

LAB0 Quick Start Guide

14-513/18-613 Introduction to Computer Systems - Summer 2020

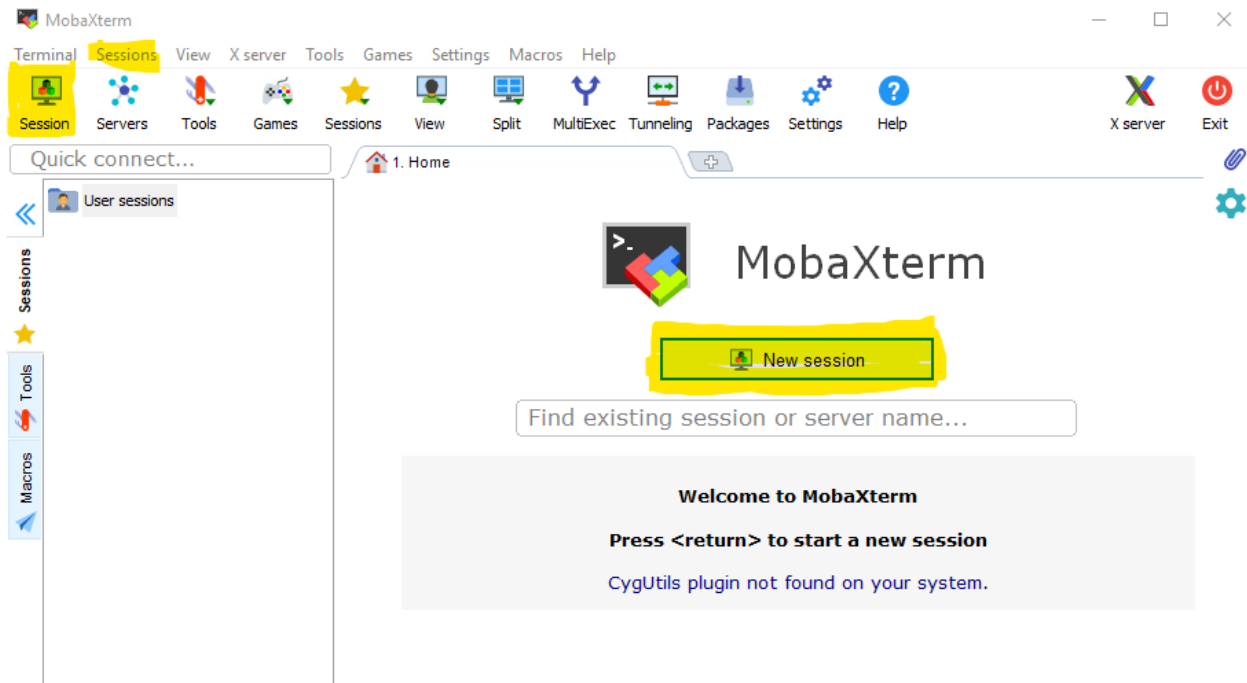
Step 1 - Accessing the Shark Machines

Steps for Windows Users

1. Install the SSH client of your choice, for this tutorial we are going with **MobaXterm**.

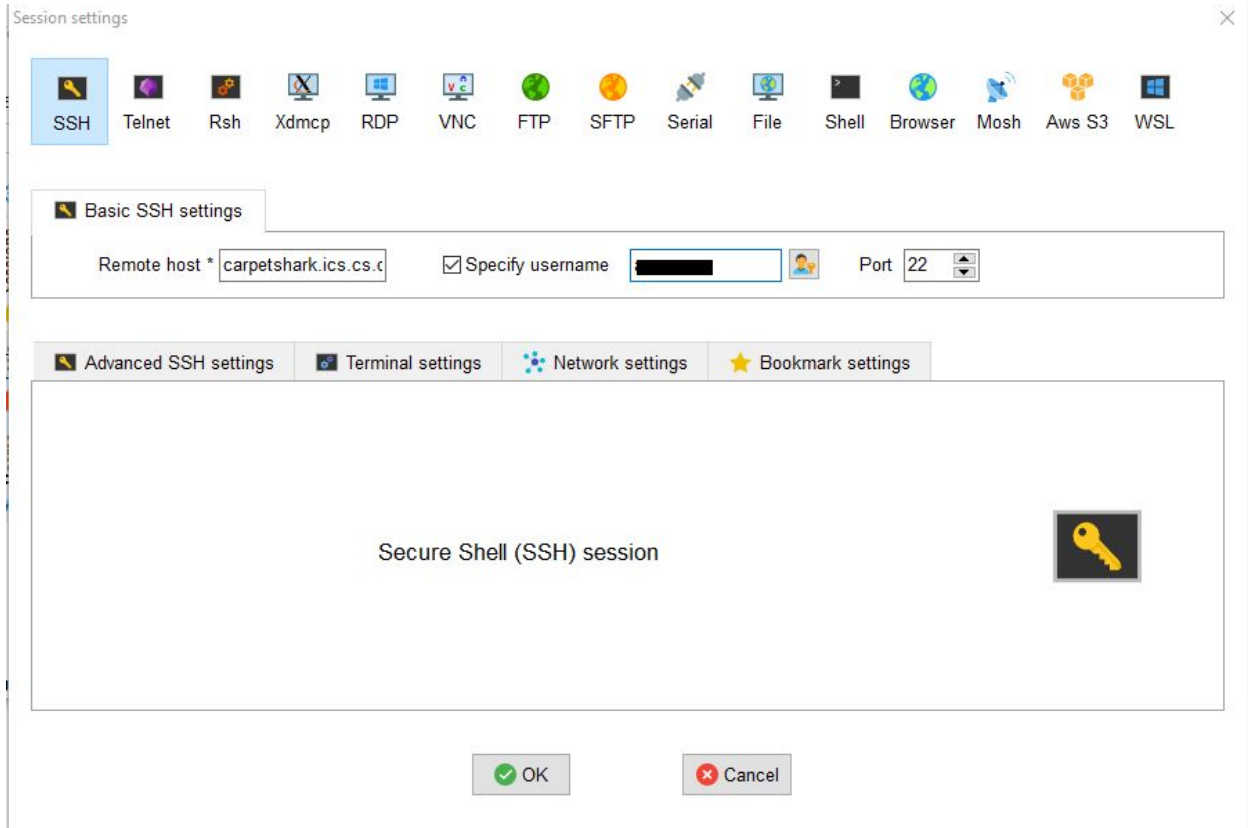


- a. Log on to <https://mobaxterm.mobatek.net/download-home-edition.html>
- b. Select the free MobaXterm Home Edition (Installer Edition)
- c. Download and Install.



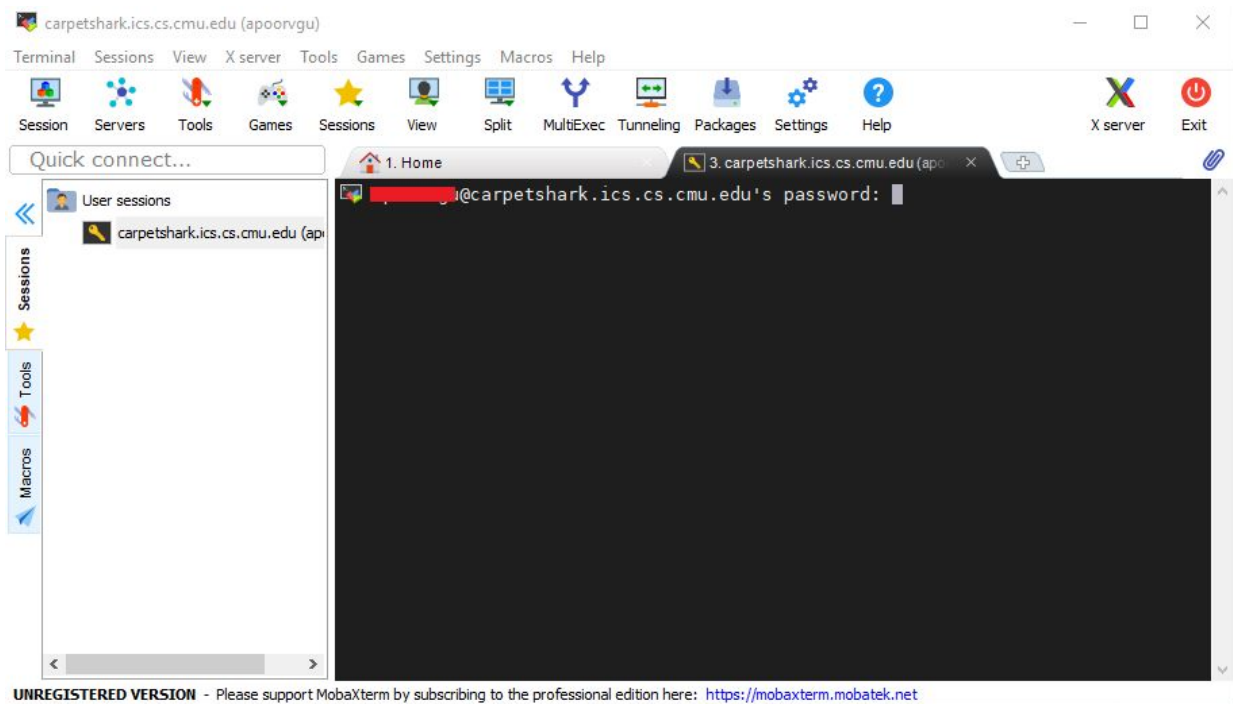
UNREGISTERED VERSION - Please support MobaXterm by subscribing to the professional edition here: <https://mobaxterm.mobatek.net>

2. Open a new SSH session
 - a. Specify the name of the desired shark machine as the remote host. For us we chose **carpetshark.ics.cs.cmu.edu**.
 - b. Specify your Andrew ID as the username.
 - c. Press OK and open the session



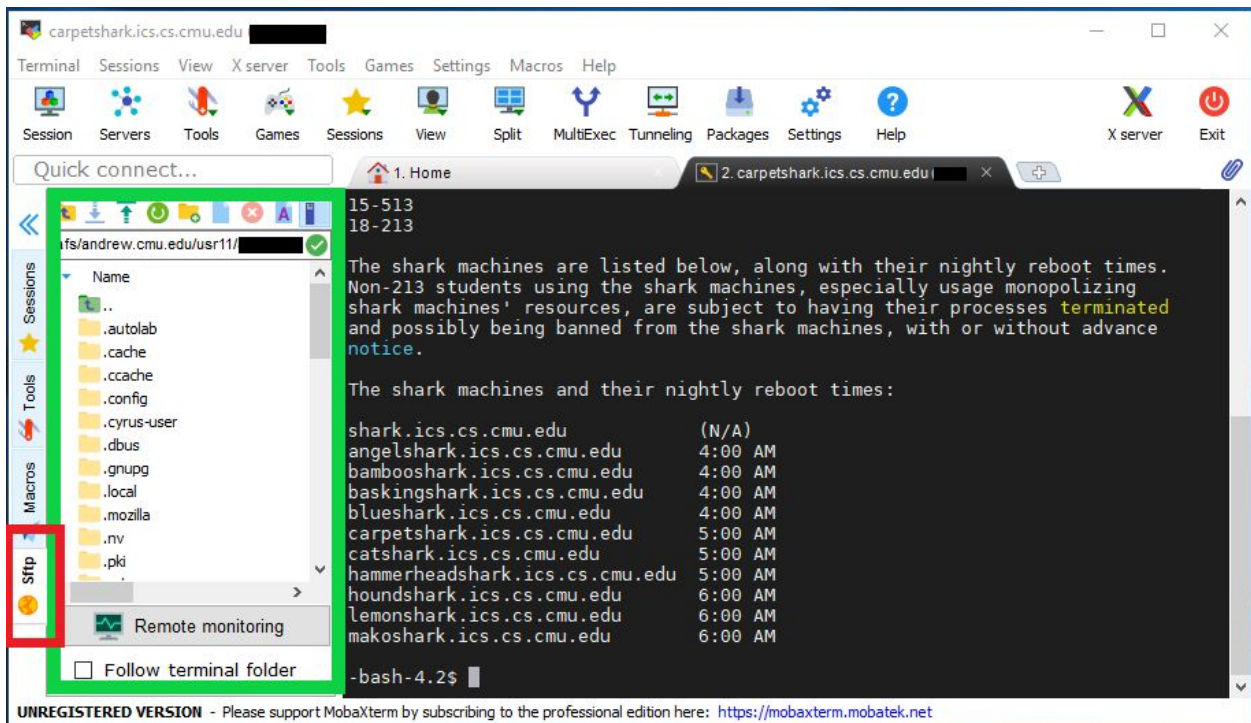
3. Log on to the Shark Machine

- The terminal will open, enter the password for your andrew account.
- This opens a bash terminal on the Shark Machine.



4. Copying your Local files to AFS

- a. Files can be transferred between the running session (i.e. shark machine) and local file system using the SFTP file browser (green).
- b. Use the upload and download commands as you see fit.
- c. If it is not enabled, it can be enabled by editing the session settings and choosing SFTP protocol as the SSH browser type.



Steps for Mac Users

1. SSH into Shark machines (Note: Shark machine cluster is used only for ICS course)

```
$ ssh yourAndrewID@shark.ics.cs.cmu.edu
```

(Sometimes, shark.ics.cs.cmu.edu does not resolve, try using below)

```
$ ssh yourAndrewID@[yourchoice]shark.ics.cs.cmu.edu
```
2. List of Shark machines is listed on the course website under "Lab machines" in case you are not able to connect to one of the hosts.
3. If it still fails, try using [VPN from CMU](#)
4. Type your password when prompted
5. If you see a warning about SSH host keys, enter "yes".
6. All Shark machines access the same Andrew File System (AFS)

7. To move a FILE from local machine to DESTINATION folder on shark machine (technically AFS), using Command Line (FILE should be in present working directory, pwd, else provide the path relative to pwd OR absolute path starting with /):

```
$ scp FILE AndrewID@shark.ics.cs.cmu.edu:DESTINATION
```

8. You can also use [Fetch](#).
9. Use command "man tar" to read on how to extract and archive a tar file.

Step 2 - Compiling and running your code

1. Accessing lab0 files
 - a. Place the handout tar file downloaded from from the course website in a directory of your choice (maybe mkdir?) inside the **private** directory.
 - b. Inside the same directory untar the files using

```
$ tar -xvf cprogramminglab-handout.tar
```
 - c. Change to the starter code directory

```
$ cd cprogramminglab-handout/
```
2. Compiling and testing your code
 - a. Run make to compile your code

```
$ make
```
 - b. To test your code manually (enter commands)

```
$ ./qtest  
cmd> help
```
 - c. To test your code for correctness (automatic like autolab)

```
$ ./driver.py
```

Note: Test all your code on shark machines to avoid surprises.

Step 3 - Final and the most important step

READ THE HANDOUT, save time and avoid mistakes by reading the handout properly. Highly recommended!

Note: If you are facing issues like connecting to shark machines or facing problems setting up a proper work environment, please feel free to contact a TA.

WARNING: All files related to the labs of the course should be located within the private directory (accessible only by you) to avoid unintentional AIVs.

-Quick References and tips:

- Do go through the "Resources" section on the course website. It has some really useful links like Basic Linux and [C tutorials](#), Linux/Unix commands, vim keymap, etc. <http://www.andrew.cmu.edu/course/18-613/resources.html>
- Quick links on [Bash](#) and [Git](#)
- More information on Shark Machines: <http://www.andrew.cmu.edu/course/18-613/labmachines.html>
- Once you are into shark machines, you can either choose to use terminal editors like vim, emacs, nano, etc OR you can use known IDEs like VS Code or Atom and use their SFTP packages to connect to shark machines (which in turn will access your AFS). Since P0 code is not too long, you can easily work on terminal editors.
- Try the command `vimtutor` to get started on vim.
- VIM Cheat sheet: <http://bit.ly/2cl0lJ0>
- Run `make` commands in the directory where you see a Makefile. It is a configurable build system often used to compile your code.