

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

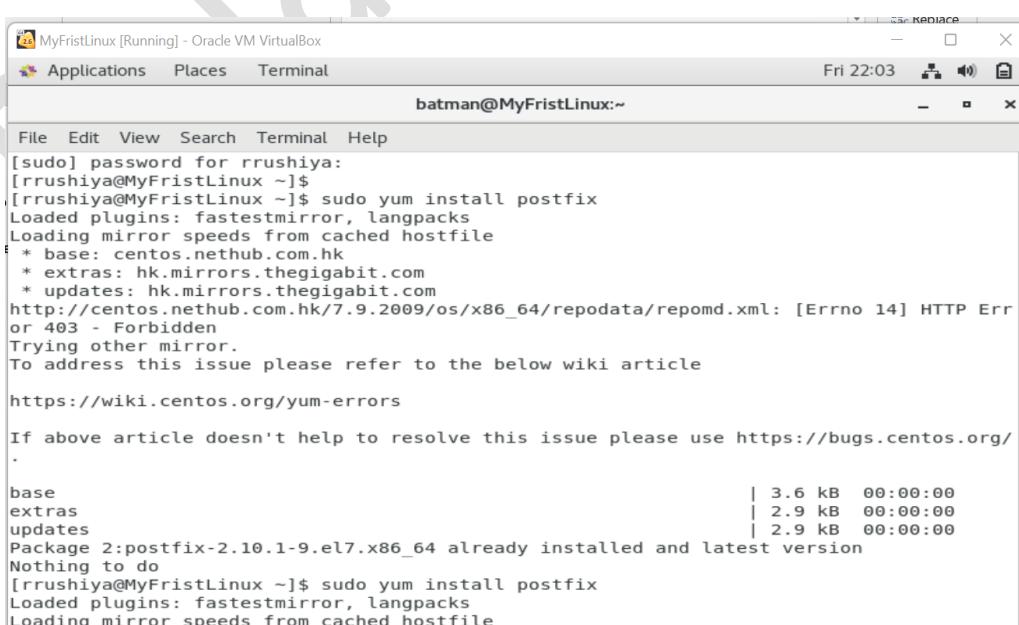
- myhostname = localhost
- mydomain = localdomain
- intet_interfaces = \$myhostname, localhost
- mydestination = \$myhostname, localhost.\$mydomain, localhost
- minework_style = host

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**



```
[MyFristLinux [Running] - Oracle VM VirtualBox]
Applications Places Terminal Fri 22:03
batman@MyFristLinux:~]

File Edit View Search Terminal Help
[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/
.

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
```

The screenshot shows a terminal window with the following session:

```
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-6 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.

MyFristLinux [Running] - Oracle VM VirtualBox

Applications Places Terminal

Tue 21:37

spiderman@MyFristLinux:~

File Edit View Search Terminal Tabs Help

root@MyFristLinux:~

spiderman@MyFristLinux:~

```
[root@MyFristLinux ~]# whoami
root
[root@MyFristLinux ~]# cd /usr/local/bin
[root@MyFristLinux bin]# vim describe
[root@MyFristLinux bin]# ls -ld /usr/local/bin/	describe
-rwxr-xr-x. 1 root root 8 Jul 12 21:12 /usr/local/bin/	describe
[root@MyFristLinux bin]# chmod 755 /usr/local/bin/	describe
[root@MyFristLinux bin]# describe
total 4
drwxr-xr-x. 2 root root 22 Jul 12 21:29 .
drwxr-xr-x. 12 root root 131 Jul 12 06:24 ..
-rw-rxr-x. 1 root root 8 Jul 12 21:12 describe
[root@MyFristLinux bin]# su - spiderman
Last login: Tue Jul 12 14:46:25 IST 2022 on pts/1
Last failed login: Tue Jul 12 17:58:18 IST 2022 on pts/0
There was 1 failed login attempt since the last successful login.
[spiderman@MyFristLinux ~]$ decribe
bash: decribe: command not found...
[spiderman@MyFristLinux ~]$ describe
total 16
drwx----- 5 spiderman superheros 128 Jul 12 14:47 .
drwxr-xr-x. 6 root      root     70 Jul 12 14:28 ..
-rw----- 1 spiderman spiderman 10 Jul 12 14:47 .bash_history
```

spiderman@MyFristLinux:~

MyFristLinux [Running] - Oracle VM VirtualBox

Applications Places Terminal

root@MyFristLinux:~

File Edit View Search Terminal Tabs Help

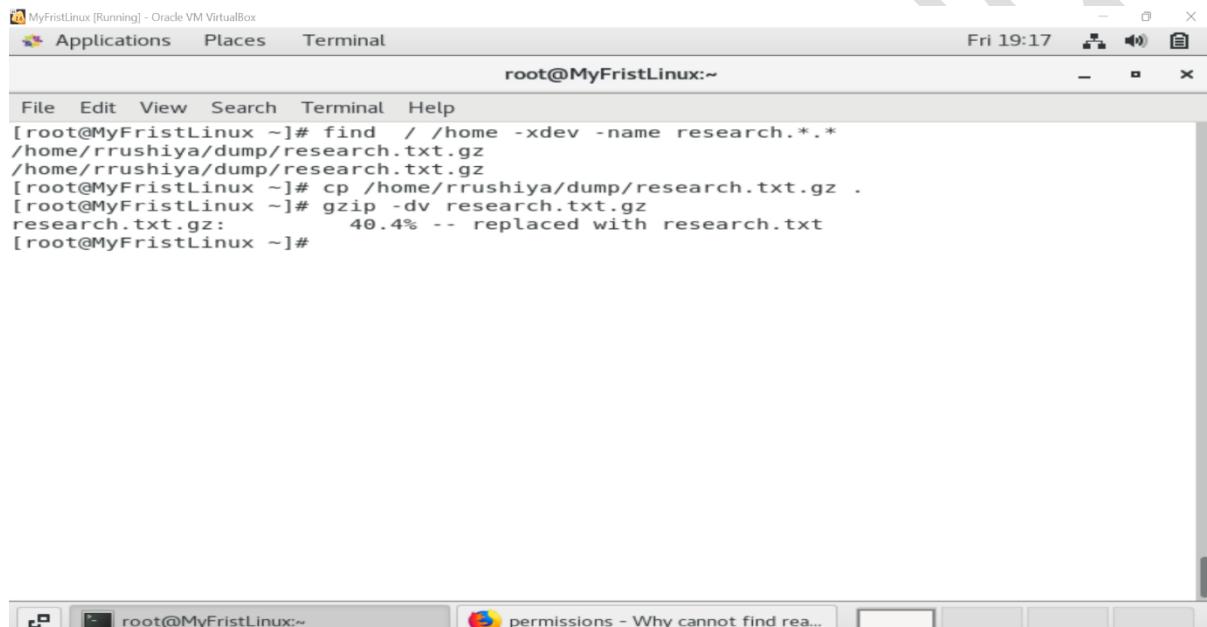
ls -all

describe

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



```
[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
```

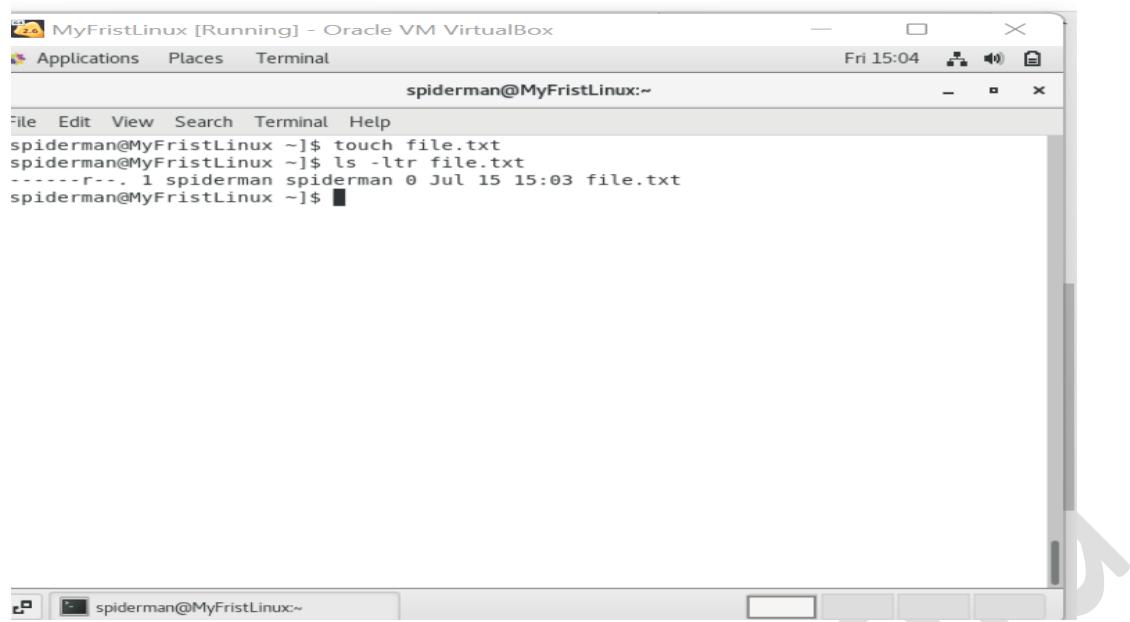
```
# ls -lrt file.txt
```

The screenshot shows a terminal window titled "umask.sh" running as root on a system named "MyFristLinux". The terminal displays the following text:

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

Below the code, the terminal shows a list of files starting with a tilde (~). At the bottom, it displays the command and its output:

```
"/etc/profile.d/umask.sh" 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
```