**Linux assignment**

**Basic level**

**1. What command is used to get the IP addresses of all interfaces**

**on a server?**

[ec2-user@ip-172-31-35-6 ~]$ ifconfig

eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 9001

inet 172.31.35.6 netmask 255.255.240.0 broadcast 172.31.47.255

inet6 fe80::8c9:9bff:fe1b:dce6 prefixlen 64 scopeid 0x20<link>

ether 0a:c9:9b:1b:dc:e6 txqueuelen 1000 (Ethernet)

RX packets 38894 bytes 56383810 (53.7 MiB)

RX errors 0 dropped 0 overruns 0 frame 0

TX packets 10189 bytes 604328 (590.1 KiB)

TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536

inet 127.0.0.1 netmask 255.0.0.0

inet6 ::1 prefixlen 128 scopeid 0x10<host>

loop txqueuelen 1000 (Local Loopback)

RX packets 8 bytes 648 (648.0 B)

RX errors 0 dropped 0 overruns 0 frame 0

TX packets 8 bytes 648 (648.0 B)

TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

**2. What is the purpose of "mv" command?**

To move files/content of a file from one location to another

[ec2-user@ip-172-31-35-6 ~]$ mv file1.txt file5.txt

[ec2-user@ip-172-31-35-6 ~]$ ls -a

. .. .bash\_logout .bash\_profile .bashrc file2.txt file3.txt file4.txt file5.txt .ssh

[ec2-user@ip-172-31-35-6 ~]$ cat file5.txt

hi

[ec2-user@ip-172-31-35-6 nach]$ mv /home/ec2-user/file2.txt /home/ec2-user/nach/

[ec2-user@ip-172-31-35-6 nach]$ ls -l

total 0

-rw-rw-r-- 1 ec2-user ec2-user 0 Mar 29 17:54 file2.txt

[ec2-user@ip-172-31-35-6 nach]$ cd ..

[ec2-user@ip-172-31-35-6 ~]$ ls -l

total 4

-rw-rw-r-- 1 ec2-user ec2-user 0 Mar 29 17:54 file3.txt

-rw-rw-r-- 1 ec2-user ec2-user 0 Mar 29 17:54 file4.txt

-rw-rw-r-- 1 ec2-user ec2-user 3 Mar 29 17:51 file5.txt

drwxrwxr-x 2 ec2-user ec2-user 23 Mar 29 18:01 nach

[ec2-user@ip-172-31-35-6 ~]$ cd nach/

[ec2-user@ip-172-31-35-6 nach]$ ls -a

. .. file2.txt

**3. Which command is used to create a new empty file?**

[ec2-user@ip-172-31-35-6 ~]$ touch file2.txt

[ec2-user@ip-172-31-35-6 ~]$ ls -a

. .. .bash\_logout .bash\_profile .bashrc file1.txt file2.txt .ssh

[ec2-user@ip-172-31-35-6 ~]$ touch file3.txt file4.txt

[ec2-user@ip-172-31-35-6 ~]$ ls -a

. .. .bash\_logout .bash\_profile .bashrc file1.txt file2.txt file3.txt file4.txt .ssh

**4. Which command is used to display the contents of a directory?**

ls -l

**5. Which command is used to display all the file names along with**

**their types of the current directory?**

ls -a

**6. Which command is used to clear the terminal?**

Clear

**7. What are daemons?**

A **daemon** (also known as background processes) is a [Linux](https://bash.cyberciti.biz/guide/Linux) or [UNIX](https://bash.cyberciti.biz/guide/UNIX) program that runs in the background. Almost all daemons have names that end with the letter "**d**". For example, [httpd](https://bash.cyberciti.biz/wiki/index.php?title=Httpd&action=edit&redlink=1) the daemon that handles the Apache server, or, [sshd](https://bash.cyberciti.biz/wiki/index.php?title=Sshd&action=edit&redlink=1" \o "Sshd (page does not exist)) which handles [SSH](https://bash.cyberciti.biz/guide/SSH) remote access connections. Linux often start daemons at boot time. Shell scripts stored in [/etc/init.d](https://bash.cyberciti.biz/guide/etc/init.d) directory are used to start and stop daemons.

**8. Which command is used to move to the parent directory?**

cd .. cd – (to move one dir up)

cd / (to move to root)

cd ~ (to move to the parent directory of the user)

**9. What does echo command do?**

Echo command prints on the console, we can add content to a file using echo command.

**10.How to display content of a file?**

Cat filename

**11. How to identify which shell you are using?**

[ec2-user@ip-172-31-35-6 ~]$ echo $0

-bash

**12. How do you check if a particular service is running?**

[ec2-user@ip-172-31-35-6 ~]$ service --status-all

● cfn-hup.service - SYSV: Runs user-specified actions when a

Loaded: loaded (/etc/rc.d/init.d/cfn-hup; bad; vendor preset: disabled)

Active: inactive (dead)

Docs: man:systemd-sysv-generator(8)

netconsole module not loaded

Configured devices:

lo eth0

Currently active devices:

lo eth0

**13.What is the command to run a program with elevated**

**permissions?**

[ec2-user@ip-172-31-35-6 ~]$ whoami

ec2-user

[ec2-user@ip-172-31-35-6 ~]$ sudo whoami

Root

Using sudo [command] gives superuser/root permission

[ec2-user@ip-172-31-35-6 ~]$ sudo bash

[root@ip-172-31-35-6 ec2-user]#

**14.Which command is used to display the path of the current**

**working directory?**

[root@ip-172-31-35-6 ec2-user]# pwd

/home/ec2-user

**15. How to delete a directory forcefully?**

[root@ip-172-31-35-6 ec2-user]# pwd

/home/ec2-user

[root@ip-172-31-35-6 ec2-user]# ls -l

total 4

-rw-rw-r-- 1 ec2-user ec2-user 0 Mar 29 17:54 file3.txt

-rw-rw-r-- 1 ec2-user ec2-user 0 Mar 29 17:54 file4.txt

-rw-rw-r-- 1 ec2-user ec2-user 3 Mar 29 17:51 file5.txt

drwxrwxr-x 2 ec2-user ec2-user 23 Mar 29 18:01 nach

[root@ip-172-31-35-6 ec2-user]# cd nach/

[root@ip-172-31-35-6 nach]# ls -l

total 0

-rw-rw-r-- 1 ec2-user ec2-user 0 Mar 29 17:54 file2.txt

[root@ip-172-31-35-6 nach]# cd ..

[root@ip-172-31-35-6 ec2-user]# clear

[root@ip-172-31-35-6 ec2-user]# pwd

/home/ec2-user

[root@ip-172-31-35-6 ec2-user]# rm -rf /home/ec2-user/nach

[root@ip-172-31-35-6 ec2-user]# ls -l

total 4

-rw-rw-r-- 1 ec2-user ec2-user 0 Mar 29 17:54 file3.txt

-rw-rw-r-- 1 ec2-user ec2-user 0 Mar 29 17:54 file4.txt

-rw-rw-r-- 1 ec2-user ec2-user 3 Mar 29 17:51 file5.txt

**16.Which command is used to switch from superuser to normal**

**user?**

[root@ip-172-31-35-6 ec2-user]# exit

exit

[ec2-user@ip-172-31-35-6 ~]$

**17. How to switch to superuser (root) with elevated permissions?**

[ec2-user@ip-172-31-35-6 ~]$ su root

Password:

su: Authentication failure

**18.How to determine the type of a file?**

[ec2-user@ip-172-31-35-6 ~]$ file file3.txt

file3.txt: empty

[ec2-user@ip-172-31-35-6 ~]$ file -b file3.txt

empty

[ec2-user@ip-172-31-35-6 ~]$ file -b .ssh

directory

[ec2-user@ip-172-31-35-6 ~]$ file -b file4.txt

empty

[ec2-user@ip-172-31-35-6 ~]$ file -b file5.txt

ASCII text

**Intermediate Level**

**1. What are the different modes when using VI editor?**

One is the command **mode** and another is the insert **mode**. In the command **mode**, user can move around the file, delete text, etc. In the insert **mode**, user can insert text.

**2. Which command is used to create multiple directories simultaneously?**

[ec2-user@ip-172-31-35-6 ~]$ mkdir -p dir1 dir2

[ec2-user@ip-172-31-35-6 ~]$ ls -l

total 4

drwxrwxr-x 2 ec2-user ec2-user 6 Apr 3 03:30 dir1

drwxrwxr-x 2 ec2-user ec2-user 6 Apr 3 03:30 dir2

-rw-rw-r-- 1 ec2-user ec2-user 0 Mar 29 17:54 file3.txt

-rw-rw-r-- 1 ec2-user ec2-user 0 Mar 29 17:54 file4.txt

-rw-rw-r-- 1 ec2-user ec2-user 3 Mar 29 17:51 file5.txt

**3. What is LILO?**

**LILO** stands for **Linux** Loader that is used to load **Linux** into memory. It can boot operating systems from floppy disks, hard disks, and it does not depend on a specific file system. **Lilo** handles some tasks such as locate the kernel, identify other supporting programs, load memory and starts the kernel.

**4. How cd ~, cd / and cd - are different from each other?**

cd .. cd – (to move one dir up)

cd / (to move to root)

cd ~ (to move to the parent directory of the user)

**5. What is a grep command?**

If we want to search for a particular expression inside a file, you can use grep command.

[ec2-user@ip-172-31-35-6 ~]$ grep "line" file3.txt

this is first line in file3

this line is for practice

this line gives the count

**6. If we are in the directory X and we are running rmdir X being in that directory X. Will this command successfully remove the directory or not?**

No, it will not.

[ec2-user@ip-172-31-35-6 ~]$ cd dir1

[ec2-user@ip-172-31-35-6 dir1]$ rmdir dir1

rmdir: failed to remove ‘dir1’: No such file or directory

**7. What are the contents of /usr/local?**

[ec2-user@ip-172-31-35-6 local]$ pwd

/usr/local

[ec2-user@ip-172-31-35-6 local]$ ls -a

. .. bin etc games include lib lib64 libexec sbin share src

**8. Which command is used to display the current username?**

[ec2-user@ip-172-31-35-6 local]$ whoami

ec2-user

**9. What command is used to change your password?**

sudo passwd username

**10. How to find the difference in two configuration files?**

[ec2-user@ip-172-31-35-6 ~]$ diff file3.txt file4.txt

1,3d0

< this is first line in file3

< this line is for practice

< this line gives the count

**11. How to find where a file is located in Linux?**

[ec2-user@ip-172-31-35-6 ~]$ locate file\*

/home/ec2-user/file3.txt

/home/ec2-user/file4.txt

/home/ec2-user/file5.txt

**12. Which command shows the users that are logged in?**

[ec2-user@ip-172-31-35-6 ~]$ w

04:32:45 up 4 days, 12:14, 1 user, load average: 0.00, 0.00, 0.00

USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT

ec2-user pts/2 024-171-017-203. 02:17 0.00s 0.07s 0.00s w

**13. How to forcefully stop a process which is running in the background?**

Use the ps command to get the **process** id (PID) of the **process** we want to **terminate**.

Issue a **kill** command for that PID.

**14. Which command is used to list the name of files starting from any particular alphabet or string?**

[ec2-user@ip-172-31-35-6 ~]$ find f\*.txt

file3.txt

file4.txt

file5.txt

**15. How to move multiple files of the same extension to a different directory?**

[ec2-user@ip-172-31-35-6 ~]$ ls -l

total 8

drwxrwxr-x 2 ec2-user ec2-user 6 Apr 3 03:30 dir2

-rw-rw-r-- 1 ec2-user ec2-user 80 Apr 3 04:08 file3.txt

-rw-rw-r-- 1 ec2-user ec2-user 0 Mar 29 17:54 file4.txt

-rw-rw-r-- 1 ec2-user ec2-user 3 Mar 29 17:51 file5.txt

[ec2-user@ip-172-31-35-6 ~]$ mv f\*.txt /home/ec2-user/dir2

[ec2-user@ip-172-31-35-6 ~]$ cd dir2

[ec2-user@ip-172-31-35-6 dir2]$ ls -l

total 8

-rw-rw-r-- 1 ec2-user ec2-user 80 Apr 3 04:08 file3.txt

-rw-rw-r-- 1 ec2-user ec2-user 0 Mar 29 17:54 file4.txt

-rw-rw-r-- 1 ec2-user ec2-user 3 Mar 29 17:51 file5.txt

**16. What command would you use to check how much memory is being used?**

[ec2-user@ip-172-31-35-6 dir2]$ free

total used free shared buff/cache available

Mem: 1006896 96660 389064 400 521172 765624

Swap: 0 0 0

**17. Which command is used to display the list of content in reverse order?**

[ec2-user@ip-172-31-35-6 dir2]$ cat file3.txt

this is first line in file3

this line is for practice

this line gives the count

[ec2-user@ip-172-31-35-6 dir2]$ tac file3.txt

this line gives the count

this line is for practice

this is first line in file3

**18. What command is used to show how long it's been since the server was rebooted?**

[ec2-user@ip-172-31-35-6 dir2]$ last reboot

reboot system boot 4.14.225-168.357 Mon Mar 29 16:18 - 04:47 (4+12:29)

wtmp begins Mon Mar 29 16:18:29 2021

[ec2-user@ip-172-31-35-6 dir2]$ who -b

system boot 2021-03-29 16:18

**19. What command is used to change the ownership of a file?**

Chown NewUser Filename

**Advanced Level**

**1. How to see the list of mounted devices on a Linux system?**

[ec2-user@ip-172-31-35-6 dir2]$ mount

sysfs on /sys type sysfs (rw,nosuid,nodev,noexec,relatime)

proc on /proc type proc (rw,nosuid,nodev,noexec,relatime)

devtmpfs on /dev type devtmpfs (rw,nosuid,size=492680k,nr\_inodes=123170,mode=755)

securityfs on /sys/kernel/security type securityfs (rw,nosuid,nodev,noexec,relatime)

tmpfs on /dev/shm type tmpfs (rw,nosuid,nodev)

devpts on /dev/pts type devpts (rw,nosuid,noexec,relatime,gid=5,mode=620,ptmxmode=000)

tmpfs on /run type tmpfs (rw,nosuid,nodev,mode=755)

tmpfs on /sys/fs/cgroup type tmpfs (ro,nosuid,nodev,noexec,mode=755)

cgroup on /sys/fs/cgroup/systemd type cgroup (rw,nosuid,nodev,noexec,relatime,xattr,release\_agent=/usr/lib/systemd/systemd-cgroups-agent,name=systemd)

pstore on /sys/fs/pstore type pstore (rw,nosuid,nodev,noexec,relatime)

cgroup on /sys/fs/cgroup/hugetlb type cgroup (rw,nosuid,nodev,noexec,relatime,hugetlb)

cgroup on /sys/fs/cgroup/net\_cls,net\_prio type cgroup (rw,nosuid,nodev,noexec,relatime,net\_cls,net\_prio)

cgroup on /sys/fs/cgroup/blkio type cgroup (rw,nosuid,nodev,noexec,relatime,blkio)

cgroup on /sys/fs/cgroup/memory type cgroup (rw,nosuid,nodev,noexec,relatime,memory)

cgroup on /sys/fs/cgroup/freezer type cgroup (rw,nosuid,nodev,noexec,relatime,freezer)

cgroup on /sys/fs/cgroup/cpu,cpuacct type cgroup (rw,nosuid,nodev,noexec,relatime,cpu,cpuacct)

cgroup on /sys/fs/cgroup/devices type cgroup (rw,nosuid,nodev,noexec,relatime,devices)

cgroup on /sys/fs/cgroup/cpuset type cgroup (rw,nosuid,nodev,noexec,relatime,cpuset)

cgroup on /sys/fs/cgroup/perf\_event type cgroup (rw,nosuid,nodev,noexec,relatime,perf\_event)

cgroup on /sys/fs/cgroup/pids type cgroup (rw,nosuid,nodev,noexec,relatime,pids)

/dev/xvda1 on / type xfs (rw,noatime,attr2,inode64,noquota)

mqueue on /dev/mqueue type mqueue (rw,relatime)

hugetlbfs on /dev/hugepages type hugetlbfs (rw,relatime,pagesize=2M)

systemd-1 on /proc/sys/fs/binfmt\_misc type autofs (rw,relatime,fd=33,pgrp=1,timeout=0,minproto=5,maxproto=5,direct,pipe\_ino=12453)

debugfs on /sys/kernel/debug type debugfs (rw,relatime)

sunrpc on /var/lib/nfs/rpc\_pipefs type rpc\_pipefs (rw,relatime)

tmpfs on /run/user/1000 type tmpfs (rw,nosuid,nodev,relatime,size=100692k,mode=700,uid=1000,gid=1000)

**2. How to check disk usage in terms of kilobytes(K), megabytes(M) and**

**gigabytes(G)?**

[ec2-user@ip-172-31-35-6 dir2]$ free -m

total used free shared buff/cache available

Mem: 983 94 378 0 510 747

Swap: 0 0 0

[ec2-user@ip-172-31-35-6 dir2]$ free -g

total used free shared buff/cache available

Mem: 0 0 0 0 0 0

Swap: 0 0 0

[ec2-user@ip-172-31-35-6 dir2]$ free -k

total used free shared buff/cache available

Mem: 1006896 96560 388072 400 522264 765712

Swap: 0 0 0

**3. What is Swap Space? What is a typical size for a swap partition in Linux?**

**Swap space** is the area on a hard disk. It is a part of your machine's Virtual Memory, which is a combination of accessible physical memory (RAM) and the **swap space**. **Swap** holds memory pages that are temporarily inactive.

Amount of system RAM Recommended **swap space**

2 GB - 8 GB Equal to the amount of RAM

8 GB - 64 GB 0.5 times the amount of RAM

more than 64 GB workload dependent

**4. How would you schedule a task in Linux?**

In the case of Linux, it comes with two basic but powerful tools: Cron daemon (default task scheduler) and at (more suitable for one-time task scheduling).

[ec2-user@ip-172-31-35-6 dir2]$ crontab -l

no crontab for ec2-user

**5. How these commands would be working try and explain (files contain**

**“hello” word) :**

* **grep -v -i hello file1.txt**

[ec2-user@ip-172-31-35-6 dir2]$ cat file4.txt

hello this is first line

this is a sample file

first week of learning over

HELLO 4 more weeks to go

3 more projects to submit

hello there

this is python language

so much fun

interesting!

Hello!

[ec2-user@ip-172-31-35-6 dir2]$ grep -v -i hello file4.txt

this is a sample file

first week of learning over

3 more projects to submit

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so much fun

interesting!

-v inverts the selection of the word hello

-i ignore the case of hello

So uppercase and lowercase hello has been removed in the output

* **grep -i hello file2.txt**

[ec2-user@ip-172-31-35-6 dir2]$ grep -i hello file4.txt

hello this is first line

HELLO 4 more weeks to go

hello there

Hello!

The casing of hello is ignored, the sentences that contain the word hello are printed in the output.

* **grep -A 2 hello file2.txt**

[ec2-user@ip-172-31-35-6 dir2]$ grep -A 2 hello file4.txt

hello this is first line

this is a sample file

first week of learning over

--

hello there

this is python language

so much fun

Two lines after encountering the word hello is printed as output

* **grep -C 4 hello file1.txt**

[ec2-user@ip-172-31-35-6 dir2]$ grep -C 4 hello file4.txt

hello this is first line

this is a sample file

first week of learning over

HELLO 4 more weeks to go

3 more projects to submit

hello there

this is python language

so much fun

interesting!

Hello!

This -C 4 prints 4 lines before and after the match for the word hello.

* **grep -B 3 hello file1.txt**

[ec2-user@ip-172-31-35-6 dir2]$ grep -B 3 hello file4.txt

hello this is first line

--

first week of learning over

HELLO 4 more weeks to go

3 more projects to submit

hello there

To print 3 lines before a match

* ps -ef | more

Command to display the currently running processes with process id

[ec2-user@ip-172-31-35-6 dir2]$ ps -ef|more

UID PID PPID C STIME TTY TIME CMD

root 1 0 0 Mar29 ? 00:00:06 /usr/lib/systemd/systemd --switched-root --system --deserialize 21

root 2 0 0 Mar29 ? 00:00:00 [kthreadd]

root 4 2 0 Mar29 ? 00:00:00 [kworker/0:0H]

root 5 2 0 Mar29 ? 00:00:01 [kworker/u30:0]

root 6 2 0 Mar29 ? 00:00:00 [mm\_percpu\_wq]

root 7 2 0 Mar29 ? 00:00:00 [ksoftirqd/0]

root 8 2 0 Mar29 ? 00:00:01 [rcu\_sched]

root 9 2 0 Mar29 ? 00:00:00 [rcu\_bh]

root 10 2 0 Mar29 ? 00:00:00 [migration/0]

root 11 2 0 Mar29 ? 00:00:01 [watchdog/0]

root 12 2 0 Mar29 ? 00:00:00 [cpuhp/0]

root 14 2 0 Mar29 ? 00:00:00 [kdevtmpfs]

root 15 2 0 Mar29 ? 00:00:00 [netns]

root 174 2 0 Mar29 ? 00:00:00 [khungtaskd]

root 175 2 0 Mar29 ? 00:00:00 [oom\_reaper]

root 176 2 0 Mar29 ? 00:00:00 [writeback]

root 178 2 0 Mar29 ? 00:00:00 [kcompactd0]

root 179 2 0 Mar29 ? 00:00:00 [ksmd]

root 180 2 0 Mar29 ? 00:00:00 [khugepaged]

root 181 2 0 Mar29 ? 00:00:00 [crypto]

root 182 2 0 Mar29 ? 00:00:00 [kintegrityd]

root 184 2 0 Mar29 ? 00:00:00 [kblockd]

root 535 2 0 Mar29 ? 00:00:00 [md]

root 538 2 0 Mar29 ? 00:00:00 [edac-poller]

root 543 2 0 Mar29 ? 00:00:00 [watchdogd]

root 684 2 0 Mar29 ? 00:00:00 [kauditd]

root 690 2 0 Mar29 ? 00:00:00 [kswapd0]

root 788 2 0 05:36 ? 00:00:00 [kworker/u30:2]

root 818 2 0 05:42 ? 00:00:00 [kworker/0:0]

root 822 2 0 Mar29 ? 00:00:00 [kthrotld]

root 828 2 0 05:47 ? 00:00:00 [kworker/0:2]

root 833 2 0 Mar29 ? 00:00:00 [xenbus]

root 834 2 0 Mar29 ? 00:00:00 [xenwatch]

root 876 2 0 Mar29 ? 00:00:00 [kstrp]

root 899 2 0 05:54 ? 00:00:00 [kworker/0:1]

root 903 2 0 Mar29 ? 00:00:00 [ipv6\_addrconf]

root 925 2 0 05:54 ? 00:00:00 [kworker/0:3]

ec2-user 936 31847 0 05:57 pts/2 00:00:00 ps -ef

ec2-user 937 31847 0 05:57 pts/2 00:00:00 more

root 1539 2 0 Mar29 ? 00:00:00 [ata\_sff]

root 1556 2 0 Mar29 ? 00:00:00 [scsi\_eh\_0]

root 1557 2 0 Mar29 ? 00:00:00 [scsi\_tmf\_0]

--More—

* **awk '{print $2,$5;}' file4.txt**

[ec2-user@ip-172-31-35-6 dir2]$ awk '{print $2,$5;}' file4.txt

this line

is file

week over

4 to

more submit

there

is

much

[ec2-user@ip-172-31-35-6 dir2]$ cat file4.txt

hello this is first line

this is a sample file

first week of learning over

HELLO 4 more weeks to go

3 more projects to submit

hello there

this is python language

so much fun

interesting!

Hello!

**For each record i.e line, the awk command splits the record delimited by whitespace character by default and stores it in the $n variables. If the line has 4 words, it will be stored in $1, $2, $3 and $4 respectively. Also, $0 represents the whole line.**

**So the second and fifth word from each line was taken and printed as output.**

**6. What is the export command used for?(Give Example)**

The **export** command is a built-in utility of Linux Bash shell. It is used to ensure the environment variables and functions to be passed to child processes. It does not affect the existing environment variable.

Environment variables are set when we open a new shell session. At any time, if we change any variable value, the shell has no way to select that change. The export command allows us to update the current session about the changes that have been made to the exported variable. We do not need to wait to start a new shell session.

Syntax: export [-f] [-n] [name[=value] ...] or export -p

[ec2-user@ip-172-31-35-6 dir2]$ export -p

declare -x HISTCONTROL="ignoredups"

declare -x HISTSIZE="1000"

declare -x HOME="/home/ec2-user"

declare -x HOSTNAME="ip-172-31-35-6.us-east-2.compute.internal"

declare -x LANG="en\_US.UTF-8"

declare -x LESSOPEN="||/usr/bin/lesspipe.sh %s"

declare -x LOGNAME="ec2-user"

declare -x LS\_COLORS="rs=0:di=01;34:ln=01;36:mh=00:pi=40;33:so=01;35:do=01;35:bd=40;33;01:cd=40;33;01:or=40;31;01:mi=01;05;37;41:su=37;41:sg=30;43:ca=30;41:tw=30;42:ow=34;42:st=37;44:ex=01;32:\*.tar=01;31:\*.tgz=01;31:\*.arc=01;31:\*.arj=01;31:\*.taz=01;31:\*.lha=01;31:\*.lz4=01;31:\*.lzh=01;31:\*.lzma=01;31:\*.tlz=01;31:\*.txz=01;31:\*.tzo=01;31:\*.t7z=01;31:\*.zip=01;31:\*.z=01;31:\*.Z=01;31:\*.dz=01;31:\*.gz=01;31:\*.lrz=01;31:\*.lz=01;31:\*.lzo=01;31:\*.xz=01;31:\*.bz2=01;31:\*.bz=01;31:\*.tbz=01;31:\*.tbz2=01;31:\*.tz=01;31:\*.deb=01;31:\*.rpm=01;31:\*.jar=01;31:\*.war=01;31:\*.ear=01;31:\*.sar=01;31:\*.rar=01;31:\*.alz=01;31:\*.ace=01;31:\*.zoo=01;31:\*.cpio=01;31:\*.7z=01;31:\*.rz=01;31:\*.cab=01;31:\*.jpg=01;35:\*.jpeg=01;35:\*.gif=01;35:\*.bmp=01;35:\*.pbm=01;35:\*.pgm=01;35:\*.ppm=01;35:\*.tga=01;35:\*.xbm=01;35:\*.xpm=01;35:\*.tif=01;35:\*.tiff=01;35:\*.png=01;35:\*.svg=01;35:\*.svgz=01;35:\*.mng=01;35:\*.pcx=01;35:\*.mov=01;35:\*.mpg=01;35:\*.mpeg=01;35:\*.m2v=01;35:\*.mkv=01;35:\*.webm=01;35:\*.ogm=01;35:\*.mp4=01;35:\*.m4v=01;35:\*.mp4v=01;35:\*.vob=01;35:\*.qt=01;35:\*.nuv=01;35:\*.wmv=01;35:\*.asf=01;35:\*.rm=01;35:\*.rmvb=01;35:\*.flc=01;35:\*.avi=01;35:\*.fli=01;35:\*.flv=01;35:\*.gl=01;35:\*.dl=01;35:\*.xcf=01;35:\*.xwd=01;35:\*.yuv=01;35:\*.cgm=01;35:\*.emf=01;35:\*.axv=01;35:\*.anx=01;35:\*.ogv=01;35:\*.ogx=01;35:\*.aac=01;36:\*.au=01;36:\*.flac=01;36:\*.mid=01;36:\*.midi=01;36:\*.mka=01;36:\*.mp3=01;36:\*.mpc=01;36:\*.ogg=01;36:\*.ra=01;36:\*.wav=01;36:\*.axa=01;36:\*.oga=01;36:\*.spx=01;36:\*.xspf=01;36:"

declare -x MAIL="/var/spool/mail/ec2-user"

declare -x OLDPWD="/home/ec2-user"

declare -x PATH="/usr/local/bin:/usr/bin:/usr/local/sbin:/usr/sbin:/home/ec2-user/.local/bin:/home/ec2-user/bin"

declare -x PWD="/home/ec2-user/dir2"

declare -x SHELL="/bin/bash"

declare -x SHLVL="1"

declare -x SSH\_CLIENT="24.171.17.203 52728 22"

declare -x SSH\_CONNECTION="24.171.17.203 52728 172.31.35.6 22"

declare -x SSH\_TTY="/dev/pts/2"

declare -x TERM="xterm"

declare -x USER="ec2-user"

declare -x XDG\_RUNTIME\_DIR="/run/user/1000"

declare -x XDG\_SESSION\_ID="759"

**7. Explain the redirection operator?**

Redirection Operator Explanation Example

> The greater-than sign is used to send to a file, or even a printer or other device, whatever information from the command would have been displayed in the Command Prompt window had you not used the operator. assoc > types.txt

>> The double greater-than sign works just like the single greater-than sign but the information is appended to the end of the file instead of overwriting it. ipconfig >> netdata.txt

< The less-than sign is used to read the input for a command from a file instead of from the keyboard. sort < data.txt

| The vertical pipe is used to read the output from one command and use if for the input of another. dir | sort

**8. Which command is used to review boot messages?**

[ec2-user@ip-172-31-35-6 dir2]$ dmesg > file6.txt

[ec2-user@ip-172-31-35-6 dir2]$ tail -n 10 file6.txt

[ 7.405529] EDAC sbridge: Seeking for: PCI ID 8086:2fa0

[ 7.410685] EDAC sbridge: Ver: 1.1.2

[ 7.445087] random: crng init done

[ 7.448917] random: 7 urandom warning(s) missed due to ratelimiting

[ 7.475311] device-mapper: uevent: version 1.0.3

[ 7.480453] device-mapper: ioctl: 4.37.0-ioctl (2017-09-20) initialised: dm-devel@redhat.com

[ 7.610333] RPC: Registered named UNIX socket transport module.

[ 7.610333] RPC: Registered udp transport module.

[ 7.610334] RPC: Registered tcp transport module.

[ 7.610334] RPC: Registered tcp NFSv4.1 backchannel transport module.

**9. Which command is used to change the permissions of a file? Explain its usage?**

Chmod

Read – 4

Write -2

Execute -1

Read+write = 4+2=6

Read+write+excute = 4+2+1=7

Ugo(User,group,others)

[ec2-user@ip-172-31-35-6 dir2]$ ls -l

total 40

-rw-rw-r-- 1 ec2-user ec2-user 80 Apr 3 04:08 file3.txt

-rw-rw-r-- 1 ec2-user ec2-user 195 Apr 3 05:41 file4.txt

-rw-rw-r-- 1 ec2-user ec2-user 3 Mar 29 17:51 file5.txt

-rw-rw-r-- 1 ec2-user ec2-user 26811 Apr 3 06:14 file6.txt

[ec2-user@ip-172-31-35-6 dir2]$ ls -a

. .. file3.txt file4.txt file5.txt file6.txt

[ec2-user@ip-172-31-35-6 dir2]$ chmod 777 file3.txt

[ec2-user@ip-172-31-35-6 dir2]$ ls -l

total 40

-rwxrwxrwx 1 ec2-user ec2-user 80 Apr 3 04:08 file3.txt

-rw-rw-r-- 1 ec2-user ec2-user 195 Apr 3 05:41 file4.txt

-rw-rw-r-- 1 ec2-user ec2-user 3 Mar 29 17:51 file5.txt

-rw-rw-r-- 1 ec2-user ec2-user 26811 Apr 3 06:14 file6.txt

[ec2-user@ip-172-31-35-6 dir2]$ chmod 764 file4.txt

[ec2-user@ip-172-31-35-6 dir2]$ ls -l

total 40

-rwxrwxrwx 1 ec2-user ec2-user 80 Apr 3 04:08 file3.txt

-rwxrw-r-- 1 ec2-user ec2-user 195 Apr 3 05:41 file4.txt

-rw-rw-r-- 1 ec2-user ec2-user 3 Mar 29 17:51 file5.txt

-rw-rw-r-- 1 ec2-user ec2-user 26811 Apr 3 06:14 file6.txt

**10. Which command would you use to create a file system on a new hard drive?**

# Commands for Creating a Customized File System

This section describes the two commands you use to create a customized file system:

* newfs
* mkfs

## The newfs Command Syntax, Options, and Arguments

The newfs command is a friendlier version of the mkfs command that is used to create file systems. The newfs command is located in the /usr/sbin directory.

The syntax is:

|  |
| --- |
| newfs [-Nv] [mkfs\_options] raw\_device |

**11. How to compress files in Linux?**

|  |  |  |
| --- | --- | --- |
| **Syntax** | **Description** | **Example(s)** |
| gzip {filename} | Gzip compress the size of the given files using Lempel-Ziv coding (LZ77). Whenever possible, each file is replaced by one with the extension .gz. | gzip mydata.doc gzip \*.jpg ls -l |
| bzip2 {filename} | bzip2 compresses files using the Burrows-Wheeler block sorting text compression algorithm, and Huffman coding. Compression is generally considerably better than that achieved by bzip command (LZ77/LZ78-based compressors). Whenever possible, each file is replaced by one with the extension .bz2. | bzip2 mydata.doc bzip2 \*.jpg ls -l |
| zip {.zip-filename} {filename-to-compress} | zip is a compression and file packaging utility for Unix/Linux. Each file is stored in single .zip {.zip-filename} file with the extension .zip. | zip mydata.zip mydata.doc zip data.zip \*.doc ls -l |
| tar -zcvf {.tgz-file} {files} tar -jcvf {.tbz2-file} {files} | The GNU tar is archiving utility but it can be use to compressing large file(s). GNU tar supports both archive compressing through gzip and bzip2. If you have more than 2 files then it is recommended to use tar instead of gzip or bzip2. **-z**: use gzip compress **-j**: use bzip2 compress | tar -zcvf data.tgz \*.doc tar -zcvf pics.tar.gz \*.jpg \*.png tar -jcvf data.tbz2 \*.doc ls -l |

**12. Which file is used to automatically mount file systems on boot?**

To have **Linux automatically mount** the **file system** on your new hard disk partition, you only need to add its name to the fstab **file**. You can do this by directly and carefully editing the /etc/fstab **file** to type in a new entry.

**13. Find out the purpose of each of the following commands:**

* shutdown

The **shutdown command in Linux** is used to **shutdown** the system in a safe way. ... options – **Shutdown** options such as halt, power-off (the default option) or **reboot** the system.

* Diff

Diff between two files in a directory

* Sort

Sorts the contents of a file line by line

[ec2-user@ip-172-31-35-6 dir2]$ cat file3.txt

this is first line in file3

this line is for practice

this line gives the count

[ec2-user@ip-172-31-35-6 dir2]$ sort file3.txt

this is first line in file3

this line gives the count

this line is for practice

* Ps

Lists the active processes in the system at a given time

* Kill

To kill a particular process

* Mount

To mount a new device, hard drive

* Nano

GUI editor to edit, modify contents of a file

**14. What are symbolic links? How do you create one using command?**

A symbolic link, also known as a symlink or soft link, is a special type of file that points to another file or directory.

ln -s source\_file symbolic\_link

**15. How would you copy a file or a directory from your system to another system on the same network?**

scp <source> <destination>

sftp <host>

ftp <host>

sftp> put test.txt

Uploading test.txt to /home/admin/test.txt

sftp> ls

Applications Downloads Movies Public

Desktop Dropbox Music node\_modules

Documents test.txt