# Alibaba Cloud
# Object Storage Service

## Errors and Troubleshooting

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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:<br>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:<br>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:<br>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:<br>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 `cd / d C :/ windows` command to enter the Windows system folder. |
| *Italics* | It is used for parameters and variables. | `bae log list --instanceid` *Instance_ID* |
| [] or [a\|b] | It indicates that it is a optional value, and only one item can be selected. | `ipconfig` *[-all\|-t]* |

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

# Contents

# 1 OSS error response

If an error occurs when a user accesses the OSS, the OSS returns the error code and error message, so that the user can locate the problem and handle it properly.

## OSS error response format

If an error occurs when the user accesses the OSS, the OSS returns an HTTP status code 3xx, 4xx, or 5xx and a message body in application/XML format.

Example of the message body for an error returned:

```
<?  xml   version =" 1 . 0 " ? >
                < Error   xmlns =” http :// doc . oss - cn - hangzhou
 . aliyuncs . com ”>
                < Code >
        AccessDeni  ed
        </ Code >
        < Message >
        Query - string   authentica  tion   requires   the
 Signature ,  Expires   and   OSSAccessK  eyId   parameters
        </ Message >
    < RequestId >
        1D842BC542  5544BB
    </ RequestId >
    < HostId >
        oss - cn - hangzhou . aliyuncs . com
        </ HostId >
        </ Error >
```

All error message bodies include the following elements:

- Code: the error code that OSS returns to the user.
- Message: the detailed error message provided by OSS.
- RequestId: the UUID that uniquely identifies a request. When you cannot solve the problem, you can seek help from OSS development engineers by providing the RequestId.
- HostId: used to identify the accessed OSS cluster, which is consistent with the Host ID carried in the user request.

For special error information elements, see specific request descriptions.

## OSS error codes

The following table lists the OSS error codes:

| Error Code | Description | HTTP Status Code | Description |
|---|---|---|---|
| AccessDenied | Access is denied. | 403 | To learn the cause and for troubleshooting, see *Permission and Troubleshooting*. |
| BucketAlreadyExists | The bucket already exists. | 409 | The bucket name specified by the *CreateBucket* operation has been used. Select a new *BucketName* |
| BucketNotEmpty | The bucket is not empty. | 409 | Before you perform a *DeleteBucket* operation, delete the files and unfinished multipart upload tasks in the bucket. |
| CallbackFailed | Upload callback fails. | 203 | To learn the cause and troubleshooting, see *Upload Callback Error and Troubleshooting*. |
| EntityTooLarge | The entity is too large. | 400 | The message length of the Post request exceeds 5 GB. To learn the cause and for troubleshooting, see *PostObject Error and Troubleshooting*. |
| EntityTooSmall | The entity is too small. | 400 | The message length of the Post request is too short. For troubleshooting, see *PostObject Error and Troubleshooting*. |

| Error Code | Description | HTTP Status Code | Description |
|---|---|---|---|
| FieldItemTooLong | The form field in the Post request is too large | 400 | Only the field `file` can exceed 4 KB. For troubleshooting, see *PostObject Error and Troubleshooting*. |
| FilePartInterity | The file part has changed. | 400 | The data and the checksum are not consistent during partition data reading. |
| FilePartNotExist | The file part does not exist. | 400 | The partitions submitted by the *CompleteMultipartUpload* operation are not uploaded. |
| FilePartStale | The file part times out. | 400 | The data and the length are not consistent during partition data reading. |
| IncorrectNumberOfFilesInPOSTRequest | The number of files in the Post request is invalid. | 400 | Only one `file` field is allowed in the form fields of the Post request. For troubleshooting, see Post Object Error and Troubleshooting. |
| InvalidArgument | The parameter format is incorrect. | 400 | The parameter format does not comply with the requirements. Follow the instructions of corresponding *API*. |

| Error Code | Description | HTTP Status Code | Description |
|---|---|---|---|
| InvalidAccessKeyId | The AccessKeyId does not exist. | 403 | The AccessKeyId is invalid or has timed out. For troubleshooting, see *403 Error and Troubleshooting*. |
| InvalidBucketName | Invalid bucket name. | 400 | For the bucket naming rules, see *Developer Guide*. |
| InvalidDigest | Invalid digest. | 400 | The specified MD5 checksum is inconsistent with the file. For MD5 calculations, see*PutObject*. |
| InvalidEncryptionAlgorithmError | The specified entropy encryption algorithm is incorrect. | 400 | Currently only the `AES256` encryption algorithm is supported. For more information, see *PutObject*. |
| InvalidObjectName | Invalid object name. | 400 | For the object naming rules, see *Developer Guide*. |
| InvalidPart | Invalid part. | 400 | The part submitted by the *CompleteMultipartUpload* operation is invalid. The `PartNumber` or the `ETag` is incorrect. |
| InvalidPartOrder | Invalid part sequence. | 400 | The parts submitted by the *CompleteMultipartUpload* operation is in an ascending sort order of the `PartNumber`. |

| Error Code | Description | HTTP Status Code | Description |
|---|---|---|---|
| InvalidPolicyDocument | Invalid policy document. | 400 | The `Policy` in the Post request is invalid. For troubleshooting, see *Post Object Error and Troubleshooting.* |
| InvalidTargetBucketForLogging | An invalid target bucket exists in the logging operation. | 400 | The target bucket for storing the *Logging*does not exist. Change it. |
| InternalError | An error occurs in OSS. | 500 | Try again. |
| MalformedXML | XML format is invalid. | 400 | The `XML` in the request is invalid, excluding *DeleteObjects*, *CompleteMultipartUpload*, *PutBucketLogging*, *PutBucketWebsite*, *PutBucketLifecycle*, *PutBucketReferer*, and *PutBucketCORS* according to specific requests. |
| MalformedPOSTRequest | The body format of the Post request is invalid. | 400 | The form field format is invalid. For troubleshooting, see *Post Object Error and Troubleshooting*. |
| MaxPOSTPreDataLengthExceededError | The size of the body outside the uploaded file content of the Post request is too large. | 400 | Only the field `file` can exceed 4 KB. For troubleshooting, see *Post Object Error and Troubleshooting*. |
| MethodNotAllowed | Unsupported method. | 405 | Access the resource with a method not supported by OSS. |

| Error Code | Description | HTTP Status Code | Description |
|---|---|---|---|
| MissingArgument | Missing argument. | 411 | See the specificAPIfor resolution. |
| MissingContentLength | Missing content length. | 411 | The message is not of the chunked encoding and does not carry the `Content - Length` . |
| NoSuchBucket | The bucket does not exist. | 404 | |
| NoSuchKey | The object does not exist. | 404 | |
| NoSuchUpload | The multipart upload ID does not exist. | 404 | No Initialize Multipart Upload or the initialized Multipart Upload Expires. |
| NotImplemented | The method cannot be implemented. | 400 | Operation not supported by OSS. |
| ObjectNotAppendable | Not an appendable file. | 409 | OSS has three files types: normal, appendable, and multipart. Only the `appendable` type of file can run the `AppendObje ct` operation. |
| PositionNotEqualToLength | The appending position does not match the file length. | 409 | For more information, see AppendObject. |
| PreconditionFailed | Pre-processing error. | 412 | The downloading conditions are not met. For more information, see GetObject. |

| Error Code | Description | HTTP Status Code | Description |
|---|---|---|---|
| RequestTimeTooSkewed | The request initiation time exceeds the server time by 15 minutes. | 403 | For troubleshooting, see *403 Error and Troubleshooting*. |
| RequestTimeout | The request times out. | 400 | Try again. |
| RequestIsNotMultiPartContent | The content-type of the Post request is invalid. | 400 | For troubleshooting, see *Post Object Error and Troubleshooting*. |
| Downloadtrafficratelimitexceeded | The downloading traffic exceeds the limit. | 503 | The default ceiling is 5 GB, including the intranet traffic and Internet traffic. To adjust the ceiling, *open a ticket*. |
| UploadTrafficRateLimitExceeded | The uploading traffic exceeds the limit. | 503 | The default ceiling is 5 GB, including the intranet traffic and Internet traffic. To adjust the ceiling,*open a ticket*. |
| SignatureDoesNotMatch | Signature error. | 403 | For troubleshooting, see *Signature in Header* and *Signature in URL*. |
| TooManyBuckets | The number of buckets exceeds the limit. | 400 | The default ceiling is 10. To adjust the ceiling, *open a ticket*. |

OSS common errors and troubleshooting

- *Upload Callback Error and Troubleshooting*
- *403 Error and Troubleshooting*
- *Post Object Error and Troubleshooting*
- *Permission Error and Troubleshooting*
- *CORS Error and Troubleshooting*

- *Anti-Leech Referer Configuration and Error Elimination*
- *STS Common Issues and Troubleshooting*

### SDK/Tool common errors and troubleshooting

- *Java SDK*
- *Python SDK*
- *ossfs*
- *ossftp*

## Operations not supported by OSS

If an operation not supported by the OSS is used to access a resource, the OSS returns error 405 Method Not Allowed.

Example of an invalid request:

```
 ABC  / 1 . txt   HTTP / 1 . 1
 Host :  bucketname . oss - cn - shanghai . aliyuncs . com
 Date :  Thu ,  11   Aug   2016   03 : 53 : 40   GMT
 Authorizat  ion :  signatureV  alue
```

Returns an example:

```
 HTTP / 1 . 1   405   Method   Not   Allowed
 Server :  AliyunOSS
 Date :  Thu ,  11   Aug   2016   03 : 53 : 44   GMT
 Content - Type :  applicatio  n / xml
 Content - Length :  338
 Connection :  keep - alive
 x - oss - request - id :  57ABF6C8BC  4D25D86CBA  5ADE
 Allow :  GET   DELETE   HEAD   PUT   POST   OPTIONS
<?  xml   version =" 1 . 0 "  encoding =" UTF - 8 "? >
< Error >
< Code > MethodNotA  llowed </ Code >
< Message > The   specified   method   is   not   allowed   against
 this   resource .</ Message >
  < RequestId > 57ABF6C8BC  4D25D86CBA  5ADE </ RequestId >
  < HostId > bucketname . oss - cn - shanghai . aliyuncs . com </
 HostId >
  < Method > abc </ Method >
  < ResourceTy  pe > Bucket </ ResourceTy  pe >
  </ Error >
```

**Note:**

If the accessed resource is /bucket/, ResourceType must be set to `bucket`.If the accessed resource is /bucket/object, ResourceType must be set to `object`.

### Operations supported by the OSS but not supported by parameters

If parameters not supported by the OSS are added to an operation supported by the OSS (for example, an If-Modified-Since parameter is added to the PUT operation), the OSS returns error 400 Bad Request.

Example of an invalid request:

```
 PUT  / abc . zip   HTTP / 1 . 1
 Host :  bucketname . oss - cn - shanghai . aliyuncs . com
 Accept : */*
 Date :  Thu ,  11   Aug   2016   01 : 44 : 50   GMT
 If - Modified - Since :  Thu ,  11   Aug   2016   01 : 43 : 51   GMT
 Content - Length :  363
```

Response example:

```
 HTTP / 1 . 1   400   Bad   Request
 Server :  AliyunOSS
 Date :  Thu ,  11   Aug   2016   01 : 44 : 54   GMT
 Content - Type :  applicatio  n / xml
 Content - Length :  322
 Connection :  keep - alive
 x - oss - request - id :  57ABD896CC  B80C366955  187E
 x - oss - server - time :  0
<?  xml   version =" 1 . 0 "  encoding =" UTF - 8 "? >
< Error >
< Code > NotImpleme  nted </ Code >
< Message > A   header   you   provided   implies   functional  ity
 that   is   not   implemente  d .</ Message >
< RequestId > 57ABD896CC  B80C366955  187E </ RequestId >
< HostId > bucketname . oss - cn - shanghai . aliyuncs . com </ HostId
 >
< Header > If - Modified - Since </ Header >
</ Error >
```

# 2 Network connection timeout handling

## Introduction

Network connection timeout is a typical problem that OSS SDK users may encounter when they upload files with the SDK. In such a case, a ConnectionTimeOut error is reported, negatively affecting user experience.

## Troubleshooting

Possible causes are described as follows to analyze and resolve the network connection timeout problem of OSS SDK because this problem cannot be reproduced.

1. Network environment

   Analyze the following network link:

   Mobile phone/PC --- Carrier network --- OSS server

   Your network may be at an edge node of the carrier network. Therefore, the requests sent to the carrier network are more likely to fail. You can use CDN edge nodes for acceleration, reducing the dependency of mobile phones/PCs on the carrier network. The network link is as follows:

   Mobile phone/PC -- Nearest CDN edge node -- Carrier network -- OSS Server

   If the problem still exists and the ConnectionTimeOut error still occurs, read the following analysis.
2. Network configuration

   The following code is the detailed timeout error message:

   ```
   " Connection  TimeoutErr  or & errormsg = Failed   to   upload
      some   parts   with   error :  Connection  TimeoutErr  or :
    Connect   timeout   for   60000ms ,  PUT   https ://***. oss - cn
    - hangzhou . aliyuncs . com /***/***/***. mp4 ? partNumber = 2 &
   ```

```
 uploadId =*** - 2  ( connected :  false ,  keepalive   socket :
 false ) headers : {}  part_num :  2
```

The following conclusions can be drawn from the error message:

- The connection because the client does not receive a response from the server in 60 seconds.
- According to CDN logs, the timeout problem occurs because the network is disconnected before a part is completely uploaded.
- In poor network conditions, the client/PC cannot receive responses from the OSS server in a long time if the file to be uploaded is too large.

Based on the preceding conclusions, we recommend the following solutions:

- Upload files with the multipart upload method and limit the maximum part size to 1 MB.
- Add a resumable mechanism to re-upload a part that fails to be uploaded.
- Increase the timeout period.

```
//  Code   example   of   multipart   upload   in   JS   SDK

 let   retryCount  =  0 ;
 let   retryCount  Max  =  3 ;
...
 const   uploadFile  =  function   uploadFile ( client ) {
   if  (!  uploadFile  Client  ||  Object . keys ( uploadFile
 Client ). length  ===  0 ) {
     uploadFile  Client  =  client ;
  }
  ...

   console . log (`${ file . name } => ${ key }`);
   const   options  = {
     progress ,
     Partsize :  1000 * 1024 , //  Set   the   part   size .
     Timeout :  120000 , //  Set   the   timeout   period .
  };
   if  ( currentChe  ckpoint ) {
     options . checkpoint  =  currentChe  ckpoint ;
  }
   return   uploadFile  Client . multipartU  pload ( key ,  file ,
 options ). then (( res ) => {
     console . log (' upload   success : % j ',  res );
     currentChe  ckpoint  =  null ;
     uploadFile  Client  =  null ;
  }). catch (( err ) => {
     if  ( uploadFile  Client  &&  uploadFile  Client . isCancel ())
 {
       console . log (' stop - upload !') ;
    }  else  {
       console . error ( err );
      // retry
       if  ( retryCount  <  retryCount  Max ){
           retryCount ++;
           console . error (" retryCount  : " +  retryCount );
           uploadFile ('');
      }
    }
  });
};
```

## Summary

If you access OSS data with a standard OSS domain name (for example, oss-cn-hangzhou.aliyuncs.com), your access is implemented through the carrier network. In this case, a ConnectionTimeOut error may occur in uploads due to complex network environments (such as unstable network or poor network conditions). You can try the following solutions:

- Upload files with the multipart upload method and limit the part size in a range from 100 KB to 1 MB.

  Note:

  The OSS server does not receive parts smaller than 100 KB.
- Add a resumable mechanism to re-upload a part that fails to be uploaded.

  Note:

  The mechanism is enabled in Android/iOS SDK by default and therefore no configuration is required.
- Increase the timeout period.
- Use the CDN acceleration service to accelerate data transmission in OSS.

# 3 PostObject

## Introduction

PostObject uploads files to OSS using forms. In Post Object, message entities are encoded in multi-form format multipart/form-data. For more information, see *RFC 2388*. In Put Object, parameters are passed by HTTP headers, while Post Object parameters are passed as form fields of the message body.

A PostObject message consists of the header and the body. The header and the body are separated by `\ r \ n --{ boundary }`. The body consists of a series of form fields in the following format: `Content - Dispositio n : form - data ; name ="{ key }"\ r \ n \ r \ n { value }\ r \ n --{ boundary }`.

Common headers include Host, User-Agent, Content-Length, Content-Type and Content-MD5 while form fields include key, OSSAccessKeyId, Signature, Content-Disposition, object meta (x-oss-meta-*), x-oss-security-token, other HTTP headers (Cache-Control/Content-Type/Cache-Control/Content-Type/Content-Disposition/Content-Encoding/Expires/Content-Encoding/Expires) and file. The `file` must be the last field in those form fields.

For more information, see *Post Object*.

## PostObject common errors

The following table shows PostObject common errors:

| No. | Error | Cause | Solution |
|---|---|---|---|
| 1 | ErrorCode: MalformedPOSTRequest ErrorMessage: The body of your POST request is not well-formed multipart/form-data | Invalid form field format. | See PostObject form field format following the table for the correct format of form fields. |

| No. | Error | Cause | Solution |
|---|---|---|---|
| 2 | ErrorCode: InvalidAccessKeyId ErrorMessage: The OSS Access Key Id You provided does not exist in our records. | `AccessKeyID` was disabled or did not exist, the temporary user AccessKeyID was expired or the temporary user did not provide STS Token. | See *Invalid AccessKeyId Troubleshooting* for the troubleshooting method. |
| 3 | ErrorCode: AccessDenied ErrorMessage: Invalid according to Policy: Policy expired. | The `expiration` in the form field Id `policy` was expired. | Adjust `expiration` in policy while ensuring that the format of `expiration` complies with ISO8601 GMT. |
| 4 | ErrorCode: AccessDenied ErrorMessage : SignatureDoesNotMatch The request signature we calculated does not match the signature you provided. Check your key and signing method. | Incorrect signature. | See PostObject signature for the signature method. |
| 5 | ErrorCode : InvalidPolicyDocument ErrorMessage: Invalid Policy: Invalid Simple-Condition: Simple-Conditions must have exactly one property specified. | The policy contains at least one condition in the request. | See PostObject policy format. |

| No. | Error | Cause | Solution |
|---|---|---|---|
| 6 | ErrorCode : InvalidPolicyDocument ErrorMessage : Invalid Policy : Invalid JSON: unknown char e | Check the format of `policy` to verify if | `"` was missing and the escape character was \. |
| 7 | ErrorCode : InvalidPolicyDocument ErrorMessage: Invalid Policy: Invalid JSON: , or ] expected | Incorrect `policy` format in the request. | Check if `,` or `]` was missing in policy. |
| 8 | ErrorCode: AccessDenied ErrorMessage: Invalid according to Policy: Policy Condition failed: [ “starts-with” , “$key” , “user/eric/ “] | The `key` specified by the request and that specified by `policy` do not match. | Check the value of the form field `key` in the request. |
| 9 | ErrorCode: AccessDenied ErrorMessage: Invalid according to Policy: Policy Condition failed: [ “eq” , “$bucket” , “mingdi-bjx” ] | The `bucket` specified by the request and that specified by `policy` do not match. | Check the value of `bucket` in endpoint. |
| 10 | ErrorCode: AccessDenied ErrorMessage: Invalid according to Policy: Policy Condition failed: [ “starts-with” , “$x-oss-meta-prop” , “prop- “] | File metadata `x - oss - meta - prop` specified by the request and that specified by policy do not match. | Check the value of `x - oss - meta - prop` in the request. |

| No. | Error | Cause | Solution |
|---|---|---|---|
| 11 | ErrorCode: AccessDenied ErrorMessage: Invalid according to Policy: Policy Condition failed: [ "eq" , "${field}" , "${value}" ] | The `{ field }` specified in form fields and that specified by policy do not match, or that field was not specified in the request. | Check the value of `{ field }` in the request. |
| 12 | ErrorCode: AccessDenied ErrorMessage: You have no right to access this object because of bucket acl. | Current user did not have the required permission. | See *OSS Permission Problems and Troubleshooting*. |
| 13 | ErrorCode: InvalidArgument ErrorMessage: The bucket POST must contain the specified 'key' . If it is specified, please check the order of the fields | The form field does not specify `key` , or it is placed after the form field `file` . | Add form field `key` or adjust orders. |

- PostObject form field format

  For the format of PostObject requests, note the following items:

  - The header must include `Content - Type : multipart / form - data ; boundary ={ boundary }`.
  - The header and the body are separated by `\ r \ n --{ boundary }`.
  - The form field format is `Content - Dispositio n : form - data ; name ="{ key }"\ r \ n \ r \ n { value }\ r \ n --{ boundary }`.
  - Form field names are case-sensitive, such as policy, key, file, OSSAccessKeyId, OSSAccessKeyId, and Content-Disposition.

  Notice:

The form field `file` must be the last form field.

- When the value of `bucket` is `public - read - write` , you do not have to specify the form fields OSSAccessKeyId, policy, and Signature. If any of OSSAccessKeyId, policy, and Signature is specified, the other two form fields must be specified no matter whether `bucket` is `public - read - write` or not.

The following describes an example PostObject request:

```
 POST  /  HTTP / 1 . 1
 User - Agent :  Mozilla / 5 . 0  ( Windows ;  U ;  Windows   NT   6
 . 1 ;  zh - CN ;  rv : 1 . 9 . 2 . 6 )
 Content - Type :  multipart / form - data ;  boundary = 9431149156
 168
 Host :  mingdi - hz . oss - cn - hangzhou . aliyuncs . com
 Accept :  text / html ,  image / gif ,  image / jpeg , *;  q =.  2
 , */*;  q =.  2
 Connection :  keep - alive
 Content - Length :  5052
--  9431149156  168
 Content - Dispositio  n :  form - data ;  name =" key "
 test - key
-- 9431149156  168
 Content - Dispositio  n :  form - data ;  name =" Content -
 Dispositio  n "
 attachment ; filename = D :\ img \ 1 . png
-- 9431149156  168
 Content - Dispositio  n :  form - data ;  name =" OSSAccessK  eyId
 "
 2NeL ******** j2Eb
```

Note:

- In the preceding sample request, `\ r \ n` shows a new line, namely a line feed. Also, this applies to the following sample requests.
- The preceding sample request is incomplete. For the complete request, see *Post Object*.

If you have any questions, see the sample code:

- *C#*
- *Java*

- PostObject policy format

  In a PostObject request, the form field `policy` is used to verify the validity of the request and it declares the conditions that must be met by the PostObject request. Specifically, those conditions are:

  - UTF-8 JSON text must be encoded with base64 before being passed into the form field `policy`.
  - The `policy` must include `expiration` and `conditions` where `conditions` must contain at least one item.

  The following shows an example `policy` before base64 encoding.

```
   {
    " expiration ": " 2018 - 01 - 01T12 : 00 : 00 . 000Z ",
    " conditions ": [
        [" content - length - range ",  0 ,  104857600 ]
    ]
}
```

  `expiration` item specifies an expiration time of the request in the ISO8601 GMT time format. For example, `2018 - 01 - 01T12 : 00 : 00 . 000Z` specifies that the request must occur before 12:00 a.m. on January 1st, 2018.

  PostPolicy supports the following “conditions” :

| Name | Description | Example |
|---|---|---|
| bucket | The bucket name of the uploaded file. Exact match is supported. | { “bucket” : “johnsmith ” } or [ “eq” , “$bucket ” , “johnsmith” ] |
| key | The name of the uploaded file. Exact match and prefix match are supported. | [ “starts-with” , “$key” , “user/etc/ “] |
| content-length-range | The maximum and minimum allowed sizes of the uploaded file. | [ “content-length-range ” , 0, 104857600] |
| x-oss-meta-* | The specified object meta . Exact match and prefix match are supported. | [ “starts-with” , “$x-oss-meta-prop” , “prop- “] |

| Name | Description | Example |
|---|---|---|
| success_action_redirect | The redirection URL upon successful upload. Exact match and prefix match are supported. | [ “starts-with” , “$success_action_redirect” , “ `http :// www . aliyun . com` ”] |
| success_action_status | The returned status code upon successful upload if success_action_redirect is not specified. Exact match and prefix match are supported. | [ “eq” , “$success_action_status” , “204” ] |
| Cache-Control, Content-Type, Content-Disposition, Content-Encoding, Expires, and so on | The HTTP headers passed as form fields. Exact match and prefix match are supported. | [ “eq” , “$Content-Encoding” , “ZLIB” ] |

PostPolicy supports the following escape characters and uses `\` for escape.

| Escape Character | Description |
|---|---|
| / | Slash |
| \ | Backslash |
| “ | Double quotation mark |
| $ | Dollar sign |
| \b | Blank |
| \f | Form feed |
| \n | Line feed |
| \r | Enter |
| \t | Horizontal tab |
| \uxxxx | Unicode character |

For more information about PostPolicy, see *Post Policy*.

- PostObject signature

  For a Post request to be verified, it must include AccessKeyID, policy, and Signature form fields. The signature calculation process is as follows:

  1. Create a policy encoded with `UTF - 8`.
  2. Encode the policy with `base64`. The resulting value is the value to be populated into the `policy` form field, and this value is used as the string to be signed.
  3. Sign the string with `AccessKeyS ecret`. Specifically, hash the string with hmac-sha1 and then encode it with base64. The signature method is the same as that for *Header Signature*.

  Namely:

  ```
   Signature  =  base64 ( hmac - sha1 ( AccessKeyS  ecret ,  base64 (
   policy )))
  ```

  Specify the calculated signature in the form field `Signature` as follows:

  ```
   Content - Dispositio  n :  form - data ;  name =" Signature "
  { signature }
  --  9431149156  168
  ```

  If you have any questions, see the sample code:

  - *C#*
  - *Java*

FAQ

- How to specify a key?

  The key is the object name, which is specified in the form field `key`. The following shows an example:

  ```
   Content - Dispositio  n :  form - data ;  name =" key "
  { key }
  -- 9431149156  168
  ```

- How to specify object content?

  Specify object content in the form field `file`. The following shows an example:

  ```
   Content - Dispositio  n :  form - data ;  name =" file ";  filename
   =" images . png "
   Content - Type :  image / png
  { File - content }
  ```

```
-- 9431149156 168
```

Note:

- The form field `file` must be the last field in a form, namely it must be placed after any other form fields.
- `filename` is the name of the uploaded local file but not the object name.

- How to specify `content - type` of the object?

  Specify `content - type` of the object in the form field `file` but not in `content - type` of the header. The following shows an example:

  ```
   Content - Dispositio  n :  form - data ;  name =" file ";  filename
   =" images . png "
   Content - Type :  image / png
  { file - content }
  -- 9431149156  168
  ```

- How to specify `content - md5` verification for object content?

  Specify `content - md5` in the Post Object request header. Note that the MD5 value is for the entire body namely for all form fields. The following shows an example request header:

  ```
   POST  /  HTTP / 1 . 1
   User - Agent :  Mozilla / 5 . 0  ( Windows ;  U ;  Windows  NT  6
   . 1 ;  zh - CN ;  rv : 1 . 9 . 2 . 6 )
   Content - Type :  multipart / form - data ;  boundary  =
   9431149156  168
   Content - MD5 :  tdqHe4hT / TuKb7Y4by + nJg ==
   Host :  mingdi - hz . oss - cn - hangzhou . aliyuncs . com
   Accept :  text / html ,  image / gif ,  image / jpeg , *;  q =.  2
   , */*;  q =.  2
   Connection :  keep - alive
   Content - Length :  5246
  -- 9431149156  168
  ```

- How to specify a signature?

  See `PostObject  signature` for the signature calculation method. The signature is carried by the form field `Signature`.

- How to implement Post Object with STS Token of a temporary user?

  The usage of AccessKeyID and AccessKeySecret of a temporary user key is the same as that of a master user key and sub-user key. `Token` is carried by the form field `x - oss - security - token`. The following shows an example:

  ```
   Content - Dispositio  n :  form - data ;  name =" Signature "
   5L0 + KaeugxYygf  qWLJLoy0eh  OmA =
  ```

```
-- 9431149156  168
 Content - Dispositio  n :  form - data ;  name =" x - oss -
 security - token "
{ Token }
-- 9431149156  168
```

- How to specify a callback?

  The callback is carried by the form field `callback`. The following shows an example:

```
 Content - Dispositio  n :  form - data ;  name =" callback "
 eyJjYWxsYm  Fja0JvZHlU  eXBlIjogIm  FwcGxpY2F0  aW9uL3gtd3
 d3LWZvcm0t  dXJsZW5jb2  RlZCIsICJj  YWxsYmFja0  JvZHkiOiAi
 ZmlsZW5hbW  U9JHtvYmpl  Y3R9JnNpem  U9JHtzaXpl  fSZtaW1lVH
 lwZT0ke21p  bWVUeXBlfS  IsICJjYWxs  YmFja1VybC  I6ICJodHRw
 Oi8vb3NzLW  RlbW8uYWxp  eXVuY3MuY2  9tOjIzNDUw  In0 =
-- 9431149156  168
```

  Callback custom parameters are also carried by form fields. The following shows an example:

```
 Content - Dispositio  n :  form - data ;  name =" x : var1 "
{ var1 - value }
-- 9431149156  168
```

- How to specify `Content - Transfer - Encoding`?

  Specify `Content - Transfer - Encoding` in the form field `file`. `file`. The following shows an example `file` form field:

```
 Content - Dispositio  n :  form - data ;  name =" file ";  filename
 =" images . png "
 Content - Type :  image / png
 Content - Transfer - Encoding :  base64
{ file - content }
-- 9431149156  168
```

- How to specify custom meta information `Object  User  Meta`?

  Specify the custom meta information in form fields. The following shows an example:

```
 Content - Dispositio  n :  form - data ;  name =" x - oss - meta -
 uuid "
{ uuid }
-- 9431149156  168
 Content - Dispositio  n :  form - data ;  name =" x - oss - meta -
 tag "
{ tag }
-- 9431149156  168
```

Note:

> For more information about file meta information, see *File Meta Information Object Meta*.

- How to specify conditions such as expiration, Key, Bucket, size, and header?

  PostObject for OSS supports various conditions and can meet demanding security requirements. Specify conditions in the form field `policy` . The following shows an example policy:

  ```
      " expiration ": " 2018 - 01 - 01T12 : 00 : 00 . 000Z ",
      " conditions ": [
          [" eq ", "$ bucket ", " md - hz "],
          [" starts - with ", "$ key ", " md / conf /"],
          [" content - length - range ",  0 ,  104857600 ]
  ```

  In the preceding policy, the conditions for user Post Object operations are as follows:

  - `bucket` must be `md - hz` .
  - `key` must be started with `md / conf /`.
  - The size of the uploaded file must be less than 100 MB.
  - The request time must be earlier than `2018 - 01 - 01T12 : 00 : 00 . 000Z` .

- How to specify HTTP headers such as Cache-Control, Content-Type, Content-Disposition, Content-Encoding and Expires?

  Specify HTTP headers including `Cache - Control` , `Content - Type` , `Content - Dispositio n` , `Content - Encoding` , `Expires` in form fields. For the meanings of those HTTP headers, see *RFC2616* . However, `Content - MD5` needs to be specified in Post Header.

### Post Object examples

- *C# Post Demo*
- *Java Post Demo*

### Common links

- *Post object*
- *Java PostObject*

# 4 OSS permission

## OSS errors 403

An OSS error 403 indicates that the HTTP status code returned from OSS is 403 and that the server receives your request but rejects to provide service because you have no access permission. OSS errors 403 and causes are listed in the following table:

| Error | Message | Cause | Solution |
|---|---|---|---|
| SignatureDoesNotMatch | ErrorCode: SignatureDoesNotMatchErrorMessage: The request signature we calculated does not match the signature you provided. Check your key and signing method. | Client and service calculated signatures do not match | *OSS 403 errors and troubleshooting* |
| Postobject | ErrorCode: AccessDeniedErrorMessage: Invalid according to Policy: Policy expired.ErrorCode: AccessDenied ErrorMessage: Invalid according to Policy: Policy Condition failed: … | Invalid policy in postobject | *PostObject* |

| Error | Message | Cause | Solution |
|---|---|---|---|
| Cors | ErrorCode: AccessForbiddenErrorMessage : CORSResponse: This CORS request is not allowed. This is usually because the evalution of Origin, request method / Access-Control-Request-Method or Access-Control-Requet-Headers are not whitelisted by the resource' s CORS spec. | CORS is not configured or is not configured incorrectly | *OSS set up cross-domain access* |
| Refers | ErrorCode: AccessDeniedErrorMessage : You are denied by bucket referer policy. | Check the Referer configuration for the bucket | *OSS Anti-leech* |
| AccessDenied | See the following permissions for common errors | You have no permission. | See the following content for more information. |

Among them, the permissions issue is part of the 403 error. The error with the permission problem is `AccessDenied`. These errors are described in detail below.

Common permissions errors

The privilege issue is that the current user does not have permission to specify an action. The errors returned by OSS and their causes can be found in the following table:

| SN | Error | Cause |
|---|---|---|
| 1 | ErrorCode: AccessDeniedErrorMessage: The bucket you are attempting to access must be addressed using the specified endpoint. Please send all future requests to this endpoint. | The bucket does not match the endpoint. |
| 2 | ErrorCode: AccessDeniedErrorMessage: You are forbidden to list buckets. | You have no permissions for listBuckets. |
| 3 | ErrorCode: AccessDeniedErrorMessage: You do not have write acl permission on this object | You have no permissions for setObjectAcl. |
| 4 | ErrorCode: AccessDeniedErrorMessage: You do not have read acl permission on this object. | You have no permissions for getObjectAcl. |
| 5 | ErrorCode: AccessDeniedErrorMessage: The bucket you access does not belong to you. | The subaccount has no permissions for bucket management like getBucketAcl, CreateBucket, deleteBucket, setBucketReferer, and getBucketReferer. |
| 6 | ErrorCode: AccessDeniedErrorMessage: You have no right to access this object because of bucket acl. | The subaccount/ temporary account has no permissions to access the object like putObject getObject, appendObject, deleteObject, and postObject. |
| 7 | ErrorCode: AccessDeniedErrorMessage: Access denied by authorizer’s policy. | The temporary account has no access permissions . The authorization policy specified for assuming the role of this temporary account has no permissions. |

| SN | Error | Cause |
|---|---|---|
| 8 | ErrorCode: AccessDeniedErrorMessage: You have no right to access this object. | The subaccount/temporary account has no permissions for the current operation like initiateMultipartUpload. |

Permission error troubleshooting

Check whether the key is for the primary user, the subaccount or the temporary account.

- Check whether the key is for a primary user.

  Log on to the *console* to check whether the AccessKeyID exists. If it does exist, the key is for a primary user.
- Check the subaccount permission, that is, the authorization policy.

  Check the subaccount AccessKeyID and find out the corresponding subaccount by navigation toResource Access Management > User Management > Management > User Details > User AccessKey.

  Log on to the console and navigate toResource Access Management > User Management > Management > User Authorization Policy > Individual Authorization Policy/User Authorization Policyto check the permissions.
- Check the permissions for a temporary account.

  The AccessKeyID for the temporary account can be recognized easily since it starts with “STS”, for example, “STS.MpsSonrqGM8bGjR6CRKNMoHXe”. Log on to the console and navigate toResource Access Management > Role Management > Management > Role Authorization Policy > View Permissionsto check the permissions.

The access rights error process is shown in the following figure:

Procedures for checking the permissions:

1. List the required permissions and resources.
2. Check whether Action has the required operation.
3. Check whether Resource is the required operation object.
4. Check whether Effect is “Allow” instead of “Deny”.
5. Check whether Condition is set correctly.

If it is unable to detect the error through checking, the following adjustments are required:

1. The condition, if any, must be removed.
2. Remove “Deny” in Effect.
3. Change Resource to “Resource” : “*” .
4. Change Action to “Action” : “oss:*” .

Note:

- We recommend that you use the OSS authorization policy generation tool *RAM Policy Editor*to generate authorization policies.
- For more information about RAM, see *access control for Alibaba Cloud*.

# 5 Upload callback

This topic describes common errors in callback functions in upload operations and how to handle them.

## About upload callback

When a file is uploaded, the OSS can provide a *Callback* to your callback server. You can carry the relevant callback parameters in the upload request to implement the upload callback. The APIs that support upload callback are *PutObject*, *PostObject*, and *CompleteMultipartUpload*. For more information, see *Upload callback* and *Callback API* in the Developer Guide.

Note:

A callback server is also called a service server.

## Application scenario

- Notification

  A typical application is to upload and callback by an authorized third party who specifies the callback parameters during file upload. After the upload is complete , the OSS sends a callback request to the callback server. When receiving the callback request, the callback server records the upload information.

- Processing, review, and statistics

  When receiving a callback request, the callback server processes, reviews, and makes statistics on the uploaded files.

## Data stream

The following table describes the data streams.

| Data stream | Meaning | Description |
|---|---|---|
| 1 | The client uploads a file and carries a callback parameter. For more information about the format, see *SDK/PostObject*. | The upload is implemented by SDK (*PutObject* and *CompleteMultipartUpload*), and the callback by the *PostObject* API. |

| Data stream | Meaning | Description |
|---|---|---|
| 2 | The OSS instance stores the file and initiates a callback. | The OSS instance sends a `POST` request to the specified `CallbackUrl` in the upload request. The callback time-out period is five seconds, which is a fixed value and cannot be configured.<br>For more information about the format of the POST request, see *Initiate a callback request*. |
| 3 | The callback server returns the processing result. | · The message body returned by the callback server must be in JSON format.<br>· OSS determines that the callback fails if the returned result is not the 200 status code. The `40x` code indicates invalid parameters or callback failures. The `50x` indicates time-out or connection failures. |
| 4 | The OSS returns the upload and callback result. | · If both the upload and callback succeed, `200` is returned.<br>· If the upload succeeds but the callback fails, `203` is returned. The value of ErrorCode is `CallbackFailed`, and ErrorMessage indicates the error cause. |

SDK/PostObject

During the file upload, you can set the callback parameters to specify the URL of the callback server, data to be sent to the callback server, and data format. When the callback server processes a callback, some context information, such as the `bucket` and `object`, is specified using system variables. Other context information is specified using custom variables.

The following parameters are available for an upload callback:

| Field | Meaning | Description |
|---|---|---|
| callbackUrl | Callback server address | Required |
| callbackHost | Value of the `Host` in the callback request message header | Optional. The default value is `callbackUrl`. |

| Field | Meaning | Description |
|---|---|---|
| callbackBody | Callback request message body | Required. It can hold system variables and custom variables. |
| callbackBodyType | Value of `Content-Type` in the callback request message header, that is, the `callbackBody` data format | Optional. It can be `application/x-www-form-urlencoded` (default) or `application/json`. |

Upload callback parameters are carried by the upload request in either of the following two ways:

- The callback parameters are carried by `x-oss-callback` in the message header. This is a common and recommended way.
- The callback parameters are carried by `callback` in QueryString.

Rules for generating the `x-oss-callback` or `callback` values are as follows:

```
Callback := Base64(CallbackJson)
CallbackJson := '{' CallbackUrlItem, CallbackBodyItem [,
CallbackHostItem, CallbackBodyTypeItem] '}'
CallbackUrlItem := '"' callbackUrl '"' ':' '"' CallbackUr
lValue '"'
CallbackBodyItem := '"' callbackBody '"' ':' '"' CallbackBo
dyValue '"'
CallbackHostItem := '"' callbackHost '"' ':' '"' CallbackHo
stValue '"'
CallbackBodyTypeItem := '"' callbackBodyType '"' : '"'
CallbackBodyType '"'
CallbackBodyType := application/x-www-form-urlencoded
| application/json
```

`CallbackJson` value examples are as follows:

```

   "callbackUrl" : "http://abc.com/test.php",
   "callbackHost" : "oss-cn-hangzhou.aliyuncs.com",
   "callbackBody" : "{\"bucket\":${mimeType}, \"object\":${
object},\"size\":${size},\"mimeType\":${mimeType},\"my_var
\":${x:my_var}}",
   "callbackBodyType" : "application/json"
```

or

```

   "callbackUrl" : "http://abc.com/test.php",
    " callbackBo  dy " : " bucket =${ bucket }& object =${ object }&
 etag =${ etag }& size =${ size }& mimeType =${ mimeType }& my_var =${
 x : my_var }"
```

System variables and custom variables

Variables for `CallbackJs  on`, such as `${ bucket }`, `${ object }`, and `${ size }`, in the `CallbackJs  on` example are the OSS-defined system variables. During the callback, the OSS replaces the system variables with actual values. The following table lists the OSS-defined system variables.

| Variable | Meaning |
|---|---|
| ${bucket} | Storage space name |
| ${object} | File name |
| ${etag} | File’ s etag |
| ${size} | File size |
| ${mimeType} | File type, such as image/jpeg |
| ${imageInfo.height} | Image height |
| ${imageInfo.width} | Image width |
| ${imageInfo.format} | Image format, such as .jpg and .png |

Note:

- The system variables are case sensitive.
- The system variable is in the `${ bucket }` format.
- imageInfo is set for images. For the non-image format, the value of imageInfo is blank.

Variables for `CallbackJs  on`, such as `${ x : my_var }`, in the `CallbackJs  on` example are the custom variables. During the callback, the OSS replaces the custom variables with custom values.  Custom variable values are defined and carried by the upload request in either of the following two ways:

- The custom variables are carried by `x - oss - callback - var` in the message header. This is a common and recommended way.
- The custom variables are carried by `callback - var` in QueryString.

Rules for generating the `x - oss - callback - var` or `callback - var` values are as follows:

```
CallbackVa  r  :=  Base64 ( CallbackVa  rJson )
CallbackVa  rJson  := '{'  CallbackVa  rItem  [,  CallbackVa  rItem
]* '}'
CallbackVa  rItem  := '"'' x :' VarName '"'  : '"' VarValue '"'
```

`CallbackVa  rJson` value examples are as follows:

```

    " x : my_var1 " : " value1 ",
    " x : my_var2 " : " value2 "
```

Note:

- The custom variables must start with ***x:***: They are case sensitive and in the format of `${ x : my_var }`.
- The custom variable length is limited by the length of the message header and URL. We recommend that the number of the custom variables do not exceed 10 and the total length do not exceed 512 bytes.

SDK usage example

Some SDKs, such as JAVA and JS, encapsulate the preceding steps. Some SDKs, such as Python, PHP, and C, need to use the preceding rules to generate the upload callback parameters and custom variables. The following table lists SDK usage examples.

| SDK | Upload callback example | Description: |
|---|---|---|
| JAVA | *CallbackSample.java* | Note the escape characters in `CallbackBo  dy`. |
| Python | *object_callback.py* | - |
| PHP | *Callback.php* | `OSS_CALLBA  CK` and `OSS_CALLBA  CK_VAR` in $options do not need to be encoded using Base64, which is implemented by the SDK. |

| SDK | Upload callback example | Description: |
|---|---|---|
| C # | *UploadCallbackSample.cs* | Use *using* to read `to read , PutObjectResult . ResponseStream` but make sure that it is disabled. |
| JS | *object.test.js* | - |
| C | *oss_callback_sample.c* | - |
| Ruby | *callback.rb* | - |
| iOS | *Callback notification after upload* | Make sure that `< var1 >` the format of `var1` is x:var1. |
| Andriod | *Callback notification after upload* | Note the escape characters in `CallbackBody` . |

Note:

The Go SDK does not support upload callback currently.

### PostObject usage example

PostObject supports the upload callback, whose callback parameters are carried by the form field `callback` and custom variables are carried by an independent form field. For more information, see *PostObjet*.

The following table lists PostObject usage examples.

| SDK | Upload callback example |
|---|---|
| Java | *PostObjectSample.java* |
| Python | *object_post.py* |
| C# | *PostPolicySample.cs* |

### Callback server

The callback server is an HTTP server that processes callback requests and POST messages sent from the OSS. The callback server URL is the value of the upload callback parameter `callbackUrl` . You can implement your own processing logic on the callback server for recording, review, processing, and statistics of the uploaded data.

Callback signature

The callback server needs to verify the signature of a POST request to make sure that the POST request is from the OSS upload callback. The callback server also can directly process the message without verifying the signature. To enhance the security of the callback server, we recommend that the callback server verify the message signature. For more information about the callback signature rules, see *Callback signature*.

Note:

The OSS callback server example describes how to implement signature verification. We recommend that you directly use the code.

Message processing

The main logic of the callback server is to process the OSS callback request. Note the following items:

- The callback server must process the POST request of the OSS.
- The OSS callback time-out time is five seconds. Therefore, the callback server must complete processing within five seconds and return the result.
- The message body sent from the callback server to the OSS must be in JSON format.
- The callback server uses its own logic, and the OSS provides examples instead of the specific service logic.

Implementation example

The following table describes the implementation examples of the callback server.

| Language | Example | Running method |
|---|---|---|
| JAVA | *AppCallbackServer.zip* | Decompress the package and run `java - jar oss - callback - server - demo . jar 9000`. |
| PHP | *callback-php-demo.zip* | Deploy and run the program to in Apache environment. |

| Language | Example | Running method |
|---|---|---|
| Python | callback_app_server.py.zip | Decompress the package and run `python callback_app_server.py`. |
| Ruby | oss-callback-server | Run `ruby aliyun_oss_callback_server.rb`. |

Debugging procedure

The upload callback debugging includes debugging of the client that uploads a file and the callback server that processes the callback. We recommend that you debug the client first and then the callback server. After independently debugging the two parts, perform the complete upload callback.

- Client debugging

  You can use the callback server `http://oss-demo.aliyuncs.com:23450` provided by the OSS, that is, the callback parameter `callbackUrl` to debug the client. The callback server only verifies the callback request signature, and does not process the callback request. For callback requests whose signatures are successfully verified, the callback server returns `{"Status":"OK"}`. For callback requests whose signatures fail to be verified, the callback server returns `400 Bad Request`. For non-POST requests, the callback server returns `501 Unsupported method`. For more information about the code of the callback server example, see callback_app_server.py.zip.

- Callback server debugging

  The callback server is an HTTP server that can process the POST request. You can modify the callback server based on the example provided by the OSS or implement it by yourself. The following table describes the examples of the callback server provided by the OSS.

| Language | Example | Running method |
|---|---|---|
| JAVA | *AppCallbackServer.zip* | Decompress the package and run `java - jar oss - callback - server - demo . jar 9000` . |
| PHP | *callback-php-demo.zip* | Deploy and run the program to in Apache environment |
| Python | *callback_app_server.py.zip* | Decompress the package and run `python callback_a pp_server . py` . |
| C# | *callback-server-dotnet.zip* | Compile the program and run `aliyun - oss - net - callback - server . exe 127 . 0 . 0 . 1 80` . |
| Go | *callback-server-go.zip* | Compile the program and run `aliyun_oss _callback_ server` . |
| Ruby | *oss-callback-server* | Run `ruby aliyun_oss _callback_ server . rb` . |

The callback server can be debugged by running the `cURL` command. The following commands may be used:

```
# Run the following command to send a ` POST `
 request whose message body is ` object = test_obj ` to
 the callback server :
 curl - d " object = test_obj " http :// oss - demo . aliyuncs .
 com : 23450 - v
# Run the following command to send a ` POST `
 request whose message body is ` post . txt ` to the
 callback server :
 curl - d @ post . txt http :// oss - demo . aliyuncs . com :
 23450 - v
# Run the following command to send a ` POST `
 request whose message body is ` post . txt ` and which
```

```
  carries   the   specified   message   header  ` Content - Type `
 to   the   callback   server :
 curl  - d  @ post . txt  - H  " Content - Type :  applicatio  n /
 json "  http :// oss - demo . aliyuncs . com : 23450  - v
```

Note:

- When debugging the callback server, ignore signature verification because it is difficult for `cURL` to simulate the signature function.
- The OSS example already provides the signature verification function. We recommend that you directly use it.
- We recommend that the callback server provide the logging function to record all messages, facilitating debugging and tracking.
- After correctly processing a callback request, the callback server must return `200` instead of 20x.
- The message body sent from the callback server to the OSS must be in JSON format, and `Content - Type` is set to `applicatio n / json`.

## Common errors and causes

- **InvalidArgument**

```
< Error >
  < Code > InvalidArg  ument </ Code >
  < Message > The   callback   configurat  ion   is   not   json
 format .</ Message >
  < RequestId > 587C79A3DD  373E2676F7  3ECE </ RequestId >
  < HostId > bucket . oss - cn - hangzhou . aliyuncs . com </ HostId
 >
  < ArgumentNa  me > callback </ ArgumentNa  me >
  < ArgumentVa  lue >{" callbackUr  l ":" 8 . 8 . 8 . 8 : 9090 ","
 callbackBo  dy ":"{" bucket ":${ bucket }," object ":${ object
 }}"," callbackBo  dyType ":" applicatio  n / json "}</ ArgumentVa
 lue >
</ Error >
```

Note:

The callback parameter settings are incorrect, or the parameter format is incorrect. The common error is that the callback parameters in `ArgumentVa lue` are not in valid JSON format. In JSON, \ and " are escape characters. For example, `" callbackBo  dy ":"{" bucket ":${ bucket }," object ":${ object }}"` must be `" callbackBo  dy ":"{\" bucket \":${ bucket },`

`\" object \":${ object }}"`. For more information about the SDKs, see the upload callback examples in the *SDK usage example* part.

| Character after escape | Character before escape |
|---|---|
| \\ | \\\\ |
| “ | \\\” |
| \b | \\b |
| \f | \\f |
| \n | \\n |
| \r | \\r |
| \t | \\t |

- CallbackFailed

  Examples of CallbackFailed error are described as follows:

  - Example 1

```
< Error >
  < Code > CallbackFa  iled </ Code >
  < Message > Response   body   is   not   valid   json   format
 .</ Message >
  < RequestId > 587C81A125  F797621829  923D </ RequestId >
  < HostId > bucket . oss - cn - hangzhou . aliyuncs . com </
 HostId >
</ Error >
```

Note:

The message body sent from the callback server to the OSS is not in JSON format. You can confirm the content by running `curl  - d  "< Content >" < CallbackSe  rverURL > - v` or capture packets. We recommend that you use Wireshark to capture packets in Windows, and use `tcpdump` to capture packets in Linux. Invalid returned messages include: `OK` and `\ 357 \ 273 \ 277 {" Status ":" OK "}` (the BOM header containing the `ef  bb  bf` bytes).

  - Example 2

```
< Error >
  < Code > CallbackFa  iled </ Code >
  < Message > Error   status  : - 1 .  OSS   can   not   connect
 to   your   callbackUr  l ,  please   check   it .</ Message >
  < RequestId > 587C873535  5BE8694A8E  9100 </ RequestId >
  < HostId > bucket . oss - cn - hangzhou . aliyuncs . com </
 HostId >
```

```
</ Error >
```

Note:

The processing time of the callback server exceeds  five seconds. Therefore, the OSS determines that a time-out occurs. We recommend that you modify the processing logic of the callback server to asynchronous processing to make sure that it can complete processing within five seconds and returns the result to the OSS.

- Example 3

```
< Error >
  < Code > CallbackFa  iled </ Code >
  < Message >  error   status :- 1   8 . 8 . 8 . 8 :   9090   reply
   timeout ,  cost :  5000   MS ,  timeout :  5000   MS  ( Ernest
 - 4 ,  errno170 ) </ message >
  < RequestId > 587C8D382A  E0B92FA3EE  F62C </ RequestId >
  < HostId > bucket . oss - cn - hangzhou . aliyuncs . com </
 HostId >
</ Error >
```

Note:

The processing time of the callback server exceeds five seconds. Therefore, the OSS determines that a time-out occurs.

- Example 4

```
< Error >
  < Code > CallbackFa  iled </ Code >
  < Message > Error   status  :  400 .</ Message >
  < RequestId > 587C89A02A  E0B92FA3C7  981D </ RequestId >
  < HostId > bucket . oss - cn - hangzhou . aliyuncs . com </
 HostId >
</ Error >
```

Note:

The status code of the message sent from the callback server to the OSS is `400` . Check the processing logic of the callback server.

- Example 5

```
< Error >
  < Code > CallbackFa  iled </ Code >
  < Message > Error   status  :  502 .</ Message >
  < RequestId > 587C8D382A  E0B92FA3EE  F62C </ RequestId >
  < HostId > bucket . oss - cn - hangzhou . aliyuncs . com </
 HostId >
```

```
</ Error >
```

> Note:
>
> The callback server is not started, `CallbackUrl` is missing in the callback parameters, or the network between the OSS instance and the callback server is disconnected. We recommend that you deploy the callback server on the ECS, which belongs to the same intranet as the OSS, to save the traffic cost and guarantee the network quality.

- The body of the response is not in JSON format.

  For example:

  This error may be caused by the following reasons:

  - The body of the response returned by the application server to OSS is not in JSON format, as shown in the following figure:

    OSS reports the error if resp_body is not in valid JSON format. In addition, this error may be caused by other underlying factors, such as the application server returning a stack trace instead of a normal response to OSS because of exceptions.
  - The body of the response returned by the application server to OSS carries a BOM in the header.

    This problem generally occurs in application servers coded in PHP, which include a BOM header in the response returned to OSS. Therefore, OSS reports the error because three additional bytes (that is, the BOM header) are included in the response, which does not conform to JSON format. The following figure shows the content included in the packet sent by the application server.

    In the preceding figure, the `ef bb bf` bytes are the three additional bytes of the BOM header.

    > Note:
    >
    > To resolve this issue, remove the BOM header in the response returned by the application server to OSS.

- Error status

  Error status codes, such as 502 and 400, are errors that are returned due to incorrect callback functions, as shown in the following figure.

  Note:

  An error status code, such as 400, 404, or 403, is returned to indicate the HTTP status returned by the application server to OSS. A return of status code 200 indicates the operation is successful.

  Error status code 502 is returned when the web service is not enabled on the application server, meaning the server cannot receive the callback request sent by OSS.

- Timeout

  The following figure shows a timeout error.

  Note:

  For security reasons, OSS waits to receive the callback response for a maximum of 5 seconds. If the response is not returned, OSS disconnects from the application server and returns a timeout error to the client. The IP address included in the error message can be ignored.

# 6 OSS 403

### Error: UserDisable.UserDisable

If the following error UserDisable is reported when you access OSS:

```
< Code > UserDisabl  e </ Code >
                < Message >  userdisabl  e  </ message >
```

The error may caused by two possible reasons:

- Access is denied due to account outstanding payment.

  You can click Billing Management on the OSS console to check whether an outstanding payment is made. If any, recharge the account in time.

  Note:

  - Even if an outstanding payment is made, you still can use OSS for 24 hours and your access will be banned later.
  - Your historical data is kept for 15 days and will be deleted later.
  - Once you see an "Alibaba Cloud OSS Arrearage Message" in the Message Center, recharge your account in time. If not, you cannot use OSS.
- Access is denied due to security reasons.

  Click Notice on the console to enter the Message Center and check the notice of violation on the Security message on the right side. Violation may be caused by various of reasons.

  Note:

  If your account is banned, you must do whatever necessary to recover the use of your account. A new account does not guarantee your normal use.

### Error: RequestTimeTooSkewed.The difference between…

If the following error RequestTimeTooSkewed is reported when you access OSS:

```
< Code > RequestTim  eTooSkewed </ Code >
< Message > The   difference   between   the   request   time   and
 the   current   time   is   too   large .</ Message >
```

The cause is that the interval between your request time and the time at which OSS receives your request exceeds 15 minutes. Therefore, OSS considers this request to be invalid due to security reasons and returns this error. You must check the system time of the device sending the request, and adjust it to a correct time according to the time zone.

You may have the following questions:

- What are the criteria for adjusting the system time of the machine or device sending the request?

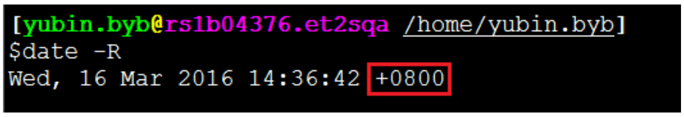
  The system time adopted by OSS is the Greenwich Mean Time (GMT). Therefore, the system time of your device must be adjusted to GMT or to a time within a time zone corresponding to GMT. GMT is the zone time of zero zone, that is the World Standard Time.

  If, for example, the system of your device that accesses OSS is configured with GMT +08:00, the system time must be adjusted to a time that is 8 hours earlier than GMT . The other time can be adjusted similarly. The standard time in China is Beijing Time, that is GMT+08:00. If your system time is located at GMT+08:00, your system time only needs to be adjusted to Beijing Time.

  - To check your time zone using the Windows system,

    clickControl Panel > Clock, Language, and Region > Set Date and Time to open the date and time. The +08:00 in the Time Zone column indicates that your device is located in the time zone GMT+08:00.
  - If your system is Linux/Unix,

    run the `date - R` command to check the time and the time zone. +0800 is shown in the following figure, which indicates that the system time zone of your device is GMT+08:00.

    ```
    [yubin.byb@rs1b04376.et2sqa /home/yubin.byb]
    $date -R
    Wed, 16 Mar 2016 14:36:42 +0800
    ```

- Is there a problem of time synchronization when using OSS across multiple regions like Hangzhou, Singapore, and the United States?

  There is certainly no problem. The OSS in each region uses GMT and the system time of your device sending the request is also GMT.

### Error: InvalidAccessKeyId.The OSS Access Key Id…

If the following error is reported when you access OSS:

```
< Code > InvalidAcc  essKeyId </ Code >
< Message > The   OSS   Access   Key   Id   you   provided   does
 not   exist   in   our   records .</ Message >
```

The possible cause is that your AccessKeyID is disabled or does not exist. You can troubleshoot the error as follows:

Log on to *AccessKey management* on the Alibaba Cloud console to confirm that the AccessKeyID used for accessing OSS does exist and has been activated.

- If your AccessKeyID is disabled, activate it.
- If your AccessKeyID does not exist, create a new AccessKeyID and use it to access OSS.

### Error: AccessDenied.The bucket you are attempting to…

If the following error is reported when you access OSS:

```
< Code > AccessDeni  ed </ 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 >
```

The cause is that the endpoint you use to access the bucket is incorrect. For endpoint details, see *OSS basic concepts*.

How can we find out a correct endpoint? If the SDK is abnormal as follows or returns the following error:

```
< Error >
  < Code > AccessDeni  ed </ 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 > 56EA **** 3EE6 </ RequestId >
  < HostId > my - oss - bucket -*****. aliyuncs . com </ HostId >
  < Bucket > my - oss - bucket -***</ Bucket >
  < Endpoint > oss - cn -****. aliyuncs . com </ Endpoint >
</ Error >
```

- Then `oss - cn -****. aliyuncs . com` in the `endpoint` is the correct endpoint. You must use `http :// oss - cn -****. aliyuncs . com` or `https :// oss - cn -****. aliyuncs . com` as the endpoint to access OSS.
- If the `endpoint` is not shown in the error returned, you must log on to OSS console, and on the Overview page find out the bucket you are attempting to

access. Then click the bucket to enter the Bucket Overviewpage. On the `OSS Domain Name` area, you can see the domain names of the intranet and the Internet.

- The Internet domain name is used to access OSS on the Internet. The intranet domain name is used to internally access OSS on the intranet of Alibaba Cloud. For example, if you access OSS on your ECS, you can use an intranet domain name.
- Endpoint is composed of the domain name (excluding the bucket part) and the access protocol. For example, the Internet domain name of OSS in the preceding picture is `oss -****. aliyuncs . com` Therefore, the Internet endpoint is `http :// oss - cn -****. aliyuncs . com` and similarly its intranet endpoint is `http :// oss - cn -****- internal . aliyuncs . com`.

### Error: ImageDamage.The image file may be damaged

If the following error is reported when you access OSS:

```
< Code > ImageDamag  e </ Code >
< Message > The   image   file   may   be   damaged .</ Message >
```

This error indicates that part of the image file message is lost or damaged, and the image cannot be identified or processed. You may have a question that an image can be processed locally by an image processor but the OSS reports an error. The cause is that the image processor does some processing of the damaged image but the OSS service currently does not have this function.

### Error: AccessDenied.AccessDenied

If the following error is reported when you access OSS:

```
< Code > AccessDeni  ed </ Code >
< Message > AccessDeni  ed </ Message >
```

This error indicates that the user accessing OSS has no permissions for the current operation. The correct `AccessKeyI  D / AccessKeyS  ecret` must be used. If the account you are using is a subaccount/temporary account (STS), you must confirm your current permissions.

Confirmation method:

Check your permissions on the *RAM console*. ClickUser management and click User who needs to confirm the permission, then click User Authorization Policy and

Authorization Policy for Group. Confirm the current account has been granted the permissions to operate on the bucket/object.

### Error: SignatureDoesNotMatch. The request signature we calculated…

If the following error is reported when you access OSS:

```
< Code > SignatureD  oesNotMatc  h </ Code >
< Message > The   request   signature   we   calculated   does   not
 match   the   signature   you   provided .  Check   your   key   and
   signing   method .</ Message >
```

Troubleshoot the error as follows:

1. Check the endpoint.

   Check whether there is a bucket before the endpoint, whether there is unnecessary `/` behind the endpoint, and whether there are unnecessary `spaces` at two sides of the endpoint. For example, the endpoint `http :// my - bucket . oss - cn - hangzhou . aliyuncs . com` and `http :// oss - cn - hangzhou . aliyuncs . com /` are invalid, while `http ://  oss - cn - hangzhou . aliyuncs . com` and `https ://  oss - cn - hangzhou . aliyuncs . com` are valid domain names.
2. Check the AccessKeyID/AccessKeySecret.

   Confirm that the AccessKeyID/AccessKeySecret is correct. Make sure there are no spaces at two sides of the AccessKeyID/AccessKeySecret, especially when it is copied and pasted.
3. Check the BucketName/ObjectKey.

   Make sure that the BucketName/ObjectKey is valid and compliant with the naming rule.

   - Bucket nomenclature: The name of a bucket only consists of lower-case letters, numbers, and hyphens (-) and must start with a lower-case letter or number.The length must be between 3 bytes and 63 bytes.
   - Object nomenclature: The name of an object adopts UTF-8 codes with a length of 1 to 1,023 bytes. The name cannot start with “/ “ or “\” .
4. If your own signature is used, you must follow the signature method provided by OSS SDK.

   OSS SDK supports URL/Header signatures. For more information, see the SDK documentation.

5. If your environment is not suitable for SDK use but you do need to use your signature, see *User signature verification* for the signature method. You must check each signature field carefully.

   A visual signature tool is provided on the OSS forum. You must compare each signature field and the final signature. The signature tool is available at the *Signature tool address*.
6. If you use a proxy, you must check whether the proxy server has been configured with an additional header.

Other errors

You must judge the causes based on the error codes and messages returned from the SDK. The error messages indicate the error causes. If you suspect that the error is related with the network environment, you can use *ossutil* for error troubleshooting and the ossutil may give possible causes.