

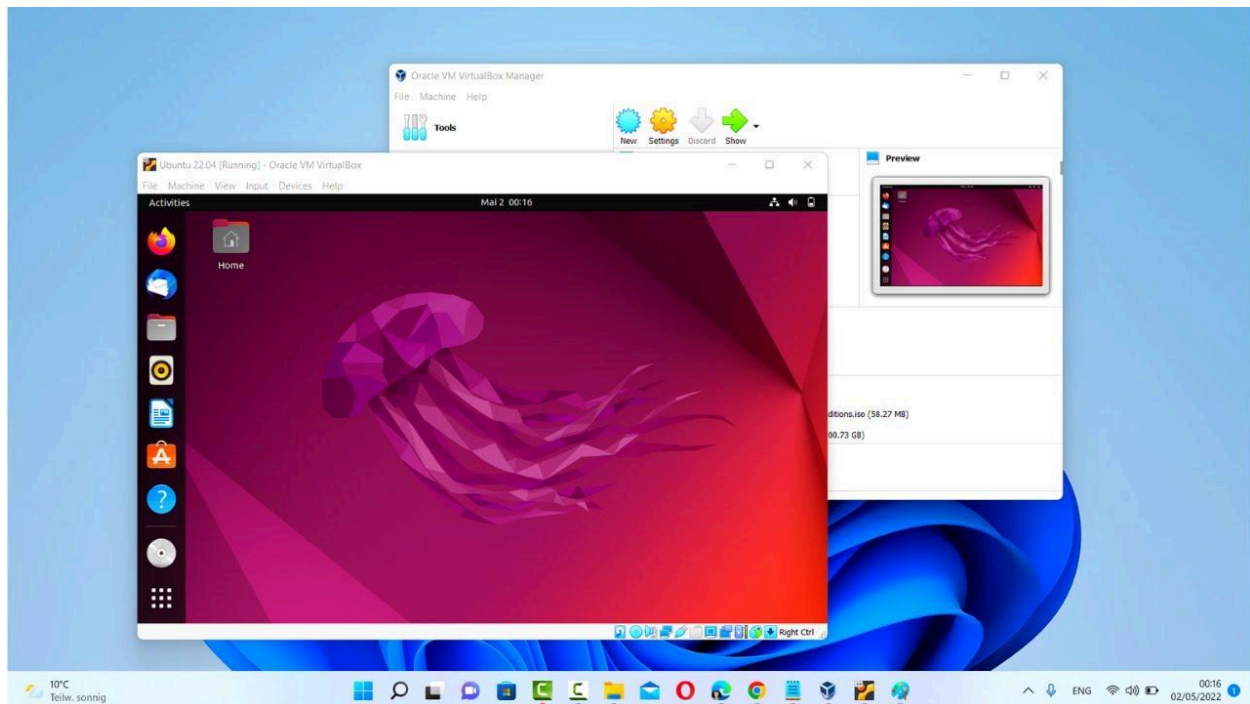
1. Write the procedure and create TYPE 2 Virtualization using VMware or any suitable virtualization tool. The created virtualization unit should have a RAM of a minimum 2 GB and a Storage Space of 10 GB. After creation, install a Guest OS (preferably an Open-Source Operating System) on the virtual machine. &

15. Create a virtual machine and deploy a guest OS (preferably Windows OS) in the VM, name it OS-A. Configure the machine so that it can accept hardware-assisted virtualization along with 2 CPUs and 2 cores each. Create a Nested Virtual Machine in OS-A with a similar configuration and test the deployed VM.

**** Change some content in these algorithm according to the question, but the output will be same to just display the linux in the VMWare ****

- Download and Install VMware (if not already on desktop).
- Open VMware and go to **"File" > "New Virtual Machine..."**
- Select **"Typical"** configuration in the wizard and click Next.
- Choose **"Installer disc image file (iso)"** and browse for the Ubuntu ISO file. Click "Next."
- Select Guest Operating System (Linux) and Version (Ubuntu). Click "Next."
- Name your VM and choose storage location. Click "Next."
- Set disk size (minimum **10 GB**), customize hardware if necessary (e.g., CPU cores, network adapter), and set **RAM size to 2GB**. Click "Finish."

Output:



**** Draw this output screen with ubuntu installation as output ****

3. In an existing Virtual Machine, perform the following:

- Take a snapshot of the virtual machine's current state from the Snapshots window for that virtual machine,
- View and list all the Snapshots for that Virtual Machine
- Restore the Virtual Machine to the State (select any one from the available list) in a Snapshot

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4. Using an existing Virtual Machine,

- Take a snapshot of the virtual machine's current state from the Snapshots window for that virtual machine.
- Revert a Virtual Machine Snapshot
- Delete the Snapshot

Take Snapshot:

- Open console, go to VM's Snapshot section.
- Find **"Take Snapshot"** option, provide name and description.

View and List Snapshots:

- Open console, navigate to VM's Snapshot section.
- See existing snapshots with names, descriptions, and dates.

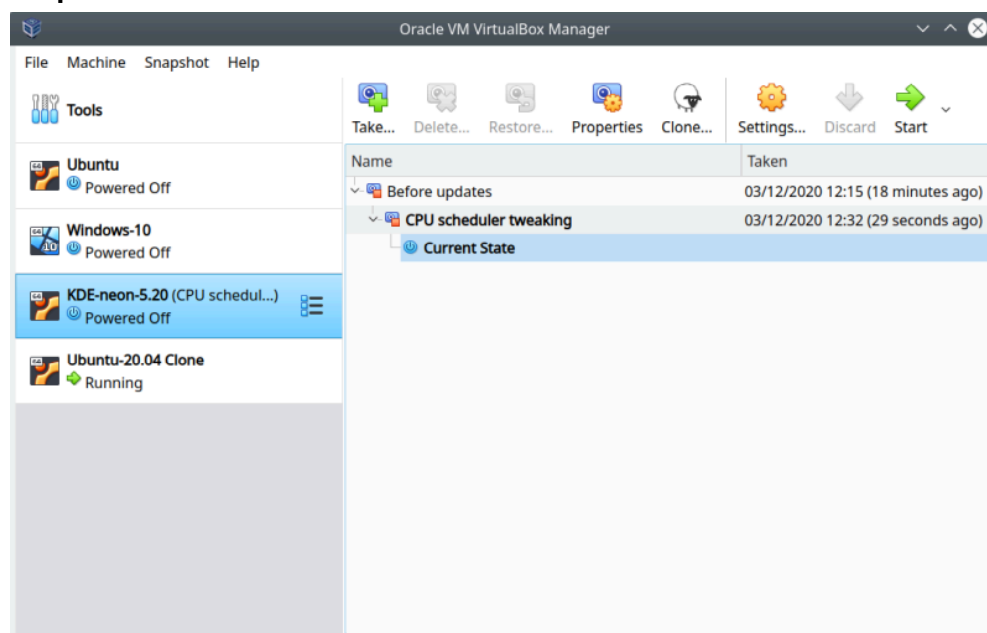
Restore VM to Snapshot:

- In snapshot list, select desired snapshot.
- Look for **"Restore Snapshot"** or **"Revert"** option, initiate.

Delete Snapshot:

- Locate **"Delete"** or **"Remove"** option in snapshot settings, confirm deletion.

Output:



**** Draw this output screen with ubuntu installation as output ****

2. Create a virtual machine of any desired primary and secondary memory (RAM and Storage Space). Make the following modifications to the created machine and write the required procedure.

- **Shrink the virtual disk to 50% of the existing value**
- **Extend the virtual disk by 75% of the existing value**

- Shrink the virtual disk to 50%:
 - Open VM & select OS.
 - Find disk settings, choose "Shrink" or "Compact."
 - Specify new size (50% decrease of original size).
- Extend the virtual disk by 75%:
 - Open VM & select OS.
 - Locate disk settings, choose "Extend" or "Resize."
 - Specify new size (75% increase of original size).

Output:

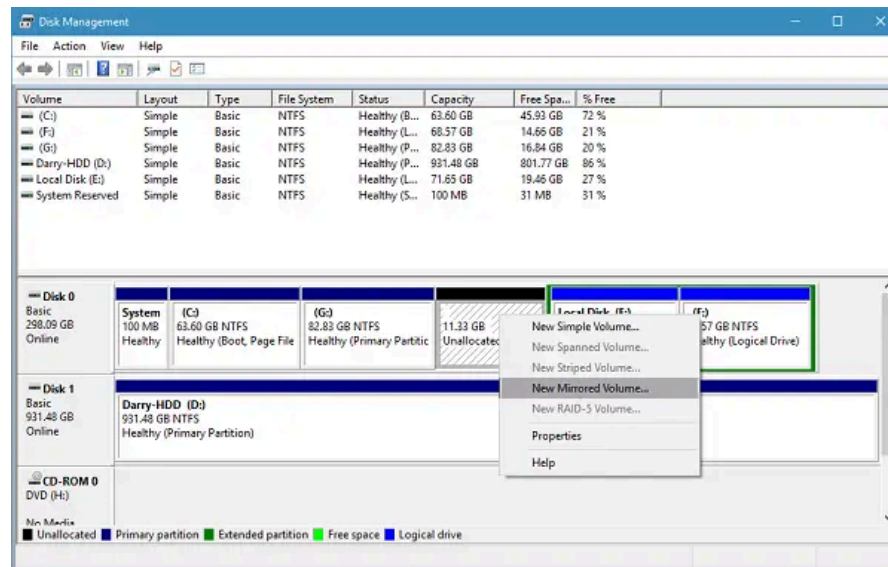
**** Draw the virtualbox screen as output which contains the disk UI****

5. a) Using a Windows virtual machine that supports dynamic disks, create a mirrored volume of 15 GB through Dynamic Disk Mirroring.

b) From a collection of multiple unallocated single disks, create a spanned single volume of 20 GB in a virtual machine.

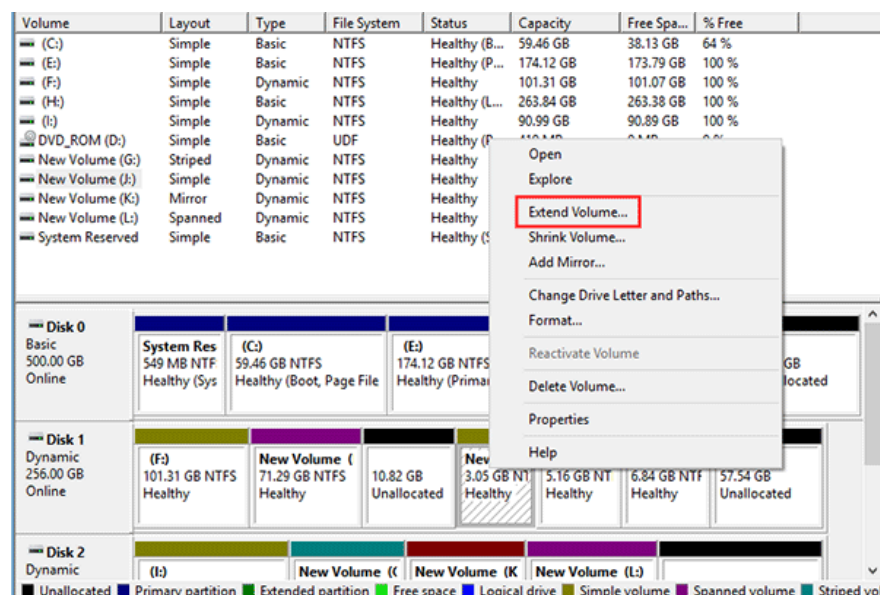
a) Creating a Mirrored Volume of 15 GB using Dynamic Disk Mirroring:

- Create a Windows virtual machine with dynamic disks.
- Initialize disks as dynamic in Disk Management.
- Right-click one disk, select **"New Mirrored Volume"**, follow prompts to create a **15 GB mirrored volume**.



b) Creating a Spanned Single Volume of 20 GB from Multiple Unallocated Disks:

- In the same VM, right-click an unallocated disk, select **"New Spanned Volume."**
- Choose disks to include, set size to **20 GB**, follow prompts to create spanned volume.

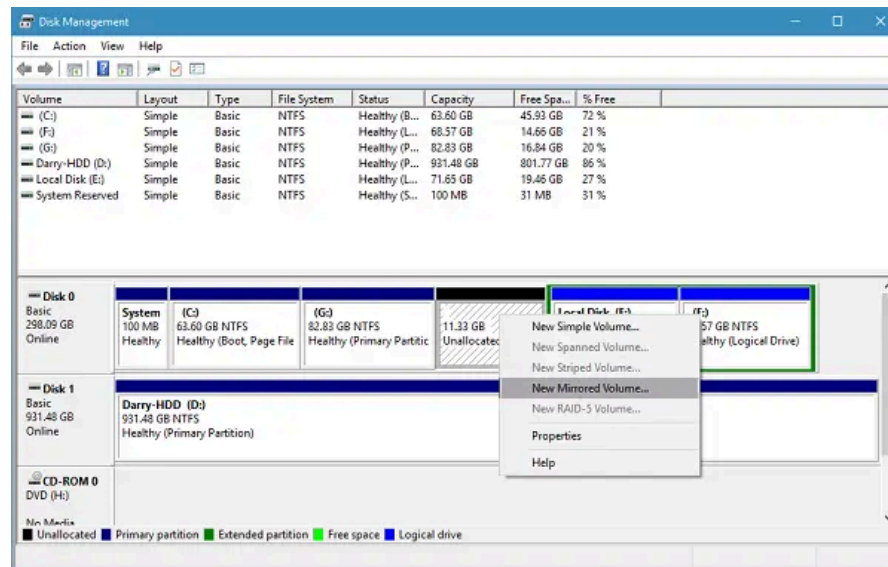


6. a) Using a Windows virtual machine that supports dynamic disks, create a mirrored volume of 10 GB through Dynamic Disk Mirroring.

b) In an existing Virtual Machine, strip a single volume of 20 GB to four 5 GB volume blocks.

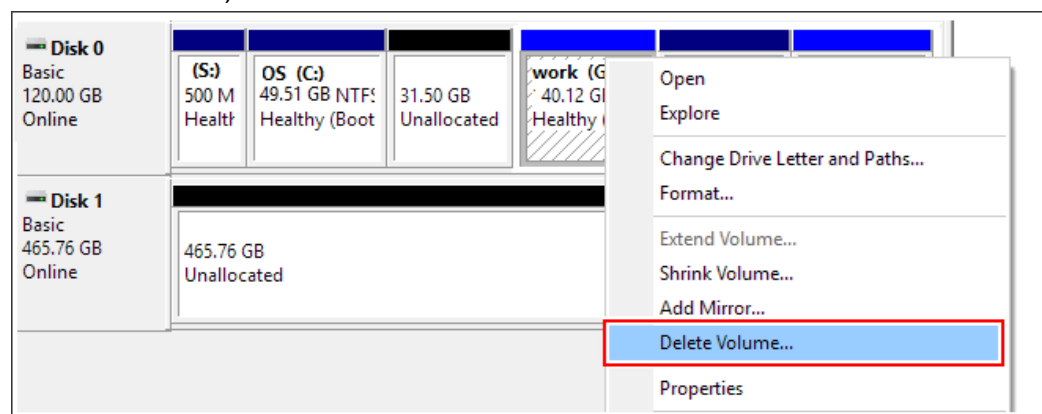
a) Creating a Mirrored Volume of 15 GB using Dynamic Disk Mirroring:

- Create a Windows virtual machine with dynamic disks.
- Initialize disks as dynamic in Disk Management.
- Right-click one disk, select **"New Mirrored Volume"**, follow prompts to create a **15 GB mirrored volume**.



b) Stripping a Single Volume of 20 GB into Four 5 GB Volume Blocks

- Open Disk Management in the existing virtual machine.
- Right-click the 20 GB volume and choose "Delete Volume" to free up the space.
- Right-click the unallocated space and select "New Striped Volume."
- Follow the wizard, specifying the number of disks and stripe size (in this case, four 5 GB blocks).



7. In an existing Virtual Machine (preferably a Windows server), create storage of the following configuration:

Disk 1-2 Gb

Disk 2-3 Gb

Disk 3-3 Gb

Convert the above three volumes into a RAID 5 volume.

- In Disk Management of your Windows Server VM, initialize three disks: Disk 1 (2 GB), Disk 2 (3 GB), and Disk 3 (3 GB).
- Create volumes on each disk: 2 GB on Disk 1, 3 GB on Disk 2 and 3 GB on Disk 3.
- Install the RAID feature if not already installed.
- In Disk Management, select Disk 1, Disk 2, and Disk 3.
- Create a RAID 5 volume using these disks.
- Assign a drive letter and format the new RAID 5 volume.

Output:

**** Draw the virtualbox screen as output which contains the disk UI****

8. Create a Virtual Desktop using VNC and use a VNC Client to connect to a Virtual Machine. (Install the VNC Application if required). &

11. Login to the ESXi 6.5 server and do the following:

- Create a Virtual Machine with Windows OS

- Memory: 2048 Mb

- Hard Disk: 10 Gb

Connect the Network Adapter and CD/DVD Drive

Login to the ESXi 6.5 Server:

- Open the vSphere Client or vSphere Web Client.
- Enter the IP address or hostname of your ESXi server, along with your username and password to log in.

Create a Virtual Machine with Windows OS:

- navigate to your ESXi host.
- Right-click on the host and select **"New Virtual Machine."**
- Follow the prompts in the New Virtual Machine wizard.
- Choose a name for your virtual machine and select the compatibility level.
- Select the guest OS family and version (Windows) & Click "Next" to proceed.

Configure Memory and CPU:

- Set the memory to **2048 MB (2 GB)** and specify the number of CPU cores as needed.
- Click "Next" to proceed.

Add Hard Disk:

- Choose **"Create a new virtual disk"** and specify the size as **10 GB**.
- Configure other disk settings as needed.
- Click "Next" to proceed.

Connect Network Adapter:

- In the New Virtual Machine wizard, select **"Network Adapter"** and choose the appropriate network configuration.
- Click "Next" to proceed.

Connect CD/DVD Drive:

- In the New Virtual Machine wizard, select "CD/DVD Drive" and choose the appropriate option to connect to an ISO image or a physical drive.
- Click "Next" to proceed.

Finish and Create Virtual Machine:

- Review the summary of your virtual machine configuration.
- Click "Finish" to create the virtual machine.

Wait for the creation process to complete.

- Power On the Virtual Machine:
- Once the virtual machine is created, right-click on it and select "Power On" to start the VM.
- If you connected a CD/DVD drive with an installation ISO, you can now proceed to install Windows on the virtual machine.

**** Draw the ESXi 6.5 browser page as output which display's the windows****

9. Access a computer using Chrome Remote Desktop through desktop virtualization. Once accessed, create a folder in that computer and insert two Word documents describing the procedure

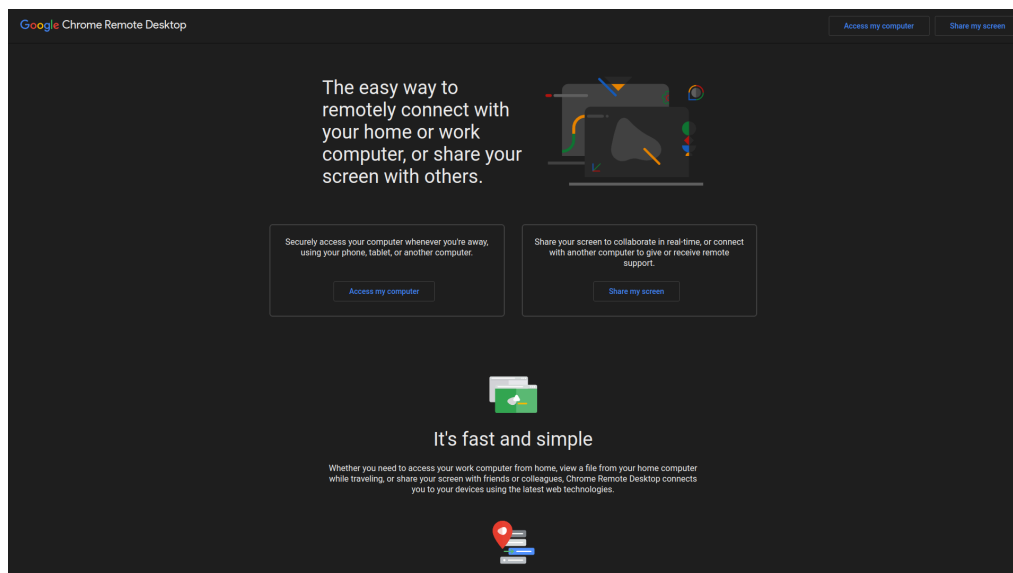
- Set Up Chrome Remote Desktop:
 - Install the extension on both computers and establish remote access.
- Access Remote Computer:
 - Use Chrome Remote Desktop to connect to the remote computer.
- Perform Tasks:
 - Create a folder on the remote computer.
 - Insert two Word documents describing the procedure into the folder.
- Save changes to the Word documents.
- Disconnect from the remote session.

10. Through Chrome Remote Desktop access a computer with Windows operating system and modify the following:

- Change the desktop background

- Reduce the screen resolution to a lower level than the existing one

- Access Remote Computer:
 - Use Chrome Remote Desktop to connect.
- Modify Desktop:
 - Change desktop background: Right-click, select "Personalize," choose new background.
 - Reduce screen resolution: Right-click, select "Display settings," adjust resolution lower.
- Save changes if prompted.
- Close remote session.



(For 9 & 10)

13. Using the command mode, download the required packages to install and configure KVM in Ubuntu Operating System. After installation, create a virtual machine through the GUI mode with any desired flavor of operating system in it

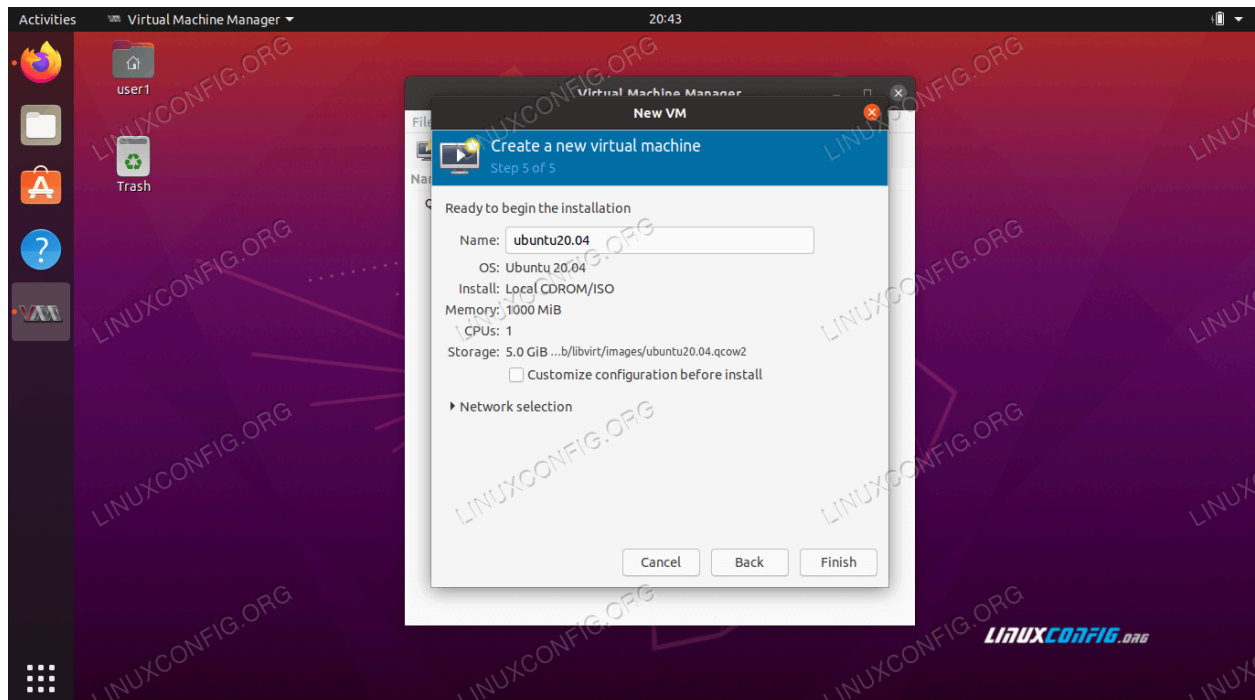
Use Ubuntu in Virtualbox for this:

Download Required Packages for KVM:

- Open the terminal in Ubuntu & Run the command:
sudo apt install -y qemu-kvm
- Verify Installation and Start Services:
sudo kvm-ok
- Start and enable the libvirtd service:
sudo systemctl enable --now libvirtd

Create a Virtual Machine through GUI:

- Open "Virtual Machine Manager" from the applications menu.
- Click on "Create a new virtual machine."
- Follow the wizard to select OS type, memory, CPU, storage, etc.
- Choose the desired OS flavor (e.g., Ubuntu, Windows, etc.) and continue with the installation process.



12. Create 2 VLANs under a LAN (name: LAN-B) with the following configuration using Cisco Packet Tracer.

- Number of hosts: 4
 - IP address of the host ranges => from 192.168.1.1 to 192.168.1.3 and 192.168.20.1 to 192.168.20.3
 - Subnet Mask Address 255.255.255.0
 - Keep the switch port mode to "Trunk" for Fast-Ethernet
- Check the configuration by sending data packets within the VLAN**

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14. Create 2 VLANs under a LAN (name: LAN-B) with the following configuration using Cisco Packet Tracer.

- Number of hosts: 4
 - IP address of the host ranges => from 192.168.1.4 to 192.168.1.6 and 192.168.20.4 to 192.168.20.6
 - Subnet Mask Address-255.255.255.0
 - Keep the switch port mode to "Trunk" for Fast-Ethernet.
- Check the configuration by sending data packets within the VLAN**

**** Refer record for Program ****