

2. Descargar e instalar Linux dentro de la máquina virtual

- Descarga la **ISO de Ubuntu Server** desde: <https://ubuntu.com/download/server>
- En VirtualBox:
 - Crear **Nueva VM** → Tipo: Linux → Versión: Ubuntu (64-bit).
 - Asignar recursos: 2 GB RAM mínimo, 20 GB de disco.
 - Montar la ISO de Ubuntu Server en la unidad óptica.
- Inicia la VM y sigue el asistente de instalación:
 - Idioma: Español o Inglés.
 - Configura teclado.
 - Configura usuario y contraseña del administrador.
 - Configura red (DHCP automático está bien).
 - Instala OpenSSH Server cuando lo pregunte (importante).

3. Configuración del sistema operativo

- Una vez instalado, entra con tu usuario y contraseña.
- Actualiza el sistema:
- `sudo apt update && sudo apt upgrade -y`
- Verifica la red con:
- `ip a`

(Debes tener una IP asignada).

4. Instalar MySQL Server

- Instala MySQL:
 - `sudo apt install mysql-server -y`
 - Verifica el estado del servicio:
 - `systemctl status mysql`
 - Asegúrate de que inicie siempre:
 - `sudo systemctl enable mysql`
-

5. Configuración de MySQL Server

- Ejecuta el script de seguridad:
- sudo mysql_secure_installation

Opciones recomendadas:

- Configurar root con contraseña.
 - Quitar usuarios anónimos.
 - Deshabilitar login remoto de root.
 - Eliminar base de datos de prueba.
 - Entra a MySQL:
 - sudo mysql -u root -p
 - Crea un usuario para conexiones remotas:
 - CREATE USER 'admin'@'%' IDENTIFIED BY 'tu_password';
 - GRANT ALL PRIVILEGES ON *.* TO 'admin'@'%' WITH GRANT OPTION;
 - FLUSH PRIVILEGES;
-

6. Configurar servidor para conexión remota (Túnel SSH)

◆ En Linux (Ubuntu Server):

- Edita el archivo de configuración de MySQL:
- sudo nano /etc/mysql/mysql.conf.d/mysqld.cnf
- Busca la línea:
- bind-address = 127.0.0.1

y cámbiala a:

bind-address = 0.0.0.0

- Reinicia MySQL:
- sudo systemctl restart mysql
- Abre el puerto 3306 (si usas firewall UFW):
- sudo ufw allow 3306/tcp
- sudo ufw reload
- Ahora tu servidor acepta conexiones remotas.

◆ Conexión vía SSH desde otra máquina

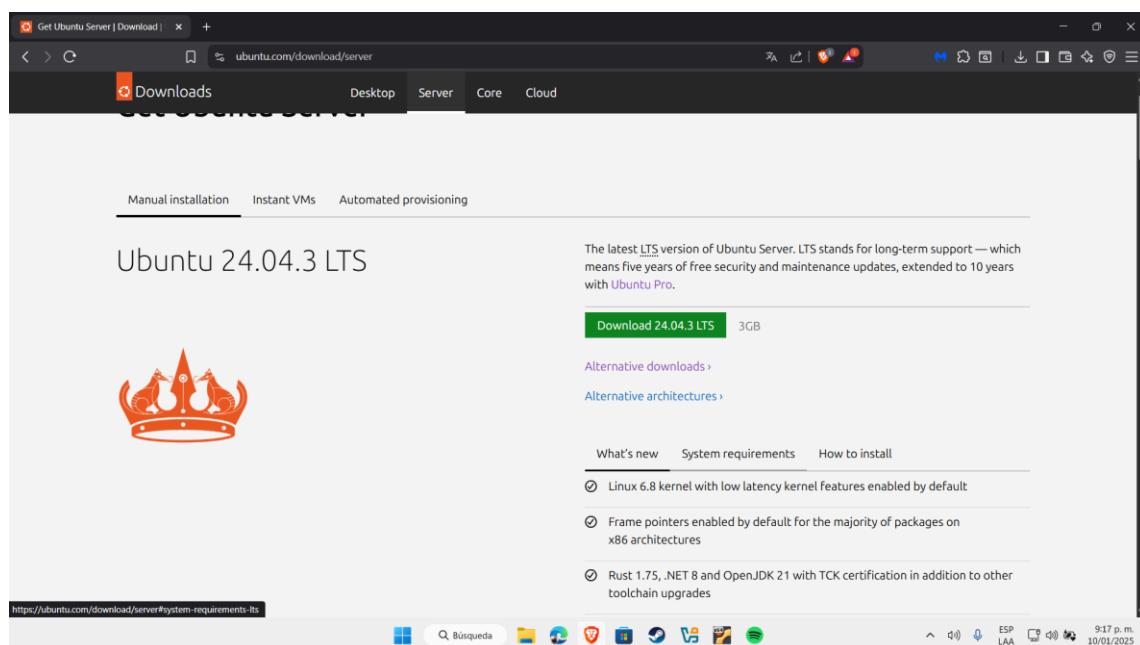
En tu máquina real (Windows), abre terminal y escribe:

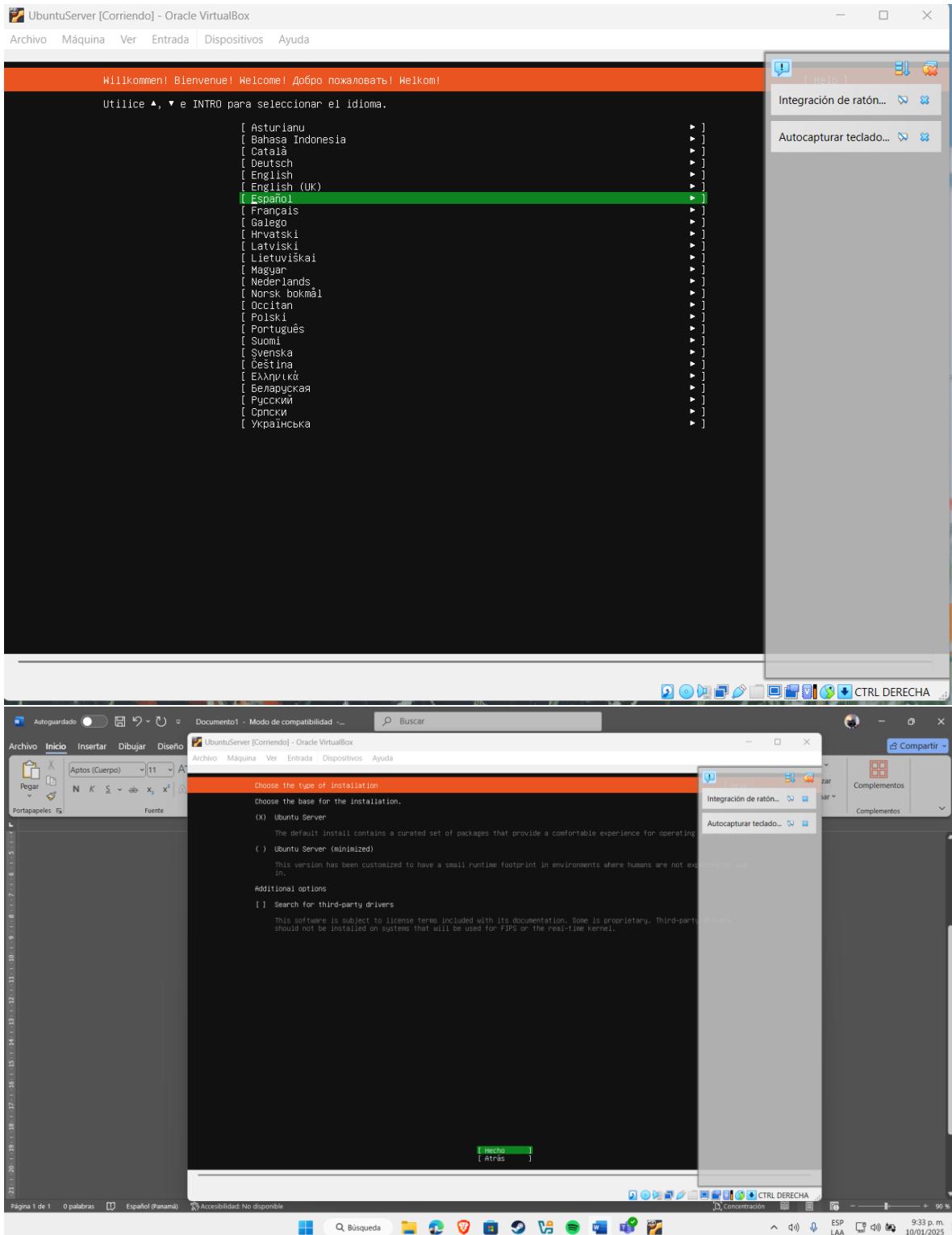
```
ssh usuario@ip_del_servidor
```

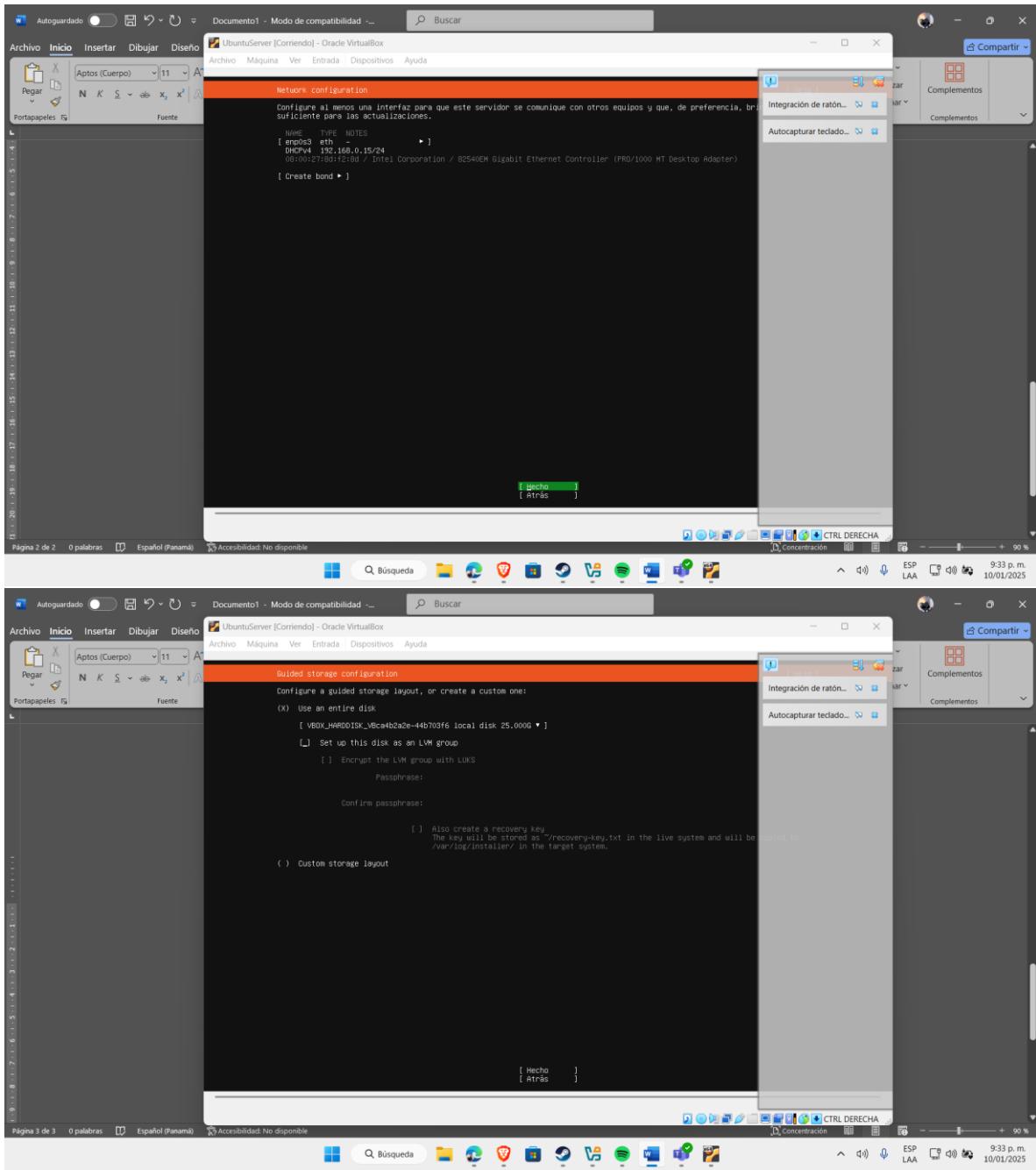
- Ejemplo:

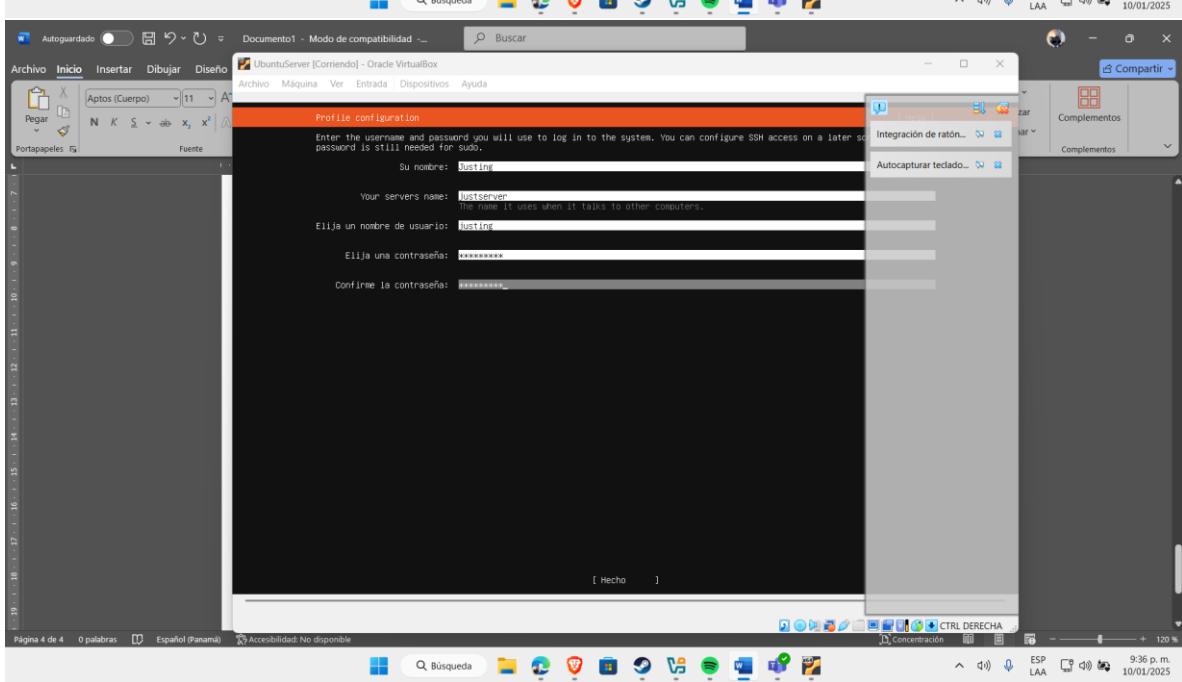
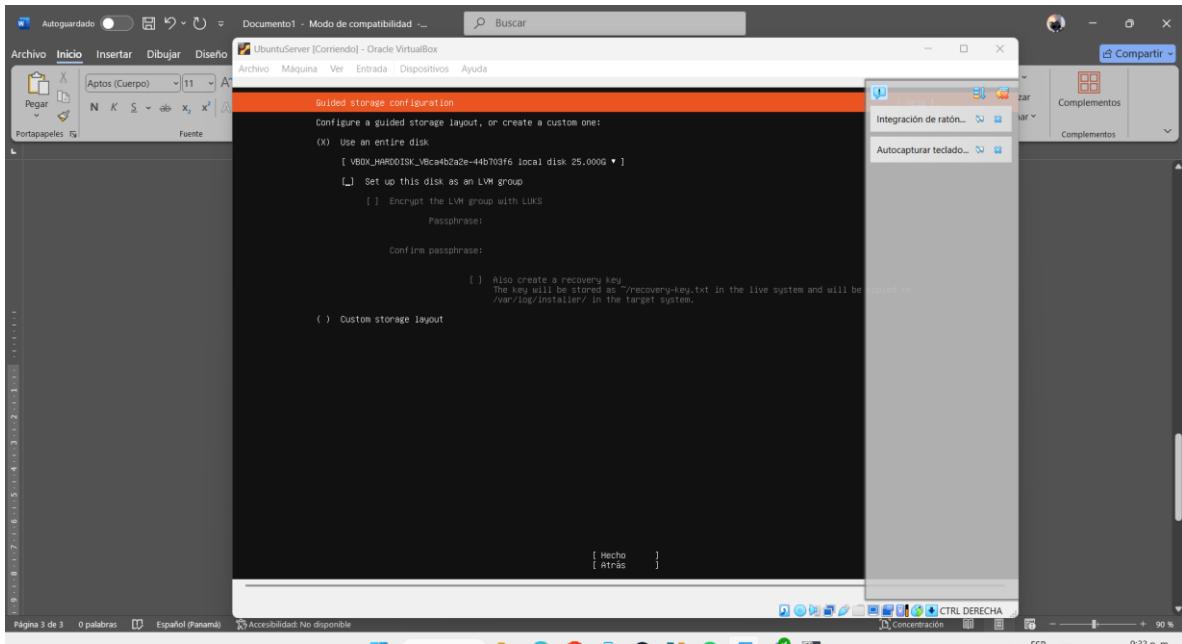
```
ssh justing@192.168.1.50
```

- También puedes usar **PuTTY** o **Visual Studio Code (Remote SSH)** para conectarte.









```
Ubuntu 24.04.3 LTS justserver tty1

justserver login: justing
Password:
^[[A
Login incorrect
justserver login: justing
Password:
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.8.0-85-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro
```

```
System information as of Tue Aug  5 17:06:09 UTC 2025
```

```
System load:    0.88      Processes:          29
Usage of /home: unknown   Users logged in:    0
Memory usage:   5%         IPv4 address for eth0: 10.10.10.2
Swap usage:     0%
```

```
El mantenimiento de seguridad expandido para Applications está desact
```

```
Se pueden aplicar 13 actualizaciones de forma inmediata.
```

```
Para ver estas actualizaciones adicionales, ejecute: apt list --upgra
```

```
Active ESM Apps para recibir futuras actualizaciones de seguridad adi
Vea https://ubuntu.com/esm o ejecute «sudo pro status»
```

```
The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/*copyright.
```

```
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.
```

```
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
```

```
justing@justserver:~$ sudo apt update && sudo apt upgrade -y
```

```
[reparando para desempaquetar .../02-bind9-host_1%3a9.18.39-0ubuntu0.24.04.1_all.deb
  esempaquetando bind9-host (1:9.18.39-0ubuntu0.24.04.1) sobre (1:9.18.30-0ubuntu0.24.04.1)
[reparando para desempaquetar .../03-bind9-dnsutils_1%3a9.18.39-0ubuntu0.24.04.1_all.deb
  esempaquetando bind9-dnsutils (1:9.18.39-0ubuntu0.24.04.1) sobre (1:9.18.30-0ubuntu0.24.04.1)
[reparando para desempaquetar .../04-bind9-libs_1%3a9.18.39-0ubuntu0.24.04.1_all.deb
  esempaquetando bind9-libs:amd64 (1:9.18.39-0ubuntu0.24.04.1) sobre (1:9.18.30-0ubuntu0.24.04.1)
[reparando para desempaquetar .../05-powermgmt-base_1.37ubuntu0.1_all.deb ...
  esempaquetando powermgmt-base (1.37ubuntu0.1) sobre (1.37) ...
[reparando para desempaquetar .../06-libfwupd2_1.9.31-0ubuntu1~24.04.1_amd64.deb
  esempaquetando libfwupd2:amd64 (1.9.31-0ubuntu1~24.04.1) sobre (1.9.30-0ubuntu1~24.04.1)
[reparando para desempaquetar .../07-fwupd_1.9.31-0ubuntu1~24.04.1_amd64.deb ...
  esempaquetando fwupd (1.9.31-0ubuntu1~24.04.1) sobre (1.9.30-0ubuntu1~24.04.1)
[reparando para desempaquetar .../08-landscape-common_24.02-0ubuntu5.6_amd64.deb
  esempaquetando landscape-common (24.02-0ubuntu5.6) sobre (24.02-0ubuntu5.3) ...
[reparando para desempaquetar .../09-software-properties-common_0.99.49.3_all.deb
  esempaquetando software-properties-common (0.99.49.3) sobre (0.99.49.2) ...
[reparando para desempaquetar .../10-python3-software-properties_0.99.49.3_all.deb
  esempaquetando python3-software-properties (0.99.49.3) sobre (0.99.49.2) ...
  configurando powermgmt-base (1.37ubuntu0.1) ...
  configurando ubuntu-drivers-common (1:0.9.7.6ubuntu3.4) ...
  configurando bind9-libs:amd64 (1:9.18.39-0ubuntu0.24.04.1) ...
  configurando libfwupd2:amd64 (1.9.31-0ubuntu1~24.04.1) ...
  configurando landscape-common (24.02-0ubuntu5.6) ...
  configurando python3-software-properties (0.99.49.3) ...
  configurando systemd-hwe-hwdb (255.1.5) ...
  configurando bind9-host (1:9.18.39-0ubuntu0.24.04.1) ...
  configurando fwupd (1.9.31-0ubuntu1~24.04.1) ...
  wupd-offline-update.service is a disabled or a static unit not running, not starting it.
  wupd-refresh.service is a disabled or a static unit not running, not starting it.
  wupd.service is a disabled or a static unit not running, not starting it.
  configurando software-properties-common (0.99.49.3) ...
  configurando bind9-dnsutils (1:9.18.39-0ubuntu0.24.04.1) ...
  procesando disparadores para libc-bin (2.39-0ubuntu8.6) ...
  procesando disparadores para man-db (2.12.0-4build2) ...
  procesando disparadores para dbus (1.14.10-4ubuntu4.1) ...
  procesando disparadores para udev (255.4-1ubuntu8.10) ...
  procesando disparadores para install-info (7.1-3build2) ...
  scanning processes...
  scanning linux images...

  running kernel seems to be up-to-date.

  0 services need to be restarted.

  0 containers need to be restarted.

  0 user sessions are running outdated binaries.

  0 VM guests are running outdated hypervisor (qemu) binaries on this host.

ustling@justserver:~$
```

```
justing@justserver:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:8d:f2:8d brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.15/24 metric 100 brd 192.168.0.255 scope global dynamic enp0s3
        valid_lft 604539sec preferred_lft 604539sec
    inet6 2800:355:12:3b:a00:27ff:fe8d:f28d/64 scope global dynamic mngtmpaddr noprefixroute
        valid_lft 3599sec preferred_lft 3599sec
    inet6 fe80::a00:27ff:fe8d:f28d/64 scope link
        valid_lft forever preferred_lft forever
```

```
reading /usr/share/mecab/dic/ipadic/Postp-col.csv ... 91
reading /usr/share/mecab/dic/ipadic/Noun.org.csv ... 16668
reading /usr/share/mecab/dic/ipadic/Adnominal.csv ... 135
reading /usr/share/mecab/dic/ipadic/Adj.csv ... 27210
reading /usr/share/mecab/dic/ipadic/Noun.verbal.csv ... 12146
reading /usr/share/mecab/dic/ipadic/Noun.adjv.csv ... 3328
reading /usr/share/mecab/dic/ipadic/Noun.name.csv ... 34202
reading /usr/share/mecab/dic/ipadic/Auxil.csv ... 199
reading /usr/share/mecab/dic/ipadic/Verb.csv ... 130750
reading /usr/share/mecab/dic/ipadic/Noun.adverbial.csv ... 795
reading /usr/share/mecab/dic/ipadic/Prefix.csv ... 221
reading /usr/share/mecab/dic/ipadic/Conjunction.csv ... 171
reading /usr/share/mecab/dic/ipadic/Noun.nai.csv ... 42
reading /usr/share/mecab/dic/ipadic/Postp.csv ... 146
reading /usr/share/mecab/dic/ipadic/Others.csv ... 2
reading /usr/share/mecab/dic/ipadic/Noun.csv ... 60477
reading /usr/share/mecab/dic/ipadic/Noun.others.csv ... 151
reading /usr/share/mecab/dic/ipadic/Noun.proper.csv ... 27328
reading /usr/share/mecab/dic/ipadic/Suffix.csv ... 1393
reading /usr/share/mecab/dic/ipadic/Filler.csv ... 19
reading /usr/share/mecab/dic/ipadic/Noun.demonst.csv ... 120
reading /usr/share/mecab/dic/ipadic/Noun.place.csv ... 72999
reading /usr/share/mecab/dic/ipadic/Noun.number.csv ... 42
emitting double-array: 100% #####|#####
reading /usr/share/mecab/dic/ipadic/matrix.def ... 1316x1316
emitting matrix      : 100% #####|#####
done!
update-alternatives: utilizando /var/lib/mecab/dic/ipadic-utf8 para proveer /
Configurando libhtml-parser-perl:amd64 (3.81-1build3) ...
Configurando libhttp-message-perl (6.45-1ubuntu1) ...
Configurando mysql-server (8.0.43-0ubuntu0.24.04.2) ...
Configurando libcgi-pm-perl (4.63-1) ...
Configurando libhtml-template-perl (2.97-2) ...
Configurando libcgi-fast-perl (1:2.17-1) ...
Procesando disparadores para man-db (2.12.0-4build2) ...
Procesando disparadores para libc-bin (2.39-0ubuntu8.6) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host
```

```
justing@justserver:~$ systemctl status mysql
● mysql.service - MySQL Community Server
   Loaded: loaded (/usr/lib/systemd/system/mysql.service; enabled; preset: enabled)
   Active: active (running) since Thu 2025-10-02 02:49:20 UTC; 51s ago
     Process: 2781 ExecStartPre=/usr/share/mysql/mysql-systemd-start pre (code=exited, status=0/SUCCESS)
    Main PID: 2740 (mysqld)
      Status: "Server is operational"
        Tasks: 38 (limit: 4606)
       Memory: 361.2M (peak: 377.7M)
         CPU: 1.781s
        CGroup: /system.slice/mysql.service
                  └─2740 /usr/sbin/mysqld
```

```
Oct 02 02:49:18 justserver systemd[1]: Starting mysql.service - MySQL Community Server...
Oct 02 02:49:20 justserver systemd[1]: Started mysql.service - MySQL Community Server.
justing@justserver:~$
```

```
justing@justserver:~$ sudo systemctl enable mysql
Synchronizing state of mysql.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable mysql
justing@justserver:~$
```

```
VALIDATE PASSWORD COMPONENT can be used to test passwords
and improve security. It checks the strength of password
and allows the users to set only those passwords which are
secure enough. Would you like to setup VALIDATE PASSWORD component?
```

```
Press y|Y for Yes, any other key for No:
```

```
Skipping password set for root as authentication with auth_socket is used by default.
If you would like to use password authentication instead, this can be done with the "ALTER_USER"
See https://dev.mysql.com/doc/refman/8.0/en/alter-user.html#alter-user-password-management for
```

```
By default, a MySQL installation has an anonymous user,
allowing anyone to log into MySQL without having to have
a user account created for them. This is intended only for
testing, and to make the installation go a bit smoother.
You should remove them before moving into a production
environment.
```

```
Remove anonymous users? (Press y|Y for Yes, any other key for No) : y
Success.
```

```
Normally, root should only be allowed to connect from
'localhost'. This ensures that someone cannot guess at
the root password from the network.
```

```
Disallow root login remotely? (Press y|Y for Yes, any other key for No) : y
Success.
```

```
By default, MySQL comes with a database named 'test' that
anyone can access. This is also intended only for testing,
and should be removed before moving into a production
environment.
```

```
Remove test database and access to it? (Press y|Y for Yes, any other key for No) : y
- Dropping test database...
Success.
```

```
- Removing privileges on test database...
Success.
```

```
Reloading the privilege tables will ensure that all changes
made so far will take effect immediately.
```

```
Reload privilege tables now? (Press y|Y for Yes, any other key for No) : y
Success.
```

```
All done!
```

```
justing@justserver:~$ sudo mysql_secure_installation
Securing the MySQL server deployment.

Connecting to MySQL using a blank password.

VALIDATE PASSWORD COMPONENT can be used to test passwords
and improve security. It checks the strength of password
and allows the users to set only those passwords which are
secure enough. Would you like to setup VALIDATE PASSWORD component?

Press y|Y for Yes, any other key for No:

Skipping password set for root as authentication with auth_socket is used by default.
If you would like to use password authentication instead, this can be done with the "ALTER USER" command.
See https://dev.mysql.com/doc/refman/8.0/en/alter-user.html#alter-user-password-management for more information.
```

```
By default, a MySQL installation has an anonymous user,
allowing anyone to log into MySQL without having to have
a user account created for them. This is intended only for
testing, and to make the installation go a bit smoother.
You should remove them before moving into a production
environment.
```

```
justing@justserver:~$ sudo mysql -u root -p
Enter password:
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 12
Server version: 8.0.43-0ubuntu0.24.04.2 (Ubuntu)
```

```
Copyright (c) 2000, 2025, Oracle and/or its affiliates.
```

```
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.
```

```
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
```

```
mysql> CREATE USER 'admin'@'%' IDENTIFIED BY '123456789'; GRANT ALL PRIVILEGES ON *.* TO 'admin'@'%' WITH GRANT OPTION; FLUSH PRIVILEGES;
Query OK, 0 rows affected (0,03 sec)

Query OK, 0 rows affected (0,00 sec)

Query OK, 0 rows affected (0,01 sec)
```

```

# The MySQL database server configuration file.
#
# One can use all long options that the program supports.
# Run program with --help to get a list of available options and with
# --print-defaults to see which it would actually understand and use.
#
# For explanations see
# http://dev.mysql.com/doc/mysql/en/server-system-variables.html

# Here is entries for some specific programs
# The following values assume you have at least 32M ram

[mysqld]
#
# * Basic Settings
#
user          = mysql
# pid-file     = /var/run/mysqld/mysqld.pid
# socket       = /var/run/mysqld/mysqld.sock
# port         = 3306
# datadir      = /var/lib/mysql

# If MySQL is running as a replication slave, this should be
# changed. Ref https://dev.mysql.com/doc/refman/8.0/en/server-system-variables.html#sysvar_tmpdir
# tmpdir        = /tmp
#
# Instead of skip-networking the default is now to listen only on
# localhost which is more compatible and is not less secure.
bind-address    = 127.0.0.1
mysqlx-bind-address = 127.0.0.1
#
# * Fine Tuning
#
key_buffer_size   = 16M
# max_allowed_packet = 64M
# thread_stack      = 256K

# thread_cache_size    = -1

# This replaces the startup script and checks MyISAM tables if needed
# the first time they are touched
myisam-recover-options = BACKUP

# max_connections     = 151
[G Help          ^O Write Out    ^W Where Is      ^K Cut           [ Read 78 lines ]
^X Exit          ^R Read File   ^\ Replace      ^U Paste        ^T Execute      ^C Location    M-U Undo
^M-A Set          ^J Justify     ^/ Go To Line   M-E Redo
^M-G Copy

# localhost which is more compatible a
bind-address    = 127.0.0.1
mysqlx-bind-address = 127.0.0.1
#
justing@justserver:~$ sudo systemctl restart mysql
justing@justserver:~$ sudo ufw enable
firewall is active and enabled on system startup
justing@justserver:~$ sudo systemctl restart mysql
justing@justserver:~$ sudo ufw allow 3306/tcp
Rules updated
Rules updated (v6)

justing@justserver:~$ sudo ufw reload
Firewall reloaded
justing@justserver:~$
```

```

        valid_ltt forever prefer_reboot forever
justing@justserver:~$ sudo systemctl status ssh
● ssh.service - OpenBSD Secure Shell server
   Loaded: loaded (/usr/lib/systemd/system/ssh.service; disabled; preset: enabled)
     Active: inactive (dead)
TriggeredBy: ● ssh.socket
   Docs: man:sshd(8)
         man:sshd_config(5)
justing@justserver:~$ sudo apt update
Obj:1 http://security.ubuntu.com/ubuntu noble-security InRelease
Obj:2 http://archive.ubuntu.com/ubuntu noble InRelease
Obj:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Obj:4 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Leyendo lista de paquetes... Hecho
Creando árbol de dependencias... Hecho
Leyendo la información de estado... Hecho
Se puede actualizar 1 paquete. Ejecute «apt list --upgradable» para verlo.
justing@justserver:~$ sudo apt install openssh-server -y
Leyendo lista de paquetes... Hecho
Creando árbol de dependencias... Hecho
Leyendo la información de estado... Hecho
openSSH-server ya está en su versión más reciente (1:9.6p1-0ubuntu18.14).
0 actualizados, 0 nuevos se instalarán, 0 para eliminar y 1 no actualizados.
justing@justserver:~$ sudo systemctl enable ssh
Synchronizing state of ssh.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable ssh
Created symlink /etc/systemd/system/sshd.service → /usr/lib/systemd/system/ssh.service.
Created symlink /etc/systemd/system/multi-user.target.wants/ssh.service → /usr/lib/systemd/system/ssh.service.
justing@justserver:~$ sudo systemctl start ssh
justing@justserver:~$ _ 

C:\Users\justi>ssh justing@192.168.0.15
The authenticity of host '192.168.0.15 (192.168.0.15)' can't be established.
ED25519 key fingerprint is SHA256:H7AMA99vmNsWJ8Eya5M0hBGgiEMyBwaaAFxRTXypoA.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '192.168.0.15' (ED25519) to the list of known hosts.
justing@192.168.0.15's password:
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.8.0-85-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

System information as of jue 02 oct 2025 03:24:01 UTC

System load:          0.0
Usage of /:           28.4% of 24.44GB
Memory usage:         15%
Swap usage:           0%
Processes:            100
Users logged in:     1
IPv4 address for enp0s3: 192.168.0.15
IPv6 address for enp0s3: 2800:355:12:3b:a00:27ff:fe8d:f28d

El mantenimiento de seguridad expandido para Applications está desactivado
Se pueden aplicar 0 actualizaciones de forma inmediata.

Active ESM Apps para recibir futuras actualizaciones de seguridad adicionales.
Vea https://ubuntu.com/esm o ejecute «sudo pro status»

Last login: Thu Oct  2 03:24:02 2025 from 127.0.0.1
justing@justserver:~$ sudo
usage: sudo -h | -K | -k | -V
usage: sudo -v [-ABkNnS] [-g group] [-h host] [-p prompt] [-u user]
usage: sudo -l [-ABkNnS] [-g group] [-h host] [-p prompt] [-U user]

```