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
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>directory</td>
<td>Yes</td>
<td>Folder name.</td>
</tr>
<tr>
<td>delete</td>
<td>No</td>
<td>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).</td>
</tr>
<tr>
<td>mostRecentDirTimes</td>
<td>No</td>
<td>Either:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- true, which shows change times that are the most recent of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The time the subdirectory was created</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The time the subdirectory was deleted</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The time an object was most recently added to the subdirectory</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The time an object was most recently deleted from the subdirectory</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Element</th>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>directory</td>
<td>path</td>
<td>Location of the directory.</td>
</tr>
<tr>
<td>directory</td>
<td>utf8path</td>
<td>UTF-8 compatible location of the directory.</td>
</tr>
<tr>
<td>directory</td>
<td>parentDir</td>
<td>Location of the parent directory.</td>
</tr>
<tr>
<td>directory</td>
<td>utf8ParentDir</td>
<td>UTF-8 compatible location of the parent directory.</td>
</tr>
<tr>
<td>directory</td>
<td>dirDeleted</td>
<td>Boolean value. Indicates whether the directory is currently deleted.</td>
</tr>
<tr>
<td>directory</td>
<td>showDeleted</td>
<td>Boolean value. Indicates whether the directory includes delete markers.</td>
</tr>
<tr>
<td>directory</td>
<td>namespaceName</td>
<td>Name of the namespace where the directory resides.</td>
</tr>
<tr>
<td>directory</td>
<td>utf8NamespaceName</td>
<td>UTF-8 compatible name of the namespace where the directory resides.</td>
</tr>
<tr>
<td>Element</td>
<td>Attribute</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>directory</td>
<td>changeTimeMilliseconds</td>
<td>Seconds after 1 January 1970 that the object was either modified or deleted.</td>
</tr>
<tr>
<td>directory</td>
<td>changeTimeString</td>
<td>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.</td>
</tr>
<tr>
<td>entry</td>
<td>urlName</td>
<td>URL of the subdirectory, symbolic link, or object.</td>
</tr>
<tr>
<td>entry</td>
<td>utf8Name</td>
<td>UTF-8 compatible name of the subdirectory, symbolic link, or object.</td>
</tr>
<tr>
<td>entry</td>
<td>type</td>
<td>Subdirectories have the type directory. Symbolic links have the type symlink. All other objects have the type object.</td>
</tr>
<tr>
<td>entry</td>
<td>changeTimeMilliseconds</td>
<td>Seconds after 1 January 1970 that the object was either modified or deleted.</td>
</tr>
<tr>
<td>entry</td>
<td>changeTimeString</td>
<td>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.</td>
</tr>
<tr>
<td>entry</td>
<td>state</td>
<td>Status is either created or deleted. Specifies whether the version contains data or is a marker indicating that the object was deleted.</td>
</tr>
<tr>
<td>entry</td>
<td>etag</td>
<td>Etags for the object.</td>
</tr>
<tr>
<td>entry</td>
<td>hashScheme</td>
<td>Type of hash algorithm, such as MD5. Not returned for multipart objects.</td>
</tr>
<tr>
<td>entry</td>
<td>hash</td>
<td>Hash value. Not returned for multipart objects.</td>
</tr>
<tr>
<td>entry</td>
<td>retention</td>
<td>Retention in seconds after 1 January 1970</td>
</tr>
<tr>
<td>entry</td>
<td>retentionString</td>
<td>Retention day and time value. In the time zone of the HCP system.</td>
</tr>
<tr>
<td>entry</td>
<td>retentionClass</td>
<td>Retention class name.</td>
</tr>
<tr>
<td>entry</td>
<td>ingestTime</td>
<td>Seconds after 1 January 1970 that the object was either created or deleted.</td>
</tr>
<tr>
<td>entry</td>
<td>ingestTimeString</td>
<td>Ingested date and time. In the time zone of the HCP system.</td>
</tr>
<tr>
<td>entry</td>
<td>hold</td>
<td>Boolean. Whether or not the object has a hold.</td>
</tr>
<tr>
<td>Element</td>
<td>Attribute</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>entry</td>
<td>shred</td>
<td>Boolean. Whether or not the object is to be shredded after it is deleted.</td>
</tr>
<tr>
<td>entry</td>
<td>index</td>
<td>Boolean. Whether or not the object is to be indexed.</td>
</tr>
<tr>
<td>entry</td>
<td>customMetadata</td>
<td>Boolean. Whether or not the object has custom metadata.</td>
</tr>
<tr>
<td>entry</td>
<td>customMetadataAnnotations</td>
<td>Annotations associated with the object. Delimited by semicolons.</td>
</tr>
<tr>
<td>entry</td>
<td>replicated</td>
<td>Boolean. Whether or not the object is replicated.</td>
</tr>
<tr>
<td>entry</td>
<td>owner</td>
<td>User name of the owner of the object. If there is no owner listed, the value is nobody.</td>
</tr>
<tr>
<td>entry</td>
<td>domain</td>
<td>Active Directory domain</td>
</tr>
<tr>
<td>entry</td>
<td>hasAcl</td>
<td>Boolean. Whether or not ACL is present for the object.</td>
</tr>
<tr>
<td>entry</td>
<td>state</td>
<td>Status is either created or deleted. Specifies whether the version contains data or is a marker indicating that the object was deleted.</td>
</tr>
</tbody>
</table>

### Status codes

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

<table>
<thead>
<tr>
<th>Code</th>
<th>Meaning</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>HCP successfully retrieved the directory listing. This code is also returned if the URL specified an object and HCP successfully retrieved the object.</td>
</tr>
</tbody>
</table>
| 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

```bash
curl -k -H "Authorization: HCP bXl1c2Vy:3f3c6784e975317774380db177774ac8d"
  "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:3f3c6784e975317774380db177774ac8d"])
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:3f3c6784e975317774380db177774ac8d
```

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"?>
<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="42C605FBFFCD7CEAC36BE62F29A374F94503D1DC1793736EF367..."
  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="E830B86212A66A792A79D58B8B185EE63A4FADA76BB8A1C257C01...
  retention="0"
  retentionString="Deletion Allowed"
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.