Connecting to the Linux systems in the Computer Science Dept.

Preliminary connection requirements.

First: You must have a CS Linux account. This allows access to all our Linux systems. If you do not have an account, please see the CS Admin folks in DAN 405 to get a CS account.

The class exercises will require that you establish a connection with the Red Hat Linux system running on the server named mercury.cs.uml.edu within the Computer Science Department at UML.

The CS Linux systems require access over a VPN, so the first step in getting ready to connect will be to set up the dual authentication service called DUO on your cell phone. You will then need to download and install the Global Protect VPN software onto your Linux, Windows or Apple system. The details of this process are found here:

https://www.uml.edu/IT/Services/Get-connected/Remote-Access/

If you're working from a Linux/UNIX or OSX platform, this is a simple matter of using the ssh command from a dumb terminal interface running some shell program like bash, as shown below :

```
bill@cs2:~$ hostname

cs2.cs.uml.edu

bill@cs2:~$ ssh bill@mercury.cs.uml.edu

Password:

Web console: https://mercury1.cs.uml.edu:9090/ or
    https://129.63.8.16:9090/


Last login: Thu Jan 19 10:51:28 2023 from 10.157.148.48

mercury1.cs.uml.edu

[bill@mercury1 ~]$ hostname

mercury1.cs.uml.edu

[bill@mercury1 ~]$ pwd

/usr/cs/faculty/bill

[bill@mercury1 ~]$
```

The ssh command shown above has a basic syntax of:

ssh username@mercury.cs.uml.edu

where username is the username for your CS account (NOT your UML email account). The mercury system will then ask you to enter your password to complete the connection. Once connected, you will be running a bash shell program that will wait for you to enter a command, will run the command (if valid), and return a prompt for the next command. You can see above that I entered the hostname command to verify the host I'm running on, and then the pwd command (print working directory) to see the pathname of my current (login) working directory.

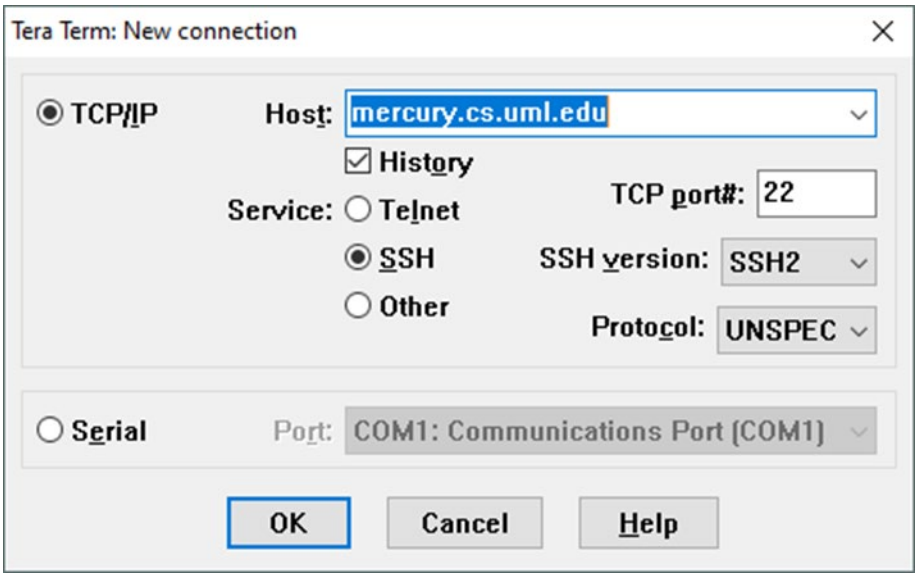
If you're working from a Windows platform, you will need to download and install an ssh terminal emulation program in order to connect to mercury. There are several freeware packages that provide this functionality, and any one of them will do. Many students use the PuTTY terminal emulator available for download at:

https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html

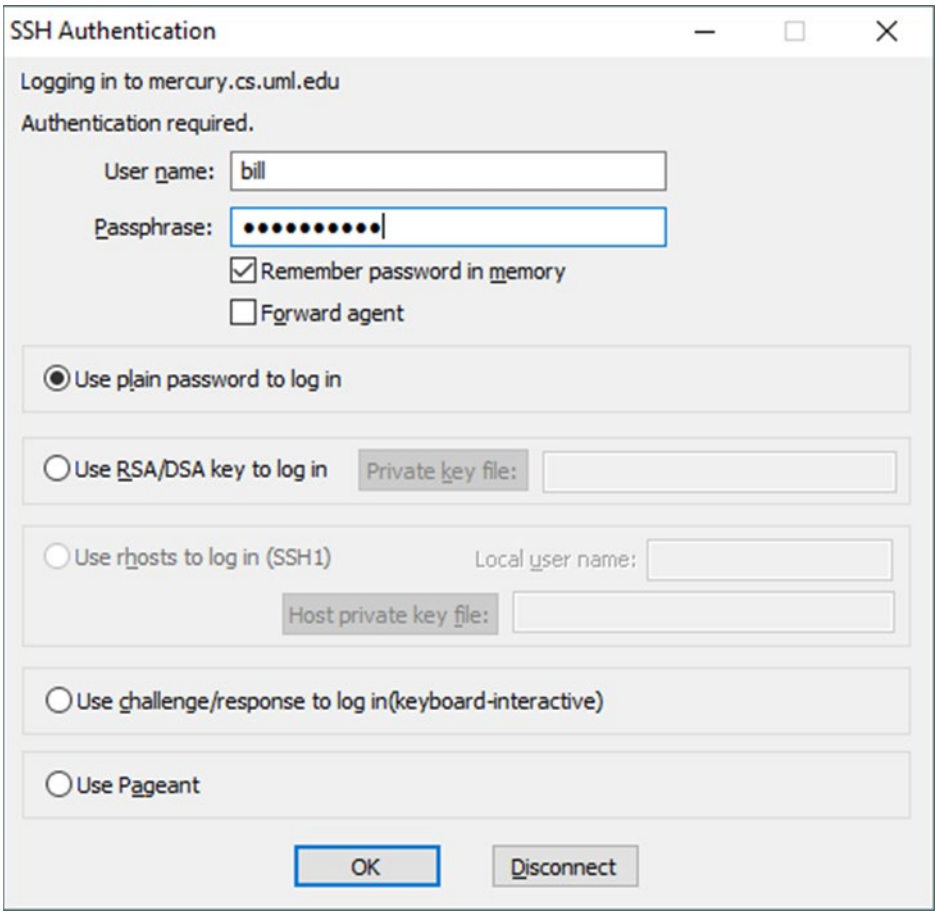
but I recommend the Tera Term package, which is available at.

https://tera-term.en.lo4d.com/windows

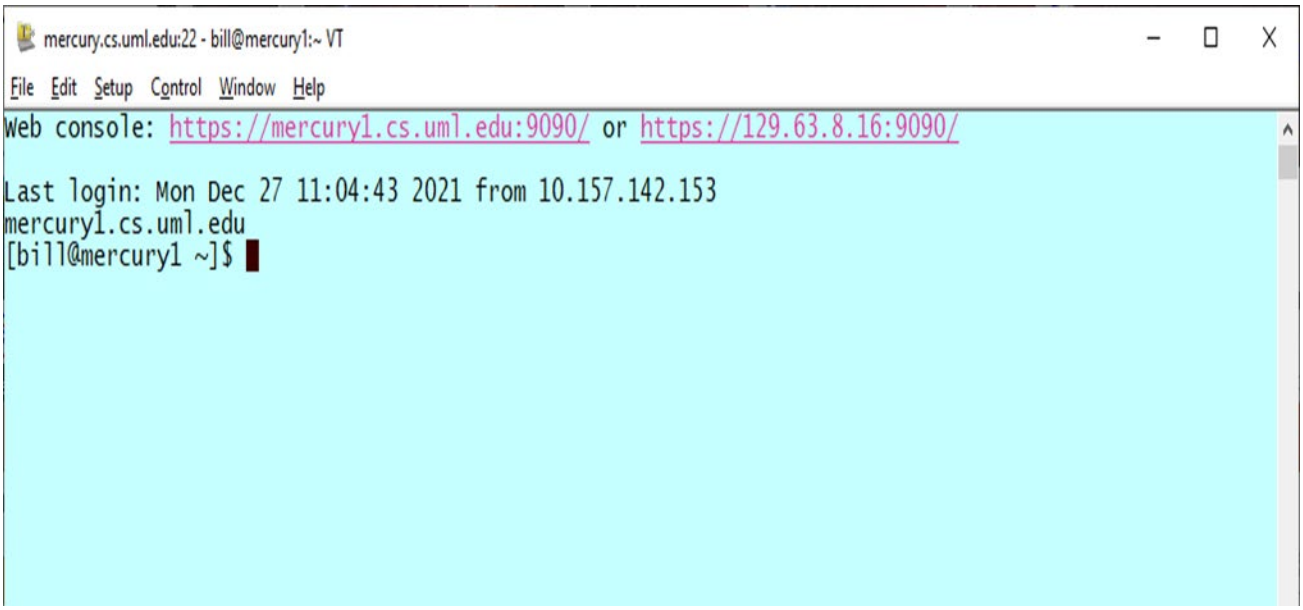
After downloading and installing this software, you can run it to connect to mercury:



Pressing OK leads you to the next dialog box where you can enter your user name and password:

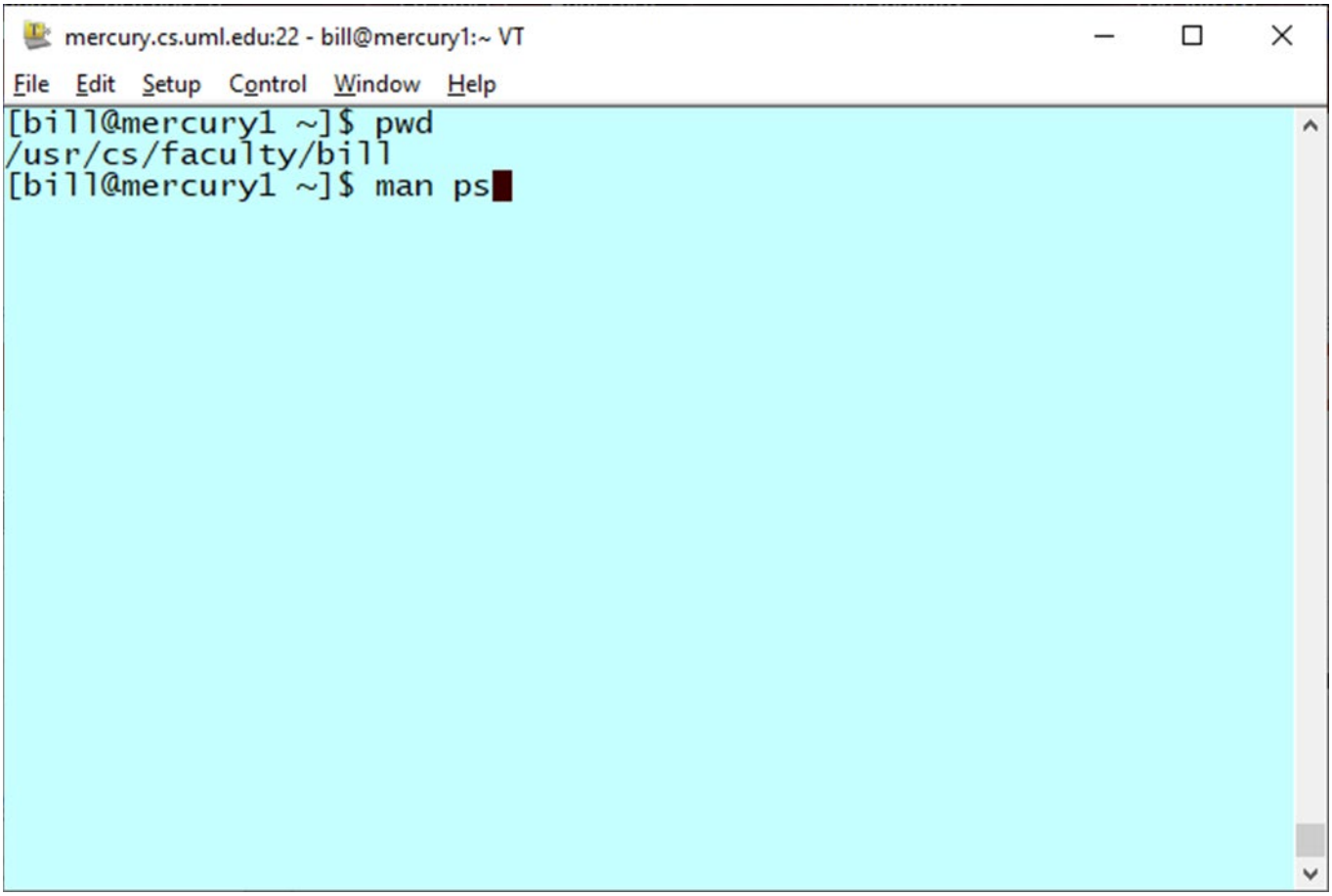


Now, pressing OK will log you into mercury and provide a terminal emulation window running a bash shell:

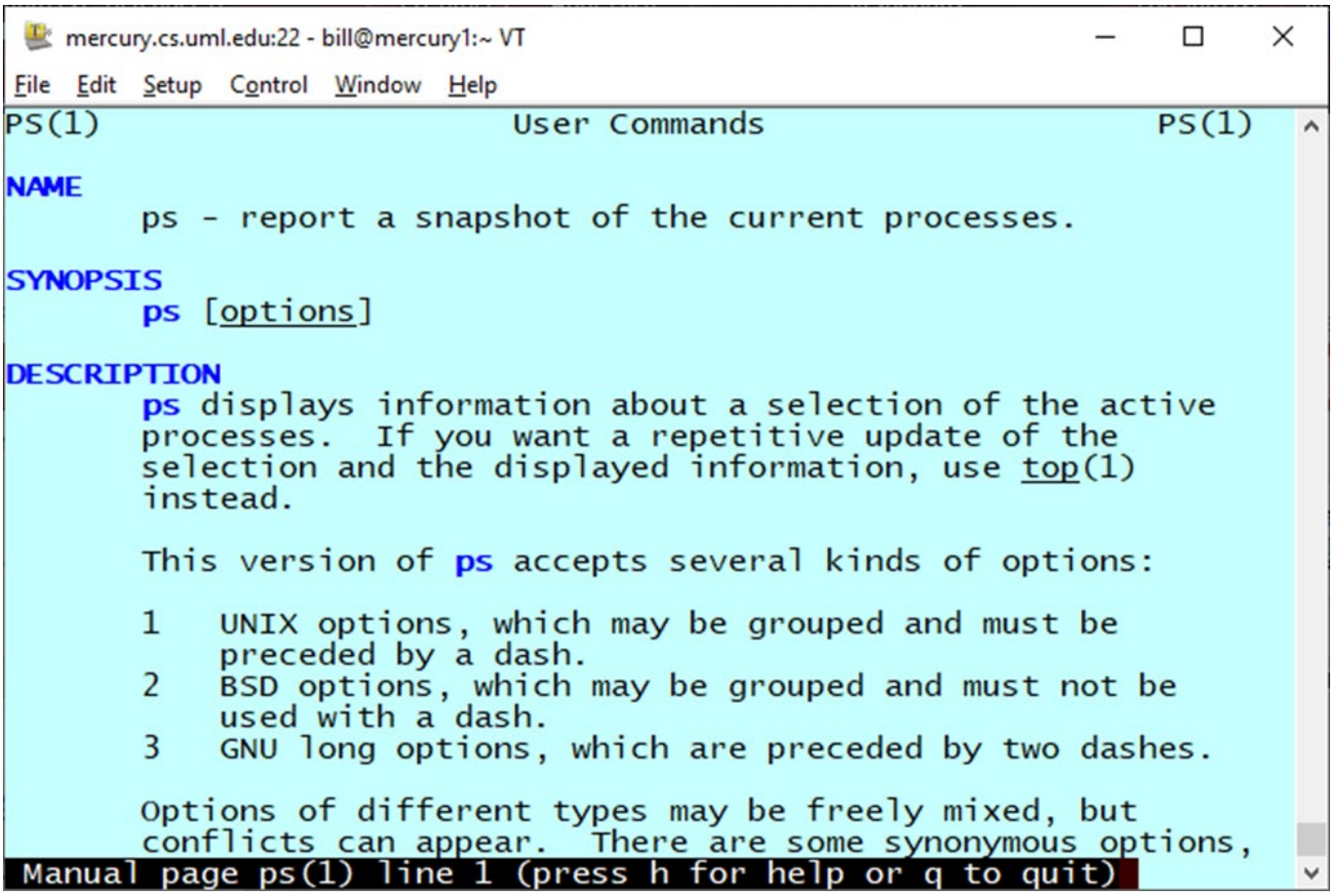


Once you've successfully launched an ssh session to mercury, you're ready to complete assignments for this class.

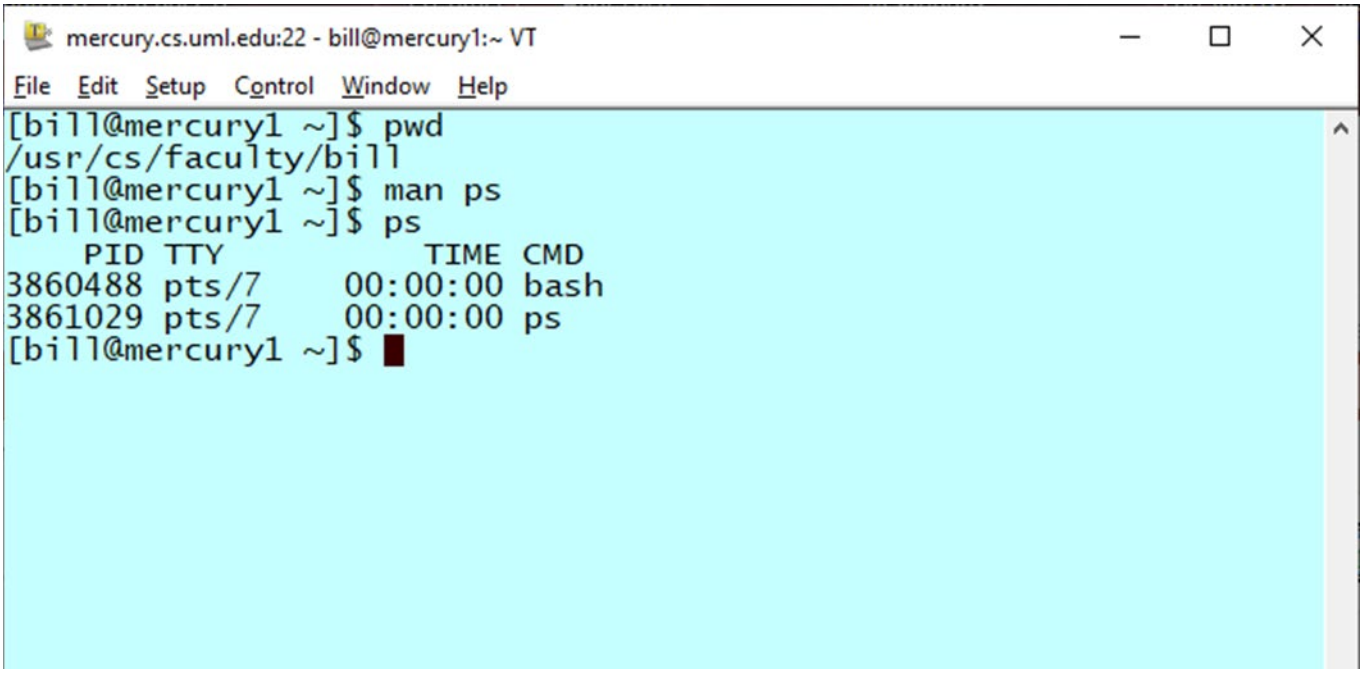
All of the commands that we will work with are documented in the form of what we call man pages, and the man command will list that documentation to your terminal. When man pages begin listing output, they paginate the output, allowing you to scroll to the next page by pressing the space bar, or scrolling one line at a time by pressing the enter key. When you're done reading a man page, press the q key to quit back to a shell prompt. You can see the initial screen of an ssh session below, with the man ps command about to run. Once you hit the enter key, the screen will be overwritten with the man page information, until you press the q key to return to the next shell prompt:



After the enter key is pressed:



Scroll through the information with the space bar or enter key, but press q when you're done:



Man pages provide details about each command, and often show example use cases. You can also find man pages online by just entering man command in a google search for example: