Sistemas Operacionais

Trabalho T1 – Processos em Linux

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1.a)

PID – ID do processo da linha

TTY – nome do terminal de controle do processo

TIME – tempo de CPU que o processo já utilizou

COMMAND – comando que inicializou o processo

b) São adicionadas algumas colunas no para cada linha, que mostram a árvore dos processos.

c) Não, o processo ‘/usr/sbin/rsyslogd’ criado por ‘syslog’

d) ‘ps – ef | grep terminology’ verifica se o processo ‘terminology’ está sendo executado.

e) Alguns dos processos em execução:

```
┌──(host㉿root)-[~]
└─$ ps -u root
    PID TTY          TIME CMD
      1 ?        00:00:02 systemd
      2 ?        00:00:00 kthreadd
      3 ?        00:00:00 rcu_gp
      4 ?        00:00:00 rcu_par_gp
      6 ?        00:00:00 kworker/0:0H-events_highpri
      7 ?        00:00:00 kworker/0:1-events
      9 ?        00:00:00 mm_percpu_wq
     10 ?        00:00:00 rcu_tasks_rude_
     11 ?        00:00:00 rcu_tasks_trace
     12 ?        00:00:00 ksoftirqd/0
     13 ?        00:00:00 rcu_sched
     14 ?        00:00:00 migration/0
     15 ?        00:00:00 cpuhp/0
     16 ?        00:00:00 cpuhp/1
     17 ?        00:00:00 migration/1
     18 ?        00:00:00 ksoftirqd/1
     20 ?        00:00:00 kworker/1:0H-events_highpri
     21 ?        00:00:00 cpuhp/2
     22 ?        00:00:00 migration/2
     23 ?        00:00:00 ksoftirqd/2
```

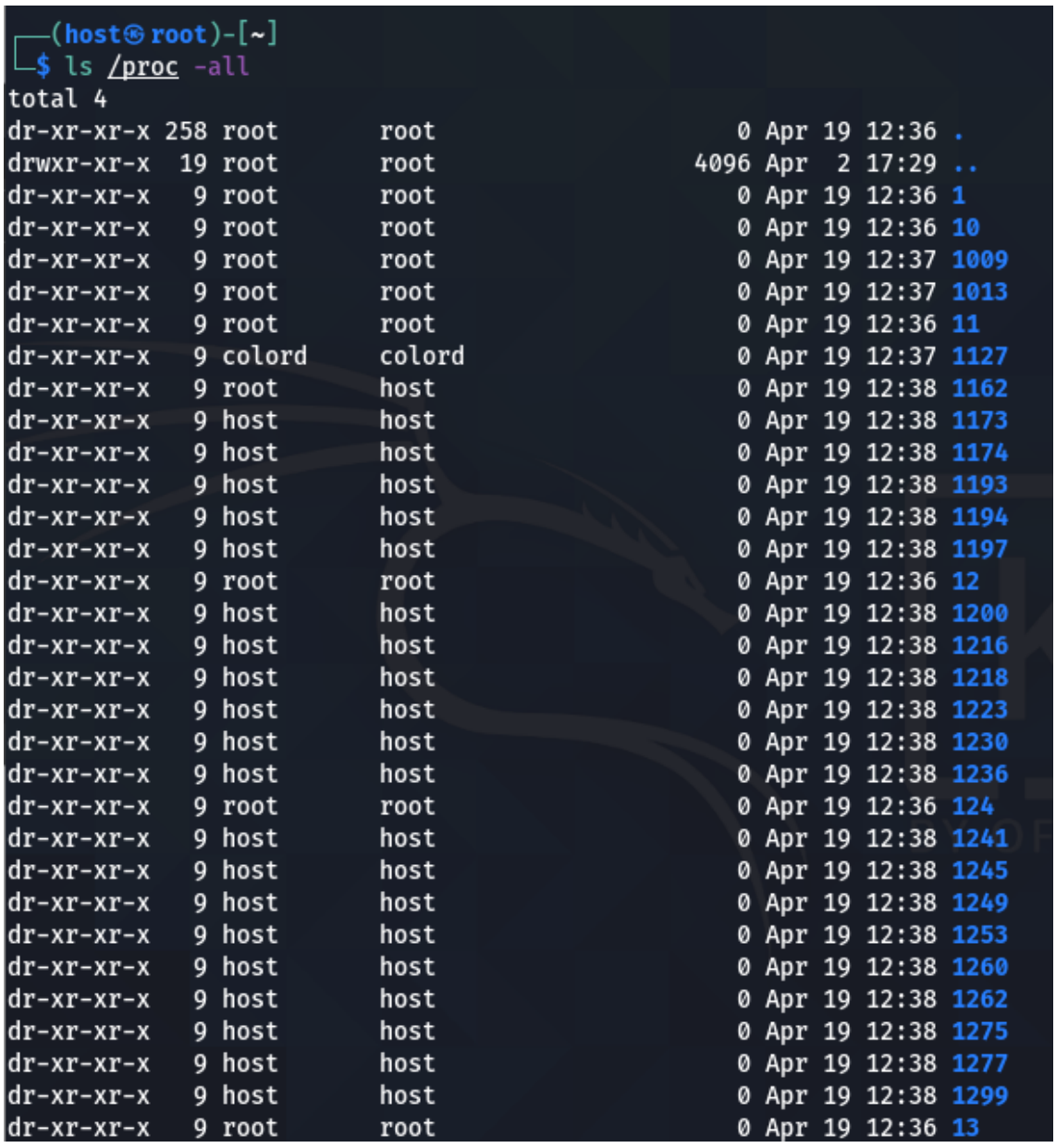
```
┌──(host㉿root)-[~]
└─$ ps -u host
    PID TTY          TIME CMD
   1173 ?        00:00:00 systemd
   1174 ?        00:00:00 (sd-pam)
   1193 ?        00:00:00 pipewire
   1194 ?        00:00:00 pulseaudio
   1197 ?        00:00:00 tracker-miner-f
   1200 ?        00:00:00 dbus-daemon
   1216 ?        00:00:00 pipewire-media-
   1218 ?        00:00:00 gvfsd
   1223 ?        00:00:00 gvfsd-fuse
   1230 ?        00:00:00 gvfs-udisks2-vo
   1236 ?        00:00:00 gvfs-afc-volume
   1241 ?        00:00:00 gvfs-mtp-volume
   1245 ?        00:00:00 gvfs-gphoto2-vo
   1249 ?        00:00:00 gvfs-goa-volume
   1253 ?        00:00:00 goa-daemon
   1260 ?        00:00:00 goa-identity-se
   1262 ?        00:00:00 gnome-keyring-d
   1275 tty2     00:00:00 gdm-x-session
   1277 tty2     00:00:08 Xorg
   1299 tty2     00:00:00 gnome-session-b
```

2. O processo que mais está utilizando CPU é ‘epiphany’

```
  PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
 1666 bodhi     23   3 98.863g  63556  14380 S   1.7   6.3   0:36.16 epiphany
 1787 bodhi     23   3 82.180g  32364  15764 S   1.3   3.2   0:01.40 WebKitWebP+
 1907 bodhi     23   3  518976  32696  19208 S   1.3   3.2   0:04.26 terminology
 1068 root      20   0  647680  26660   7156 S   0.7   2.6   0:03.54 Xorg
```

3.

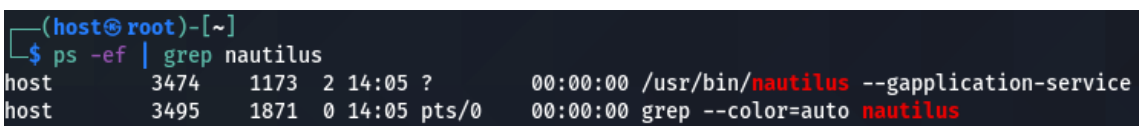
a) Como a listagem é muito longa, segue print de uma parte dela:



```
┌──(host㉿root)-[~]
└─$ ls /proc -all
total 4
dr-xr-xr-x 258 root       root                    0 Apr 19 12:36 .
drwxr-xr-x  19 root       root                 4096 Apr  2 17:29 ..
dr-xr-xr-x   9 root       root                    0 Apr 19 12:36 1
dr-xr-xr-x   9 root       root                    0 Apr 19 12:36 10
dr-xr-xr-x   9 root       root                    0 Apr 19 12:37 1009
dr-xr-xr-x   9 root       root                    0 Apr 19 12:37 1013
dr-xr-xr-x   9 root       root                    0 Apr 19 12:36 11
dr-xr-xr-x   9 colord     colord                  0 Apr 19 12:37 1127
dr-xr-xr-x   9 root       host                    0 Apr 19 12:38 1162
dr-xr-xr-x   9 host       host                    0 Apr 19 12:38 1173
dr-xr-xr-x   9 host       host                    0 Apr 19 12:38 1174
dr-xr-xr-x   9 host       host                    0 Apr 19 12:38 1193
dr-xr-xr-x   9 host       host                    0 Apr 19 12:38 1194
dr-xr-xr-x   9 host       host                    0 Apr 19 12:38 1197
dr-xr-xr-x   9 root       root                    0 Apr 19 12:36 12
dr-xr-xr-x   9 host       host                    0 Apr 19 12:38 1200
dr-xr-xr-x   9 host       host                    0 Apr 19 12:38 1216
dr-xr-xr-x   9 host       host                    0 Apr 19 12:38 1218
dr-xr-xr-x   9 host       host                    0 Apr 19 12:38 1223
dr-xr-xr-x   9 host       host                    0 Apr 19 12:38 1230
dr-xr-xr-x   9 host       host                    0 Apr 19 12:38 1236
dr-xr-xr-x   9 root       root                    0 Apr 19 12:36 124
dr-xr-xr-x   9 host       host                    0 Apr 19 12:38 1241
dr-xr-xr-x   9 host       host                    0 Apr 19 12:38 1245
dr-xr-xr-x   9 host       host                    0 Apr 19 12:38 1249
dr-xr-xr-x   9 host       host                    0 Apr 19 12:38 1253
dr-xr-xr-x   9 host       host                    0 Apr 19 12:38 1260
dr-xr-xr-x   9 host       host                    0 Apr 19 12:38 1262
dr-xr-xr-x   9 host       host                    0 Apr 19 12:38 1275
dr-xr-xr-x   9 host       host                    0 Apr 19 12:38 1277
dr-xr-xr-x   9 host       host                    0 Apr 19 12:38 1299
dr-xr-xr-x   9 root       root                    0 Apr 19 12:36 13
```

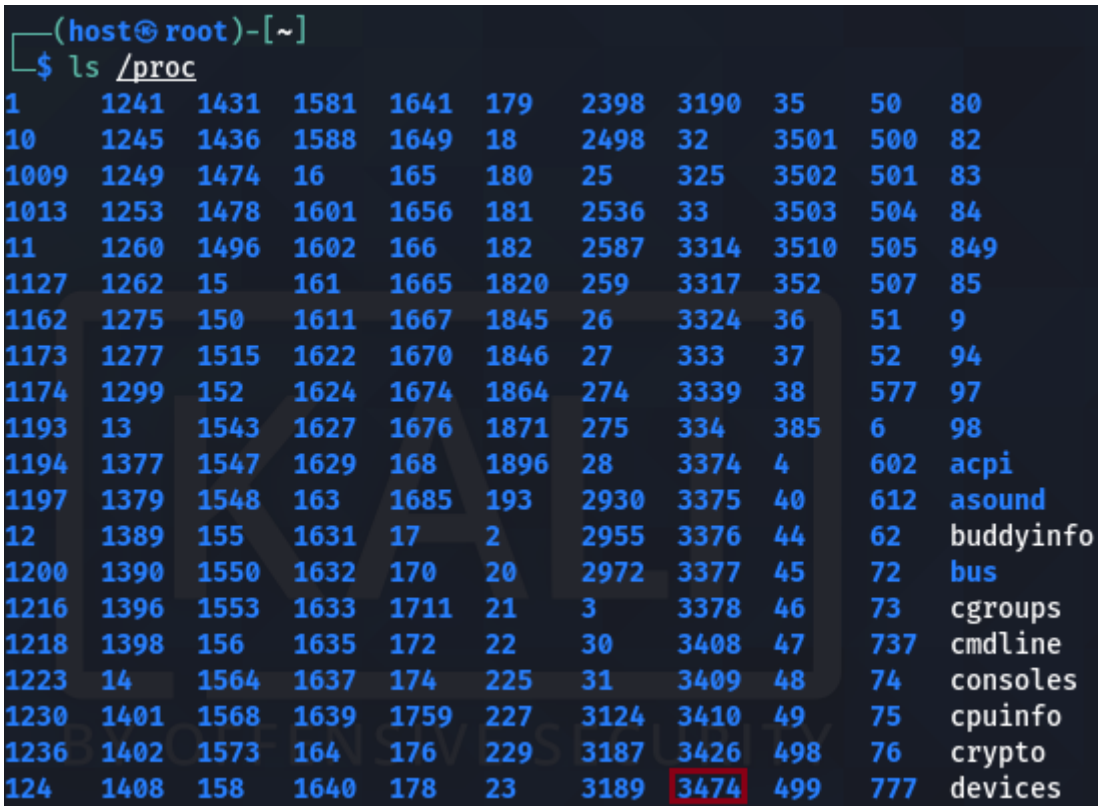
b)

Processo escolhido: Nautilus



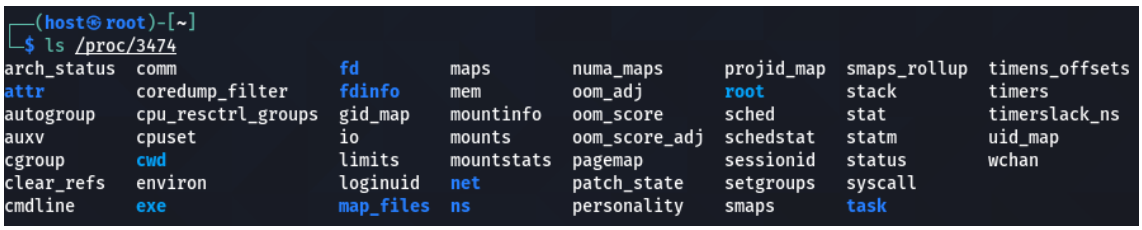
```
┌──(host㉿root)-[~]
└─$ ps -ef | grep nautilus
host        3474    1173  2 14:05 ?        00:00:00 /usr/bin/nautilus --gapplication-service
host        3495    1871  0 14:05 pts/0    00:00:00 grep --color=auto nautilus
```

Diretórios encontrados:



Listagem dos diretórios:

/proc/3474 (listagem igual para todos)



Funcionalidade de alguns arquivos:

- comm: armazena o nome do processo;
- limits: limitações para o uso do hardware pelo processo;
- maps: listagem de diretórios necessários para o funcionamento do processo;

4.

d) Estado do job: ‘Running’

```
bodhi@bodhi:~$ jobs
[1]+  Running                 ping localhost > /dev/null &
```

e)

```
bodhi@bodhi:~$ jobs
[1]-  Running                 ping localhost > /dev/null &
[2]+  Running                 ping localhost > /dev/null &
```

g)

Estado do job 1: ‘Stopped’

Estado do job 2: ‘Running’

```
bodhi@bodhi:~$ jobs
[1]+  Stopped                 ping localhost > /dev/null
[2]-  Running                 ping localhost > /dev/null &
```

h) Job 1 voltou a ser executado

```
bodhi@bodhi:~$ jobs
[1]-  Running                 ping localhost > /dev/null &
[2]+  Running                 ping localhost > /dev/null &
```

i) Job 1 foi terminado

```
bodhi@bodhi:~$ jobs
[1]-  Terminated              ping localhost > /dev/null
[2]+  Running                 ping localhost > /dev/null &
```

j) Job 2 foi terminado

```
bodhi@bodhi:~$ jobs
[2]+  Terminated              ping localhost > /dev/null
```