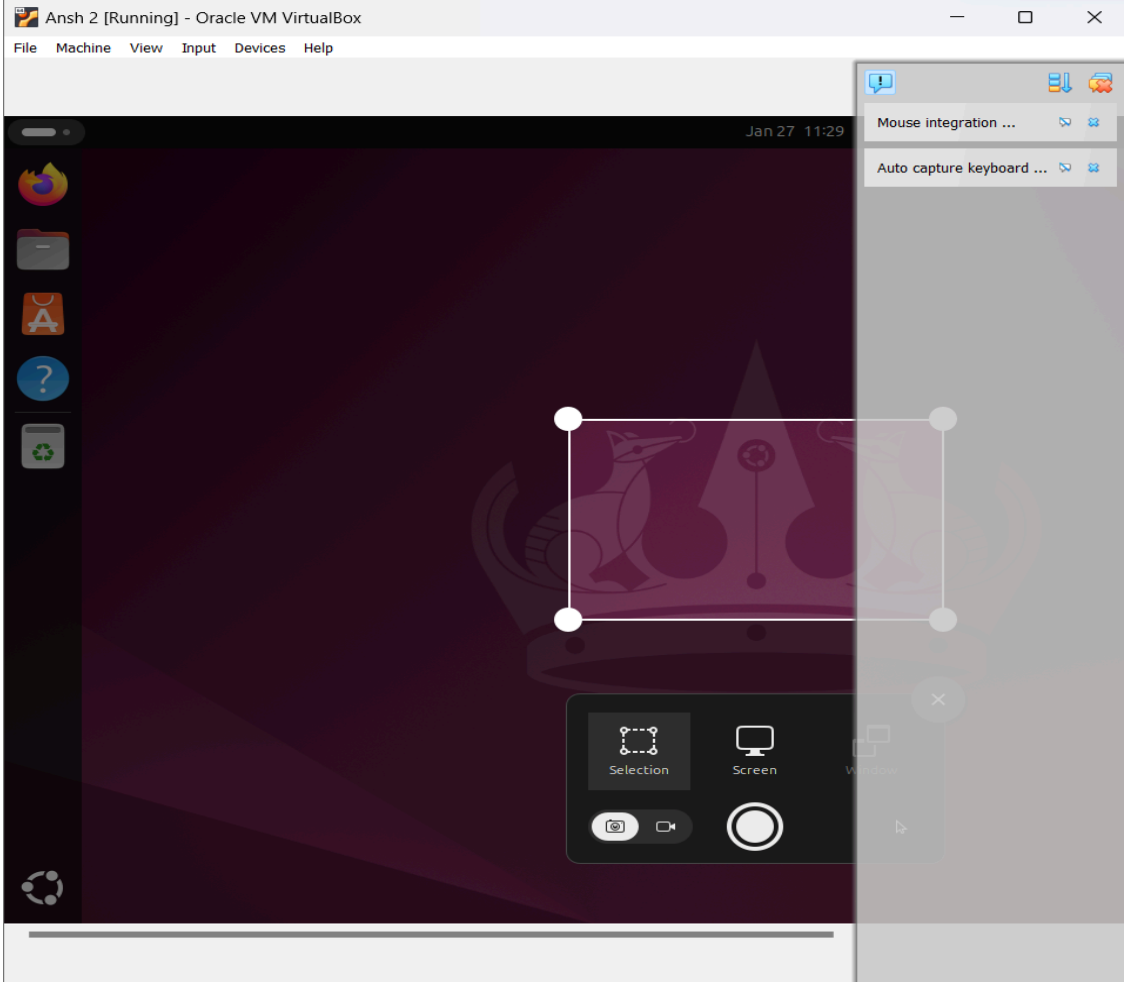


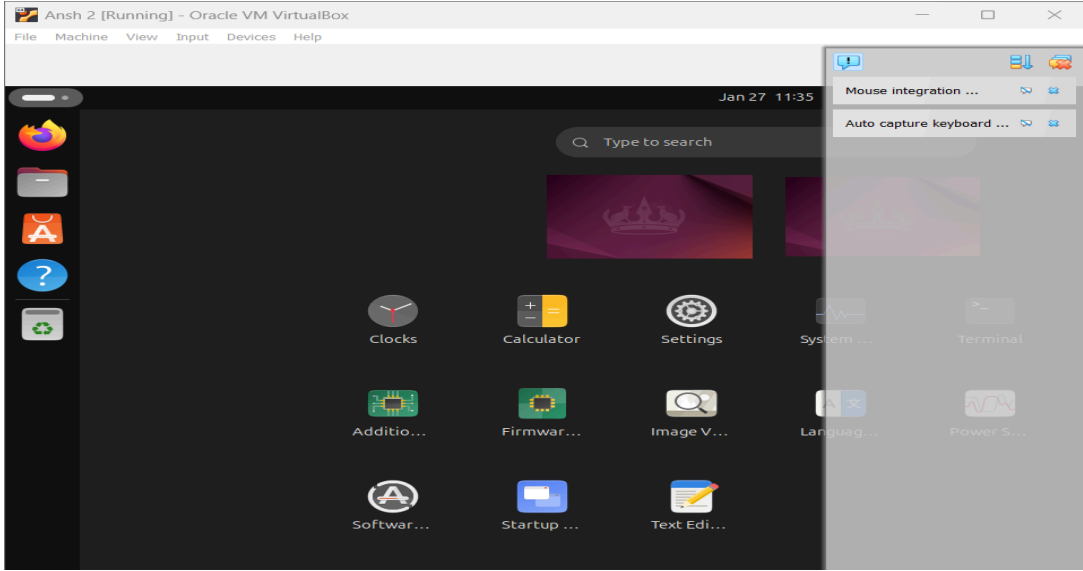
EXPERIMENT II

VIRTUAL BOX

AIM	To Install and configure VMware Workstation Pro / Oracle Virtual Box for creating the Virtual Machines, cloning and deleting VMs.
------------	--

1	<p>Making Clone in Virtual Box</p> <p><u>Choose a Virtualization Platform</u> Local options: VMware Workstation, VirtualBox, Hyper-V. Cloud options: AWS EC2, Azure Virtual Machines, Google Compute Engine.</p> <p><u>Install the Virtualization Software</u> Download and install the software on your system. If using a cloud platform, create an account and log in to the respective console.</p> <p><u>Create the First Virtual Machine</u> Start the VM Creation Wizard: Open your virtualization platform. Select Create New Virtual Machine (or similar option). Choose an Operating System: Select an OS (Linux, Windows, etc.) for your VM. You may need an installation ISO or prebuilt image. Allocate Resources: Assign resources such as: CPU: Number of cores. RAM: Memory size (e.g., 2 GB, 4 GB). Disk Storage: Storage size (e.g., 20 GB). Cloud platforms may also ask for instance types, like t2.micro on AWS. Configure Network: Select a network type (NAT, Bridged, or Host-only). Finish Setup: Complete the configuration and start the VM installation.</p>
----------	---

	
2	Install two or more Guest Operating Systems on all the VMs.
	<p><u>1. Prepare Installation Media</u></p> <p>Download ISO files or installation images for the guest OS (e.g., Windows, Linux distros like Ubuntu, CentOS). Place the files in an accessible folder on your system.</p> <p><u>2. Open the Virtualization Software</u></p> <p>Launch your virtualization platform (e.g., VMware Workstation, VirtualBox, Hyper-V).</p> <p><u>3. Start VM Creation for the First OS</u></p>

	<p>Create a New VM: Click New Virtual Machine (or equivalent). Select Installation Source: Attach the ISO file for the first guest OS during setup. Assign Resources: Allocate CPU, RAM, and storage as needed. Start the VM: Boot the VM to launch the guest OS installer.</p> <p><u>4. Install the First Guest OS</u> Follow the guest OS installation process: Select language, time zone, etc. Partition the disk (if required). Install the OS files. Reboot the VM once the installation completes. Set up a username, password, and additional settings.</p>
3	<p>Run simple applications or programs on all the VMs.</p>
	<p>Start All Virtual Machines Open your virtualization software (e.g., VMware Workstation, VirtualBox, or Hyper-V). Power on each VM and log in to the guest operating systems.</p> 
1	<p>Cloning of Virtual Machines: Full Cloning, Linked Cloning</p>

1. Full Cloning

Creates a completely independent copy of the VM.

Power Off the Base VM:

Shut down the VM you want to clone to ensure consistency.

Open Virtualization Software:

Open VMware Workstation, VirtualBox, or any virtualization platform you're using.

Right-Click the VM:

Select the VM you want to clone and right-click on it.

Choose Clone Option:

In VMware Workstation:

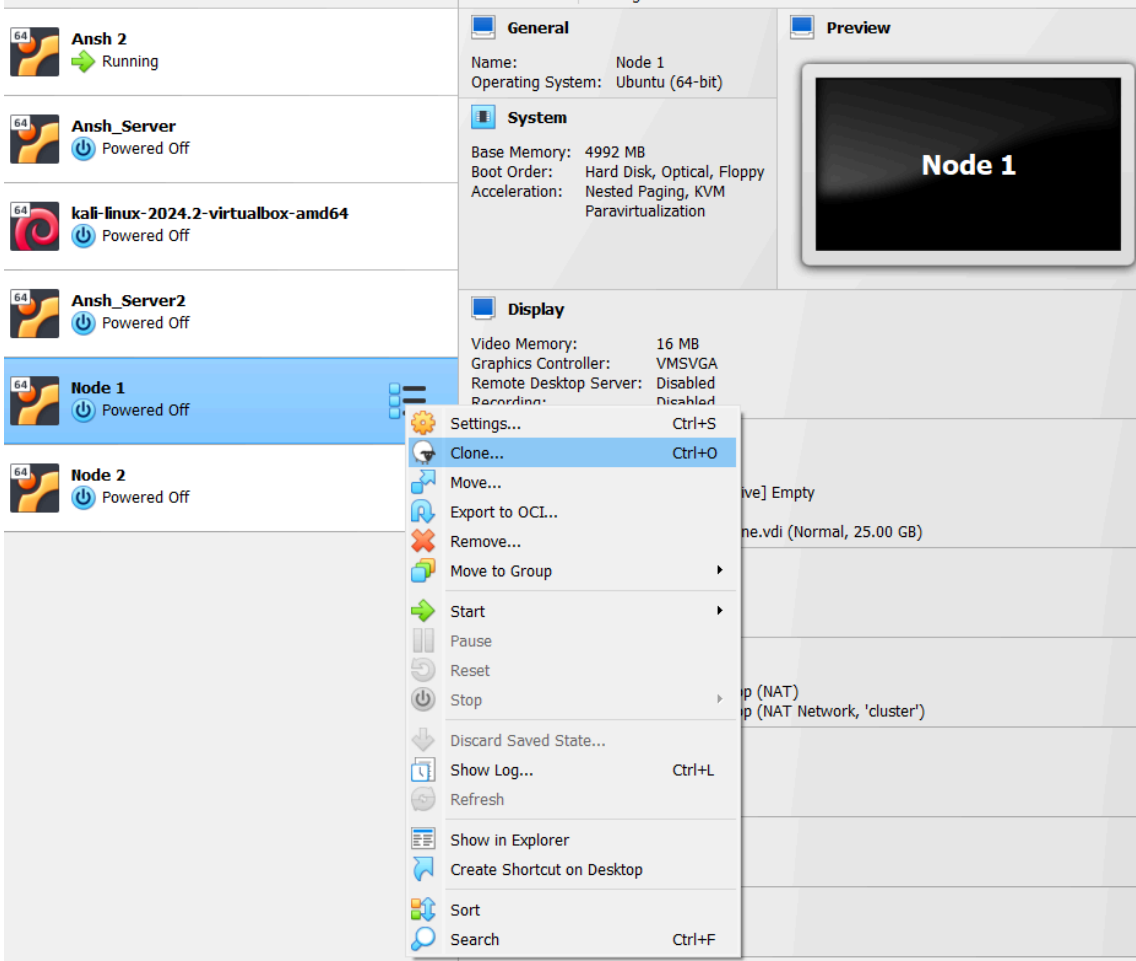
Go to Manage > Clone.

In VirtualBox:

Select Clone from the context menu.

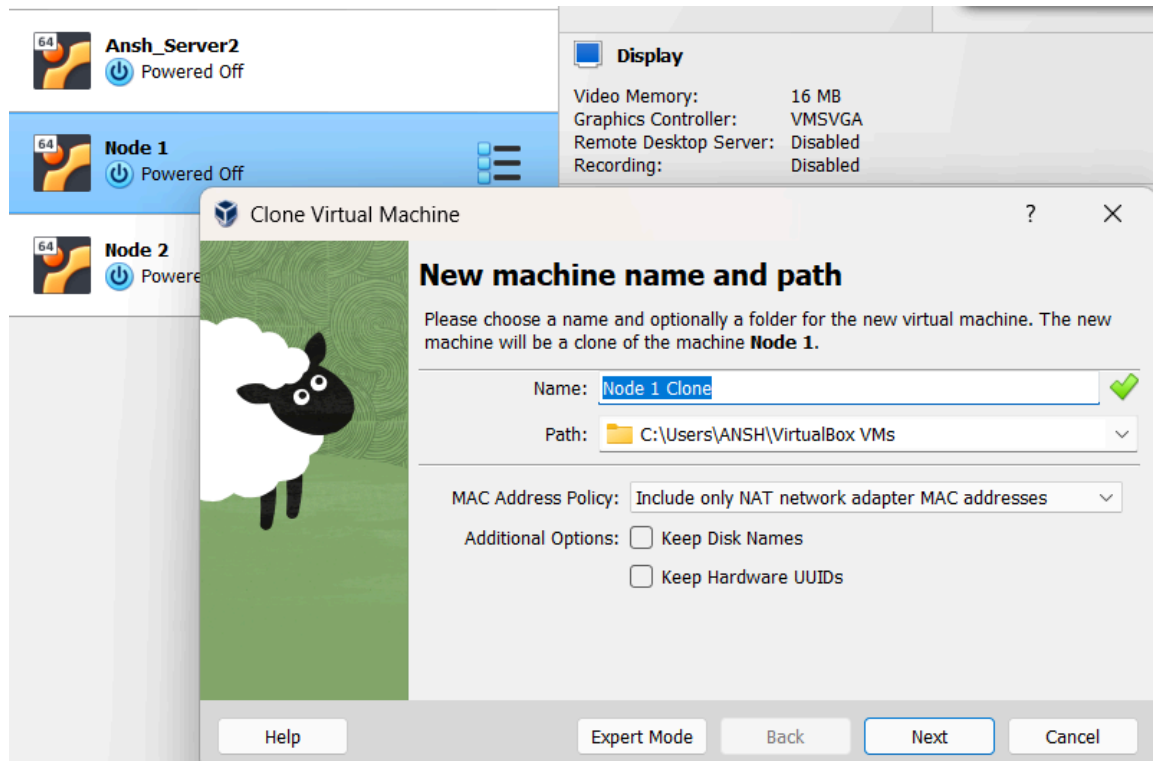
Select Cloning Method:

Choose Full Clone when prompted.

	 <p>The screenshot shows the VirtualBox VM Manager interface. On the left, a list of VMs includes 'Ansh 2' (Running), 'Ansh_Server' (Powered Off), 'kali-linux-2024.2-virtualbox-amd64' (Powered Off), 'Ansh_Server2' (Powered Off), 'Node 1' (Powered Off, selected), and 'Node 2' (Powered Off). The 'Node 1' VM is highlighted in blue. A context menu is open over 'Node 1', with the 'Clone...' option selected. The menu also includes options like 'Settings...', 'Move...', 'Export to OVA...', 'Remove...', 'Move to Group', 'Start', 'Pause', 'Reset', 'Stop', 'Discard Saved State...', 'Show Log...', 'Refresh', 'Show in Explorer', 'Create Shortcut on Desktop', 'Sort', and 'Search'. The right pane shows the 'General' tab for 'Node 1', displaying details like Name, Operating System (Ubuntu (64-bit)), Base Memory (4992 MB), Boot Order, and Acceleration settings. A 'Preview' window shows the VM's display, which currently displays 'Node 1'.</p>
	<p>Creates a lightweight copy that depends on the base VM.</p> <p>Power Off the Base VM or Take a Snapshot:</p> <p>Shut down the base VM or take a snapshot to ensure a clean state.</p> <p>Open Virtualization Software:</p> <p>Open VMware Workstation or VirtualBox.</p> <p>Right-Click the VM:</p> <p>Select the VM you want to clone and right-click.</p> <p>Choose Clone Option:</p> <p>In VMware Workstation:</p> <p>Go to Manage > Clone.</p>

In VirtualBox:
Select Clone from the context menu.
Select Cloning Method:

Choose Linked Clone when prompted.



2 Add a USB Controller to Virtual Machine.

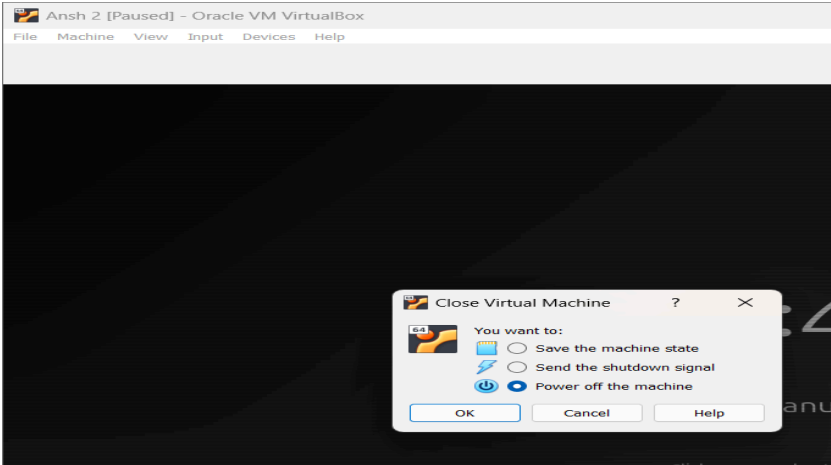
Power Off the VM:

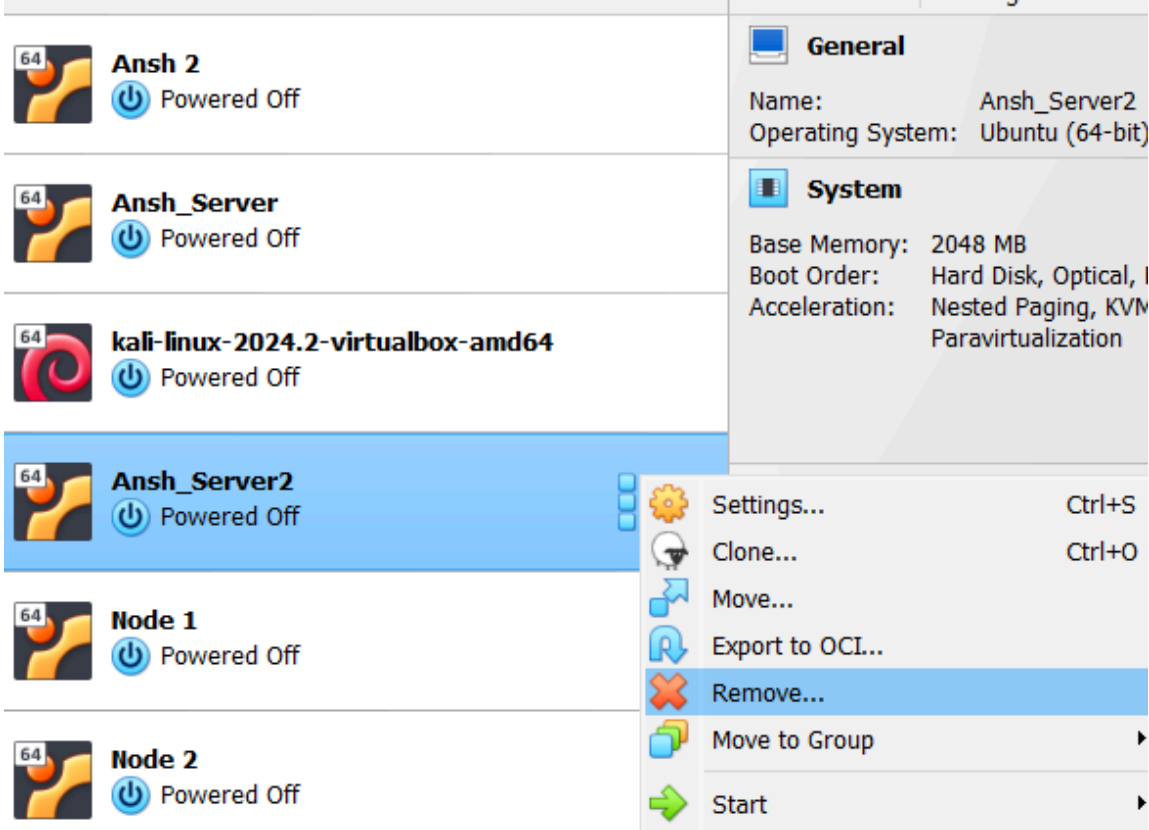
Ensure the VM is turned off before making hardware changes.
Open VMware Workstation:

Launch VMware Workstation or Player and select the VM you want to modify.
Edit VM Settings:

Right-click on the VM name and select Settings (or click Edit virtual machine settings).
Add USB Controller:

In the Virtual Machine Settings window, click on the Add button at the bottom.
Select USB Controller from the list of available devices and click Next.

3	<p>Closing Virtual Machines & Exiting Workstation Pro</p> <p>a. Hard and Soft Power Off</p> <p>b. Configure Virtual Machine to Run in the Background</p> <p>c. Pause and Unpause a Virtual Machine</p> <p>d. Pause all Virtual Machine without interacting Workstation Pro / Oracle</p>
	<p><u>Hard and Soft Power Off</u> Hard Power Off: In VMware, go to VM > Power > Power Off; in VirtualBox, select Power Off in the Close menu.</p> <p><u>Soft Power Off:</u> In VMware, go to VM > Power > Shut Down Guest; in VirtualBox, select Send the shutdown signal.</p> <p><u>b. Configure Virtual Machine to Run in the Background</u> VMware: Start VM, minimize VMware Workstation to run in the background. VirtualBox: Start VM, then choose Machine > Close > Save the machine state.</p> <p><u>c. Pause and Unpause a Virtual Machine</u> VMware: Go to VM > Pause to pause; VM > Unpause to resume. VirtualBox: Go to Machine > Pause to pause; Machine > Resume to unpause.</p> <p><u>d. Pause All Virtual Machines Without Interacting with Workstation Pro / Oracle</u> VMware: Go to VM > Pause All to pause all VMs. VirtualBox: Right-click the VM list and select Pause All, or use VBoxManage command to pause VMs.</p> 

4	Delete a Virtual Machine from the disk.
	<p>Open Oracle VirtualBox: Launch VirtualBox and go to the VirtualBox Manager.</p> <p>Select the VM: Click on the VM you want to delete from the list.</p> <p>Right-click and Choose "Remove":</p> <p>Right-click the selected VM. Choose Remove from the context menu.</p>  <p>The screenshot displays the Oracle VM VirtualBox Manager interface. On the left, a list of virtual machines is shown: 'Ansh 2', 'Ansh_Server', 'kali-linux-2024.2-virtualbox-amd64', 'Ansh_Server2' (selected), 'Node 1', and 'Node 2'. All VMs are in a 'Powered Off' state. A right-click context menu is open for 'Ansh_Server2', with the 'Remove...' option highlighted in blue. The right pane shows the settings for the selected VM, including the 'General' tab with the name 'Ansh_Server2' and operating system 'Ubuntu (64-bit)', and the 'System' tab with base memory of 2048 MB and boot order 'Hard Disk, Optical, I'. Other options like 'Clone...', 'Move...', 'Export to OVI...', 'Move to Group', and 'Start' are also visible in the context menu.</p>