows:

- Host: 127.0.0.1
- Logon type: normal
- User: access\_key\_id/bucket\_name
- Password: access\_key\_secret



### Note:

- The slash sign (/) means that both, not either items are required. For example, the user could be tSxyiUM3NKswPMEp/test-hz-jh-002.
- For more information about access\_key\_id and access\_key\_secret, see [OSS Access Control](#).

## Advanced use

- Manage the ftpserver from the console page

- Modify the Listener Address

If you want to access the ftpserver over a network, you must modify the listener address because the default address, 127.0.0.1, only allows local access. You can change it to an intranet IP or Internet IP.

- Modify the Listening Port

Modify the ftpserver' s listening port. We suggest using a port over 1024 because ports below 1024 require administrator permissions.

- Modify the Log Level

Set the ftpserver' s log level. The FTP server' s log is output to the `data/ossftp/` directory. You can view it only by pressing the Log button on the console page. The default log level is INFO and little information is printed in the log. If you need more detailed log information, you can change the level to

DEBUG. If you want to reduce log output, you can set the log level to WARNING or ERROR.

#### - Set Bucket Endpoints

By default, the ftpserver searches for the bucket's location information, so it can send subsequent requests to the corresponding (such as `oss-cn-hangzhou.aliyuncs.com` or `oss-cn-beijing.aliyuncs.com`). The ftpserver first tries to access the OSS instance over the intranet. If you set bucket endpoints, for example, `test-bucket-a.oss-cn-hangzhou.aliyuncs.com`, when you access `test-bucket-a`, you go to the `oss-cn-hangzhou.aliyuncs.com` domain name.

#### - Set Display Language

By setting `cn/en`, the display language of the FTP control page can be modified to Chinese/English.



Note:

- The system must be restarted for modifications to take effect.
- All the preceding modifications are actually changes to the ftp directory's `config.json` file. Thus, you can also modify this file directly.

#### · Directly start ftpserver (Linux/Mac)

You can only run the `ftpserver.py` file in the `ossftp` directory to avoid `web_server` overhead.

```
$ python ossftp/ftpserver.py &
```

The configuration modification method is the same to the preceding method.

### Potential problems

- If you encounter an error when connecting to the FTP server.

The error may be caused by two possible causes:

- There may be an error in the entered `access_key_id` or `access_key_secret`.

Solution: Enter the correct information and try again.

- The used `access_key` information may be a RAM sub-account `access_key` for a sub-account without list buckets permission.

Solution: When using a sub-account, specify bucket endpoints on the console page to tell the ftpserver which endpoint must be used to access a certain

bucket. Also, the sub-account must have the required permissions. For information on implementing access control by using RAM to access OSS, see [RAM](#). The details about permissions are as follow:

■ Read-only:

The OSS-FTP must have these permissions: [ 'ListObjects' , 'GetObject' , 'HeadObject' ]. For information on creating a RAM sub-account with Read-only permission, see the graphic tutorial [How to Integrate RAM for File Sharing](#).

■ Upload files:

If you want to allow a RAM sub-account to upload files, assign [ 'PutObject' ] permission.

■ Delete files

If you want to allow a RAM sub-account to delete files, assign [ 'DeleteObject' ] permission.

- If you are running the FTP server on Linux, you may encounter the following error when using FileZilla to connect to the server:

```
501 can't decode path (server filesystem encoding is ANSI_X3.4-1968)
```

This is usually generated when errors occur in local Chinese code. Input the following command in the terminal where you want to run start.sh. Then, restart the program.

```
$ export LC_ALL=en_US.UTF-8; export LANG="en_US.UTF-8"; locale
```

# 7 ossfs

---

## 7.1 Quick installation

ossfs allows you to mount Alibaba Cloud OSS buckets to local files in Linux systems. In the system, you can quickly use the local file system to perform operations on OSS objects, achieving data sharing.

### Main features

The ossfs is constructed based on S3FS and incorporates all S3FS functions. The main features include:

- Supports most functions of the POSIX file system, including file reading/writing, directories, link operations, permissions, UID/GID, and extended attributes.
- Uploads large files using the OSS multipart function.
- Guarantees data integrity with MD5 checksum.

### Limitations

Compared with a local file system, the functions and performance provided by ossfs have certain limitations. These include:

- Random write or any appended operations causes rewrite of the entire file.
- The performance of metadata operations, such as list directory, is poor because the system has to remotely access the OSS server.
- The file/folder rename operation is not atomic.
- When multiple clients are attached to a single OSS bucket, you must coordinate the actions of each client manually. For example, you must avoid multiple clients writing the same file.
- Hard link is not supported.
- This system is not suitable for highly-concurrent read/write scenarios, as this greatly increases the system load.



## Installation and use

- Installation package download

| Released Linux     | Download                                                  |
|--------------------|-----------------------------------------------------------|
| Ubuntu 16.04 (x64) | <a href="#"><i>ossfs_1.80.5_ubuntu16.04_amd64.deb</i></a> |
| Ubuntu 14.04 (x64) | <a href="#"><i>ossfs_1.80.5_ubuntu14.04_amd64.deb</i></a> |
| CentOS 7.0 (x64)   | <a href="#"><i>ossfs_1.80.5_centos7.0_x86_64.rpm</i></a>  |
| CentOS 6.5 (x64)   | <a href="#"><i>ossfs_1.80.5_centos6.5_x86_64.rpm</i></a>  |

Due to the lower version of the Linux distribution, the kernel version is relatively lower. The ossfs is prone to disconnection or other problems during the running process. Therefore, users are advised to upgrade the operating system to CentOS 7.0 or Ubuntu 14.04 or later.

- Installation method

- Run the following commands to install ossfs for Ubuntu:

```
sudo apt-get update
sudo apt-get install gdebi-core
sudo gdebi your_ossfs_package
```

- Run the following command to install ossfs for CentOS 6.5 or later:

```
sudo yum localinstall your_ossfs_package
```

- Run the following command to install ossfs for CentOS 5:

```
sudo yum localinstall your_ossfs_package --nogpgcheck
```

- Usage

Set bucket name and AccessKeyId/Secret and save it to the `/etc/passwd-ossfs` file.

Note that the permissions for this file must be set correctly. We suggest setting it to 640.

```
echo my-bucket:my-access-key-id:my-access-key-secret > /etc/passwd-ossfs
```

```
chmod 640 /etc/passwd-ossfs
```

Mount the OSS bucket to the specified directory.

```
ossfs my-bucket my-mount-point -ourl=my-oss-endpoint
```

### Example

Mount the bucket `my-bucket` to the `/tmp/ossfs` directory. The `AccessKeyId` is `faint`, the `AccessKeySecret` is `123`, and the OSS endpoint is `http://oss-cn-hangzhou.aliyuncs.com`.

```
echo my-bucket:faint:123 > /etc/passwd-ossfs
chmod 640 /etc/passwd-ossfs
mkdir /tmp/ossfs
ossfs my-bucket /tmp/ossfs -ourl=http://oss-cn-hangzhou.aliyuncs.com
```



#### Notice:

If you use an Alibaba Cloud ECS instance to provide ossfs services, you can use the intranet endpoints. In this example, you can replace the OSS endpoint with `oss-cn-hangzhou-internal.aliyuncs.com` to save bandwidth costs. For more information about intranet endpoints, see [Regions and endpoints](#)

Unmount the bucket:

```
fusermount -u /tmp/ossfs
```

For more information, see [GitHub ossfs](#).

### Release log

For more information, see [GitHub ChangeLog](#)

## 7.2 FAQ

- Q: For what programs is ossfs suitable?
  - ossfs mounts OSS buckets locally. If you want a program that does not support OSS to automatically sync the data to the OSS, ossfs is a great option.
- Q: What are the limitations of ossfs?
  - Because data must be synced to the cloud over the network, the performance and functions of ossfs may differ from those of local file systems. If you want to run a database or other applications with frequent I/O operations on a mounted

ossfs disk, you must consider this carefully. ossfs differs from local file systems in the following ways:

- Random write and append operations overwrite the entire file.
- The performance of metadata operations, such as list directory, is poor because the system has to remotely access the OSS server.
- The file/folder rename operation is not atomic.
- When multiple clients are attached to a single OSS bucket, you must coordinate the actions of each client manually. For example, you must avoid multiple clients writing the same file.
- Hard link is not supported.

- Q: Do I need to use Alibaba Cloud hosts for ossfs?
  - ossfs does not need to be used with Alibaba Cloud intranet. It can be used on external Internet hosts.
- Q: Can ossfs simultaneously mount multiple OSS buckets?
  - Yes, write multiple OSS configuration information entries in the passwd-ossfs file. Buckets from different OSS accounts are supported.
- Q: I installed ossfs at yum/apt-get and has an error: conflicts with file from package fuse-devel.
  - There is an earlier version of fuse on your system. Please use the relevant package manager to uninstall and then reinstall ossfs.
- Q: ossfs is not working properly, how do I debug?
  - You can use the `-d -o f2` parameter when mounting. ossfs will write log content into the system logs. On the centos system, in/var/log/messages.
  - You can also use the `-f -d -o f2` parameter when mounting, and ossfs prints the logs to the screen.

- Q: When trying to mount a bucket, why do I receive the error “ossfs: unable to access MOUNTPOINT /tmp/ossfs: Transport endpoint is not connected” ?
  - First, run the `umount` command for the corresponding directory.
  - When mounting with `ossfs`, check that the entered URL parameter is correct and the bucket, AccessKey ID, and AccessKey secret match.
  - DO NOT include the bucket name in the URL. For example, if the bucket domain name is `ossfs-test-1.oss-cn-hangzhou.aliyuncs.com` on the OSS console, set the URL to `http://oss-cn-hangzhou.aliyuncs.com`.
- Q: Why does `ossfs` display “ossfs: unable to access MOUNTPOINT /tmp/odat: No such file or directory” ?
  - This error occurs if the directory is not yet created. You must create the directory before mounting.
- Q: Why does the “operation not permitted” error occur after I mount the bucket locally and run the `ls` command for the directory?
  - In your bucket, check if the directory name contains any OSS objects with invisible characters. The file system has strict restrictions for file/directory names. If the directory name fails to meet the restrictions, this error occurs. Use another tool to rename these objects and run the `ls` command, the directory content can be correctly displayed.
- Q: There are a lot of files in one of my directories. Why is `ls` so slow?
  - Assuming that there are `n` files in a directory, then the `ls` of this directory requires at least a minimum of `n` `oss http` requests. When there are many files, this can cause serious performance problems.
  - You can optimize in two ways:
    - Increase stat cache size with the `-omax_stat_cache_size=xxx` parameter, so that the first time `ls` will be slow, but the subsequent `ls` will be fast, because the metadata of the file is in the local cache. The default is 1000, which costs about 4 MB of memory, please adjust to the appropriate value according to the size of your machine's memory.
    - Use the `ls -f` command, which eliminates `n` HTTP requests with OSS.
    - For more information.

- **Q: How do I set permissions during ossfs mounting?**
  - If you want to allow other users to access mounted folders, specify the `allow_other` parameter as follows when running ossfs:
    - ```
ossfs your_bucket your_mount_point -ourl=your_endpoint -o allow_other
```
 - Why does the `allow_other` parameter still have no access to the file?
 - **Note:** `allow_other` is the permission granted to other users in the Mount directory, not the file inside! If you want to change the files in the folder, use the `chmod` command.
 - `allow_other` gives the Mount directory 777 permission by default, and I want to have the Mount directory permission 770, what should I do?
 - You can set by `umask`.
- **Q: If you want to allow the mounting of folders (/tmp/ossfs) that belong to another user,**
 - **Method 1:** If you want to allow the mounting of folders (/tmp/ossfs) that belong to another user, you need to create the mount folder as user and use ossfs:
 - ```
sudo -u user mkdir /tmp/ossfs
```
    - ```
sudo -u user ossfs bucket-name /tmp/ossfs
```
 - **Method 2:** first get the uid/gid information for the specified user by the `id` command. For example, to get uid/gid information for a `www` user: `id www`; then specify the uid/gid parameter when you mount:
 - ```
ossfs your_bucket your_mountpoint -ourl=your_url -oid=your_uid -ogid=your_gid
```

**Note:** uid/gid are numbers.
- **Q: I am not the root user, how does `umount ossfs` mount the directory?**
  - `fusermount -u your_mountpoint`
- **Q: How can I mount ossfs automatically when the device starts up?**
  - **Step 1:** Write the bucket name, AccessKeyId/Secret, and other information into `/etc/passwd-ossfs`, and change the permissions for this file to 640.
    - ```
echo your_bucket_name:your_access_key_id:your_access_key_secret >
```

```
/etc/passwd-ossfs
```

```
■ chmod 640 /etc/passwd-ossfs
```

- **Step 2: Make the appropriate settings (the setting methods differ for different system versions).**

- **Step 2A: Use the fstab method to automatically mount the ossfs (applies to Ubuntu 14.04 and CentOS 6.5).**

- **Add the following command in /etc/fstab:**

```
■ ossfs#your_bucket_name your_mount_point fuse _netdev,url=  
your_url,allow_other 0  
0
```

- **In the preceding command, replace ‘your_XXX’ with your actual bucket name and other information.**

- **Save the /etc/fstab file. Run the `mount -a` command. If no error is reported, the settings are correct.**

- **Now, Ubuntu 14.04 can automatically mount the ossfs. For CentOS 6.5, also run the following command:**

- `chkconfig netfs on`

- **Step 2B: Mount ossfs using a boot script (applies to CentOS 7.0 and later).**

- **Create the file `ossfs` in the `/etc/init.d/` directory. Copy the content in the [Template File](#) to the new file. Here, replace ‘your_XXX’ with your own information.**

- **Run the command: `chmod a+x /etc/init.d/ossfs`.**

- **The preceding command grants execution permission to the new `ossfs` script. You can now run this script. If no errors occur in the script content, the OSS bucket has been mounted to the specified directory.**

- **Run the command: `chkconfig ossfs on`.**

- **The preceding command sets the `ossfs` boot script as another service, so it is automatically started when the device starts up.**

- **`ossfs` can now automatically mount upon startup. To sum up, if you use Ubuntu 14.04 or CentOS 6.5, perform Steps 1 and 2A; if you use CentOS 7.0, perform Steps 1 and 2B.**

- Q: How do I solve the `fusermount: failed to open current directory: Permission denied error`?
 - This is a *fuse bug*. It requires the current user to have read permission for the current directory (unmounted directory). To solve this problem, run the `cd` command to change to a directory with read permission and then run the `ossfs` command again.
- Q: I need to use a `www` user to mount `ossfs`. In this case, how do I set up automatic mounting?
 - See the answer to the preceding question. Perform Step 1 as stated. Perform Step 2B with the command in the `/etc/init.d/ossfs` file changed to:

```
sudo -u www ossfs your_bucket your_mountpoint -ourl=your_url
```
 - Set the boot script to allow the use of `sudo` to edit `/etc/sudoers`. Change the `Defaults requiretty` line to `#Defaults requiretty` (comment out this line).
- Q: How do I solve the `fusermount: failed to open current directory: Permission denied error`?
 - This is a *fuse bug*. It requires the current user to have read permission for the current directory (unmounted directory). To solve this problem, run the `cd` command to change to a directory with read permission and then run the `ossfs` command again.
- Q: How do I avoid the cost of scanning files by using ECS to mount `ossfs`?
 - The program scans a directory mounted by `ossfs` to convert to a request to OSS, if the number of requests is high, costs will be incurred (1 cent/10 thousand times). If it is *updatedb*, you can skip it by modifying `/etc/updatedb.conf`. The specific practice is:
 1. Add `fuse.ossfs` to `PRUNEFS =`.
 2. Add the mounted directory to the `PRUNEPATHS =`.
 - How do I determine which process swept my catalog?
 1. First install `auditd`: `sudo apt-get install auditd`.
 2. Start `auditd`: `sudo service auditd start`.
 3. Set the monitor mount directory : `auditctl -w /mnt/ossfs`
 4. In the auditorium log, you can see which processes have accessed this directory: `aureport -i | grep /mnt/ossfs`

- **Q: what is the content-type file that uses ossfs to upload to OSS all "application/ocdet-stream? what happened?**
 - ossfs queries /etc/mime.types content to determine the Content-Type of the file, please check that the file exists, if it does not exist, you need to add:
 1. For Ubuntu, you can add it with `udo apt-get install mime-support`.
 2. For Centos, you can add it with `sudo Yum install mailcap`
 3. You can also manually add one row per format, each in the form of:
 Application/JavaScript JS
- **Q: How do I start ossfs using the supervisor?**
 1. To install the supervisor, run the `sudo apt-Get install supervisor` in Ubuntu
 2. Create a directory and edit the ossfs STARTUP script:

```
mkdir /root/ossfs_scripts
vi /root/ossfs_scripts/start_ossfs.sh
```

Write the following data:

```
# Unload
fusermount -u /mnt/ossfs
# Re-mounted, you must add-F parameter to run ossfs, let ossfs run
at the front desk
exec ossfs my-bucket my-mount-point -ourl=my-oss-endpoint -f
```

3. Edit/etc/Supervisor/supervisord. conf to add the following paragraph at the end:

```
[program:ossfs]
command=bash /root/ossfs_scripts/start_ossfs.sh
logfile=/var/log/ossfs.log
log_stdout=true
log_stderr=true
logfile_maxbytes=1MB
logfile_backups=10
```

4. Run Supervisor:

```
supervisord
```

supervisord

5. Confirm that everything is fine:

```
ps aux | grep supervisor # should be able to see the supervisor
Process
ps aux | grep ossfs # should be able to see ossfs Process
kill -9 ossfs # Kill ossfs process, the supervisor must restart
it, do not use killall, because killall sends sigterm, the process
Exits normally, and the Supervisor no longer reruns ossfs.
```



```
ps aux | grep ossfs # should be able to see ossfs Process
```

If an error occurs, check `/var/log/supervisor/supervisord.log` and `/var/log/ossfs.log`.

- Q: encounter "fuse: Warning: Library too old, some operations may not work?"

This occurs because of the libfuse version that ossfs uses at compile time Higher than the libfuse version linked to at run time. This is often due to the user's own installation of libfuse. Install ossfs with the RPM package we provide, without having to install libfuse again.

The RPM bag that we provide on the box and the box contains the box, if there is a chain in the running environment and ossfs is linked to an earlier version of fuse, the preceding warning will appear.

1. How do I confirm the fuse version of The ossfs runtime link?

- Run `LDD $(which ossfs) | grep Fuse`
- For example, the result is `"/lib64/libfuse. So. 2 "`, then you can see the version of fuse through `LS-L/lib64/libfuse`.

2. How do I link ossfs to the correct version?

- First find the directory of libfuse with `rpm-QL ossfs | grep fuse`.
- For example, the result is `"/usr/lib/libfuse. So. 2 "`, use `fig =/usr/lib ossfs... Run ossfs`

3. Can I ignore this warning?

- You better not see this bug.
- Q: Why do I see file information with ossfs (for example, size) not consistent with what other tools see?

Because ossfs, by default, caches the file's meta-information (including size/permissions, etc), this does not require every time ls requests are sent to OSS to speed up. If the user passes other programs (such as SDK/website console/osscli, etc) the file has been modified so that it is possible to see the file information in ossfs, not updated in a timely manner.

If you want to disable ossfs caching, you can add the following paramete `-omax_stat_ cache_size=0`

8 ossprobe

Introduction

The ossprobe is an OSS access detection tool used to troubleshoot problems caused by network errors or incorrect settings of basic parameters during the upload and download processes. If an error occurs after you run a command to upload or download data, the ossprobe displays the possible cause to help you identify the error quickly.

Version

Version: 1.0.0

Main features

- Checking whether the network environment is normal
- Checking whether basic parameters are correct
- Testing the upload and download speeds

Platforms

- Linux
- Windows
- Mac

Download software

- [windows64 ossprobe](#)
- [linux64 ossprobe](#)
- [mac ossprobe](#)

Detect download problems

- Usage

```
ossprobe --download [-i AccessKeyId] [-k AccessKeySecret] [-p
EndPoint] [-b BucketName] [-o ObjectName] [-t LocalPath]
[-f Url] [-a Address]
-f --from      Object Url
-i --id        AccessKeyId
-k --key       AccessKeySecret
-p --endpoint  EndPoint
-b --bucket    BucketName
-o --object    ObjectName
```

```

-t --to          Save path for the downloaded content. By
default, it is the path to a temporary file in the current directory
.
-a --addr       Network address for detection. The default
address is www.aliyun.com. If you are using private cloud, select an
accessible address in the private cloud.
TIP: If the -f parameter is present, a URL is used for download.
If the -f parameter is not present, you must set the AccessKeyId,
AccessKeySecret, EndPoint, and BucketName parameters.

```

- **Example**

To check whether URL-based download is normal ([How to obtain a URL](#)), run the following commands:

| Method | Command |
|---|--|
| Download from a specified URL | <code>ossprobe --download -f Url</code> |
| Download from a specified URL and save the downloaded content to a specified file | <code>ossprobe --download -f Url -t tmp/example.txt</code> |
| Download from a specified URL and detect the network condition of a specified address | <code>ossprobe --download -f Url -a Addr</code> |

To check whether download using specified parameters (AccessKeyId, AccessKeySecret, EndPoint, and BucketName) is normal, run the following commands:

| Method | Command |
|---|---|
| Download a random file | <code>ossprobe --download -i AccessKeyId -k AccessKeySecret -p EndPoint -b Bucketname</code> |
| Download a specified file | <code>ossprobe --download -i AccessKeyId -k AccessKeySecret -p EndPoint -b BucketName -o ObjectName</code> |
| Download a specified file and save the downloaded content to a specified local file | <code>ossprobe --download -i AccessKeyId -k AccessKeySecret -p EndPoint -b BucketName -o ObjectName -t tmp/example.txt</code> |

| Method | Command |
|--|---|
| Download a random file and detect the network condition of a specified address | ossprobe --download -i AccessKeyId -k AccessKeySecret -p EndPoint -b BucketName -a Addr |



Note:

- The file you downloaded is a binary executable program, and you must add the ossprobe executable permissions through `chmod +x ossprobe` in the Linux system.
- By default, the `-t` parameter indicates the path to a temporary file in the current directory (the file name format is `ossfilestore20160315060101`).
- If the `-t` parameter indicates a directory, a temporary file is generated in the directory to save data (the file name format is `ossfilestore20160315060101`).
- If a file is downloaded from a URL, the file is named after the last string following the forward slash “/” in the URL. For example, if the URL is `http://aliyun.com/a.jpg`, then the file is saved as `a.jpg`.

Detect upload problems

• Usage

```
ossprobe --upload -i AccessKeyId -k AccessKeySecret -p EndPoint -b
BucketName [-m normal|append|multipart]
          [-s UploadFilePath] [-o ObjectName] [-a Addr]
  -i      --id          AccessKeyID
  -k      --key         AccessKeySecret
  -p      --endpoint    EndPoint
  -b      --bucket      BucketName
  -s      --src         Path to the file you want to upload. By
default, it is the path to a local temporary file.
  -m      --mode        File upload mode. The default is normal upload
  -o      --object      Uploaded object name. By default, the object
name is the name of the uploaded file if -s is not null. If -s is
null, by default, the object name is the name of the temporary file
starting with tem.
  -a      --addr        Network address for detection. The default
address is the address of the Alibaba Cloud website. If you are
```

using private cloud, select an accessible address in the private cloud.

- **Example**

| Method | Command |
|--|---|
| Generate a temporary file and upload it in normal mode | <code>ossprobe --upload -i AccessKeyId -k AccessKeySecret -p EndPoint -b BucketName</code> |
| Generate a temporary file and upload it in append mode | <code>ossprobe --upload -i AccessKeyId -k AccessKeySecret -p EndPoint -b BucketName -o ObjectName -m append</code> |
| Generate a temporary file and upload it in multipart mode | <code>ossprobe --upload -i AccessKeyId -k AccessKeySecret -p EndPoint -b BucketName -o ObjectName -m multipart</code> |
| Upload specified content in multipart mode | <code>ossprobe --upload -i AccessKeyId -k AccessKeySecret -p EndPoint -b BucketName -o ObjectName -m multipart -s src</code> |
| Upload specified content in multipart mode and specify the object name | <code>ossprobe --upload -i AccessKeyId -k AccessKeySecret -p EndPoint -b BucketName -m multipart -s src -o example.txt</code> |
| Generate a temporary file, upload it in normal mode, and detect the network condition of a specified address | <code>ossprobe --upload -i AccessKeyId -k AccessKeySecret -p EndPoint -b BucketName -a Addr</code> |



Note:

The name of a randomly generated file starts with `ossuploadtmp`.

Platform differences

- For Windows, press Win+R to bring up the “Run” dialog box, enter `cmd`, and press Enter. On the command-line interface (CLI), enter the path to the tool and enter related detection parameters to run the tool.

```
D:\tw108174\workspace\1111\src>ossprobe --download -i xxxxxxxx -k xxxxxxxx -p xx
xxxxxxx -b xxxxxxxxxxxx_
```

- For Linux and Mac, open the terminal. On the displayed interface, enter the path to the tool and enter related detection parameters to run the tool.

```
[admin@ml-30070-42qg /home/admin/tianwei/gofile]
$./ossprobe --upload -i xxxxxxxxxxxx -k xxxxxxxxxxxx -p xxxxxxxxxxxxxxxxxxxx -b xxxxxxxxxxxx
```

View report data

After command execution, a report named logOssProbe20060102150405.txt is generated (the numbers following logOssProbe indicate the formatted date of report generation). The possible error cause is printed in command line mode. If you think the error message is not specific, you can view the report. If the problem persists, you can submit a ticket attached with the detection report.

- Console display

The console displays the following main information:

- After execution, the steps marked with × fail, whereas the steps not marked with × are successful.
- The result indicates whether the upload or download operation is successful. If the upload or download operation is successful, the console displays the file size and upload/download time.
- The “Suggested Change” column shows the error cause or change suggestions.
- If you are familiar with OSS error codes, you can perform troubleshooting based on the error message returned by OSS.
- The “Log Info” columns shows the log name and address, allowing you to find the log.



Note:

- Log files

Different from console display, log files contain network detection details. Ping is used to detect a specified network or the network of a specified EndPoint, tracert is used to detect the route for EndPoint access, and nslookup is used for DNS detection.

References

- [How to obtain a URL](#)