1. **Create user with name Techie and provide sudo access to user.**

…...sudo useradd basha

…...sudo passwd basha

…...su basha

…...passwd:-XXXXXX

…...vi /etc/sudoers

…...su basha

…...sudo su

1. **Navigate to the home directory.**

[ec2-user@ip-172-31-25-211 ~]$ cd ..

[ec2-user@ip-172-31-25-211 home]$ pwd

/home

[ec2-user@ip-172-31-25-211 home]$ ^C

**3) Create a new directory.**

[ec2-user@ip-172-31-25-211 home]$ sudo mkdir sameer

[ec2-user@ip-172-31-25-211 home]$ ls

basha ec2-user sameer

[ec2-user@ip-172-31-25-211 home]$ ^C

[ec2-user@ip-172-31-25-211 home]$ cd sameer/

[ec2-user@ip-172-31-25-211 sameer]$ ^C

1. **List the contents of a directory.**

[ec2-user@ip-172-31-25-211 home]$ ls

basha ec2-user sameer

1. **Change the current directory.**

[ec2-user@ip-172-31-25-211 home]$ cd ..

[ec2-user@ip-172-31-25-211 /]$

1. **Create a new empty file.**

[ec2-user@ip-172-31-25-211 ~]$ touch sameer

[ec2-user@ip-172-31-25-211 ~]$ ls

linux.txt sameer

1. **View the contents of a file.**

c2-user@ip-172-31-25-211 ~]$ echo "hey sameer " >sameer

[ec2-user@ip-172-31-25-211 ~]$ cat sameer

hey sameer

1. **Copy a file to another location.**

[ec2-user@ip-172-31-25-211 ~]$ sudo cp sameer /etc/tmpfiles.d/

1. **Move a file to another location.**

[ec2-user@ip-172-31-25-211 ~]$ sudo mv sameer /etc/tmpfiles.d/

1. **Rename a file.**

[ec2-user@ip-172-31-25-211 ~]$ ls

linux.txt sameer

[ec2-user@ip-172-31-25-211 ~]$ mv sameer basha

[ec2-user@ip-172-31-25-211 ~]$ ls

basha linux.txt

1. **Delete a file.**

[ec2-user@ip-172-31-25-211 ~]$ ls

basha linux.txt

[ec2-user@ip-172-31-25-211 ~]$ rm basha

[ec2-user@ip-172-31-25-211 ~]$ ls

linux.txt

1. **Grant or revoke permissions on a file or directory.**

[ec2-user@ip-172-31-25-211 ~]$ touch harry

[ec2-user@ip-172-31-25-211 ~]$ ls

harry linux.txt

[ec2-user@ip-172-31-25-211 ~]$ ls -ltrh

total 4.0K

-rw-r--r--. 1 ec2-user ec2-user 3.6K Oct 26 13:32 linux.txt

-rw-r--r--. 1 ec2-user ec2-user 0 Oct 27 18:44 harry

[ec2-user@ip-172-31-25-211 ~]$ sudo chmod 777 harry

[ec2-user@ip-172-31-25-211 ~]$ ls -ltrh

total 4.0K

-rw-r--r--. 1 ec2-user ec2-user 3.6K Oct 26 13:32 linux.txt

-rwxrwxrwx. 1 ec2-user ec2-user 0 Oct 27 18:44 harry

[ec2-user@ip-172-31-25-211 ~]$ sudo chmod 000 harry

[ec2-user@ip-172-31-25-211 ~]$ ls -ltrh

total 4.0K

-rw-r--r--. 1 ec2-user ec2-user 3.6K Oct 26 13:32 linux.txt

----------. 1 ec2-user ec2-user 0 Oct 27 18:44 harry

**13)View the current date and time.**

[ec2-user@ip-172-31-25-211 ~]$ date

Sun Oct 27 18:49:51 UTC 2024

1. **Check the system uptime.**

[ec2-user@ip-172-31-25-211 ~]$ uptime

18:51:25 up 1 day, 6:29, 2 users, load average: 0.00, 0.00, 0.00

1. **View the running processes.**

[ec2-user@ip-172-31-25-211 ~]$ ps -ef

UID PID PPID C STIME TTY TIME CMD

root 1 0 0 Oct26 ? 00:00:05 /usr/lib/systemd/systemd --switched-root --syst

root 2 0 0 Oct26 ? 00:00:00 [kthreadd]

root 3 2 0 Oct26 ? 00:00:00 [rcu\_gp]

root 4 2 0 Oct26 ? 00:00:00 [rcu\_par\_gp]

root 5 2 0 Oct26 ? 00:00:00 [slub\_flushwq]

root 6 2 0 Oct26 ? 00:00:00 [netns]

root 8 2 0 Oct26 ? 00:00:00 [kworker/0:0H-events\_highpri]

root 10 2 0 Oct26 ? 00:00:00 [mm\_percpu\_wq]

**16) Kill a running process.**

yum install nginx

sudo yum install nginx

ps -ef| grep nginx

sudo systemctl start nginx

ps -ef| grep nginx

kill -9 89782

sudo kill -9 89782

sudo systemctl status nginx

**I7) stall a package using the package manager (e.g., apt or yum).**

[ec2-user@ip-172-31-25-211 ~]$ sudo yum install httpd

Last metadata expiration check: 1 day, 6:50:47 ago on Sat Oct 26 12:22:13 2024.

Dependencies resolved.

===================================================================================================

Package Architecture Version Repository Size

===================================================================================================

Installing:

httpd x86\_64 2.4.62-1.amzn2023 amazonlinux 48 k

Installing dependencies:

apr x86\_64 1.7.2-2.amzn2023.0.2 amazonlinux 129 k

apr-util x86\_64 1.6.3-1.amzn2023.0.1 amazonlinux 98 k

httpd-core x86\_64 2.4.62-1.amzn2023 amazonlinux 1.4 M

httpd-filesystem noarch 2.4.62-1.amzn2023 amazonlinux 14 k

httpd-tools x86\_64 2.4.62-1.amzn2023 amazonlinux 81 k

libbrotli x86\_64 1.0.9-4.amzn2023.0.2 amazonlinux 315 k

mailcap noarch 2.1.49-3.amzn2023.0.3 amazonlinux 33 k

Installing weak dependencies:

apr-util-openssl x86\_64 1.6.3-1.amzn2023.0.1 amazonlinux 17 k

mod\_http2 x86\_64 2.0.27-1.amzn2023.0.3 amazonlinux 166 k

mod\_lua x86\_64 2.4.62-1.amzn2023 amazonlinux 61 k

Transaction Summary

===================================================================================================

Install 11 Packages

Total download size: 2.3 M

Installed size: 6.9 M

1. **Update the system packages.**

[ec2-user@ip-172-31-25-211 ~]$ sudo yum update httpd

Last metadata expiration check: 1 day, 6:52:57 ago on Sat Oct 26 12:22:13 2024.

Dependencies resolved.

Nothing to do.

Complete!

1. **Create a symbolic link.**

[ec2-user@ip-172-31-25-211 ~]$ touch sameer

[ec2-user@ip-172-31-25-211 ~]$ echo "hey sameer">sameer

[ec2-user@ip-172-31-25-211 ~]$ cat sameer

hey sameer

[ec2-user@ip-172-31-25-211 ~]$ ln -s sameer shaik

[ec2-user@ip-172-31-25-211 ~]$ ls -lthr

total 8.0K

-rw-r--r--. 1 ec2-user ec2-user 3.6K Oct 26 13:32 linux.txt

-rw-r--r--. 1 ec2-user ec2-user 11 Oct 27 19:31 sameer

lrwxrwxrwx. 1 ec2-user ec2-user 6 Oct 27 19:32 shaik -> sameer

[ec2-user@ip-172-31-25-211 ~]$ cat shaik

hey sameerr

1. **Search for files using the find command.**

[ec2-user@ip-172-31-25-211 ~]$ find / -name sameer

1. **Compress and decompress files using tar.**

[ec2-user@ip-172-31-25-211 ~]$ mkdir sameer

[ec2-user@ip-172-31-25-211 ~]$ cd sameer/

[ec2-user@ip-172-31-25-211 sameer]$ touch 1 2 3 a b c

[ec2-user@ip-172-31-25-211 sameer]$ ls

1 2 3 a b c

[ec2-user@ip-172-31-25-211 sameer]$ cd ..

[ec2-user@ip-172-31-25-211 ~]$ tar cvf shaik.tar sameer/

sameer/

sameer/1

sameer/2

sameer/3

sameer/a

sameer/b

sameer/c

[ec2-user@ip-172-31-25-211 ~]$ ls

basha linux.txt sameer shaik.tar

[ec2-user@ip-172-31-25-211 ~]$ tar xvf shaik.tar

sameer/

sameer/1

sameer/2

sameer/3

sameer/a

sameer/b

sameer/c

[ec2-user@ip-172-31-25-211 ~]$

**22) Monitor system resources with top or htop.**

top

htop

sudo yum install htop

htop

**23)Create and manage user groups.**

sudo groupadd venom

cat /etc/group

1. **Set up SSH password less authentication.**
2. **Monitor log files using tail or grep.**

[root@ip-172-31-25-211 ec2-user]# tail -f | grep log

1. **Set up a web server (e.g., Apache or Nginx).**

[root@ip-172-31-25-211 ec2-user]# sudo yum install httpd

Last metadata expiration check: 1 day, 7:59:37 ago on Sat Oct 26 12:22:13 2024.

Package httpd-2.4.62-1.amzn2023.x86\_64 is already installed.

Dependencies resolved.

Nothing to do.

Complete!

1. **Configure and secure a MySQL Database.**

sudo yum install mysql-server

1. **Set up a Application Server**

[root@ip-172-31-25-211 ec2-user]# sudo yum install httpd

Last metadata expiration check: 1 day, 7:59:37 ago on Sat Oct 26 12:22:13 2024.

Package httpd-2.4.62-1.amzn2023.x86\_64 is already installed.

Dependencies resolved.

Nothing to do.

Complete!

1. **create a service file for Apache Tomcat.(Should execute by using systemtctl command)**

**A)**

**ec2-user@ip-172-31-42-105 ~]$ wget https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.96/src/apache-tomcat-9.0.96-src.tar.gz**

**--2024-10-28 12:20:11-- https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.96/src/apache-tomcat-9.0.96-src.tar.gz**

**Resolving dlcdn.apache.org (dlcdn.apache.org)... 151.101.2.132, 2a04:4e42::644**

**Connecting to dlcdn.apache.org (dlcdn.apache.org)|151.101.2.132|:443... connected.**

**HTTP request sent, awaiting response... 200 OK**

**Length: 7042818 (6.7M) [application/x-gzip]**

**Saving to: ‘apache-tomcat-9.0.96-src.tar.gz’**

**apache-tomcat-9.0.96-src.tar.gz 100%[============================================================================>] 6.72M --.-KB/s in 0.04s**

**2024-10-28 12:20:11 (171 MB/s) - ‘apache-tomcat-9.0.96-src.tar.gz’ saved [7042818/7042818]**

**[ec2-user@ip-172-31-42-105 ~]$ ls**

**Techie\_Horizon apache-tomcat-9.0.96-src.tar.gz techie**

1. **Print specific columns from a delimited file.**

**A)**

**[ec2-user@ip-172-31-42-105 ~]$ echo -e "Name,Age,Location,Score\nkim,23,erragal,25\nclay,47,Austraila,90\nsam,27,bankok,98" > data.txt**

**[ec2-user@ip-172-31-42-105 ~]$ cat data.txt**

**Name,Age,Location,Score**

**kim,23,erragal,25**

**clay,47,Austraila,90**

**sam,27,bankok,98**

**[ec2-user@ip-172-31-42-105 ~]$ cut -d',' -f2,4 data.txt**

**Age,Score**

**23,25**

**47,90**

**27,98**

**[ec2-user@ip-172-31-42-105 ~]$ awk -F',' '{prinrt $2,$4}' data.txt**

**awk: cmd. line:1: {prinrt $2,$4}**

**awk: cmd. line:1: ^ syntax error**

**[ec2-user@ip-172-31-42-105 ~]$ awk -F',' '{prinrt $2, $4}' data.txt**

**awk: cmd. line:1: {prinrt $2, $4}**

**awk: cmd. line:1: ^ syntax error**

**[ec2-user@ip-172-31-42-105 ~]$ awk -F',' '{print $2, $4}' data.txt**

**Age Score**

**23 25**

**47 90**

**27 98**

**[ec2-user@ip-172-31-42-105 ~]$ ^C**

1. **Filter and print lines based on a specific pattern or condition.**

**A**

**[ec2-user@ip-172-31-42-105 ~]$ grep sam data.txt**

**sam,27,bankok,98**

**[ec2-user@ip-172-31-42-105 ~]$ grep -v sam data.txt**

**Name,Age,Location,Score**

**kim,23,erragal,25**

**clay,47,Austraila,90**

**[ec2-user@ip-172-31-42-105 ~]$ cata data.txt**

**-bash: cata: command not found**

**[ec2-user@ip-172-31-42-105 ~]$ cat data.txt**

**Name,Age,Location,Score**

**kim,23,erragal,25**

**clay,47,Austraila,90**

**sam,27,bankok,98**

1. **Calculate and print the average, sum, or other statistics of a column.**

**A**

**ec2-user@ip-172-31-42-105 ~]$ awk -F',' '{sum+=^C data.txt**

**[ec2-user@ip-172-31-42-105 ~]$ awk -F',' '{sum+=$4} END {print "sum: ",sum}' file**

**sum: 213**

**[ec2-user@ip-172-31-42-105 ~]$ awk -F',' '{avg+=$4} END {print "avg: ",avg/4}' file**

**avg: 53.25**

1. **Perform string manipulation, such as extracting substrings or changing case.**

**A**

**ec2-user@ip-172-31-42-105 ~]$ cut -c 1-2 file**

**Na**

**ki**

**cl**

**sa**

**[ec2-user@ip-172-31-42-105 ~]$ cat file | tr '[:lower:}' '{upper}'**

**Namr,Agr,Lpcatipn,Scp}r**

**kim,23,r}}agap,25**

**cpay,47,Aust}aipa,90**

**sam,27,bankpk,98**

**[ec2-user@ip-172-31-42-105 ~]$**

1. **Count the occurrences of a specific pattern in a file.**

**[ec2-user@ip-172-31-42-105 ~]$ vim fruts**

**[ec2-user@ip-172-31-42-105 ~]$ greap -o 'apple' fruts | wc**

**-bash: greap: command not found**

**0 0 0**

**[ec2-user@ip-172-31-42-105 ~]$**

**[ec2-user@ip-172-31-42-105 ~]$ greap -o 'apple' fruts | wc -l**

**-bash: greap: command not found**

**0**

**[ec2-user@ip-172-31-42-105 ~]$ grep -o 'apple' fruts | wc -l**

**6**

1. **Sort lines based on a specific field or column.**

**A**

**[ec2-user@ip-172-31-42-105 ~]$ cat file**

**Name,Age,Location,Score**

**kim,23,erragal,25**

**clay,47,Austraila,90**

**sam,27,bankok,98**

**[ec2-user@ip-172-31-42-105 ~]$ sort -t ',' -k 3 file**

**clay,47,Austraila,90**

**Name,Age,Location,Score**

**sam,27,bankok,98**

**kim,23,erragal,25**

**[ec2-user@ip-172-31-42-105 ~]$**

1. **Merge multiple files based on a common field or column.**

**A**

**[ec2-user@ip-172-31-42-105 ~]$ vim file1**

**[ec2-user@ip-172-31-42-105 ~]$ vim file2**

**[ec2-user@ip-172-31-42-105 ~]$ sort file**

**file file1 file2**

**[ec2-user@ip-172-31-42-105 ~]$ sort file1 -o file1**

**[ec2-user@ip-172-31-42-105 ~]$ sort file2 -o file2**

**[ec2-user@ip-172-31-42-105 ~]$ join -t '.' -1 1 -2 1 file1 file2> final**

**[ec2-user@ip-172-31-42-105 ~]$ cat final**

1. **Substitute text in a file using search and replace.**

**A**

**[ec2-user@ip-172-31-42-105 ~]$ cat p1**

**hey complete the task**

**[ec2-user@ip-172-31-42-105 ~]$ greap 'the' p1**

**-bash: greap: command not found**

**[ec2-user@ip-172-31-42-105 ~]$ grep 'the' p1**

**hey complete the task**

**[ec2-user@ip-172-31-42-105 ~]$ vim p1**

**[ec2-user@ip-172-31-42-105 ~]$ sed -n 's/the/theeee' p1**

**38**

1. **Delete specific lines based on a pattern or line number.**

[ec2-user@ip-172-31-42-105 ~]$ cat file

Name,Age,Location,Score

clay,47,Austraila,90

kim,23,erragal,25

sam,27,bankok,98

[ec2-user@ip-172-31-42-105 ~]$ awk '!/clay/' file

Name,Age,Location,Score

kim,23,erragal,25

sam,27,bankok,98

1. **Append or insert text before or after a specific pattern or line.**

**[ec2-user@ip-172-31-42-105 ~]$ vim basha**

**[ec2-user@ip-172-31-42-105 ~]$ cat basha**

**The sky was painted in hues of orange and purple as the sun began to set.**

**Waves gently lapped at the shore, creating a soothing melody.**

**A cool breeze carried the scent of salt and sea, filling the evening air.**

**[ec2-user@ip-172-31-42-105 ~]$ sed '/sky/i\new line is added' basha**

**new line is added**

**The sky was painted in hues of orange and purple as the sun began to set.**

**Waves gently lapped at the shore, creating a soothing melody.**

**A cool breeze carried the scent of salt and sea, filling the evening air.**

**[ec2-user@ip-172-31-42-105 ~]$ ^C**

1. **Print only specific lines from a file.**

**[ec2-user@ip-172-31-42-105 ~]$ cat basha**

**The sky was painted in hues of orange and purple as the sun began to set.**

**Waves gently lapped at the shore, creating a soothing melody.**

**A cool breeze carried the scent of salt and sea, filling the evening air.**

**[ec2-user@ip-172-31-42-105 ~]$ sed -n '3p' basha**

**A cool breeze carried the scent of salt and sea, filling the evening air.**

**[ec2-user@ip-172-31-42-105 ~]$**

4

1. Copy file from linux to windows machine

[ec2-user@ip-172-31-42-105 ~]$ cat basha

The sky was painted in hues of orange and purple as the sun began to set.

Waves gently lapped at the shore, creating a soothing melody.

A cool breeze carried the scent of salt and sea, filling the evening air.

[ec2-user@ip-172-31-42-105 ~]$ awk '{$!=$1; print}' basha

awk: cmd. line:1: {$!=$1; print}

awk: cmd. line:1: ^ syntax error

[ec2-user@ip-172-31-42-105 ~]$ awk '{$1=$1; print}' basha

The sky was painted in hues of orange and purple as the sun began to set.

Waves gently lapped at the shore, creating a soothing melody.

A cool breeze carried the scent of salt and sea, filling the evening air.

1. **5 use cases for AWK and 5 use cases for sed**

**[ec2-user@ip-172-31-42-105 ~]$ awk -F ',' '{print $1, $3}' file**

**Name Location**

**clay Austraila**

**kim erragal**

**sam bankok**

**[ec2-user@ip-172-31-42-105 ~]$ awk '{sum += $2} END {print sum}' file.**

**awk: fatal: cannot open file `file.' for reading: No such file or directory**

**[ec2-user@ip-172-31-42-105 ~]$ awk '{sum += $2} END {print sum}' file**

**0**

**[ec2-user@ip-172-31-42-105 ~]$ awk '$3 > 50' file**

**[ec2-user@ip-172-31-42-105 ~]$ awk '$3 > 10' file**

**[ec2-user@ip-172-31-42-105 ~]$ awk '{printf "Name: %s, Age: %d\n", $1, $2}' file**

**Name: Name,Age,Location,Score, Age: 0**

**Name: clay,47,Austraila,90, Age: 0**

**Name: kim,23,erragal,25, Age: 0**

**Name: sam,27,bankok,98, Age: 0**

**[ec2-user@ip-172-31-42-105 ~]$ awk '{count[$1]++} END {for (word in count) print word, count[word]}' file**