

# Transferring files to or from Hydra

This page explains how to copy files for your analysis to and from Hydra.

- File transfers can be done through (Linux/Mac) command line, using [scp](#), [rsync](#) or [sftp](#), or
- using a GUI application like [FileZilla](#) or [WinSCP](#) (etc, i.e., any tool that implements the scp or sftp protocol) While Cyberduck works, surprisingly, it uses a lot of CPU cycles (on Hydra), so we recommend that you use [FileZilla](#) or [WinSCP](#) instead, or just [scp](#), [rsync](#) or [sftp](#).
- Transfers to Hydra can only be initiated from "trusted" computers (i.e., you may need to enable VPN);
- Transfers from Hydra to your local machine are not limited to trusted destinations.

⚠ Files should always be copied directly to the `/pool`, `/data` or `/scratch` directories, not to your home directory (`/home`) because of space limitations. See [here](#) for more about data storage on Hydra.

These quick start instructions show how to configure [FileZilla](#) for file transfers, and a short introduction to [scp](#), [rsync](#) or [sftp](#).

## Using FileZilla

1. "FileZilla Client" is available for Mac, Windows and Linux systems. Mac screenshots are shown here, but use on other systems is similar.
2. Open the FileZilla application.
3. In the Quickconnect toolbar at the top of the window enter:
  - a. Host: `hydra-login01.si.edu` or `hydra-login02.si.edu`
  - b. Username: your Hydra username
  - c. Password: your Hydra password
  - d. Port: 22

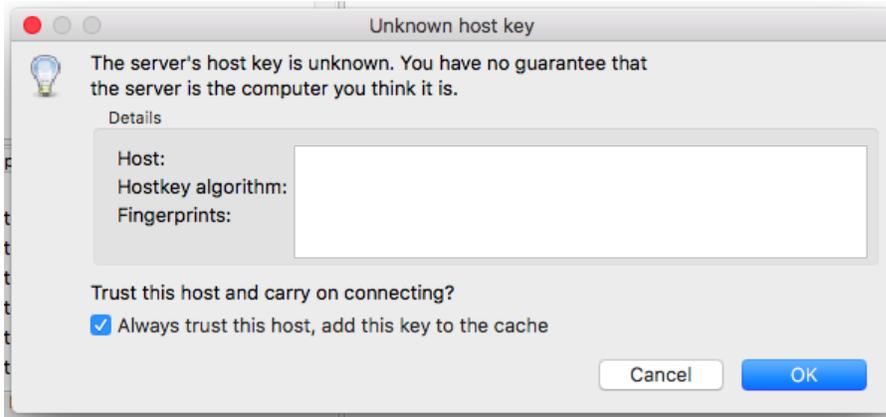


4. Press the "Quickconnect" button to start the connection.

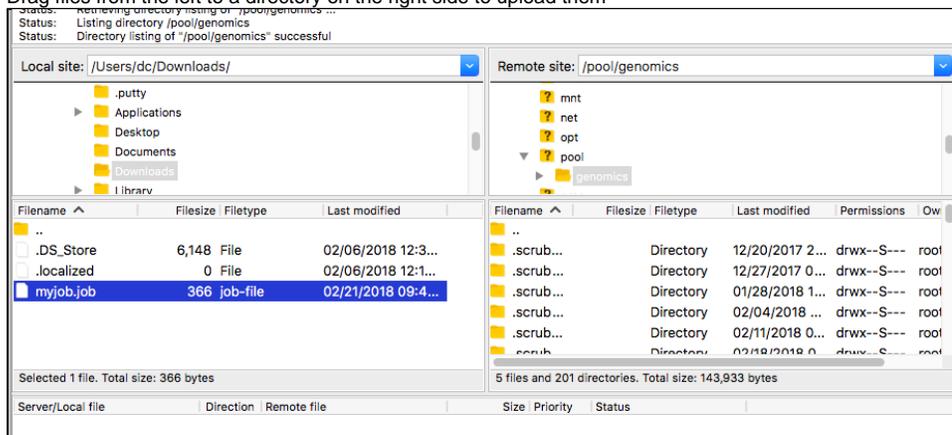
⚠ If you get a warning about Saving passwords, choose "Do not save Passwords" and then the OK button.



⚠ If you get a warning about Unknown host key, click the "Always trust..." checkbox and then the OK button.



5. The files listed on the left side of the window are on your local computer, those on the right are on Hydra.
  - a. Use the file tree on the left to navigate to the directory with your files to upload
  - b. For the destination on Hydra, enter the path of your destination in the "Remote site:" text box
  - c. Drag files from the left to a directory on the right side to upload them



## Using SCP

The command `scp` is available on any Linux or Mac machine. To access it from a Mac, start a terminal to get a Unix prompt.

Use the command `cd` to go to where the files you want to copy are.

### You can copy a local file with:

```
scp myfile remuser@hydra-login01.si.edu:/path/to/dest/
```

where:

- `myfile` is the file name you want to copy on your (local) machine,
- `remuser` is your Hydra username,
- `/path/to/dest` is the directory specification where you want the file copied (it must exist), like `/pool/genomics/kweskinm/big/stuff`

### You can copy multiple files with:

```
scp myfile1 myfile2 remuser@hydra-login01.si.edu:/path/to/dest/
scp myfile* remuser@hydra-login01.si.edu:/path/to/dest/
```

The command `scp` always copy the file(s), the option `-p` (like in `scp -p`) will preserve the date information of the file(s) copied.

And

### To copy from Hydra

```
scp remuser@hydra-login01.si.edu:/path/to/location/myfile .
```

### You can use wildcards (remote location), as follows:

```
scp 'remuser@hydra-login01.si.edu:/path/to/location/myfile*' .
```

To learn more about [scp](#), read the manual page ([man scp](#)).

## Using RSYNC

The command [rsync](#) is available on any Linux or Mac machine. To access it from a Mac, start a terminal to get a Unix prompt.

It synchronizes files between two hosts (machines), so it will not copy files that exists already and are up-to-date: it will copy a file if the one on the remote location is older.

Use the command [cd](#) to go to where the files you want top copy are.

### Examples of copying to Hydra:

```
rsync myfile remuser@hydra-login01.si.edu:/path/to/dest/  
rsync myfile1 myfile2 remuser@hydra-login01.si.edu:/path/to/dest/  
rsync myfile* remuser@hydra-login01.si.edu:/path/to/dest/
```

And

### From Hydra to your local machine:

```
rsync remuser@hydra-login01.si.edu:/path/to/location/myfile .  
rsync 'remuser@hydra-login01.si.edu:/path/to/location/myfile*' .
```

The difference with [scp](#), is that [rsync](#) will only copy what is new,

### so you can do:

```
rsync * remuser@hydra-login01.si.edu:/path/to/dest/
```

to synchronize the content of the current working directory.

Use the option '-n' (like in [rsync -n](#)) to check what [rsync](#) will do (it will list what will be copied, but not do it).

Three more useful options are:

- [-a](#) - archive mode (equals [-rlptgD](#)). It is a quick way of saying you want recursion and want to preserve almost everything (with [-H](#) being a notable omission).
- [-z](#) - compress file data during the transfer (speed up)
- [-v](#) - verbose mode

that can be combined as [rsync -azv](#)

To learn more about [rsync](#), read the manual page ([man rsync](#)).

## Using SFTP or LFTP

You can also use the command [sftp](#) or [lftp](#) to copy files, it is also available on any/most Linux or Mac machine.

To access it from a Mac, start a terminal to get a Unix prompt.

Use the command [cd](#) to go to where the files you want top copy are.

**For example:**

```
sftp remuser@hydra-login01.si.edu
sftp> cd /path/to/dest/
sftp> put myfile
sftp> get myresults
sftp> exit
```

The main `sftp` commands are `cd`, `lcd`, `put` and `get`:

- `cd` - change the directory on the remote host,
- `lcd` - change the directory on the local host,
- `put` - copy a file from the local host to the remote one,
- `get` - copy a file from the remote host to the local one.

To learn more about `sftp` or `lftp`, read the manual page (`man sftp`, `man lftp`).

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