

# Linux Assignment

## 1. Configure smtp in localhost.

> The following command undergoes updation and installation of the packages:

```
sudo apt update
sudo apt install postfix -y
sudo apt install mailutils
```

> configure the postfix go to the location

```
cd /etc/postfix
```

> Now, we have to work on main.cf file. So open the file in editor file

```
vi /etc/postfix/main.cf
```

```
myhostname = sigmoid-ThinkPad-T470.localdomain
mydomain = localdomain
myorigin = /etc/mailname
mydestination = $myhostname, localhost.$mydomain, localhost
relayhost = [smtp.gmail.com]:587
inet_interfaces = all
inet_protocols = all
smtp_sasl_auth_enable = yes
smtp_sasl_password_maps = hash:/etc/postfix/sasl_passwd
smtp_sasl_security_options = noanonymous
smtp_tls_security_level = may
smtp_tls_CAfile = /etc/ssl/certs/ca-certificates.crt
smtp_use_tls = yes

smtpd_relay_restrictions = permit_mynetworks, reject
mynetworks = 127.0.0.0/8 192.168.0.0/24 [::1]/128 [2406:7400:104:54a9::]/64 [fe80::]/64
mailbox_size_limit =
recipient_delimiter = +

compatibility_level = 2
```

Create the /etc/postfix/sasl\_passwd file and add your Gmail credentials:  
[smtp.gmail.com]:587 sathwick@gmail.com:yourpassword

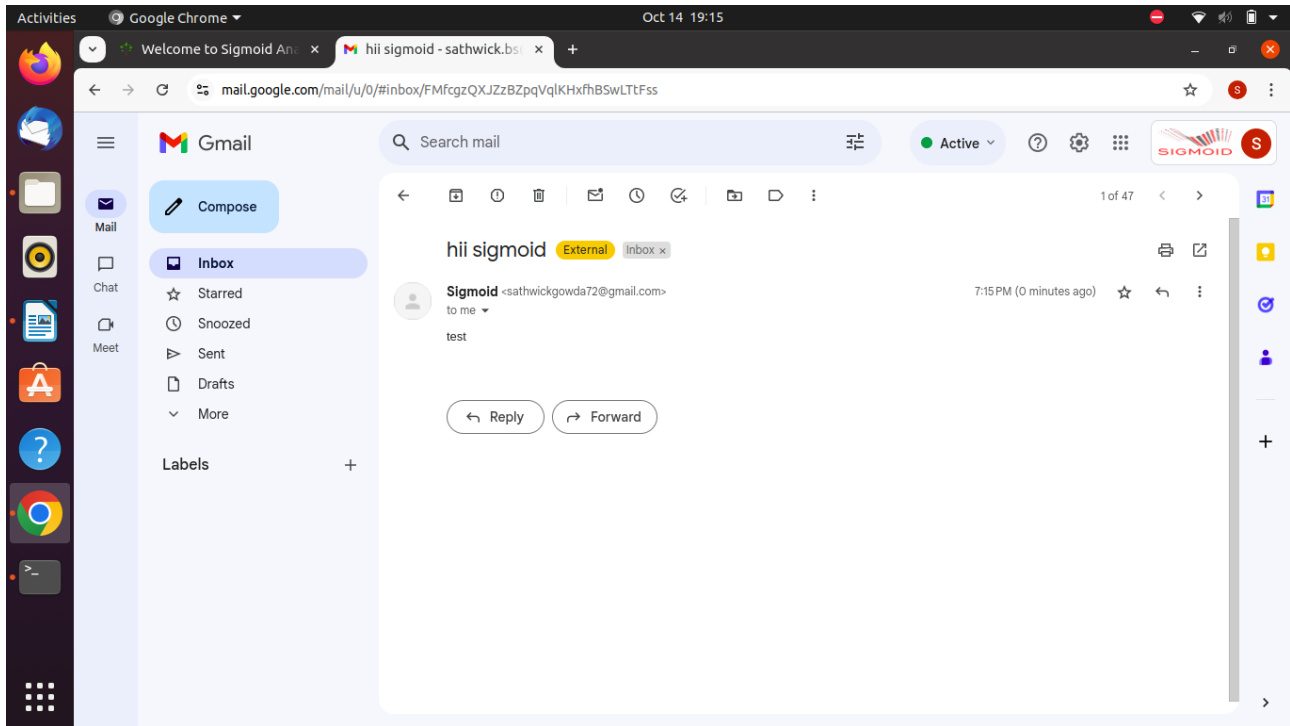
Secure the password file:  
sudo chmod 600 /etc/postfix/sasl\_passwd

Postmap the password file:  
sudo postmap /etc/postfix/sasl\_passwd

Reload Postfix to apply the changes:

```
sudo systemctl restart postfix
```

```
echo "Test" | mail -s "hiii sigmoid" sathwick.bs@sigmoidanalytics.com
```



2. Create a user in your localhost, which should not be able to execute the sudo command.

```
Activities Terminal Oct 14 17:12
sathwick@sigmoid-ThinkPad-T470: ~

sigmoid@sigmoid-ThinkPad-T470: /etc/postfix$ cd
sigmoid@sigmoid-ThinkPad-T470:~$ sudo su
[sudo] password for sigmoid:
root@sigmoid-ThinkPad-T470:/home/sigmoid# adduser sathwick
Adding user `sathwick' ...
Adding new group `sathwick' (1005) ...
Adding new user `sathwick' (1004) with group `sathwick' ...
Creating home directory `/home/sathwick' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for sathwick
Enter the new value, or press ENTER for the default
  Full Name []:
  Room Number []:
  Work Phone []:
  Home Phone []:
  Other []:
Is the information correct? [Y/n] y
root@sigmoid-ThinkPad-T470:/home/sigmoid# su - sathwick
sathwick@sigmoid-ThinkPad-T470:~$ whoami
sathwick
sathwick@sigmoid-ThinkPad-T470:~$ sudo sathwick
[sudo] password for sathwick:
sathwick is not in the sudoers file. This incident will be reported.
sathwick@sigmoid-ThinkPad-T470:~$ sudo install postfix
[sudo] password for sathwick:
sathwick is not in the sudoers file. This incident will be reported.
sathwick@sigmoid-ThinkPad-T470:~$
```

**3. Configure your system in such a way that when a user type and executes a `describe` command from anywhere of the system it must list all the files and folders of the user's current directory.**

Ex:- `$ describe`

`$ content1 content2`

`Content3 content 4`

**In `bash.bashrc` vi editor `alias describe='ls -la'`**

```
Activities Terminal Oct 14 17:35
root@sigmoid-ThinkPad-T470: /home/sigmoid

sigmoid@sigmoid-ThinkPad-T470: ~ root@sigmoid-ThinkPad-T470: ~ root@sigmoid-ThinkPad-T470: /h... root@sigmoid-ThinkPad-T470: /h...
root@sigmoid-ThinkPad-T470: /home/sigmoid# ls -la
total 132
drwxr-xr-x 20 sigmoid sigmoid 4096 Oct 14 15:12 .
drwxr-xr-x 6 root root 4096 Oct 14 17:09 ..
-rw-r--r-- 1 sigmoid sigmoid 5942 Oct 14 17:18 .bash_history
-rw-r--r-- 1 sigmoid sigmoid 220 Oct 1 16:16 .bash_logout
-rw-r--r-- 1 sigmoid sigmoid 3771 Oct 1 16:16 .bashrc
drwxrwxr-x 20 sigmoid sigmoid 4096 Oct 2 21:28 .cache
-rw-rw-r-- 1 sigmoid sigmoid 0 Oct 7 13:57 cha
drwx----- 16 sigmoid sigmoid 4096 Oct 2 21:28 .config
-rw-rw-r-- 1 sigmoid sigmoid 932 Oct 9 19:35 david
drwxr-xr-x 2 sigmoid sigmoid 4096 Oct 1 21:52 Desktop
drwxr-xr-x 2 sigmoid sigmoid 4096 Oct 1 21:52 Documents
drwxr-xr-x 3 sigmoid sigmoid 4096 Oct 1 18:46 Downloads
-rw-rw-r-- 1 sigmoid sigmoid 61 Oct 9 13:19 erorrfile
drwx----- 3 sigmoid sigmoid 4096 Oct 14 14:49 .gnupg
-rw-rw-r-- 1 sigmoid sigmoid 0 Oct 7 14:02 homer
-rw-rw-r-- 1 sigmoid sigmoid 0 Oct 7 13:54 jerry
-rw-rw-r-- 1 sigmoid sigmoid 822 Oct 9 12:42 karthik
drwxr-xr-x 3 sigmoid sigmoid 4096 Oct 1 21:52 .local
drwx----- 4 sigmoid sigmoid 4096 Oct 2 01:29 .mozilla
drwxr-xr-x 2 sigmoid sigmoid 4096 Oct 1 21:52 Music
drwxr-xr-x 2 sigmoid sigmoid 4096 Oct 14 17:26 Pictures
drwx----- 3 sigmoid sigmoid 4096 Oct 1 14:55 .pkt
-rw-r--r-- 1 sigmoid sigmoid 807 Oct 1 16:16 .profile
drwxr-xr-x 2 sigmoid sigmoid 4096 Oct 1 21:52 Public
-rw-rw-r-- 1 sigmoid sigmoid 11 Oct 11 18:44 rahul
-rw-r--r-- 1 sigmoid sigmoid 12288 Oct 11 18:46 .rahul.swp
-rw-rw-r-- 1 sigmoid sigmoid 62 Oct 13 17:22 rocky
-rw-rw-r-- 1 sigmoid sigmoid 0 Oct 7 13:54 sam
drwxrwxr-x 2 sigmoid sigmoid 4096 Oct 7 15:23 sigmoid
drwx----- 3 sigmoid sigmoid 4096 Oct 1 14:51 snap
drwx----- 2 sigmoid sigmoid 4096 Oct 4 14:53 .ssh
-rw-r--r-- 1 sigmoid sigmoid 0 Oct 2 01:20 .sudo_as_admin_successful
drwxr-xr-x 2 sigmoid sigmoid 4096 Oct 1 21:52 Templates
drwxr-xr-x 2 sigmoid sigmoid 4096 Oct 1 21:52 Videos
```

```
Activities Terminal Oct 14 17:35
root@sigmoid-ThinkPad-T470: /home/sigmoid

sigmoid@sigmoid-ThinkPad-T470: ~ root@sigmoid-ThinkPad-T470: ~ root@sigmoid-ThinkPad-T470: /h... root@sigmoid-ThinkPad-T470: /h...
-rw-rw-r-- 1 sigmoid sigmoid 62 Oct 13 17:22 rocky
drwxr-xr-x 2 sigmoid sigmoid 4096 Oct 14 17:26 Pictures
root@sigmoid-ThinkPad-T470: /home/sigmoid# vt .bashrc
root@sigmoid-ThinkPad-T470: /home/sigmoid# describe
total 132
drwxr-xr-x 20 sigmoid sigmoid 4096 Oct 14 17:34 .
drwxr-xr-x 6 root root 4096 Oct 14 17:09 ..
-rw-r--r-- 1 sigmoid sigmoid 5942 Oct 14 17:18 .bash_history
-rw-r--r-- 1 sigmoid sigmoid 220 Oct 1 16:16 .bash_logout
-rw-r--r-- 1 sigmoid sigmoid 3798 Oct 14 17:34 .bashrc
drwxrwxr-x 20 sigmoid sigmoid 4096 Oct 2 21:28 .cache
-rw-rw-r-- 1 sigmoid sigmoid 0 Oct 7 13:57 cha
drwx----- 16 sigmoid sigmoid 4096 Oct 2 21:28 .config
-rw-rw-r-- 1 sigmoid sigmoid 932 Oct 9 19:35 david
drwxr-xr-x 2 sigmoid sigmoid 4096 Oct 1 21:52 Desktop
drwxr-xr-x 2 sigmoid sigmoid 4096 Oct 1 21:52 Documents
drwxr-xr-x 3 sigmoid sigmoid 4096 Oct 1 18:46 Downloads
-rw-rw-r-- 1 sigmoid sigmoid 61 Oct 9 13:19 erorrfile
drwx----- 3 sigmoid sigmoid 4096 Oct 14 14:49 .gnupg
-rw-rw-r-- 1 sigmoid sigmoid 0 Oct 7 14:02 homer
-rw-rw-r-- 1 sigmoid sigmoid 0 Oct 7 13:54 jerry
-rw-rw-r-- 1 sigmoid sigmoid 822 Oct 9 12:42 karthik
drwxr-xr-x 3 sigmoid sigmoid 4096 Oct 1 21:52 .local
drwx----- 4 sigmoid sigmoid 4096 Oct 2 01:29 .mozilla
drwxr-xr-x 2 sigmoid sigmoid 4096 Oct 1 21:52 Music
drwxr-xr-x 2 sigmoid sigmoid 4096 Oct 14 17:26 Pictures
drwx----- 3 sigmoid sigmoid 4096 Oct 1 14:55 .pkt
-rw-r--r-- 1 sigmoid sigmoid 807 Oct 1 16:16 .profile
drwxr-xr-x 2 sigmoid sigmoid 4096 Oct 1 21:52 Public
-rw-rw-r-- 1 sigmoid sigmoid 11 Oct 11 18:44 rahul
-rw-r--r-- 1 sigmoid sigmoid 12288 Oct 11 18:46 .rahul.swp
-rw-rw-r-- 1 sigmoid sigmoid 62 Oct 13 17:22 rocky
-rw-rw-r-- 1 sigmoid sigmoid 0 Oct 7 13:54 sam
drwxrwxr-x 2 sigmoid sigmoid 4096 Oct 7 15:23 sigmoid
drwx----- 3 sigmoid sigmoid 4096 Oct 1 14:51 snap
drwx----- 2 sigmoid sigmoid 4096 Oct 4 14:53 .ssh
-rw-r--r-- 1 sigmoid sigmoid 0 Oct 2 01:20 .sudo_as_admin_successful
```

4. Users can put a compressed file at any path of the linux file system. The name of the file will be research and the extension will be of compression type, example for gzip type extension will be .gz. You have to find the file and check the compression type and uncompress it.

```
sigmoid@sigmoid-ThinkPad-T470:~$ whoami
sigmoid
sigmoid@sigmoid-ThinkPad-T470:~$ pwd
/home/sigmoid
sigmoid@sigmoid-ThinkPad-T470:~$ cd /home/sigmoid/myscripts
sigmoid@sigmoid-ThinkPad-T470:~/myscripts$ vi researchfile-script
#!/bin/bash
file=$(find / -type f \( -name "research.gz" -o -name "research.tar.gz" -o -name "research.tar" \) 2>/dev/null)
if [ -z "$file" ]; then
    echo "No compressed file named 'research' found."
    exit 1
fi
echo "Found file: $file"
filetype=$(file --mime-type -b "$file")
echo "Detected file type: $filetype"
case "$filetype" in
    application/gzip)
        echo "Uncompressing gzip file..."
        gunzip "$file"
        ;;
    application/x-tar)
        echo "Uncompressing tar file..."
        tar -xf "$file"
        ;;
    *)
        echo "Unknown file type or unsupported compression format."
        exit 1
        ;;
esac
echo "File uncompressed successfully."
```

```
sigmoid@sigmoid-ThinkPad-T470:~/myscripts$ chmod a+x researchfile-script
sigmoid@sigmoid-ThinkPad-T470:~$ touch research.tar
sigmoid@sigmoid-ThinkPad-T470:~$ gzip research.tar
sigmoid@sigmoid-ThinkPad-T470:~/myscripts$ ./researchfile-script
Found file: /home/sigmoid/research.tar.gz
Detected file type: application/gzip
Uncompressing gzip file...
File uncompressed successfully.
sigmoid@sigmoid-ThinkPad-T470:~/myscripts$ cd
sigmoid@sigmoid-ThinkPad-T470:~$ ls -ltr
-rw-rw-r-- 1 sigmoid sigmoid 2614 Oct  9 13:08 research.tar
```

5. Configure your system in such a way that any user of your system creates a file then there should not be permission to do any activity in that file.

Note:- Don't use the chmod command.

```
sigmoid@sigmoid-ThinkPad-T470:~$ sudo vi /etc/bash.bashrc
umask 0777
[sudo] password for sigmoid:
sigmoid@sigmoid-ThinkPad-T470:~$ source ~/.bashrc
sigmoid@sigmoid-ThinkPad-T470:~$ umask
0777
sigmoid@sigmoid-ThinkPad-T470:~$ touch testfileee
sigmoid@sigmoid-ThinkPad-T470:~$ ls -l testfileee
----- 1 sigmoid sigmoid 0 Oct 10 15:30 testfileee
sigmoid@sigmoid-ThinkPad-T470:~$ echo "hii hello" > testfileee
bash: testfileee: Permission denied
```

6. Create a service with the name **showtime**, after starting the service, every minute it should print the current time in a file in the user home directory.

Ex:-

sudo service showtime start -> It should start writing in file.

sudo service showtime stop -> It should stop writing in file.

sudo service showtime status -> It should show status.

```
sigmoid@sigmoid-ThinkPad-T470:~$ nano ~/showtime.sh
sigmoid@sigmoid-ThinkPad-T470:~$ cat ~/showtime.sh
#!/bin/bash
# Define the output file
OUTPUT_FILE="$HOME/current_time.txt"
# Infinite loop to write current time every minute
while true; do
    echo "$(date)" >> "$OUTPUT_FILE"
    sleep 60 # Wait for 1 minute
done
sigmoid@sigmoid-ThinkPad-T470:~$ sudo nano /etc/systemd/system/showtime.service
[sudo] password for sigmoid:
sigmoid@sigmoid-ThinkPad-T470:~$ sudo systemctl daemon-reload
sigmoid@sigmoid-ThinkPad-T470:~$ sudo systemctl start showtime.service
sigmoid@sigmoid-ThinkPad-T470:~$ sudo systemctl enable showtime.service
Created symlink /etc/systemd/system/multi-user.target.wants/showtime.service ->
/etc/systemd/system/showtime.service.
sigmoid@sigmoid-ThinkPad-T470:~$ sudo systemctl start showtime.service
sigmoid@sigmoid-ThinkPad-T470:~$ sudo systemctl stop showtime.service
sigmoid@sigmoid-ThinkPad-T470:~$ sudo systemctl status showtime.service
● showtime.service - Showtime Service
   Loaded: loaded (/etc/systemd/system/showtime.service; enabled; vendor preset:
   Active: inactive (dead) since Thu 2024-10-10 15:53:27 IST; 9s ago
```

Process: 19433 ExecStart=/bin/bash /home/sigmoid/showtime.sh (code=killed, >  
Main PID: 19433 (code=killed, signal=TERM)

Oct 10 15:53:06 sigmoid-ThinkPad-T470 systemd[1]: Started Showtime Service.  
Oct 10 15:53:27 sigmoid-ThinkPad-T470 systemd[1]: Stopping Showtime Service...  
Oct 10 15:53:27 sigmoid-ThinkPad-T470 systemd[1]: showtime.service: Succeeded.  
Oct 10 15:53:27 sigmoid-ThinkPad-T470 systemd[1]: Stopped Showtime Service.  
sigmoid@sigmoid-ThinkPad-T470:~\$ cat ~/current\_time.txt  
Thursday 10 October 2024 03:53:06 PM IST