

Deccan Education Society's
Kirti M. Doongursee College of Arts, Science and Commerce
[NAAC Accredited: "A Grade"]



M.Sc. [Computer Science]

Practical Journal

PAPER: PSCSP303

Roll Number [_____]

Department of Computer Science and Information Technology

Department of Computer Science and Information Technology

Deccan Education Society's

Kirti M. Doongursee College of Arts, Science and Commerce

[NAAC Accredited: "A Grade"]

C E R T I F I C A T E

This is to certify that Mr./Mrs. _____
of M.Sc. (Computer Science) with Roll No. _____ has completed _____
Practicals of Paper **PSCSP303** under my supervision in this College during the
year 2022-2023.

Dr. Neha Ansari.
Lecturer-In-Charge

Dr. Apurva Yadav.
H.O.D.
Dept of CS & IT

Date:

Date:

Examined by:

Remarks:

Date:

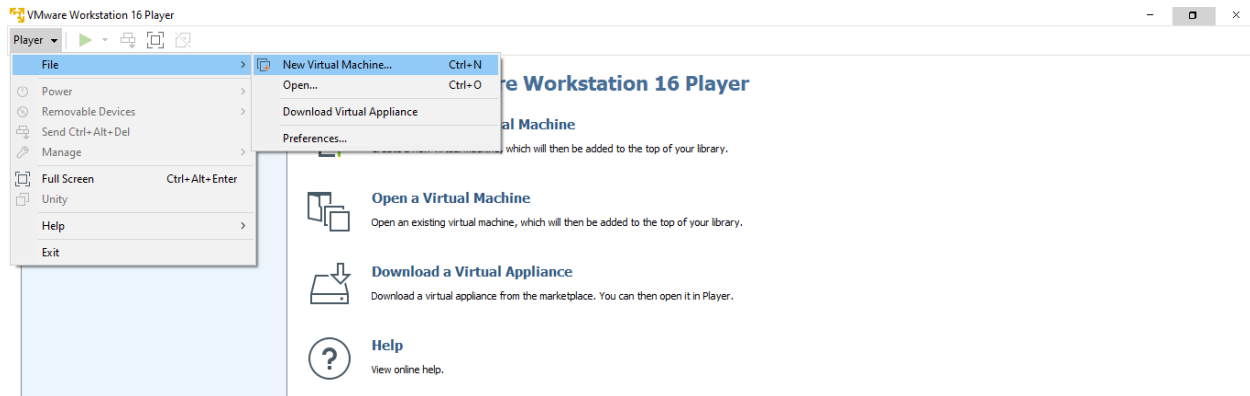
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Sr. No	Date	Title	Sign
1		Installation of VMWare ESXI. Deployment of virtual machine using VMWare ESXI.	
2		Installation of Citrix Xen. Deployment of virtual machine using Citrix Xen.	
3		Installation of Microsoft Hyper-V. Deployment of virtual machine using Hyper-V.	
4		Creating V-LAN using access and trunk mode.	
5		Inter V-LAN Routing using VTP.	

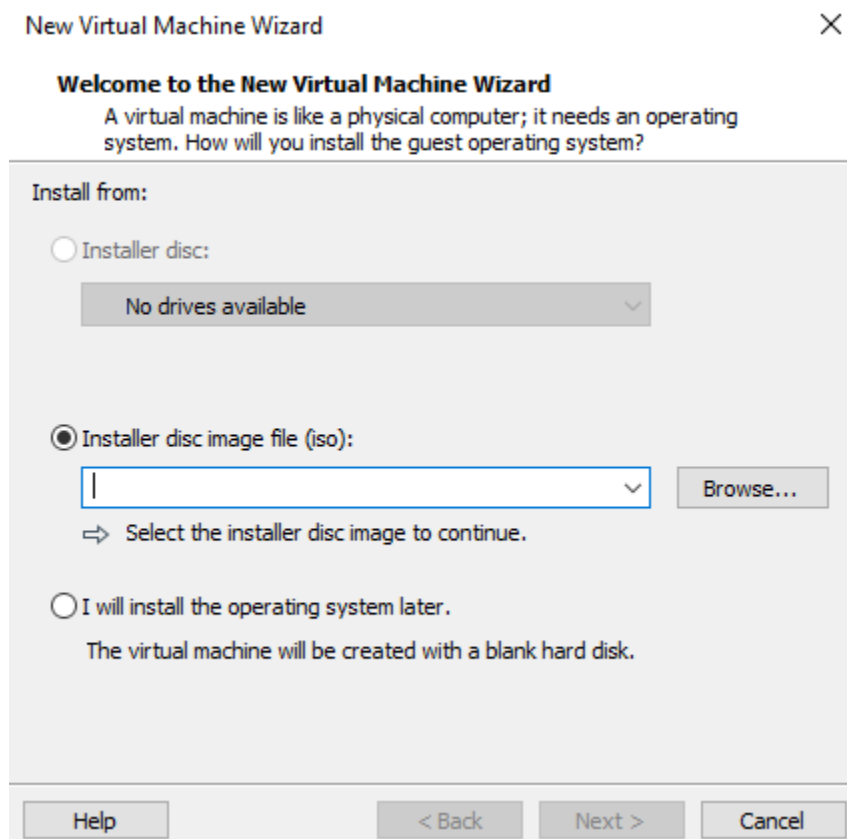
Practical No. 1

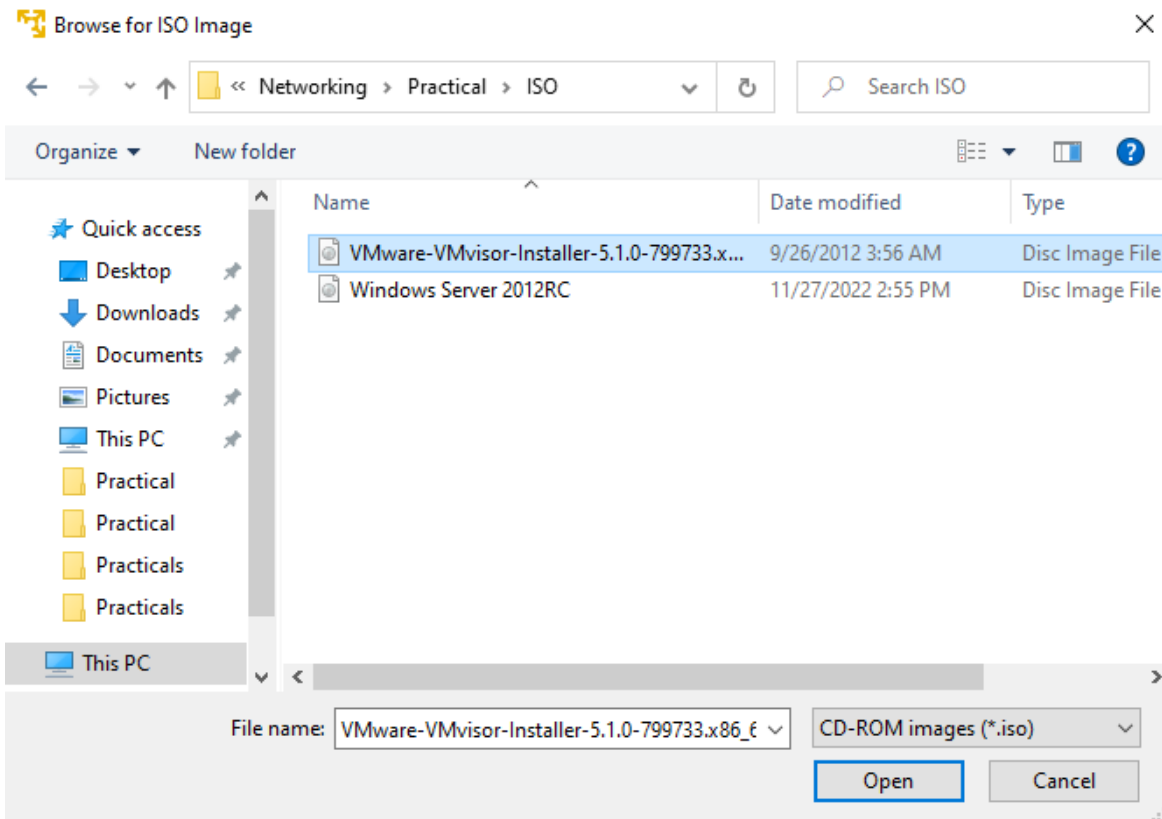
Aim: Installation of VMWare ESXI. Deployment of Virtual Machine using VMWare ESXI.

Step 1: Go to file and Click on New Virtual Machine.

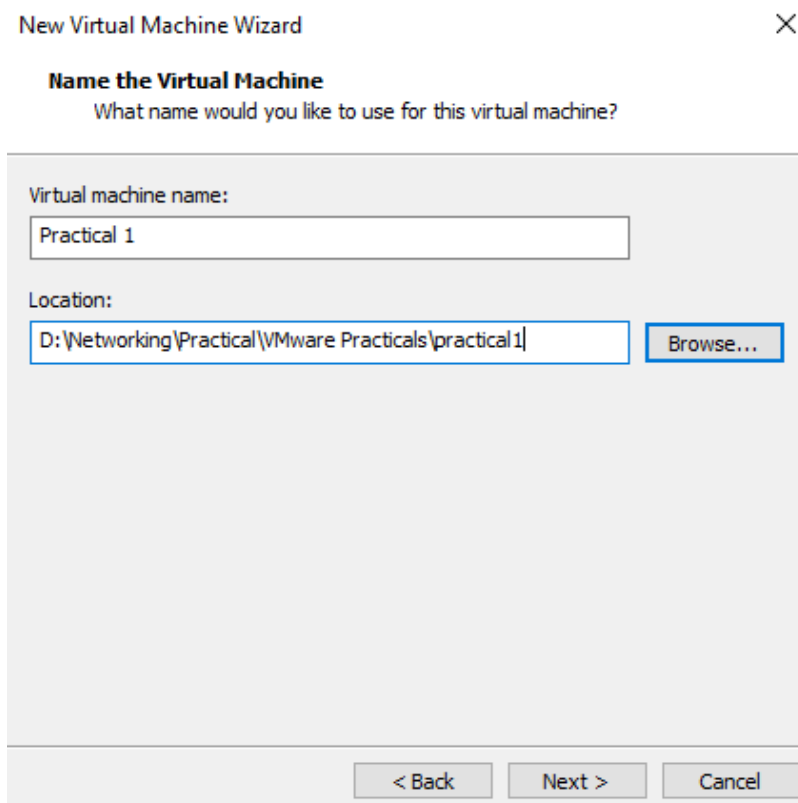


Step 2: Select Installer disc image file (iso) and Browse VMvisor iso file.





Step 3: Name the Virtual Machine



Step 4: Set disk size 60GB

New Virtual Machine Wizard ✕

Specify Disk Capacity
How large do you want this disk to be?

The virtual machine's hard disk is stored as one or more files on the host computer's physical disk. These file(s) start small and become larger as you add applications, files, and data to your virtual machine.

Maximum disk size (GB):

Recommended size for VMware ESXi 5.x: 40 GB

☒ Store virtual disk as a single file
☐ Split virtual disk into multiple files
Splitting the disk makes it easier to move the virtual machine to another computer but may reduce performance with very large disks.

Step 5: Uncheck the Power on virtual machine checkbox and Click on Finish

New Virtual Machine Wizard ✕

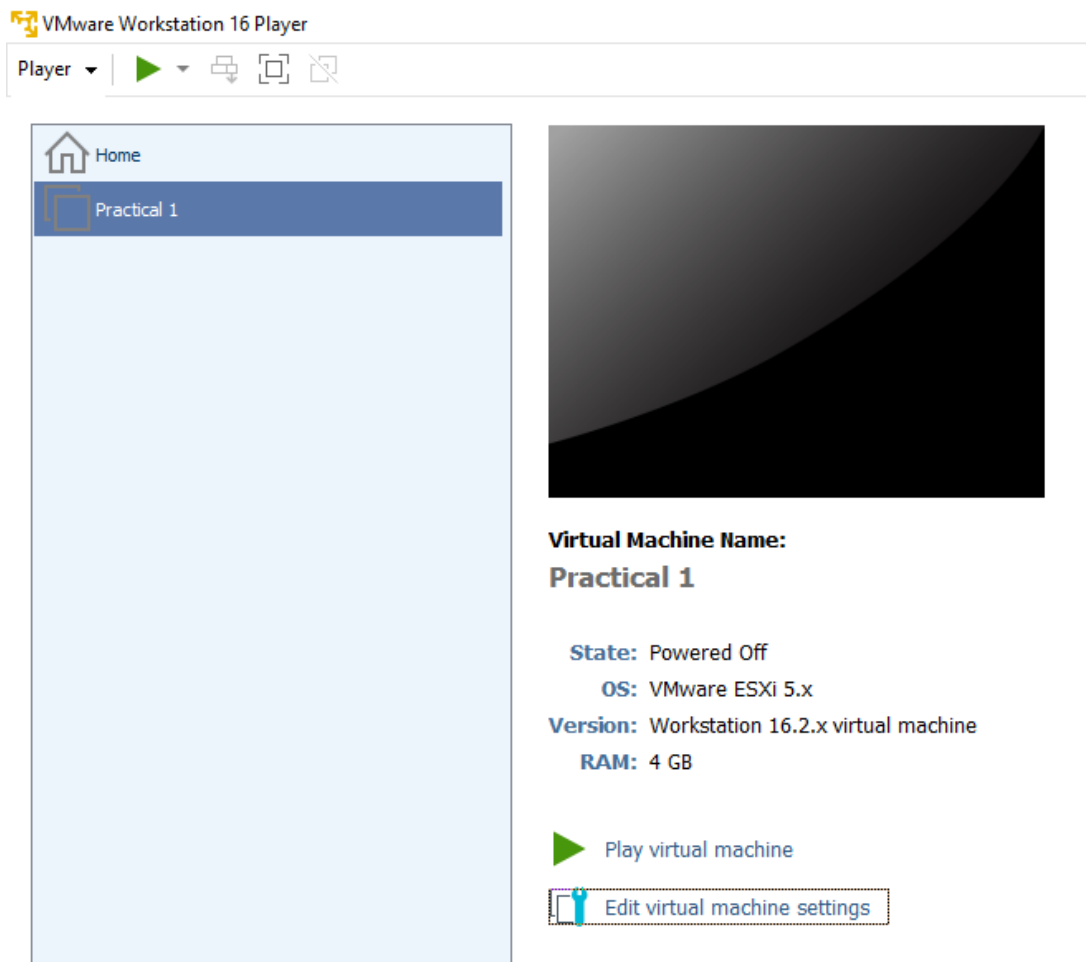
Ready to Create Virtual Machine
Click Finish to create the virtual machine and start installing VMware ESXi 5.x.

The virtual machine will be created with the following settings:

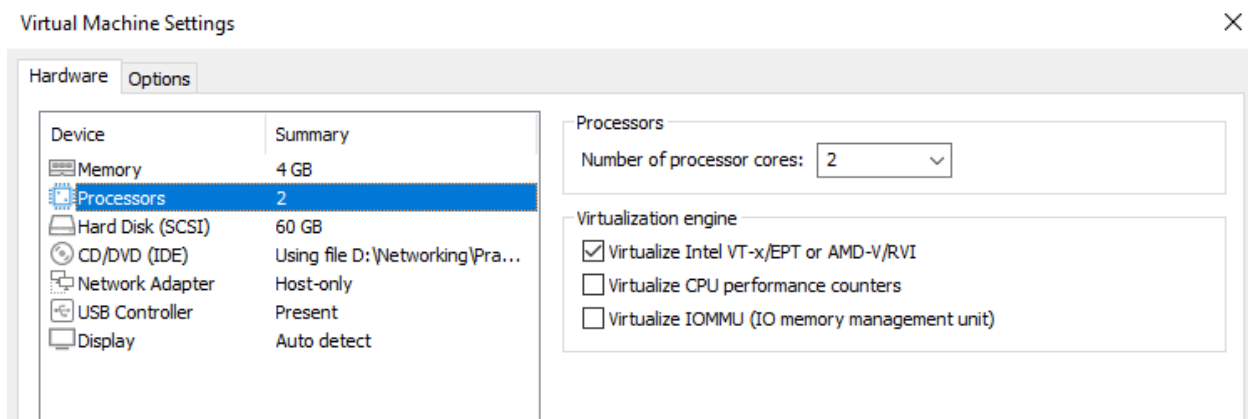
Name:	Practical 1
Location:	D:\Networking\Practical\VMware Practicals\practical1
Version:	Workstation 16.2.x
Operating System:	VMware ESXi 5.x
Hard Disk:	60 GB
Memory:	4096 MB
Network Adapter:	NAT
Other Devices:	2 CPU cores, CD/DVD, USB Controller, Printer, Sound...

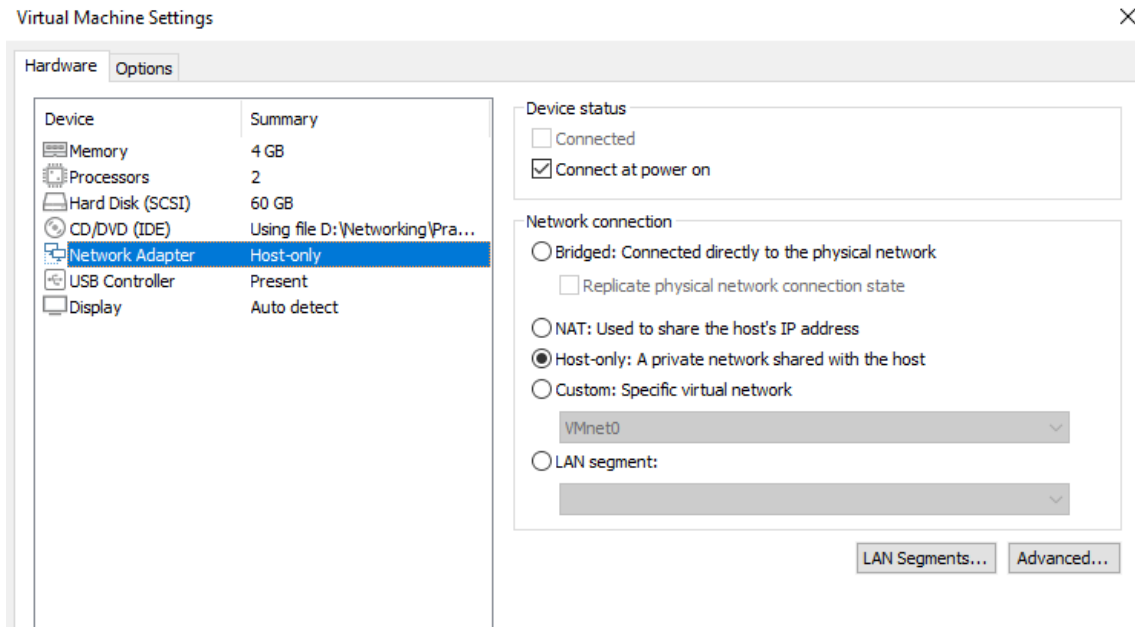
☐ Power on this virtual machine after creation

Step 6: Edit virtual machine settings.

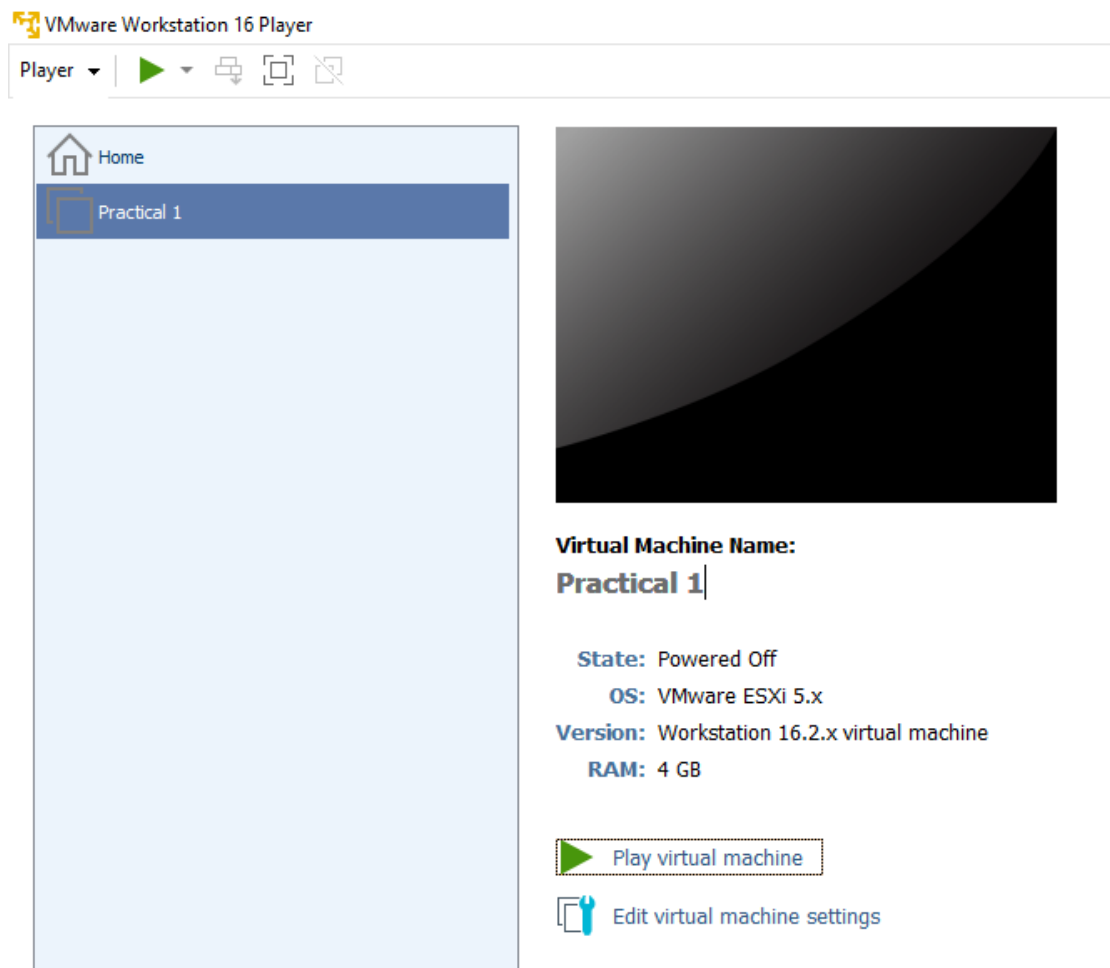


Step 7: Change Memory: 4GB, Processor: 2, checked the Virtualize Intel VT and Select Network: Host only.

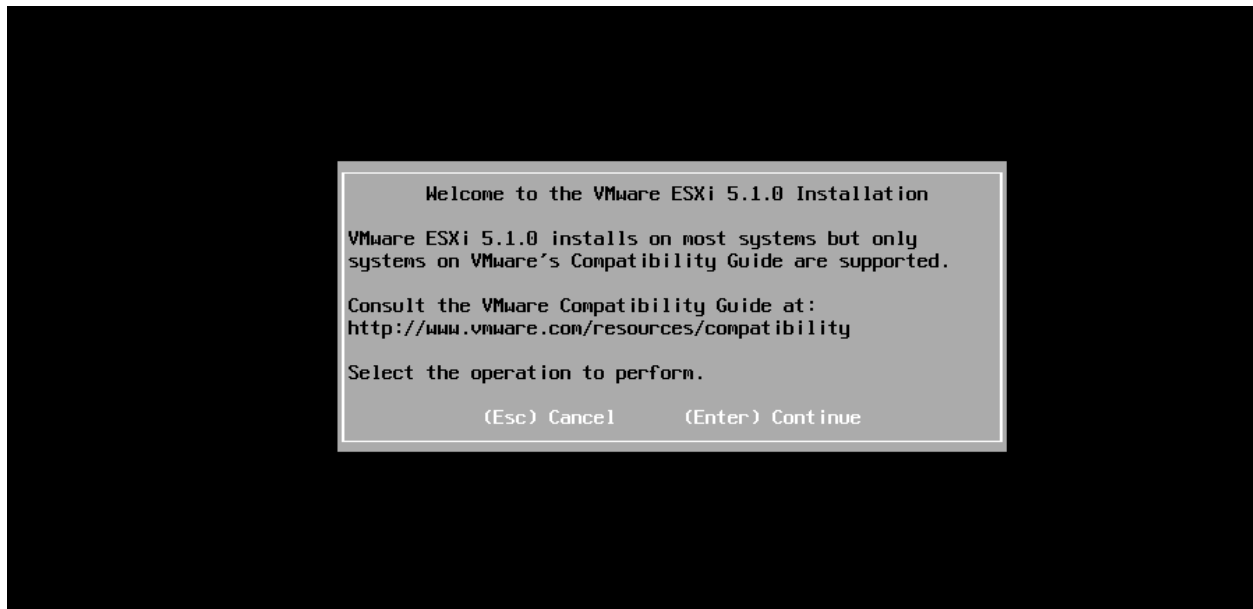




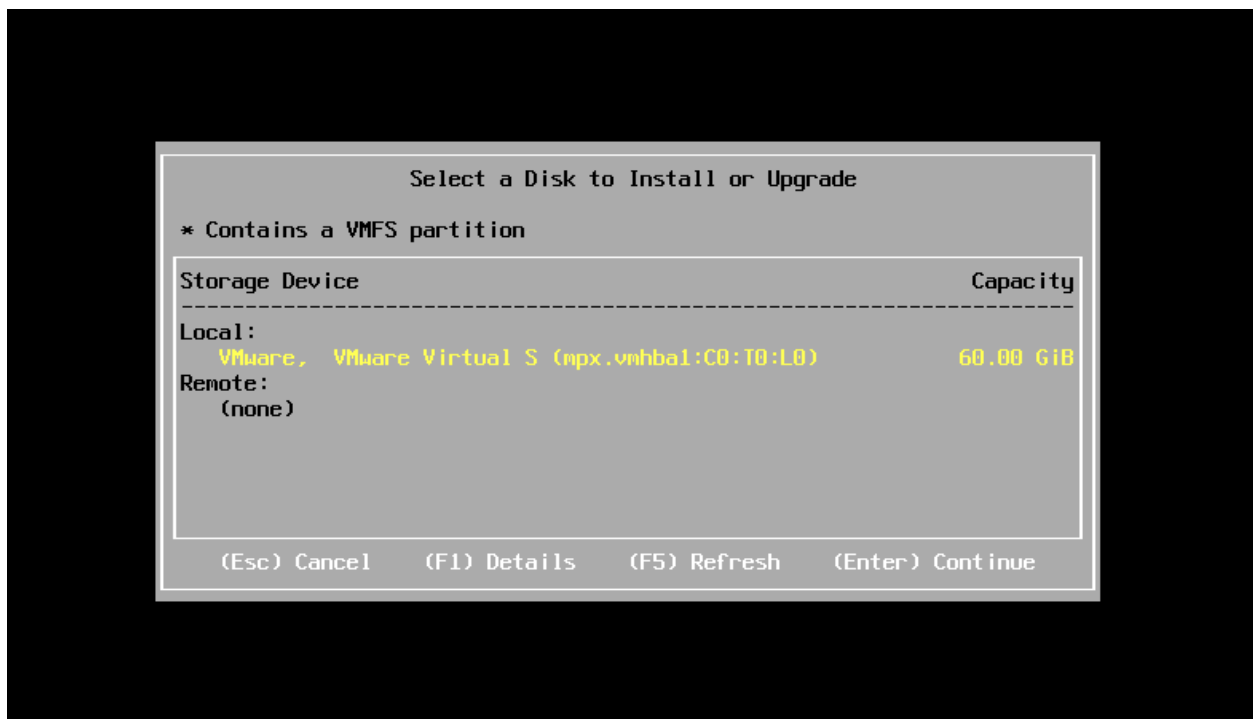
Step 8: Play virtual machine



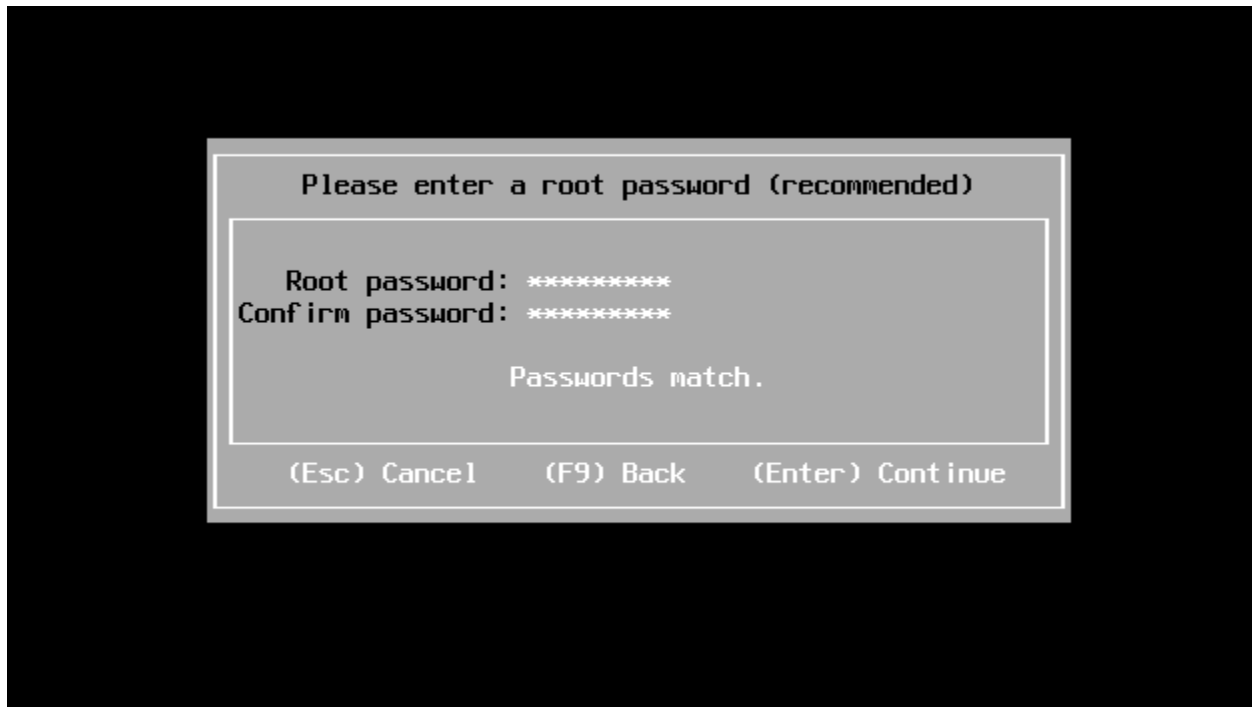
Click Enter



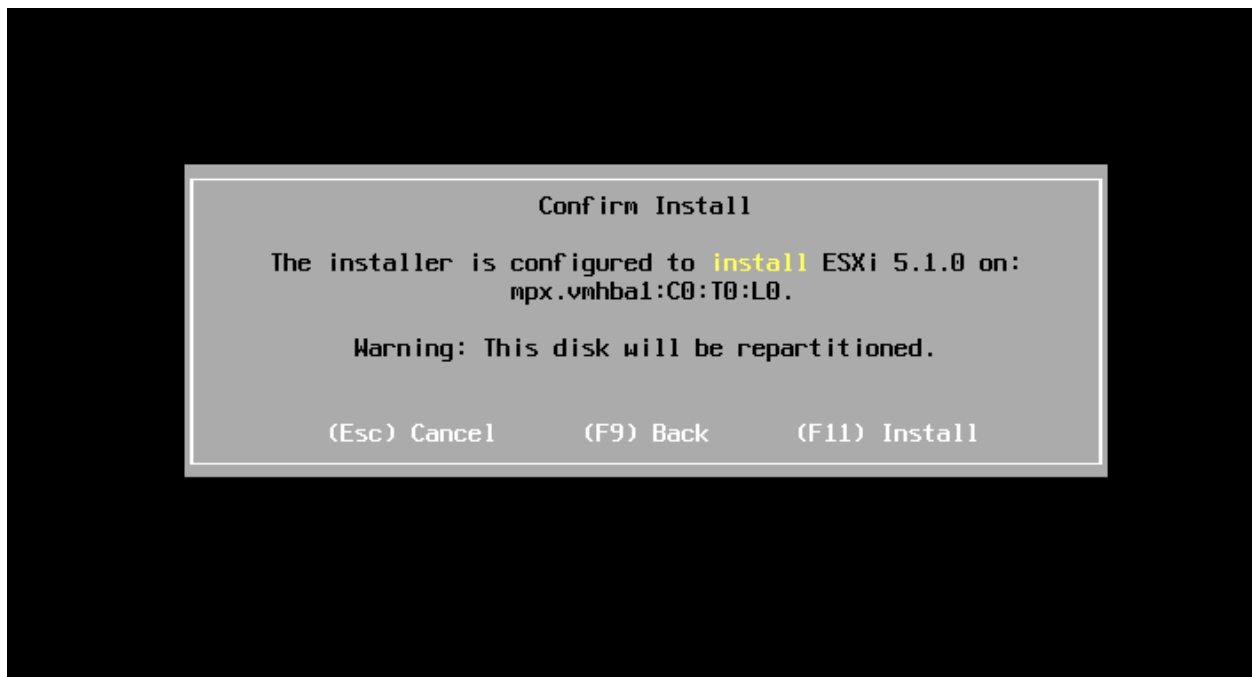
Select Local and Click Enter



Enter Password



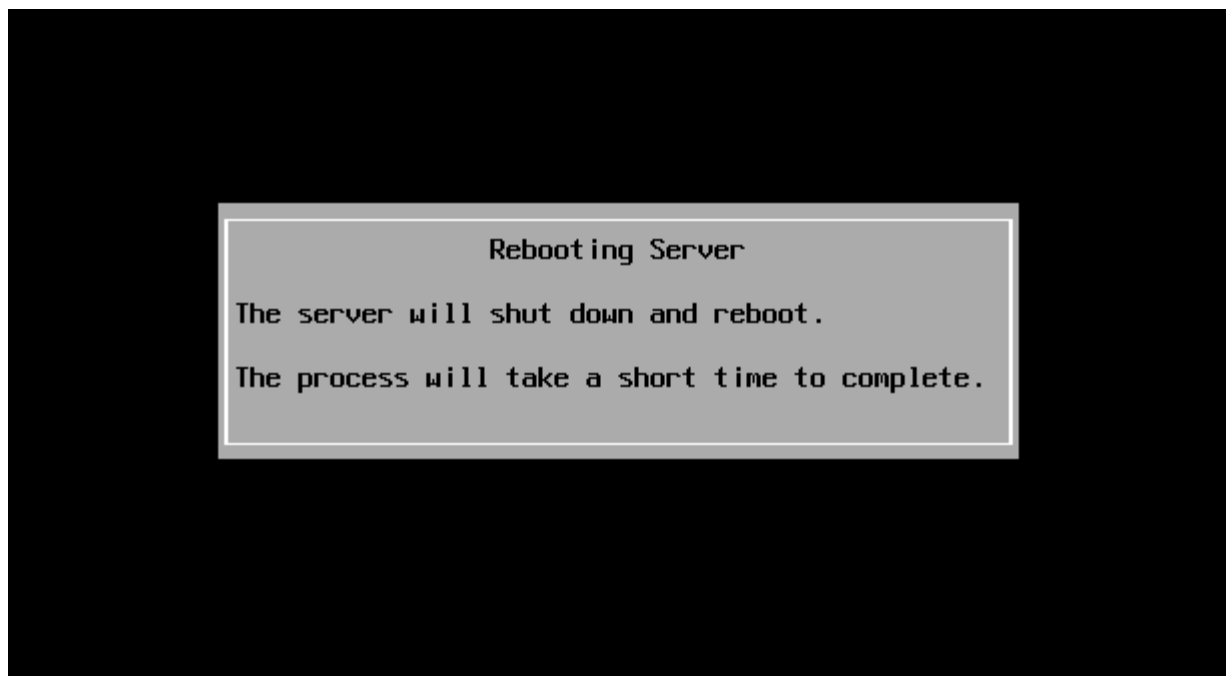
Press F11 to install



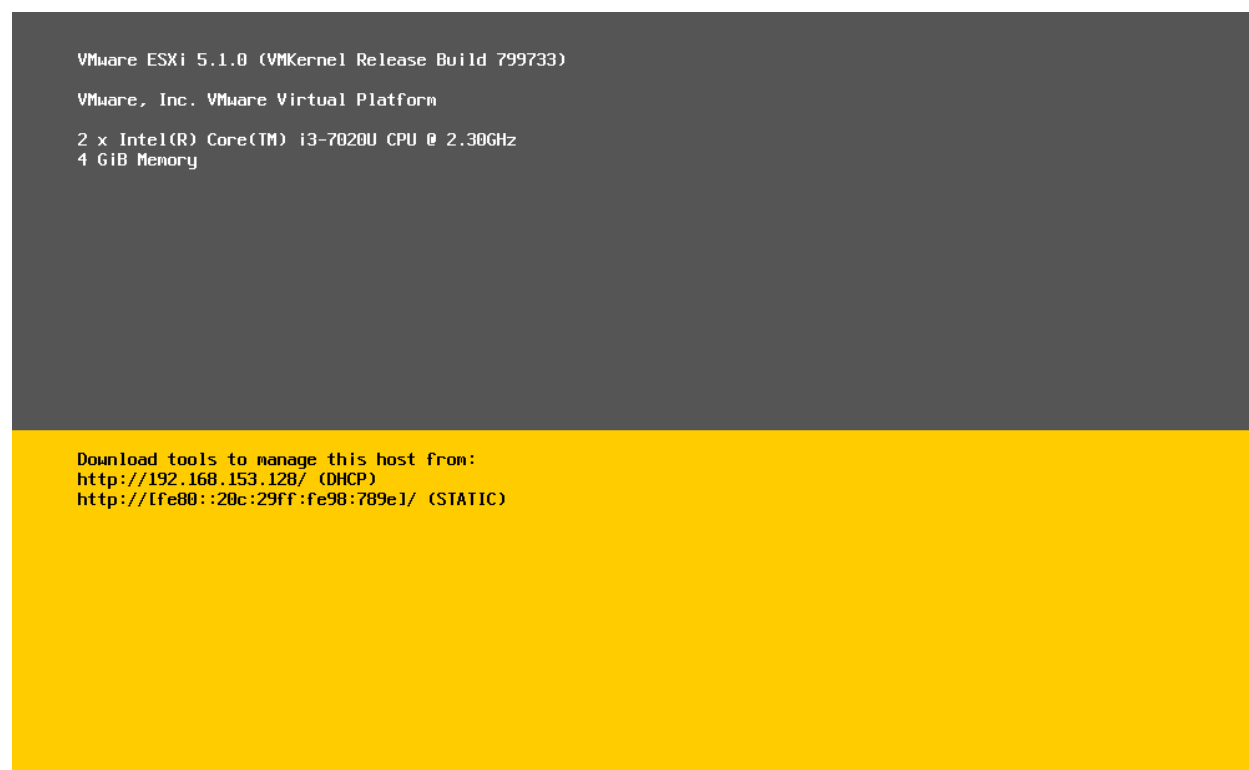


Successfully installed press Enter to Reboot












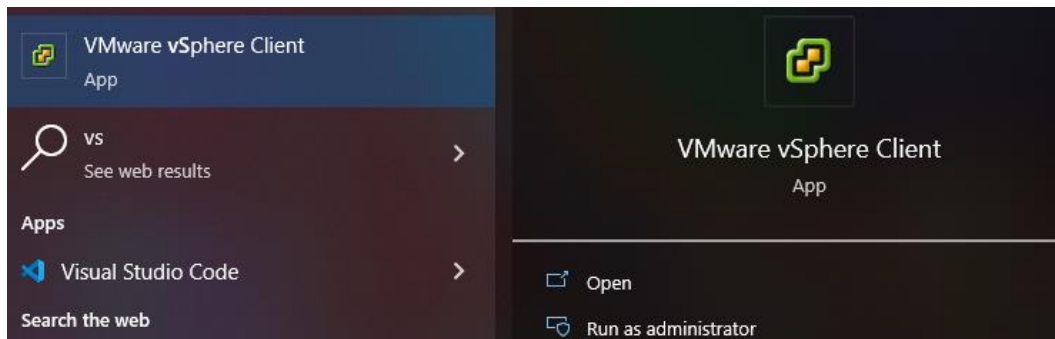
After Rebooting the IP address is displayed



Step 9: Install VMClient Software

Name	Date modified	Type	Size
 VMware-viclient-all-5.1.0-786111	6/22/2013 1:08 PM	Application	355,688 KB
 VMware-viclient-all-5.1.0-786111	7/31/2022 12:41 PM	Compressed (zipp...	355,694 KB
 VMware-VMvisor-Installer-5.1.0-799733.x...	9/26/2012 3:56 AM	Disc Image File	307,798 KB
 VMware-VMvisor-Installer-5.1.0-799733.x...	7/31/2022 12:41 PM	Compressed (zipp...	301,721 KB
 Windows Server 2012RC	11/27/2022 2:55 PM	Disc Image File	3,535,730 KB
 XenServer-6.2.0-install-cd (ISO Image)	11/8/2022 11:49 AM	Compressed (zipp...	566,117 KB
 XenServer-6.2.0-XenCenter (Client)	11/8/2022 11:49 AM	Compressed (zipp...	48,891 KB

Step 10: Open VMClient



Enter IP Address, Username: root, and Password and Click on Login

A screenshot of the VMware vSphere Client login window. The window has a blue header with the VMware logo and the text 'VMware vSphere Client'. Below the header, there is a text box for 'IP address / Name' containing '192.168.153.128', a text box for 'User name' containing 'root', and a text box for 'Password' containing '*****'. There is a checkbox labeled 'Use Windows session credentials' which is currently unchecked. At the bottom, there are three buttons: 'Login', 'Close', and 'Help'.

Done

192.168.153.128 - vSphere Client

FileEditViewInventoryAdministrationPlug-insHelp

Home

Inventory

Inventory

Administration

Roles

System Logs

Recent Tasks

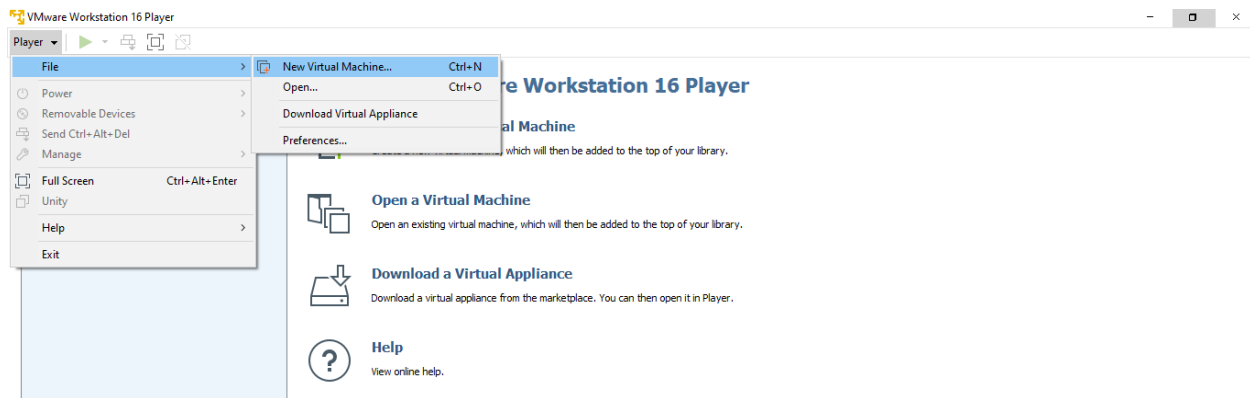
Name, Target or Status contains: Clear

Name	Target	Status	Details	Initiated by	Requested Start Time	Start Time	Completed Time
------	--------	--------	---------	--------------	----------------------	------------	----------------

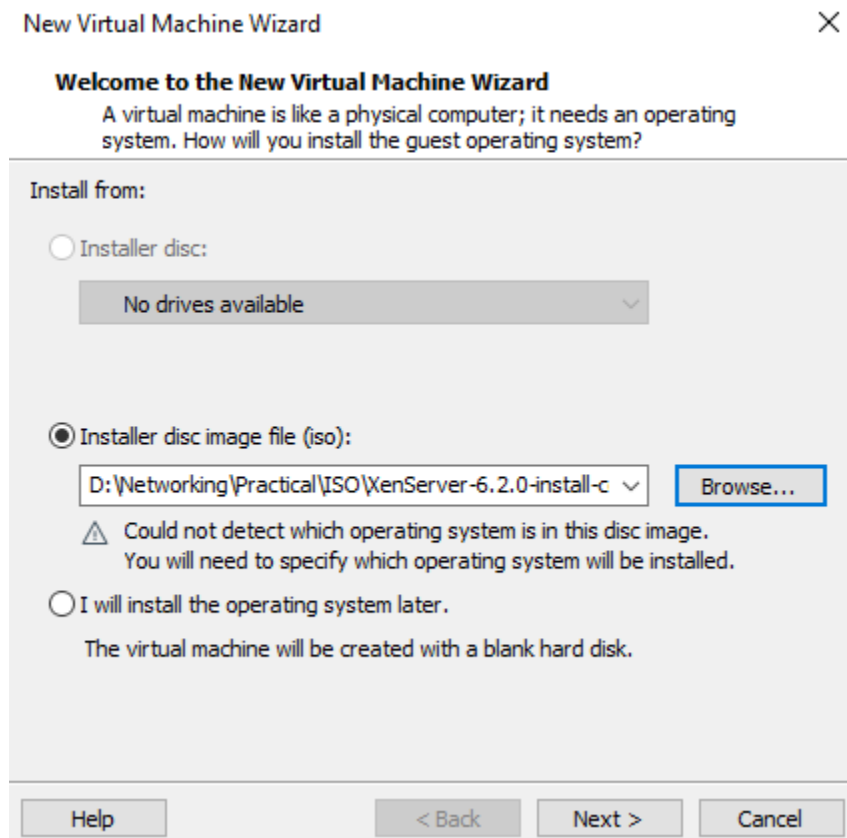
Practical No. 2

Aim: Installation of Citrix Xen. Deployment of virtual machine using Citrix Xen.

Step 1: Go to file and Click on New Virtual Machine.



Step 2: Select Installer disc image file (iso) and Browse XenServer iso file.



Step 3: Select a Guest Operating System (Linux and select version: Other Linux 2.6.x 64bit)

New Virtual Machine Wizard ✕

Select a Guest Operating System
Which operating system will be installed on this virtual machine?

Guest operating system

☐ Microsoft Windows
☒ Linux
☐ Other

Version

Other Linux 2.6.x kernel 64-bit ▾

Help < Back Next > Cancel

Step 4: Name the Virtual Machine

New Virtual Machine Wizard ✕

Name the Virtual Machine
What name would you like to use for this virtual machine?

Virtual machine name:

Practical 2

Location:

D:\Networking\Practical\VMware Practicals\practical2 Browse...

< Back Next > Cancel

Select Disk size 50GB

New Virtual Machine Wizard ✕

Specify Disk Capacity
How large do you want this disk to be?

The virtual machine's hard disk is stored as one or more files on the host computer's physical disk. These file(s) start small and become larger as you add applications, files, and data to your virtual machine.

Maximum disk size (GB):

Recommended size for Other Linux 2.6.x kernel 64-bit: 8 GB

☒ Store virtual disk as a single file
☐ Split virtual disk into multiple files

Splitting the disk makes it easier to move the virtual machine to another computer but may reduce performance with very large disks.

[Help](#) [< Back](#) [Next >](#) [Cancel](#)

Step 5: Edit virtual machine setting

VMware Workstation 16 Player

Player ▶ ⏏ 🖥 🔍

Home

Practical 2

Practical 1

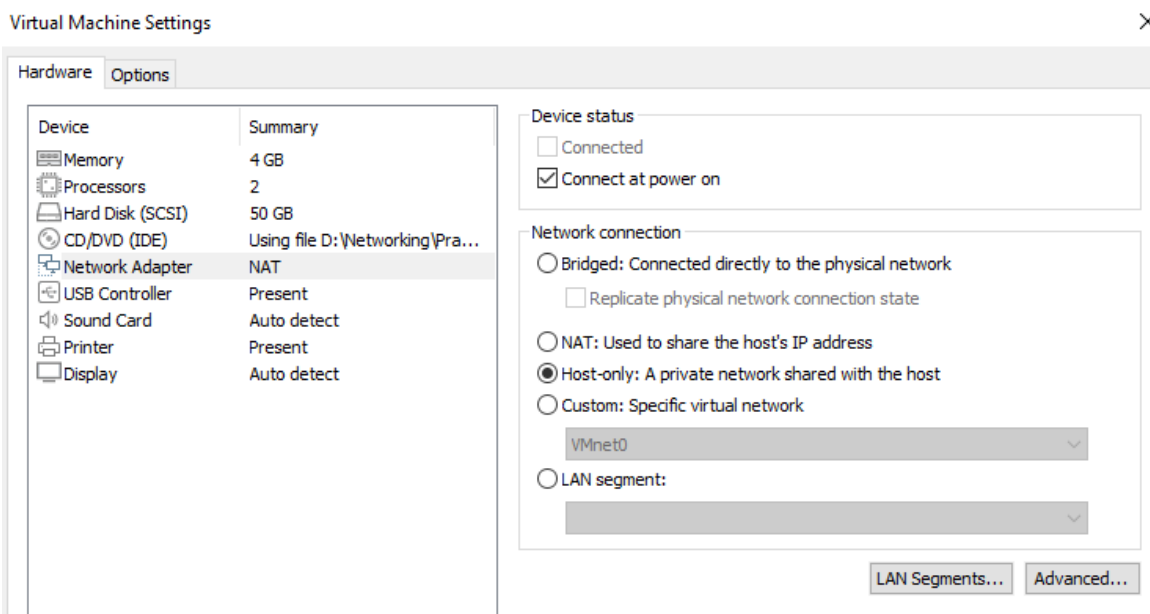
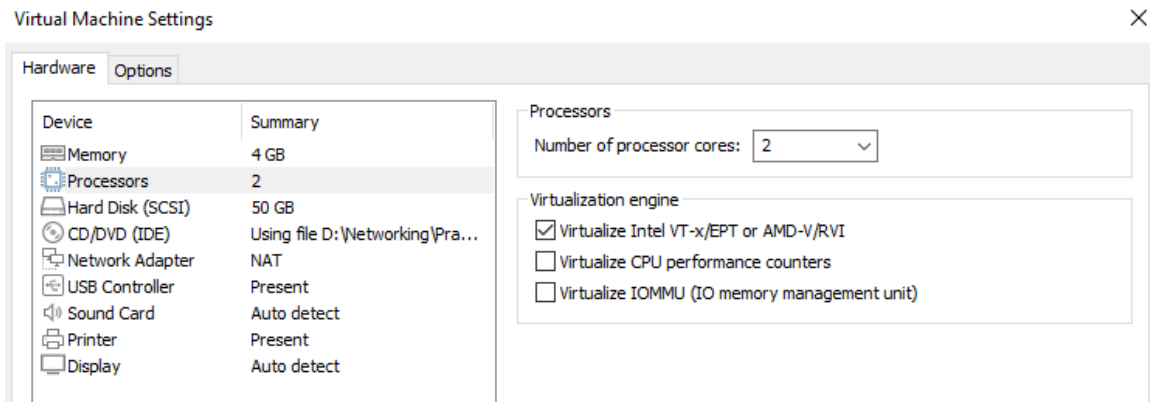
Virtual Machine Name:
Practical 2

State: Powered Off
OS: Other Linux 2.6.x kernel 64-bit
Version: Workstation 16.2.x virtual machine
RAM: 384 MB

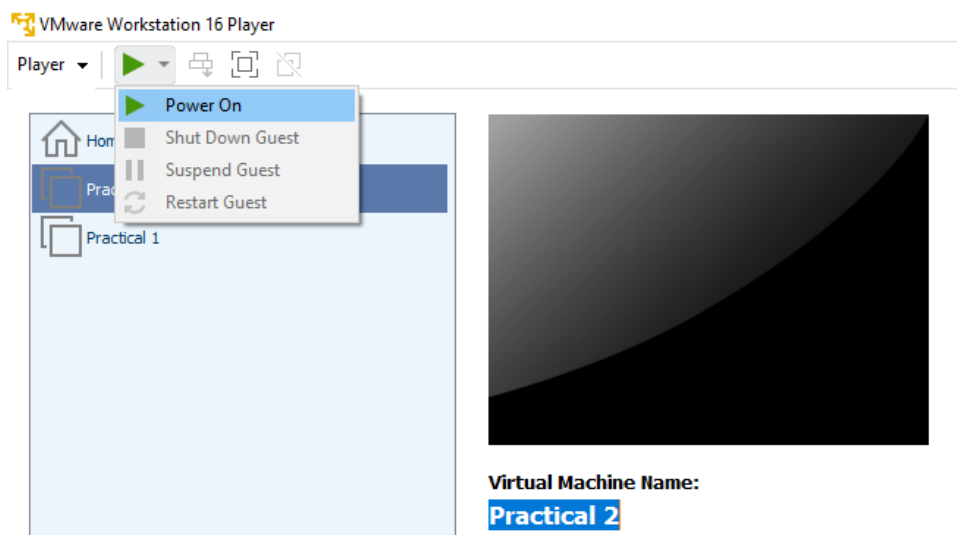
▶ Play virtual machine

⚙ Edit virtual machine settings

Change Memory to 4GB, Processor 2 and Check Virtualize Intel VT and Network Host only.



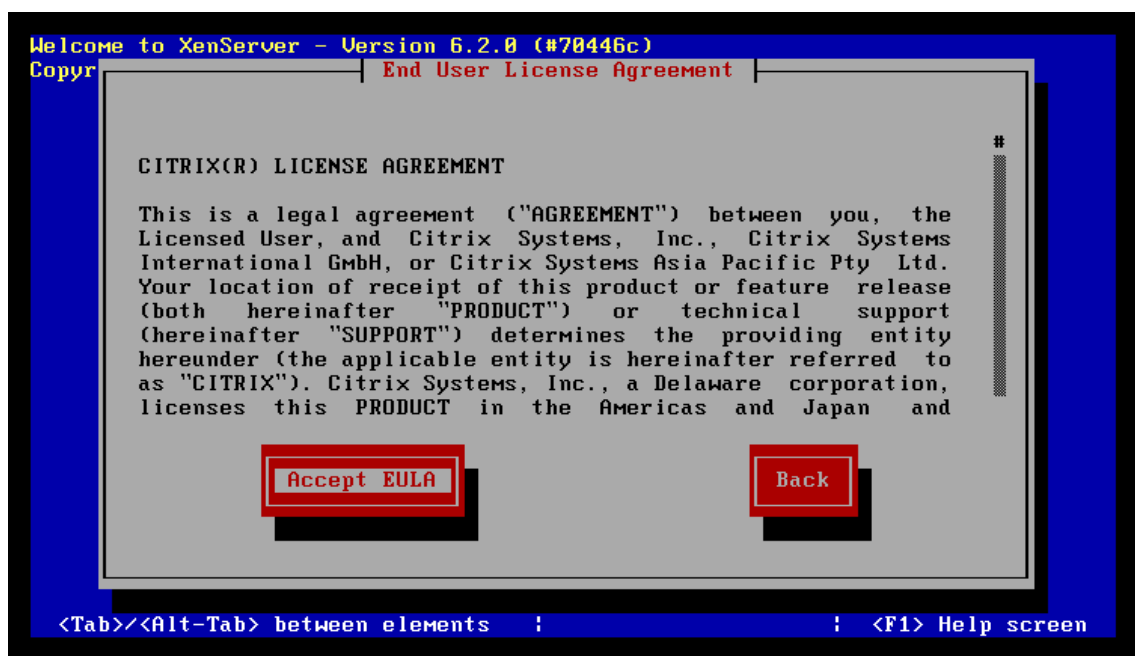
Then Power on the virtual machine



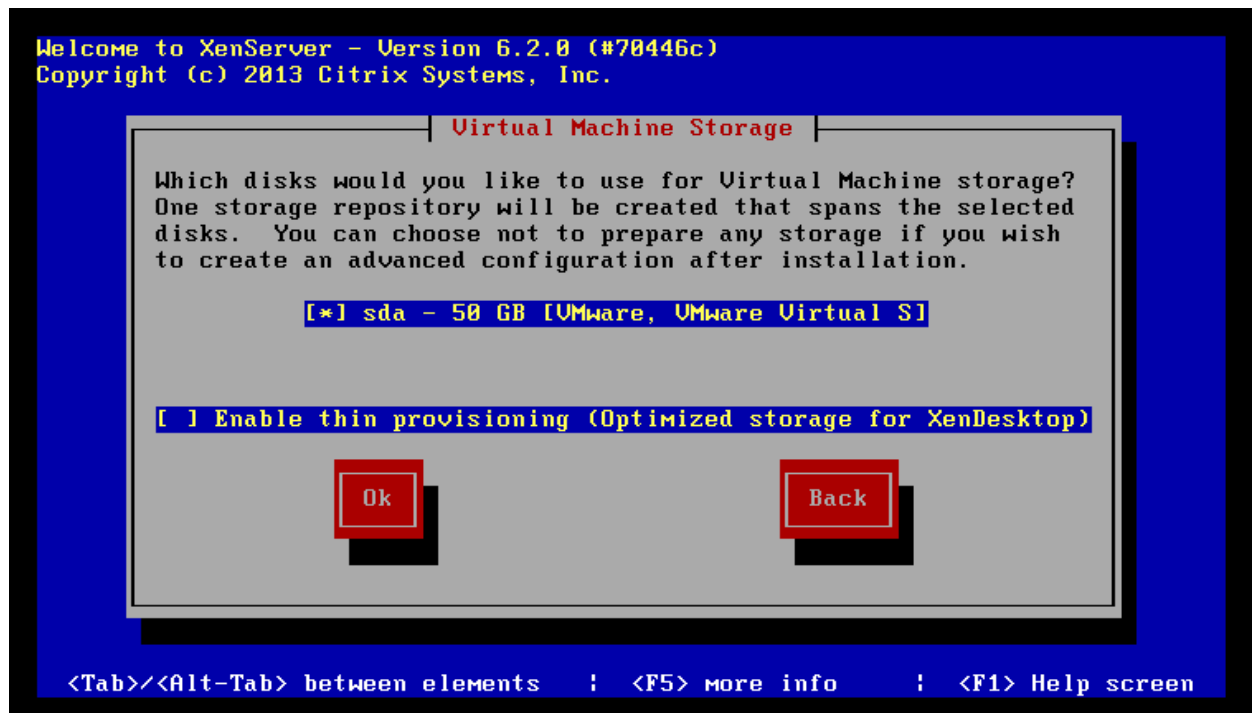
Step 6: Installation process start.



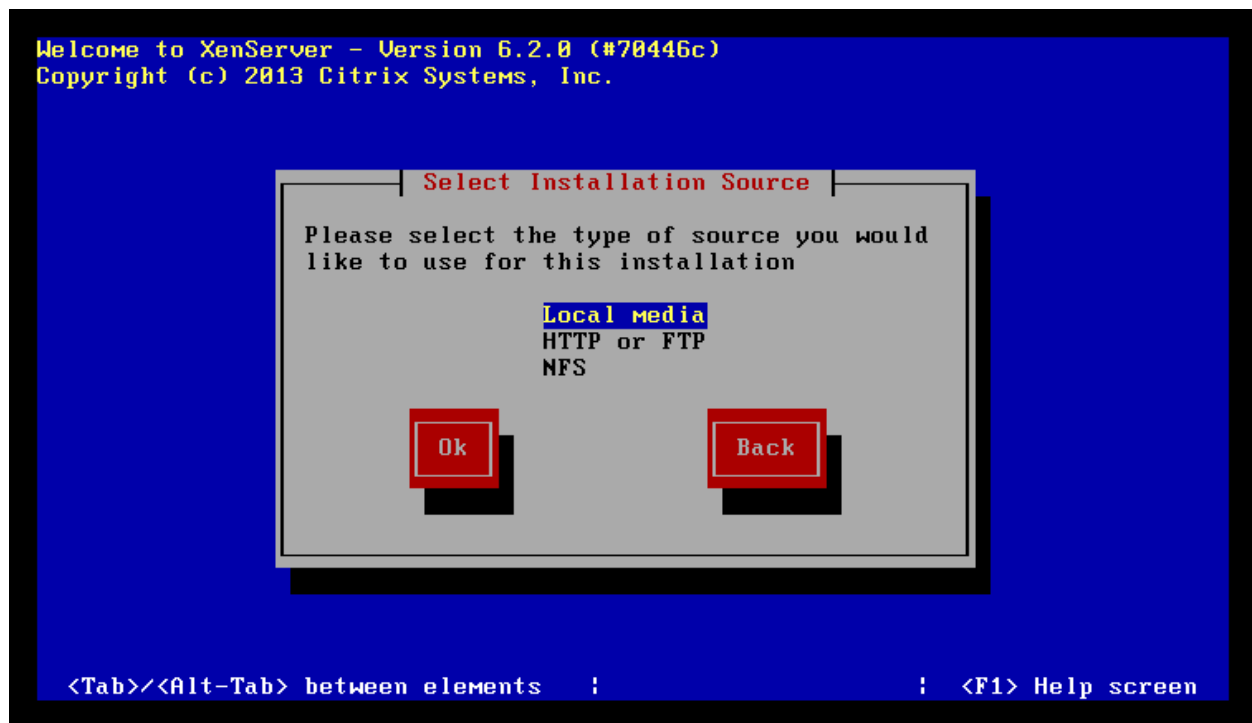
Accept License



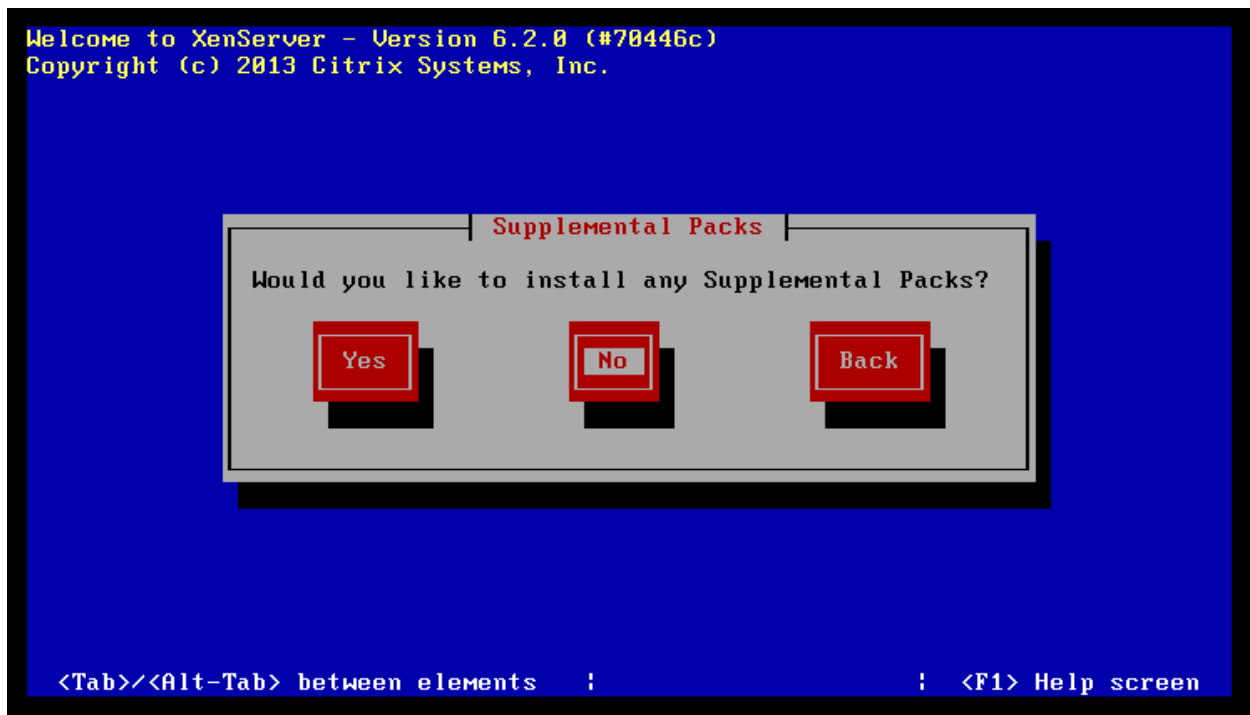
Select Disk and Click ok.



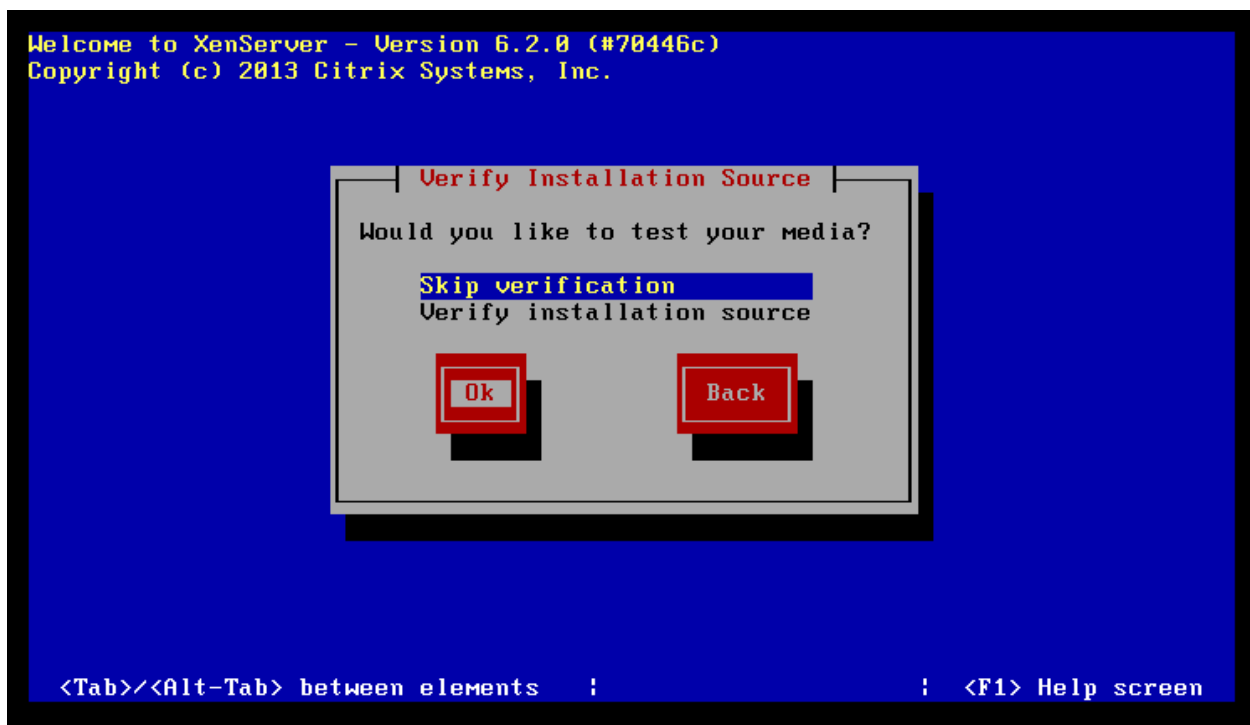
Select Installation Media as Local



Select Supplement Packs: No



Then Skip verification



Enter Password

Welcome to XenServer - Version 6.2.0 (#70446c)
Copyright (c) 2013 Citrix Systems, Inc.

Set Password

Please specify a password of at least 6 characters for the root account.

(This is the password used when connecting to the XenServer Host from XenCenter.)

Password:

Confirm:

<Tab>/<Alt-Tab> between elements : : <F1> Help screen

Select Automatic configuration (DHCP)

Welcome to XenServer - Version 6.2.0 (#70446c)
Copyright (c) 2013 Citrix Systems, Inc.

Networking

Please specify how networking should be configured for the management interface on this host.

☒ Automatic configuration (DHCP)

☐ Static configuration:

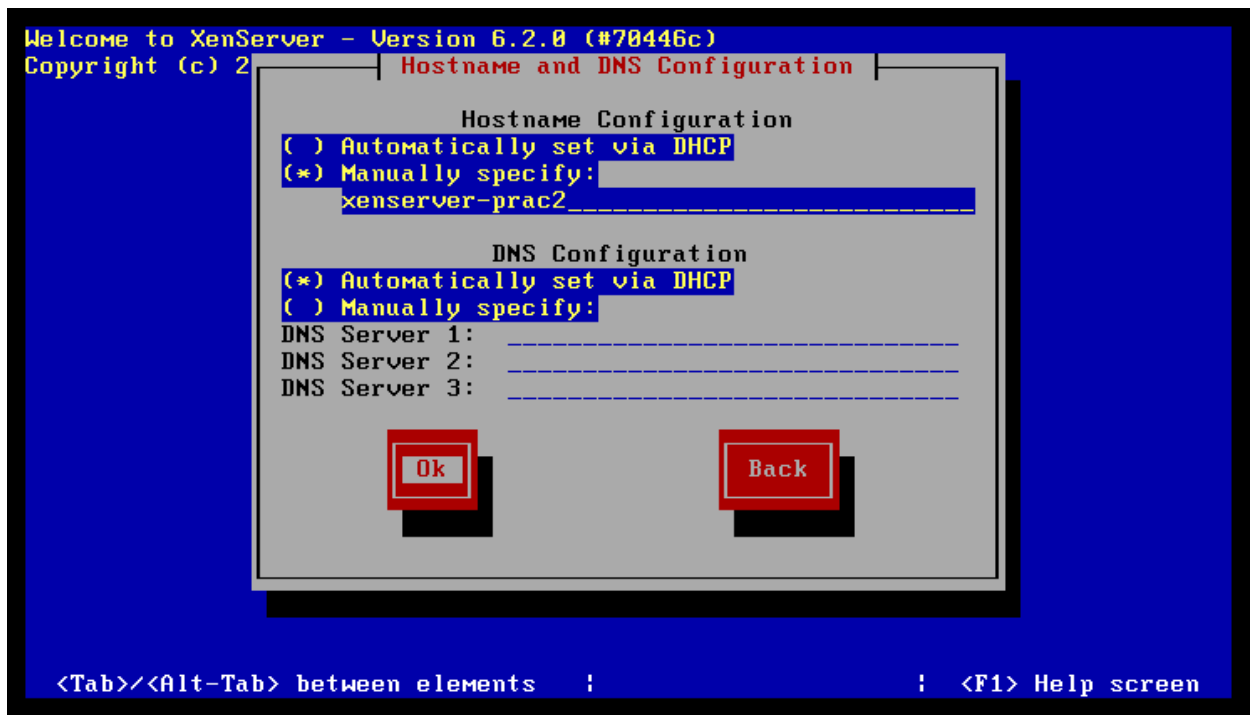
IP Address:

Subnet mask:

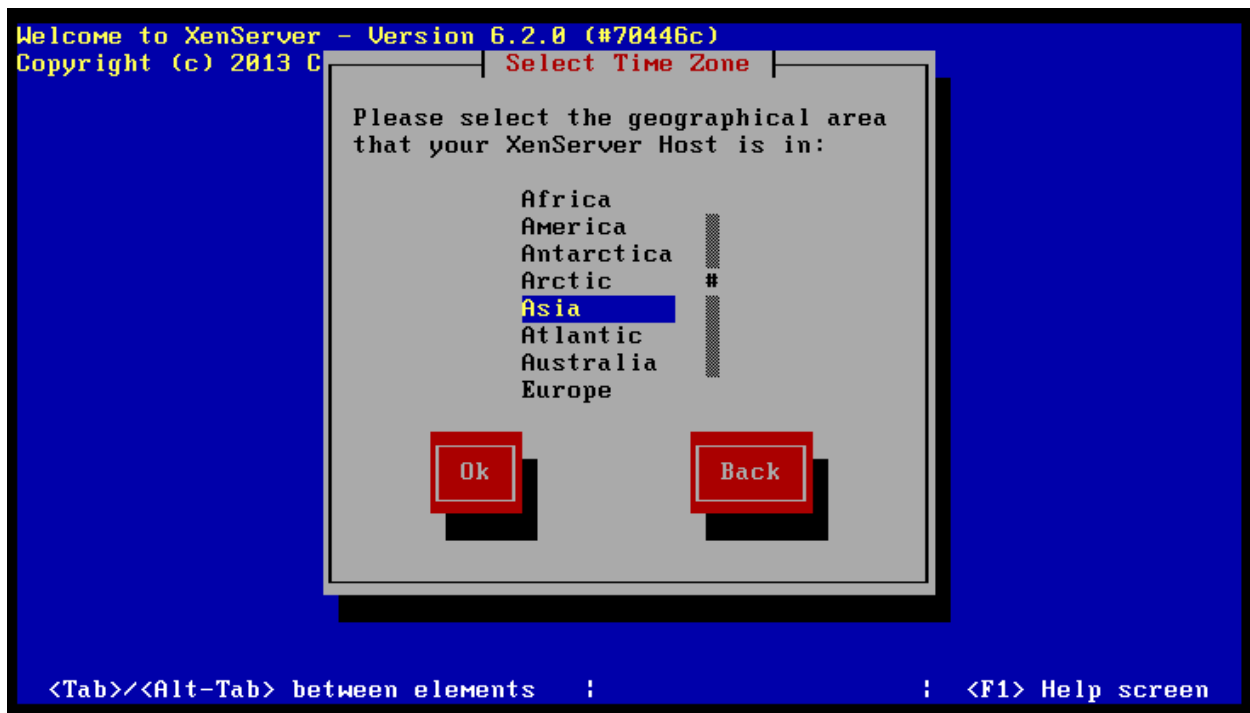
Gateway:

<Tab>/<Alt-Tab> between elements : : <F1> Help screen

Now Configuring Hostname and DNS set as below

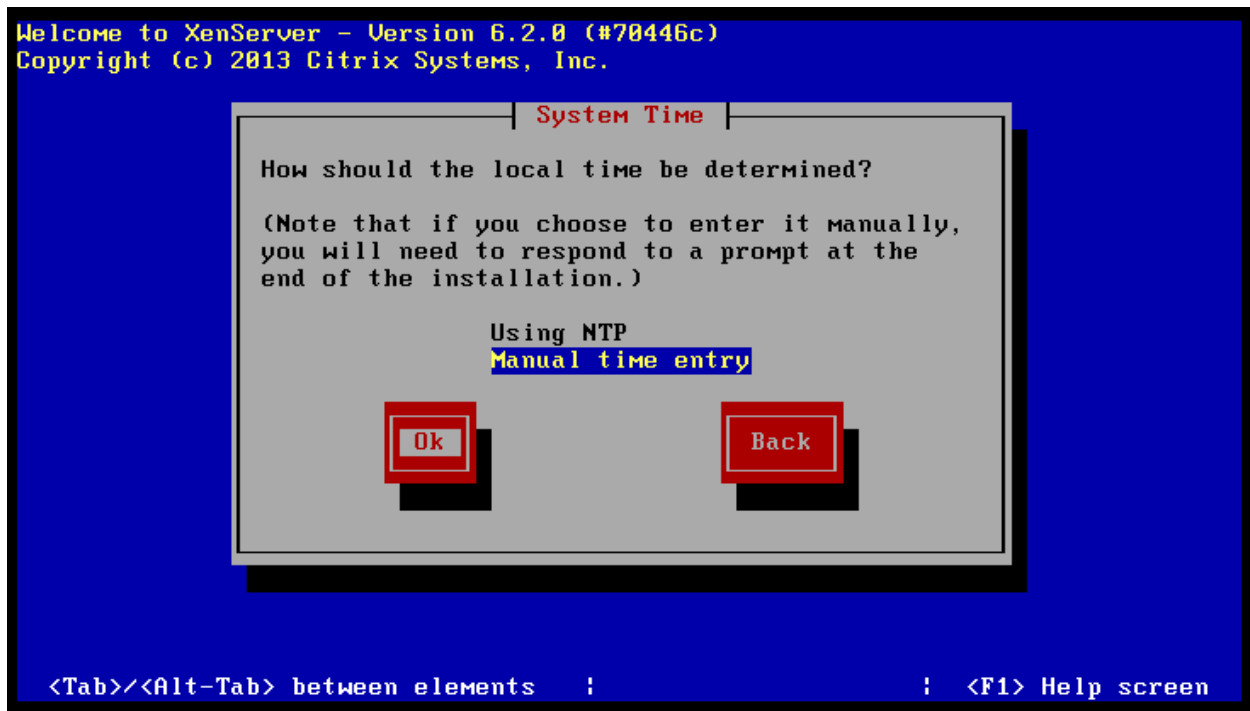


Select Time Zone: Asia

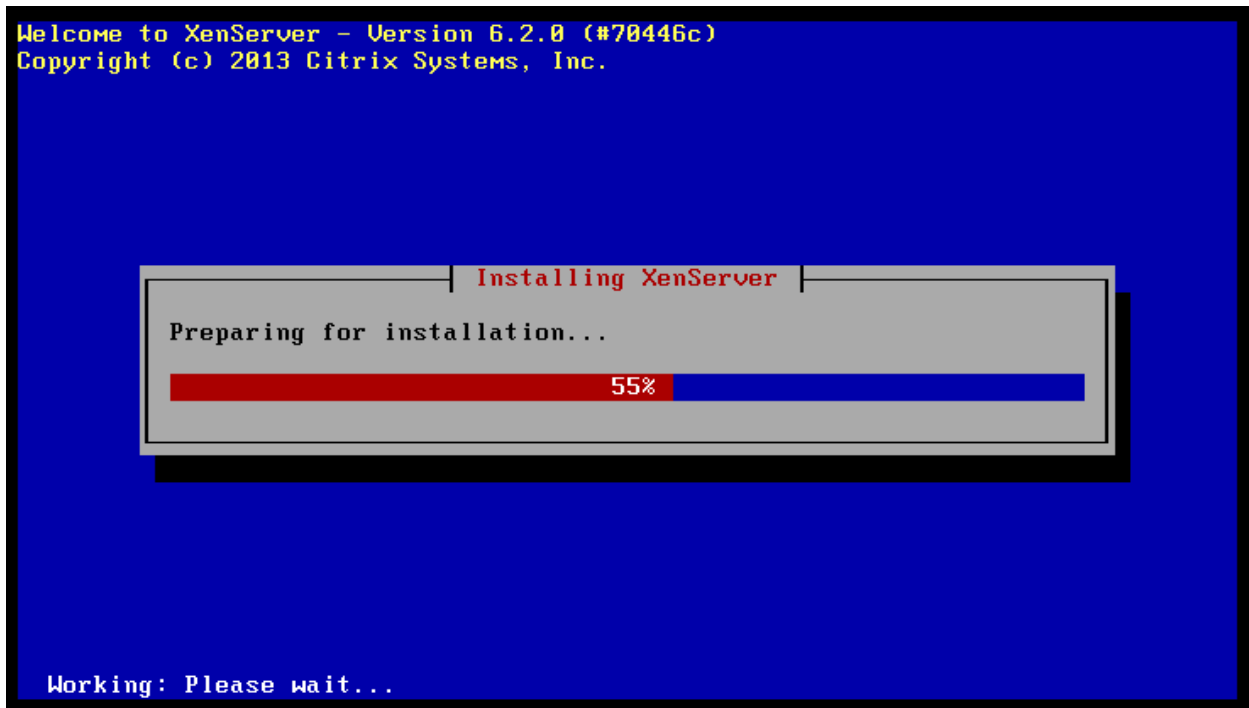
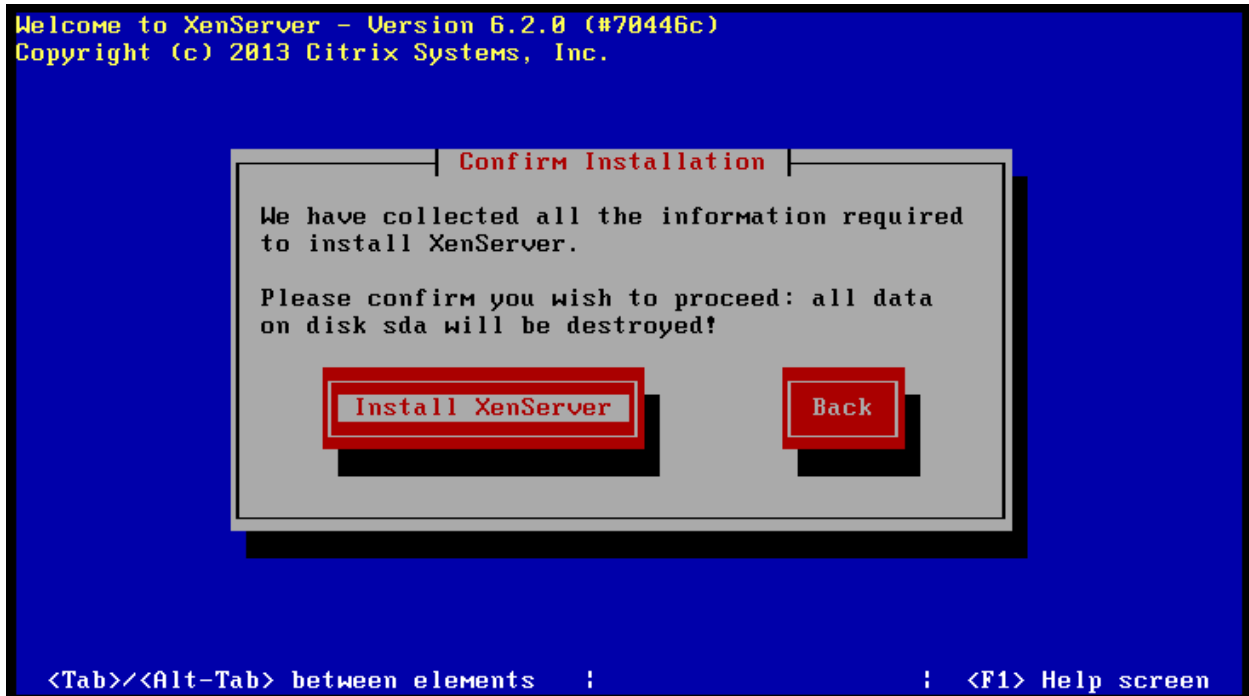




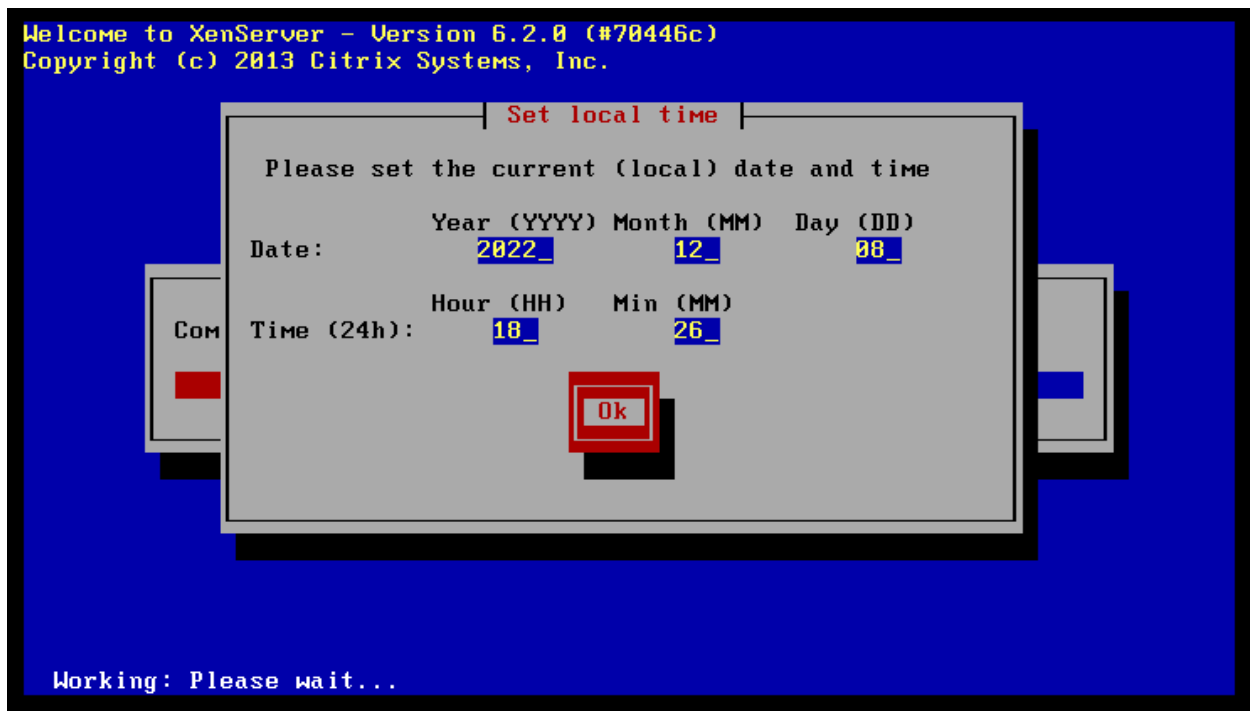
Then Select Manual Time Entry



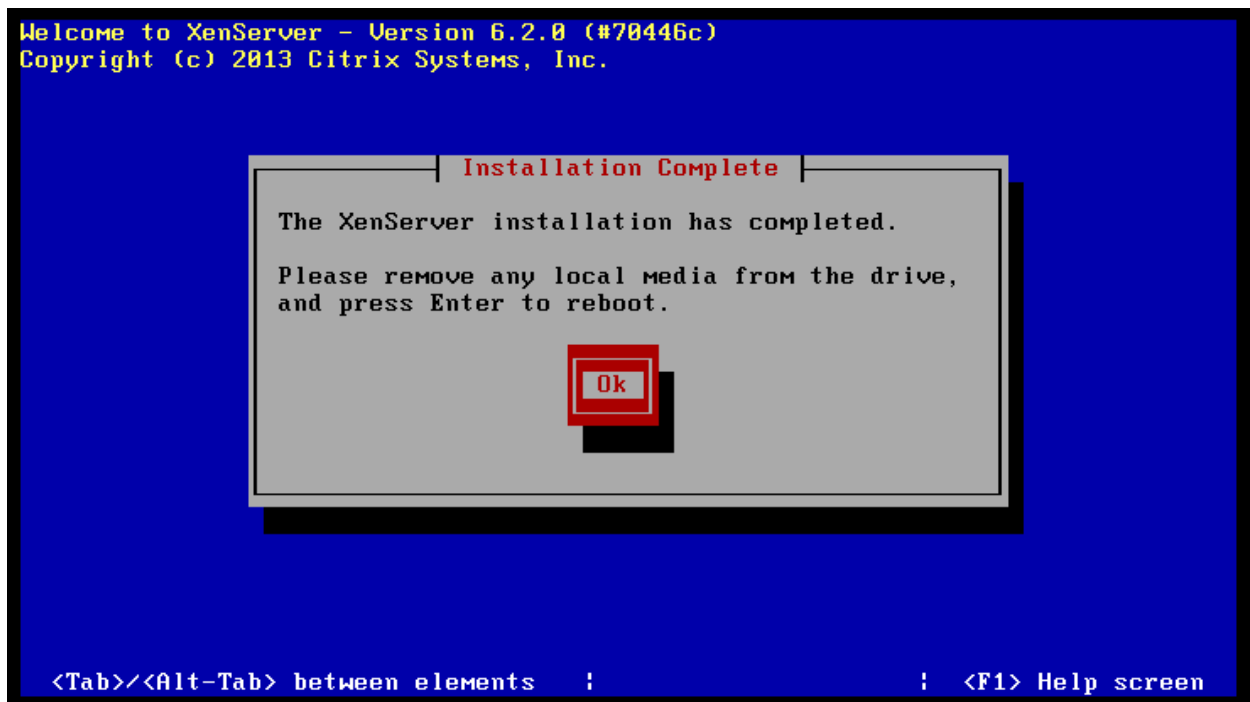
Click on Install



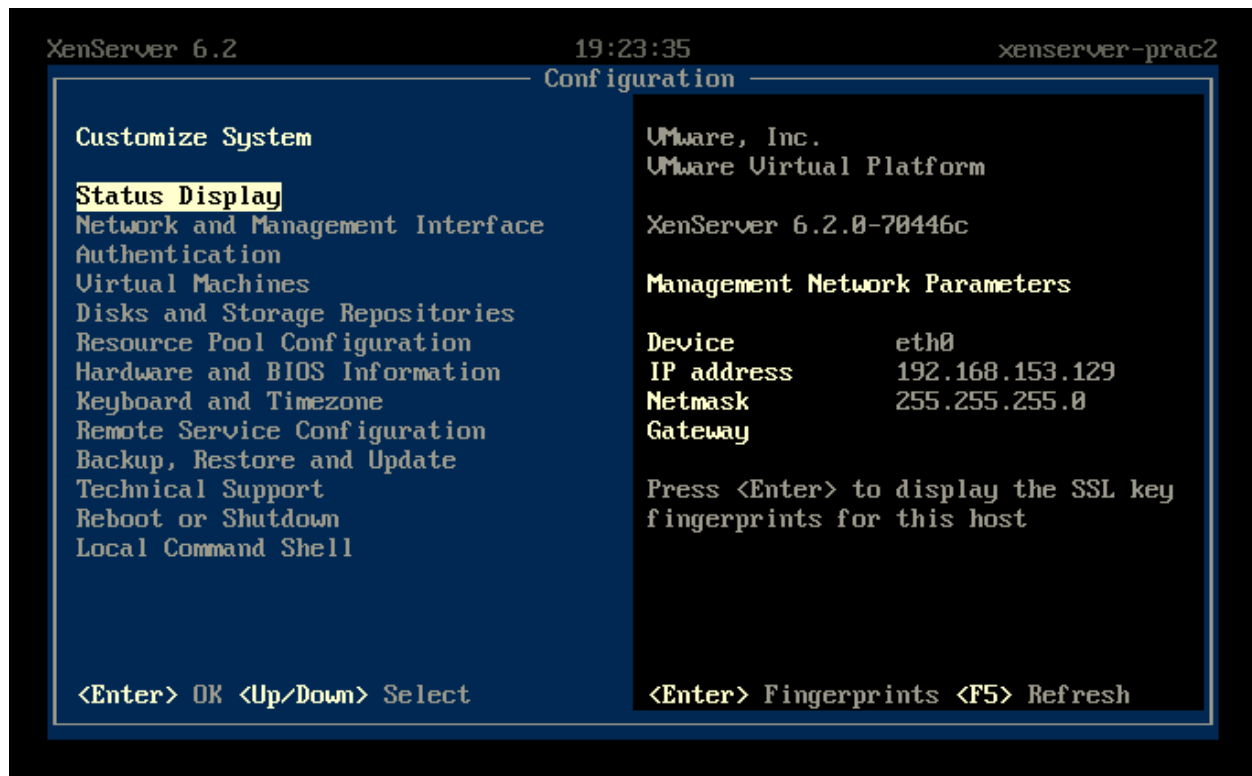
Set Date and Time












And reboot it.



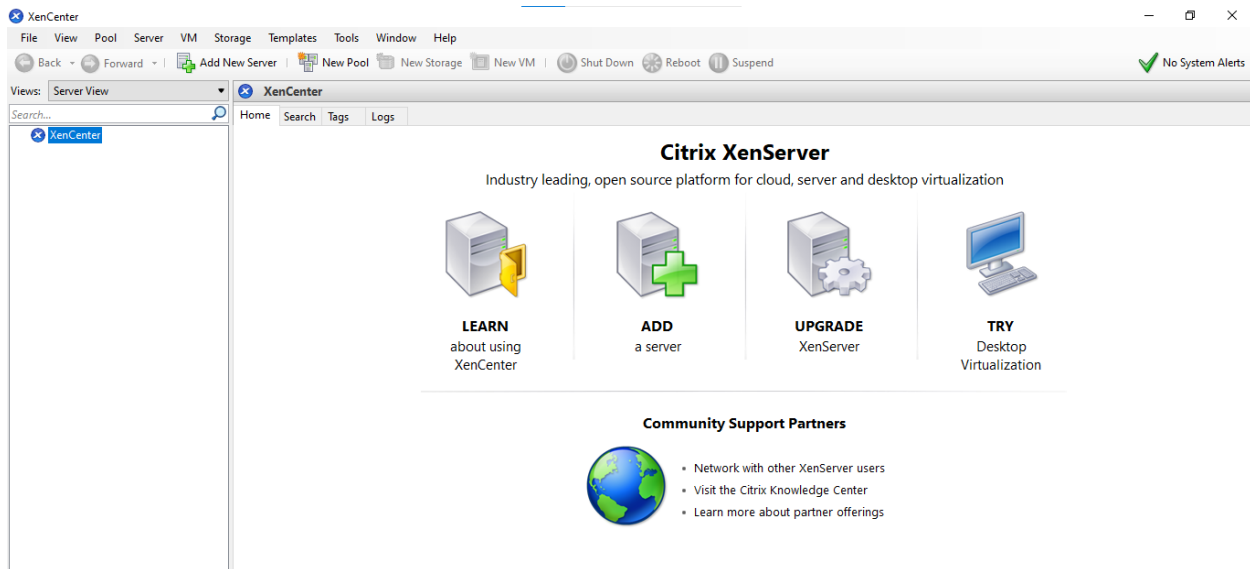
Done



Step 7: Install XenClient Software

Name	Date modified	Type	Size
 VMware-viclient-all-5.1.0-786111	6/22/2013 1:08 PM	Application	355,688 KB
 VMware-viclient-all-5.1.0-786111	7/31/2022 12:41 PM	Compressed (zipp...	355,694 KB
 VMware-VMvisor-Installer-5.1.0-799733.x...	9/26/2012 3:56 AM	Disc Image File	307,798 KB
 VMware-VMvisor-Installer-5.1.0-799733.x...	7/31/2022 12:41 PM	Compressed (zipp...	301,721 KB
 Windows Server 2012RC	11/27/2022 2:55 PM	Disc Image File	3,535,730 KB
 XenServer-6.2.0-install-cd (ISO Image)	11/8/2022 11:49 AM	Compressed (zipp...	566,117 KB
 XenServer-6.2.0-install-cd	7/20/2013 9:45 AM	Disc Image File	576,610 KB
 XenServer-6.2.0-XenCenter (Client)	11/8/2022 11:49 AM	Compressed (zipp...	48,891 KB
 XenServer-6.2.0-XenCenter	10/26/2013 2:28 PM	Windows Installer ...	49,649 KB

Open XenClient



Step 8: Click on Add and Enter IP Address and Password and Click on Add

The screenshot shows the "Add New Server" dialog box. The title bar reads "Add New Server". The main text says "Enter the host name or IP address of the server you want to add and your user login credentials for that server." There are three input fields: "Server:" with the value "192.168.153.129", "User name:" with the value "root", and "Password:" with masked characters. At the bottom right are "Add" and "Cancel" buttons.

Server: 192.168.153.129

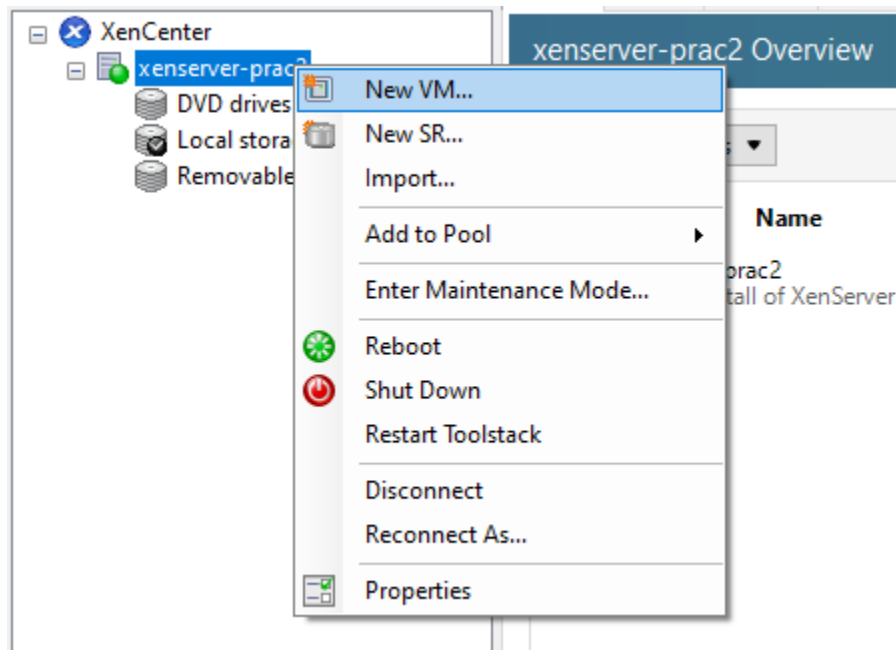
User login credentials

User name: root

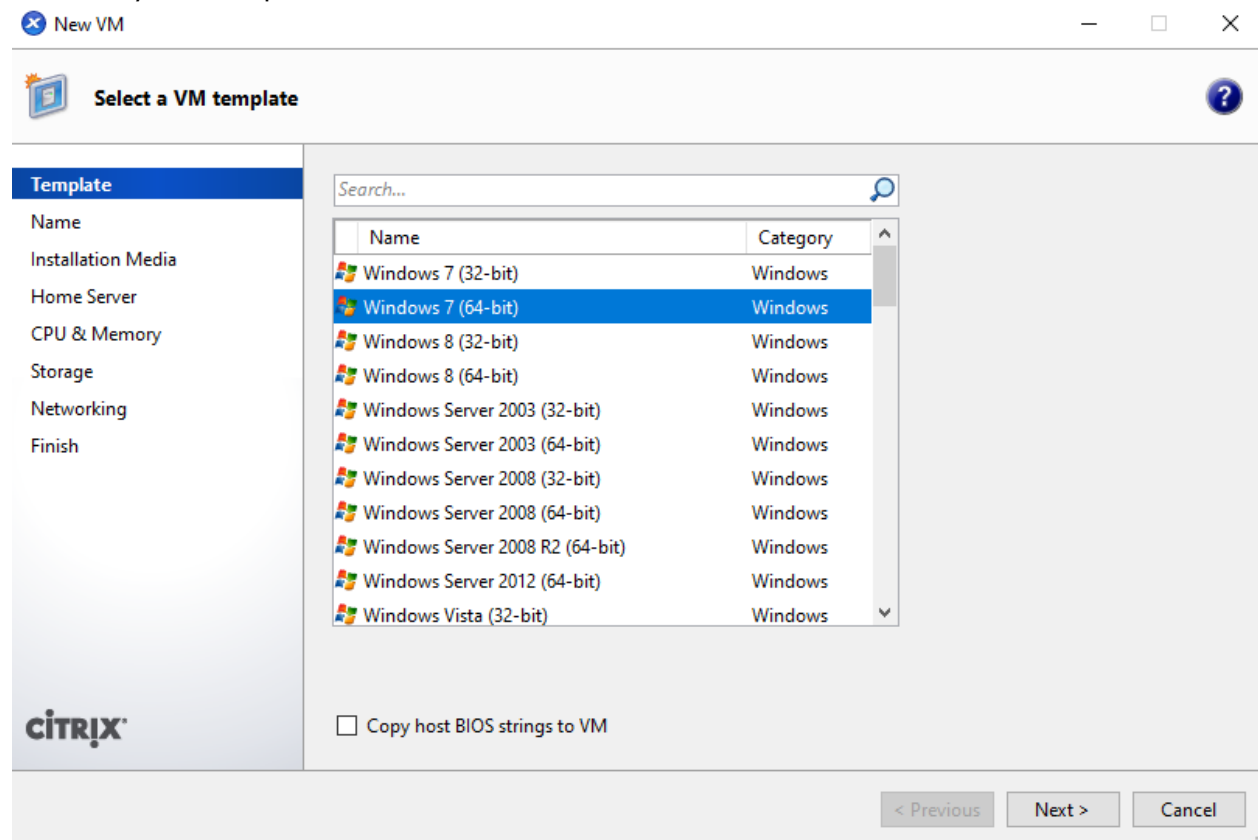
Password: ••••••••

Add Cancel

Click on New VM



Select any VM Template



Give Name and Click on Next

New VM

Name the new virtual machine

Enter a name that will help you to identify the virtual machine later. This could be a name that describes its software and hardware such as RHEL DHCP Server, Win2K3 XenApp Server or Exchange 2007 Client Access Server. This name will also be displayed in XenCenter's Resources pane and can be changed later.

You can also add a more detailed description of the VM, if you wish.

Name:

Description:

< Previous Next > Cancel

New VM

Locate the operating system installation media

Select the installation method for the operating system software you want to install on the new VM.

☒ Install from ISO library or DVD drive:

[New ISO library...](#)

☐ Boot from network

< Previous Next > Cancel

New VM

?

Select a home server

Template

Name

Installation Media

Home Server

CPU & Memory

Storage

Networking

Finish

When you nominate a home server for a virtual machine, the virtual machine will always be started up on that server if it is available. If this is not possible, then an alternate server within the same pool will be selected automatically.

☐ Don't assign this VM a home server. The VM will be started on any server with the necessary resources.
(Shared storage required)

☒ Place the VM on this server:

xenserver-prac2 1189 MB available (2047 MB total)

< Previous

Next >

Cancel

Set Memory 2048

New VM

?

Allocate processor and memory resources

Template

Name

Installation Media

Home Server

CPU & Memory

Storage

Networking

Finish

Specify the number of virtual CPUs and the amount of memory that will be initially allocated to the new virtual machine.

Number of vCPUs:

1

Memory:

2048

MB

The amount of memory allocated to the new VM is greater than the amount of physical memory on any server in the pool.

Server 'xenserver-prac2' has 2047 MB of physical memory in total.

You will not be able to start this VM without increasing the amount of physical memory on one of the servers in the pool.

< Previous

Next >

Cancel

New VM

Configure storage for the new VM

Template
Name
Installation Media
Home Server
CPU & Memory
Storage
Networking
Finish

The virtual machine template you selected earlier provides the virtual disks listed below. You can change the properties of these virtual disks, and add more disks if required.

Alternatively, you can select the second option below to create a diskless VM that can be booted from the network and does not use any virtual disks.

When you have finished configuring disks for the new virtual machine, click Next to continue to the next step.

☒ Use these virtual disks:

Location	Size	Shared
Local storage on xenserver-prac2	24 GB	False

☐ Use storage-level fast disk clone

☐ Create a diskless VM that boots from the network

< Previous Next > Cancel

Uncheck the checkbox and Click on Create Now

New VM

Ready to create the new virtual machine

Template
Name
Installation Media
Home Server
CPU & Memory
Storage
Networking
Finish

All the necessary information has been collected and the wizard is ready to provision the new virtual machine using the settings shown below.

Review these settings, then click Previous if you need to change anything. Otherwise, click Create Now to create the new VM. It may take several minutes to create the new VM.

Template	Windows 7 (64-bit)
Name	Prac-2
Install Method	CD
Installation Source	DVD drive 0 on xenserver-prac2
Home Server	xenserver-prac2
vCPUs	1
Memory	2304 MB
Disk 0	24 GB
Network Interface 0	Network 0

☐ Start the new VM automatically

< Previous Create Now Cancel

Done

XenCenter

FileViewPoolServerVMStorageTemplatesToolsWindowHelp

BackForward

Add New ServerNew PoolNew StorageNew VM

StartRebootSuspend

No System Alerts

Views: Server View

Prac-2 on 'xenserver-prac2'

Logged in as: Local root account

Search...

XenCenter

xenserver-prac2

Prac-2

DVD drives

Local storage

Removable storage

GeneralMemoryStorageNetworkingConsolePerformanceSnapshotsLogs

VM General Properties

PropertiesExpand allCollapse all

General

Name:Prac-2

Description:

Tags:<None>

Folder:<None>

Operating System:Unknown

BIOS strings copied:No

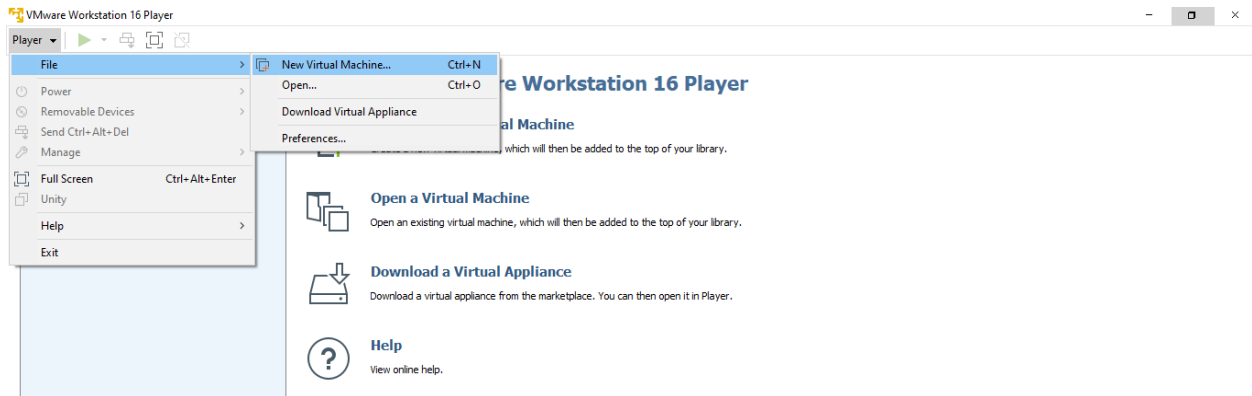
UUID:cb533b76-7e9e-473a-78b1-6ee79388dae8

Boot Options

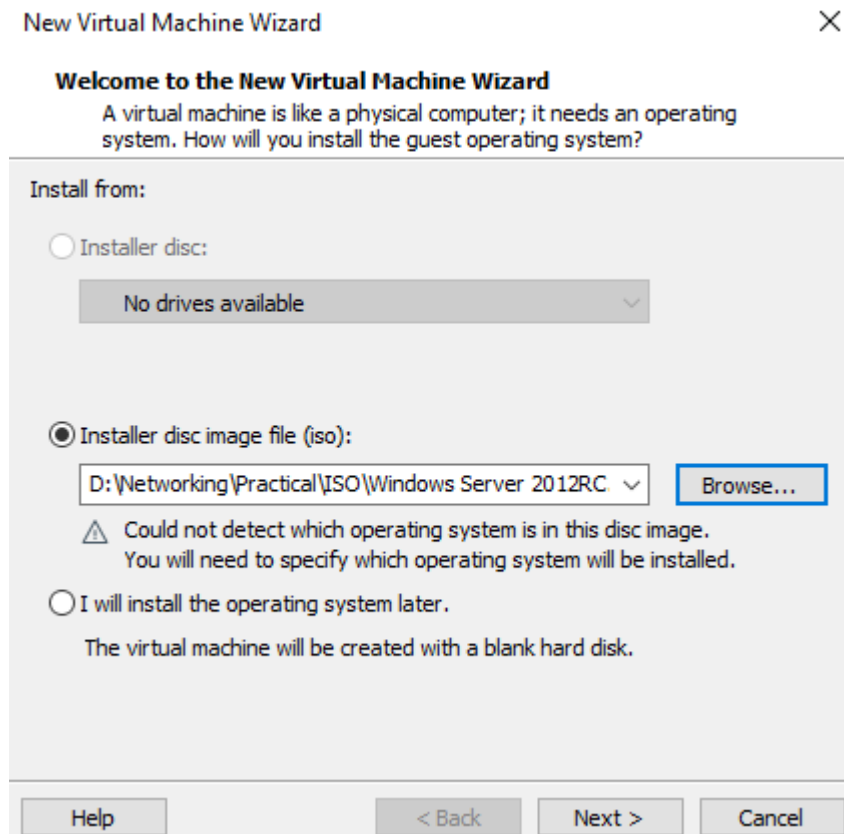
Practical No. 3

Aim: Installation of Microsoft Hyper-V. Deployment of virtual machine using Hyper-V.

Step 1: Go to file and Click on New Virtual Machine



Step 2: Select Installer disc image file (iso) and Browse Windows Server iso file.



Step 3: Select a Guest Operating System (Microsoft and select version: Hyper-V)

New Virtual Machine Wizard ✕

Select a Guest Operating System
Which operating system will be installed on this virtual machine?

Guest operating system

☒ Microsoft Windows
☐ Linux
☐ Other

Version

Hyper-V (unsupported) ▾

Help < Back **Next >** Cancel

Step 4: Name the Virtual Machine

New Virtual Machine Wizard ✕

Name the Virtual Machine
What name would you like to use for this virtual machine?

Virtual machine name:

Practical 3

Location:

D:\Networking\Practical\VMware Practicals\practical3 **Browse...**

< Back **Next >** Cancel

Select Disk size 60GB

New Virtual Machine Wizard ✕

Name the Virtual Machine
What name would you like to use for this virtual machine?

Virtual machine name:

Location:
 [Browse...](#)

< Back Next > Cancel

Step 5: Edit virtual machine setting

VMware Workstation 16 Player

Player ▶ 🖨 📐 🗑

Home

Practical 3

Practical 2

Practical 1

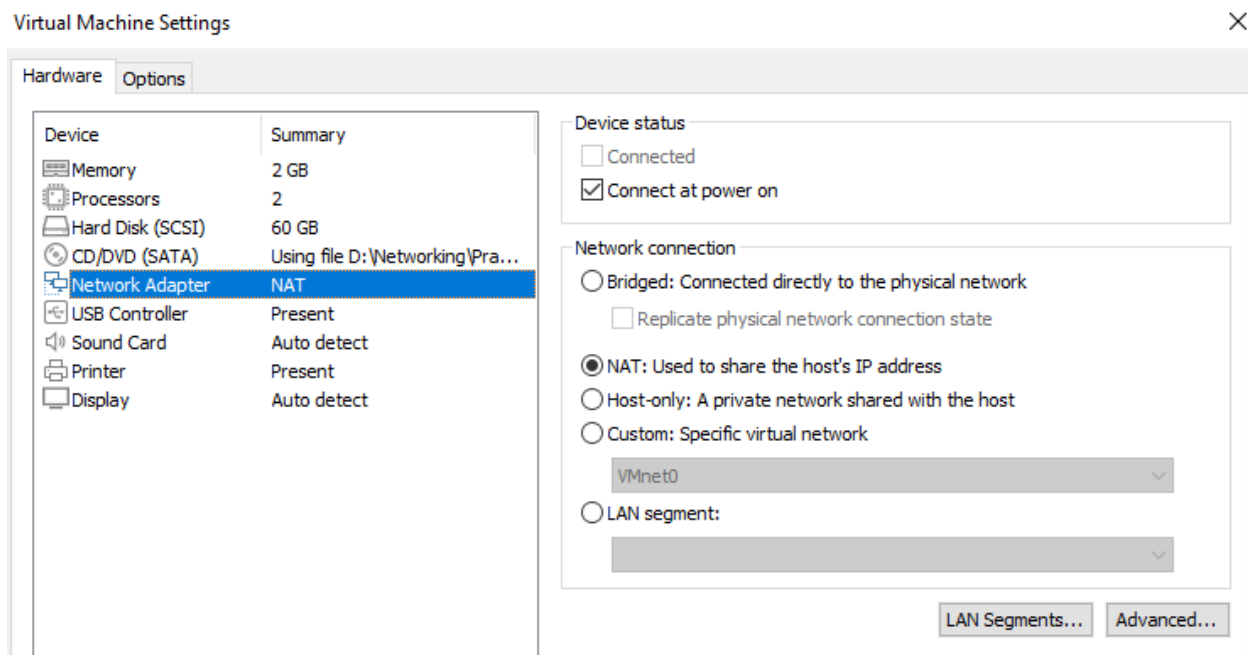
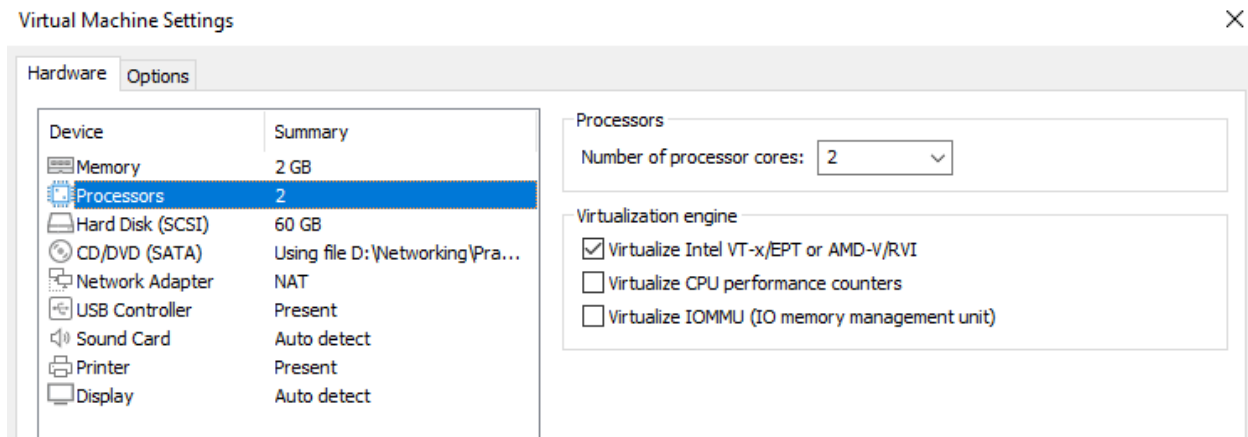
Virtual Machine Name:
Practical 3

State: Powered Off
OS: Hyper-V (unsupported)
Version: Workstation 16.2.x virtual machine
RAM: 1 GB

▶ Play virtual machine

🔧 Edit virtual machine settings

Change Memory to 4GB, Processor 2 and Check Virtualize Intel VT and Network NAT.




Step 6: Create empty folder in C drive

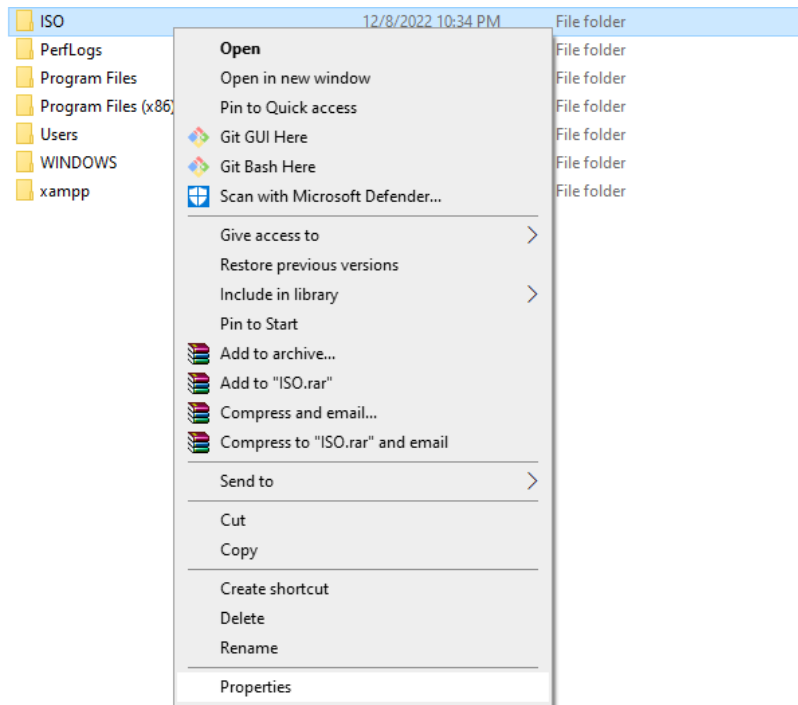
Name	Date modified	Type	Size
Drivers	11/19/2021 12:31 PM	File folder	
Intel	10/13/2021 1:43 PM	File folder	
ISO	12/8/2022 10:32 PM	File folder	
PerfLogs	12/7/2019 2:44 PM	File folder	
Program Files	12/8/2022 3:16 PM	File folder	
Program Files (x86)	12/8/2022 7:27 PM	File folder	
Users	12/9/2021 1:08 PM	File folder	
WINDOWS	11/27/2022 8:13 PM	File folder	
xampp	11/17/2021 9:13 PM	File folder	

Copy Windows Server iso and paste in Newly created folder (ISO)

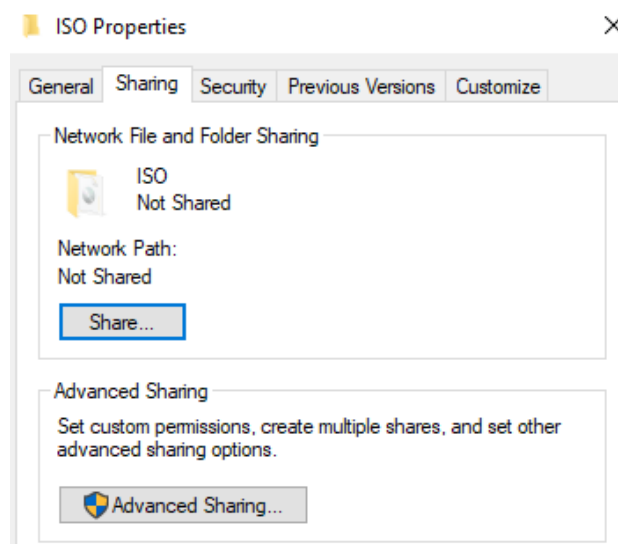
PC > Local Disk (C:) > ISO

Name	Date modified	Type	Size
 Windows Server 2012RC	11/27/2022 2:55 PM	Disc Image File	3,535,730 KB

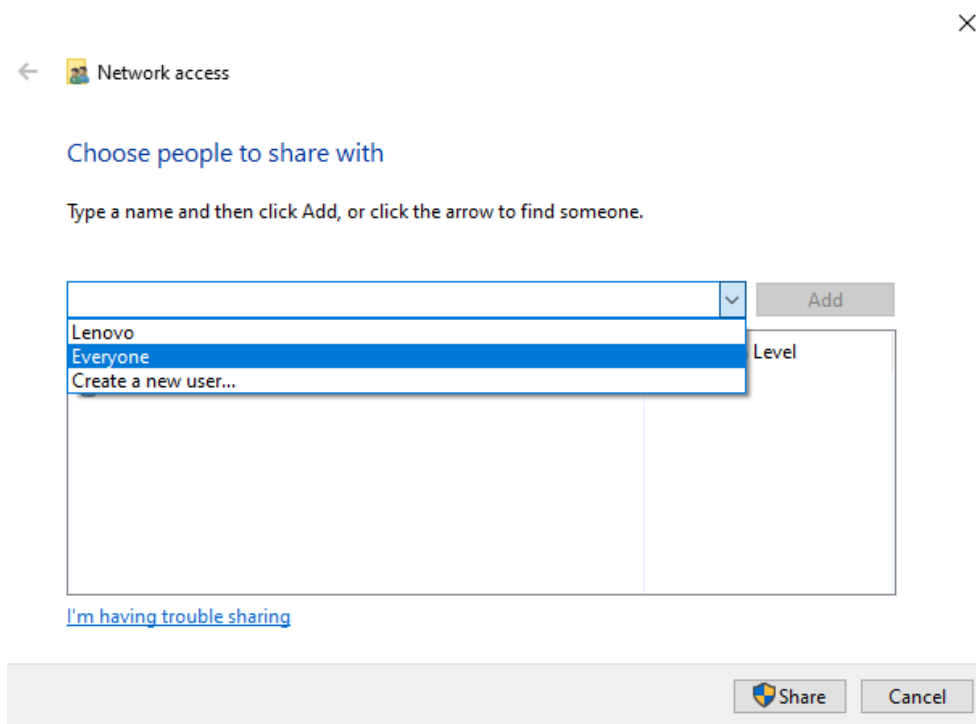
Right click on ISO folder and Click on properties



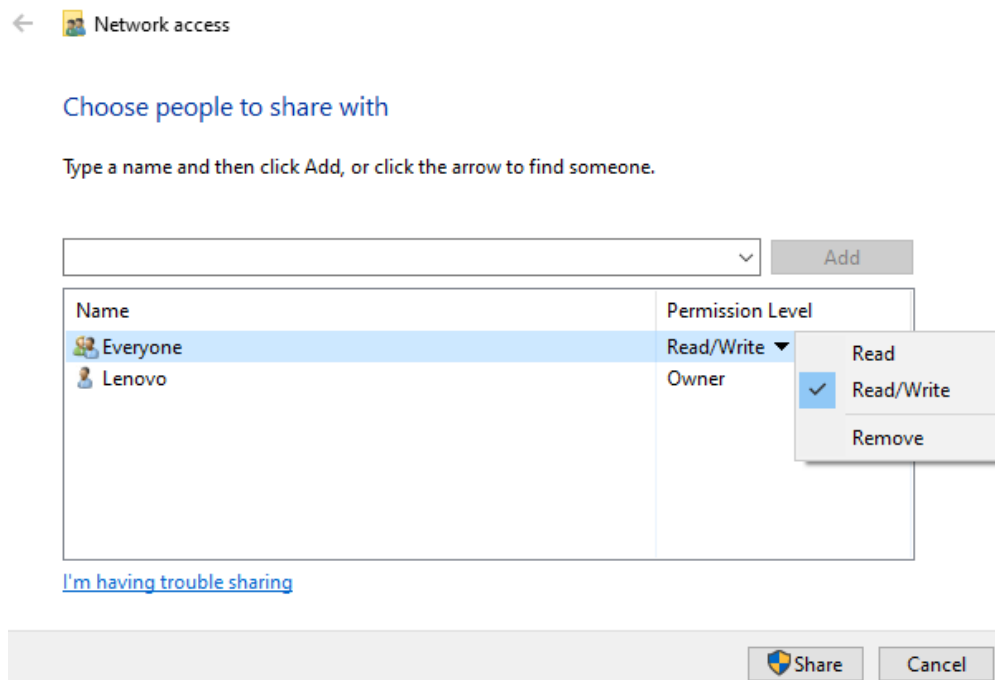
Inside properties go to Sharing



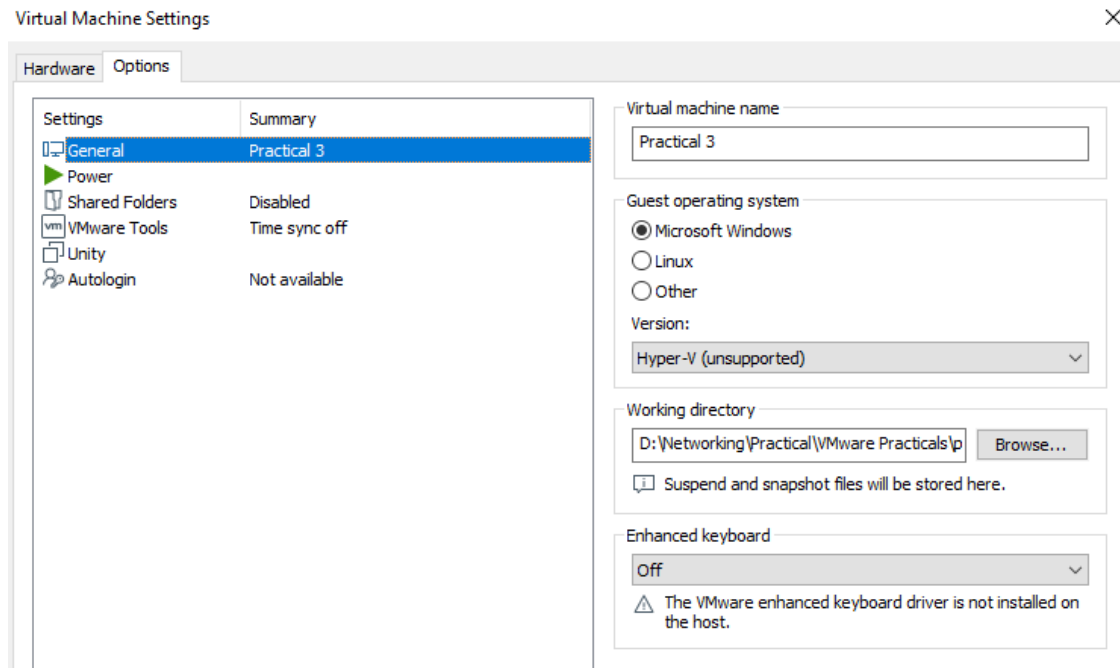
Click on Share and Select Everyone from dropdown



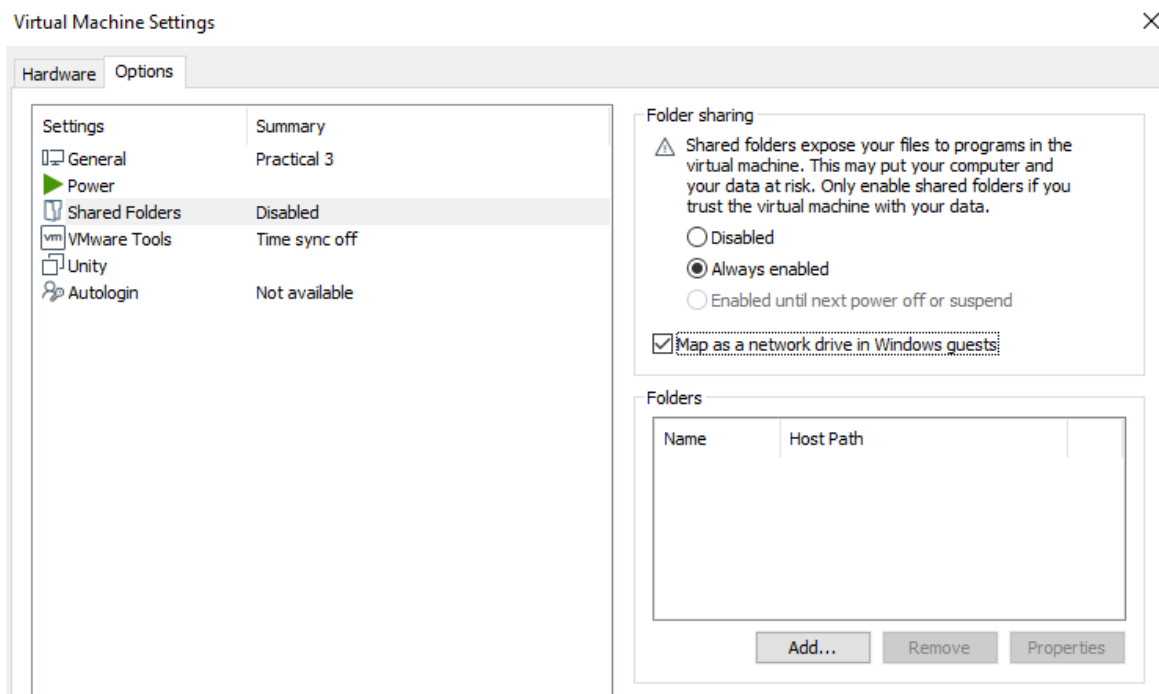
Then click on Add and Give Read Write permission. Then click on Share



Step 7: Go to VMWare and Edit virtual machine setting. Go to options



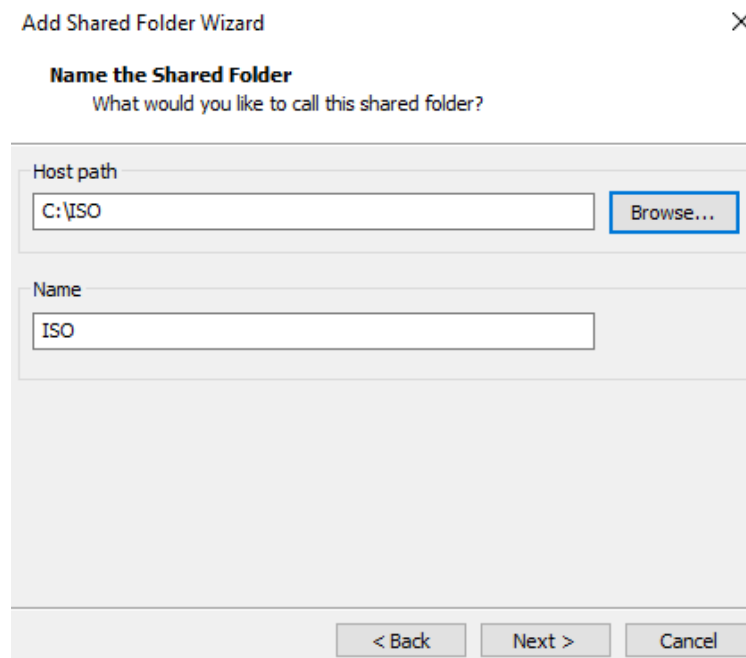
Go to shared folder and select Always enabled option. Check checkbox



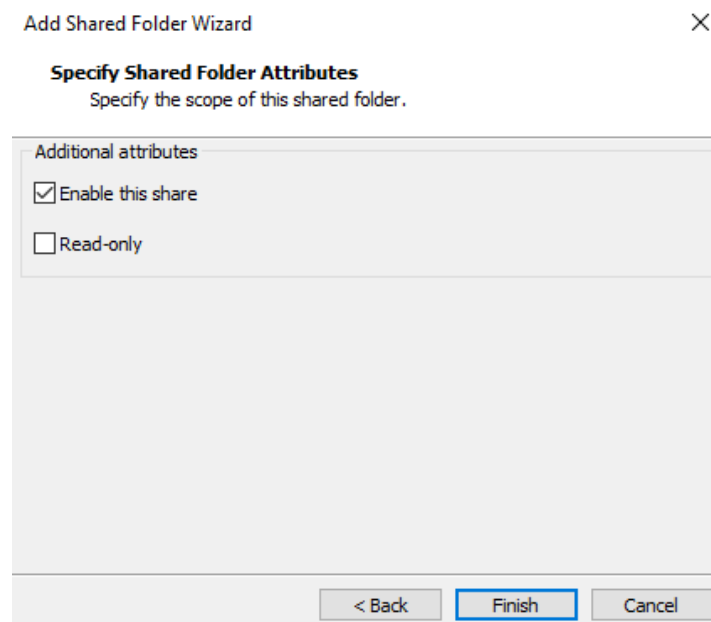
Then click on Add. After click on Add the new window pop up.



Click on Next. Browse the shared folder



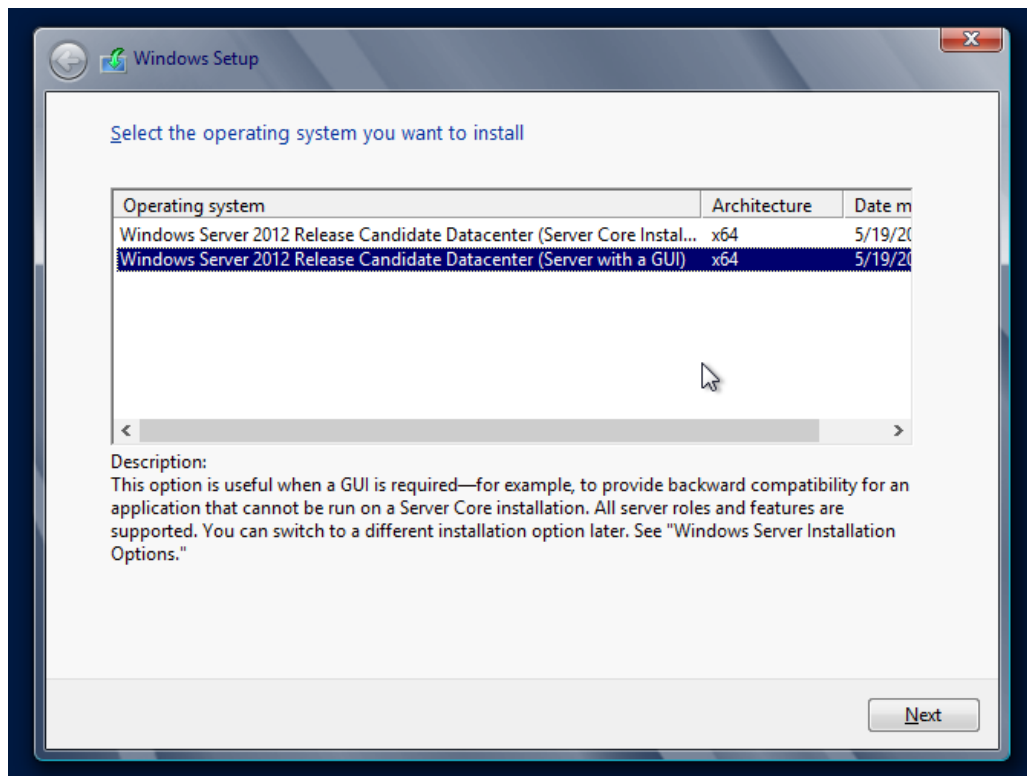
Check Enable share checkbox and then Finish



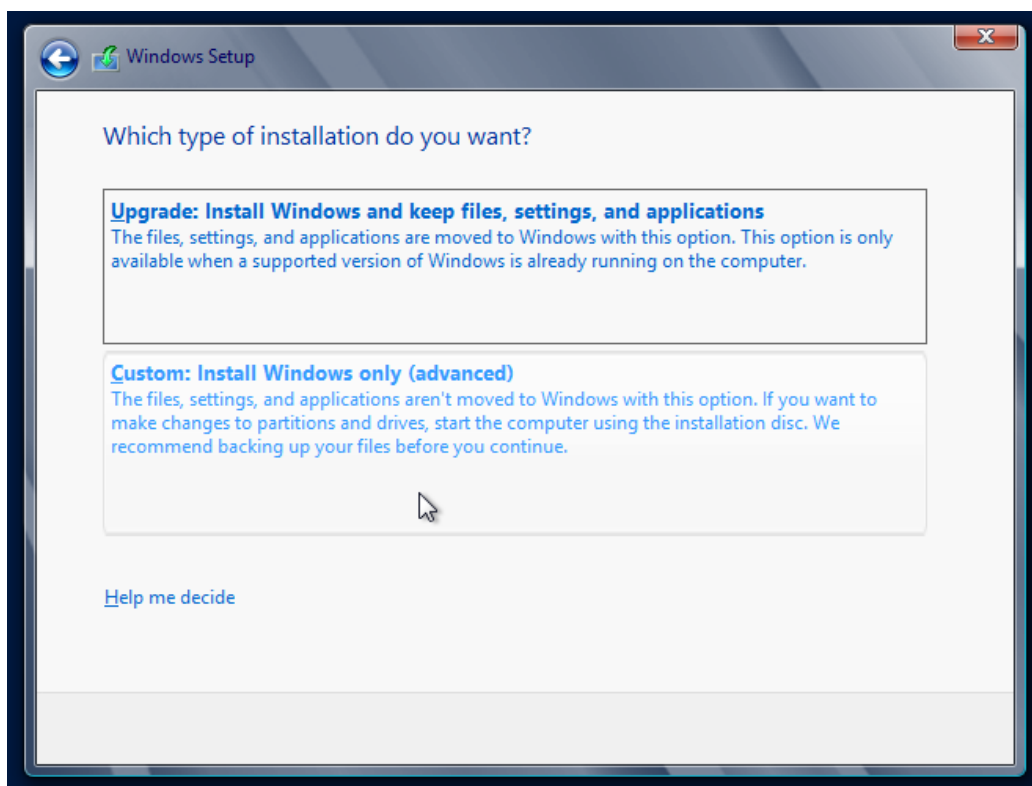
Power on the virtual machine

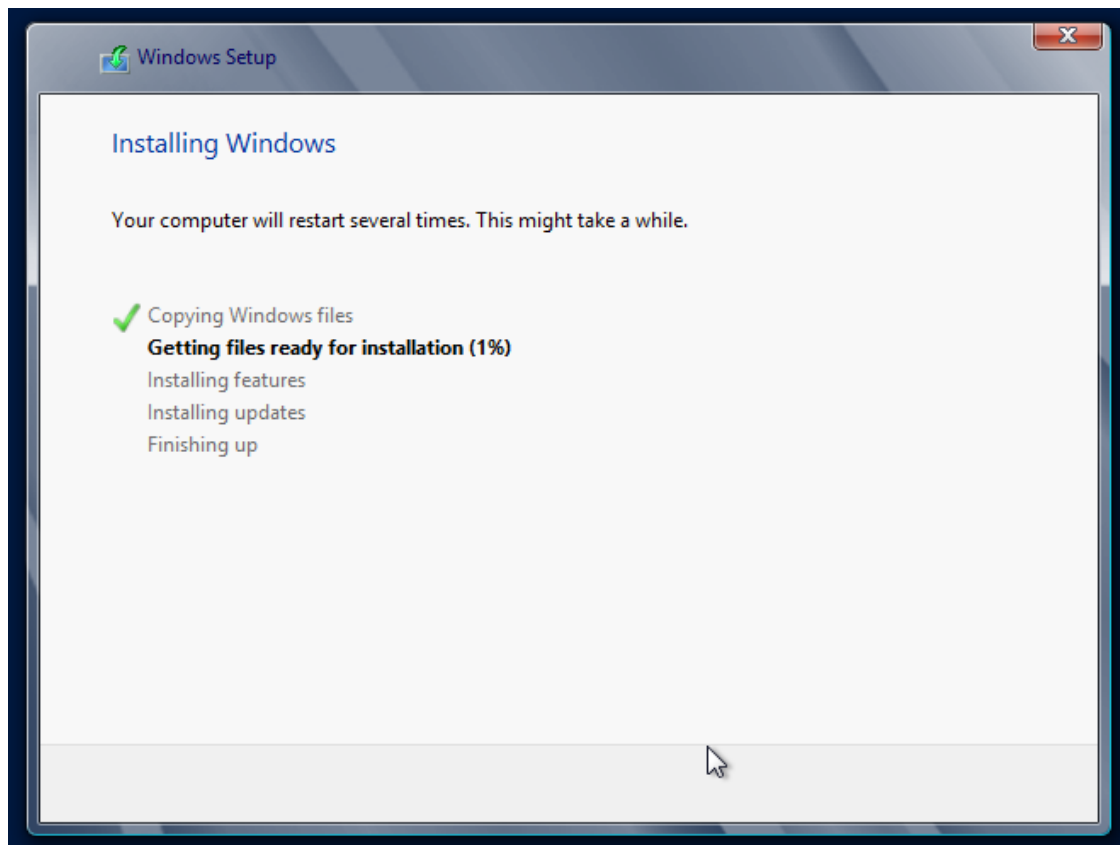


Select GUI



Select Custom and then Select Drive






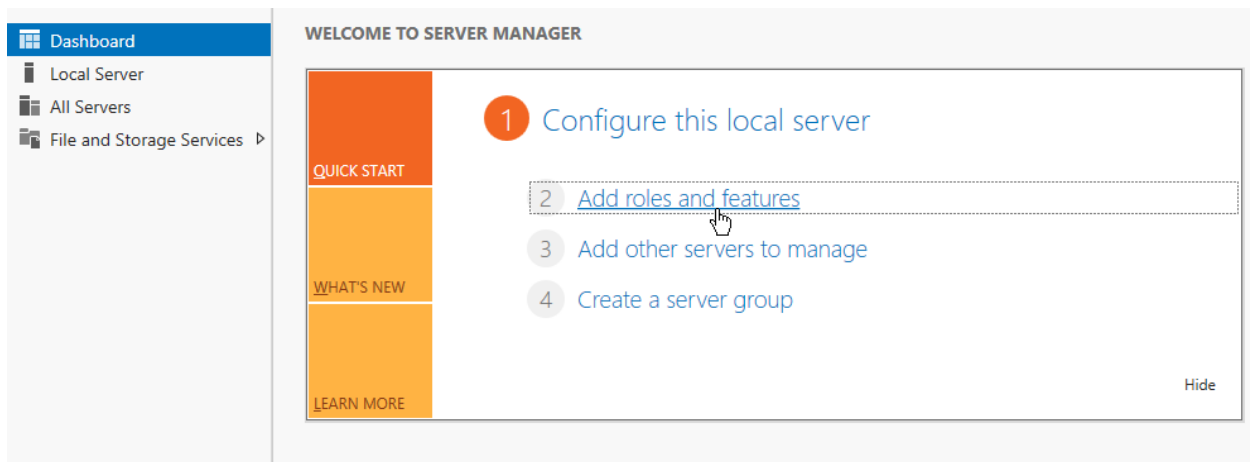
After Successfully installation. Enter Password and click on Finish

Settings

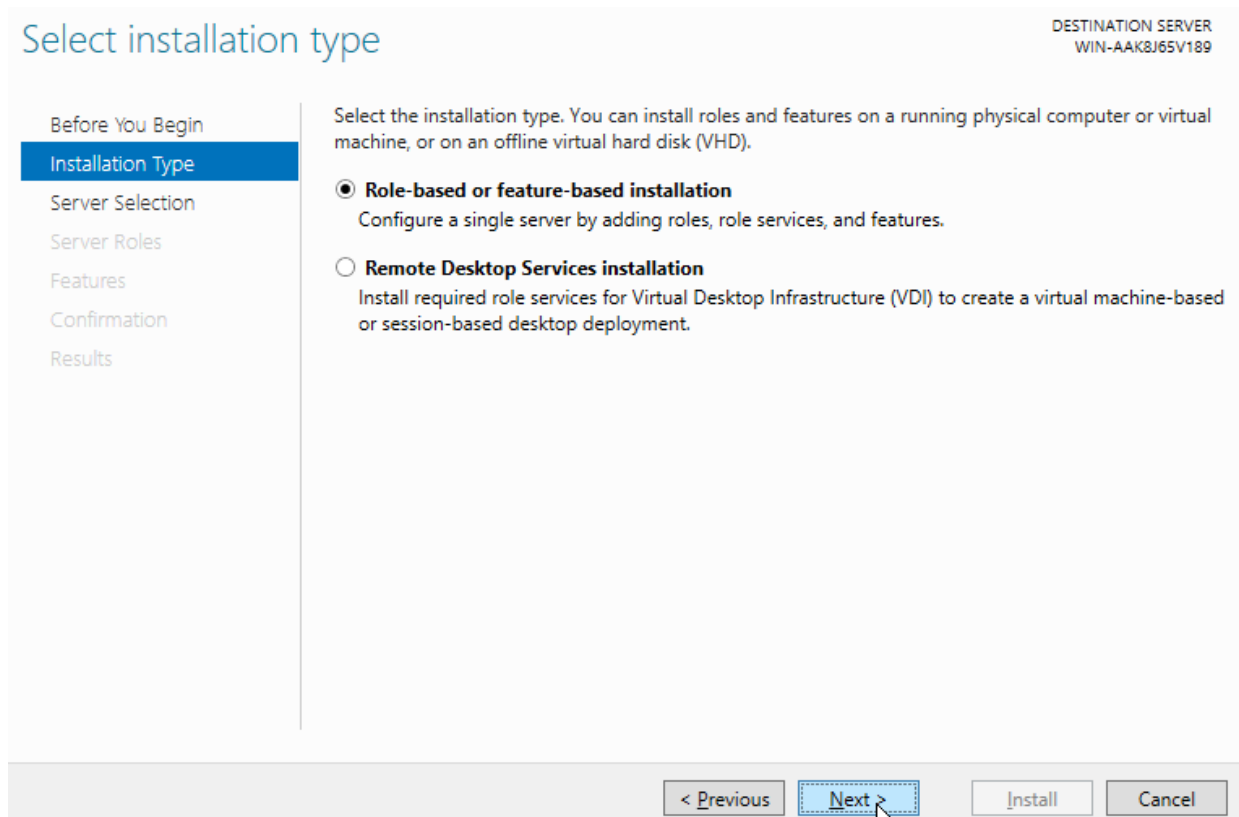
Type a password for the built-in administrator account that you can use to sign in to this computer.

User name	<input type="text" value="Administrator"/>
Password	<input type="password" value="••••••••"/>
Reenter password	<input type="password" value="••••••••"/> 

After that click on Add roles and features



Select Installation type Role based



Select Server Role Hyper-V. Add feature and click on Next.

Select server roles

DESTINATION SERVER
WIN-AAK8J65V189

Before You Begin
Installation Type
Server Selection
Server Roles
Features
Confirmation
Results

Select one or more roles to install on the selected server.

Roles	Description
<input type="checkbox"/> Active Directory Certificate Services	Hyper-V provides the services that you can use to create and manage virtual machines and their resources. Each virtual machine is a virtualized computer system that operates in an isolated execution environment. This allows you to run multiple operating systems simultaneously.
<input type="checkbox"/> Active Directory Domain Services	
<input type="checkbox"/> Active Directory Federation Services	
<input type="checkbox"/> Active Directory Lightweight Directory Services	
<input type="checkbox"/> Active Directory Rights Management Services	
<input type="checkbox"/> Application Server	
<input type="checkbox"/> DHCP Server	
<input type="checkbox"/> DNS Server	
<input type="checkbox"/> Fax Server	
<input checked="" type="checkbox"/> File And Storage Services (Installed)	
<input checked="" type="checkbox"/> Hyper-V	
<input type="checkbox"/> Network Policy and Access Services	
<input type="checkbox"/> Print and Document Services	
<input type="checkbox"/> Remote Access	
<input type="checkbox"/> Remote Desktop Services	

< Previous Next > Install Cancel

Add Roles and Features Wizard

Add features that are required for Hyper-V?

The following tools are required to manage this feature, but do not have to be installed on the same server.

- Remote Server Administration Tools
 - Role Administration Tools
 - Hyper-V Management Tools
 - [Tools] Hyper-V Module for Windows PowerShell
 - [Tools] Hyper-V GUI Management Tools

☒ Include management tools (if applicable)

Add Features Cancel

Select Dot Net 3.5 click Next

Select features

DESTINATION SERVER
WIN-AAK8J65V189

Before You Begin
Installation Type
Server Selection
Server Roles
Features
Hyper-V
Virtual Switches
Migration
Default Stores
Confirmation
Results

Select one or more features to install on the selected server.

Features	Description
<input checked="" type="checkbox"/> .NET Framework 3.5 Features	.NET Framework 3.5 combines the power of the .NET Framework 2.0 APIs with new technologies for building applications that offer appealing user interfaces, protect your customers' personal identity information, enable seamless and secure communication, and provide the ability to model a range of business processes.
<input type="checkbox"/> .NET Framework 4.5 Features (Installed)	
<input type="checkbox"/> Background Intelligent Transfer Service (BITS)	
<input type="checkbox"/> BitLocker Drive Encryption	
<input type="checkbox"/> BitLocker Network Unlock	
<input type="checkbox"/> BranchCache	
<input type="checkbox"/> Client for NFS	
<input type="checkbox"/> Data Center Bridging	
<input type="checkbox"/> Enhanced Storage	
<input type="checkbox"/> Failover Clustering	
<input type="checkbox"/> Group Policy Management	
<input type="checkbox"/> Ink and Handwriting Services	
<input type="checkbox"/> Internet Printing Client	
<input type="checkbox"/> IP Address Management (IPAM) Server	

< Previous **Next >** Install Cancel

Select Restart checkbox

Confirm installation selections

DESTINATION SERVER
WIN-AAK8J65V189

Do you need to specify an alternate source path? One or more installation selections are missing source files on the destination server. Click Previous to clear the selection.

To install the following roles, role services, or features on selected server, click Install.

☒ Restart the destination server automatically if required

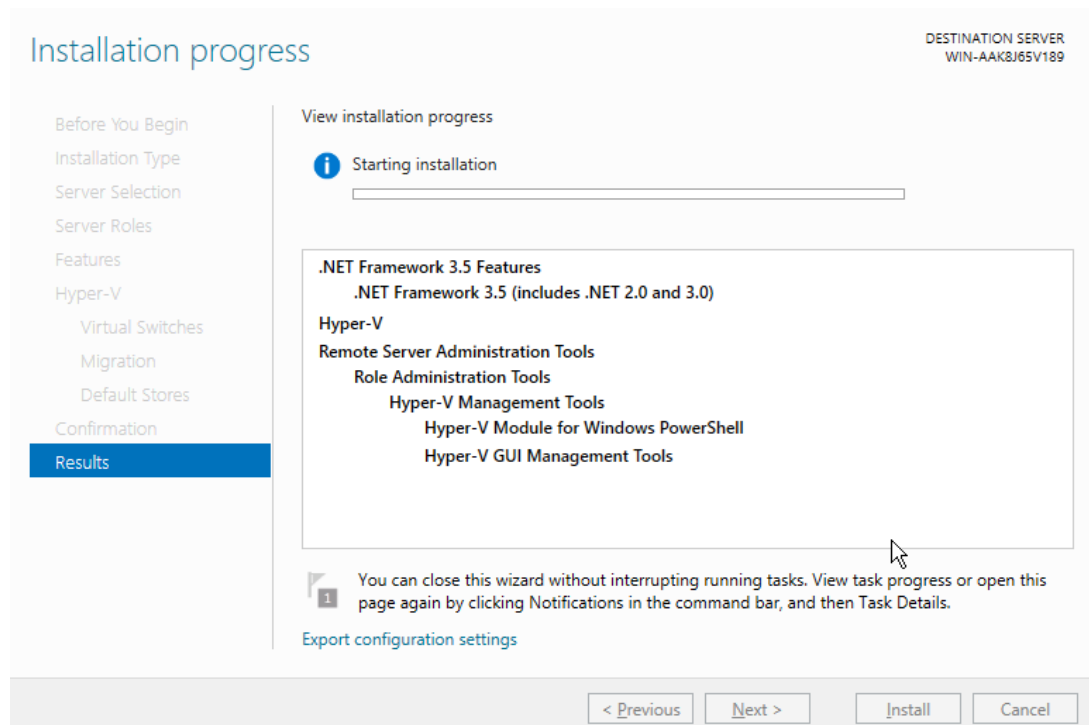
Optional features (such as administration tools) might be displayed on this page because they have been selected automatically. If you do not want to install these optional features, click Previous to clear their check boxes.

- .NET Framework 3.5 Features
 - .NET Framework 3.5 (includes .NET 2.0 and 3.0)
- Hyper-V
- Remote Server Administration Tools
 - Role Administration Tools
 - Hyper-V Management Tools
 - Hyper-V Module for Windows PowerShell
 - Hyper-V GUI Management Tools

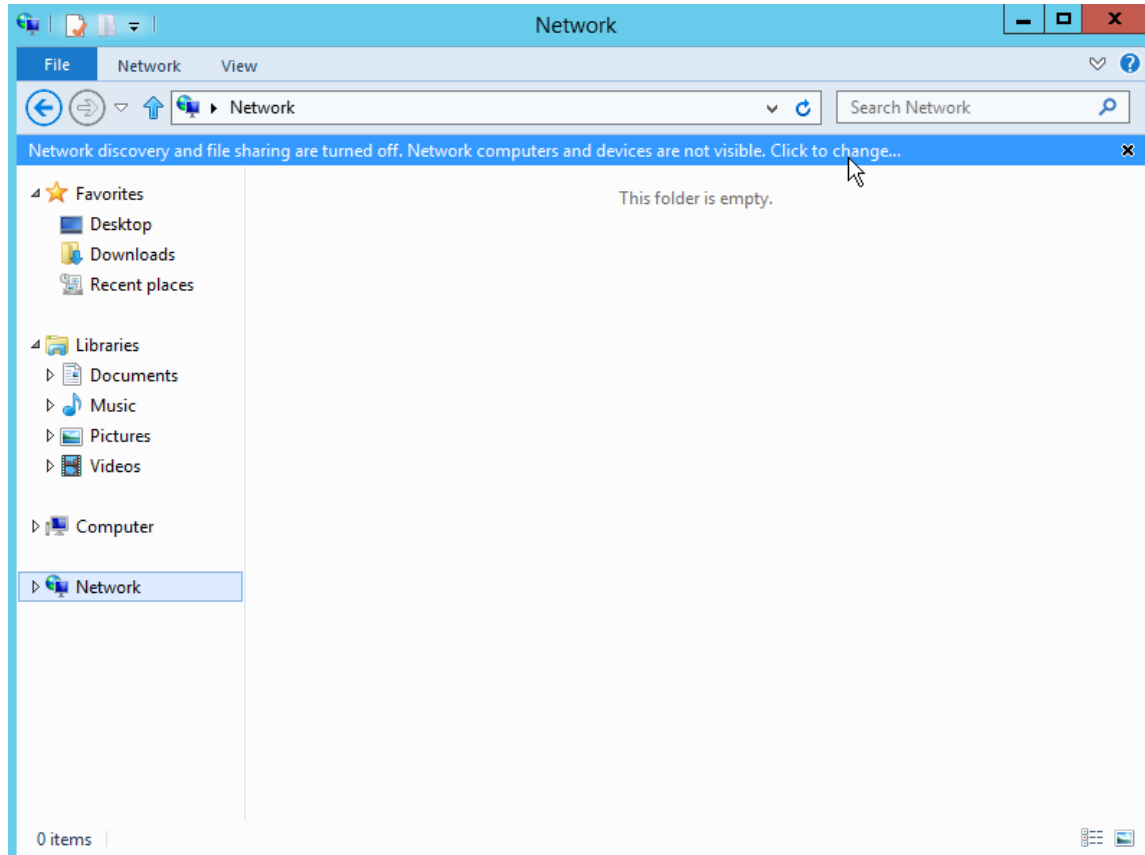
[Export configuration settings](#)
[Specify an alternate source path](#)

< Previous **Next >** Install Cancel

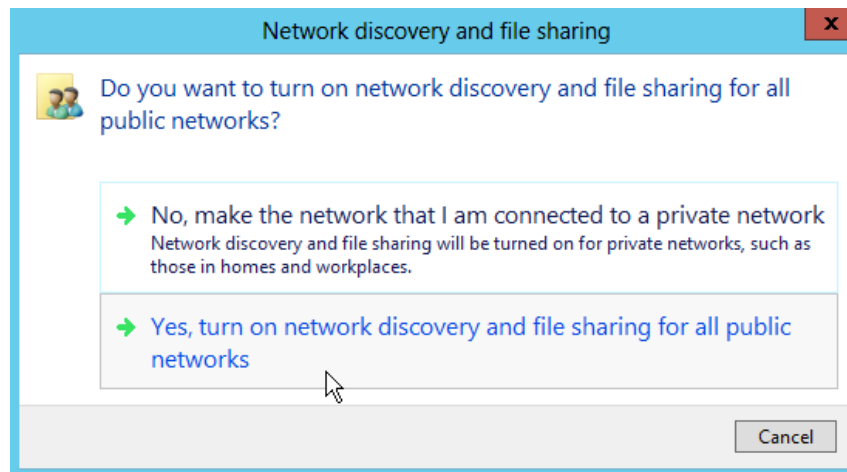
Click on Install



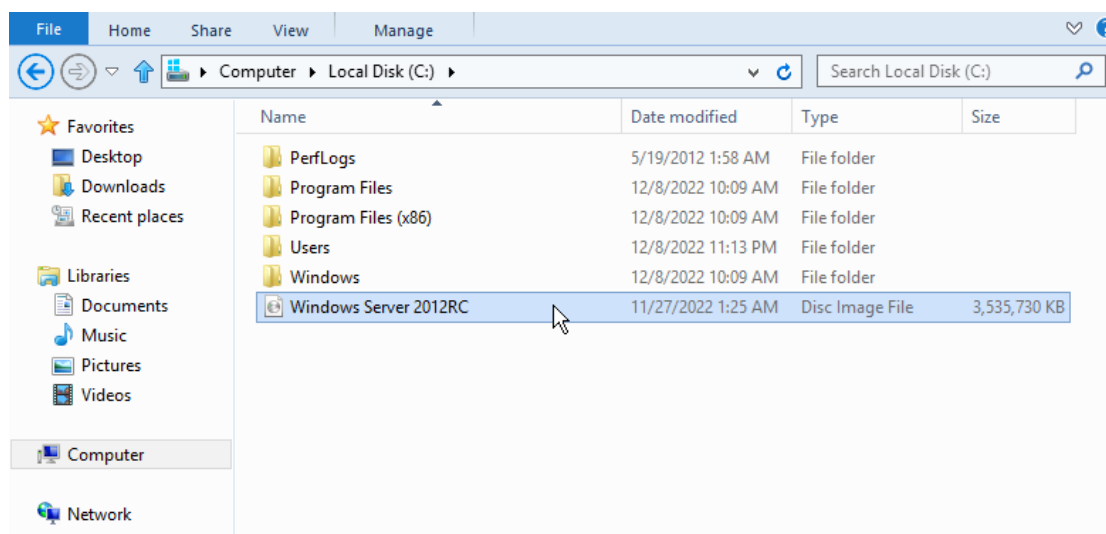
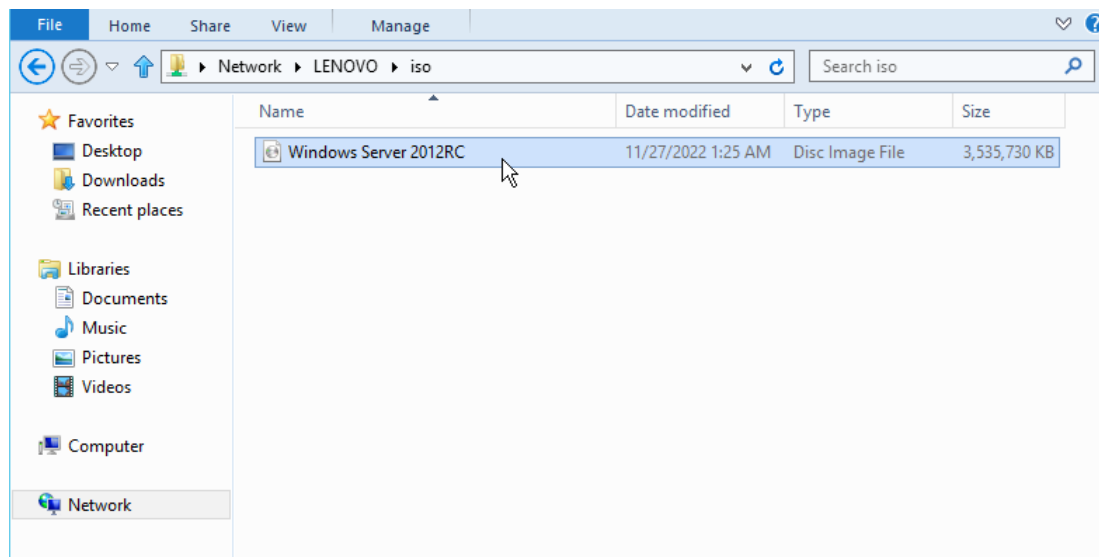
Open Folder and Go to Network, click to change and turn on



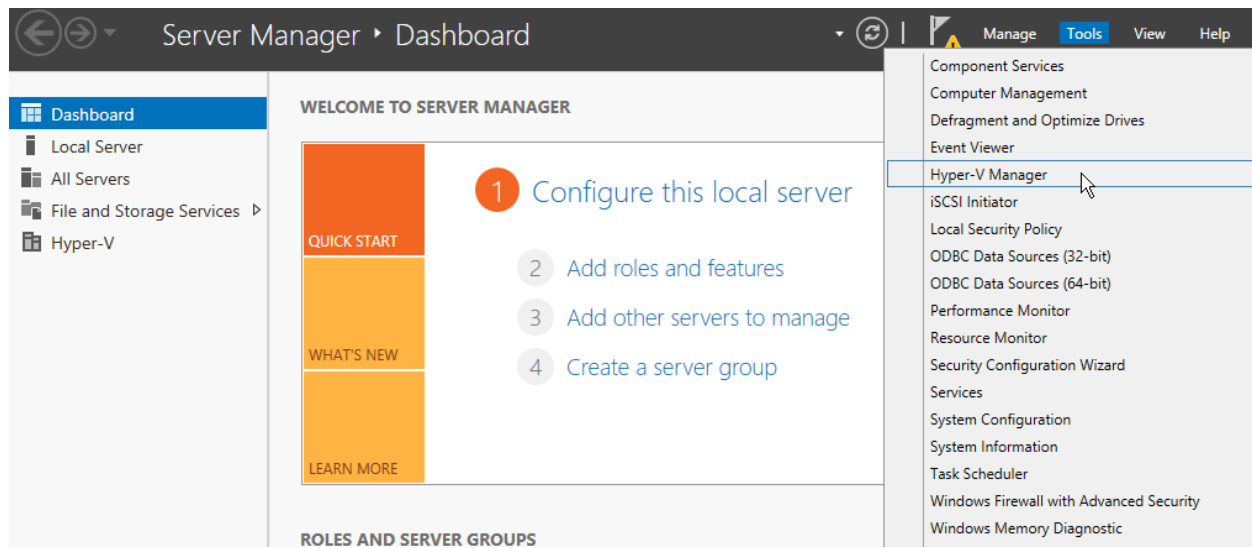
Click on Yes



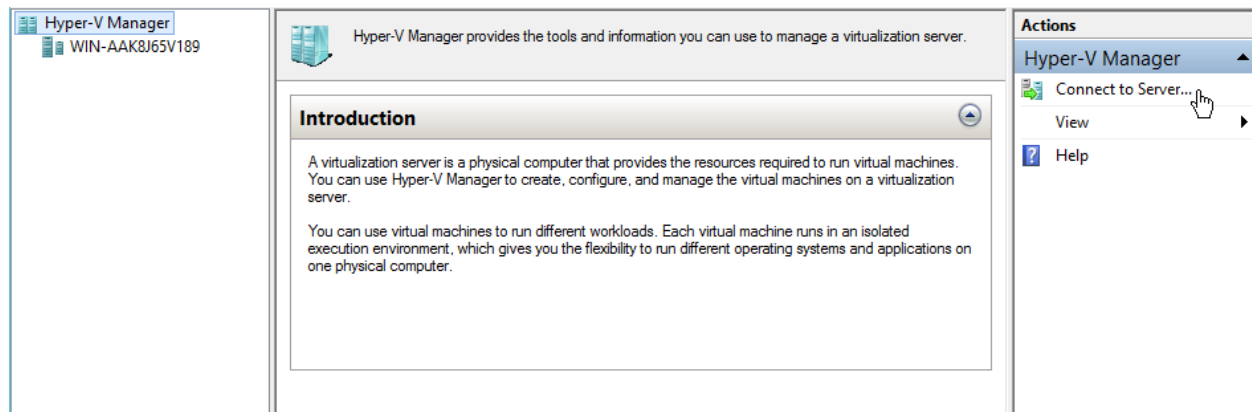
Copy iso file and paste in Computer C drive



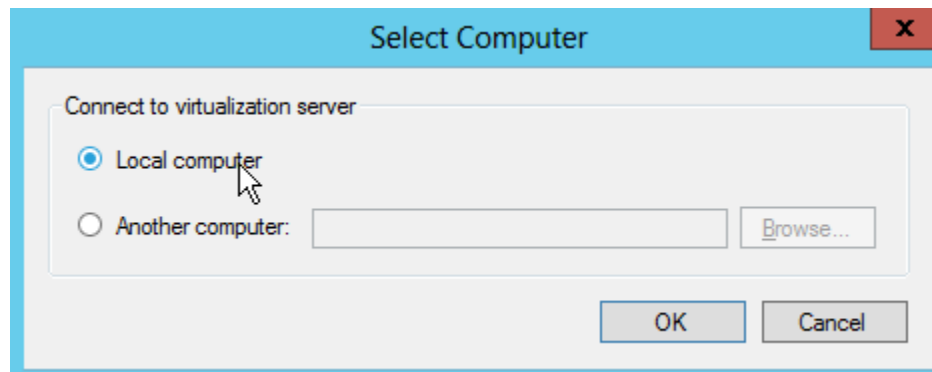
Step 8: Go to Tools Select Hyper-V Manage



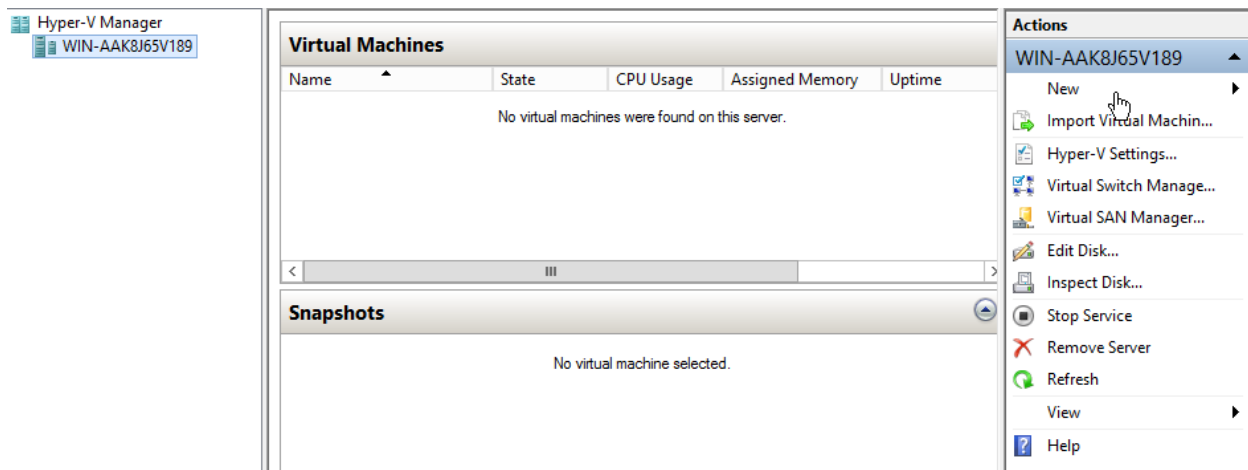
Select Connect to Server



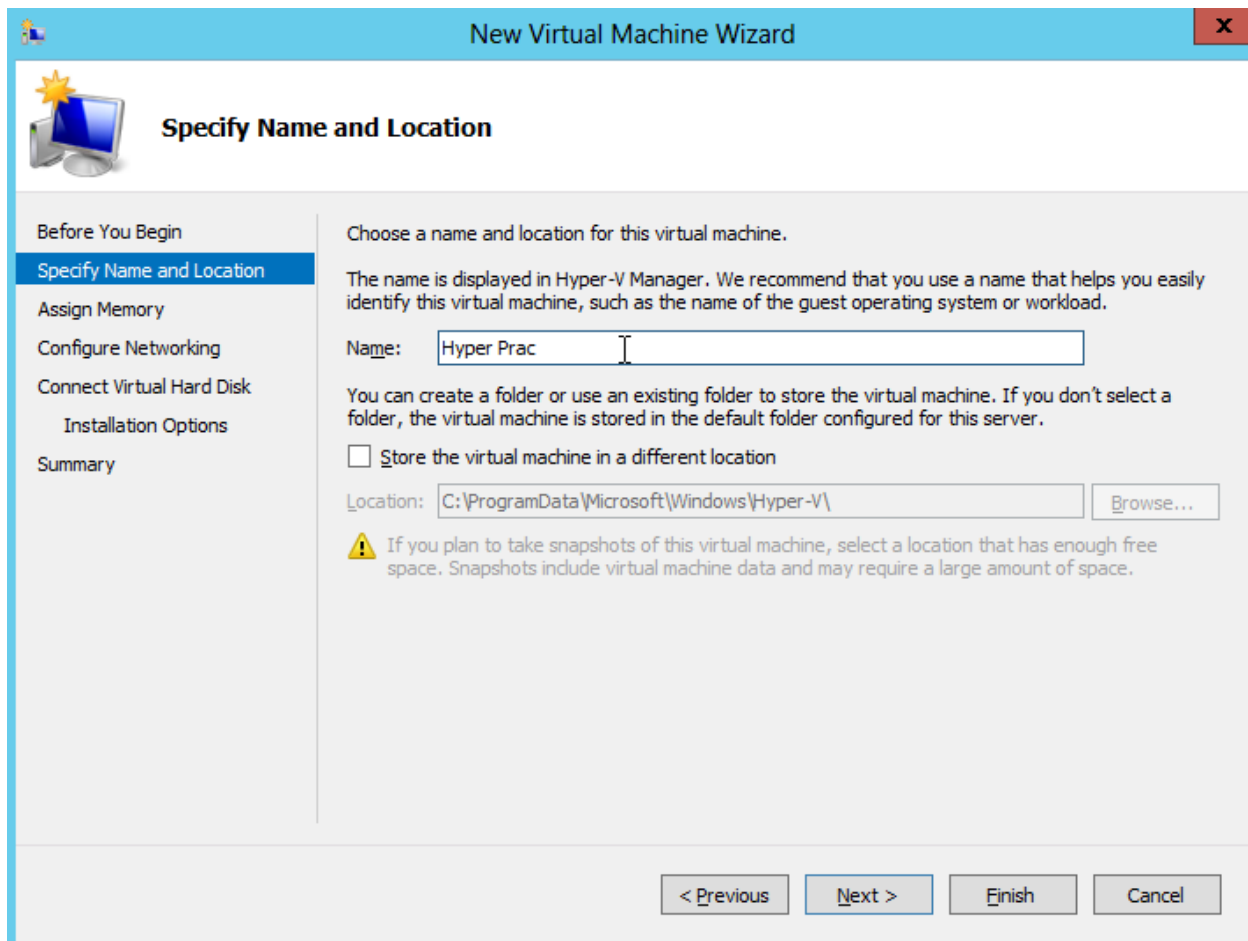
Select Local Computer



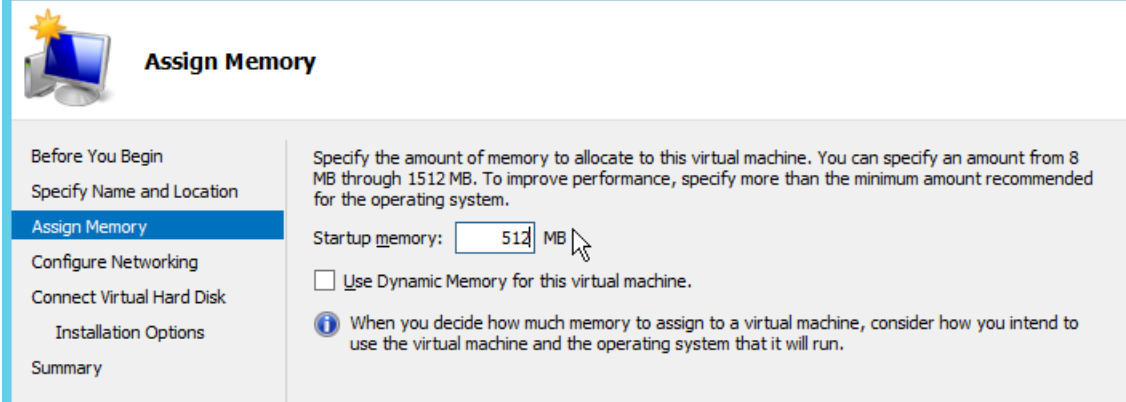
Click on New then Select Virtual Machine



Give Name on virtual machine



Set Memory to 512MB



Assign Memory

Before You Begin
Specify Name and Location
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary

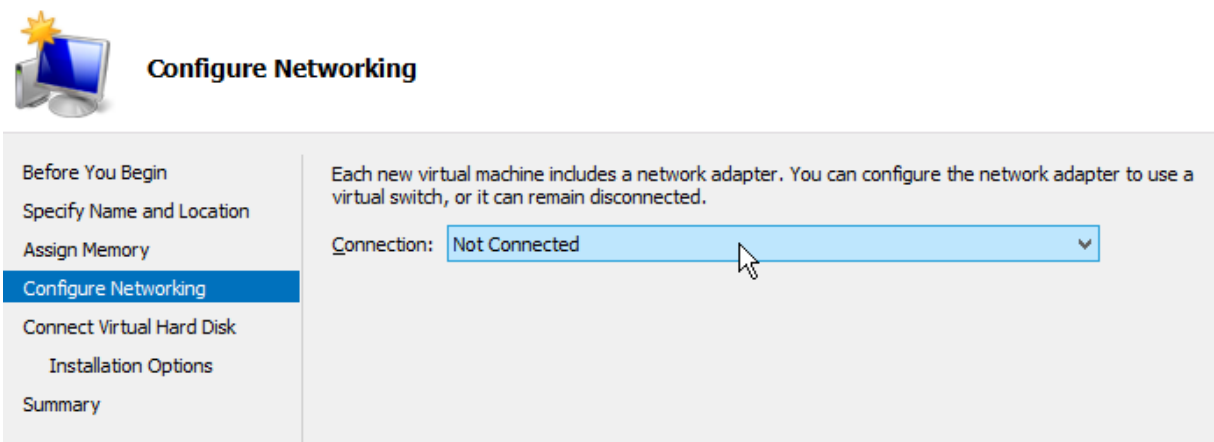
Specify the amount of memory to allocate to this virtual machine. You can specify an amount from 8 MB through 1512 MB. To improve performance, specify more than the minimum amount recommended for the operating system.

Startup memory: MB

☐ Use Dynamic Memory for this virtual machine.

i When you decide how much memory to assign to a virtual machine, consider how you intend to use the virtual machine and the operating system that it will run.

Set connection to Not connected



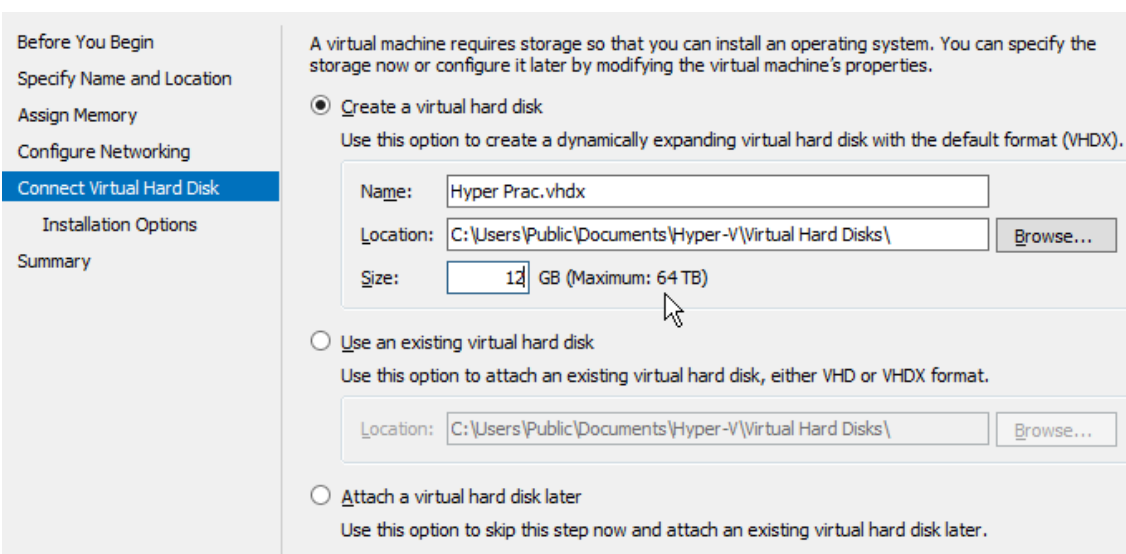
Configure Networking

Before You Begin
Specify Name and Location
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary

Each new virtual machine includes a network adapter. You can configure the network adapter to use a virtual switch, or it can remain disconnected.

Connection:

Give Disk size to 12GB



Connect Virtual Hard Disk

Before You Begin
Specify Name and Location
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary

A virtual machine requires storage so that you can install an operating system. You can specify the storage now or configure it later by modifying the virtual machine's properties.

☒ **Create a virtual hard disk**
Use this option to create a dynamically expanding virtual hard disk with the default format (VHDX).

Name:

Location:

Size: GB (Maximum: 64 TB)

☐ **Use an existing virtual hard disk**
Use this option to attach an existing virtual hard disk, either VHD or VHDX format.

Location:

☐ **Attach a virtual hard disk later**
Use this option to skip this step now and attach an existing virtual hard disk later.

Select Install from boot and select iso image file and click on Finish

Before You Begin

Specify Name and Location

Assign Memory

Configure Networking

Connect Virtual Hard Disk

Installation Options

Summary

You can install an operating system now if you have access to the setup media, or you can install it later.

☐ Install an operating system later

☒ Install an operating system from a boot CD/DVD-ROM

Media

☐ Physical CD/DVD drive: D: ▾

☒ Image file (.iso): C:\Windows Server 2012RC.ISO Browse...

☐ Install an operating system from a boot floppy disk

Media

Virtual floppy disk (.vfd): Browse...

☐ Install an operating system from a network-based installation server

⚠ Your network adapter is disconnected. To perform a network-based installation, return to the Configure Networking page and connect the network adapter.

Connect to Start

Hyper-V Manager

WIN-AAK8J65V189

Virtual Machines

Name	State	CPU Usage	Assigned Memory	Uptime
Hyper Prac	Off			

Snapshots

The selected virtual machine has no snapshots.

Hyper Prac

Created: 12/8/2022 10:41:53 AM Clustered: No

Notes: None

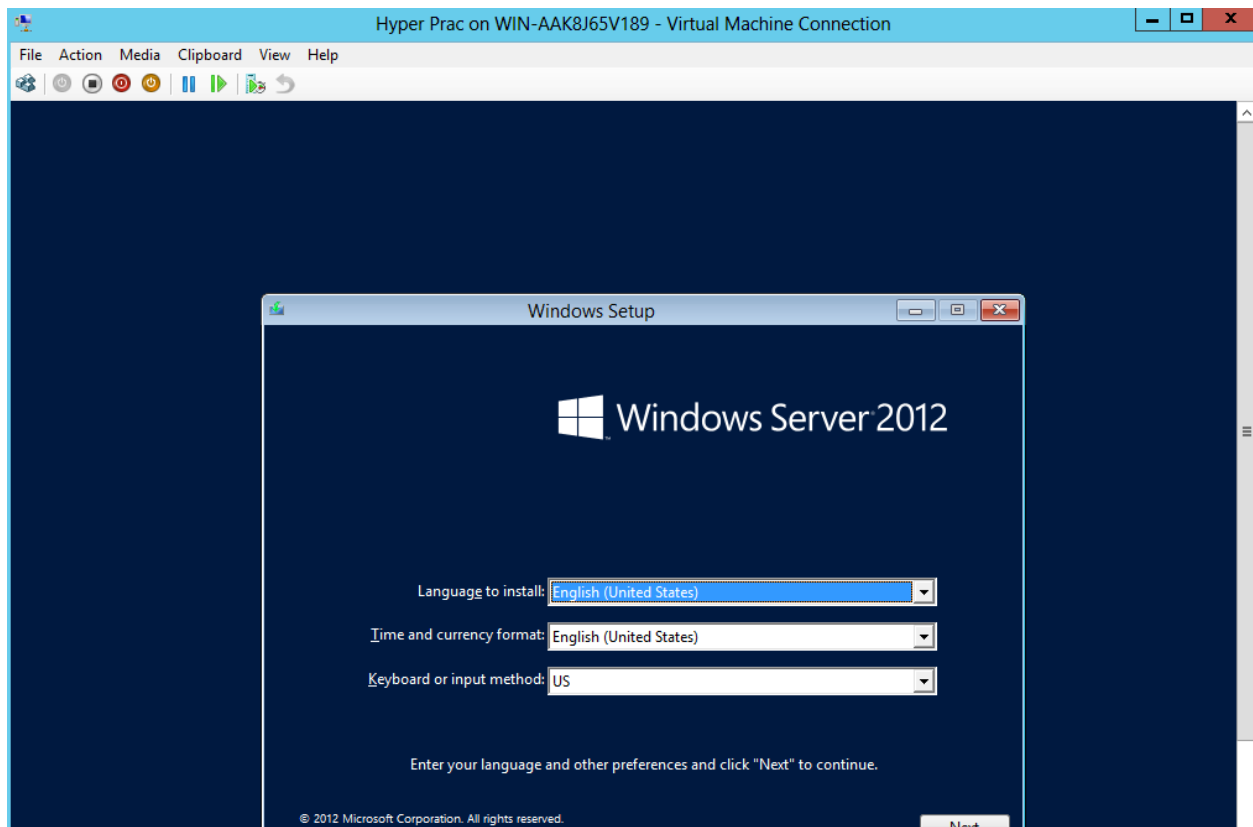
Summary Memory Networking Replication

Actions

WIN-AAK8J65V189

- New
- Import Virtual Mac...
- Hyper-V Settings...
- Virtual Switch Man...
- Virtual SAN Manag...
- Edit Disk...
- Inspect Disk...
- Stop Service
- Remove Server
- Refresh
- View
- Help
- Hyper Prac**
- Connect...
- Settings...
- Start
- Snapshot
- Move...
- Export...
- Rename...
- Delete...
- Enable Replication...

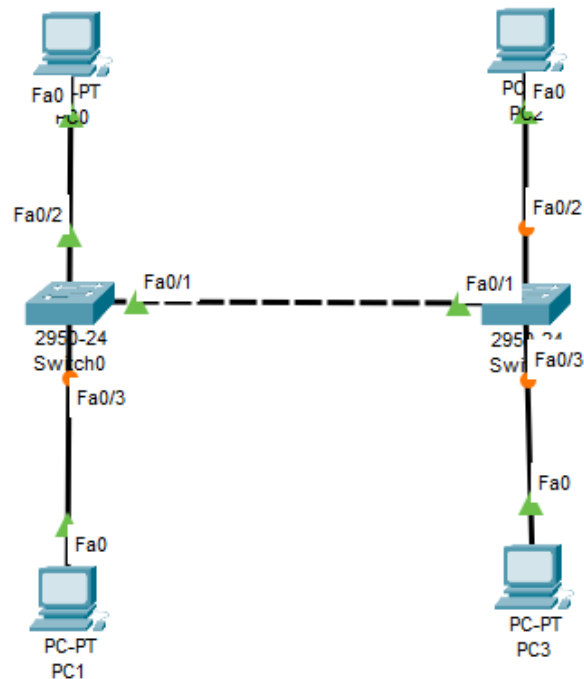
Done



Practical No. 4

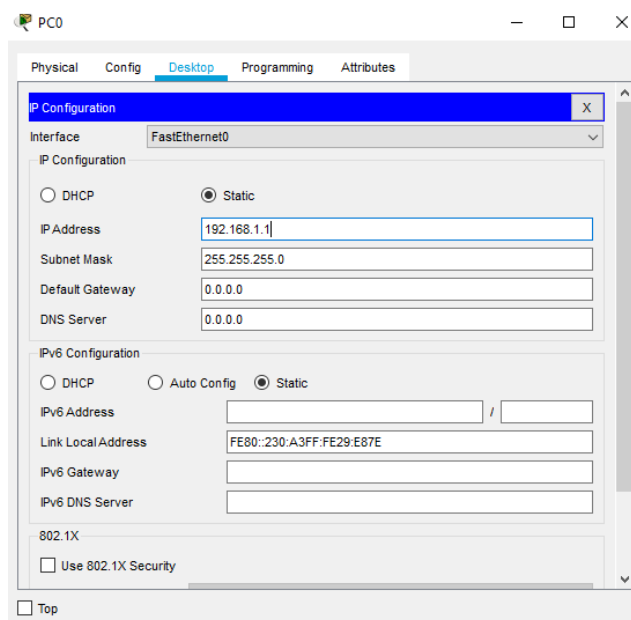
Aim: Creating VLAN using access and trunk mode.

Step 1: Make Topology using 2 Switches and 4 Machines.

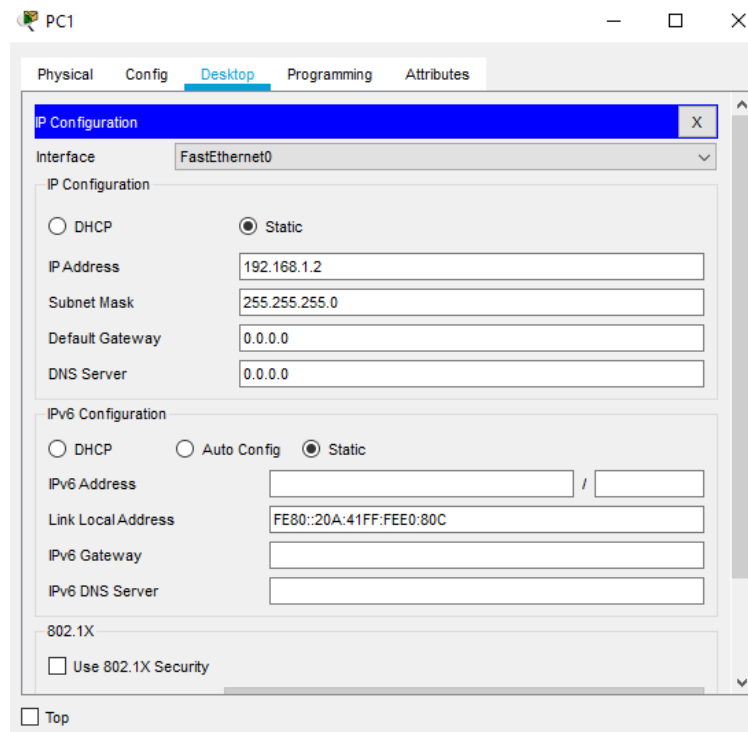


Step 2: Set IP Configuration to all PC's.

PC0



PC1



PC1

Physical Config **Desktop** Programming Attributes

IP Configuration [X]

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IP Address: 192.168.1.2

Subnet Mask: 255.255.255.0

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address: /

Link Local Address: FE80::20A:41FF:FEE0:80C

IPv6 Gateway:

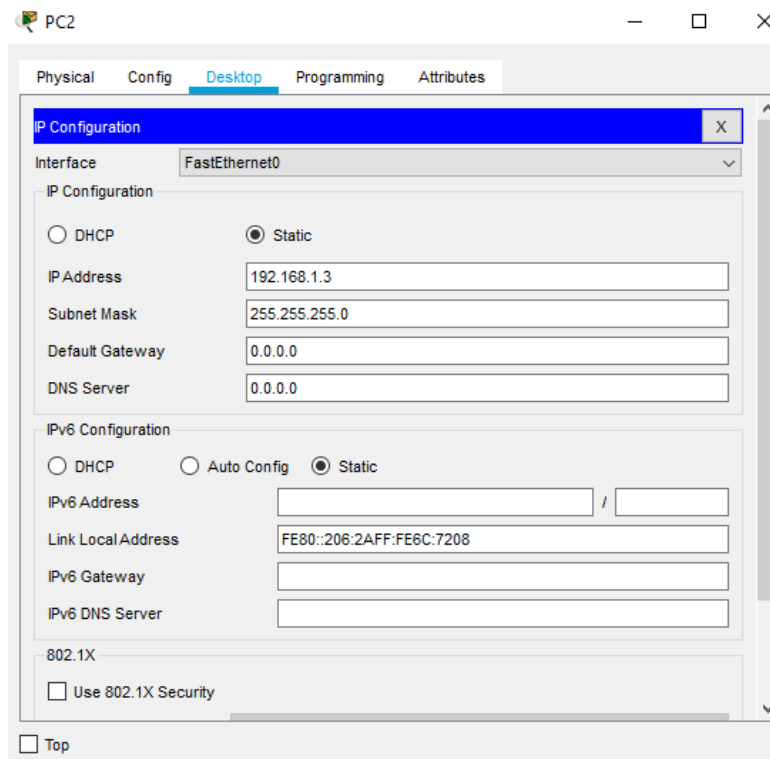
IPv6 DNS Server:

802.1X

☐ Use 802.1X Security

☐ Top

PC2



PC2

Physical Config **Desktop** Programming Attributes

IP Configuration [X]

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IP Address: 192.168.1.3

Subnet Mask: 255.255.255.0

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address: /

Link Local Address: FE80::206:2AFF:FE6C:7208

IPv6 Gateway:

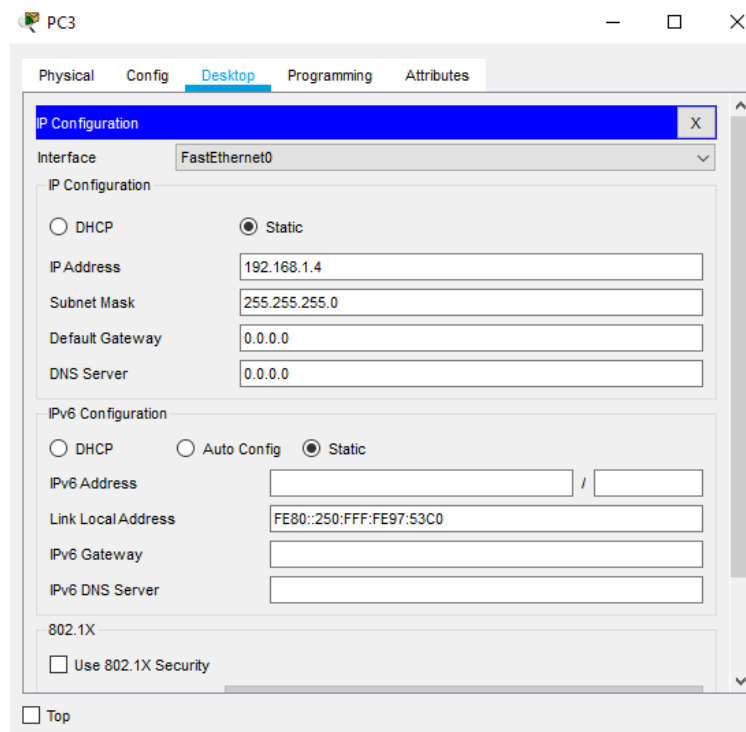
IPv6 DNS Server:

802.1X

☐ Use 802.1X Security

☐ Top

PC3



Step 3: Set access and trunk mode on Switch 0 and Switch 1

Switch 0 - CLI

```
IOS Command Line Interface

Switch>en
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name upper
Switch(config-vlan)#vlan 20
Switch(config-vlan)#name lower
Switch(config-vlan)#int fa0/2
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#int fa0/3
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 20
Switch(config-if)#int fa0/1
Switch(config-if)#switchport mode trunk

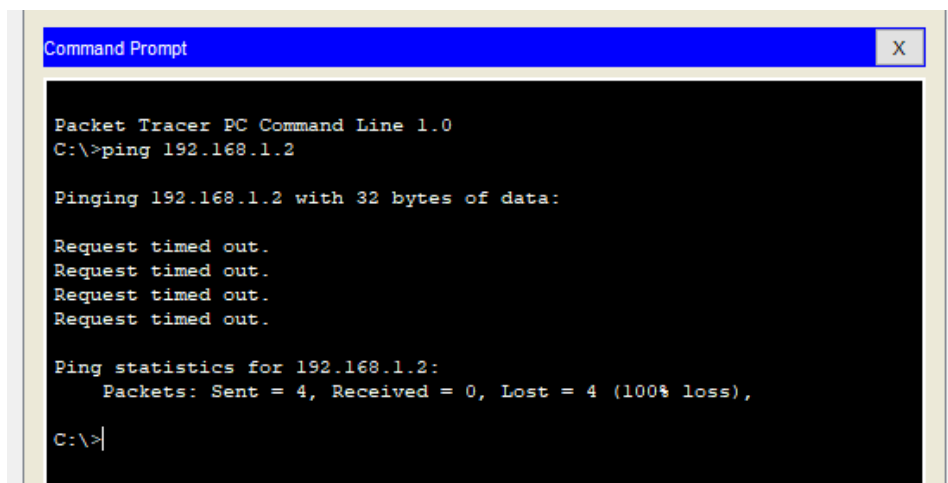
Switch(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1,
changed state to down
```

Switch 1 – CLI

```
Switch>en
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name upper
Switch(config-vlan)#vlan 20
Switch(config-vlan)#name lower
Switch(config-vlan)#int fa0/2
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#int fa0/3
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 20
Switch(config-if)#int fa0/1
Switch(config-if)#switchport mode trunk
Switch(config-if)#
```

Step 4: Ping PC0 to PC1 and PC2

PC0 to PC1



Command Prompt

```
Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.2

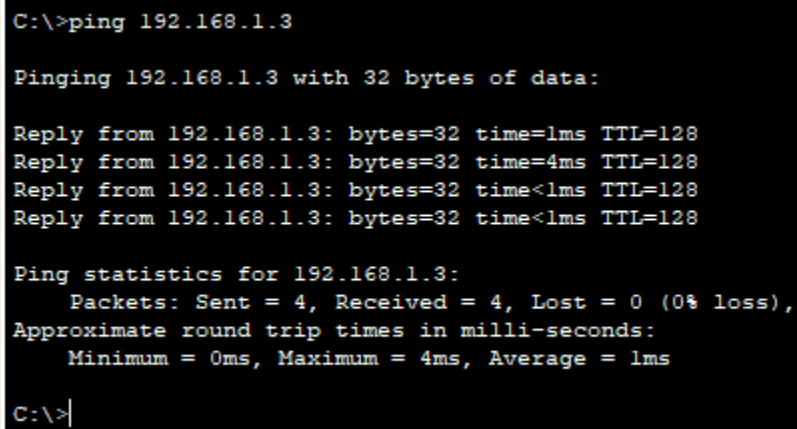
Pinging 192.168.1.2 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

PC0 to PC2



```
C:\>ping 192.168.1.3

Pinging 192.168.1.3 with 32 bytes of data:

Reply from 192.168.1.3: bytes=32 time=1ms TTL=128
Reply from 192.168.1.3: bytes=32 time=4ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128

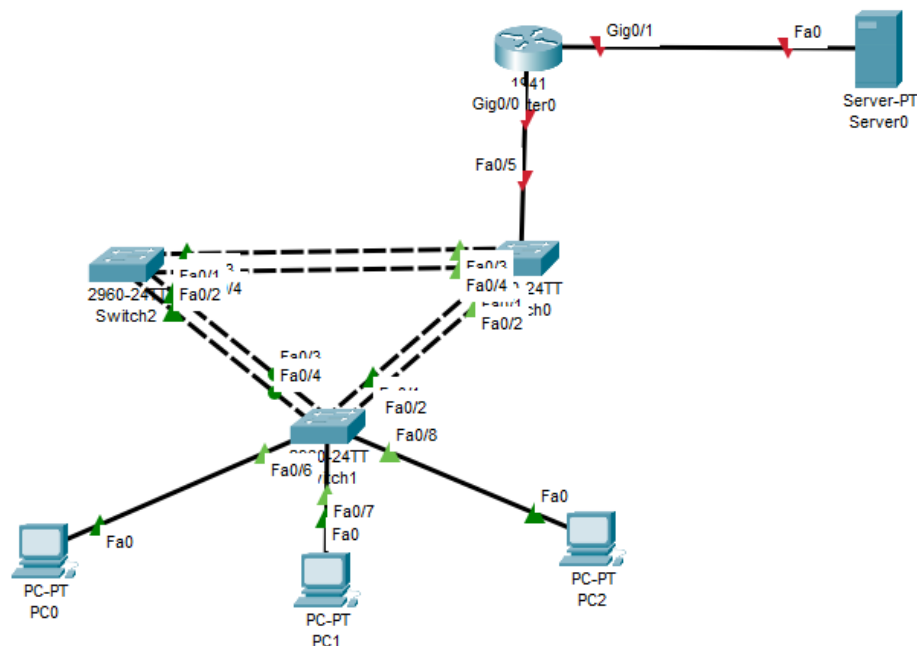
Ping statistics for 192.168.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 4ms, Average = 1ms

C:\>
```

Practical No. 5

Aim: Inter VLAN Routing using VTP.

Task 1: Make Topology using 3 Switches, 1 Router, 3 PC's and 1 Server.



Task 2: Make general configuration on Switches.

Switch 0 > CLI

```
Switch0
Physical Config CLI Attributes
IOS Command Line Interface

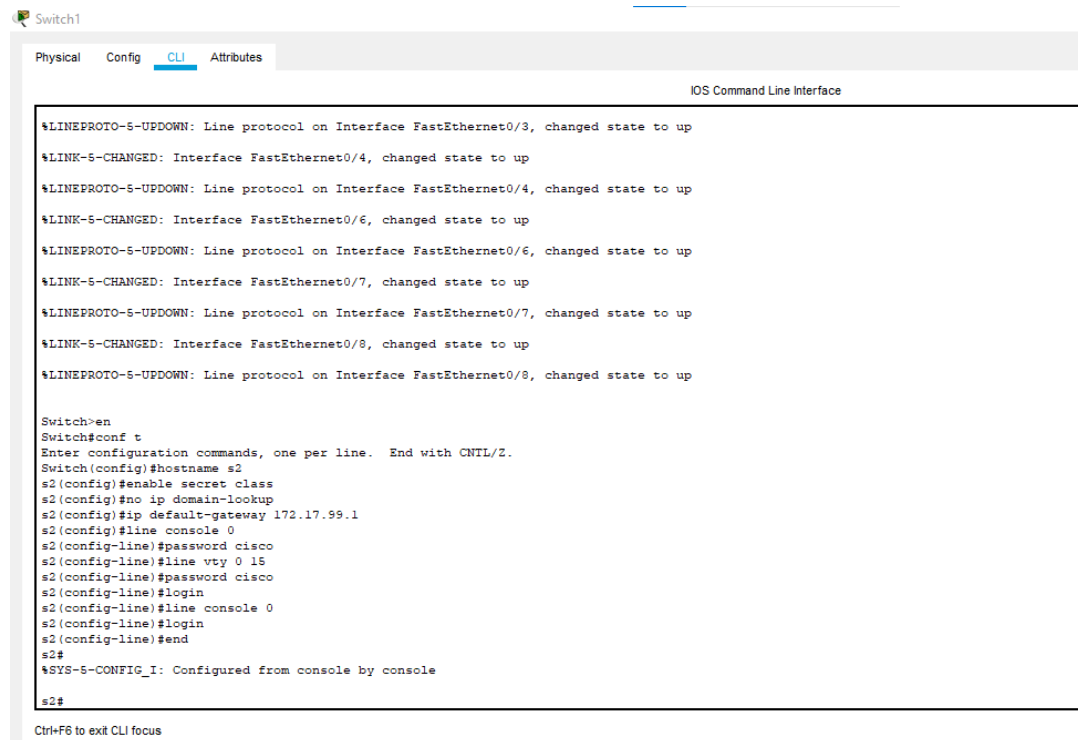
Press RETURN to get started!

%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/4, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to up

Switch>en
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname s1
s1(config)#enable secret class
s1(config)#no ip domain-lookup
s1(config)#ip default-gateway 172.17.99.1
s1(config)#line console 0
s1(config-line)#password cisco
s1(config-line)#line vty 0 15
s1(config-line)#password cisco
s1(config-line)#login
s1(config-line)#line console 0
s1(config-line)#login
s1(config-line)#end
s1#
%SYS-5-CONFIG_I: Configured from console by console
s1#

Ctrl+F6 to exit CLI focus
```

Switch 1 > CLI



The screenshot shows the CLI interface for Switch1. The top bar has tabs for Physical, Config, CLI (selected), and Attributes. The main window displays the IOS Command Line Interface. It shows a series of status messages for interfaces FastEthernet0/3 through 0/8, indicating that the line protocol is up and the link is up. Below these messages, the user enters the command 'en' to enter configuration mode, followed by 'conf t' to enter global configuration mode. The user then enters a series of configuration commands: 'hostname s2', 'enable secret class', 'no ip domain-lookup', 'ip default-gateway 172.17.99.1', 'line console 0', 'password cisco', 'login', 'line vty 0 15', 'password cisco', 'login', 'line console 0', 'login', and 'end'. The prompt changes from 'Switch>' to 'Switch#', then to 'Switch(config)#', and finally to 'Switch#' after the 'end' command. The status message '%SYS-5-CONFIG_I: Configured from console by console' is displayed. The prompt returns to 'Switch#'. At the bottom, a note indicates 'Ctrl+F6 to exit CLI focus'.

```
Switch1
Physical Config CLI Attributes

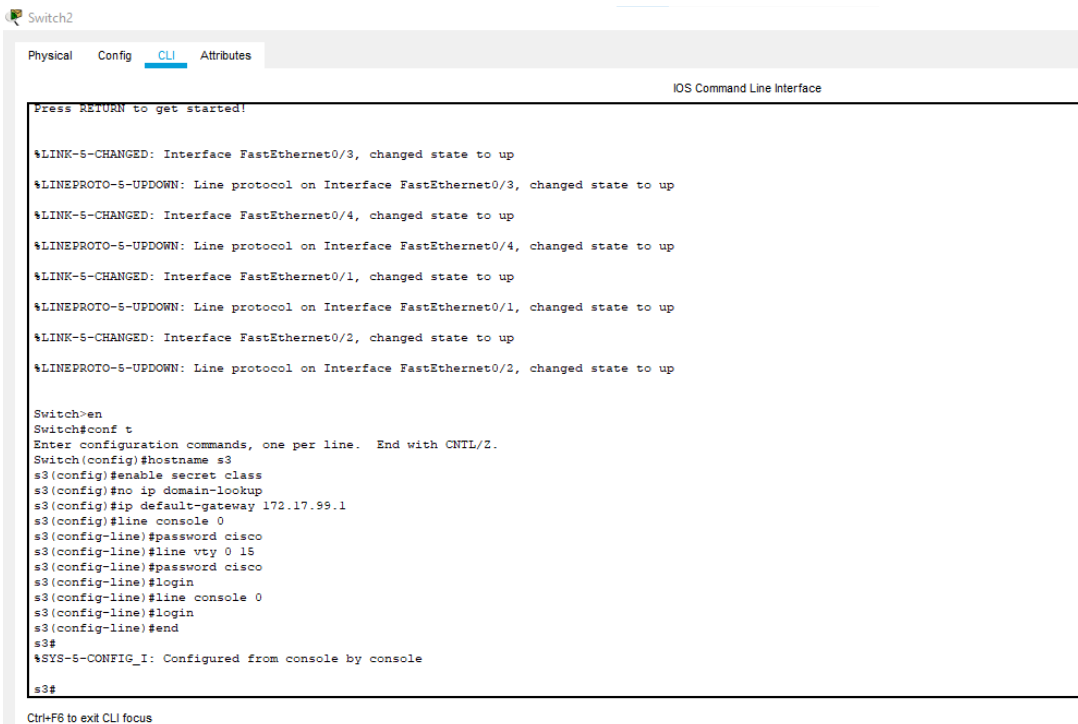
IOS Command Line Interface

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/4, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/6, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/6, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/7, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/8, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to up

Switch>en
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname s2
s2(config)#enable secret class
s2(config)#no ip domain-lookup
s2(config)#ip default-gateway 172.17.99.1
s2(config)#line console 0
s2(config-line)#password cisco
s2(config-line)#line vty 0 15
s2(config-line)#password cisco
s2(config-line)#login
s2(config-line)#line console 0
s2(config-line)#login
s2(config-line)#end
s2#
%SYS-5-CONFIG_I: Configured from console by console
s2#

Ctrl+F6 to exit CLI focus
```

Switch 2 > CLI



The screenshot shows the CLI interface for Switch2. The top bar has tabs for Physical, Config, CLI (selected), and Attributes. The main window displays the IOS Command Line Interface. It shows a series of status messages for interfaces FastEthernet0/3 through 0/2, indicating that the line protocol is up and the link is up. Below these messages, the user enters the command 'en' to enter configuration mode, followed by 'conf t' to enter global configuration mode. The user then enters a series of configuration commands: 'hostname s3', 'enable secret class', 'no ip domain-lookup', 'ip default-gateway 172.17.99.1', 'line console 0', 'password cisco', 'login', 'line vty 0 15', 'password cisco', 'login', 'line console 0', 'login', and 'end'. The prompt changes from 'Switch>' to 'Switch#', then to 'Switch(config)#', and finally to 'Switch#' after the 'end' command. The status message '%SYS-5-CONFIG_I: Configured from console by console' is displayed. The prompt returns to 'Switch#'. At the bottom, a note indicates 'Ctrl+F6 to exit CLI focus'.

```
Switch2
Physical Config CLI Attributes

IOS Command Line Interface

Press RETURN to get started!

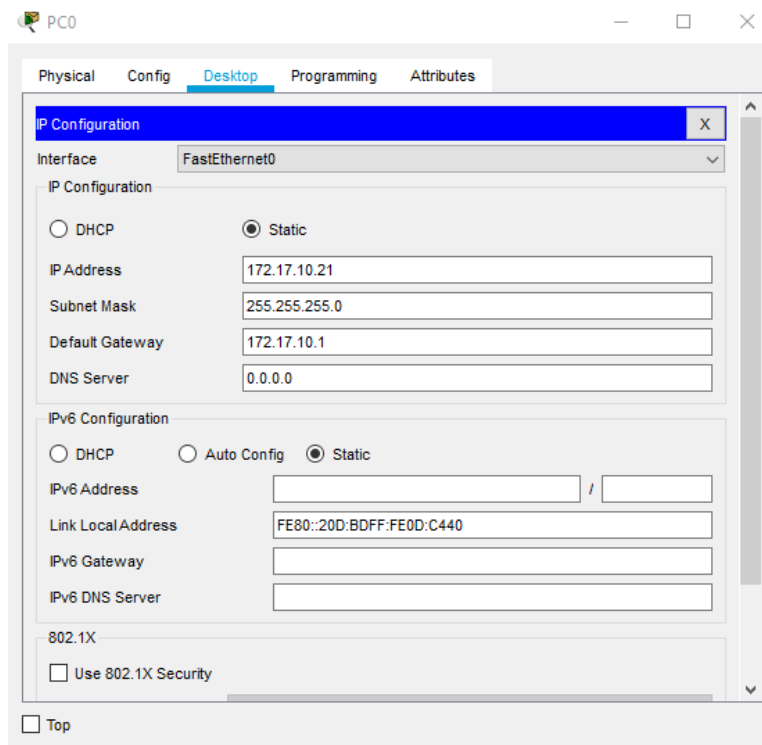
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/4, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up

Switch>en
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname s3
s3(config)#enable secret class
s3(config)#no ip domain-lookup
s3(config)#ip default-gateway 172.17.99.1
s3(config)#line console 0
s3(config-line)#password cisco
s3(config-line)#line vty 0 15
s3(config-line)#password cisco
s3(config-line)#login
s3(config-line)#line console 0
s3(config-line)#login
s3(config-line)#end
s3#
%SYS-5-CONFIG_I: Configured from console by console
s3#

Ctrl+F6 to exit CLI focus
```

Task 3: Deploy IP configuration on all PC's and Server.

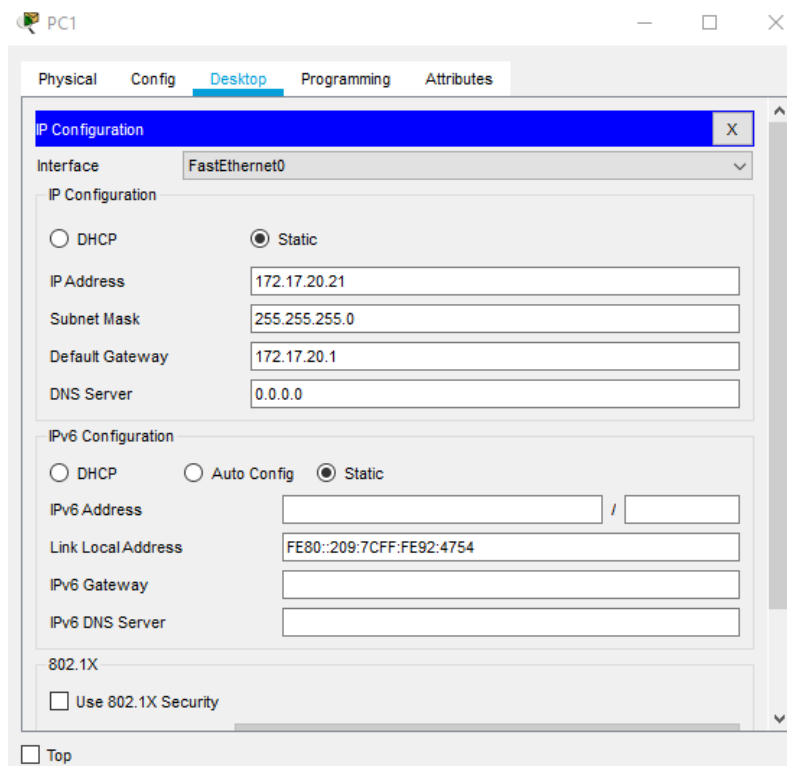
PC0



The screenshot shows the configuration window for PC0. The 'Desktop' tab is selected. Under 'IP Configuration', the 'Static' radio button is chosen. The IP Address is 172.17.10.21, Subnet Mask is 255.255.255.0, Default Gateway is 172.17.10.1, and DNS Server is 0.0.0.0. Under 'IPv6 Configuration', the 'Static' radio button is chosen. The IPv6 Address is empty, Link Local Address is FE80::20D:BDFE:FE0D:C440, IPv6 Gateway is empty, and IPv6 DNS Server is empty. The '802.1X' section has 'Use 802.1X Security' unchecked. A 'Top' button is at the bottom left.

Field	Value
Interface	FastEthernet0
IP Configuration	
<input type="radio"/> DHCP	
<input checked="" type="radio"/> Static	
IP Address	172.17.10.21
Subnet Mask	255.255.255.0
Default Gateway	172.17.10.1
DNS Server	0.0.0.0
IPv6 Configuration	
<input type="radio"/> DHCP	
<input type="radio"/> Auto Config	
<input checked="" type="radio"/> Static	
IPv6 Address	
Link Local Address	FE80::20D:BDFE:FE0D:C440
IPv6 Gateway	
IPv6 DNS Server	
802.1X	
<input type="checkbox"/> Use 802.1X Security	

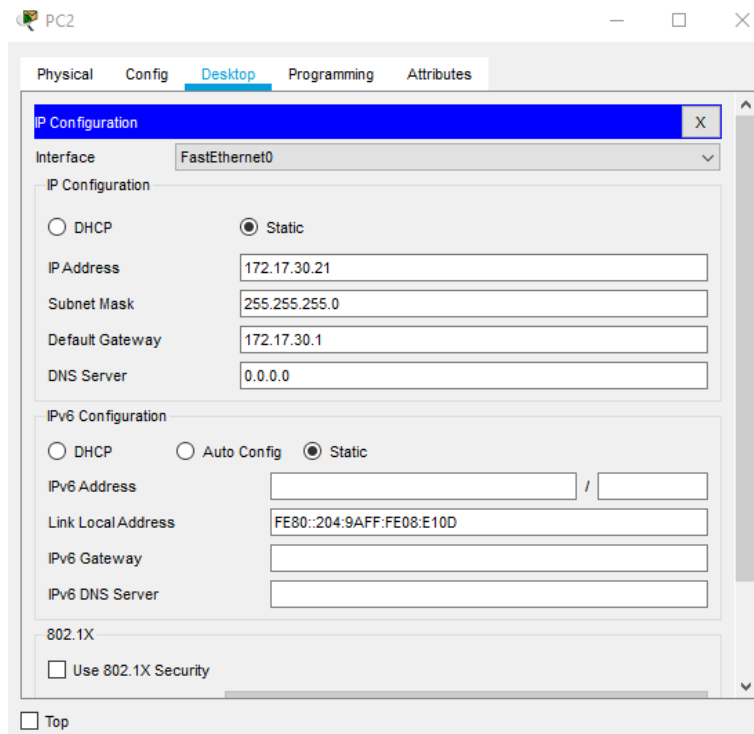
PC1



The screenshot shows the configuration window for PC1. The 'Desktop' tab is selected. Under 'IP Configuration', the 'Static' radio button is chosen. The IP Address is 172.17.20.21, Subnet Mask is 255.255.255.0, Default Gateway is 172.17.20.1, and DNS Server is 0.0.0.0. Under 'IPv6 Configuration', the 'Static' radio button is chosen. The IPv6 Address is empty, Link Local Address is FE80::209:7CFF:FE92:4754, IPv6 Gateway is empty, and IPv6 DNS Server is empty. The '802.1X' section has 'Use 802.1X Security' unchecked. A 'Top' button is at the bottom left.

Field	Value
Interface	FastEthernet0
IP Configuration	
<input type="radio"/> DHCP	
<input checked="" type="radio"/> Static	
IP Address	172.17.20.21
Subnet Mask	255.255.255.0
Default Gateway	172.17.20.1
DNS Server	0.0.0.0
IPv6 Configuration	
<input type="radio"/> DHCP	
<input type="radio"/> Auto Config	
<input checked="" type="radio"/> Static	
IPv6 Address	
Link Local Address	FE80::209:7CFF:FE92:4754
IPv6 Gateway	
IPv6 DNS Server	
802.1X	
<input type="checkbox"/> Use 802.1X Security	

PC2



PC2

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IP Address 172.17.30.21

Subnet Mask 255.255.255.0

Default Gateway 172.17.30.1

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::204:9AFF:FE08:E10D

IPv6 Gateway

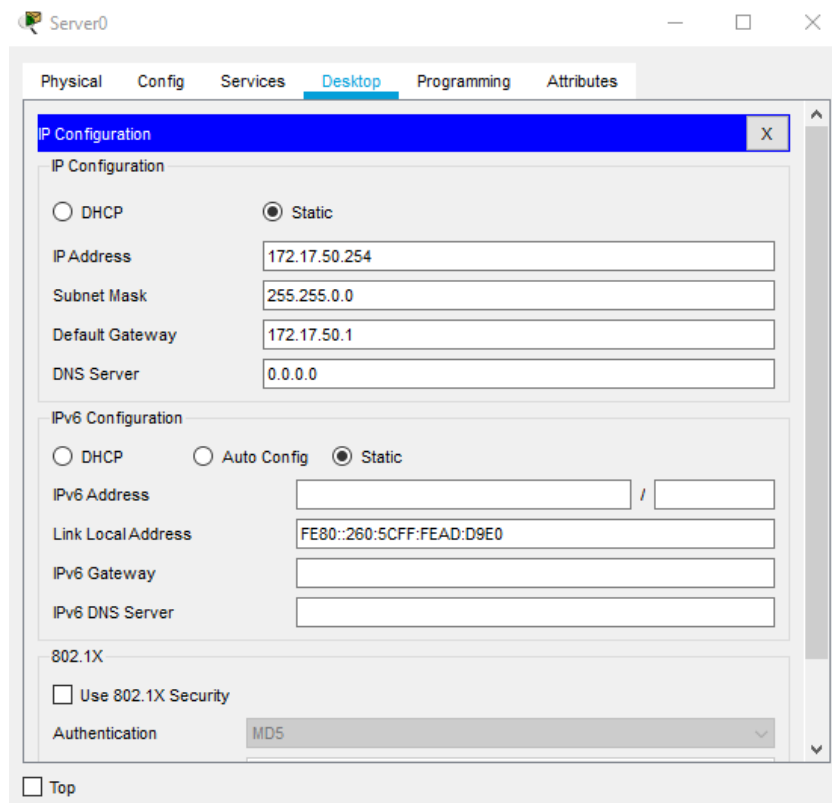
IPv6 DNS Server

802.1X

☐ Use 802.1X Security

Top

Server 0



Server0

Physical Config Services **Desktop** Programming Attributes

IP Configuration X

IP Configuration

☐ DHCP ☒ Static

IP Address 172.17.50.254

Subnet Mask 255.255.0.0

Default Gateway 172.17.50.1

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::260:5CFF:FEAD:D9E0

IPv6 Gateway

IPv6 DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Top

Task 4:

Step 1: Enable user ports on Switch S2 in access mode.

User Access Verification

Password:

```
s2>en
Password:
s2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
s2(config)#int fa0/6
s2(config-if)#switchport mode access
s2(config-if)#no sh
s2(config-if)#int fa0/7
s2(config-if)#switchport mode access
s2(config-if)#no sh
s2(config-if)#int fa0/8
s2(config-if)#switchport mode access
s2(config-if)#no sh
s2(config-if)#
```

Step 2: Configure VTP Protocol.

Making Switch 0 as VTP Server.

User Access Verification

Password:

```
s1>en
Password:
s1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
s1(config)#vtp mode server
Device mode already VTP SERVER.
s1(config)#vtp domain kirti
Changing VTP domain name from NULL to kirti
s1(config)#vtp password cisco
Setting device VLAN database password to cisco
s1(config)#
```

Making Switch 1 as VTP Client.

User Access Verification

Password:

```
s2>en
Password:
s2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
s2(config)#vtp mode client
Setting device to VTP CLIENT mode.
s2(config)#vtp domain kirti
Changing VTP domain name from NULL to kirti
s2(config)#vtp password cisco
Setting device VLAN database password to cisco
s2(config)#
```

Making Switch 2 as VTP Client.

User Access Verification

Password:

```
s3>en
Password:
s3#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
s3(config)#vtp mode client
Setting device to VTP CLIENT mode.
s3(config)#vtp domain kirti
Changing VTP domain name from NULL to kirti
s3(config)#vtp password cisco
Setting device VLAN database password to cisco
s3(config)#
```


Step 3: Configure trunking port and designed native VLAN for trunks.

Switch 0

User Access Verification

Password:

```
s1>en
Password:
s1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
s1(config)#int fa0/1
s1(config-if)#switchport mode trunk

s1(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

s1(config-if)#switchport trunk native vlan 99
s1(config-if)#no sh
s1(config-if)#int fa0/2
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/1 (99), with s2 FastEthernet0/1 (1).

s1(config-if)#int fa0/2
s1(config-if)#
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/1 (99), with s2 FastEthernet0/1 (1).

s1(config-if)#switchport mode trunk

s1(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up

s1(config-if)#switchport trunk native vlan 99
s1(config-if)#no sh
s1(config-if)#int fa0/3
s1(config-if)#switchport mode trunk

s1(config-if)#switchport trunk native vlan 99
s1(config-if)#no sh
s1(config-if)#int fa0/4
s1(config-if)#int fa0/4
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/1 (99), with s2 FastEthernet0/1 (1).

%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/2 (99), with s2 FastEthernetno sh
s1(config-if)#switchport mode trunk

s1(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to up

s1(config-if)#switchport trunk native vlan 99
s1(config-if)#no sh
s1(config-if)#int fa0/5
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/3 (99), with s3 FastEthernet0/3 (1).

%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/4 (99), with s3 FastEthernet0/4 (1).

%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/3 (99), with s3 FastEthernet0/3 (1).

%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/4 (99), with s3 FastEthernet0/4 (1).

s1(config-if)#int fa0/5
s1(config-if)#switchport mode trunk
s1(config-if)#switchport trunk native vlan 99
s1(config-if)#no sh
s1(config-if)#
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/3 (99), with s3 FastEthernet0/3 (1).

%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/4 (99), with s3 FastEthernet0/4 (1).

%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/2 (99), with s2 FastEthernet0/2 (1).

%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/1 (99), with s2 FastEthernet0/1 (1).
```

Switch 1

```
s2>en
Password:
s2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
s2(config)#
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/1 (1), with s1 FastEthernet0/1 (99).

%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/2 (1), with s1 FastEthernet0/2 (99).

s2(config)#int fa0/1
s2(config-if)#switchport mode trunk
s2(config-if)#switchport trunk native vlan 99
s2(config-if)#no sh
s2(config-if)#int fa0/2
s2(config-if)#switchport mode trunk
s2(config-if)#switchport trunk native vlan 99
s2(config-if)#no sh
s2(config-if)#int fa0/3
s2(config-if)#switchport mode trunk

s2(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up

s2(config-if)#switchport trunk native vlan 99
s2(config-if)#no sh
s2(config-if)#int fa0/4
s2(config-if)#switchport mode trunk

s2(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to up

s2(config-if)#switchport trunk native vlan 99
s2(config-if)#no sh
s2(config-if)#
```

Switch 2

User Access Verification

```
Password:

s3>en
Password:
s3#conf t
Enter configuration commands, one per line. End with CNTL/Z.
s3(config)#int fa0/1
s3(config-if)#switchport mode trunk
s3(config-if)#switchport
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/3 (1), with s1 FastEthernet0/3 (99).

%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/4 (1), with s1 FastEthernet0/4 (99).

% Incomplete command.
s3(config-if)#switchport t
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/1 (1), with s2 FastEthernet0/3 (99).

%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/2 (1), with s2 FastEthernet0/4 (99).

% Incomplete command.
s3(config-if)#switchport trunk native vlan 99
s3(config-if)#no sh
s3(config-if)#int fa0/2
s3(config-if)#switchport mode trunk
s3(config-if)#switchport trunk native vlan 99
s3(config-if)#no sh
s3(config-if)#int fa0/3
s3(config-if)#switchport mode trunk
s3(config-if)#switchport trunk native vlan 99
s3(config-if)#no sh
s3(config-if)#int fa0/4
s3(config-if)#switchport mode trunk
s3(config-if)#int fa0/4
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/4 (1), with s1 FastEthernet0/4 (99).

s3(config-if)#switchport trunk native vlan 99
s3(config-if)#no sh
```

Step 4: Configure VLAN only on Switch 0.

User Access Verification

Password:

```
sl>en
Password:
sl#conf t
Enter configuration commands, one per line. End with CNTL/Z.
sl(config)#vlan 99
sl(config-vlan)#name management
sl(config-vlan)#vlan 10
sl(config-vlan)#name faculty
sl(config-vlan)#vlan 20
sl(config-vlan)#name staff
sl(config-vlan)#vlan 30
sl(config-vlan)#name guest
sl(config-vlan)#do sh vlan br
```

VLAN	Name	Status	Ports
1	default	active	Fa0/5, Fa0/6, Fa0/7, Fa0/8 Fa0/9, Fa0/10, Fa0/11, Fa0/12 Fa0/13, Fa0/14, Fa0/15, Fa0/16 Fa0/17, Fa0/18, Fa0/19, Fa0/20 Fa0/21, Fa0/22, Fa0/23, Fa0/24 Gig0/1, Gig0/2
10	faculty	active	
20	staff	active	
30	guest	active	
99	management	active	
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

```
sl(config-vlan)#
```

Switch 1

```
s2(config-if)#do sh vlan br
```

VLAN	Name	Status	Ports
1	default	active	Fa0/5, Fa0/6, Fa0/7, Fa0/8 Fa0/9, Fa0/10, Fa0/11, Fa0/12 Fa0/13, Fa0/14, Fa0/15, Fa0/16 Fa0/17, Fa0/18, Fa0/19, Fa0/20 Fa0/21, Fa0/22, Fa0/23, Fa0/24 Gig0/1, Gig0/2
10	faculty	active	
20	staff	active	
30	guest	active	
99	management	active	
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

```
s2(config-if)#
```

Switch 2

```
s3(config-if)#  
s3(config-if)#do sh vlan br
```

VLAN	Name	Status	Ports
1	default	active	Fa0/5, Fa0/6, Fa0/7, Fa0/8 Fa0/9, Fa0/10, Fa0/11, Fa0/12 Fa0/13, Fa0/14, Fa0/15, Fa0/16 Fa0/17, Fa0/18, Fa0/19, Fa0/20 Fa0/21, Fa0/22, Fa0/23, Fa0/24 Gig0/1, Gig0/2
10	faculty	active	
20	staff	active	
30	guest	active	
99	management	active	
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

```
s3(config-if)#
```