1. **Getting Started with MSI**

**VPN** (necessary to work off campus)

Set up Windows native VPN as described [https://it.umn.edu/services-technologies/virtual-private-network-vpn?km=]

**(Recommended, PC only) Notepad++**

[https://notepad-plus-plus.org/] *Like notepad, but useful. Also can do column selection – very useful.*

**WinSCP (PC only)**

Download and install WinSCP [https://winscp.net/eng/docs/guide\_install] and PuTTY [https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html].



Host name: **mangi.msi.umn.edu**

User name: x500 (e.g. cmstaley)

Password: password

Click ‘Advanced’

Select Tunnel and check “Connect through SSH tunnel”

Re-enter the above information.



The first time you log in, you have to click “yes” a few times.

**Filezilla (for Mac)**

[https://www.msi.umn.edu/support/faq/how-do-i-use-filezilla-transfer-data]

**WinSCP operation** (similar on FileZilla)



**D**

**C**

**B**

**A**

1. Local directory (your computer)
2. MSI directory
3. Current location
4. Click to open a new directory

*Any data stored on your home directory (/panfs/roc/groups/8/cmstaley/) counts against the collective group space, which is limited and provided by specific request. For temporary processing, navigate to /panfs/roc/scratch/ and create your own directory there. This is free space to use for processing. Transfer anything you want to keep back to the home directory.*

**PuTTY (PC only)**

*To actually work on the supercomputers, open PuTTY (ctrl + P or ‘Open in PuTTY’ under Commands).*

**Terminal (Mac only; part of the default computer software)**

*You will start at a prompt ($ means prompt, do not type it):*

$ ssh -Y username@mangi.msi.umn.edu

***Once logged in…***

You start in your home folder in your default group. See below for operational commands.

*Basic commands:*

$ cd /path/to/directory/ Changes directory

$ mkdir Create directory

$ cp filename1.ext filename2.ext Changes a filename without deleting original

$ cp file1.ext /new/directory/file1.ext Copies file to a new directory

$ mv filename1.ext filename2.ext Changes a filename deleting original

$ mv file1.ext /new/drectory/file1.ext Moves a file to a new directory

$ ls List all files in a directory

*Most software is available as modules.*

*To access R:*

$ module load R

$ R

*To access mothur:*

$ module load mothur/1.41.1 (*The default is ver. 1.33.3, which is really buggy)*

$ mothur

*To view all software, first search of MSI website. To see which versions are available*

$ module avail *module*

*There are default resources on all the computers e.g., a job will get killed if a single command takes more than 20 min or exceeds 8 gb on the lab servers. Additional info here [https://www.msi.umn.edu/queues]. To request additional resources once logged onto a server:*

srun -N 1 --ntasks-per-node=4 --mem-per-cpu=1gb -t 12:00:00 -p interactive --pty bash

**Job files**

*Submitting a non-interactive job requires a job file. This file should be written in Notepad, switch ‘save as type’ to ‘all files’ and save the file as name.job. The job file looks like:*

#!/bin/bash -l

#SBATCH --time=96:00:00

#SBATCH --ntasks=4

#SBATCH --mem=24g

#SBATCH --mail-type=ALL

#SBATCH --mail-user=cmstaley@umn.edu

cd /panfs/roc/scratch/cmstaley/

module load mothur/1.41.1

mothur data.batch