EJERCICIO

Presenta la documentación que explique, detalladamente, la instalación y configuración de un Servidor DHCP con las siguientes características:

Servirá direcciones IP del dominio "asisomos.net".

Este dominio tendrá direcciones dentro del rango 172.16.0.0/16.

Direcciones especiales:

Puerta de enlace: 172.16.0.1/16

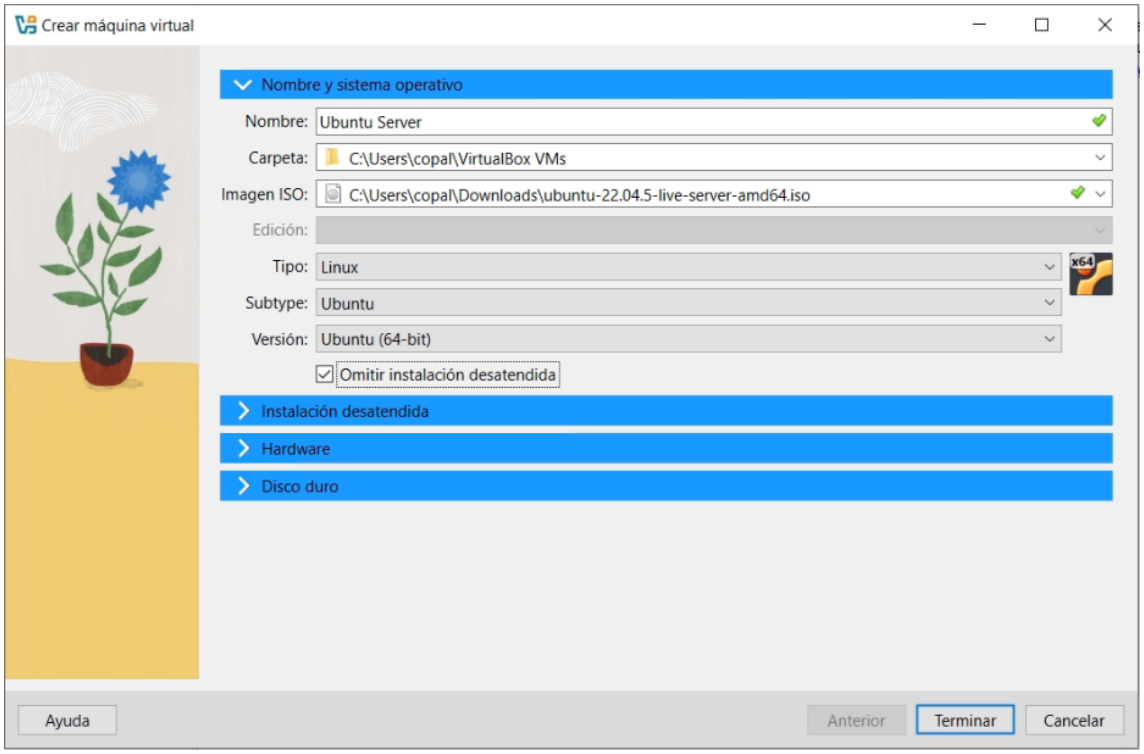
Servidores DNS: 192.168.8.1 y 192.168.8.2

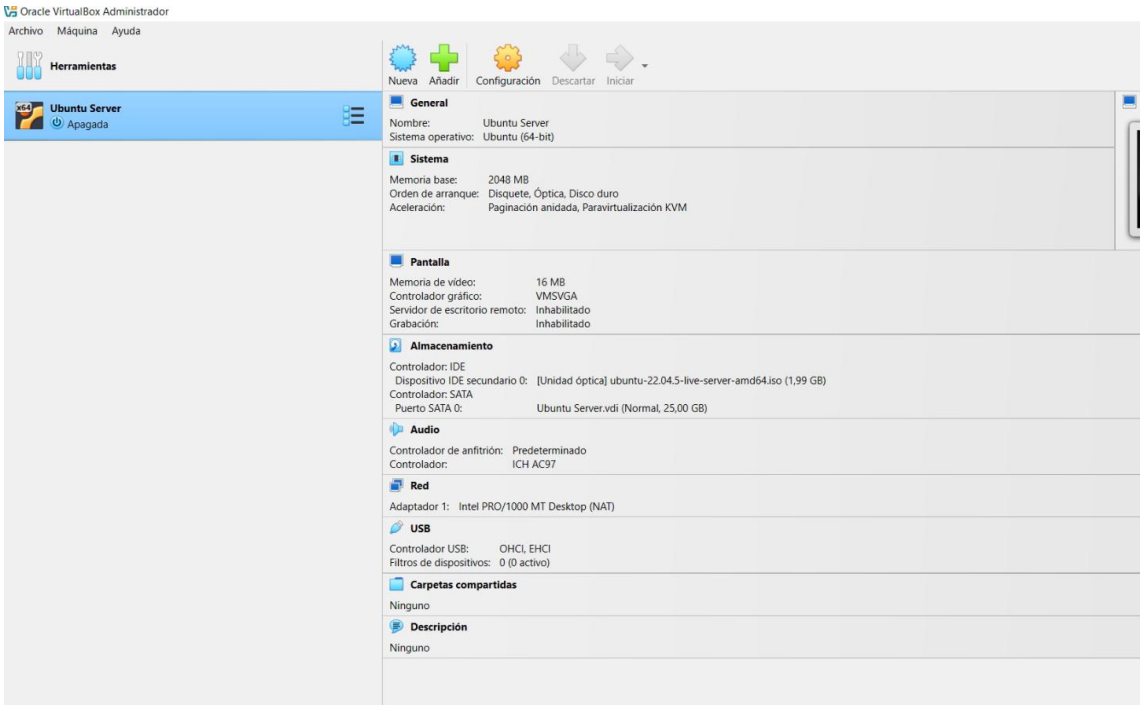
Se asignarán direcciones del rango 172.16.0.10 a la 172.16.0.100

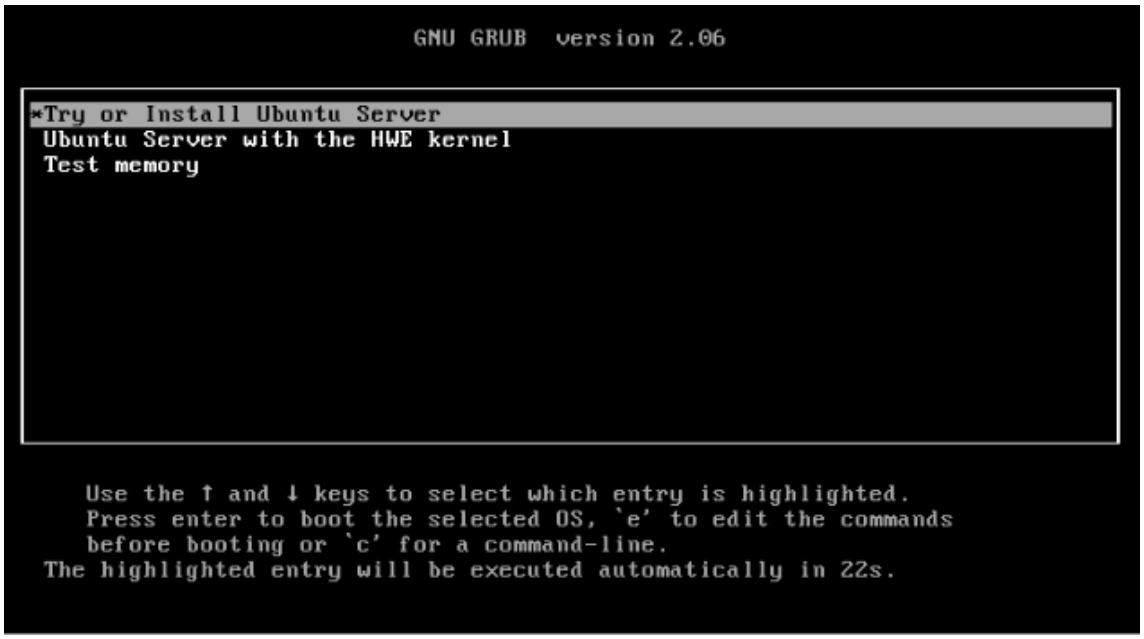
La máquina de nombre "superstation", con MAC 00:05:5D:4D:08:11, recibirá siempre la dirección 172.16.0.25/16.

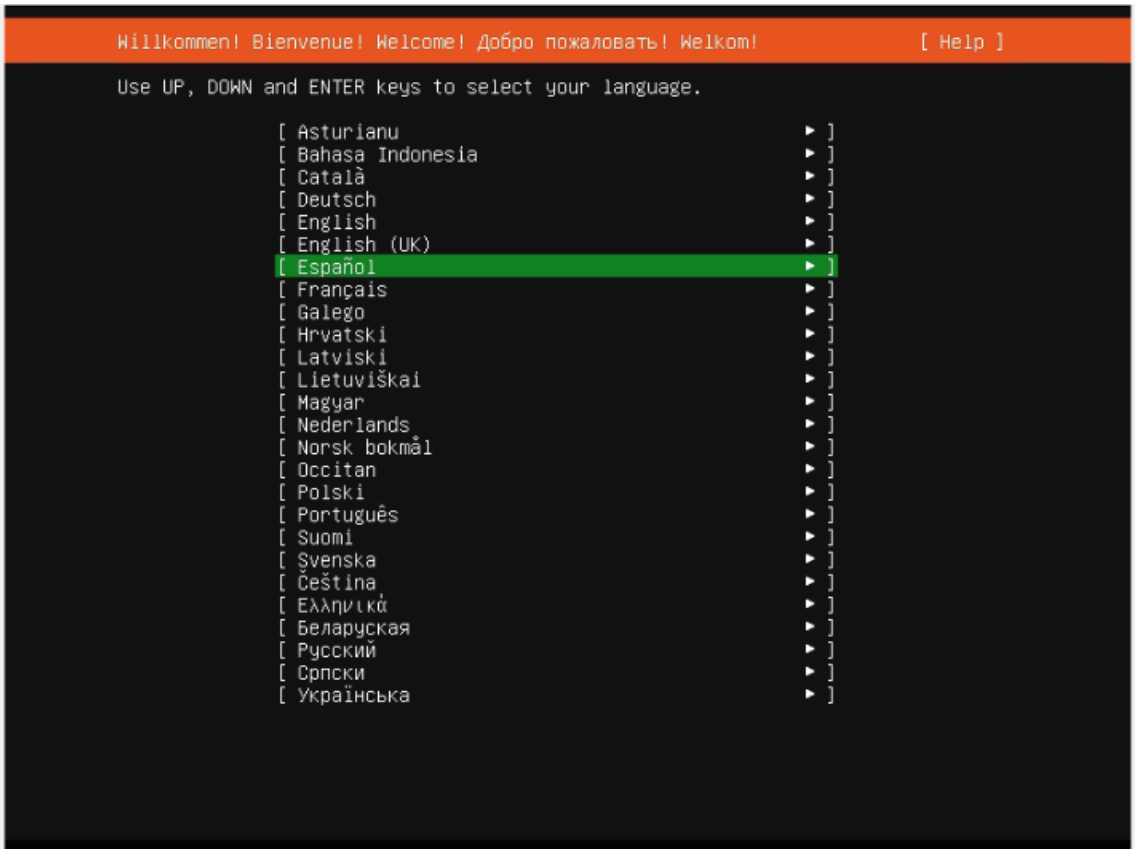
Podrías hacer un resumen de todo con capturas de procesos lo hago con máquina virtual virtualbox detalle todos los procesos que hacer que hacer

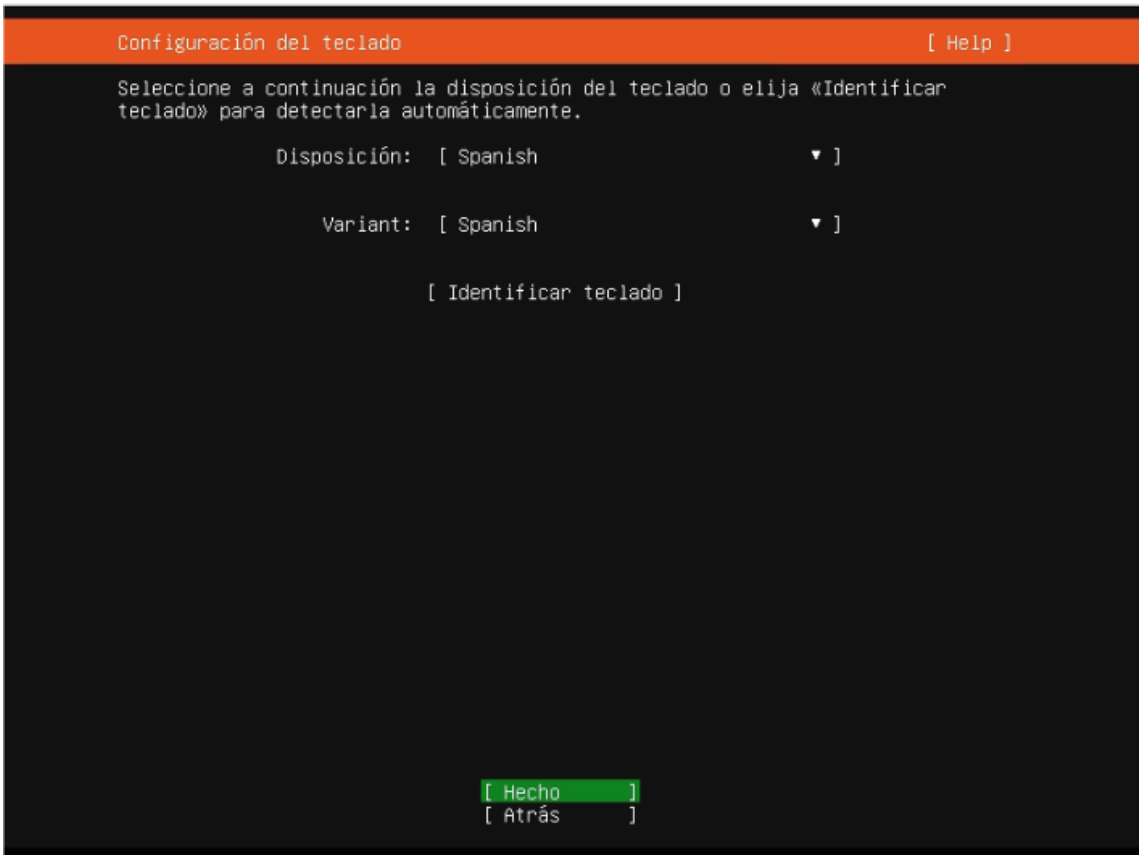
SERVIDOR

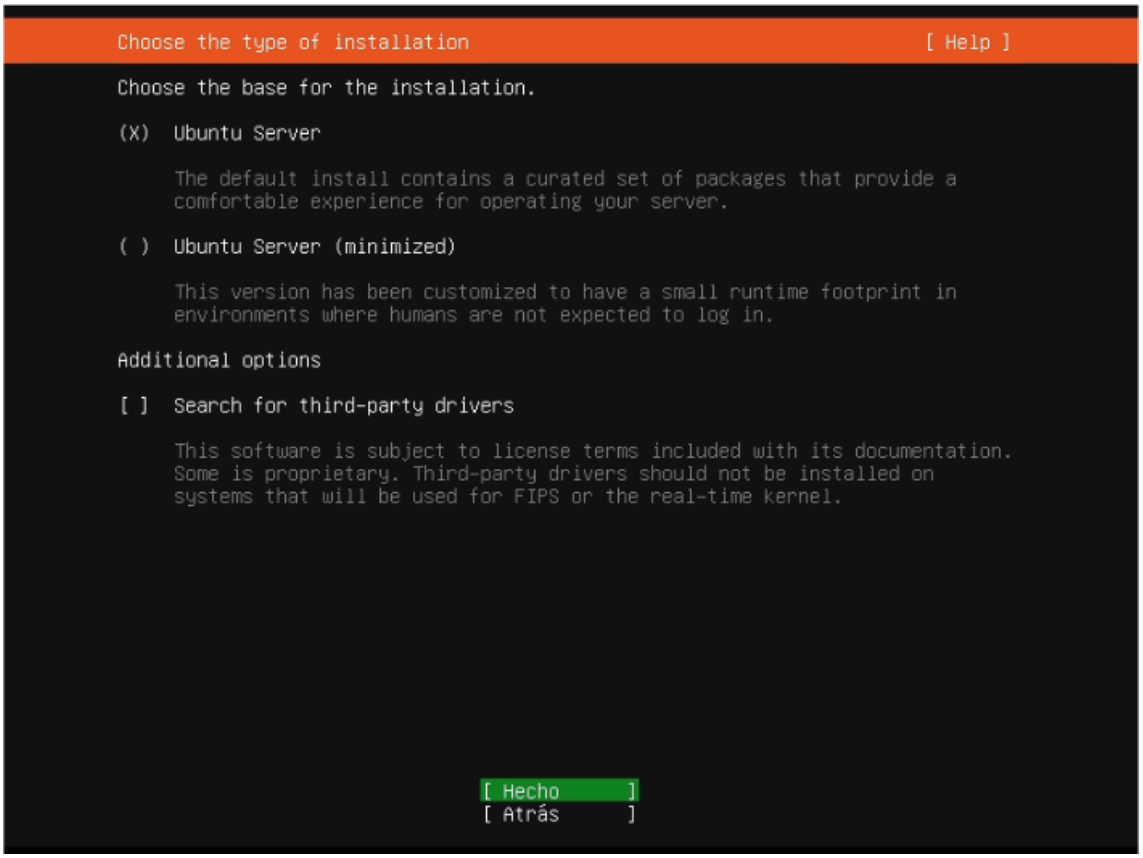

Crear máquina virtual
Nombre y sistema operativo
Nombre: Ubuntu Server
Carpeta: C:\Users\copal\VirtualBox VMs
Imagen ISO: C:\Users\copal\Downloads\ubuntu-22.04.5-live-server-amd64.iso
Edición:
Tipo: Linux
Subtype: Ubuntu
Versión: Ubuntu (64-bit)
Omitir instalación desatendida
Instalación desatendida
Hardware
Disco duro
Ayuda
Anterior
Terminar
Cancelar

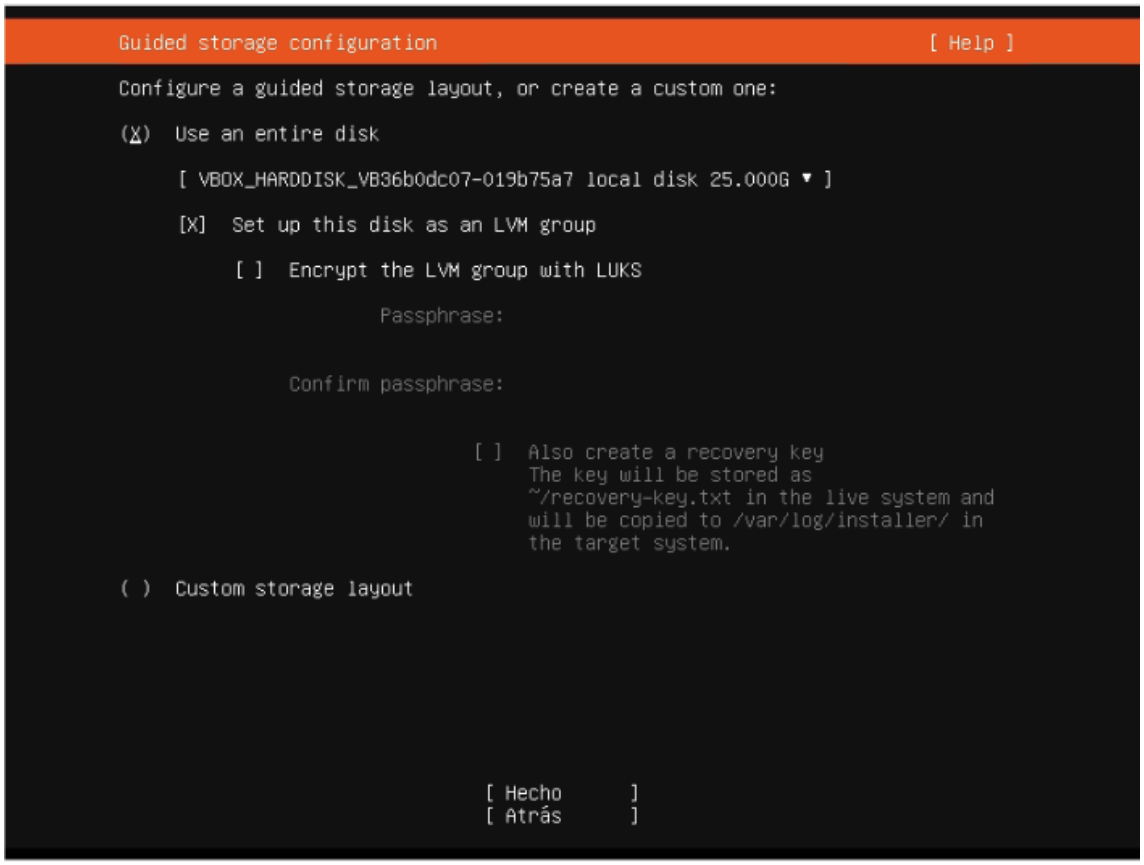

Oracle VirtualBox Administrador
Archivo Máquina Ayuda
Herramientas
Ubuntu Server
Apagada
Nueva Añadir Configuración Descartar Iniciar
General
Nombre: Ubuntu Server
Sistema operativo: Ubuntu (64-bit)
Sistema
Memoria base: 2048 MB
Orden de arranque: Disquete, Óptica, Disco duro
Aceleración: Paginación anidada, Paravirtualización KVM
Pantalla
Memoria de vídeo: 16 MB
Controlador gráfico: VMSVGA
Servidor de escritorio remoto: Inhabilitado
Grabación: Inhabilitado
Almacenamiento
Controlador: IDE
Dispositivo IDE secundario 0: [Unidad óptica] ubuntu-22.04.5-live-server-amd64.iso (1,99 GB)
Controlador: SATA
Puerto SATA 0: Ubuntu Server.vdi (Normal, 25,00 GB)
Audio
Controlador de anfitrión: Predeterminado
Controlador: ICH AC97
Red
Adaptador 1: Intel PRO/1000 MT Desktop (NAT)
USB
Controlador USB: OHCI, EHCI
Filtros de dispositivos: 0 (0 activo)
Carpetas compartidas
Ninguno
Descripción
Ninguno

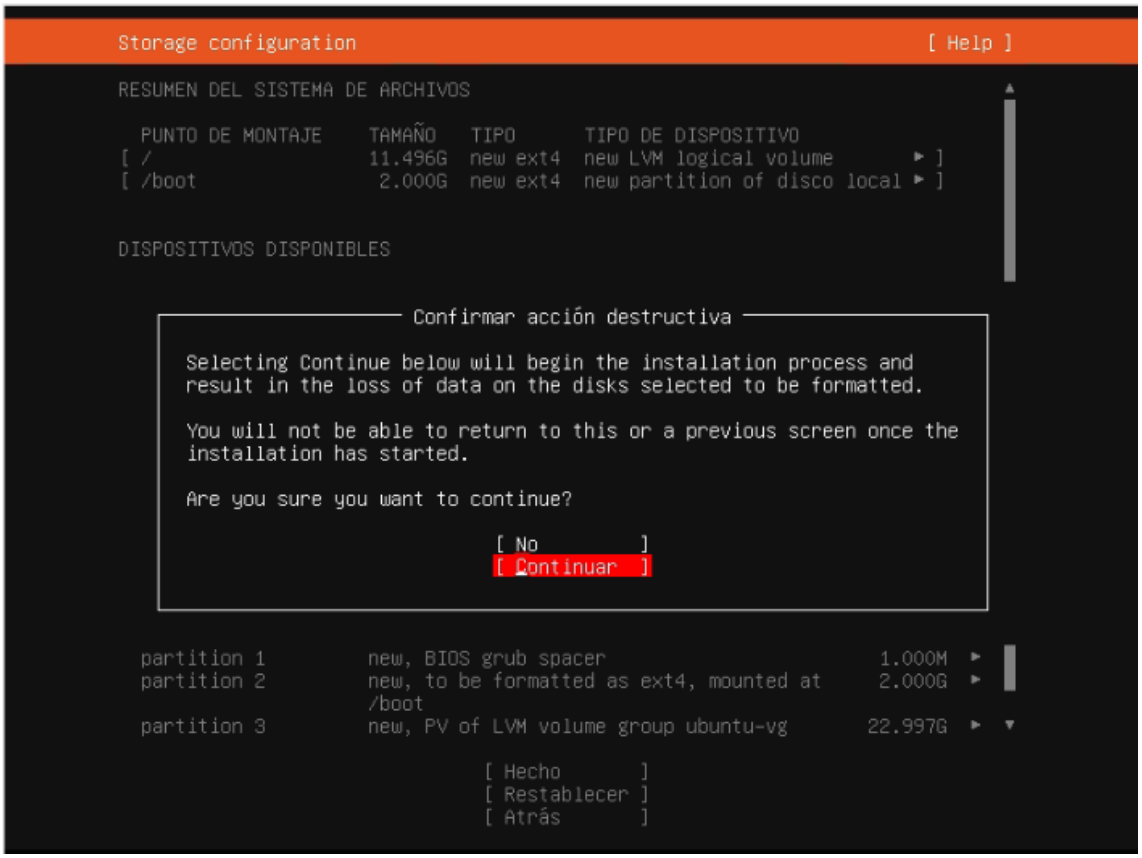

GNU GRUB version 2.06
*Try or Install Ubuntu Server
Ubuntu Server with the HWE kernel
Test memory
Use the ↑ and ↓ keys to select which entry is highlighted.
Press enter to boot the selected OS, `e' to edit the commands
before booting or `c' for a command-line.
The highlighted entry will be executed automatically in 22s.

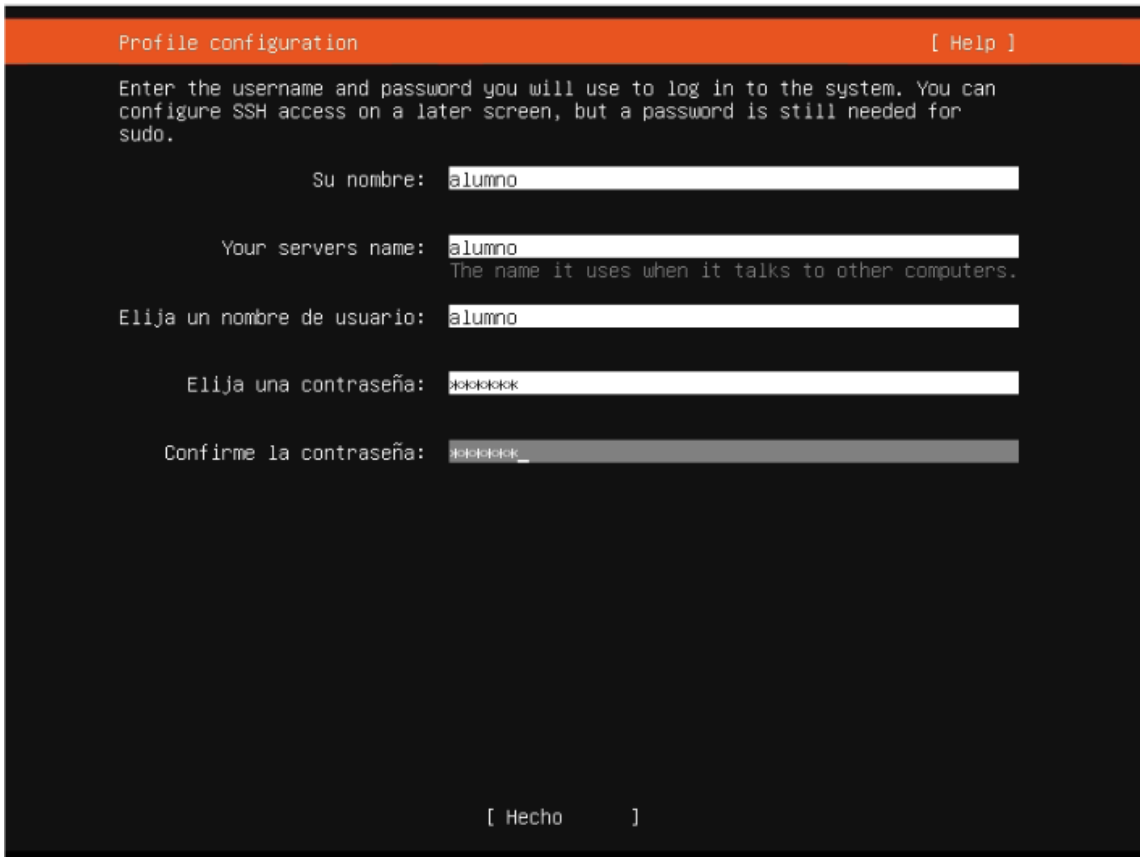

Willkommen! Bienvenue! Welcome! Добро пожаловать! Welkom!
[Help]
Use UP, DOWN and ENTER keys to select your language.
[Asturianu ▸]
[Bahasa Indonesia ▸]
[Català ▸]
[Deutsch ▸]
[English ▸]
[English (UK) ▸]
[Español ▸]
[Français ▸]
[Galego ▸]
[Hrvatski ▸]
[Latviski ▸]
[Lietuviškai ▸]
[Magyar ▸]
[Nederlands ▸]
[Norsk bokmål ▸]
[Occitan ▸]
[Polski ▸]
[Português ▸]
[Suomi ▸]
[Svenska ▸]
[Čeština ▸]
[Ελληνικά ▸]
[Беларуская ▸]
[Русский ▸]
[Српски ▸]
[Українська ▸]

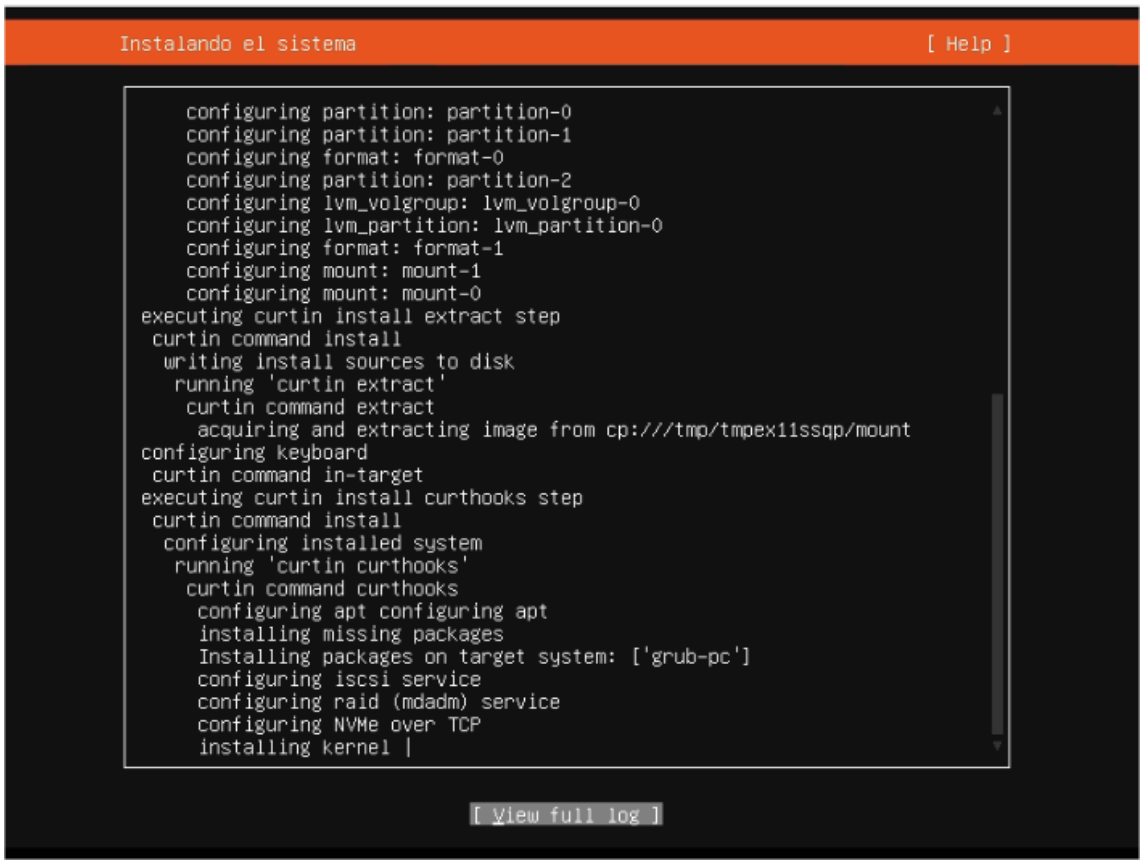

Configuración del teclado
[Help]
Seleccione a continuación la disposición del teclado o elija «Identificar teclado» para detectarla automáticamente.
Disposición: [Spanish ▾]
Variant: [Spanish ▾]
[Identificar teclado]
[Hecho]
[Atrás]


Choose the type of installation
[Help]
Choose the base for the installation.
(X) Ubuntu Server
The default install contains a curated set of packages that provide a comfortable experience for operating your server.
( ) Ubuntu Server (minimized)
This version has been customized to have a small runtime footprint in environments where humans are not expected to log in.
Additional options
[ ] Search for third-party drivers
This software is subject to license terms included with its documentation. Some is proprietary. Third-party drivers should not be installed on systems that will be used for FIPS or the real-time kernel.
[Hecho]
[Atrás]


Guided storage configuration
[Help]
Configure a guided storage layout, or create a custom one:
(X) Use an entire disk
[VBOX_HARDDISK_VB36b0dc07-019b75a7 local disk 25.000G ▾]
[X] Set up this disk as an LVM group
[ ] Encrypt the LVM group with LUKS
Passphrase:
Confirm passphrase:
[ ] Also create a recovery key
The key will be stored as
~/recovery-key.txt in the live system and
will be copied to /var/log/installer/ in
the target system.
( ) Custom storage layout
[Hecho]
[Atrás]


Storage configuration
[Help]
RESUMEN DEL SISTEMA DE ARCHIVOS
PUNTO DE MONTAJE TAMAÑO TIPO TIPO DE DISPOSITIVO
[/ 11.496G new ext4 new LVM logical volume ▸]
[/boot 2.000G new ext4 new partition of disco local ▸]
DISPOSITIVOS DISPONIBLES
Confirmar acción destructiva
Selecting Continue below will begin the installation process and
result in the loss of data on the disks selected to be formatted.
You will not be able to return to this or a previous screen once the
installation has started.
Are you sure you want to continue?
[No]
[Continuar]
partition 1 new, BIOS grub spacer 1.000M ▸
partition 2 new, to be formatted as ext4, mounted at /boot 2.000G ▸
partition 3 new, PV of LVM volume group ubuntu-vg 22.997G ▸
[Hecho]
[Restablecer]
[Atrás]

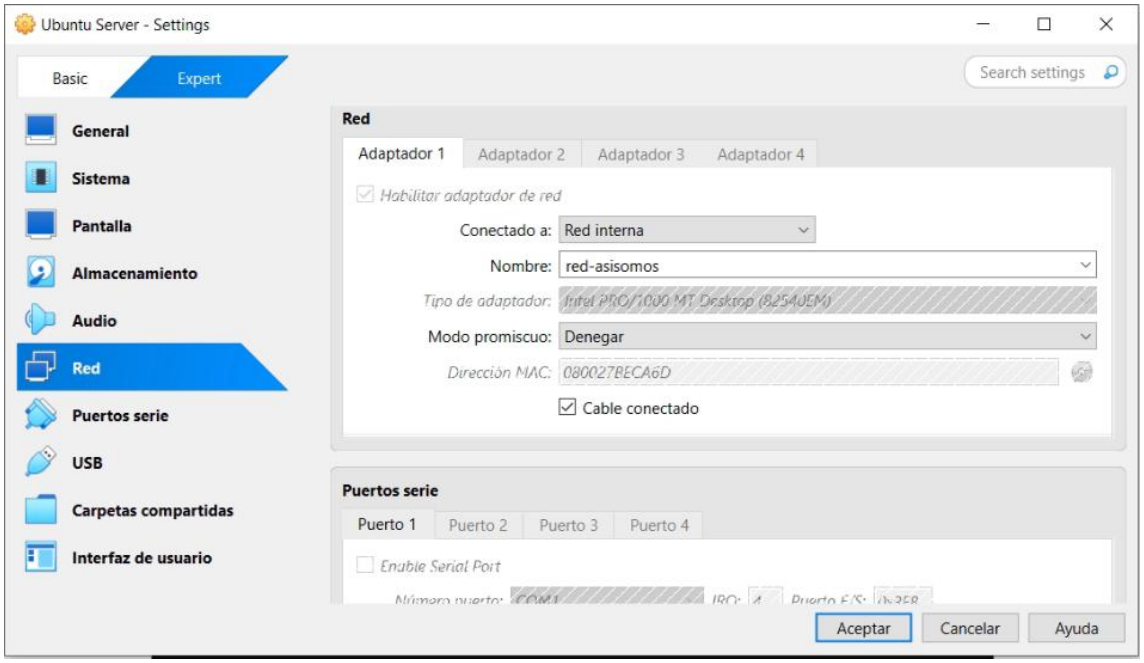




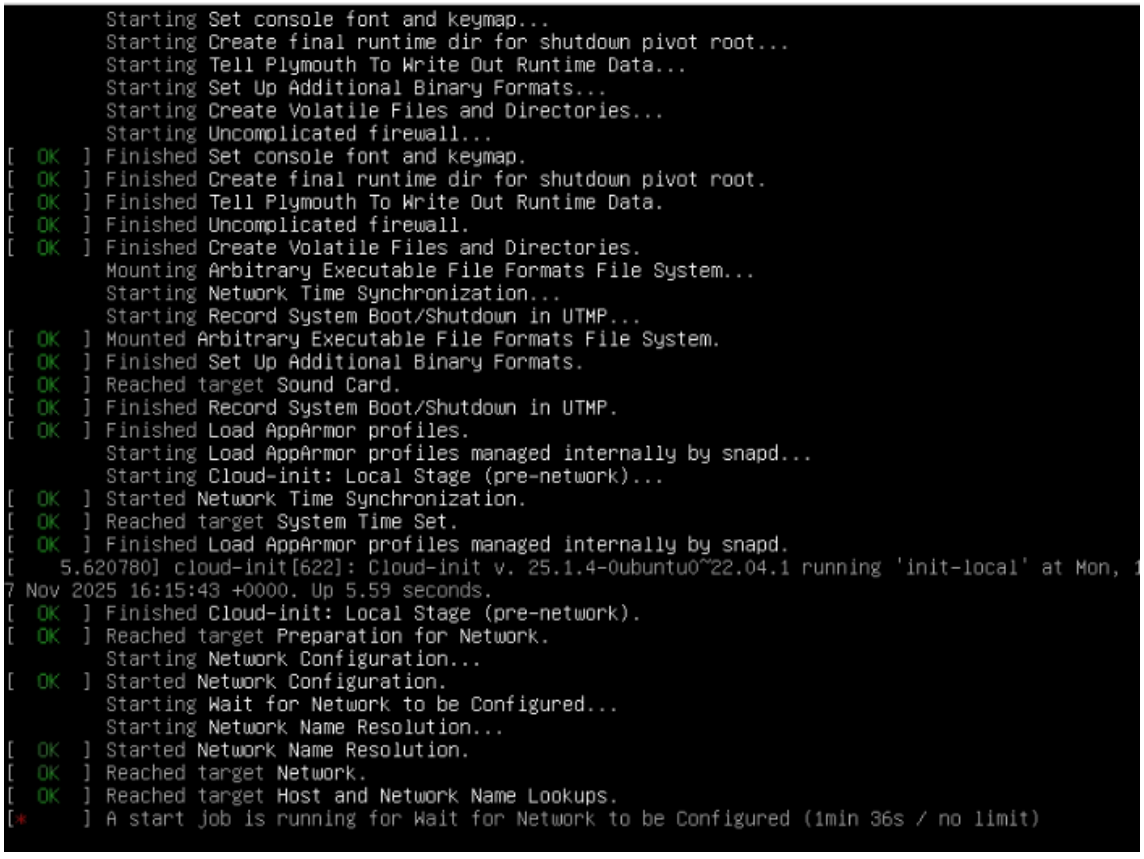
INSTALAMOS VirtualBox Extension Pack

SIRVE PARA EXTENDER ALGUNAS FUNCIONALIDADES QUE POR DEFECTO, VIRTUALBOX NO TRAE.

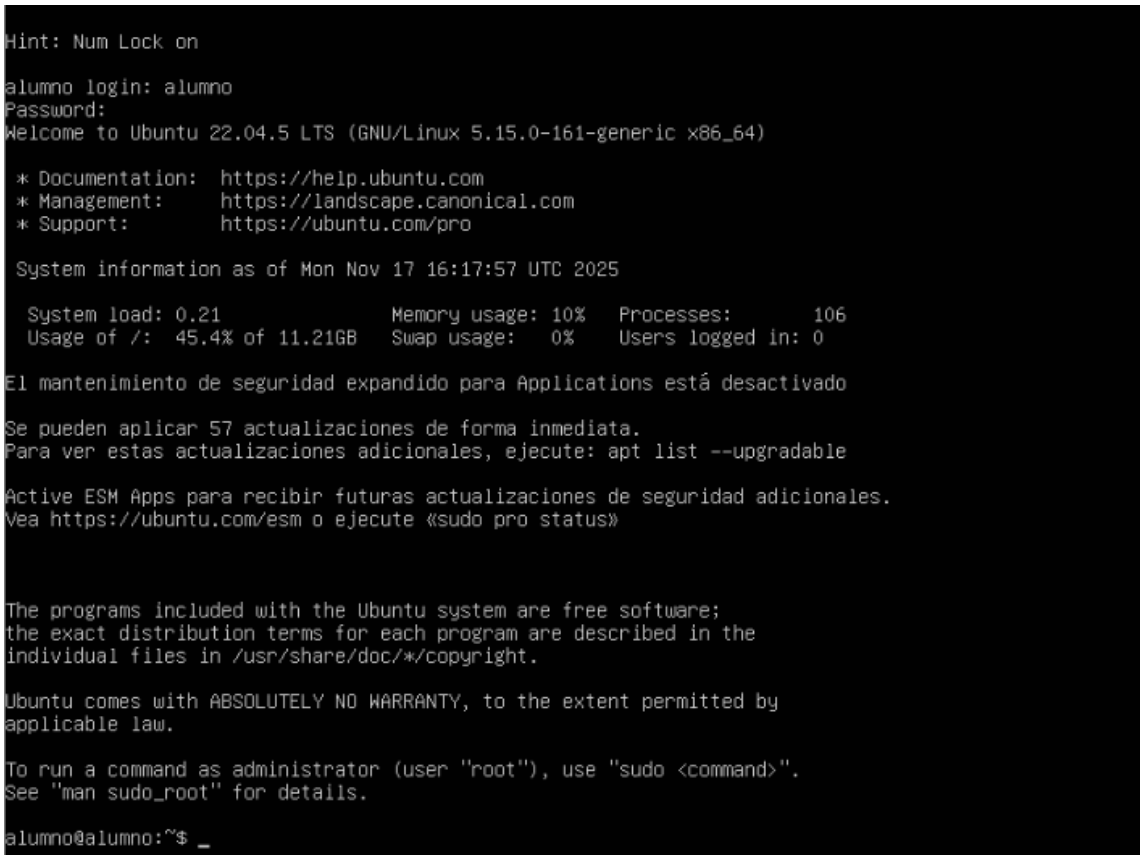
CAMBIO LA INTERFAZ DE RED



CUANDO INICIA

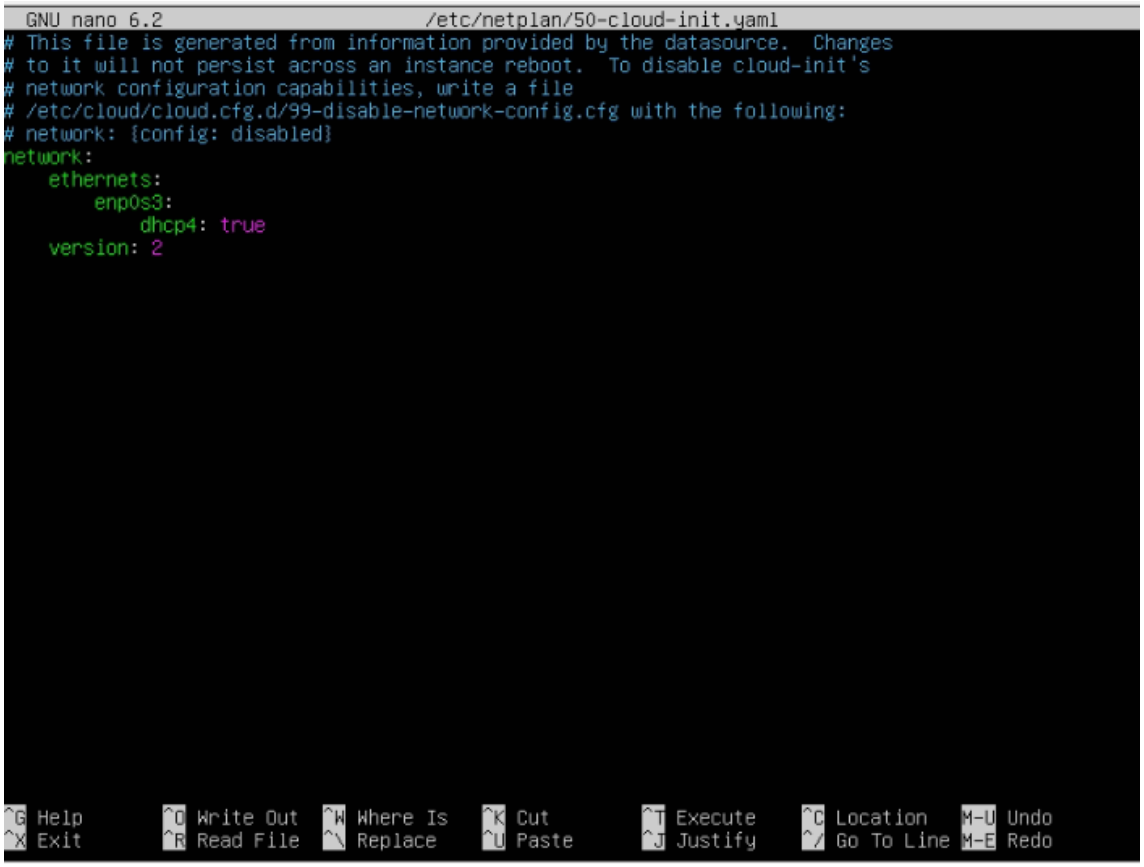


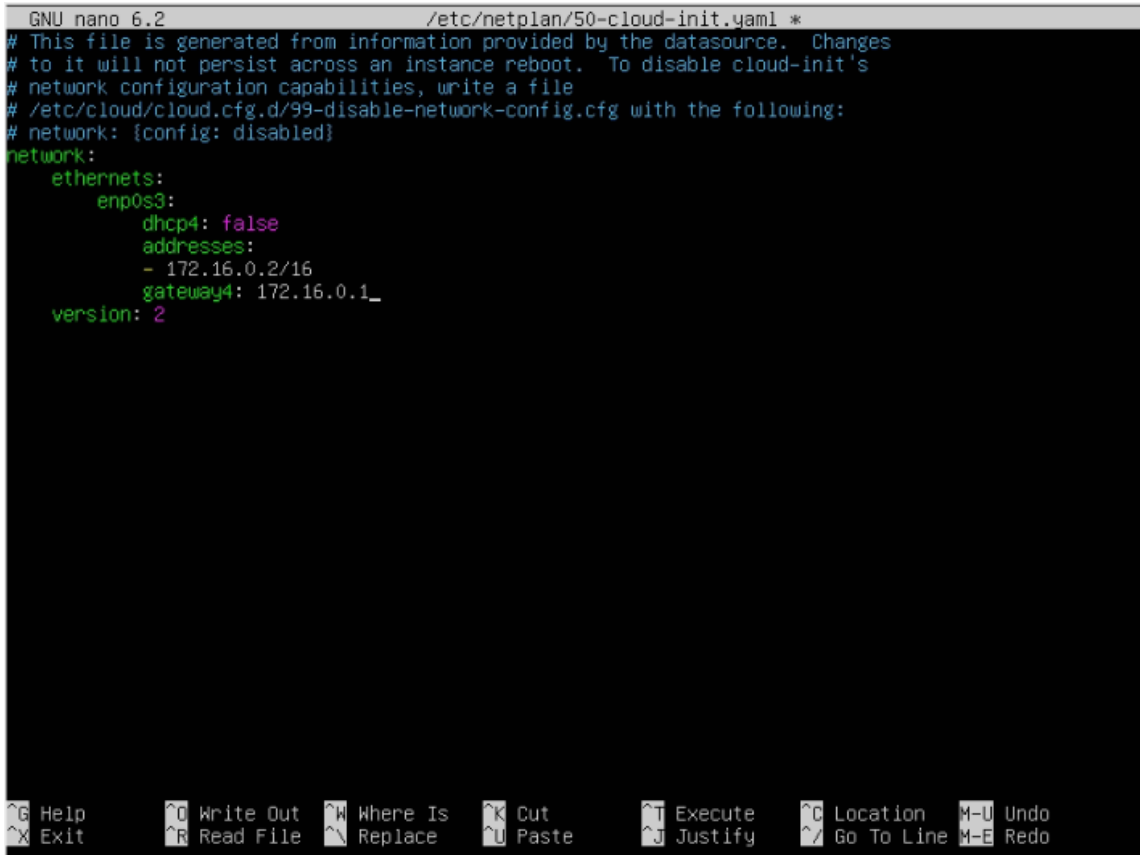
SE ESPERA 120 SEGUNDOS PARA QUE SE CANCELE EL PROCESO.




```
alumno@alumno:~$ sudo nano /etc/netplan/50-cloud-init.yaml
```

ARCHIVO POR DEFECTO:





CTRL+O Para guardar el archivo.

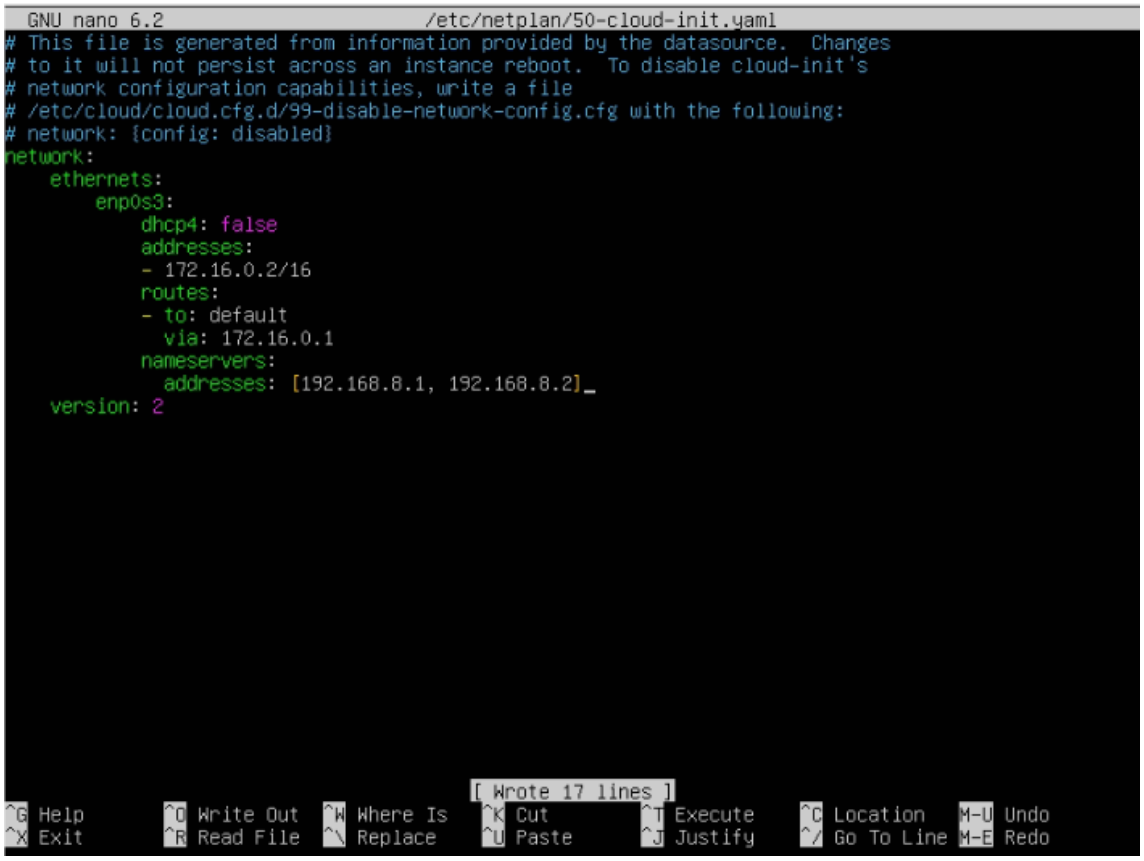
```
alumno@alumno:~$ sudo netplan apply
```

APLICAMOS LAS CONFIGURACIONES DE RED.

```
alumno@alumno:~$ sudo netplan apply

** (generate:1559): WARNING **: 16:24:28.768: `gateway4` has been deprecated, use default routes in
tead.
See the 'Default routes' section of the documentation for more details.
WARNING:root:Cannot call Open vSwitch: ovsdb-server.service is not running.

** (process:1557): WARNING **: 16:24:29.191: `gateway4` has been deprecated, use default routes ins
ead.
See the 'Default routes' section of the documentation for more details.

** (process:1557): WARNING **: 16:24:29.302: `gateway4` has been deprecated, use default routes ins
ead.
See the 'Default routes' section of the documentation for more details.

** (process:1557): WARNING **: 16:24:29.302: `gateway4` has been deprecated, use default routes ins
ead.
See the 'Default routes' section of the documentation for more details.
```

Ejemplo de warning.

```
  GNU nano 6.2                    /etc/netplan/50-cloud-init.yaml
# This file is generated from information provided by the datasource.  Changes
# to it will not persist across an instance reboot.  To disable cloud-init's
# network configuration capabilities, write a file
# /etc/cloud/cloud.cfg.d/99-disable-network-config.cfg with the following:
# network: {config: disabled}
network:
    ethernets:
        enp0s3:
            dhcp4: false
            addresses:
            - 172.16.0.2/16
            routes:
            - to: default
              via: 172.16.0.1_
    version: 2

                                    [ Wrote 15 lines ]
^G Help      ^O Write Out  ^W Where Is   ^K Cut       ^T Execute    ^C Location   M-U Undo
^X Exit      ^R Read File  ^\ Replace    ^U Paste     ^J Justify    ^/ Go To Line M-E Redo
```



COMPROBAR MI IP

PROCESO PARA INSTALAR EL PAQUETE DHCP

```
alumno@alumno:~$ sudo apt install isc-dhcp-server
```

EDITAMOS ARCHIVO DE CONFIGURACIÓN.

```
alumno@alumno:~$ sudo nano /etc/default/isc-dhcp-server
```

Se indica que la interfacesv4, que es el que recibirá las peticiones es enp0s3, que en este caso es la interfaz de red.

Se puede ver en ip a

```
alumno@alumno:~$ 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
       valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 100
0
    link/ether 08:00:27:be:ca:6d brd ff:ff:ff:ff:ff:ff
    inet 172.16.0.2/16 brd 172.16.255.255 scope global enp0s3
       valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:febe:ca6d/64 scope link
       valid_lft forever preferred_lft forever
```

```
  GNU nano 6.2                        /etc/default/isc-dhcp-server
# Defaults for isc-dhcp-server (sourced by /etc/init.d/isc-dhcp-server)

# Path to dhcpd's config file (default: /etc/dhcp/dhcpd.conf).
#DHCPDv4_CONF=/etc/dhcp/dhcpd.conf
#DHCPDv6_CONF=/etc/dhcp/dhcpd6.conf

# Path to dhcpd's PID file (default: /var/run/dhcpd.pid).
#DHCPDv4_PID=/var/run/dhcpd.pid
#DHCPDv6_PID=/var/run/dhcpd6.pid

# Additional options to start dhcpd with.
#       Don't use options -cf or -pf here; use DHCPD_CONF/ DHCPD_PID instead
#OPTIONS=""

# On what interfaces should the DHCP server (dhcpd) serve DHCP requests?
#       Separate multiple interfaces with spaces, e.g. "eth0 eth1".
INTERFACESv4="enp0s3"
INTERFACESv6=""

                              [ Wrote 18 lines ]
^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute   ^C Location  M-U Undo
^X Exit      ^R Read File ^\ Replace   ^U Paste     ^J Justify   ^/ Go To Line M-E Redo
```

SE HACE COPIA DE SEGURIDAD DEL ARCHIVO ORIGINAL DE CONFIGURACIÓN DE DHCP.

```
alumno@alumno:~$ sudo mv /etc/dhcp/dhcpd.conf /etc/dhcp/dhcpd.conf.backup
```

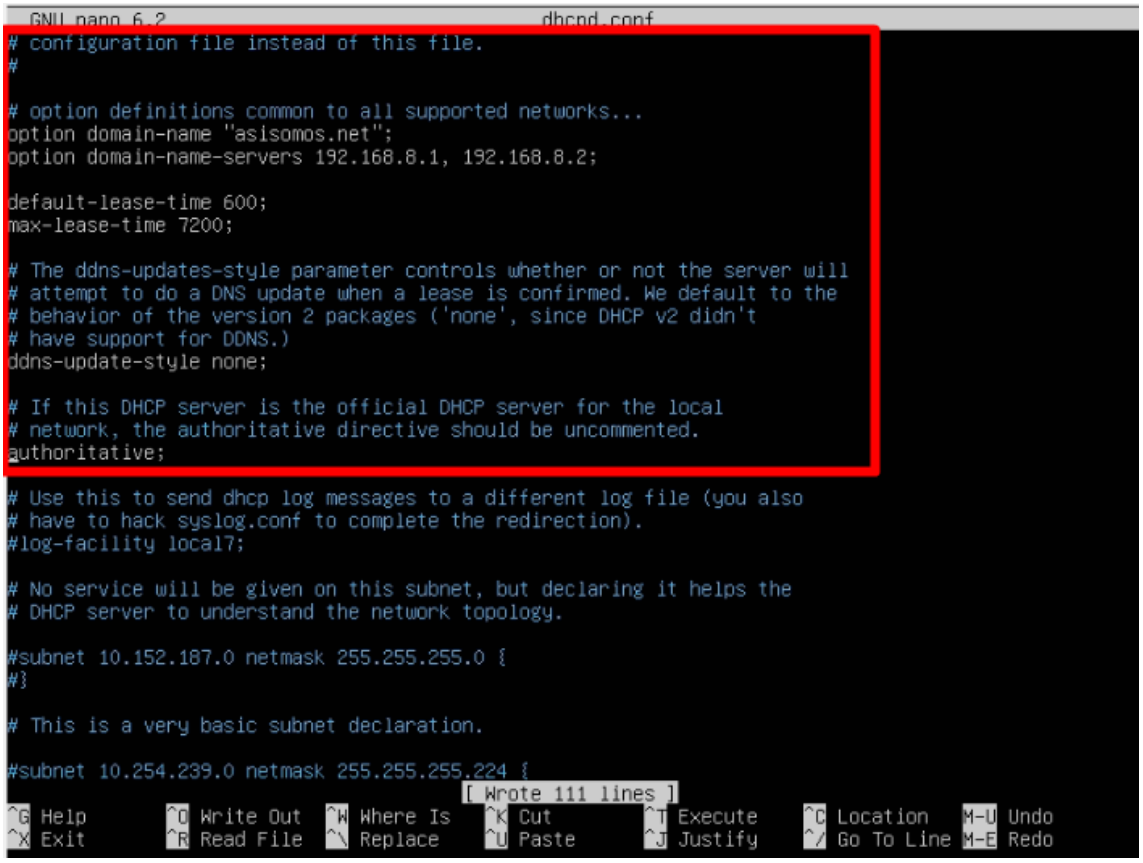
```
alumno@alumno:~$ cd /etc/dhcp/
alumno@alumno:/etc/dhcp$ ls
ddns-keys  dhclient-enter-hooks.d  dhclient.conf      dhcpd6.conf
debug      dhclient-exit-hooks.d   dhcpd.conf.backup
```

EDITAMOS ARCHIVO DE CONFIGURACIÓN

```
alumno@alumno:/etc/dhcp$ sudo nano /etc/dhcp/dhcpd.conf_
```

CREAMOS UNA COPIA

```
alumno@alumno:/etc/dhcp$ sudo cp dhcpd.conf.backup dhcpd.conf
```

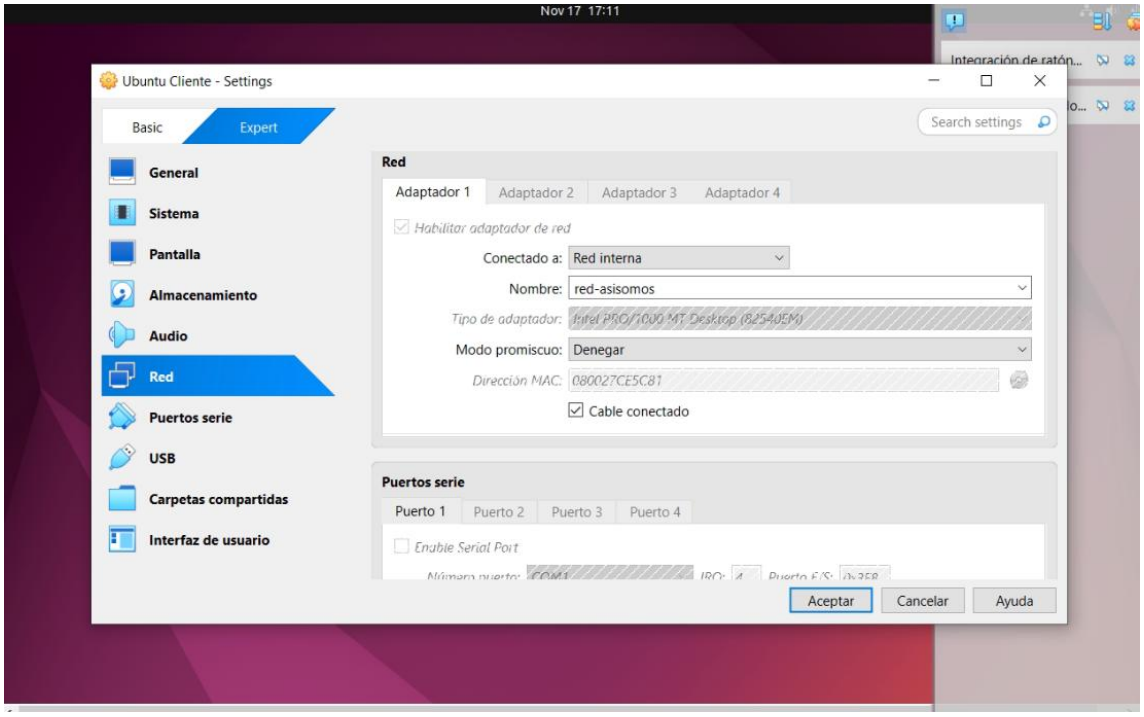


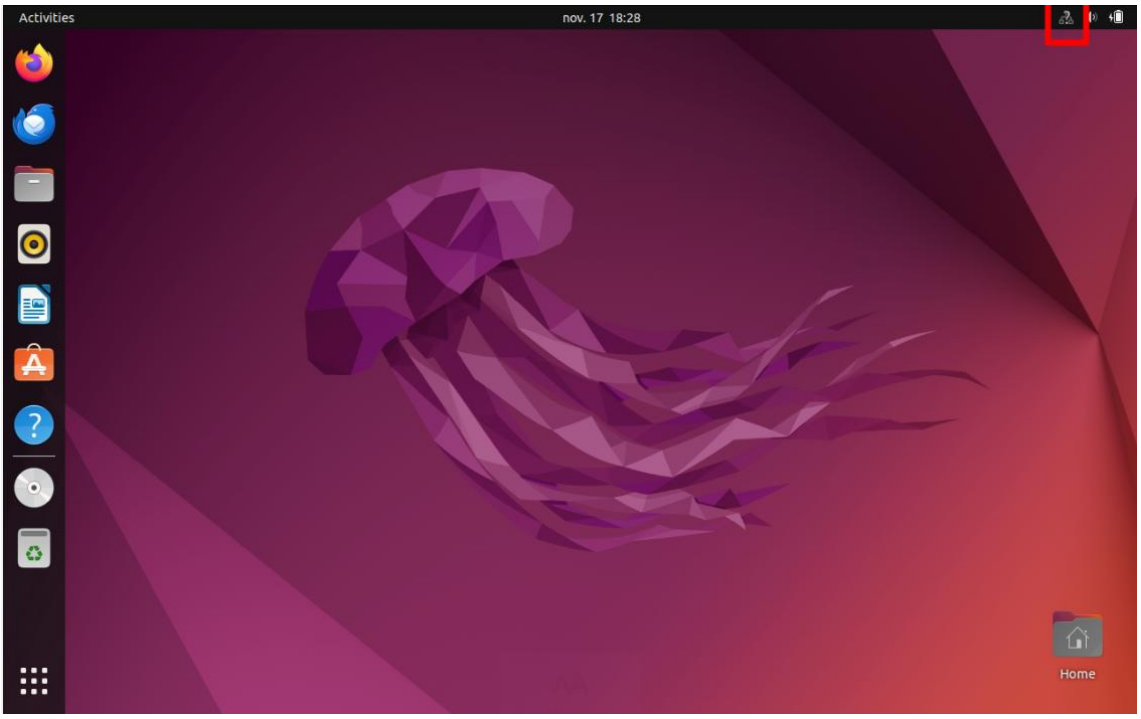

```
# A slightly different configuration for an internal subnet.
subnet 172.16.0.0 netmask 255.255.0.0 {
  range 172.16.0.10 172.16.0.100;
  option routers 172.16.0.1;
  option broadcast-address 172.16.255.255;
}

# Hosts which require special configuration options can be listed in
# host statements.   If no address is specified, the address will be
# allocated dynamically (if possible), but the host-specific information
# will still come from the host declaration.

host superstation {
  hardware ethernet 00:05:5D:4D:08:11;
  fixed-address 172.16.0.25;
}
```

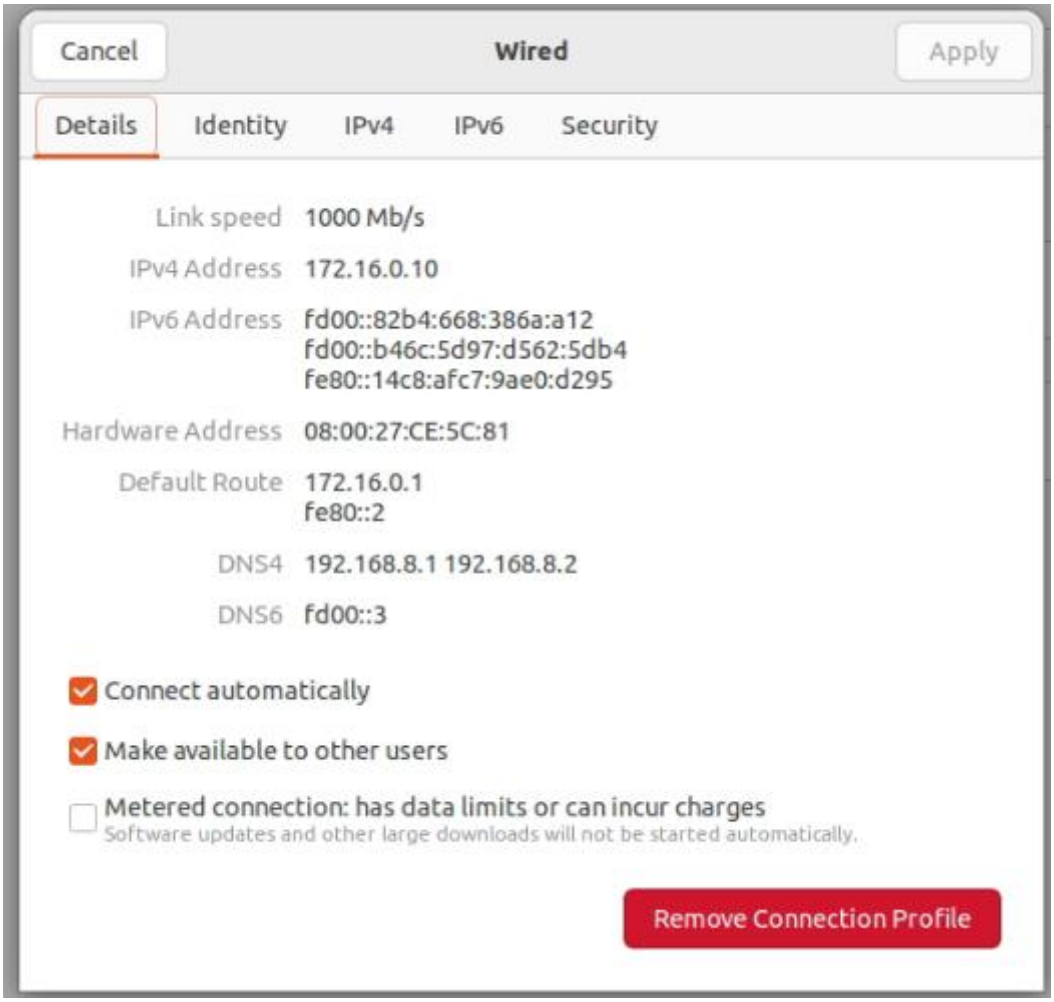
```
alumno@alumno:/etc/dhcp$ sudo systemctl restart isc-dhcp-server
```

```
alumno@alumno:/etc/dhcp$ sudo systemctl status isc-dhcp-server
● isc-dhcp-server.service - ISC DHCP IPv4 server
     Loaded: loaded (/lib/systemd/system/isc-dhcp-server.service; enabled; vendor preset: enabled)
     Active: active (running) since Mon 2025-11-17 16:58:00 UTC; 1min 29s ago
       Docs: man:dhcpd(8)
   Main PID: 2837 (dhcpd)
      Tasks: 4 (limit: 2220)
     Memory: 4.8M
        CPU: 9ms
     CGroup: /system.slice/isc-dhcp-server.service
             └─2837 dhcpd -user dhcpd -group dhcpd -f -4 -pf /run/dhcp-server/dhcpd.pid -cf /etc/dh

Nov 17 16:58:00 alumno dhcpd[2837]: Wrote 0 deleted host decls to leases file.
Nov 17 16:58:00 alumno dhcpd[2837]: Wrote 0 new dynamic host decls to leases file.
Nov 17 16:58:00 alumno dhcpd[2837]: Wrote 0 leases to leases file.
Nov 17 16:58:00 alumno dhcpd[2837]: Listening on LPF/enp0s3/08:00:27:be:ca:6d/172.16.0.0/16
Nov 17 16:58:00 alumno sh[2837]: Listening on LPF/enp0s3/08:00:27:be:ca:6d/172.16.0.0/16
Nov 17 16:58:00 alumno dhcpd[2837]: Sending on   LPF/enp0s3/08:00:27:be:ca:6d/172.16.0.0/16
Nov 17 16:58:00 alumno sh[2837]: Sending on   LPF/enp0s3/08:00:27:be:ca:6d/172.16.0.0/16
Nov 17 16:58:00 alumno dhcpd[2837]: Sending on   Socket/fallback/fallback-net
Nov 17 16:58:00 alumno sh[2837]: Sending on   Socket/fallback/fallback-net
Nov 17 16:58:00 alumno dhcpd[2837]: Server starting service.
lines 1-21/21 (END)
```

CLIENTE







SE HACE LA PRUEBA CON DOS TAREJTAS DE RED PARA VER QUE EL DCHP ASIGNA CORRECTAMENTE.

Cancel
Wired
Apply
Details
Identity
IPv4
IPv6
Security
Link speed 1000 Mb/s
IPv4 Address 172.16.0.11
IPv6 Address fe80::b92a:4718:7268:913e
Hardware Address 08:00:27:2D:95:A9
Default Route 172.16.0.1
DNS 192.168.8.1 192.168.8.2
Connect automatically
Make available to other users
Metered connection: has data limits or can incur charges
Software updates and other large downloads will not be started automatically.
Remove Connection Profile