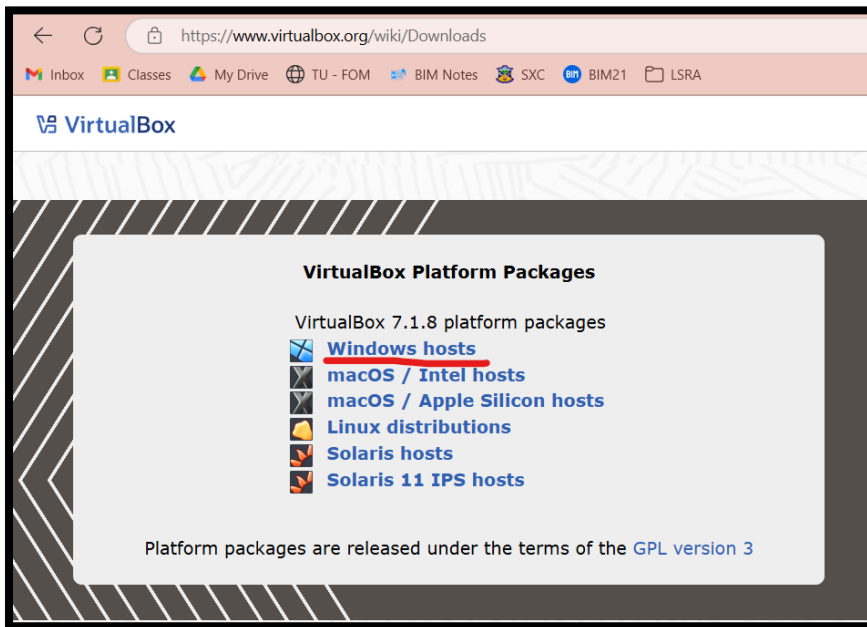


Lab 2: Setting Up a Virtual Machine (VM)

1. Virtual Machine download and Install

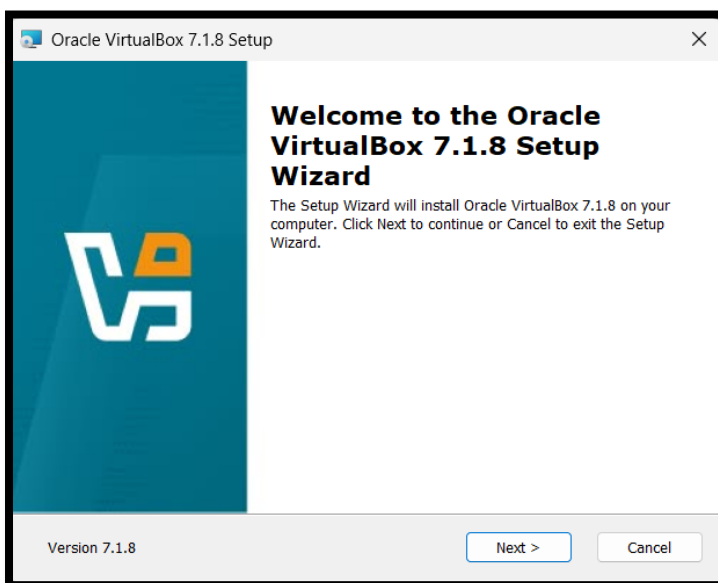
Step 1: Download the VirtualBox

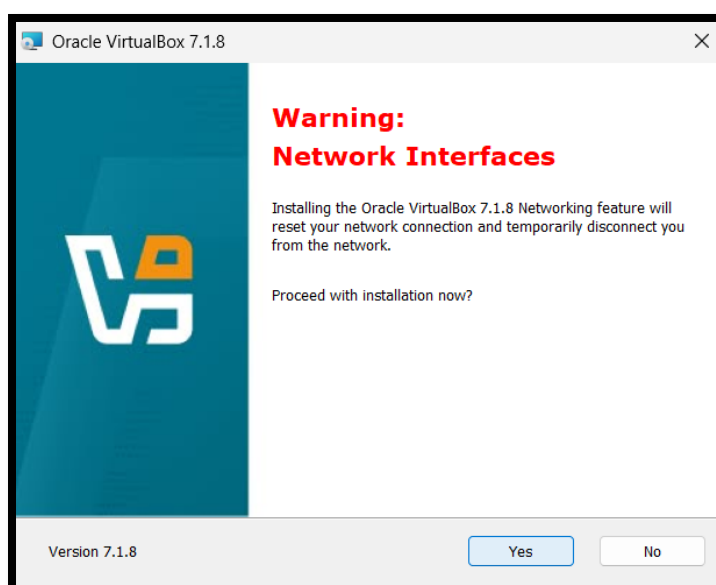
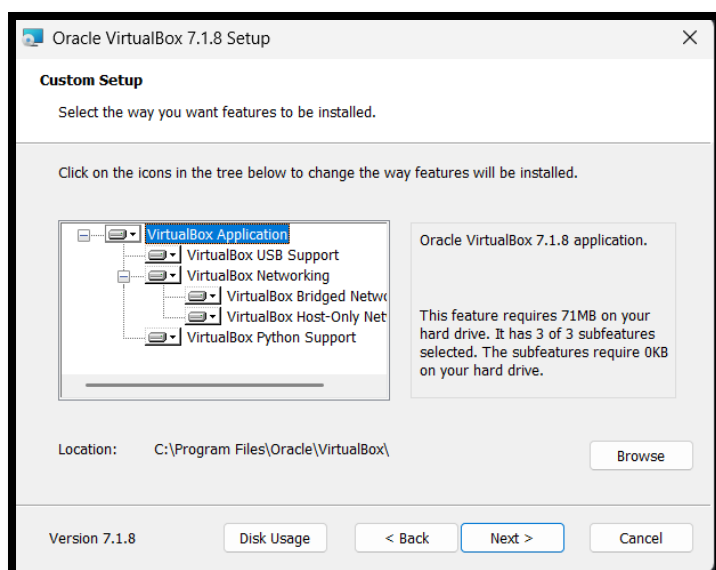
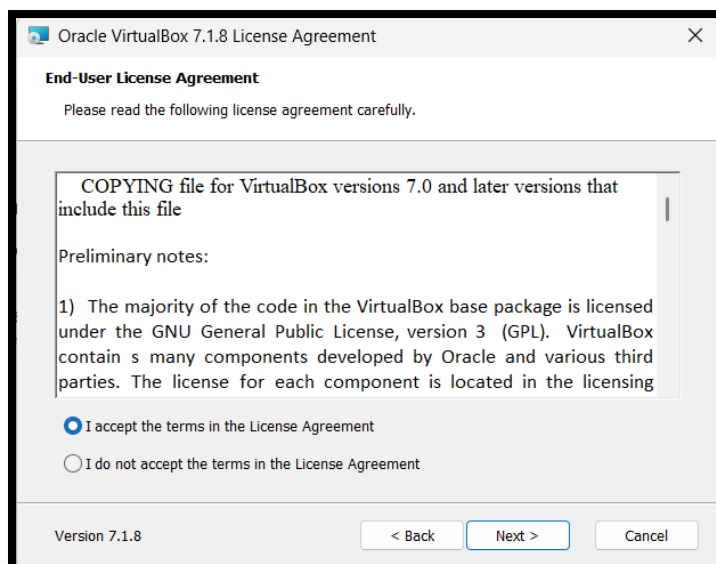
- Visit the official site: <https://www.virtualbox.org/wiki/Downloads>
- Click on the platform for your operating system (Windows, macOS, Linux) and wait for download.

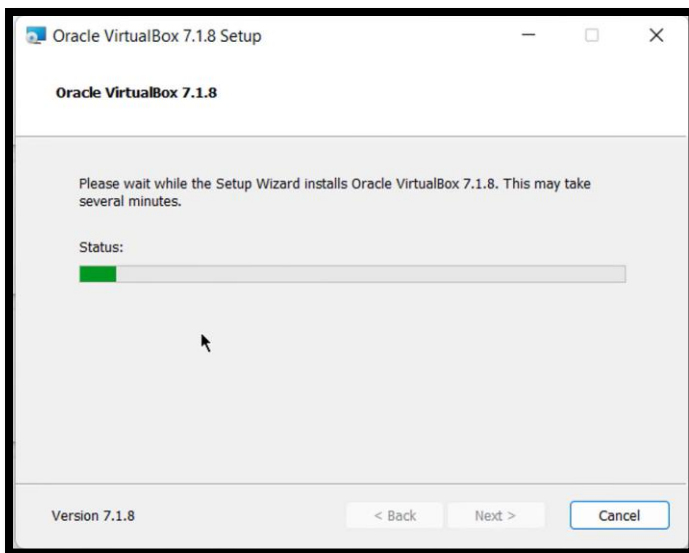
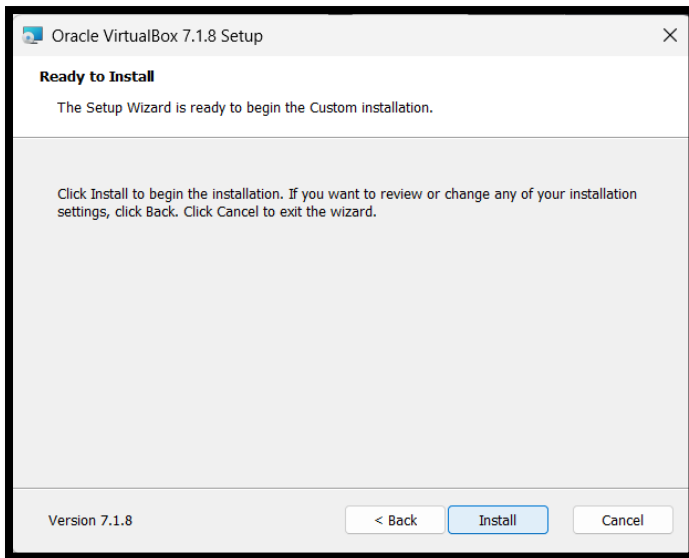


Step 2: Run the Installer

- Open the downloaded .exe or .dmg file.
- Follow the installation wizard:
 - Click Next several times to accept defaults.
 - Click Install.

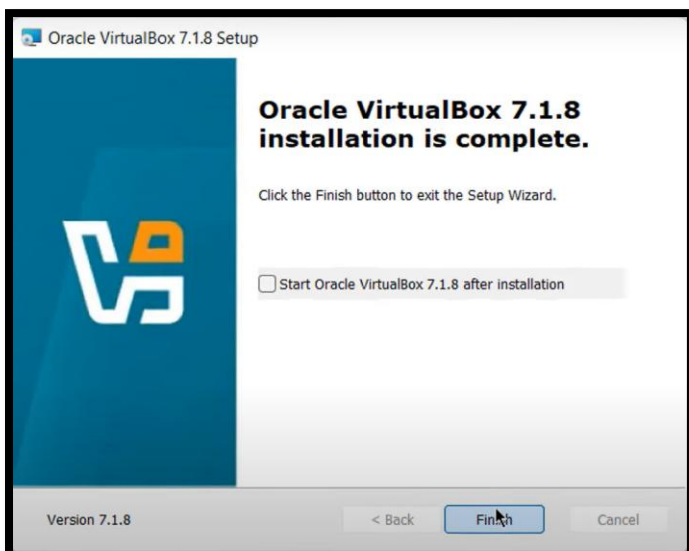






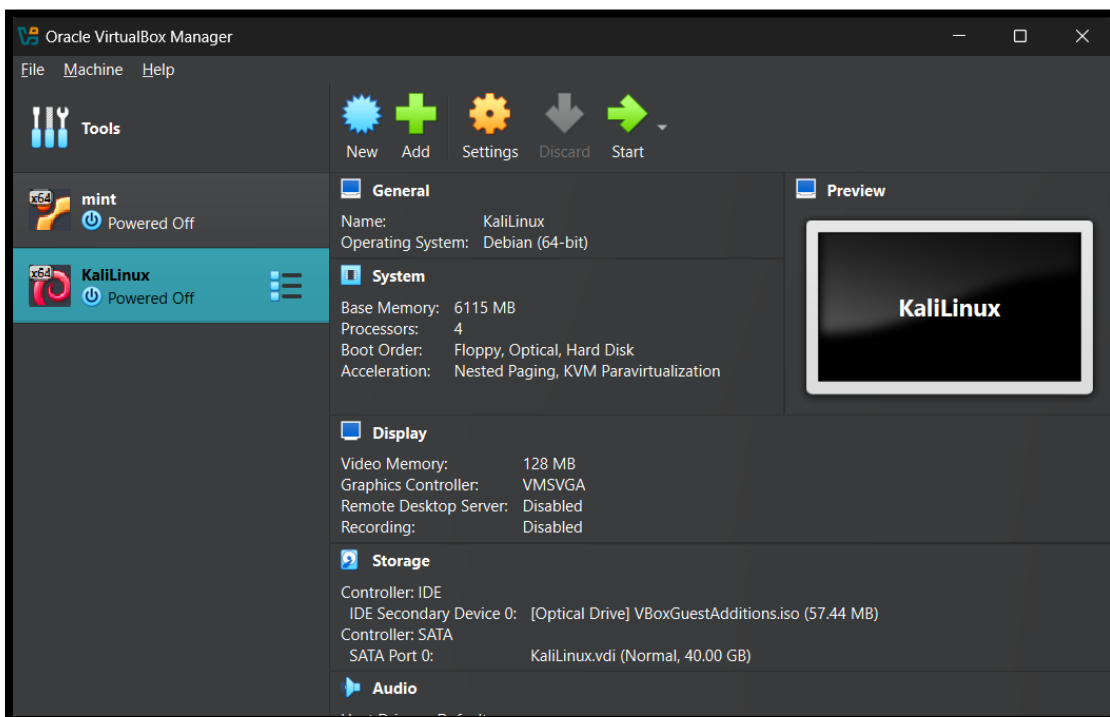
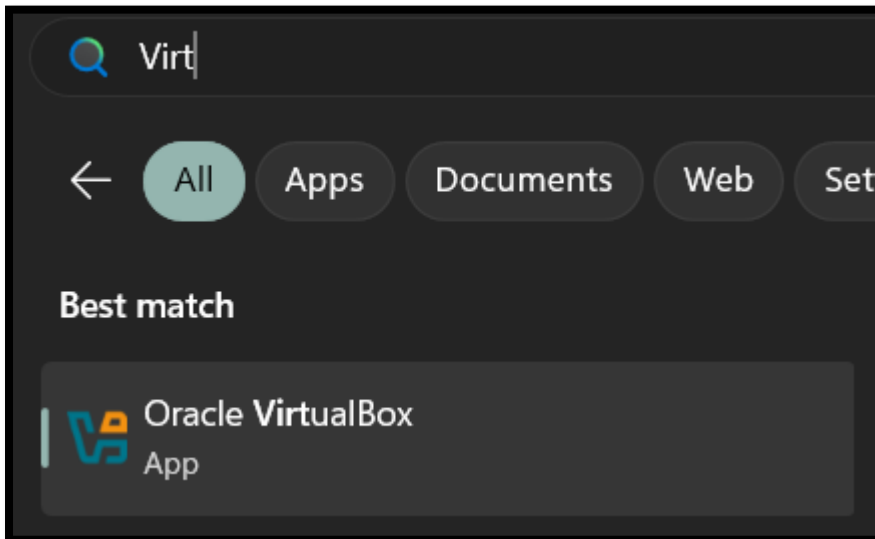
Step 3: Complete Installation

- Click Finish once the installation completes.



Step 4: Open Virtual Box

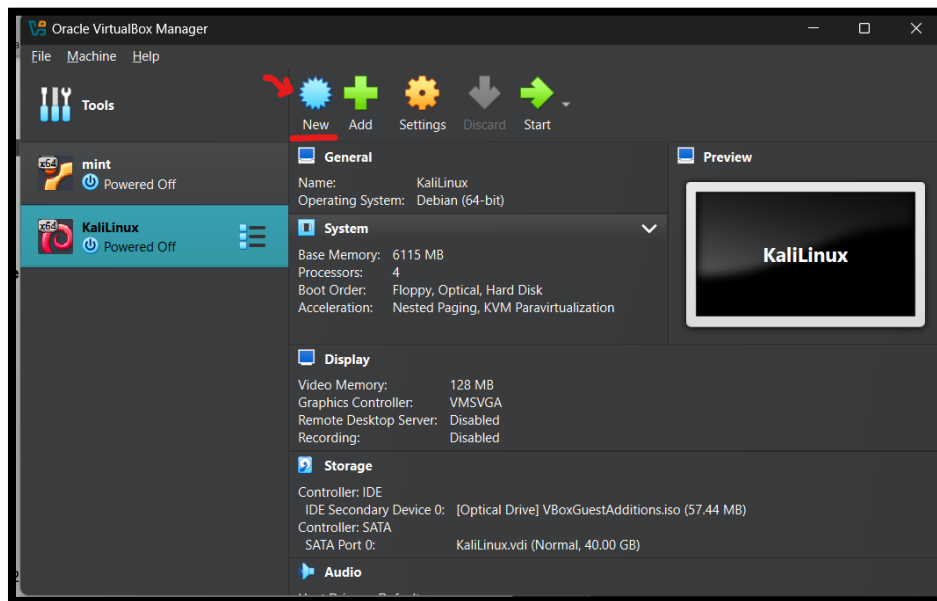
- Open the Oracle Virtual Box



2. Creating a New Virtual Machine

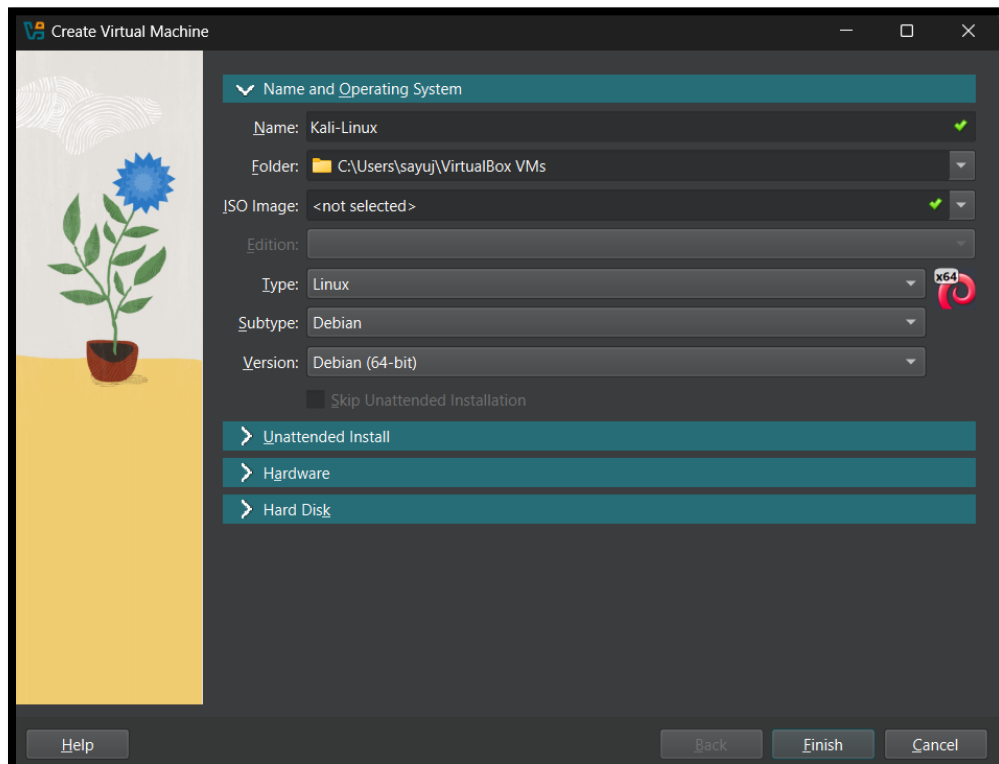
Step 1: Open VirtualBox

- Click “New”.



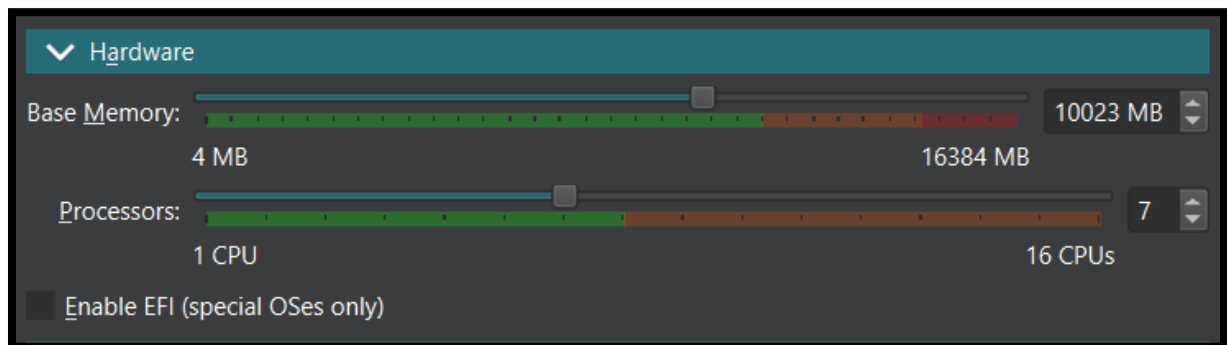
Step 2: Name and OS Type

- **Name:** Kali-Linux
- **Type:** Linux
- **Subtype:** Debian
- **Version:** Devian (64-bit)



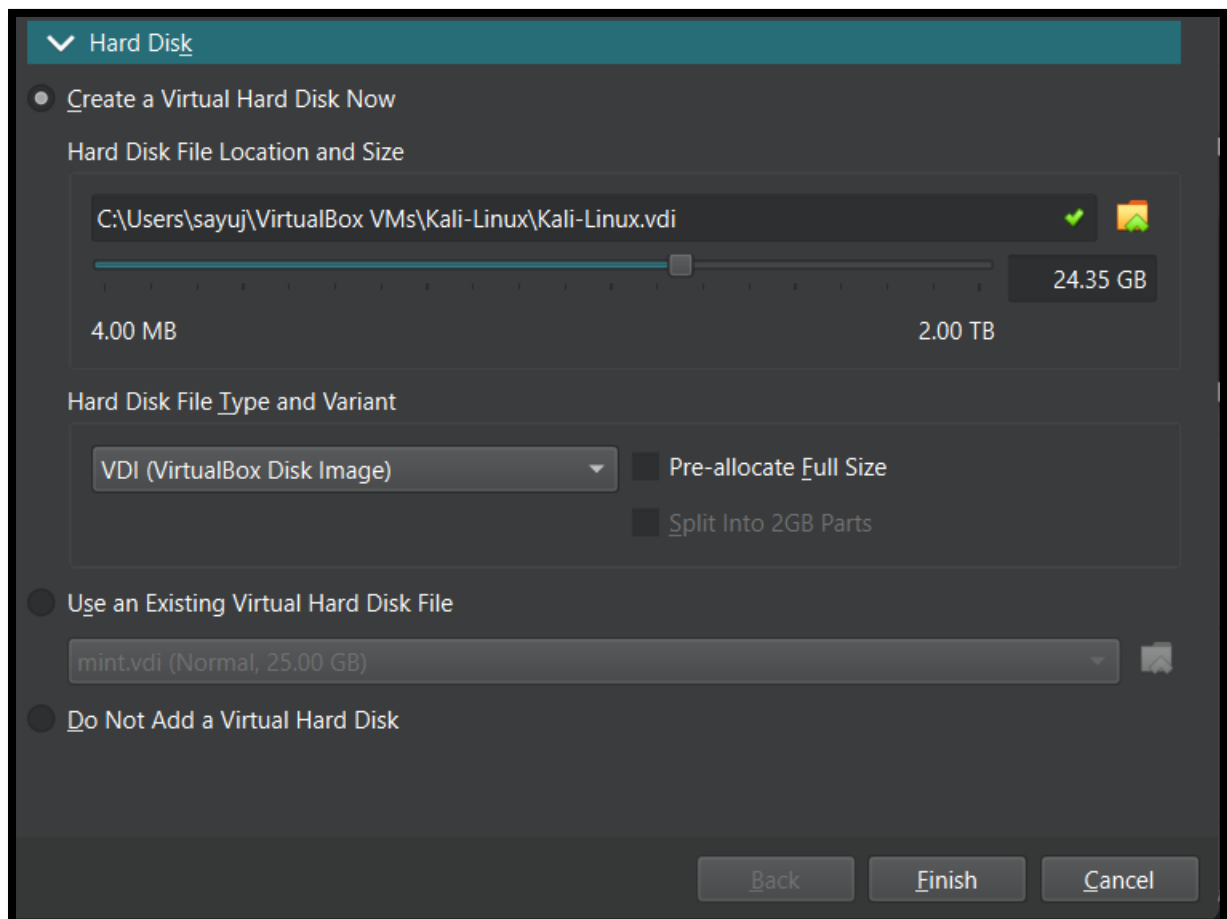
Step 3: Memory (RAM) Allocation

- Go to the Hardware tab
- Select the appropriate RAM and processors



Step 4: Create Virtual Hard Disk

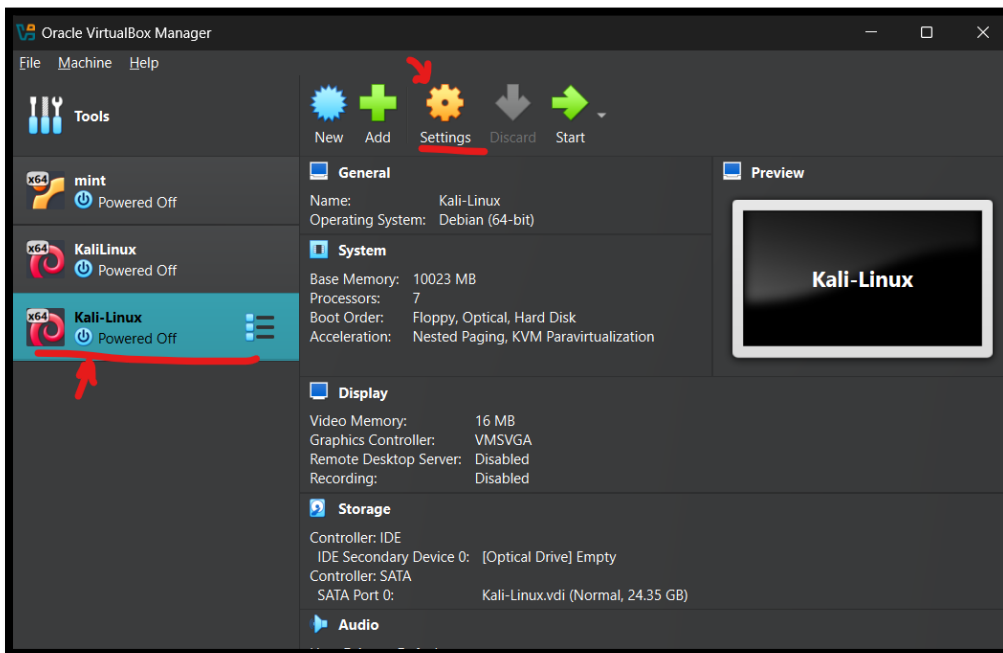
- Go to Hard Disk tab
- Set size (e.g., 24.35 GB)



3. Network Configuration Options

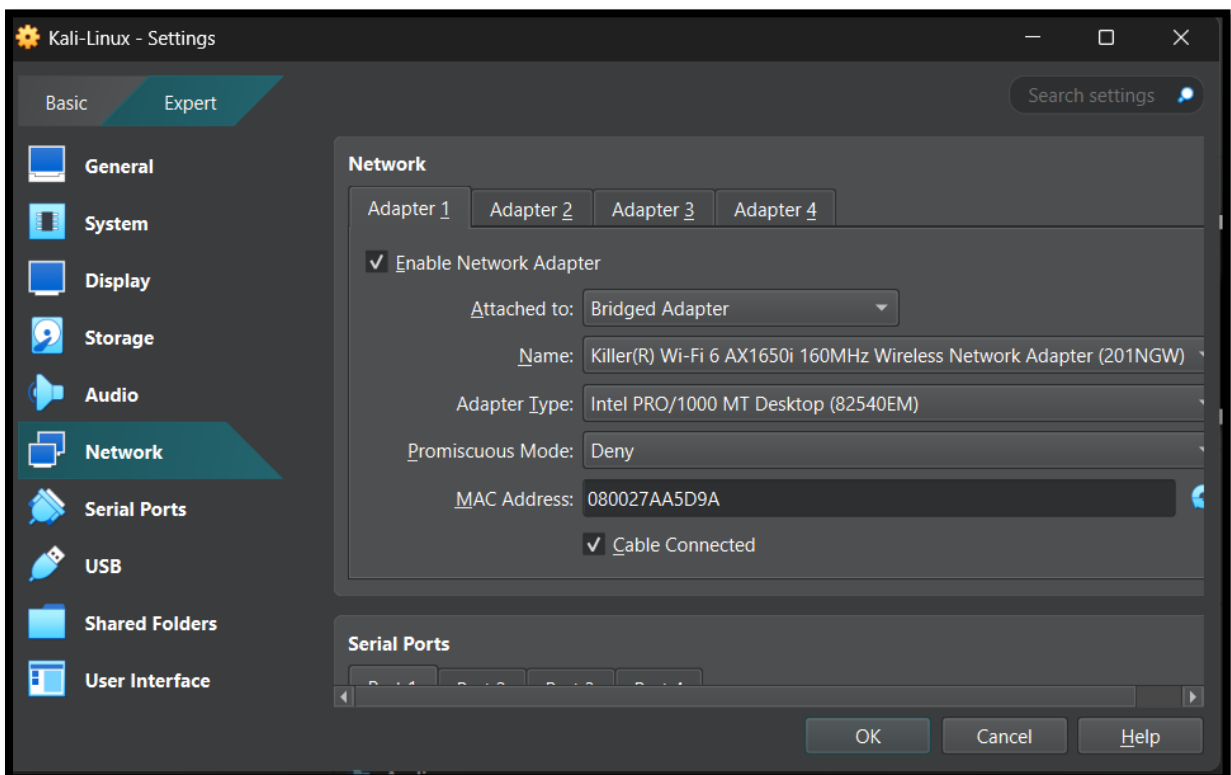
Step 1: Settings

- Select the virtual machine and click on Settings



Step 2: Network Settings

- After opening, select the network tab on the left
- Go to Attached to and Select Bridged Adapter or Nat



Nat vs Bridged Adapter

a. NAT (Network Address Translation)

The VM shares the host's internet connection. It is hidden from other devices on the network.

Nat has the following properties:

- VM gets a private IP from VirtualBox.
- Internet access works out of the box.
- Cannot be accessed directly from the host or other devices.
- Port forwarding is needed to allow inbound connections.
- More secure (isolated from local network).
- Best for browsing, software updates, and outbound traffic.
- Default and easier to configure.

b. Bridged Adapter:

The VM acts like a separate device on the same network as the host, with its own IP address.

Bridged Adapter has the following properties:

- VM gets an IP address from the same network as the host.
- It can be accessed directly by the host and other LAN devices.
- Suitable for server hosting and peer-to-peer labs.
- Acts as a full member of the local network.
- May require proper firewall/router settings.
- Less isolated — use caution with unknown networks.