**System Commands:**

|  |  |  |
| --- | --- | --- |
| 1 | man <command> date mount uptime exit | Gets the help for commands Show system date Show mounted filesystems Show system uptime Log out of current session |
| 2 | su su <username> sudo sesu <processingid> sesu - bash | Switches to the root user account To switch the user It runs a single command with root privileges To login as a processingid user To login as a root user |
| 3 | Id who whoami passwd w | To show the current logged in user All logged in users to the server Current logged in user To change the password Display who is online |
| 4 | ping <host> (or) telnet <host> | To check if a remote host is alive or not |
| 5 | ls –l <directory> ln -s /path/to/source /path/to/destination | Provides the symbolic targets  To Create Symbolic link from source to destination (All symbolic links are avialble in /use/local/bin) |
| 6 | arch | 32 bit or 64 bit system |
| 7 | netstat –a netstat –a | grep <port number> | List of open ports Gives the port number info |
| 8 | Clear  history | Clear console  To see command line history |

**Files & Directory Commands:**

|  |  |  |
| --- | --- | --- |
| 1 | cd  cd <directory> cd ../  ls ls –lrt  ls -ltr ls -R  ls -a  ls -l ls –lah  file <filename>  pwd  du -sh <directoryname> | Return to $Home directory Change directory Return to parent directory of current directory  List the content of current directory To list sub directories in the directory List the file names with details List the subdirectories recursively List all the content including hidden files List the content and its information File size in the folder  Shows the file type  To show the current working directory  Gives the size of the directory in human readable format |
| 2 | cat <filename> cat <filename> <filename> cat ><filename>  ctrl+d cat -n <filename>  less <file name>  space  down and up arrows,j and k  /  q  H  tail –f <filename>  ctrl+c  head -100 <filename>  wc -l <filename>  wc -w <filename> | Displays content of the file Displays content of multiple files Creates a new file and starts editing To exit from editing file To display line numbers in a file  To see the content of a file Advances by one page Scroll by one line Searches for text To exit the less pager displays help screen  To see the file info run time to get out of tail  Show first 100 lines of file  Prints number of lines in a file  Prints number of words in a file |
| 3 | find / -name “\*.log” find / -name <filename> find . -name <filename> find /dir/ -name \*.log  find . -type f -name "\*.class" -delete  grep <word> <filename> grep <word1> <filename> | grep <word2> | Finds the file with extension as .log under root. Finds the file with <filename> under root. Finds the file with <filename> under current folder and subfolders. Finds the file with extension as .log under dir.  Deletes all .class files under the current and sub folders.  To search the <word> in the file <filename> Searches multiple words in the same line in a file |
| 4 | vi <filename>  i  Esc -> w -> Enter  Esc -> Shift+zz  Esc -> :wq! -> Enter  Esc -> :q! -> Enter  touch <filename> | To Edit the file Insert To save the edited file To save and exit from vi editor To save and exit from vi editor To exit from vi editor  To Create the empty file |
| 5 | rm <filename> rm –r <foldername>  mkdir <directory name>  rmdir <directory name> | To remove the file To remove the folder  To create the new directory/folder  To remove an empty folder |
| 6 | chmod 4 <filename> chmod 2 <filename> chmod 1 <filename> chmod 0 <filename> chmod 777 <filename>  chown user:group <filename> | To make the file Readable To make the file Writable To make the file Executable To make the file Not Readable, Not Writable, Not Executable Gives read,write and executable permissions to file  Change the ownership of file to user and group |
| 7 | mv <src filename> <dest filename> mv ~<userid>/<filename> mv <dir1> <dir2>   cp <src filename> <dest filename> cp /dev/null <filename> | Moving file content from src to dest Moving files under userid directory to current directory Renaming directory1 to directory2   Copying file content from src to dest To clear the file |
| 8 | gpg -c <file> gpg file.gpg  tar -cf archive.tar foo bar tar -xf archive.tar tar -czf archive.tar.gz foo bartar -xzf archive.tar.gz  gzip <file> gzip -d file.gz  Gunzip <zip filename> | Encrypt file Decrypt file.gpg  Create *archive.tar* from files *foo* and *bar* Extract all files from archive.tarCreate *archive.tar.gz* from files *foo* and *bar* with Gzip compression Extract a tar using Gzip  Compresses file and rename it to file.gz Decompress file.gz  Unzip the zipped file |

**Memory:**

|  |  |  |
| --- | --- | --- |
| 1 | top -u <user>  **c    d** Shift+P  ps aux | grep <ProcessingId> ps aux | grep java  Ps -ef ps –ef | grep <processname> ps –ef | grep java  kill -9 <ProcessingId> kill pid pkill name killall name | It will display specific **user** process details. Press ‘**c**‘ option in running top command, it will display absolute path of running process  By default screen refresh interval is **3.0** seconds,  same can be change pressing ‘**d**‘ option in running top command  to sort processes as per **CPU** utilization on running top command  To show all running processes Running <processname> processes Running java processes  To kill process with Process Id Kill process with id “pid” Kill process with name “name” Kill all processes with names beginning “name” |
| 2 | vmstat 10 | Gives the performance of server |
| 3 | less /proc/meminfo | Gives the total RAM of linux system |
| 4 | java -Xmx8g <java file> | Setting 8gb memory to <java file> process |
| 5 | grep -c ^processor /proc/cpuinfo | No. of CPUs |

**SSH Commands:**

|  |  |  |
| --- | --- | --- |
| 1 | ssh $USER@$HOST  ssh $USER@$HOST command  ssh $USER@$HOST -p 1234 | Connect to *$Host* as *$USER*  Run *command* on *$HOST* as *$USER*  Connect to *$HOST* as *$USER* on port *1234* |
| 2 | scp $user@$sourcehost:/location/to/file $user@$destinationhost:/where/to/put | Syntax for copying file from remote source to remote destination |
| 3 | scp $user@$remoteHost:/file/to/send /where/to/put | Copy file from remote to local |
| 4 | scp /file/to/send $user@$remoteHost:/where/to/put | Copy file from local to remote |

**Disk Space:**

|  |  |  |
| --- | --- | --- |
| 1 | df -H df df -h  df -i  du -h folder  du -sh folder  fdisk -l  free | Gives the hard disk size of linux system in GB space lift in current drive how full our current drive  Show free inodes on mounted filesystems  Show file usage of each folder in *folder*  Show the total file size of *folder*  Show disks partitions sizes and types (run as root)  Show memory and swap usage |

**Package Installation:**

|  |  |  |
| --- | --- | --- |
| 1 | dpkg -i package.deb  rpm -Uvh package.rpm | Install a deb package  Install a rpm package |

**Operating System:**

An operating system (OS) is a set of programs that manage computer hardware resources and provide common services for application software.

Windows: GUI

UNIX/LINUX: character user interface/command line

**UNIX:**

Unix operating systems are widely used in servers, workstations, and mobile devices. The Unix environment and the clientñserver program model were essential elements in the development of the Internet and the reshaping of computing as centered in networks rather than in individual computers.

Diff flavors of unix :SUN-SOLARIS: (AT&T, VERIZON,) IBM-AIX, HP-UX

**LINUX:**

Linux is a Unix-like computer operating system assembled under the model of free and open source software development and distribution.

Example: REDHAT Enterprise linux - open source

**Accessing Unix/Linux:**

Need IP Address of the UNIX machine, Login and Password:   
We can use cygwin, putty, or telnet -- tools to connect to linux server

**File Transfer Protocol(FTP)**

Ftp server: winscp, filezilla, winftp

Filezilla:

downlaod filezilla client from: <http://filezilla-project.org/>

host: m-net.arbornet.org

username: h2kunix6

pass:h2kunix6

**Shell scripts:**

Group of commands and logic written in a file usually with extension .sh or .ksh.

./start.sh : Run this from the location of the file. It execute the shell script file.

CLASSPATH=.:<jar location>:$CLASSPATH

export CLASSPATH 🡪Setting classpath

export PATH=$PATH:/Users/adcwq5r/Installations/Angular-CLI/node\_modules/.bin

echo $<variable\_name> 🡪Display values stored in <variable\_name>