

Monitorización de Linux

Cosas importantes de un servidor a monitorizar:

Procesos

Memoria ram

discos duros

Red

Ejercicios

Procesos (ps 1)

stat = R running

S = sleeping (+ en primer plano)

T = background

```
asir@pc213:~$ ps a
  PID TTY          STAT       TIME COMMAND
 2426 tty2      Ssl+      0:00 /usr/libexec/gdm-wayland-session env GNOME_SHELL_SESSION_MODE=ubuntu /usr/bin/gnome-session --session=ubuntu
 2434 tty2      Sl+       0:00 /usr/libexec/gnome-session-binary --session=ubuntu
11811 pts/0      Ss        0:00 bash
11906 tty3      Ss        0:00 /bin/login -p --
12066 tty3      S         0:00 -bash
12348 tty3      S+        0:00 nano agua
12446 pts/0      R+        0:00 ps a
asir@pc213:~$ ps au
USER          PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
asir          2426   0.0   0.0 233480 6272 tty2      Ssl+ 11:57   0:00 /usr/libexec/gdm-wayland-session env GNOME_SHELL_SESSION_MODE=ubuntu /usr/bin/gnome-session --session=ubuntu
asir          2434   0.0   0.1 296612 16640 tty2      Sl+   11:57   0:00 /usr/libexec/gnome-session-binary --session=ubuntu
asir          11811   0.0   0.0   8748  5504 pts/0      Ss    14:00   0:00 bash
root          11906   0.0   0.0   7260  4932 tty3      Ss    14:01   0:00 /bin/login -p --
alumno       12066   0.0   0.0   8744  5376 tty3      S     14:01   0:00 -bash
alumno       12348   0.0   0.0   8664  5504 tty3      S+    14:01   0:00 nano agua
asir         12450  100.0  0.0  11360 4864 pts/0      R+    14:04   0:00 ps au
asir@pc213:~$
```

```

sslr@pc213:~$ ps aux
USER          PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root           1  0.1  0.0  23616 14880 ?        Ss   11:57   0:00 /sbin/init splash
root           2  0.0  0.0      0   0 ?        S    11:57   0:00 [kthreadd]
root           3  0.0  0.0      0   0 ?        S    11:57   0:00 [pool_workqueue_release]
root           4  0.0  0.0      0   0 ?        I<   11:57   0:00 [kworker/R-rcu_g]
root           5  0.0  0.0      0   0 ?        I<   11:57   0:00 [kworker/R-rcu_p]
root           6  0.0  0.0      0   0 ?        I<   11:57   0:00 [kworker/R-slub_]
root           7  0.0  0.0      0   0 ?        I<   11:57   0:00 [kworker/R-netns]
root           9  0.0  0.0      0   0 ?        I<   11:57   0:00 [kworker/0:0H-events_highpri]
root          12  0.0  0.0      0   0 ?        I<   11:57   0:00 [kworker/R-mm_pg]
root          13  0.0  0.0      0   0 ?        I    11:57   0:00 [rcu_tasks_kthread]
root          14  0.0  0.0      0   0 ?        I    11:57   0:00 [rcu_tasks_rude_kthread]
root          15  0.0  0.0      0   0 ?        I    11:57   0:00 [rcu_tasks_trace_kthread]
root          16  0.0  0.0      0   0 ?        S    11:57   0:00 [ksoftirqd/0]
root          17  0.0  0.0      0   0 ?        I    11:57   0:00 [rcu_preempt]
root          18  0.0  0.0      0   0 ?        S    11:57   0:00 [migration/0]
root          19  0.0  0.0      0   0 ?        S    11:57   0:00 [idle_inject/0]
root          20  0.0  0.0      0   0 ?        S    11:57   0:00 [cpuhp/0]
root          21  0.0  0.0      0   0 ?        S    11:57   0:00 [cpuhp/1]
root          22  0.0  0.0      0   0 ?        S    11:57   0:00 [idle_inject/1]
root          23  0.0  0.0      0   0 ?        S    11:57   0:00 [migration/1]
root          24  0.0  0.0      0   0 ?        S    11:57   0:00 [ksoftirqd/1]
root          26  0.0  0.0      0   0 ?        I<   11:57   0:00 [kworker/1:0H-events_highpri]
root          27  0.0  0.0      0   0 ?        S    11:57   0:00 [cpuhp/2]
root          28  0.0  0.0      0   0 ?        S    11:57   0:00 [idle_inject/2]
root          29  0.0  0.0      0   0 ?        S    11:57   0:00 [migration/2]
root          30  0.1  0.0      0   0 ?        S    11:57   0:12 [ksoftirqd/2]
root          32  0.0  0.0      0   0 ?        I<   11:57   0:00 [kworker/2:0H-events_highpri]
root          33  0.0  0.0      0   0 ?        S    11:57   0:00 [cpuhp/3]
root          34  0.0  0.0      0   0 ?        S    11:57   0:00 [idle_inject/3]
root          35  0.0  0.0      0   0 ?        S    11:57   0:00 [migration/3]
root          36  0.0  0.0      0   0 ?        S    11:57   0:00 [ksoftirqd/3]
root          38  0.0  0.0      0   0 ?        I<   11:57   0:00 [kworker/3:0H-events_highpri]
root          39  0.0  0.0      0   0 ?        S    11:57   0:00 [cpuhp/4]
root          40  0.0  0.0      0   0 ?        S    11:57   0:00 [idle_inject/4]
root          41  0.0  0.0      0   0 ?        S    11:57   0:00 [migration/4]
root          42  0.0  0.0      0   0 ?        S    11:57   0:00 [ksoftirqd/4]
root          44  0.0  0.0      0   0 ?        I<   11:57   0:00 [kworker/4:0H-events_highpri]
root          45  0.0  0.0      0   0 ?        S    11:57   0:00 [cpuhp/5]
root          46  0.0  0.0      0   0 ?        S    11:57   0:00 [idle_inject/5]
root          47  0.0  0.0      0   0 ?        S    11:57   0:00 [migration/5]
root          48  0.0  0.0      0   0 ?        S    11:57   0:00 [ksoftirqd/5]
root          50  0.0  0.0      0   0 ?        I<   11:57   0:00 [kworker/5:0H-events_highpri]
root          51  0.0  0.0      0   0 ?        S    11:57   0:00 [cpuhp/6]
root          52  0.0  0.0      0   0 ?        S    11:57   0:00 [idle_inject/6]

```

ps -C “Nombre del proceso”

```

sslr@pc213:~$ ps u -C nano
USER          PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
alunno       12348  0.0  0.0   8664  5504 tty3    S+   14:01   0:00 nano agua
sslr@pc213:~$

```

5 procesos que mas cpu consumen (Para entregar)

```
asir@pc213: $ ps -eo user,pid,%cpu,%mem,time --sort=-%cpu | head -n 6
USER      PID %CPU %MEM    TIME
asir      12599  8.3  1.5 00:00:10
asir      10607  5.2  1.8 00:00:56
asir      2572  4.5  1.8 00:06:06
asir      3306  3.9  1.3 00:05:23
asir      3293  3.1  2.6 00:04:18
asir@pc213: $
```

top

control + M = ordenar con memoria

control + p = CPU

control + P = PID

salir (q)

como hago que el comando top de linux me mande los 10 procesos que mas cpu consumen y en 3 periodos consecutivos

```
asir@pc213:~$ top -b -o %CPU -n 3 | head -n 17 > 10procesos.txt
asir@pc213:~$ cat 10procesos.txt
top - 14:21:31 up 2:23, 2 users, load average: 0,16, 0,32, 0,43
Tasks: 342 total, 1 ejecutar, 341 hibernar, 0 detener, 0 zombie
%Cpu(s): 1,4 us, 1,4 sy, 0,0 ni, 97,3 id, 0,0 wa, 0,0 hi, 0,0 si, 0,0 st
Mem Mem : 15822,0 total, 7894,5 libre, 3222,5 usado, 5589,7 búf/caché
Mem Intercambio: 4096,0 total, 4096,0 libre, 0,0 usado, 12599,5 dispon

  PID USUARIO PR NI VIRT RES SHR S %CPU %MEM  HORA+ ORDEN
12739 asir 20 0 12096 5888 3712 R 16,7 0,0 0:00.03 top
949 systemd+ 20 0 17728 7424 6656 S 8,3 0,0 0:04.21 systemd+
1 root 20 0 23616 14080 9344 S 0,0 0,1 0:00.17 systemd
2 root 20 0 0 0 0 S 0,0 0,0 0:00.01 kthreadd
3 root 20 0 0 0 0 S 0,0 0,0 0:00.00 pool_wor+
4 root 0 -20 0 0 0 I 0,0 0,0 0:00.00 kworker+
5 root 0 -20 0 0 0 I 0,0 0,0 0:00.00 kworker+
6 root 0 -20 0 0 0 I 0,0 0,0 0:00.00 kworker+
7 root 0 -20 0 0 0 I 0,0 0,0 0:00.00 kworker+
9 root 0 -20 0 0 0 I 0,0 0,0 0:00.00 kworker+
asir@pc213:~$
```

htop
atop fichero de configuración

```
GNU nano 7.2 /etc/default/atop
# /etc/default/atop
# see man atoprc for more possibilities to configure atop execution

LOGOPTS=""
LOGINTERVAL=60
LOGGENERATIONS=28
LOGPATH=/var/log/atop

[ 7 líneas escritas ]
Ayuda Guardar Buscar Cortar Ejecutar Ubicación Deshacer Poner marca A llave Anterior Después
Salir Leer fich. Reemplazar Pegar Justificar Ir a línea Rehacer Copiar Buscar atrás Siguiente Adelante
```

(es un servicio, así que hay que actualizarlo)

The image consists of two terminal window screenshots. The top window shows a user attempting to restart 'htop' and 'atop' services using 'systemctl restart'. The 'htop' command fails with the message 'Unit htop.service not found.', while the 'atop' command succeeds. The bottom window shows the user navigating to the directory '/var/log/atop' and running 'ls -l'. The output shows a file named 'atop_20241115' with permissions '-rw-r--r--'. The user then runs 'atop -r atop_20241115' to reload the data.

```
asir@pc213: ~  
asir@pc213:~$ systemctl restart htop  
Failed to restart htop.service: Unit htop.service not found.  
asir@pc213:~$ systemctl restart atop  
asir@pc213:~$  
  
asir@pc213: /var/log/atop$ ls -l  
total 364  
-rw-r--r-- 1 root root 371845 nov 15 14:32 atop_20241115  
asir@pc213: /var/log/atop$ atop -r atop_20241115  
asir@pc213: /var/log/atop$
```

(d minúscula se ven los procesos)

Prácticas con la memoria

```

asir@pc213:~$ free
              total        usado        libre  compartido    búf/caché  disponible
Mem:          16201704      3846892      6754060       529036      6476720      12354812
Inter:         4194300           0       4194300
asir@pc213:~$ free -h
              total        usado        libre  compartido    búf/caché  disponible
Mem:           15Gi        3,2Gi        6,9Gi        445Mi        6,1Gi        12Gi
Inter:          4,0Gi          0B        4,0Gi
asir@pc213:~$ free -s 3
              total        usado        libre  compartido    búf/caché  disponible
Mem:          16201704      3278420      7306508       452512      6416216      12923284
Inter:         4194300           0       4194300

              total        usado        libre  compartido    búf/caché  disponible
Mem:          16201704      3261444      7323468       434624      6398344      12940260
Inter:         4194300           0       4194300

              total        usado        libre  compartido    búf/caché  disponible

```

comando con la memoria (-s 3) se refresca
df -h para ver lo que está montado

```

asir@pc213:~$ df -h
S.ficheros      Tamaño Usados  Disp Uso% Montado en
tmpfs           1,6G   3,0M   1,6G   1% /run
/dev/nvme0n1p2  457G   376G   58G   87% /
tmpfs           7,8G    65M   7,7G   1% /dev/shm
tmpfs           5,0M    8,0K   5,0M   1% /run/lock
efivarfs        192K    35K   153K  19% /sys/firmware/efi/efivars
/dev/nvme0n1p1  1,1G    6,2M   1,1G   1% /boot/efi
tmpfs           1,6G    132K   1,6G   1% /run/user/1000
asir@pc213:~$ dh -h /
No se ha encontrado la orden «dh», pero se puede instalar con:
sudo apt install debhelper
asir@pc213:~$ df -h /
S.ficheros      Tamaño Usados  Disp Uso% Montado en
/dev/nvme0n1p2  457G   376G   58G   87% /
asir@pc213:~$ █

```

listar todo el sistema y ver que pesa cada cosa:

```

du: no se puede acceder a '/proc/52513/fd/3': No existe el archivo o el directorio
0      /proc/52513/fd
0      /proc/52513/map_files
du: no se puede acceder a '/proc/52513/fdinfo/3': No existe el archivo o el directorio
0      /proc/52513/fdinfo
0      /proc/52513/ns
0      /proc/52513/net/stat
0      /proc/52513/net/dev_snmp6
0      /proc/52513/net/netfilter
0      /proc/52513/net
0      /proc/52513/attr/smack
0      /proc/52513/attr/apparmor
0      /proc/52513/attr
0      /proc/52513
0      /proc
379G   /
asir@pc213:~$ ^C
asir@pc213:~$ du -h /█

```

```

asir@pc213:~$ sudo du -hs /
du: no se puede acceder a '/run/user/1000/doc': Permiso denegado
du: no se puede acceder a '/run/user/1000/gvfs': Permiso denegado
du: no se puede acceder a '/proc/52534/task/52534/fd/4': No existe el archivo o el directorio
du: no se puede acceder a '/proc/52534/task/52534/fdinfo/4': No existe el archivo o el directorio
du: no se puede acceder a '/proc/52534/fd/3': No existe el archivo o el directorio
du: no se puede acceder a '/proc/52534/fdinfo/3': No existe el archivo o el directorio
379G    /
asir@pc213:~$ sudo du -hs /home
361G    /home
asir@pc213:~$

```

-s (para indicar el total del directorio)
información de o que ocupa cada directorio:

```

asir@pc213:~$ sudo du -hs /home/*
292K    /home/2smra
3,4M    /home/alumno
361G    /home/asir
asir@pc213:~$ sudo du -h --max-depth=1 /home/
3,4M    /home/alumno
292K    /home/2smra
361G    /home/asir
361G    /home/
asir@pc213:~$

```

Tamaño de discos:

asir@pc213:~\$ iostat -m

Linux 6.8.0-48-generic (pc213) 25/11/24 _x86_64_ (12 CPU)

avg-cpu:	%user	%nice	%system	%iowait	%steal	%idle
	0,08	0,00	0,07	0,01	0,00	99,84

Device	tps	MB_read/s	MB_wrtn/s	MB_dscd/s	MB_read	MB_wrtn	MB_d
sdc							
loop0	0,00	0,00	0,00	0,00	0	0	
loop1	0,00	0,00	0,00	0,00	1	0	
loop10	0,00	0,00	0,00	0,00	0	0	
loop11	0,00	0,00	0,00	0,00	0	0	
loop12	0,00	0,00	0,00	0,00	0	0	
loop13	0,00	0,00	0,00	0,00	0	0	
loop14	0,00	0,00	0,00	0,00	0	0	
loop2	0,00	0,00	0,00	0,00	6	0	
loop3	0,00	0,00	0,00	0,00	1	0	
loop4	0,00	0,00	0,00	0,00	0	0	
loop5	0,00	0,00	0,00	0,00	2	0	
loop6	0,00	0,00	0,00	0,00	23	0	
loop7	0,01	0,00	0,00	0,00	11	0	
loop8	0,00	0,00	0,00	0,00	0	0	
loop9	0,00	0,00	0,00	0,00	0	0	
nvme0n1	1,46	0,01	0,02	0,16	3129	10908	90
sda	0,00	0,00	0,00	0,00	10	0	

asir@pc213:~\$

loop1	0,00	0,00	0,00	0,00	1	0
loop10	0,00	0,00	0,00	0,00	0	0
loop11	0,00	0,00	0,00	0,00	0	0
loop12	0,00	0,00	0,00	0,00	0	0
loop13	0,00	0,00	0,00	0,00	0	0
loop14	0,00	0,00	0,00	0,00	0	0
loop2	0,00	0,00	0,00	0,00	6	0
loop3	0,00	0,00	0,00	0,00	1	0
loop4	0,00	0,00	0,00	0,00	0	0
loop5	0,00	0,00	0,00	0,00	2	0
loop6	0,00	0,00	0,00	0,00	23	0
loop7	0,01	0,00	0,00	0,00	11	0
loop8	0,00	0,00	0,00	0,00	0	0
loop9	0,00	0,00	0,00	0,00	0	0
nvme0n1	1,46	0,01	0,02	0,16	3129	10917
sda	0,00	0,00	0,00	0,00	10	0

```
asir@pc213:~$ iostat -mh
```

```
Linux 6.8.0-48-generic (pc213) 25/11/24 _x86_64_ (12 CPU)
```

```
avg-cpu:  %user   %nice %system %iowait  %steal   %idle
            0,1%    0,0%    0,1%    0,0%    0,0%   99,8%
```

tps	MB_read/s	MB_wrtn/s	MB_dscd/s	MB_read	MB_wrtn	MB_dscd	Device
0,00	0,0k	0,0k	0,0k	17,0k	0,0k	0,0k	loop0
0,00	0,0k	0,0k	0,0k	2,0M	0,0k	0,0k	loop1
0,00	0,0k	0,0k	0,0k	367,0k	0,0k	0,0k	loop10
0,00	0,0k	0,0k	0,0k	440,0k	0,0k	0,0k	loop11
0,00	0,0k	0,0k	0,0k	55,0k	0,0k	0,0k	loop12
0,00	0,0k	0,0k	0,0k	335,0k	0,0k	0,0k	loop13
0,00	0,0k	0,0k	0,0k	154,0k	0,0k	0,0k	loop14
0,00	0,0k	0,0k	0,0k	6,0M	0,0k	0,0k	loop2
0,00	0,0k	0,0k	0,0k	1,1M	0,0k	0,0k	loop3
0,00	0,0k	0,0k	0,0k	347,0k	0,0k	0,0k	loop4
0,00	0,0k	0,0k	0,0k	2,0M	0,0k	0,0k	loop5
0,00	0,0k	0,0k	0,0k	23,7M	0,0k	0,0k	loop6
0,01	0,0k	0,0k	0,0k	11,3M	0,0k	0,0k	loop7
0,00	0,0k	0,0k	0,0k	380,0k	0,0k	0,0k	loop8
0,00	0,0k	0,0k	0,0k	347,0k	0,0k	0,0k	loop9
1,46	5,6k	19,5k	161,4k	3,1G	10,7G	88,4G	nvme0n1
0,00	0,0k	0,0k	0,0k	10,4M	0,0k	0,0k	sda

```
asir@pc213:~$
```

```

loop14      0,00      0,00      0,00      0,00      154      0
loop2       0,00      0,01      0,00      0,00     6154      0
loop3       0,00      0,00      0,00      0,00     1152      0
loop4       0,00      0,00      0,00      0,00      347      0
loop5       0,00      0,00      0,00      0,00     2061      0
loop6       0,00      0,04      0,00      0,00    24309      0
loop7       0,01      0,02      0,00      0,00    11612      0
loop8       0,00      0,00      0,00      0,00      380      0
loop9       0,00      0,00      0,00      0,00      347      0
nvme0n1     1,46      5,58     19,51     161,36  3204779  11204673  926767
sda         0,00      0,02      0,00      0,00     10694      0

```

```
asir@pc213:~$ iostat -x nvme0n1
```

```
Linux 6.8.0-48-generic (pc213) 25/11/24      _x86_64_      (12 CPU)
```

```

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           0,08    0,00    0,07    0,01    0,00   99,84

```

```

Device      r/s      kB/s    rrqm/s  %rrqm  r_await  rareq-sz    w/s      kB/s    wrqm/s
aqu-sz  %util
nvme0n1    0,21      5,58      0,05   19,36    0,13    26,38    1,19     19,51     0,73
0,00    0,01

```

```
asir@pc213:~$ iostat -xh nvme0n1
```

```
Linux 6.8.0-48-generic (pc213) 25/11/24      _x86_64_      (12 CPU)
```

```

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           0,1%    0,0%    0,1%    0,0%    0,0%   99,8%

```

```

r/s      kB/s    rrqm/s  %rrqm  r_await  rareq-sz Device
0,21     5,6k      0,05   19,4%    0,13    26,4k nvme0n1

```

```

w/s      kB/s    wrqm/s  %wrqm  w_await  wareq-sz Device
1,19     19,5k     0,73   38,0%    0,56    16,4k nvme0n1

```

```

d/s      kB/s    drqm/s  %drqm  d_await  dareq-sz Device
0,06    161,4k     0,00    0,0%    0,45     2,6M nvme0n1

```

```

f/s  f_await  aqu-sz  %util Device
0,16   0,26    0,00   0,0% nvme0n1

```

```
asir@pc213:~$
```

```
0,08 0,00 0,07 0,01 0,00 99,84
Device      tps    kB_read/s    kB_w+d/s    kB_read    kB_w+d
nvme0n1     1,46      5,58      180,86    3205291    103887629

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           0,33    0,00    0,08    0,00    0,00   99,58

Device      tps    kB_read/s    kB_w+d/s    kB_read    kB_w+d
nvme0n1     0,00      0,00      0,00         0         0

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           0,42    0,00    0,25    0,08    0,00   99,25

Device      tps    kB_read/s    kB_w+d/s    kB_read    kB_w+d
nvme0n1     0,00      0,00      0,00         0         0

^C
asir@pc213:~$ iostat -3 1 nvme0n1
Us: iostat [ opciones ] [ <intervalo> [ <iteraciones> ] ]
Options are:
[ -c ] [ -d ] [ -h ] [ -k | -m ] [ -N ] [ -s ] [ -t ] [ -V ] [ -x ] [ -y ] [ -z ]
[ { -f | +f } <directory> ] [ -j { ID | LABEL | PATH | UUID | ... } ]
[ --compact ] [ --dec={ 0 | 1 | 2 } ] [ --human ] [ --pretty ] [ -o JSON ]
[ [ -H ] -g <group_name> ] [ -p [ <device> [,...] | ALL ] ]
[ <device> [...] | ALL ]
asir@pc213:~$ iostat -s 3 nvme0n1
Linux 6.8.0-48-generic (pc213) 25/11/24      _x86_64_      (12 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           0,08    0,00    0,07    0,01    0,00   99,84

Device      tps    kB_read/s    kB_w+d/s    kB_read    kB_w+d
nvme0n1     1,46      5,58      180,86    3205291    103888473

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           0,19    0,00    0,08    0,06    0,00   99,67

Device      tps    kB_read/s    kB_w+d/s    kB_read    kB_w+d
nvme0n1     0,00      0,00      0,00         0         0

asir@pc213:~$ iostat -x sda
Linux 6.8.0-48-generic (pc213) 25/11/24      _x86_64_      (12 CPU)
avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           0,08    0,00    0,07    0,01    0,00   99,84
Device      r/s    kB/s    rrqn/s    %rrqn  r_await  rareq-sz  w/s    kB/s    wrqn/s    %wrqn  w_await  wareq-sz  d/s    dB/s    drqn/s    %drqn  d_await  dareq-sz  f/s  f_await  aqu-sz  %util
sda         0,00    0,02    0,00    0,00    0,29    20,14    0,00    0,00    0,00    0,00    0,00    0,00    0,00    0,00    0,00    0,00    0,00    0,00    0,00    0,00    0,00    0,00
asir@pc213:~$
```

El % util y el awaits sube mientras descargas algo.

```

asir@pc213:~$ iostat -sx 1 nvme0n1
Linux 6.8.0-48-generic (pc213) 25/11/24 _x86_64_ (1

```

avg-cpu:	%user	%nice	%system	%iowait	%steal	%idle
	0,09	0,00	0,07	0,01	0,00	99,84

Device	tps	kB/s	rqm/s	await	areq-sz	aqu-sz
nvme0n1	1,49	188,29	0,79	0,49	126,39	0,00

avg-cpu:	%user	%nice	%system	%iowait	%steal	%idle
	4,19	0,00	0,67	0,17	0,00	94,97

RED

```

root@pc213: /home/
asir@pc213:~$ sudo su
[sudo] contraseña para asir:
root@pc213:/home/asir# tcpdump

```

```

root@pc213:/home/asir# ip a
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 noprefixroute
        valid_lft forever preferred_lft forever
2: eno1: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default q
len 1000
    link/ether f4:b5:20:40:52:72 brd ff:ff:ff:ff:ff:ff
    altname enp0s31f6
    inet 172.26.11.166/16 brd 172.26.255.255 scope global dynamic noprefixroute eno1
        valid_lft 69912sec preferred_lft 69912sec
3: wlp1s0: <BROADCAST,MULTICAST> mtu 1500 qdisc noop state DOWN group default qlen 1000
    link/ether 54:af:97:ce:15:10 brd ff:ff:ff:ff:ff:ff
4: docker0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state DOWN group def
ault
    link/ether 02:42:08:a6:16:25 brd ff:ff:ff:ff:ff:ff
    inet 172.17.0.1/16 brd 172.17.255.255 scope global docker0
        valid_lft forever preferred_lft forever
root@pc213:/home/asir# tcpdump -l eno1

```



```
root@pc213: /home/asir
root@pc213:/home/asir# tcpdump -r captura
reading from file captura, link-type EN10MB (Ethernet), snapshot length 262144
14:00:05.154622 IP 172.26.17.217 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:00:05.231372 IP6 fe80::c28a:cdff:fe86:1efe > ip6-allrouters: ICMP6, router solicitation,
length 16
14:00:05.422377 ARP, Request who-has 192.168.2.1 tell 192.168.2.197, length 46
14:00:05.534514 IP 172.26.17.217 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:00:05.719686 48:22:54:42:17:41 (oui Unknown) > Broadcast, Realtek unknown type 0x25
14:00:05.854098 IP 172.26.16.26 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:00:05.913692 IP 172.26.17.217 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:00:06.004656 IP6 fe80::72c4:e48c:b6d7:9cda.59853 > ff02::c.3702: UDP, length 656
14:00:06.035101 IP 172.26.17.217 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:00:06.305589 IP 172.26.16.26 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:00:06.446338 ARP, Request who-has 192.168.2.1 tell 192.168.2.197, length 46
14:00:06.522343 IP 172.26.20.236.59852 > 239.255.255.250.3702: UDP, length 656
14:00:06.720158 48:22:54:42:17:41 (oui Unknown) > Broadcast, Realtek unknown type 0x25
14:00:06.726299 IP 172.26.16.190 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:00:06.855450 IP 172.26.16.26 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:00:07.042043 IP 172.26.17.223 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:00:07.059100 IP mad41s04-in-f14.1e100.net.https > www.arturodeneb.org.52113: UDP, length
36
14:00:07.059285 IP mad41s04-in-f14.1e100.net.https > www.arturodeneb.org.52113: UDP, length
103
14:00:07.061645 IP www.arturodeneb.org.52113 > mad41s04-in-f14.1e100.net.https: UDP, length
34
14:00:07.061777 IP www.arturodeneb.org.52113 > mad41s04-in-f14.1e100.net.https: UDP, length
784
14:00:07.075295 IP mad41s04-in-f14.1e100.net.https > www.arturodeneb.org.52113: UDP, length
32
14:00:07.078509 IP www.arturodeneb.org.52113 > mad41s04-in-f14.1e100.net.https: UDP, length
34
14:00:07.152100 IP 172.26.17.223 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:00:07.200854 IP 172.26.16.190 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:00:07.266905 IP mad41s04-in-f14.1e100.net.https > www.arturodeneb.org.52113: UDP, length
984
14:00:07.266905 IP mad41s04-in-f14.1e100.net.https > www.arturodeneb.org.52113: UDP, length
59
14:00:07.269836 IP www.arturodeneb.org.52113 > mad41s04-in-f14.1e100.net.https: UDP, length
40
14:00:07.282218 IP mad41s04-in-f14.1e100.net.https > www.arturodeneb.org.52113: UDP, length
26
14:00:07.306479 IP 172.26.16.26 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:00:07.448033 IP 172.26.17.223 > igmp.mcast.net: igmp v3 report, 1 group record(s)
```



```
root@pc213: /home/asir
14:05:09.093957 IP 172.26.18.43 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:05:09.706488 ARP, Request who-has 172.26.11.231 tell _gateway, length 46
14:05:09.733898 ARP, Request who-has 192.168.2.1 tell 192.168.2.197, length 46
14:05:09.792801 IP 172.26.18.167.34725 > 239.255.255.250.1900: UDP, length 172
14:05:09.956600 48:22:54:42:17:41 (oui Unknown) > Broadcast, Realtek unknown type 0x25
14:05:10.059747 IP 172.26.17.217 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:05:10.302226 IP 172.26.17.217 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:05:10.537217 IP 172.26.17.217 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:05:10.673927 IP www.arturodeneb.org.47098 > cdn-185-199-111-133.github.com.https: Flags
[.], ack 2273620400, win 6181, options [nop,nop,TS val 2218996162 ecr 2269537863], length 0
14:05:10.684428 IP cdn-185-199-111-133.github.com.https > www.arturodeneb.org.47098: Flags
[.], ack 1, win 387, options [nop,nop,TS val 2269582919 ecr 2218452984], length 0
14:05:10.722353 ARP, Request who-has 172.26.11.231 tell _gateway, length 46
14:05:10.765839 ARP, Request who-has 192.168.2.1 tell 192.168.2.197, length 46
14:05:10.783461 IP 172.26.18.198.mdns > mdns.mcast.net.mdns: 0*- [0q] 3/0/0 (Cache flush) A
0.0.0.0, (Cache flush) A 172.26.18.198, (Cache flush) AAAA :: (198)
14:05:10.793981 IP 172.26.18.167.34725 > 239.255.255.250.1900: UDP, length 172
14:05:10.957242 48:22:54:42:17:41 (oui Unknown) > Broadcast, Realtek unknown type 0x25
14:05:11.746540 ARP, Request who-has 172.26.11.231 tell _gateway, length 46
14:05:11.789770 ARP, Request who-has 192.168.2.1 tell 192.168.2.197, length 46
14:05:11.795388 IP 172.26.18.167.34725 > 239.255.255.250.1900: UDP, length 172
14:05:11.802880 IP 172.26.16.151 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:05:11.960866 48:22:54:42:17:41 (oui Unknown) > Broadcast, Realtek unknown type 0x25
14:05:12.002522 IP 172.26.18.36 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:05:12.092886 IP 172.26.16.151 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:05:12.145040 IP 172.26.18.36 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:05:12.196899 IP 172.26.18.36 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:05:12.602862 IP6 fe80::72c4:e48c:b6d7:9cda.59449 > ff02::c.3702: UDP, length 656
14:05:12.602995 IP 172.26.20.236.59448 > 239.255.255.250.3702: UDP, length 656
14:05:12.758742 IP 172.26.20.236.59448 > 239.255.255.250.3702: UDP, length 656
14:05:12.770496 IP6 fe80::72c4:e48c:b6d7:9cda.59449 > ff02::c.3702: UDP, length 656
14:05:12.778348 ARP, Request who-has 172.26.11.231 tell _gateway, length 46
14:05:12.800703 IP 172.26.16.151 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:05:12.958894 48:22:54:42:17:41 (oui Unknown) > Broadcast, Realtek unknown type 0x25
14:05:13.050439 IP 172.26.16.151 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:05:13.070975 IP 172.26.20.236.59448 > 239.255.255.250.3702: UDP, length 656
14:05:13.105463 IP6 fe80::72c4:e48c:b6d7:9cda.59449 > ff02::c.3702: UDP, length 656
14:05:13.216109 IP 172.26.17.223 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:05:13.324242 IP 172.26.17.223 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:05:13.447425 IP 172.26.17.223 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:05:13.570576 IP 172.26.16.76 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:05:13.619804 IP 172.26.16.76 > igmp.mcast.net: igmp v3 report, 1 group record(s)
14:05:13.695102 IP 172.26.20.236.59448 > 239.255.255.250.3702: UDP, length 656
```

está aqui el github


```
root@pc213: /home/asir
root@pc213:/home/asir# tcptrack -i eno1
^[[Aroot@pc213:/home/asir# tcptrack -i eno1
```

root@pc213: /home/asir				
Client	Server	State	Idle A	Speed
172.26.11.166:39450	31.13.83.36:443	ESTABLISHED	3s	0 B/s
172.26.11.166:38044	93.114.43.46:443	ESTABLISHED	4s	0 B/s
172.26.11.166:37986	93.114.43.46:443	ESTABLISHED	4s	0 B/s
172.26.11.166:34832	172.217.17.3:443	RESET	1s	0 B/s
172.26.11.166:38000	93.114.43.46:443	ESTABLISHED	3s	0 B/s
172.26.11.166:33946	108.157.109.69:443	ESTABLISHED	1s	0 B/s
172.26.11.166:41382	142.250.200.74:443	ESTABLISHED	4s	0 B/s
172.26.11.166:34824	172.217.17.3:443	ESTABLISHED	1s	0 B/s
172.26.11.166:37122	151.101.0.223:443	ESTABLISHED	1s	156 KB/s
172.26.11.166:38678	31.13.83.4:443	ESTABLISHED	4s	0 B/s
172.26.11.166:38012	93.114.43.46:443	ESTABLISHED	4s	0 B/s
172.26.11.166:38028	93.114.43.46:443	ESTABLISHED	4s	0 B/s
172.26.11.166:43412	151.101.66.79:443	ESTABLISHED	1s	8 KB/s
172.26.11.166:38052	93.114.43.46:443	ESTABLISHED	4s	0 B/s
172.26.11.166:34822	172.217.17.3:443	RESET	1s	0 B/s
172.26.11.166:51936	151.101.193.229:443	ESTABLISHED	2s	578 KB/s
172.26.11.166:60262	216.58.215.170:443	ESTABLISHED	2s	10 KB/s
172.26.11.166:43420	151.101.66.79:443	RESET	2s	6 KB/s

nos salen la conexion por los puertos
y nos sale el ancho de banda

root@pc213: /home/asir


Client	Server	State	Idle	A	Speed
172.26.11.166:44370	212.224.123.69:443	ESTABLISHED	2s	0	B/s
172.26.11.166:42274	79.133.36.254:443	RESET	2s	0	B/s
172.26.11.166:46998	212.224.123.69:443	ESTABLISHED	2s	0	B/s
172.26.11.166:46994	212.224.123.69:443	ESTABLISHED	2s	0	B/s
172.26.11.166:46978	212.224.123.69:443	ESTABLISHED	2s	0	B/s
172.26.11.166:39946	188.157.109.69:443	ESTABLISHED	25s	0	B/s
172.26.11.166:41382	142.250.208.74:443	ESTABLISHED	29s	0	B/s
172.26.11.166:34824	172.217.17.3:443	ESTABLISHED	25s	0	B/s
172.26.11.166:52680	79.133.36.254:443	ESTABLISHED	2s	0	B/s
172.26.11.166:37122	151.181.0.223:443	ESTABLISHED	25s	0	B/s
172.26.11.166:43412	151.181.66.79:443	ESTABLISHED	25s	0	B/s
172.26.11.166:44386	212.224.123.69:443	ESTABLISHED	2s	0	B/s
172.26.11.166:55256	140.82.114.26:443	ESTABLISHED	4s	0	B/s
172.26.11.166:51936	151.181.193.229:443	ESTABLISHED	25s	0	B/s
172.26.11.166:60262	216.58.215.170:443	ESTABLISHED	25s	0	B/s
172.26.11.166:46586	188.157.109.74:443	ESTABLISHED	8s	0	B/s
172.26.11.166:47010	212.224.123.69:443	ESTABLISHED	2s	0	B/s

Monitorización resumen - D

Xicobot/Monitoring-Linux: 1


Proxmox Virtual Environ

proxmox.com/en/proxmox-virtual-environmen...



Proxmox Virtual Environment

Proxmox Virtual Environment is a complete, open-source server management platform for enterprise virtualization. It tightly integrates the KVM hypervisor and Linux Containers (LXC), software-defined storage and networking functionality, on a single platform. With the integrated web-based user interface you can manage VMs and containers, high availability for clusters, or the integrated disaster recovery tools with ease.



Compute, network, and storage in a single solution

The enterprise-class features and a 100% software-based focus make Proxmox VE the perfect choice to virtualize your IT infrastructure, optimize existing resources, and increase efficiencies with minimal expense. You can easily virtualize even the most demanding of Linux and Windows application workloads, and dynamically scale computing and storage as your needs grow, ensuring that your data center adjusts for future growth.

Ready to build an open and future-proof data center with Proxmox VE?

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Features

By combining two virtualization technologies on a single platform, Proxmox VE is giving maximum flexibility to your production environment. Use KVM full virtualization for Windows and Linux images, and lightweight containers to run conflict-free Linux applications.

iptraf

root@pc213: /home/asir

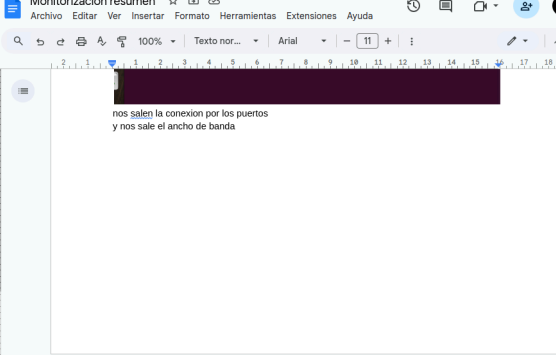
```
root@pc213:/home/asir# iptraf
root@pc213:/home/asir# iptraf
```


Monitorización resumen

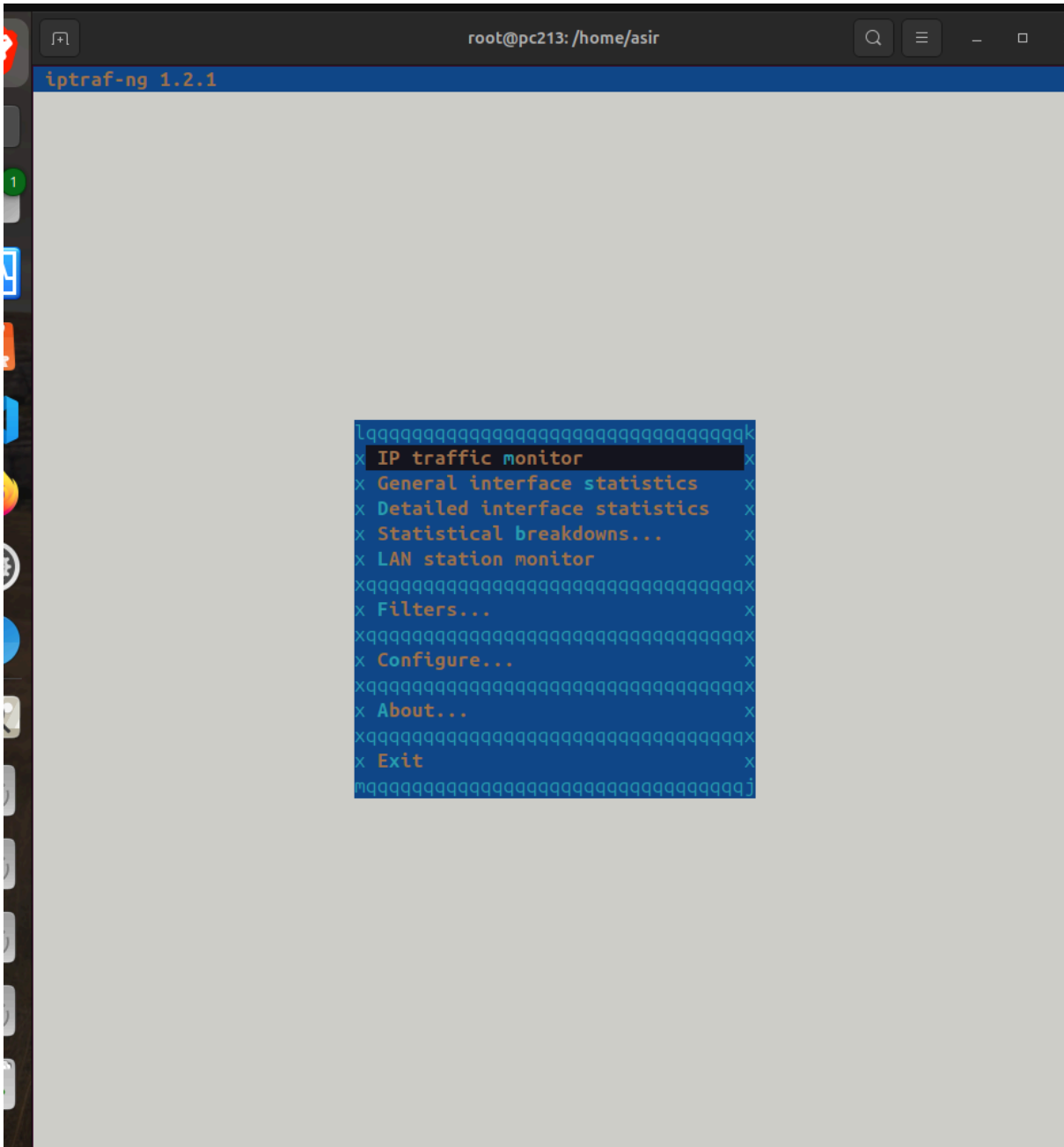
Xicobot/Monitoring-Linux: 1

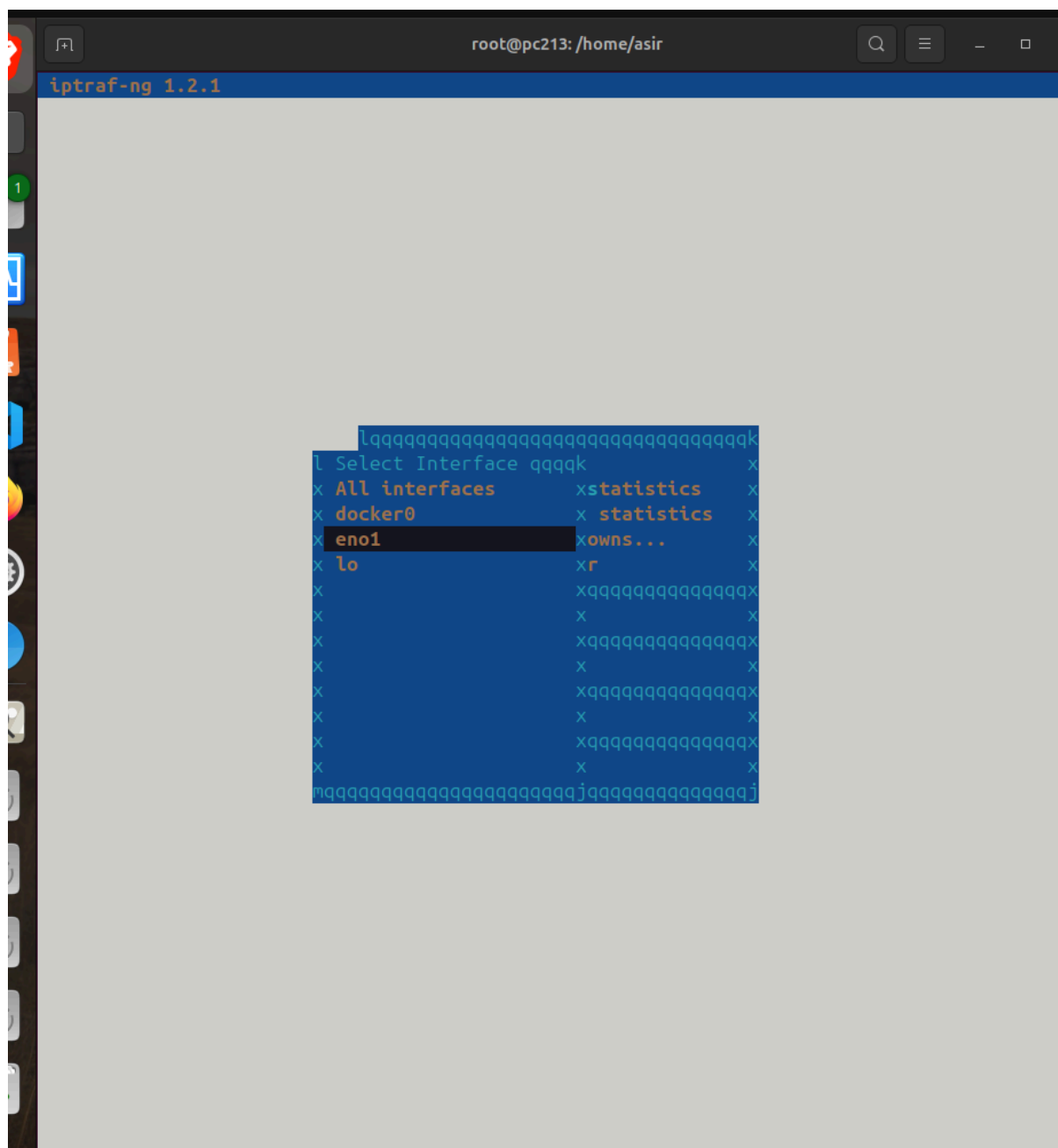
Proxmox Virtual Environ

docs.google.com/document/d/1YD0s-Corq5mcsO0LUdK...





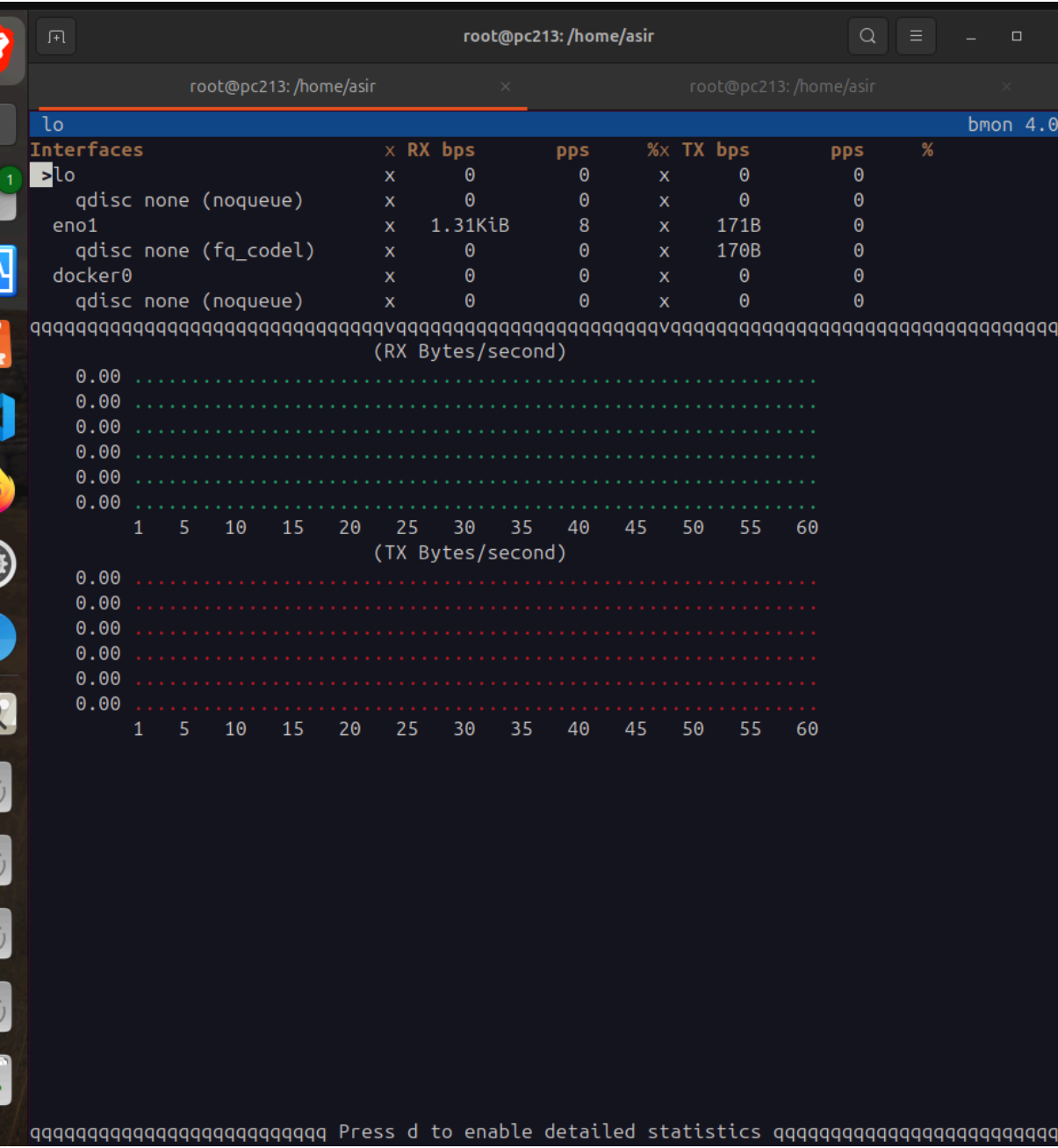




```
root@pc213: /home/asir
```

```
iptraf-ng 1.2.1
l TCP Connections (Source Host:Port) qqqqqqqqqqqqqq Packets qqqqq Bytes Flag Iface qq
xm142.250.200.74:443 > 6 604 CLOS eno1
xl172.26.11.166:37122 > 1 52 --A- eno1
xm151.101.0.223:443 = 0 0 ---- eno1
xl172.26.11.166:33946 > 2 104 CLOS eno1
xm108.157.109.69:443 > 3 195 CLOS eno1
xl172.26.11.166:51936 > 1 52 --A- eno1
xm151.101.193.229:443 = 0 0 ---- eno1
xl172.26.11.166:43412 > 1 52 --A- eno1
xm151.101.66.79:443 = 0 0 ---- eno1
xl172.26.11.166:34824 > 4 208 CLOS eno1
xm172.217.17.3:443 > 2 177 CLOS eno1
xl172.26.11.166:60262 > 3 156 CLOS eno1
xm216.58.215.170:443 > 2 177 CLOS eno1
xl172.26.11.166:46978 > 1 52 --A- eno1
xm212.224.123.69:443 = 1 46 RSET eno1
xl172.26.11.166:46994 > 1 52 --A- eno1
xm212.224.123.69:443 = 1 46 RSET eno1
xl172.26.11.166:46998 > 1 52 --A- eno1
xm212.224.123.69:443 = 1 46 RSET eno1
xl172.26.11.166:47010 > 1 52 --A- eno1
xm212.224.123.69:443 = 1 46 RSET eno1
xl140.82.114.25:443 > 3 181 --A- eno1
xm172.26.11.166:44210 > 2 133 -PA- eno1
xl172.26.11.166:44370 > 1 52 --A- eno1
xm212.224.123.69:443 = 1 46 RSET eno1
n TCP: 13 entries qqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqq Active c
lqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqq
x UDP (88 bytes) from 172.26.19.122:5353 to 224.0.0.251:5353 on eno1
x UDP (157 bytes) from 172.26.19.122:5353 to 224.0.0.251:5353 on eno1
x UDP (157 bytes) from 172.26.19.122:5353 to 224.0.0.251:5353 on eno1
x UDP (172 bytes) from 172.26.19.122:5353 to 224.0.0.251:5353 on eno1
x UDP (172 bytes) from 172.26.19.122:5353 to 224.0.0.251:5353 on eno1
x UDP (157 bytes) from 172.26.19.122:5353 to 224.0.0.251:5353 on eno1
x UDP (88 bytes) from 172.26.19.122:5353 to 224.0.0.251:5353 on eno1
x UDP (157 bytes) from 172.26.19.122:5353 to 224.0.0.251:5353 on eno1
x UDP (157 bytes) from 172.26.19.122:5353 to 224.0.0.251:5353 on eno1
x UDP (1271 bytes) from 172.26.11.166:52113 to 216.58.215.142:443 on eno1
x UDP (721 bytes) from 172.26.11.166:52113 to 216.58.215.142:443 on eno1
x UDP (61 bytes) from 216.58.215.142:443 to 172.26.11.166:52113 on eno1
```

```
root@pc213:/home/asir
root@pc213:/home/asir
root@pc213:/home/asir# bmon
No se ha encontrado la orden «bmon», pero se puede instalar con:
apt install bmon
root@pc213:/home/asir# apt install bmon
Leyendo lista de paquetes... Hecho
Creando árbol de dependencias... Hecho
Leyendo la información de estado... Hecho
Se instalarán los siguientes paquetes adicionales:
  libconfuse-common libconfuse2
Se instalarán los siguientes paquetes NUEVOS:
  bmon libconfuse-common libconfuse2
0 actualizados, 3 nuevos se instalarán, 0 para eliminar y 3 no actualizados.
Se necesita descargar 79,7 kB de archivos.
Se utilizarán 245 kB de espacio de disco adicional después de esta operación.
¿Desea continuar? [S/n] s
Des:1 http://archive.ubuntu.com/ubuntu noble/universe amd64 libconfuse-common all 3.3-3build1 [5.894 B]
Des:2 http://archive.ubuntu.com/ubuntu noble/universe amd64 libconfuse2 amd64 3.3-3build1 26,8 kB]
Des:3 http://archive.ubuntu.com/ubuntu noble/universe amd64 bmon amd64 1:4.0-10 [47,0 kB]
Descargados 79,7 kB en 1s (130 kB/s)
Seleccionando el paquete libconfuse-common previamente no seleccionado.
(Leyendo la base de datos ... 222549 ficheros o directorios instalados actualmente.)
Preparando para desempaquetar .../libconfuse-common_3.3-3build1_all.deb ...
Desempaquetando libconfuse-common (3.3-3build1) ...
Seleccionando el paquete libconfuse2:amd64 previamente no seleccionado.
Preparando para desempaquetar .../libconfuse2_3.3-3build1_amd64.deb ...
Desempaquetando libconfuse2:amd64 (3.3-3build1) ...
Seleccionando el paquete bmon previamente no seleccionado.
Preparando para desempaquetar .../bmon_1%3a4.0-10_amd64.deb ...
Desempaquetando bmon (1:4.0-10) ...
Configurando libconfuse-common (3.3-3build1) ...
Configurando libconfuse2:amd64 (3.3-3build1) ...
Configurando bmon (1:4.0-10) ...
Procesando disparadores para man-db (2.12.0-4build2) ...
Procesando disparadores para libc-bin (2.39-0ubuntu8.3) ...
root@pc213:/home/asir# bmon
root@pc213:/home/asir#
```



Comparativa y Recomendaciones:

Herramienta	Detalles TCP	Tráfico UDP	Estadísticas de Interfaz	Análisis de Ancho de Banda	Fácil de usar
tcptrack	✓	×	×	×	✓
iptraf-ng	✓	✓	✓	✓	✓
bandwidth	×	×	✓	✓	✓
netstat/ss	✓	✓	×	×	×