Remote Connection Tutorial

This guide instructs how to remotely access the linux computing machines. You are able to access the linux operating system via SSH connection on your PC or mac. However, the display resolution ratio and the delay may be annoying.

Obtain an ECE account

You need the ECE login for both linux lab machines and remote access. If you don't have an ECE login yet, visit the following website or contact the computing staff in person.

https://vannevar.ece.uw.edu/computing/faq/new_account.html

Selecting the shell

From the link below, change the shell from **bash** to **tcsh**. The fourth annotation in the last section Additional Information shows how to verify the shell.

https://user.ee.washington.edu/user

***IMPORTANT PLEASE READ IF YOU ARE USING THE VNC INTERFACE**

The web service is currently down. There are 2 options for changing your shell:

1. Change your terminal's preferences – This is the preferred method because you only need to do it once and all your subsequent terminal shells will be automatically changed to the tcsh.

While connected to the servers in a VNC session, open a terminal and click edit > preferences, as shown in Figure 0 below. This opens the Terminal Preferences window.

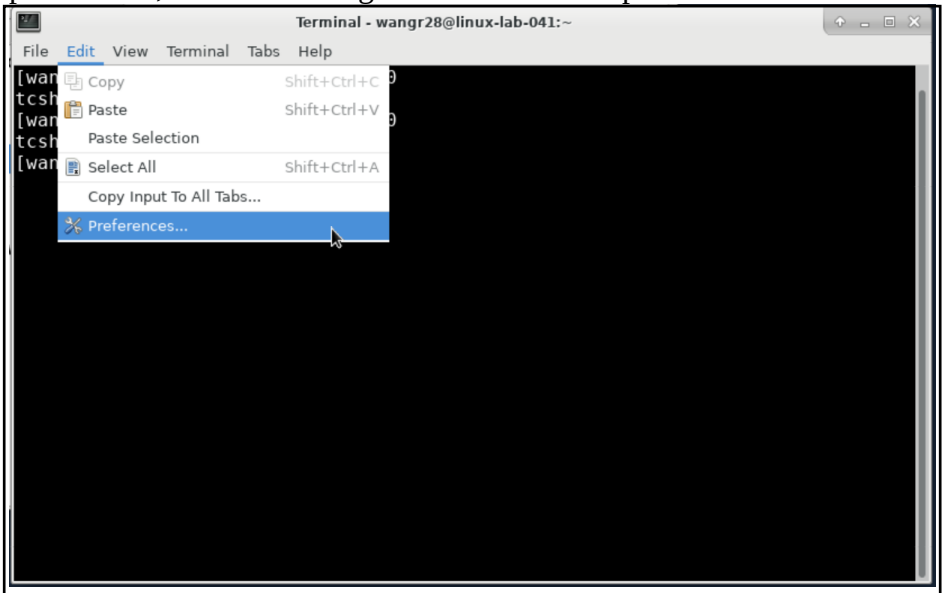

Figure 0

In the Terminal Preferences window, check the “Run a custom command instead of my shell” box, and enter “/usr/bin/tcsh” into the text box as shown in Figure 0.1 below.

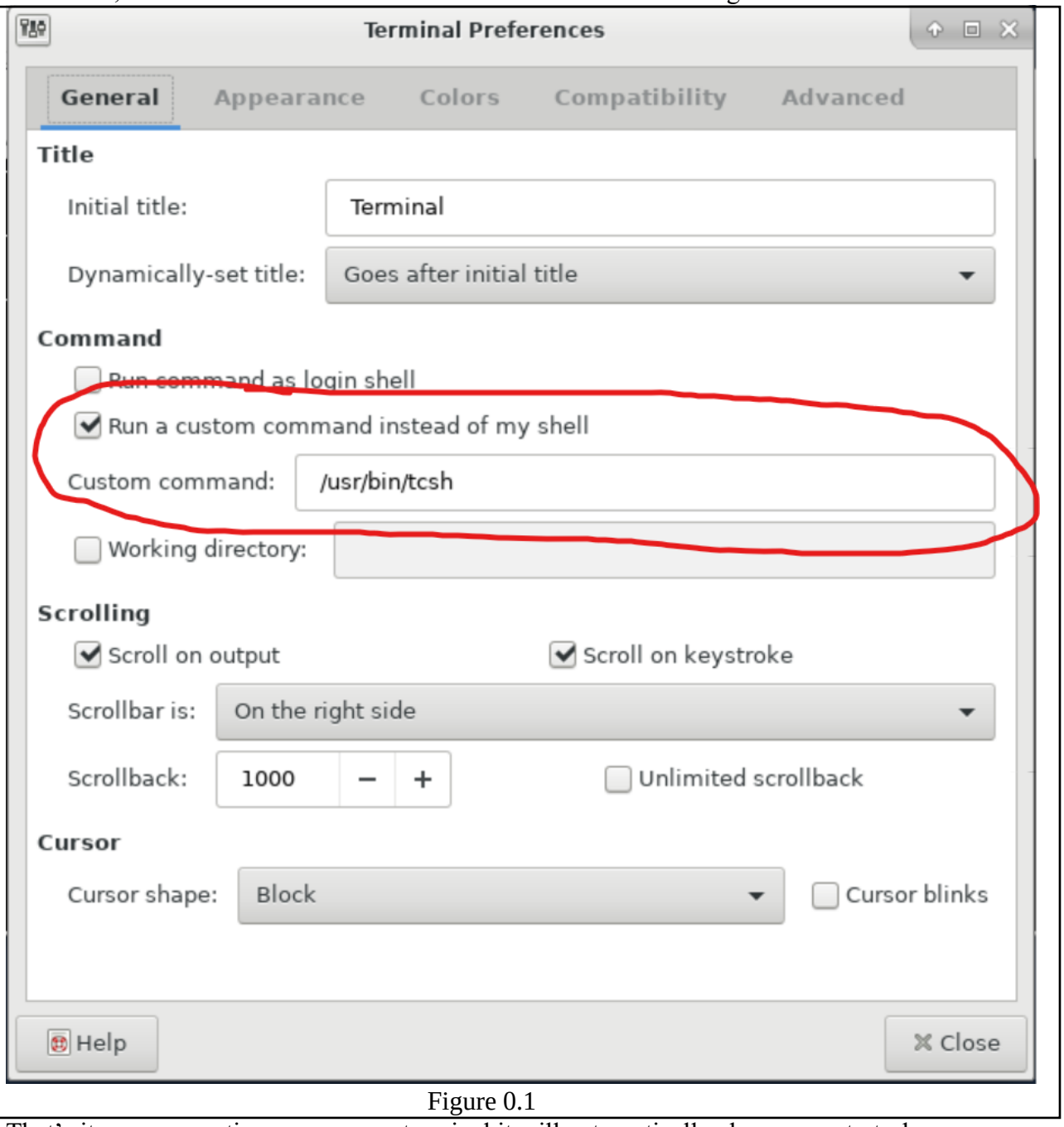

Figure 0.1

That’s it, now every time you open a terminal it will automatically change you to tcsh.

2. Change your shell manually – this option is more cumbersome but can be used as a backup if other methods fail.

After opening a terminal run one of these commands to switch to the tcsh shell:

- /usr/bin/tcsh
- exec tcsh -l

If you choose to change your shell manually you'll have to **change the shell every time you open a new terminal**.

Either way, you can always check what shell you are in by running this command:

- echo $0

The output of "echo $0" should be "/usr/bin/tcsh" (or just "tcsh"), as shown in Figure 0.2 below.

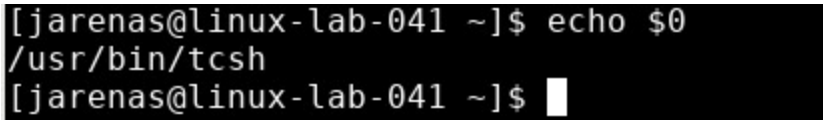

Figure 0.2

If you see something different, then manually change your shell to tcsh.

Husky OnNet

If you are **off campus**, then you will need to use the Husky OnNet software to connect remotely to our linux machines.

Download Husky OnNet here:
https://softy.cac.washington.edu/HuskyOnNet/

If you are experiencing difficulties with your connection, switch to "All Internet Traffic". Figure 0.3 below shows what this looks like in Windows and Mac.

For Windows you will have to click the "Change Server" button, which opens the server select window. In the dropdown menu select "All internet Traffic".

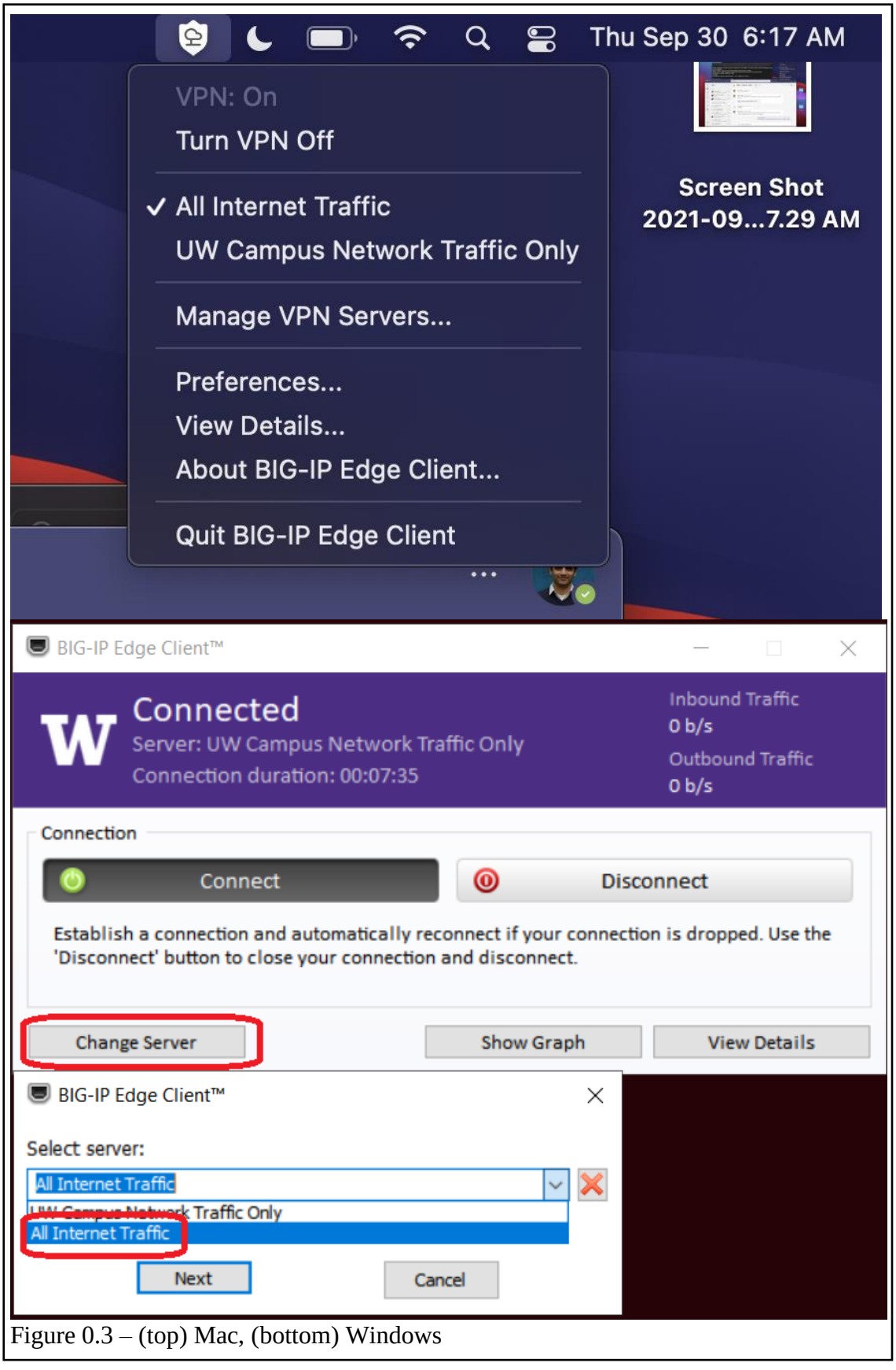

Figure 0.3 – (top) Mac, (bottom) Windows

Windows Users:

Download software

Putty is an open source software that can create SSH connection. Mac has built-in Unix terminals, so Mac users are able to use terminal to construct SSH connection without Putty. After the SSH connection is created, TightVNC can open a virtual desktop with same appearance on the machines in Sieg 118. The following instruction is for windows users. Mac users need to figure out how to use terminals to construct SSH connection.

For Windows users, download Putty from the following website. Install Putty.

http://www.putty.org/

For both Windows and Mac users, download TightVNC from the following website.

https://www.tightvnc.com/download.php

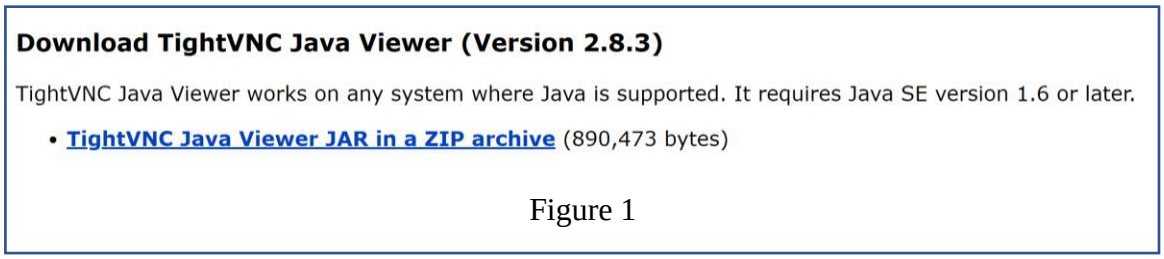

Figure 1

Download the version in Figure 1 and unzip it. **Download exactly the version shown in Figure 1.** No install is needed.

Setting up Putty

Open putty, you will see a window like the following Figure 2.

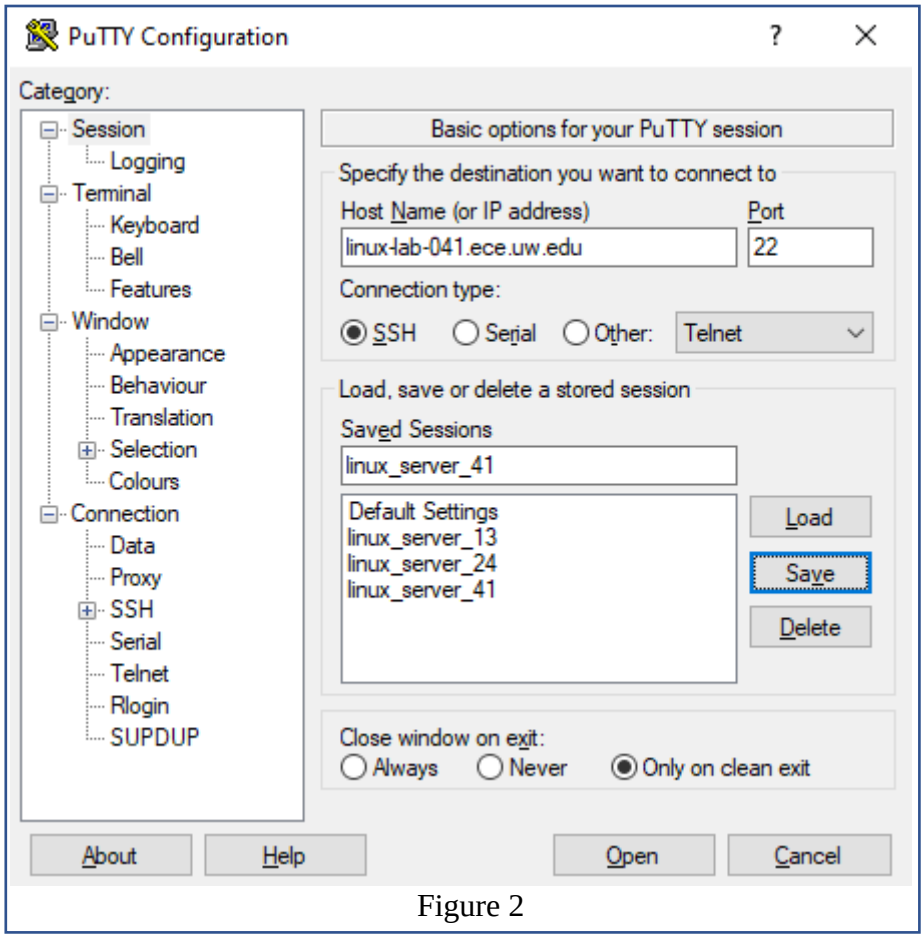

Figure 2

In the "Host Name (or IP address)" text box, type in **linux-lab-0##.ece.uw.edu** – where ## can be any number from **41** to **80**.

Examples of valid host names:

- linux-lab-042.ece.uw.edu
- linux-lab-069.ece.uw.edu
- linux-lab-077.ece.uw.edu

In this tutorial, **linux-lab-041.ece.uw.edu** is used. Under Category, click the "+" symbol on the left side of "SSH", and then click "X11". Select "Enable X11 forwarding". Your configuration should look like Figure 4 below.

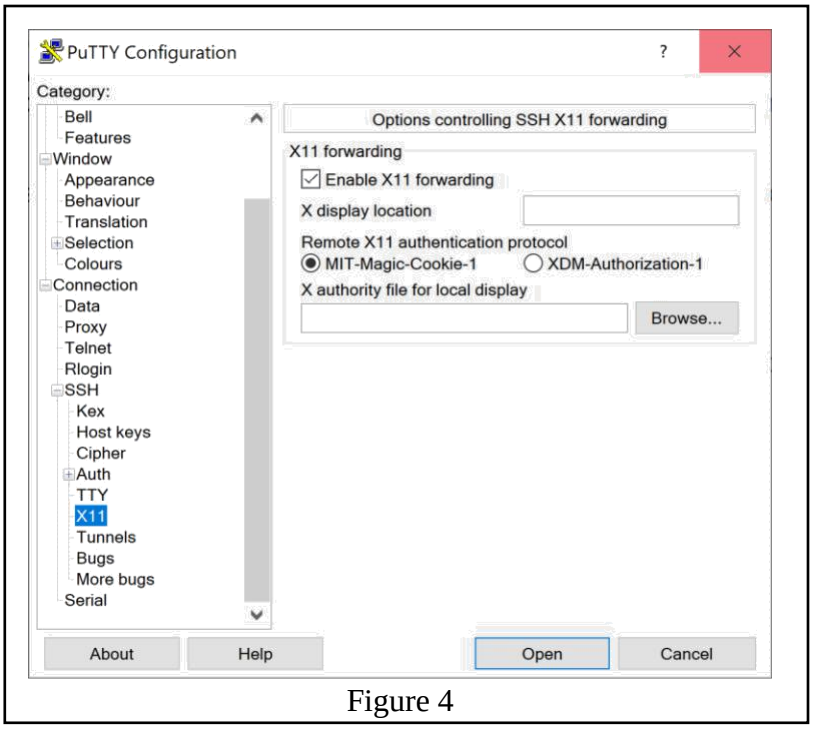

Figure 4

Go back to previous interface by clicking “Session” under Category. Under “Saved Sessions”, type in any name for this connection and save it. The next open Putty, you can load this saved configuration.

Click “Open” at the bottom. A terminal in Figure 5 will open.

Figure 5

Start VNC session

Typing in ECE logins, you connect to a Linux Lab system using a SSH client. Now, follow the instructions on the website to configure VNC session.

https://vannevar.ece.uw.edu/computing/faq/vnc.html

The commands should input from Putty window. Read these sections: **Start a VNC Session, Connect using TightVNC** to start VNC session. The VNC session will be always active even closing the VNC viewer. If you want to stop the session, read section: **Close your VNC session**.

Mac Users:

Connecting via X2Go

If you use Mac OS, we recommend you use X2Go to connect to the servers (You can also try it if you prefer using the Windows edition too). On the Mac, you first need to make sure you have the latest version of XQuartz installed. Please go to https://www.xquartz.org and download the latest version, shown in Figure 6. Install it using the dmg file on your computer.

For those installing XQuartz for the first time, they may have to log out and log back in.

Mac now has "gatekeeper" which requires notarization of apps. X2go is not currently notarized. To get around this, there are 2 options:
1. Go to applications and "ctrl+click-on-x2goclient-application" and then open it for the first time around.
2. Open System Preferences, go to "Security & Privacy", then allow the x2go client.

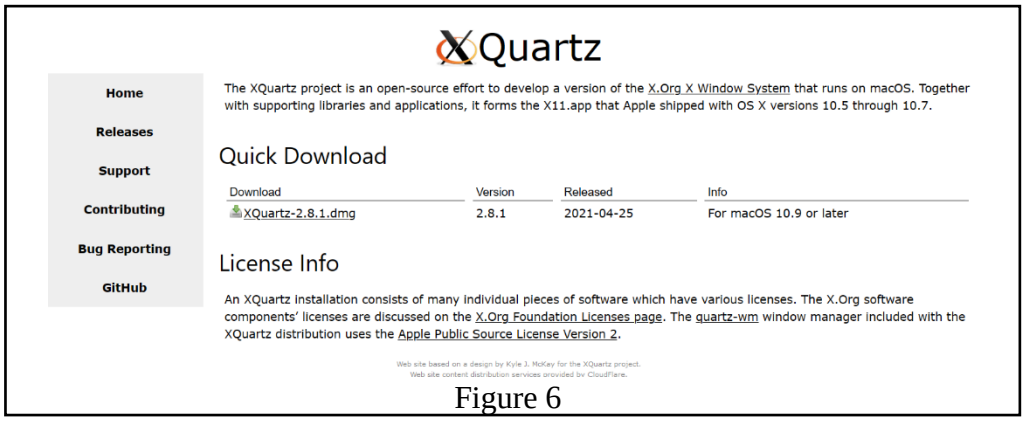

Figure 6

Next, you need to install the latest version of X2Go (Figure 7) for Mac from https://wiki.x2go.org/doku.php

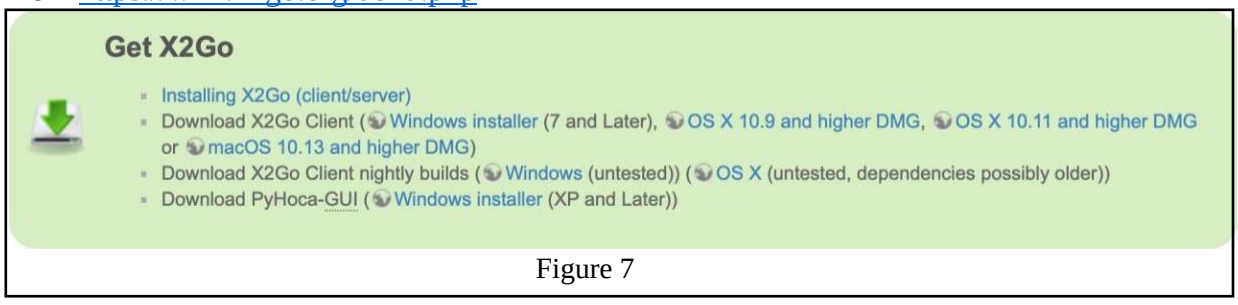

Figure 7

After opening the software, click on the icon on top left side to make a new connection with configurations shown in Figure 8 below:

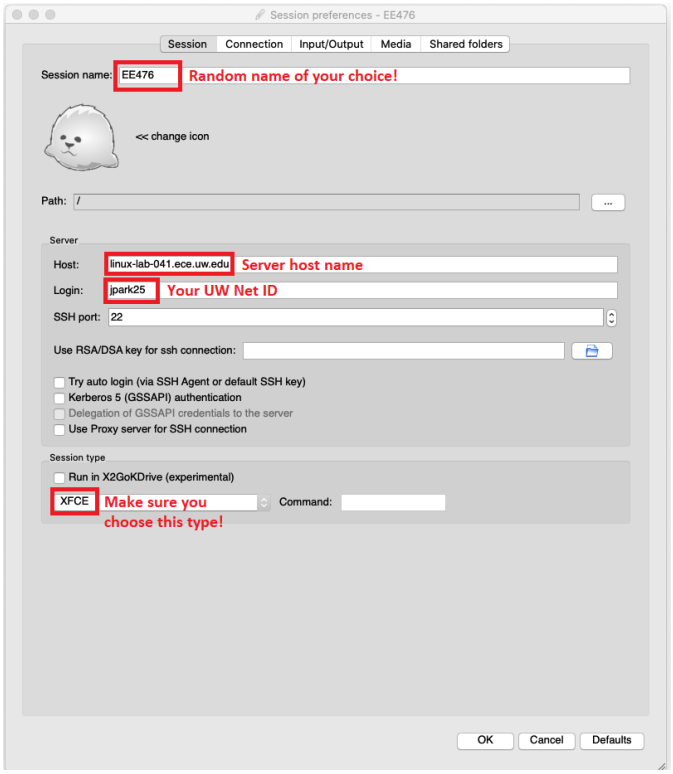

Figure 8

After clicking OK the connection is made and shown on the right-side panel. Simply double click on it and enter your password to log in.

Macports users need to also install xorg-server "sudo port install xorg-server".

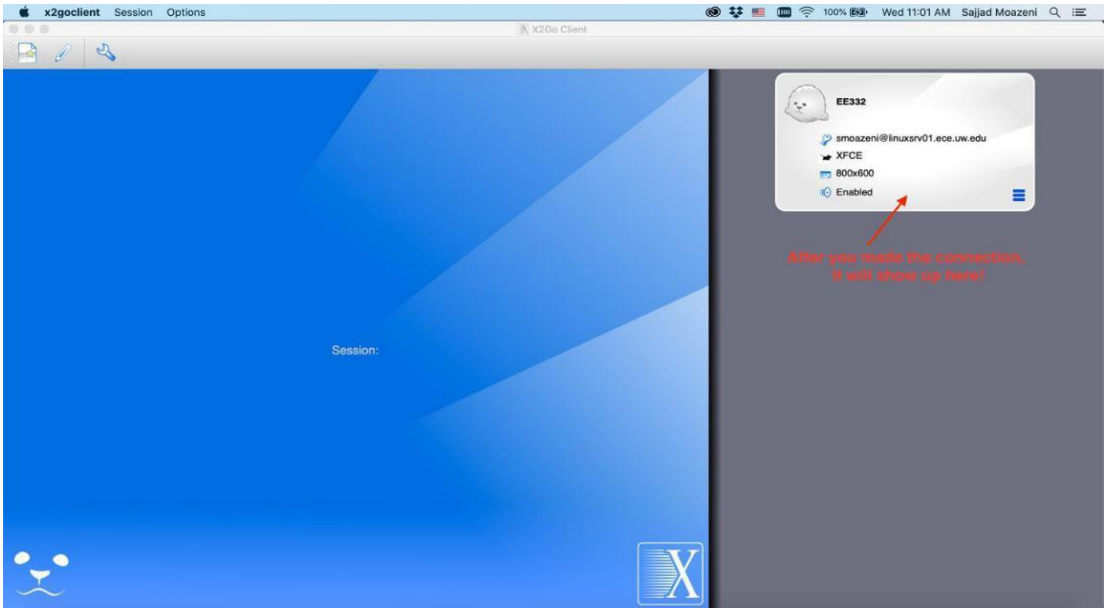

Figure 9

Additional information

1. The VNC session is always running until you kill it. It's safe to close the tightVNC windows while programs are running.

2. Use command below to create an VNC session with different resolution instead of "startvnc" command

vncserver -geometry 1900x990

By replacing the length 1900 and width 990, you can change the size of tightVNC window. This size is suitable for my 15 inches laptop. You may adjust the numbers.

Figure 10

Remember to select the fourth button in Figure 10 from the toolbar of tightVNC window.

3. Finally you should see the similar window in Figure 11.

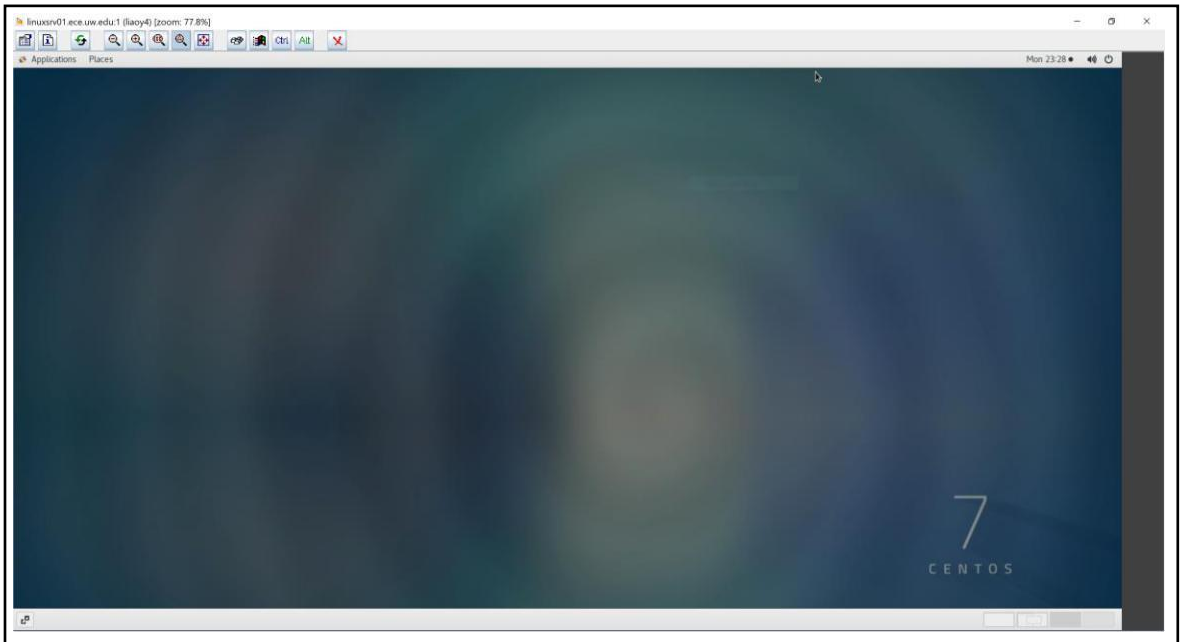

Figure 11

4. Click Application at left top corner in Figure 11 → select Favorite → select terminal. Type in command "echo $0". The returned message indicates the current shell.

5. If your shell is bash, run this command "exec tcsh". Check the current shell.

6. If your shell is still bash, open "~/.bashrc" file by any text editor (vim, emacs, gedit). Save "exec tcsh -l" in the file. Open a new terminal and check the shell.