

A Guide to Eustis and the Linux Command Line

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Updated: Fall 2018

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Introduction

Eustis accounts have already been created for everyone who was enrolled in this course by Friday, Aug. 17. Accounts for all other students will be created on Monday, Aug. 27. You can log into Eustis from computers on campus, but to log into Eustis from home (or certain dorms), you must first establish a UCF VPN connection.

Server: eustis.eecs.ucf.edu

Username: your NID

Password: your NID password

Important Information Regarding Your Eustis Password

Eustis is fully integrated with UCF's NET domain, meaning that you will use your NID and NID password to log in to the system once your accounts are created.

Important note: When typing your password, Eustis does not print asterisks ('*') to the screen. It might look like the system is frozen, but don't worry; it's capturing your password as you type it.

If you have trouble logging into Eustis or get locked out of your account, you can e-mail your NID to help@cecs.ucf.edu and ask for assistance.

Looking for Help?

For account issues (unrecognized username or invalid password), please e-mail help@cecs.ucf.edu. Be sure to include your NID, let them know you're enrolled in this course, and provide a brief description of the login problem you're encountering (e.g., the exact error message Eustis is giving you).

For help establishing a connection to Eustis, please see one of the TAs in office hours. Your fellow classmates will also be a great resource for help with connection issues!

Connecting to Eustis While Using Campus Wifi

If you're using campus wifi, please log into the wifi network with your NID and NID password (*not* as a guest) in order to gain access to Eustis. If you do that, you won't need to go through the steps of manually establishing a VPN connection (except, sadly, in some of the dorms on campus).

Establishing a UCF VPN Connection (Windows)

Skip this if you're using a campus computer or if you're connected to UCF's wifi with your NID/password (not as a guest). If you're using Linux, you might have to manually install the Cisco AnyConnect Client. See pg. 6 of this document for instructions on how to do so.

1. Go to ucfvpn-1.vpn.ucf.edu (This step is the same for Windows and Mac.)
2. Sign in as a student using your NID and NID password.
3. Download some stuff for Cisco AnyConnect.
4. Open up Cisco AnyConnect and type in: ucfvpn-1.vpn.ucf.edu
5. Again, type in your NID and NID password. This creates a VPN connection, and you can now log into the Eustis server using one of the methods described below.

Establishing a UCF VPN Connection (Mac)

Skip this if you're using a campus computer or if you're connected to UCF's wifi with your NID/password (not as a guest). If you're using Linux, you might have to manually install the Cisco AnyConnect Client. See pg. 6 of this document for instructions on how to do so.

Note: For an alternative approach, you should also be able to follow the instructions above for establishing a VPN connection on Windows, although some Mac users report having limited success with that approach.

1. Open "Network Preferences," and click on the plus sign toward the bottom-left corner of the window to create a new service. Select "VPN" and "Cisco IPsec." You can name the service whatever you like. After that, enter ucfvpn-1.vpn.ucf.edu for the service address, your NID for the account name, and leave the password field blank. Next, click the "Authentication Settings" button. Choose "shared secret," and type "knights" in the empty field. Then type "ucfstudent" in the "Group Name" field. Click "OK" and then "Apply" to create the new VPN service.
2. In the "Network Preferences" window for the VPN you just created, click "Connect," and connect to the VPN using your NID and NID password.

Connecting to Eustis from a Command Line Terminal (Mac and Linux)

1. Open a terminal window and connect to Eustis by typing the following:

```
ssh YOUR_NID@eustis.eecs.ucf.edu
```

2. When prompted for your password, type your NID password. Note that Eustis does not print asterisks ('*') to the screen as you type your password. It might look like the system is frozen, but don't worry; it's capturing your password as you type it. After you type your password, hit enter.

Note: If you get an error about IP spoofing or a "REMOTE HOST IDENTIFICATION HAS CHANGED" warning when connecting, you might need to remove your old ssh key, like so (and then try re-connecting):

```
ssh-keygen -R eustis.eecs.ucf.edu
```

Transferring Files to Eustis via Terminal (Mac and Linux)

1. Open a new terminal window.
2. Use the "cd" command to navigate to the directory containing the file(s) you want to transfer. E.g.:

```
cd Desktop/cop3223/program1
```

3. Type the following to transfer some file to Eustis. Note the need for the "::~/" at the end of this command:

```
scp some_file.txt YOUR_NID@eustis.eecs.ucf.edu::~/
```

4. When prompted, enter your NID password (and keep typing even though no characters appear as you do).

Connecting to Eustis with MobaXTerm (All-in-One Solution for Windows)

Please note that some versions of the SSH program included with Windows will not be able to connect to Eustis. You can instead download MobaXTerm - a free program that provides a beautiful, all-in-one solution for working with Eustis. MobaXTerm allows you to connect to Eustis, transfer files, and interact with the Eustis command line all in one program, rather than dealing with separate applications for file transfers and command line interactions. It also allows you to edit files that are stored on Eustis and update them automatically when you save (rather working with local copies of all your files and then manually transferring them to Eustis every time you make a change).

See the following link, and follow the "GET MOBAXTERM NOW!" button to download the free version:
<http://mobaxterm.mobatek.net/>

To connect to Eustis with MobaXTerm, you'll want to establish a new SSH session with the following settings:

Remote host: eustis.eecs.ucf.edu

Specify username: (enter your NID in this field)

Port: 22

Basic Linux/Mac Commands (Including Command Line Compilation)

1. To compile a source file (.c file) into an executable:

```
gcc source.c
```

2. By default, the command in (1) will produce an executable file called *a.out*, which you can run by typing:

```
./a.out
```

3. To name the executable something else when you compile:

```
gcc source.c -o whatever.exe
```

4. To run the program created in (3), which is called *whatever.exe*:

```
./whatever.exe
```

5. Running the program could potentially dump a lot of output to the screen. If you want to redirect the output of your program to a text file in Linux, it's easy. Just run the program using the following:

```
./a.out > output.txt
```

This will create a file called *output.txt* that contains the output from your program.

6. Linux has a helpful command called *diff* for comparing the contents of two files, which is really helpful if you have a text file that contains the solutions you're looking for. You can see whether the contents of two files match exactly (character for character) by typing, e.g.:

```
diff output.txt solution.txt
```

If the contents of *output.txt* and *solution.txt* are exactly the same, *diff* won't have any output. It will just look like this:

```
seansz@net1547:~$ diff output.txt solution.txt
seansz@net1547:~$ _
```

If the files differ, *diff* will spit out some information about the lines that aren't the same. For example:

```
seansz@net1547:~$ diff output.txt solution.txt
1c1
< Hello, world!
---
> Hello world!
seansz@net1547:~$ _
```

7. To list all the files in your current directory:

```
ls
```

8. To delete a file, such as *whatever.exe*:

```
rm whatever.exe
```

9. To dump the contents of a file to the screen:

```
cat output.txt
```

10. To compile multiple source files into an executable, which you will have to do for some of your assignments this semester, simply list all of the source files you want to compile after the *gcc* command:

```
gcc source1.c source2.c source3.c
```

11. If you want to compile a program that includes *math.h* library functions, you need to link the math library by adding the *-lm* flag at the command line:

```
gcc -lm source.c
```

Appendix A:

Establishing a UCF VPN Connection (Manual Installation for Linux Users)

You might have to manually install the Cisco AnyConnect Client in order to connect to UCF's VPN if you're using Linux. Here's how to do it.

1. Go to ucfvpn-1.vpn.ucf.edu
2. Sign in as a student using your NID and NID password.
3. If the client does not download right away and seems to be stuck at "Sun Java Applet started, this may take up to 60 seconds..." just be patient. It might take 2-3 minutes. Eventually, it should come up with this message:

```
Web-based installation was unsuccessful. If you wish to install the Cisco AnyConnect Secure Mobility Client, you may download an installer package.
```

```
Install using the link below:
```

```
Linux x86_64
```

4. Right-click the link and save the file (vpnsetup.sh) to your desktop.
5. Open a terminal and enter the following commands:

```
# Go to your Desktop
cd ~/Desktop

# Make the script you downloaded executable
chmod +x vpnsetup.sh

# Run the script with administrative privileges. (This will ask
# for your Linux account password. That's okay. Type it in.)
sudo ./vpnsetup.sh
```

6. Find and run the "Cisco AnyConnect Secure Mobile Client" in your Applications menu. (It was filed under "Other" on my system, but your mileage might vary.)
7. Enter ucfvpn-1.vpn.ucf.edu, click "Connect," and supply your NID and NID password.
8. You'll have to click "Accept" for some terms of service.
9. Open a terminal and connect to Eustis using your NID and NID password:

```
ssh YOUR\_NID@eustis.eecs.ucf.edu
```

Important note: Cisco AnyConnect sometimes produces the following error: "AnyConnect cannot confirm it is connected to your secure gateway. The local network may not be trustworthy. Please try another network." If that happens to you, you can either simply try switching to Firefox, or [install OpenConnect](#) instead.