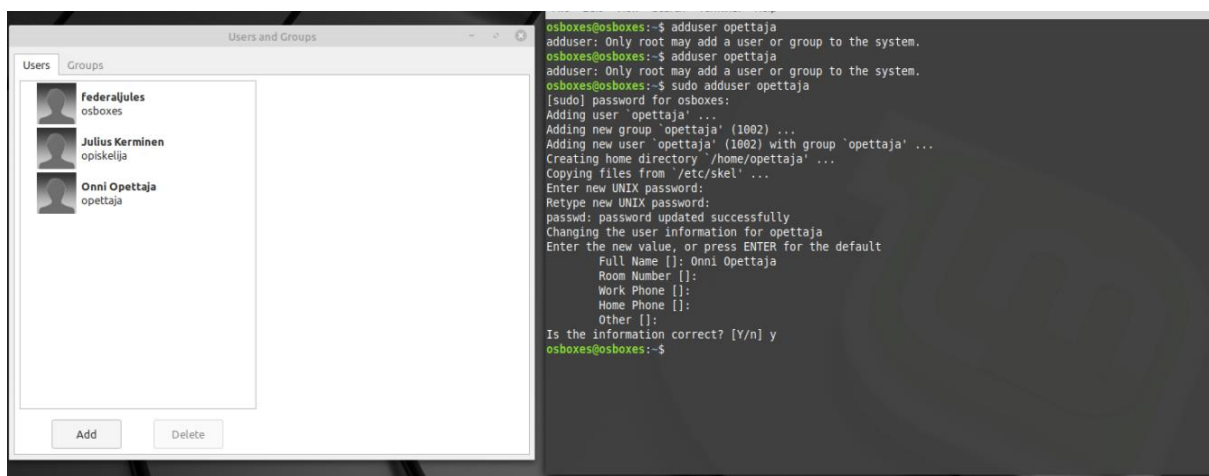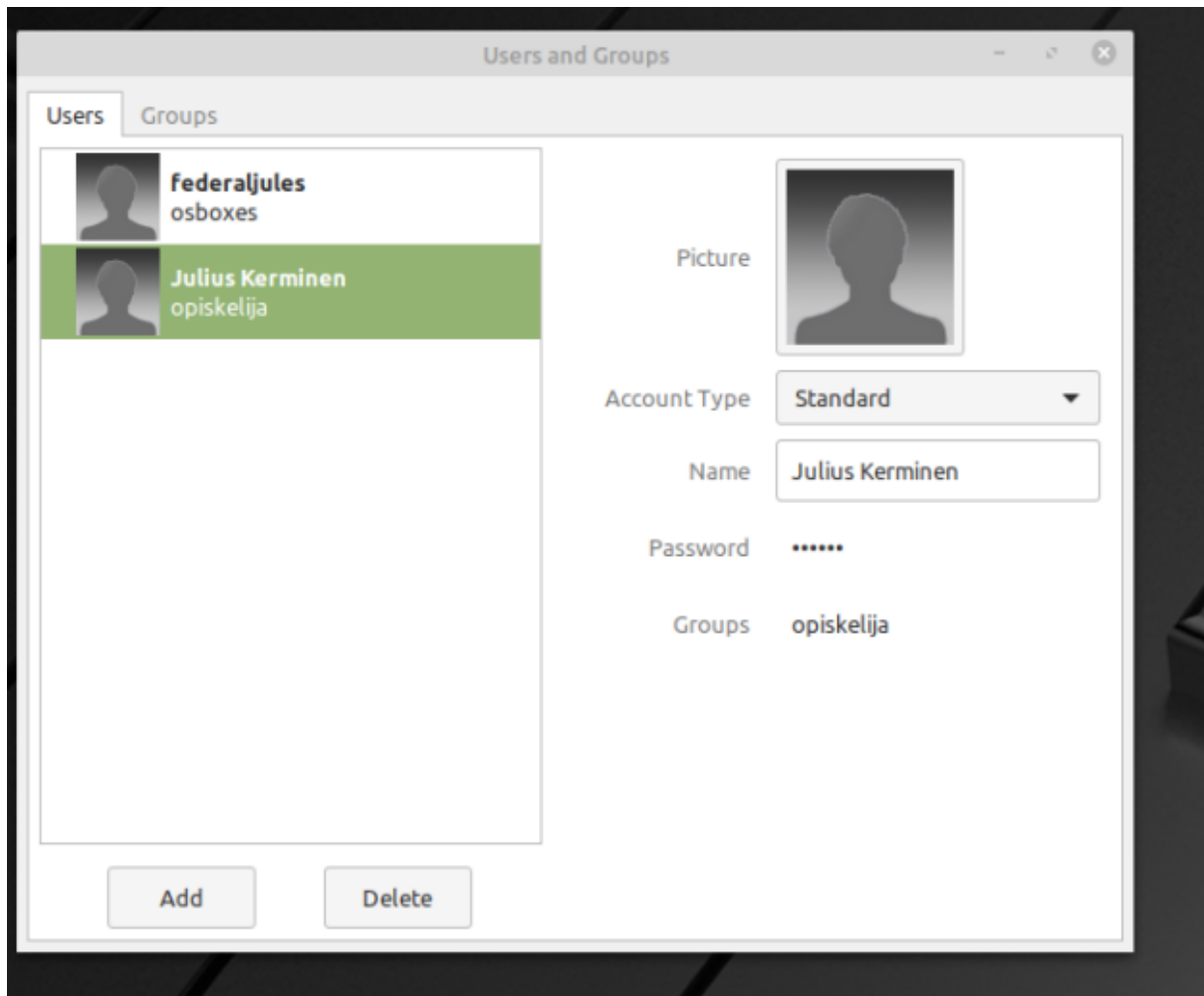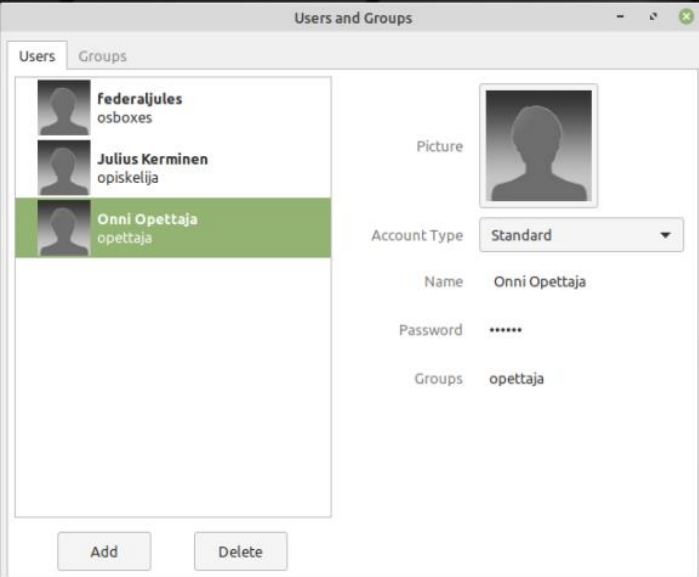## 4.1

```
osboxes@osboxes:~$ gpasswd -a opettaja opettaja
gpasswd: Permission denied.
osboxes@osboxes:~$ sudo gpasswd -a opettaja opettaja
Adding user opettaja to group opettaja
osboxes@osboxes:~$ 
```
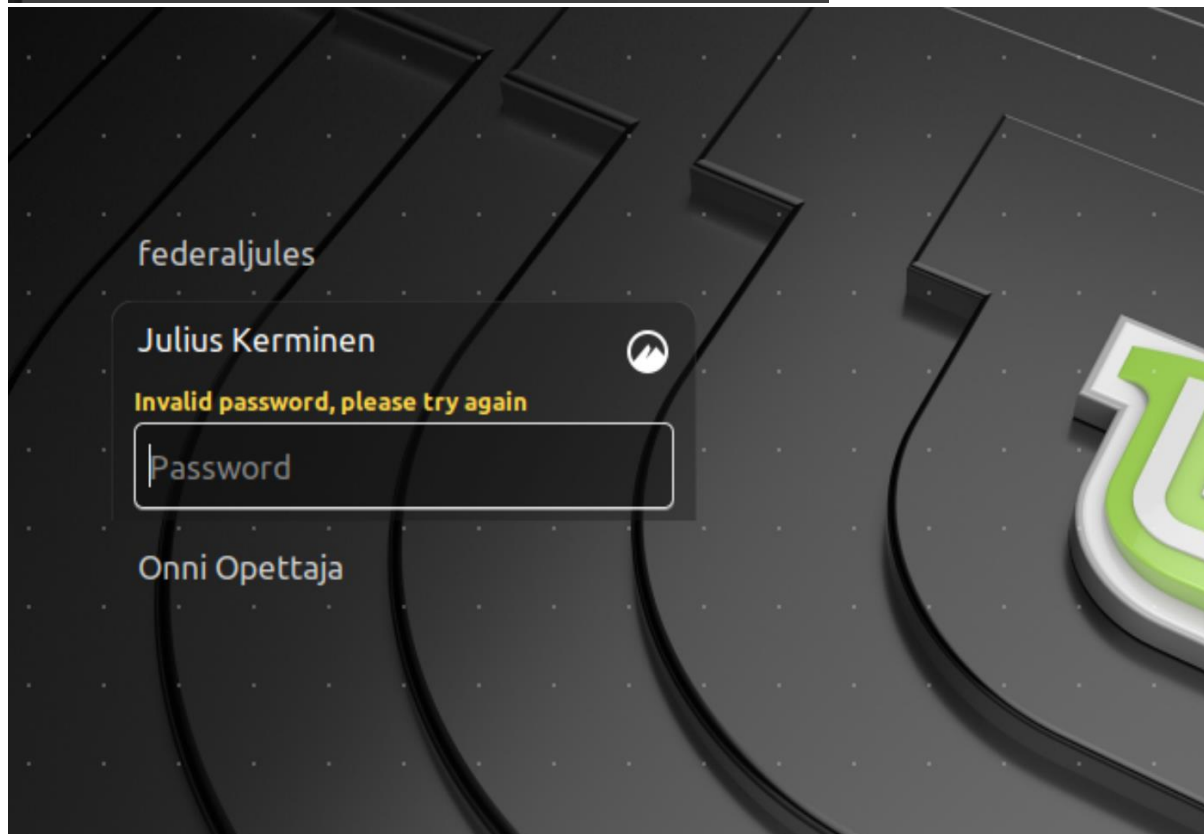
Users and Groups

Users | Groups

federaljules
osboxes

Julius Kerminen
opiskelija

Onni Opettaja
opettaja

Picture

Account Type    Standard

Name        Onni Opettaja

Password    ••••••

Groups      opettaja

Add        Delete

```
osboxes@osboxes:/$ sudo setfacl -m u:opettaja:rwx opettajan_tiedostot
[sudo] password for osboxes:
osboxes@osboxes:/$ sudo setfacl -m u:opiskelija:rwx opiskelijan_tiedostot
osboxes@osboxes:/$ ls -lh
total 112K
drwxr-xr-x    2 root root 4,0K Apr 29 16:05 bin
drwxr-xr-x    4 root root 4,0K Apr 29 16:07 boot
drwxr-xr-x    2 root root 4,0K Aug  4  2019 cdrom
drwxr-xr-x   18 root root 3,9K Apr 29 21:18 dev
drwxr-xr-x  143 root root  12K Apr 29 21:35 etc
drwxr-xr-x    6 root root 4,0K Apr 29 21:31 home
lrwxrwxrwx    1 root root   33 Aug  4  2019 initrd.img -> boot/initrd.img-4.15.0-54-generic
lrwxrwxrwx    1 root root   33 Aug  4  2019 initrd.img.old -> boot/initrd.img-4.15.0-54-generic
-rw-r--r--    1 root root   49 Apr 28 22:13 KOPIOIDUT
drwxr-xr-x   24 root root 4,0K Mar 18 16:03 lib
drwxr-xr-x    2 root root 4,0K Jul 29  2019 lib64
drwx------    2 root root  16K Aug  4  2019 lost+found
drwxr-xr-x    2 root root 4,0K Jul 29  2019 media
drwxr-xr-x    2 root root 4,0K Jul 29  2019 mnt
drwxrwxr-x+   2 root root 4,0K Apr 29 21:47 opettajan_tiedostot
drwxrwxr-x+   2 root root 4,0K Apr 29 21:46 opiskelijan_tiedostot
drwxr-xr-x    4 root root 4,0K Mar 18 16:03 opt
dr-xr-xr-x  212 root root    0 Apr 29 15:37 proc
drwx------    4 root root 4,0K Aug  4  2019 root
drwxr-xr-x   32 root root  940 Apr 29 22:08 run
drwxr-xr-x    2 root root  16K Apr 29 16:06 sbin
drwxr-xr-x    2 root root 4,0K Jul 29  2019 srv
dr-xr-xr-x   13 root root    0 Apr 29 22:05 sys
drwxrwxrwt   16 root root 4,0K Apr 29 22:08 tmp
drwxr-xr-x   11 root root 4,0K Jul 29  2019 usr
drwxr-xr-x   11 root root 4,0K Jul 29  2019 var
lrwxrwxrwx    1 root root   30 Aug  4  2019 vmlinuz -> boot/vmlinuz-4.15.0-54-generic
osboxes@osboxes:/$ 
```

```
osboxes@osboxes:~$ usermod -L opiskelija
usermod: Permission denied.
usermod: cannot lock /etc/passwd; try again later.
osboxes@osboxes:~$ sudo usermod -L opiskelija
[sudo] password for osboxes:
osboxes@osboxes:~$
```

federaljules

Julius Kerminen

**Invalid password, please try again**

Password

Onni Opettaja

## 4.2

```
osboxes@osboxes: ~
File   Edit   View   Search   Terminal   Help
osboxes@osboxes:~$ sudo renice -10 -p 17935
17935 (process ID) old priority 0, new priority -10
osboxes@osboxes:~$
osboxes@osboxes:~$ kill 17935
osboxes@osboxes:~$ kill -9 16322
osboxes@osboxes:~$ kill -HUP 18299
osboxes@osboxes:~$
```







```
*cronjobs [Read-Only] (/etc/cron.d)
File   Edit   View   Search   Tools   Documents   Help

*cronjobs

1
2
3   58 8 * * 1 firefox http://www.iltalehti.fi
4   00 15 * * 3 sudo apt-get update && sudo apt-get update -y
5   55 23 * * * sudo mail -s "Varmuuskopiointi" julius.kerminen@gmail.com < /home/osboxes/varmuuskopioi.sh
6
7
8
9   #     *     *     *     *   suoritettava komento
10  #
11  #                          viikonpäivä (0 - 7) (0 tai 7 = sunnuntai)
12  #                          kuukausi (1 - 12)
13  #
14  #                          päivä (1 - 31)
15  #                          tunti (0 - 23)
16  #                          minuutti (0 - 59)
```

## 4.3

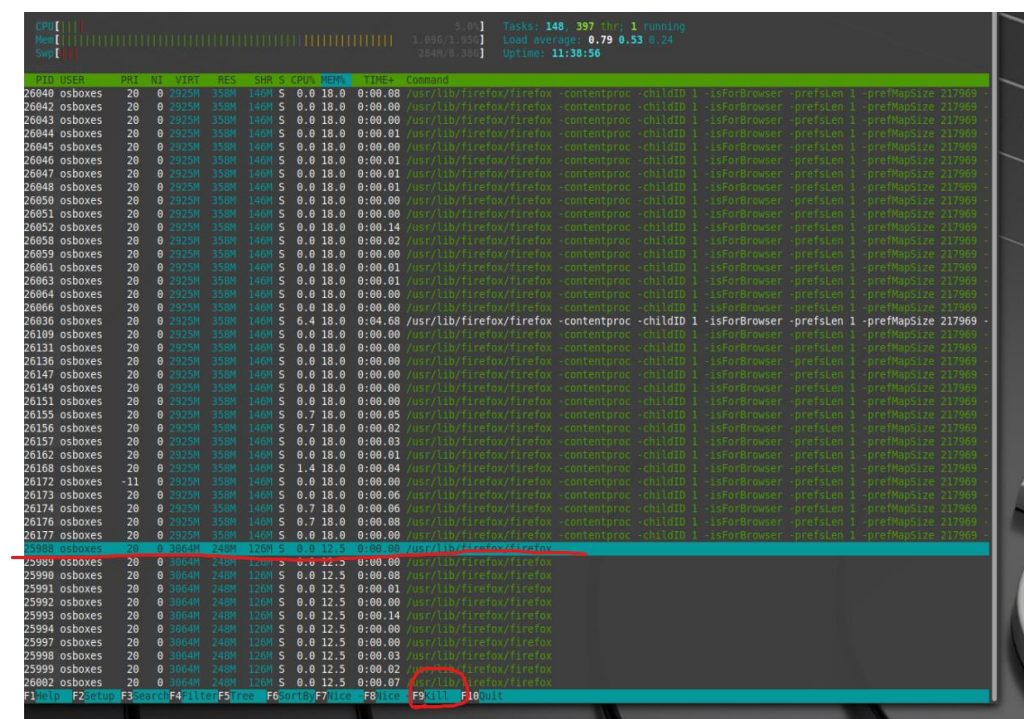1. Eniten käyttää firefox, varmaan koska siinä on muutama tab auki
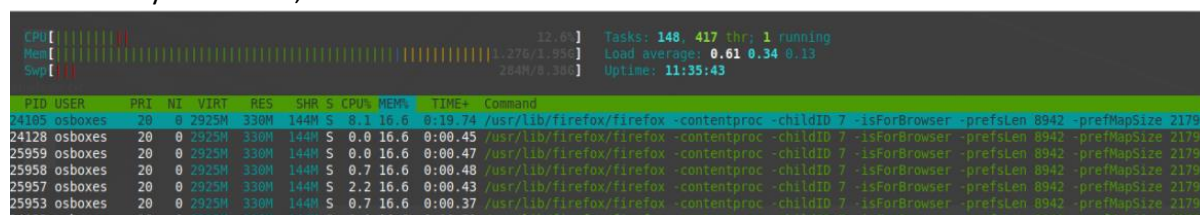


2. Myös firefox

3. 11h 38min 56sec

4. 1.09gb käytössä, kokonaisuudessaan 1.95gb

5. htopissa sovelluksen voi tappaa painikkeella F9

## 6. Luettu 5123MB ja kirjoitettu 7365MB

```
osboxes@osboxes:~$ iostat
Linux 4.15.0-54-generic (osboxes)       05/18/2020      _x86_64_      (1 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           1,85    0,00    0,46    0,16    0,00   97,53

Device            tps    kB_read/s    kB_wrtn/s    kB_read    kB_wrtn
sda              9,44       130,27       185,80    5247738    7484344

osboxes@osboxes:~$ iostat -m
Linux 4.15.0-54-generic (osboxes)       05/18/2020      _x86_64_      (1 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           1,84    0,00    0,46    0,16    0,00   97,54

Device            tps    MB_read/s    MB_wrtn/s    MB_read    MB_wrtn
sda              9,42         0,13         0,18       5124       7365

osboxes@osboxes:~$ iostat -p sda1 -m -x
Linux 4.15.0-54-generic (osboxes)       05/18/2020      _x86_64_      (1 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           1,84    0,00    0,46    0,16    0,00   97,54

Device           r/s      w/s     rMB/s     wMB/s   rrqm/s   wrqm/s  %rrqm  %wrqm r_await w_await aqu-sz rareq-sz wareq-sz  svctm
  %util

osboxes@osboxes:~$ iostat -p sda -x
Linux 4.15.0-54-generic (osboxes)       05/18/2020      _x86_64_      (1 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           1,84    0,00    0,46    0,16    0,00   97,54

Device           r/s      w/s     rkB/s     wkB/s   rrqm/s   wrqm/s  %rrqm  %wrqm r_await w_await aqu-sz rareq-sz wareq-sz  svctm
  %util
sda             5,51     3,90    129,79    186,53     0,31     8,92   5,28  69,60    0,73    2,35   0,01    23,54    47,85   0,37
  0,34
sda4            0,54     0,61      6,80     19,61     0,01     1,02   2,62  62,74    0,58    0,88   0,00    12,59    32,36   0,43
  0,05
sda2            0,02     0,03      0,72      3,24     0,00     0,05   3,54  61,25    0,35    2,82   0,00    28,92   111,64   0,48
  0,00
sda3            0,08     0,04      0,83      5,87     0,05     1,43  35,97  97,40    0,88    2,48   0,00    10,31   153,63   0,90
  0,01
sda1            4,85     2,29    121,02    157,79     0,25     6,43   4,85  73,74    0,75    3,57   0,01    24,97    68,93   0,37
  0,27

osboxes@osboxes:~$
```

## 9. ip on 88.148.204.179

```
osboxes@osboxes:~$ ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:64:d6:15 brd ff:ff:ff:ff:ff:ff
    inet 88.148.204.179/18 brd 88.148.255.255 scope global dynamic noprefixroute enp0s3
       valid_lft 13304sec preferred_lft 13304sec
    inet6 2001:14ba:9b00::2:83d1/128 scope global dynamic noprefixroute
       valid_lft 17927sec preferred_lft 8927sec
    inet6 fe80::6740:da7c:c041:fc22/64 scope link noprefixroute
       valid_lft forever preferred_lft forever
```
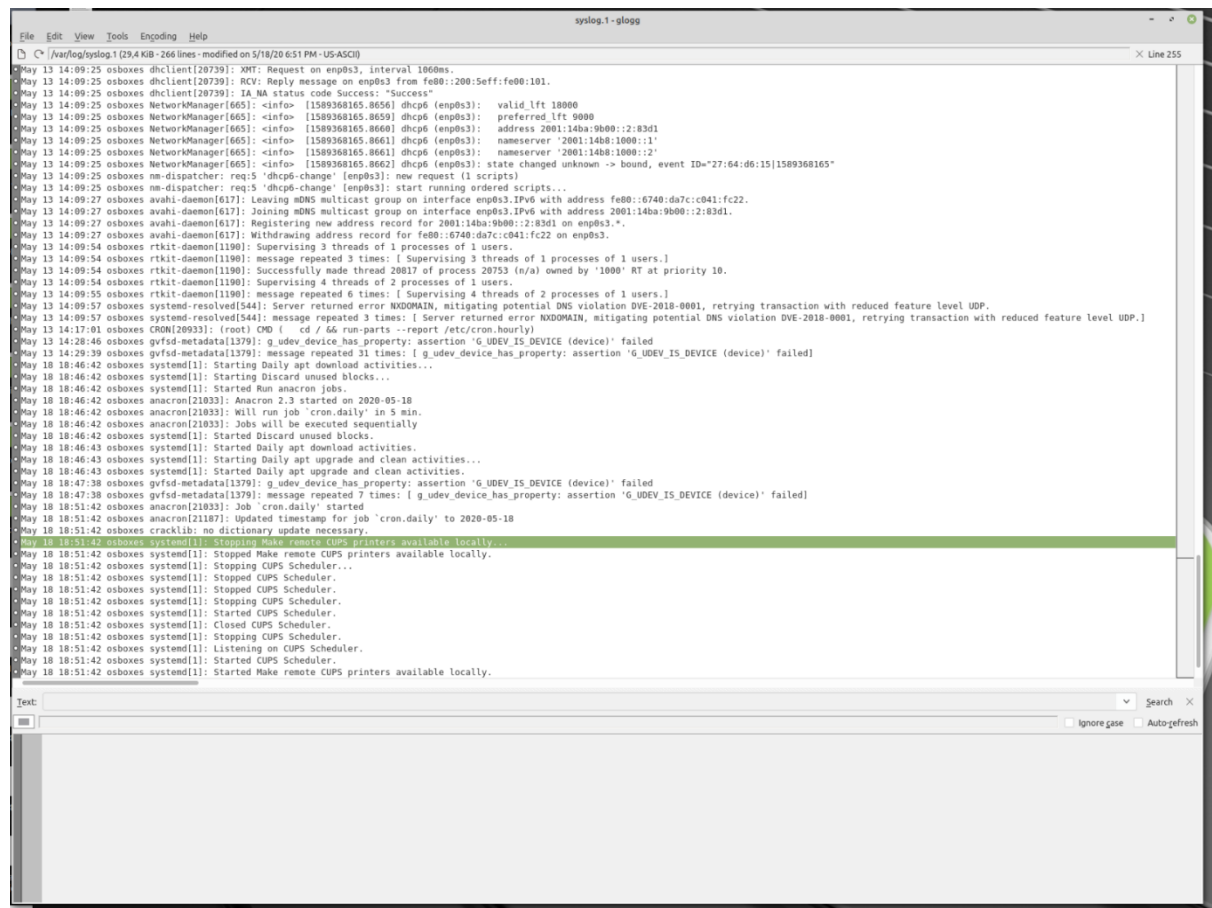
## 10. laurean ip on 193.166.246.78

```
osboxes@osboxes:~$ ping www.laurea.fi
PING www.laurea.fi (193.166.246.78) 56(84) bytes of data.
64 bytes from 193.166.246.78 (193.166.246.78): icmp_seq=1 ttl=123 time=3.08 ms
64 bytes from 193.166.246.78 (193.166.246.78): icmp_seq=1 ttl=123 time=3.47 ms (DUP!)
64 bytes from 193.166.246.78 (193.166.246.78): icmp_seq=2 ttl=123 time=3.25 ms
64 bytes from 193.166.246.78 (193.166.246.78): icmp_seq=2 ttl=123 time=3.43 ms (DUP!)
64 bytes from 193.166.246.78 (193.166.246.78): icmp_seq=3 ttl=123 time=2.96 ms
64 bytes from 193.166.246.78 (193.166.246.78): icmp_seq=3 ttl=123 time=3.25 ms (DUP!)
64 bytes from 193.166.246.78 (193.166.246.78): icmp_seq=4 ttl=123 time=2.85 ms
64 bytes from 193.166.246.78 (193.166.246.78): icmp_seq=4 ttl=123 time=3.04 ms (DUP!)
64 bytes from 193.166.246.78 (193.166.246.78): icmp_seq=5 ttl=123 time=2.91 ms
64 bytes from 193.166.246.78 (193.166.246.78): icmp_seq=5 ttl=123 time=2.92 ms (DUP!)
^C
--- www.laurea.fi ping statistics ---
5 packets transmitted, 5 received, +5 duplicates, 0% packet loss, time 4005ms
rtt min/avg/max/mdev = 2.856/3.119/3.471/0.215 ms
osboxes@osboxes:~$
```

## 11. 8 reitintä

```
osboxes@osboxes:~$ traceroute www.laurea.fi
traceroute to www.laurea.fi (193.166.246.78), 30 hops max, 60 byte packets
 1  88-148-192-1.rev.dnainternet.fi (88.148.192.1)  1.663 ms  1.649 ms  1.807 ms
 2  hel5-tr1.dnaip.fi (62.78.125.244)  2.247 ms  2.443 ms  2.439 ms
 3  hel7-sr22.dnaip.fi (62.78.117.23)  3.917 ms  4.237 ms  4.212 ms
 4  hel5-tr1.dnaip.fi (62.78.117.22)  2.337 ms  2.311 ms  2.305 ms
 5  hel7-sr1.dnaip.fi (62.78.117.247)  2.477 ms hel1-sr1.dnaip.fi (62.78.121.210)  2.268 ms  2.250 ms
 6  csc.ficix1.ficix.fi (193.110.226.14)  2.525 ms csc.ficix2.ficix.fi (193.110.224.14)  2.337 ms  2.330 ms
 7  helsinki3-et-1-1-1.ip.funet.fi (86.50.255.247)  2.707 ms helsinki-et-0-1-1-1.ip.funet.fi (86.50.255.251)  2.879 ms helsinki3-et-1-1-1.ip.funet.fi (86.
50.255.247)  2.951 ms
 8  helsinki2-et-1-1-0-1.ip.funet.fi (86.50.255.248)  2.942 ms  2.913 ms *
 9  * * *
10  * * *
11  * * *
12  * * *
13  * * *
14  * * *
```

## 4.3.1

Latasin ohjelman glogg ja tämä näyttää ja kertoo tapahtumat selvästi. Paljon informaatiota esim cron tehtävien suorituksesta.