**/🡪root directory**

**/root🡪home directory of root**

**/home🡪home directory of all user**

**/boot🡪it contains the kernel information, it contains bootable files, bootloader information**

**/sbin🡪contains system commands, which is used by superuser, ex: fdisk, dump**

**/bin🡪 contains commands used by all users ex: ping, cat, chmod**

**/usr🡪 By default software are installed in this director, contains programme and application for users**

**/var🡪 contains variable information, such as logs and print queues**

**/dev🡪It contains information about all hardware devices.**

**/etc🡪contains all system configuration files**

**/opt🡪contains third party softwares**

**/media🡪contains removable media ex: pendrive cd**

**/tmp🡪contains temporary file information**

**/lib🡪contain library files used by os**

**find / -iname <file/dir name> 🡪to find the location of file or dir**

**wc [–l –w –c] [file name]🡪 To count the lines, word and characters of file**

**diff [file1] [file2]🡪 difference bw 2 files**

**cmp [file1] [file2]🡪 compare 2 file character by character**

**tr “a-z” “A-Z”🡪 to translate character by character**

**head -5 [file name], tail -5 [file name], more [file name], less [file name]**

**grep🡪to find the expression in a file, fgrep🡪work faster the grep, egrep🡪combination of grep & fgrep**

**grep options file1.txt 🡪returns result for matching string "options"**

**grep -i options file1.txt 🡪returns result for case insensitive strings "options"**

**grep -n options file1.txt 🡪returns result for matching string "options" along with line number.**

**grep -v options file1.txt 🡪returns result of the line not matching string "options"**

**grep -c options file1.txt 🡪returns the number of lines in which the results matched search string.**

**find🡪 it is used to search the file.**

**kill -9 [process ID]🡪to kill a process, pidof [service name] or pgrep [service name]🡪 to find the process ID**

**-3🡪Quit process, -15🡪 Terminate process**

**top🡪to moniter system resources**

**nohup🡪execute command even though user disconnect from his account ex:: nohup cp –i file1 file2 &**

**lsof | grep jboss.log🡪We can see two files with the same name but the first says it was deleted. Now this is the file we need to recover.**

**Links:To give a pointer to the source file🡪 soft link, hard link**

**Soft link🡪 inode number of source file and link file are different🡪it can be created across the file system🡪if source file is deleted the link file will not be accessed🡪ln –s [source file] [link file]**

**Hard link🡪same inode number🡪can’t be created across file system🡪if source file deleted, can access link file🡪ln [source file] [link file]**

**Crontab [-u username] [options]🡪options[-e: edit crontab, -l: list crontab, -r delete]**

**To set crontab🡪Min(0-59) Hr(0-23) Dom(1-31) Month(1-12) Dow(0-6) [job]**

**Types of user: Super user, system user(don’t have home dir), normal user**

**/etc/passwd: users created are stored here.**

**/etc/shadow: contains the encrypted user password.**

**/etc/group: contains all the groups**

**/etc/gshadow: group password related information**

**system-config-users &🡪 create, modify user & groups in GUI mode**

**useradd <–u [UID] –g [Primary group] –o [Override] –G [Secondary group] –c [Comment] –d [Home directory] –s [Shell]> <username> 🡪user creation**

**usermod < –l [Change the login name] –L [Lock the account] –U [Unlock the account] –u [UID] –g [Primary group] –o [Override] –G [Secondary group] –c [Comment] –d [Home directory] –s [Shell]> <username>**

**userdel –r <username>🡪delete a user**

**passwd <username> 🡪user’s password**

**passwd –S <username> 🡪user’s encrypted password**

**groupadd <-g [GID] –o [Override]> <group name>**

**groupmod <-g [GID] –o [Override] –n [Group name]> <group name>**

**groupdel <group name>**

**gpasswd <-M [Add multiple users] –a [add a user] –d [delete user] -A [adds a group administrator]> <group name>**

**chmod [permission] [file name]🡪change file permission**

**chown <username:group name> <file/dir> 🡪change ownership of filr/dir**

**chgrp <groupname> <file/dir> 🡪 change the group ownership of a file/dir**

**setfacl –m u:<username>:<permission> <file or directory> 🡪Assigning permissions for a user**

**setfacl –m g:<group name>:<permission> <file or directory> 🡪 Assigning permission for a group**

**getfacl <file or directory> 🡪 To list the applied ACLs on a file or directory**

**setfacl -x u:<username><file or directory> 🡪 To remove an ACL for a user from a file or directory**

**setfacl -x g:<group name> <file or directory> 🡪To remove an ACL for a group from a file or directory**

**netstat –lntp🡪to show network connected ports.**

**rpm –ivh [package]🡪install package**

**rpm –e [package]🡪uninstall package**

**rpm –uvh [package]🡪upgrade package**

**rpm –qa [package name]🡪information of package**

**chkconfig [package name] on🡪set the system to boot on system start**

**/usr/sbin/sysv-rc-conf🡪** is an alternate option for Ubuntu

**Evey disk will have 4 partitions.**

**fdisk –l 🡪view the list of partitions**

**lsblk🡪information of disk**

**fdisk <partition name>🡪create partitions**

**n: new partition, p: partion table, t: chang a partion system id(83-normal,8e- lvm,82-swap partition), w: save and exit, q: quite without saving**

**df -Th🡪to view available disk space**

**du –h🡪To view the size of a file or directory**

**partprobe <partition name> or partx –a <partition name>🡪to update the portioning**

**mkfs.<file system type> <partition name>🡪Formatting a partition**

**filesystm type: ext2, ext3, ext4,jfs, xfs, vtfs**

**mount <device name> <directory name (mount point)>🡪temporary mounting**

**vi /etc/fstab🡪permanent mounting**

**umount <mount point directory> 🡪to unmount**

**e2label <partition name> <label>🡪to label the partition**

**vi /etc/fstab🡪 to label partition permanent**

**82- to create swap partition, mkswap <device name> 🡪** **Format the partition with swap file system**

**swapon <device name>🡪** **To turn on the swap space, In order to make the swap partition mount automatic after reboot, we need to make an entry in /etc/fstab file.**

**Removing the SWAP Partition:**

**#swapoff <device name>🡪 Deactivate the swap partition**

**Remove the entry from /etc/fstab.**

**Delete the partition through fdisk**

**#cryptsetup luksFormat <device name>🡪** **To encrypting a partition using luks**

**#cryptsetup luksOpen <device name> [Name of the partition]🡪** **To decrypt the partition**

**LVM: pvs 🡪** **Displays all the physical volumes**

**pvcreate <partition name>🡪 to create physical volume**

**vgcreate <name for the VG> <partition name>🡪to create volume group**

**#vgs or #vgdisplay <vgname>**

**lvcreate –L <size of LV> -n <name for LV> <VG name>🡪 to create Logical volume**

**lvs or #lvdisplay <VG name>**

**vgextend <VG name> <partition name>🡪 volume group extension**

**lvextend –L <+addition size> </dev/vg/lv name>🡪extend the logical volume**

**resize2fs </dev/vg/lv name>🡪 resize the logical volume**

**pvmove <Old PV> <New PV>🡪 to migrate PV**

**lvremove <logical volume name>**

**vgremove <volume group name>**

**pvremove <PV name>🡪Deleting a Physical Volume**

**--------------------------------------------------------------------------------------------**

**we’ll patch/update a Centos system from version 6.8 to version 6.9 and then perform a rollback to version 6.8.**

**cat /etc/redhat-release🡪check the current version of Centos running on the system**

**yum update**

**grep -v '^#' /etc/grub.conf🡪we will check the redhat-release file and /etc/grub.conf to verify that the entries in these files have been modified.**

**cat /etc/redhat-release**

**uname –a🡪** **to validate that the system booted from the new kernel.**

**To rollback:**

**uptime**

**yum history🡪** **to view a history of previous yum activities.**

**yum history info 18🡪to view more information about a particular transaction ID**

**yum history undo 18🡪** **Now, we will rollback this transaction via the yum history undo command.**

**The entries for the new kernel have been removed.**

**But the entry in /etc/redhat-release file will not be updated automatically. We’ll need to do it manually.**

**Once the rollback operation completes it’s highly recommended that you reboot the system. Now when we reboot the system and interrupt the boot process we find that only the original kernel is now available to boot from.**

**Once the system boots, we can run the uname -a command to verify that the system is running on the old kernel.**

**yum history**

**The latest transaction with id 19 represents the ‘yum history undo 18’ command we executed. The Action field mentions the letters D and E indicating downgrade and erases respectively. The E in the Altered field indicates that the corresponding yum transaction finished successfully but an error warning was displayed.**

|  |  |  |
| --- | --- | --- |
| **Sl No.** | **RPM** | **YUM** |
| **1** | **If we want to install an application(Ex: apache), rpm need to install all the packages required for this application, these packages may vary from 1 rpm to several rpm’s depending on shared rpm packages.** | **Install an application with single command** **Ex: yum install httpd** |
| **2** | **RPM package dependencies is bit tough** | **YUM resolves dependencies with ease** |
| **3** | **Batch installation of applications is possible with one command** | **YUM command can install number of applications in one single command** **Ex: yum install httpd vsftpd** |
| **4** | **RPM can not handle updated software installation automatically** | **Does YUM install updates of the existing packages by using** **yum install upgrade** |
| **5** | **Can not connect to online repositories** | **Can connect to on-line repositories to get latest software before installing the applications** |