Listing directory contents

You use the HTTP GET method to list the contents of a directory in a namespace. This method does not list old versions of objects.

Access permission

To list the contents of a directory, you need browse permission.

Request header

```
GET /rest/directory?deleted=true HTTP/1.1
```

Parameter	Required	Description
directory	Yes	Folder name.
delete	No	By default, a directory list does not include deleted objects or directories. If the namespace supports versioning, you can include deleted objects and directories in the list. To do this, specify this URL query parameter: ``` deleted=true ``` You can also specify `deleted=false`, which results in the default behavior. Also specify the `deleted=true` parameter to list the contents of a deleted directory (which can contain only deleted objects and directories).

mostRecentDirTimes	No	Either:
		
		 • `false`, the default, which shows the change time returned for each subdirectory in a directory list is the time the subdirectory was created or, if the subdirectory is a deleted directory, the time it was deleted. .
		 • `true`, which shows change times that are the most recent of
		    • The time the subdirectory was created
		    • The time the subdirectory was deleted
		    • The time an object was most recently added to the subdirectory
		    • The time an object was most recently deleted from the subdirectory

Response headers

The list below describes the request-specific response header for this operation.

X-HCP-Type

The object entity type.

X-HCP-ChangeTimeMilliseconds

The change time for the directory, in milliseconds since January 1, 1970, at 00:00:00 UTC, followed by an integer that is unique for the change time. For example: 1336483100178.00.

The change time for a directory is the most recent of:

- The time the directory was created
- The time the directory was deleted
- The time an object was added to the directory
- The time an object was deleted from the directory

X-HCP-ChangeTimeString

The change time for the object in this format:

```
yyyy-MM-ddThh:mm:ssZ
```

In this format, *Z* represents the offset from UTC and is specified as:

```
(+|-)hhmm
```

For example, 2020-09-18T09:18:20-0400 represents the start of the 20th second into 9:18 AM, September 18, 2020, EDT.

X-HCP-SymlinkTarget

The path to the target object as specified when the symbolic link was created.

This header is returned only if the URL specifies a symbolic link to an object.

If this header is returned, the `X-HCP-ACL` value is always `false`.

Response body

The body of the HTTP response consists of XML that lists the contents of the requested directory, including metadata for the objects the directory contains. It lists only the immediate directory contents, not the contents of any subdirectories.

Element	Attribute	Description
directory	path	Location of the directory.
directory	utf8path	UTF-8 compatible location of the directory.
directory	parentDir	Location of the parent directory.
directory	utf8ParentDir	UTF-8 compatible location of the parent directory.
directory	dirDeleted	Boolean value. Indicates whether the directory is currently deleted.
directory	showDeleted	Boolean value. Indicates whether the directory includes delete markers.
directory	namespaceName	Name of the namespace where the directory resides.
directory	utf8NamespaceName	UTF-8 compatible name of the namespace where the directory resides.

Element	Attribute	Description
directory	changeTimeMilliseconds	Seconds after 1 January 1970 that the object was either modified or deleted.
directory	changeTimeString	Change date and time. In ISO 8601 format, which is the time in the time zone of the HCP system followed by the hour and minute offset between local time and UTC.
entry	urlName	URL of the subdirectory, symbolic link, or object.
entry	utf8Name	UTF-8 compatible name of the subdirectory, symbolic link, or object.
entry	type	Subdirectories have the type `directory`. Symbolic links have the type `symlink`. All other objects have the type `object`.
entry	changeTimeMilliseconds	Seconds after 1 January 1970 that the object was either modified or deleted.
entry	changeTimeString	Change date and time. In ISO 8601 format, which is the time in the time zone of the HCP system followed by the hour and minute offset between local time and UTC.
entry	state	Status is either `created` or `deleted`. Specifies whether the version contains data or is a marker indicating that the object was deleted.
entry	etag	Etags for the object.
entry	hashScheme	Type of hash algorithm, such as MD5. Not returned for multipart objects.
entry	hash	Hash value. Not returned for multipart objects.
entry	retention	Retention in seconds after 1 January 1970
entry	retentionString	Retention day and time value. In the time zone of the HCP system.
entry	retentionClass	Retention class name.
entry	ingestTime	Seconds after 1 January 1970 that the object was either created or deleted.
entry	ingestTimeString	Ingested date and time. In the time zone of the HCP system.
entry	hold	Boolean. Whether or not the object has a hold.

Element	Attribute	Description
entry	shred	Boolean. Whether or not the object is to be shredded after it is deleted.
entry	index	Boolean. Whether or not the object is to be indexed.
entry	customMetadata	Boolean. Whether or not the object has custom metadata.
entry	customMetadataAnnotations	Annotations associated with the object. Delimited by semicolons.
entry	replicated	Boolean. Whether or not the object is replicated.
entry	owner	User name of the owner of the object. If there is no owner listed, the value is `nobody`.
entry	domain	Active Directory domain
entry	hasAcl	Boolean. Whether or not ACL is present for the object.
entry	state	Status is either `created` or `deleted`. Specifies whether the version contains data or is a marker indicating that the object was deleted.

Status codes

The table below describes the HTTP status codes that have specific meaning for this request.

Code	Meaning	Description
200	OK	HCP successfully retrieved the directory listing. This code is also returned if the URL specified an object and HCP successfully retrieved the object.
404	Not Found	One of: • HCP could not find a directory, object, or version at the specified URL. The specified object or version does not exist, or the request specified the current version of an object that has been deleted. • Any component of the URL except for the last component in the path is a symbolic link to a directory.

Example: Listing the contents of a directory that includes deleted objects

Here's a sample HTTP GET request that lists all the contents, including any deleted objects or subdirectories, of a directory named `quarterly_rpts` in a namespace that supports versioning.

Request with curl command line

```
curl -k -H "Authorization: HCP bXl1c2Vy:3f3c6784e97531774380db177774ac8d"
    "https://finance.europe.hcp.example.com/rest/quarterly_rpts?deleted=true"
    > quarterly_rpts.xml
```

Request in Python using PycURL

```python
import pycurl
filehandle = open("quarterly_rpts.xml", 'wb')
curl = pycurl.Curl()
curl.setopt(pycurl.HTTPHEADER, ["Authorization: HCP
  bXl1c2Vy:3f3c6784e97531774380db177774ac8d"])
curl.setopt(pycurl.URL, "https://finance.europe.hcp.example.com \
  /rest/quarterly_rpts?deleted=true")
curl.setopt(pycurl.SSL_VERIFYPEER, 0)
curl.setopt(pycurl.SSL_VERIFYHOST, 0)
curl.setopt(pycurl.WRITEFUNCTION, filehandle.write)
curl.perform()
print curl.getinfo(pycurl.RESPONSE_CODE)
curl.close()
filehandle.close()
```

Request headers

```
GET /rest/quarterly_rpts?deleted=true HTTP/1.1
Host: finance.europe.hcp.example.com
Authorization: HCP bXl1c2Vy:3f3c6784e97531774380db177774ac8d
```

Response headers

```
HTTP/1.1 200 OK
X-HCP-ServicedBySystem: hcp.example.com
X-HCP-Time: 1335036864
X-HCP-SoftwareVersion: 7.0.0.16
Content-Type: text/xml
X-HCP-Type: directory
X-HCP-ChangeTimeMilliseconds: 1353420657688.00
X-HCP-ChangeTimeString: 2012-11-20T09:10:57-0500
Content-Length: 577
```

Response body

```xml
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/xsl" href="/static/xsl/ns-directory.xsl"?>
<directory xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:noNamespaceSchemaLocation="/static/xsd/ns-directory.xsd"
    path="/rest/quarterly_rpts"
    utf8Path="/rest/quarterly_rpts"
    parentDir="/rest">
    utf8ParentDir="/rest"
    dirDeleted="false"
    showDeleted="true"
    namespaceName="finance"
    utf8NamespaceName="finance">
    changeTimeMilliseconds="1326336965436"
    changeTimeString="2012-01-11T09:56:05-0500"

    <entry urlName="Q4_2011.ppt"
        utf8Name="Q4_2011.ppt"
        type="object"
        size="671744"
        hashScheme="SHA-256"
        hash="42C605FBFFCD7CEAC36BE62F294374F94503D1DC1793736EF367..."
        retention="0"
        retentionString="Deletion Allowed"
        retentionClass=""
        ingestTime="1326898187"
        ingestTimeString="1/18/2012 2:49PM"
        hold="false"
        shred="false"
        dpl="2"
        index="true"
        customMetadata="false"
        customMetadataAnnotations=""
        version="80238375537921"
        replicated="false"
        changeTimeMilliseconds="1326898187533.00"
        changeTimeString="2012-01-18T14:49:47-0400"
        owner="lgreen"
        domain=""
        hasAcl="false"
        state="created"
    />
    <entry urlName="obsolete"
        utf8Name="obsolete"
        type="directory"
        changeTimeMilliseconds="1331847677748.00"
        changeTimeString="2012-03-15T17:41:17-0400"
        state="deleted"
    />
    <entry urlName="Q1_2012.ppt"
        utf8Name="Q1_2012.ppt"
        type="object"
        size="678400"
        hashScheme="SHA-256"
        hash="E830B86212A66A792A79D58BB185EE63A4FADA76BB8A1C257C01..."
        retention="0"
        retentionString="Deletion Allowed"
```

```
            retentionClass=""
            ingestTime="1334847117"
            ingestTimeString="4/19/2012 9:51AM"
            hold="false"
            shred="false"
            dpl="2"
            index="true"
            customMetadata="false"
            customMetadataAnnotations=""
            version="80238376132993"
            replicated="false"
        changeTimeMilliseconds="1334847117598.00"
            changeTimeString="2012-04-19T09:51:57-0400"
            owner="lgreen"
            domain=""
            hasAcl="false"
            state="created"
    />
</directory>
```

Notice that the `obsolete` directory was deleted. It does not appear in a directory listing if the URL does not include the `deleted=true` parameter.