

```
iti@iti: ~  
UNIT                                LOAD    ACTIVE SUB    DESCRIPTION  
accounts-daemon.service            loaded active running Accounts Service  
alsa-restore.service               loaded active exited Save/Restore Sound Card State  
alsa-state.service                 loaded inactive dead   Manage Sound Card State (restore and store)  
anacron.service                    loaded active running Run anacron jobs  
apparmor.service                   loaded active exited Load AppArmor profiles  
apt-daily-upgrade.service           loaded inactive dead   Daily apt upgrade and clean activities  
apt-daily.service                   loaded inactive dead   Daily apt download activities  
auditd.service                     not-found inactive dead   auditd.service  
auto-cpufreq.service               not-found inactive dead   auto-cpufreq.service  
avahi-daemon.service                loaded active running Avahi mDNS/DNS-SD Stack  
blk-availability.service            loaded active exited Availability of block devices  
bluetooth.service                  loaded inactive dead   Bluetooth management mechanism  
casper-md5check.service             loaded failed failed   casper-md5check Verify Live ISO checksums  
casper.service                     loaded inactive dead   Shuts down the "live" preinstalled system cleanly  
cloud-init-local.service            not-found inactive dead   cloud-init-local.service  
colord.service                      loaded active running Manage, Install and Generate Color Profiles  
connman.service                    not-found inactive dead   connman.service  
console-setup.service               not-found inactive dead   console-setup.service  
console-setup.service               loaded active exited Set console font and keymap  
cron.service                        loaded active running Regular background program processing daemon  
cups-browsed.service                loaded active running Make remote CUPS printers available locally  
cups.service                        loaded active running CUPS Scheduler
```

1. `iti@iti:~$ sudo systemctl list-units --type=service --all`

```
iti@iti:~$ sudo systemctl get-default  
graphical.target  
iti@iti:~$ sudo systemctl set-default graphical.target  
iti@iti:~$
```

2.

```
iti@iti:~$ echo "mail to the root task" | mail -s "Task3" root  
iti@iti:~$ sudo cat /var/mail/root
```

```
From iti@iti Mon Jan 26 13:12:02 2026  
Return-Path: <iti@iti>  
X-Original-To: root  
Delivered-To: root@iti  
Received: by iti (Postfix, from userid 1000)  
        id A3D5A150F0D; Mon, 26 Jan 2026 13:12:02 +0200 (EET)  
Subject: Task3  
To: root@iti  
User-Agent: mail (GNU Mailutils 3.17)  
Date: Mon, 26 Jan 2026 13:12:02 +0200  
Message-Id: <20260126111202.A3D5A150F0D@iti>  
From: iti <iti@iti>  
  
mail to the root task
```

3. `iti@iti:~$`

4. this is the verification above

5. stop Postfix.service

`sudo systemctl stop postfix.service`

```

iti@localhost:~$ sudo systemctl stop postfix
iti@localhost:~$ echo "sending after stopping..." | mail -s "Stopped Service" root
iti@localhost:~$ sudo cat /var/mail/root

iti@localhost:~$ sudo systemctl start postfix
iti@localhost:~$ sudo cat /var/mail/root

From iti@localhost.localdomain  Mon Jan 26 17:22:37 2026
Return-Path: <iti@localhost.localdomain>
X-Original-To: root
Delivered-To: root@localhost.localdomain
Received: by localhost.localdomain (Postfix, from userid 1000)
        id 3EB2C1977E4; Mon, 26 Jan 2026 17:21:58 +0200 (EET)
Date: Mon, 26 Jan 2026 17:21:58 +0200
To: root@localhost.localdomain
Subject: Stopped Service
User-Agent: s-nail v14.9.24
Message-Id: <20260126152237.3EB2C1977E4@localhost.localdomain>
From: iti <iti@localhost.localdomain>

sending after stopping...

iti@localhost:~$ █

```

- 6.
7. done above
8. done above
9. done above

```

iti@localhost:~$ sudo vim /etc/default/grub
iti@localhost:~$ sudo cat /etc/default/grub
GRUB_TIMEOUT=20
GRUB_DISTRIBUTOR="$(sed 's, release .*$,g' /etc/system-release)"
GRUB_DEFAULT=1
GRUB_DISABLE_SUBMENU=true
GRUB_TERMINAL_OUTPUT="console"
GRUB_CMDLINE_LINUX="crashkernel=2G-64G:256M,64G-:512M resume=UUID=90e43ad0-5055-44b8-8b62-6aa6903bfae1 rd.lvm.lv=rhel/root rd.
lvm.lv=rhel/swap rhgb quiet"
GRUB_DISABLE_RECOVERY="true"
GRUB_ENABLE_BLSCFG=true
iti@localhost:~$ sudo grub2-mkconfig -o /boot/grub2/grub.cfg
Generating grub configuration file ...
Adding boot menu entry for UEFI Firmware Settings ...
done
iti@localhost:~$ █

```

10.

```

iti@localhost:~$ sudo vim /etc/default/grub
iti@localhost:~$ sudo cat /etc/default/grub
GRUB_TIMEOUT=20
GRUB_DISTRIBUTOR="$(sed 's, release .*$,g' /etc/system-release)"
GRUB_DEFAULT=1
GRUB_DISABLE_SUBMENU=true
GRUB_TERMINAL_OUTPUT="console"
GRUB_CMDLINE_LINUX="crashkernel=2G-64G:256M,64G-:512M resume=UUID=90e43ad0-5055-44b8-8b62-6aa6903bfae1 rd.lvm.lv=rhel/root rd.
lvm.lv=rhel/swap rhgb quiet"
GRUB_DISABLE_RECOVERY="true"
GRUB_ENABLE_BLSCFG=true
iti@localhost:~$ sudo grub2-mkconfig -o /boot/grub2/grub.cfg
Generating grub configuration file ...
Adding boot menu entry for UEFI Firmware Settings ...
done
iti@localhost:~$ █

```

11.

```

iti@localhost:~$ sudo crontab -l -u root
*/10 8-17 * * * tail -n 50 /var/log/kern.log | logger -t "Memory-check"

```

12.

```

root@localhost:~# mail
s-nail version v14.9.24. Type '?' for help
/var/spool/mail/root: 6 messages
▶  1 iti                                2026-01-26 17:21    16/539    *Stopped Service
   2 (Cron Daemon)                     2026-01-27 13:00    31/1149    *Cron <root@localhost>
   3 (Cron Daemon)                     2026-01-27 13:10    31/1149    *Cron <root@localhost>
   4 (Cron Daemon)                     2026-01-27 13:20    31/1149    *Cron <root@localhost>
   5 (Cron Daemon)                     2026-01-27 13:30    31/1150    *Cron <root@localhost>
   6 (Cron Daemon)                     2026-01-27 13:40    31/1150    *Cron <root@localhost>
&

```

13.

```

*/10 8-17 * * * tail -n 50 /var/log/kern.log | logger -t "Memory-check"

MAILTO=manager

```

14.

15. the mail is not working for some reason :(

16. Create /opt/research and do other operations

```

iti@localhost:~$ sudo mkdir /opt/research

```

1.

```

iti@localhost:~$ sudo groupadd profs
[sudo] password for iti:
iti@localhost:~$ sudo groupadd grads
iti@localhost:~$

```

2.

3. Owned By root

```

iti@localhost:/opt$ ls -al
total 0
drwxr-xr-x.  3 root root  22 Jan 27 18:03 .
dr-xr-xr-x. 18 root root 235 Jan 26 14:26 ..
drwxr-xr-x.  2 root root   6 Jan 27 18:03 research

```

4. the group owners is grads

```

iti@localhost:/opt$ sudo chgrp grads ./research/
[sudo] password for iti:
iti@localhost:/opt$ ls -l
total 0
drwxr-xr-x. 2 root grads 6 Jan 27 18:03 research

```

5. this to ensure no other group has acces and all the files that will be created inside this directory will be owned by the group grads

```
iti@localhost:/opt$ sudo chmod 2770 research/
[sudo] password for iti:
iti@localhost:/opt$ ls -l
total 0
drwxrws---. 2 root grads 6 Jan 27 18:03 research
iti@localhost:/opt$
```

6. edit profs and interns permissions

```
iti@localhost:/opt$ sudo setfacl -m g:profs:rw ./research/
iti@localhost:/opt$ sudo groupadd interns
iti@localhost:/opt$ sudo setfacl -m g:interns:r ./research/
```

17. using ifconfig and ip link show

```
iti@localhost:/opt$ ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255
    inet6 fd17:625c:f037:2:a00:27ff:feb2:1b98 prefixlen 64 scopeid 0x0<global>
    inet6 fe80::a00:27ff:feb2:1b98 prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:b2:1b:98 txqueuelen 1000 (Ethernet)
    RX packets 1768277 bytes 2410051477 (2.2 GiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 271626 bytes 20166218 (19.2 MiB)
    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 154 bytes 11323 (11.0 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 154 bytes 11323 (11.0 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

18. iti@localhost:/opt\$

```
iti@localhost:/opt$ ip link show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN mode DEFAULT group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP mode DEFAULT group default qlen 1000
    link/ether 08:00:27:b2:1b:98 brd ff:ff:ff:ff:ff:ff
altname enx080027b21b98
```

19.

```
iti@localhost:~$ ip link show up
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN mode DEFAULT group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP mode DEFAULT group default qlen 1000
    link/ether 08:00:27:b2:1b:98 brd ff:ff:ff:ff:ff:ff
    altname enx080027b21b98
```

20.

```
iti@localhost:~$ ip link show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN mode DEFAULT group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP mode DEFAULT group default qlen 1000
    link/ether 08:00:27:b2:1b:98 brd ff:ff:ff:ff:ff:ff
    altname enx080027b21b98
```

21.

```
iti@localhost:~$ sudo ip link set enp0s3 down
iti@localhost:~$ ping 1.1.1.1
ping: connect: Network is unreachable
```

22.

```
iti@localhost:~$ sudo nmcli connection modify enp0s3 ipv4.addresses 192.168.1.99/24 ipv4.gateway 192.168.1.1
iti@localhost:~$ sudo nmcli connection modify enp0s3 ipv4.method manual
iti@localhost:~$ sudo nmcli connection up enp0s3
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/3)
```

23.

```
iti@localhost:~$ sudo ip link set enp0s3 up
iti@localhost:~$ ping 1.1.1.1
PING 1.1.1.1 (1.1.1.1) 56(84) bytes of data.
64 bytes from 1.1.1.1: icmp_seq=1 ttl=255 time=248 ms
64 bytes from 1.1.1.1: icmp_seq=2 ttl=255 time=270 ms
^C
--- 1.1.1.1 ping statistics ---
3 packets transmitted, 2 received, 33.3333% packet loss, time 2003ms
rtt min/avg/max/mdev = 247.575/258.625/269.676/11.050 ms
```

24.

```
iti@localhost:~$ ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.1.99 netmask 255.255.255.0 broadcast 192.168.1.255
    inet6 fe80::a00:27ff:feb2:1b98 prefixlen 64 scopeid 0x20<link>
    inet6 fd17:625c:f037:2:a00:27ff:feb2:1b98 prefixlen 64 scopeid 0x0<global>
    ether 08:00:27:b2:1b:98 txqueuelen 1000 (Ethernet)
    RX packets 551 bytes 164983 (161.1 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 651 bytes 90954 (88.8 KiB)
    TX errors 0 dropped 3 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 52 bytes 5574 (5.4 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 52 bytes 5574 (5.4 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

25.

```
iti@localhost:~$ sudo nmcli connection modify enp0s3 ipv4.method auto
iti@localhost:~$ sudo nmcli connection up enp0s3
Connection successfully activated (D-Bus active path: /org/freedesktop/NetworkManager/ActiveConnection/8)
```

26.

```

iti@localhost:~$ ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255
    inet6 fe80::a00:27ff:feb2:1b98 prefixlen 64 scopeid 0x20<link>
    inet6 fd17:625c:f037:2:a00:27ff:feb2:1b98 prefixlen 64 scopeid 0x0<global>
    ether 08:00:27:b2:1b:98 txqueuelen 1000 (Ethernet)
    RX packets 48929 bytes 63615381 (60.6 MiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 21693 bytes 1769906 (1.6 MiB)
    TX errors 0 dropped 3 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 3444 bytes 325822 (318.1 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 3444 bytes 325822 (318.1 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

```

27. iti@localhost:~\$



28.

```

= IPv4 CONFIGURATION <Manual>
    Addresses 192.168.1.100 <Remove>
              192.168.1.101 <Remove>
              192.168.1.102 <Remove>
              <Add...>

```

29.

```

iti@localhost:~$ sudo vim /etc/hosts
[sudo] password for iti:
iti@localhost:~$ cat /etc/hosts
# Loopback entries; do not change.
# For historical reasons, localhost precedes localhost.localdomain:
127.0.0.1 NewHostName localhost.localdomain localhost4 localhost4.localdomain4
::1      localhost localhost.localdomain localhost6 localhost6.localdomain6
# See hosts(5) for proper format and other examples:
# 192.168.1.10 foo.example.org foo
# 192.168.1.13 bar.example.org bar

```

30.

