

CSE 351: Alternate Workflow and Pro-Tips

Why?

Because my computer is not that powerful, the VM runs pretty slowly on my machine. Working only in the terminal is also a pain. Instead, with this workflow, I get the power of the CSE lab machines in the comfort of my own preferred text editor and operating system!

Overview

The idea here is to use SFTP (SSH File Transfer Protocol) to view and edit your files on Attu, and SSH (Secure SHell) to run commands on Attu. The beauty of these clients is that any changes you save locally automatically are saved and uploaded to Attu!

For EE majors, you can log into the EE Linux lab instead of Attu.

A. SFTP

Protocol	SFTP
Port number (should be auto-set)	22
Host name	attu.cs.washington.edu for CSE majors linuxNN.ee.washington.edu (where NN is from 12 to 18) for EE majors
Username	<cse-netid> for CSE majors <uw-netid> for EE majors
Password	Your corresponding password (shocker!)

Mac OS X

1. Install CyberDuck (<http://cyberduck.io>) from the website.
2. Hit “Ctrl + Shift + B” to create a new bookmark.
3. Set the session options as detailed above.

Using your preferred editor:

1. In the “Edit” menu at the top, select “Preferences.”
2. Under the “Browser” tab, select the option “Double click opens file in external editor.”
3. Under the “Editor” tab, change the selection for default editor to your preferred editor.
4. Select the “Always use this application” option.

Windows 7+

1. Install WinSCP (<http://winscp.net>) from the download page.
2. Set the session options as detailed above, and select “Save” for future use.
3. If prompted, select “Remember password for this session.”
4. If a message pops up about remembering the host fingerprint, select “Yes.”

Using your preferred editor:

1. Hit “Ctrl + Alt + P” to open the Preferences window.
2. Select “Panel” in the left list of categories.
3. Change the “Operation to perform on double-click” to “Open.”
4. Then, set the default editor on Windows for the file-types that you’ll be using (.c, .h, etc.) to your preferred editor.

B. SSH

Mac OS X

Lucky for you Mac users, Mac OS's **Terminal** uses a Unix-like shell that you can directly use with no outside software!

Windows 7+

At the time of making this updated worksheet, Microsoft had just announced native Bash for Windows 10, but for now you can download **PuTTY**. (<http://putty.org>)

Logging in:

We'll be using the same hostname and such as the SFTP details. For Mac users, enter this into a Terminal window:

```
ssh <cse-netid>@attu.cs.washington.edu or  
ssh <uw-netid>@linuxNN.ee.washington.edu (NN is 12-18, same as the SFTP host)
```

Enter your password when the prompt shows up. It won't look like you're typing anything: that's done for security.

Using the Shell

Once you're logged in, you can navigate around the terminal to access the files you're working on, compile them, and run them. A detailed guide regarding this can be found on the left toolbar of the website, called "Linux tips for CSE351."

C. Pro Tips

1. Quick GCC ("QGCC"): Saving time by not having to type the GCC command each time.
 - a. Log into Attu.
 - b. Type in the command "vim ~/.bashrc"
 - c. Add the following line to the bottom of the file:

```
alias qgcc='gcc -Wall -g -std=gnu99 -o'
```
 - d. Save and exit vim.
 - e. **Exit the shell.**
 - f. Now, when you log back in, you can simply run "qgcc test test.c" to compile the test.c file into the executable file test!
2. Quick login: Save time by automating your SSH login. (this is mostly for Mac users)
 - a. On your home machine's terminal, type in the command "vim ~/.bash_profile"
 - b. Add the following line to the bottom of the file:

```
alias attu='ssh <cse-netid>@attu.cs.washington.edu'
```
 - c. Follow the instructions on this website to add your SSH key to Attu's recognized keys: <http://bit.ly/sshlogin>
 - i. In the tutorial, a and A refer to your local machine, whereas b refers to your CSENetID and B refers to attu.cs.washington.edu

Let us know if you have any questions, and happy SSH-ing!