Linux Survival Guide

Introduction:

This guide is intended for use with classes at DACC that use a Linux operating system as the platform for students. It provides a quick summary and examples of how to use some command line commands. Remember that all commands are *lower case.*

Connecting to Linux:

Unless you have Linux installed on a PC that is in front of you, you will have to connect to a server. There are three basic ways to connect to a server. To transfer files you can use an FTP connection. To be a user on the system you can connect via a telnet connection or an X windows connection.

Telnet

From DACC or from home you should use an application called PuTTY. It is available on the Internet for free.

Instructions:
   Go to the start button, Programs, Internet&NMSU, Putty.
   Select *OECSLinux* under saved section or
           Host Name set to *dab-oect2.nmsu.edu* or *128.123.227.135*
           Click of SSH
   Click the OPEN button

   A window should appear with a login prompt. See **login** below for login instructions.

FTP

WS-FTP Pro or FileZilla are user-friendly products for transferring files to and from the Linux server and your PC.

Instructions:
   Go to the start button and type filezilla or WS-FTP.
   Select *OECSLinux* under Profile Name or
           Host Name set to *dab-oect2.nmsu.edu* or *128.123.227.135*
   Enter you user name in User ID
   Click the OK button

A window should appear with a password prompt. See **login** below for login instructions.

Commands:
Note that items in [ ] are optional.

Login
Your login ID or user name should be the same as it is for WebCT and your NMSU account. The ID is case sensitive, Tim is not the same as TIM, so make sure the cap lock key is off. Your ID will be <u>all lower case</u>. Your initial password will be your last name followed by four numbers. (i.e. smith1234) Your instructor will give you the numbers in class. Again, it will be all lower case and no spaces. No characters will be echoed back to your screen, <u>nothing will appear as you type,</u> so be careful. <u>Don't</u> use the numeric keypad to type the numbers. After you login the first time, CHANGE YOUR PASSWORD. (See **PASSWD** below)

Logout
Always log yourself off of a Linux server when you are done with your session.

Command:
  Syntax - *logout*

  Example:
   logout

PASSWD
This command is used to change your password. See the man page on how to choose a password.

Command:
  Syntax - *passwd*

  Example:
   passwd
   New UNIX password: X3g7rum9 (Note: no characters will be echoed back to your screen, <u>nothing will appear as you type,</u> so be careful.)
   Retype password:

MAN/INFO

Man and info provide online documentation for commands. The problem is that you need to know the command before you can get the documentation.

Command:

Syntax - *man* command name

Example:
  man passwd

  or

  info passwd

LS
  This command lists the contents of the current directory or directory that is
  provided as a parameter.

  Command:
    Syntax - *ls* [-la] [directory path]

    Example:
      ls –la   (shows all the files in the current directory in long format)

      ls /home   (shows files in the /home directory that don't start with a period)

CD
  To change your current directory.

  Command:
    Syntax - *cd* path

    Example:
      cd ch2   (This will change your working directory to ch2)
     or
      cd   (With no parameters the cd command will take you to your root
                    directory.)
     or
      cd ..   (With two periods it the take you back one directory.)

CP
  This command will copy files from the source location to the destination.

  Command:
    Syntax - *cp* source file destination file

    Example:
    cp test.txt newtest.txt   (Copies test.txt to a new file newtest.tx in the current
                                    directory)

cp /home/OECS111/CLASS/test.txt **.**   (Copies the test.txt file to the current directory, naming it test.txt. Note that there must be a space between the end of test.txt and the period)

MKDIR
Use this command to create new directories.

Command:
Syntax - *mkdir* new directory name

Example:
mkdir tstdir   (creates a new directory tstdir in the current directory)

MV/RENAME
The mv, move command, and rename command do the same thing. They can give a file a new name and/or move the file to a new location.

Command:
Syntax - *mv* source_file destination_file

Example:
mv test.txt testnew.txt   (renames test.txt testnew.txt, test.txt no longer exists.)

PS
To check on what processes are running use the ps command.

Command:
Syntax - *ps* [uxa]

Example:
ps ux   (This will list all the process that you are running)

KILL
The kill command will terminate any processes that you are running.

Command:
Syntax - *kill* [-9] process ID

Example:

Kill –9 1345   (will terminate the process that has the ID 1345. Use the ps
command to get the process ID of the program you want to kill)

GPP
This command will invoke the gnu C++ compiler and linker to create an executable
program from a source code file.

Command:
   Syntax – *g++ –g –o* executable name program name

   Example:

   g++ –g –o progA progA.cpp

RUNNING A PROGRAM
Use the following command string to run a program that is in your current
directory.

Command:

   Syntax - ./executable program name

   Example:

   ./progA

PRINTING A PROGRAM OR OUTPUT
Use the following command string to print a program or file that is in your current
directory.

Command:

   Syntax - lp filename

   Example: Note this will print to the printer at DACC
     lp progA.cpp

   To print to a printer in lab 85
     lp –d lab85 progA.cpp

   NOTE: You can use the "lpstat –a" command to find the name of the printer
   you want to send to.

EDITING A PROGRAM

Use the following command string to edit a program or file that is in your current directory.

Command:

  Syntax - emacs filename

  Example: Note this will print to the printer in room 105
    emacs progA.cpp

  Common emacs commands:
      F10 - use the F10 key to get to menu options (use ESC ESC ESC to get out of menu selection.)

      For example: F10 f s   (f = file, s = save; this will save you file)

                        F10 f e   (f = file, e = exit; this will exit emacs)

Sample commands used in a working session during class.

Step	Description	Commands	Notes
1	Login	Login: billybob Password	Names are case sensitive Passwords are not echoed to screen
2	Make a new directory	mkdir ch3	Makes a new directory "ch3" under user home /home/192/billybob/ch3
3	Change to new directory	cd ch3	Use cd .. to go back one folder
4	Copy fixme file	**cp /home/192/CLASS/fixmech3.cpp .**	Note the blank and period after the cpp . Change 192 to your class.
5	Edit file	emacs fixmech3.cpp	If in GUI interface use emacs fixmech3.cpp &
6	Compile	g++ -g -o fixmech3 fixmech3.cpp	
7	Execute program	./fixmech3	
8	Repeat steps 5, 6, 7 ten to twenty times until program works		
9	Print source	lp fixmech3.cpp lp –d Lab213P1 fixmech3.cpp	Prints in room 214 Prints in Lab 213 Printer 1
10	Look at files in directory	ls -l	-l is long format
11	Debug	gdb fixmech3	A text based debugger to stop execution at a break line to view variables and exit states.
12	Logout	logout	