

Ex No: 7b

Creation of VM, Powershell commands, Management of VMs

11/08/25

Aim:

To create, configure, and manage virtual machines using Hyper-V Manager (GUI) and PowerShell Commands.

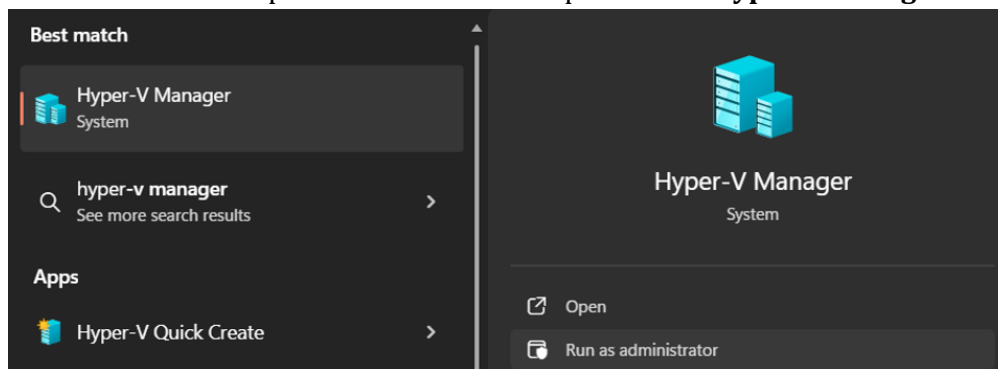
Theory:

Hyper-V is Microsoft's virtualization platform that allows creation and management of **Virtual Machines (VMs)** on Windows.

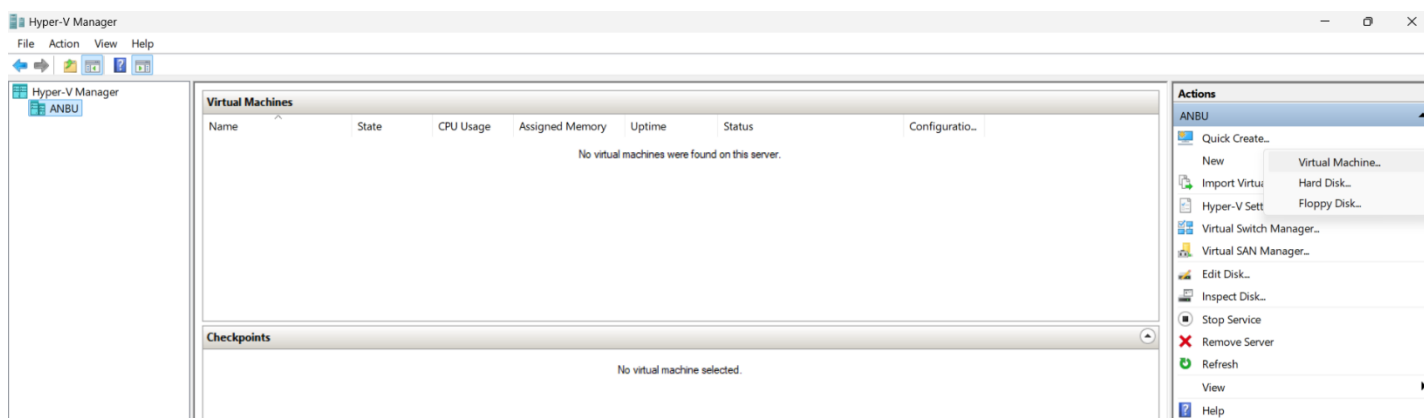
- **Creation of VMs:** Using Hyper-V Manager (GUI) or PowerShell, VMs are created with assigned CPU, RAM, storage, and network resources.
- **PowerShell Commands:** Hyper-V provides cmdlets such as:
 - New-VM → Create a VM
 - Set-VM → Modify configuration
 - Start-VM, Stop-VM, Restart-VM → Control VM state
 - Get-VM → View VM details
- **Management of VMs:** Administrators can configure, start, stop, snapshot, and monitor VMs either via **Hyper-V Manager GUI** or automated **PowerShell scripts**.

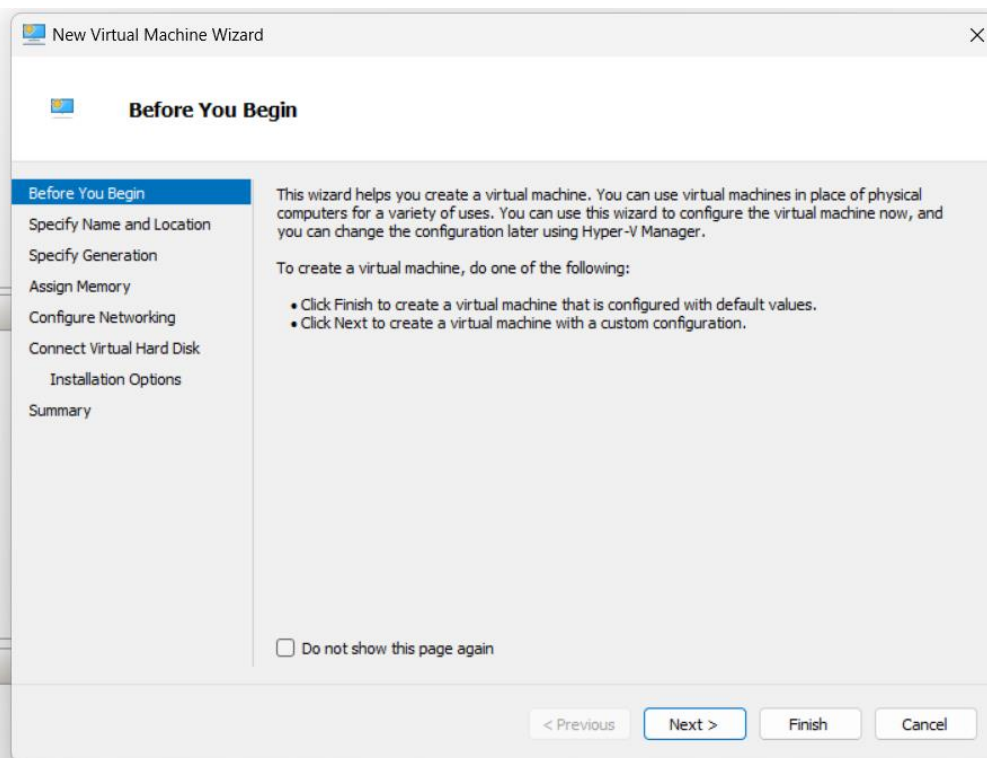
Procedure:**Step 1 – Open Hyper-V Manager**

1. Press **Windows + S**, type Hyper-V Manager, and open it.
2. Ensure the host computer is listed in the left pane under **Hyper-V Manager**.

**Step 2 – Create a Virtual Machine using Hyper-V Manager**

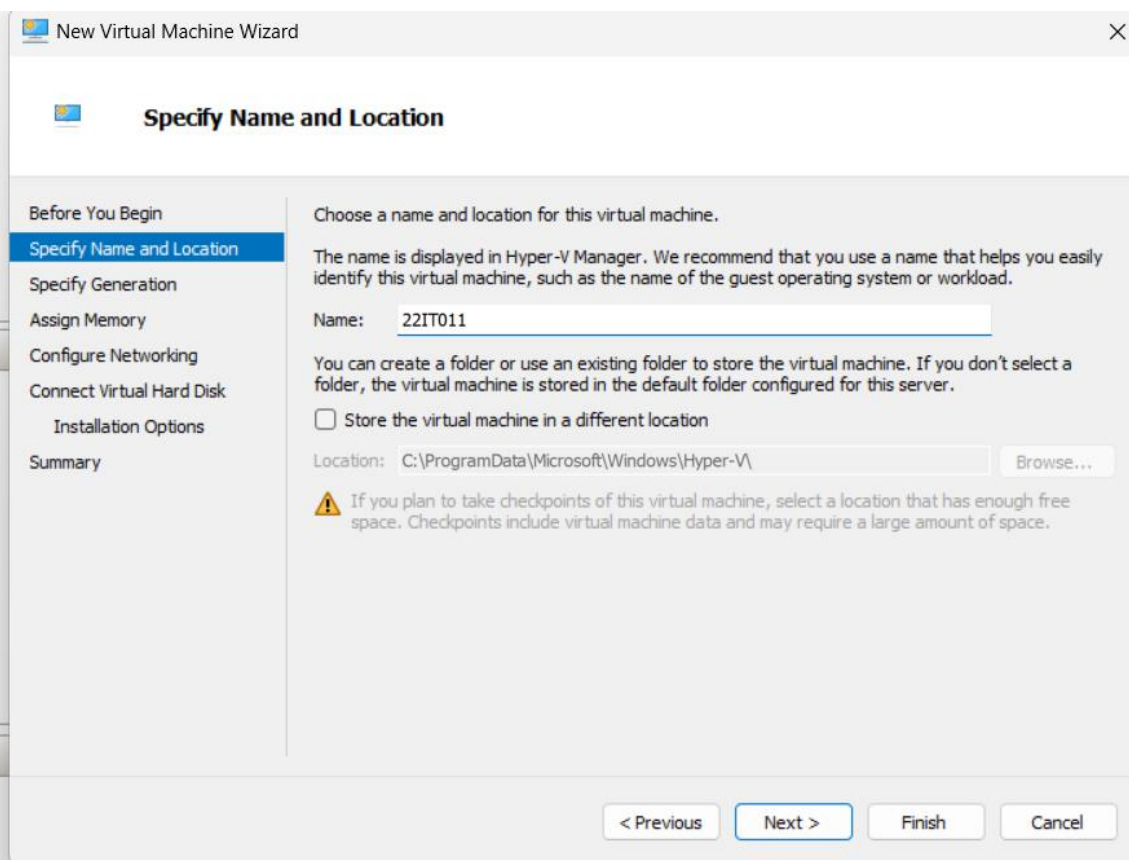
1. In the **Actions** pane (right side), click **New → Virtual Machine**.



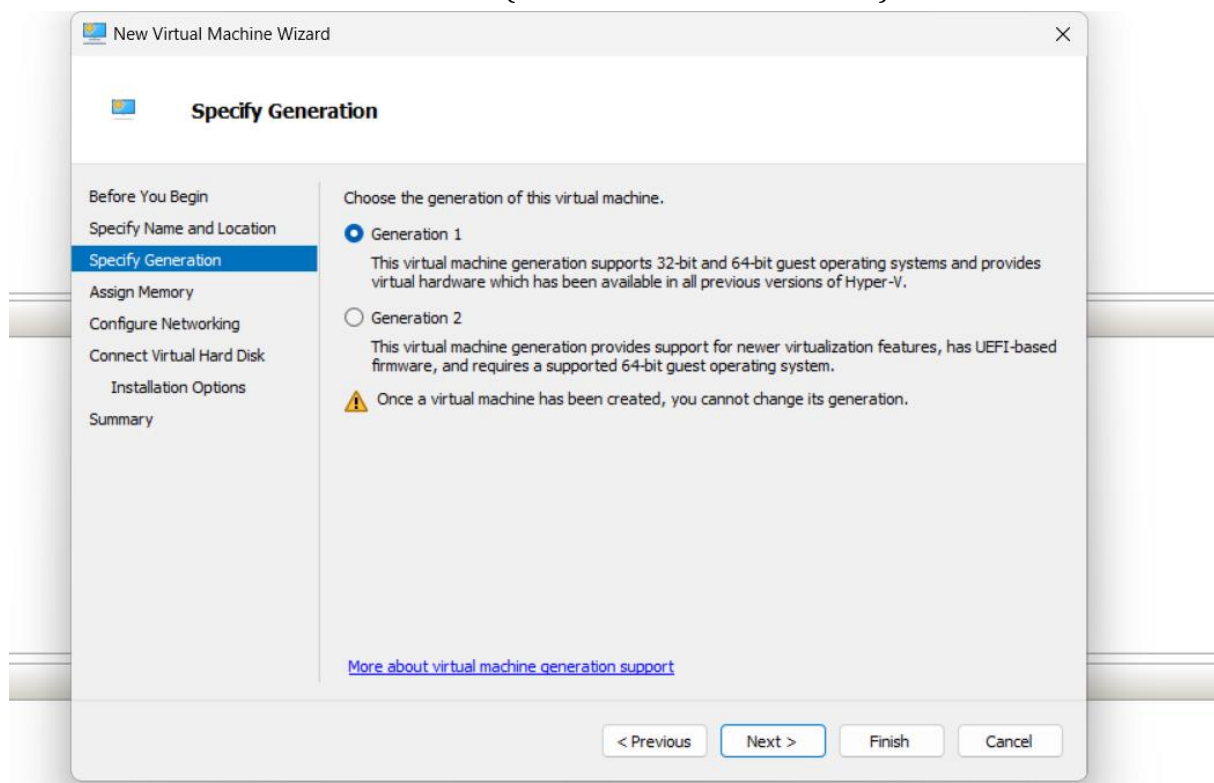


2. Follow the wizard:

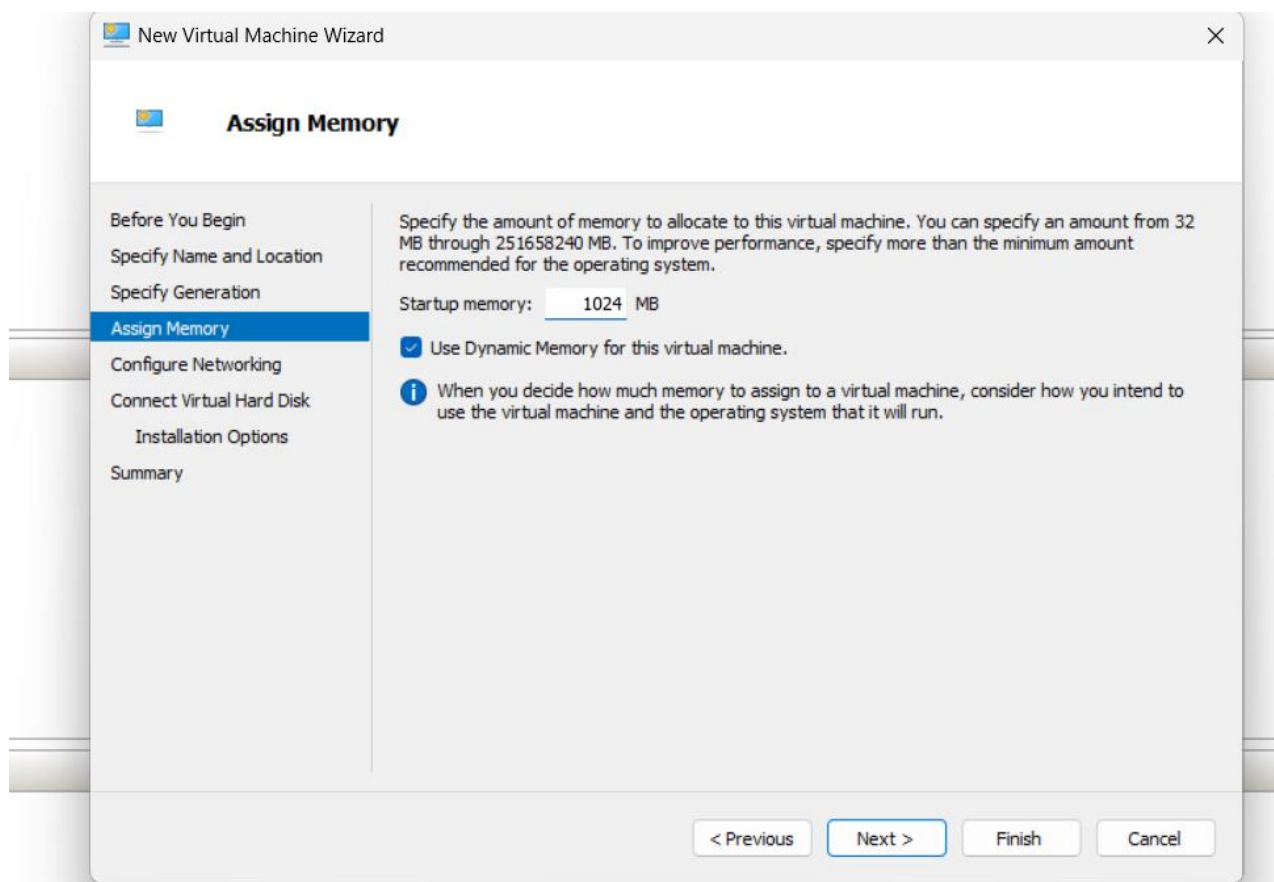
- **Name:** Enter a name for the VM.



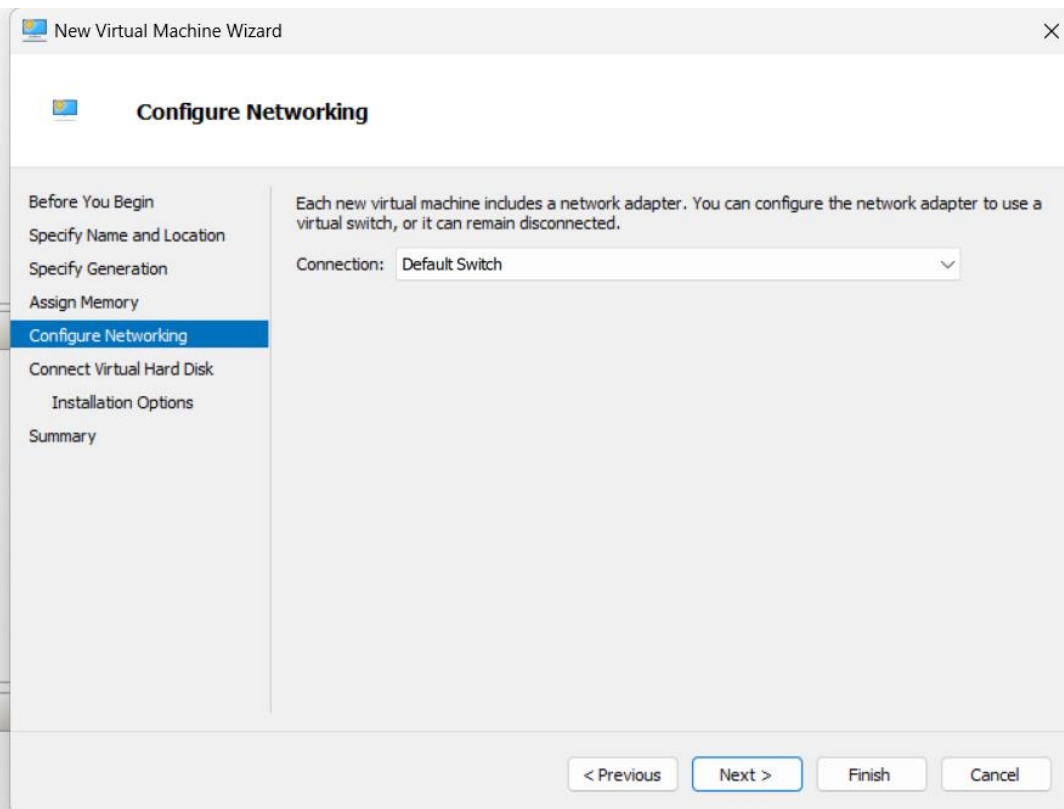
- **Generation:**
 - Gen 1 → BIOS-based OS
 - Gen 2 → UEFI-based OS (recommended for modern OS)



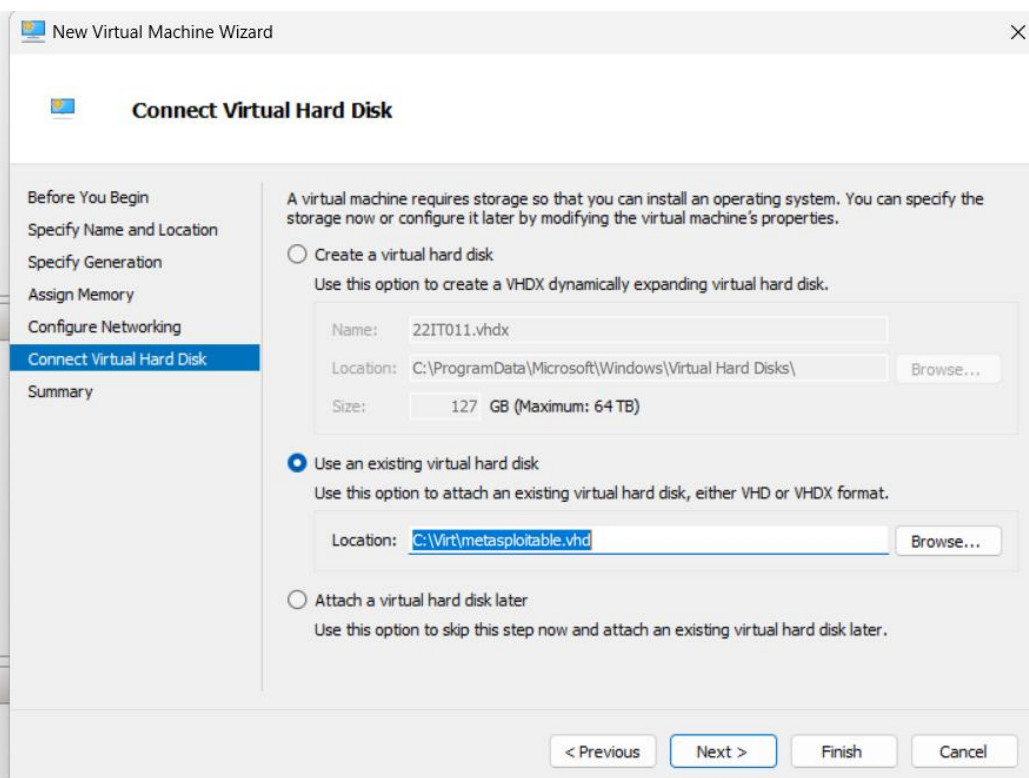
- **Memory:** Assign startup memory.



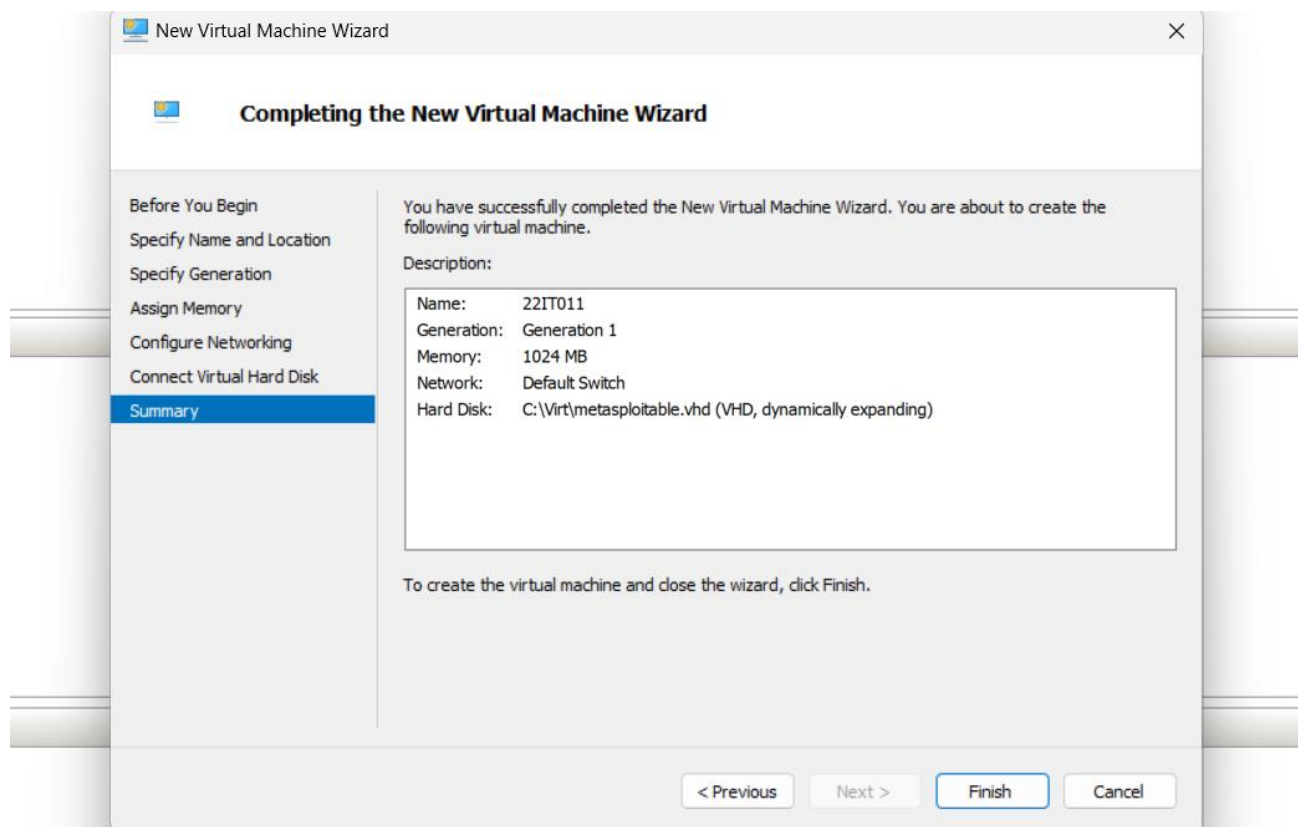
- **Networking:** Select a Virtual Switch.



- **Virtual Hard Disk:**
 - Create a new disk
 - Or attach an existing VHD/VHDX file

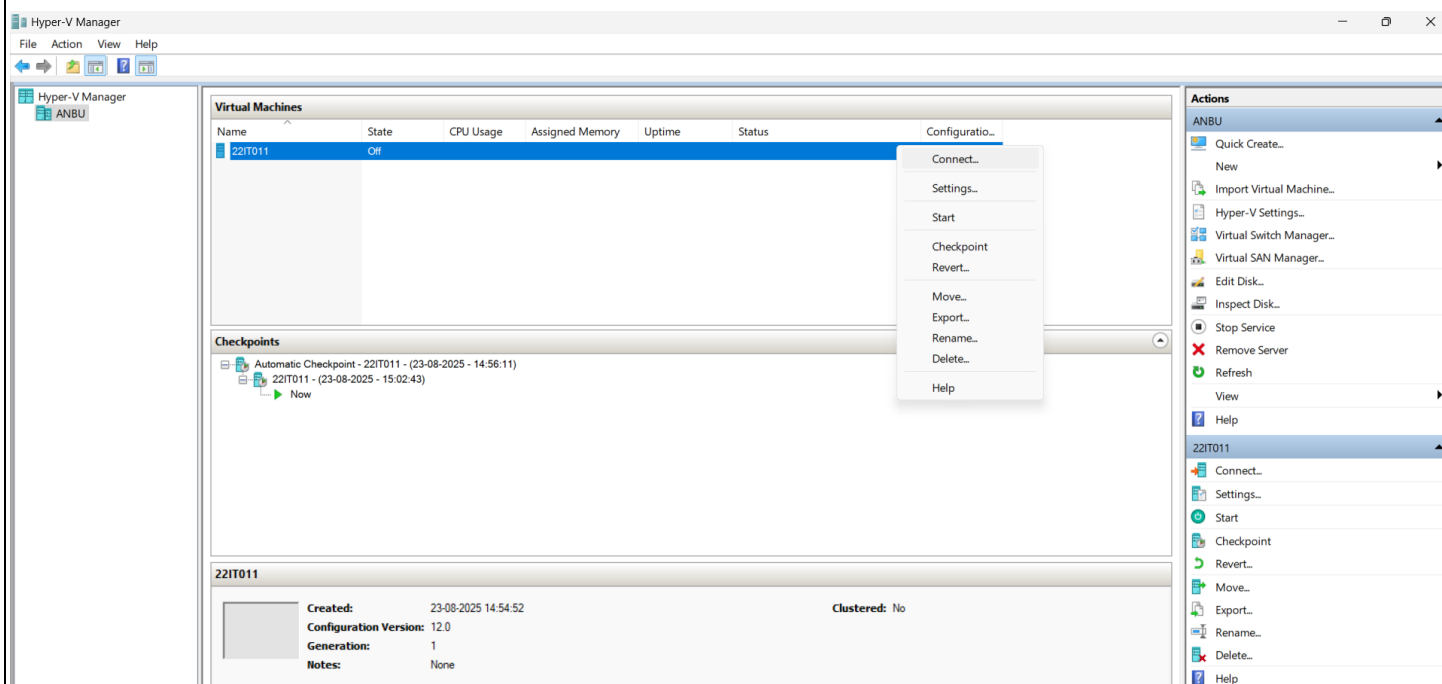


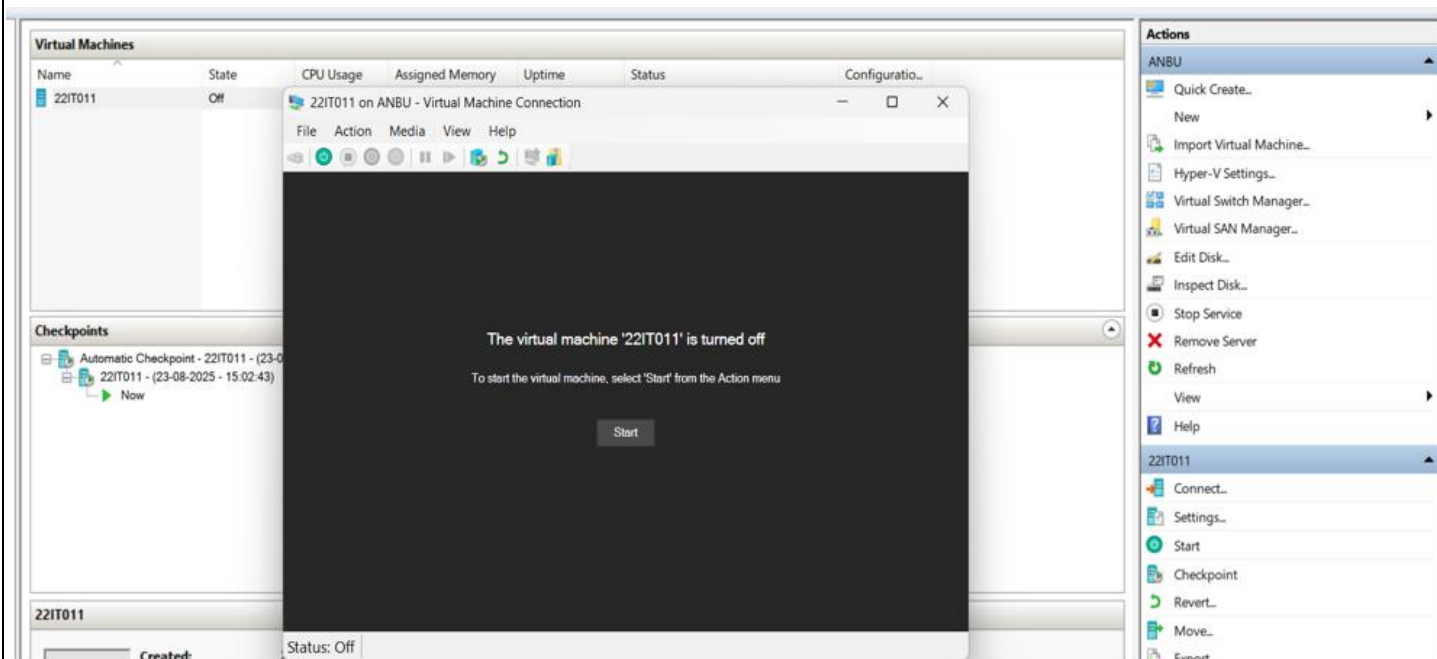
- Click **Finish** to create the VM.



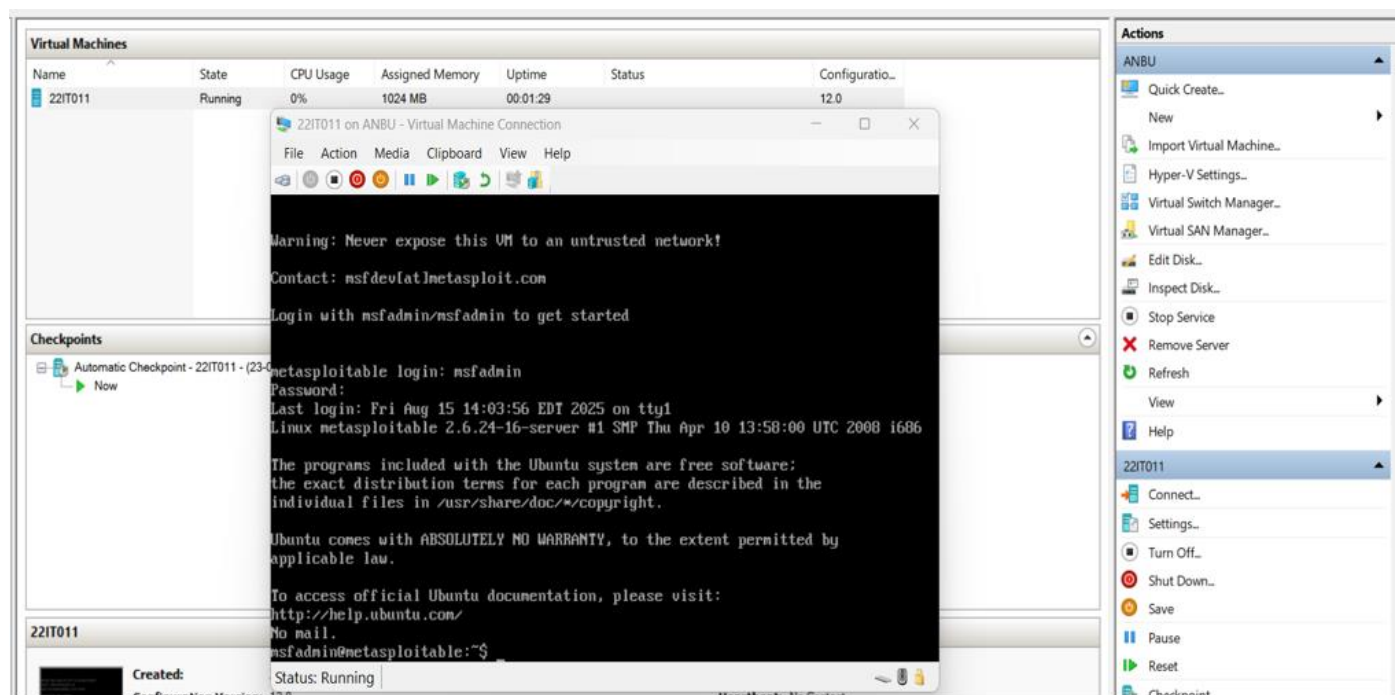
Step 3 – Start and Connect to the VM

- In **Hyper-V Manager**, right-click the VM → **Connect**.
- Click **Start** in the VM window.





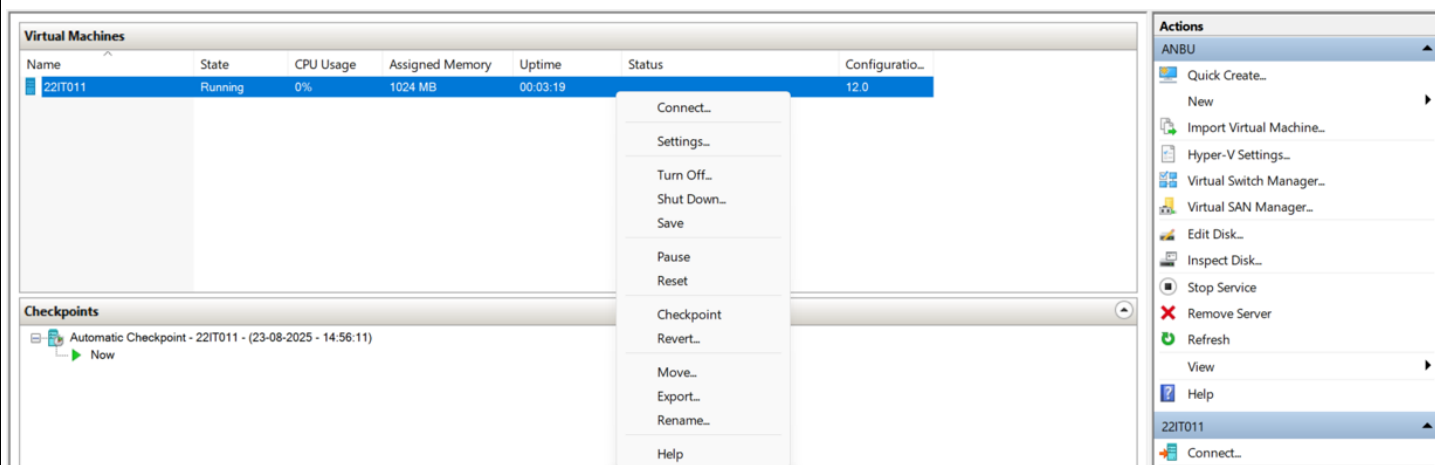
3. Install the OS as you would on a physical computer.



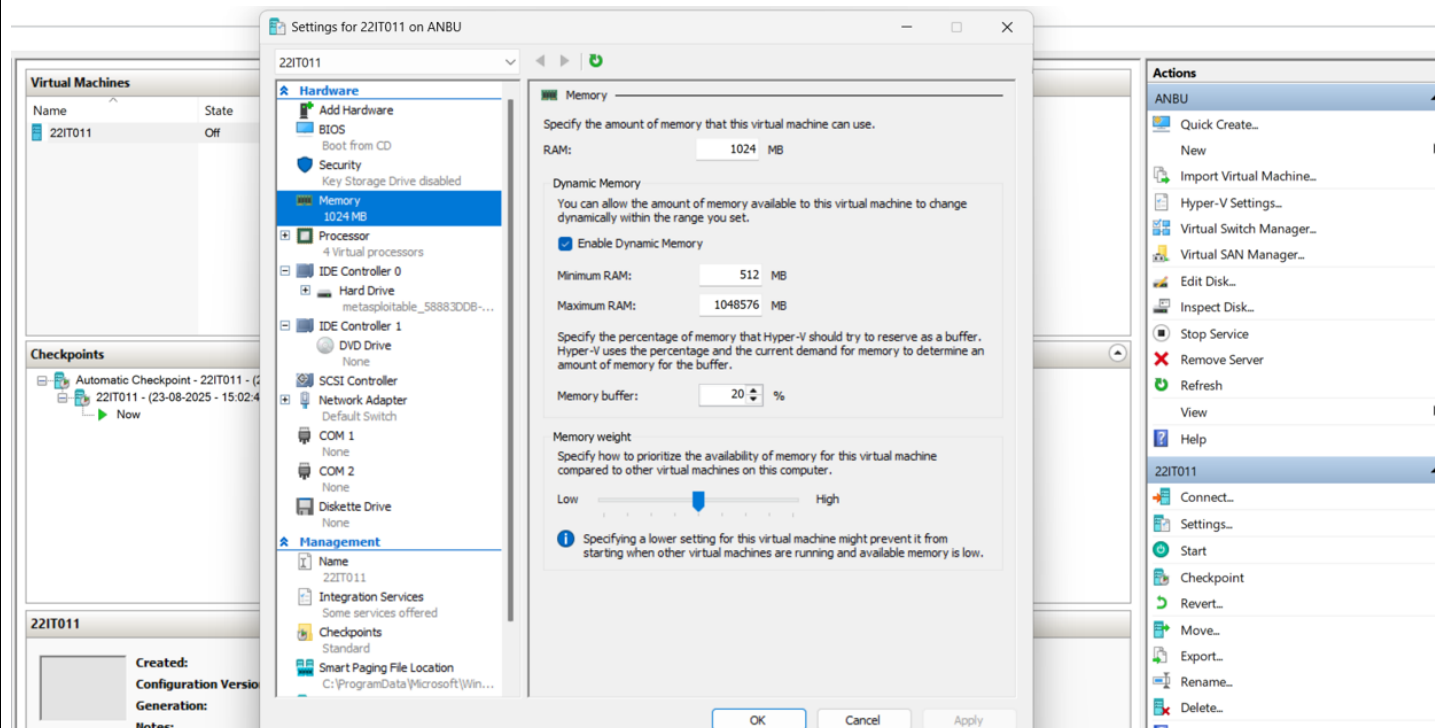
Step 4 – Manage Virtual Machines using Hyper-V Manager

You can:

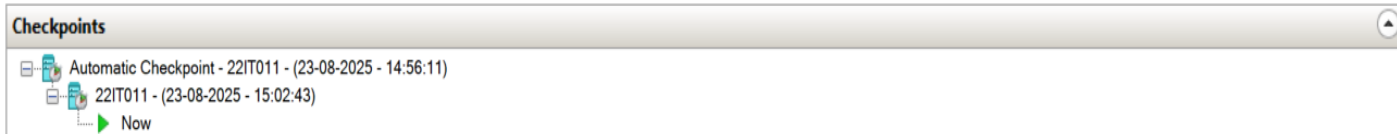
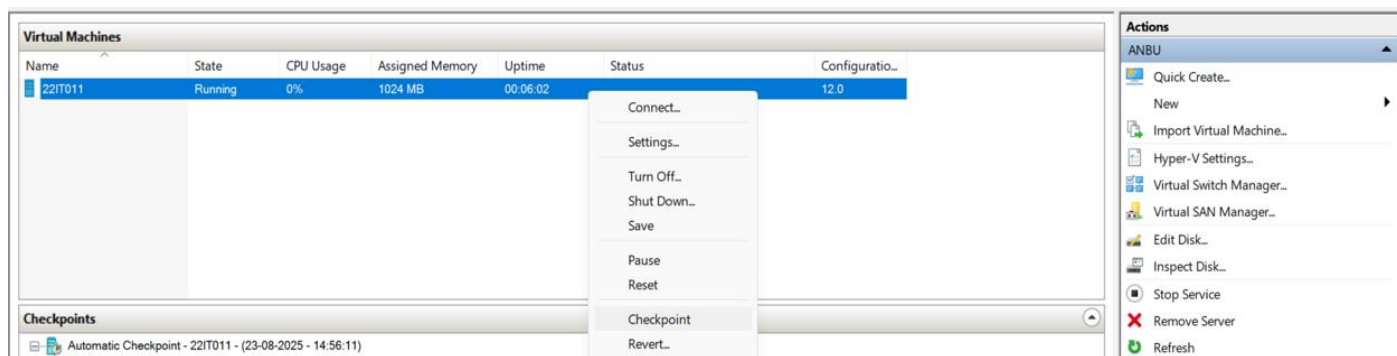
- **Start / Stop / Pause / Reset VMs** → Right-click the VM → choose the action.



- **Configure Settings** → Right-click VM → **Settings** → modify:
 - Memory
 - Processors
 - Network adapters
 - Hard disks



- **Create Checkpoints** → Right-click VM → **Checkpoint** (backup VM state).



Step 5 – Manage Virtual Machines using PowerShell

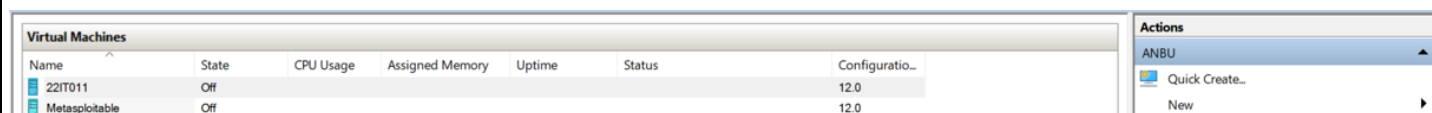
Open **PowerShell as Administrator** and use these commands:

Create a new VM

New-VM -Name Metasploitable -MemoryStartupBytes 1024MB -Generation 1 -VHDPATH "C:\Virt\metasploitable.vhd" -SwitchName "Default Switch"

```
PS C:\WINDOWS\system32> New-VM -Name Metasploitable -MemoryStartupBytes 1024MB -Generation 1 -VHDPATH "C:\Virt\metasploitable.vhd" -SwitchName "Default Switch"
```

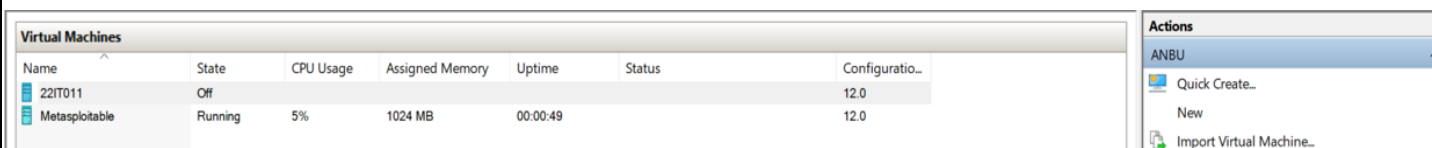
Name	State	CPUUsage(%)	MemoryAssigned(M)	Uptime	Status	Version
Metasploitable	Off	0	0	00:00:00	Operating normally	12.0



Start a VM

Start-VM -Name Metasploitable

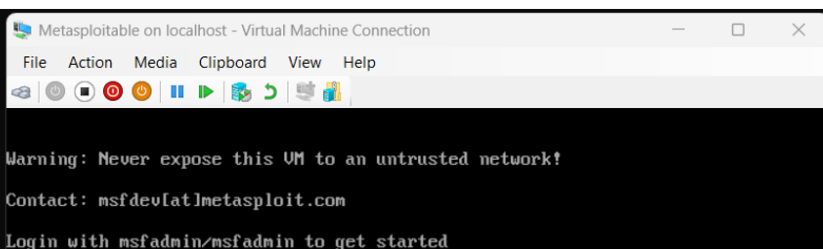
```
PS C:\WINDOWS\system32> Start-VM -Name Metasploitable
```



Connect to the VM console

vmconnect localhost Metasploitable

```
PS C:\WINDOWS\system32> vmconnect localhost Metasploitable
PS C:\WINDOWS\system32>
```



Get VM status*Get-VM -Name Metasploitable*

```
PS C:\WINDOWS\system32> Get-VM -Name Metasploitable
```

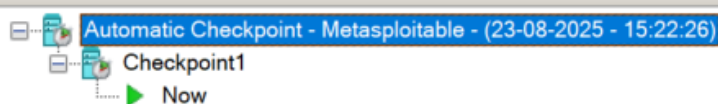
Name	State	CPUUsage(%)	MemoryAssigned(M)	Uptime	Status	Version
Metasploitable	Running	0	1024	00:03:32.5660000	Operating normally	12.0

Virtual Machines						Actions
Name	State	CPU Usage	Assigned Memory	Uptime	Status	Configuratio..
22IT011	Off					12.0
Metasploitable	Running	0%	1024 MB	00:03:52		12.0

ANBU
Quick Create..
New

Create a checkpoint*Checkpoint-VM -Name Metasploitable -SnapshotName "Checkpoint1"*

```
PS C:\WINDOWS\system32> Checkpoint-VM -Name Metasploitable -SnapshotName "Checkpoint1"
```

Checkpoints**Restore a checkpoint***Restore-VMCheckpoint -VMName Metasploitable -Name "Checkpoint1"*

```
PS C:\WINDOWS\system32> Restore-VMCheckpoint -VMName Metasploitable -Name "Checkpoint1"
```

Confirm

Are you sure you want to perform this action?

Restore-VMSnapshot will restore snapshot "Checkpoint1".

[Y] Yes [A] Yes to All [N] No [L] No to All [S] Suspend [?] Help (default is "Y"): Y

PS C:\WINDOWS\system32>

Restart a VM*Restart-VM -Name Metasploitable*

```
PS C:\WINDOWS\system32> Restart-VM -Name Metasploitable
```

Confirm

Are you sure you want to restart virtual machine "Metasploitable"?

[Y] Yes [A] Yes to All [N] No [L] No to All [S] Suspend [?] Help (default is "Y"): Y

Stop a VM*Stop-VM -Name Metasploitable*

```
PS C:\WINDOWS\system32> Stop-VM -Name Metasploitable
```

Confirm

Hyper-V can't shut down virtual machine "Metasploitable" because the Shutdown integration service is unavailable. You can turn off the virtual machine by selecting [Y]es, but this is similar to pulling the power on a physical machine. To avoid potential data loss, select [N]o, then pause or save the virtual machine. Do you want to turn off the virtual machine?

[Y] Yes [A] Yes to All [N] No [L] No to All [S] Suspend [?] Help (default is "Y"): Y

PS C:\WINDOWS\system32>

Virtual Machines							Actions
Name	State	CPU Usage	Assigned Memory	Uptime	Status	Configuratio...	ANBU
22IT011	Off					12.0	Quick Create...
Metasploitable	Off					12.0	New
							Import Virtual Machine...

Hyper-V host settings

Get-VMHost

```
PS C:\WINDOWS\system32> Get-VMHost

Name LogicalProcessorCount MemoryCapacity(M) VirtualMachineMigrationEnabled
-----
ANBU 8 7835.51953125 False
```

List all VMs

Get-VM

```
PS C:\WINDOWS\system32> Get-VM

Name      State CPUUsage(%) MemoryAssigned(M) Uptime      Status           Version
-----
22IT011   Off   0           0                 00:00:00 Operating normally 12.0
Metasploitable Off   0           0                 00:00:00 Operating normally 12.0
```

Remove a VM

Remove-VM -Name Metasploitable

```
PS C:\WINDOWS\system32> Remove-VM -Name Metasploitable

Confirm
Are you sure you want to remove virtual machine "Metasploitable"?
[Y] Yes [A] Yes to All [N] No [L] No to All [S] Suspend [?] Help (default is "Y"): Y
PS C:\WINDOWS\system32> Get-VM

Name      State CPUUsage(%) MemoryAssigned(M) Uptime      Status           Version
-----
22IT011   Off   0           0                 00:00:00 Operating normally 12.0
```

Result:

Thus, the virtual machine was successfully created, configured, and managed using both Hyper-V Manager GUI and PowerShell commands.