

IESO Reports Site – Access Interfaces for Confidential Reports

This document presents and describes the application programming interface (API) and SFTP for automating retrieval of confidential reports published by the IESO

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Access Interface - Web API

To build programmatic access with the Web API, the basic concepts of the HTTP/HTTPS access protocol will need to be understood by the programmer.

The sections below specify examples to retrieve confidential reports. The recommended programmatic access applies to confidential reports repository and not public reports. The market participant must have a valid user name and password in order to access the confidential report repository (upon request the IESO shall provide the market participant with a machine account).

The production URL for the confidential report repository HTTPS site is: <https://reports2.ieso.ca/>

The sandbox URL for the confidential report repository HTTPS site is: <https://reports-sandbox2.ieso.ca/>

1. Representational State Transfer (REST) API

The IESO Reports Site application programming interface (API) is provided by the SecureTransport product from Axway. This API is based on RESTful API queries to allow automation of retrieving private reports.

REST API calls are executed by a verb: GET, DELETE, PUT, or POST and a location, which is the REST resource. The REST API for the IESO Reports Site takes both JSON and XML as input, and can output either JSON or XML.

2. Examples

The examples outlined will be executed using cURL. You can use any HTTP(s) client - .NET HTTP, Perl's HTTP::Tiny or LWP::Simple, cURL, or Java HttpClient. A valid user name and password is required for each request to the API resource.

The examples will assume the machine account executing the API requests has the username of "username" and password of "password". These examples also assume the account is programmatically obtaining reports through the sandbox confidential report repository (<https://reports-sandbox2.ieso.ca/>).

2.1 List all directories and files in user's home folder

The HTTPS request below will provide a listing of all files and folders in the account's root folder.

Command

```
curl -k -u username:password https://reports-sandbox2.ieso.ca/api/v1.1/files
```

Output

The root folder has two sub folders: "subfolder1" and "subfolder2", both having the "isDirectory" attribute set to "true", which our single file "sample_file.xml" has it set to false.

Timestamps are stored as “epoch-time-milliseconds”.

```
{
  "files" : [ {
    "fileName" : "sample_file.xml",
    "lastModifiedTime" : 1428677940000,
    "size" : 5,
    "isDirectory" : false,
    "isRegularFile" : true,
    "isSymbolicLink" : false,
    "isOther" : false,
    "group" : "root",
    "owner" : "root",
    "permissions" : "644"
  }, {
    "fileName" : "subfolder1",
    "lastModifiedTime" : 1428678000000,
    "isDirectory" : true,
    "isRegularFile" : false,
    "isSymbolicLink" : false,
    "isOther" : false,
    "group" : "root",
    "owner" : "root",
    "permissions" : "755"
  }, {
    "fileName" : "subfolder2",
    "lastModifiedTime" : 1428678000000,
    "isDirectory" : true,
    "isRegularFile" : false,
    "isSymbolicLink" : false,
    "isOther" : false,
    "group" : "root",
    "owner" : "root",
    "permissions" : "755"
  } ]
}
```

2.2 List all directories and files in user`s subfolder

Appending the subfolder name to URL after the “files” resource will provide a listing of all files and folders in the specified subfolder.

Command

```
curl -k -u username:password https://reports-sandbox2.ieso.ca/api/v1.1/files/subfolder1/
```

Output

Our relative directory “/subfolder” has 1 file: “sample_file1.xml” and 0 subfolders. Also note the file has a file size stored in the “size” attribute of 17 bytes.

```
{
  "files" : [ {
    "fileName" : "sample_file1.xml",
    "lastModifiedTime" : 1428678000000,
    "size" : 17,
  } ]
}
```

```
"isDirectory" : false,
"isRegularFile" : true,
"isSymbolicLink" : false,
"isOther" : false,
"group" : "root",
"owner" : "root",
"permissions" : "644"
} ]
}
```

2.3 Get Properties of a file

To obtain additional properties of a file.

Command

```
curl -k -u username:password https://reports-sandbox2.ieso.ca/api/v1.1/files/subfolder1/sample\_file1.xml?status
```

Output

```
{
  "lastModifiedTime" : "1428678000000",
  "lastAccessTime" : "1428678000000",
  "isSymbolicLink" : "false",
  "size" : "17",
  "fileKey" : "(dev=fd01,ino=4134547)",
  "isDirectory" : "false",
  "isOther" : "false",
  "owner" : "root",
  "fileName" : "sample_file1.xml",
  "isRegularFile" : "true",
  "permissions" : "644",
  "creationTime" : "1428678000000",
  "group" : "root"
}
```

2.4 Download a file

Command

```
curl -k -u username:password -o localfile_download.xml https://reports-sandbox2.ieso.ca/api/v1.1/files/subfolder1/sample\_file1.xml
```

Output

The command above downloads a file **sample_file1.xml** from the remote `"/subfolder1"` directory to the current local directory, as the filename **localfile_download.xml**.

3. Additional Resource Materials

For more detailed information regarding the Web API provided, please refer to the documentation linked below. This gives details of all the parameters (options) that can be configured as part of the API request when requesting folders/files. Please note this is a modified version of the API documentation from Axway's SecureTransport product. It only lists functions exposed to the market participant. Functions that are not available were removed from the original documentation.

Axway SecureTransport API Doc: http://www.ieso.ca/reports_api/api/v1.1/docs/index.html

Access Interface - SFTP

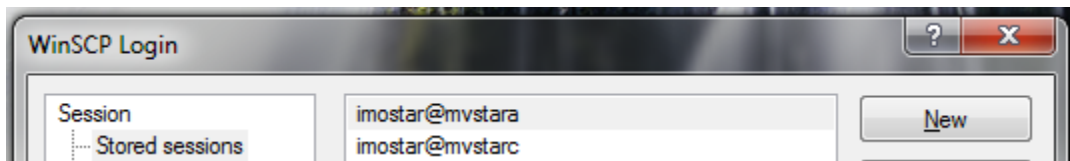
SFTP, which stands for SSH File Transfer Protocol, or Secure File Transfer Protocol, is a network protocol that provides secure file transfer functionality over the Internet. To download confidential reports using SFTP and a machine account, a participant must satisfy the following:

1. Have a valid machine account to access the IESO Reports Sandbox Site
2. Download and install the software which uses the SFTP protocol to transfer files securely to and from a computer
3. Configure your firewalls allow SFTP connections.
4. Test SFTP access to the new IESO Reports Sandbox Site

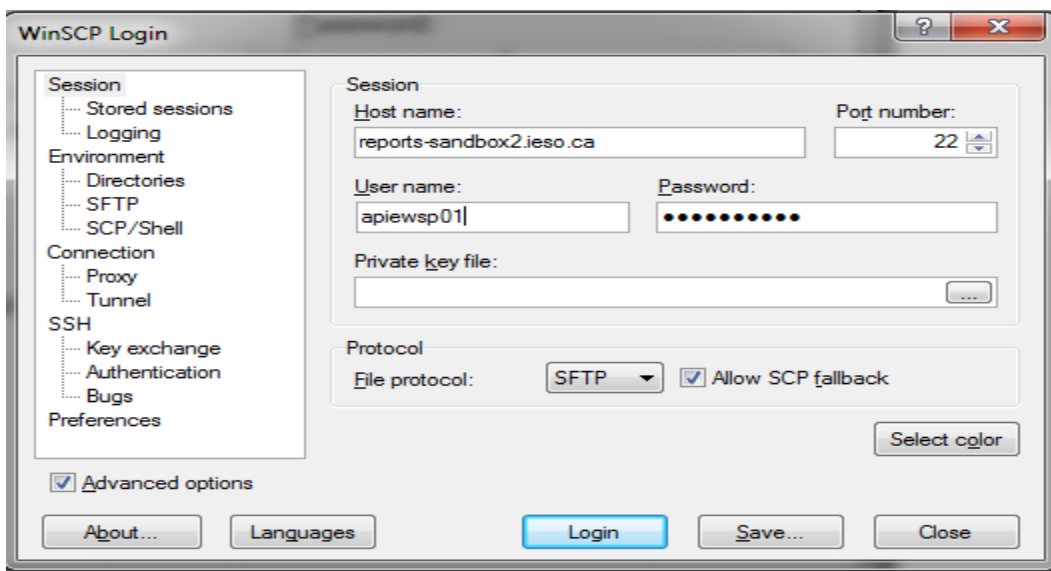
If required, please contact your organization's IT support group to setup your SFTP access to IESO private reports.

In the following example we configure "WinSCP" on Windows as the SFTP client program.

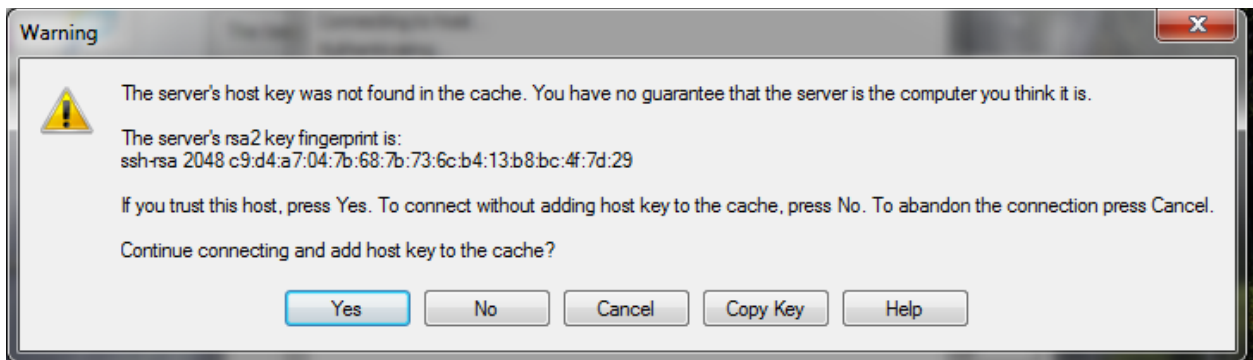
1. Start WinSCP, **Login** Dialog appears, click **New** to setup server connection



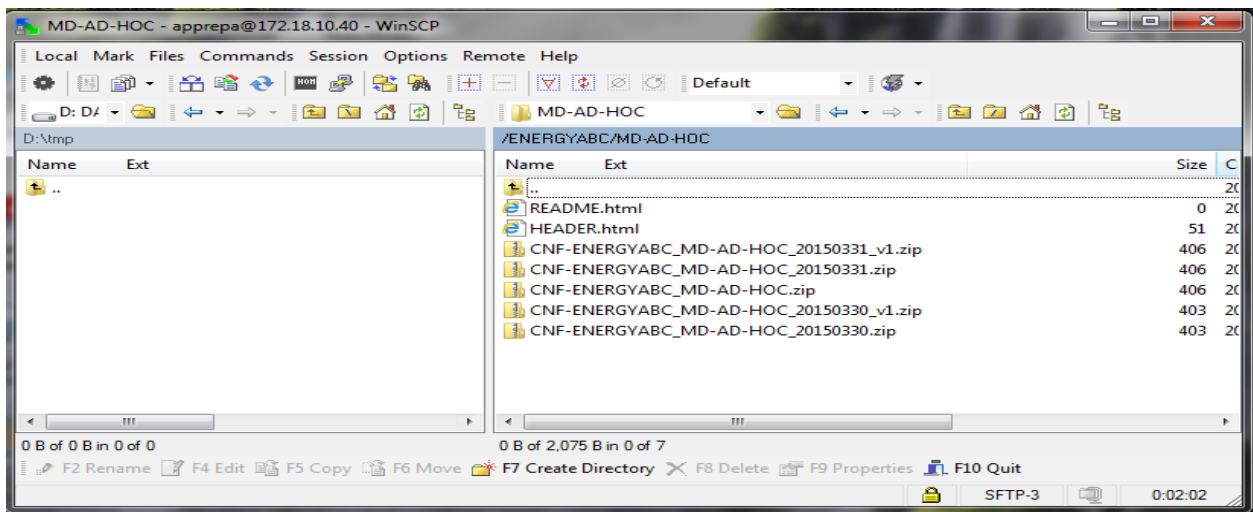
2. Enter **reports-sandbox2.ieso.ca** as Host Name, **22** as Port Number, select **SFTP** as File Protocol, your machine API account as User name and password for your machine API account. Click **Save** to save your settings or **Login** to connect to SFTP sandbox server



3. A confirmation box appears, click **Yes** to add server's host key to your computer. The server's host key must be added to the client for a SFTP connection to be successful.



4. The list of authorized report files and folders for your organization appears



5. Click on the report(s) you want to download, press F5 to download the report(s) to your selected local folder.