



# FIT3143 Lab Week 1

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## INTRODUCTION TO LINUX

### OBJECTIVES

- The purpose of this lab is to introduce you to the Linux VM
- You will also form group for the lab assessment tasks
- Understand Lab-work evaluation process

### INSTRUCTIONS

- Form a group of two members
- Download and set up the Linux VM
- Setup eFolio (including Git) and share with tutor and partner

### DESCRIPTION:

- Become familiar with Linux VM
- Basic Linux commands that will be useful in subsequent labs
- Understand Linux networking
- Discover your programming tools

### WHAT TO SUBMIT:

- Screenshot of the running Linux VM and Lab answers in the eFolio.

### EVALUATION CRITERIA

- This Lab-work is not part of grading

## LAB ACTIVITIES

### Finding Help

- (a) Which text-based command provides information on the use of other Linux commands and utilities? List at least two.
- (b) List the command-line for finding help on the usage of ssh?
- (c) How do you access Linux manual pages? List the full command line for accessing a particular section.
- (d) Where would you generally look for help on the Web? List 3 major sites.

### File and Directory Manipulation

- (a) List the command-lines for creating and deleting sub-directories.
- (b) List the command-line for creating a zero-length file.

### Users and Access Control

- (a) Create a user account for yourself and assign it to a unique group. List the command-line.
- (b) Set the permissions for your home directory such that no one besides yourself can read your home directory's contents. List the command line.
- (c) What does `chmod 4775 filename` do?
- (d) How do you set the executable permission on a file? List the command-line.
- (e) List the command-line for inspecting the permissions assigned to a file.
- (f) List the command line for inspecting the permissions assigned to a directory.

### Linux Shell

- (a) What is your default Linux shell? Read the manual pages on your shell and then answer the following questions.
- (b) How do you get the last command-line re-displayed?
- (c) Which key-stroke invokes filename completion?
- (d) Which file in your home directory contains the PATH variable, what does it do, and how do you inspect its value?
- (e) What does the shell function alias do? Add an alias to your shell configuration file and test that it works. List the command-lines.
- (f) How does which command work? List a command-line demonstrating its function.
- (g) How do you execute a program file in the shell? List the command-line.
- (h) Why it's sometime necessary to prefix `./` to run an executable file?
- (i) How are the contents of a text file displayed? List the command-line.
- (j) List the command-line for search all files with an extension `.html` on the system.

(k) Create a simple shell script for listing the contents of your directory and make it executable. List the script and the command-line for changing it into an executable file.

### **Networking**

(a) Using ifconfig list the following networking parameters for eth0:

IP address:

Hardware address:

Netmask:

(b) What is the function of /etc/hosts file?

(c) What is the function of /etc/resolv.conf?

(d) Using netstat display the routing table in the numeric format. List the command line and default route.

### **Programming Tools**

Confirm the following programming utilities are available within your VM:

(a) gcc

(b) Open MPI

Hint: apt-cache search SearchTerm