FATIMA JINNAH WOMEN UNIVERSITY

RAWALPINDI

Department Of Software Engineering

Cloud Computing Lab

Saira Ejaz [2023-BSE-057]

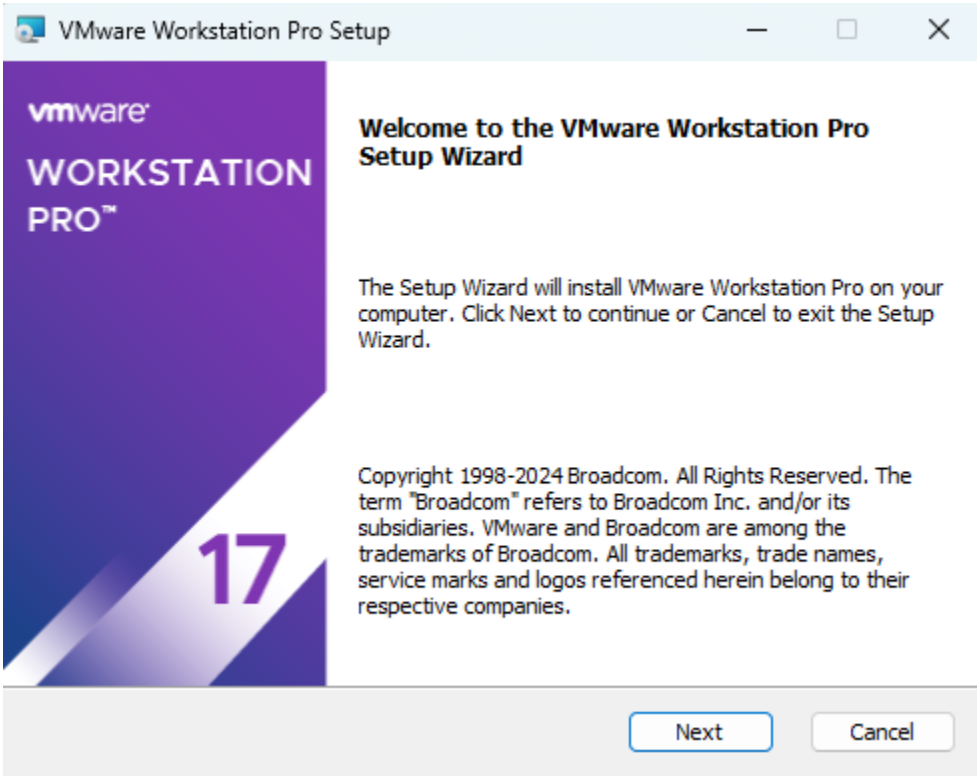
Section: 5-B

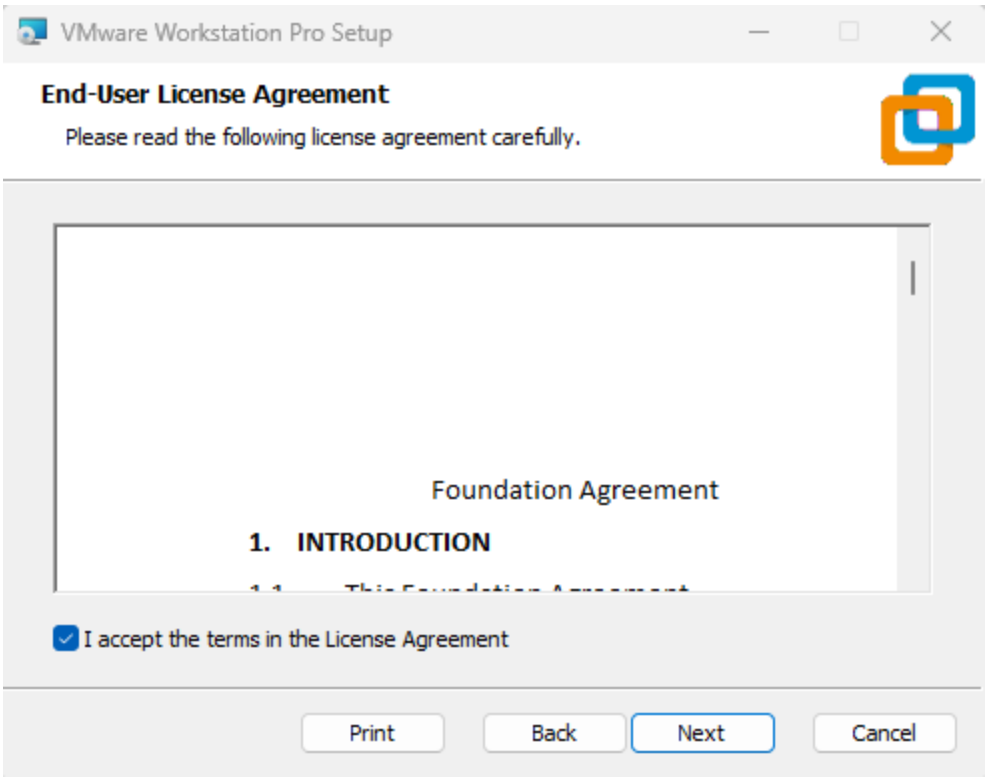
LAB NO 1

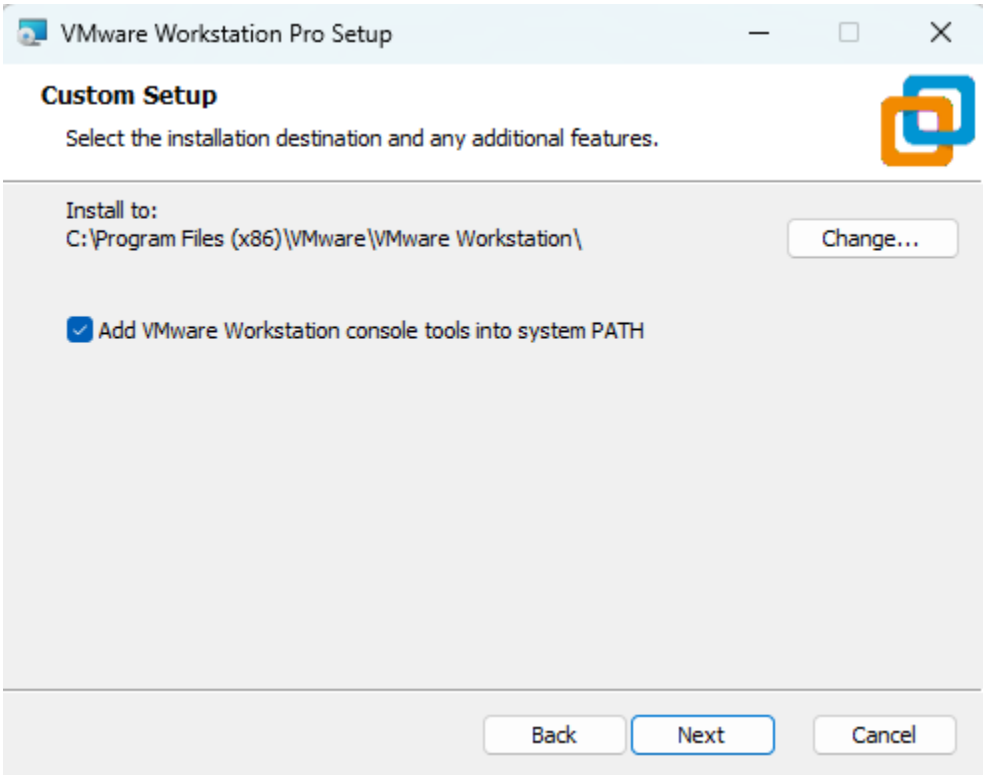
Lab Task:

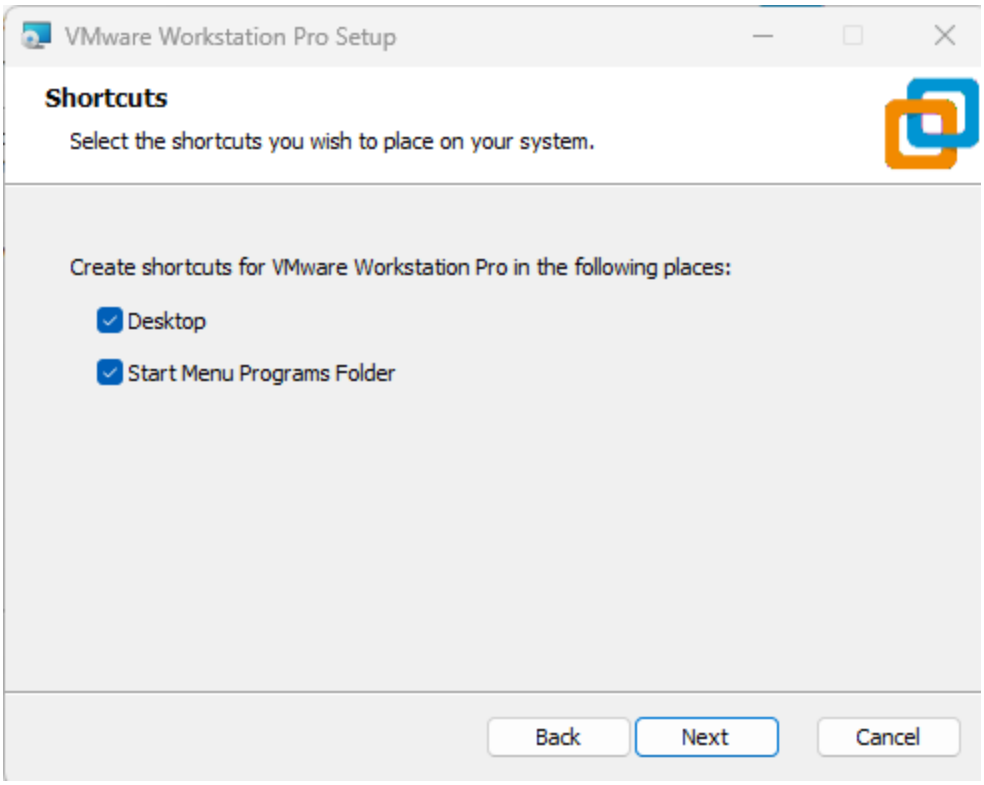
Installation of Ubuntu in Vmware Workstation

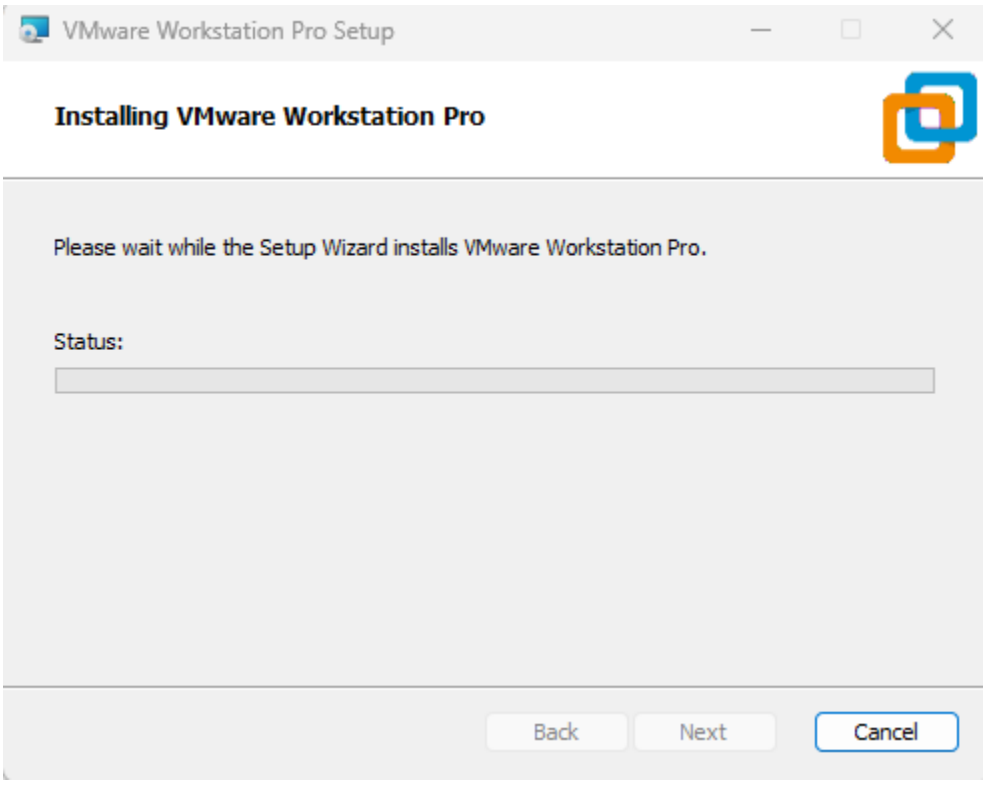
- **VMware Installation**

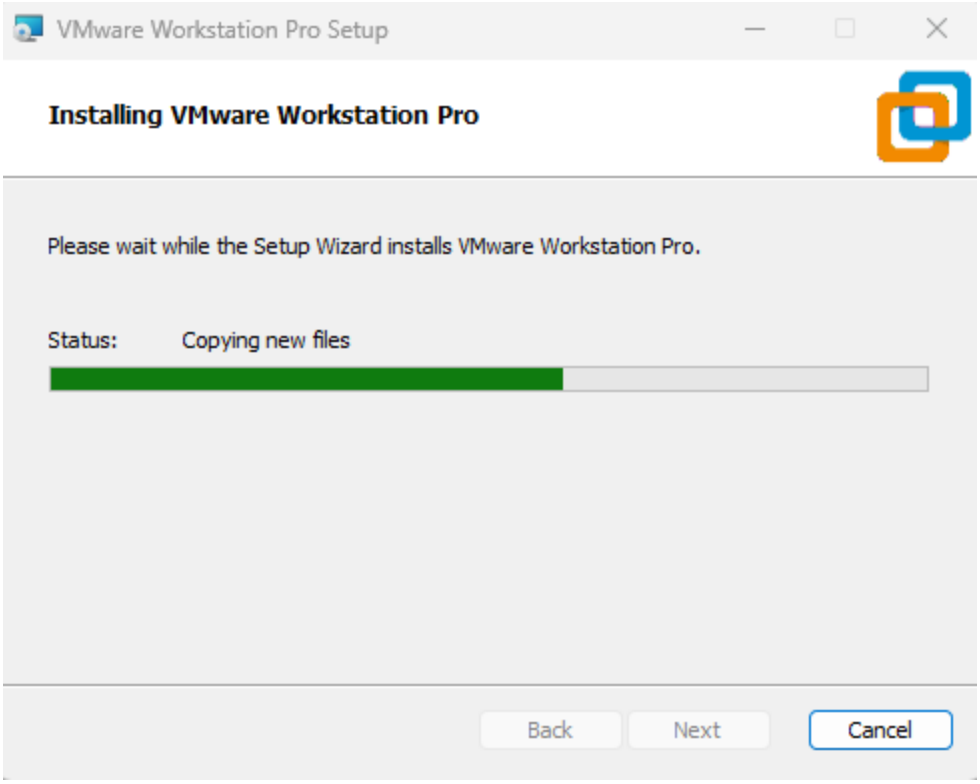


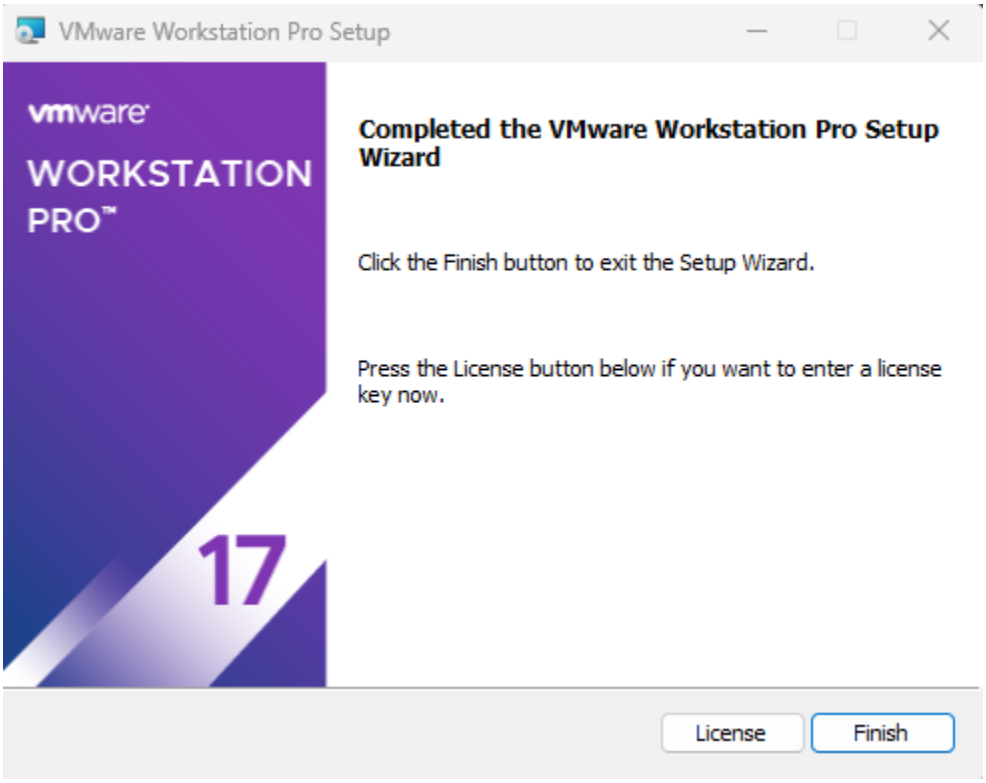

VMware Workstation Pro Setup
End-User License Agreement
Please read the following license agreement carefully.
Foundation Agreement
1. INTRODUCTION
I accept the terms in the License Agreement
Print
Back
Next
Cancel


VMware Workstation Pro Setup
Custom Setup
Select the installation destination and any additional features.
Install to:
C:\Program Files (x86)\VMware\VMware Workstation\
Change...
Add VMware Workstation console tools into system PATH
Back
Next
Cancel


VMware Workstation Pro Setup
Shortcuts
Select the shortcuts you wish to place on your system.
Create shortcuts for VMware Workstation Pro in the following places:
Desktop
Start Menu Programs Folder
Back
Next
Cancel


VMware Workstation Pro Setup
Installing VMware Workstation Pro
Please wait while the Setup Wizard installs VMware Workstation Pro.
Status:
Back
Next
Cancel

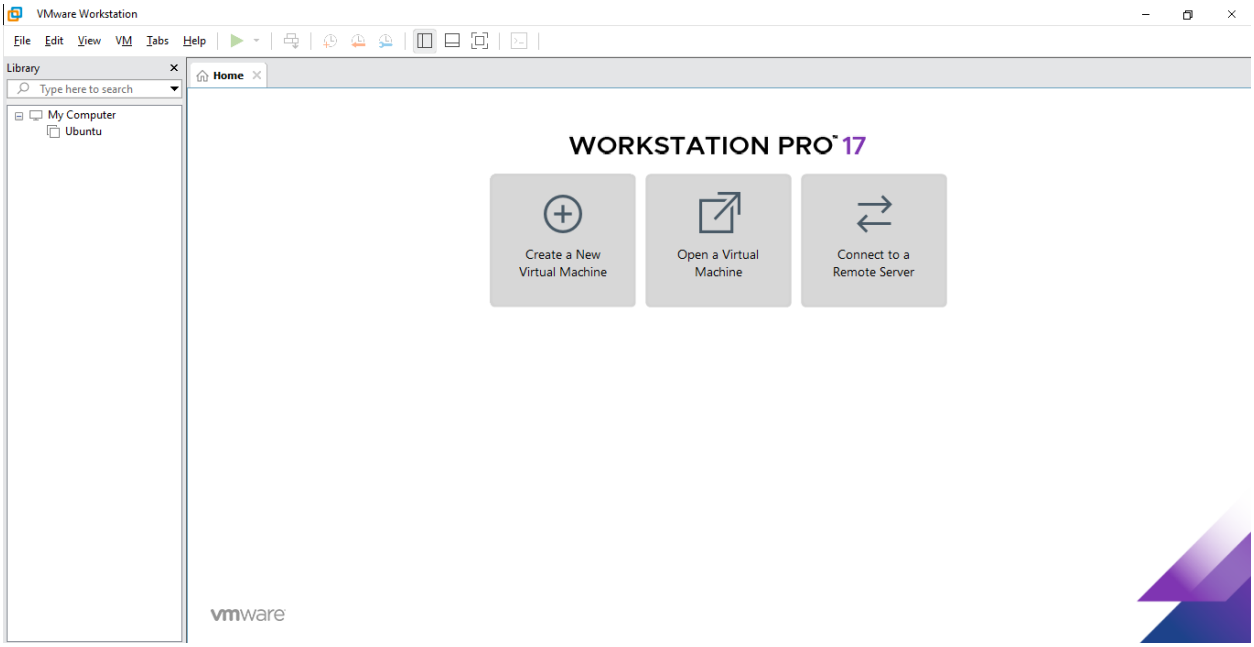




- **Download Ubuntu server ISO**

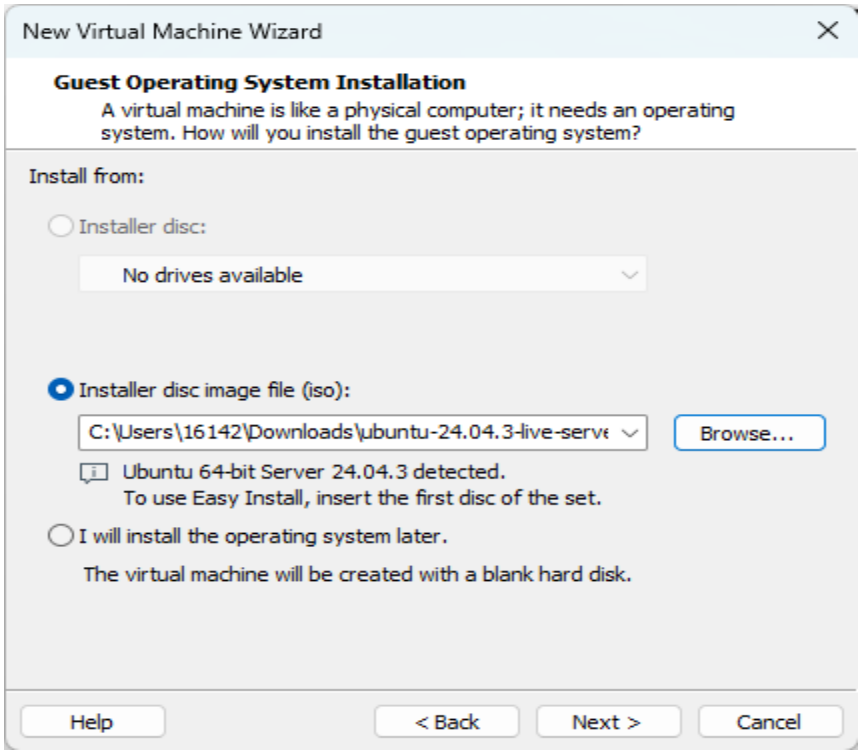
➢ Create a new virtual machine in VMware

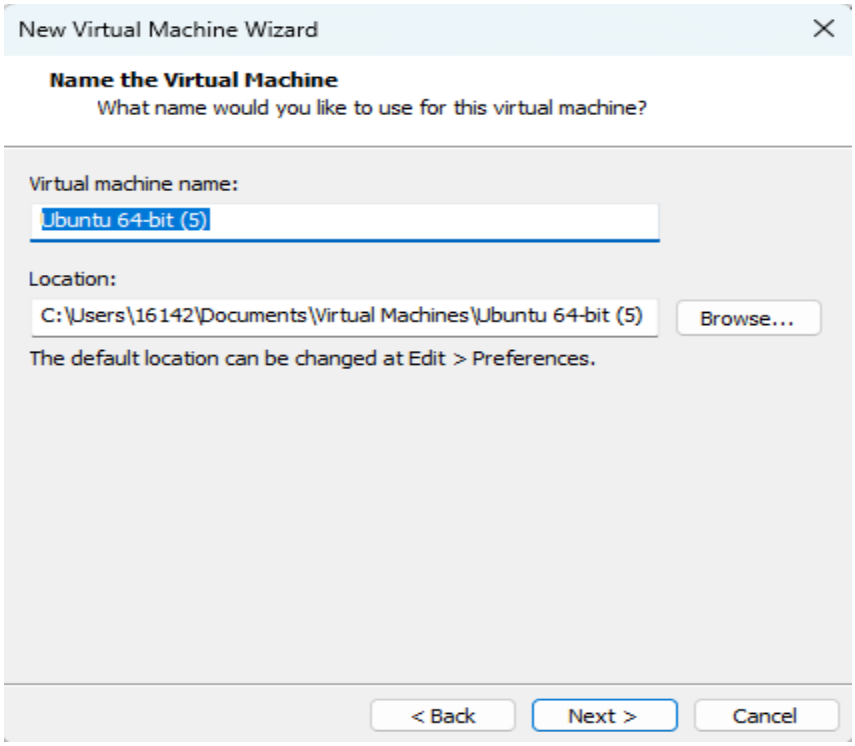
- Open VMware Workstation Pro.

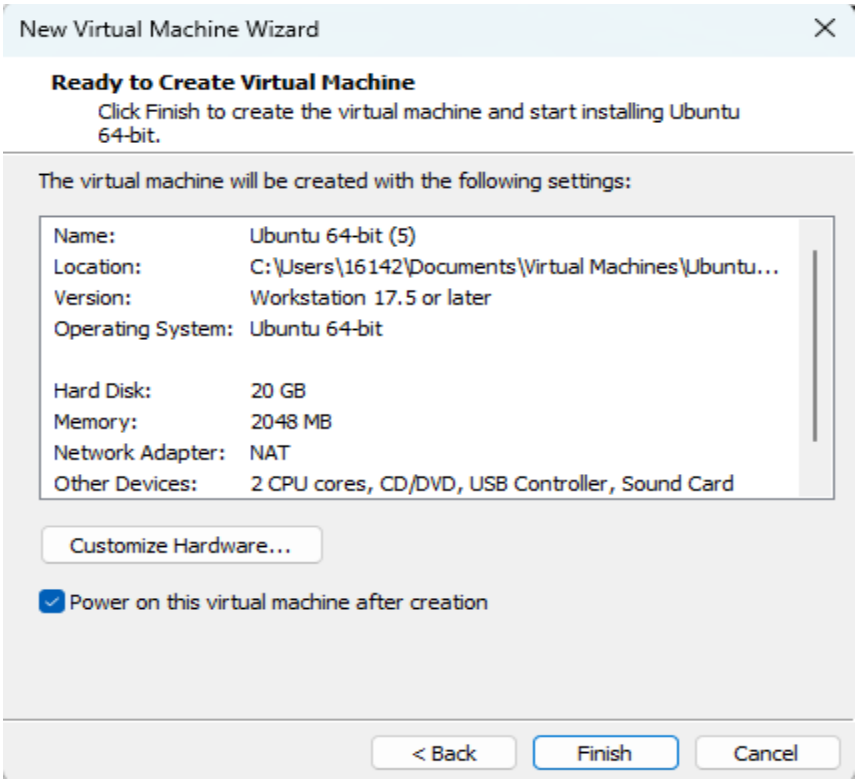


- Click **Create a New Virtual Machine**.

- Select **Typical (recommended)**.
- When asked for installation media, choose **Installer disc image file (ISO)** and browse to the Ubuntu Server ISO you downloaded.


New Virtual Machine Wizard
Guest Operating System Installation
A virtual machine is like a physical computer; it needs an operating system. How will you install the guest operating system?
Install from:
Installer disc:
No drives available
Installer disc image file (iso):
C:\Users\16142\Downloads\ubuntu-24.04.3-live-serve
Browse...
Ubuntu 64-bit Server 24.04.3 detected.
To use Easy Install, insert the first disc of the set.
I will install the operating system later.
The virtual machine will be created with a blank hard disk.
Help
< Back
Next >
Cancel

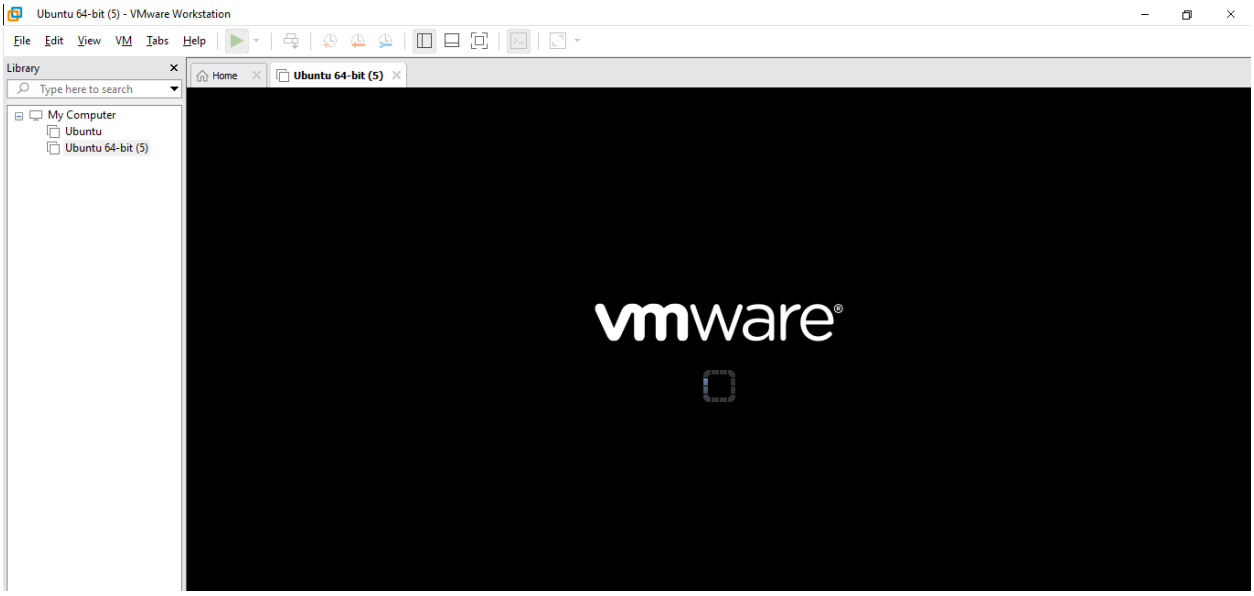

New Virtual Machine Wizard
Name the Virtual Machine
What name would you like to use for this virtual machine?
Virtual machine name:
Ubuntu 64-bit (5)
Location:
C:\Users\16142\Documents\Virtual Machines\Ubuntu 64-bit (5)
Browse...
The default location can be changed at Edit > Preferences.
< Back
Next >
Cancel



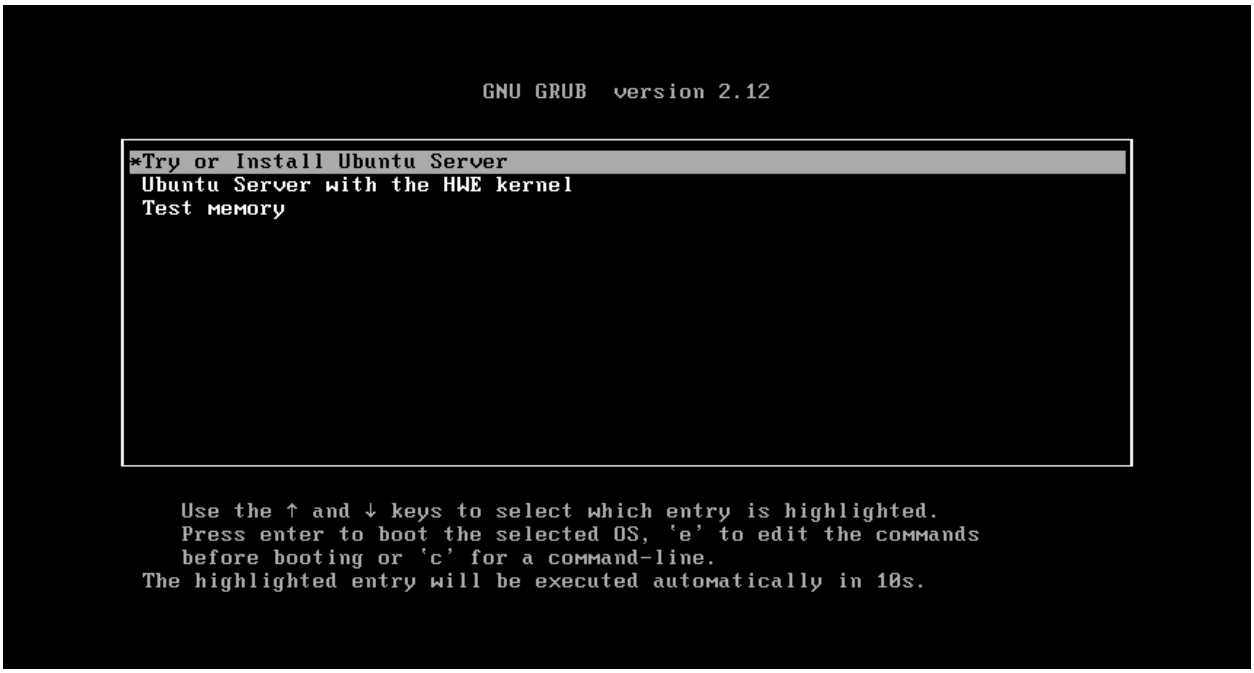
- Continue through the wizard, selecting the defaults unless otherwise instructed.

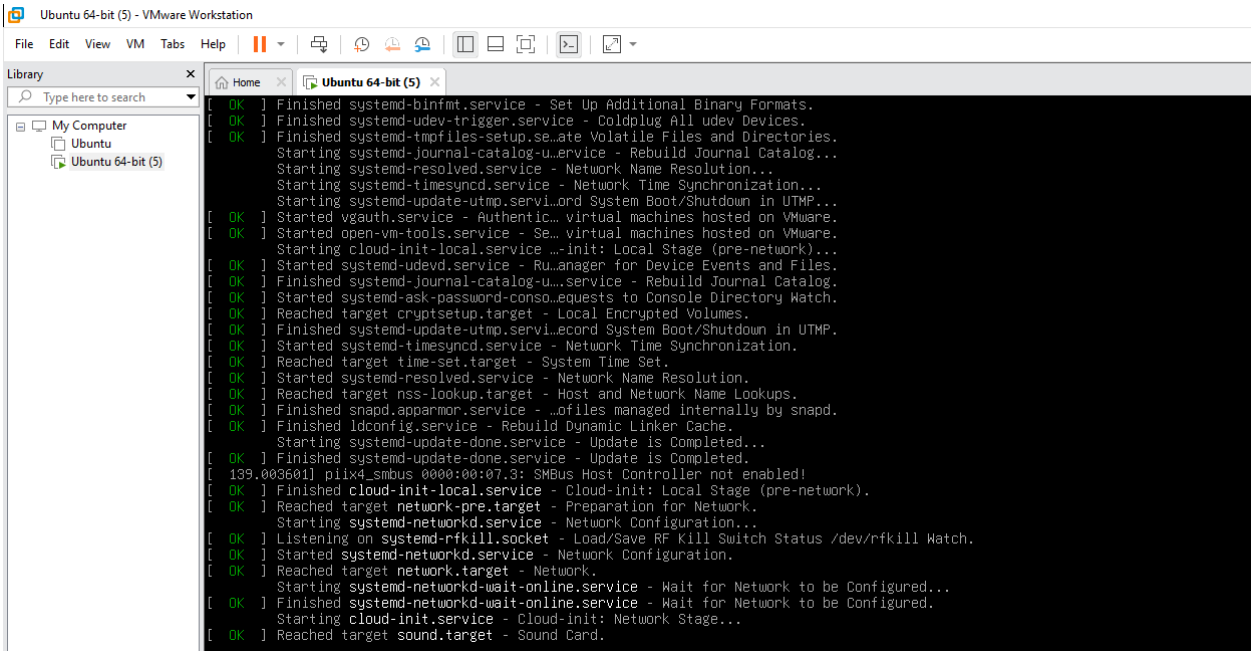
➢ Start the virtual machine

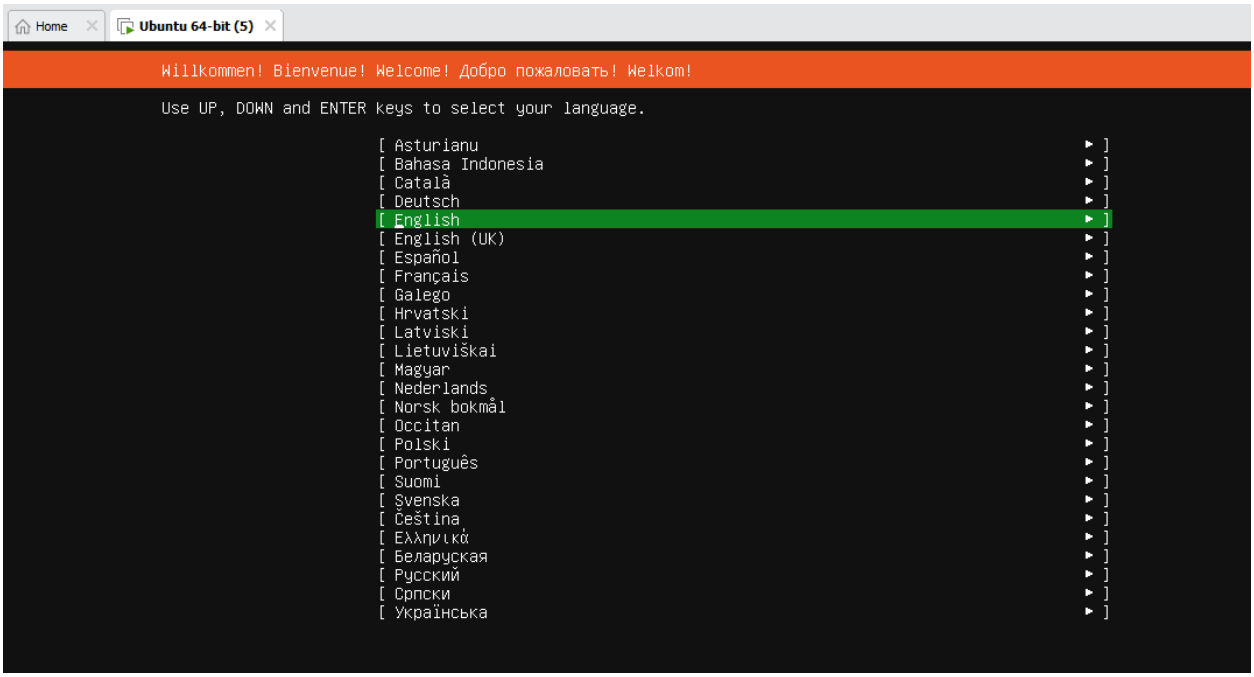
- Once the VM is created, click **Power on this virtual machine**.

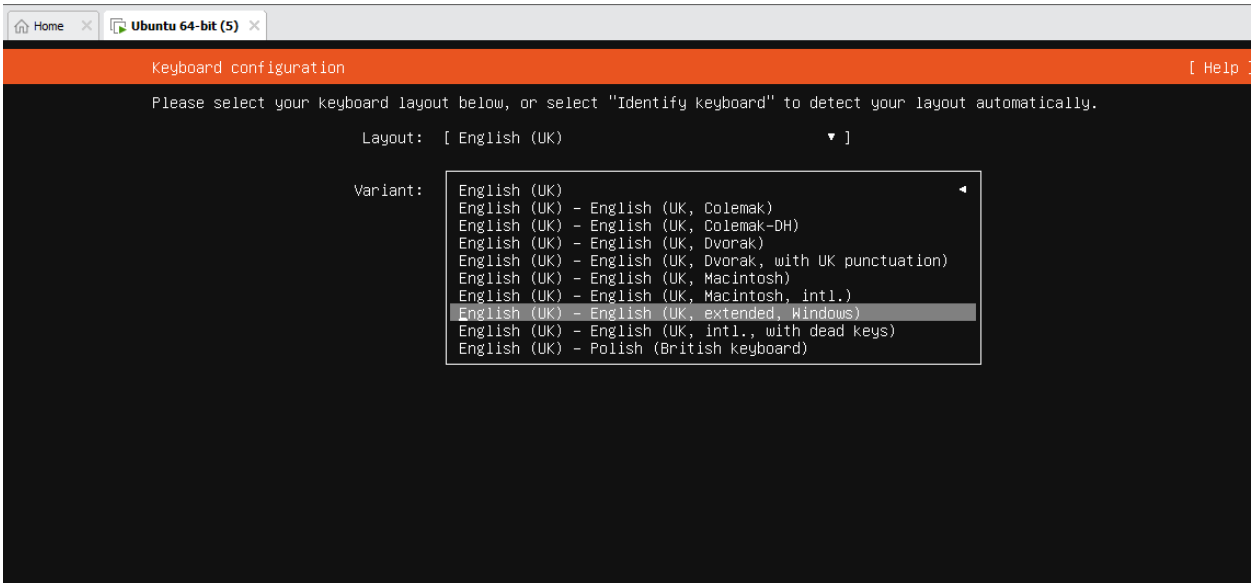


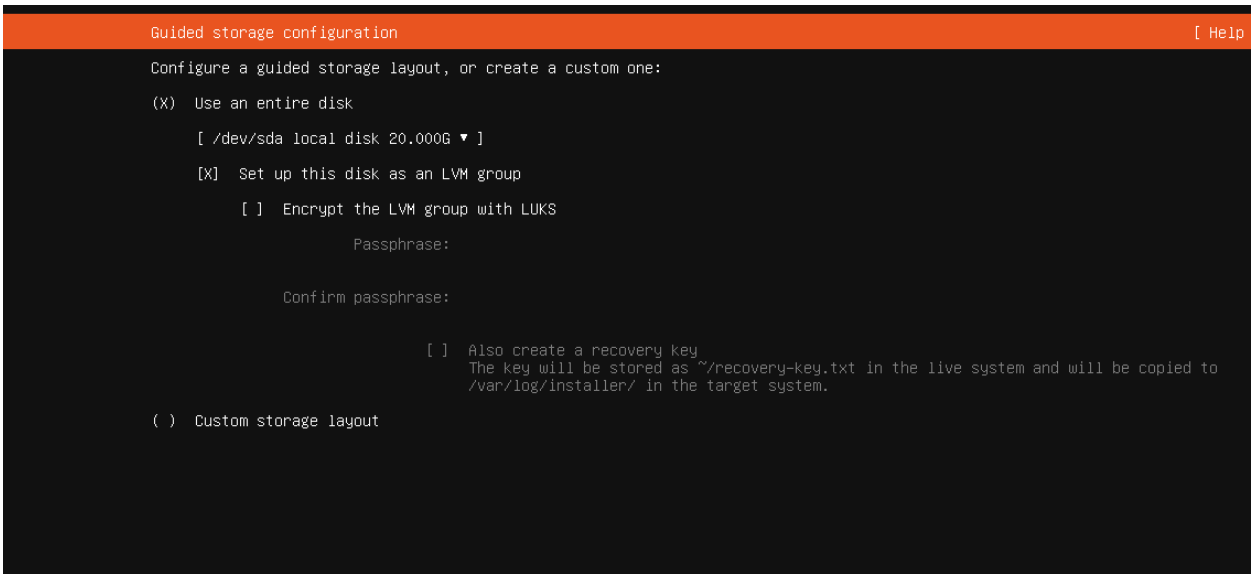
- The Ubuntu Server installer will boot using the ISO file.

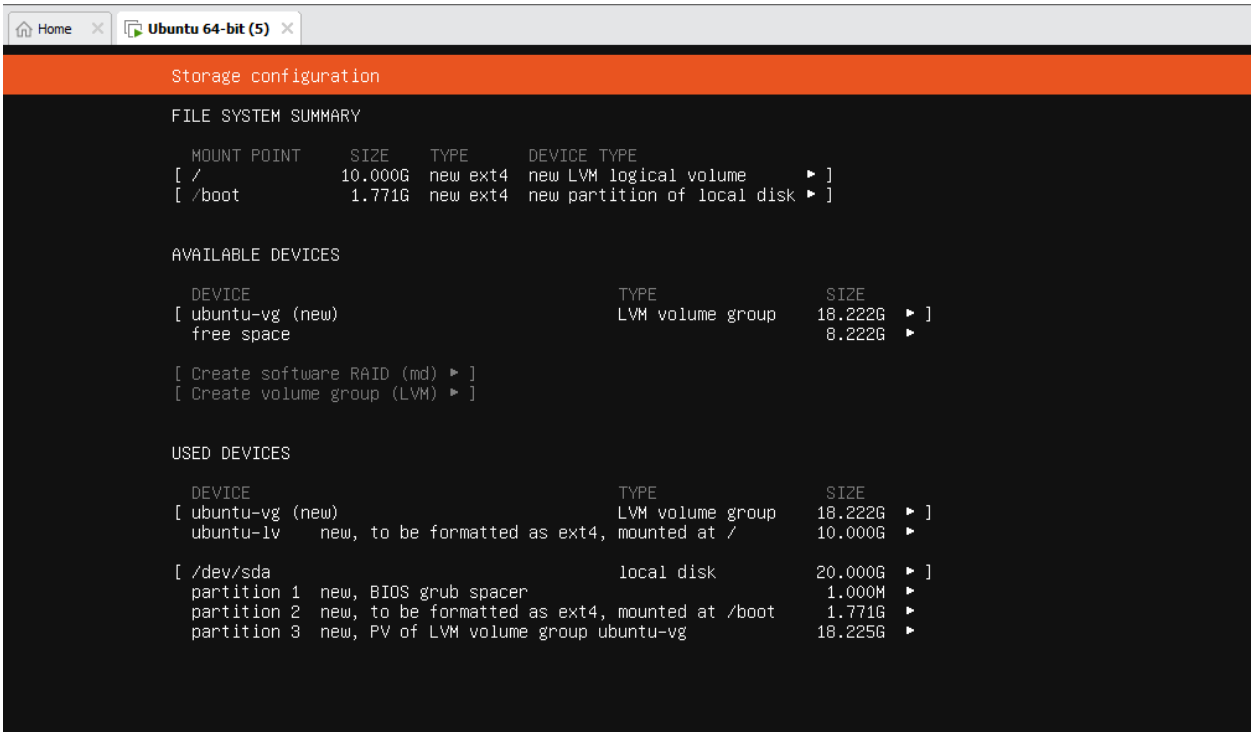

GNU GRUB version 2.12
*Try or Install Ubuntu Server
Ubuntu Server with the HWE kernel
Test memory
Use the ↑ and ↓ keys to select which entry is highlighted.
Press enter to boot the selected OS, 'e' to edit the commands
before booting or 'c' for a command-line.
The highlighted entry will be executed automatically in 10s.

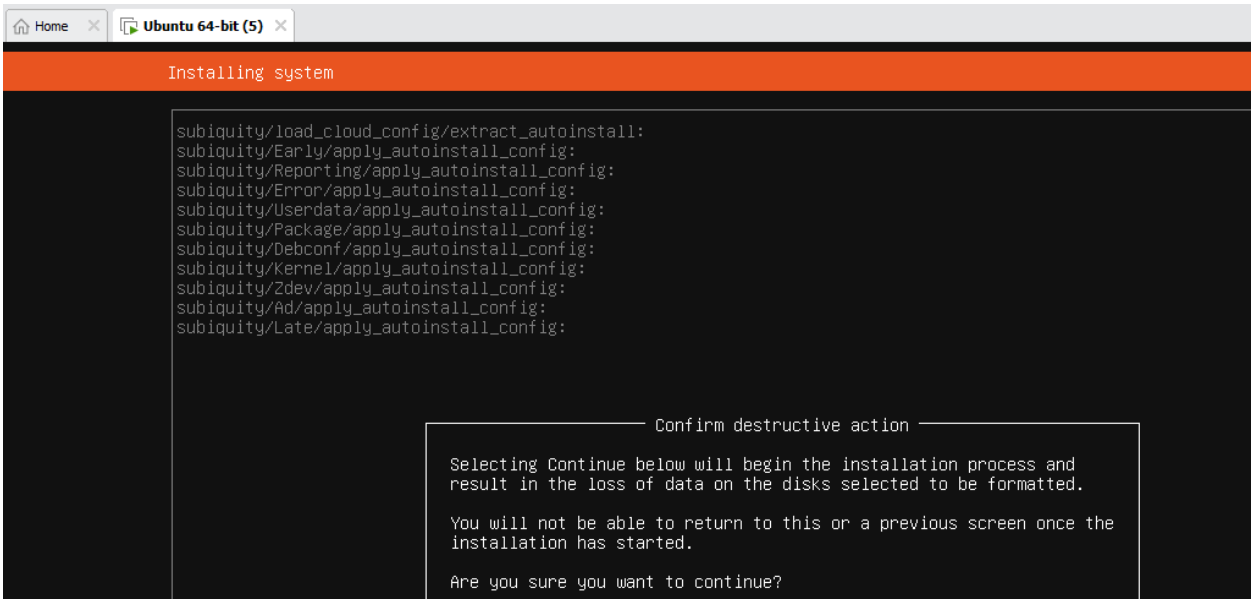

Ubuntu 64-bit (5) - VMware Workstation
File Edit View VM Tabs Help
Library
Type here to search
My Computer
Ubuntu
Ubuntu 64-bit (5)
Home
Ubuntu 64-bit (5)
[OK] Finished systemd-binfmt.service - Set Up Additional Binary Formats.
[OK] Finished systemd-udev-trigger.service - Coldplug All udev Devices.
[OK] Finished systemd-tmpfiles-setup.se…ate Volatile Files and Directories.
Starting systemd-journal-catalog-u…ervice - Rebuild Journal Catalog...
Starting systemd-resolved.service - Network Name Resolution...
Starting systemd-timesyncd.service - Network Time Synchronization...
Starting systemd-update-utmp.servi…ord System Boot/Shutdown in UTMP...
[OK] Started vgauth.service - Authentic… virtual machines hosted on VMware.
[OK] Started open-vm-tools.service - Se… virtual machines hosted on VMware.
Starting cloud-init-local.service …-init: Local Stage (pre-network)...
[OK] Started systemd-udevd.service - Ru…anager for Device Events and Files.
[OK] Finished systemd-journal-catalog-u….service - Rebuild Journal Catalog.
[OK] Started systemd-ask-password-conso…equests to Console Directory Watch.
[OK] Reached target cryptsetup.target - Local Encrypted Volumes.
[OK] Finished systemd-update-utmp.servi…ecord System Boot/Shutdown in UTMP.
[OK] Started systemd-timesyncd.service - Network Time Synchronization.
[OK] Reached target time-set.target - System Time Set.
[OK] Started systemd-resolved.service - Network Name Resolution.
[OK] Reached target nss-lookup.target - Host and Network Name Lookups.
[OK] Finished snapd.apparmor.service - …ofiles managed internally by snapd.
[OK] Finished ldconfig.service - Rebuild Dynamic Linker Cache.
Starting systemd-update-done.service - Update is Completed...
[OK] Finished systemd-update-done.service - Update is Completed.
[139.003601] piix4_smbus 0000:00:07.3: SMBus Host Controller not enabled!
[OK] Finished cloud-init-local.service - Cloud-init: Local Stage (pre-network).
[OK] Reached target network-pre.target - Preparation for Network.
Starting systemd-networkd.service - Network Configuration...
[OK] Listening on systemd-rfkill.socket - Load/Save RF Kill Switch Status /dev/rfkill Watch.
[OK] Started systemd-networkd.service - Network Configuration.
[OK] Reached target network.target - Network.
Starting systemd-networkd-wait-online.service - Wait for Network to be Configured...
[OK] Finished systemd-networkd-wait-online.service - Wait for Network to be Configured.
Starting cloud-init.service - Cloud-init: Network Stage...
[OK] Reached target sound.target - Sound Card.

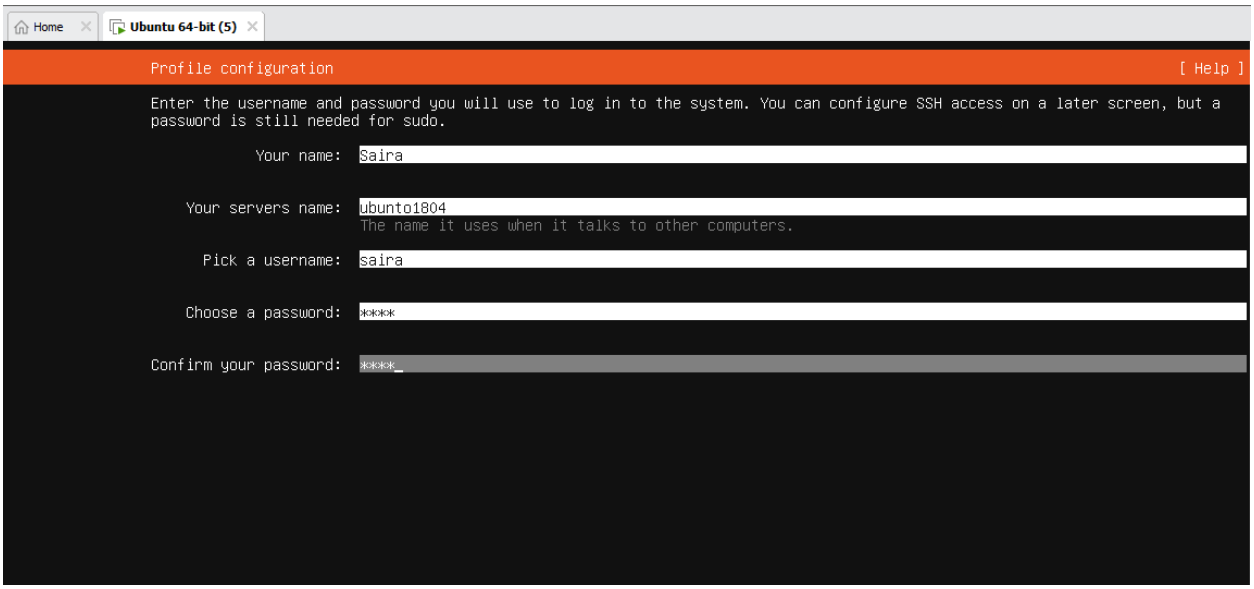

Home
Ubuntu 64-bit (5)
Willkommen! Bienvenue! Welcome! Добро пожаловать! Welkom!
Use UP, DOWN and ENTER keys to select your language.
[Asturianu ▸]
[Bahasa Indonesia ▸]
[Català ▸]
[Deutsch ▸]
[English ▸]
[English (UK) ▸]
[Español ▸]
[Français ▸]
[Galego ▸]
[Hrvatski ▸]
[Latviski ▸]
[Lietuviškai ▸]
[Magyar ▸]
[Nederlands ▸]
[Norsk bokmål ▸]
[Occitan ▸]
[Polski ▸]
[Português ▸]
[Suomi ▸]
[Svenska ▸]
[Čeština ▸]
[Ελληνικά ▸]
[Беларуская ▸]
[Русский ▸]
[Српски ▸]
[Українська ▸]

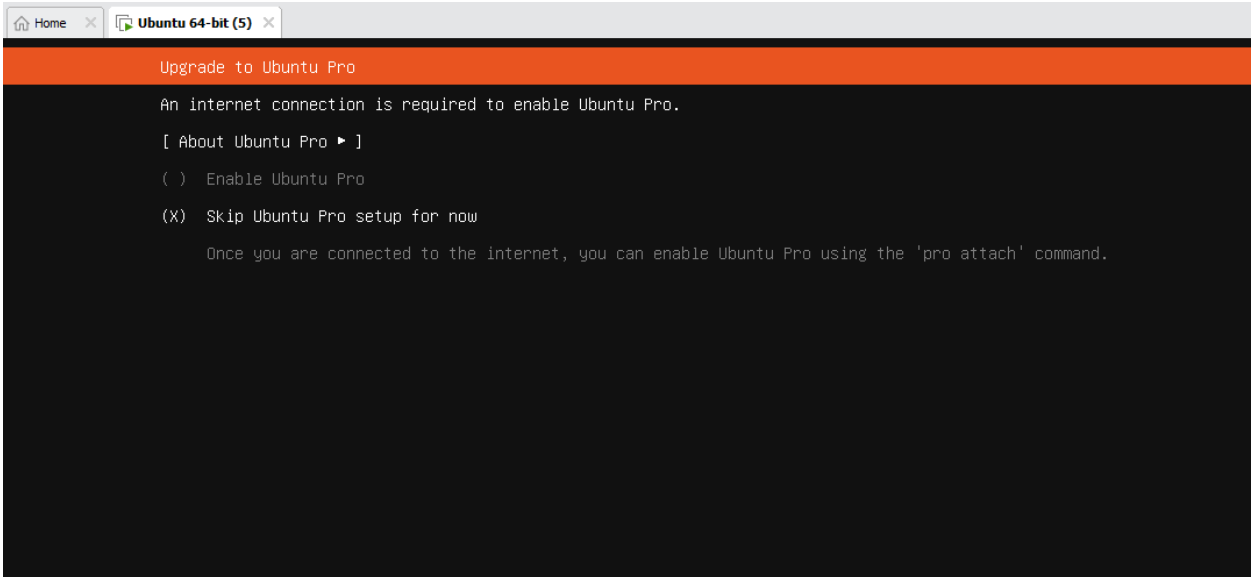

Home
Ubuntu 64-bit (5)
Keyboard configuration
[Help]
Please select your keyboard layout below, or select "Identify keyboard" to detect your layout automatically.
Layout: [English (UK) ▾]
Variant:
English (UK) ◂
English (UK) - English (UK, Colemak)
English (UK) - English (UK, Colemak-DH)
English (UK) - English (UK, Dvorak)
English (UK) - English (UK, Dvorak, with UK punctuation)
English (UK) - English (UK, Macintosh)
English (UK) - English (UK, Macintosh, intl.)
English (UK) - English (UK, extended, Windows)
English (UK) - English (UK, intl., with dead keys)
English (UK) - Polish (British keyboard)

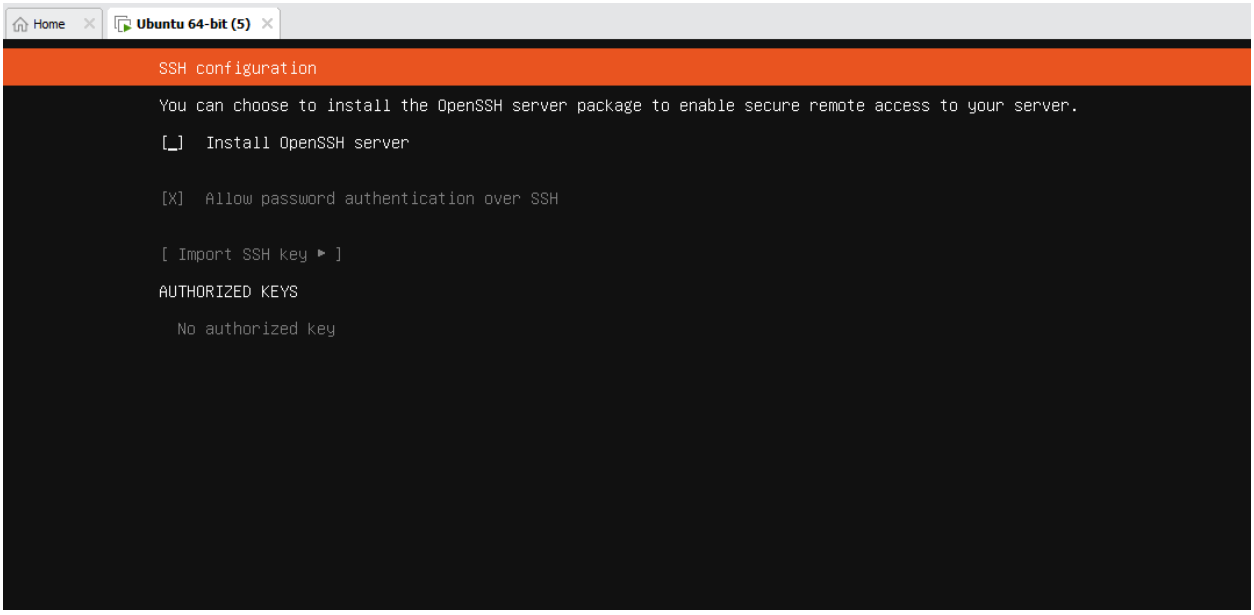

Guided storage configuration
[Help
Configure a guided storage layout, or create a custom one:
(X) Use an entire disk
[/dev/sda local disk 20.000G ▾]
[X] Set up this disk as an LVM group
[ ] Encrypt the LVM group with LUKS
Passphrase:
Confirm passphrase:
[ ] Also create a recovery key
The key will be stored as ~/recovery-key.txt in the live system and will be copied to /var/log/installer/ in the target system.
( ) Custom storage layout

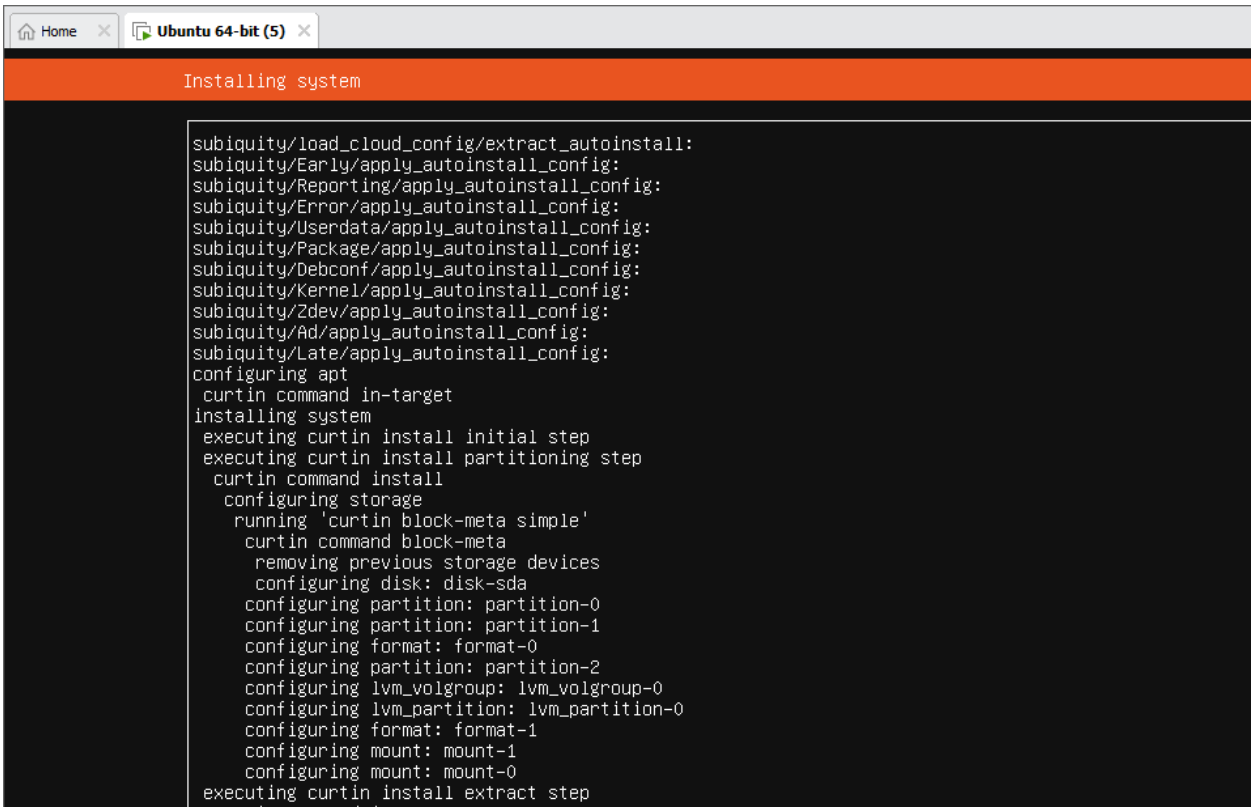

Home
Ubuntu 64-bit (5)
Storage configuration
FILE SYSTEM SUMMARY
MOUNT POINT SIZE TYPE DEVICE TYPE
[/ 10.000G new ext4 new LVM logical volume ▸]
[/boot 1.771G new ext4 new partition of local disk ▸]
AVAILABLE DEVICES
DEVICE TYPE SIZE
[ubuntu-vg (new) LVM volume group 18.222G ▸]
free space 8.222G ▸
[Create software RAID (md) ▸]
[Create volume group (LVM) ▸]
USED DEVICES
DEVICE TYPE SIZE
[ubuntu-vg (new) LVM volume group 18.222G ▸]
ubuntu-lv new, to be formatted as ext4, mounted at / 10.000G ▸
[/dev/sda local disk 20.000G ▸]
partition 1 new, BIOS grub spacer 1.000M ▸
partition 2 new, to be formatted as ext4, mounted at /boot 1.771G ▸
partition 3 new, PV of LVM volume group ubuntu-vg 18.225G ▸

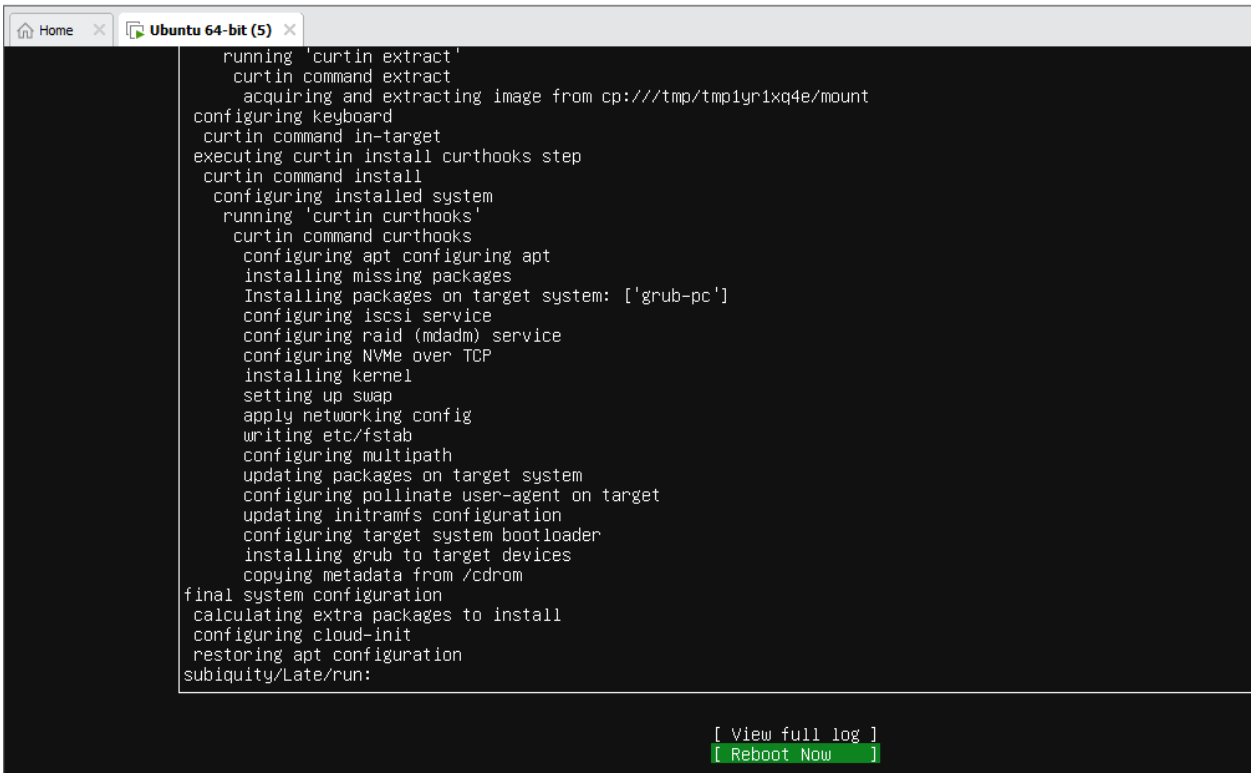

Home
Ubuntu 64-bit (5)
Installing system
subiquity/load_cloud_config/extract_autoinstall:
subiquity/Early/apply_autoinstall_config:
subiquity/Reporting/apply_autoinstall_config:
subiquity/Error/apply_autoinstall_config:
subiquity/Userdata/apply_autoinstall_config:
subiquity/Package/apply_autoinstall_config:
subiquity/Debconf/apply_autoinstall_config:
subiquity/Kernel/apply_autoinstall_config:
subiquity/Zdev/apply_autoinstall_config:
subiquity/Ad/apply_autoinstall_config:
subiquity/Late/apply_autoinstall_config:
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?

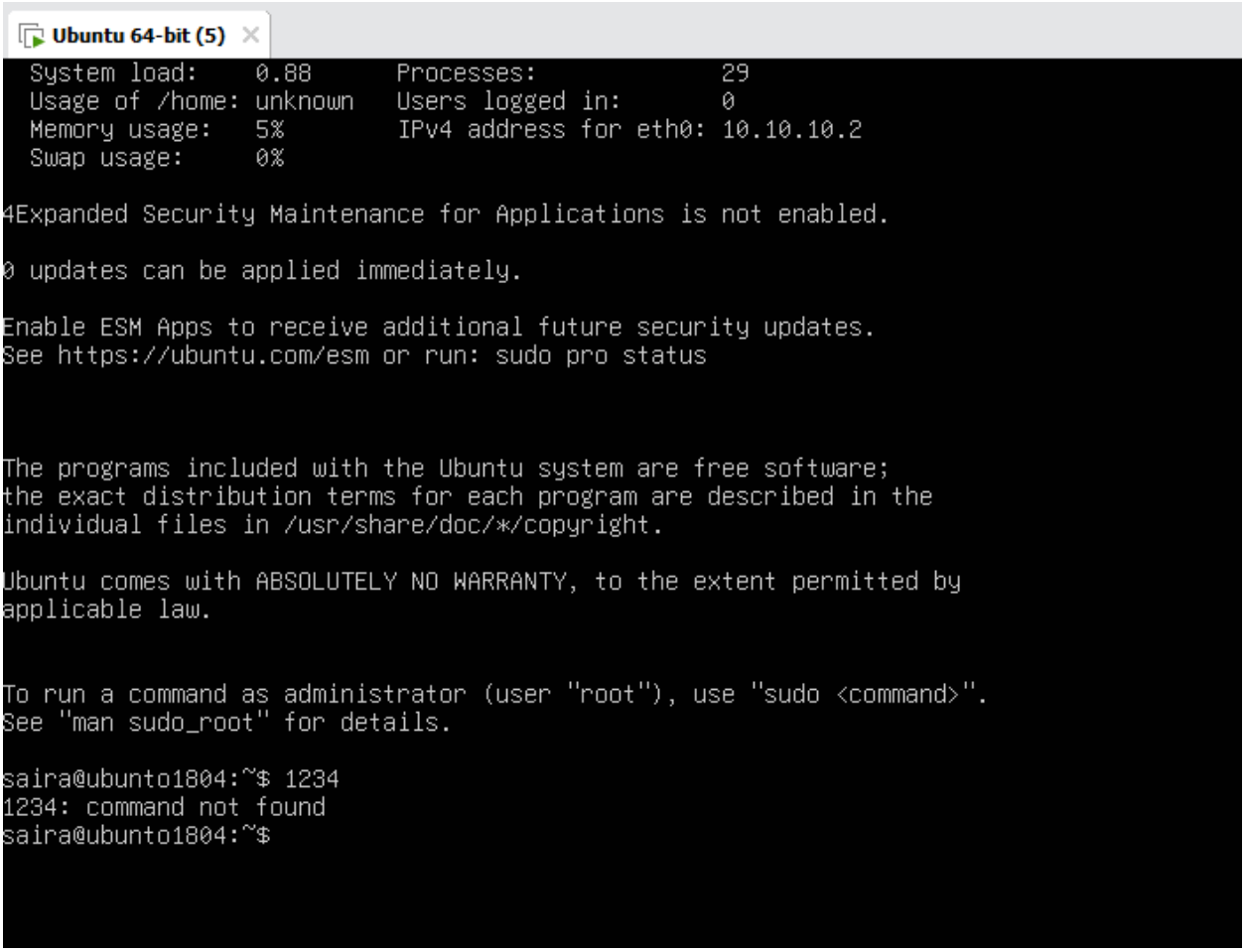

Home
Ubuntu 64-bit (5)
Profile configuration
[Help]
Enter the username and password you will use to log in to the system. You can configure SSH access on a later screen, but a password is still needed for sudo.
Your name: Saira
Your servers name: ubunto1804
The name it uses when it talks to other computers.
Pick a username: saira
Choose a password: ****
Confirm your password: ****


Home
Ubuntu 64-bit (5)
Upgrade to Ubuntu Pro
An internet connection is required to enable Ubuntu Pro.
[About Ubuntu Pro ▸]
( ) Enable Ubuntu Pro
(X) Skip Ubuntu Pro setup for now
Once you are connected to the internet, you can enable Ubuntu Pro using the 'pro attach' command.


Home
Ubuntu 64-bit (5)
SSH configuration
You can choose to install the OpenSSH server package to enable secure remote access to your server.
[_] Install OpenSSH server
[X] Allow password authentication over SSH
[Import SSH key ▸]
AUTHORIZED KEYS
No authorized key


Home
Ubuntu 64-bit (5)
Installing system
subiquity/load_cloud_config/extract_autoinstall:
subiquity/Early/apply_autoinstall_config:
subiquity/Reporting/apply_autoinstall_config:
subiquity/Error/apply_autoinstall_config:
subiquity/Userdata/apply_autoinstall_config:
subiquity/Package/apply_autoinstall_config:
subiquity/Debconf/apply_autoinstall_config:
subiquity/Kernel/apply_autoinstall_config:
subiquity/Zdev/apply_autoinstall_config:
subiquity/Ad/apply_autoinstall_config:
subiquity/Late/apply_autoinstall_config:
configuring apt
curtin command in-target
installing system
executing curtin install initial step
executing curtin install partitioning step
curtin command install
configuring storage
running 'curtin block-meta simple'
curtin command block-meta
removing previous storage devices
configuring disk: disk-sda
configuring partition: partition-0
configuring partition: partition-1
configuring format: format-0
configuring partition: partition-2
configuring lvm_volgroup: lvm_volgroup-0
configuring lvm_partition: lvm_partition-0
configuring format: format-1
configuring mount: mount-1
configuring mount: mount-0
executing curtin install extract step


Home
Ubuntu 64-bit (5)
running 'curtin extract'
curtin command extract
acquiring and extracting image from cp:///tmp/tmp1yr1xq4e/mount
configuring keyboard
curtin command in-target
executing curtin install curthooks step
curtin command install
configuring installed system
running 'curtin curthooks'
curtin command curthooks
configuring apt configuring apt
installing missing packages
Installing packages on target system: ['grub-pc']
configuring iscsi service
configuring raid (mdadm) service
configuring NVMe over TCP
installing kernel
setting up swap
apply networking config
writing etc/fstab
configuring multipath
updating packages on target system
configuring pollinate user-agent on target
updating initramfs configuration
configuring target system bootloader
installing grub to target devices
copying metadata from /cdrom
final system configuration
calculating extra packages to install
configuring cloud-init
restoring apt configuration
subiquity/Late/run:
[View full log]
[Reboot Now]

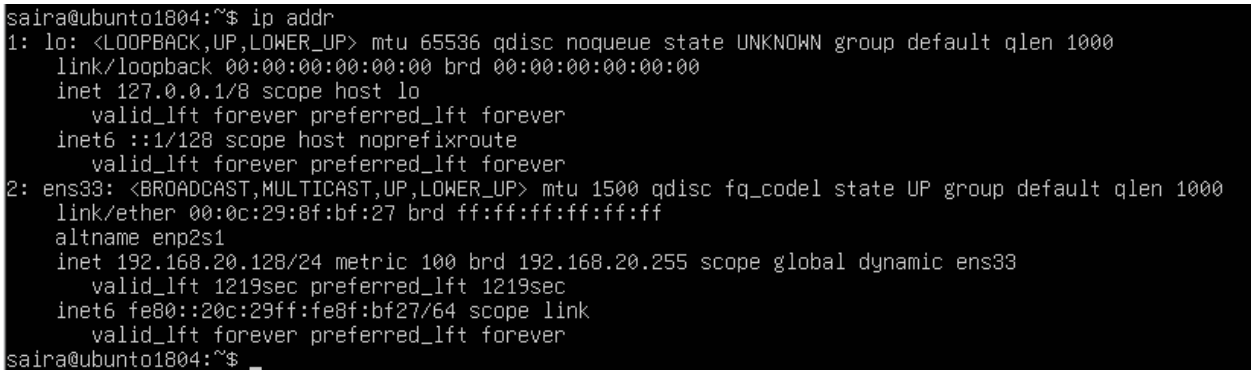


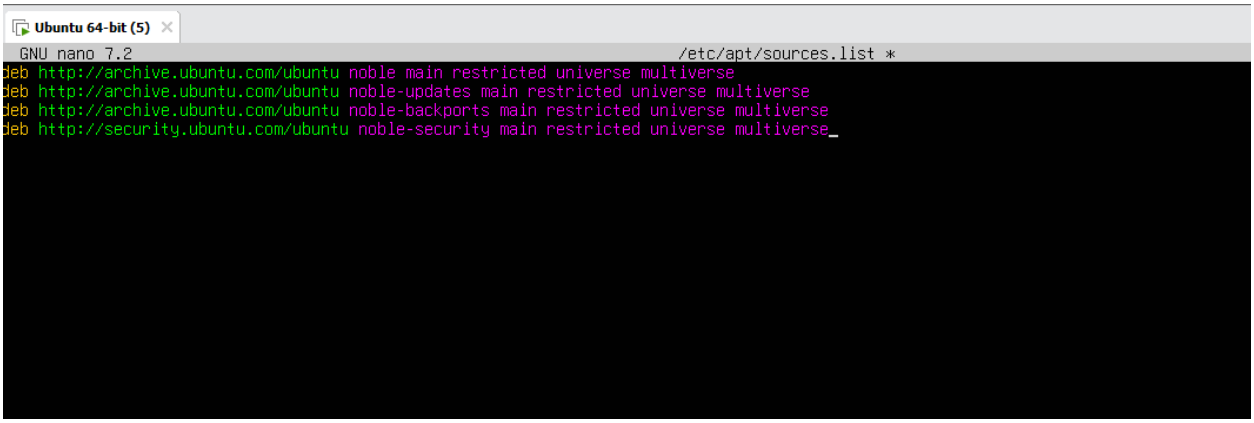
➢ Accessing Ubuntu Server from Windows

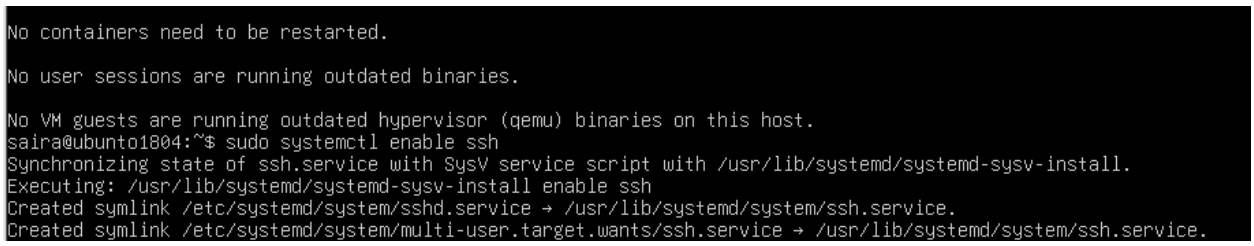
Before moving further, let's make sure you can connect to your Ubuntu Server from your Windows host system.

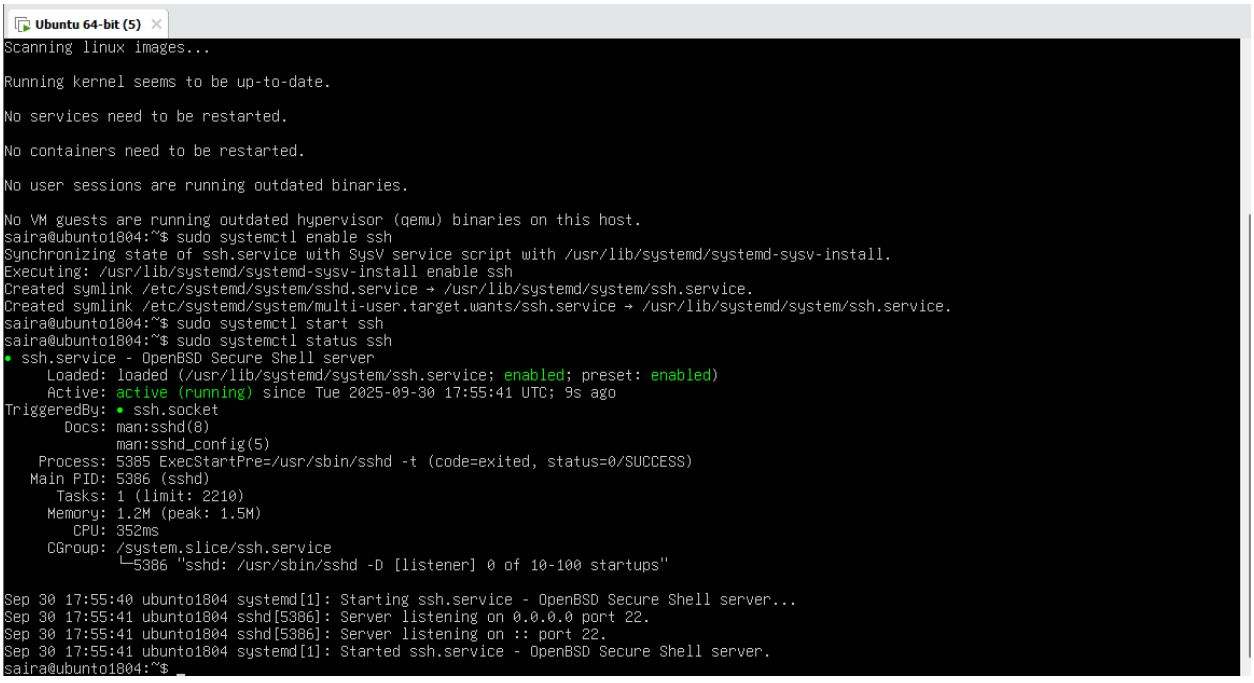
1. Find the IP address of Ubuntu Server

- Inside your Ubuntu Server VM, run the following command









➢ Connect via SSH from Windows

- On your Windows host, open **Command Prompt** or **PowerShell**.
- Run the following command (replace <username> with the one you set up during installation, and <ip-address> with the server's IP you just found)

```
C:\Users\16142>ssh saira@192.168.20.128
The authenticity of host '192.168.20.128 (192.168.20.128)' can't be established.
ED25519 key fingerprint is SHA256:hyYwUFpkiiZuKHK+t87jFvJwElHEYFACedUS8LL5WyQ.
This key is not known by any other names.
```

- **Accept the fingerprint**
  Type yes when prompted.

```
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '192.168.20.128' (ED25519) to the list of known hosts.
saira@192.168.20.128's password:
```

- **Enter your password**
  Use the same password you set up during the Ubuntu Server installation.

```
saira@192.168.20.128's password:
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.8.0-71-generic x86_64)

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

 System information as of Tue Sep 30 05:58:20 PM UTC 2025

  System load:  0.17              Processes:             220
  Usage of /:   48.4% of 9.75GB   Users logged in:       1
  Memory usage: 15%               IPv4 address for ens33: 192.168.20.128
  Swap usage:   0%


Expanded Security Maintenance for Applications is not enabled.

53 updates can be applied immediately.
40 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status


123saira@ubunto1804:~$
```