

Basic Linux File Management & Commands

IMPORTANT NOTES:

1. Follow the instructions to install on your device the relevant software to allow you to log in and connect to your Virtual Machine on Monash Cloud server.
2. Study lecture materials at least 1 hour and prepare Question 1-4 under Lab Tasks section prior to the lab session. Prepared questions will be discussed in the lab session.

1 Overview

The objective of this lab is to introduce the students to the basic Unix commands. UNIX-like systems are increasingly being used on personal computers, mobile phones, web servers, and many other systems. This laboratory exercise reviews some of the essential commands and capabilities that match likely needs of FIT2093 students.

2 Lab Tasks: File and Directory manipulation

Root Directory and its Subdirectories. In this lab, we will use the Ubuntu 64-bit VM on Cloud. We will learn some basic Linux file and directory manipulation commands in the command terminal, so that we can use the command terminal in future labs in this unit. A list of important unix commands is given in Table 1. For more details and examples for using these commands, refer to the Linux commands quick reference link on the week 2 Moodle lab material page.

Every file and directory in the file system has a path. Unix paths are delimited by forward slashes (/). e.g. A login name, Mark, has a directory as /srv/home/mark in the VM. After logging your VM, your directory follows the same pattern as /srv/home/[user name], where [username] is your Monash authcate user name.

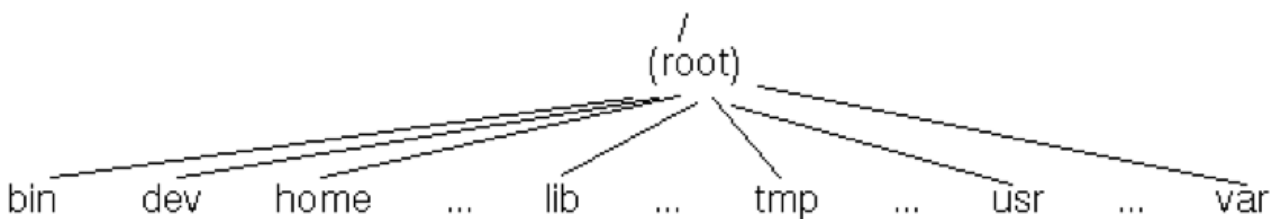


Figure 1: Unix file system hierarchy.

Special directories.

- **Root Directory (/):** The Top-Most directory.
- **Bin Directory (/bin):** Executable programs that comprise the GNU/Linux utilities.
- **Home Directory (~):** Current User's directory.
- **Current Directory (.):** The directory you're in.
- **Parent Directory (..):** The directory above.

Absolute paths: start with "/" i.e. the root directory.

Relative paths: start from your current directory.

man <cmd>	an interface to the on-line reference manuals
whatis <cmd>	display manual page descriptions
<cmd> --help	print a help message and exit
history	prints the last 50 commands
grep	print lines matching a pattern
<cmd> > [filename]	send the output of the command to that file
cat [filename]	concatenate files and print on the standard output
mkdir	make directories
rmdir	remove empty directories
rm	remove files or directories
cp	copy files and directories
mv	move or rename files and directories
find	search for files in a directory hierarchy
locate	find files by name
pwd	print name of current/working directory
ls	list directory contents
cd	change working directory
tar	The GNU version of the tar archiving utility

Table 1: File and Directory Manipulation Commands.

Assignment Project Exam Help

1. To poke around the Linux file system, open a Linux command terminal and take a look at the files in the root directory using the `cd /` command to change to the root directory, followed by the `ls` command to list the contents in the root directory. Experiment with variants of the `ls` command to see additional information, for example, what information does `ls -l` display, and what does `ls -a` display? (note: we will learn about the access control permissions of files in UNIX in a later lab). You should see directories with names like `/bin`, `/home`, `/lib`, and `/usr`.
2. There is an archive file with the filename `poems.tar.gz` on the `/srv/fit2093files/fit2093lab`, which contains a collection of poems by different writers. Use the change directory command `cd` to change your current directory to that directory and copy the file `poems.tar.gz` from `/srv/fit2093files/fit2093lab` to `/srv/home/[username]`. Then, list its contents to verify that it contains the file `poems.tar.gz`. Then run the command `tar -xvzf poems.tar.gz` to extract the contents of this archive file to your home directory.
3. The archive file extracted in the previous task should have created a directory called `/home/[username]/poems`. Change your current directory to the latter. What command can you use to display the path of your current directory to verify that? Perform the operations in the following tasks from this poems directory.
4. Poems by both *Angelou* and *Neruda* are in the same directory. Create a separate directory for Neruda and move all his poems to the new directory. Rename the original directory as *Angelou*. (Hints: Auto-complete function: Try clicking “Tab” after keying first few characters of the folder name).
5. There is only one poem by *Blake*. Move that poem to Others directory and delete the directory *Blake*.
6. Create a text file called `blank.txt` using the `gedit` text editor and add some text to the file.
7. Use `cat` command to display the contents of the file.

3 Further Exploration

1. The Linux command `ln` can create a symbolic (soft) link to a target file or folder, similar to the “shortcut” in Windows operating system. Learn how to use `ln` to create a symbolic link by using the proper options and try it by yourself in the VM.