

Portland State University

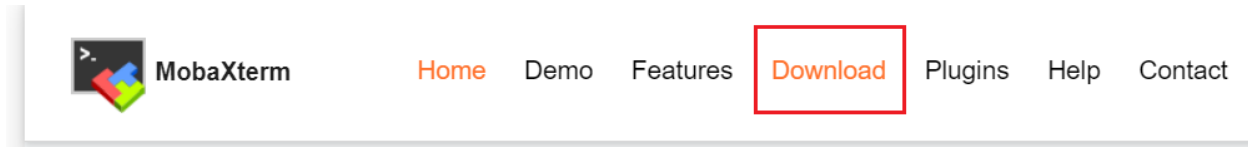
Synopsys VC Formal Tutorial

Getting Started:

2: Downloading, Installing, and Setting up MobaXterm

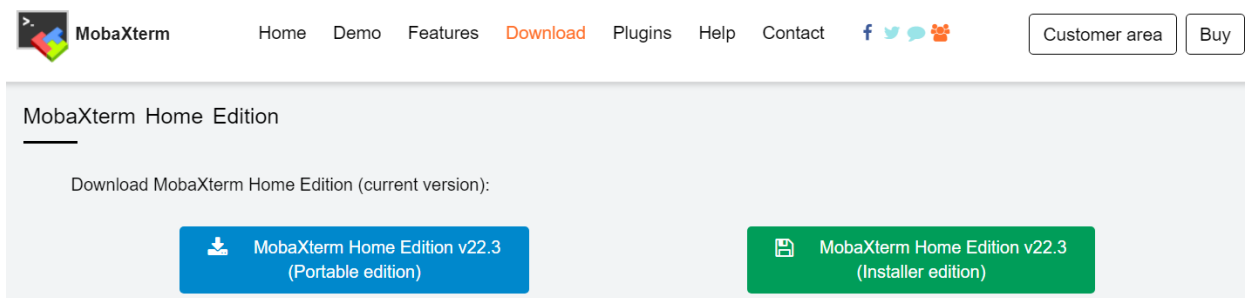
We need to use a Linux client to access the Linux environment in which we run VC Formal, in this tutorial, we will download, install, and set up the MobaXterm client.

You can go to <https://mobaxterm.mobatek.net/> or simply google “MobaXterm” to download MobaXterm, click on the “Download” tab.

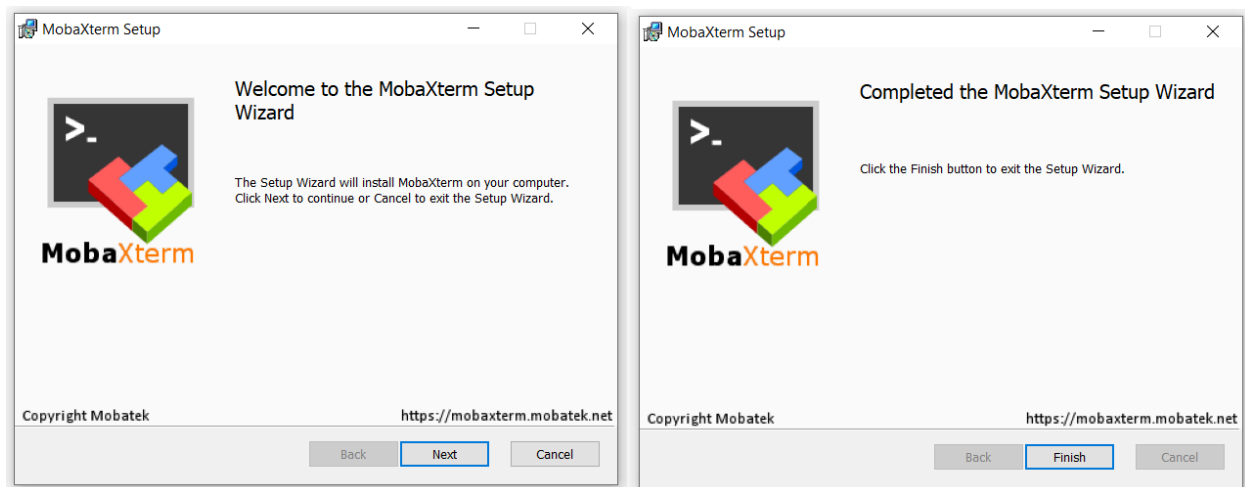


For our uses, the **free Home Edition** is sufficient. Click “Download Now” to download and install MobaXterm. We recommend the installer edition, but the portable edition should work too.

A screenshot of the MobaXterm website's pricing page. The page is divided into two main columns. The left column is for the 'Home Edition', which is 'Free'. It lists features such as Full X server and SSH support, Remote desktop (RDP, VNC, Xdmcp), Remote terminal (SSH, telnet, rlogin, Mosh), X11-Forwarding, Automatic SFTP browser, Master password protection, Plugins support, Portable and installer versions, Full documentation, Max. 12 sessions, Max. 2 SSH tunnels, Max. 4 macros, and Max. 360 seconds for Tftp, Nfs and Cron. At the bottom of this column is a 'Download now' button. The right column is for the 'Professional Edition', priced at '\$69 / 49€ per user*'. It lists features including Every feature from Home Edition +, Customize your startup message and logo, Modify your profile script, Remove unwanted games, screensaver or tools, Unlimited number of sessions, Unlimited number of tunnels and macros, Unlimited run time for network daemons, Enhanced security settings, 12-months updates included, Deployment inside company, and Lifetime right to use. At the bottom of this column is a button that says 'Subscribe online / Get a quote' with logos for PayPal, Visa, and Mastercard.

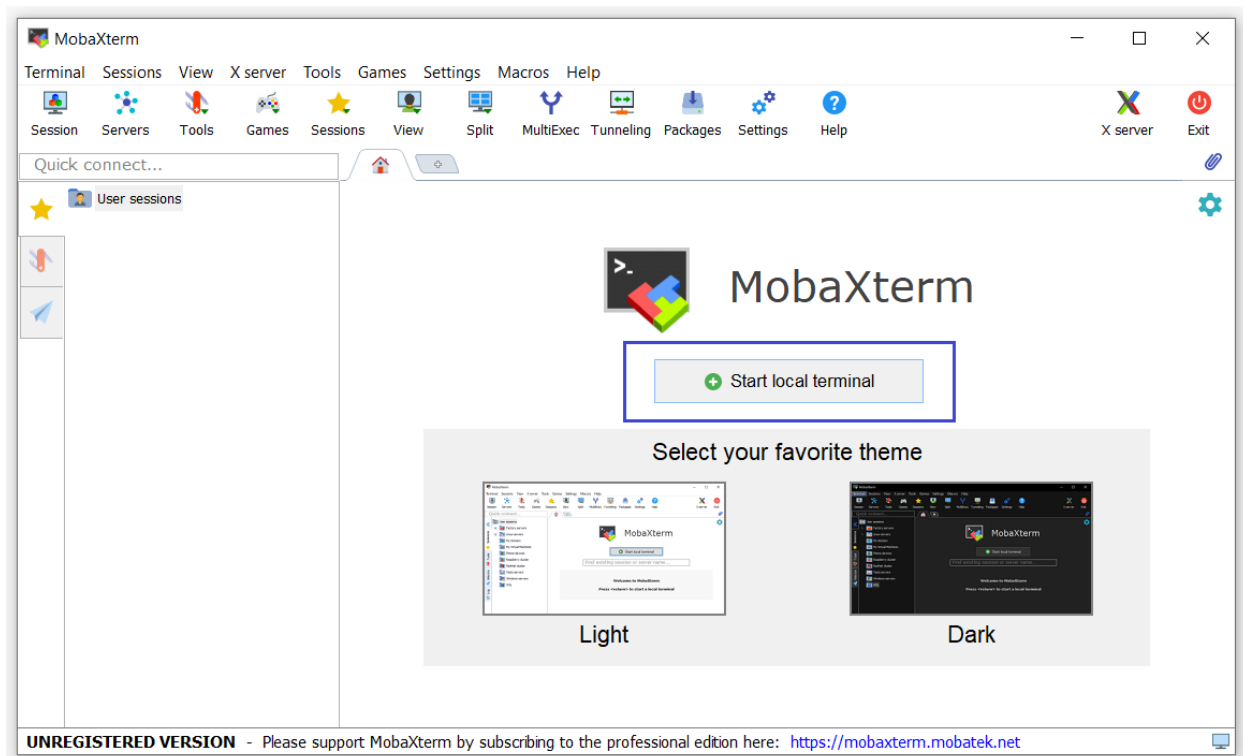


Follow the prompts to install MobaXterm on your computer.



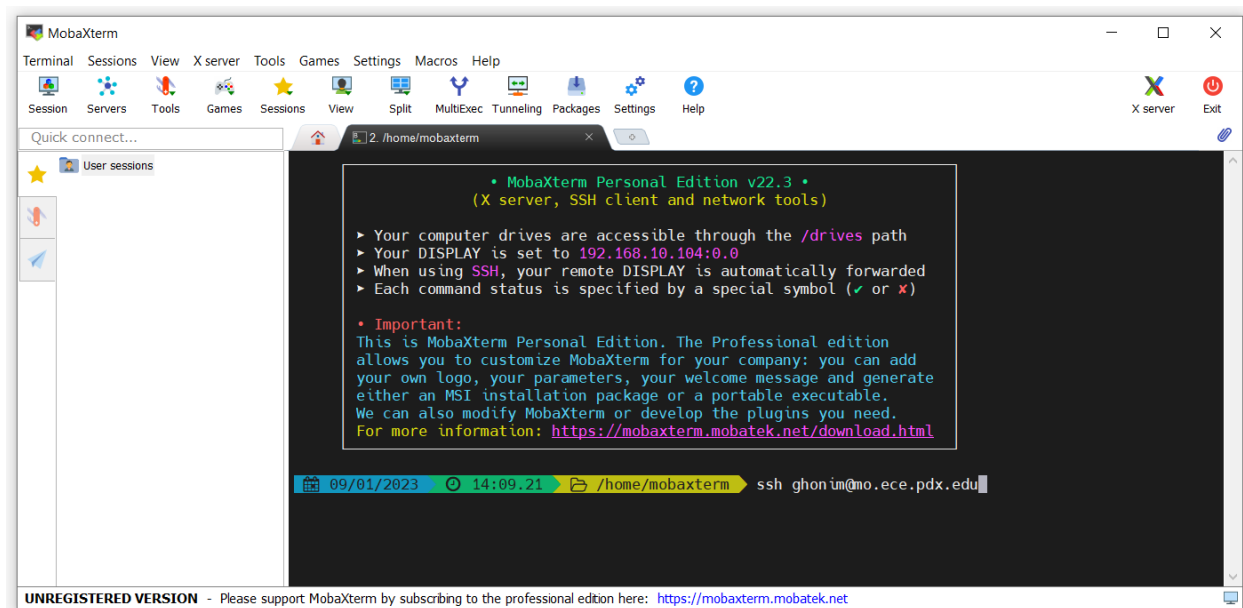
Once installed, open MobaXterm. It should look something like this.

Now to get started, click on "Start local terminal". Make sure the VPN is running in the background before proceeding further.

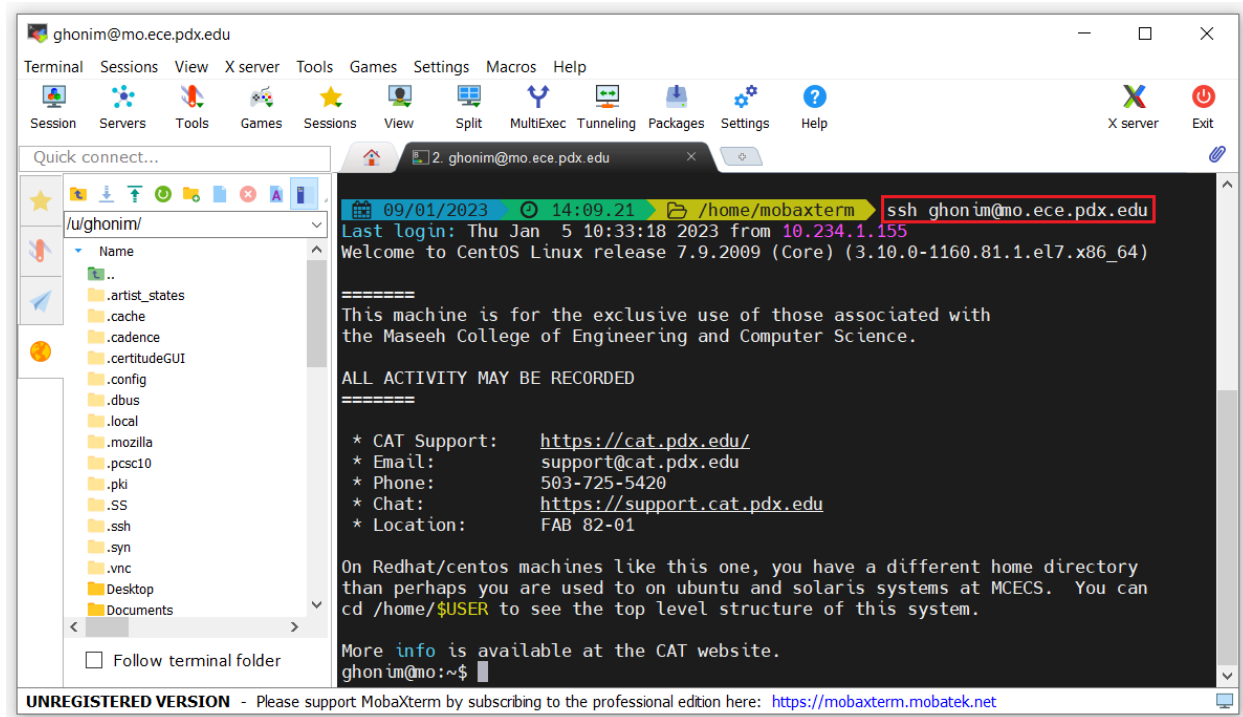


Now you should get the screen below, the first command you type there should be [ssh yourPSUUsername@mo.ece.pdx.edu](#) for example, my Odin and PSU username is ghonim, so my command is [ssh ghonim@mo.ece.pdx.edu](#). If needed, you can also use @auto.ece.pdx.edu instead of @mo.ece.pdx.edu, but try to maintain consistency with the one you use if possible.

You should then press enter, and if promoted, enter your Odin PSU password.



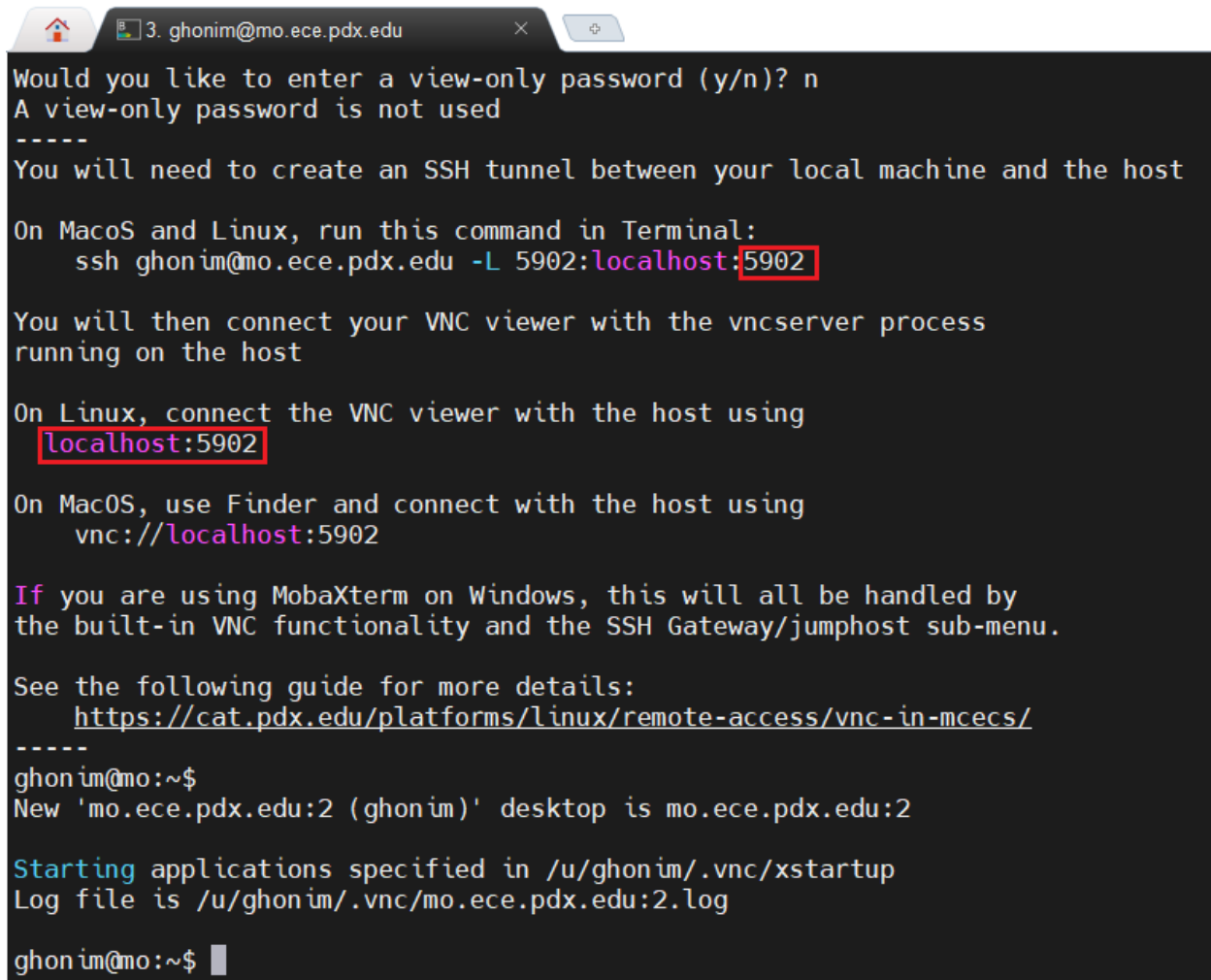
After successfully connecting to the remote lab, you should get something like the screen below.



Now to access a desktop-like graphical user interface (GUI) we will set up a VNC server. To do so, we type the command “vncserver” without the quotes as shown below. If prompted, please enter a password for the VNC Server connection. This is a new password you’re setting up, you can use your PSU Odin password, but it’s recommended that you use a different one for security reasons.

```
More info is available at the CAT website.  
ghonim@mo:~$ vncserver  
Please create a new password  
This password will _only_ be used  
for the vncserver.  
This should be a unique password  
separate from your MCECS password  
Password:
```

Now you should get a screen like the one below. All we care about here is the port number, the one I boxed in red (5902), and the localhost in purple. Please note that your port number could be different, but the localhost will most likely be the same “localhost”



A terminal window with a dark background and light-colored text. The window title is '3. ghonim@mo.ece.pdx.edu'. The text inside the terminal reads: 'Would you like to enter a view-only password (y/n)? n', 'A view-only password is not used', '-----', 'You will need to create an SSH tunnel between your local machine and the host', 'On MacOS and Linux, run this command in Terminal:', 'ssh ghonim@mo.ece.pdx.edu -L 5902:localhost:5902' (the last part is highlighted with a red box), 'You will then connect your VNC viewer with the vncserver process running on the host', 'On Linux, connect the VNC viewer with the host using', 'localhost:5902' (highlighted with a red box), 'On MacOS, use Finder and connect with the host using', 'vnc://localhost:5902', 'If you are using MobaXterm on Windows, this will all be handled by the built-in VNC functionality and the SSH Gateway/jumphost sub-menu.', 'See the following guide for more details:', '<https://cat.pdx.edu/platforms/linux/remote-access/vnc-in-mcecs/>', '-----', 'ghonim@mo:~\$', 'New 'mo.ece.pdx.edu:2 (ghonim)' desktop is mo.ece.pdx.edu:2', 'Starting applications specified in /u/ghonim/.vnc/xstartup', 'Log file is /u/ghonim/.vnc/mo.ece.pdx.edu:2.log', 'ghonim@mo:~\$'.

```
Would you like to enter a view-only password (y/n)? n
A view-only password is not used
-----
You will need to create an SSH tunnel between your local machine and the host

On MacOS and Linux, run this command in Terminal:
ssh ghonim@mo.ece.pdx.edu -L 5902:localhost:5902

You will then connect your VNC viewer with the vncserver process
running on the host

On Linux, connect the VNC viewer with the host using
localhost:5902

On MacOS, use Finder and connect with the host using
vnc://localhost:5902

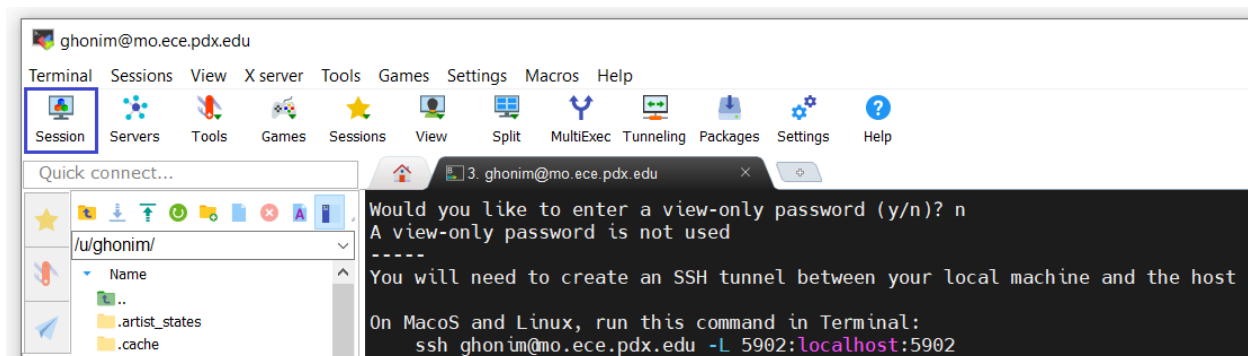
If you are using MobaXterm on Windows, this will all be handled by
the built-in VNC functionality and the SSH Gateway/jumphost sub-menu.

See the following guide for more details:
https://cat.pdx.edu/platforms/linux/remote-access/vnc-in-mcecs/
-----
ghonim@mo:~$
New 'mo.ece.pdx.edu:2 (ghonim)' desktop is mo.ece.pdx.edu:2

Starting applications specified in /u/ghonim/.vnc/xstartup
Log file is /u/ghonim/.vnc/mo.ece.pdx.edu:2.log

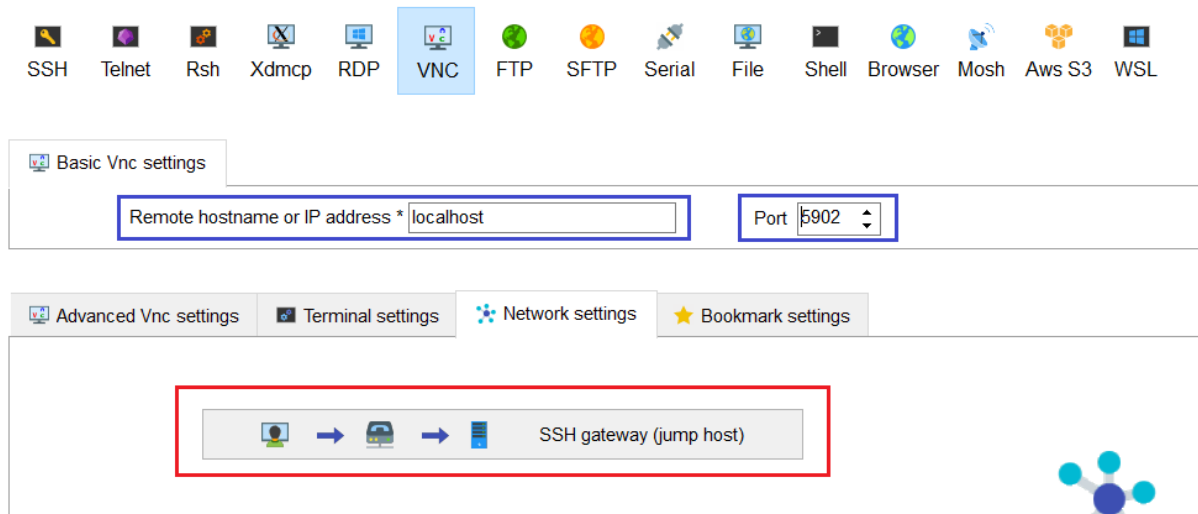
ghonim@mo:~$
```

Once you have done that and know your part number, please don't close the terminal, keep it open, go to the top left side of the MobaXterm window and click on "Session" as shown below.



Now click on VNC, and for the Remote hostname or IP address * Please enter “**localhost**”, which was the hostname in purple we got from the terminal, and change the port to the one you got in the terminal as well. In my case, it was port **5902**.

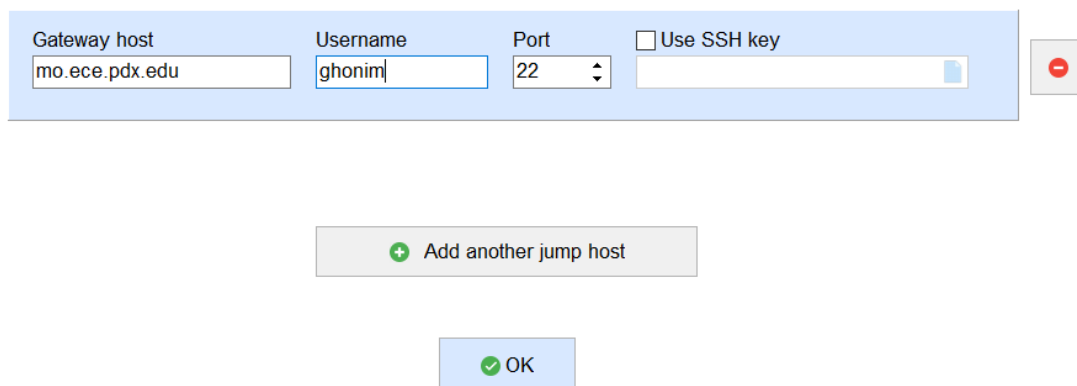
Once you have done that, click on [SSH gateway \(jump host\)](#), the one boxed in red below.



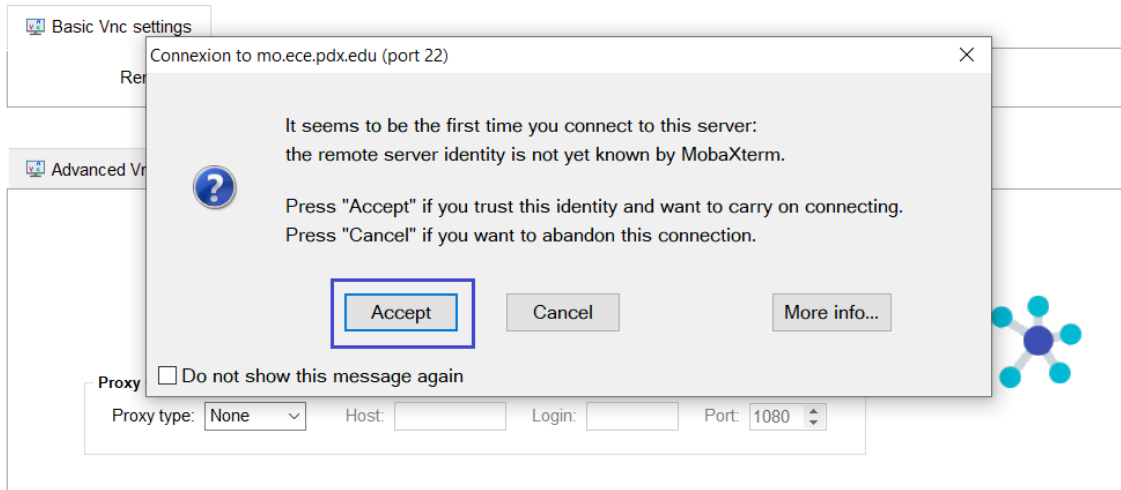
In the new window that pops up, please enter **mo.ece.pdx.edu** in the Gateway host field (or [auto.ece.pdx.edu](#) **ONLY** IF this is the one you started with in the terminal, again, maintain consistency).

Enter your PSU Odin username in the Username field, and leave the port field unchanged. Leave the last field blank.

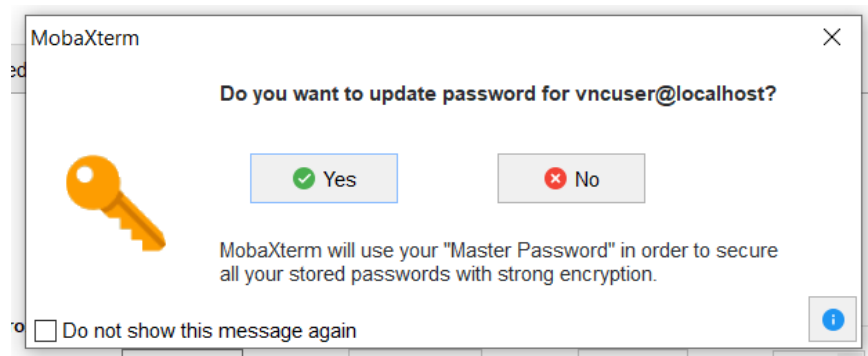
You should have something like what I have below.



After you click on “OK” you might get a pop-up message like the one below, in this case, you **must** choose “**Accept**” in order to continue and access the VNC server.



You might then get a message like the one below, I recommend choosing “**Yes**” for faster access in the future, but feel free to choose “**No**” if you want to.



Now you will be back to the main MobaXterm page, with “**localhost**” now showing under “recent sessions” as shown and boxed in red below. Please click on it.




MobaXterm

+ Start local terminal

Find existing session or server name...

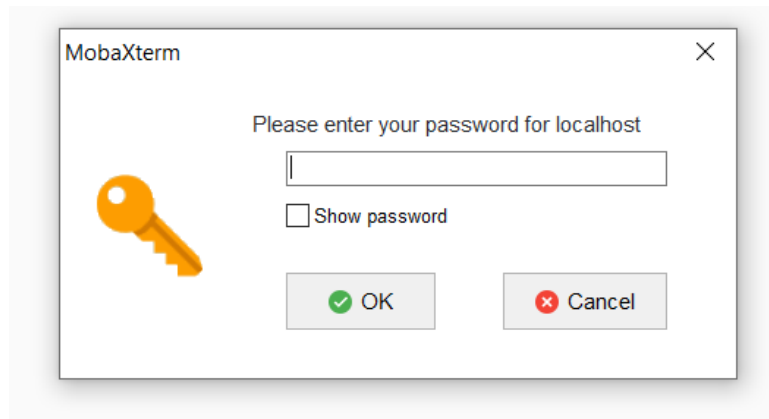
Recent sessions

 localhost
...
...

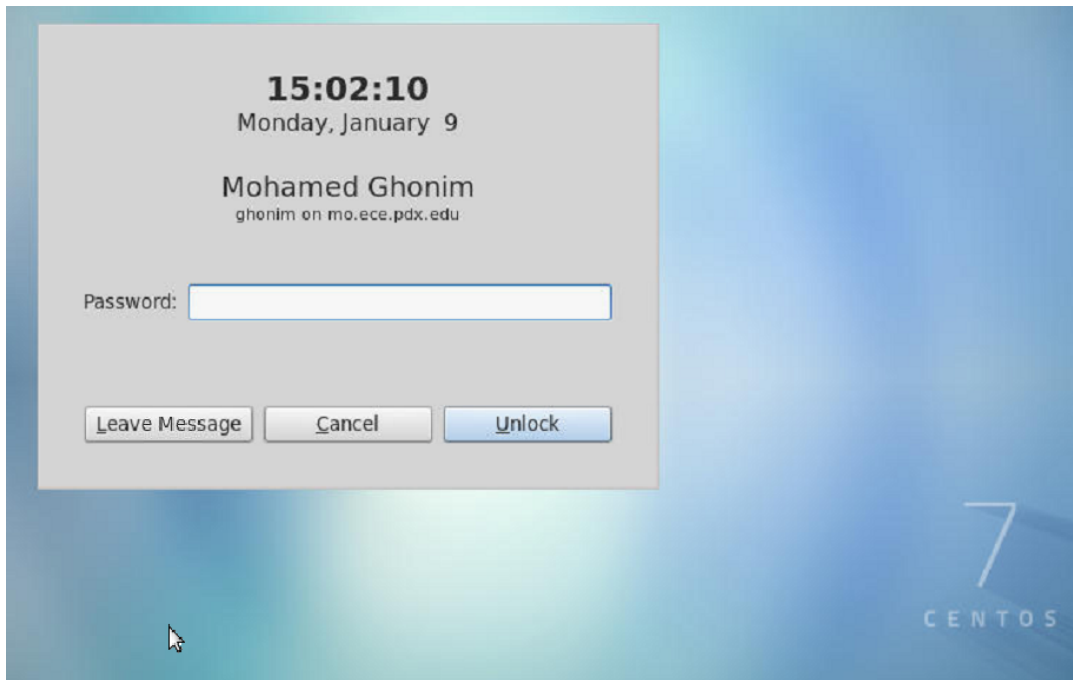
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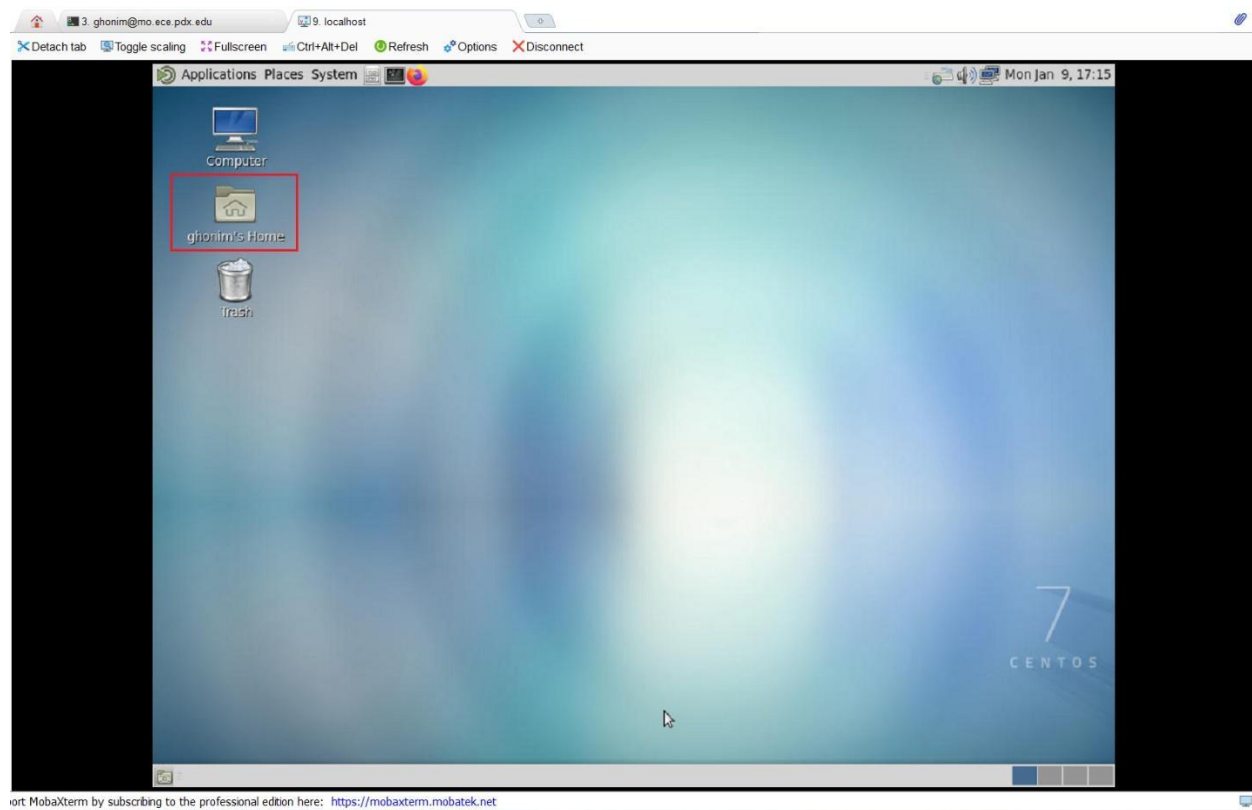
If asked to enter a localhost password, this should be the VNC server password you created above in the terminal. Depending on which password you entered there, this might not be the same as your PSU Odin password unless you put your same password there.



Now a Linux GUI screen will open in a new tab, and if you are asked to enter your password you will need to enter your PSU Odin password there and click “Unlock”.

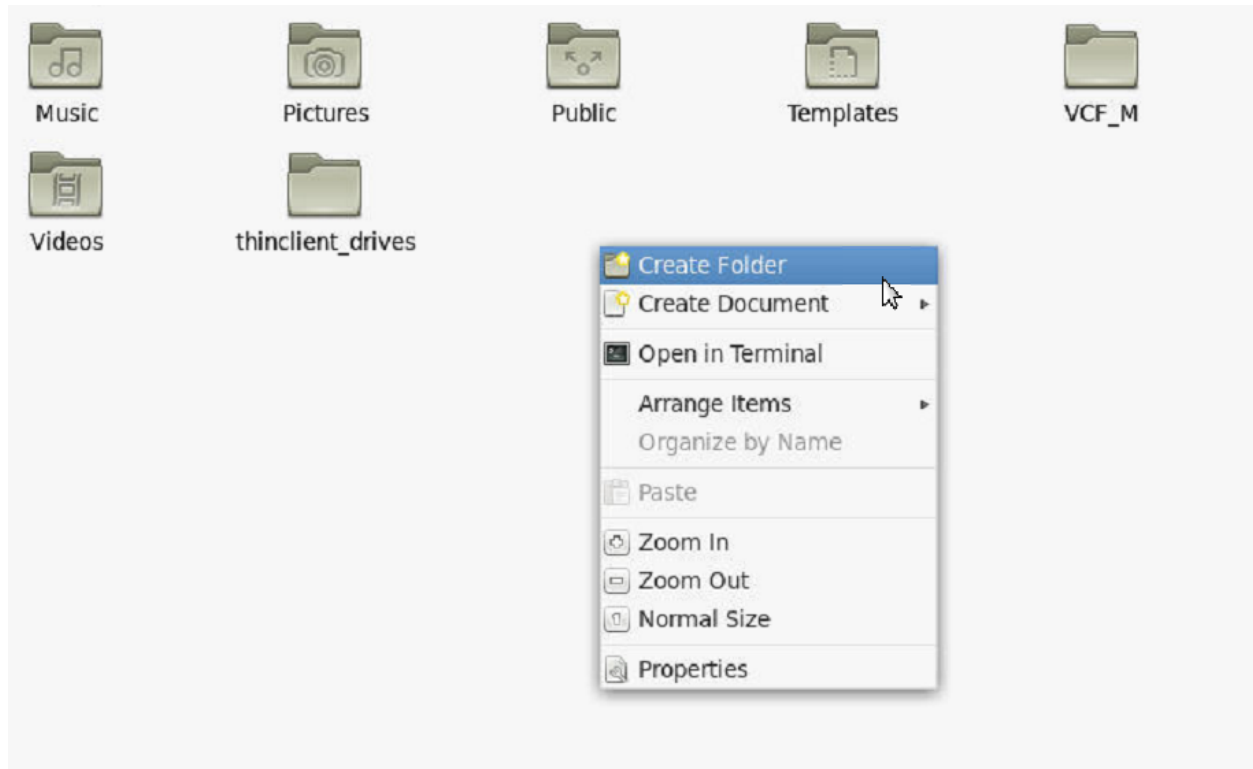


Now you should get the Linux desktop as shown below and you are ready to install VC Formal!



One last, yet important step we need to do is to create a folder for our project since once you open something like VC Formal, you'll be surprised with how many files get created randomly on your desktop or wherever you have opened VC Formal. We don't want that to happen.

Please click on the home folder as boxed in red above, it should have your Odin username and then the word home, for example, mine is ghonim's Home.



You will then need to right-click on the mouse and choose “**Create Folder**” and name your folder anything you want! I created a folder and named it “**VCF_M**” for example.

Now that we have the environment setup, the next step is to install and open Synopsys VC Formal as we show next.