

# Computing on Clark and More Parallel Computing

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## Section 1: Connecting to Clark with mobaXterm

1. Visit <https://missouri.app.box.com/v/rcss-mobaxterm-new> and download both files into your downloads folder.
2. Run the .exe file, accept all defaults for installation.
3. Open mobaXterm and click “Start Local Terminal” This will open a command interface for you to connect to Clark with.
4. Generate a ssh key:
  - i) In your terminal type `ssh-keygen`.
  - ii) Accept all defaults by pushing enter. Do not enter a password.
  - iii) You only need to do this once!
5. Connect to Clark

- i) In your terminal, type `ssh <username>@clark.rnet.missouri.edu`  
Replace `<username>` with your pawprint.

```
11/02/2021 13:47.59 /home/mobaxterm ssh jdp6n8@clark.rnet.missouri.edu
Enter passphrase for key '/home/mobaxterm/.ssh/id_rsa':
```

- ii) Do not include brackets, for example `ssh jdp6n8@clark.rnet.missouri.edu`
- iii) When prompted for your password, enter your university password. **NOTE THAT WHAT YOU TYPE DOES NOT SHOW UP IN THE TERMINAL** You should then see something like this:

```
* *****
* Welcome to clark-r630-login-node907.cobalt.lan, CentOS, 7.9.2009
* Archive of news is available in /etc/motd-archive
* University of Missouri Division of IT Research Computing Support Services
*
* Use of this system is governed by the rules and regulations of the
* University of Missouri and the University of Missouri System and also
* by requirements of various granting agencies.
*
* Users must be familiar with and abide by the UM System acceptable use
* policy (CRR 110.005) and the UM System Data Classification System (DCL).
* http://umsystem.edu/ums/rules/collected_rules/facilities/ch110
* http://umsystem.edu/ums/is/infosec/classification
*
* Helpful Links
* News: http://doit.missouri.edu/research/research-computing-news
* Support: rcss-support@missouri.edu
* Announcement list: https://po.missouri.edu/cgi-bin/wa?A0=rcss-announce-l
* Training: http://docs.rnet.missouri.edu/training
* Documentation: http://docs.rnet.missouri.edu/
* *****
[jdp6n8@clark-r630-login-node907 ~]$
```

## Section 2: Linux commands on Clark

### Need to add data copy

Watch **this video** if you are not familiar with bash/linux commands. These will be useful in mobaXterm and Clark.

**Question 2.1** In your own words, provide a description of what each of the following bash terminal commands do (google is your friend):

- pwd
- ls
- cd
- touch
- rm
- cat
- cp
- mv
- mkdir

**Question 2.2** In your home directory, create a folder named **hw4** and in it create a file name **test.txt**. Screenshot the output of **ls** in this directory (Hint: windows users hold **windows button + shift + s**)

When you log into Clark, you are logging into part of a computer cluster called a *node*. Every time, you start out in the *login node*. Here, you can perform basic tasks like making folders and files, but more data intensive tasks, like running R or NCL, must be done on a compute node.

To request a node for this task, type this into your terminal: **srun -n 1 --mem 4G --pty /bin/bash**  
Notice the node name at your command line changes!

To load the rstudio software, type **module load rstudio/1.1.456**  
Next, type **rstudio**