# Wi-Fi Login



#### Wi-Fi: MBL-GUEST Password: mblguest

Workshop on Molecular Evolution

#### 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

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# 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!

- 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)

## $\mathsf{SSH} \text{ and } \mathsf{sFTP}$



- 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

Log in to your VM

- ▶ Mac: Open *terminal* or *iTerm*2 (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

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 -1 mydir uses the **command** ls (list), the **option** -1 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** -1.



### 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
ср	copy file(s)	<b>cp</b> 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, <u>cd</u>... will move you back one directory
- One dot (.) represents the present working directory. So, for example, <u>cd</u>. 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 <u>cd</u> ~ 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



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

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

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

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	<b>mole vm</b> 149,165.155.35	SSH Private Key: None	
	moleuser	Add to Keychain  Cancel Login	
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- 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.

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- 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

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• Double click on a folder to open

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

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

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

# Transferring

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• 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

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

• 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

**O** Create, if necessary, a text file on your local computer as follows:

nano  $\sim$ /.ssh/config

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

Host molevm HostName 123.456.789.321 User moleuser

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

chmod 600  $\sim$ /.ssh/config

You should now be able to do this:

scp testfile molevm: or scp testfile molevm:myfolder/