CS 246 Fall 2014
Getting Started

September 8, 2014

1 Summary

- Terminal Setup
- Text Editors

2 Terminal Setup

Note: You should only follow one of these suggestions - e.g. Cygwin or Putty but not both

2.1 XServer

- To run X (read: graphical) applications, your computer needs to be running an X Server
- Linux installations by default are running one
- OSX installations may or may not be (depends on OSX version)
  - See the XQuartz project for more information.
  - `http://xquartz.macosforge.org/`
- Windows will also require an XServer - we recommend XMing
  - See `http://sourceforge.net/projects/xming/`

2.2 Cygwin - Windows only

- Cygwin is a Windows program that simulates the Unix experience.
- It can be downloaded from `http://www.cygwin.com/`
- Note that during installation you will be **prompted but not required** to select packages to install
- You should install the ssh package (openssh/libssh2_1) at the very least though you may want others (e.g. g++, text editors)
- Cygwin currently ships with an X server as well
- You should also install the vim package (vim is course staff approved) or text editor package of your choice.

2.3 Terminal - OSX, Cygwin, Linux

- Open the terminal
- Enter the command: `ssh -Y your-username@linux.student.cs.uwaterloo.ca`
  - Note that the -Y option allows for X11 forwarding (e.g. graphical applications)
  - Username refers to your Quest username
- Enter your Quest password
  - Do not be alarmed if you do not see any text when doing so. This is normal. You are still entering your password.

  - Hit enter/return when you have completed entering your password.
  - If this doesn't work then you need to reset your password.
  - visit `http://www.student.cs.uwaterloo.ca/password` to do so.
- Note that your default shell may not be bash. To make your default shell bash, visit the password reset site and click the relevant link.

2.4 PuTTY - Windows (Generally)

- Open PuTTY (`http://www.chiark.greenend.org.uk/~sgtatham/putty/`)
- In the **Host Name** field enter `linux.student.cs.uwaterloo.ca`
- In the sidebar under **SSH**, click **X11**
- Click the box that says `Enable X11 forwarding`
- Press `Open`
- Enter your Quest username and password
  - Again, it may appear that nothing is happening when you type your password but your keystrokes are being hidden for privacy.

3 Text Editors

- There are several different command line text editors that you can use.
  - vi/vim is what we recommend and will give you less grief during the course
  - Other options are emacs, pico, nano.
  - In addition, there are other graphical text editors that might be handy (e.g. gvim, gedit).
    * emacs does not meet Unix standards and has issues with newlines. Be careful.
    * pico and nano are both simple and it is easy to outgrow them.
  - Countless debates have arisen between vi and Emacs. We're not going to get into the trade-offs besides the newline issue.
- A quick vim rundown:
  - Enter the command `vim file` to create or edit an existing file named `file`
  - By default vim starts in command mode
  - Different keystrokes activate different commands
    * **h,j,k,l** - navigate like the arrow keys (which generally work in vim as well)
    * **x** - delete highlighted character
    * **r** - replace highlighted character with next key pressed
    * **o** - create a line below the current line (starts insert mode)
    * **O** - create a line above the current line (starts insert mode)
    * **i** - start insert mode (can enter text - arrow keys may or may not work)
    * **Esc** - return to normal mode
    * **:w file** - save the file to given filename
      · If no filename given, then write to filename specified when vim was opened
    * **:wq** - write and quit
    * **:q** - quit
  - Use `vimtutor` to learn all you need to know about vim
    * Enter `vimtutor` on the command line to start the tutorial
    * Works on the undergraduate environment - may or may not work on your personal computer