Universidad Mariano Gálvez de Guatemala

Ingeniería en Sistemas

Seminario

Ing. Edgar Civil

Sección A

Documento de Instalaciones

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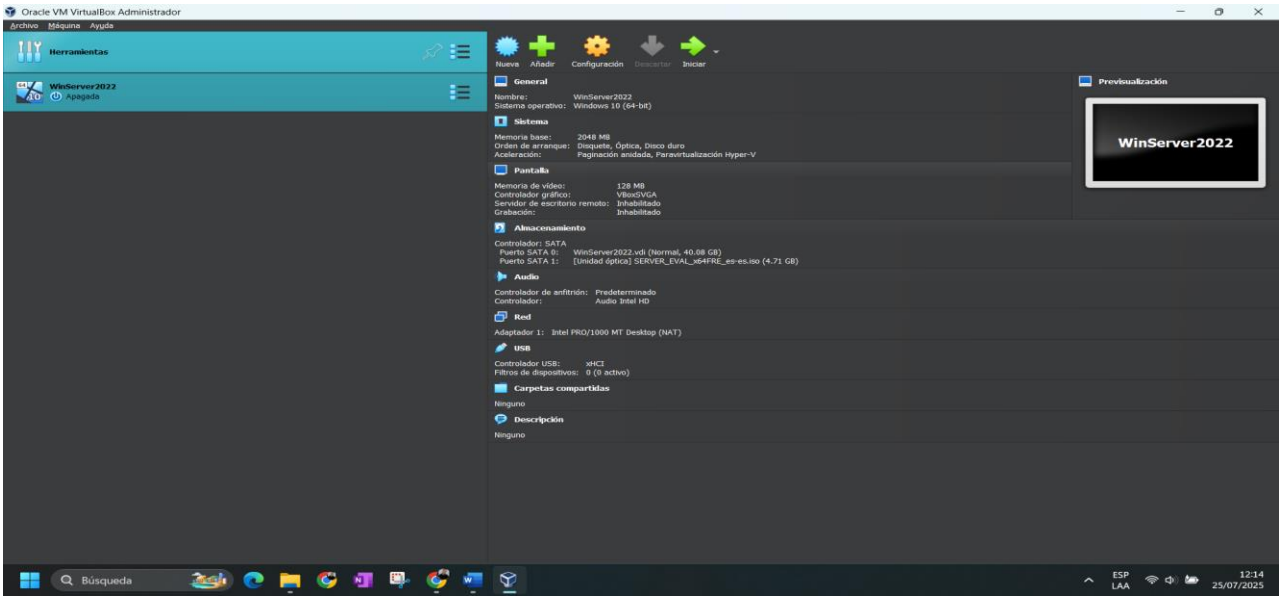
Introducción

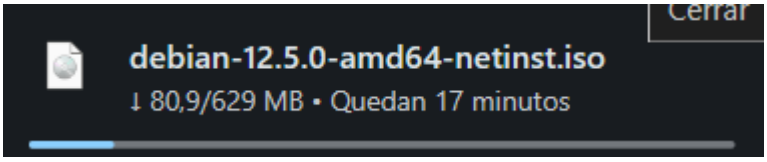
La información descrita a continuación tiene fines educativos, lo que conlleva a tener una amplia serie de instrucciones sobre cómo se hacen las instalaciones de cada imagen .iso en consola para que sea una forma más cómoda y sencilla de utilizar, además que la instalación de este tipo hará que se ocupe menos espacio en la memoria de la computadora.

Linux > Debian 12 Server (Consola)

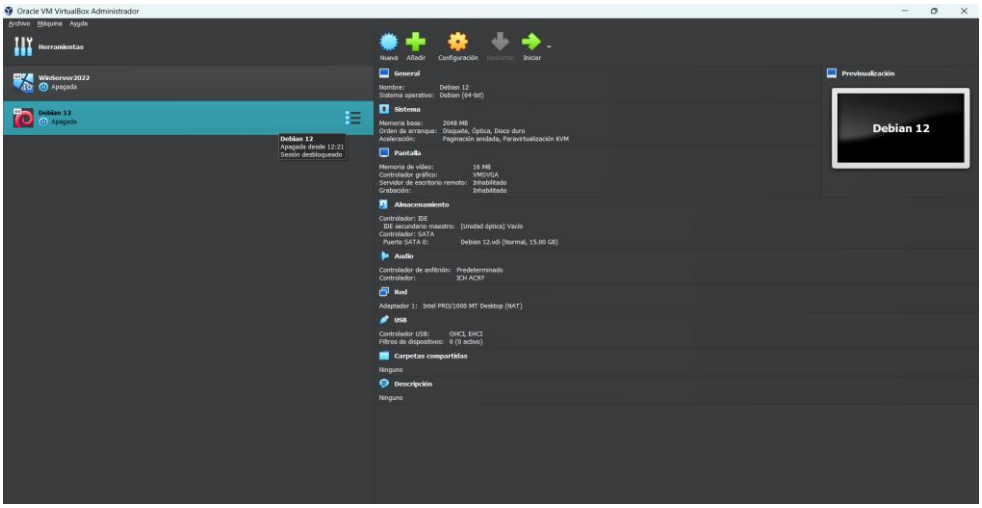
Abrir Virtual Box



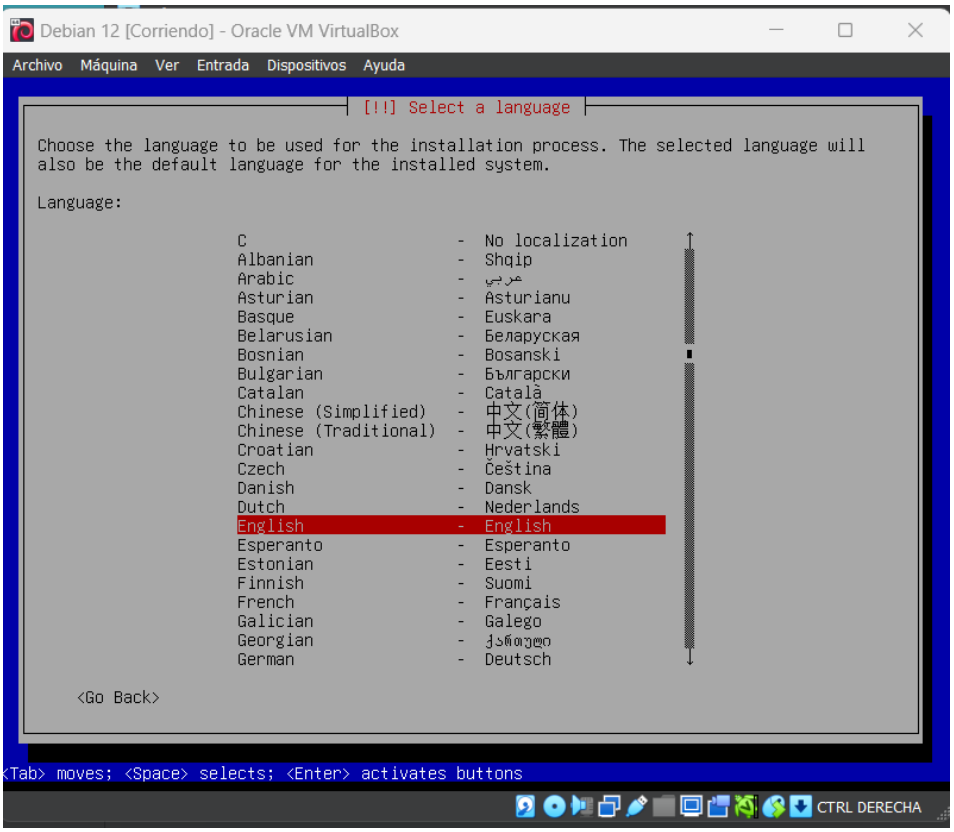
Descargar la .iso de Debian 12



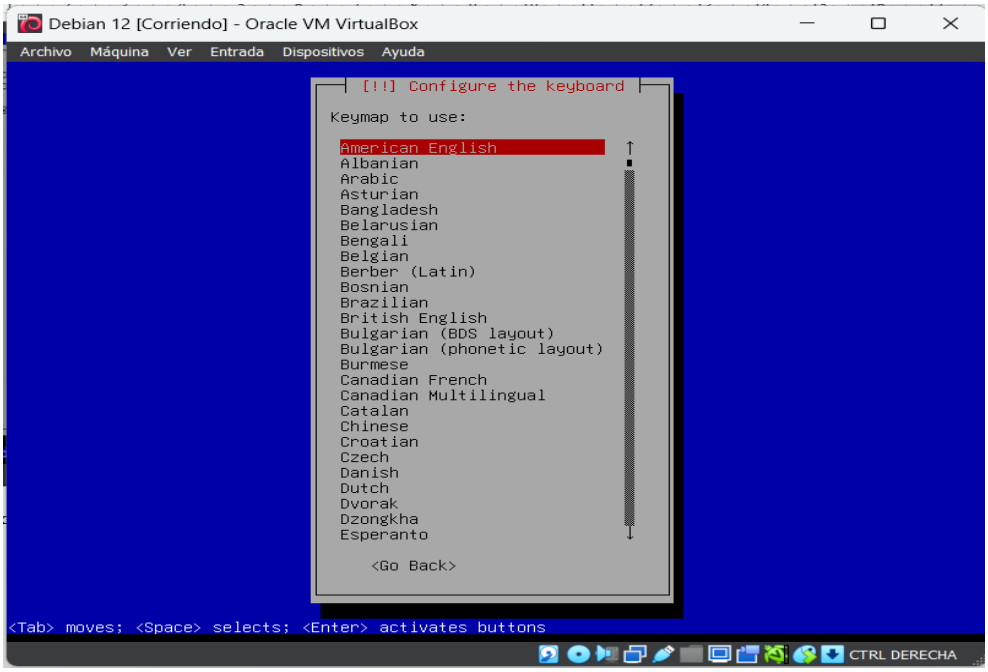
Crear la máquina virtual



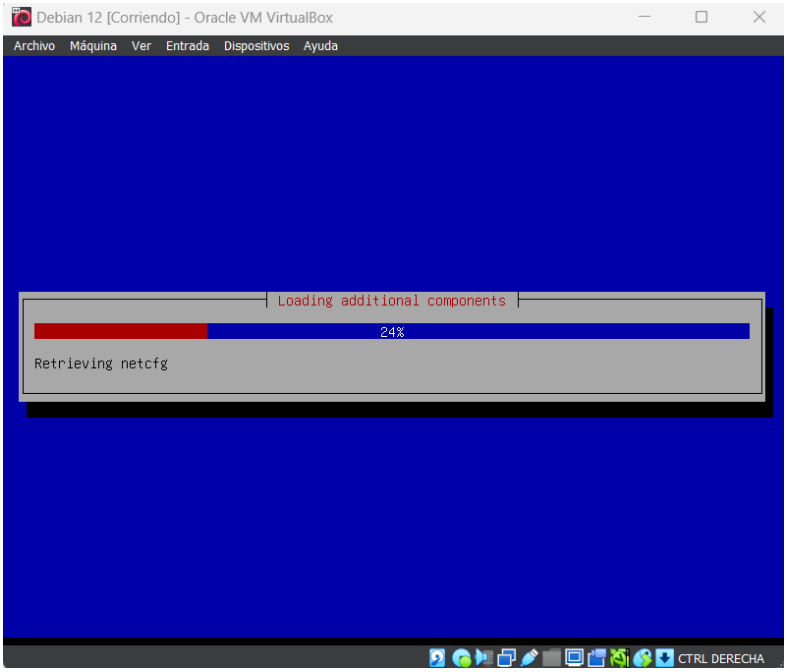
Seleccionar el idioma install



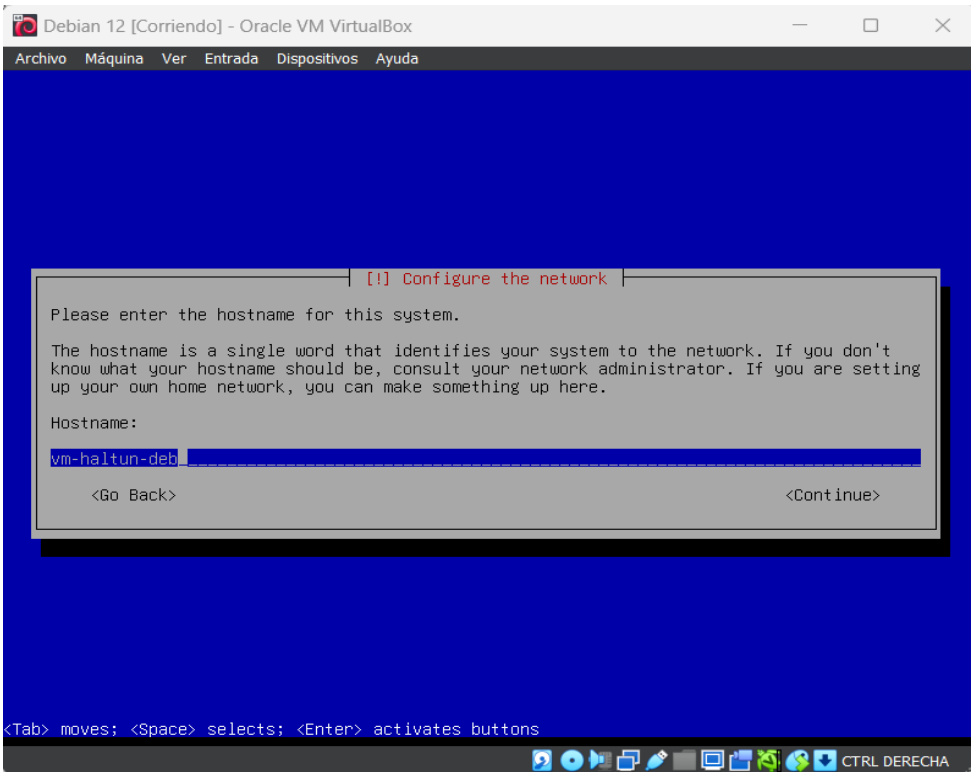
Seleccionar el tipo de teclado



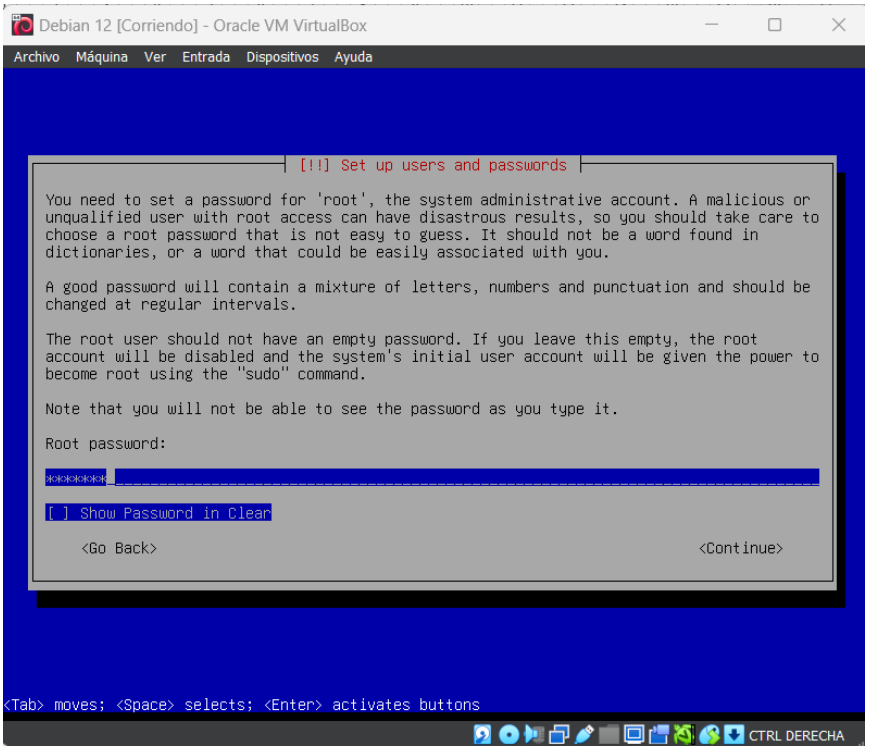
Realizar las descargas correspondientes

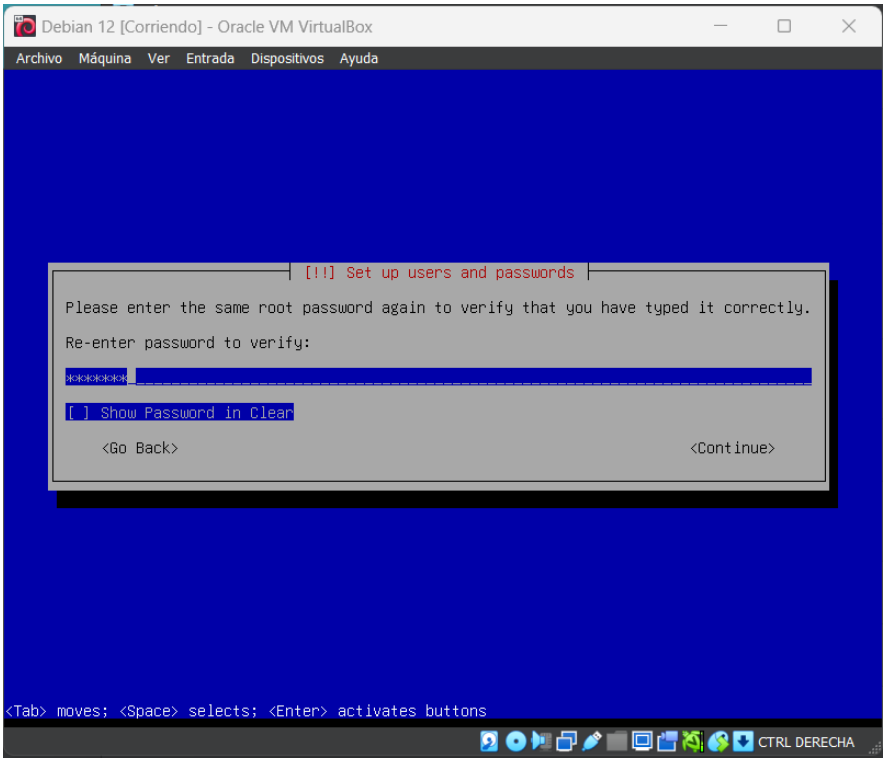


Colocar el hostname vm-haltun-deb

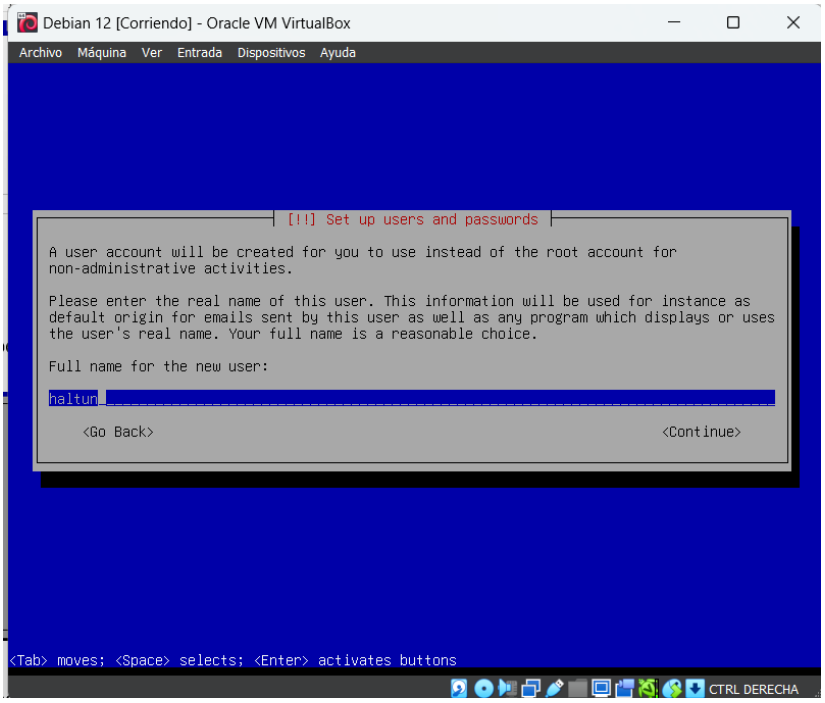


Ingreso de contraseña

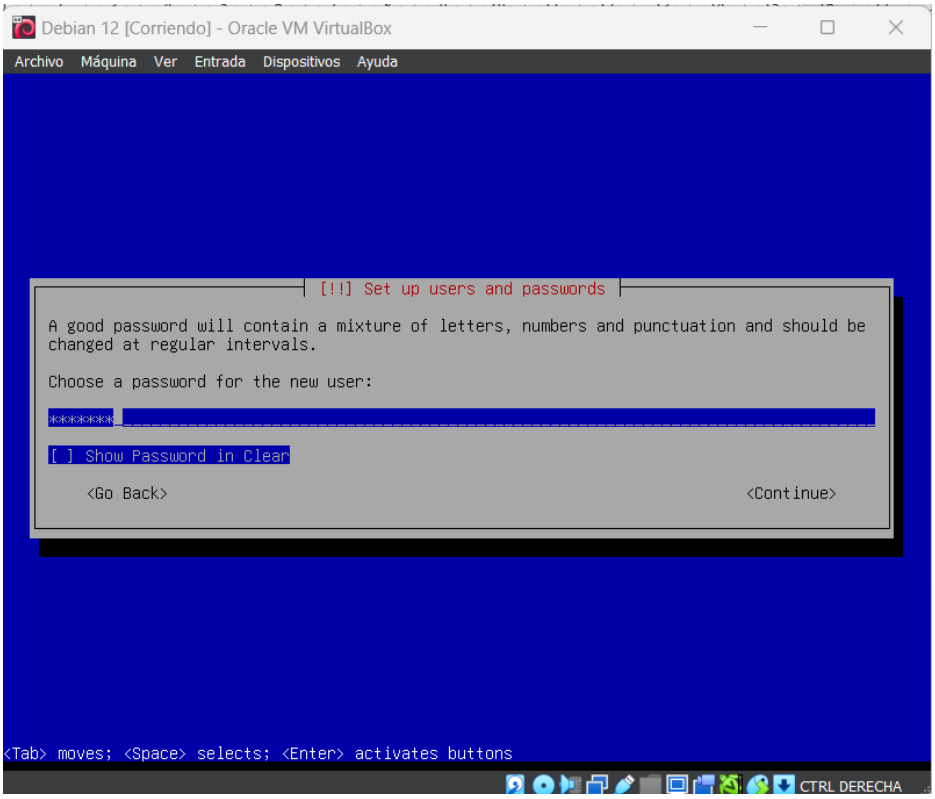




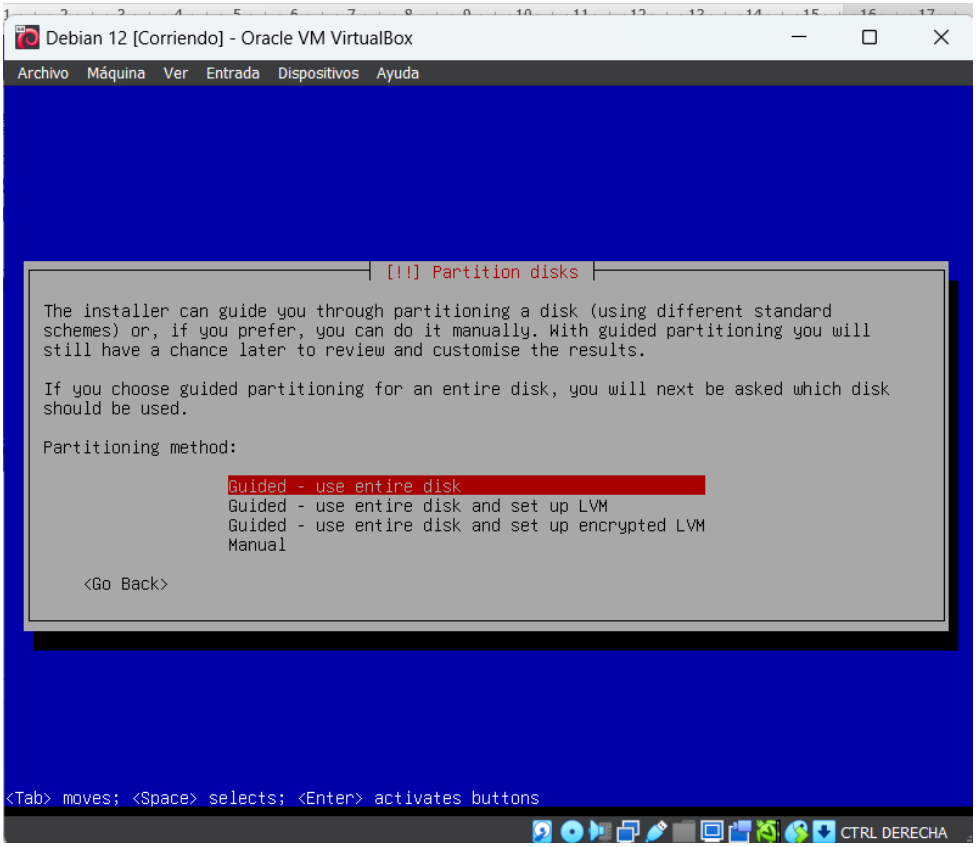
Colocar nombre de usuario haltun

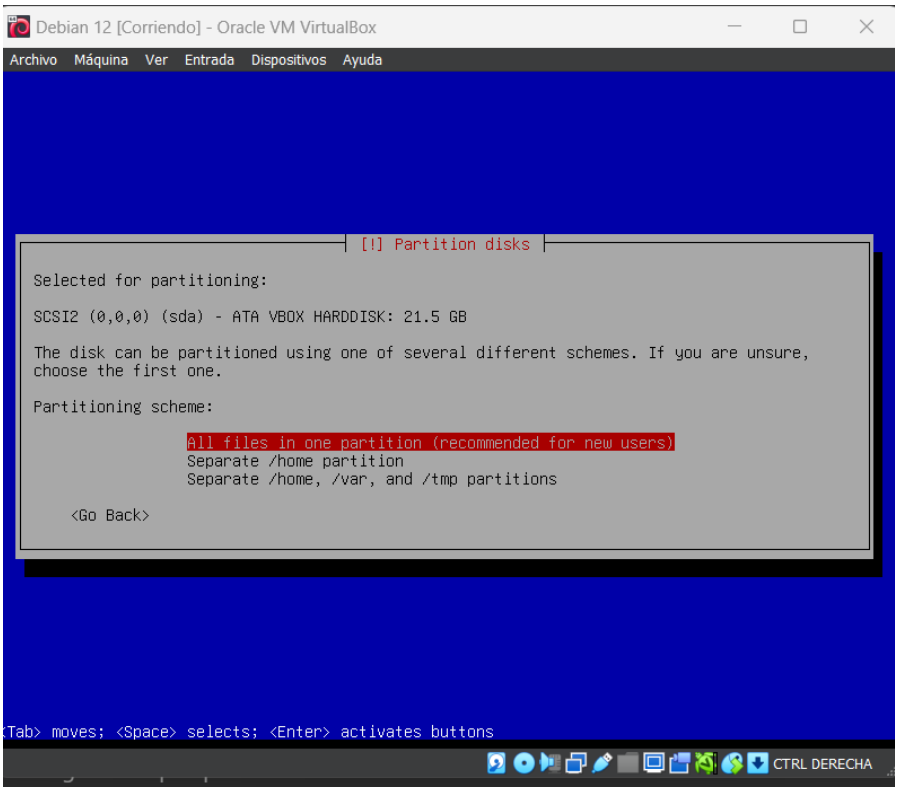


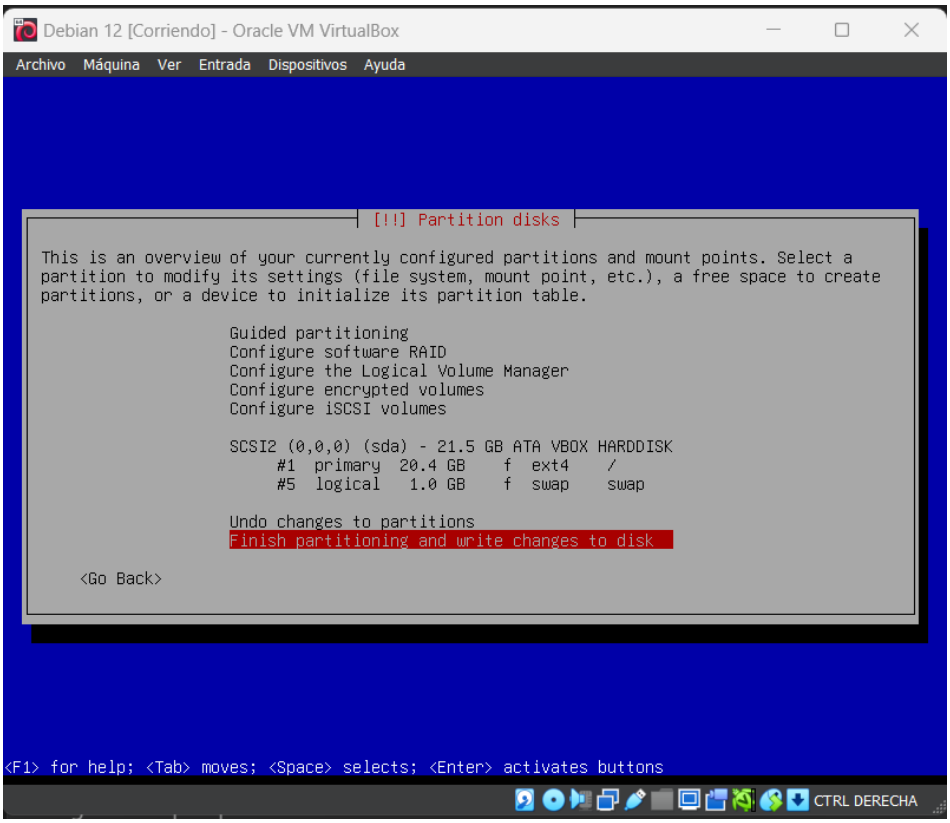
Ingresar contraseña



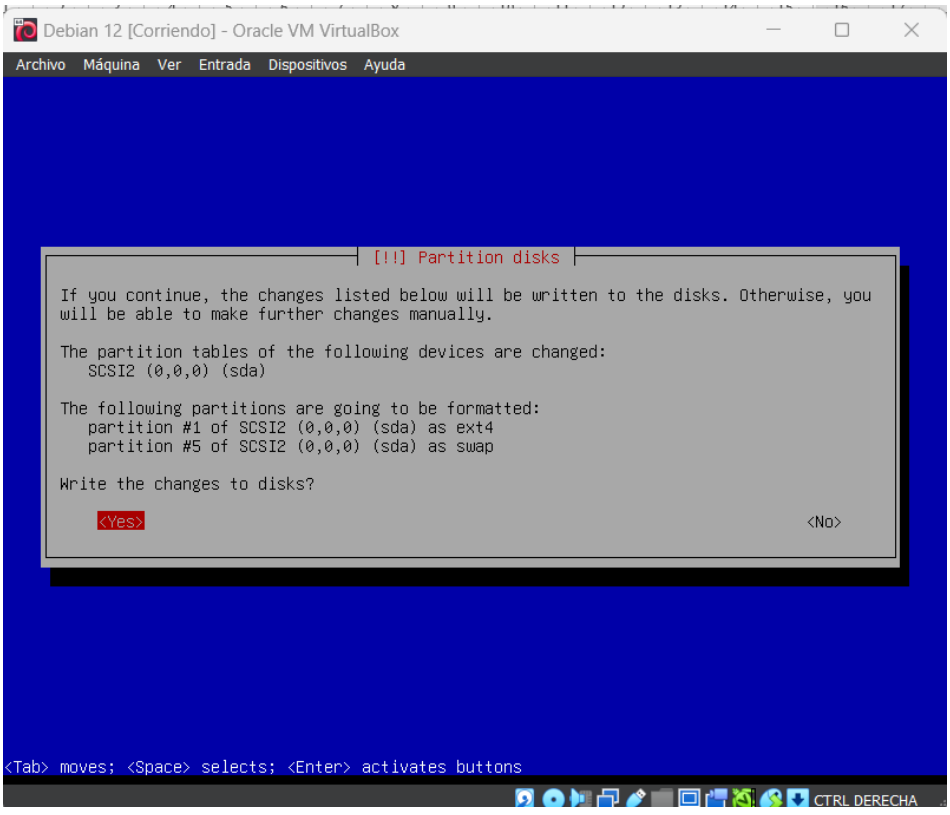
Realizar la partición de disco:



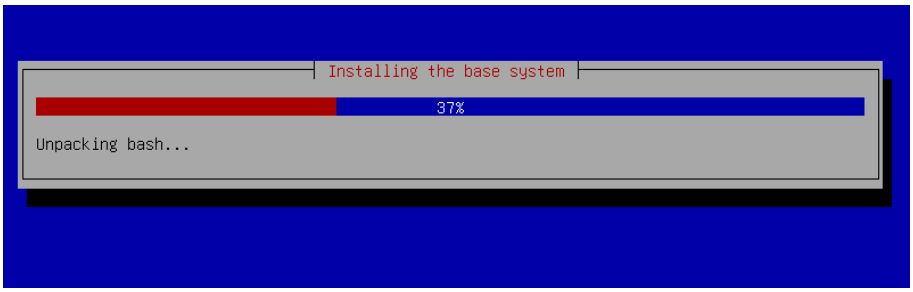




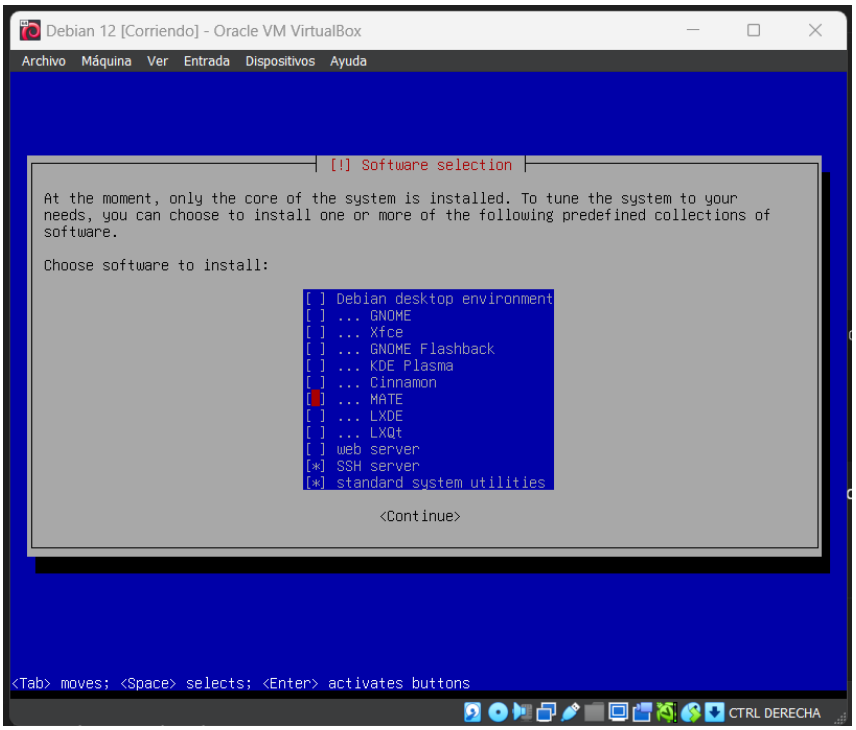
Confirmar los cambios



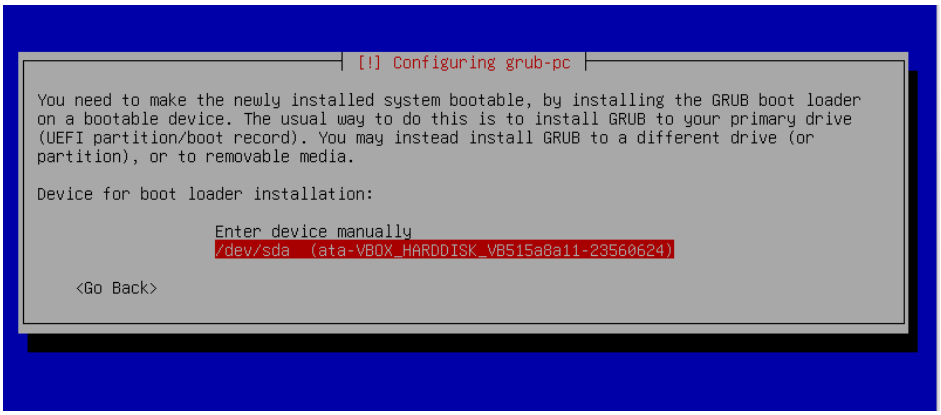
Realizando la instalación



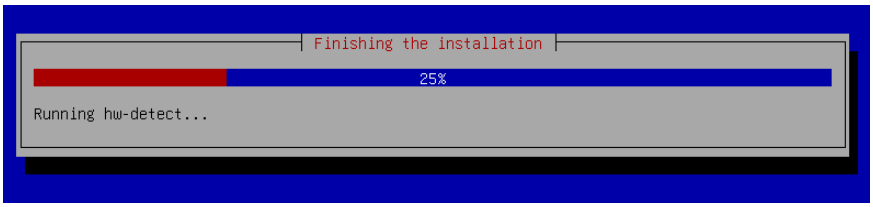
Seleccionar softwares necesarios



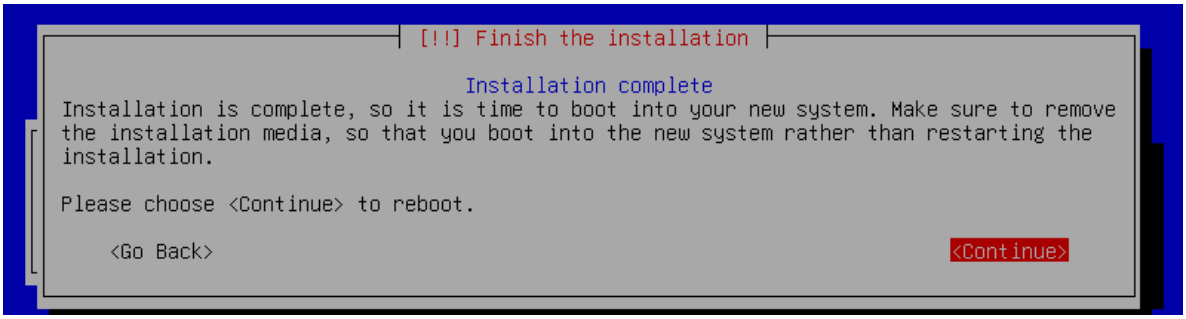
Seleccionamos el disco que corresponde



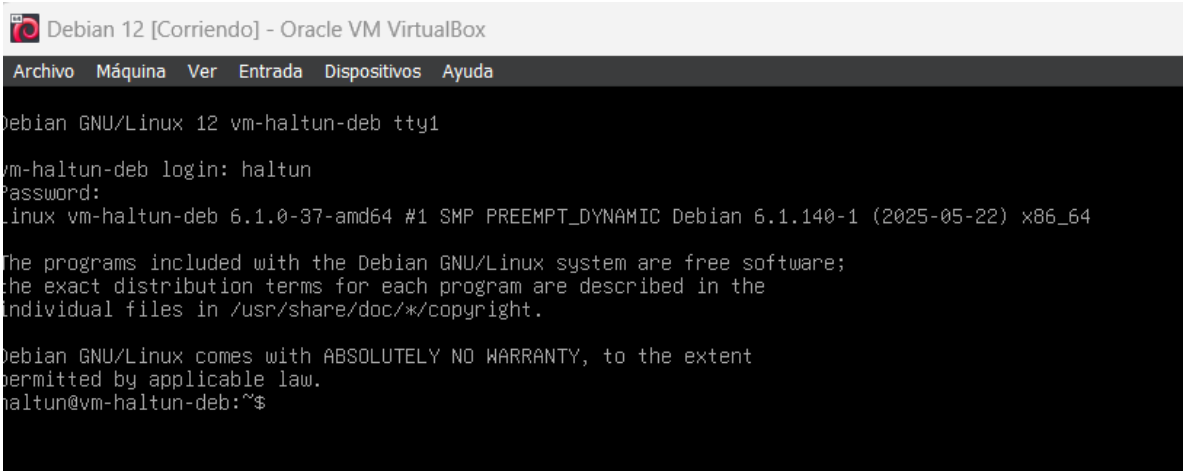
Esperamos la instalación:



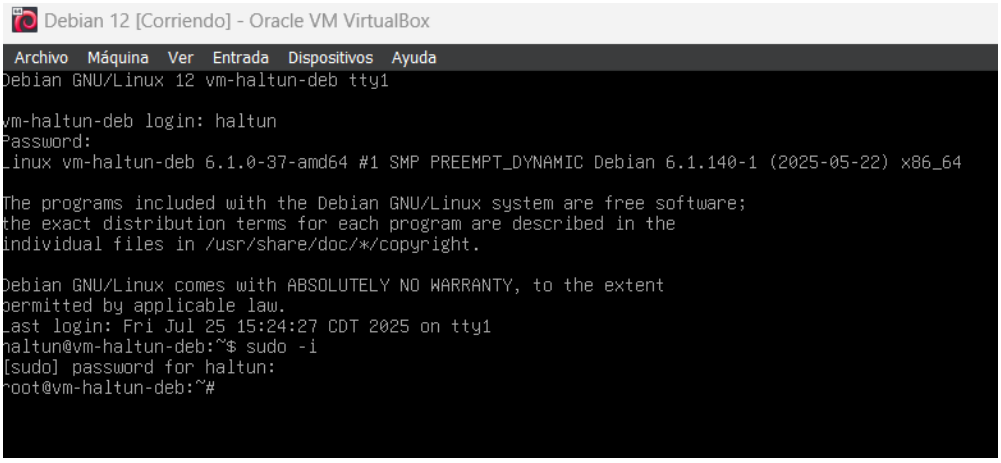
Seleccionar Continue para que se pueda reiniciar la máquina virtual y se pueda utilizar



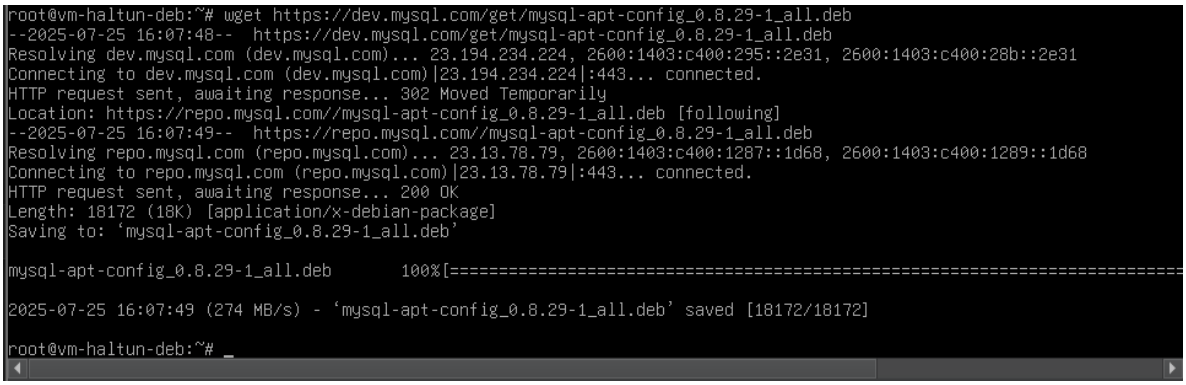
Instalación completa

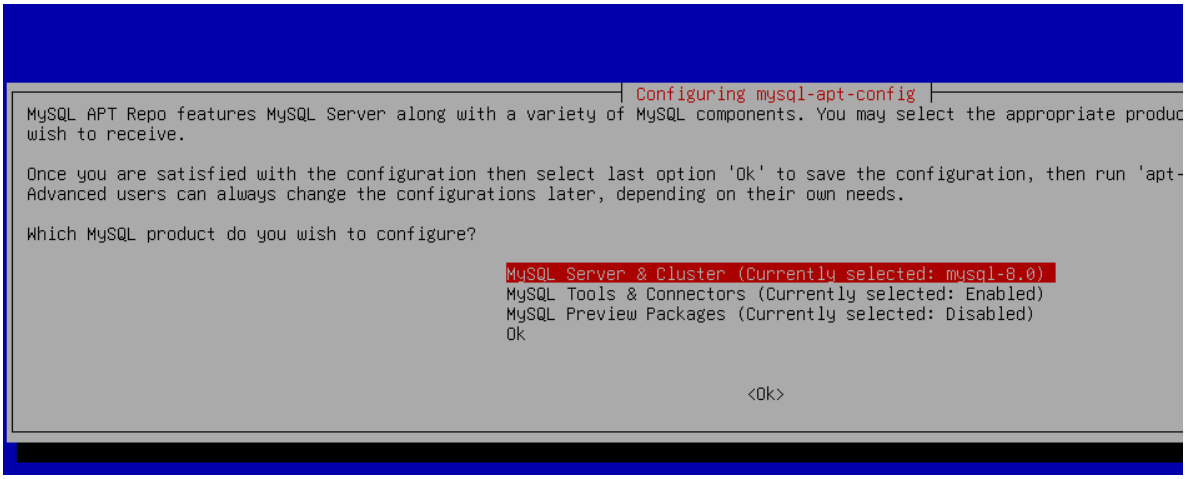


Obtener privilegios super usuario



INSTALAR **MySQL 8.x**





```
root@vm-haltun-deb:~# sudo systemctl status mysql
● mysql.service - MySQL Community Server
     Loaded: loaded (/lib/systemd/system/mysql.service; enabled; preset: enabled)
     Active: active (running) since Fri 2025-07-25 16:39:24 CDT; 1min 2s ago
       Docs: man:mysqld(8)
             http://dev.mysql.com/doc/refman/en/using-systemd.html
   Main PID: 6545 (mysqld)
     Status: "Server is operational"
      Tasks: 37 (limit: 2300)
     Memory: 368.0M
        CPU: 2.394s
     CGroup: /system.slice/mysql.service
             └─6545 /usr/sbin/mysqld

Jul 25 16:39:23 vm-haltun-deb systemd[1]: Starting mysql.service - MySQL Community Server...
Jul 25 16:39:24 vm-haltun-deb systemd[1]: Started mysql.service - MySQL Community Server.
root@vm-haltun-deb:~# _
```

Instalar htop

```
root@vm-haltun-deb:~# sudo apt install -y htop
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
htop is already the newest version (3.2.2-2).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
root@vm-haltun-deb:~#
```

Instalar nmap

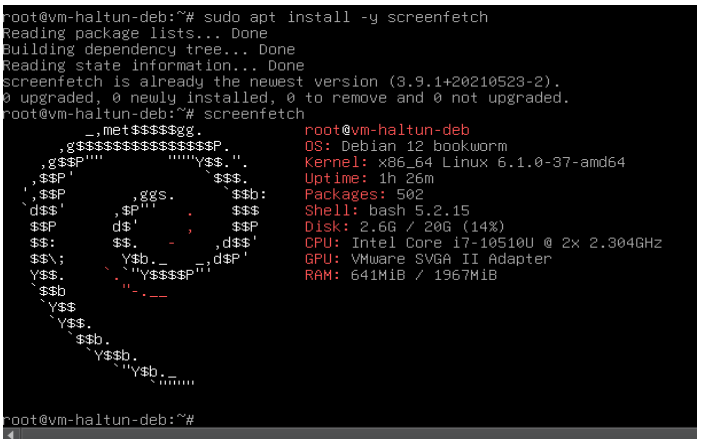
```
root@vm-haltun-deb:~# sudo apt install -y nmap
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
nmap is already the newest version (7.93+dfsg1-1).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
```

Instalar neofetch

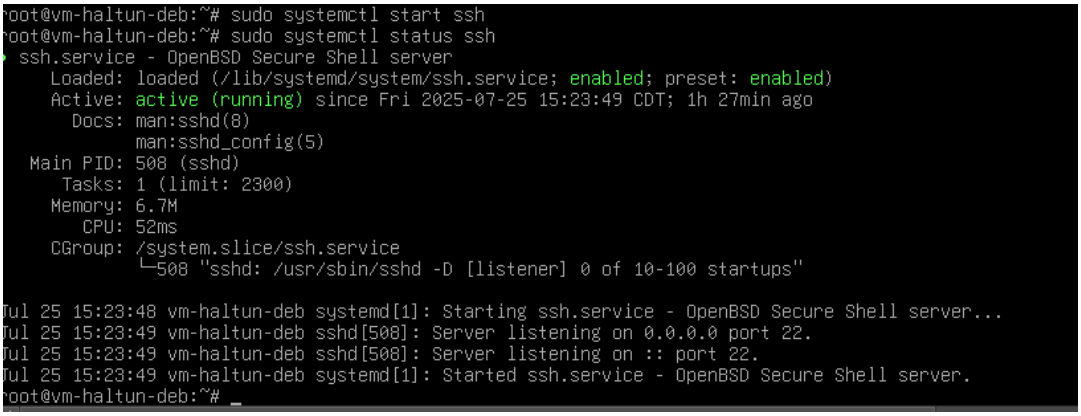
```
root@vm-haltun-deb:~# sudo apt install -y neofetch
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
neofetch is already the newest version (7.1.0-4).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
root@vm-haltun-deb:~# neofetch
       _,met$$$$$gg.          root@vm-haltun-deb
    ,g$$$$$$$$$$$$$$$P.      ------------------
  ,g$$P"     """Y$$.".       OS: Debian GNU/Linux 12 (bookworm) x86_64
 ,$$P'              `$$$.     Host: VirtualBox 1.2
',$$P       ,ggs.     `$$b:   Kernel: 6.1.0-37-amd64
`d$$'     ,$P"'   .    $$$    Uptime: 1 hour, 25 mins
 $$P      d$'     ,    $$P    Packages: 503 (dpkg)
 $$:      $$.   -    ,d$$'    Shell: bash 5.2.15
 $$;      Y$b._   _,d$P'      Resolution: 1280x800
 Y$$.    `.`"Y$$$$P"'        Terminal: /dev/pts/0
 `$$b      "-.__              CPU: Intel i7-10510U (2) @ 2.304GHz
  `Y$$                        GPU: 00:02.0 VMware SVGA II Adapter
   `Y$$.                      Memory: 486MiB / 1967MiB
     `$$b.
       `Y$$b.
          `"Y$b._
              `"""

root@vm-haltun-deb:~#
```

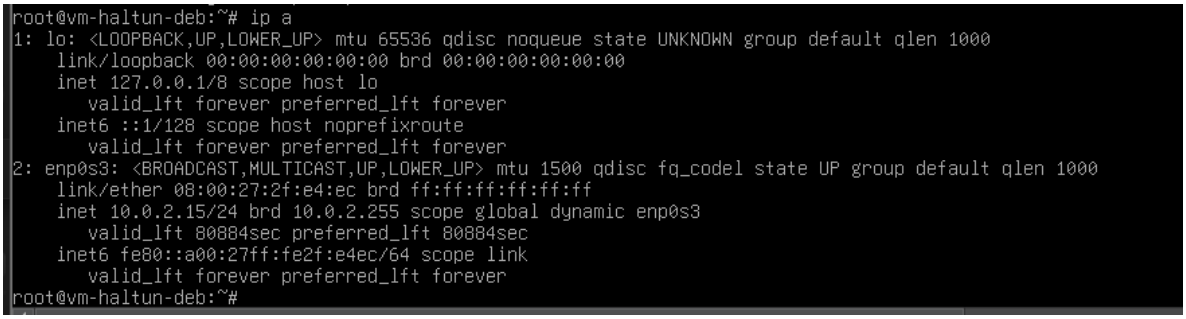
Instalar screenfetch



Instalar ssh server

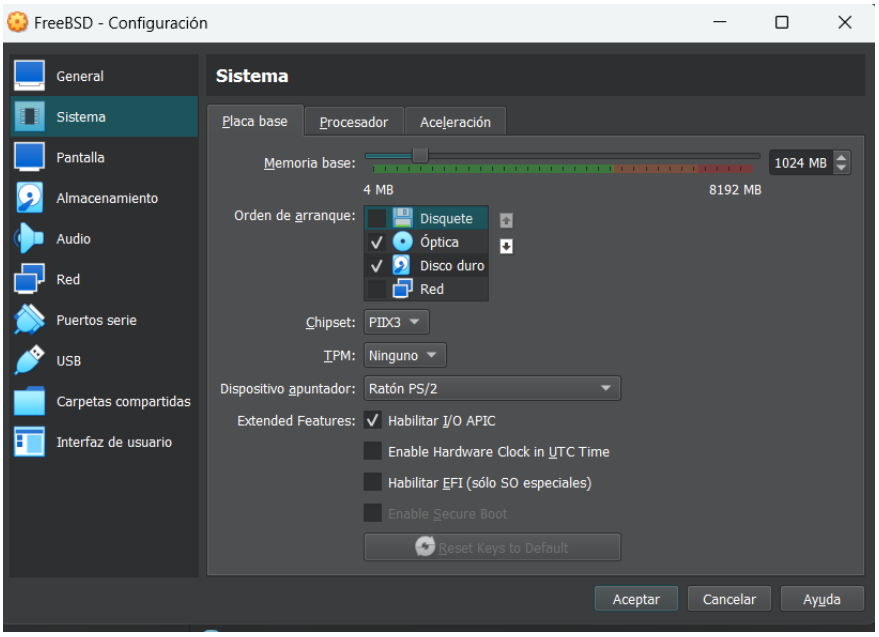


Conexión a NAP ip 10.0.2.15

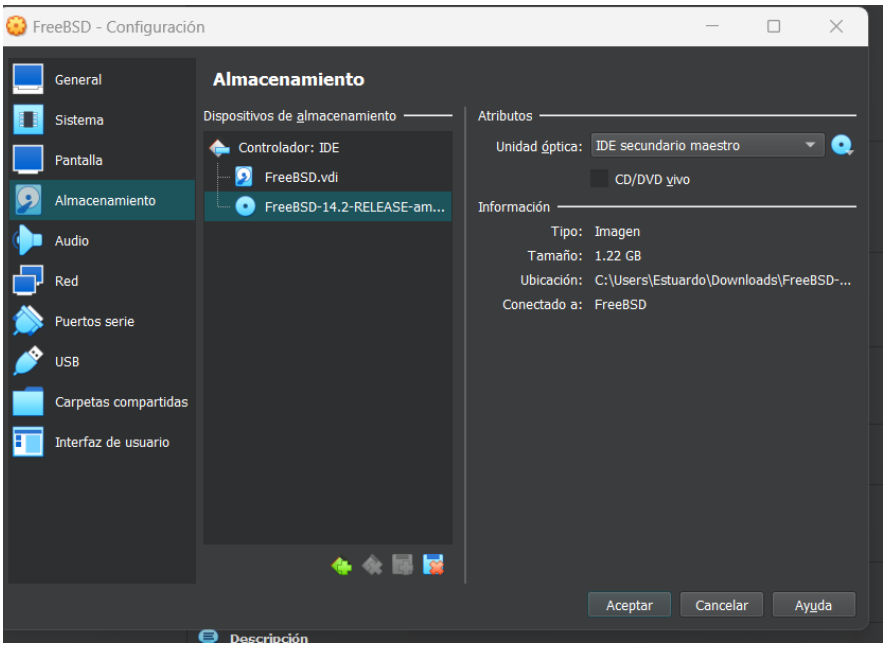


Unix > FreeBSD 14 Server (Consola)

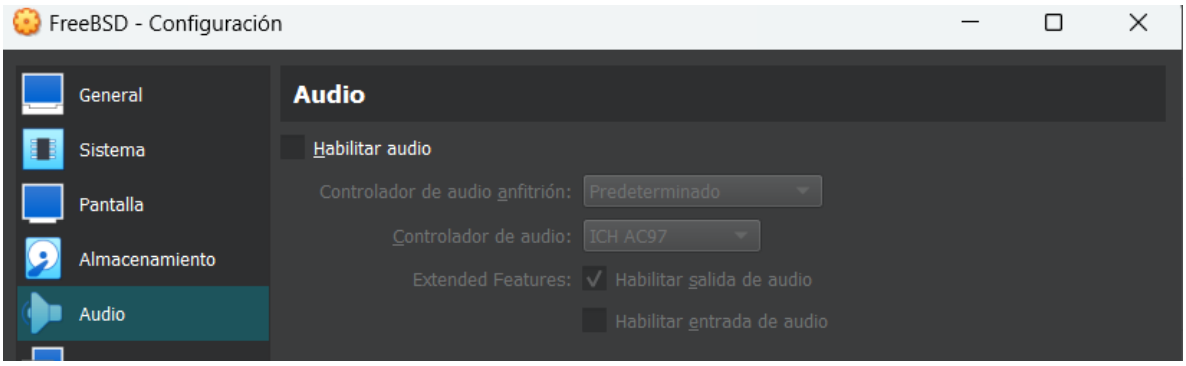
Crear la máquina virtual y en la configuración quitar el floppy/disquete:



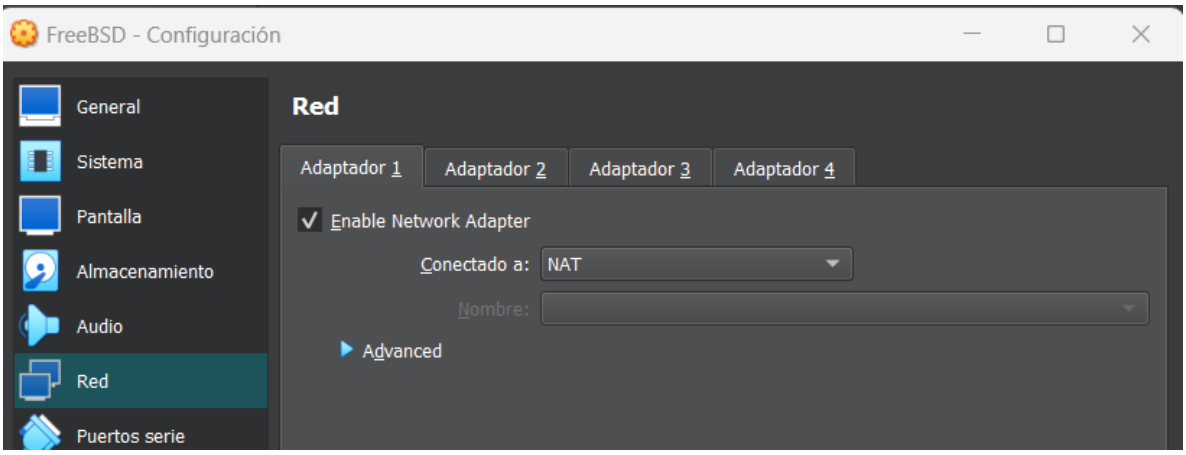
Buscamos la ISO de FreeBSD y la colocamos para que nos lea el disco



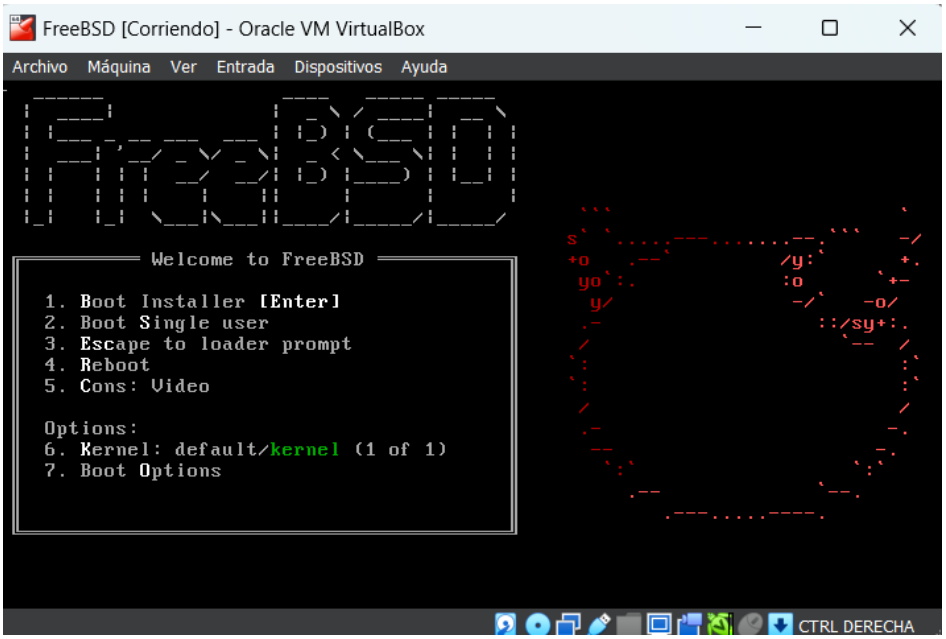
Desactivar el enable del audio



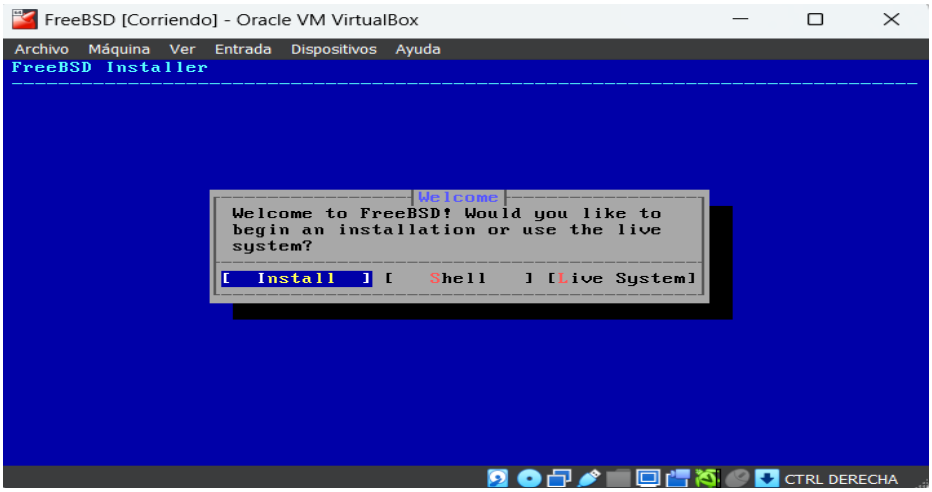
Red en NAT



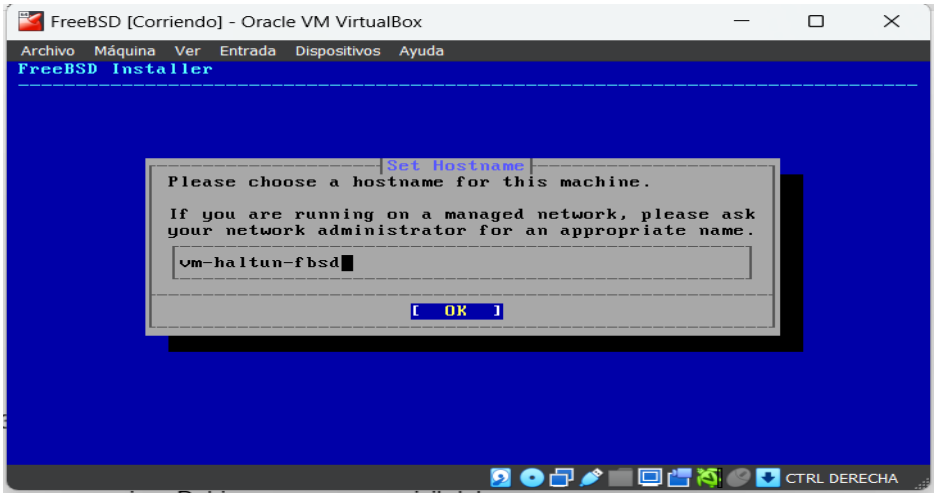
Ventana inicial



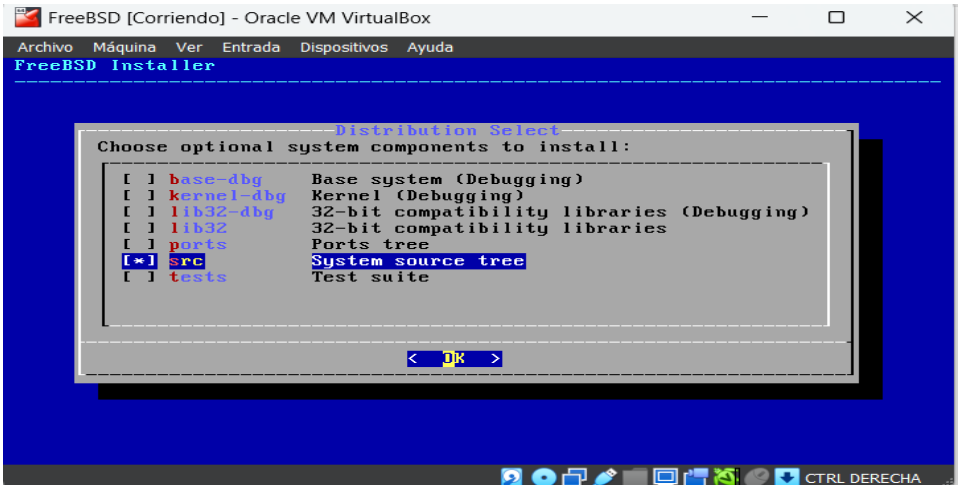
Seleccionar Install



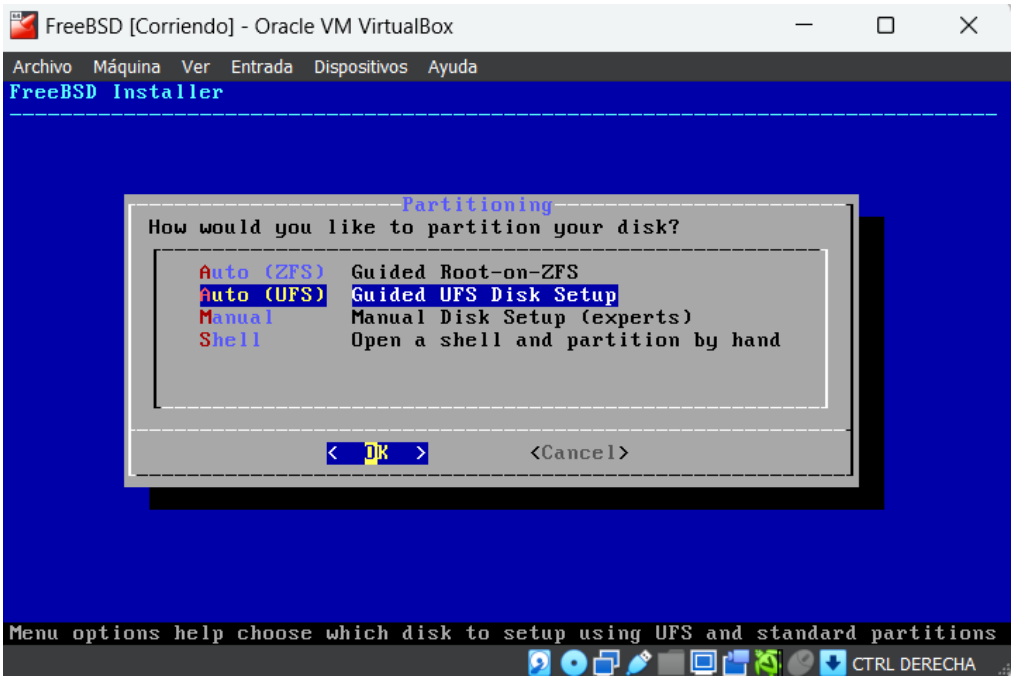
Ingresar el hostname



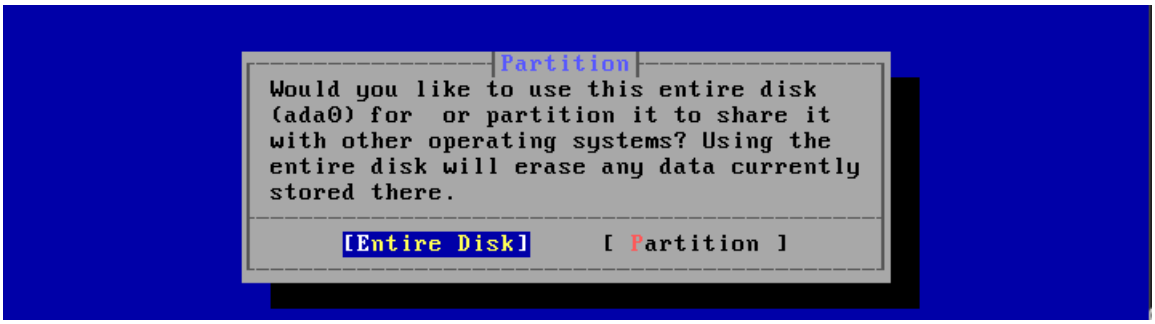
Dejamos selecciona únicamente la opción de las librerías:



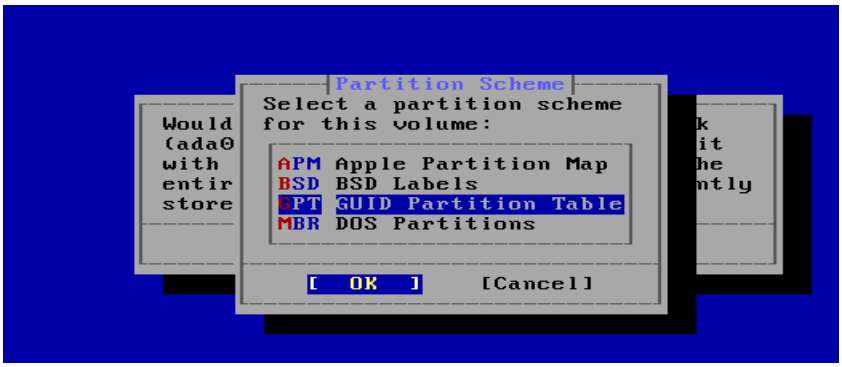
Ejecutamos la máquina virtual con Auto (UFS) así no permitirá que la partición tenga más de 8 de RAM



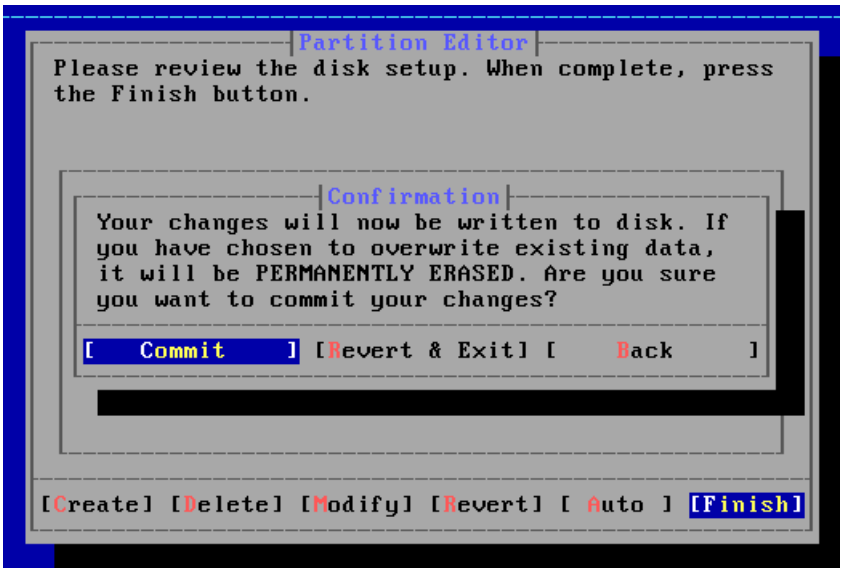
Confirmar



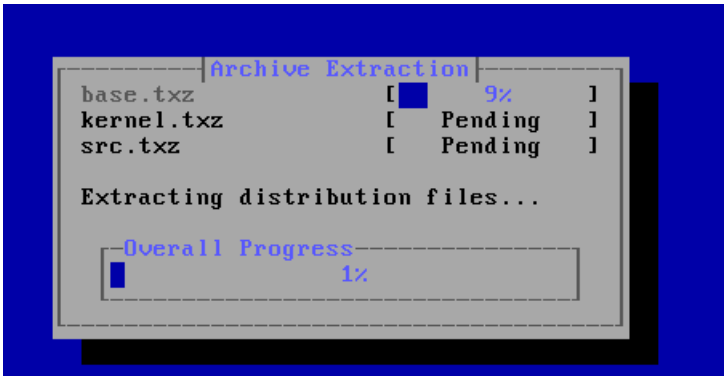
Luego realizamos la partición con la opción GPT



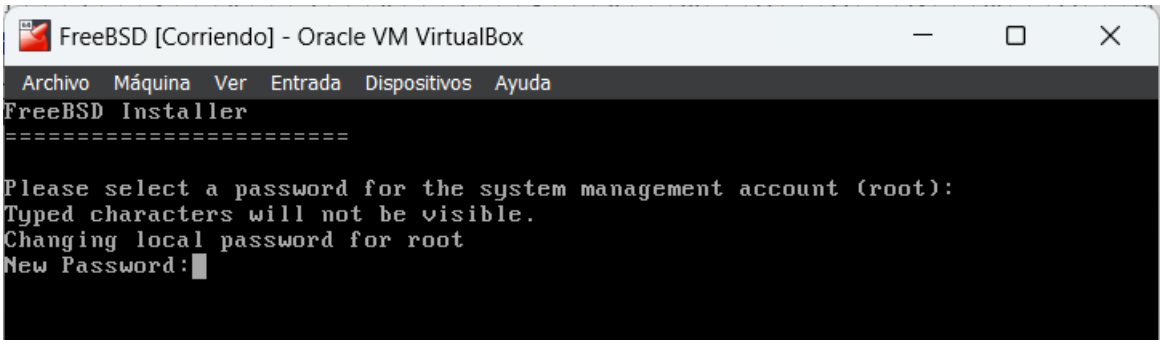
Finish y commint



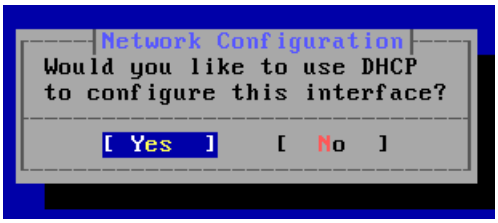
Realizar las descargas correspondientes, esperar hasta que el proceso termine de realizarse:

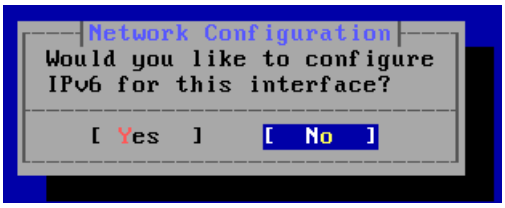


Colocar nueva contraseña

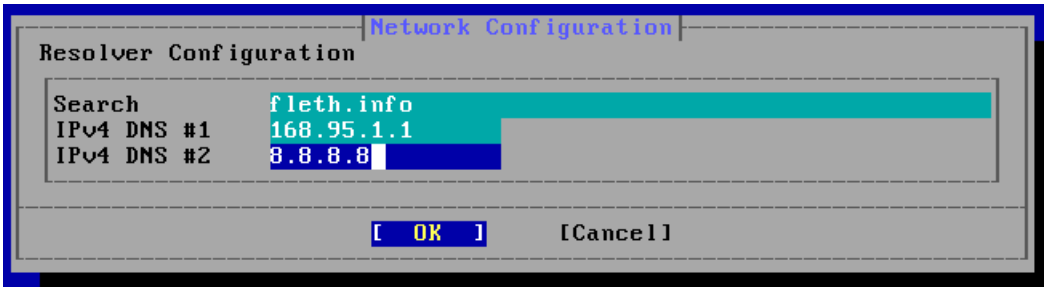


Presionamos YES, en la ventana de IPV4 y DHCP, para IPV6 presionamos que no

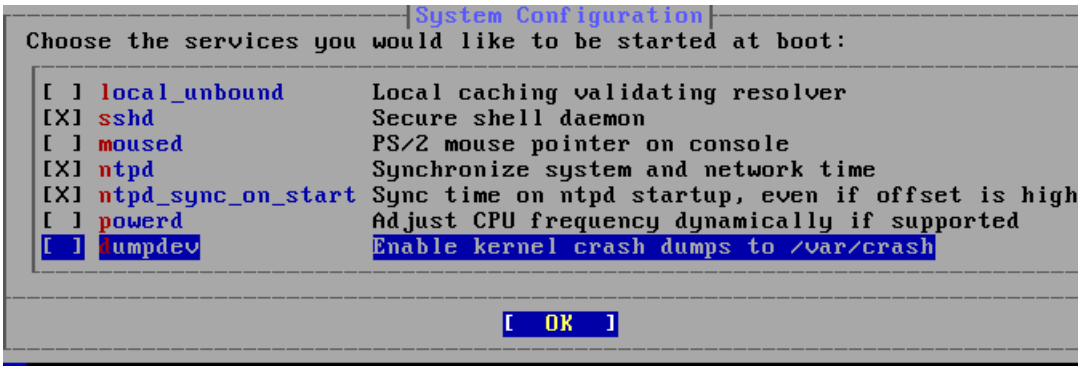




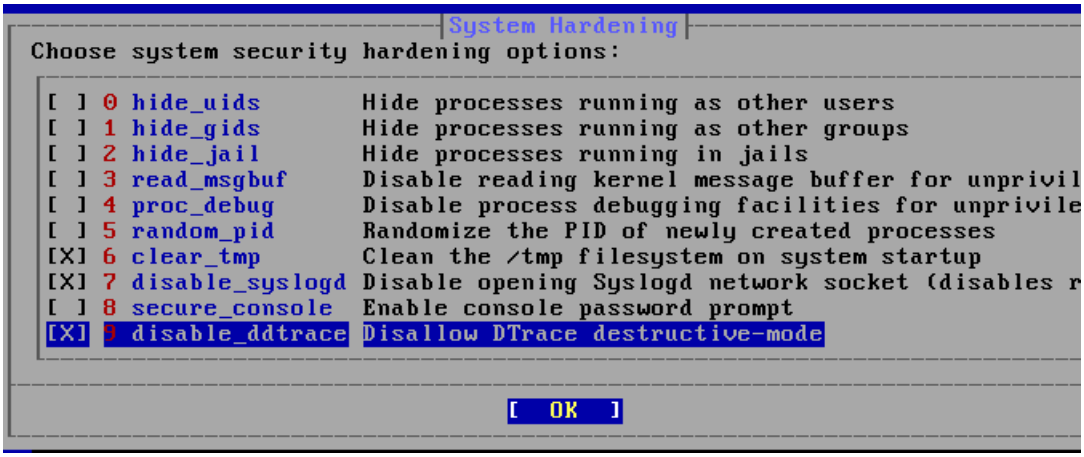
Colocar las IP



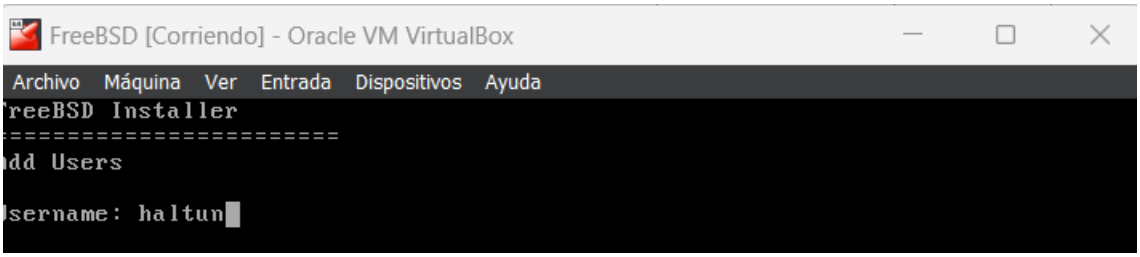
Seleccionamos los servicios que vamos a estar utilizando

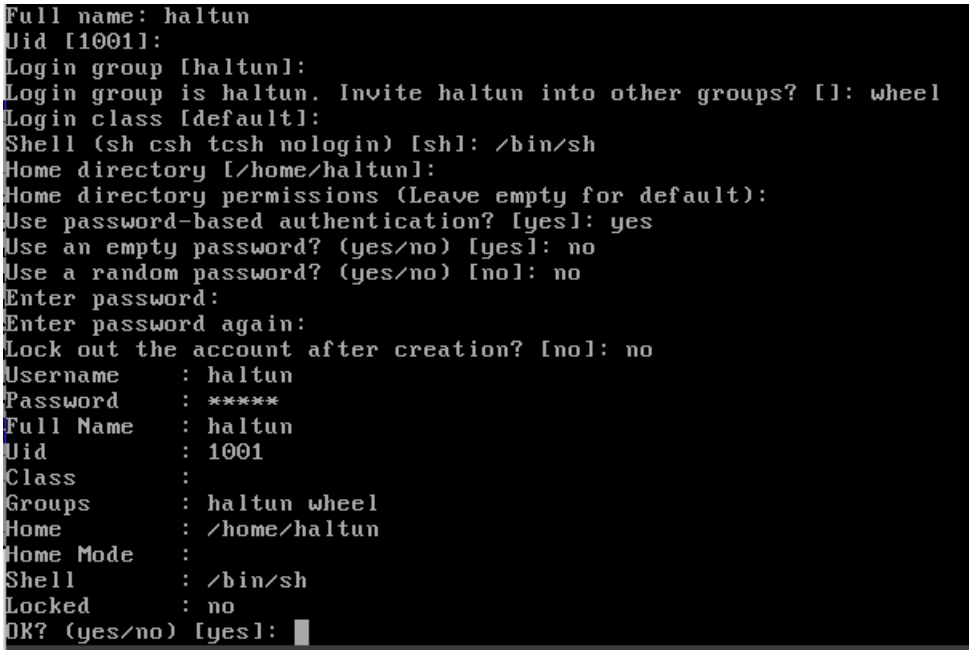


Configuramos el sistema de seguridad



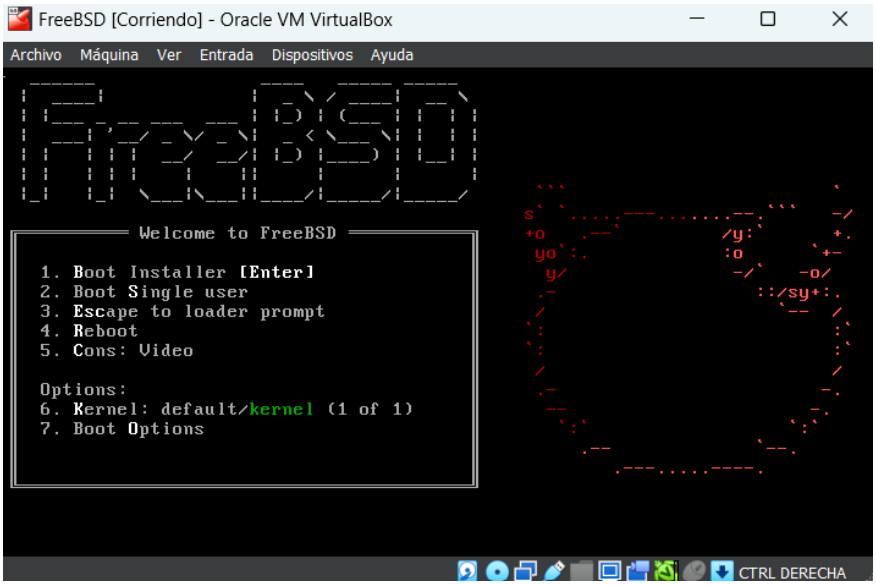
Agregar usuario



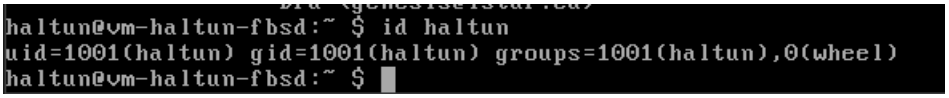


Reinicio de máquina virtual

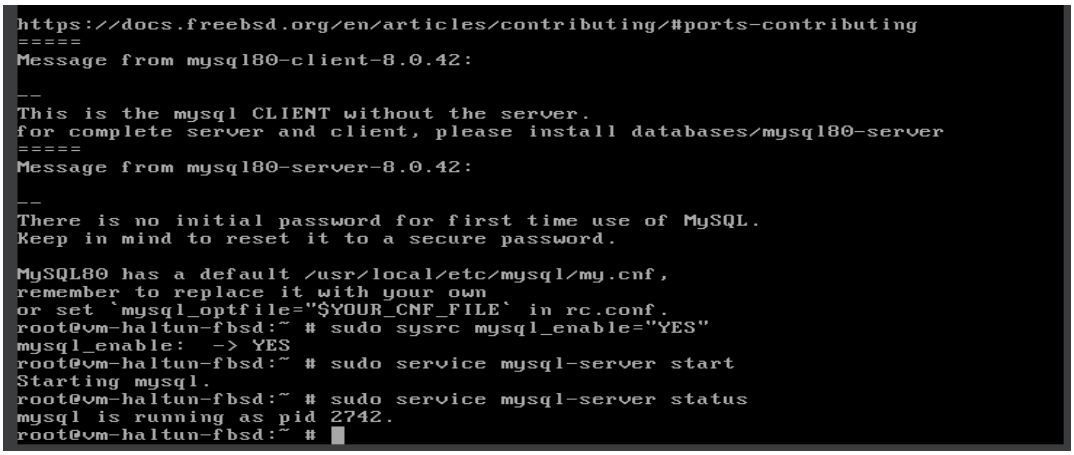
Ventana de inicio de FreeBSD:



Usuario creado



INSTALAR **MySQL 8.x** pkg install mysql80-server mysql80-client



Instalar htop pkg install htop

```
root@vm-haltun-fbsd:~ # sudo pkg install htop
Updating FreeBSD repository catalogue...
FreeBSD repository is up to date.
All repositories are up to date.
The following 1 package(s) will be affected (of 0 checked):

New packages to be INSTALLED:
        htop: 3.4.0

Number of packages to be installed: 1

110 KiB to be downloaded.

Proceed with this action? [y/N]: y
[1/1] Fetching htop-3.4.0.pkg: 100%  110 KiB 113.0kB/s    00:01
Checking integrity... done (0 conflicting)
[1/1] Installing htop-3.4.0...
[1/1] Extracting htop-3.4.0: 100%
root@vm-haltun-fbsd:~ #
```

Instalar nmap pkg install nmap

```
root@vm-haltun-fbsd:~ # sudo pkg install nmap
Updating FreeBSD repository catalogue...
FreeBSD repository is up to date.
All repositories are up to date.
The following 1 package(s) will be affected (of 0 checked):

New packages to be INSTALLED:
        nmap: 7.94_3

Number of packages to be installed: 1

The process will require 26 MiB more space.
6 MiB to be downloaded.

Proceed with this action? [y/N]: y
[1/1] Fetching nmap-7.94_3.pkg: 100%    6 MiB 566.3kB/s    00:11
Checking integrity... done (0 conflicting)
[1/1] Installing nmap-7.94_3...
[1/1] Extracting nmap-7.94_3: 100%
root@vm-haltun-fbsd:~ #
```

Instalar neofetch pkg install neofetch

```
All repositories are up to date.
The following 3 package(s) will be affected (of 0 checked):

New packages to be INSTALLED:
        bash: 5.2.37
        neofetch: 7.1.0_1
        readline: 8.2.13_2

Number of packages to be installed: 3

The process will require 11 MiB more space.
2 MiB to be downloaded.

Proceed with this action? [y/N]: y
[1/3] Fetching neofetch-7.1.0_1.pkg: 100%   82 KiB  83.6kB/s    00:01
[2/3] Fetching readline-8.2.13_2.pkg: 100%  397 KiB 406.3kB/s    00:01
[3/3] Fetching bash-5.2.37.pkg: 100%    2 MiB 585.2kB/s    00:03
Checking integrity... done (0 conflicting)
[1/3] Installing readline-8.2.13_2...
[1/3] Extracting readline-8.2.13_2: 100%
[2/3] Installing bash-5.2.37...
[2/3] Extracting bash-5.2.37: 100%
[3/3] Installing neofetch-7.1.0_1...
[3/3] Extracting neofetch-7.1.0_1: 100%
root@vm-haltun-fbsd:~ #
```

Instalar screenfetch pkg install screenfetch

```
[15/16] Extracting xapian-1.3.4: 100%
[16/16] Installing screenFetch-3.9.9...
[16/16] Extracting screenFetch-3.9.9: 100%
root@vm-haltun-fbsd:~ #
```

Instalar ssh server

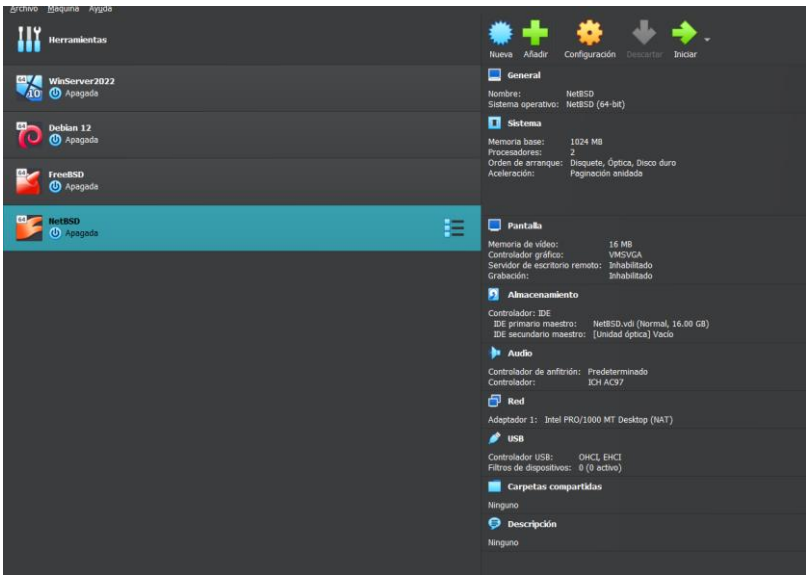
```
root@vm-haltun-fbsd:~ # sudo sysrc sshd_enable="YES"
sshd_enable: YES -> YES
root@vm-haltun-fbsd:~ # sudo service sshd start
sshd already running?  (pid=784).
root@vm-haltun-fbsd:~ # sudo service sshd status
sshd is running as pid 784.
root@vm-haltun-fbsd:~ #
```

Conexión a NAP ip 10.0.2.15

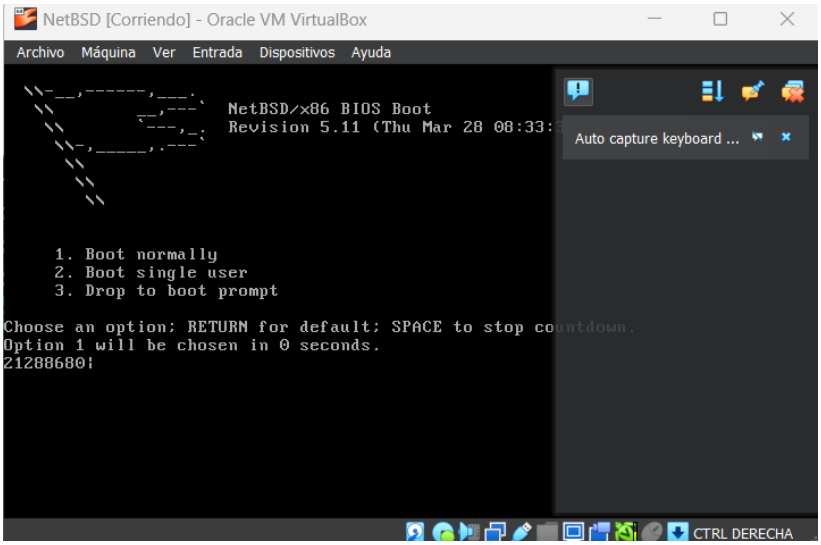
```
root@vm-haltun-fbsd:~ # ifconfig
em0: flags=1008843<UP,BROADCAST,RUNNING,SIMPLEX,MULTICAST,LOWER_UP> metric 0 mtu
 1500
        options=48505bb<RXCSUM,TXCSUM,VLAN_MTU,VLAN_HWTAGGING,JUMBO_MTU,VLAN_HWC
SUM,TSO4,LRO,VLAN_HWFILTER,VLAN_HWTSO,HWSTATS,MEXTPG>
        ether 08:00:27:e8:2e:4e
        inet 10.0.2.15 netmask 0xffffff00 broadcast 10.0.2.255
        media: Ethernet autoselect (1000baseT <full-duplex>)
        status: active
        nd6 options=29<PERFORMNUD,IFDISABLED,AUTO_LINKLOCAL>
lo0: flags=1008049<UP,LOOPBACK,RUNNING,MULTICAST,LOWER_UP> metric 0 mtu 16384
        options=680003<RXCSUM,TXCSUM,LINKSTATE,RXCSUM_IPV6,TXCSUM_IPV6>
        inet 127.0.0.1 netmask 0xff000000
        inet6 ::1 prefixlen 128
        inet6 fe80::1%lo0 prefixlen 64 scopeid 0x2
        groups: lo
        nd6 options=21<PERFORMNUD,AUTO_LINKLOCAL>
root@vm-haltun-fbsd:~ #
```

Unix > NetBSD 10 Server (Consola)

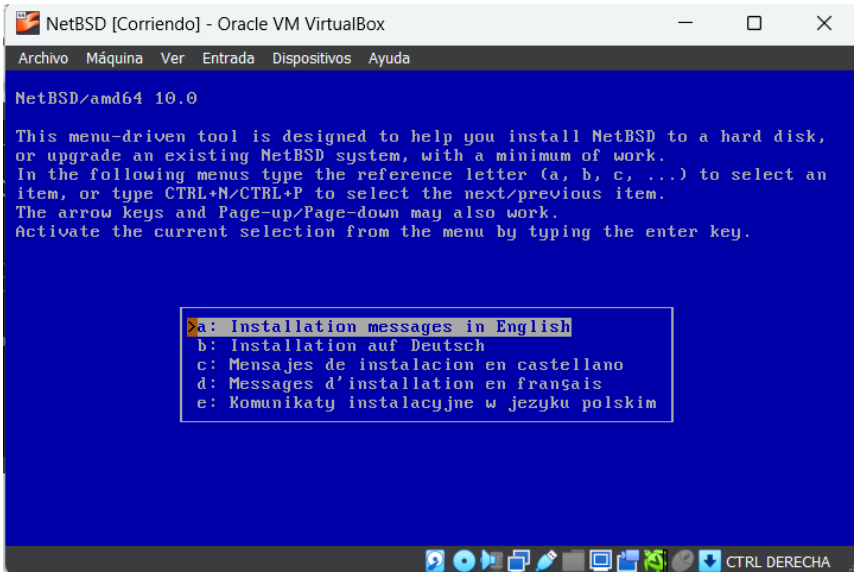
Crear máquina virtual



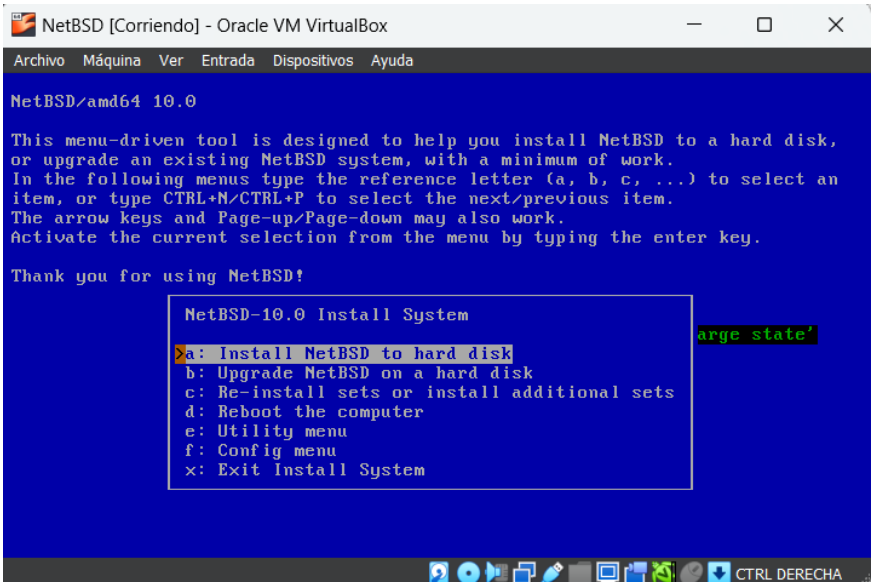
Ventana de inicio



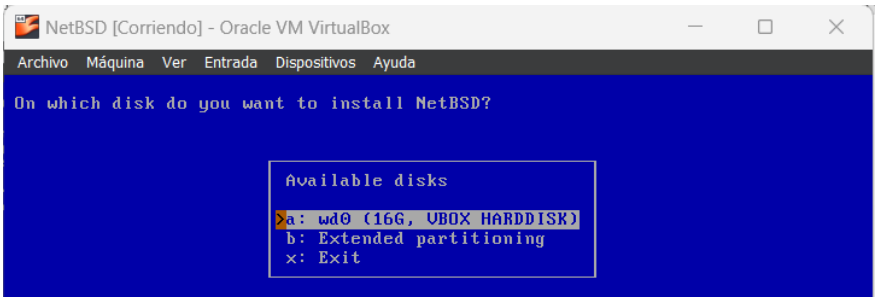
Seleccionar idioma



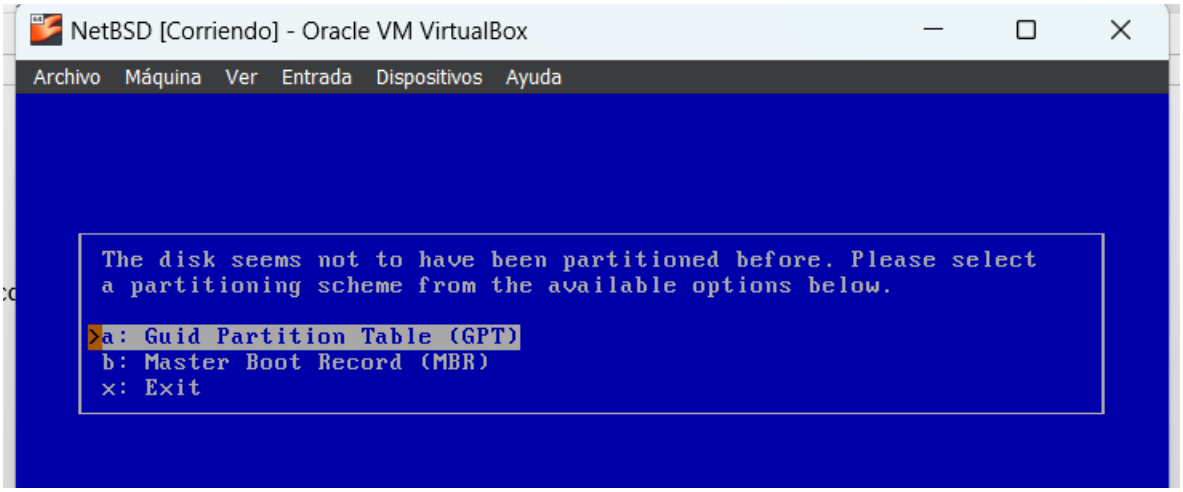
Instalar Netbsd



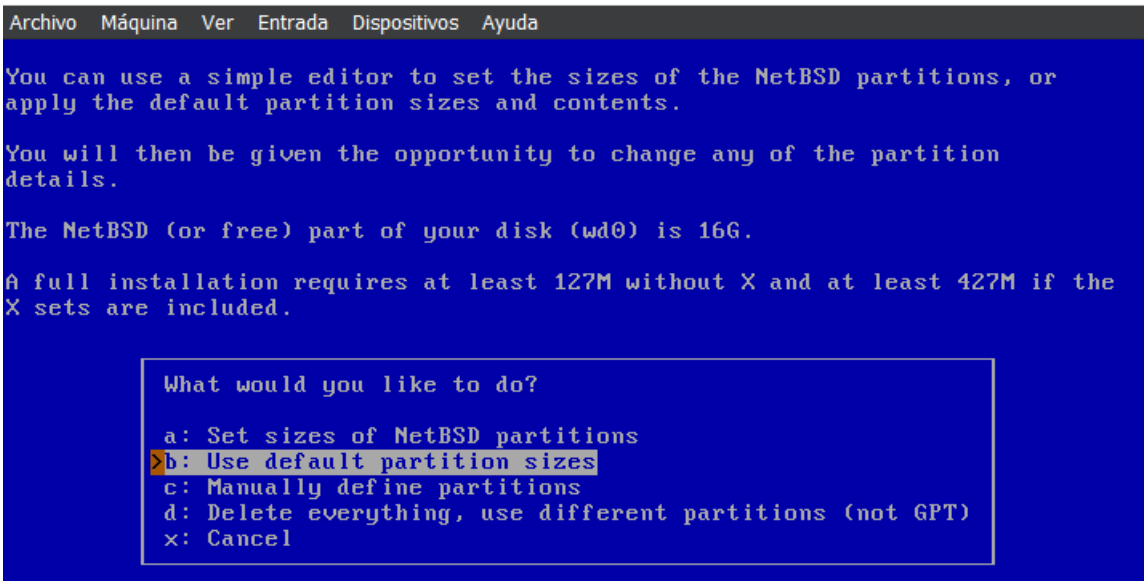
Instalar el disco



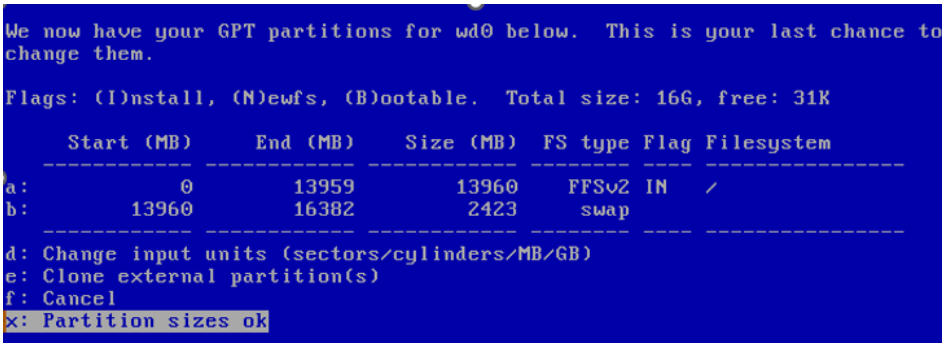
Seleccionar el tipo de partición



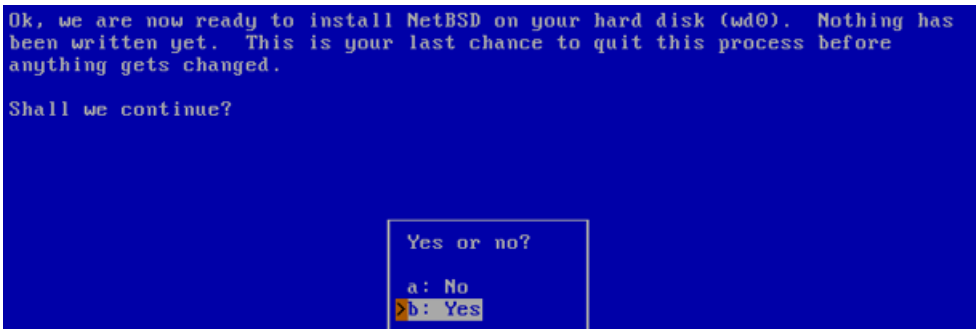
Realizar la partición por default



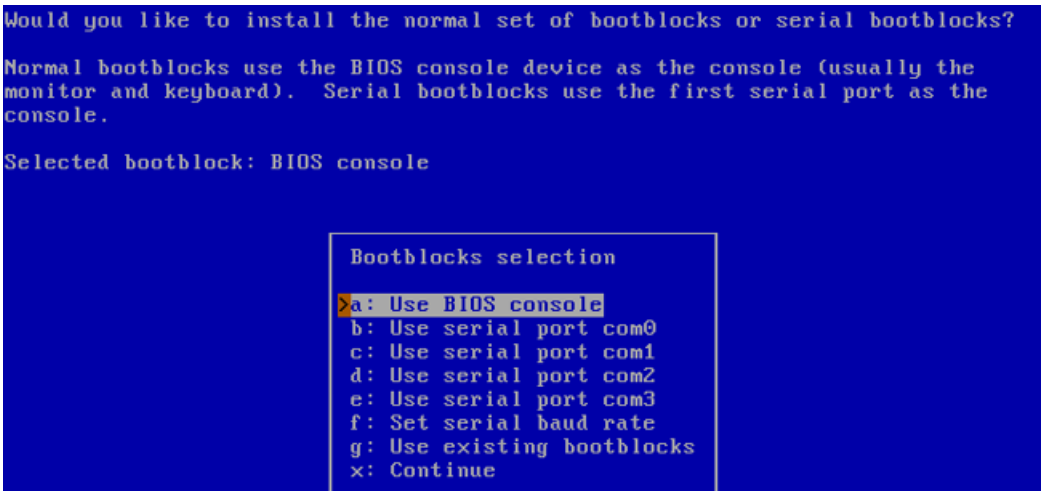
Presionar ok para seguir con el proceso:



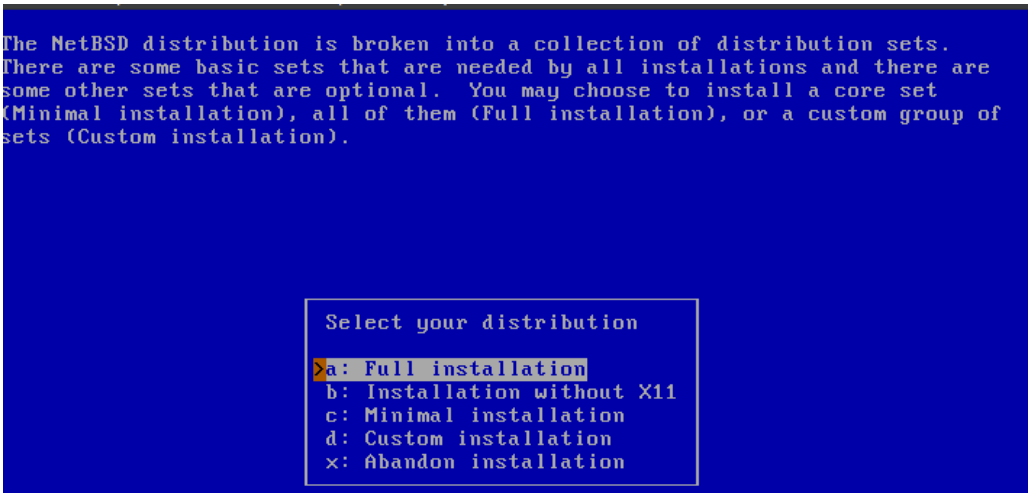
Proceso listo para descargar:



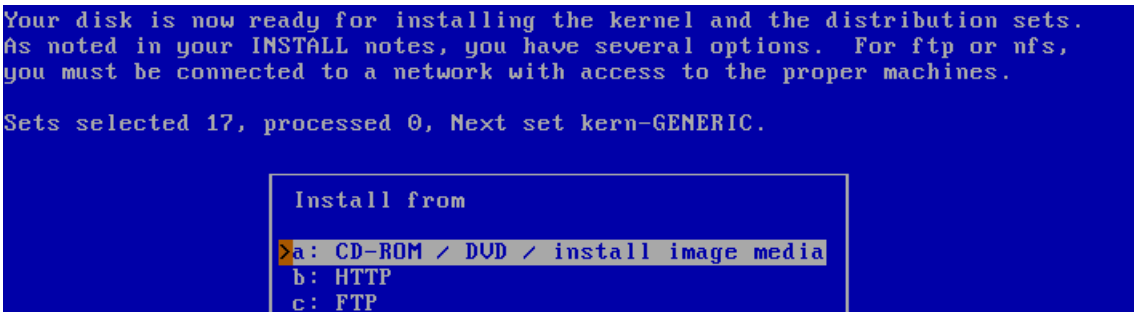
Utilizar el modo consola:



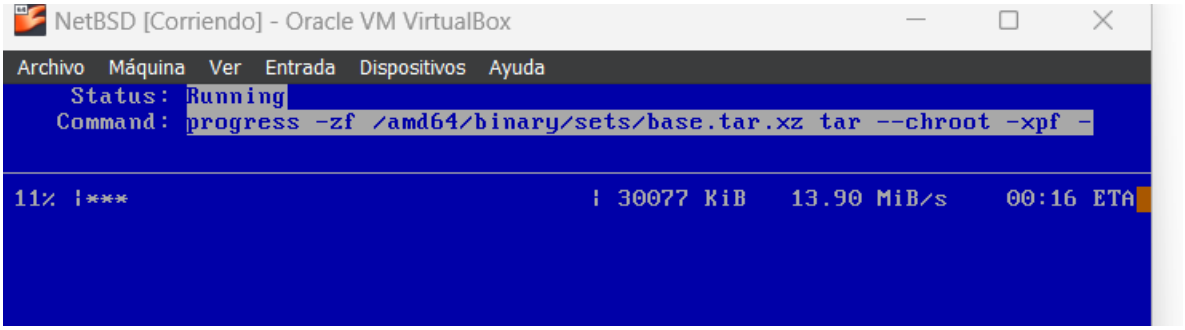
Full instalación



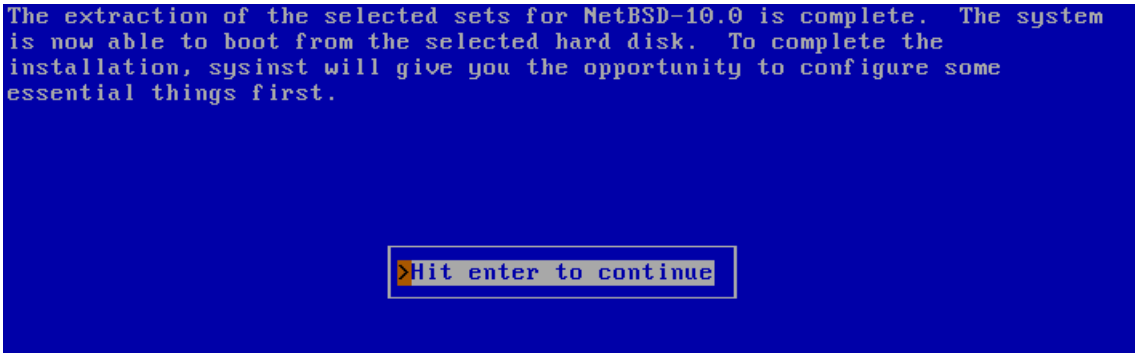
Seleccionar Kernel y distribución del disco



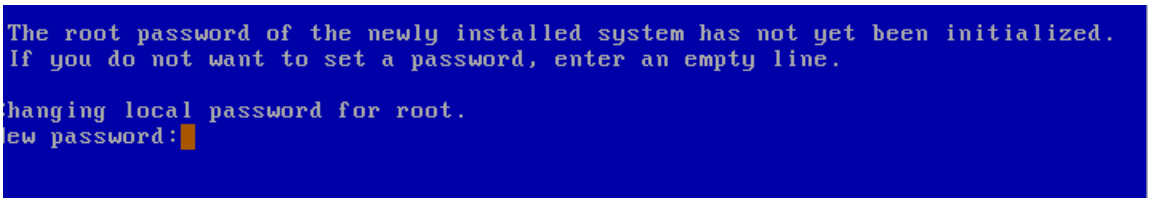
Instalando



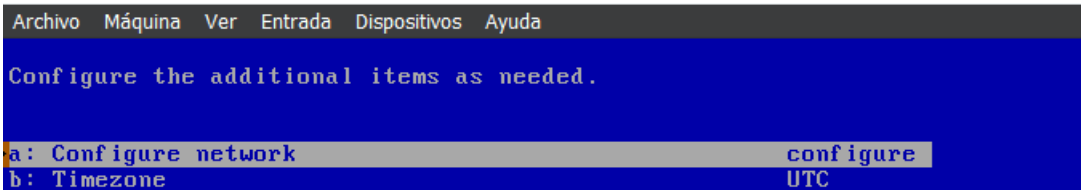
Esperar las descargas



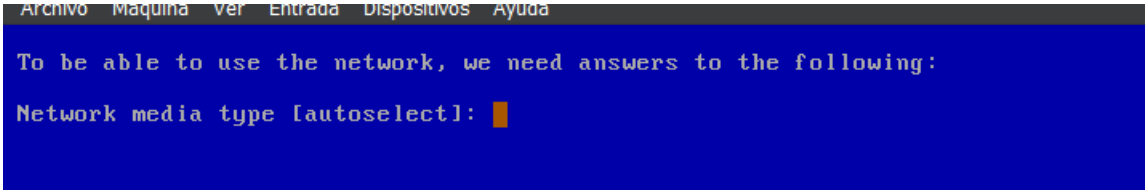
Crear contraseña al usuario root

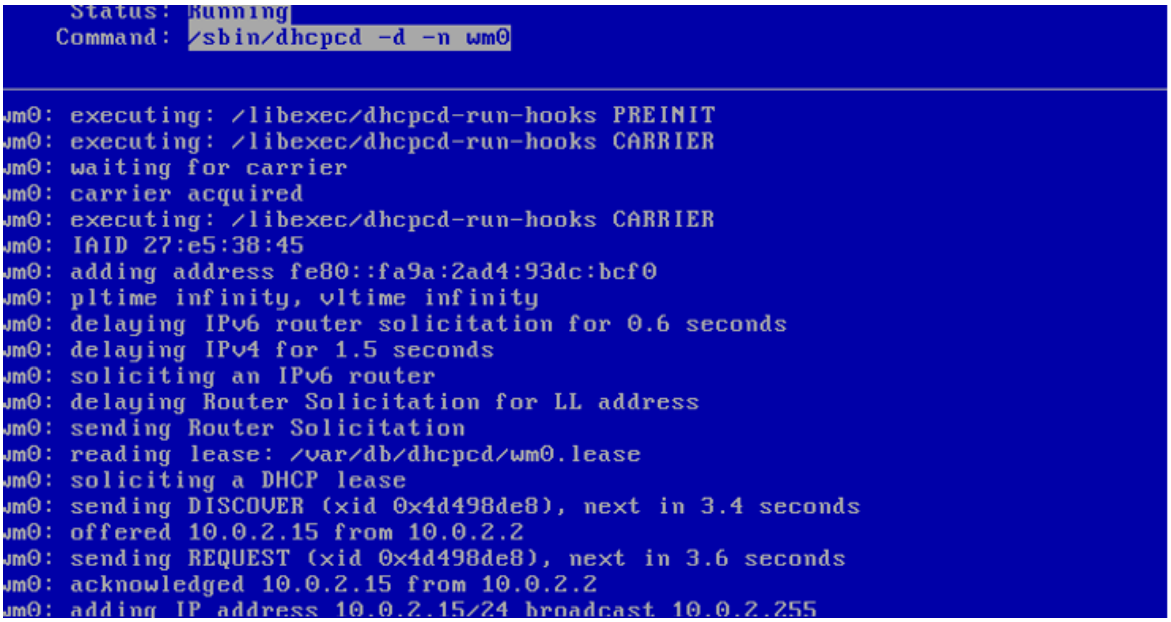


Configurar la red

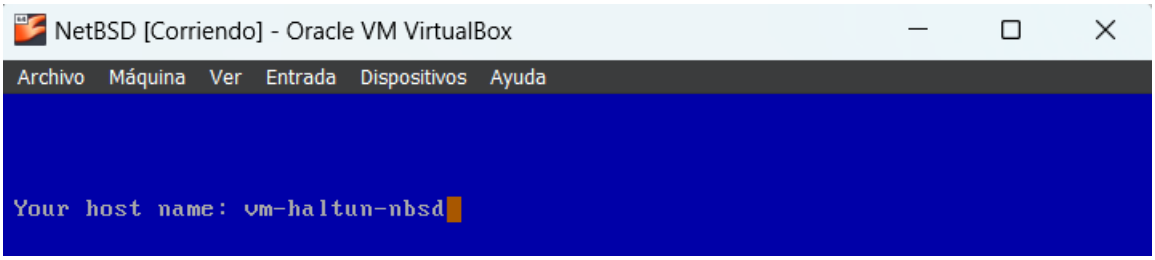


Dejar la opción por defecto



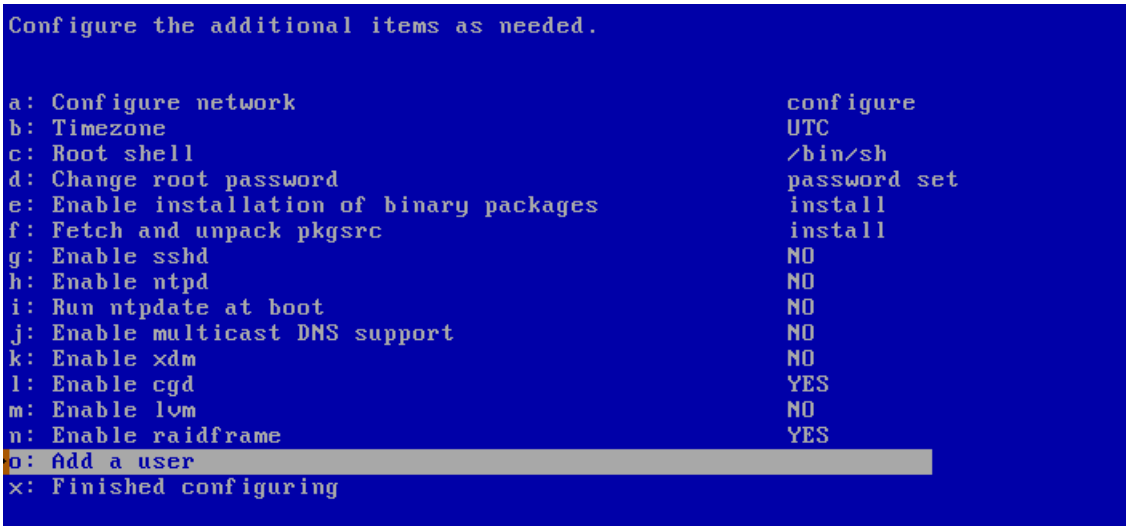


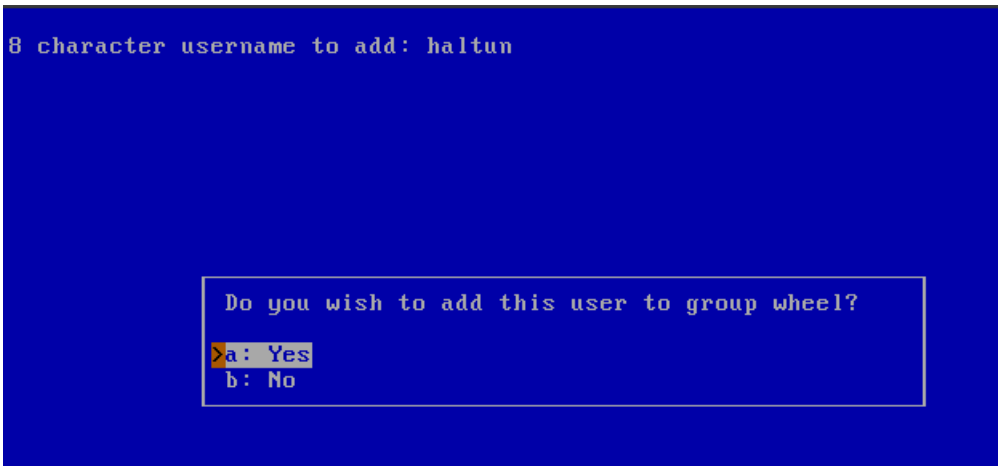
Asignar el hostname

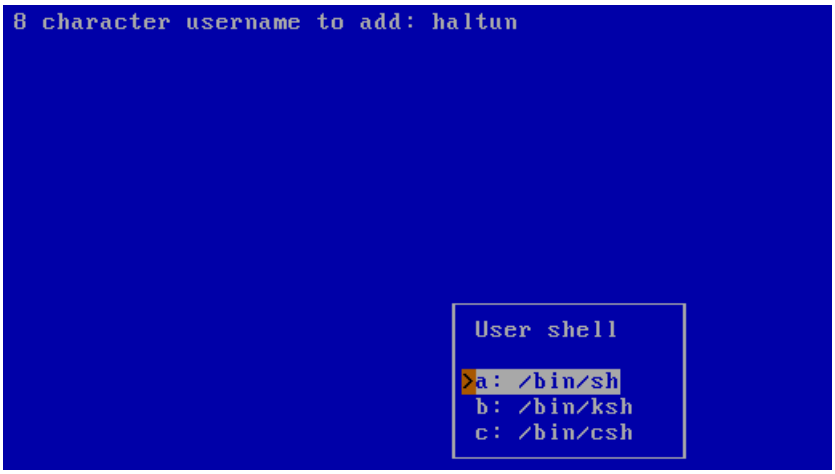


Confirmar datos

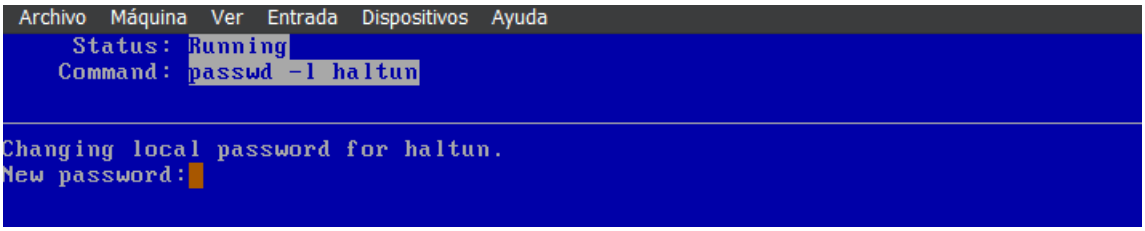
Agregar un usuario



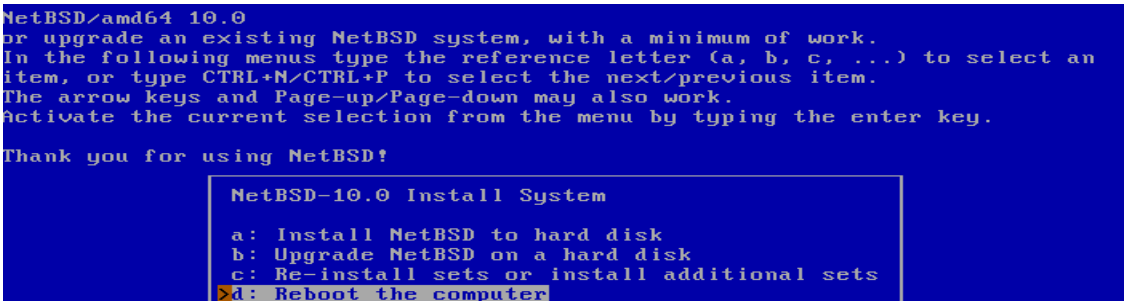




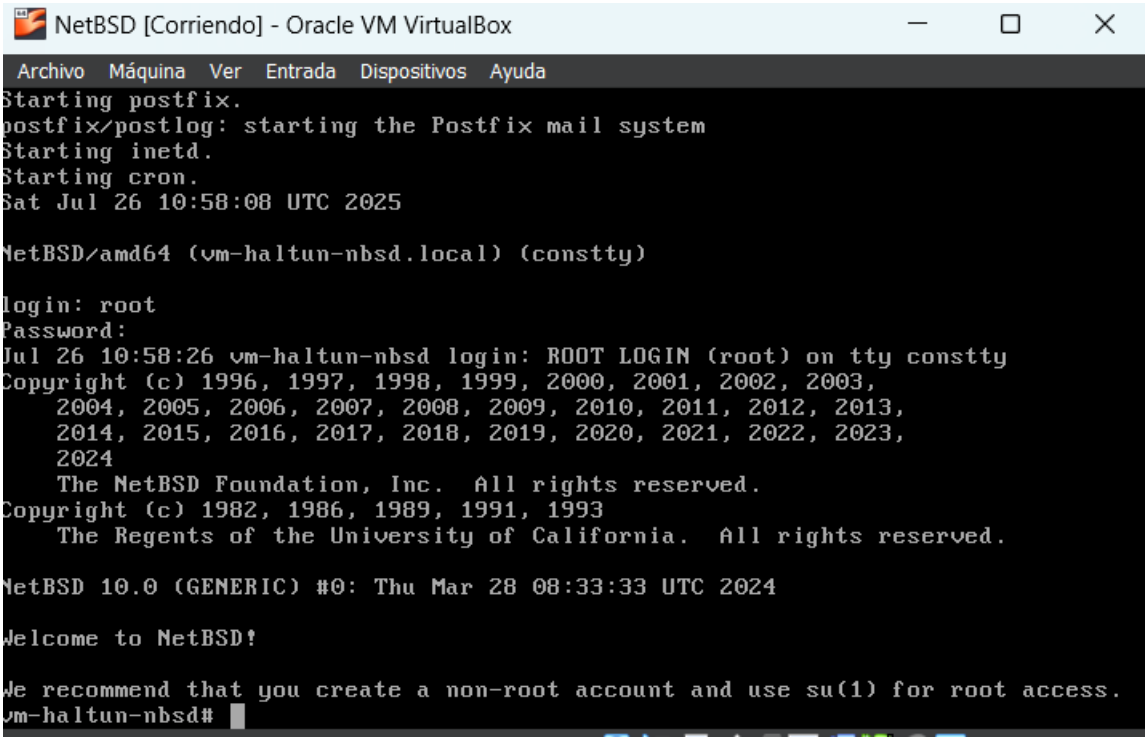
Ingresar contraseña



Validar configuración



Conexión completa



INSTALAR **MySQL 8.x** pkg install mysql80-server mysql80-client

```
vm-haltun-nbsd# tar xf /usr/pkgsrc.tar.gz
vm-haltun-nbsd# cd /usr/pkgsrc/databases/mysql80-client
vm-haltun-nbsd#
```

Instalar htop pkg install htop

```
vm-haltun-nbsd# cd /usr/pkgsrc/sysutils/htop
vm-haltun-nbsd#
```

Instalar nmap pkg install nmap

```
vm-haltun-nbsd# cd /usr/pkgsrc/net/nmap
vm-haltun-nbsd#
```

Instalar neofetch pkg install neofetch

```
vm-haltun-nbsd# cd /usr/pkgsrc/sysutils/neofetch
vm-haltun-nbsd#
```

Instalar ssh server

```
vm-haltun-nbsd# cd /usr/pkgsrc/security/openssh
vm-haltun-nbsd#
```

Conexión a NAP ip 10.0.2.15

```
vm-haltun-nbsd# cd /usr/pkgsrc/misc/screenfetch
cd: can't cd to /usr/pkgsrc/misc/screenfetch
vm-haltun-nbsd# cd /usr/pkgsrc/security/openssh
vm-haltun-nbsd# cd /usr/pkgsrc/misc/screenfetch
cd: can't cd to /usr/pkgsrc/misc/screenfetch
vm-haltun-nbsd# find . -type d -name '*screenfetch*'
vm-haltun-nbsd# ifconfig
wm0: flags=0x8843<UP,BROADCAST,RUNNING,SIMPLEX,MULTICAST> mtu 1500
        capabilities=0x2bf80<TSO4,IP4CSUM_Rx,IP4CSUM_Tx,TCP4CSUM_Rx>
        capabilities=0x2bf80<TCP4CSUM_Tx,UDP4CSUM_Rx,UDP4CSUM_Tx,TCP6CSUM_Tx>
        capabilities=0x2bf80<UDP6CSUM_Tx>
        enabled=0
        ec_capabilities=0x7<VLAN_MTU,VLAN_HWTAGGING,JUMBO_MTU>
        ec_enabled=0x2<VLAN_HWTAGGING>
        address: 08:00:27:92:42:4b
        media: Ethernet autoselect (1000baseT full-duplex)
        status: active
        inet6 fe80::a00:27ff:fe92:424b%wm0/64 flags 0 scopeid 0x1
        inet 10.0.2.15/24 broadcast 10.0.2.255 flags 0
lo0: flags=0x8049<UP,LOOPBACK,RUNNING,MULTICAST> mtu 33624
        status: active
        inet6 ::1/128 flags 0x20<NODAD>
        inet6 fe80::1%lo0/64 flags 0 scopeid 0x2
        inet 127.0.0.1/8 flags 0
vm-haltun-nbsd#
```

Conclusión

La instalación de Debian 12, FreeBSD y NetBSD 10 me permitió visualizar las diferencias claves entre distribuciones de tipo GNU/Linux y Unix-like BSD, en aspectos como el proceso de instalación, el manejo de paquetes y la configuración inicial del sistema. Debian 12 se destaca por su facilidad de instalación, interfaz gráfica amigable, reconocimiento automático de hardware y amplio soporte de paquetes. FreeBSD ofrece un enfoque más técnico, pero muy robusto, con una instalación clara pero menos asistida. NetBSD 10 mostró ser un sistema altamente portable y modular, aunque más complejo de configurar al inicio, especialmente en entornos virtuales.