

## 1. Configure smtp in localhost.

### Steps: -

1. Switch to root user using  
su –
2. Install postfix service using command  
yum install postfix
3. Start postfix service using command  
systemctl postfix start  
or  
service postfix start
  - check status of postfix service using command  
systemctl postfix start
4. Now add smtp firewall using command  
firewall-cmd --permanent --add-service=smtp
5. Edit /etc/postfix/main.cf file. Change the following parameters
  - myhostname = localhost
  - mydomain = localdomain
  - intet\_interfaces = \$myhostname, localhost
  - mydestination = \$myhostname, localhost.\$mydomain, localhost
  - minework\_style = host
6. Now to test mail service use command
  - mail -S "Hello" username@localhost
  - subject: Enter your subject
  - Enter the message body
  - Press cont+d when you finish
7. Now switch to user and run mail command to check mail
  - mail

```
[sudo] password for rrushiya:  
[rrushiya@MyFristLinux ~]$  
[rrushiya@MyFristLinux ~]$ sudo yum install postfix  
Loaded plugins: fastestmirror, langpacks  
Loading mirror speeds from cached hostfile  
* base: centos.nethub.com.hk  
* extras: hk.mirrors.thegigabit.com  
* updates: hk.mirrors.thegigabit.com  
http://centos.nethub.com.hk/7.9.2009/os/x86_64/repo/repodata/repomd.xml: [Errno 14] HTTP Err  
or 403 - Forbidden  
Trying other mirror.  
To address this issue please refer to the below wiki article  
https://wiki.centos.org/yum-errors  
If above article doesn't help to resolve this issue please use https://bugs.centos.org/  
.br  
base | 3.6 kB 00:00:00  
extras | 2.9 kB 00:00:00  
updates | 2.9 kB 00:00:00  
Package 2:postfix-2.10.1-9.el7.x86_64 already installed and latest version  
Nothing to do  
[rrushiya@MyFristLinux ~]$ sudo yum install postfix  
Loaded plugins: fastestmirror, langpacks  
Loading mirror speeds from cached hostfile
```

Applications Places Terminal Fri 22:09 batman@MyFristLinux:~

```
[root@MyFristLinux ~]# firewall-cmd --permanent --add-service=smtp
success
[root@MyFristLinux ~]# firewall-cmd --permanent --add-service=smtp
Warning: ALREADY_ENABLED: smtp
success
[root@MyFristLinux ~]#
[root@MyFristLinux ~]# vi /etc/postfix/main.cf
[root@MyFristLinux ~]# vi /etc/postfix/main.cf
[root@MyFristLinux ~]# systemctl restart postfix
[root@MyFristLinux ~]# systemctl status postfix
● postfix.service - Postfix Mail Transport Agent
   Loaded: loaded (/usr/lib/systemd/system/postfix.service; enabled; vendor preset: disabled)
     Active: active (running) since Fri 2022-07-15 21:29:06 IST; 30s ago
       Process: 24434 ExecStop=/usr/sbin/postfix stop (code=exited, status=0/SUCCESS)
      Process: 24456 ExecStart=/usr/sbin/postfix start (code=exited, status=0/SUCCESS)
     Process: 24454 ExecStartPre=/usr/libexec/postfix/chroot-update (code=exited, status=0/SUCCESS)
    Process: 24452 ExecStartPre=/usr/libexec/postfix/aliasesdb (code=exited, status=0/SUCCESS)
   Main PID: 24529 (master)
     Tasks: 3
      CGroup: /system.slice/postfix.service
              └─24529 /usr/libexec/postfix/master -w
                  ├─24530 pickup -l -t unix -u
                  ├─24531 qmgr -l -t unix -u
```

MyFristLinux [Running] - Oracle VM VirtualBox Applications Places Terminal Fri 22:25 spiderman@MyFristLinux:~

```
File Edit View Search Terminal Help
[root@MyFristLinux ~]# mail -S "Welcome" spiderman@localhost
Subject: Welcome to Sigmoid
Hey Spiderman welcome to Sigmoid

Thanks and regards
root
EOT
[root@MyFristLinux ~]# su - spiderman
Last login: Fri Jul 15 17:30:50 IST 2022 on pts/0
[spiderman@MyFristLinux ~]$ mail
Heirloom Mail version 12.5 7/5/10. Type ? for help.
"/var/spool/mail/spiderman": 1 message 1 new
>N 1 root          Fri Jul 15 22:25 21/688 "Welcome to Sigmoid"
&
```

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

**Steps: -**

1. switch to root user to create the user using

```
sudo su
```

2. Create a user with command

```
useradd NameOfTheUser
```

ex. useradd spiderman

3. set password for created user

```
passwd spiderman
```

4. Now confirm by running any sudo command by switch into created user

```
su spiderman
```

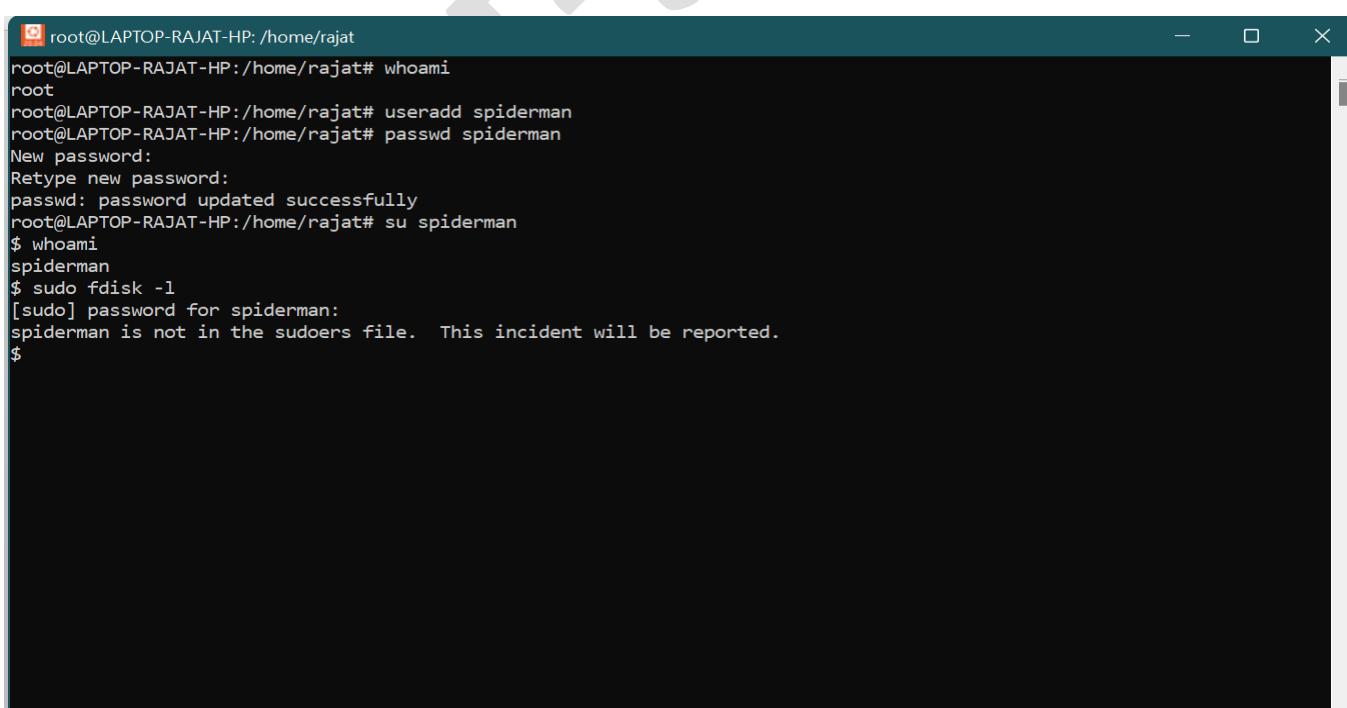
```
whoami
```

```
sudo fdisk -l
```

4. Confirm this user is not the member of sudo group or admin group using

```
sudo su
```

```
visudo
```



```
root@LAPTOP-RAJAT-HP: /home/rajat
root@LAPTOP-RAJAT-HP:/home/rajat# whoami
root
root@LAPTOP-RAJAT-HP:/home/rajat# useradd spiderman
root@LAPTOP-RAJAT-HP:/home/rajat# passwd spiderman
New password:
Retype new password:
passwd: password updated successfully
root@LAPTOP-RAJAT-HP:/home/rajat# su spiderman
$ whoami
spiderman
$ sudo fdisk -l
[sudo] password for spiderman:
spiderman is not in the sudoers file. This incident will be reported.
$
```

root@LAPTOP-RAJAT-HP: /home/rajat

GNU nano 4.8 /etc/sudoers.tmp

```
# See the man page for details on how to write a sudoers file.
#
Defaults        env_reset
Defaults        mail_badpass
Defaults        secure_path="/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/snap/bin"

# Host alias specification

# User alias specification

# Cmnd alias specification

# User privilege specification
root    ALL=(ALL:ALL) ALL

# Members of the admin group may gain root privileges
%admin  ALL=(ALL) ALL

# Allow members of group sudo to execute any command
%sudo   ALL=(ALL:ALL) ALL

# See sudoers(5) for more information on "#include" directives:
#include /etc/sudoers.d

-
^G Get Help      ^O Write Out     ^W Where Is      ^K Cut Text      ^J Justify      ^C Cur Pos      M-U Undo
^X Exit          ^R Read File     ^\ Replace       ^U Paste Text    ^T To Spell      ^_ Go To Line   M-E Redo
                                         ^A             ^P             ^S             ^L             ^I             M-A Mark Text
                                         M-G           M-P           M-S           M-L           M-I           M-U Copy Text
```

**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

**Steps:** -

1. Switch to root user using  
su -
2. Navigate to /usr/local/bin directory using  
cd /usr/local/bin
3. Now add the alias with file name “describe”  
vim describe  
press i for insert mode then type command which want to replace with alias “describe”  
ls -all
4. Save the file  
Press “esc button” to come out from insert mode then type :wq! To save the file
5. Now confirm the file having executable permission using command  
ls -ld /usr/local/bin/describe
6. Provide the executable permission using  
chmod 755 /usr/local/bin/describe
7. Now you can use “describe” to list file for current working directory.

The screenshot shows a Linux desktop environment with two terminal windows. The top terminal window is running as root and shows the process of creating an alias named 'describe'. It includes commands like 'vim describe', 'chmod 755 /usr/local/bin/describe', and 'alias describe="ls -all"'. The bottom terminal window is also running as root and demonstrates the new alias by typing 'describe' and pressing Enter, which lists all files in the current directory ('/usr/local/bin'). A red box highlights the word 'describe' in the bottom terminal window.

```
[root@MyFristLinux ~]# vim describe
[root@MyFristLinux ~]# chmod 755 /usr/local/bin/describe
[root@MyFristLinux ~]# alias describe="ls -all"
[root@MyFristLinux ~]# describe
total 16
drwxr-xr-x. 2 root root 22 Jul 12 21:29 .
drwxr-xr-x. 12 root root 131 Jul 12 06:24 ..
-rw-r--r--. 1 root root 8 Jul 12 21:12 describe
[root@MyFristLinux ~]#
```

```
spiderman@MyFristLinux:~$ describe
total 16
drwxr-xr-x. 5 spiderman superheros 128 Jul 12 14:47 .
drwxr-xr-x. 6 root root 70 Jul 12 14:28 ..
-rw-r--r--. 1 spiderman spiderman 10 Jul 12 14:47 .bash_history
```

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.

**Steps:-**

1. Switch to root user using  
su –
2. To find file location run command  
find / /home -xdev -name research.\*.\*
3. Now copy file into current directory cp command
4. To uncompress file use command  
gzip -d research.txt.gz

The screenshot shows a terminal window titled "MyFristLinux [Running] - Oracle VM VirtualBox". The window has a title bar with icons for Applications, Places, and Terminal, and a status bar showing "Fri 19:17". The terminal window itself has a menu bar with File, Edit, View, Search, Terminal, and Help. The command history is as follows:

```
[root@MyFristLinux ~]# find / /home -xdev -name research.*.*  
/home/rrushiya/dump/research.txt.gz  
/home/rrushiya/dump/research.txt.gz  
[root@MyFristLinux ~]# cp /home/rrushiya/dump/research.txt.gz .  
[root@MyFristLinux ~]# gzip -dv research.txt.gz  
research.txt.gz: 40.4% -- replaced with research.txt  
[root@MyFristLinux ~]#
```

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.

**Steps:**

1.Switch to root user using

su -

2. create a file umask.sh in /etc/profile.d/ directory

cd /etc/profile.d

vim umask.sh

```
if [ $UID -gt 199 ] [ "/usr/bin/id -gn" = "/usr/bin/id -un" ]; then
```

```
    umask 772
```

```
else
```

```
    umask 022
```

```
fi
```

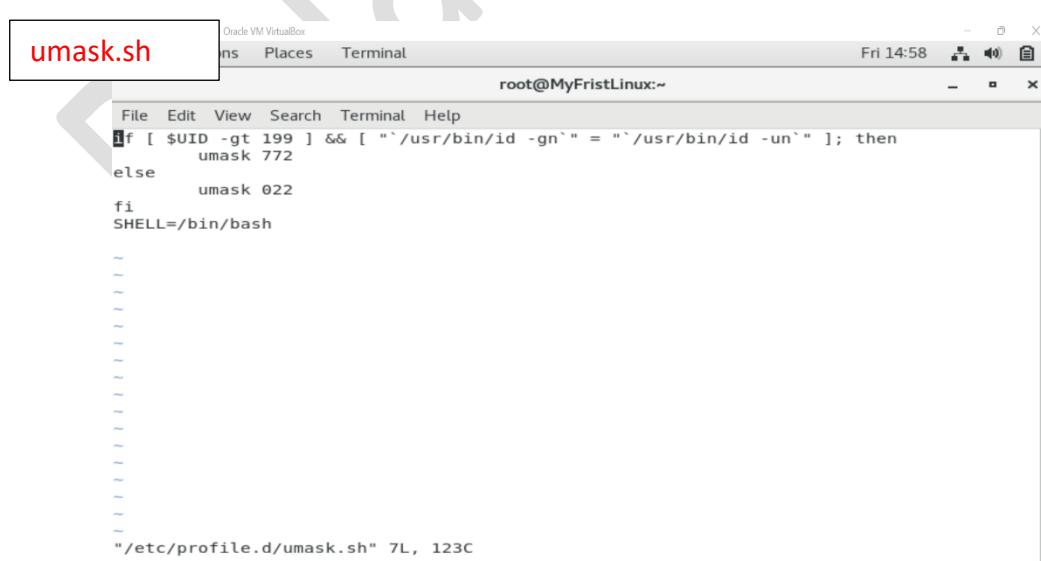
```
SHELL=/bin/bash
```

-save file

3. close the terminal and open new terminal then create a file and check file permission.

touch file.txt

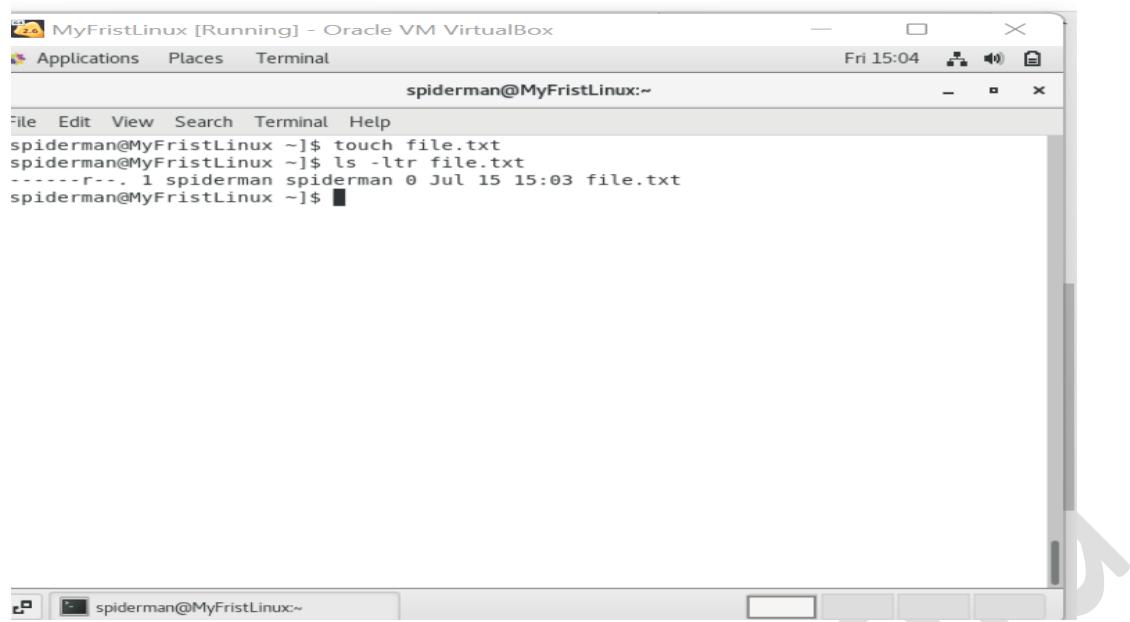
ls -lrt file.txt



The screenshot shows a terminal window titled "umask.sh". The window title bar also displays "Oracle VM VirtualBox", "Places", "Terminal", and the date/time "Fri 14:58". The terminal window itself has a black background and white text. It contains the following script code:

```
if [ $UID -gt 199 ] && [ `/usr/bin/id -gn` = `/usr/bin/id -un` ]; then
    umask 772
else
    umask 022
fi
SHELL=/bin/bash
```

Below the script, the terminal shows a series of tilde (~) characters, indicating the user's home directory. At the bottom of the terminal window, it displays the path "/etc/profile.d/umask.sh" and the statistics "7L, 123C".



Rajat-Sigma

**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

**Steps:**

1.Create a bash script file in user home directory using

vim showtime.sh

add the following script to file

```
#!/bin/bash
while true
do
    echo The current time is $(date) >> /home/username /date.txt
    sleep 60
done
```

- Save file

2. Give the executable permission to file using

chmod +ax showtime.sh

3. Create a custom service

- cd to /etc/systemd/system

- create a file showtime.service insider this directory

sudo vim showtime.service

add following script to file

[Service]

ExecStart=/home/username/showtime.sh

- Save file

4. Now run the command to start the service

sudo service showtime start

- For check status run

sudo service showtime status

- For stop service run

```
sudo service showtime stop
```

5. check the entry in date.txt file using command

```
cat /home/username/date.txt
```

```
spiderman@MyFristLinux [Running] - Oracle VM VirtualBox
Applications Places Terminal Fri 12:45
spiderman@MyFristLinux:/etc/systemd/system
File Edit View Search Terminal Help
[spiderman@MyFristLinux ~]$ [spiderman@MyFristLinux ~]$ vi showtime.sh
[spiderman@MyFristLinux ~]$ cd /etc/systemd/system/
[spiderman@MyFristLinux system]$ sudo vim showtime1.service
[spiderman@MyFristLinux system]$ sudo service showtime1 start
Redirecting to /bin/systemctl start showtime1.service
[spiderman@MyFristLinux system]$ sudo service showtime1 status
Redirecting to /bin/systemctl status showtime1.service
● showtime1.service
  Loaded: loaded (/etc/systemd/system/showtime1.service; static; vendor preset: disabled)
    Active: active (running) since Fri 2022-07-15 12:43:00 IST; 15s ago
      Main PID: 7452 (showtime.sh)
        Tasks: 2
       CGroup: /system.slice/showtime1.service
           └─7452 /bin/bash /home/spiderman/showtime.sh
             ├─7455 sleep 60

Jul 15 12:43:00 MyFristLinux systemd[1]: Started showtime1.service.
[spiderman@MyFristLinux system]$ sudo service showtime1 stop
Redirecting to /bin/systemctl stop showtime1.service
[spiderman@MyFristLinux system]$ cat /home/spiderman/date.txt
The current time is Fri Jul 15 12:43:00 IST 2022
The current time is Fri Jul 15 12:44:00 IST 2022
[spiderman@MyFristLinux system]$
```

showtime.sh

```
spiderman@MyFristLinux:~$ while true
do
    echo The current time is $(date) >> /home/spiderman/date.txt
    sleep 60
done
```

spiderman@MyFristLinux:/etc/systemd/system

```
[Service]
ExecStart=/home/spiderman/showtime.sh
```

showtime.service

```
"showtime1.service" 2L, 48C
```