

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



M.Sc. [Computer Science]

Practical Journal

PAPER: PSCSP301

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 **PSCSP301** 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:

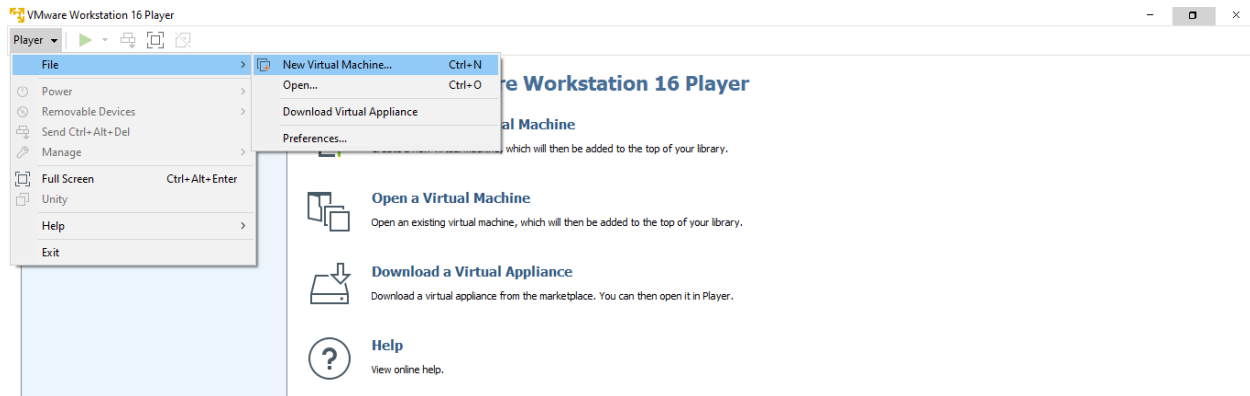
Index

Sr.No	Date	Title	Sign
1		Installation of Citrix Xen. Deployment of virtual machine using Citrix Xen.	
2		Installation of Microsoft Hyper-V. Deployment of virtual machine using Hyper-V.	
3		Demonstrate Model View Controller framework	
4		Implementing Client Server based web service on NetBeans	

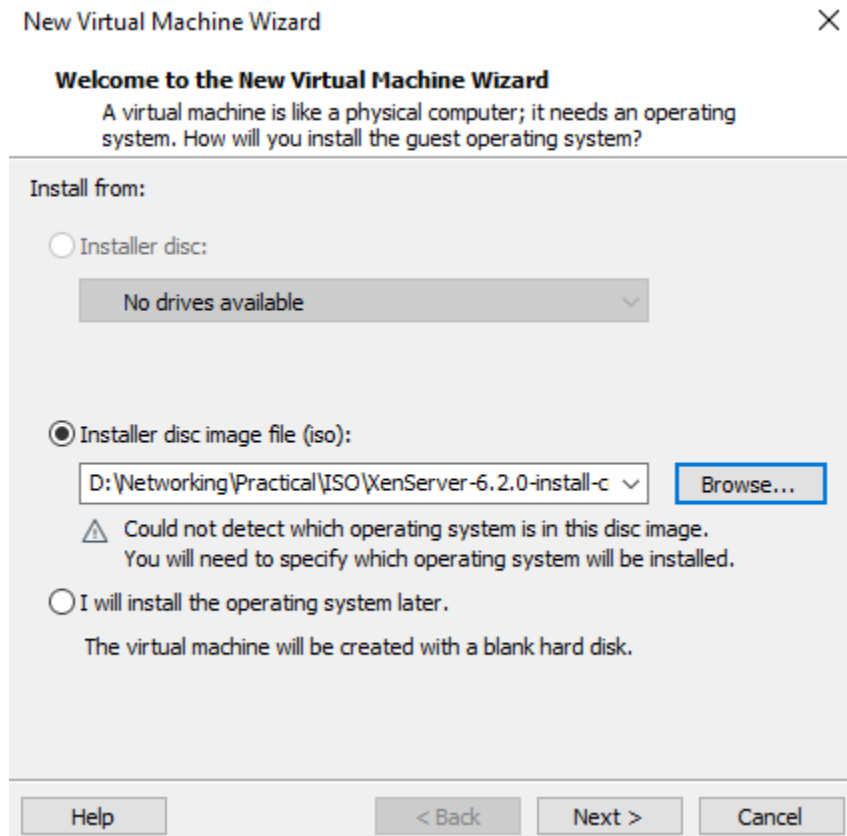
Practical No. 1

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

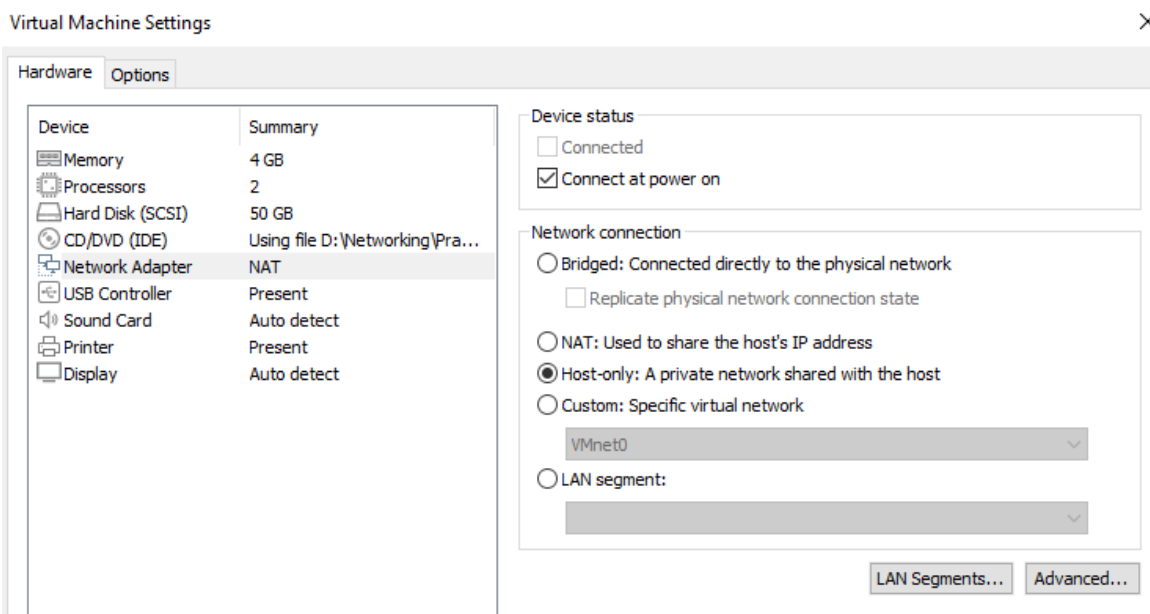
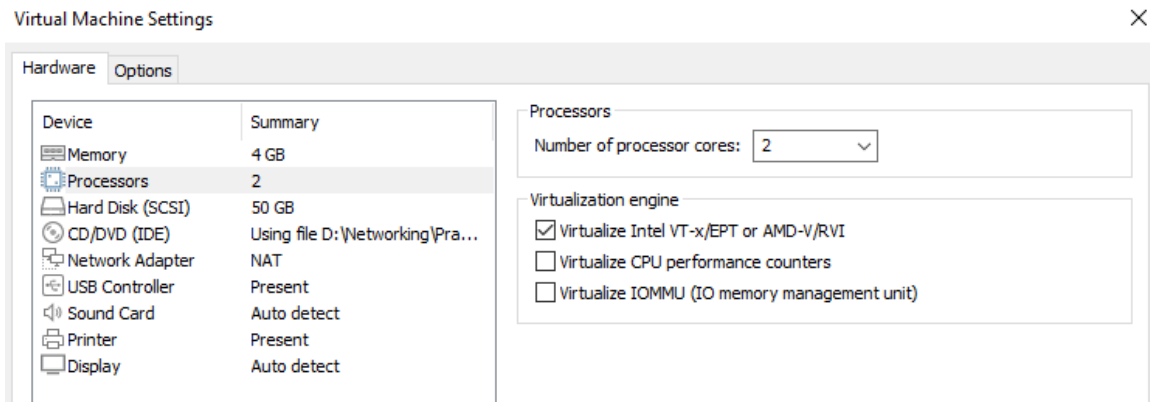
Virtual Machine Name:
Practical 2

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

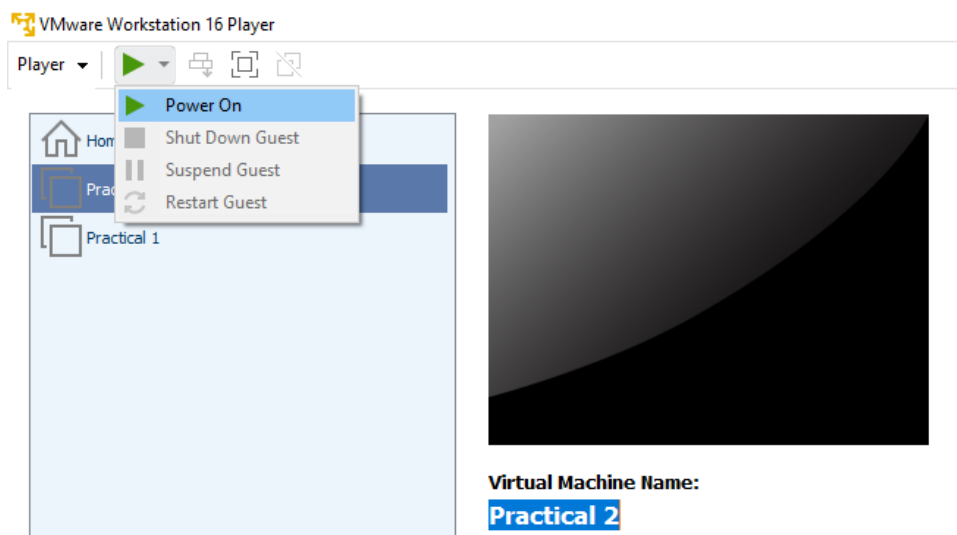
▶ Play virtual machine

🔧 Edit virtual machine settings

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



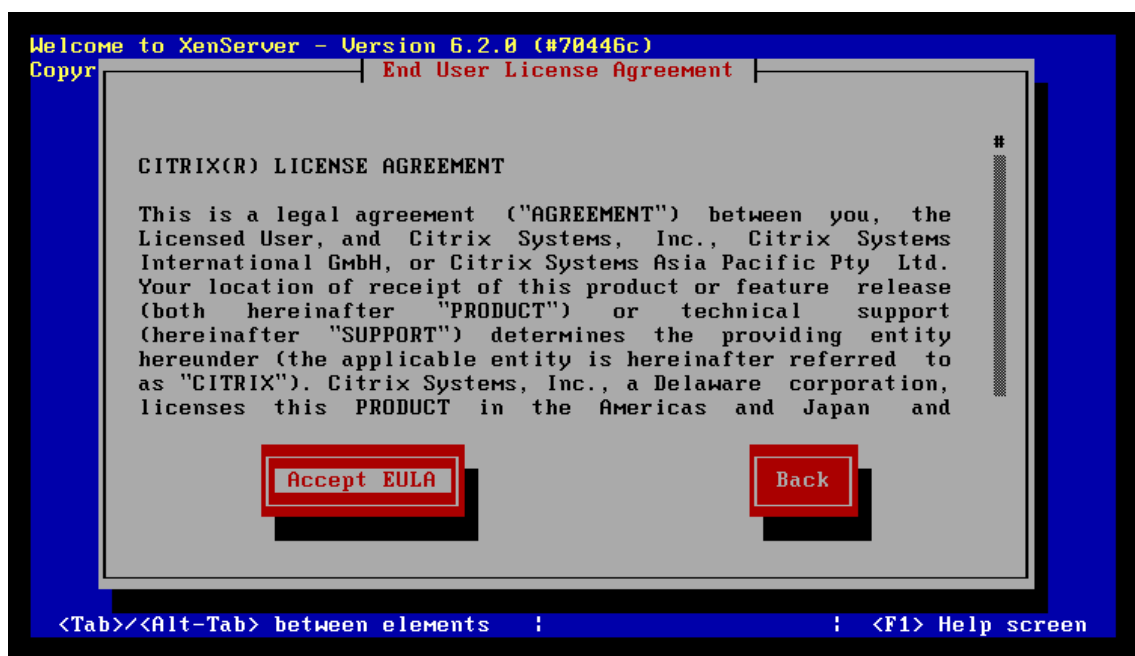
Then Power on the virtual machine



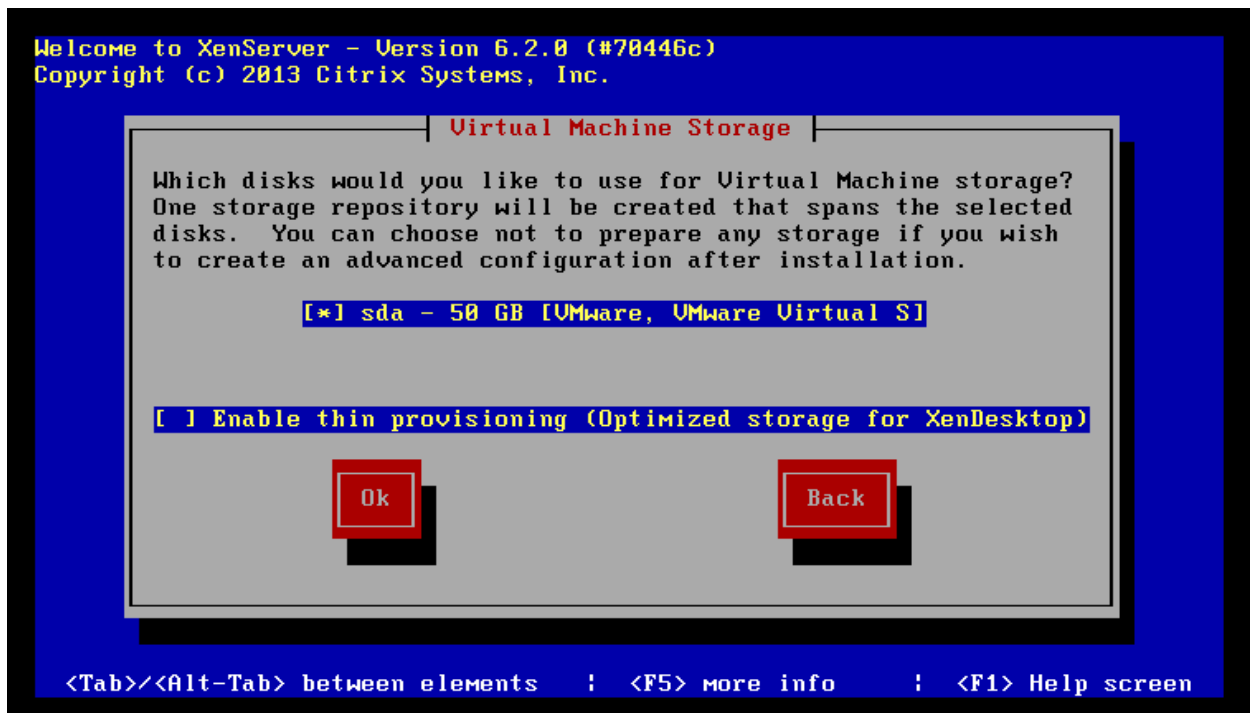
Step 6: Installation process start.



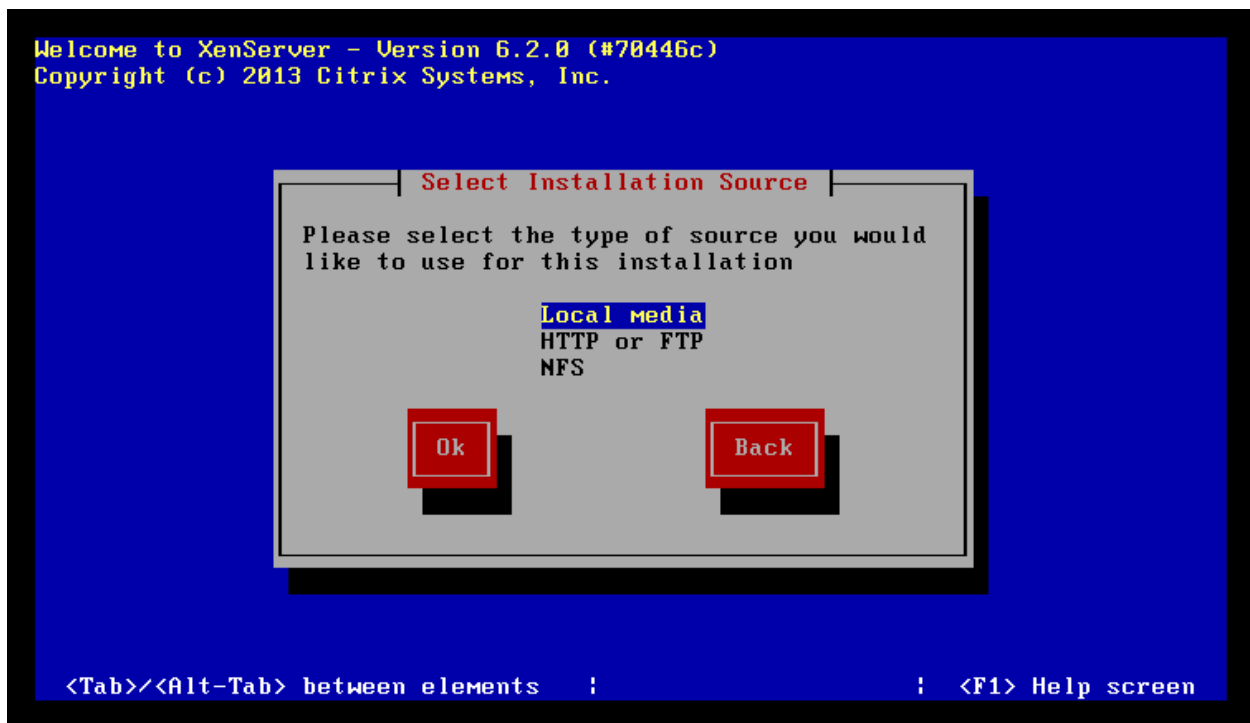
Accept License



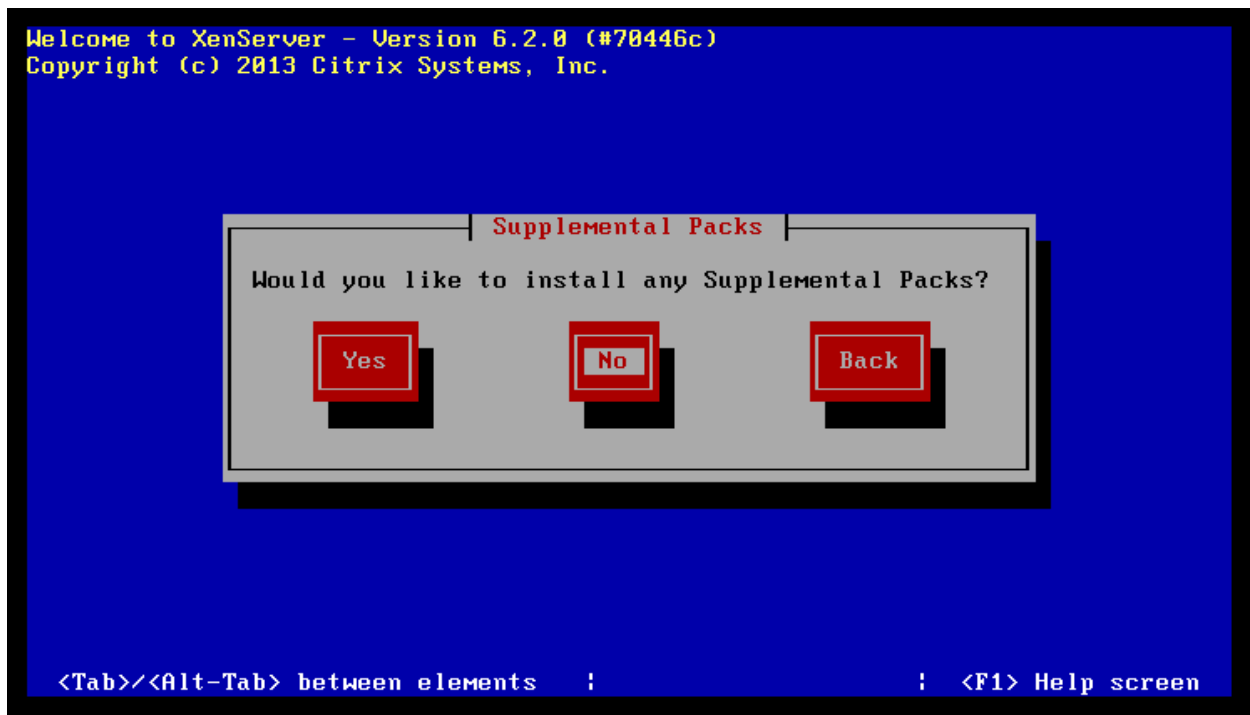
Select Disk and Click ok.



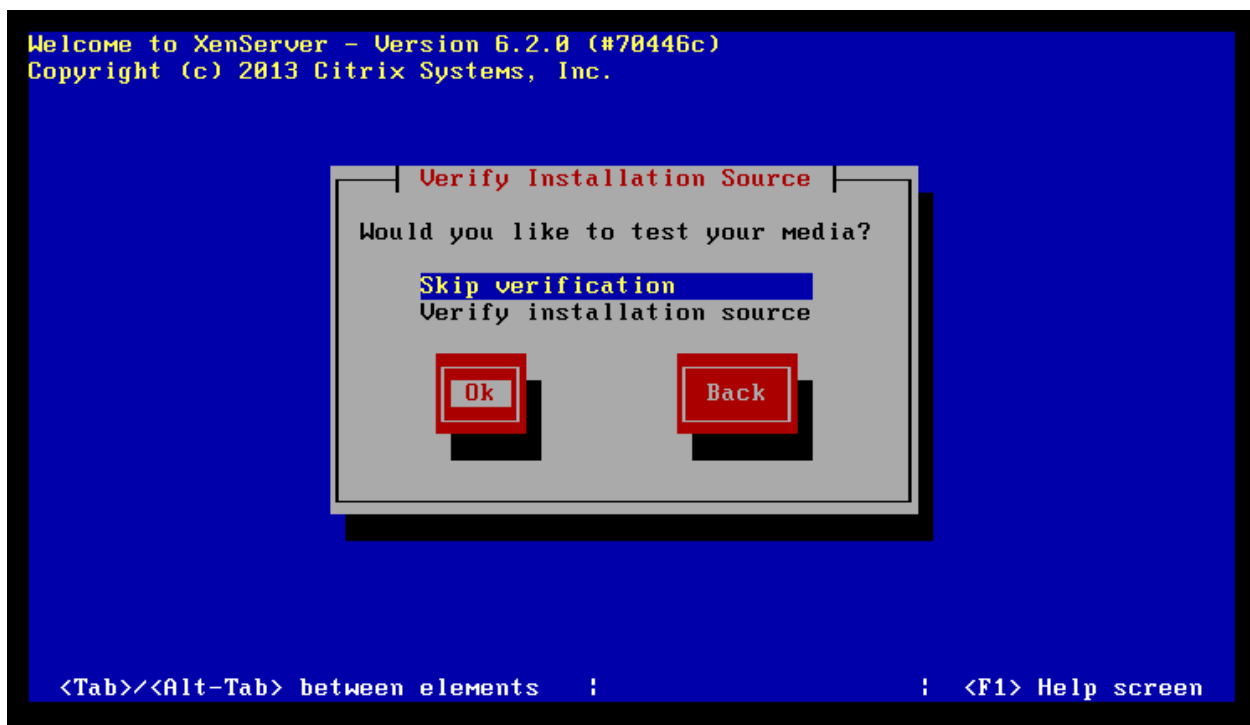
Select Installation Media as Local



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:

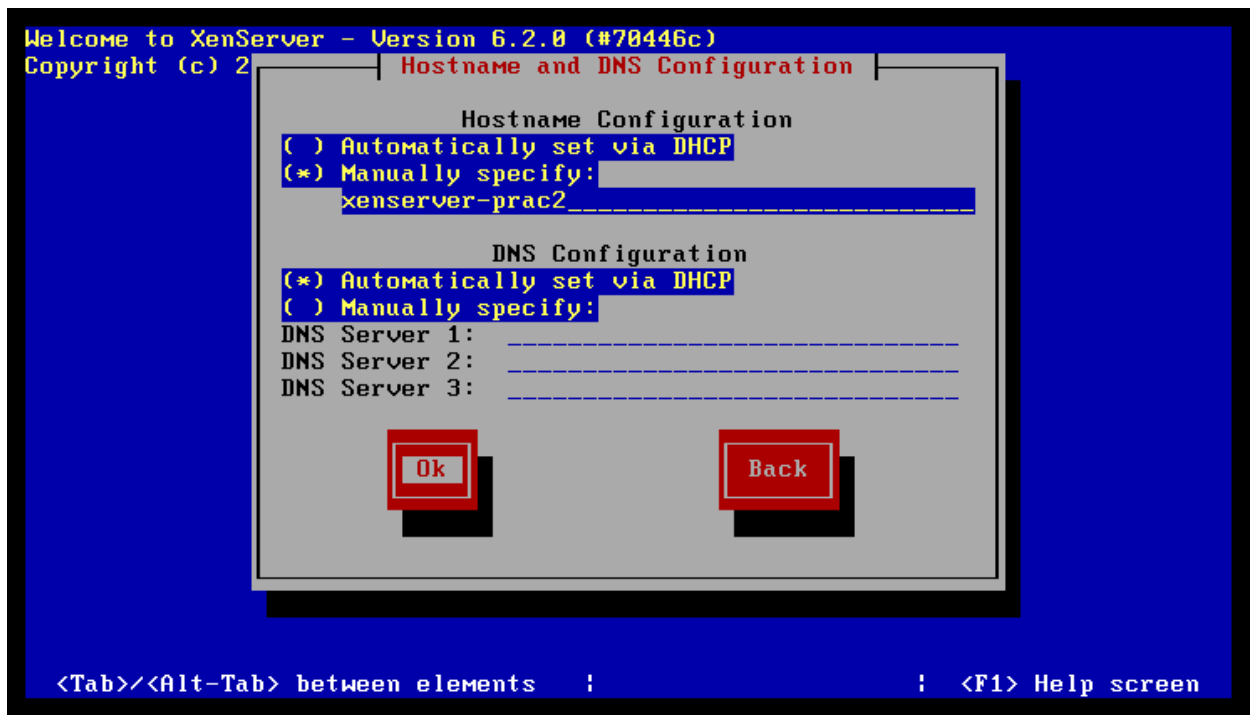
IP Address:

Subnet mask:

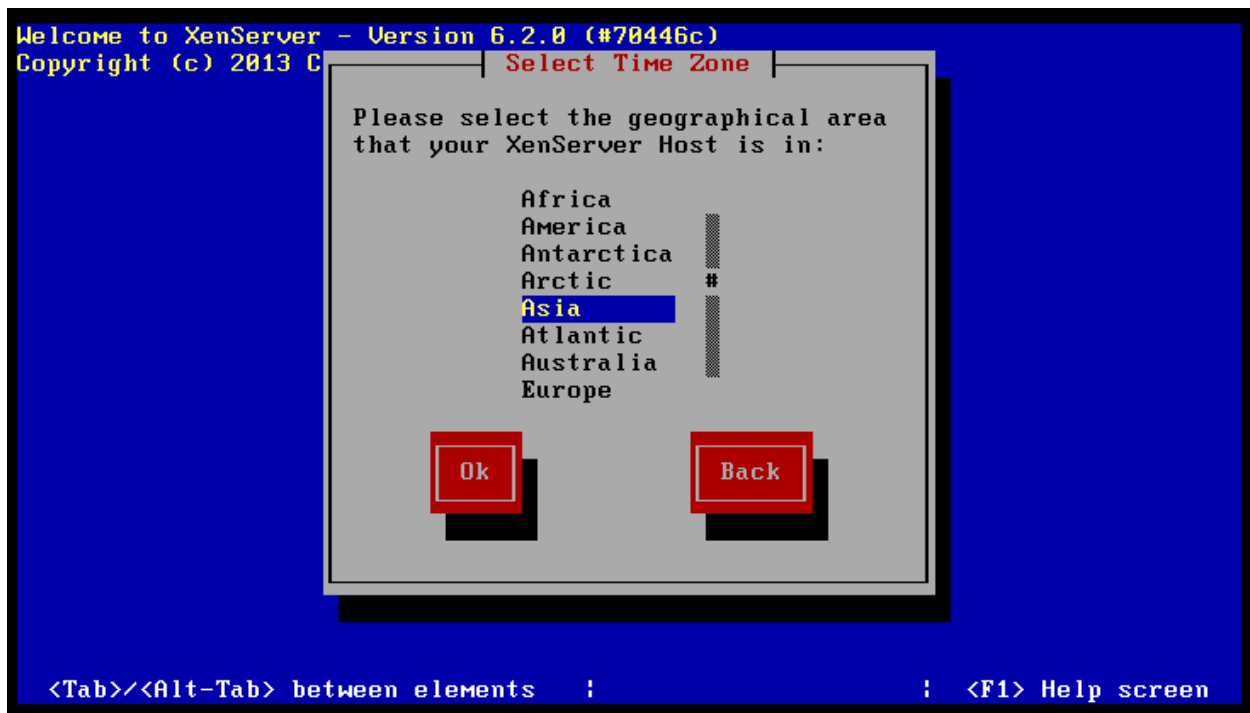
Gateway:

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

Now Configuring Hostname and DNS set as below

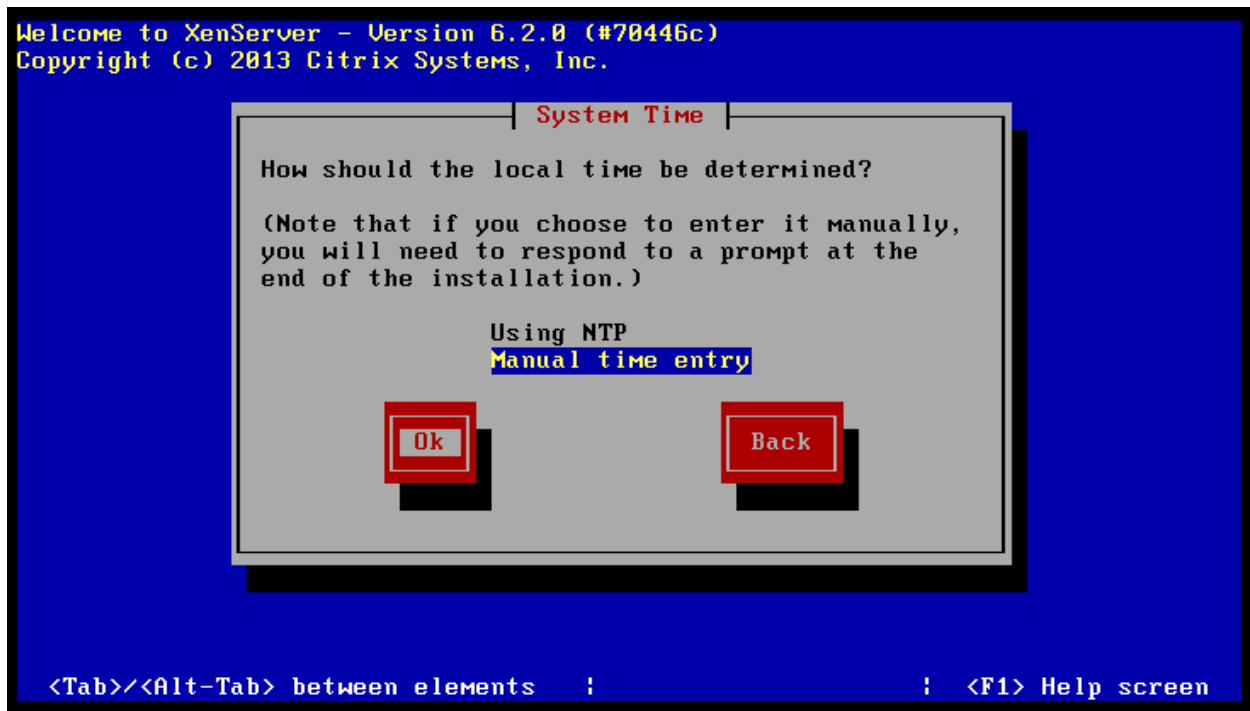


Select Time Zone: Asia

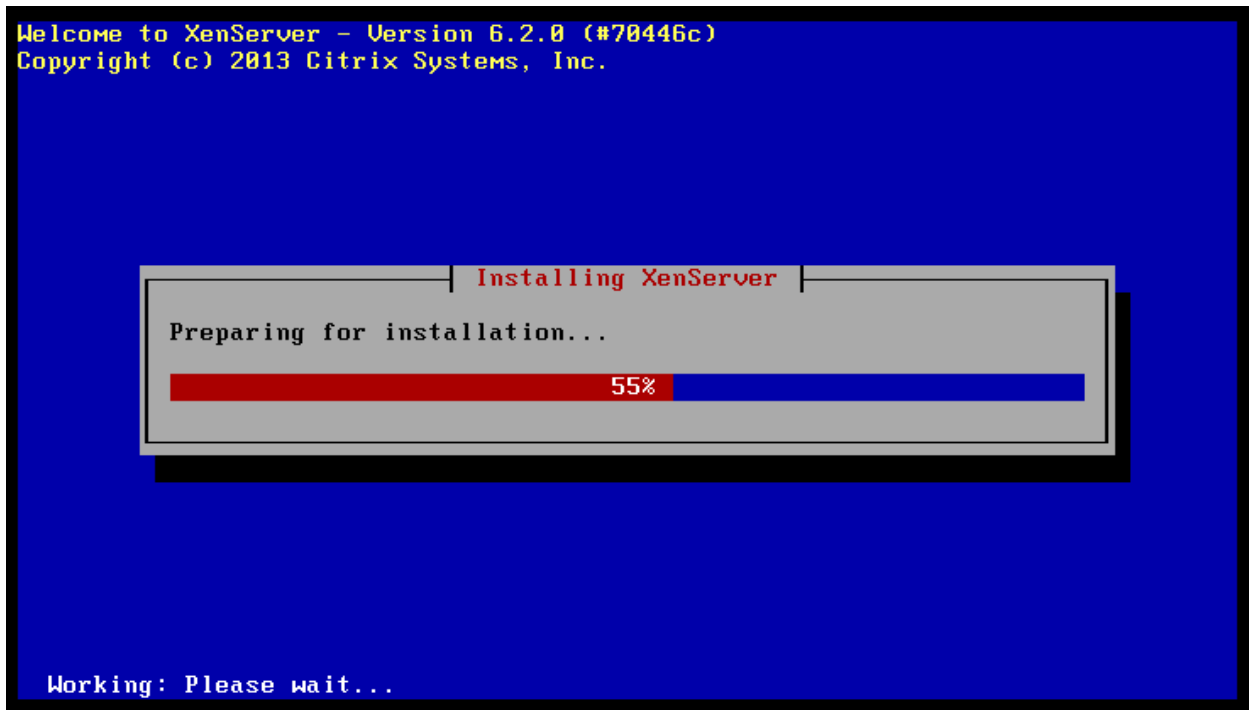
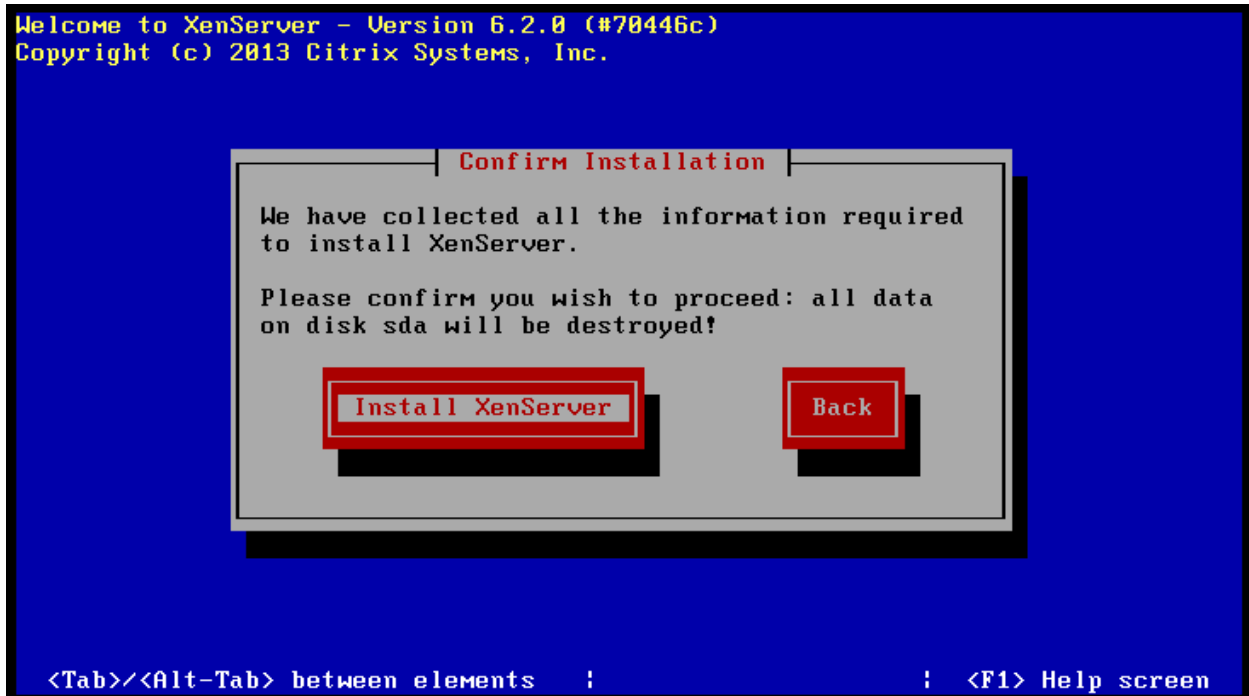




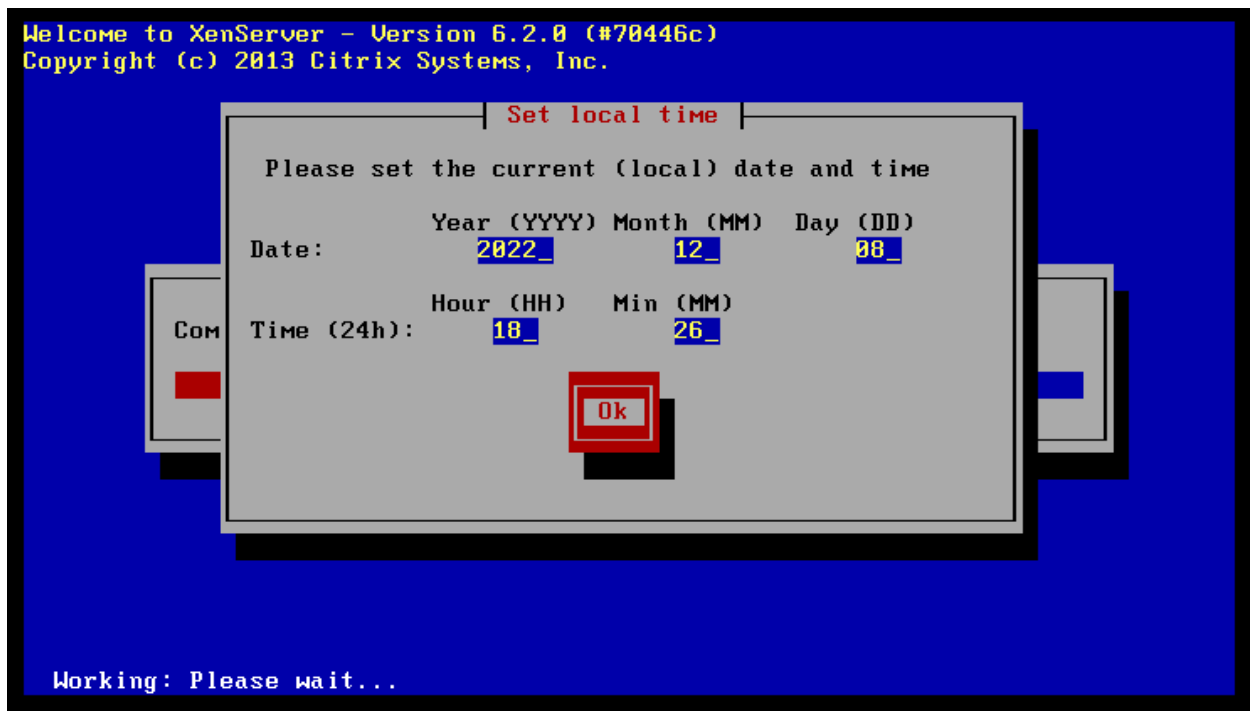
Then Select Manual Time Entry



Click on Install



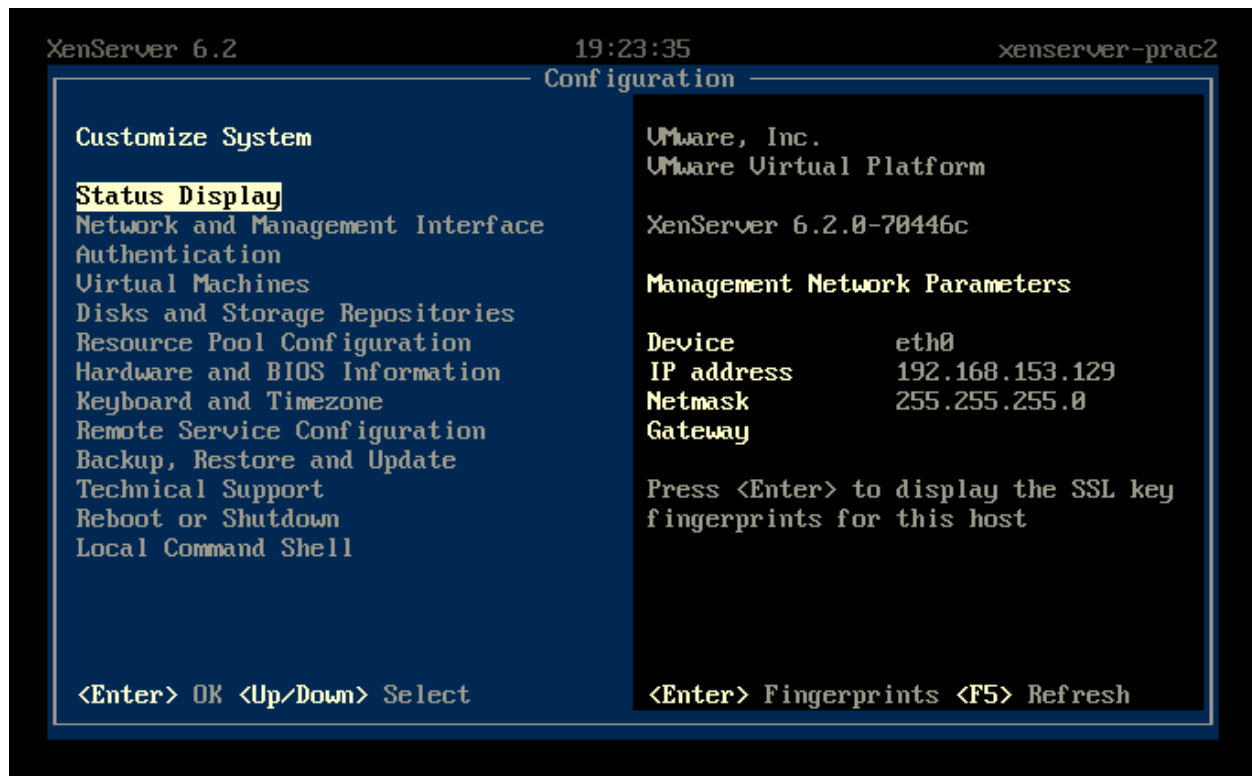
Set Date and Time












And reboot it.



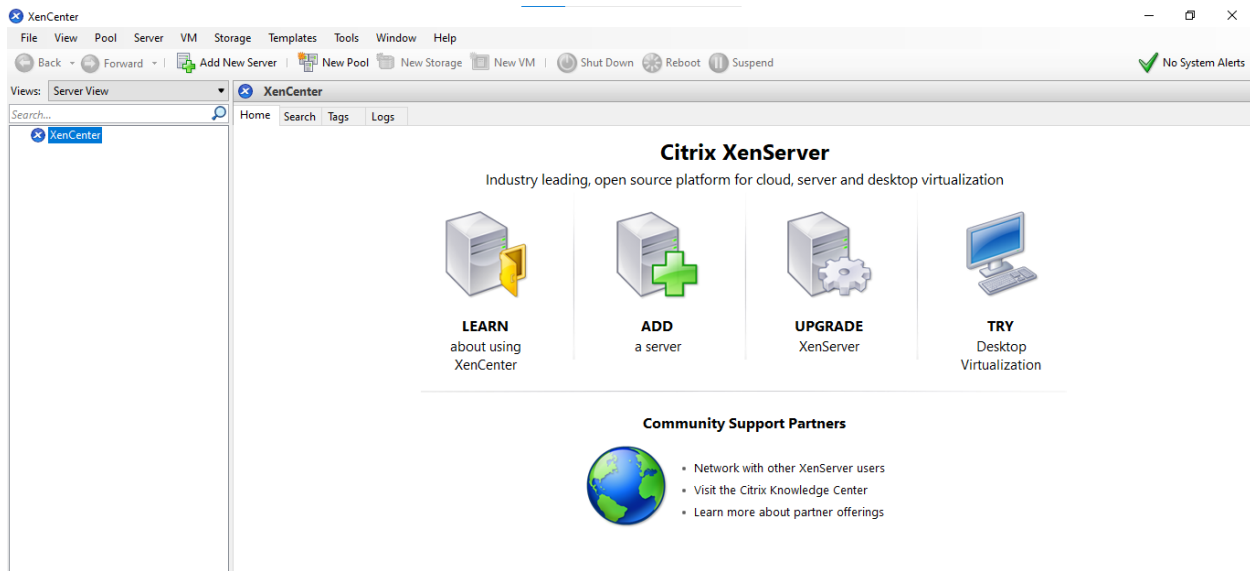
Done



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

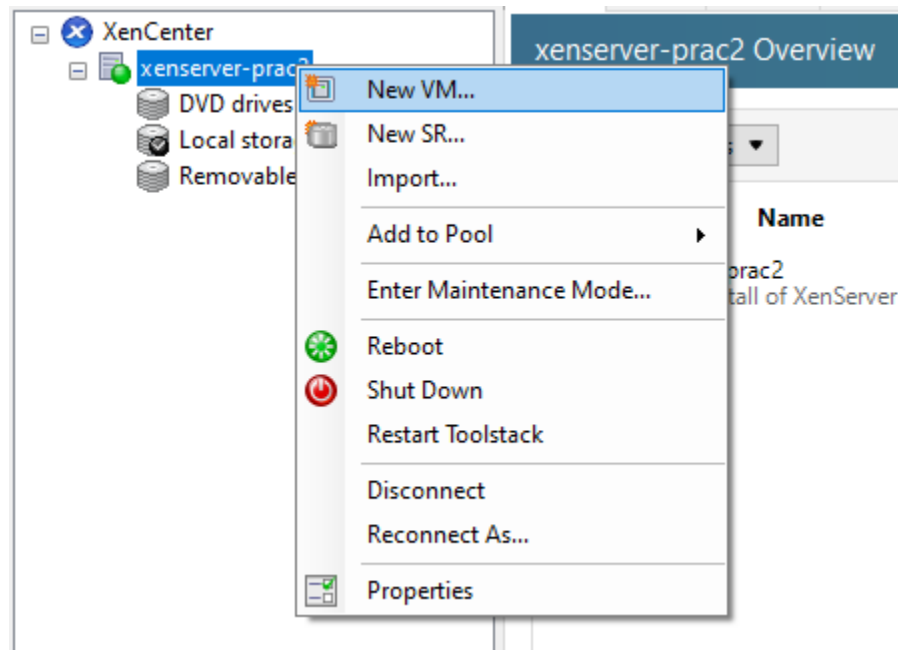
Open XenClient



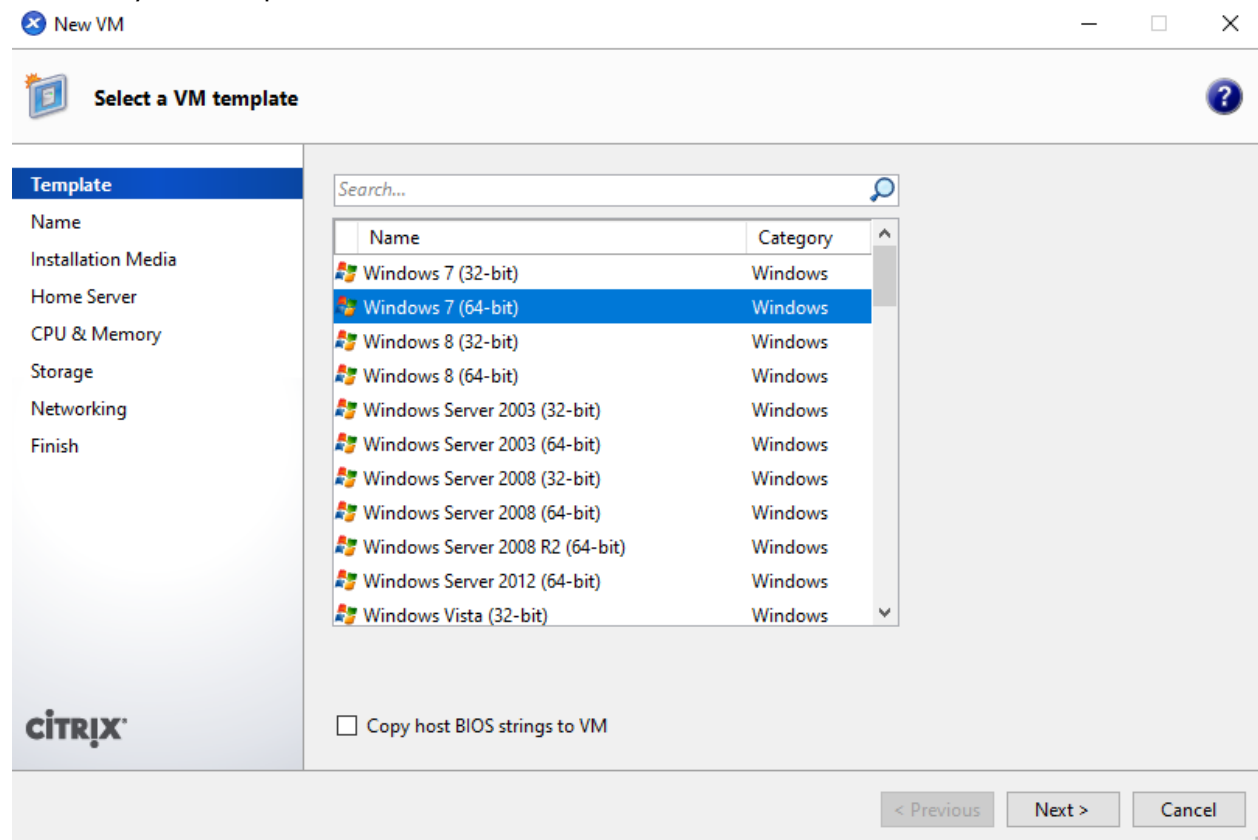
Step 8: Click on Add and Enter IP Address and Password and Click on Add

The screenshot shows the "Add New Server" dialog box. The title bar reads "Add New Server" with a close button and a help icon. 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 is a "Server:" label followed by a text box containing "192.168.153.129" and a dropdown arrow. Below this is a section titled "User login credentials" containing a "User name:" label followed by a text box containing "root", and a "Password:" label followed by a text box filled with dots. At the bottom right, there are two buttons: "Add" and "Cancel".

Click on New VPN



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)

CITRIX

< 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.

CITRIX

< 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

BackForwardAdd New ServerNew PoolNew StorageNew VMStartRebootSuspend

No System Alerts

Views: Server ViewPrac-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

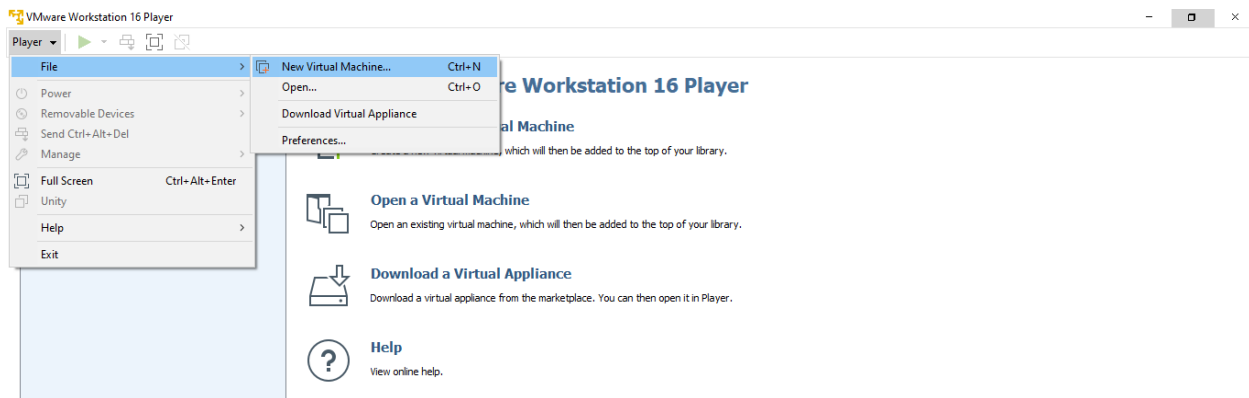
UUID:cb533b76-7e9e-473a-78b1-6ee79388dae8

Boot Options

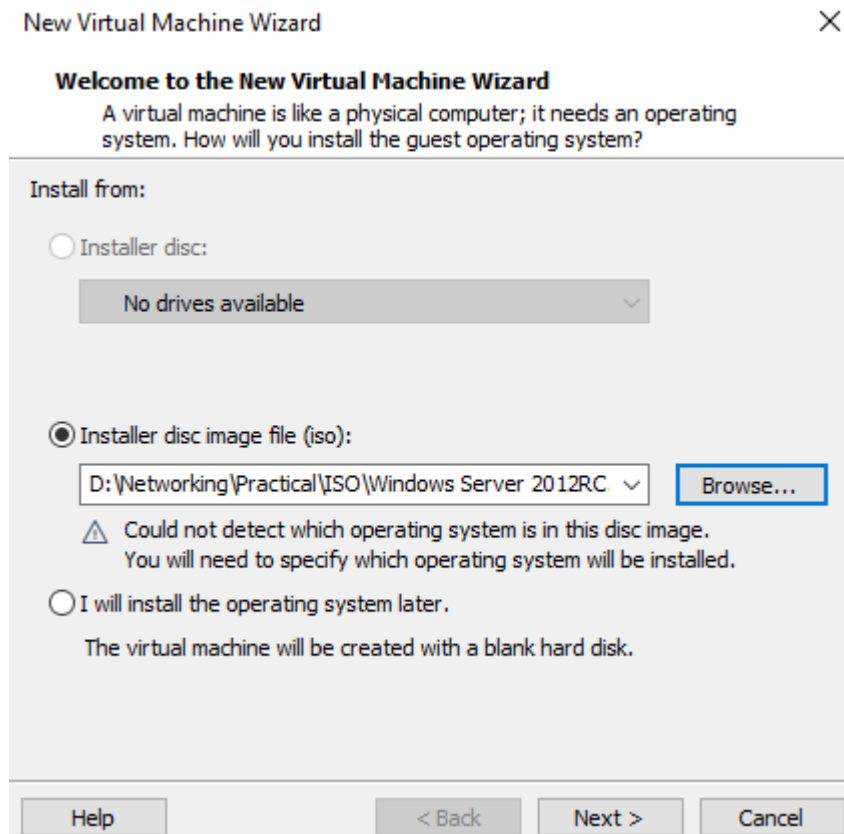
Practical No. 2

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 XenServer 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

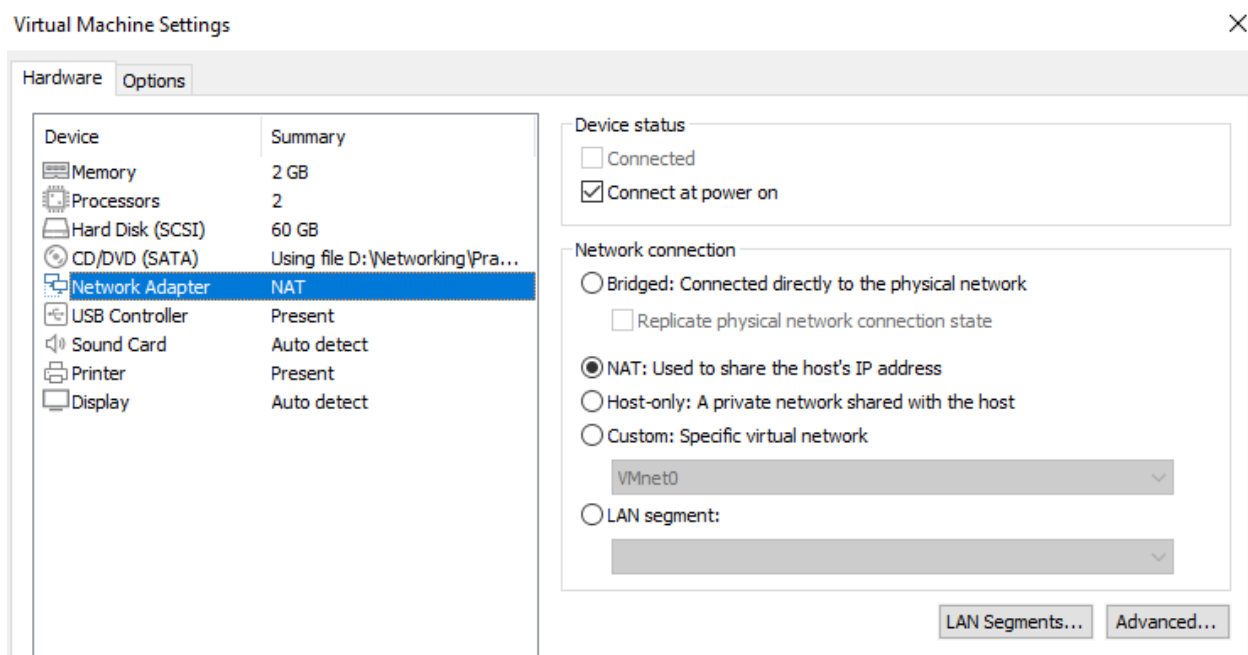
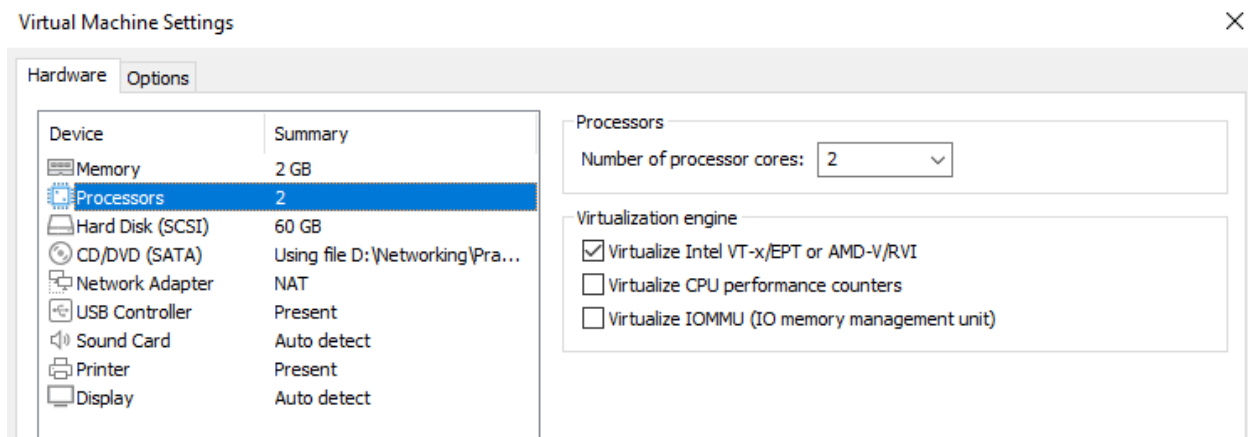
Virtual Machine Name:
Practical 3

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

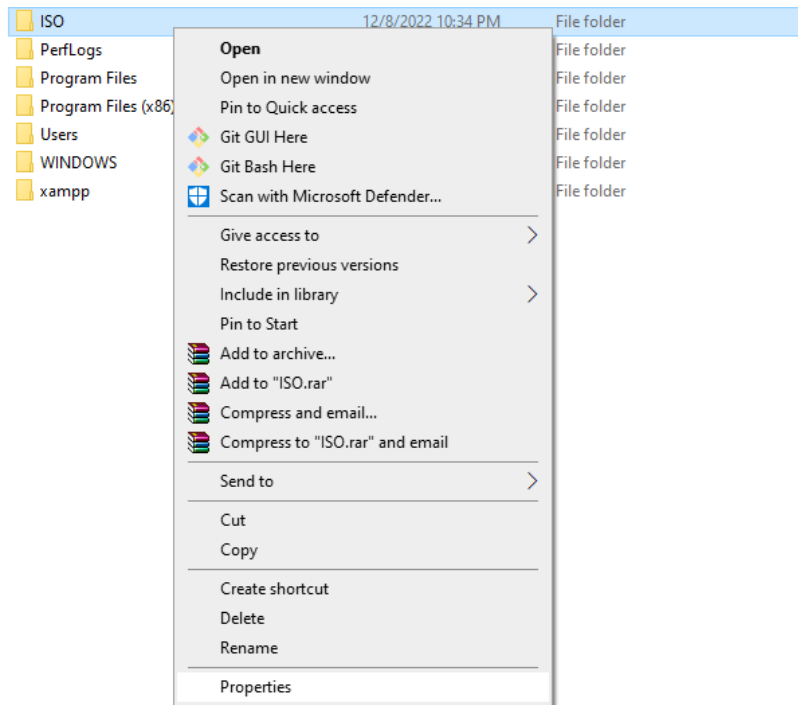
Name	Date modified	Type	Size
Drivers	11/19/2021 12:31 PM	File folder	
Intel	10/13/2021 1:43 PM	File folder	
ISO	12/8/2022 10:32 PM	File folder	
PerfLogs	12/7/2019 2:44 PM	File folder	
Program Files	12/8/2022 3:16 PM	File folder	
Program Files (x86)	12/8/2022 7:27 PM	File folder	
Users	12/9/2021 1:08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

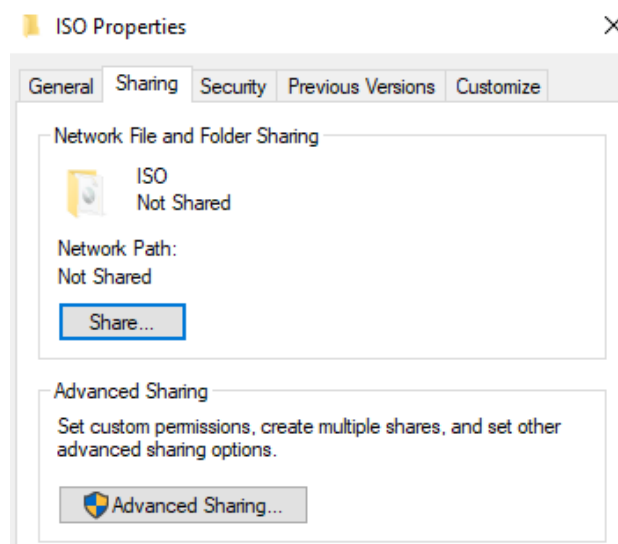
PC > Local Disk (C:) > ISO

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

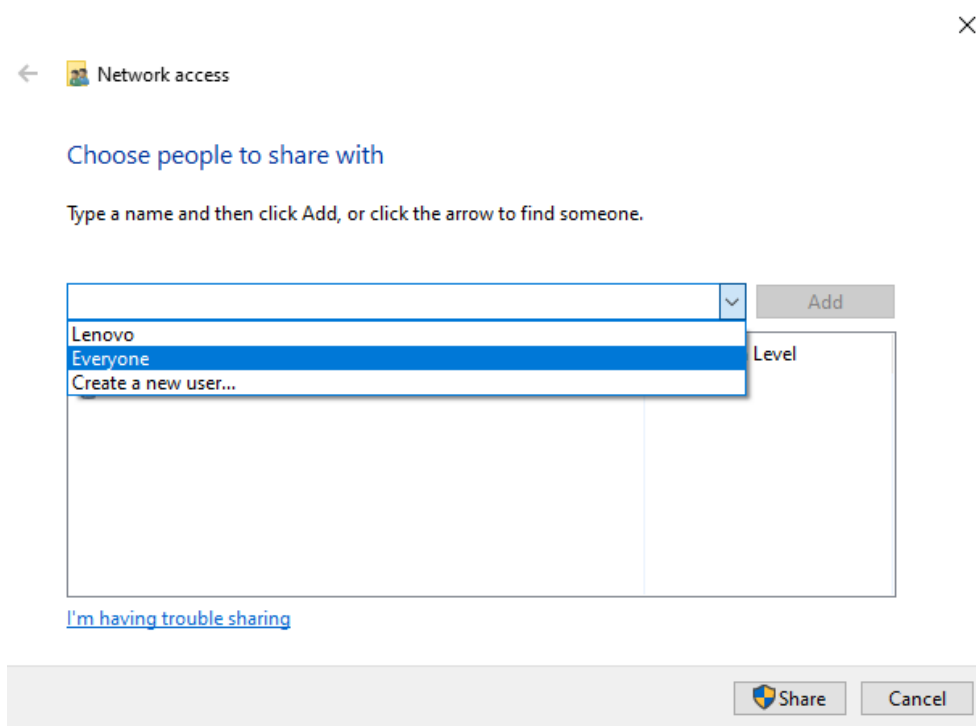
Right click on ISO folder and Click on properties



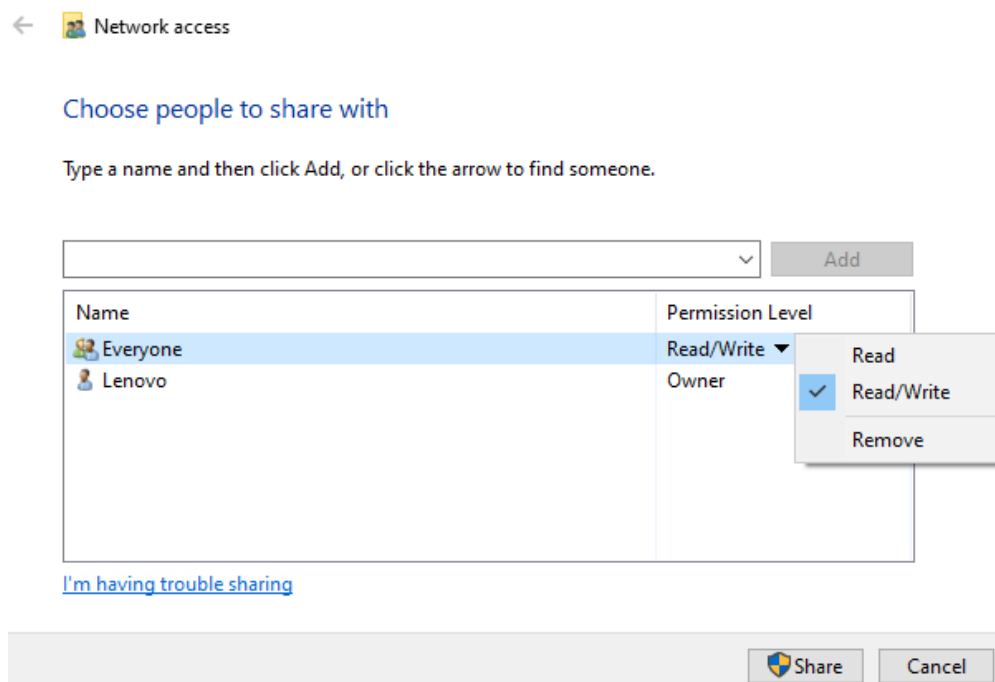
Inside properties go to Sharing



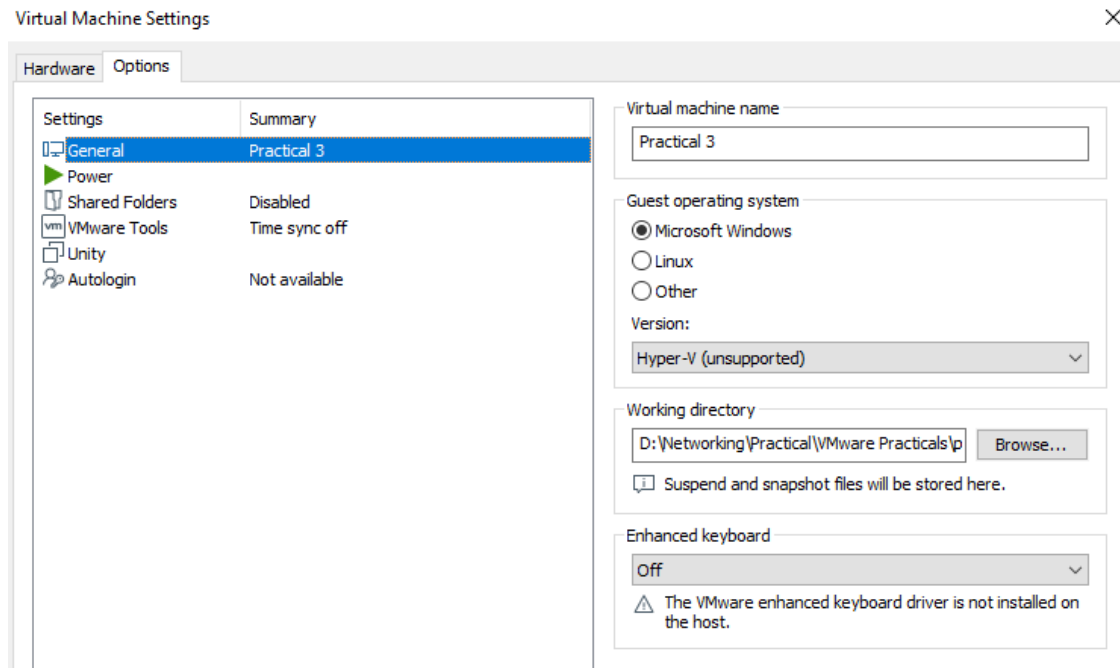
Click on Share and Select Everyone from dropdown



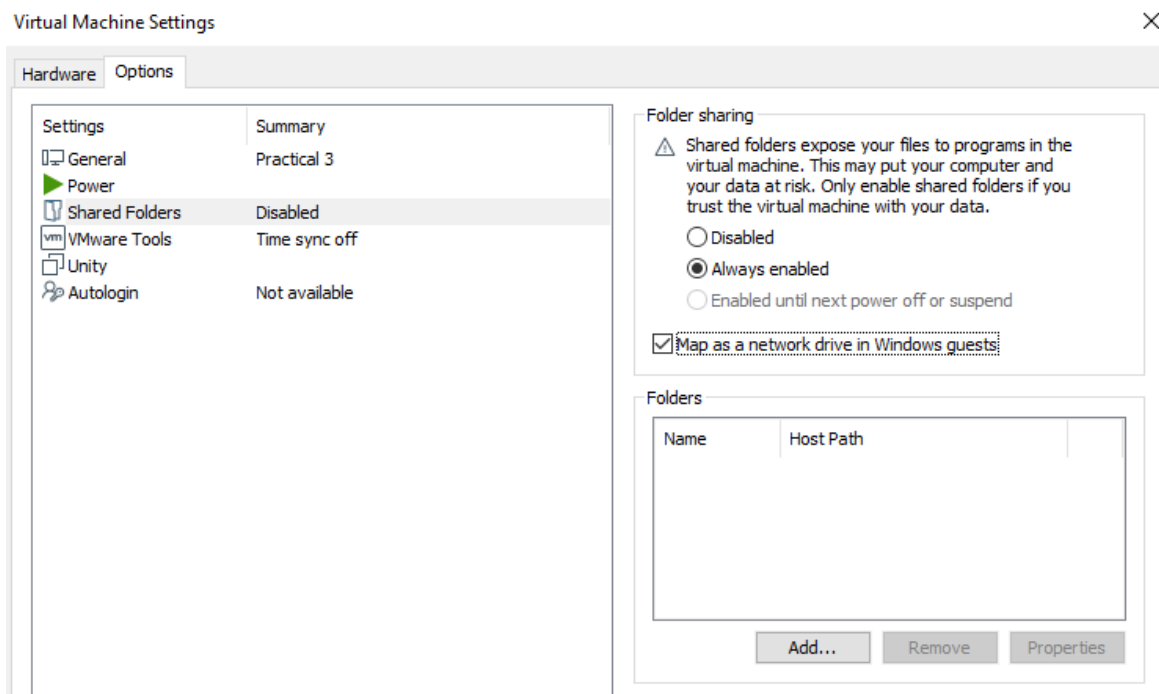
Then click on Add and Give Read Write permission. Then click on Share



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



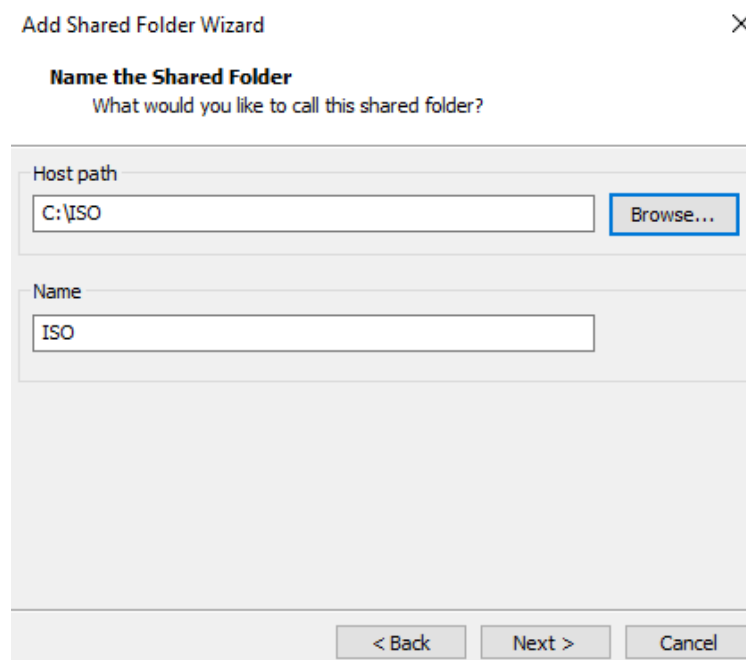
Go to shared folder and select Always enabled option. Check checkbox



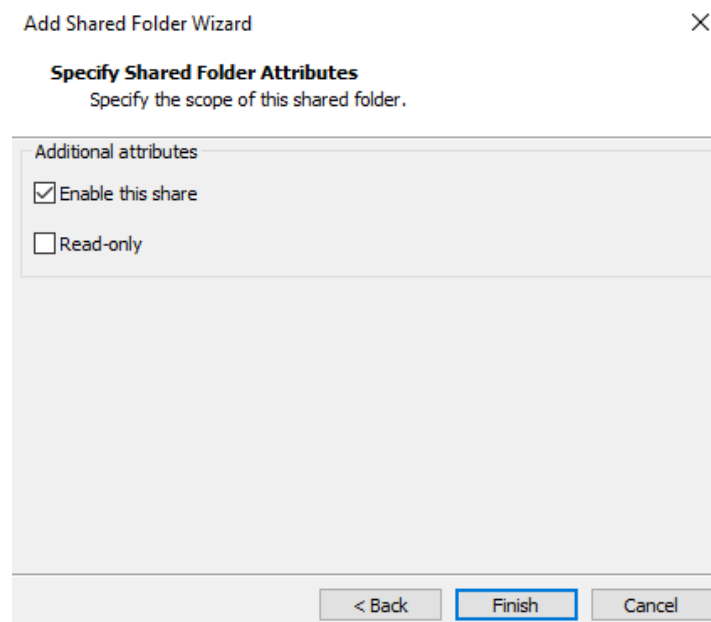
Then click on Add. After click on Add the new window pop up.



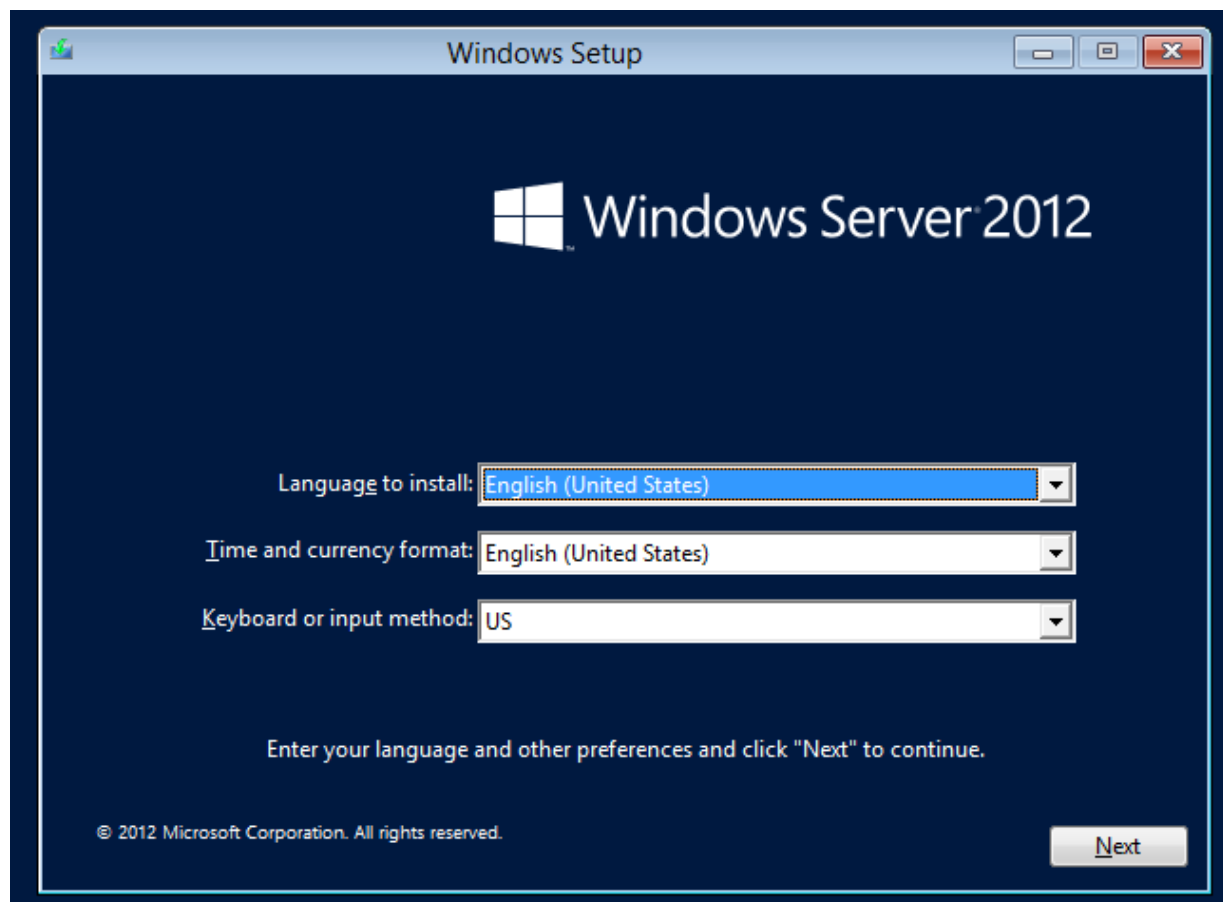
Click on Next. Browse the shared folder



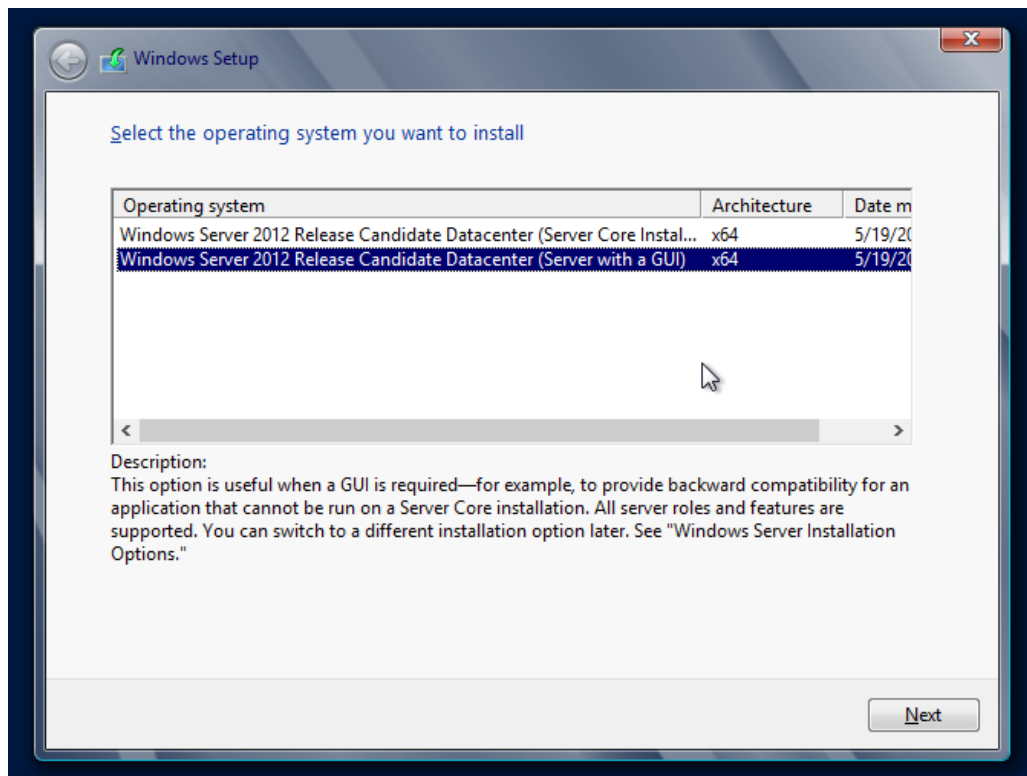
Check Enable share checkbox and then Finish



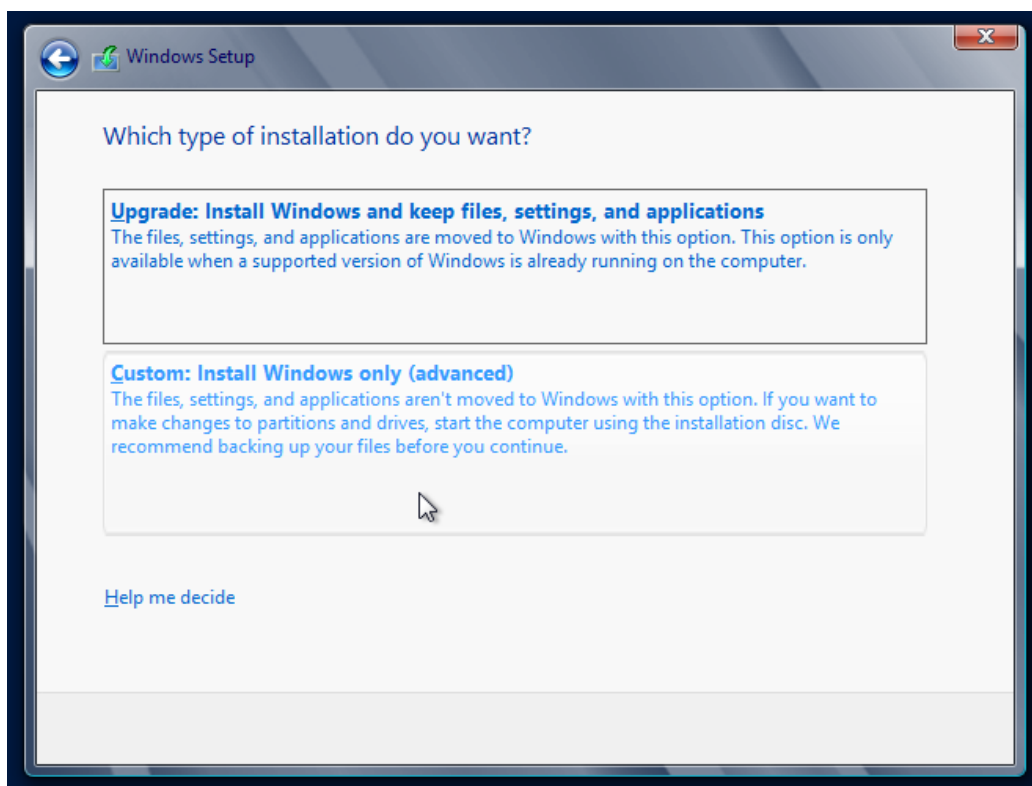
Power on the virtual machine



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

Password

Reenter password 

After that click on Add roles and features

Dashboard

Local Server

All Servers

File and Storage Services ▸

WELCOME TO SERVER MANAGER

QUICK START

WHAT'S NEW

LEARN MORE

1 Configure this local server

2 Add roles and features

3 Add other servers to manage

4 Create a server group

Hide

Select Installation type Role based

Select installation type

DESTINATION SERVER
WIN-AAK8J65V189

Before You Begin

Installation Type

Server Selection

Server Roles

Features

Confirmation

Results

Select the installation type. You can install roles and features on a running physical computer or virtual machine, or on an offline virtual hard disk (VHD).

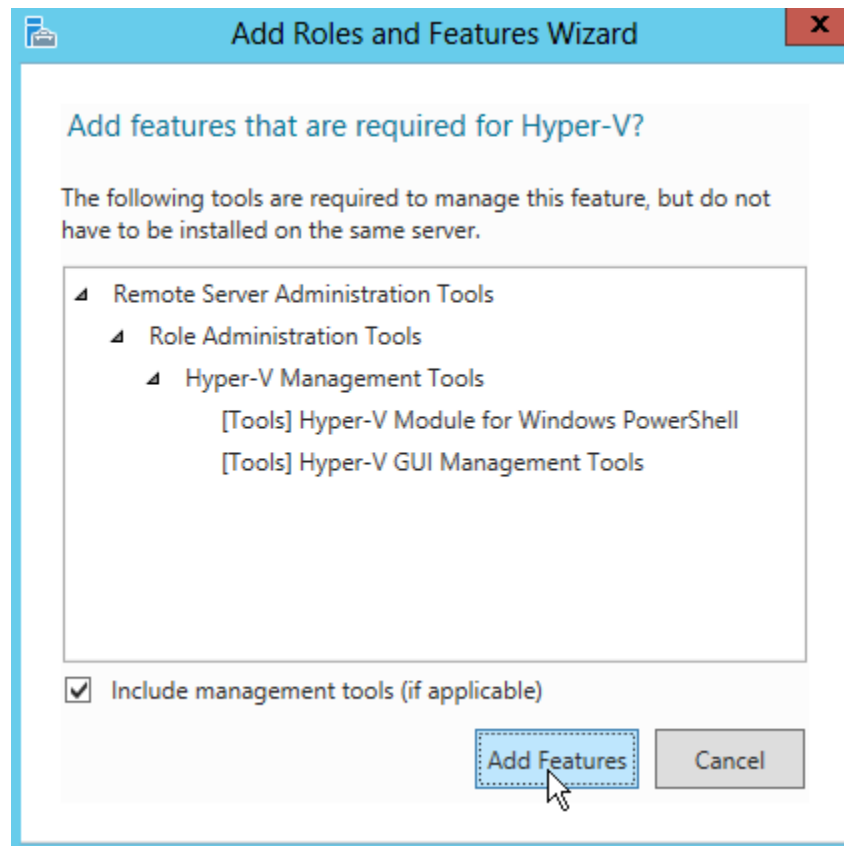
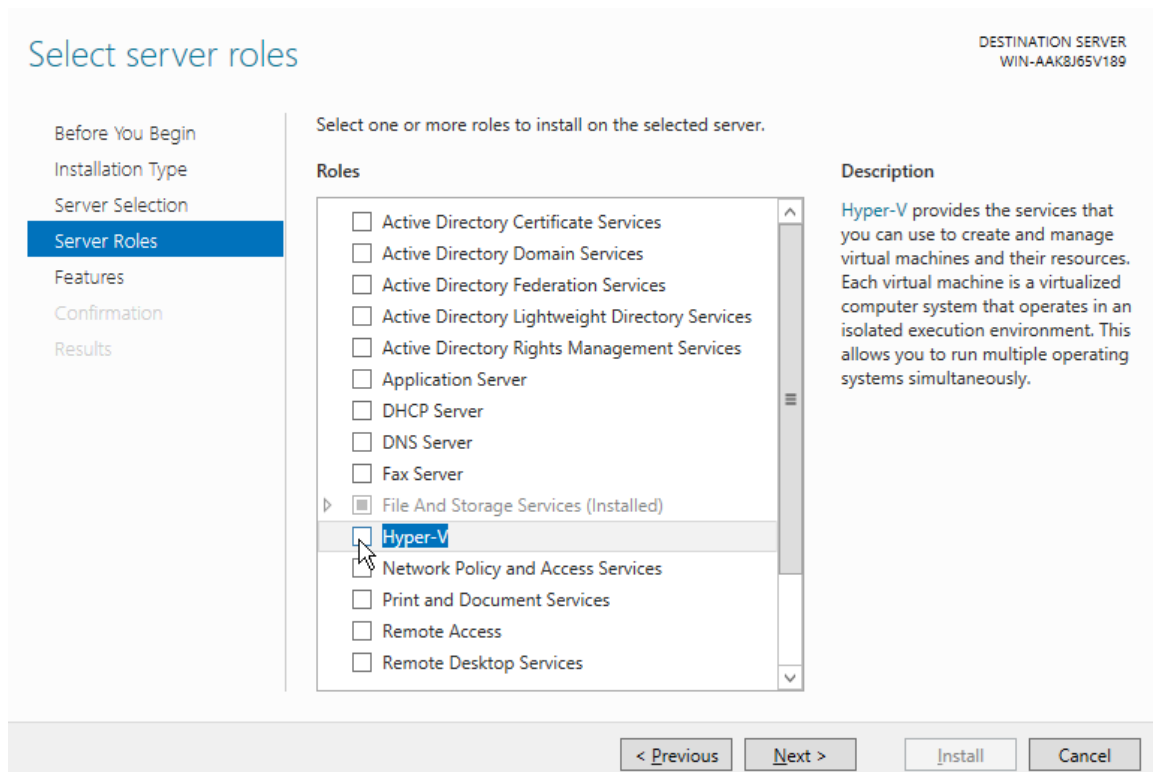
☒ **Role-based or feature-based installation**

Configure a single server by adding roles, role services, and features.

☐ **Remote Desktop Services installation**

Install required role services for Virtual Desktop Infrastructure (VDI) to create a virtual machine-based or session-based desktop deployment.

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



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... ✕

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

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

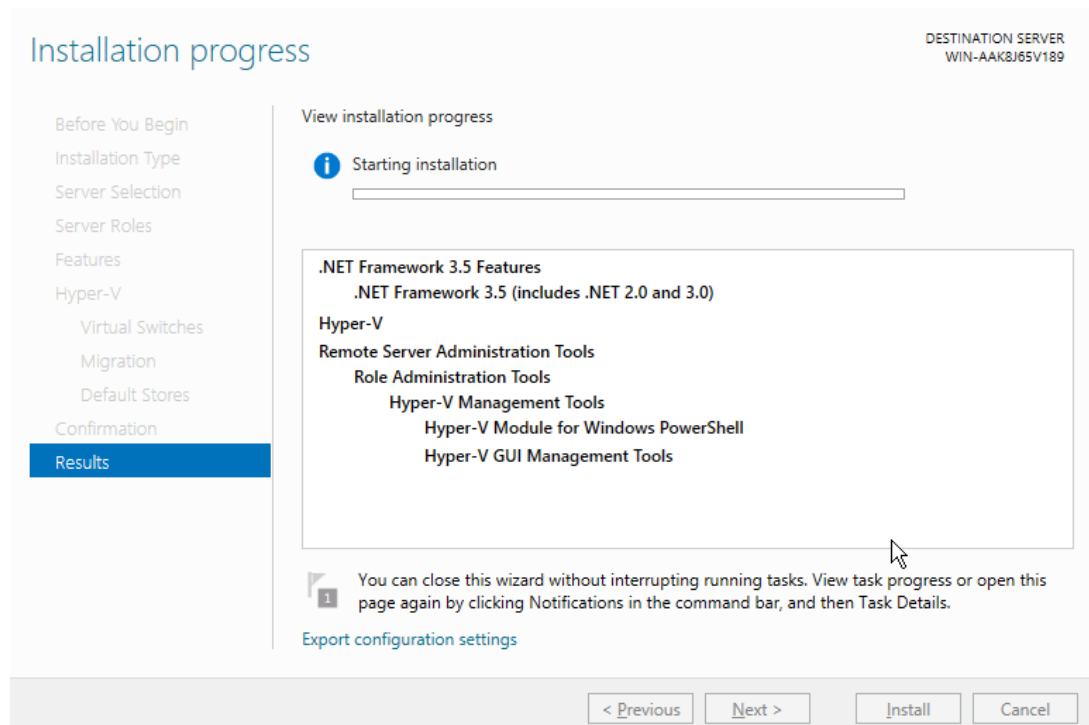
Hyper-V Module for Windows PowerShell

Hyper-V GUI Management Tools

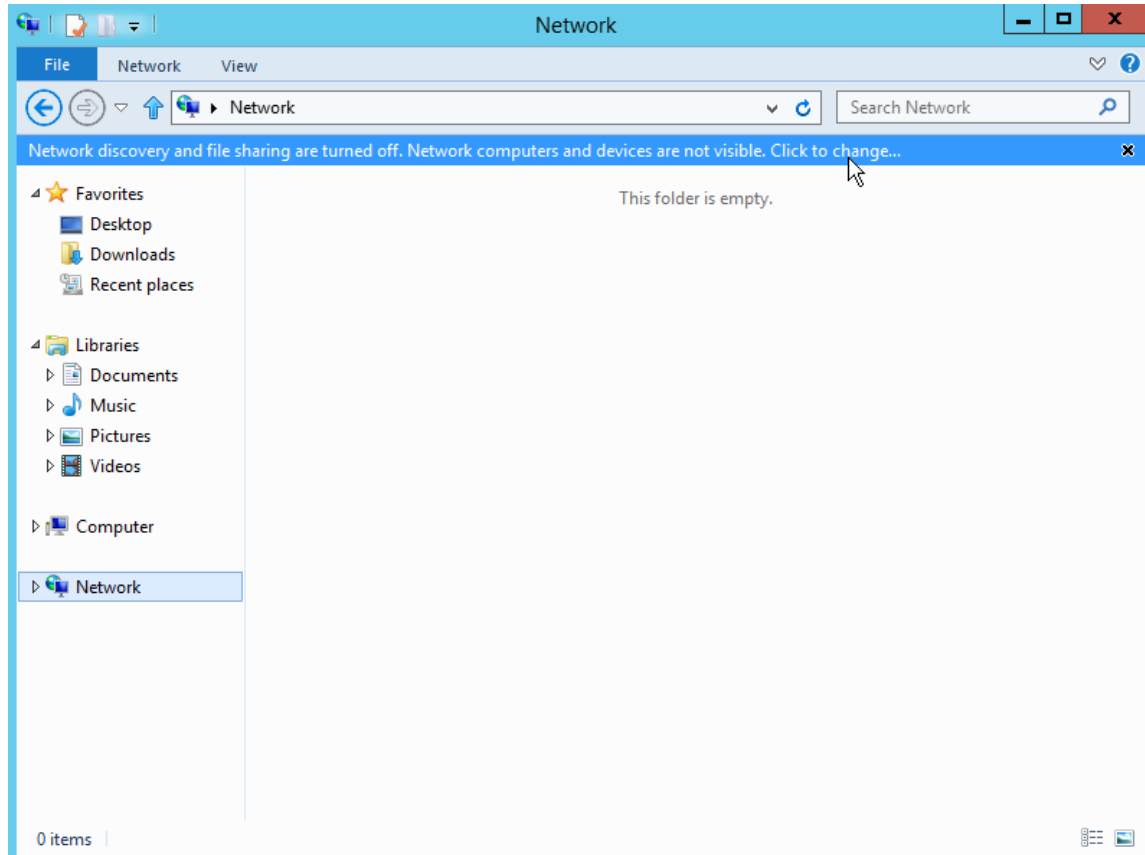
[Export configuration settings](#)
[Specify an alternate source path](#)

< Previous Next > Install Cancel

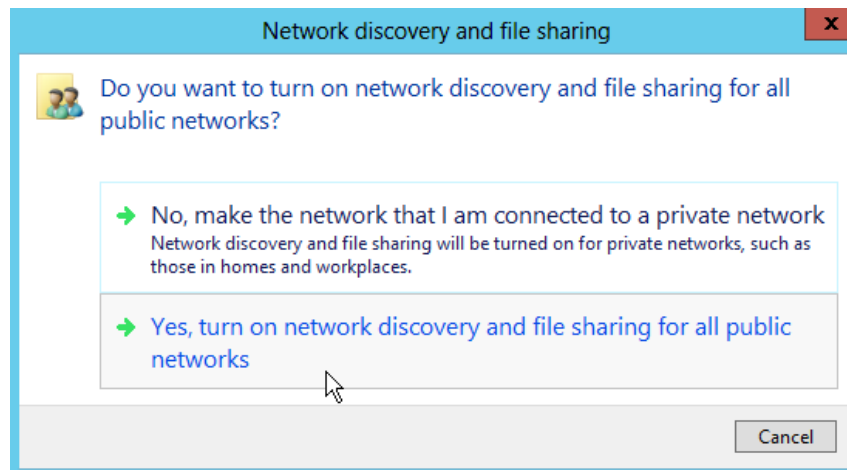
Click on Install



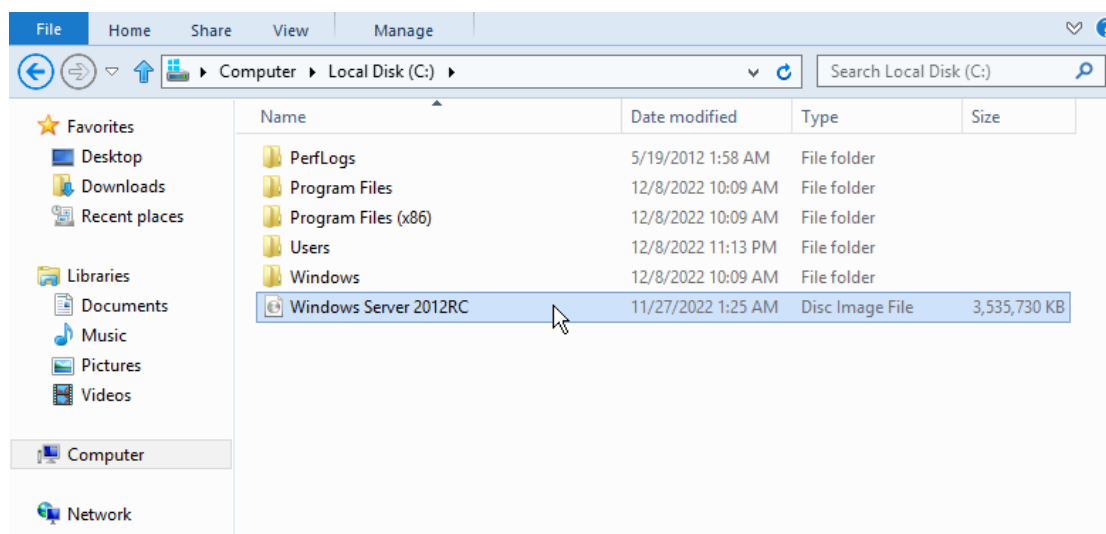
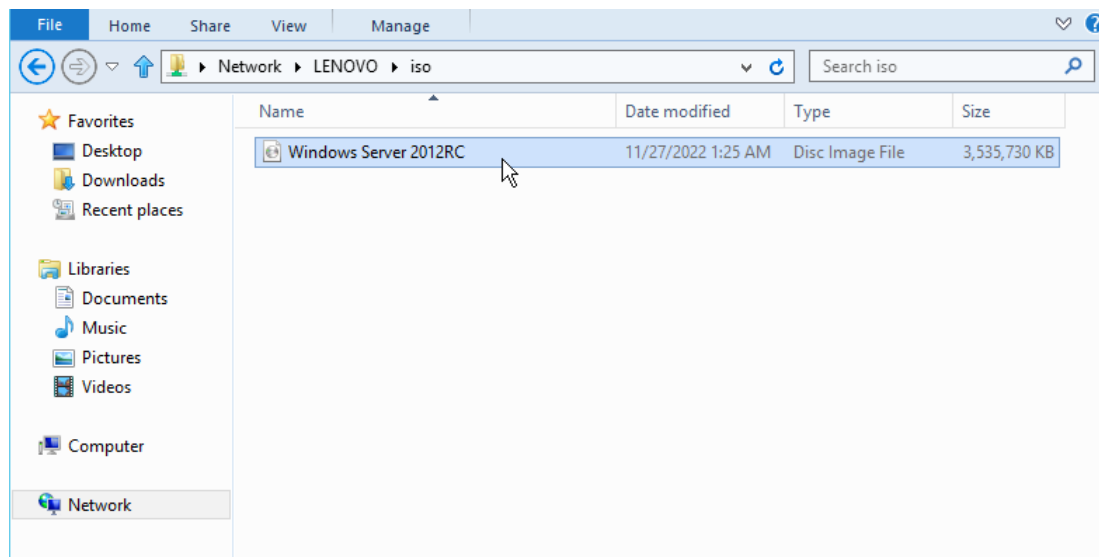
Open Folder and Go to Network, click to change and turn on



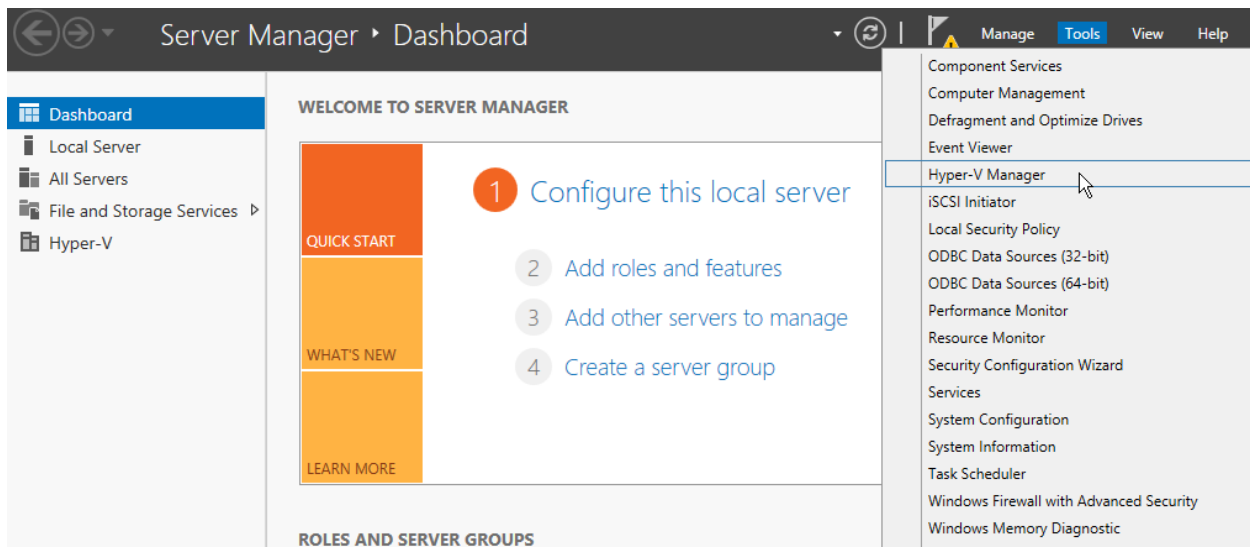
Click on Yes



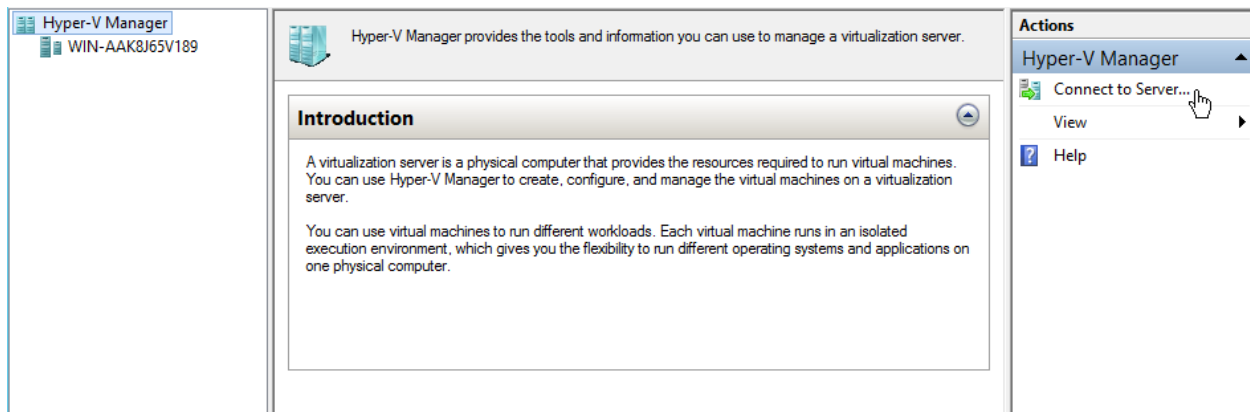
Copy iso file and paste in Computer C drive



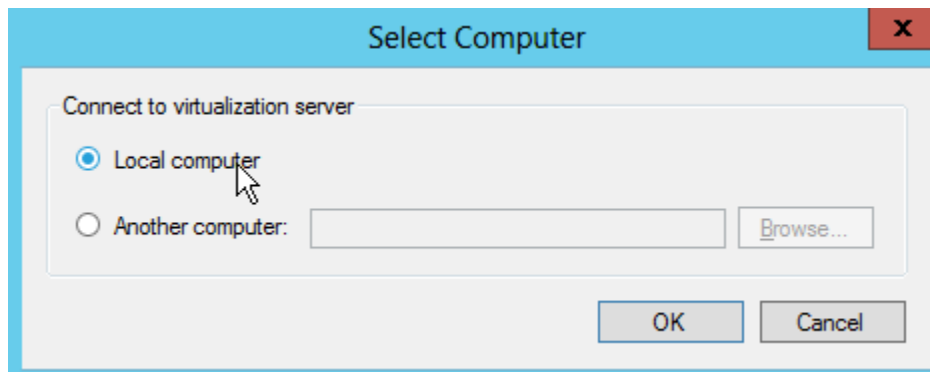
Step 8: Go to Tools Select Hyper-V Manage



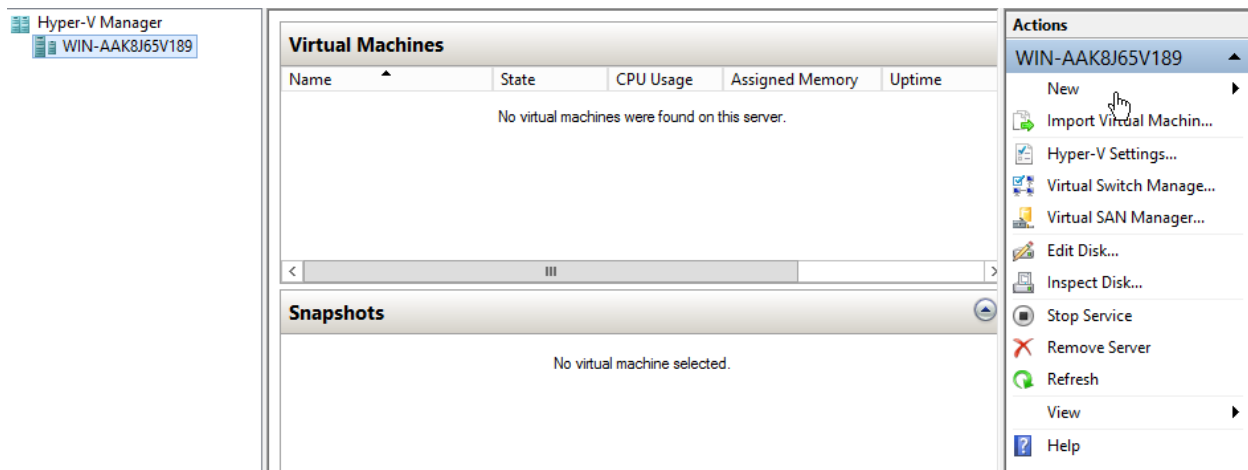
Select Connect to Server



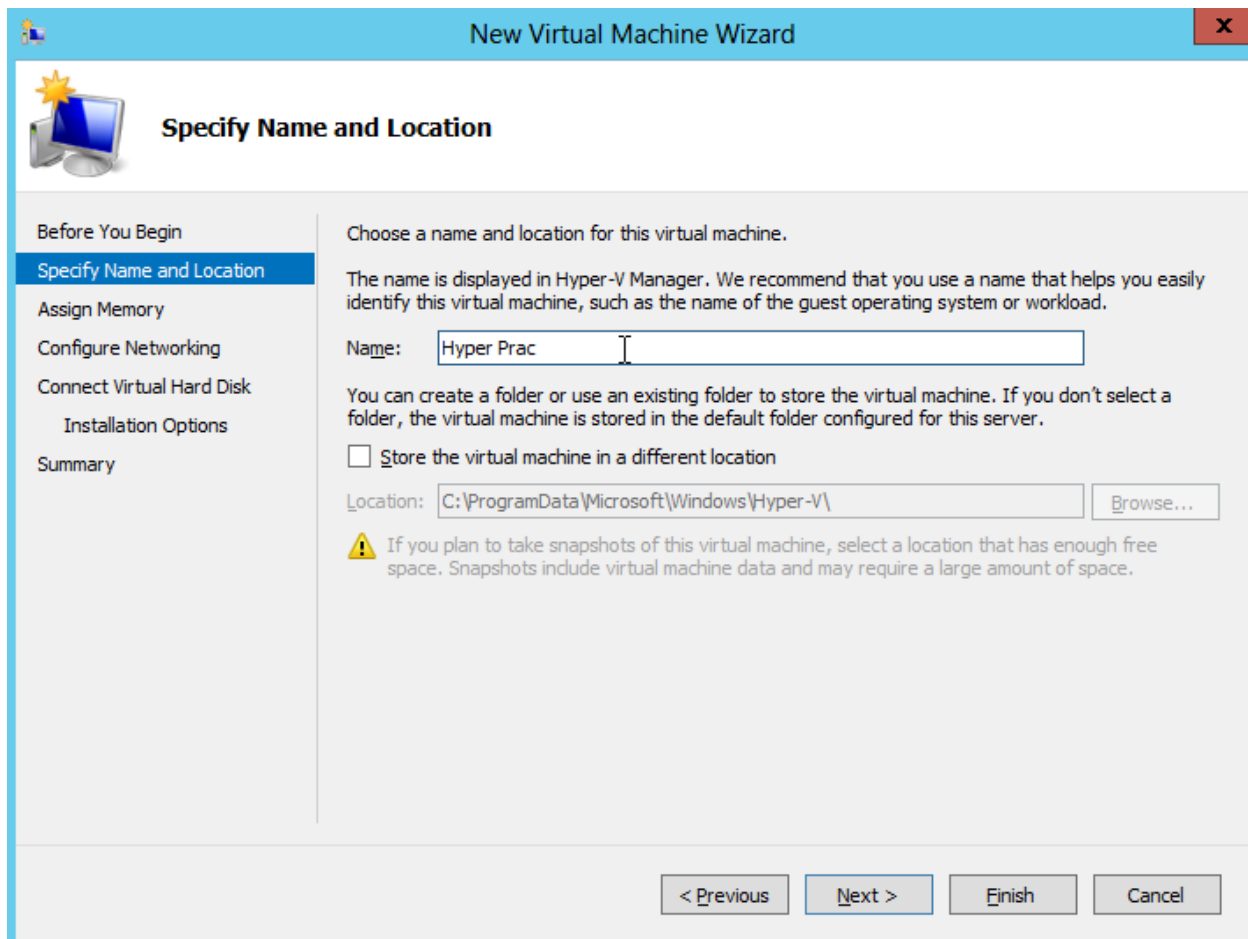
Select Local Computer



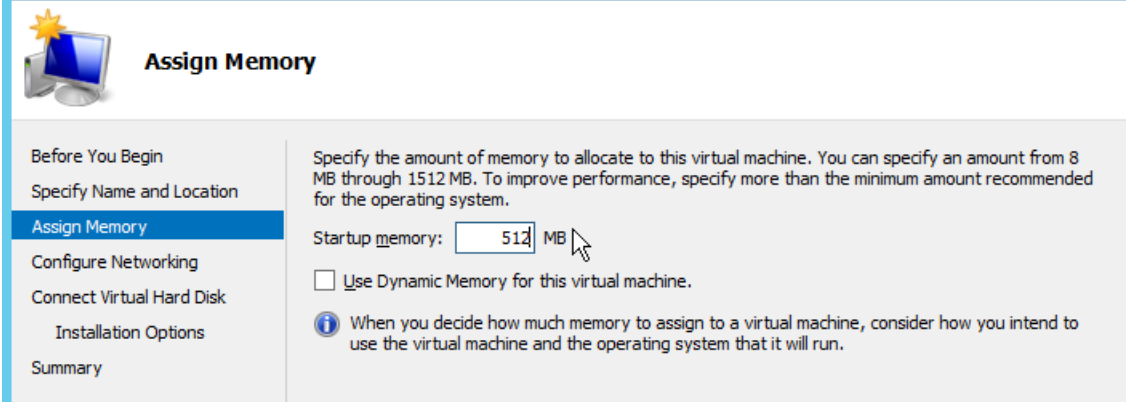
Click on New then Select Virtual Machine



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

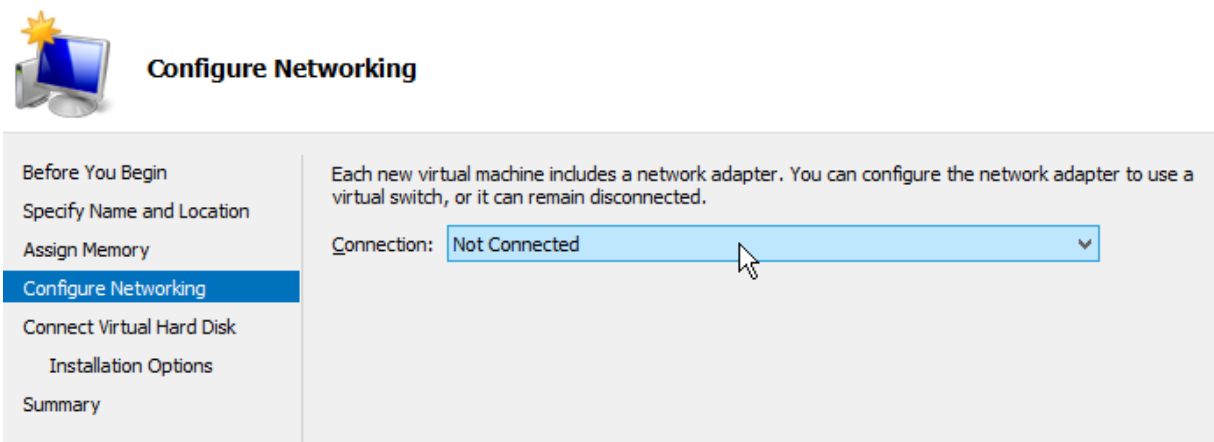
Specify the amount of memory to allocate to this virtual machine. You can specify an amount from 8 MB through 1512 MB. To improve performance, specify more than the minimum amount recommended for the operating system.

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



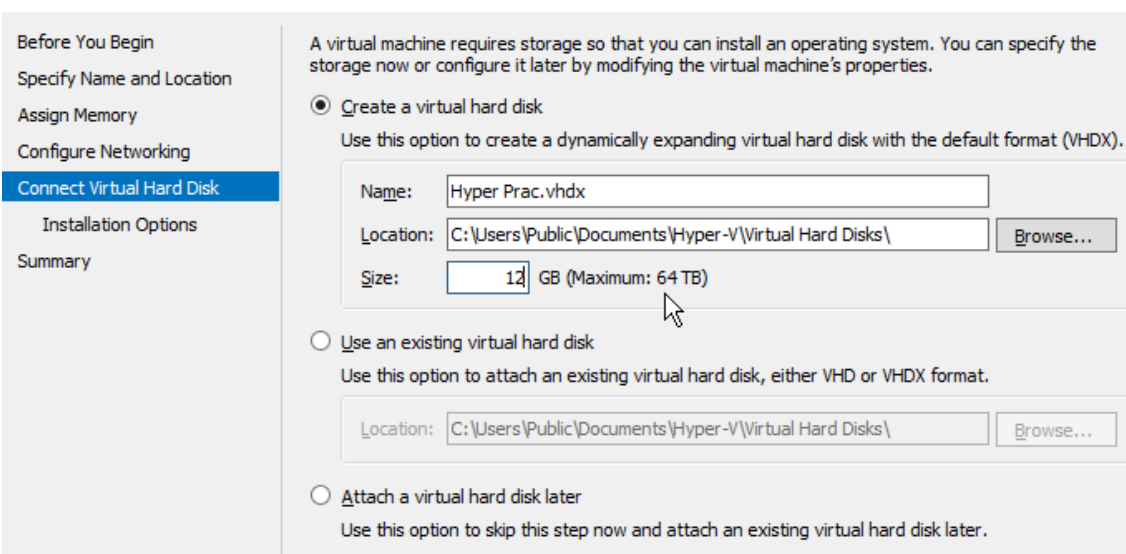
Configure Networking

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

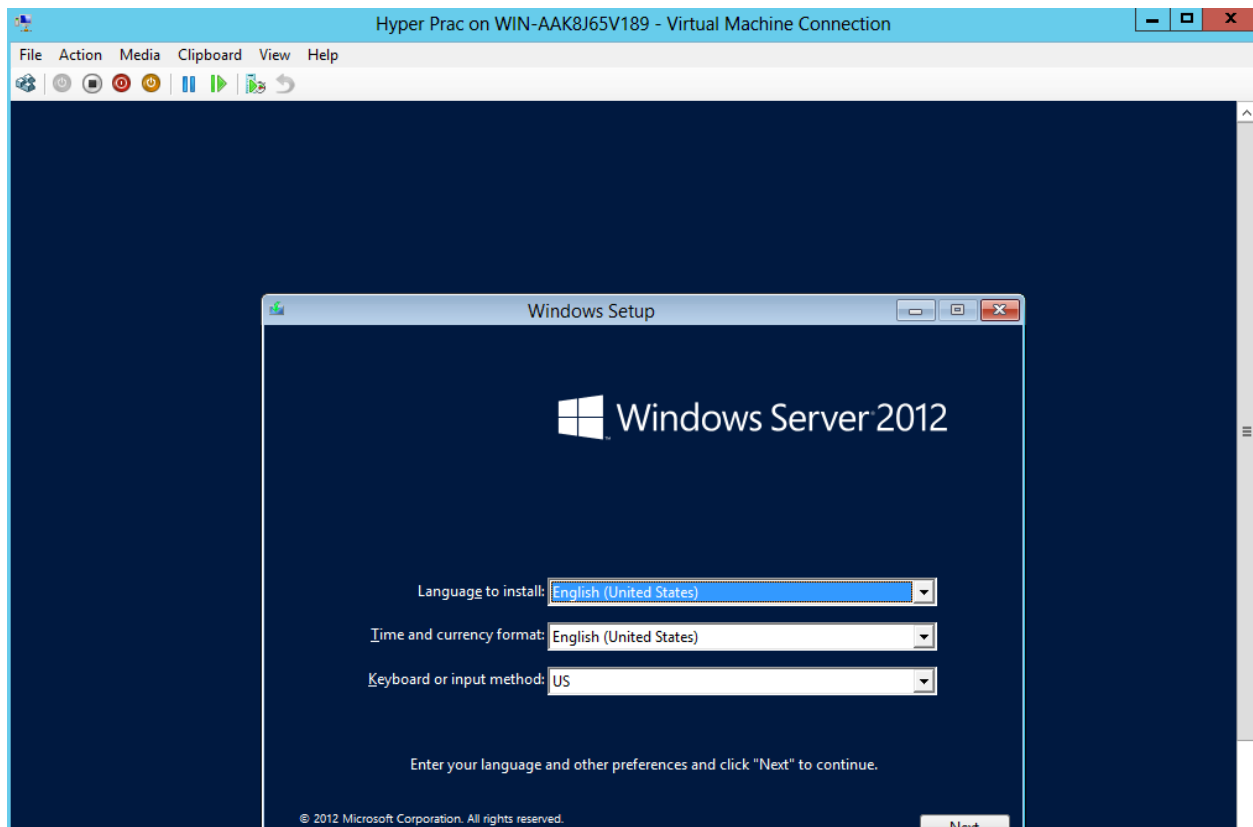
Summary Memory Networking Replication

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...

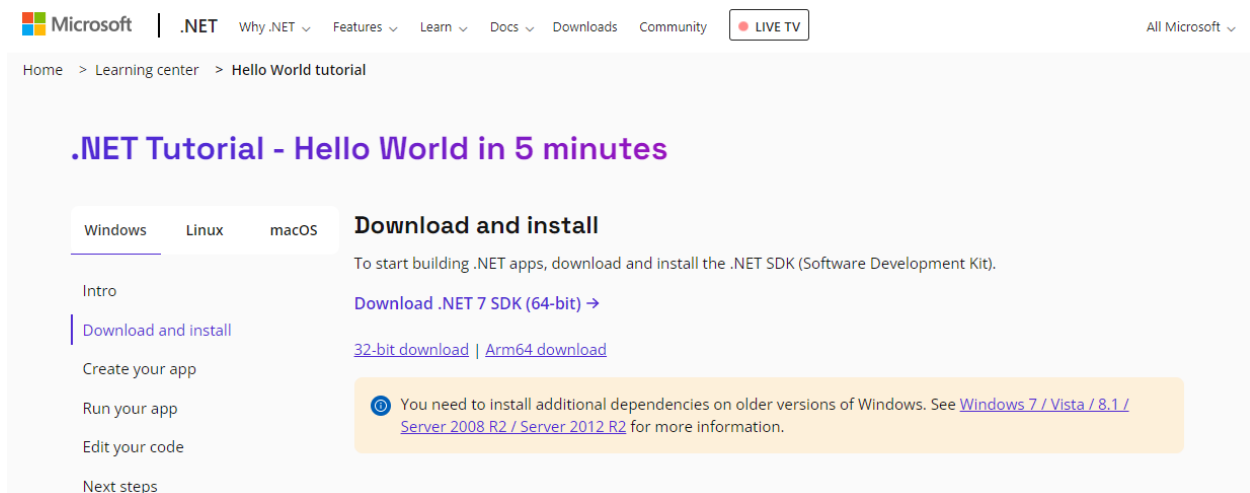
Done



Practical No. 3

Aim: Demonstrate Model View Controller framework.

Step 1: Download and Install DotNet. Link: <https://dotnet.microsoft.com/en-us/learn/dotnet/hello-world-tutorial/install>



After installing open cmd and run following command

Command: dotnet

```
Command Prompt
Microsoft Windows [Version 10.0.19044.2075]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Lenovo>dotnet

Usage: dotnet [options]
Usage: dotnet [path-to-application]

Options:
  -h|--help           Display help.
  --info              Display .NET information.
  --list-sdks         Display the installed SDKs.
  --list-runtimes     Display the installed runtimes.

path-to-application:
  The path to an application .dll file to execute.

C:\Users\Lenovo>
```

Step 2: Create App

Create New folder in D: drive

Open CMD in Newly created folder path and run the following command to create app

Command: dotnet new mvc --auth none

```
Command Prompt
D:\Cloud Computing\Practical>dotnet new mvc --auth none

Welcome to .NET 7.0!
-----
SDK Version: 7.0.100

Telemetry
-----
The .NET tools collect usage data in order to help us improve your experience. It is collected by Microsoft and shared with the community. You can opt-out of telemetry by setting the DOTNET_CLI_TELEMETRY_OPTOUT environment variable to '1' or 'true' using your favorite shell.

Read more about .NET CLI Tools telemetry: https://aka.ms/dotnet-cli-telemetry


-----
Installed an ASP.NET Core HTTPS development certificate.
To trust the certificate run 'dotnet dev-certs https --trust' (Windows and macOS only).
Learn about HTTPS: https://aka.ms/dotnet-https
-----
Write your first app: https://aka.ms/dotnet-hello-world
Find out what's new: https://aka.ms/dotnet-whats-new
Explore documentation: https://aka.ms/dotnet-docs
Report issues and find source on GitHub: https://github.com/dotnet/core
Use 'dotnet --help' to see available commands or visit: https://aka.ms/dotnet-cli
-----
The template "ASP.NET Core Web App (Model-View-Controller)" was created successfully.
This template contains technologies from parties other than Microsoft, see https://aka.ms/aspnetcore/7.0-third-party-notices for details.

Processing post-creation actions...
Restoring D:\Cloud Computing\Practical\Practical.csproj:
  Determining projects to restore...
  Restored D:\Cloud Computing\Practical\Practical.csproj (in 144 ms).
Restore succeeded.

D:\Cloud Computing\Practical>
```

Step 3: Edit the HomeController.cs file

PC > Local Disk (D:) > Cloud Computing > Practical > Controllers

Name	Date modified	Type	Size
 HomeController.cs	12/9/2022 1:01 AM	CS File	1 KB

Edit the file

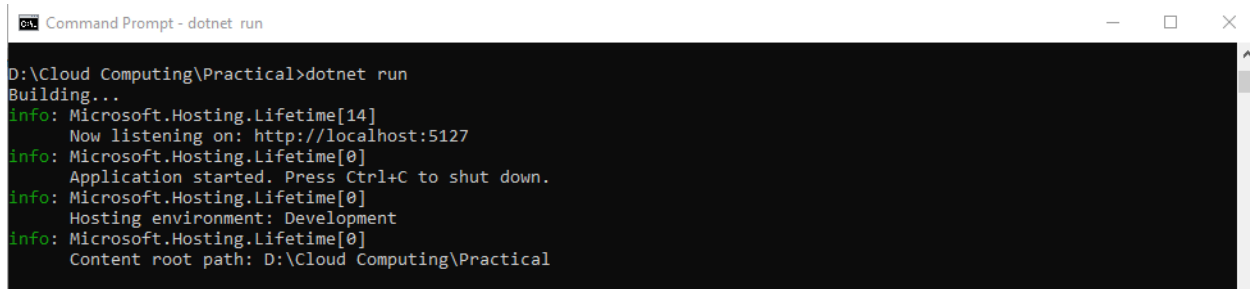
```
HomeController.cs - Notepad
File Edit Format View Help
using System.Diagnostics;
using Microsoft.AspNetCore.Mvc;
using Practical.Models;

namespace Practical.Controllers;

public class HomeController : Controller
{
    public String Index() {
        return 'Hello MVC';
    }
}
```

Step 4: Run the app

Command: dotnet run



```
Command Prompt - dotnet run
D:\Cloud Computing\Practical>dotnet run
Building...
info: Microsoft.Hosting.Lifetime[14]
    Now listening on: http://localhost:5127
info: Microsoft.Hosting.Lifetime[0]
    Application started. Press Ctrl+C to shut down.
info: Microsoft.Hosting.Lifetime[0]
    Hosting environment: Development
info: Microsoft.Hosting.Lifetime[0]
    Content root path: D:\Cloud Computing\Practical
```

Step 5: Open URL in browser

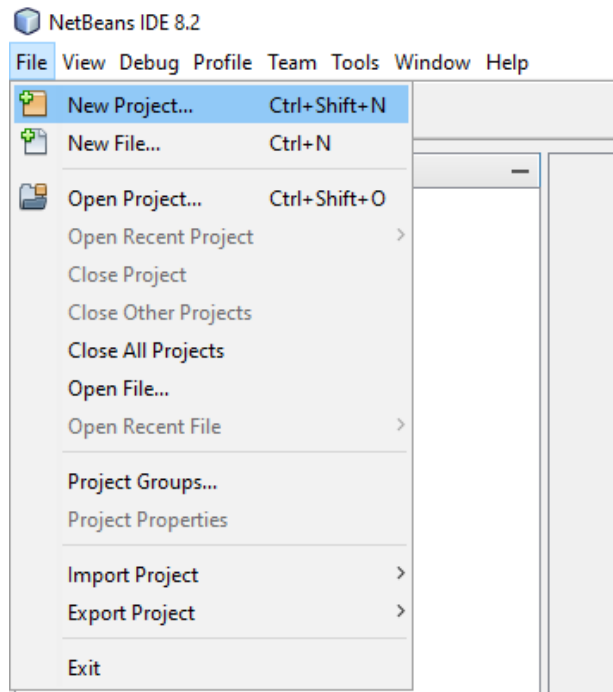


Practical No. 4

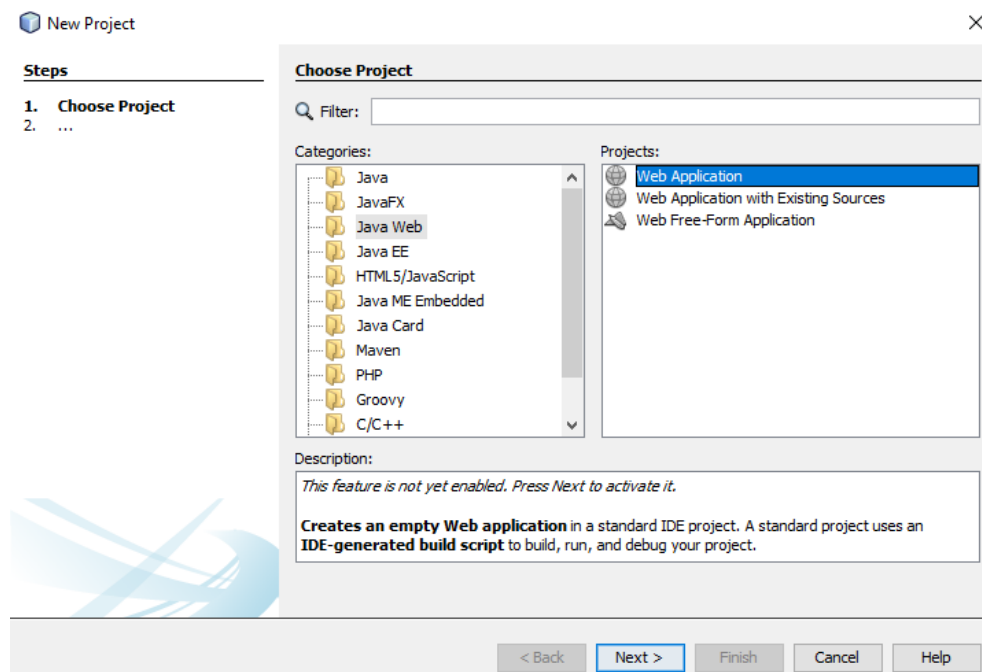
Aim: Implementing Client Server based web service on NetBeans.

Task 1: Creating Web Server

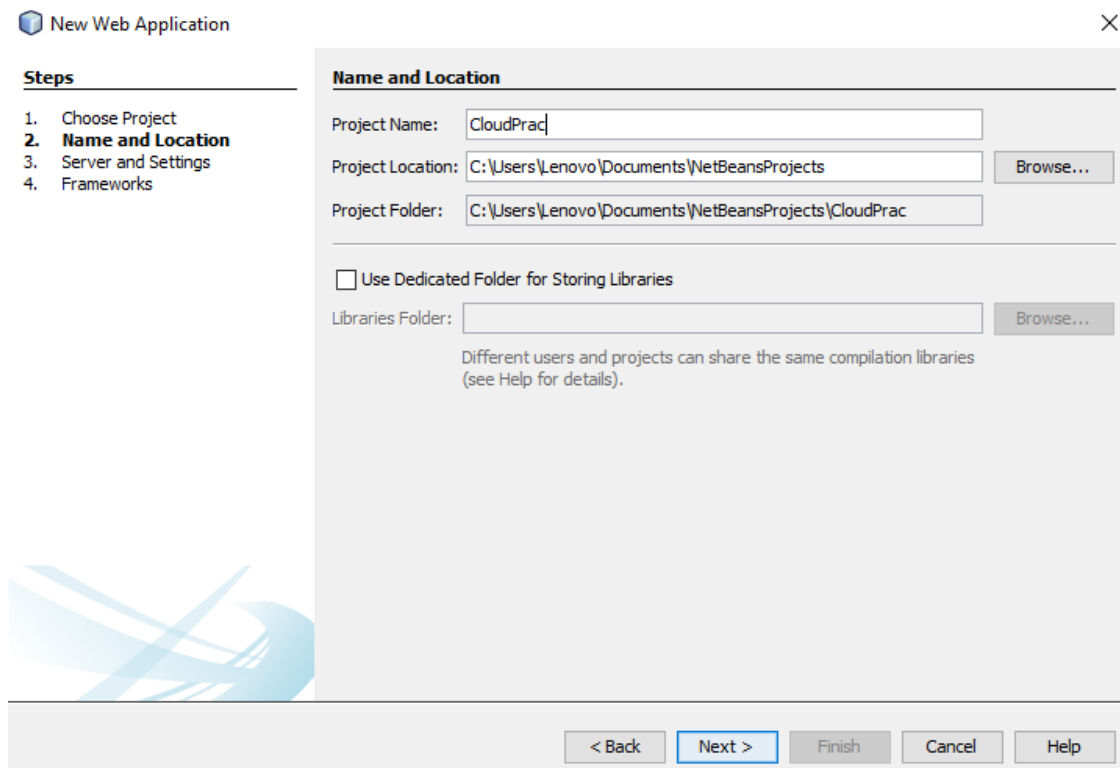
Step 1: Open NetBeans – Go to file – Select New Project



Step 2: In New Project Window. Select Java Web and Web Application.



Step 3: Next Name to the project.



The screenshot shows the 'New Web Application' dialog box with the 'Name and Location' tab selected. The 'Steps' list on the left indicates the current step is '2. Name and Location'. The main area contains fields for 'Project Name' (CloudPrac), 'Project Location' (C:\Users\Lenovo\Documents\NetBeansProjects), and 'Project Folder' (C:\Users\Lenovo\Documents\NetBeansProjects\CloudPrac). There is a 'Browse...' button next to the Project Location field. Below these fields is a checkbox for 'Use Dedicated Folder for Storing Libraries' which is unchecked, and a 'Libraries Folder' field with its own 'Browse...' button. A note states: 'Different users and projects can share the same compilation libraries (see Help for details)'. At the bottom, there are buttons for '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'. The 'Next >' button is highlighted with a blue border.

New Web Application

Steps

1. Choose Project
- 2. Name and Location**
3. Server and Settings
4. Frameworks

Name and Location

Project Name: CloudPrac

Project Location: C:\Users\Lenovo\Documents\NetBeansProjects Browse...

Project Folder: C:\Users\Lenovo\Documents\NetBeansProjects\CloudPrac

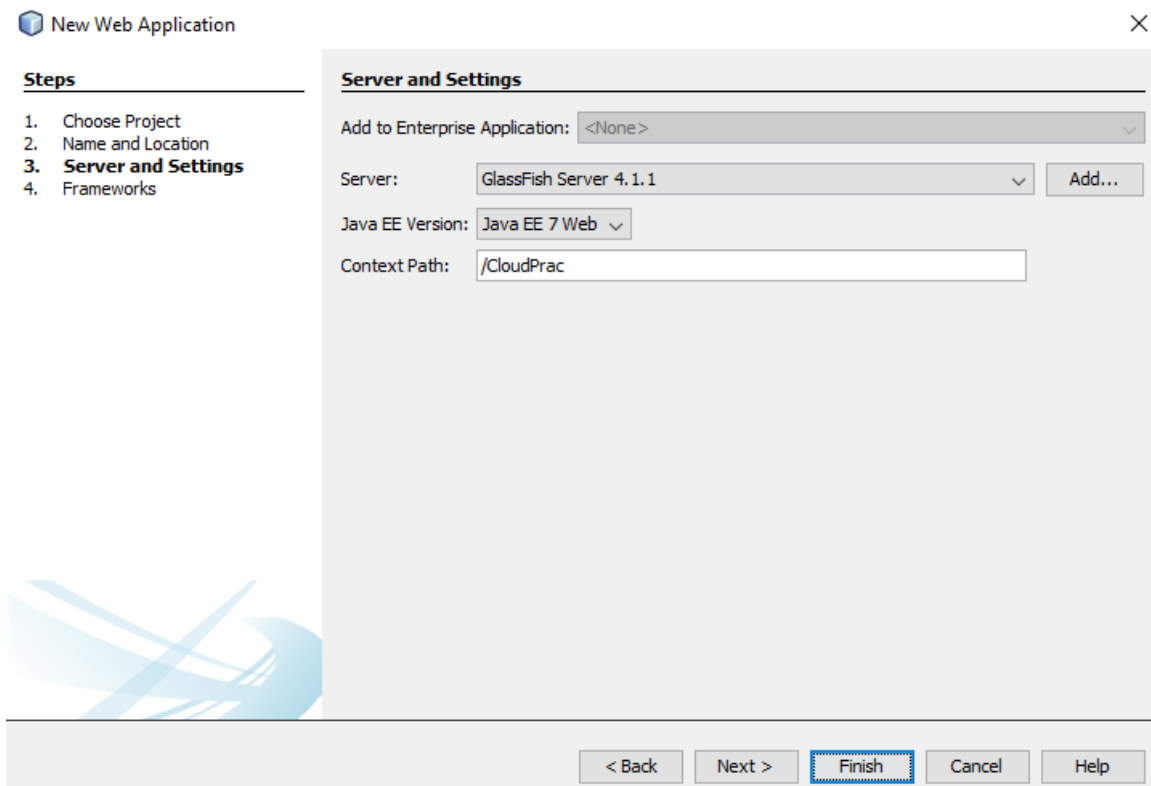
☐ Use Dedicated Folder for Storing Libraries

Libraries Folder: Browse...

Different users and projects can share the same compilation libraries (see Help for details).

< Back Next > Finish Cancel Help

Step 4: Keep the Default server and Java EE version as it is and click on finish.



The screenshot shows the 'New Web Application' dialog box with the 'Server and Settings' tab selected. The 'Steps' list on the left indicates the current step is '3. Server and Settings'. The main area contains a dropdown for 'Add to Enterprise Application' (set to '<None>'), a 'Server' dropdown (set to 'GlassFish Server 4.1.1') with an 'Add...' button, a 'Java EE Version' dropdown (set to 'Java EE 7 Web'), and a 'Context Path' text field (set to '/CloudPrac'). At the bottom, there are buttons for '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'. The 'Finish' button is highlighted with a blue border.

New Web Application

Steps

1. Choose Project
2. Name and Location
- 3. Server and Settings**
4. Frameworks

Server and Settings

Add to Enterprise Application: <None>

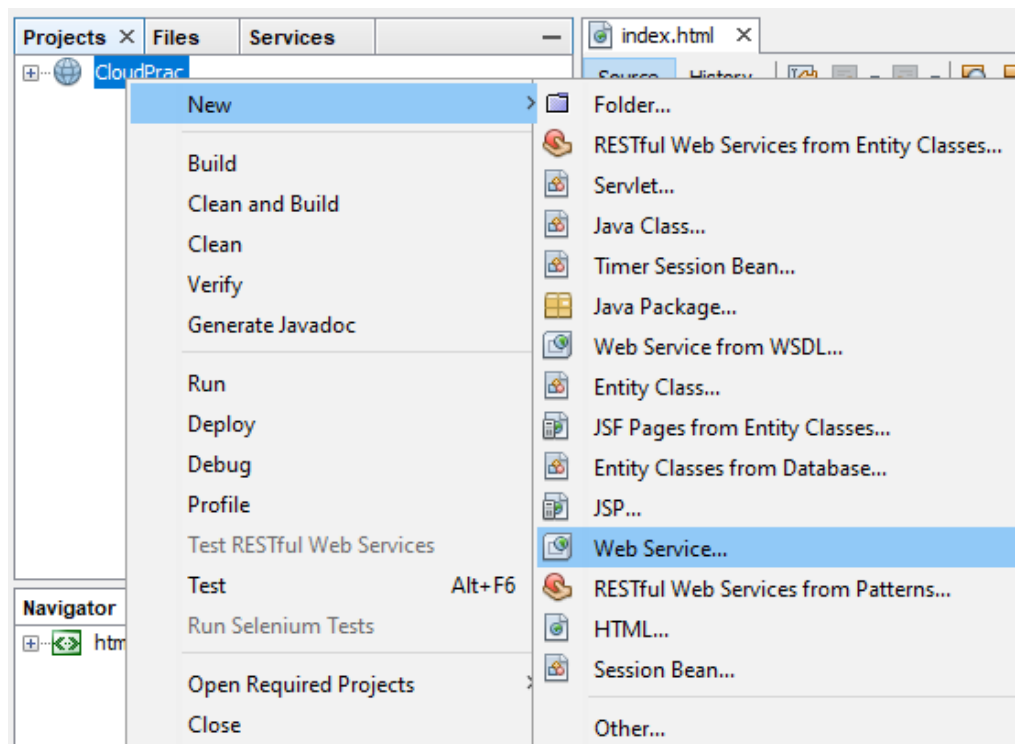
Server: GlassFish Server 4.1.1 Add...

Java EE Version: Java EE 7 Web

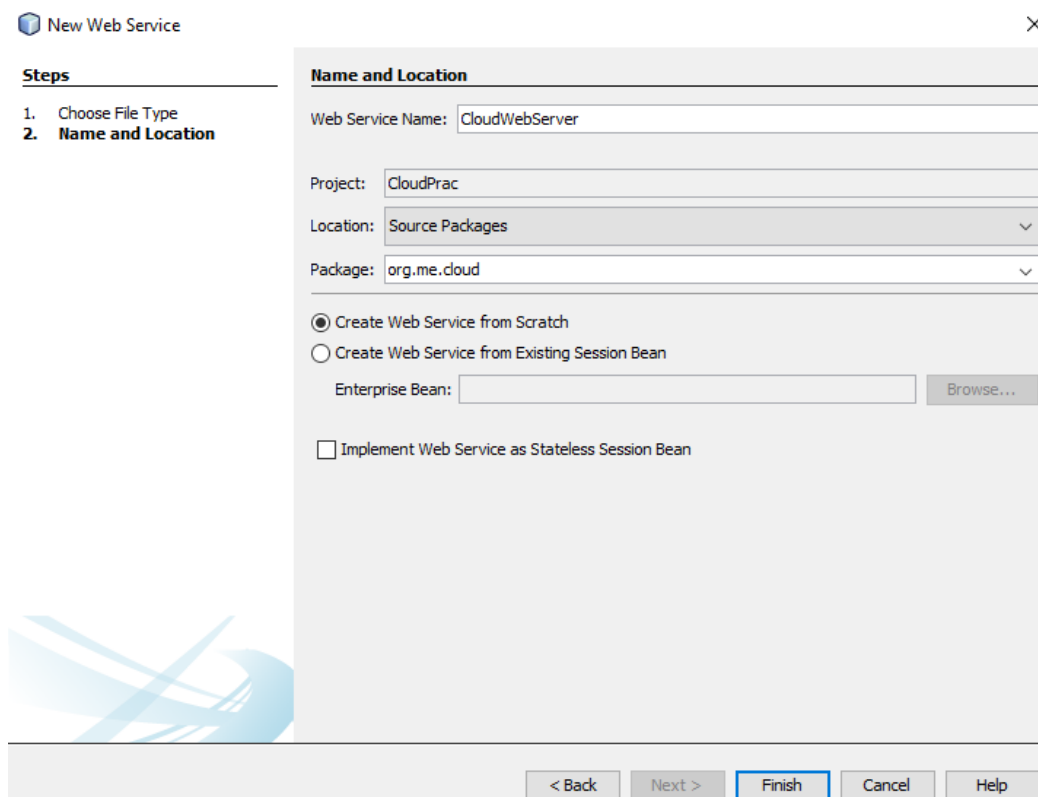
Context Path: /CloudPrac

< Back Next > Finish Cancel Help

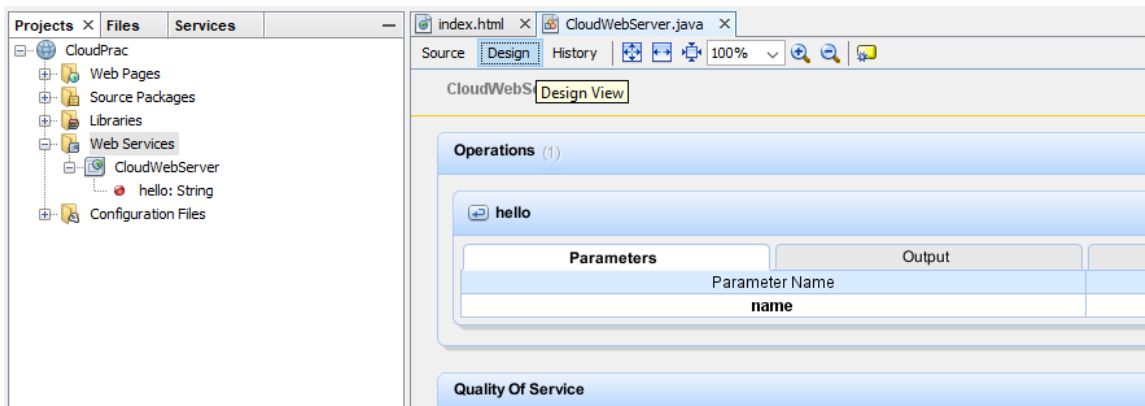
Step 5: Right click on the project – Choose New – Web Service



Step 6: Name to the web service – Give package name (the package name must begin with org.me.name) and Select Create web service from scratch and Click on Finish

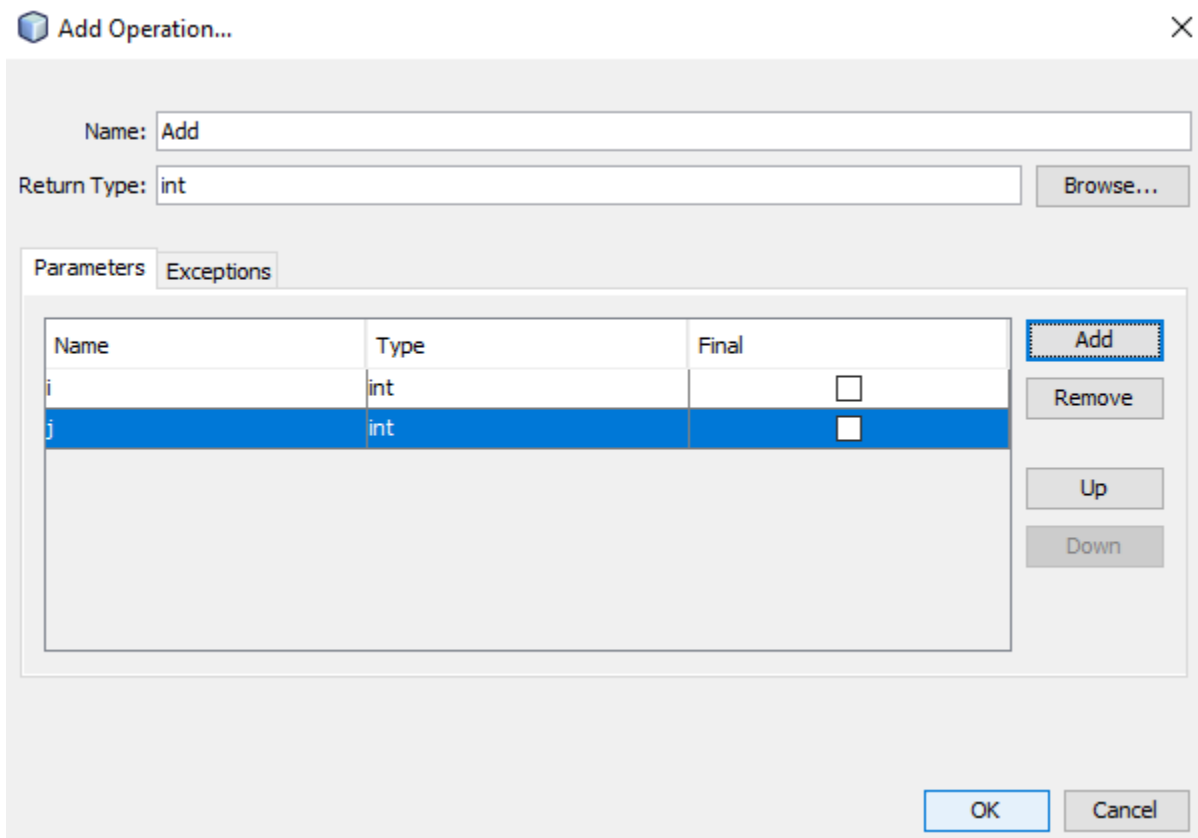


Step 7: Click on Web Service and Go to Design tab.



Step 8: Click on Add operation

Give Name and Select Return Type int and Add 2 parameters as follows

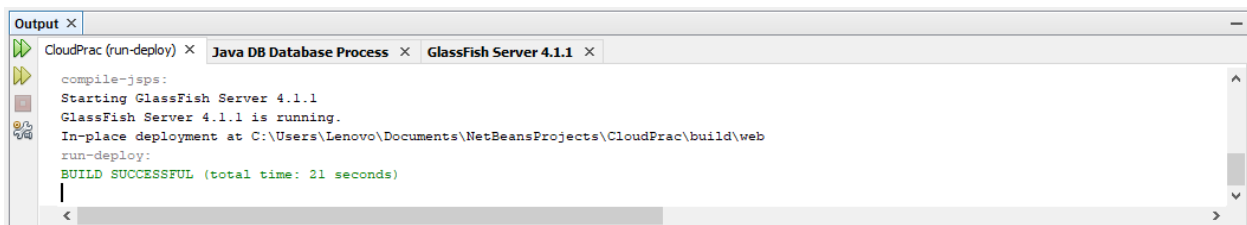
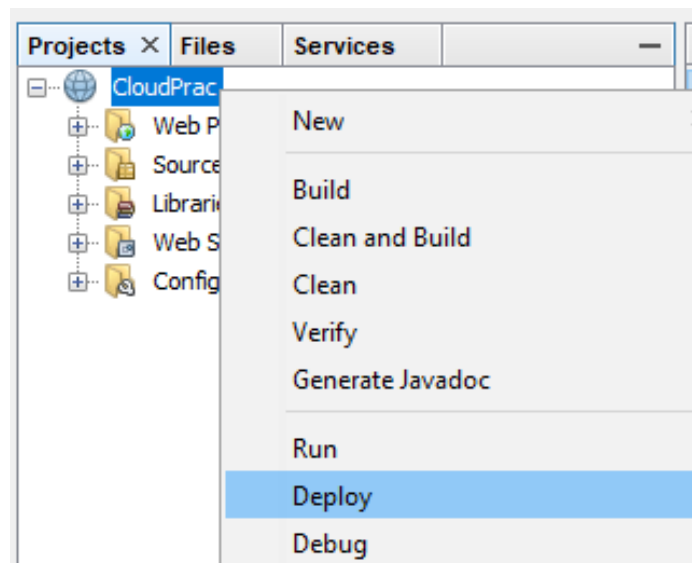


Step 9: Click on Ok and Select Source tab

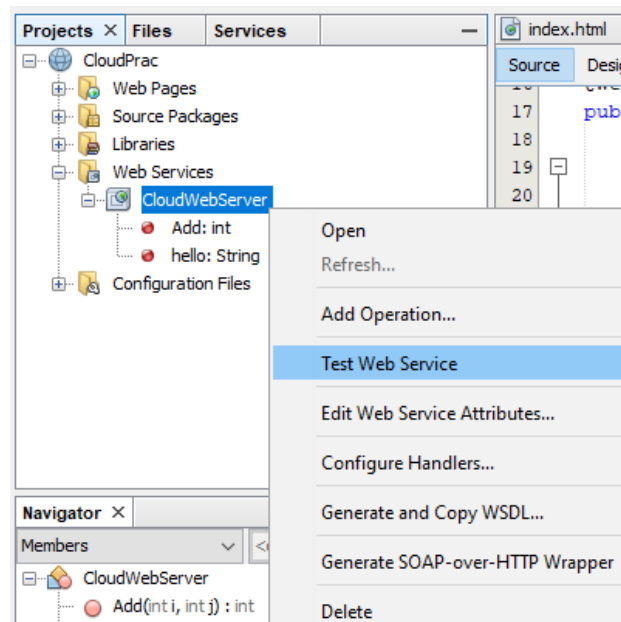
Inside Source tab write following code.

```
/**
 * Web service operation
 */
@WebMethod(operationName = "Add")
public int Add(@WebParam(name = "i") int i, @WebParam(name = "j") int j) {
    //TODO write your implementation code here:
    int k;
    k = i + j;
    System.out.println("k is " + k);
    return k;
}
```

Step 10: Right click on Project and Click on Deploy



Step 11: Right click on Web Services and click on Test.



CloudWebServer Web Service Tester

This form will allow you to test your web service implementation ([WSDL File](#))

To invoke an operation, fill the method parameter(s) input boxes and click on the button labeled with the method name.

Methods :

public abstract int org.me.cloud.CloudWebServer.add(int,int)

add (2, 3)

public abstract java.lang.String org.me.cloud.CloudWebServer.hello(java.lang.String)

hello ()

add Method invocation

Method parameter(s)

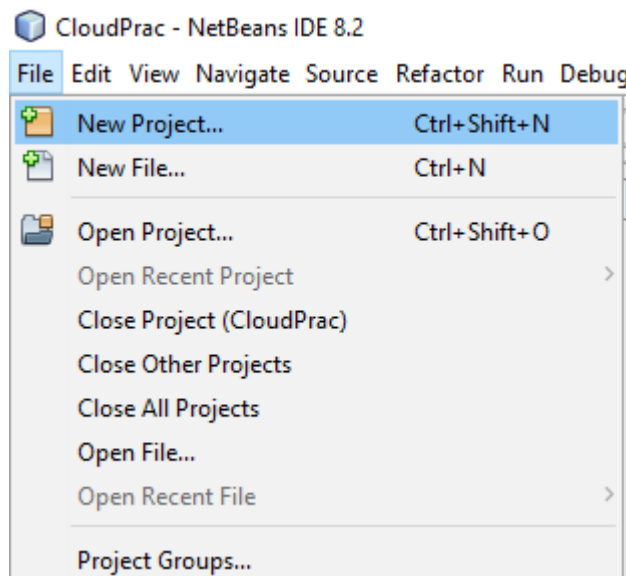
Type	Value
int	2
int	2

Method returned

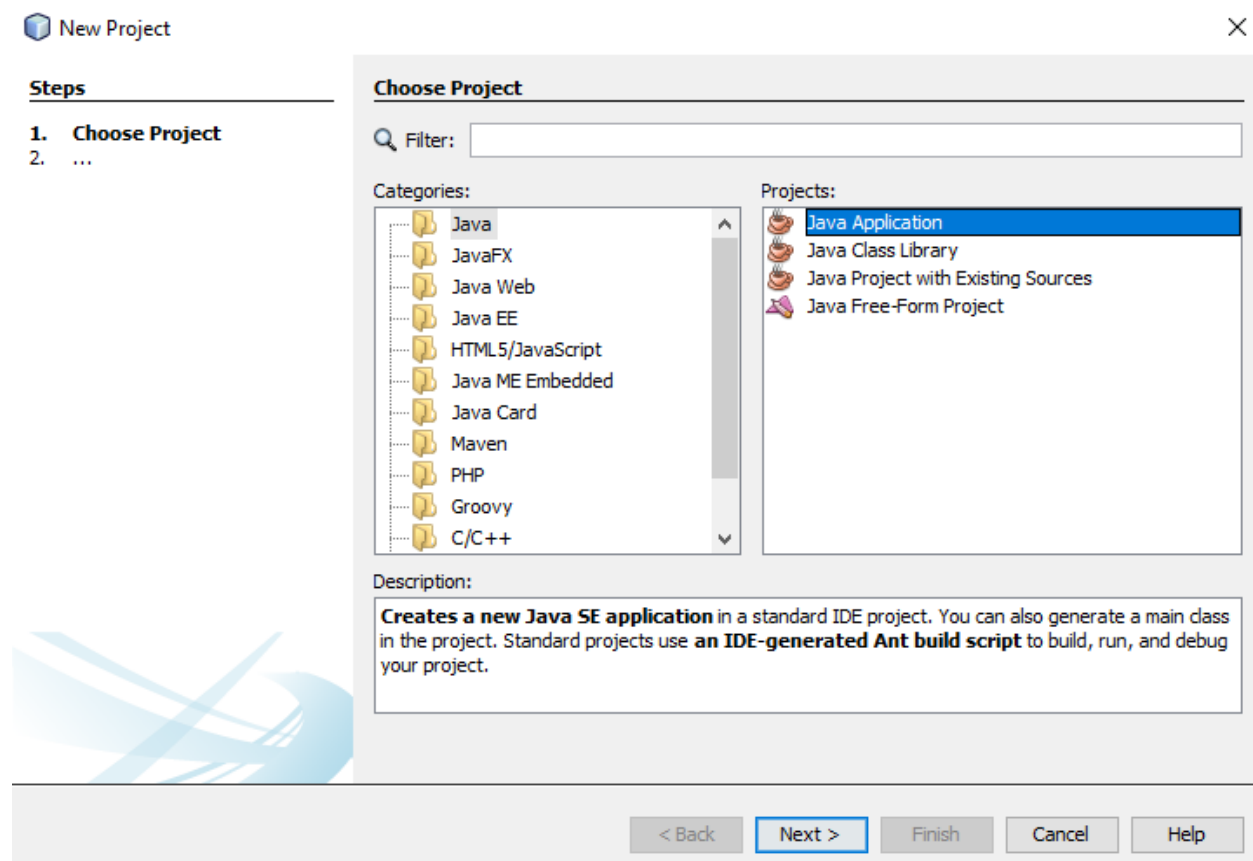
int : "4"

Task 2: Creating Web Client

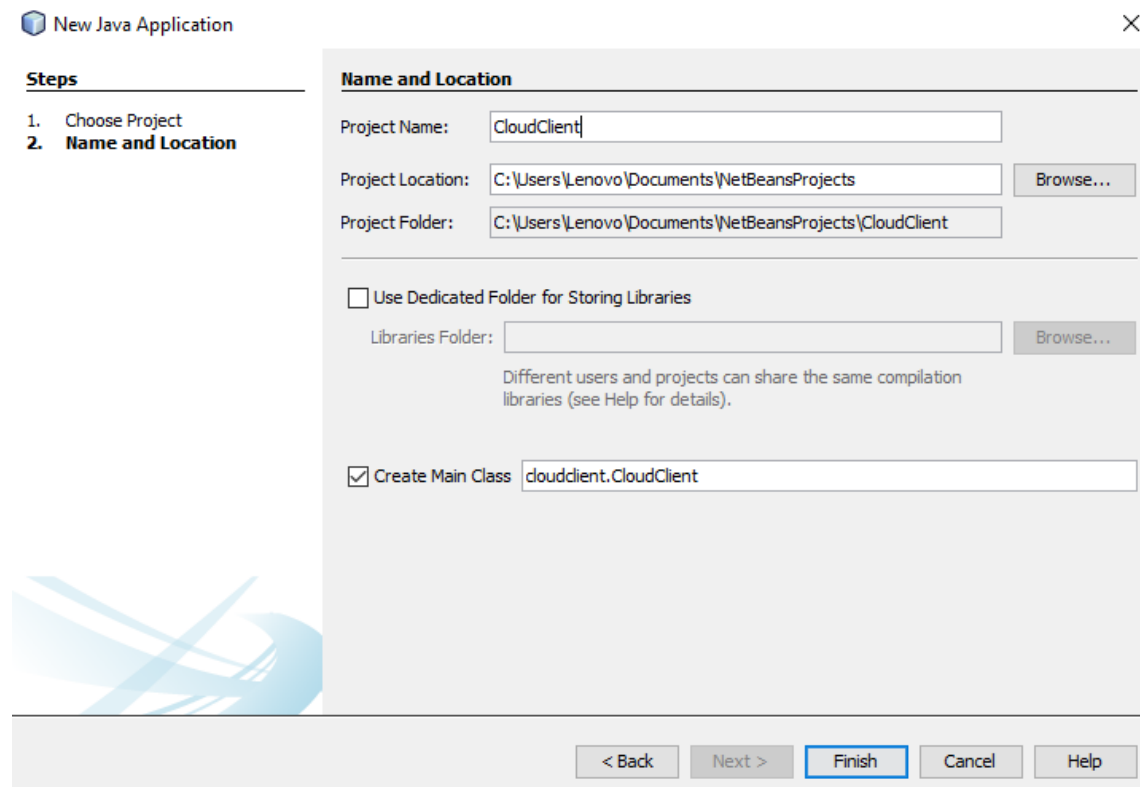
Step 1: Go to file – Select New Project



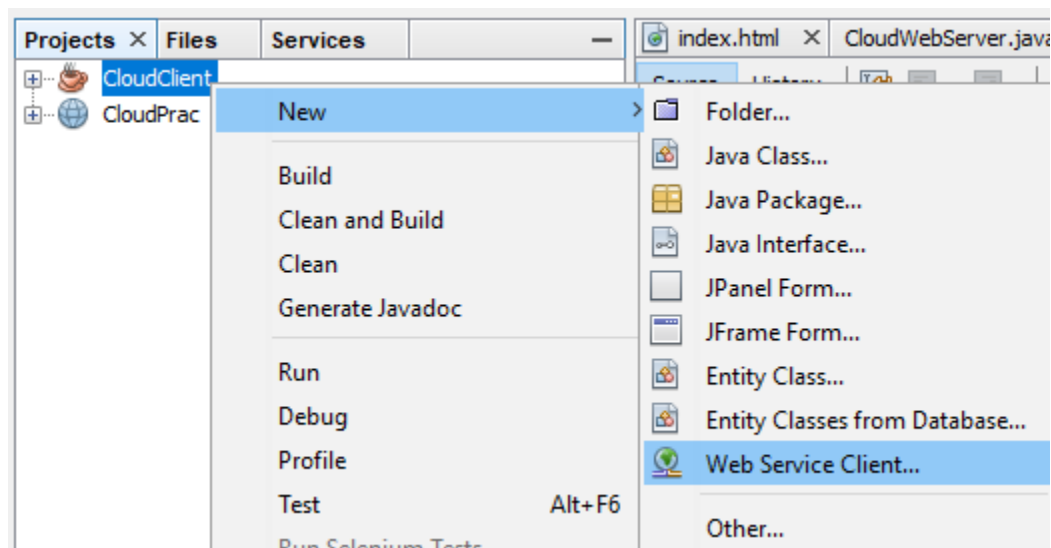
Step 2: In New Project window – Select Java and Java Application



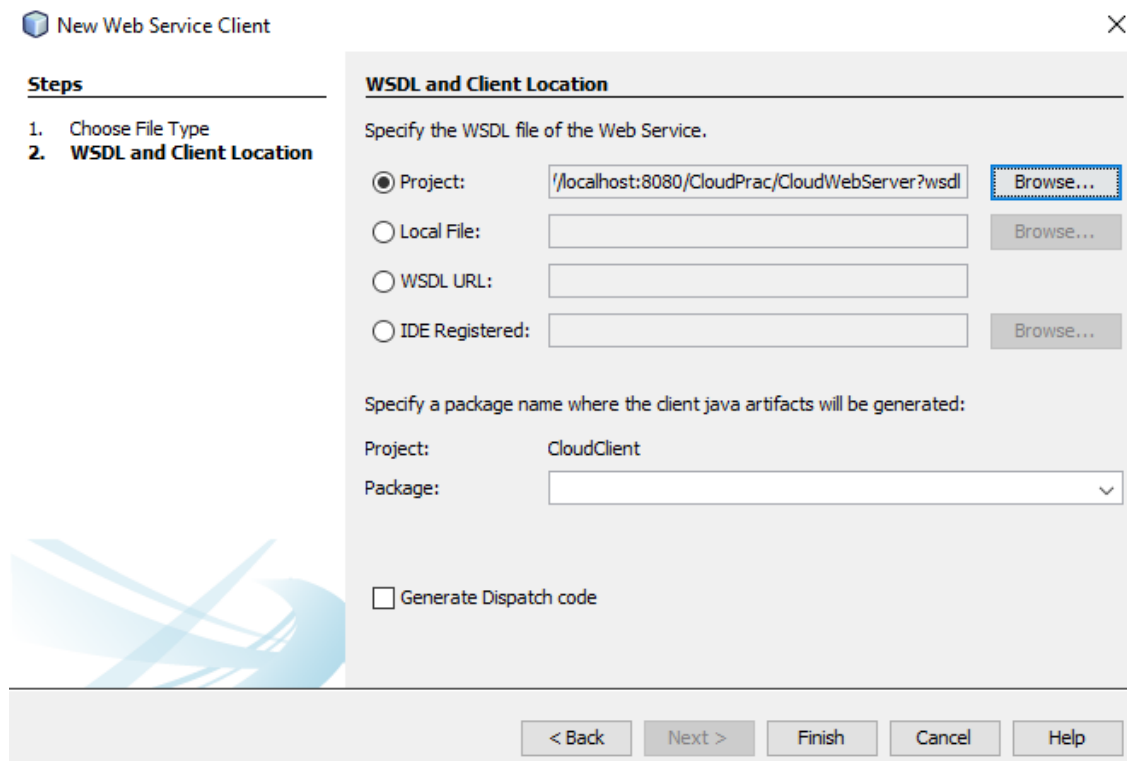
Step 3: Give Name to the project – Select checkbox for main class and set as main project. and Click on Finish



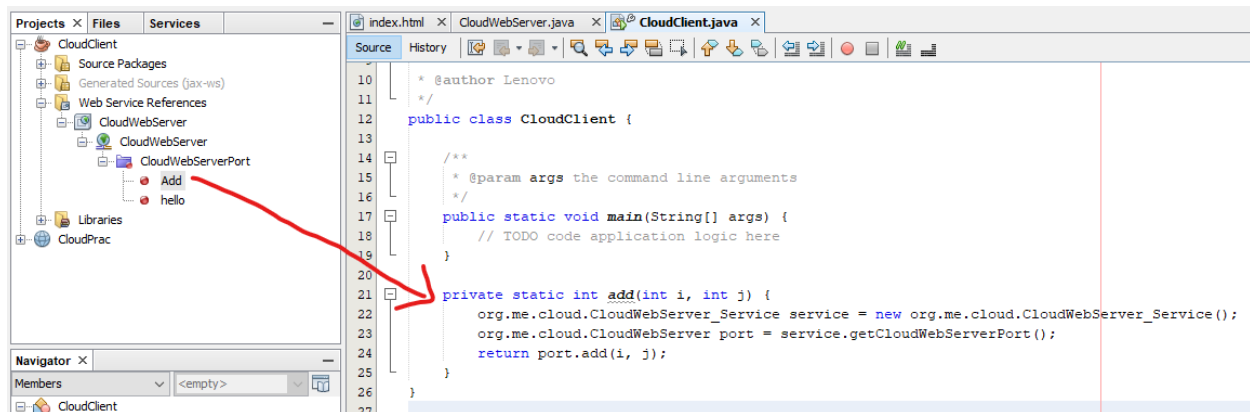
Step 4: Right click on Project – Choose New – Web Service Client



Step 5: Click on Browse and Select Service



Step 6: Go to Java Application – Web Service References – Service – ServicePort - Add Drag and Drop in Java application



And add the following code

```
public class CloudClient {

    /**
     * @param args the command line arguments
     */
    public static void main(String[] args) {
        // TODO code application logic here
        int i = 3;
        int j = 5;
        int result = add(i, j);
        System.out.println("Result: " + result);
    }

    private static int add(int i, int j) {
        org.me.cloud.CloudWebServer_Service service = new org.me.cloud.CloudWebServer_Service();
        org.me.cloud.CloudWebServer port = service.getCloudWebServerPort();
        return port.add(i, j);
    }
}
```

Then Run Project

