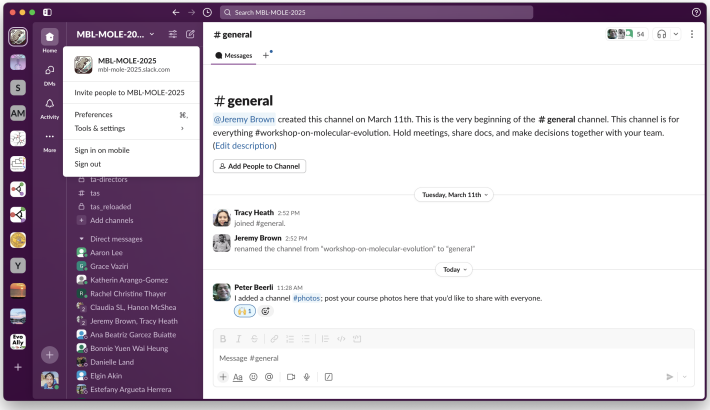
Wi-Fi Login

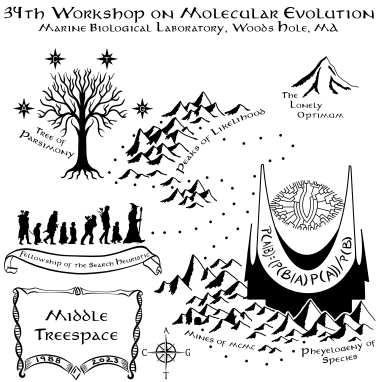
Wi-Fi: MBL-GUEST
Password: mblguest

Slack workspace



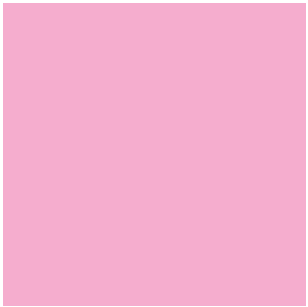
- Communication through class slack channel: **MBL-MOLE-2025**
- If you have lost your invitation to join this workspace, please ask one of us

T-shirts design competition



- Workshop participants and faculty hold a competition to decide the t-shirt design
- Design due **27 May, Tuesday night**, submit to **#t-shirts** channel on Slack

Post-its



- **GREEN:** I am done!
- **PINK:** I need a help!

Goals

- Log in to the class Virtual Machine (VM)
- Navigate and understand the directory structure
- Create and edit files and directories on the cluster
- Move files to and from the cluster

Downloads*

Windows:

- Cyberduck
- Git for Windows
- Notepad++
- Seaview
- FigTree
- Tracer

Mac:

- Cyberduck
- BBEdit
- Seaview
- FigTree
- Tracer
- iTerm2 (optional)

Linux:

- Seaview
- FigTree
- Tracer

- **https://molevolworkshop.github.io/labs/intro/** > Downloads section
- Other software we will be using are accessible on the virtual machine (VM)

SSH and sFTP

- You will interact with your VM by typing commands into a terminal window
- The cluster we will be using is from the Jetstream2 project at Indiana University

Connecting to SSH

1. Log in to your VM
   - **Mac:** Open *terminal* or *iTerm2* (in /Applications/Utilities)
   - **Linux:** Open *Konsole (KDE)* or *gnome-terminal (GNOME)*
   - **Windows:** Open *Git for Windows* → choose **Git BASH** from the **All Programs** of the **Start** menu

Login to your particular VM using the IP address on the sticker attached to the back of your name tag.

Connecting to SSH*

1. On terminal, type:
`ssh moleuser@123.123.123.123`

2. It will ask for a password, so type the current password (`mbl@woodshole`) and log-in

3. Then, once in VM, type:
`passwd`

4. When the prompt asks for the current password, re-type the password used above.

5. It will then ask for a new password. Here, participant can set their own password.

6. Re-type the new password; done

Basic syntax

Unix commands follow the general format of:

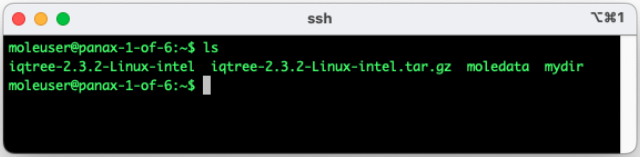
```
command -options target
```

- Not all commands need options or targets.
- Options (or flags) are generally preceded by a dash (-)

Basic syntax: Examples

`mkdir mydir`

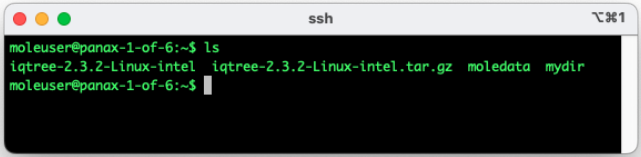
`mkdir mydir` uses the **command** `mkdir` (make directory) and creates the **target** folder `mydir` in the current directory.



Basic syntax: Examples

`cd mydir`

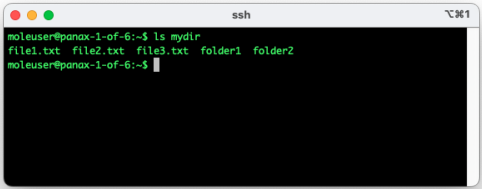
`cd mydir` uses the **command** `cd` (change directory) and the **target** `mydir` to move from the current directory into the subdirectory called mydir.

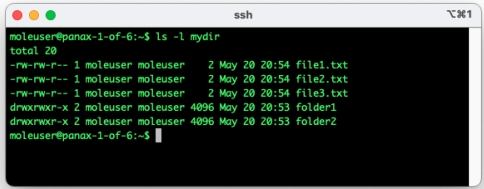


Basic syntax: Examples

`ls -l mydir`

`ls -l mydir` uses the **command** `ls` (list), the **option** `-l` for long-list, and the **target** `mydir` to list the contents of mydir in the long list format, which provides more thorough descriptions than *without* the **option** `-l` .





Useful commands

Linux/Mac	Description	Syntax (Linux/Mac)
`pwd`	print working directory	**pwd**
`ls`	list directory contents	**ls**
`history`	display command history	**history**
`cd`	change directory	**cd** *directory-name*
`mkdir`	create directory	**mkdir** *directory-name*
`cp`	copy file(s)	**cp** *original-filename copied-filename*
`mv`	rename file(s)	**cp** *original-filename new-filename*
`clear`	clear the screen	**clear**
`exit`	quit command line	**exit**
`Ctrl+E`	go to the end of line	
`Ctrl+A`	go to the beginning of line	

More on syntax for directory structure

- Two dots (..) represents the parent directory of the present working directory. So, for example, `cd ..` will move you back one directory
- One dot (.) represents the present working directory. So, for example, `cd .` will keep you where you are. There are times where the single dot can be useful
- The tilde (~) represents your home directory. On your virtual machine, your home directory is `/home/moleuser`. The tilde is very helpful if you get lost while using the terminal – just type `cd ~` and you'll be back in your home directory.
- A forward slash (/) delimits a root folder and the folder that it contains

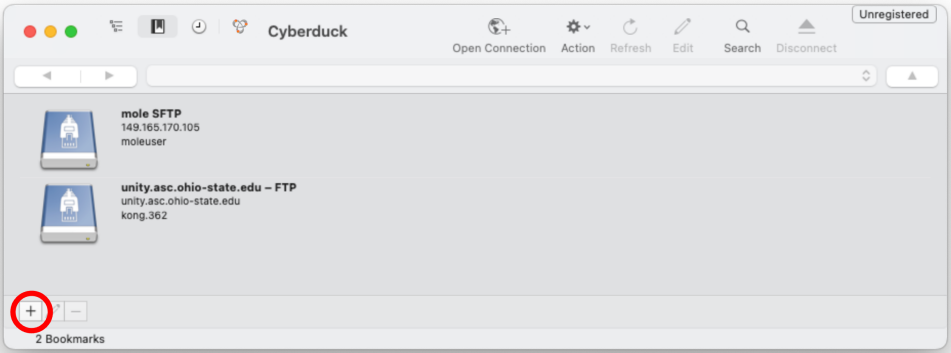
Intro-to-Unix tutorial*

- Next, you will learn how to do the following using the command line:
  - Navigation
  - Copying, renaming, and moving files
  - Downloading files from the VM
  - Creating an alias for the example data directory

- Please go to the Linux tutorial and go through the step by step guide there:
  `https://molevolworkshop.github.io/linux-tutorial/`

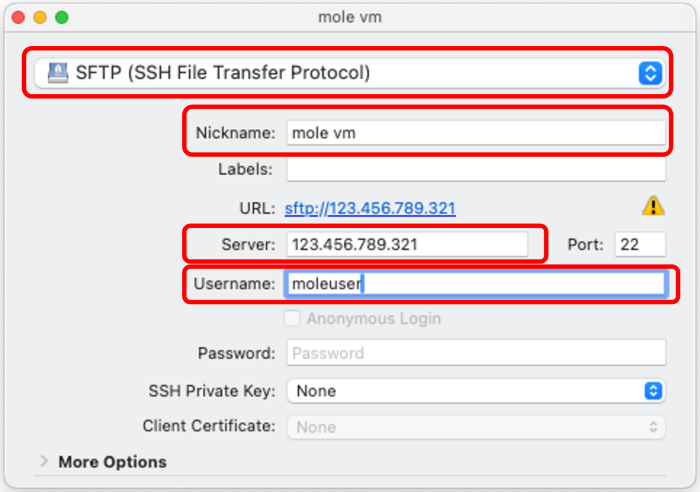
Setting up Cyberduck

Creating a bookmark

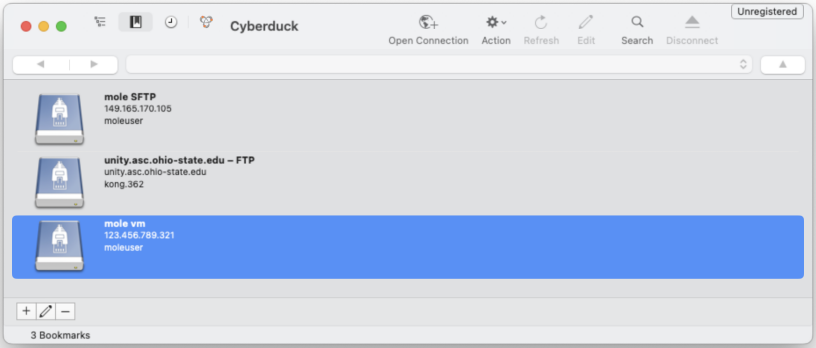


- Click the + button at the BOTTOM LEFT to create a new bookmark

Creating a bookmark

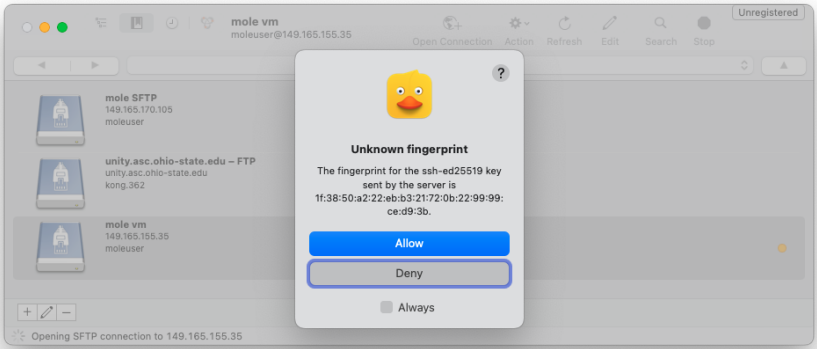


Creating a bookmark



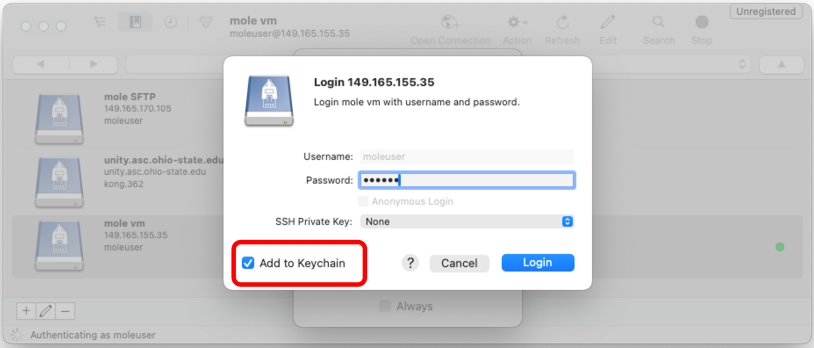
- A new bookmark should have appeared named whatever you set as the nickname. **Double click** on this.

Unknown fingerprint?



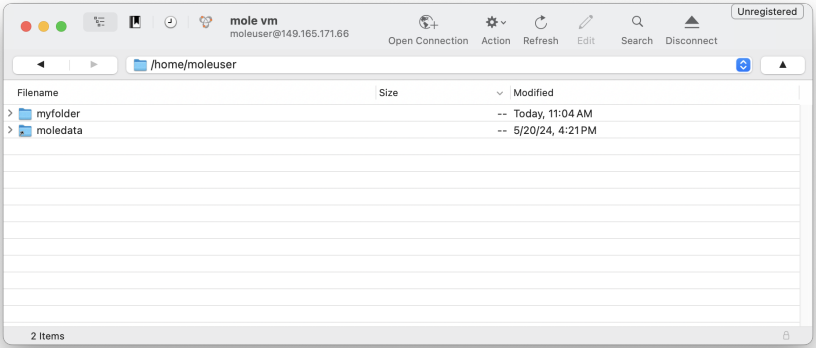
- Just press the **Allow** button; This would only be a concern if you see it a second time

Creating a bookmark



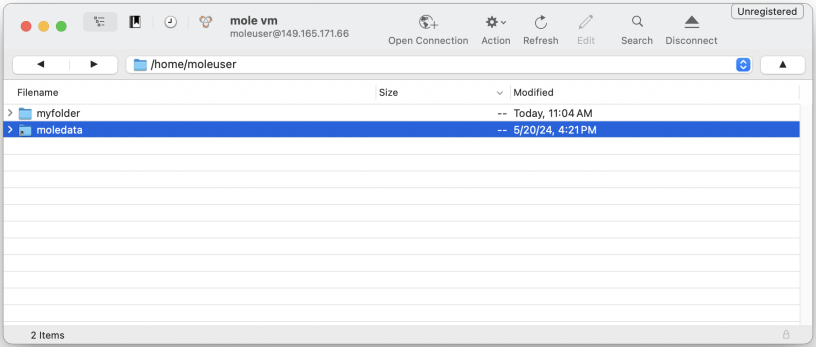
- Type in the password you created earlier; **make sure the box is ticked**
- This may connect you directly to the virtual machine. If not double click on the bookmark again.

Creating a bookmark



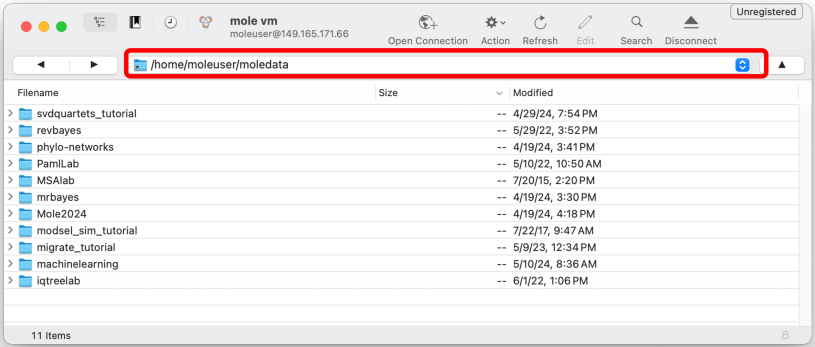
- You now should see your home directory on the cluster
- You should see the folder named `myfolder` that we created earlier in the Unix-tutorial

Navigating



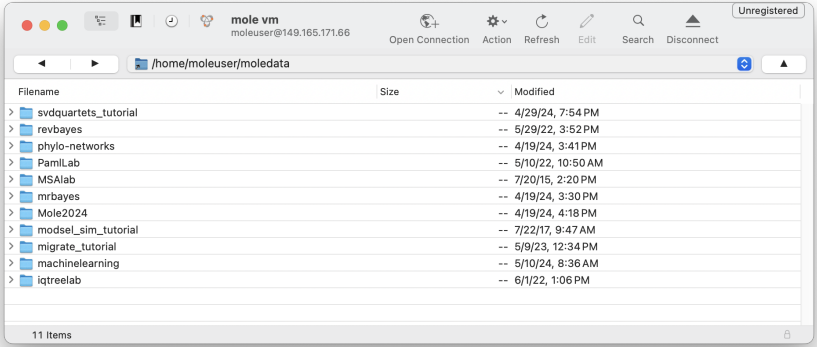
- Double click on a folder to open

Navigating



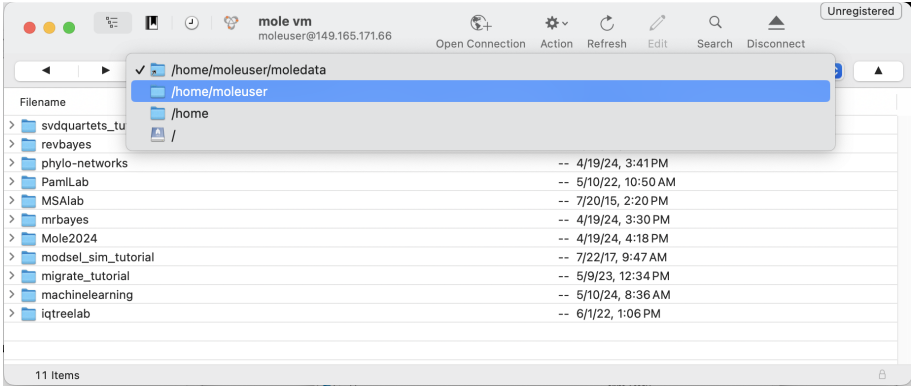
- This tells you where you are in the virtual machine's directory structure

Navigating



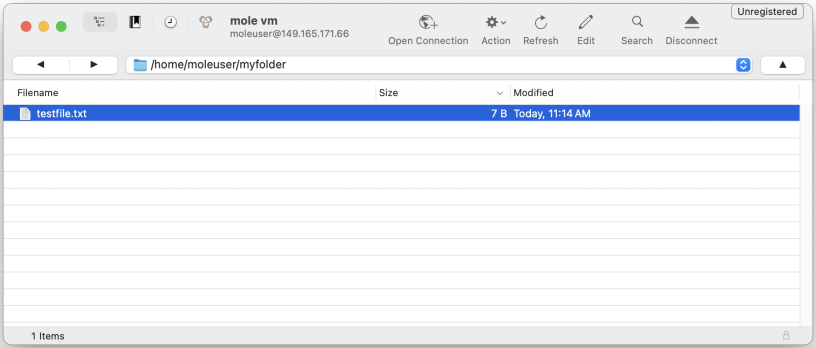
- Clicking on any of these intermediate directories will allow you to navigate to that directory

Navigating



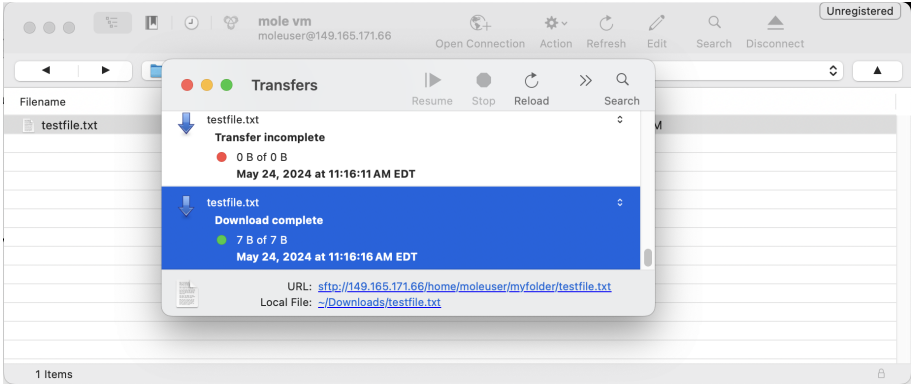
- If you get lost in folders, select `/home/moleuser` to return to your home directory

Transferring



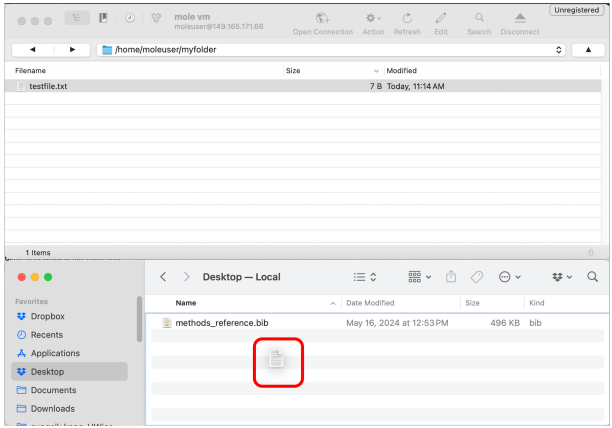
- Double click on a file name

Transferring



- A transfer window should open up
- At the bottom, the location of that downloaded file on your own computer is printed

Transferring



- An easier way is through drag and drop
- You also can do this in the reverse (drag a file from finder/explorer to Cyberduck) to place a file on the cluster in that folder

Using scp alternative to Cyberduck to transfer files

```
scp source target
```

1. Move to the folder (on your local computer) containing the file you wish to transfer to VM. Then type:

```
scp testfile moleuser@123.456.789.321
```

2. You could also copy the file to a subdirectory:

```
scp testfile moleuser@123.456.789.321:myfolder/
```

Using scp alternative to Cyberduck to transfer files

3. To get files from your VM to your local computer, type (from your local computer:

```
scp moleuser@123.456.789.321:testfile .
```

The dot at the end is significant: it stands for your present working directory (on your local computer).

Creating alias for moleuser@123.456.789.321

1. Create, if necessary, a text file on your local computer as follows:

```
nano ~/.ssh/config
```

2. Enter the following text in this file and save (tab indent in second and third lines):

```
Host molevm
     HostName 123.456.789.321
     User moleuser
```

3. Now make sure that your config file has the proper permissions:

```
chmod 600 ~/.ssh/config
```

4. You should now be able to do this:

```
scp testfile molevm: or scp testfile molevm:myfolder/
```