Install Linux server on the virtual box and Install SSH

Aim

To install a Linux server on Oracle VM VirtualBox and then install SSH on it.

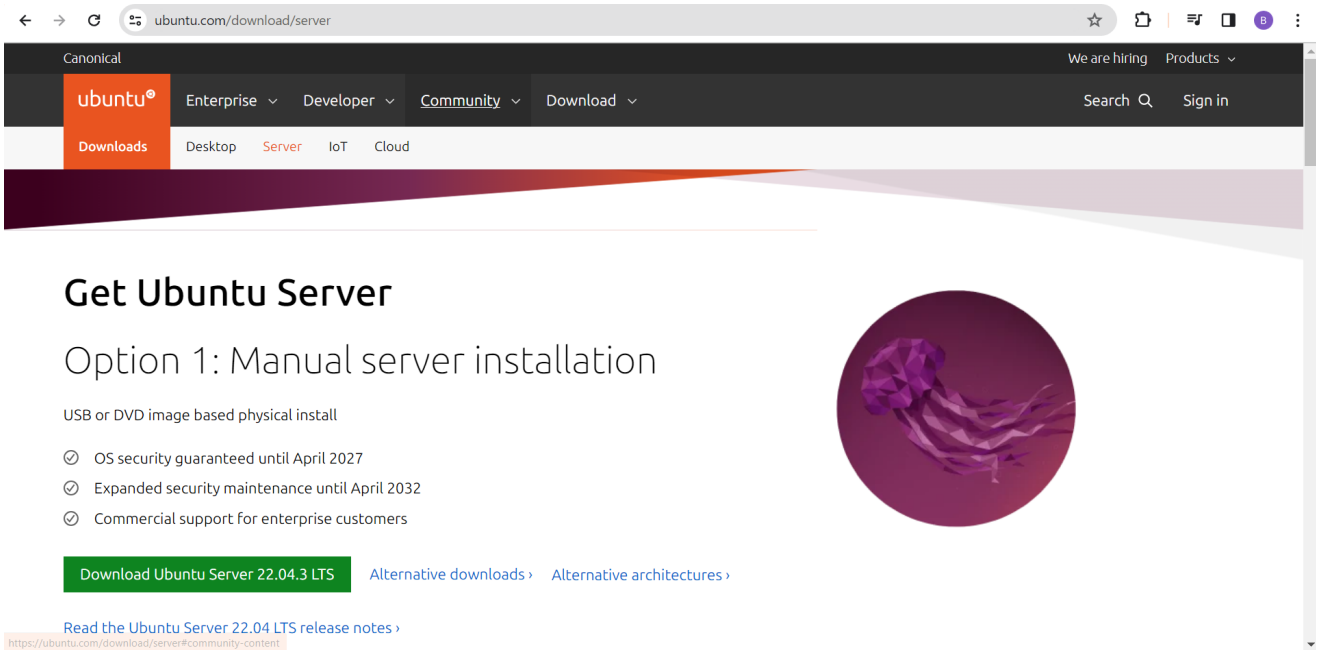
Introduction

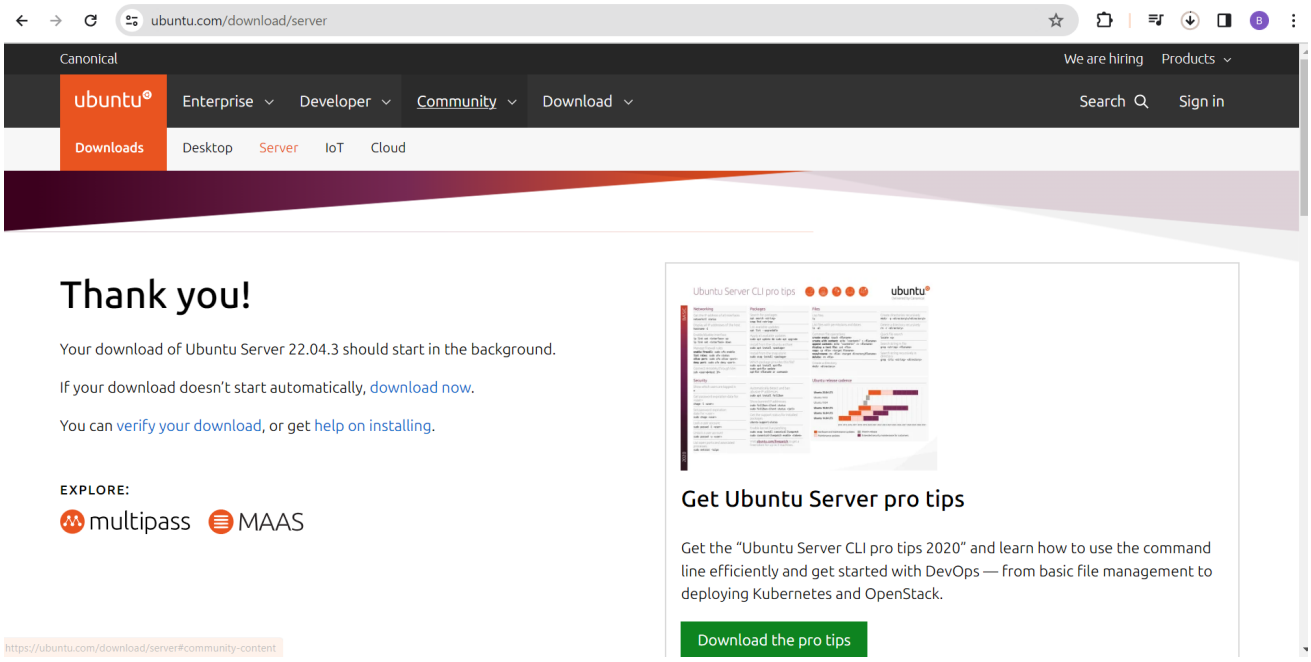
Ubuntu Server stands out as a robust and user-friendly Linux distribution tailored for diverse server applications. Favored for its stability and security, Ubuntu Server seamlessly integrates with Secure Shell (SSH), a crucial protocol for remote system access.

SSH ensures secure communication, allowing administrators to manage the server remotely through encrypted connections, execute commands, and perform system tasks efficiently. Together, Ubuntu Server and SSH provide a solid foundation for secure and scalable server environments, catering to the needs of both individuals and enterprises in the digital realm.

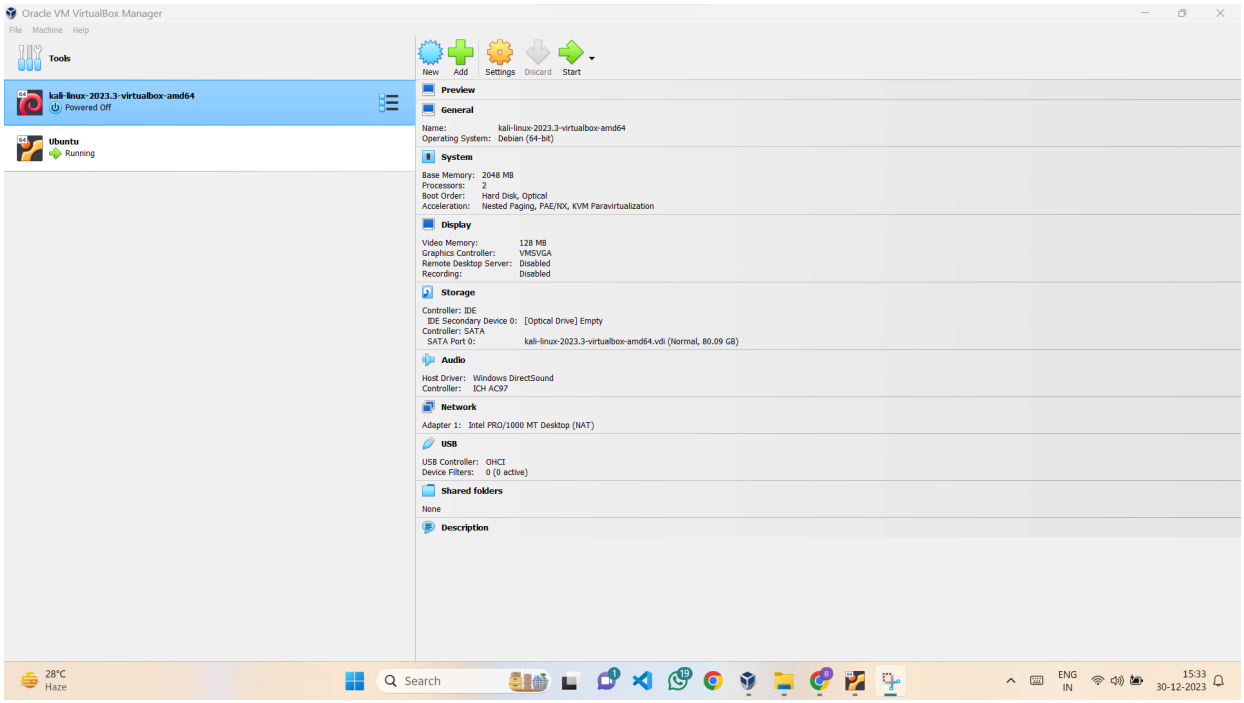
Procedure

1. Visit the official Ubuntu Server website Download page: https://ubuntu.com/download/server. Click on Download. The server .iso file will be downloaded.

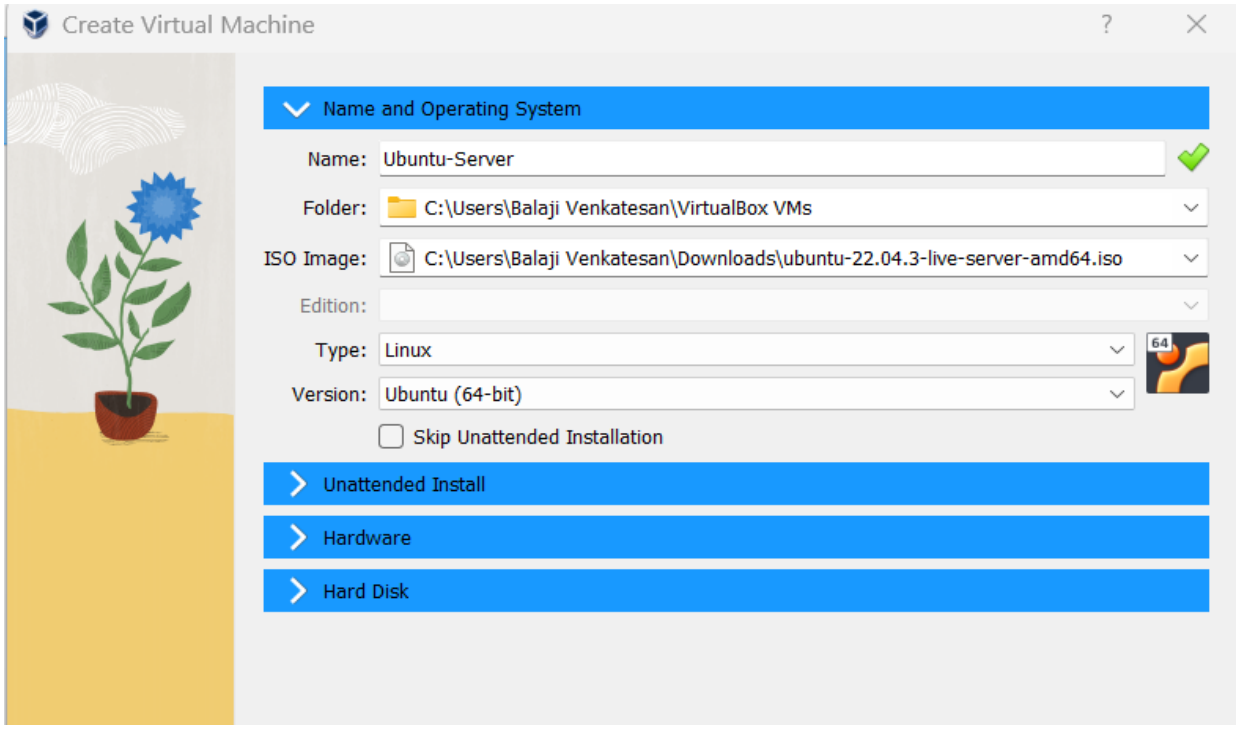




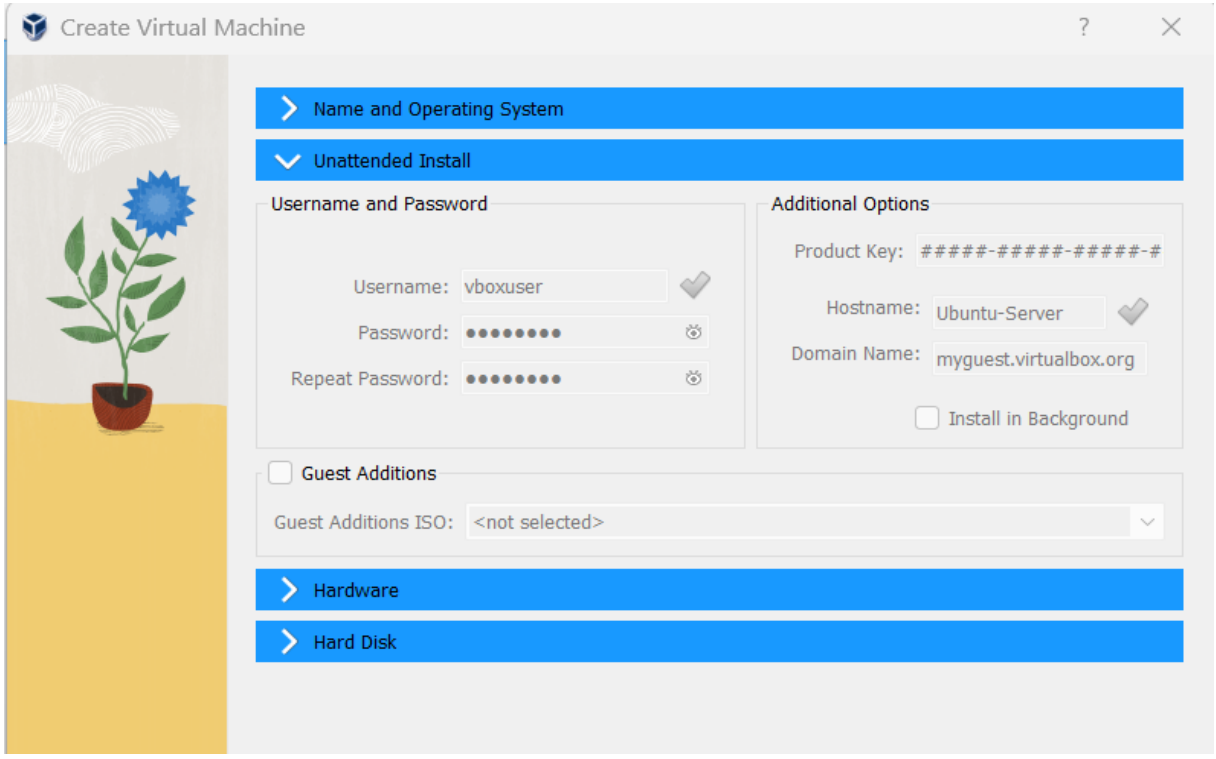
2. Open Oracle VM VirtualBox and click on "New" to create a new virtual machine.

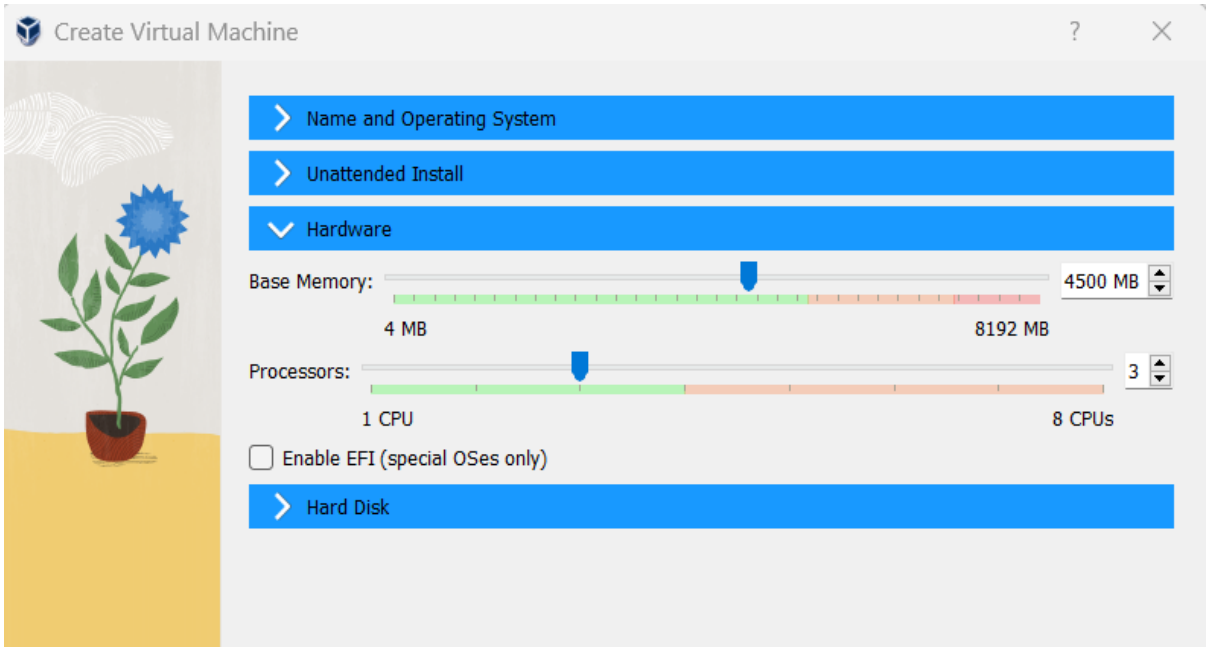


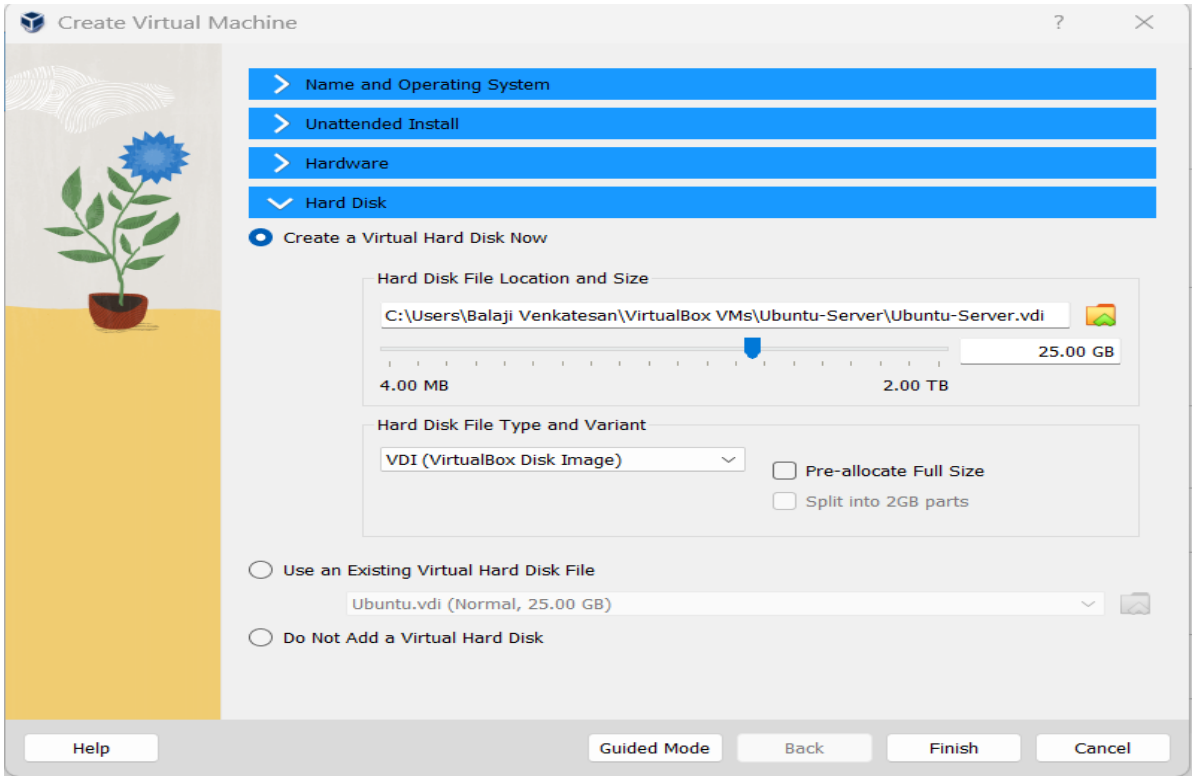
Name your virtual machine, choose "Linux" as the type, and select Ubuntu (64-bit) as the version.



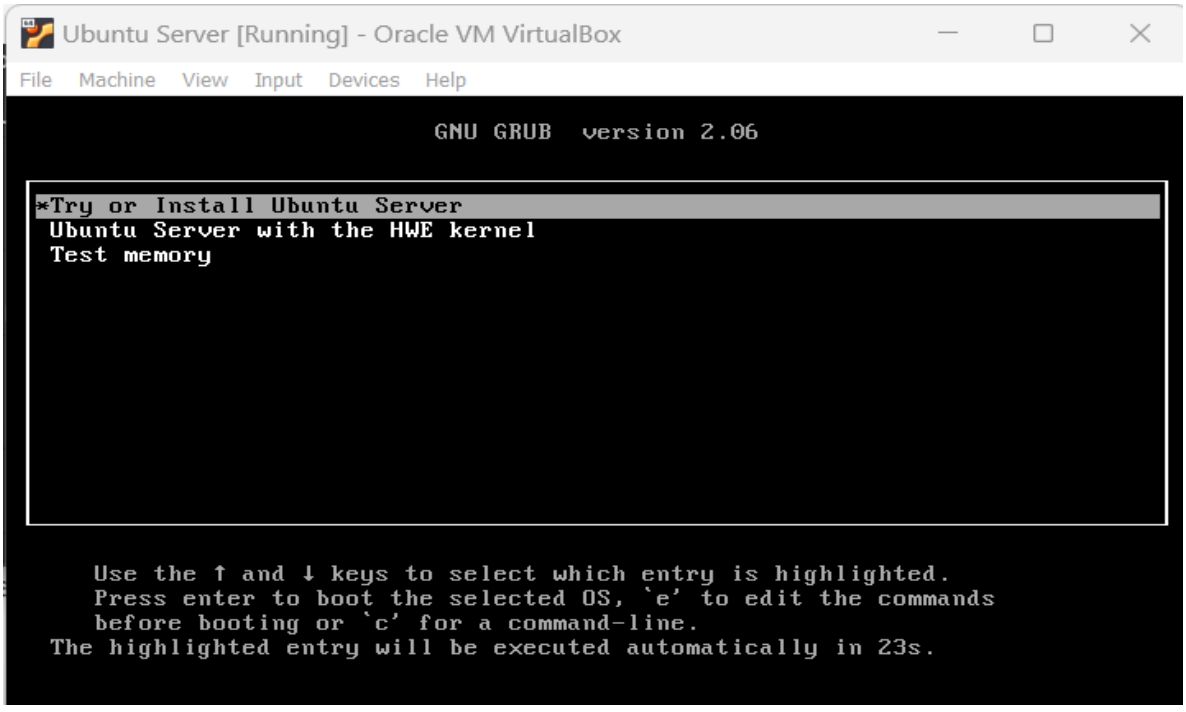
Choose the downloaded ISO image, allocate an appropriate amount of RAM, and create a virtual hard disk.



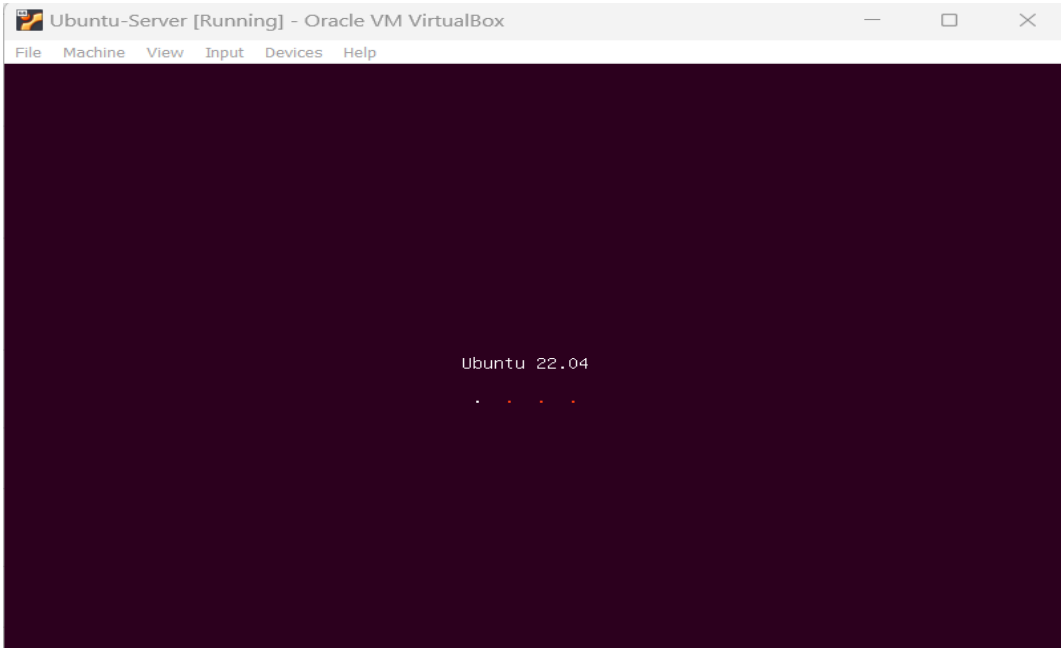


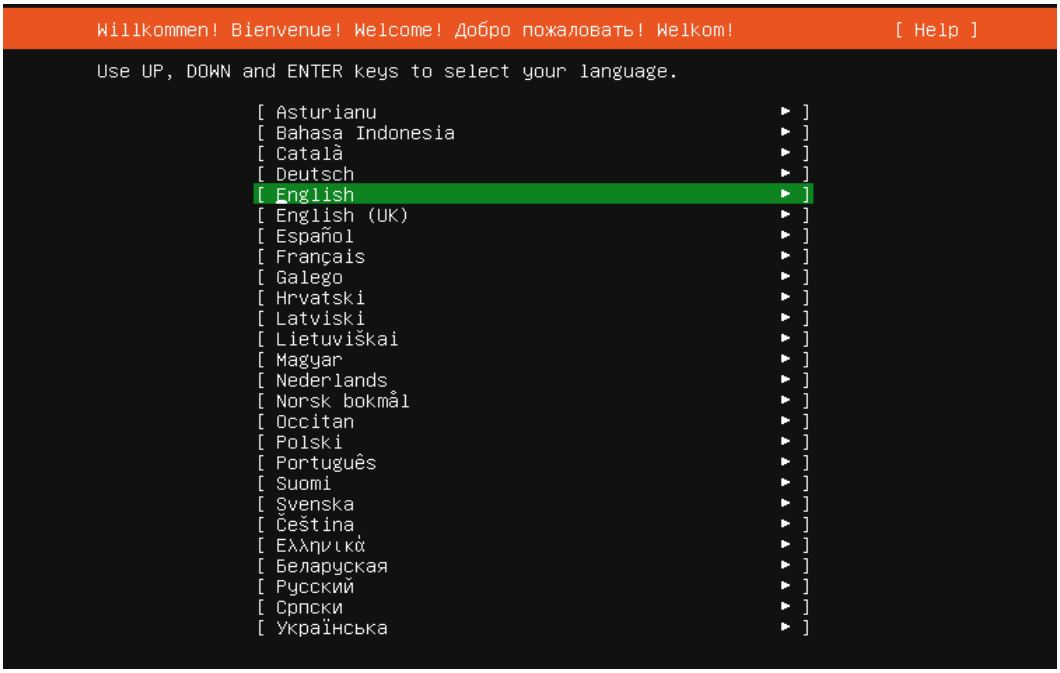


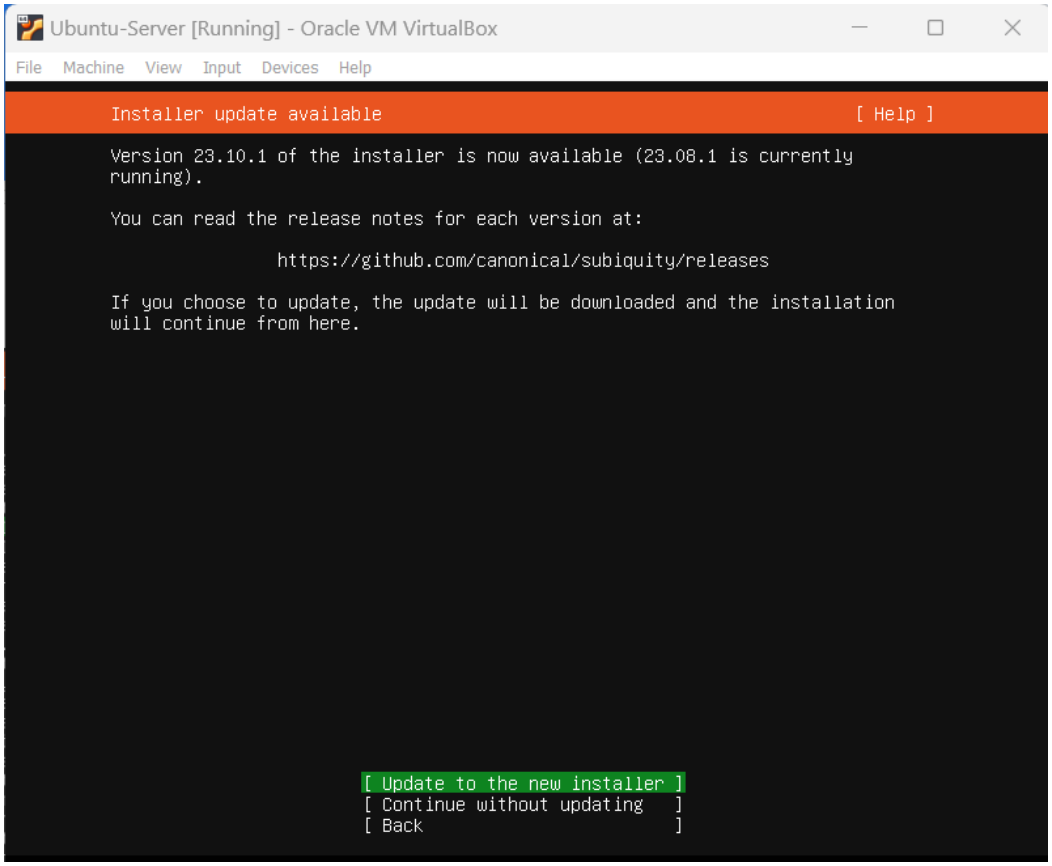
3. Start the Ubuntu Server and select the “Try or Install Ubuntu Server” option.

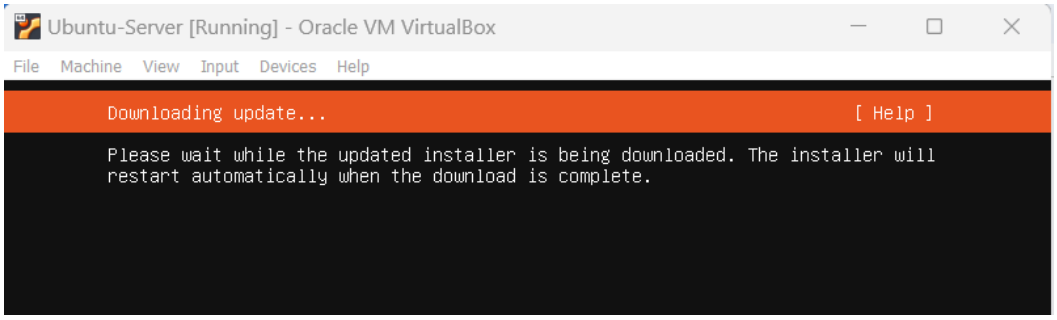


4. Follow the on-screen instructions to install Ubuntu. Use a combination of Enter and Space buttons to choose the options that suit your needs.

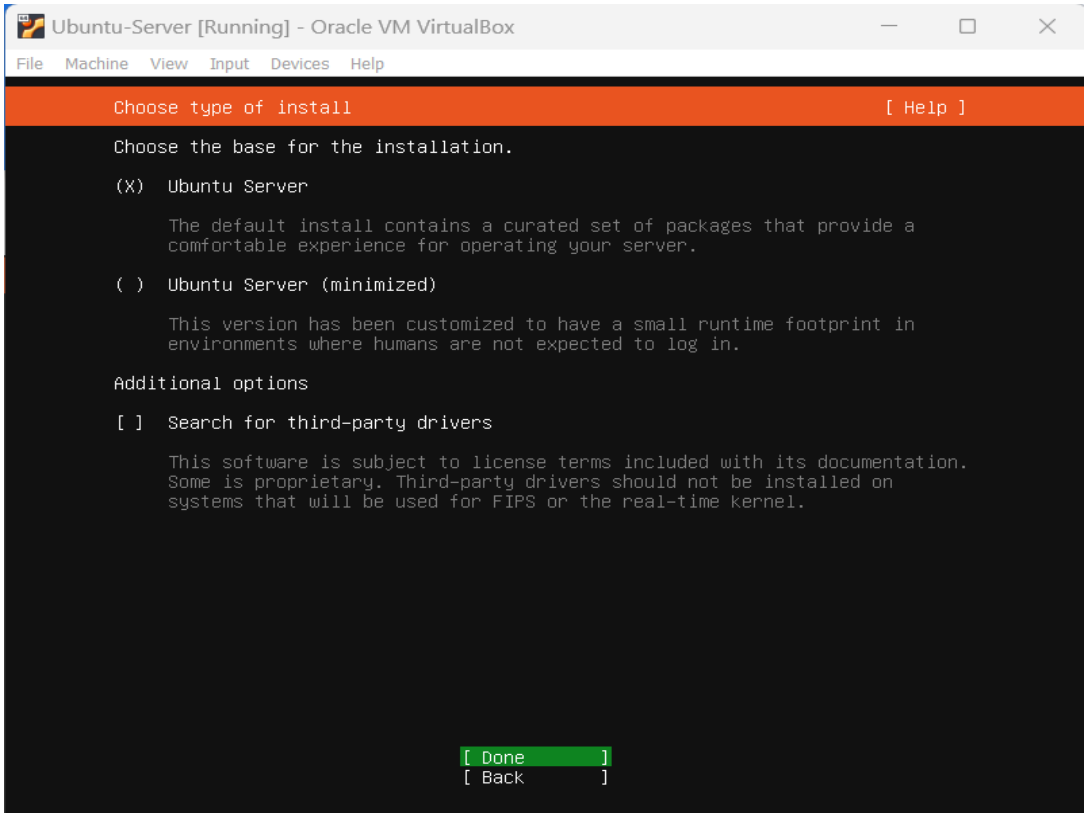


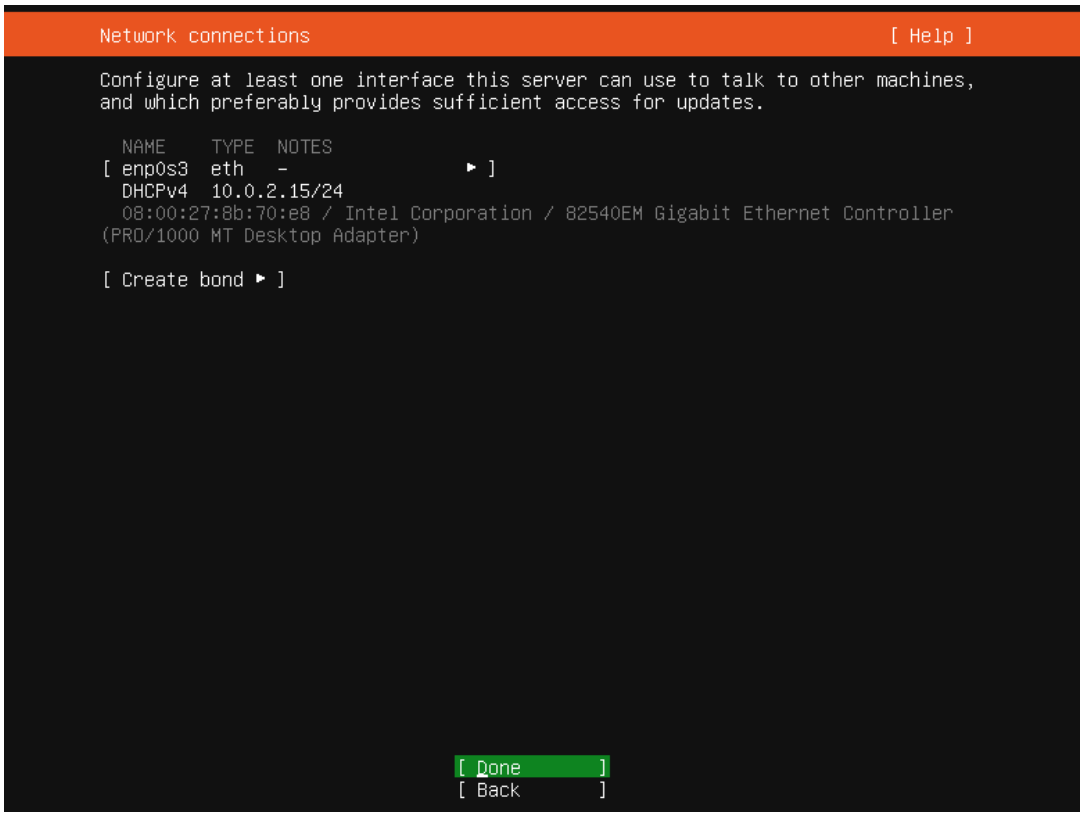


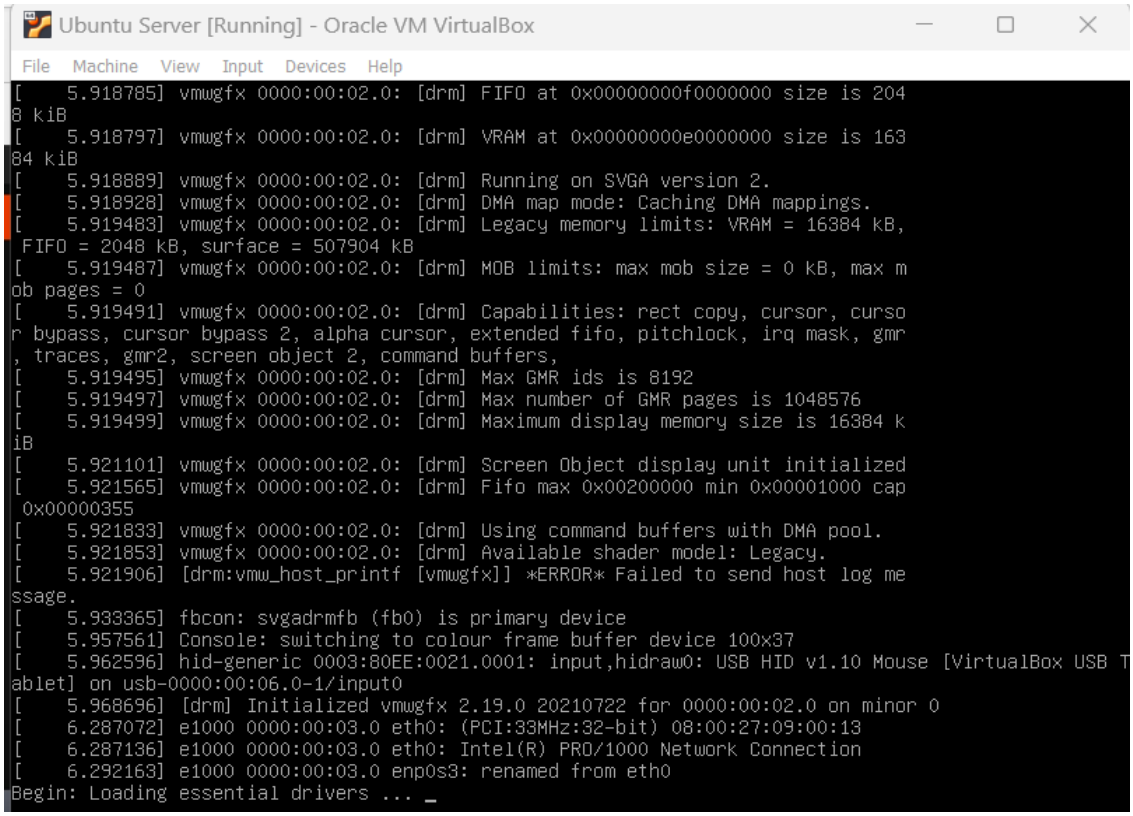

Ubuntu-Server [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Installer update available [Help]
Version 23.10.1 of the installer is now available (23.08.1 is currently running).
You can read the release notes for each version at:
https://github.com/canonical/subiquity/releases
If you choose to update, the update will be downloaded and the installation will continue from here.
[Update to the new installer]
[Continue without updating]
[Back]

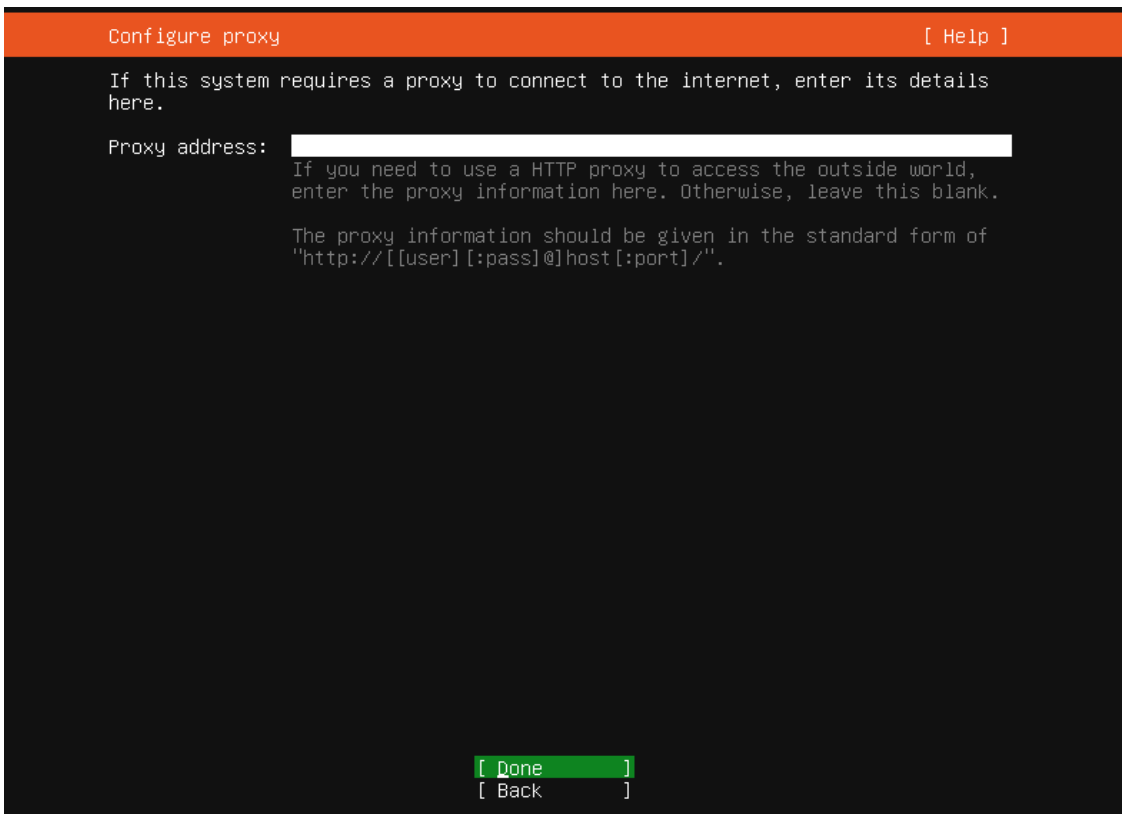

Ubuntu-Server [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Downloading update... [Help]
Please wait while the updated installer is being downloaded. The installer will restart automatically when the download is complete.

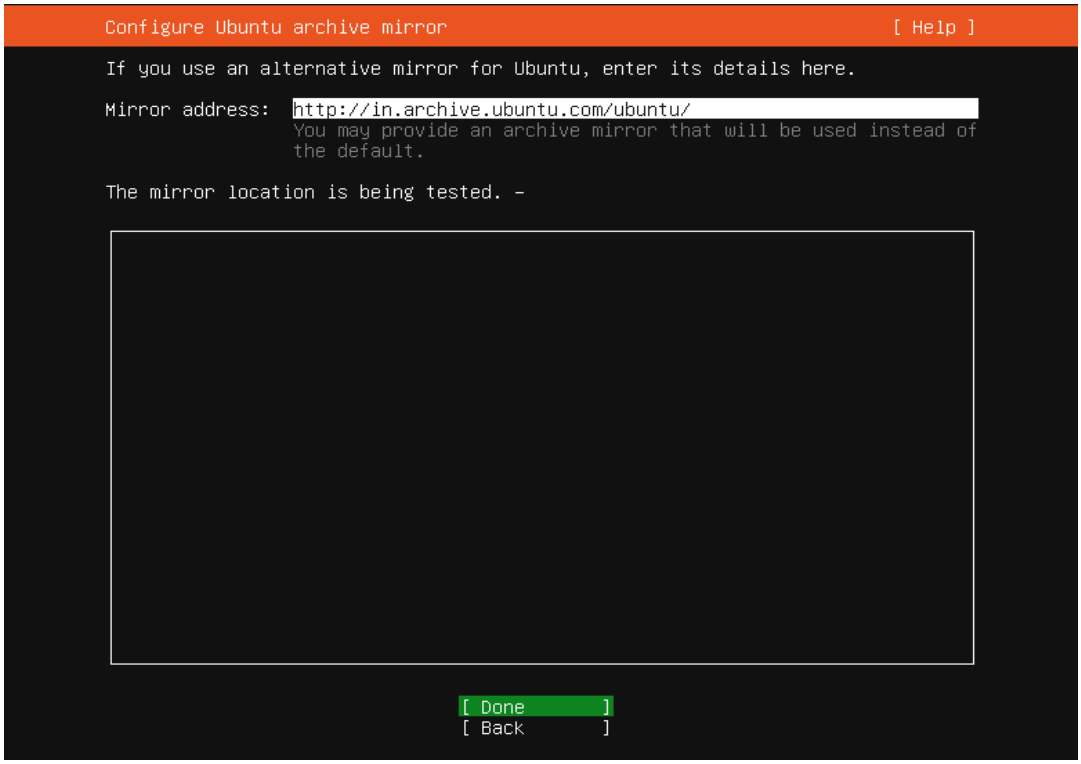
Keyboard configuration [Help]
Please select your keyboard layout below, or select "Identify keyboard" to detect your layout automatically.
Layout: [English (US) ▾]
Variant: [English (US) ▾]
[Identify keyboard]

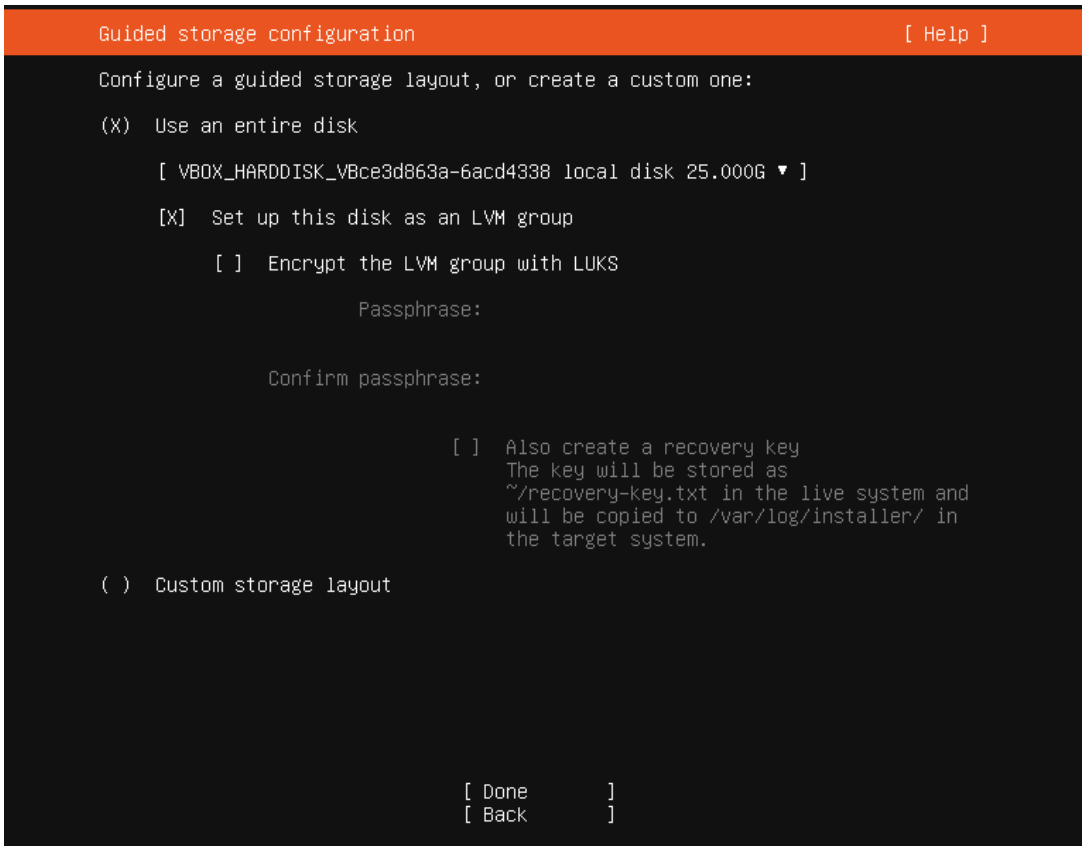

Ubuntu-Server [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Choose type of install [Help]
Choose the base for the installation.
(X) Ubuntu Server
The default install contains a curated set of packages that provide a comfortable experience for operating your server.
( ) Ubuntu 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.
[Done]
[Back]

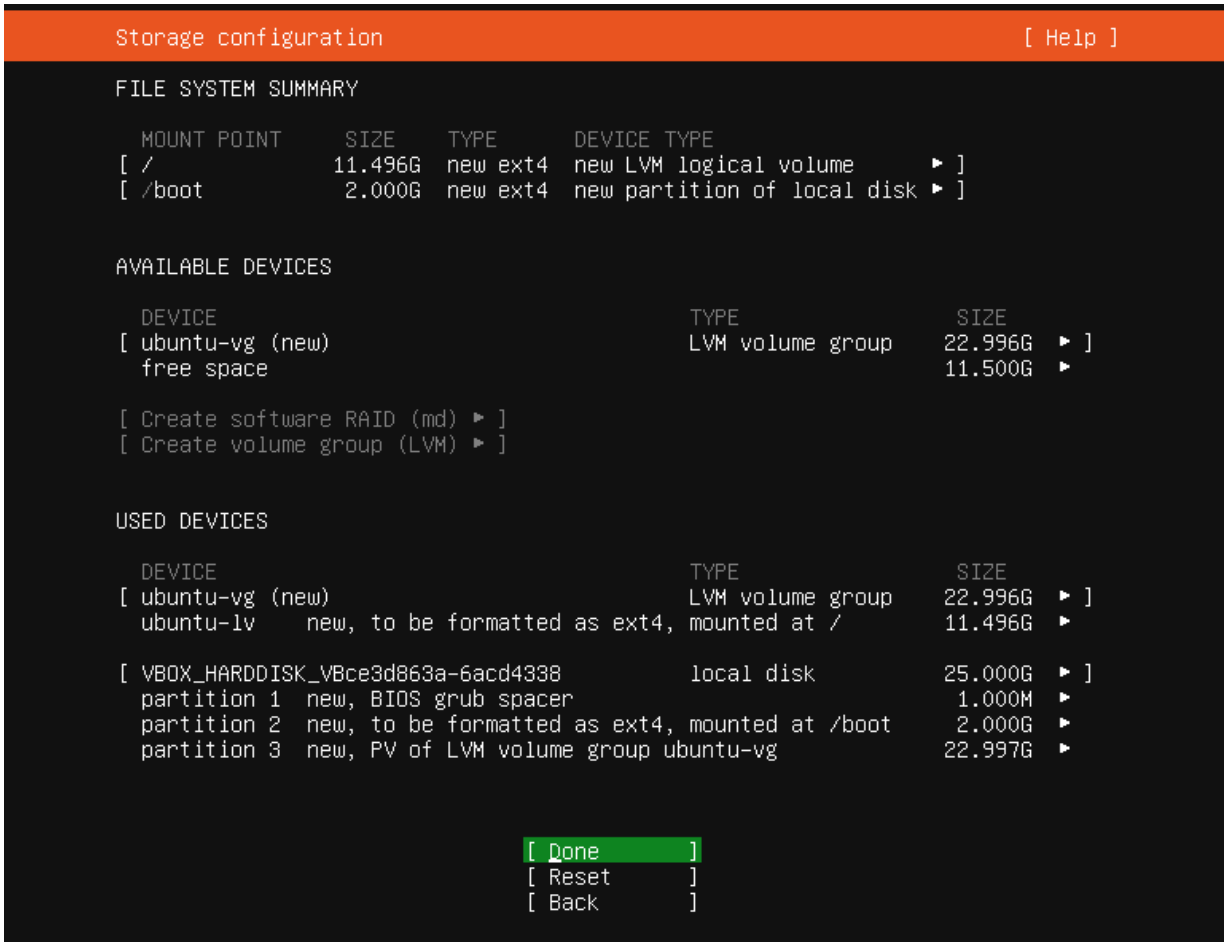

Network connections [Help]
Configure at least one interface this server can use to talk to other machines, and which preferably provides sufficient access for updates.
NAME TYPE NOTES
[enp0s3 eth - ▸]
DHCPv4 10.0.2.15/24
08:00:27:8b:70:e8 / Intel Corporation / 82540EM Gigabit Ethernet Controller (PRO/1000 MT Desktop Adapter)
[Create bond ▸]
[Done]
[Back]

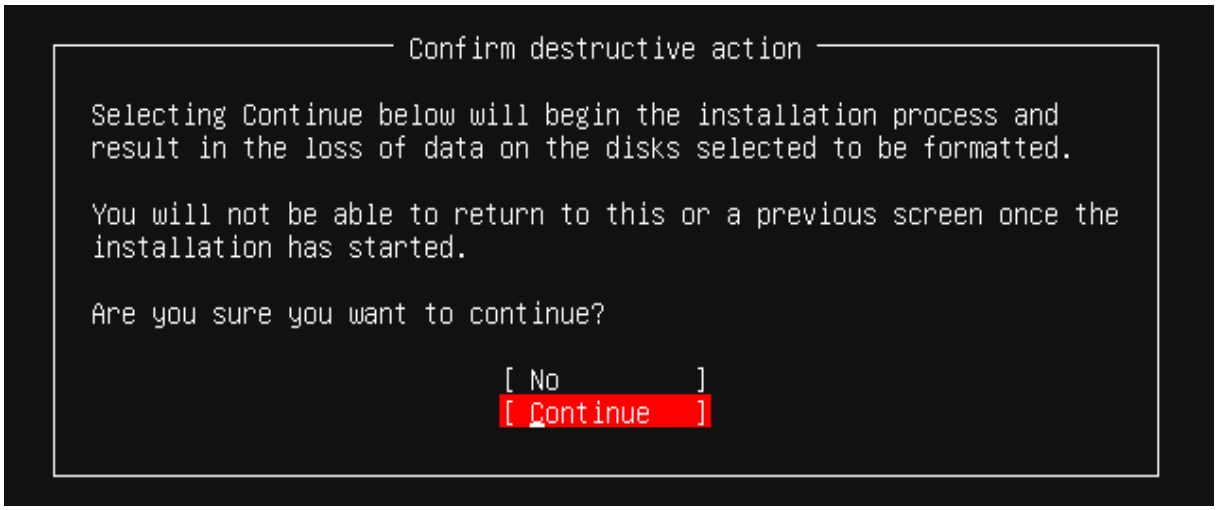

Ubuntu Server [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
[5.918785] vmwgfx 0000:00:02.0: [drm] FIFO at 0x00000000f0000000 size is 2048 kiB
[5.918797] vmwgfx 0000:00:02.0: [drm] VRAM at 0x00000000e0000000 size is 16384 kiB
[5.918889] vmwgfx 0000:00:02.0: [drm] Running on SVGA version 2.
[5.918928] vmwgfx 0000:00:02.0: [drm] DMA map mode: Caching DMA mappings.
[5.919483] vmwgfx 0000:00:02.0: [drm] Legacy memory limits: VRAM = 16384 kB, FIFO = 2048 kB, surface = 507904 kB
[5.919487] vmwgfx 0000:00:02.0: [drm] MOB limits: max mob size = 0 kB, max mob pages = 0
[5.919491] vmwgfx 0000:00:02.0: [drm] Capabilities: rect copy, cursor, cursor bypass, cursor bypass 2, alpha cursor, extended fifo, pitchlock, irq mask, gmr, traces, gmr2, screen object 2, command buffers,
[5.919495] vmwgfx 0000:00:02.0: [drm] Max GMR ids is 8192
[5.919497] vmwgfx 0000:00:02.0: [drm] Max number of GMR pages is 1048576
[5.919499] vmwgfx 0000:00:02.0: [drm] Maximum display memory size is 16384 kiB
[5.921101] vmwgfx 0000:00:02.0: [drm] Screen Object display unit initialized
[5.921565] vmwgfx 0000:00:02.0: [drm] Fifo max 0x00200000 min 0x00001000 cap 0x00000355
[5.921833] vmwgfx 0000:00:02.0: [drm] Using command buffers with DMA pool.
[5.921853] vmwgfx 0000:00:02.0: [drm] Available shader model: Legacy.
[5.921906] [drm:vmw_host_printf [vmwgfx]] *ERROR* Failed to send host log message.
[5.933365] fbcon: svgadrmfb (fb0) is primary device
[5.957561] Console: switching to colour frame buffer device 100x37
[5.962596] hid-generic 0003:80EE:0021.0001: input,hidraw0: USB HID v1.10 Mouse [VirtualBox USB Tablet] on usb-0000:00:06.0-1/input0
[5.968696] [drm] Initialized vmwgfx 2.19.0 20210722 for 0000:00:02.0 on minor 0
[6.287072] e1000 0000:00:03.0 eth0: (PCI:33MHz:32-bit) 08:00:27:09:00:13
[6.287136] e1000 0000:00:03.0 eth0: Intel(R) PRO/1000 Network Connection
[6.292163] e1000 0000:00:03.0 enp0s3: renamed from eth0
Begin: Loading essential drivers ... _


Configure proxy
[Help]
If this system requires a proxy to connect to the internet, enter its details here.
Proxy address:
If you need to use a HTTP proxy to access the outside world, enter the proxy information here. Otherwise, leave this blank.
The proxy information should be given in the standard form of "http://[[user][:pass]@]host[:port]/".
[Done]
[Back]

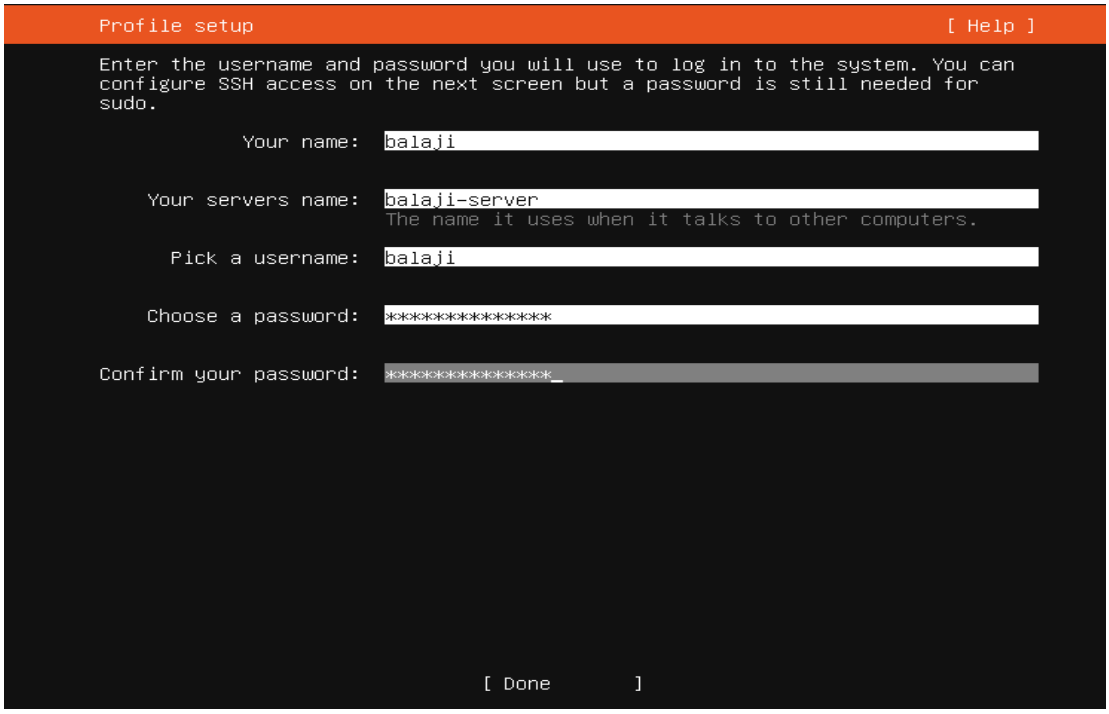

Configure Ubuntu archive mirror
[Help]
If you use an alternative mirror for Ubuntu, enter its details here.
Mirror address: http://in.archive.ubuntu.com/ubuntu/
You may provide an archive mirror that will be used instead of the default.
The mirror location is being tested. -
[Done]
[Back]

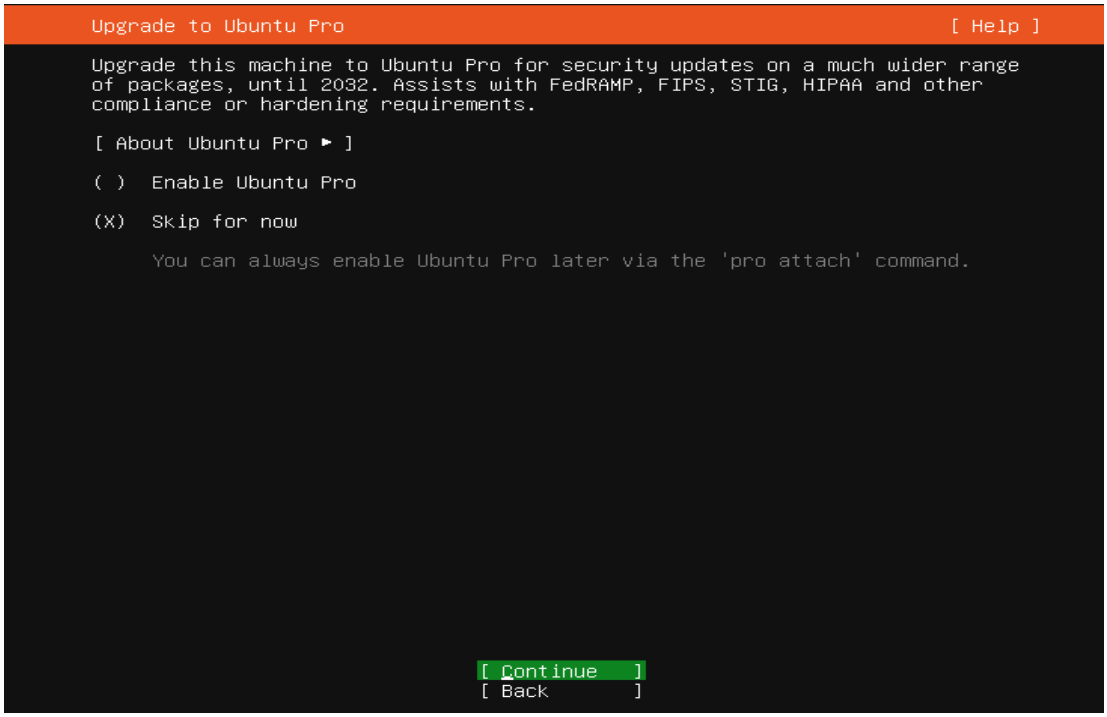

Guided storage configuration
[Help]
Configure a guided storage layout, or create a custom one:
(X) Use an entire disk
[VBOX_HARDDISK_VBce3d863a-6acd4338 local disk 25.000G ▾]
[X] Set up this disk as an LVM group
[ ] Encrypt the LVM group with LUKS
Passphrase:
Confirm passphrase:
[ ] Also create a recovery 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
[Done]
[Back]


Storage configuration
[Help]
FILE SYSTEM SUMMARY
MOUNT POINT SIZE TYPE DEVICE TYPE
[/ 11.496G new ext4 new LVM logical volume ▸]
[/boot 2.000G new ext4 new partition of local disk ▸]
AVAILABLE DEVICES
DEVICE TYPE SIZE
[ubuntu-vg (new) LVM volume group 22.996G ▸]
free space 11.500G ▸
[Create software RAID (md) ▸]
[Create volume group (LVM) ▸]
USED DEVICES
DEVICE TYPE SIZE
[ubuntu-vg (new) LVM volume group 22.996G ▸]
ubuntu-lv new, to be formatted as ext4, mounted at / 11.496G ▸
[VBOX_HARDDISK_VBce3d863a-6acd4338 local disk 25.000G ▸]
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 ▸
[Done]
[Reset]
[Back]

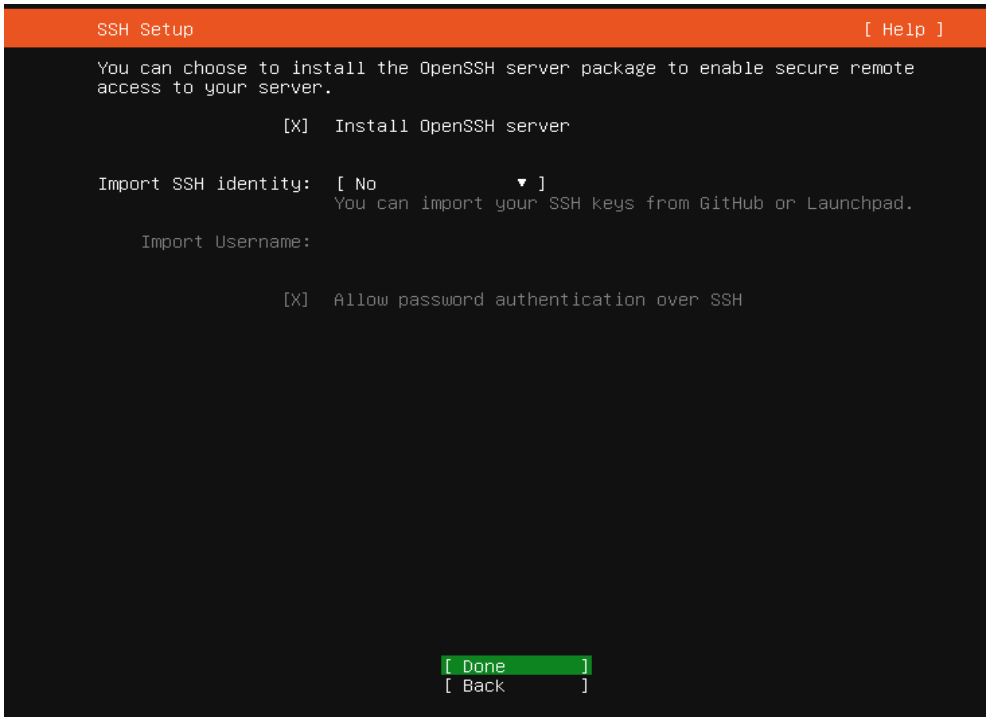

Confirm destructive action
Selecting Continue below will begin the installation process and result in the loss of data on the disks selected to be formatted.
You will not be able to return to this or a previous screen once the installation has started.
Are you sure you want to continue?
[No]
[Continue]

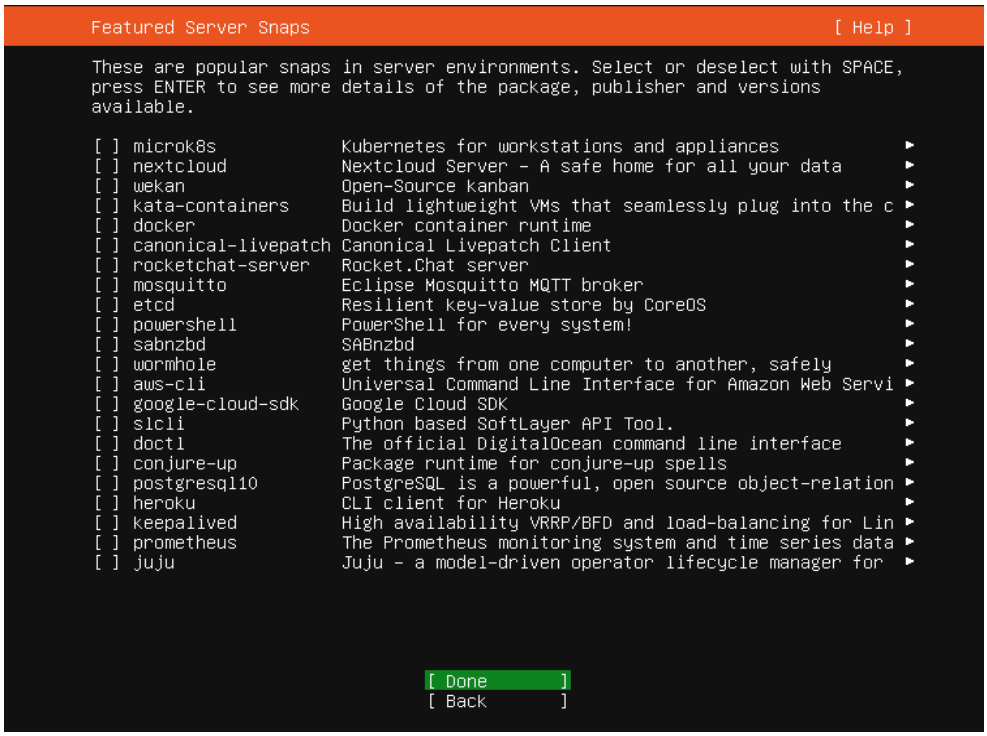
5. Enter the username, password, and server details as per your preference.



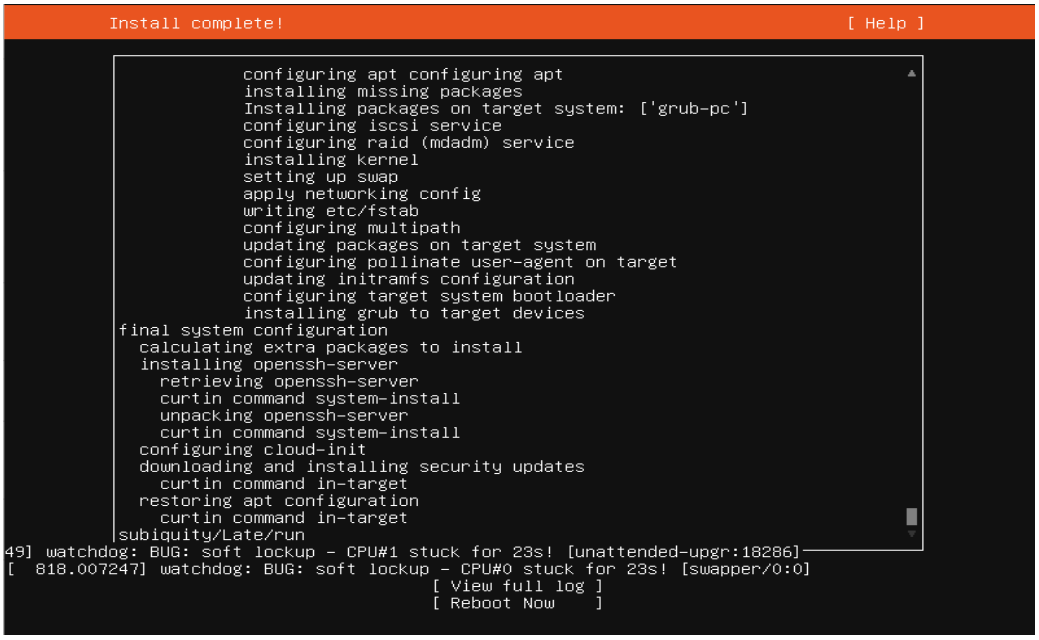


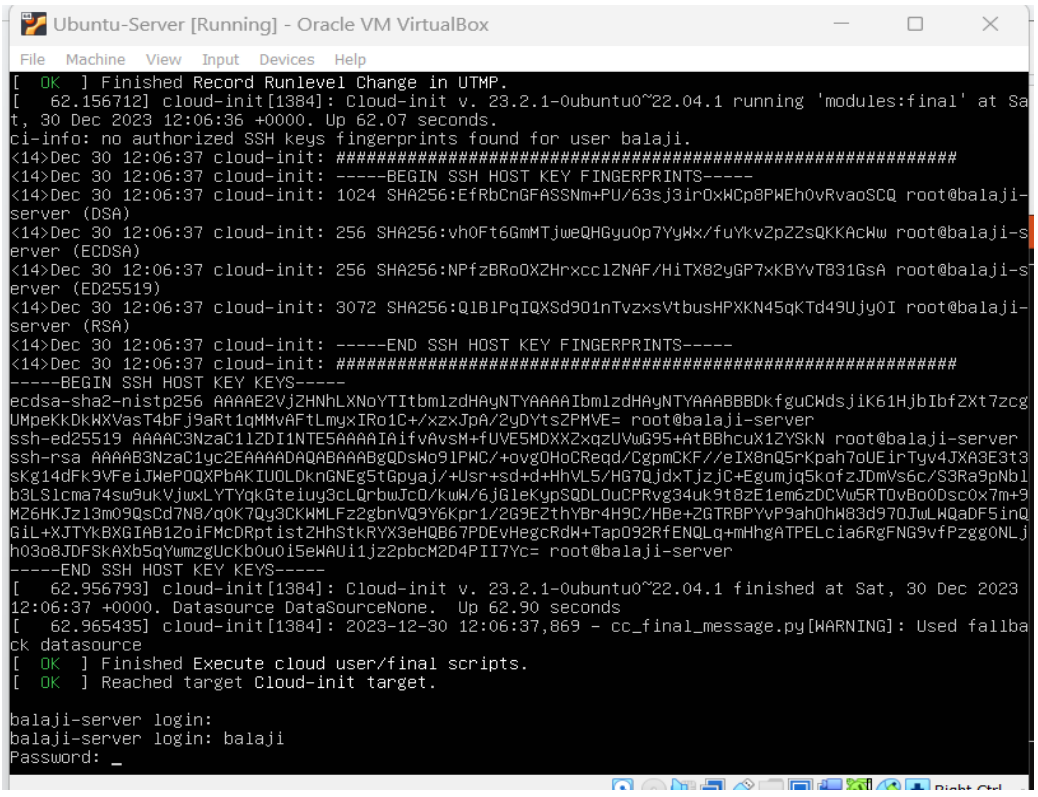
6. Select the option to install the OpenSSH server and click "Done." Choose additional packages to install in further screens.



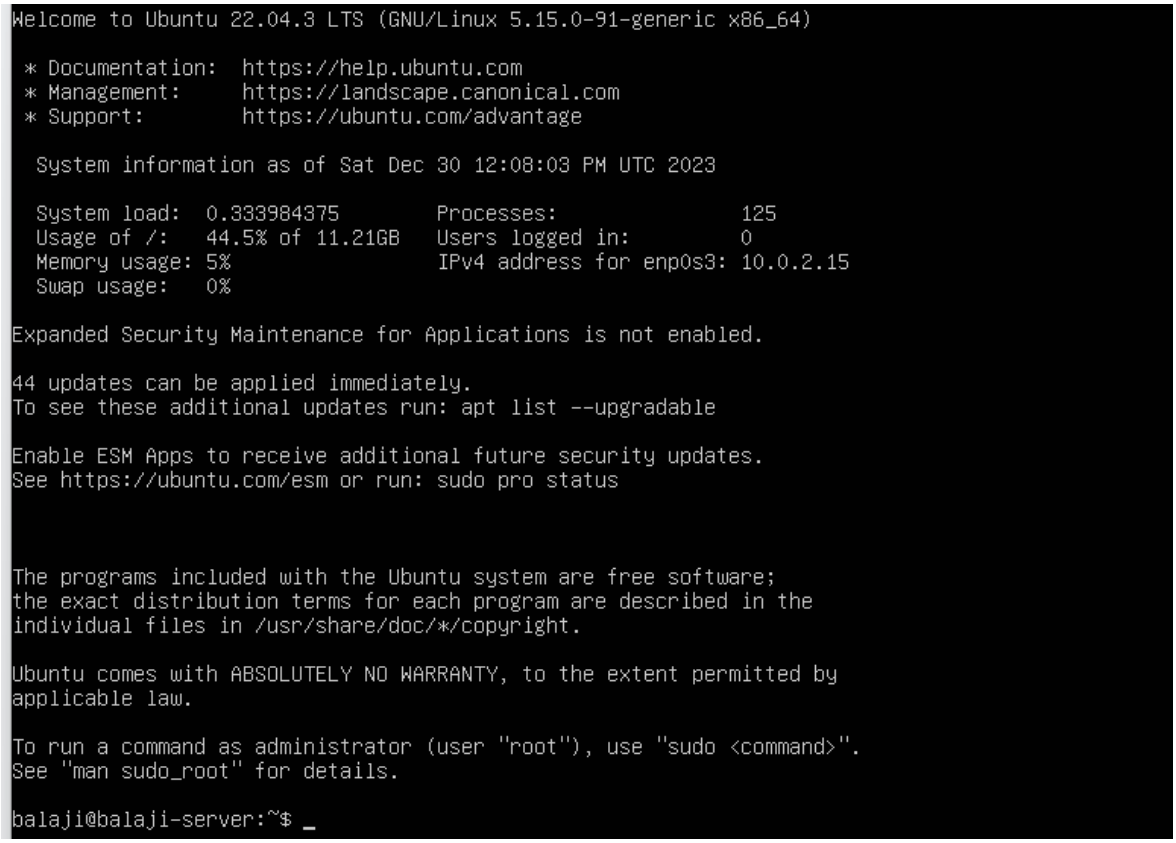


7. Wait for the server to be installed, then select ‘Reboot Now.’ Afterward, enter the username and password in further screens.

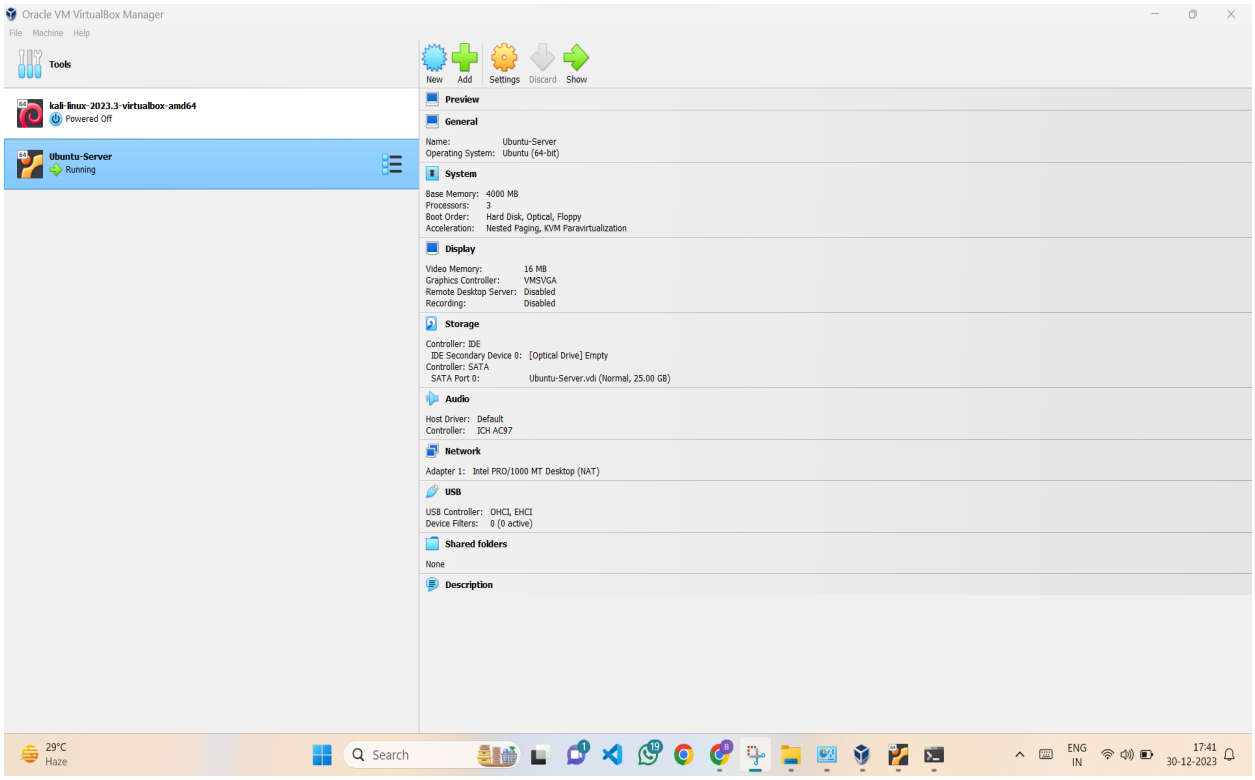


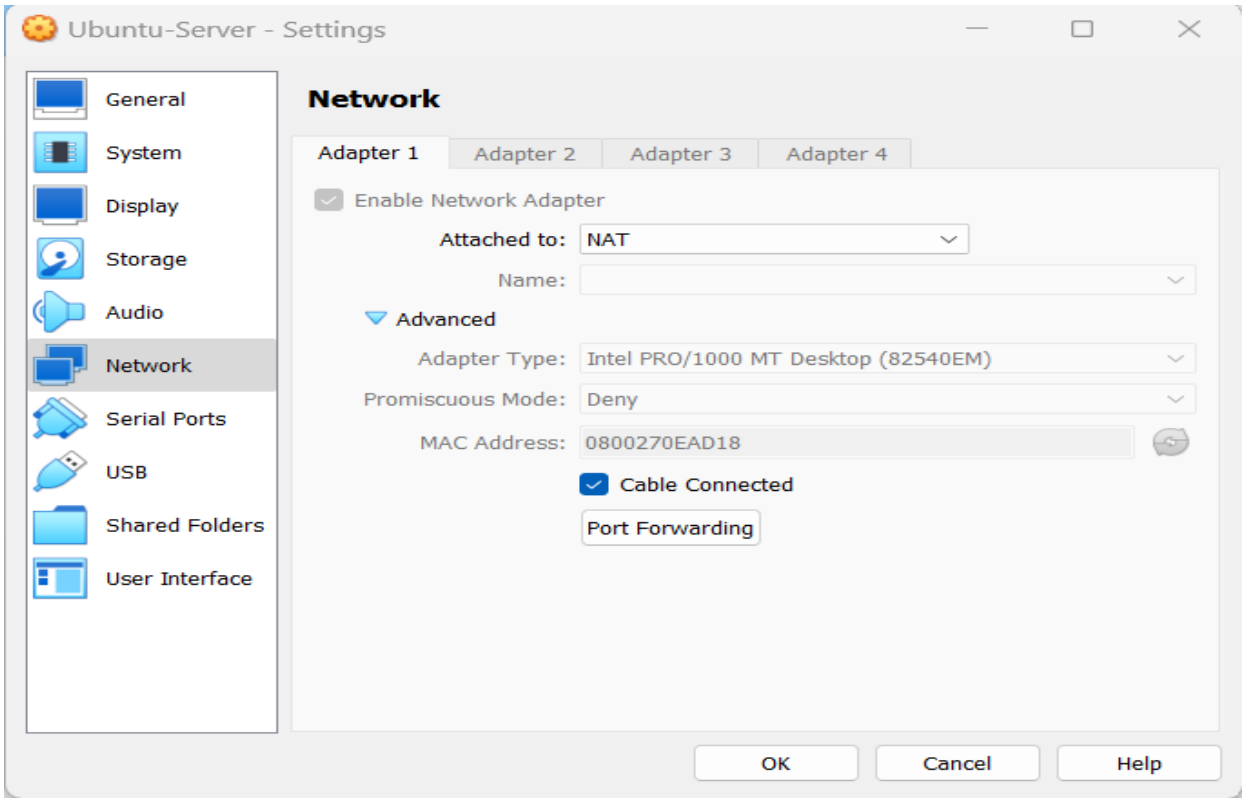


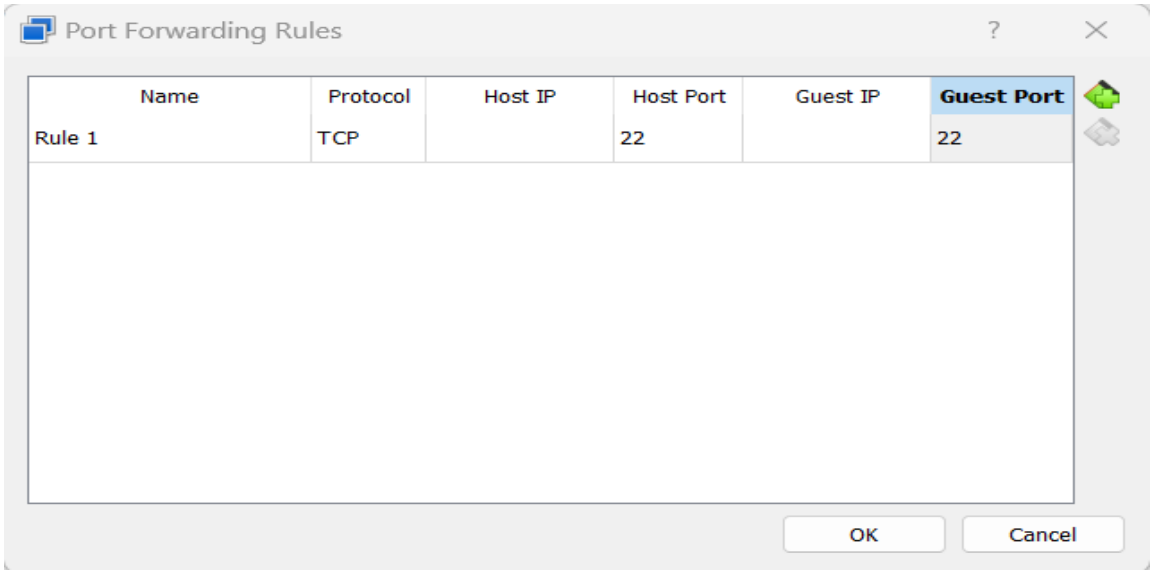
8. Ubuntu Server and SSH have been successfully installed in VirtualBox.



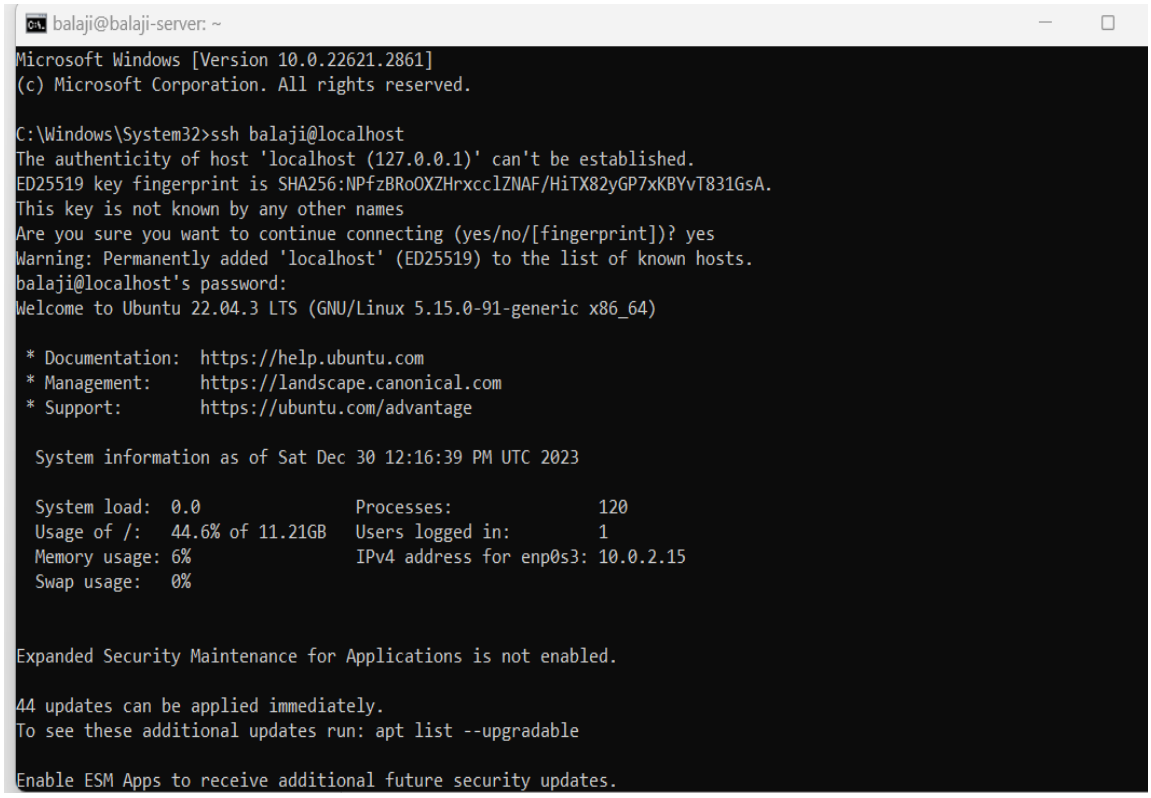
9. With SSH installed and running, connect to your VirtualBox VM from another machine (e.g., Windows Command Prompt). Go to Ubuntu Server Settings, select the Network area, and click on Port Forwarding. Enter the Host port and Guest Port as 22 in further screens and select Ok.

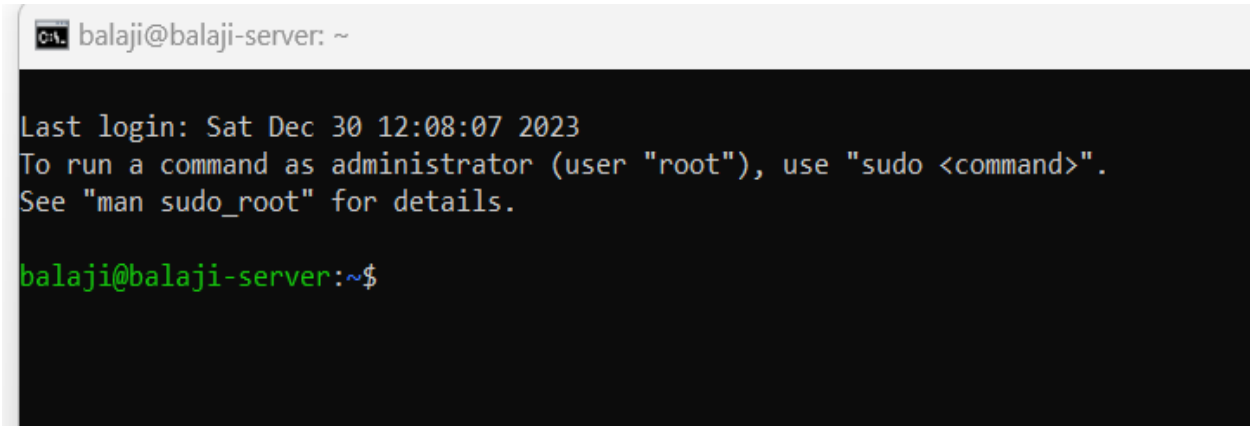

Oracle VM VirtualBox Manager
File Machine Help
Tools
kali-linux-2023.3-virtualbox-amd64
Powered Off
Ubuntu-Server
Running
New Add Settings Discard Show
Preview
General
Name: Ubuntu-Server
Operating System: Ubuntu (64-bit)
System
Base Memory: 4000 MB
Processors: 3
Boot Order: Hard Disk, Optical, Floppy
Acceleration: Nested Paging, KVM Paravirtualization
Display
Video Memory: 16 MB
Graphics Controller: VMSVGA
Remote Desktop Server: Disabled
Recording: Disabled
Storage
Controller: IDE
IDE Secondary Device 0: [Optical Drive] Empty
Controller: SATA
SATA Port 0: Ubuntu-Server.vdi (Normal, 25.00 GB)
Audio
Host Driver: Default
Controller: ICH AC97
Network
Adapter 1: Intel PRO/1000 MT Desktop (NAT)
USB
USB Controller: OHCI, EHCI
Device Filters: 0 (0 active)
Shared folders
None
Description
29°C
Haze
Search
ENG
IN
17:41
30-12-2023


Ubuntu-Server - Settings
General
System
Display
Storage
Audio
Network
Serial Ports
USB
Shared Folders
User Interface
Network
Adapter 1
Adapter 2
Adapter 3
Adapter 4
Enable Network Adapter
Attached to: NAT
Name:
Advanced
Adapter Type: Intel PRO/1000 MT Desktop (82540EM)
Promiscuous Mode: Deny
MAC Address: 0800270EAD18
Cable Connected
Port Forwarding
OK
Cancel
Help

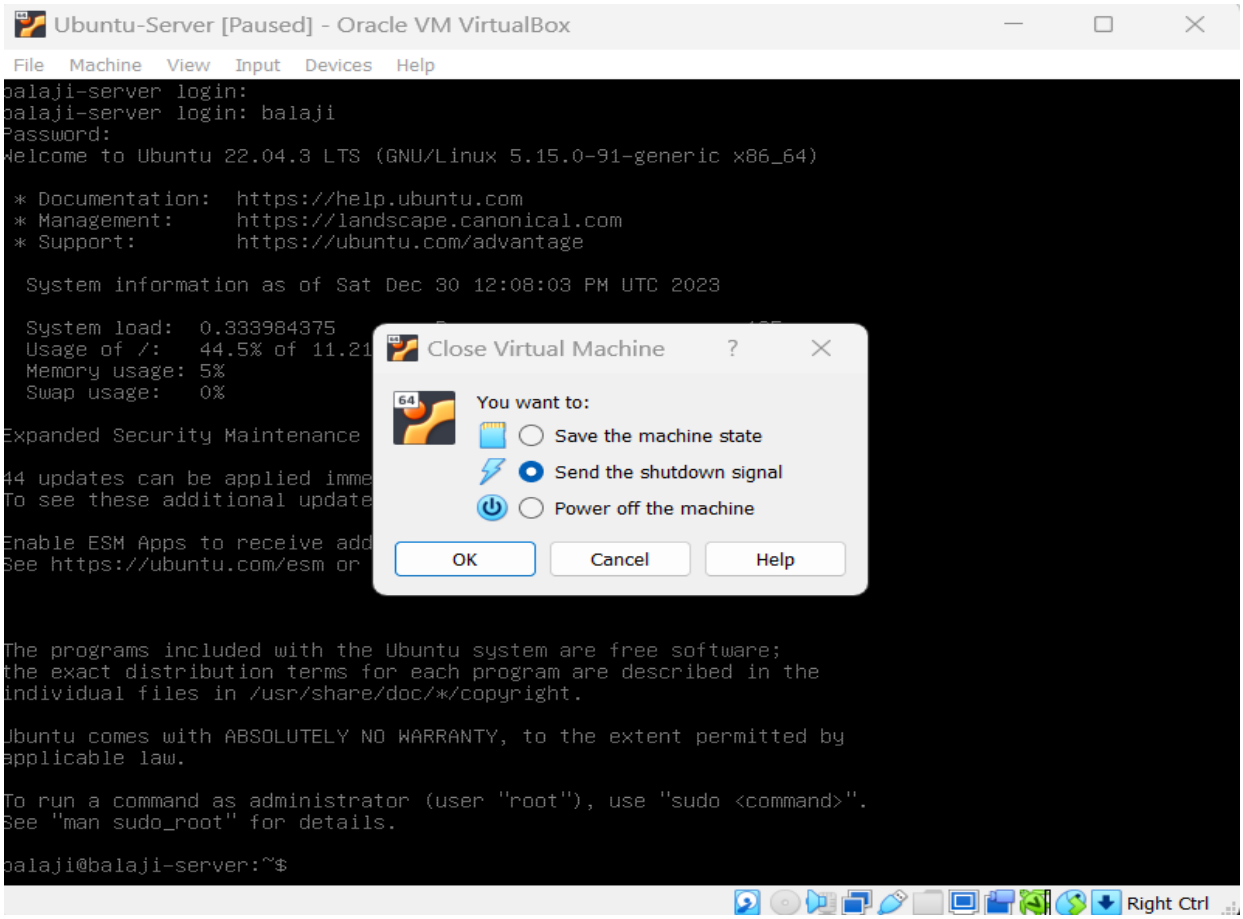


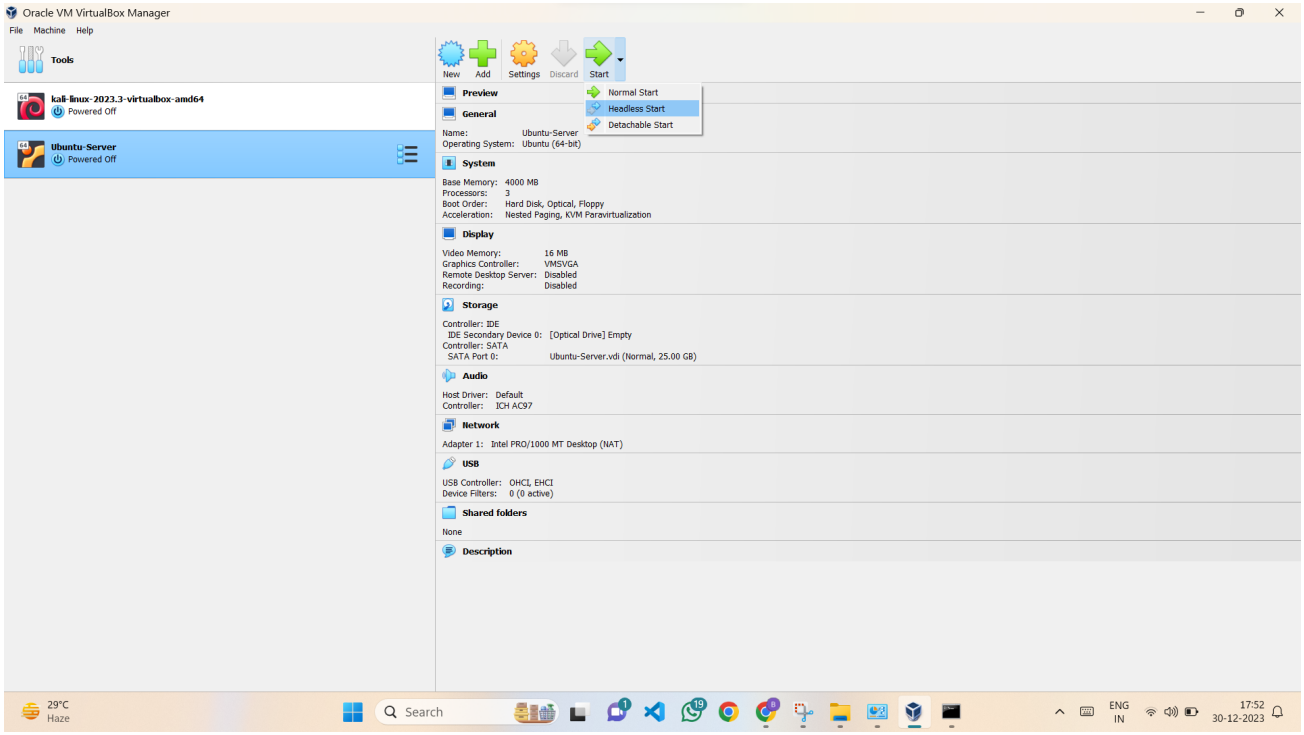
10. Open the Windows Command Prompt (CMD) as Administrator. Enter the command ssh [username]@[hostname or IP address].





11. To avoid the Terminal Windows Display of the server, close the server and select Headless Start in the next session.





Result

Through this experiment, we've learned to install a Linux server on VirtualBox by selecting a distribution, creating a virtual machine, and completing the installation. Additionally, we've gained insights into setting up secure remote access using SSH by installing the OpenSSH server and configuring it. This knowledge allows us to efficiently manage the VirtualBox Linux server remotely, enhancing our skills in virtualization and server administration.