

Introduction to Operating System – Linux

Introduction

During this lab you will be introduced to some basic Linux commands, most of which you might already know. Other than learning simple commands, you will learn regular expressions. Regular expressions allow us to write expressions which match multiple strings based on the criteria we specify. Some other concepts being introduced in this lab are I/O redirection and the background and foreground execution of processes. Note that all commands and their arguments that should be typed on Linux will be shown in italics. Also, at some points new commands may be introduced in the exercise, in which case they will be given a bold font. Remember that you should show the result of exercises to the instructor.

Basic Linux Commands

When using Linux, knowing about file and directory operations is the first step. You will be introduced to some basic commands and then given some exercises which will show you how these commands work.

The standard form of commands on a Linux system is:

`$ command -options argument(s)`

command	ls
description	Lists files and directories in a directory (the current directory by default).
some parameters	-a, --all do not hide entries starting with . -l use a long listing format -R, --recursive list subdirectories recursively -S sort by file size

command	cat
description	Displays the contents of a file on the screen.

command	mv
description	This command doubles as a move and rename command. You can use it to move files from the one directory to another, and change the name of the file.

command	cp
description	This command is used to copy a file from one location to another.

command	rm
description	This command is used to delete a file. Given the right options, it can even delete directories making the next command unnecessary. Later on in the lab you will be told how to find out these options.

command	rmdir
description	This deletes only empty directories. You must first delete all files in it using the rm command.

command	mkdir
description	This command creates directories.

command	vi
description	This is a text editor. We use it to create and edit files. The alternate to this editor is pico.

Now we come to the second most important command you will ever learn. The first was ls.

command	man
description	This is a command used to view help files on various other commands. It not only describes the command, but also describes the options available with it.

command	who
description	The command who lists the names of people logged into the system.

command	ps
description	There are usually a lot of processes running at the current moment. This command enables us to see which ones we or other people are running.

command	kill
description	Now that you have seen some of the processes being run, what if we want to end some of them. That's the job of this command.

command	ln
description	Just like windows, linux also has shortcuts. This command enables us to make a shortcut to anything, including files and directories. These shortcuts are called soft links and hard links. These two terms will be explained by the instructor in detail.

command	touch
description	In simple terms, this utility creates empty files for us. If

the file already exists, it will change its modified time to the current time.

command `echo`
description This is a simple command to display text. Yet, even being a simple command, it is one of the most important commands you will encounter on unix based systems.

command `find`
description Sometimes you need to find a file. That's when you need to use this command. It not only searches on the basis of filenames, but also uses regular expressions.

command `grep`
description Another important command, `grep` allows you to display a line by matching a word or some portion of the line. It can directly scan a file, or just standard input.

command `cut`
description Sometimes you need certain portions of a line and ignore the rest. You can use `cut` to separate fields based on a field delimiter.

command `gcc`
description Invokes C compiler.

command `./a.out`
description Executes file made by `gcc` and `g++`.

command `g++`
description Invokes C++ compiler.

command `./a.out`
description Executes file made by `gcc` and `g++`

command `javac`
description Invokes java compiler.

command `java`
description Executes java class.