Enunciado

1. La sintaxis general de la utilidad systemctl es: systemctl comando [--opcion]

```
SYSTEMCTL(1)                    systemctl                    SYSTEMCTL(1)

NAME
       systemctl - Control the systemd system and service manager

SYNOPSIS
       systemctl [OPTIONS...] COMMAND [UNIT...]

DESCRIPTION
       systemctl may be used to introspect and control the state of the
       "systemd" system and service manager. Please refer to systemd(1) for
       an introduction into the basic concepts and functionality this tool
       manages.
```

2. Vamos a comenzar viendo el estado general del sistema con systemctl. Ejecuta systemctl o systemctl list-units. Verás todas las unidades activas del sistema. A partir de la salida y la explicación final que se muestra intenta entender qué significan las columnas de información que se muestran.

```
alumno@Ubuntu20:~$ systemctl list-units
  UNIT                                                                    >
  proc-sys-fs-binfmt_misc.automount                                       >
  sys-devices-pci0000:00-0000:00:01.1-ata2-host1-target1:0:0-1:0:0:0-block-sr0>
  sys-devices-pci0000:00-0000:00:03.0-net-enp0s3.device                   >
  sys-devices-pci0000:00-0000:00:05.0-sound-card0.device                  >
  sys-devices-pci0000:00-0000:00:0d.0-ata3-host2-target2:0:0-2:0:0:0-block-sda>
  sys-devices-pci0000:00-0000:00:0d.0-ata3-host2-target2:0:0-2:0:0:0-block-sda>
  sys-devices-pci0000:00-0000:00:0d.0-ata3-host2-target2:0:0-2:0:0:0-block-sda>
  sys-devices-pci0000:00-0000:00:0d.0-ata3-host2-target2:0:0-2:0:0:0-block-sda>
  sys-devices-platform-serial8250-tty-ttyS0.device                        >
  sys-devices-platform-serial8250-tty-ttyS1.device                        >
  sys-devices-platform-serial8250-tty-ttyS10.device                       >
  sys-devices-platform-serial8250-tty-ttyS11.device                       >
  sys-devices-platform-serial8250-tty-ttyS12.device                       >
  sys-devices-platform-serial8250-tty-ttyS13.device                       >
  sys-devices-platform-serial8250-tty-ttyS14.device                       >
  sys-devices-platform-serial8250-tty-ttyS15.device                       >
  sys-devices-platform-serial8250-tty-ttyS16.device                       >
  sys-devices-platform-serial8250-tty-ttyS17.device                       >
  sys-devices-platform-serial8250-tty-ttyS18.device                       >
  sys-devices-platform-serial8250-tty-ttyS19.device                       >
  sys-devices-platform-serial8250-tty-ttyS2.device                        >
  sys-devices-platform-serial8250-tty-ttyS20.device                       >
  sys-devices-platform-serial8250-tty-ttyS21.device                       >
  sys-devices-platform-serial8250-tty-ttyS22.device                       >
  sys-devices-platform-serial8250-tty-ttyS23.device                       >
  sys-devices-platform-serial8250-tty-ttyS24.device                       >
```

UNIT que es nombre de la unidad de systemd
LOAD muestra si la unidad ha sido analizada por systemd
ACTIVE muestra un estado resumido que indica s la unidad está activa
SUB nos muestra información mas detallada sobre la unidad
DESCRIPTION nos da una descripción breve de que es y que hace esa unidad

3. ¿Qué comando tecleamos para ver todas las unidades incluso las inactivas?
systemctl list-units --all

```
alumno@Ubuntu20:~$ systemctl list-units -all
  UNIT
  proc-sys-fs-binfmt_misc.automount
  dev-cdrom.device
  dev-disk-by\x2did-ata\x2dVBOX_CD\x2dROM_VB2\x2d01700376.device
  dev-disk-by\x2did-ata\x2dVBOX_HARDDISK_VB62f2dec9\x2d81362d4a.device
  dev-disk-by\x2did-ata\x2dVBOX_HARDDISK_VB62f2dec9\x2d81362d4a\x2dpart1.devi
  dev-disk-by\x2did-ata\x2dVBOX_HARDDISK_VB62f2dec9\x2d81362d4a\x2dpart2.devi
  dev-disk-by\x2did-ata\x2dVBOX_HARDDISK_VB62f2dec9\x2d81362d4a\x2dpart5.devi
  dev-disk-by\x2dpartuuid-f83ef93f\x2d01.device
  dev-disk-by\x2dpartuuid-f83ef93f\x2d02.device
  dev-disk-by\x2dpartuuid-f83ef93f\x2d05.device
  dev-disk-by\x2dpath-pci\x2d0000:00:01.1\x2data\x2d2.device
  dev-disk-by\x2dpath-pci\x2d0000:00:0d.0\x2data\x2d1.device
  dev-disk-by\x2dpath-pci\x2d0000:00:0d.0\x2data\x2d1\x2dpart1.device
  dev-disk-by\x2dpath-pci\x2d0000:00:0d.0\x2data\x2d1\x2dpart2.device
  dev-disk-by\x2dpath-pci\x2d0000:00:0d.0\x2data\x2d1\x2dpart5.device
  dev-disk-by\x2duuid-555e64fb\x2d355f\x2d48b6\x2d85bd\x2d35acf7903314.device
  dev-disk-by\x2duuid-E6A3\x2d2E2A.device
  dev-dvd.device
  dev-loop0.device
  dev-loop1.device
  dev-loop10.device
  dev-loop2.device
  dev-loop3.device
```

4. Lo habitual no es querer ver todas las unidades sino filtrar según el estado o el tipo. Investiga cómo podemos ver todas las unidades cuyo estado es running
systemctl list-units --all --state=running

```
alumno@Ubuntu20:~$ systemctl list-units -all --state=running
  UNIT                              LOAD   ACTIVE SUB     DESCRIPTION
  acpid.path                        loaded active running ACPI Events Check
  init.scope                        loaded active running System and Service Man
  session-7.scope                   loaded active running Session 7 of user alum
  accounts-daemon.service           loaded active running Accounts Service
  acpid.service                     loaded active running ACPI event daemon
  avahi-daemon.service              loaded active running Avahi mDNS/DNS-SD Stac
  colord.service                    loaded active running Manage, Install and Ge
  cron.service                      loaded active running Regular background pro
  cups-browsed.service              loaded active running Make remote CUPS print
  cups.service                      loaded active running CUPS Scheduler
  dbus.service                      loaded active running D-Bus System Message B
  gdm.service                       loaded active running GNOME Display Manager
  kerneloops.service                loaded active running Tool to automatically
  ModemManager.service              loaded active running Modem Manager
  networkd-dispatcher.service       loaded active running Dispatcher daemon for
  NetworkManager.service            loaded active running Network Manager
  polkit.service                    loaded active running Authorization Manager
  rsyslog.service                   loaded active running System Logging Service
  rtkit-daemon.service              loaded active running RealtimeKit Scheduling
  snapd.service                     loaded active running Snap Daemon
  switcheroo-control.service        loaded active running Switcheroo Control Pro
  systemd-journald.service          loaded active running Journal Service
  systemd-logind.service            loaded active running Login Service
  systemd-resolved.service          loaded active running Network Name Resolutio
  systemd-timesyncd.service         loaded active running Network Time Synchroni
```

5. ¿Y si sólo queremos ver los servicios cuyo estado es running?
systemctl | grep running

```
alumno@Ubuntu20:~$ systemctl list-units --state=running
  UNIT                                LOAD   ACTIVE SUB     DESCRIPTION
  acpid.path                          loaded active running ACPI Events Check
  init.scope                          loaded active running System and Service Man
  session-7.scope                     loaded active running Session 7 of user alum
  accounts-daemon.service             loaded active running Accounts Service
  acpid.service                       loaded active running ACPI event daemon
  avahi-daemon.service                loaded active running Avahi mDNS/DNS-SD Stac
  colord.service                      loaded active running Manage, Install and Ge
  cron.service                        loaded active running Regular background pro
  cups-browsed.service                loaded active running Make remote CUPS print
  cups.service                        loaded active running CUPS Scheduler
  dbus.service                        loaded active running D-Bus System Message B
  gdm.service                         loaded active running GNOME Display Manager
  kerneloops.service                  loaded active running Tool to automatically
  ModemManager.service                loaded active running Modem Manager
  networkd-dispatcher.service         loaded active running Dispatcher daemon for
  NetworkManager.service              loaded active running Network Manager
  polkit.service                      loaded active running Authorization Manager
  rsyslog.service                     loaded active running System Logging Service
  rtkit-daemon.service                loaded active running RealtimeKit Scheduling
  snapd.service                       loaded active running Snap Daemon
  switcheroo-control.service          loaded active running Switcheroo Control Pro
  systemd-journald.service            loaded active running Journal Service
  systemd-logind.service              loaded active running Login Service
  systemd-resolved.service            loaded active running Network Name Resolutio
```

6. List-units nos muestra las unidades que systemctl ha intentado cargar en memoria, pero puede que haya más disponibles en el sistema. Para ver todas las unidades disponibles en las rutas de systemd ejecutamos.
Hacemos lo mismo que en el ejercicio 2

```
alumno@Ubuntu20:~$ systemctl list-units
  UNIT                                                                        >
  proc-sys-fs-binfmt_misc.automount                                           >
  sys-devices-pci0000:00-0000:00:01.1-ata2-host1-target1:0:0-1:0:0:0-block-sr0>
  sys-devices-pci0000:00-0000:00:03.0-net-enp0s3.device                       >
  sys-devices-pci0000:00-0000:00:05.0-sound-card0.device                      >
  sys-devices-pci0000:00-0000:00:0d.0-ata3-host2-target2:0:0-2:0:0:0-block-sda>
  sys-devices-pci0000:00-0000:00:0d.0-ata3-host2-target2:0:0-2:0:0:0-block-sda>
  sys-devices-pci0000:00-0000:00:0d.0-ata3-host2-target2:0:0-2:0:0:0-block-sda>
  sys-devices-pci0000:00-0000:00:0d.0-ata3-host2-target2:0:0-2:0:0:0-block-sda>
  sys-devices-platform-serial8250-tty-ttyS0.device                            >
  sys-devices-platform-serial8250-tty-ttyS1.device                            >
  sys-devices-platform-serial8250-tty-ttyS10.device                           >
  sys-devices-platform-serial8250-tty-ttyS11.device                           >
  sys-devices-platform-serial8250-tty-ttyS12.device                           >
  sys-devices-platform-serial8250-tty-ttyS13.device                           >
  sys-devices-platform-serial8250-tty-ttyS14.device                           >
  sys-devices-platform-serial8250-tty-ttyS15.device                           >
  sys-devices-platform-serial8250-tty-ttyS16.device                           >
  sys-devices-platform-serial8250-tty-ttyS17.device                           >
  sys-devices-platform-serial8250-tty-ttyS18.device                           >
  sys-devices-platform-serial8250-tty-ttyS19.device                           >
  sys-devices-platform-serial8250-tty-ttyS2.device                            >
  sys-devices-platform-serial8250-tty-ttyS20.device                           >
  sys-devices-platform-serial8250-tty-ttyS21.device                           >
  sys-devices-platform-serial8250-tty-ttyS22.device                           >
  sys-devices-platform-serial8250-tty-ttyS23.device                           >
  sys-devices-platform-serial8250-tty-ttyS24.device                           >
```

7. Vamos a visualizar un fichero de unidad que se ha cargado en el sistema. Ejecuta
   - systemctl cat xinetd.service

```
alumno@Ubuntu20:/etc/init.d$ sudo systemctl cat xinetd
# /run/systemd/generator.late/xinetd.service
# Automatically generated by systemd-sysv-generator

[Unit]
Documentation=man:systemd-sysv-generator(8)
SourcePath=/etc/init.d/xinetd
Description=LSB: Starts or stops the xinetd daemon.
Before=multi-user.target
Before=multi-user.target
Before=multi-user.target
Before=graphical.target
After=remote-fs.target
After=network-online.target
Wants=network-online.target

[Service]
Type=forking
Restart=no
TimeoutSec=5min
IgnoreSIGPIPE=no
KillMode=process
GuessMainPID=no
RemainAfterExit=yes
SuccessExitStatus=5 6
ExecStart=/etc/init.d/xinetd start
ExecStop=/etc/init.d/xinetd stop
ExecReload=/etc/init.d/xinetd reload
alumno@Ubuntu20:/etc/init.d$
```

8. ¿Cómo podemos ver las dependencias de este servicio?

```
alumno@Ubuntu20:/etc/init.d$ systemctl list-dependencies xinetd
xinetd.service
● ├─system.slice
● ├─network-online.target
● │ └─NetworkManager-wait-online.service
● └─sysinit.target
●   ├─apparmor.service
●   ├─dev-hugepages.mount
●   ├─dev-mqueue.mount
●   ├─keyboard-setup.service
●   ├─kmod-static-nodes.service
○   ├─plymouth-read-write.service
○   ├─plymouth-start.service
●   ├─proc-sys-fs-binfmt_misc.automount
●   ├─setvtrgb.service
●   ├─sys-fs-fuse-connections.mount
●   ├─sys-kernel-config.mount
●   ├─sys-kernel-debug.mount
●   ├─sys-kernel-tracing.mount
○   ├─systemd-ask-password-console.path
○   ├─systemd-binfmt.service
○   ├─systemd-boot-system-token.service
○   ├─systemd-hwdb-update.service
●   ├─systemd-journal-flush.service
●   ├─systemd-journald.service
○   ├─systemd-machine-id-commit.service
●   ├─systemd-modules-load.service
```

9. ¿Qué diferencia hay si ejecutamos el comando anterior con --all?
Se abren más dependencias del servicio solicitado

```
alumno@Ubuntu20:/etc/init.d$ systemctl list-dependencies xinetd -all
xinetd.service
● ├─system.slice
● │ └─-.slice
● ├─network-online.target
● │ └─NetworkManager-wait-online.service
● │   ├─NetworkManager.service
● │   │ ├─dbus.socket
● │   │ │ ├─-.mount
● │   │ │ │ └─system.slice
● │   │ │ │   └─-.slice
● │   │ │ ├─system.slice
● │   │ │ │ └─-.slice
● │   │ │ └─sysinit.target
● │   │ │   ├─apparmor.service
● │   │ │   │ ├─-.mount
● │   │ │   │ │ └─system.slice
● │   │ │   │ │   └─-.slice
● │   │ │   │ └─system.slice
● │   │ │   │   └─-.slice
● │   │ │   ├─dev-hugepages.mount
● │   │ │   │ ├─-.mount
● │   │ │   │ │ └─system.slice
● │   │ │   │ │   └─-.slice
● │   │ │   │ └─system.slice
● │   │ │   │   └─-.slice
```

10. ¿Qué puedes ver con el comando show de systemctl? Aplicalo sobre el servicio ssh

```
alumno@Ubuntu20:/etc/init.d$ systemctl show ssh
Restart=no
NotifyAccess=none
RestartUSec=100ms
TimeoutStartUSec=1min 30s
TimeoutStopUSec=1min 30s
TimeoutAbortUSec=1min 30s
RuntimeMaxUSec=infinity
WatchdogUSec=0
WatchdogTimestampMonotonic=0
RootDirectoryStartOnly=no
RemainAfterExit=no
GuessMainPID=yes
MainPID=0
ControlPID=0
FileDescriptorStoreMax=0
NFileDescriptorStore=0
StatusErrno=0
Result=success
ReloadResult=success
CleanResult=success
UID=[not set]
GID=[not set]
NRestarts=0
ExecMainStartTimestampMonotonic=0
ExecMainExitTimestampMonotonic=0
ExecMainPID=0
ExecMainCode=0
ExecMainStatus=0
```

11. ¿Cómo podrías ver sólo la propiedad Requires de este servicio?

```
alumno@Ubuntu20:/etc/init.d$ systemctl show ssh -p Requires
Requires=
alumno@Ubuntu20:/etc/init.d$
```

12. Vamos a aprender a manejar servicios con systemctl. Utilizando comandos ya vistos investiga cuál es el servicio de red.
systemctl | grep Network

```
alumno@Ubuntu20:~/Escritorio$ systemctl | grep Network
  NetworkManager-wait-online.service
          loaded active exited    Network Manager Wait Online

  NetworkManager.service
          loaded active running   Network Manager

  systemd-resolved.service
          loaded active running   Network Name Resolution

  systemd-timesyncd.service
          loaded active running   Network Time Synchronization

  network-online.target
          loaded active active    Network is Online

  network.target
          loaded active active    Network

  nss-lookup.target
          loaded active active    Host and Network Name Lookups
```

13. Comprueba que puedes iniciar una sesión ssh en tu sistema. Ejecuta ssh alumno@localhost. Después cierra la sesión ssh.

```
alumnom@a37pc05:~$ ssh alumnom@localhost
The authenticity of host 'localhost (127.0.0.1)' can't be established.
ECDSA key fingerprint is SHA256:O22vyQPd/IJvKG+NF+IjIMRemVs1MAHg3kxOre5AvKk.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'localhost' (ECDSA) to the list of known hosts.
alumnom@localhost: Permission denied (publickey).
alumnom@a37pc05:~$
```

14. Utiliza el comando stop de systemctl para parar el servicio de ssh. Verifica que ahora se rechaza la conexión.

```
alumno@Ubuntu20:/etc/init.d$ service ssh stop
Failed to stop ssh.service: Unit ssh.service not loaded.
alumno@Ubuntu20:/etc/init.d$
```

15. Vuelve a arrancar el servicio de ssh y comprueba que de nuevo puedes iniciar una sesión ssh.

```
alumnom@a37pc05:~$ ssh alumnom@localhost
The authenticity of host 'localhost (127.0.0.1)' can't be established.
ECDSA key fingerprint is SHA256:O22vyQPd/IJvKG+NF+IjIMRemVs1MAHg3kxOre5AvKk.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'localhost' (ECDSA) to the list of known hosts.
alumnom@localhost: Permission denied (publickey).
alumnom@a37pc05:~$
```

16. ¿Cómo puedo saber si un servicio está activo ó habilitado o fallido? Aplica los comandos sobre el servicio de ssh.

Con ssh no lo encuentra por lo que lo haré con otro servicio

```
alumno@Ubuntu20:/etc/init.d$ systemctl status xinetd
● xinetd.service - LSB: Starts or stops the xinetd daemon.
     Loaded: loaded (/etc/init.d/xinetd; generated)
     Active: active (running) since Wed 2021-10-06 09:55:27 CEST; 2h 11min ago
       Docs: man:systemd-sysv-generator(8)
      Tasks: 1 (limit: 2319)
     Memory: 772.0K
     CGroup: /system.slice/xinetd.service
             └─6316 /usr/sbin/xinetd -pidfile /run/xinetd.pid -stayalive -inet>

oct 06 09:55:27 Ubuntu20 xinetd[6316]: Reading included configuration file: /e>
oct 06 09:55:27 Ubuntu20 xinetd[6316]: Reading included configuration file: /e>
oct 06 09:55:27 Ubuntu20 xinetd[6316]: Reading included configuration file: /e>
oct 06 09:55:27 Ubuntu20 xinetd[6316]: Reading included configuration file: /e>
oct 06 09:55:27 Ubuntu20 xinetd[6316]: Reading included configuration file: /e>
oct 06 09:55:27 Ubuntu20 xinetd[6316]: Reading included configuration file: /e>
oct 06 09:55:27 Ubuntu20 xinetd[6316]: Reading included configuration file: /e>
oct 06 09:55:27 Ubuntu20 xinetd[6316]: Reading included configuration file: /e>
oct 06 09:55:27 Ubuntu20 xinetd[6316]: 2.3.15.3 started with libwrap loadavg l>
oct 06 09:55:27 Ubuntu20 xinetd[6316]: Started working: 0 available services
lines 1-19/19 (END)
```

17. Vamos a consultar el target por defecto cuando arranca el sistema. Ejecuta systemctl getdefault

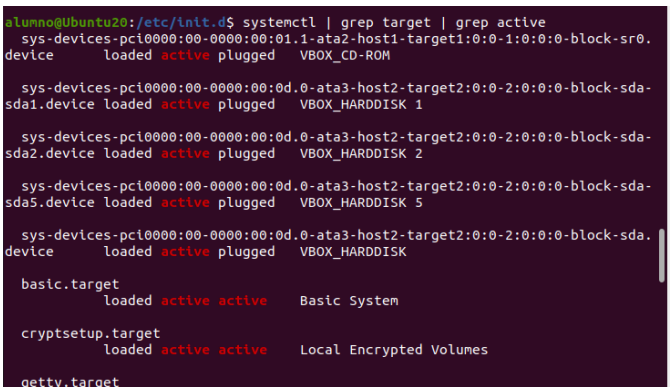
```
alumno@Ubuntu20:/etc/init.d$ systemctl get-default
graphical.target
alumno@Ubuntu20:/etc/init.d$
```

18. ¿Cómo obtenemos un listado de los targets disponibles en el sistema?

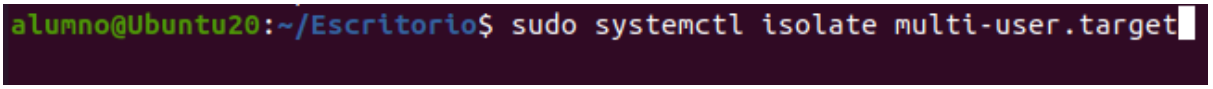
systemctl | grep target

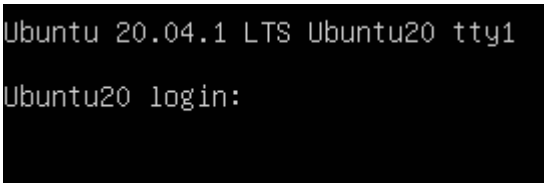
```
alumno@Ubuntu20:/etc/init.d$ systemctl | grep target
  sys-devices-pci0000:00-0000:00:01.1-ata2-host1-target1:0:0-1:0:0:0-block-sr0.
device      loaded active plugged   VBOX_CD-ROM

  sys-devices-pci0000:00-0000:00:0d.0-ata3-host2-target2:0:0-2:0:0:0-block-sda-
sda1.device loaded active plugged   VBOX_HARDDISK 1

  sys-devices-pci0000:00-0000:00:0d.0-ata3-host2-target2:0:0-2:0:0:0-block-sda-
sda2.device loaded active plugged   VBOX_HARDDISK 2

  sys-devices-pci0000:00-0000:00:0d.0-ata3-host2-target2:0:0-2:0:0:0-block-sda-
sda5.device loaded active plugged   VBOX_HARDDISK 5

  sys-devices-pci0000:00-0000:00:0d.0-ata3-host2-target2:0:0-2:0:0:0-block-sda.
device      loaded active plugged   VBOX_HARDDISK

  basic.target
            loaded active active    Basic System
```

19. ¿Y cuáles están activos ahora? Observa como múltiples targets pueden estar activos simultáneamente
systemctl | grep target | grep active

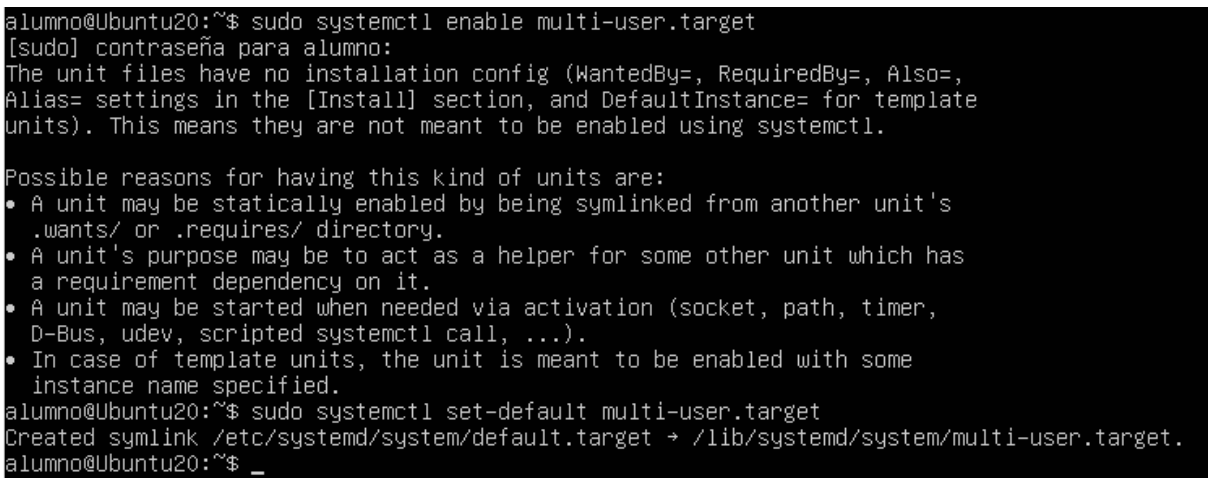


20. Si queremos cambiar al sistema a modo multiusuario sin entorno gráfico significa que Queremos que estén arrancadas todas las dependencias del target multi-user.target pero que se paren las que no están en este árbol (las asociadas con el entorno gráfico). Esto es lo que se llama “isolating” un target (antiguamente cambiar el runlevel). Ejecuta sudo systemctl isolate multi-user.target y observa como ya no tienes entorno gráfico. En el siguiente arranque lo volverás a tener, si quieres que sea el target de arranque por defecto harías





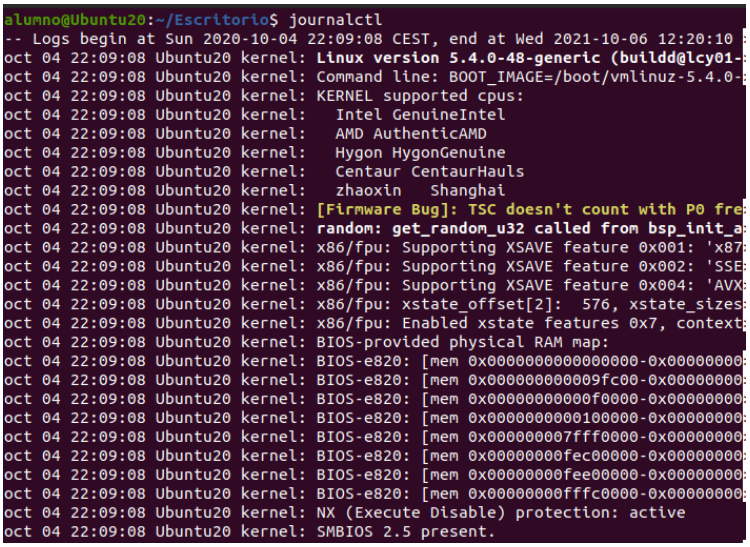
- sudo systemctl enable multi-user.target
- sudo systemctl set-default multi-user.target

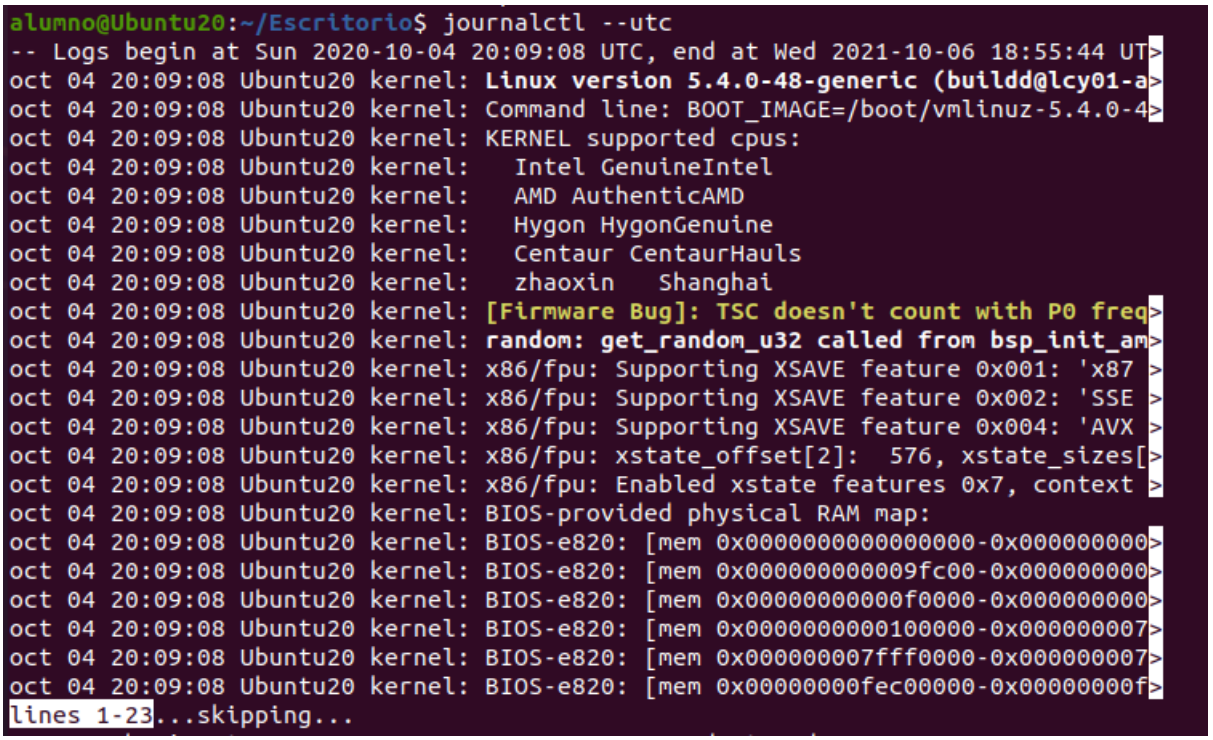


En los otros tty tengo el modo texto activado
Existen comandos systemctl para halt, poweroff, reboot y rescue (modo monousuario) pero

podemos usarlos sin necesidad de escribir systemctl como hacíamos habitualmente hasta ahora.

21. Para ver los logs que el demonio journal registra tenemos la utilidad journalctl. Ejecuta journalctl con y sin la opción --utc para ver todos los registros del log.





22. La potencia de journalctl son las opciones de filtrado que vamos a ir probando. Realiza un less de /etc/systemd/journald.conf y observa si hay una sección [Journal] con un par clave= valor que sea Storage=persistent. Esto significa que journald registra logs de todos los arranques, no sólo del actual. Si no es así modifícalo y después reinicia el sistema.

```
[Journal]
#Storage=auto
#Compress=yes
#Seal=yes
#SplitMode=uid
#SyncIntervalSec=5m
#RateLimitIntervalSec=30s
#RateLimitBurst=10000
#SystemMaxUse=
#SystemKeepFree=
#SystemMaxFileSize=
#SystemMaxFiles=100
#RuntimeMaxUse=
#RuntimeKeepFree=
#RuntimeMaxFileSize=
#RuntimeMaxFiles=100
#MaxRetentionSec=
#MaxFileSec=1month
#ForwardToSyslog=yes
#ForwardToKMsg=no
#ForwardToConsole=no
#ForwardToWall=yes
#TTYPath=/dev/console
#MaxLevelStore=debug
#MaxLevelSyslog=debug
#MaxLevelKMsg=notice
#MaxLevelConsole=info
#MaxLevelWall=emerg
#LineMax=48K
#ReadKMsg=yes
~
```

23. ¿Qué opción de journalctl me permite ver los mensajes de log del arranque actual?

```
alumno@Ubuntu20:~/Escritorio$ journalctl -f
-- Logs begin at Sun 2020-10-04 22:09:08 CEST. --
oct 06 19:31:25 Ubuntu20 gnome-shell[1707]: Window manager warning: Overwriting existing binding of keysym 3
1 with keysym 31 (keycode a).
oct 06 19:31:25 Ubuntu20 gnome-shell[1707]: Window manager warning: Overwriting existing binding of keysym 3
2 with keysym 32 (keycode b).
oct 06 19:31:25 Ubuntu20 gnome-shell[1707]: Window manager warning: Overwriting existing binding of keysym 3
3 with keysym 33 (keycode c).
oct 06 19:31:25 Ubuntu20 gnome-shell[1707]: Window manager warning: Overwriting existing binding of keysym 3
4 with keysym 34 (keycode d).
oct 06 19:31:25 Ubuntu20 gnome-shell[1707]: Window manager warning: Overwriting existing binding of keysym 3
5 with keysym 35 (keycode e).
oct 06 19:31:25 Ubuntu20 gnome-shell[1707]: Window manager warning: Overwriting existing binding of keysym 3
6 with keysym 36 (keycode f).
oct 06 19:31:25 Ubuntu20 gnome-shell[1707]: Window manager warning: Overwriting existing binding of keysym 3
7 with keysym 37 (keycode 10).
oct 06 19:31:25 Ubuntu20 gnome-shell[1707]: Window manager warning: Overwriting existing binding of keysym 3
9 with keysym 39 (keycode 12).
oct 06 19:31:41 Ubuntu20 systemd[1]: fprintd.service: Succeeded.
oct 06 19:33:53 Ubuntu20 systemd-resolved[485]: Server returned error NXDOMAIN, mitigating potential DNS vio
lation DVE-2018-0001, retrying transaction with reduced feature level UDP.
```

24. Prueba la opción --list-boots e investiga cómo puedes usarla para ver los mensajes de log del penúltimo arranque del sistema.

```
alumno@Ubuntu20:~/Escritorio$ journalctl --list-boots
-6 b20cbab576ff4e418de7be5862cb2195 Sun 2020-10-04 22:09:08 CEST—Sun 2020-10-04 23:44:48 CEST
-5 5e449644a0684ac4a2fe19fb3ee94ead Sun 2020-10-04 23:45:01 CEST—Sun 2020-10-04 23:45:51 CEST
-4 b5e210ec959a4c76b0e1e564a17bb402 Tue 2021-09-28 16:24:15 CEST—Tue 2021-09-28 16:36:00 CEST
-3 d3c9652e41374321955d5b4dc0aadfbd Tue 2021-09-28 18:36:47 CEST—Tue 2021-09-28 17:35:44 CEST
-2 94822a4bc44940edb28ca99f47a36894 Wed 2021-09-29 19:25:47 CEST—Wed 2021-09-29 19:29:35 CEST
-1 9aff853679014366b8f19369ebfeca10 Thu 2021-09-30 19:28:12 CEST—Thu 2021-09-30 18:36:59 CEST
 0 3fc6f5709ea5485a84bc36dcfec4b62b Wed 2021-10-06 20:55:05 CEST—Wed 2021-10-06 19:38:53 CEST
alumno@Ubuntu20:~/Escritorio$
```

Usando journalctl -b -1

```
alumno@Ubuntu20:~/Escritorio$ journalctl -b-1
-- Logs begin at Sun 2020-10-04 22:09:08 CEST, end at Wed 2021-10-06 20:55:44 CEST. --
sep 30 19:28:12 Ubuntu20 kernel: Linux version 5.4.0-48-generic (buildd@lcy01-amd64-010) (gcc version 9.3.0>
sep 30 19:28:12 Ubuntu20 kernel: Command line: BOOT_IMAGE=/boot/vmlinuz-5.4.0-48-generic root=UUID=555e64fb>
sep 30 19:28:12 Ubuntu20 kernel: KERNEL supported cpus:
sep 30 19:28:12 Ubuntu20 kernel:   Intel GenuineIntel
sep 30 19:28:12 Ubuntu20 kernel:   AMD AuthenticAMD
sep 30 19:28:12 Ubuntu20 kernel:   Hygon HygonGenuine
sep 30 19:28:12 Ubuntu20 kernel:   Centaur CentaurHauls
sep 30 19:28:12 Ubuntu20 kernel:   zhaoxin   Shanghai
sep 30 19:28:12 Ubuntu20 kernel: x86/fpu: Supporting XSAVE feature 0x001: 'x87 floating point registers'
sep 30 19:28:12 Ubuntu20 kernel: x86/fpu: Supporting XSAVE feature 0x002: 'SSE registers'
sep 30 19:28:12 Ubuntu20 kernel: x86/fpu: Supporting XSAVE feature 0x004: 'AVX registers'
sep 30 19:28:12 Ubuntu20 kernel: x86/fpu: xstate_offset[2]:  576, xstate_sizes[2]:  256
sep 30 19:28:12 Ubuntu20 kernel: x86/fpu: Enabled xstate features 0x7, context size is 832 bytes, using 'st>
sep 30 19:28:12 Ubuntu20 kernel: BIOS-provided physical RAM map:
sep 30 19:28:12 Ubuntu20 kernel: BIOS-e820: [mem 0x0000000000000000-0x000000000009fbff] usable
sep 30 19:28:12 Ubuntu20 kernel: BIOS-e820: [mem 0x000000000009fc00-0x000000000009ffff] reserved
sep 30 19:28:12 Ubuntu20 kernel: BIOS-e820: [mem 0x00000000000f0000-0x00000000000fffff] reserved
sep 30 19:28:12 Ubuntu20 kernel: BIOS-e820: [mem 0x0000000000100000-0x00000000417effff] usable
sep 30 19:28:12 Ubuntu20 kernel: BIOS-e820: [mem 0x00000000417f0000-0x00000000417fffff] ACPI data
sep 30 19:28:12 Ubuntu20 kernel: BIOS-e820: [mem 0x00000000fec00000-0x00000000fec00fff] reserved
sep 30 19:28:12 Ubuntu20 kernel: BIOS-e820: [mem 0x00000000fee00000-0x00000000fee00fff] reserved
sep 30 19:28:12 Ubuntu20 kernel: BIOS-e820: [mem 0x00000000fffc0000-0x00000000ffffffff] reserved
sep 30 19:28:12 Ubuntu20 kernel: NX (Execute Disable) protection: active
sep 30 19:28:12 Ubuntu20 kernel: SMBIOS 2.5 present.
sep 30 19:28:12 Ubuntu20 kernel: DMI: innotek GmbH VirtualBox/VirtualBox, BIOS VirtualBox 12/01/2006
sep 30 19:28:12 Ubuntu20 kernel: Hypervisor detected: KVM
sep 30 19:28:12 Ubuntu20 kernel: kvm-clock: Using msrs 4b564d01 and 4b564d00
```

25. Prueba journalctl --since "2015-01-10 17:15:00", ¿Qué hace? Observa que el formato es YYYY MM-DD HH:MM:SS, y se puede omitir fecha u hora.

```
alumno@Ubuntu20:~/Escritorio$ journalctl --since "2015-01-10 17:15:00"
-- Logs begin at Sun 2020-10-04 22:09:08 CEST, end at Wed 2021-10-06 20:55:44 CEST. --
oct 04 22:09:08 Ubuntu20 kernel: Linux version 5.4.0-48-generic (buildd@lcy01-amd64-010) (gcc version 9.3.0
oct 04 22:09:08 Ubuntu20 kernel: Command line: BOOT_IMAGE=/boot/vmlinuz-5.4.0-48-generic root=UUID=555e64fb
oct 04 22:09:08 Ubuntu20 kernel: KERNEL supported cpus:
oct 04 22:09:08 Ubuntu20 kernel:   Intel GenuineIntel
oct 04 22:09:08 Ubuntu20 kernel:   AMD AuthenticAMD
oct 04 22:09:08 Ubuntu20 kernel:   Hygon HygonGenuine
oct 04 22:09:08 Ubuntu20 kernel:   Centaur CentaurHauls
oct 04 22:09:08 Ubuntu20 kernel:   zhaoxin   Shanghai
oct 04 22:09:08 Ubuntu20 kernel: [Firmware Bug]: TSC doesn't count with P0 frequency!
oct 04 22:09:08 Ubuntu20 kernel: random: get_random_u32 called from bsp_init_amd+0x217/0x2c0 with crng_init
oct 04 22:09:08 Ubuntu20 kernel: x86/fpu: Supporting XSAVE feature 0x001: 'x87 floating point registers'
oct 04 22:09:08 Ubuntu20 kernel: x86/fpu: Supporting XSAVE feature 0x002: 'SSE registers'
oct 04 22:09:08 Ubuntu20 kernel: x86/fpu: Supporting XSAVE feature 0x004: 'AVX registers'
oct 04 22:09:08 Ubuntu20 kernel: x86/fpu: xstate_offset[2]:  576, xstate_sizes[2]:  256
oct 04 22:09:08 Ubuntu20 kernel: x86/fpu: Enabled xstate features 0x7, context size is 832 bytes, using 'st
oct 04 22:09:08 Ubuntu20 kernel: BIOS-provided physical RAM map:
oct 04 22:09:08 Ubuntu20 kernel: BIOS-e820: [mem 0x0000000000000000-0x000000000009fbff] usable
oct 04 22:09:08 Ubuntu20 kernel: BIOS-e820: [mem 0x000000000009fc00-0x000000000009ffff] reserved
oct 04 22:09:08 Ubuntu20 kernel: BIOS-e820: [mem 0x00000000000f0000-0x00000000000fffff] reserved
oct 04 22:09:08 Ubuntu20 kernel: BIOS-e820: [mem 0x0000000000100000-0x000000007ffeffff] usable
oct 04 22:09:08 Ubuntu20 kernel: BIOS-e820: [mem 0x000000007fff0000-0x000000007fffffff] ACPI data
oct 04 22:09:08 Ubuntu20 kernel: BIOS-e820: [mem 0x00000000fec00000-0x00000000fec00fff] reserved
oct 04 22:09:08 Ubuntu20 kernel: BIOS-e820: [mem 0x00000000fee00000-0x00000000fee00fff] reserved
oct 04 22:09:08 Ubuntu20 kernel: BIOS-e820: [mem 0x00000000fffc0000-0x00000000ffffffff] reserved
oct 04 22:09:08 Ubuntu20 kernel: NX (Execute Disable) protection: active
oct 04 22:09:08 Ubuntu20 kernel: SMBIOS 2.5 present.
oct 04 22:09:08 Ubuntu20 kernel: DMI: innotek GmbH VirtualBox/VirtualBox, BIOS VirtualBox 12/01/2006
oct 04 22:09:08 Ubuntu20 kernel: Hypervisor detected: KVM
oct 04 22:09:08 Ubuntu20 kernel: kvm-clock: Using msrs 4b564d01 and 4b564d00
oct 04 22:09:08 Ubuntu20 kernel: kvm-clock: cpu 0, msr 27e01001, primary cpu clock
oct 04 22:09:08 Ubuntu20 kernel: kvm-clock: using sched offset of 7911465632413 cycles
oct 04 22:09:08 Ubuntu20 kernel: clocksource: kvm-clock: mask: 0xffffffffffffffff max_cycles: 0x1cd42e4dffb
oct 04 22:09:08 Ubuntu20 kernel: tsc: Detected 3493.442 MHz processor
oct 04 22:09:08 Ubuntu20 kernel: e820: update [mem 0x00000000-0x00000fff] usable ==> reserved
```

```
alumno@Ubuntu20:~/Escritorio$ journalctl --since "2015-01-10"
-- Logs begin at Sun 2020-10-04 22:09:08 CEST, end at Wed 2021-10-06 20:55:44 CEST. --
oct 04 22:09:08 Ubuntu20 kernel: Linux version 5.4.0-48-generic (buildd@lcy01-amd64-010) (gcc version 9.3.0>
oct 04 22:09:08 Ubuntu20 kernel: Command line: BOOT_IMAGE=/boot/vmlinuz-5.4.0-48-generic root=UUID=555e64fb>
oct 04 22:09:08 Ubuntu20 kernel: KERNEL supported cpus:
oct 04 22:09:08 Ubuntu20 kernel:   Intel GenuineIntel
oct 04 22:09:08 Ubuntu20 kernel:   AMD AuthenticAMD
oct 04 22:09:08 Ubuntu20 kernel:   Hygon HygonGenuine
oct 04 22:09:08 Ubuntu20 kernel:   Centaur CentaurHauls
oct 04 22:09:08 Ubuntu20 kernel:   zhaoxin   Shanghai
oct 04 22:09:08 Ubuntu20 kernel: [Firmware Bug]: TSC doesn't count with P0 frequency!
oct 04 22:09:08 Ubuntu20 kernel: random: get_random_u32 called from bsp_init_amd+0x217/0x2c0 with crng_init>
oct 04 22:09:08 Ubuntu20 kernel: x86/fpu: Supporting XSAVE feature 0x001: 'x87 floating point registers'
oct 04 22:09:08 Ubuntu20 kernel: x86/fpu: Supporting XSAVE feature 0x002: 'SSE registers'
oct 04 22:09:08 Ubuntu20 kernel: x86/fpu: Supporting XSAVE feature 0x004: 'AVX registers'
oct 04 22:09:08 Ubuntu20 kernel: x86/fpu: xstate_offset[2]:  576, xstate_sizes[2]:  256
oct 04 22:09:08 Ubuntu20 kernel: x86/fpu: Enabled xstate features 0x7, context size is 832 bytes, using 'st>
oct 04 22:09:08 Ubuntu20 kernel: BIOS-provided physical RAM map:
oct 04 22:09:08 Ubuntu20 kernel: BIOS-e820: [mem 0x0000000000000000-0x000000000009fbff] usable
oct 04 22:09:08 Ubuntu20 kernel: BIOS-e820: [mem 0x000000000009fc00-0x000000000009ffff] reserved
oct 04 22:09:08 Ubuntu20 kernel: BIOS-e820: [mem 0x00000000000f0000-0x00000000000fffff] reserved
oct 04 22:09:08 Ubuntu20 kernel: BIOS-e820: [mem 0x0000000000100000-0x00000007ffefffff] usable
oct 04 22:09:08 Ubuntu20 kernel: BIOS-e820: [mem 0x00000007fff0000-0x00000007ffffffff] ACPI data
oct 04 22:09:08 Ubuntu20 kernel: BIOS-e820: [mem 0x00000000fec00000-0x00000000fec00fff] reserved
oct 04 22:09:08 Ubuntu20 kernel: BIOS-e820: [mem 0x00000000fee00000-0x00000000fee00fff] reserved
oct 04 22:09:08 Ubuntu20 kernel: BIOS-e820: [mem 0x00000000fffc0000-0x00000000ffffffff] reserved
oct 04 22:09:08 Ubuntu20 kernel: NX (Execute Disable) protection: active
oct 04 22:09:08 Ubuntu20 kernel: SMBIOS 2.5 present.
oct 04 22:09:08 Ubuntu20 kernel: DMI: innotek GmbH VirtualBox/VirtualBox, BIOS VirtualBox 12/01/2006
oct 04 22:09:08 Ubuntu20 kernel: Hypervisor detected: KVM
oct 04 22:09:08 Ubuntu20 kernel: kvm-clock: Using msrs 4b564d01 and 4b564d00
oct 04 22:09:08 Ubuntu20 kernel: kvm-clock: cpu 0, msr 27e01001, primary cpu clock
oct 04 22:09:08 Ubuntu20 kernel: kvm-clock: using sched offset of 79114656324l3 cycles
```

```
alumno@Ubuntu20:~/Escritorio$ journalctl --since "17:15:00"
-- Logs begin at Sun 2020-10-04 22:09:08 CEST, end at Wed 2021-10-06 20:55:44 CEST. --
oct 06 20:55:05 Ubuntu20 kernel: Linux version 5.4.0-48-generic (buildd@lcy01-amd64-010) (gcc version 9.3.0>
oct 06 20:55:05 Ubuntu20 kernel: Command line: BOOT_IMAGE=/boot/vmlinuz-5.4.0-48-generic root=UUID=555e64fb>
oct 06 20:55:05 Ubuntu20 kernel: KERNEL supported cpus:
oct 06 20:55:05 Ubuntu20 kernel:   Intel GenuineIntel
oct 06 20:55:05 Ubuntu20 kernel:   AMD AuthenticAMD
oct 06 20:55:05 Ubuntu20 kernel:   Hygon HygonGenuine
oct 06 20:55:05 Ubuntu20 kernel:   Centaur CentaurHauls
oct 06 20:55:05 Ubuntu20 kernel:   zhaoxin   Shanghai
oct 06 20:55:05 Ubuntu20 kernel: x86/fpu: Supporting XSAVE feature 0x001: 'x87 floating point registers'
oct 06 20:55:05 Ubuntu20 kernel: x86/fpu: Supporting XSAVE feature 0x002: 'SSE registers'
oct 06 20:55:05 Ubuntu20 kernel: x86/fpu: Supporting XSAVE feature 0x004: 'AVX registers'
oct 06 20:55:05 Ubuntu20 kernel: x86/fpu: xstate_offset[2]:  576, xstate_sizes[2]:  256
oct 06 20:55:05 Ubuntu20 kernel: x86/fpu: Enabled xstate features 0x7, context size is 832 bytes, using 'st>
oct 06 20:55:05 Ubuntu20 kernel: BIOS-provided physical RAM map:
oct 06 20:55:05 Ubuntu20 kernel: BIOS-e820: [mem 0x0000000000000000-0x000000000009fbff] usable
oct 06 20:55:05 Ubuntu20 kernel: BIOS-e820: [mem 0x000000000009fc00-0x000000000009ffff] reserved
oct 06 20:55:05 Ubuntu20 kernel: BIOS-e820: [mem 0x00000000000f0000-0x00000000000fffff] reserved
oct 06 20:55:05 Ubuntu20 kernel: BIOS-e820: [mem 0x0000000000100000-0x00000000417effff] usable
oct 06 20:55:05 Ubuntu20 kernel: BIOS-e820: [mem 0x00000000417f0000-0x00000000417fffff] ACPI data
oct 06 20:55:05 Ubuntu20 kernel: BIOS-e820: [mem 0x00000000fec00000-0x00000000fec00fff] reserved
oct 06 20:55:05 Ubuntu20 kernel: BIOS-e820: [mem 0x00000000fee00000-0x00000000fee00fff] reserved
oct 06 20:55:05 Ubuntu20 kernel: BIOS-e820: [mem 0x00000000fffc0000-0x00000000ffffffff] reserved
oct 06 20:55:05 Ubuntu20 kernel: NX (Execute Disable) protection: active
oct 06 20:55:05 Ubuntu20 kernel: SMBIOS 2.5 present.
oct 06 20:55:05 Ubuntu20 kernel: DMI: innotek GmbH VirtualBox/VirtualBox, BIOS VirtualBox 12/01/2006
oct 06 20:55:05 Ubuntu20 kernel: Hypervisor detected: KVM
oct 06 20:55:05 Ubuntu20 kernel: kvm-clock: Using msrs 4b564d01 and 4b564d00
oct 06 20:55:05 Ubuntu20 kernel: kvm-clock: cpu 0, msr b001001, primary cpu clock
oct 06 20:55:05 Ubuntu20 kernel: kvm-clock: using sched offset of 5297451832 cycles
```

26. ¿Y si quiero ver los mensajes del log desde ayer hasta hace una hora?

```
alumno@Ubuntu20:~/Escritorio$ journalctl --since "2021-10-05"
-- Logs begin at Sun 2020-10-04 22:09:08 CEST, end at Wed 2021-10-06 20:55:44 CEST. --
oct 06 20:55:05 Ubuntu20 kernel: Linux version 5.4.0-48-generic (buildd@lcy01-amd64-010) (gcc version 9.3.0>
oct 06 20:55:05 Ubuntu20 kernel: Command line: BOOT_IMAGE=/boot/vmlinuz-5.4.0-48-generic root=UUID=555e64fb>
oct 06 20:55:05 Ubuntu20 kernel: KERNEL supported cpus:
oct 06 20:55:05 Ubuntu20 kernel:   Intel GenuineIntel
oct 06 20:55:05 Ubuntu20 kernel:   AMD AuthenticAMD
oct 06 20:55:05 Ubuntu20 kernel:   Hygon HygonGenuine
oct 06 20:55:05 Ubuntu20 kernel:   Centaur CentaurHauls
oct 06 20:55:05 Ubuntu20 kernel:   zhaoxin   Shanghai
oct 06 20:55:05 Ubuntu20 kernel: x86/fpu: Supporting XSAVE feature 0x001: 'x87 floating point registers'
oct 06 20:55:05 Ubuntu20 kernel: x86/fpu: Supporting XSAVE feature 0x002: 'SSE registers'
oct 06 20:55:05 Ubuntu20 kernel: x86/fpu: Supporting XSAVE feature 0x004: 'AVX registers'
oct 06 20:55:05 Ubuntu20 kernel: x86/fpu: xstate_offset[2]:  576, xstate_sizes[2]:  256
oct 06 20:55:05 Ubuntu20 kernel: x86/fpu: Enabled xstate features 0x7, context size is 832 bytes, using 'st>
oct 06 20:55:05 Ubuntu20 kernel: BIOS-provided physical RAM map:
oct 06 20:55:05 Ubuntu20 kernel: BIOS-e820: [mem 0x0000000000000000-0x000000000009fbff] usable
oct 06 20:55:05 Ubuntu20 kernel: BIOS-e820: [mem 0x000000000009fc00-0x000000000009ffff] reserved
oct 06 20:55:05 Ubuntu20 kernel: BIOS-e820: [mem 0x00000000000f0000-0x00000000000fffff] reserved
oct 06 20:55:05 Ubuntu20 kernel: BIOS-e820: [mem 0x0000000000100000-0x00000000417effff] usable
oct 06 20:55:05 Ubuntu20 kernel: BIOS-e820: [mem 0x00000000417f0000-0x00000000417fffff] ACPI data
oct 06 20:55:05 Ubuntu20 kernel: BIOS-e820: [mem 0x00000000fec00000-0x00000000fec00fff] reserved
oct 06 20:55:05 Ubuntu20 kernel: BIOS-e820: [mem 0x00000000fee00000-0x00000000fee00fff] reserved
oct 06 20:55:05 Ubuntu20 kernel: BIOS-e820: [mem 0x00000000fffc0000-0x00000000ffffffff] reserved
oct 06 20:55:05 Ubuntu20 kernel: NX (Execute Disable) protection: active
oct 06 20:55:05 Ubuntu20 kernel: SMBIOS 2.5 present.
oct 06 20:55:05 Ubuntu20 kernel: DMI: innotek GmbH VirtualBox/VirtualBox, BIOS VirtualBox 12/01/2006
oct 06 20:55:05 Ubuntu20 kernel: Hypervisor detected: KVM
oct 06 20:55:05 Ubuntu20 kernel: kvm-clock: Using msrs 4b564d01 and 4b564d00
oct 06 20:55:05 Ubuntu20 kernel: kvm-clock: cpu 0, msr b001001, primary cpu clock
oct 06 20:55:05 Ubuntu20 kernel: kvm-clock: using sched offset of 5297451832 cycles
oct 06 20:55:05 Ubuntu20 kernel: clocksource: kvm-clock: mask: 0xffffffffffffffff max_cycles: 0x1cd42e4dffb>
oct 06 20:55:05 Ubuntu20 kernel: tsc: Detected 2495.998 MHz processor
```

27. Utiliza la opción –u para ver los mensajes de la unidad del servicio de red de hoy
journalctl -u NetworkManager.service

```
alumno@Ubuntu20:~/Escritorio$ journalctl -u NetworkManager.service
-- Logs begin at Sun 2020-10-04 22:09:08 CEST, end at Wed 2021-10-06 20:55:44 CEST. --
oct 04 22:09:47 Ubuntu20 systemd[1]: Starting Network Manager...
oct 04 22:09:49 Ubuntu20 NetworkManager[463]: <info>  [1601842189.3485] NetworkManager (version 1.22.10) i
oct 04 22:09:49 Ubuntu20 NetworkManager[463]: <info>  [1601842189.3486] Read config: /etc/NetworkManager/N
oct 04 22:09:49 Ubuntu20 NetworkManager[463]: <info>  [1601842189.5772] bus-manager: acquired D-Bus servic
oct 04 22:09:49 Ubuntu20 systemd[1]: Started Network Manager.
oct 04 22:09:49 Ubuntu20 NetworkManager[463]: <info>  [1601842189.6780] manager[0x559456d52030]: monitorin
oct 04 22:09:49 Ubuntu20 NetworkManager[463]: <info>  [1601842189.6803] monitoring ifupdown state file '/r
oct 04 22:09:51 Ubuntu20 NetworkManager[463]: <info>  [1601842191.3182] hostname: hostname: using hostname
oct 04 22:09:51 Ubuntu20 NetworkManager[463]: <info>  [1601842191.3182] hostname: hostname changed from (n
oct 04 22:09:51 Ubuntu20 NetworkManager[463]: <info>  [1601842191.3187] dns-mgr[0x559456d37290]: init: dns
oct 04 22:09:51 Ubuntu20 NetworkManager[463]: <info>  [1601842191.3452] manager[0x559456d52030]: rfkill: W
oct 04 22:09:51 Ubuntu20 NetworkManager[463]: <info>  [1601842191.3453] manager[0x559456d52030]: rfkill: W
oct 04 22:09:51 Ubuntu20 NetworkManager[463]: <info>  [1601842191.3869] Loaded device plugin: NMAtmManager
oct 04 22:09:51 Ubuntu20 NetworkManager[463]: <info>  [1601842191.4347] Loaded device plugin: NMTeamFactor
oct 04 22:09:51 Ubuntu20 NetworkManager[463]: <info>  [1601842191.4768] Loaded device plugin: NMWwanFactor
oct 04 22:09:51 Ubuntu20 NetworkManager[463]: <info>  [1601842191.4979] Loaded device plugin: NMWifiFactor
oct 04 22:09:51 Ubuntu20 NetworkManager[463]: <info>  [1601842191.5448] Loaded device plugin: NMBluezManag
oct 04 22:09:51 Ubuntu20 NetworkManager[463]: <info>  [1601842191.5455] manager: rfkill: Wi-Fi enabled by
oct 04 22:09:51 Ubuntu20 NetworkManager[463]: <info>  [1601842191.5456] manager: rfkill: WWAN enabled by r
oct 04 22:09:51 Ubuntu20 NetworkManager[463]: <info>  [1601842191.5489] manager: Networking is enabled by
oct 04 22:09:51 Ubuntu20 NetworkManager[463]: <info>  [1601842191.5509] dhcp-init: Using DHCP client 'inte
oct 04 22:09:51 Ubuntu20 NetworkManager[463]: <info>  [1601842191.5642] settings: Loaded settings plugin:
oct 04 22:09:51 Ubuntu20 NetworkManager[463]: <info>  [1601842191.5645] settings: Loaded settings plugin:
oct 04 22:09:51 Ubuntu20 NetworkManager[463]: <info>  [1601842191.5646] ifupdown: management mode: unmanag
oct 04 22:09:51 Ubuntu20 NetworkManager[463]: <warn>  [1601842191.5653] ifupdown: interfaces file /etc/net
oct 04 22:09:51 Ubuntu20 NetworkManager[463]: <info>  [1601842191.5903] device (lo): carrier: link connect
oct 04 22:09:51 Ubuntu20 NetworkManager[463]: <info>  [1601842191.5908] manager: (lo): new Generic device
oct 04 22:09:51 Ubuntu20 NetworkManager[463]: <info>  [1601842191.6250] manager: (enp0s3): new Ethernet de
```

28. ¿Y si sólo quiero ver los mensajes de warning?

journalctl -p 4

```
alumno@Ubuntu20:~/Escritorio$ journalctl -p 4
-- Logs begin at Sun 2020-10-04 22:09:08 CEST, end at Wed 2021-10-06 20:55:44 CEST. --
oct 04 22:09:08 Ubuntu20 kernel: [Firmware Bug]: TSC doesn't count with P0 frequency!
oct 04 22:09:08 Ubuntu20 kernel: APIC calibration not consistent with PM-Timer: 98ms instead of 100ms
oct 04 22:09:08 Ubuntu20 kernel: platform eisa.0: EISA: Cannot allocate resource for mainboard
oct 04 22:09:08 Ubuntu20 kernel: platform eisa.0: Cannot allocate resource for EISA slot 1
oct 04 22:09:08 Ubuntu20 kernel: platform eisa.0: Cannot allocate resource for EISA slot 2
oct 04 22:09:08 Ubuntu20 kernel: platform eisa.0: Cannot allocate resource for EISA slot 3
oct 04 22:09:08 Ubuntu20 kernel: platform eisa.0: Cannot allocate resource for EISA slot 4
oct 04 22:09:08 Ubuntu20 kernel: platform eisa.0: Cannot allocate resource for EISA slot 5
oct 04 22:09:08 Ubuntu20 kernel: platform eisa.0: Cannot allocate resource for EISA slot 6
oct 04 22:09:08 Ubuntu20 kernel: platform eisa.0: Cannot allocate resource for EISA slot 7
oct 04 22:09:08 Ubuntu20 kernel: platform eisa.0: Cannot allocate resource for EISA slot 8
oct 04 22:09:08 Ubuntu20 kernel: [drm:vmw_host_log [vmwgfx]] *ERROR* Failed to send host log message.
oct 04 22:09:08 Ubuntu20 kernel: [drm:vmw_host_log [vmwgfx]] *ERROR* Failed to send host log message.
oct 04 22:09:10 Ubuntu20 kernel: vboxguest: loading out-of-tree module taints kernel.
oct 04 22:09:10 Ubuntu20 kernel: vgdrvHeartbeatInit: Setting up heartbeat to trigger every 2000 milliseco
oct 04 22:09:10 Ubuntu20 kernel: vboxguest: Successfully loaded version 6.1.10_Ubuntu
oct 04 22:09:10 Ubuntu20 kernel: vboxguest: misc device minor 58, IRQ 20, I/O port d040, MMIO at 00000000
oct 04 22:09:18 Ubuntu20 systemd-udevd[271]: controlC0: Process '/usr/sbin/alsactl -E HOME=/run/alsa -E X
oct 04 22:09:46 Ubuntu20 kernel: kauditd_printk_skb: 1 callbacks suppressed
oct 04 22:09:48 Ubuntu20 /usr/sbin/irqbalance[484]: Balancing is ineffective on systems with a single cpu
oct 04 22:09:49 Ubuntu20 udisksd[501]: failed to load module mdraid: libbd_mdraid.so.2: cannot open share
oct 04 22:09:49 Ubuntu20 udisksd[501]: Failed to load the 'mdraid' libblockdev plugin
oct 04 22:09:51 Ubuntu20 NetworkManager[463]: <warn>  [1601842191.5653] ifupdown: interfaces file /etc/ne
oct 04 22:09:51 Ubuntu20 NetworkManager[463]: <warn>  [1601842191.8363] Error: failed to open /run/networ
oct 04 22:09:52 Ubuntu20 systemd-resolved[403]: Server returned error NXDOMAIN, mitigating potential DNS
oct 04 22:09:52 Ubuntu20 systemd[1]: kerneloops.service: Found left-over process 636 (kerneloops) in cont
oct 04 22:09:52 Ubuntu20 systemd[1]: This usually indicates unclean termination of a previous run, or ser
oct 04 22:09:53 Ubuntu20 tracker-miner-f[690]: Unable to get XDG user directory path for special director
oct 04 22:09:53 Ubuntu20 tracker-miner-f[690]: Unable to get XDG user directory path for special director
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```

29. Prueba journalctl -F _UID y después journalctl _UID=1000 --since today. Consulta la página del manual man systemd.journal-fields y entiende la utilidad de estas opciones.

```
alumno@Ubuntu20:~/Escritorio$ journalctl -F _UID
115
104
0
101
103
125
102
120
122
121
111
1000
```

```
alumno@Ubuntu20:~/Escritorio$ journalctl _UID=1000 --since today
-- Logs begin at Sun 2020-10-04 22:09:08 CEST, end at Wed 2021-10-06 20:55:44 CEST. --
oct 06 19:09:22 Ubuntu20 systemd[1447]: Started Pending report trigger for Ubuntu Report.
oct 06 19:09:22 Ubuntu20 systemd[1447]: Reached target Paths.
oct 06 19:09:22 Ubuntu20 systemd[1447]: Reached target Timers.
oct 06 19:09:22 Ubuntu20 systemd[1447]: Starting D-Bus User Message Bus Socket.
oct 06 19:09:22 Ubuntu20 systemd[1447]: Listening on GnuPG network certificate management daemon.
oct 06 19:09:22 Ubuntu20 systemd[1447]: Listening on GnuPG cryptographic agent and passphrase cache (access>
oct 06 19:09:22 Ubuntu20 systemd[1447]: Listening on GnuPG cryptographic agent and passphrase cache (restri>
oct 06 19:09:22 Ubuntu20 systemd[1447]: Listening on GnuPG cryptographic agent (ssh-agent emulation).
oct 06 19:09:22 Ubuntu20 systemd[1447]: Listening on GnuPG cryptographic agent and passphrase cache.
oct 06 19:09:22 Ubuntu20 systemd[1447]: Listening on debconf communication socket.
oct 06 19:09:22 Ubuntu20 systemd[1447]: Listening on Sound System.
oct 06 19:09:22 Ubuntu20 systemd[1447]: Listening on REST API socket for snapd user session agent.
oct 06 19:09:22 Ubuntu20 systemd[1447]: Listening on D-Bus User Message Bus Socket.
oct 06 19:09:22 Ubuntu20 systemd[1447]: Reached target Sockets.
oct 06 19:09:22 Ubuntu20 systemd[1447]: Reached target Basic System.
oct 06 19:09:22 Ubuntu20 systemd[1447]: Starting Sound Service...
oct 06 19:09:22 Ubuntu20 systemd[1447]: Starting Tracker metadata extractor...
oct 06 19:09:22 Ubuntu20 systemd[1447]: Starting Tracker file system data miner...
oct 06 19:09:22 Ubuntu20 tracker-extract[1454]: Set scheduler policy to SCHED_IDLE
oct 06 19:09:22 Ubuntu20 tracker-extract[1454]: Setting priority nice level to 19
oct 06 19:09:22 Ubuntu20 systemd[1447]: Started D-Bus User Message Bus.
oct 06 19:09:22 Ubuntu20 tracker-miner-f[1455]: Set scheduler policy to SCHED_IDLE
oct 06 19:09:22 Ubuntu20 tracker-miner-f[1455]: Setting priority nice level to 19
oct 06 19:09:22 Ubuntu20 dbus-daemon[1462]: [session uid=1000 pid=1462] AppArmor D-Bus mediation is enabled
oct 06 19:09:22 Ubuntu20 dbus-daemon[1462]: [session uid=1000 pid=1462] Activating via systemd: service nam>
oct 06 19:09:22 Ubuntu20 systemd[1447]: Starting Virtual filesystem service...
oct 06 19:09:22 Ubuntu20 /usr/lib/gdm3/gdm-x-session[1470]: (--) Log file renamed from "/home/alumno/.local>
oct 06 19:09:22 Ubuntu20 /usr/lib/gdm3/gdm-x-session[1470]: X.Org X Server 1.20.8
oct 06 19:09:22 Ubuntu20 /usr/lib/gdm3/gdm-x-session[1470]: X Protocol Version 11, Revision 0
oct 06 19:09:22 Ubuntu20 /usr/lib/gdm3/gdm-x-session[1470]: Build Operating System: Linux 4.15.0-115-generi>
oct 06 19:09:22 Ubuntu20 /usr/lib/gdm3/gdm-x-session[1470]: Current Operating System: Linux Ubuntu20 5.4.0->
oct 06 19:09:22 Ubuntu20 /usr/lib/gdm3/gdm-x-session[1470]: Kernel command line: BOOT_IMAGE=/boot/vmlinuz-5>
oct 06 19:09:22 Ubuntu20 /usr/lib/gdm3/gdm-x-session[1470]: Build Date: 04 September 2020  01:34:27PM
```

30. ¿Cómo puedo ver los mensajes de advertencia del servicio de red desde esta mañana a las 9:00 en formato json legible por personas?

31. Ejecuta journalctl --disk-usage para ver el espacio en disco que está ocupando journalctl

```
alumno@Ubuntu20:~/Escritorio$ journalctl --disk-usage
Archived and active journals take up 128.0M in the file system.
alumno@Ubuntu20:~/Escritorio$ journalctl --disk-usage
```

32. ¿Cómo podría reducir el tamaño ocupado por los logs a 1GB? ¿Y si quiero que se eliminen todos los mensajes de log anteriores a un año?
journalctl --vacuum-size=1G

```
alumno@Ubuntu20:~/Escritorio$ sudo journalctl --vacuum-size=1G
[sudo] contraseña para alumno:
Vacuuming done, freed 0B of archived journals from /var/log/journal.
Vacuuming done, freed 0B of archived journals from /var/log/journal/75559a01a6cd40b385d099099b162eef.
Vacuuming done, freed 0B of archived journals from /run/log/journal.
alumno@Ubuntu20:~/Escritorio$
```

journalctl --vacuum-time=1years

```
alumno@Ubuntu20:~/Escritorio$ sudo journalctl --vacuum-time=1years
Deleted archived journal /var/log/journal/75559a01a6cd40b385d099099b162eef/system@f846a5c236fa4e0d87d3c011a9
cb2e02-0000000000000001-0005b0ddf039b184.journal (8.0M).
Deleted archived journal /var/log/journal/75559a01a6cd40b385d099099b162eef/system@f846a5c236fa4e0d87d3c011a9
cb2e02-00000000000004ce-0005b0ddf40f0bca.journal (8.0M).
Deleted archived journal /var/log/journal/75559a01a6cd40b385d099099b162eef/user-1000@75f1d7c0c2464391997f570
3a6898321-00000000000005b9-0005b0de2e1195f1.journal (8.0M).
Deleted archived journal /var/log/journal/75559a01a6cd40b385d099099b162eef/system@f846a5c236fa4e0d87d3c011a9
cb2e02-0000000000001205-0005b0df49489eb3.journal (8.0M).
Vacuuming done, freed 32.0M of archived journals from /var/log/journal/75559a01a6cd40b385d099099b162eef.
Vacuuming done, freed 0B of archived journals from /run/log/journal.
Vacuuming done, freed 0B of archived journals from /var/log/journal.
alumno@Ubuntu20:~/Escritorio$
```