Linux Skills Open Notes

Description

The Linux skills test is an individual hands on practical test of Linux skills. You will be asked to login and complete a series of tasks. General rules:

- No Internet
- Use only the information on the Pi, including man pages
- No GUI (ssh login)
- Open note

General Commands

Command	What it does
$ uname -a	Version of unix
$ passwd	Change password
$ man uname	Built in manual for commands
$ top	Display running processes
$ ls	List directory contents
$ cd	Change directory
$ pwd	Print working directory
$ mkdir	Make a new directory
$ cp	Copy files
$ mv	Move files
$ rm	Remove files
$ cat	Used to display a file
$ more	Used to display a file page by page
$ less	A more powerful version of more
$ ssh	Utility to remotely login to a unix computer
$ shutdown -h now	Shutdown computer immediately
$ reboot	Reboot immediately
$ printenv	Display environment variables
$ echo	Print

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$ nano	Create a script
#!/bin/bash	All bash scripts start with this
./<filename>	Execute file
$ ls -al	List all files
$ chmod +x <filename>	Add executable permission to file
$ chmod 755 <filename>	Set to :rwx r-x-r-x
$?	The exit status of the last command that was run
$ ps -aux | grep apache	Get a running list of all processes | search for a regular expression
$ git add	Add files
$ git commit -m “”	Commit
$ git commit -a -m “”	Add and commit
$ git status	Current status of repository
$ git log	See list of commit objects in the repository
$ git diff	See diffs between files and a commit object
$ git pull	Pull changes from a repository
$ git remote add origin http://github.com/githubusername/repository name.git	Make local repository
$ git push -u origin master	Push to repository
$ git remote set-url origin git@github.com:GitHUser/GitHRepo.git	Add set url
$ git remote show origin	Check if it is set up correctly

File System

- ls - directory contents
- cd - change directory
- pwd - print working directory (where am I)
- mkdir - make a new directory
- cp - copy files / directories
- mv - movie files / directories

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- rm - remove files / directories

Basic File System

- cat - used to display a file
- more - used to display a file page by page
- less - a more powerful version of more

Basic

- echo hello world - display
- Date - displays the current date
- Hostname - IP address
- Uptime - displays the uptime of the machine
- Top - display running process
- Ssh-keygen

Skills to be tested

- **Files**
  - **Copy, move, remove files in the file system**

Cp file

Mv file location

rm file

  - **Edit files**

Nano file

  - **Move around the file system and locate files**

cd /myFolder/ (example: myFolder)

[see table]

  - **Access and understand file permissions**

Chmod 755 file

./ file

- Bash

#!/bin/bash

- **Bash scripting which uses variables, iteration and selection**

Cat file:check status

./file : execute

- **Passing a single input parameter to a script from the command line**

- ./file input 1

- **Read input from the user in the script**

- $<input number>

- **Understand the PATH variable and how to change it**

Printenv PATH

PATH=$PATH:/home/student4/directroy

Printenv PATH

- **Network**
  - **Understand how to ping a machine**

```
ping -c 1 <device>num &> /dev/null
```

- **Understand the difference between an hostname, IP address and a MAC/HW address**

Hostname -I : IP address

Host name is resolved to an IP by a DNS server

So http://www.google.com is a hostname, but will get converted to an IP once through DNS

And then a MAC address is a static address that is on read only memory in a device that is used to identify that device

So when your printer connects to your router, it will send a MAC address when asking for an IP adress

If the router recognizes your printer's MAC adress, it will assign it the IP it had last time it was turned on

Basically the MAC adress just identify's a device. It never changes.

- **Git**
    - **Create, add and commit files to a local Git repository**

Nano file

Git add

Git commit

Git rm

Git mv

Add from github: git push

Git pull: git file from github

    - **Clone a remote GitHub repository given a URL**

Git clone git@github.com: gituser/githubrep.git

Git fetch

Git pull

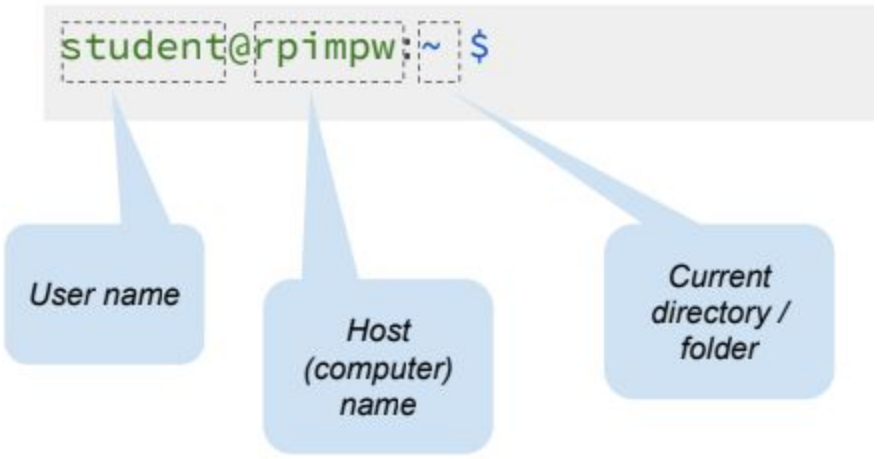
    - **Use simple Git status/diff/log commands to understand a repository**

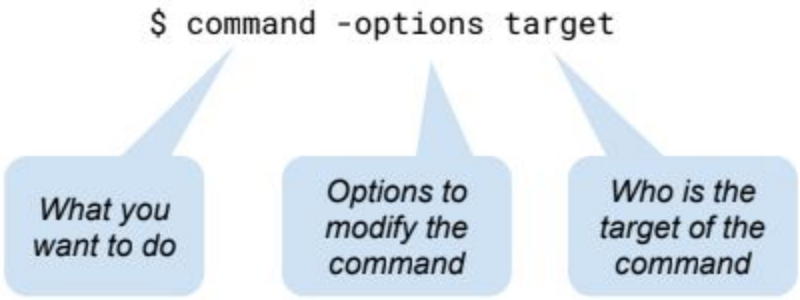
Git diff

Git log

Git status

Concepts





~	Current users home directory
/home/student1/tmp	Absolute path to a directory
~/tmp	The tmp directory under my home e.g. /home/student1/tmp
../student2/tmp	Go on level up and then down to student2/tmp