SFTP Guide
Transferring Data

This document is a User Guide for all engineers and support staff who are working in the chamber environment.

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INTRODUCTION

This document provides instructions on how to use SFTP to transfer files to and from your chamber. Secure FTP is the modern evolution of the original File Transfer Protocol. It uses SSH for secure logins and file encryption to ensure the safety of data in transit.

SFTP Clients

There are many free and/or open-source graphical SFTP applications available on the internet; any one of them will work well with your chamber. The only special setting to note is the port; *Cadence chambers use port 222 for SFTP connections.*

You may also use the built-in sftp/scp command-line applications native to your OS. These are already present for Mac and Linux, and optional in Windows; see below for installation instructions.

Connecting to the Chamber

Important: Just like with your remote desktop session, you must first authenticate to the chamber or connect with a VPN tunnel. See the Quick Start Guide for more information.

Launch your favorite SFTP application and create or open a session with these settings:

- Hostname   : *<utility_hostname_or_IP>*
- Protocol   : *SFTP*
- Port   : *222*
- Username   : *(your Cadence Unix username)*
- Password   : *(your Cadence Unix password)*

Once you have connected to the chamber with the SFTP client, you can then navigate your local and remote filesystems to copy files and directories as needed.

Note: Remember that copying data *to* your chamber is allowed for everyone. For the security of your data, copying data *from* your chamber is *not allowed* unless explicitly authorized by your chamber approver.

Using Console Applications

Alternatively, you can use the console *sftp* application to copy files, either interactively or in batch mode. The session settings are the same as above. Start your session with:

```
sftp -P 222 username@<hostname_or_ip>
```

Where *username* is your Cadence Unix username. Once inside the application, you can traverse and display your remote/local working directories with the `cd/lcd` and `ls/lls` commands. Then use `put/get` to upload/download files. Type `sftp --help` from the command line or *help* from within the interactive session for a full command list.

You can also use the *scp* application to copy files and folders to and from the chamber:

```
scp -P 222 local_file
username@<hostname_or_ip>:/path/to/target/
scp -P 222 -r local_dir
username@<hostname_or_ip>:/:/path/to/target/
```

Installing SSH in Windows

OpenSSH is an optional Windows-native component for running ssh/sftp/scp on the command line. It is installed by default in later Windows 10 versions, but you might need to install it yourself.

1. Open *Settings*, select *Apps > Apps & Features*, then select *Optional Features*.
2. Scan the list to see if the OpenSSH is already installed. If not:
   a. At the top of the page, select *Add a feature*, then
   b. Find *OpenSSH Client*, then click *Install*.

Once setup completes, return to *Apps > Apps & Features* and *Optional Features* and you should see OpenSSH listed.

Note: The OpenSSH binary files are in *c:\Windows\System32\OpenSSH*. You should restart your Command Prompt sessions for Windows to pick up the new path environment variable additions.

Using SFTP on a Mac

To support the ssh-rsa key algorithm on a Mac, you may need to add an additional argument to the scp command.

```
scp -P 222 -oHostKeyAlgorithms=+ssh-rsa local_file
username@<hostname_or_ip>:/path/to/target
```

Transfer Speeds

Cadence do not apply any bandwidth limiting to SFTP data transfers so if you experience any slowness then you can raise a support case and we will investigate this for you.

Addendum: Legacy SFTP Applications

Most modern SFTP applications will not require any special configuration beyond specifying the protocol and port. However, if you are using a legacy SFTP application, you may need to specify additional advanced settings for your connection. If present, please enable the following options:

- *Use Putty compatible SFTP*
- *Simulate ASCII mode for SFTP*
- *Use pipelining*

Again, this is generally not necessary for most SFTP client applications.