

PRACTICAL e-Journal  
MSCIT (PART I) SEMESTER - II  
2018-19

SUBJECT  
CLOUD COMPUTING

SUBMITTED BY  
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Seat No. 13

Submitted in partial fulfillment of the requirement for  
Qualifying  
M.Sc. Part I Semester II Examination  
2018-19

Department of Information Technology  
Ramniranjan Jhunjhunwala College  
Station Road, Ghatkopar (w), Mumbai-86



Hindi Vidya Prachar Samiti's

**RAMNIRANJAN  
JHUNJHUNWALA COLLEGE  
(AUTONOMOUS)**

Opposite Ghatkopar Railway Station, Ghatkopar West, Mumbai-400086



## CERTIFICATE

This is to certify that Miss. SHAIKH SEEMA ABDUL RASHID with Seat No. 13 has successfully completed the necessary course of experiments in the subject of **CLOUD COMPUTING** during the academic year **2018 – 2019** complying with the requirements of **RAMNIRANJAN JHUNJHUNWALA COLLEGE OF ARTS, SCIENCE AND COMMERCE**, for the course of **M.Sc. (IT)** semester -II.

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Internal Examiner

Date: \_\_\_\_\_

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Head of Department

College Seal

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External Examiner

# Index

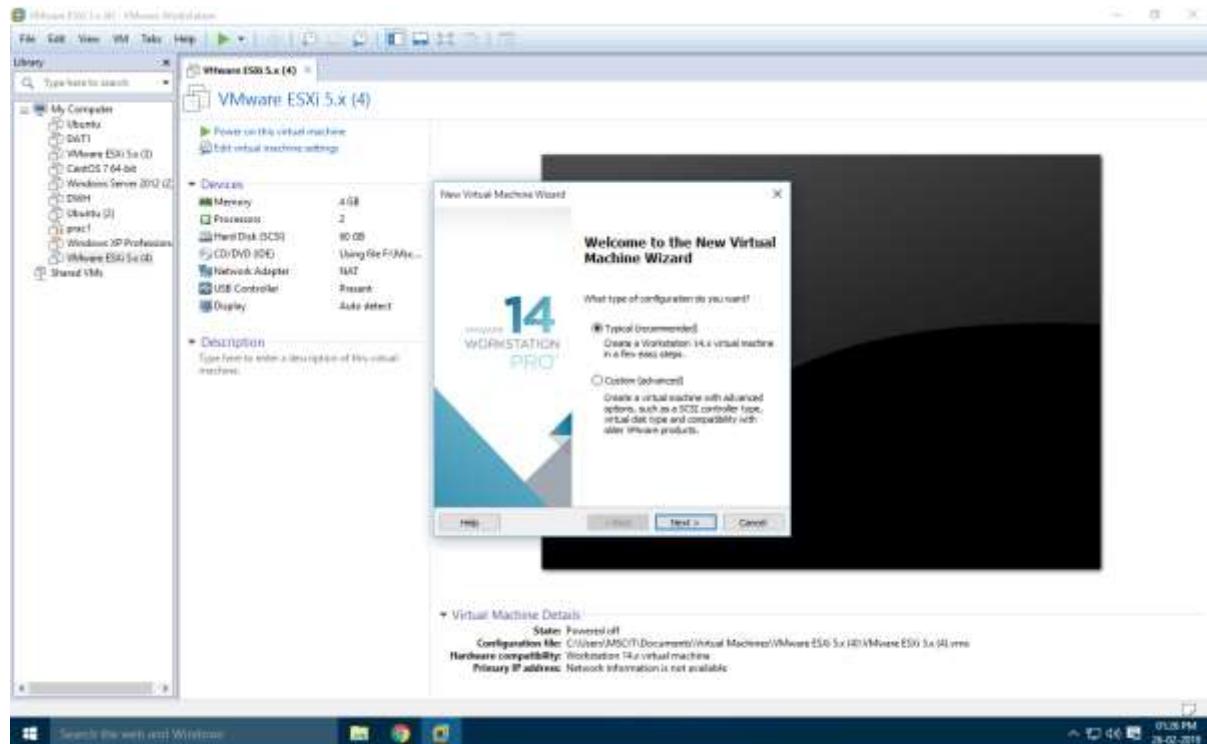
<b>PRACTICAL NUMBER</b>	<b>PRACTICAL TITLE</b>	<b>PAGE NUMBER</b>
1	Implement cluster on Windows	4
2	Developing application for Windows Azure	25
3	Implementing private cloud with Xen Server	30
4	Implement Search Engine Google App Engine(GAE)	50
5	Implement ESXi Server	57
6	Native Virtualization using Hyper-V	77
7	Implement Open Nebula	88
8	Implement IAAS using Eucalyptus	120

## PRACTICAL: 1

### IMPLEMENTING CLUSTER ON WINDOWS

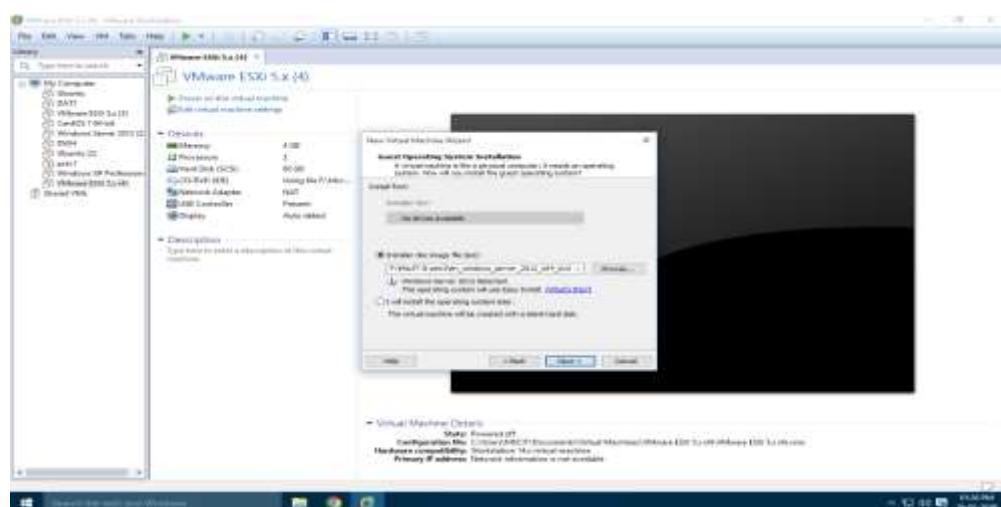
Install the **VMWare Workstation**. The **Home page** of VMWare Workstation looks like the picture below. To create a new Virtual Machine click on “**Create a New Virtual Machine**”.

In the “**New Virtual Machine Wizard**” select the “**Typical**” option. And click on “**Next**” button.

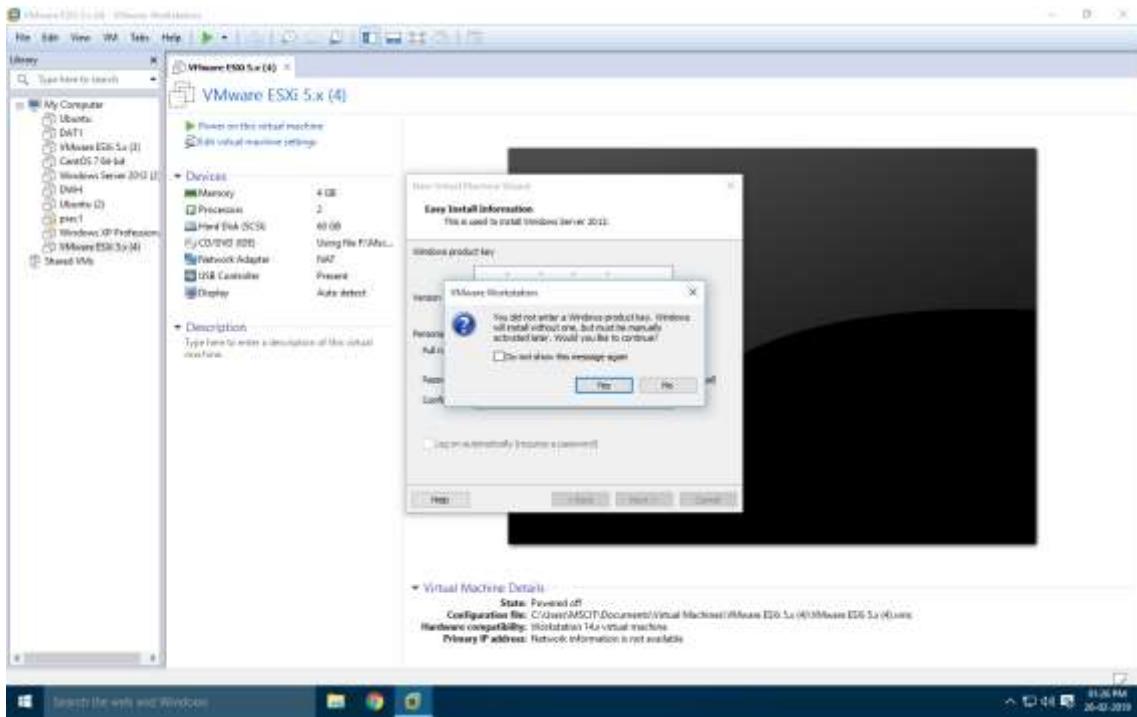


In the Next window, select the option **Install Disc** and click on **Browse** to select the windows server2012 iso file and then click on **Next**.

In this window, select the name of **operating system** and its **version**.



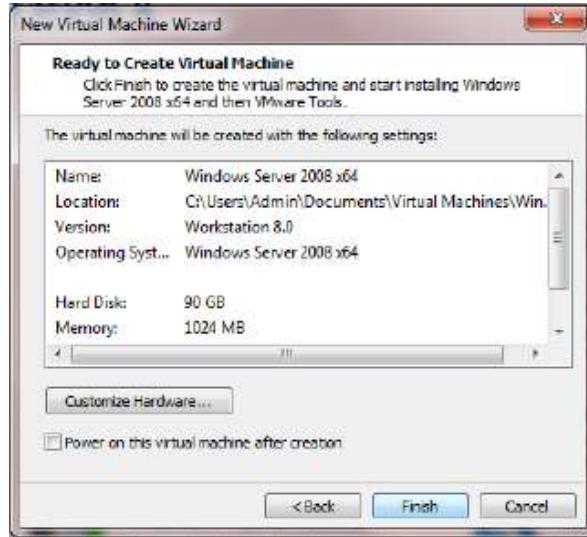
Click “**Next**”, And click on yes



Choose "**Store virtual disk as a single file**" and Keep the memory size as **90GB**. Click on "**Next**".

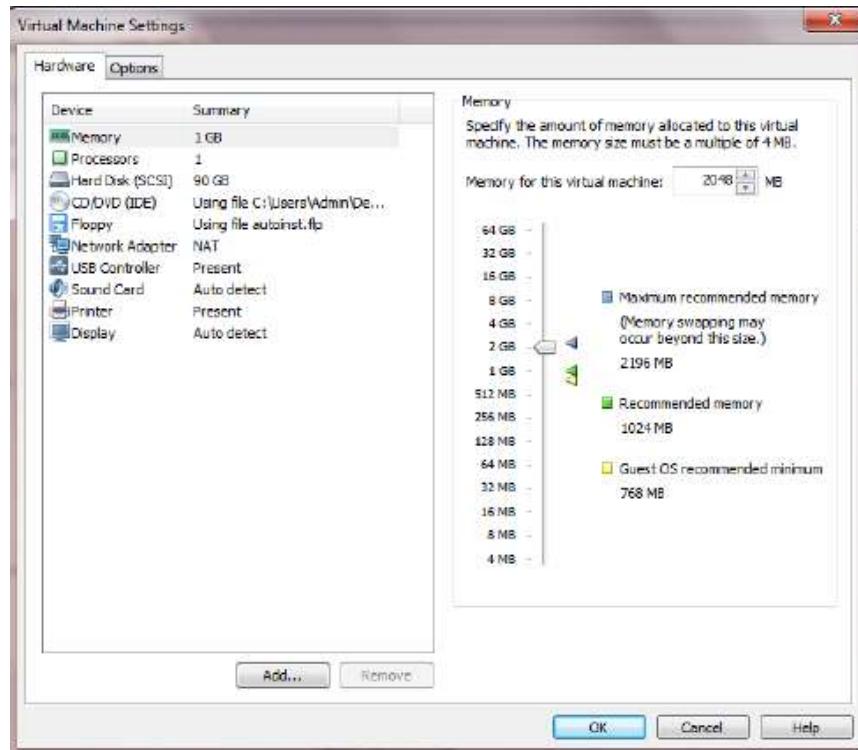


Click on "**Finish**" button.

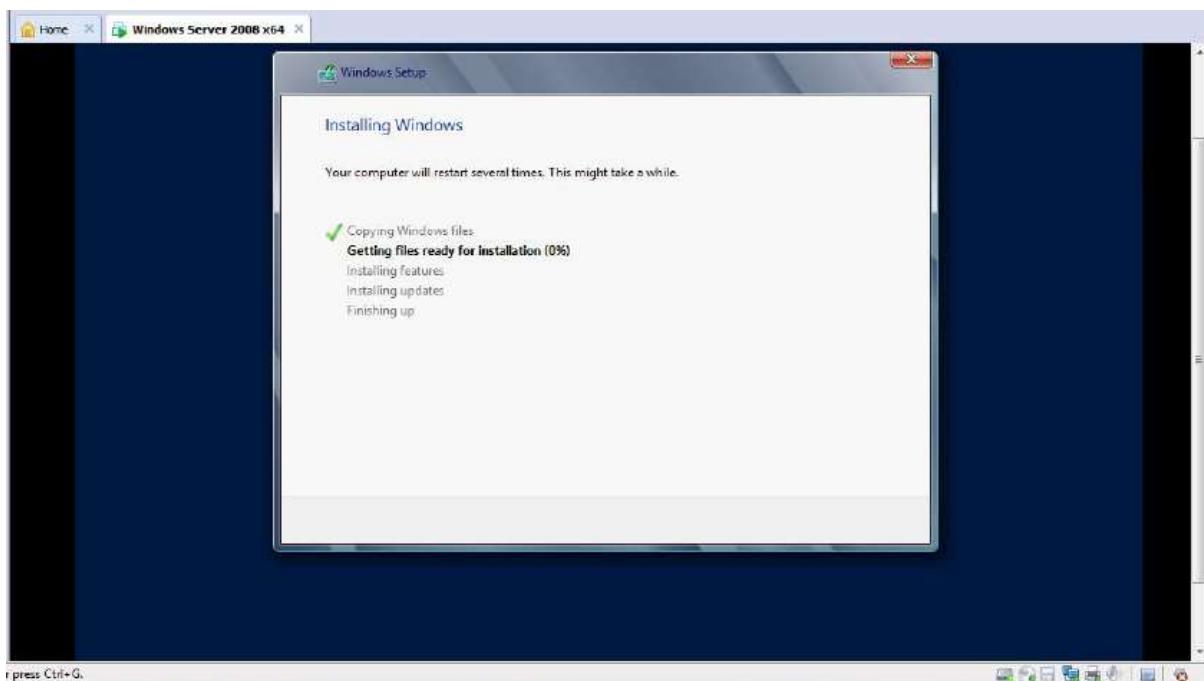


Click on **Memory** under Devices on the right side and make it to **2GB**.

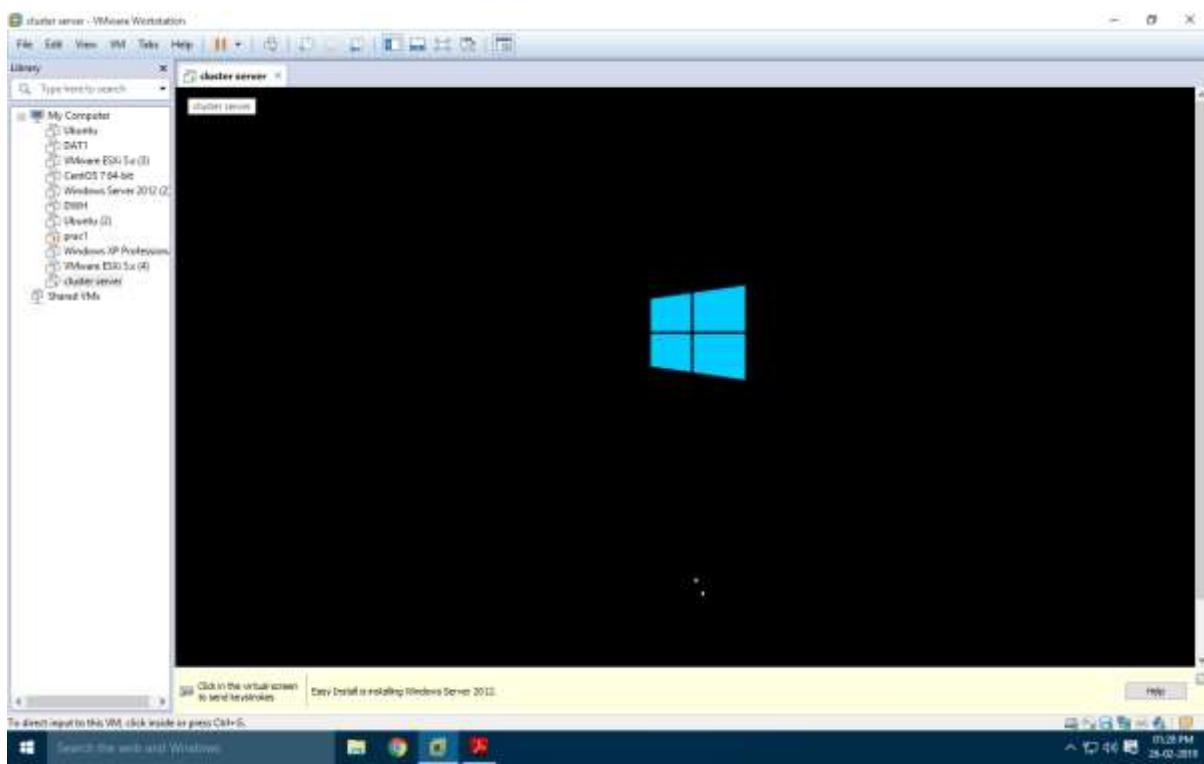
Power on the virtual machine by clicking on “**Power on this virtual machine**”.



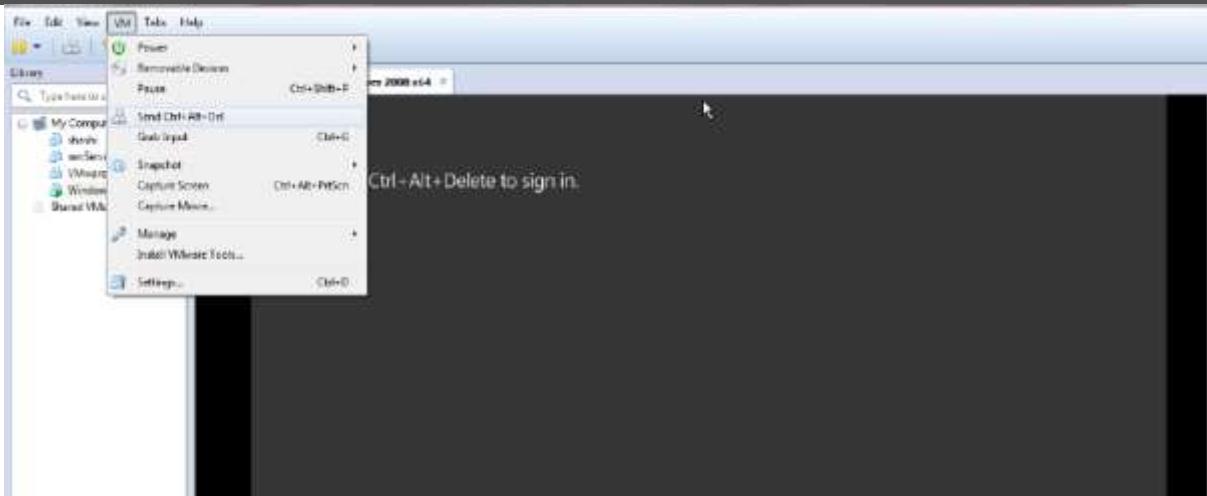
Copying of **System Files** will start.



After copying files it will automatically start.



If installing on the Virtual Machine like VMWare then you need to click on the menu as show in the next screen.

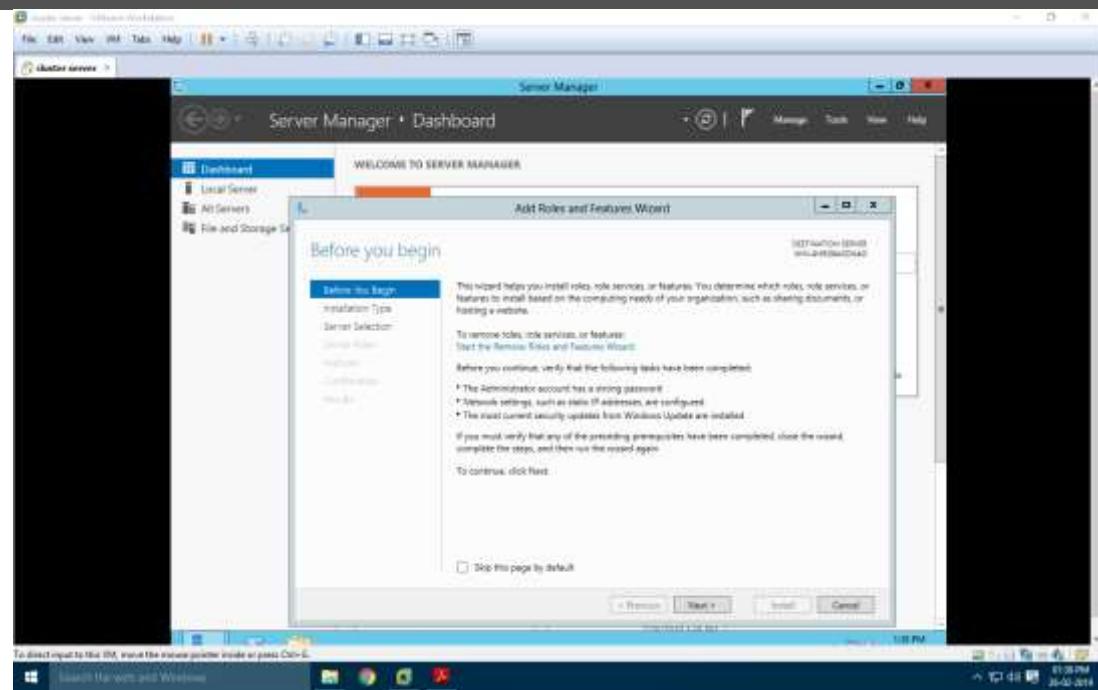


Enter the password and press "**Enter**" button on the keyboard

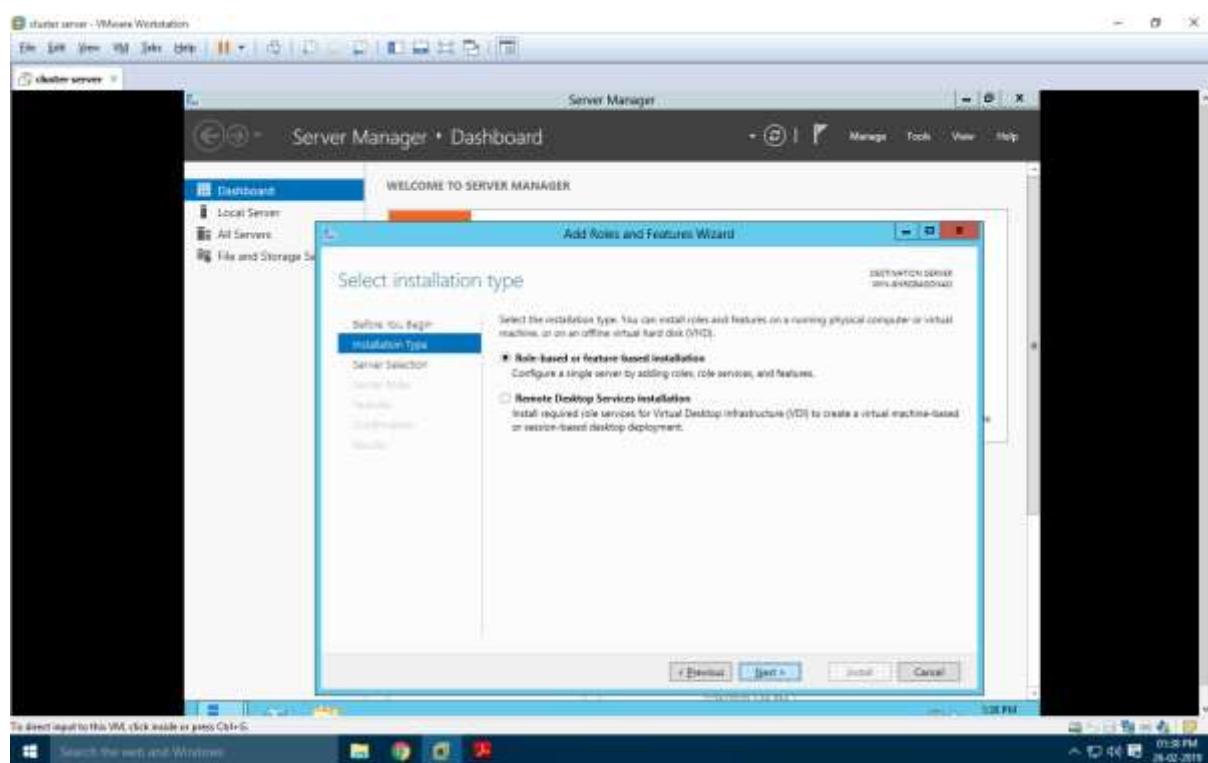
**Password:Admin12345**



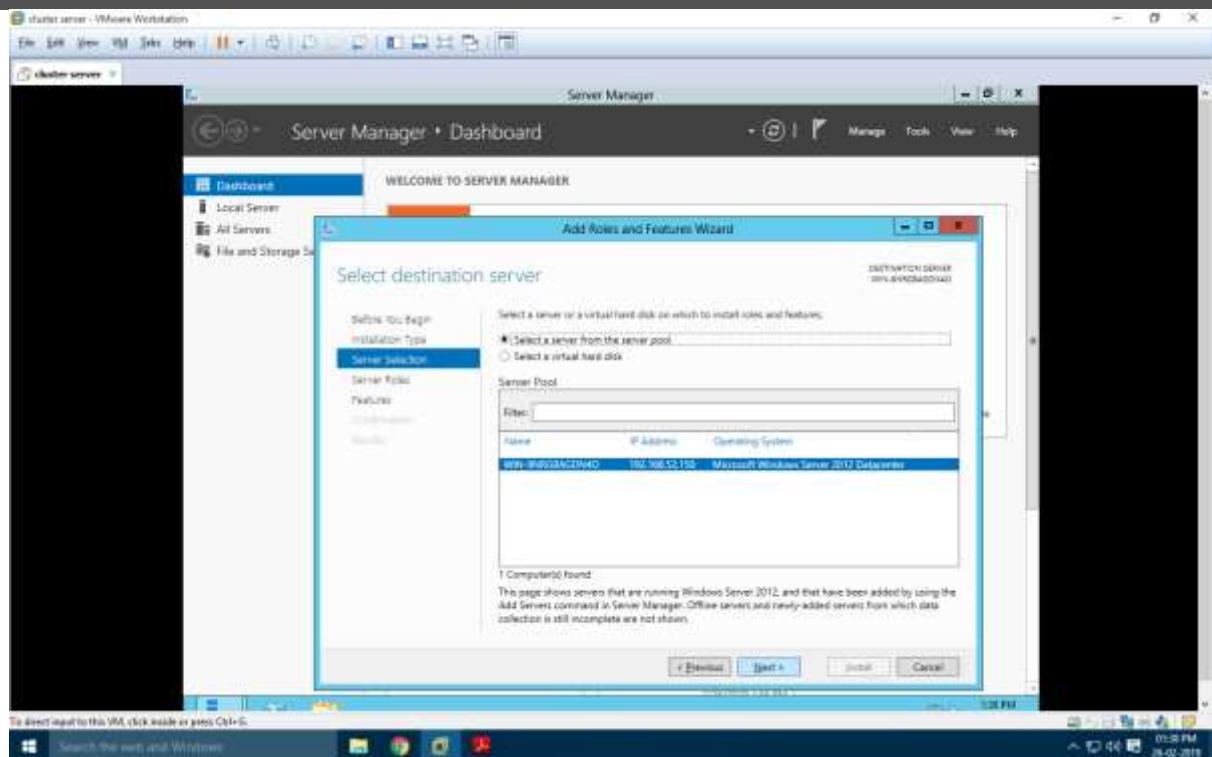
To make the current system a Domain Controller click on "**Add Roles and Features**" under the "**Manage**" menu at the top of the screen and get the "**Add Roles and Feature Wizard**".



Under “**select installation Type**” select “**Role-based or feature-based installation**” and click “**Next**” button.

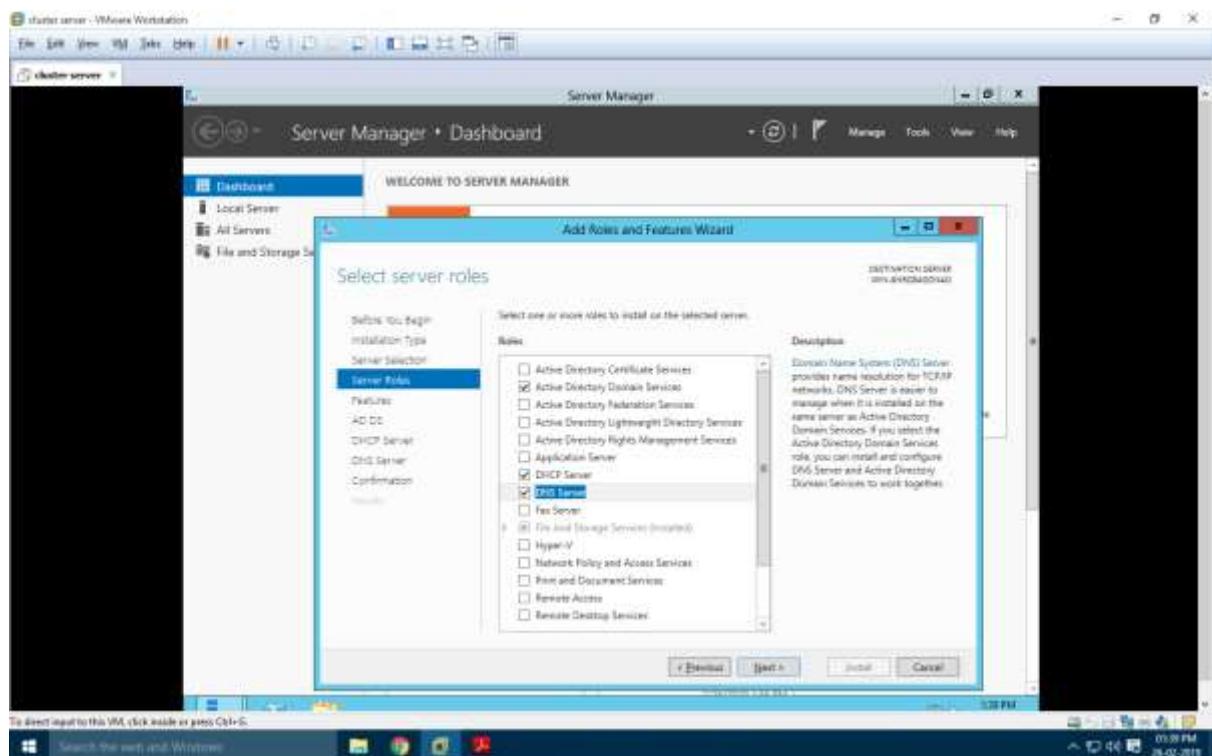


Under “**select destination Server**” select “**Select a server from the server pool**” option and select the server as shown in the screen below and click “**Next**”

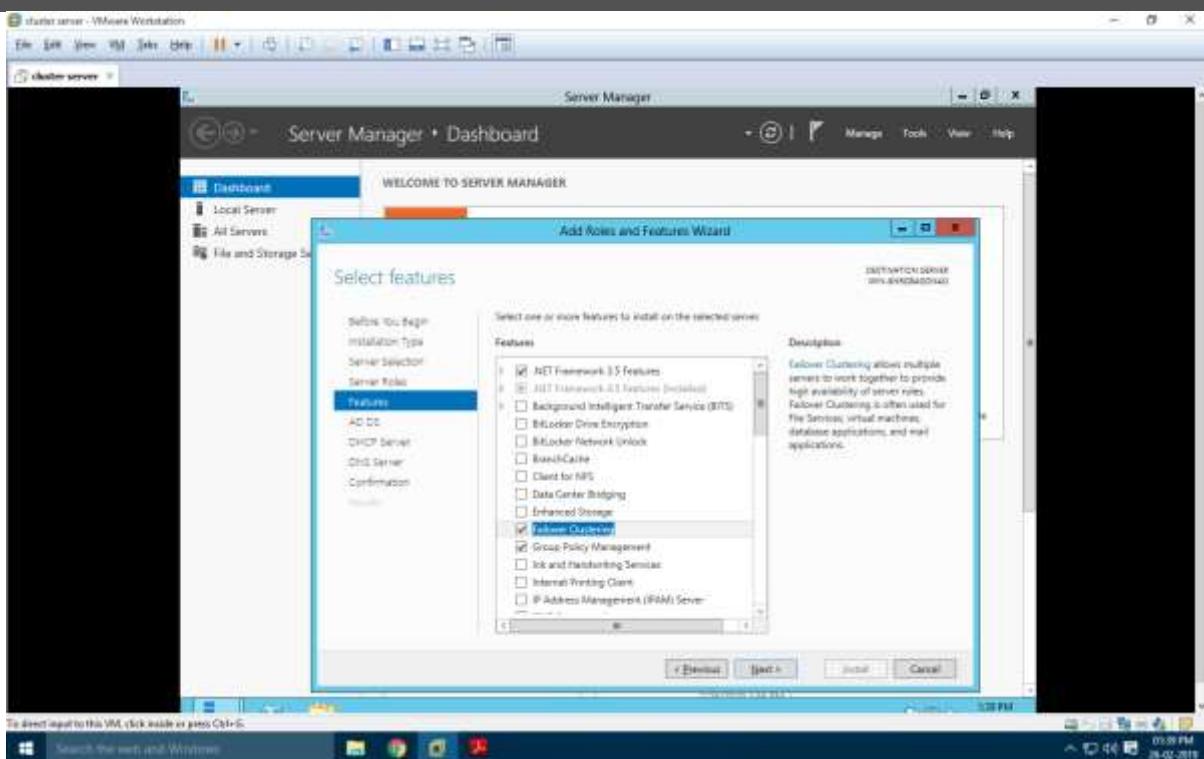


Click on “**Active Directory Services**”, “**DNS**” and “**DNS**” roles from the list of roles provided and click on “**Add Features**” button as shown in the screen. Add Features button will appear as you click on any of the roles.

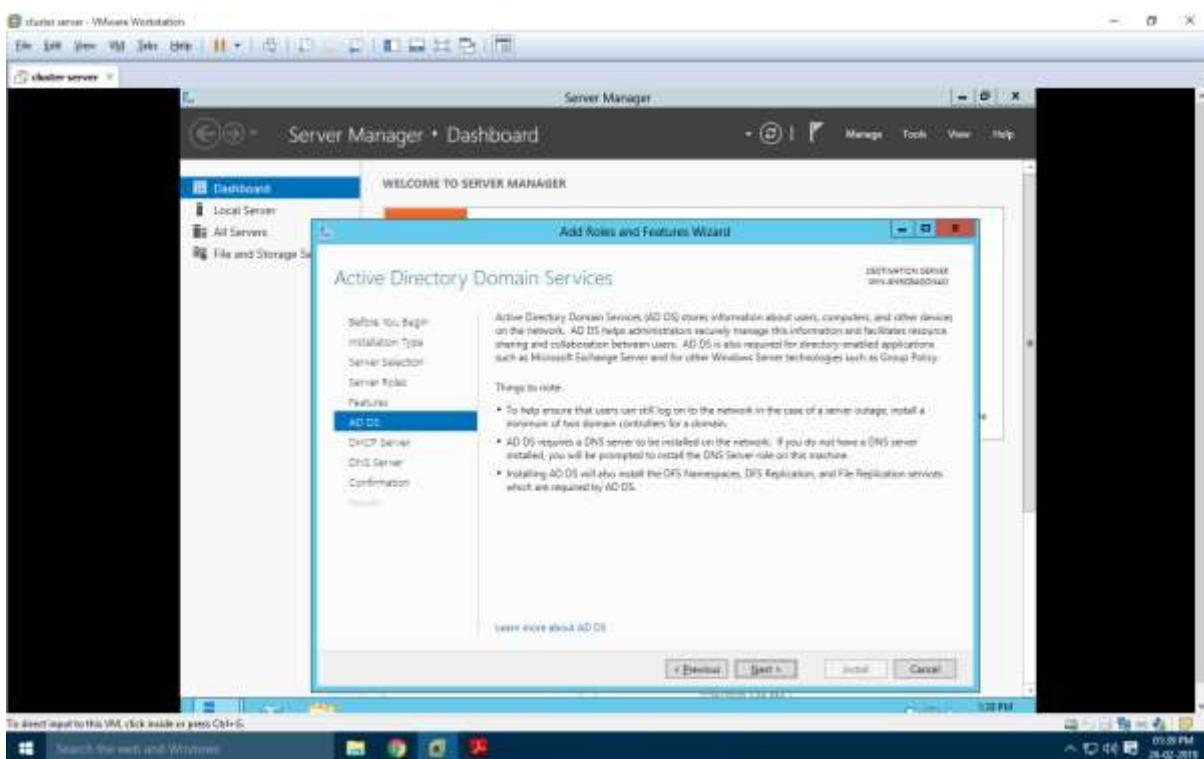
**After selecting the Role click “Next”.**

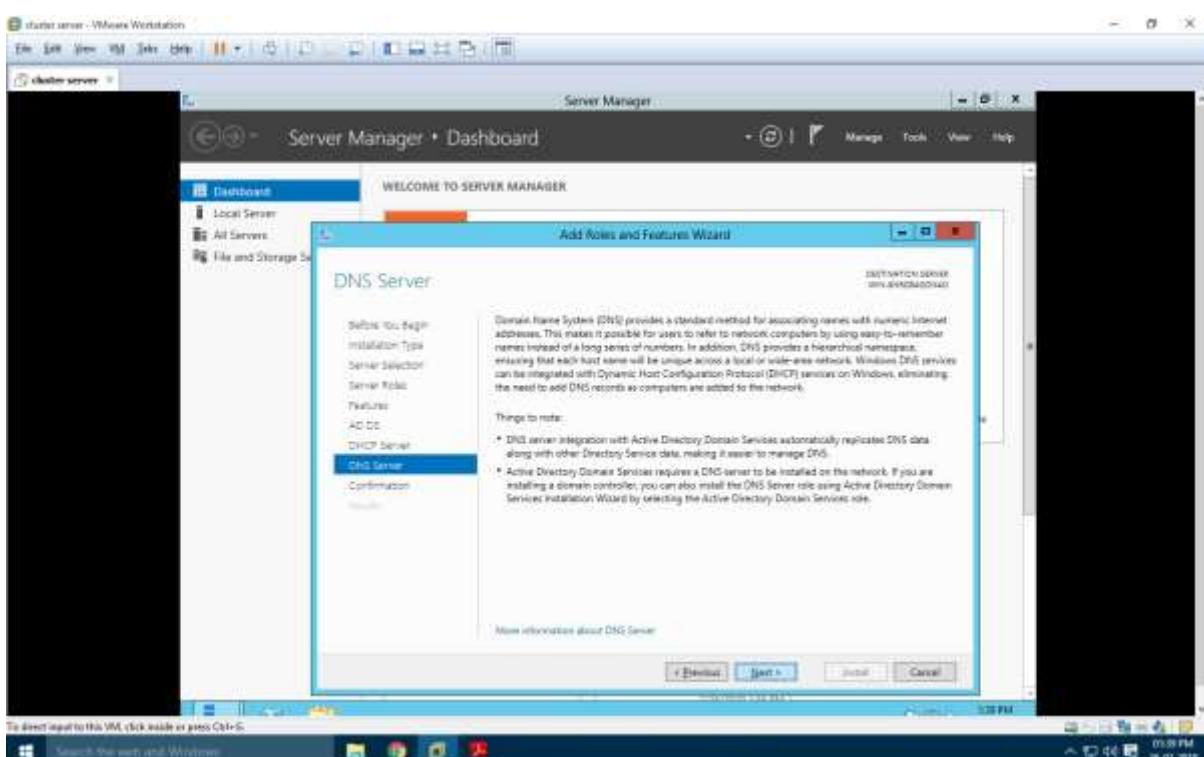
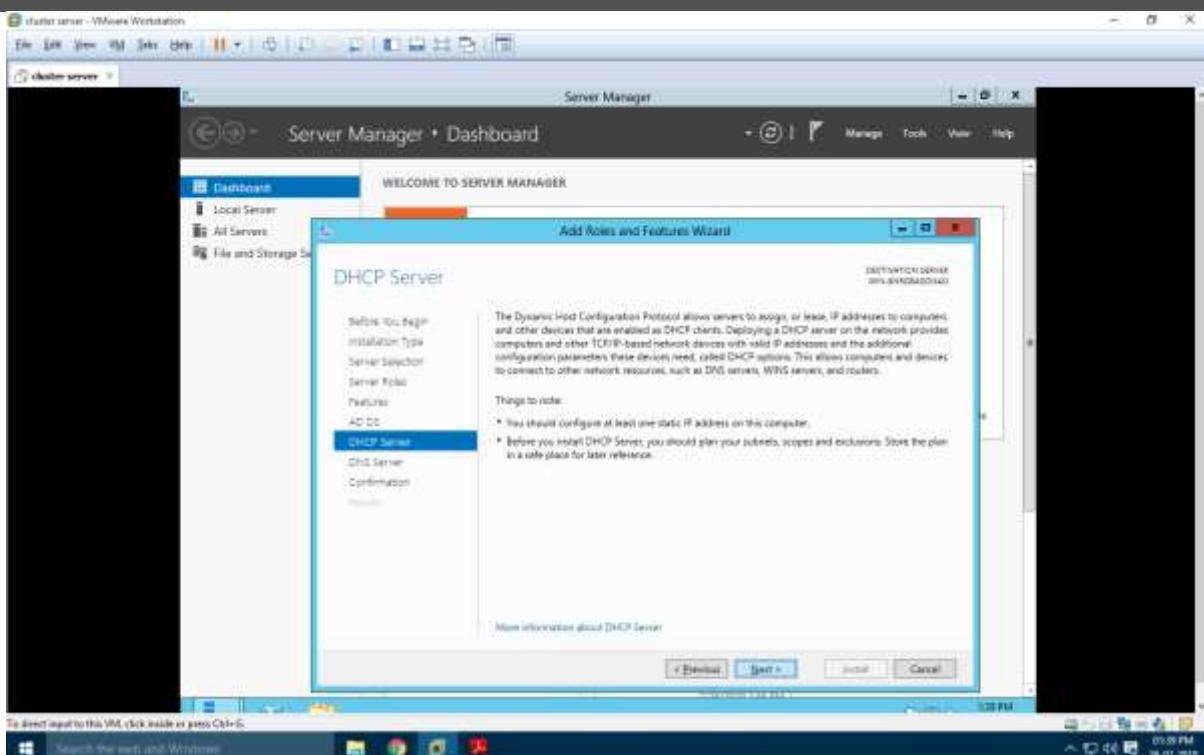


Under “**Select Features**” select “**Failover Clustering**” and “**.NET Framework 3.5 Features**” and click “**Next**”.

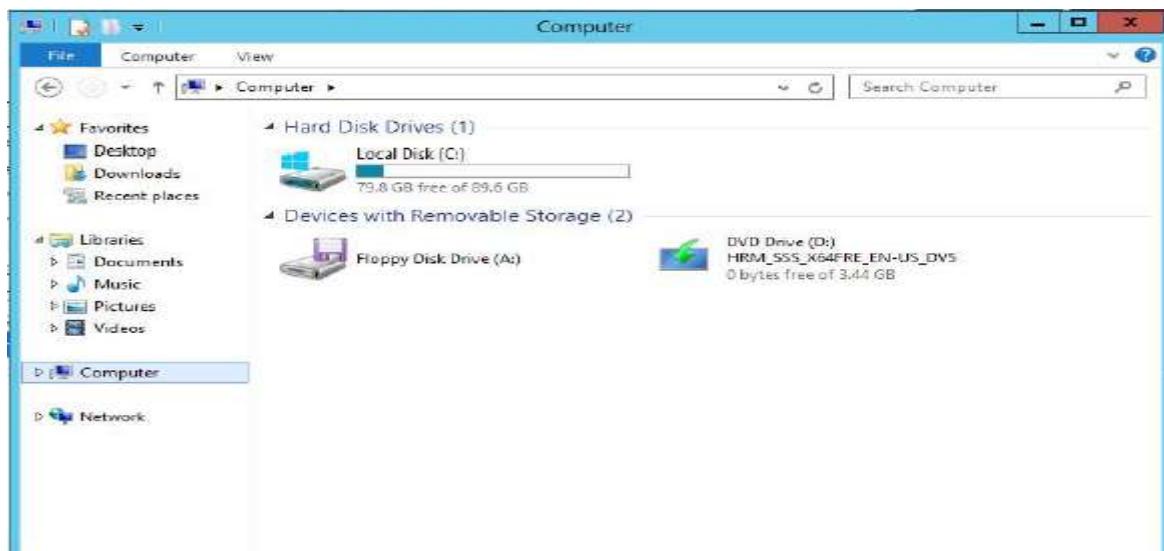


You will see the “**Confirm Installation selections**” then click on link “specify an alternate path”. As shown in below two screens.

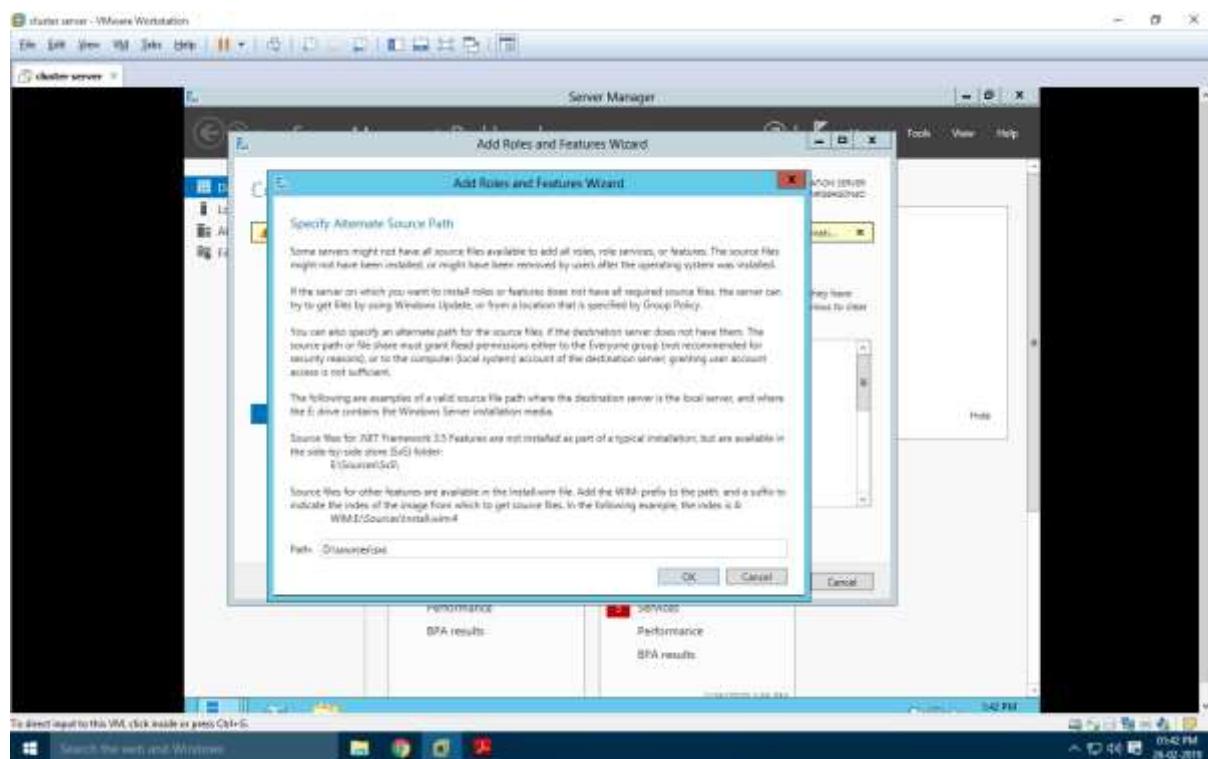




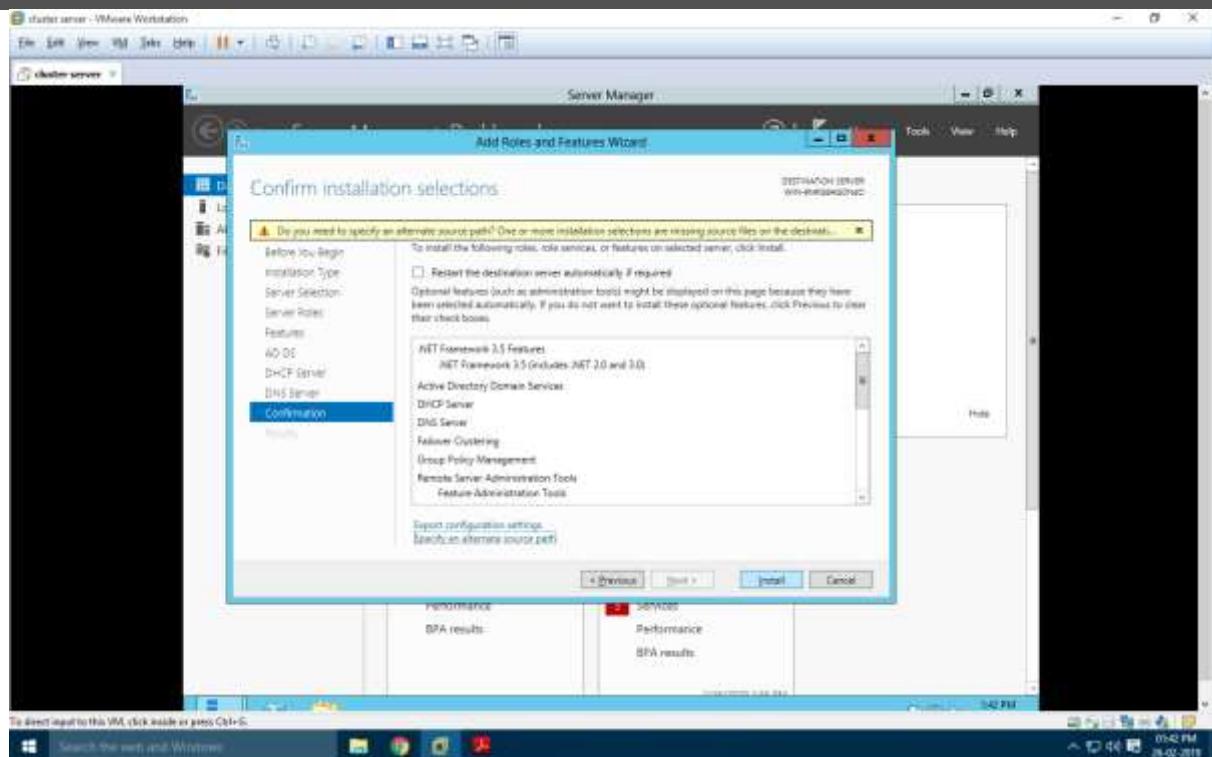
Now, For path specification Go to menu VM->use Iso image file of windows server 2012->Ok Then, Go to File Explorer->Computer -> select the DVD->VIEW FILE-> SOURCES->SXS:



Paste the path Here,

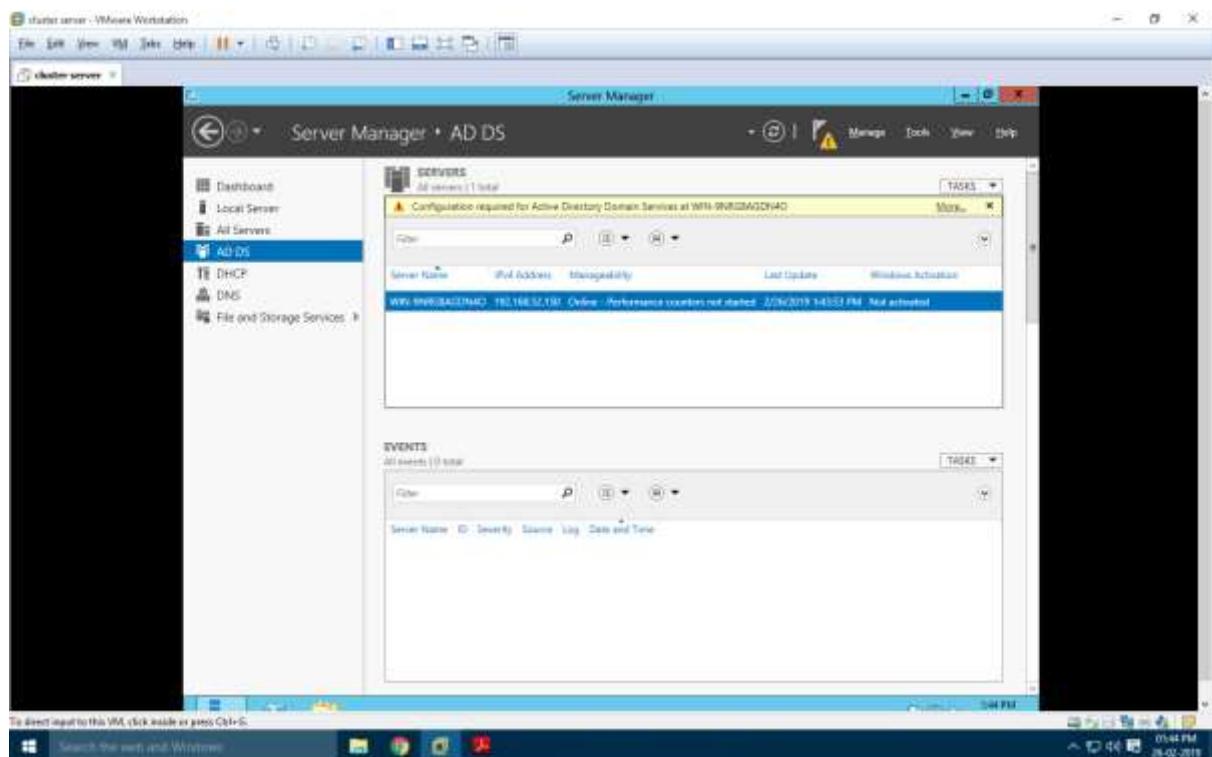


Now, Click on ok and Install button

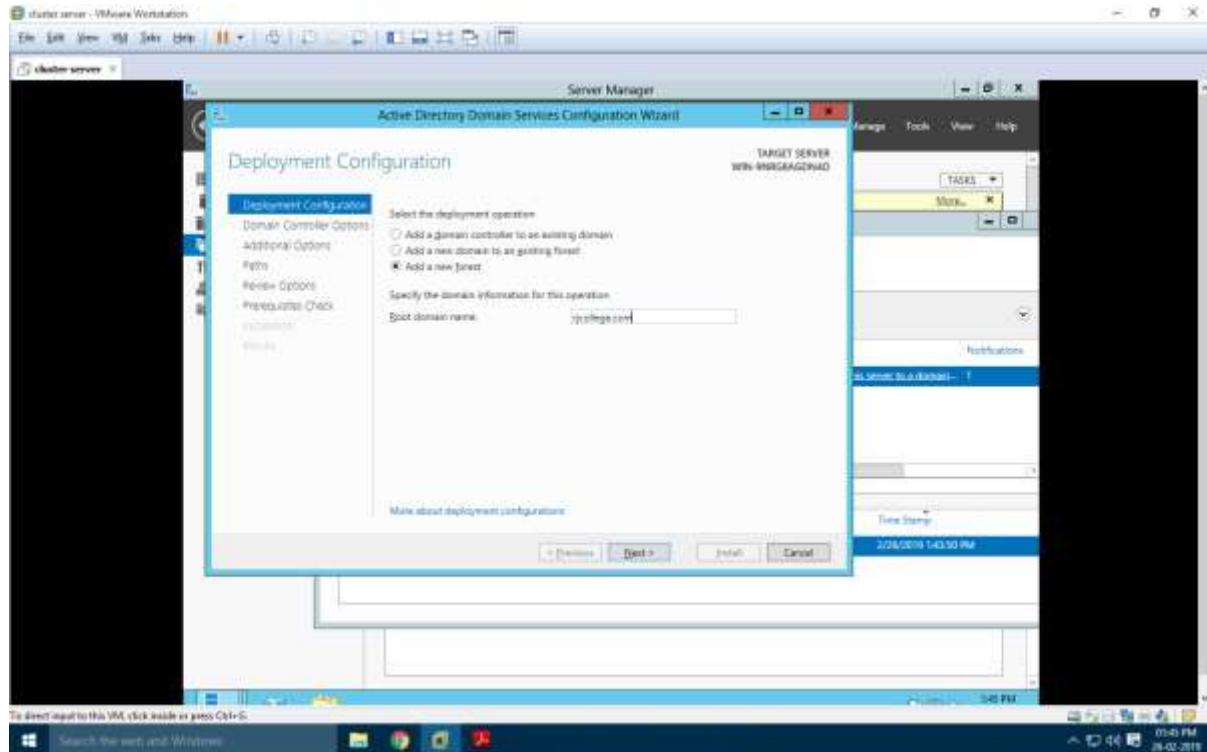


### PROMOTING AS DOMAIN CONTROLLER

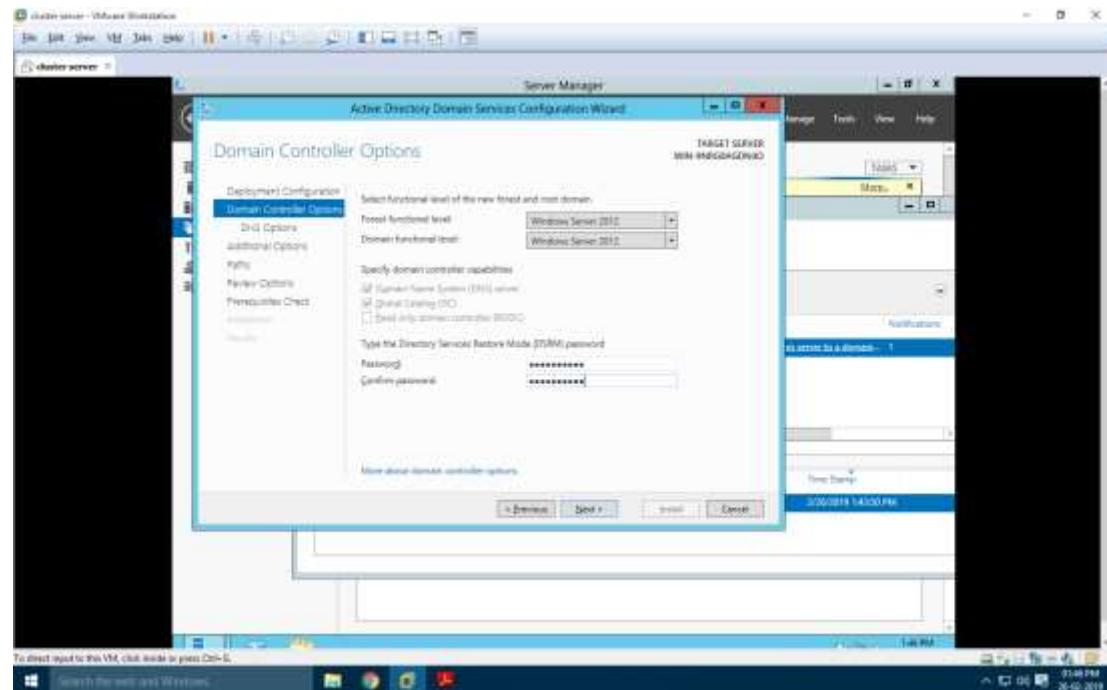
After installation Go to the “**ADDS**” shown on the left side in the server Manger Dashboard as shown in next screen and click on More, then Click on “**Promote this server to a domain controller**”.



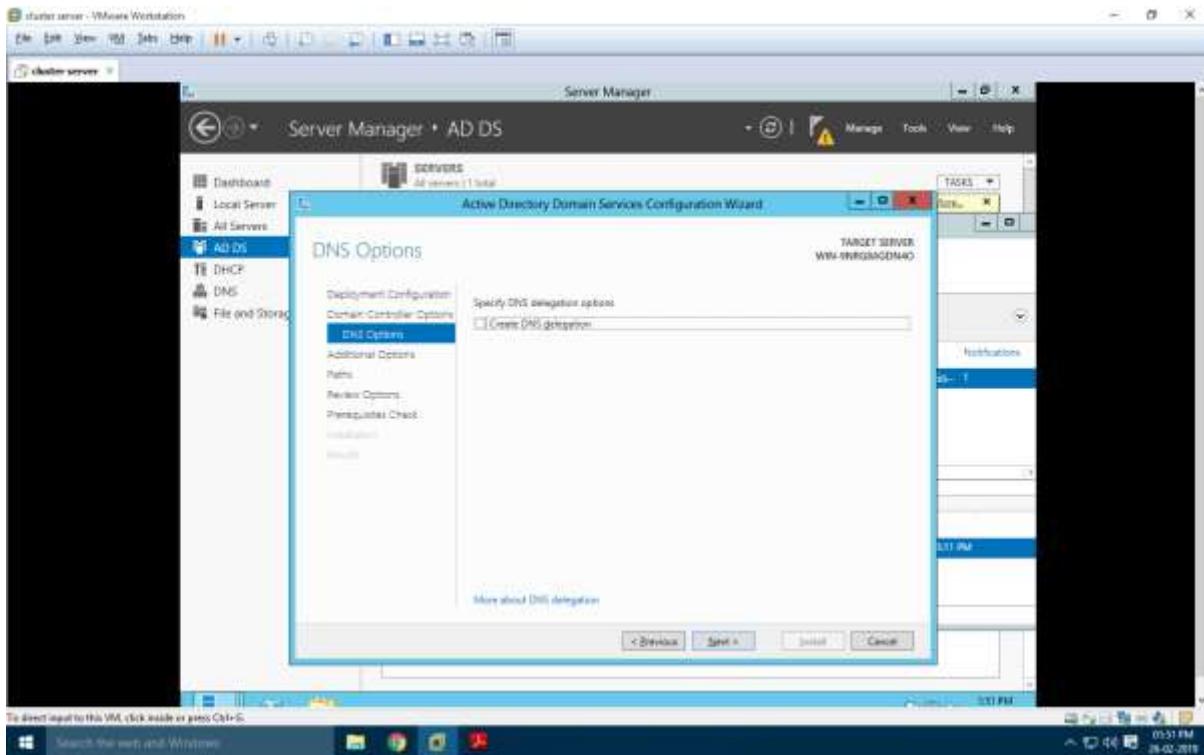
Choose “**Add a new forest**” option in the “**Active Directory Domain services Configuration Wizard**” window. Enter the Domain Name “**rjcollege.com**” as shown in the screen and click “**Next**”.



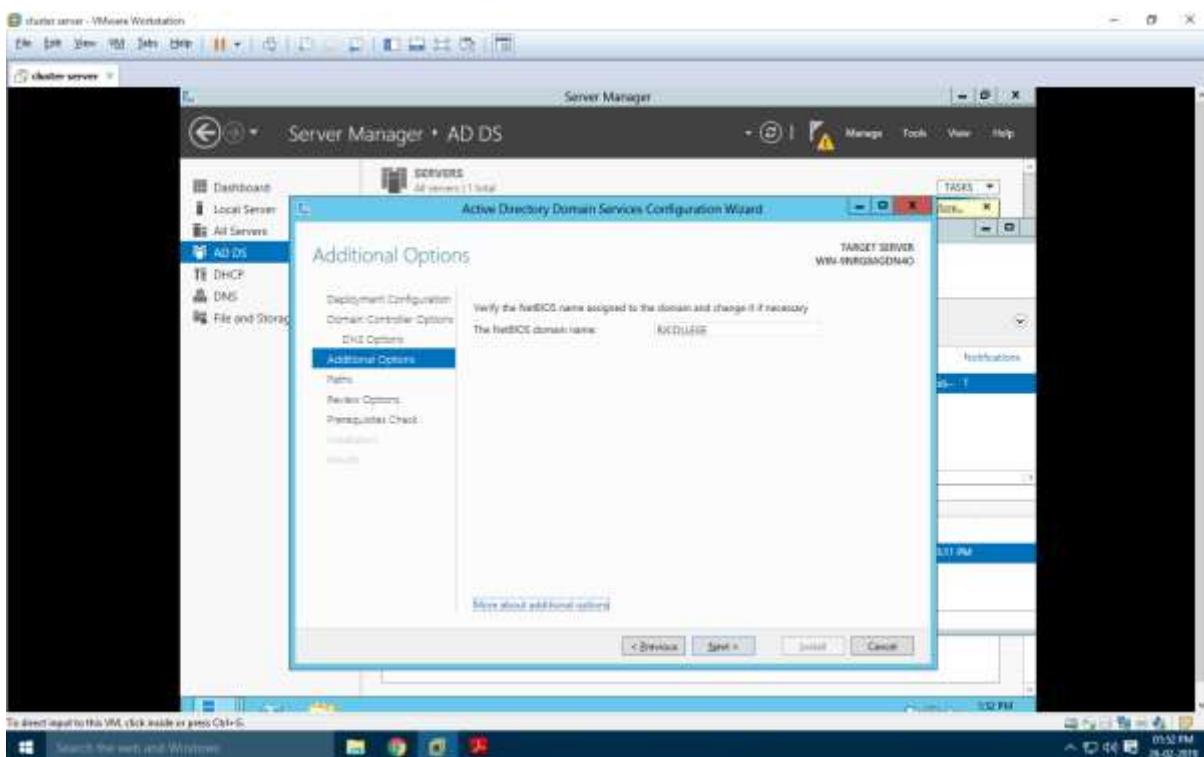
Under “**Domain Controller Options**” enter the alphanumeric password for the “**Directory Services Restore Mode (DSRM) PASSWORD**”. Preferably use the password given to the Administrators account.



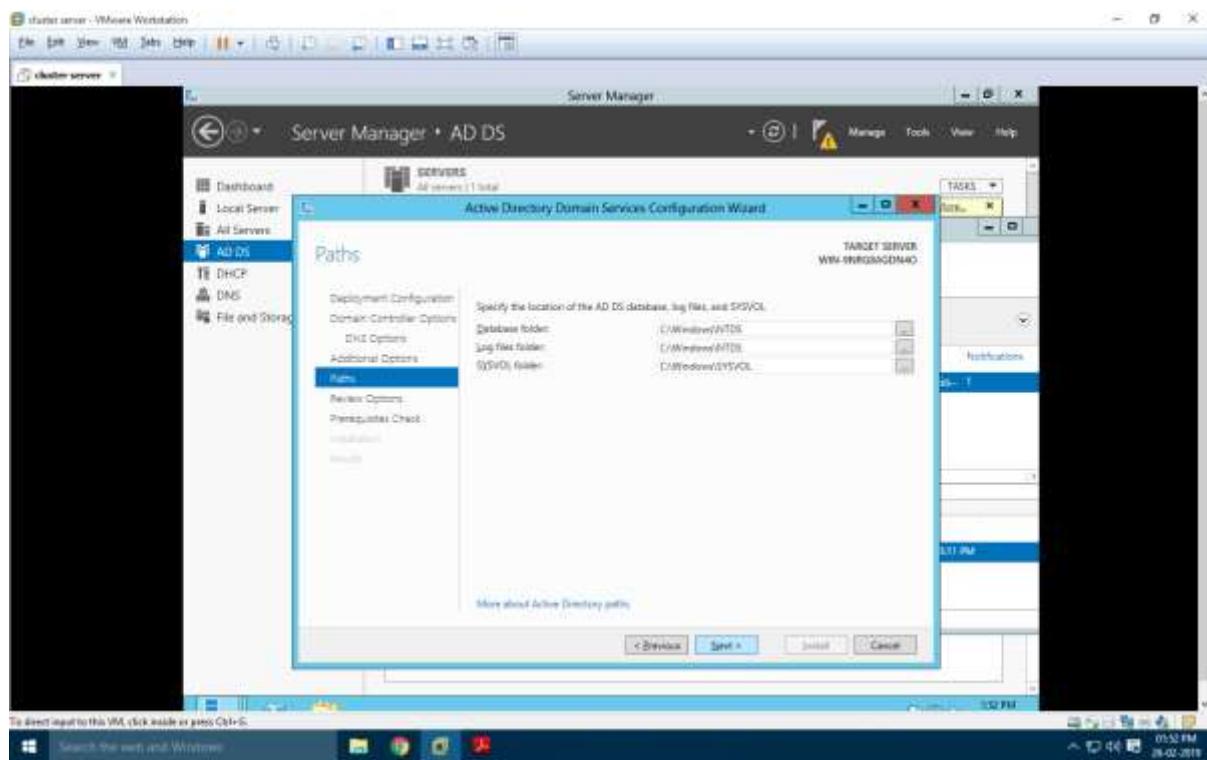
Click “**Next**”



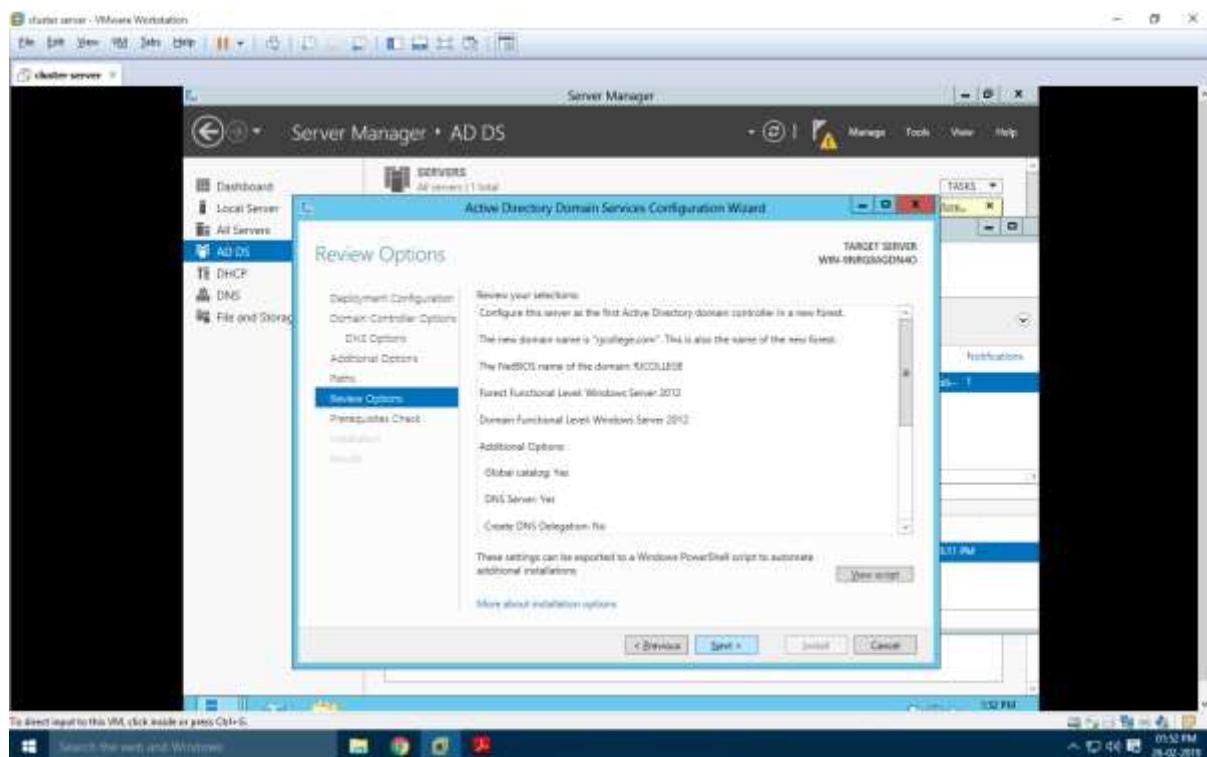
The NetBIOS Domain Name appears here automatically. Click "**Next**".



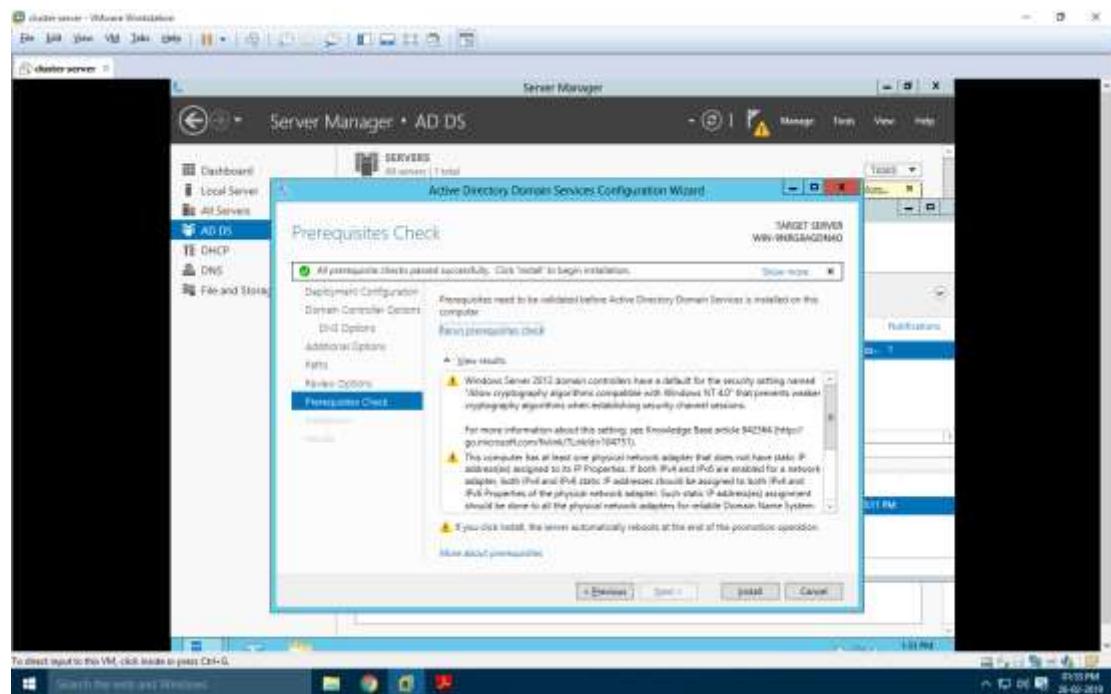
Click "Next"



Under "Review Options" it shows us whatever we have selected for the Domain Controller.

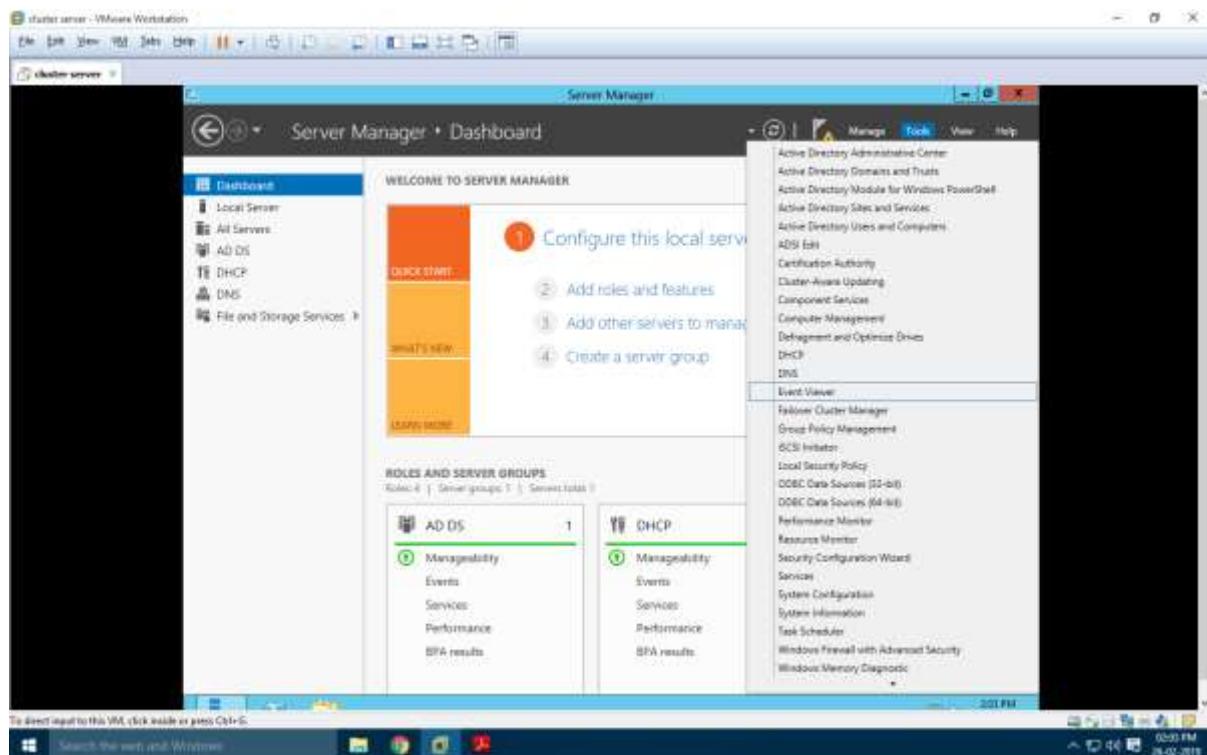


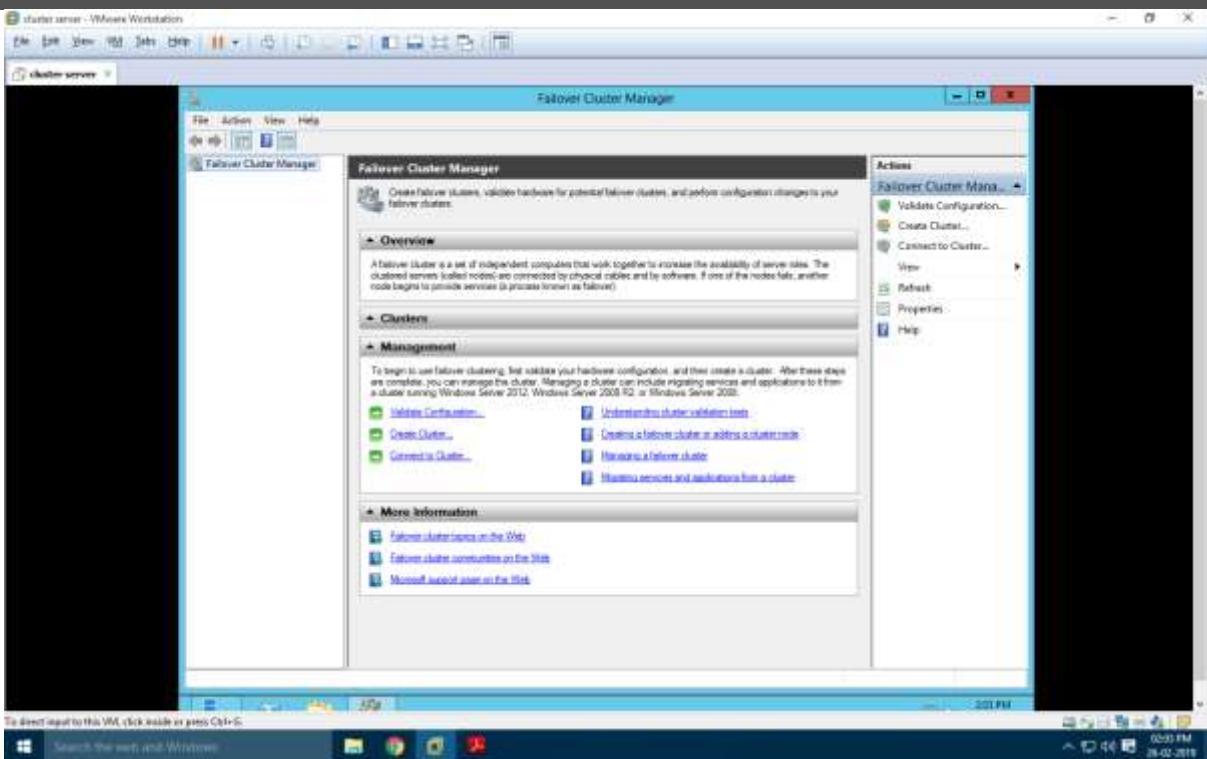
It checks for all the Prerequisites required to create a Domain Controller under “**Prerequisites Check**”. Click on “**Install**” button.



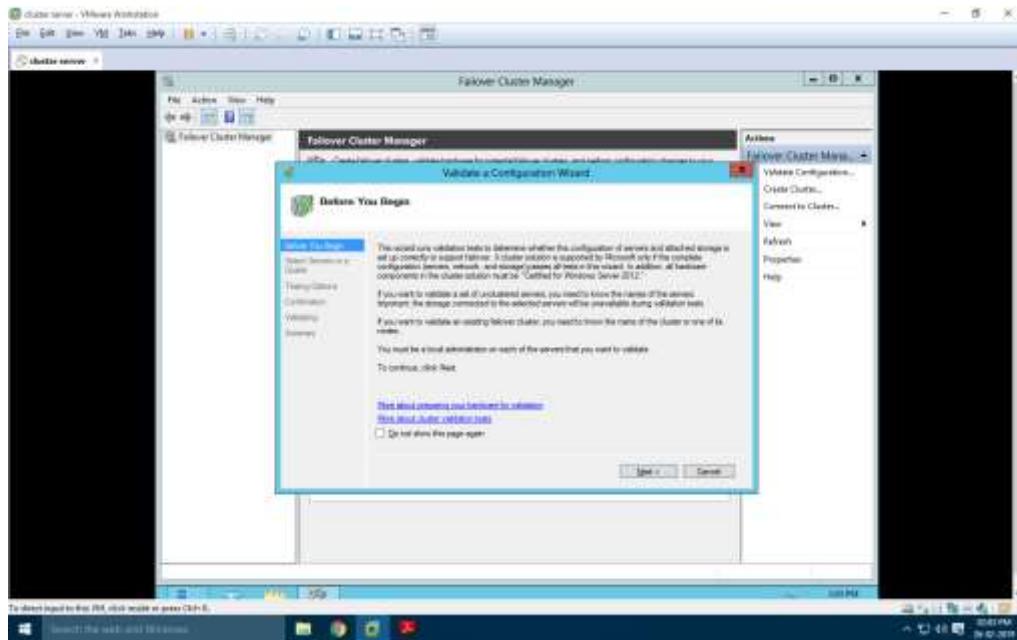
## CREATING FAILOVER CLUSTER

Click on the “**Failover Cluster Manager**” under the tools menu to get the following screen.

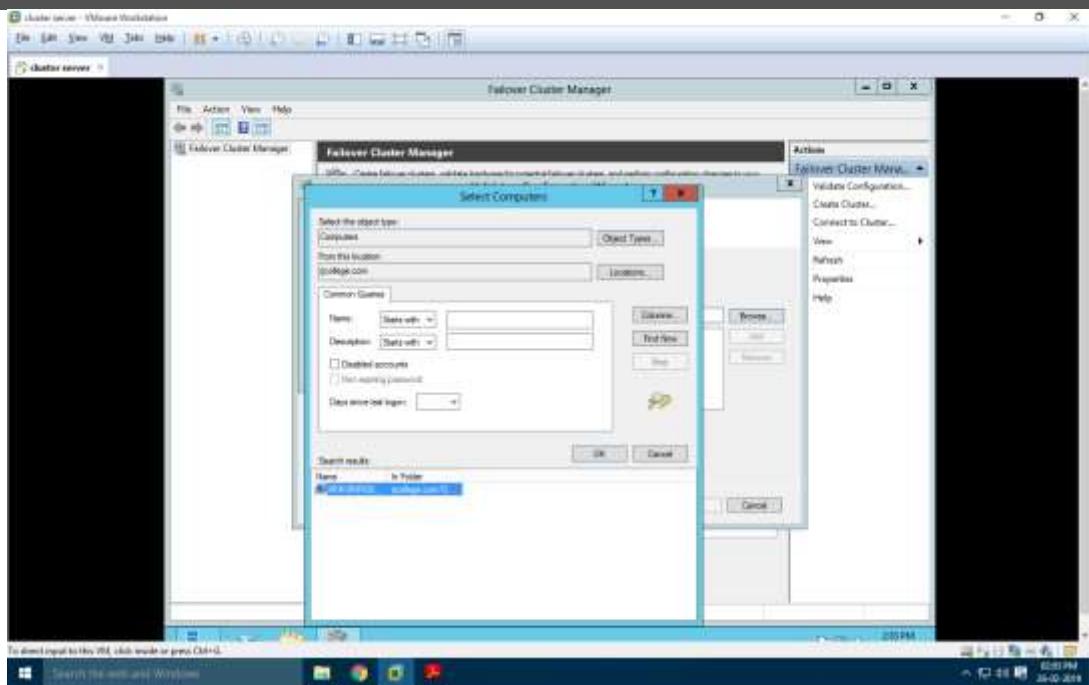




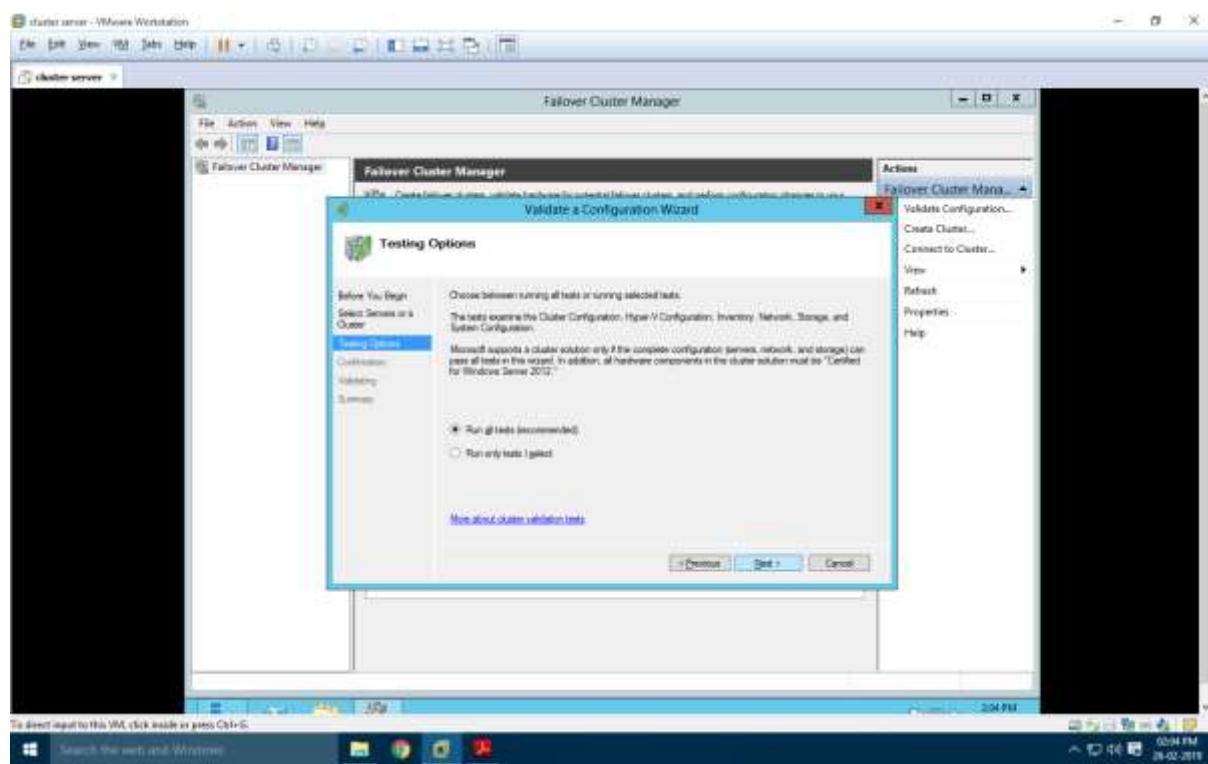
Click on “**Validation Configuration**” to open the “**Validate a Configuration Wizard**” by clicking on the “**Validation Configuration**” under the Management section at the bottom or right side of the screen. The nodes to be added must be validated prior to add in the cluster. Click “**Next**”.



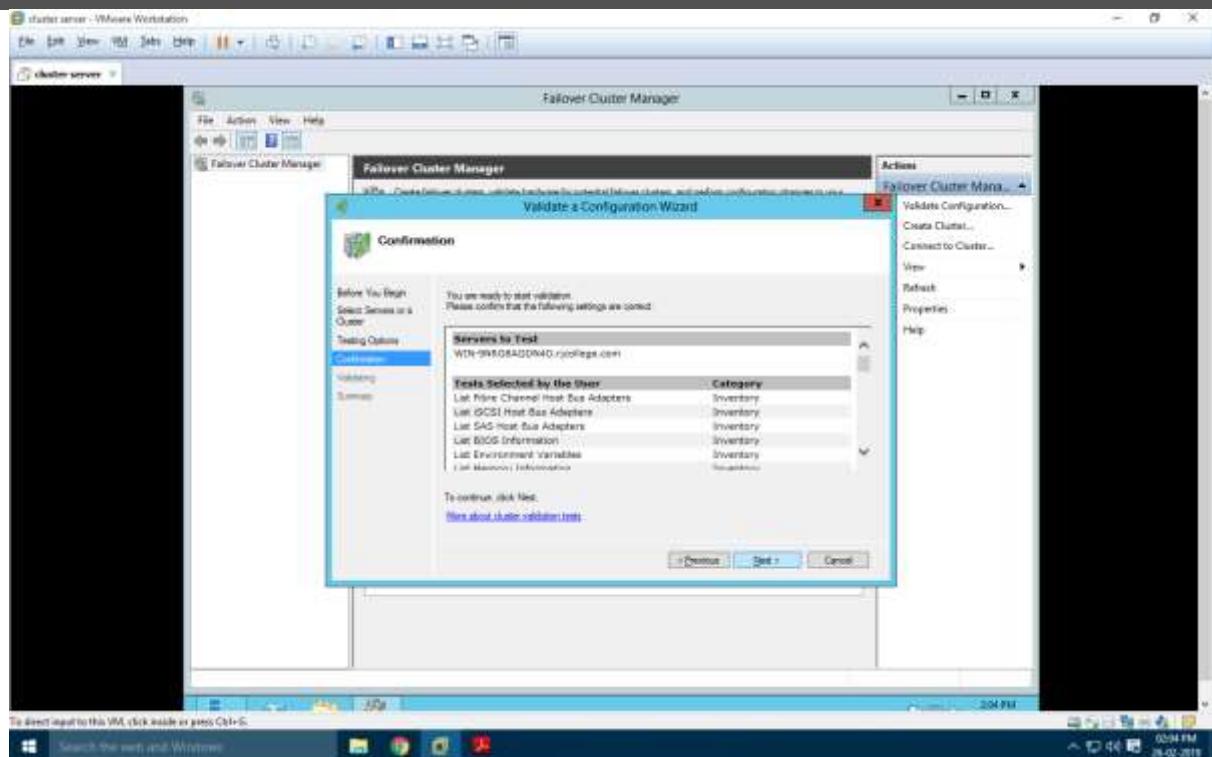
In this screen, click on Browse button and then Advanced for finding the domain node. As shown in below screens.



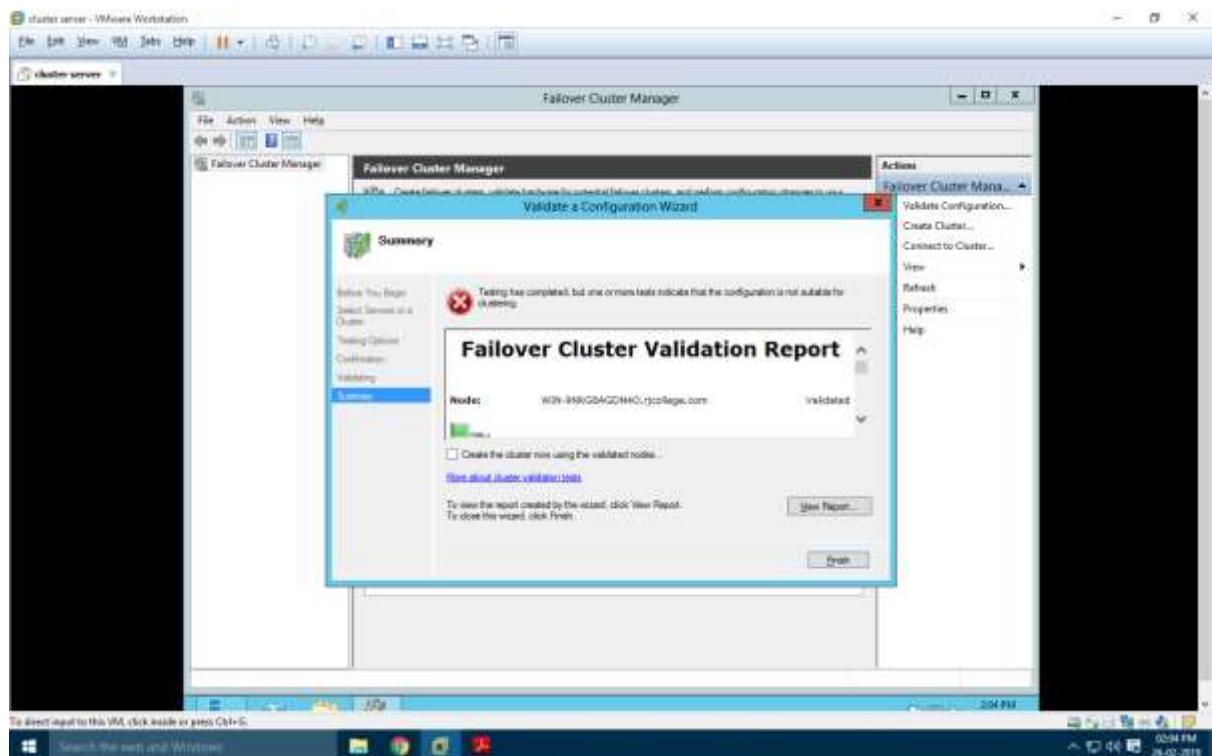
Click on run all test



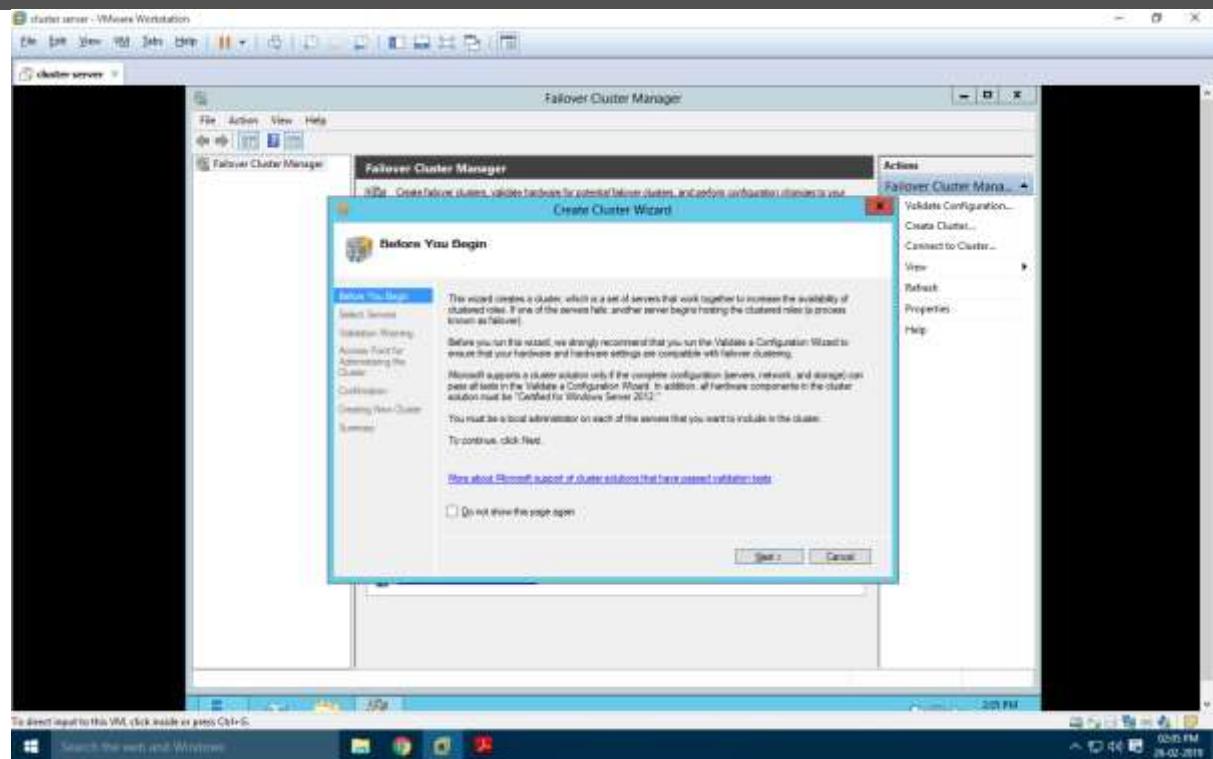
Choose "**Run all the tests(recommended)**" and click "**Next**" and then it will ask for the confirmation click "**Next**". It will start all test validation.



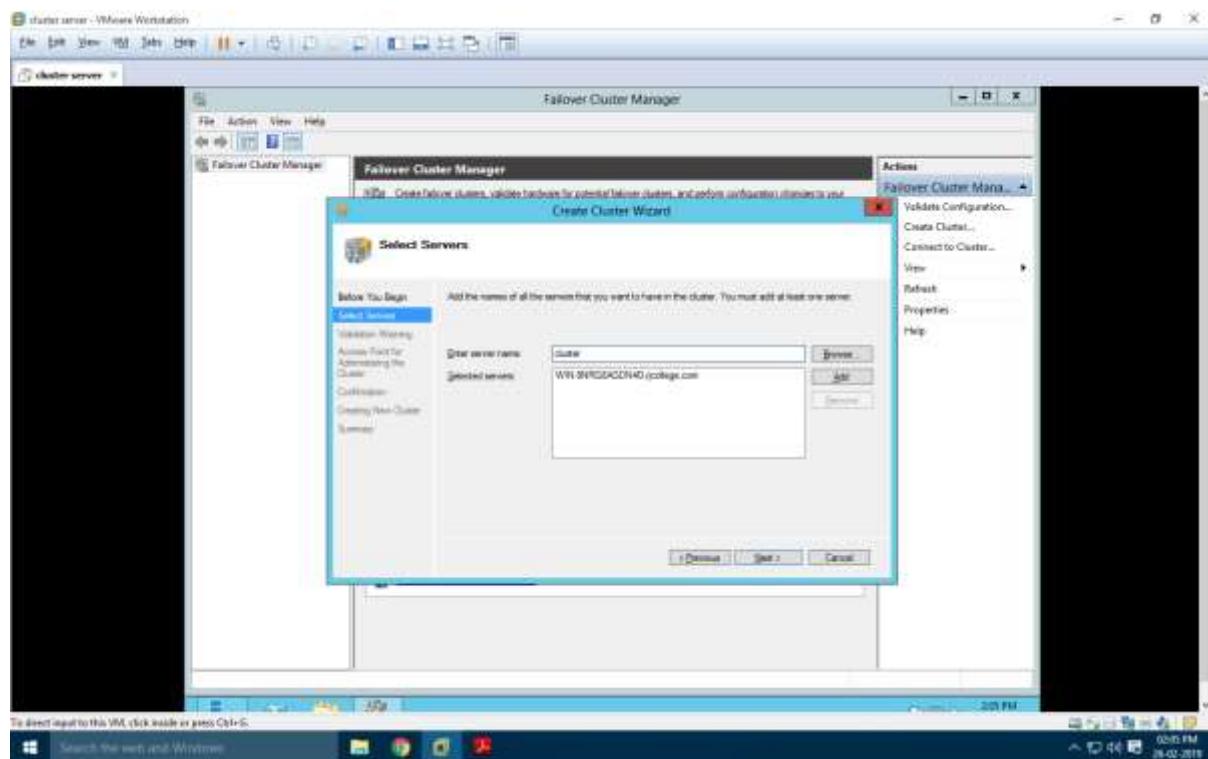
After completion it will display the summary report as shown below. If there are any errors can be seen here and you will not be allowed to create the cluster. As shown in the screen we can see that the nodes are validated. Click on finish.



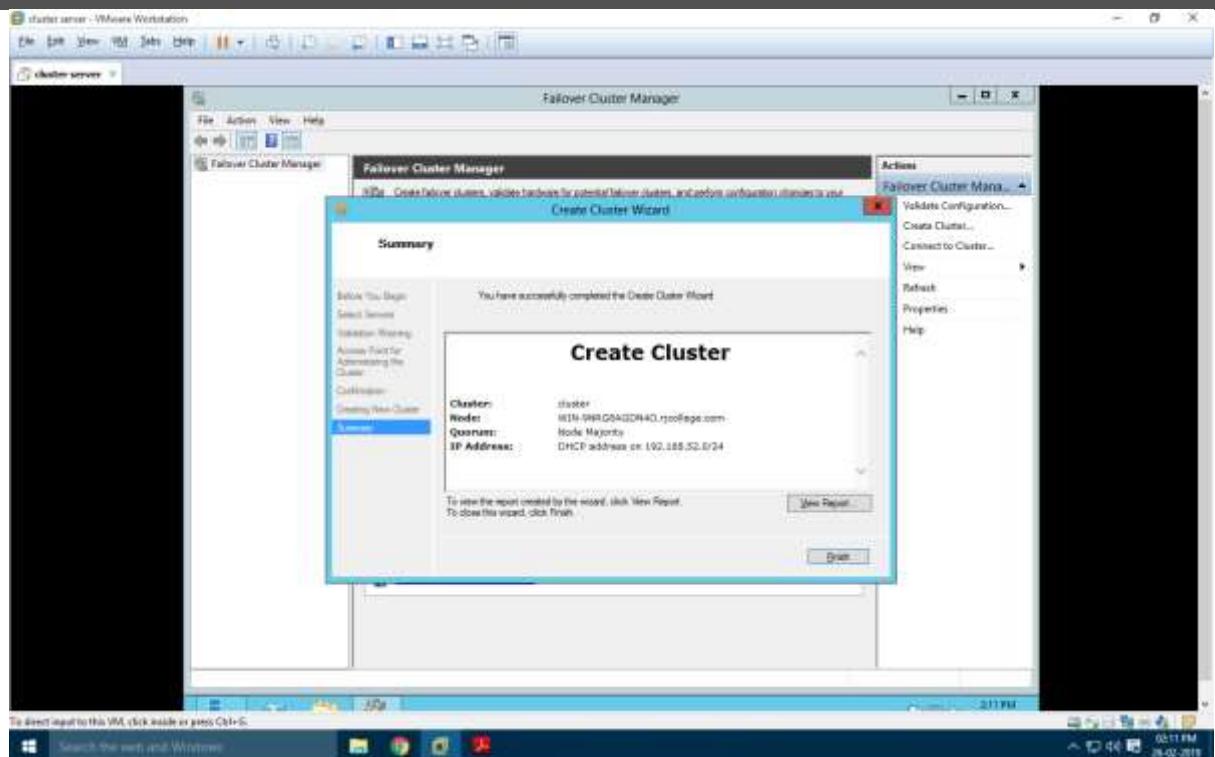
After validation completion you will create the “**Create Cluster Wizard**” click Next.



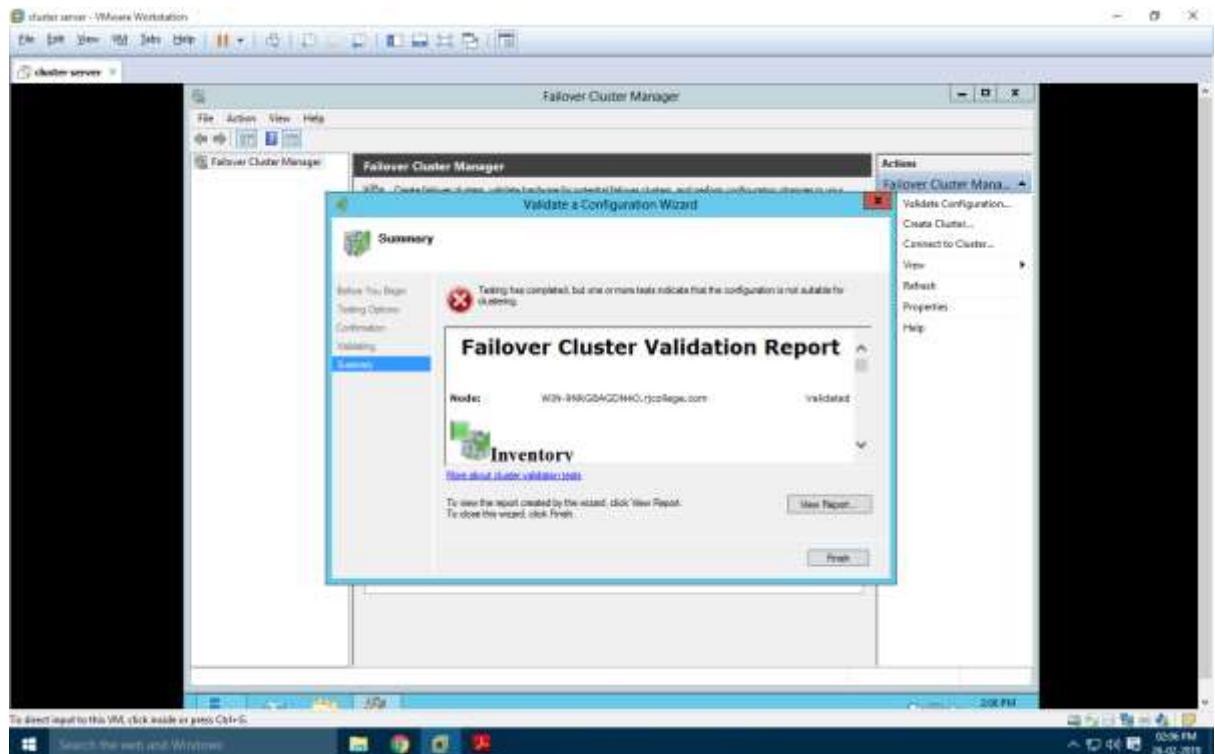
Specify the **Cluster name**. Cluster name here should be the **NetBIOS name of the Domain Controller**, so here it is RJC\_Node. Click next



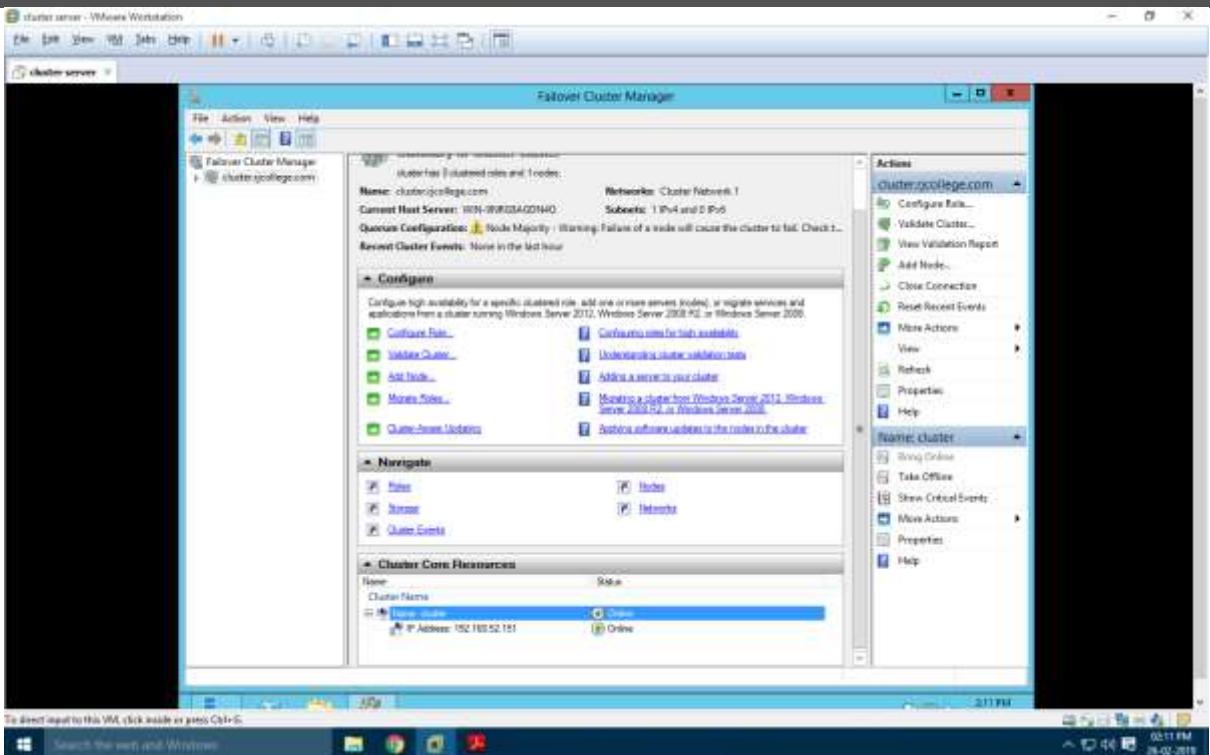
It will ask for the confirmation of cluster Creation. Click "**Next**".



If the Cluster creation is successful you should see the following screen that shows a message "You have successfully completed the Create Cluster Wizard"



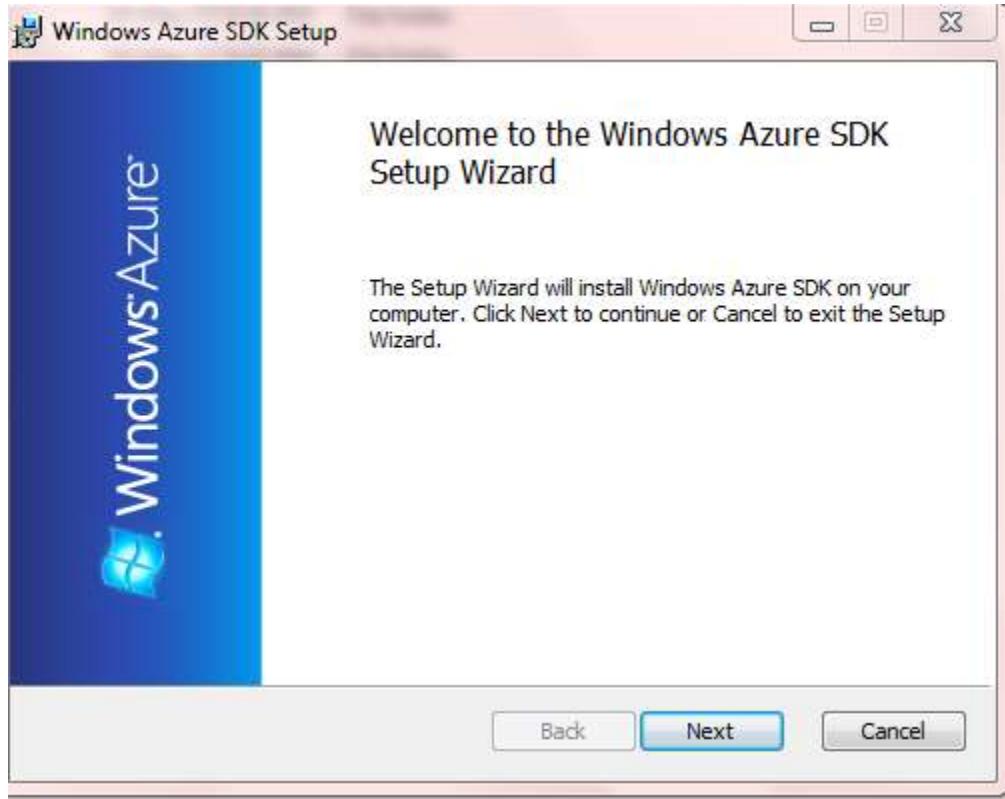
After cluster gets created you can see the cluster on the left side as shown in the screen below.



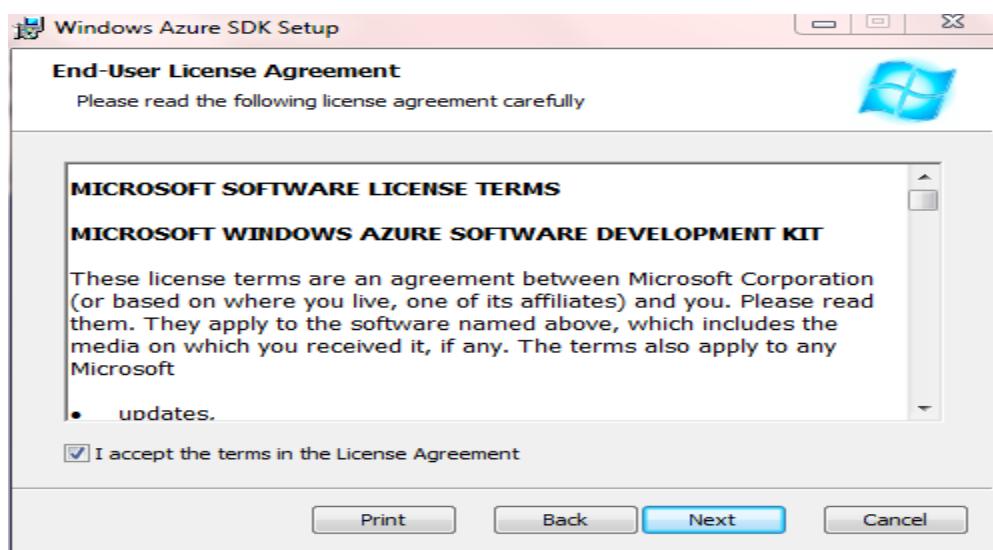
**PRACTICAL: 2**  
**DEVELOPING APPLICATION FOR WINDOWS AZURE**

**Step 1:**

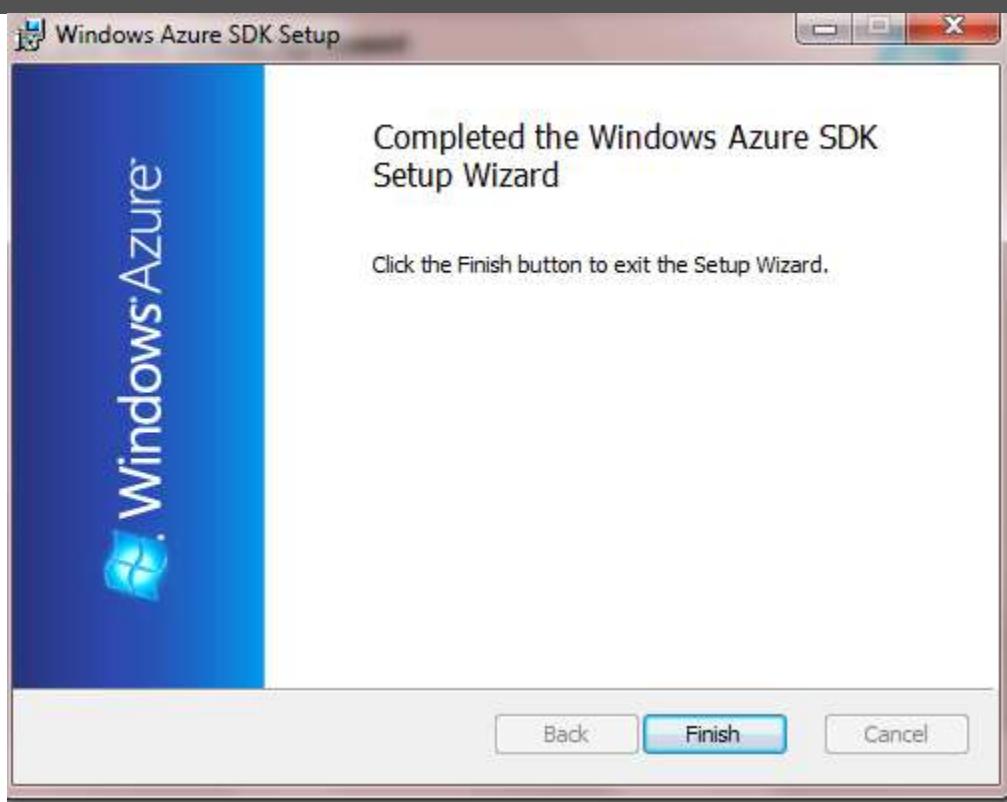
To develop an application for Windows Azure on Visual Studio install the "**Microsoft Azure SDK for .NET (VS 2010) – 2.8.2.1**"



Accept the license and Click on Next.



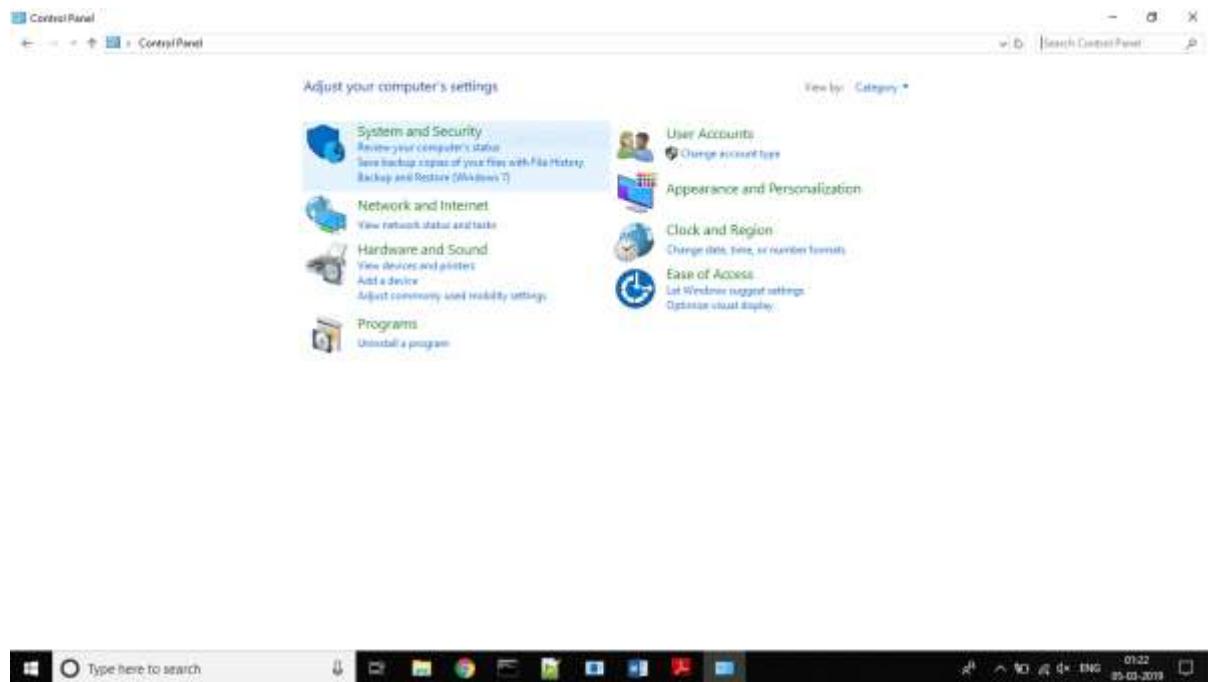
Click on Finish



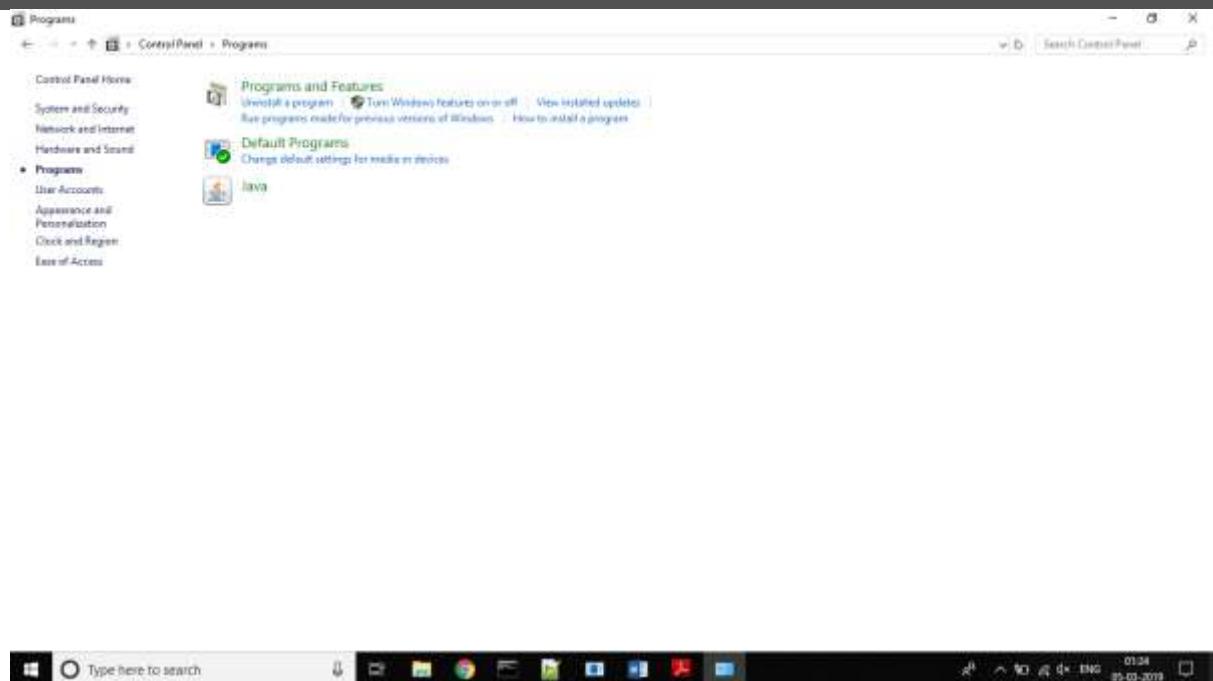
## **Step2:**

## Turn windows Features ON or OFF:

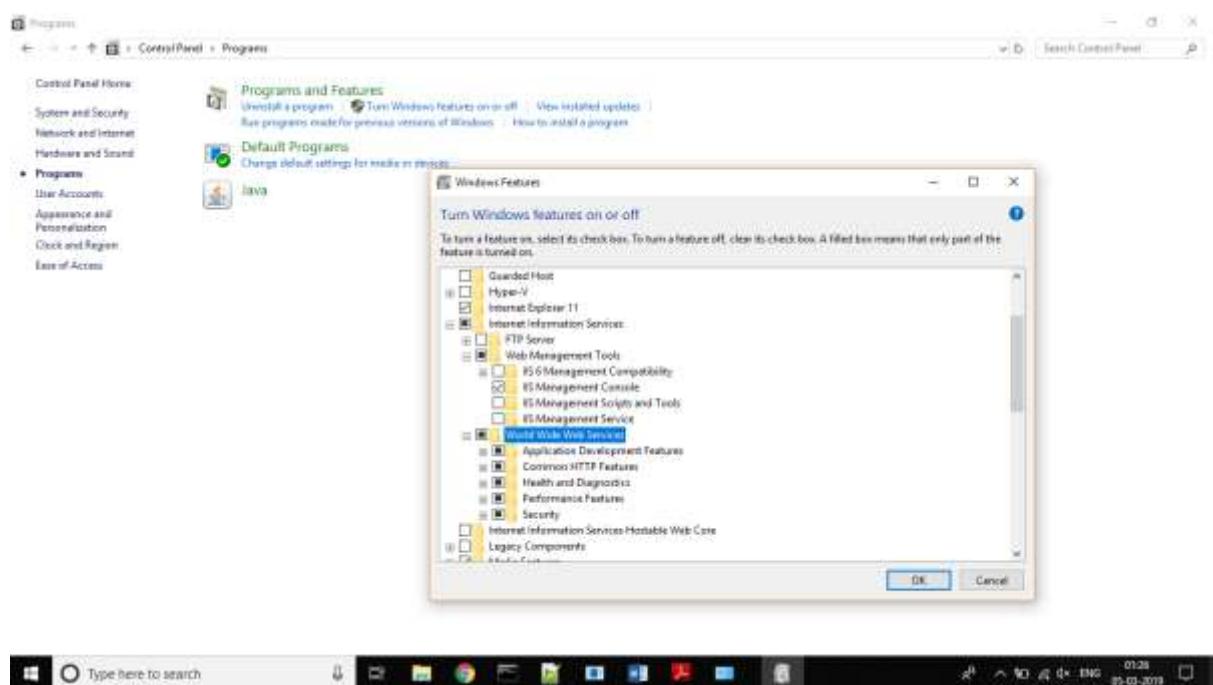
Go to Control panel and click on programs.



## Turn Windows features on or off.

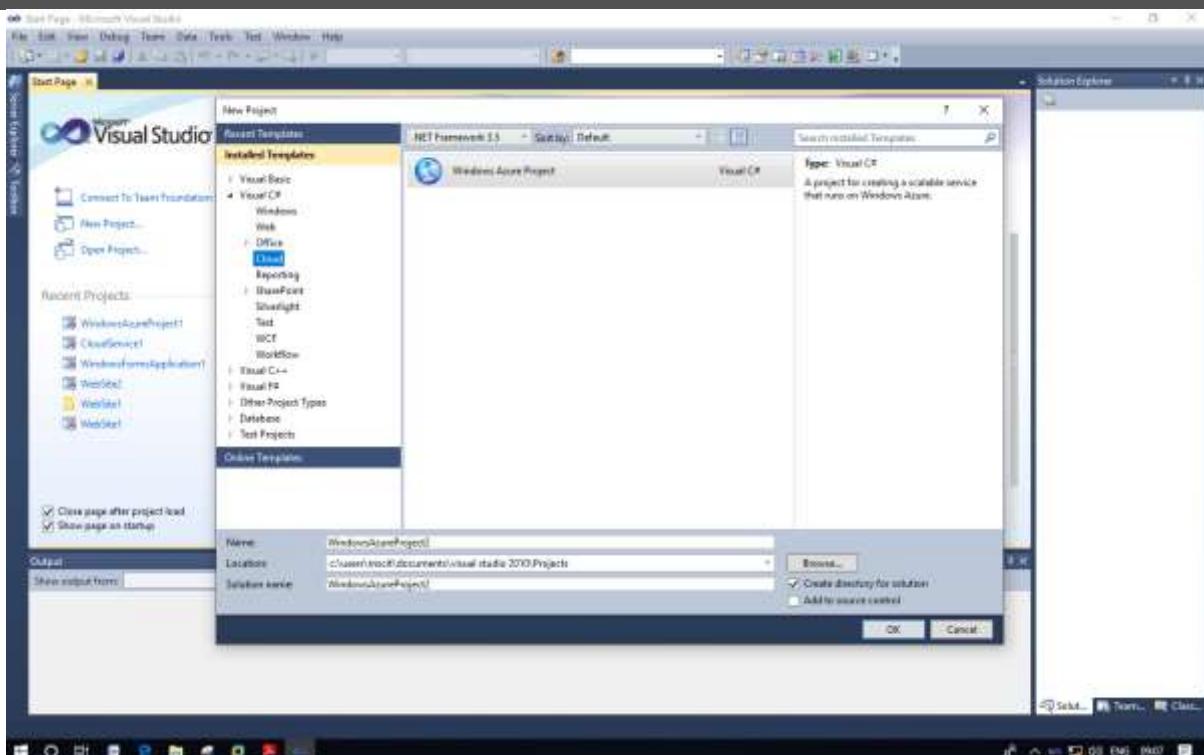


Expand the internet information services and select the following checkbox.

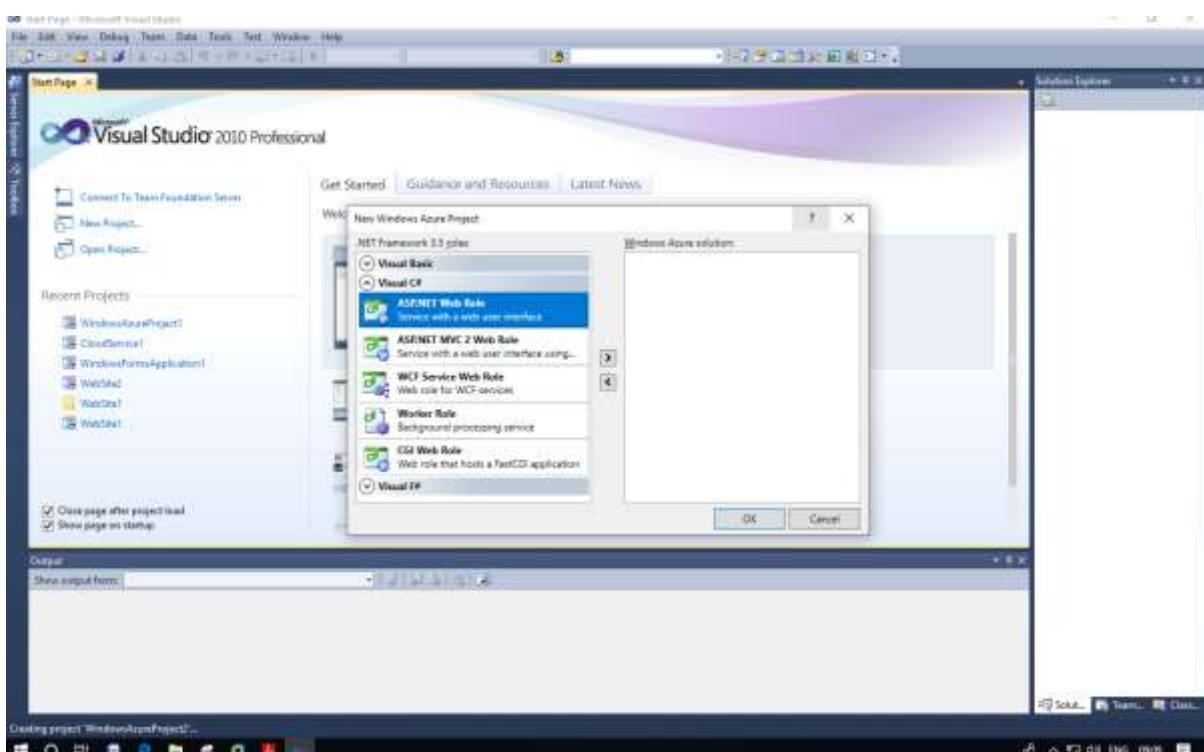


#### Step4:

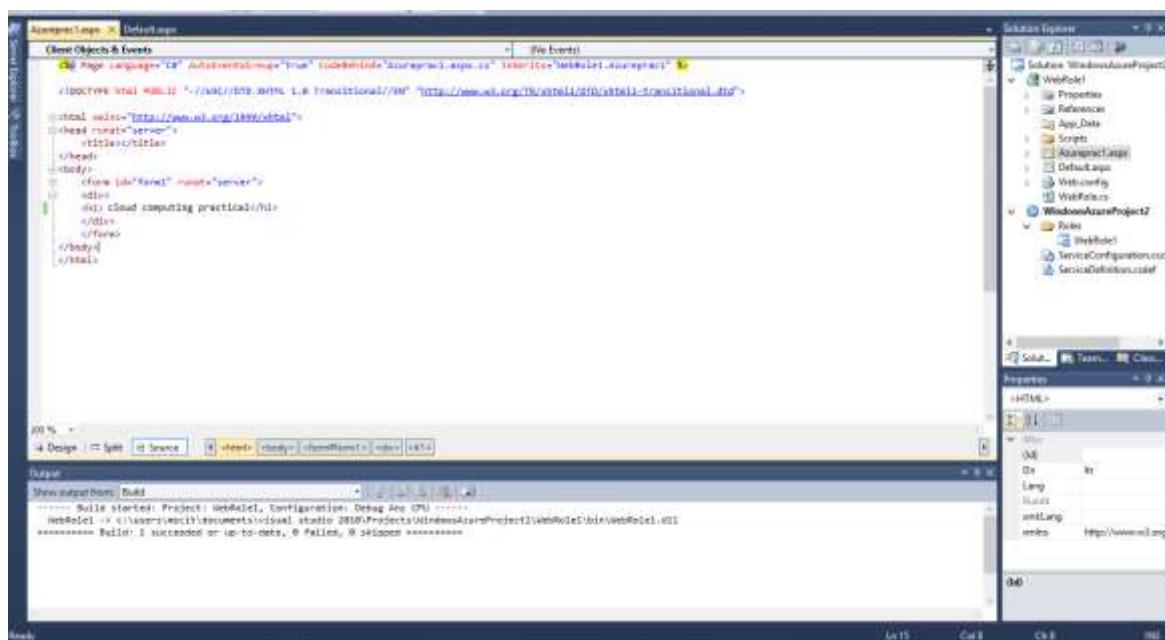
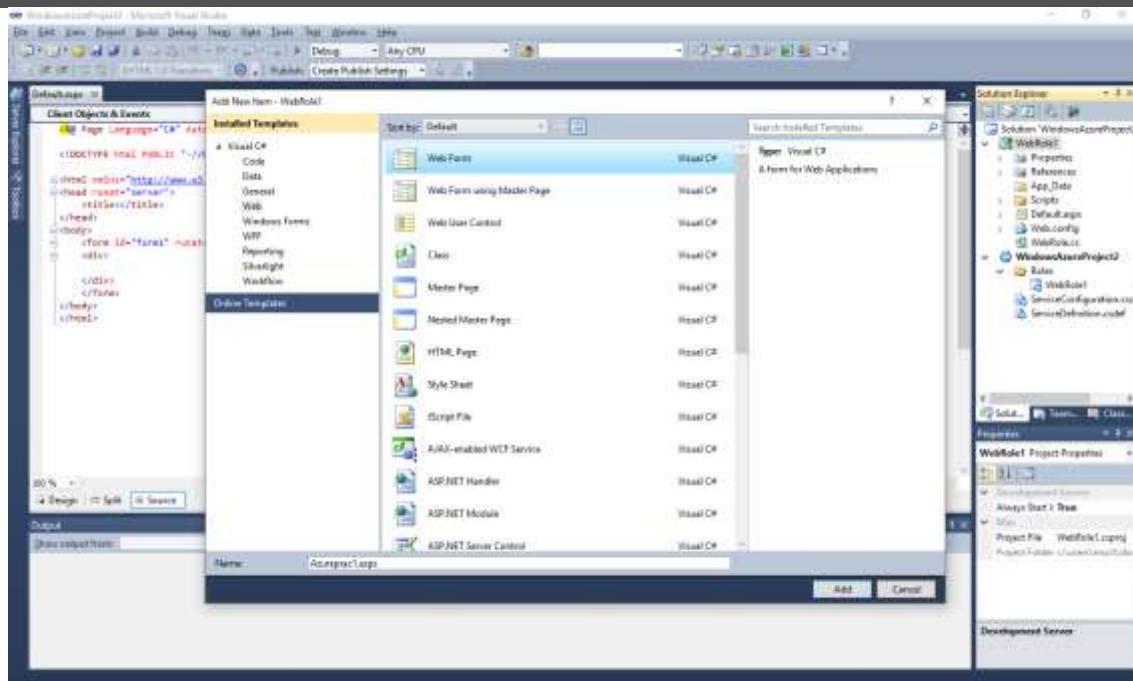
Now, Start the visual studio 2010 and Go To File->New->Project



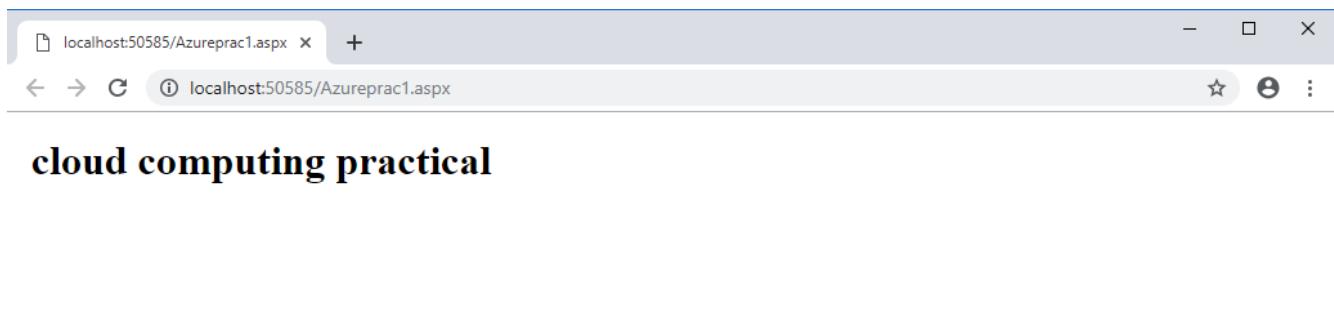
### Add asp.net roles



### Create a web form



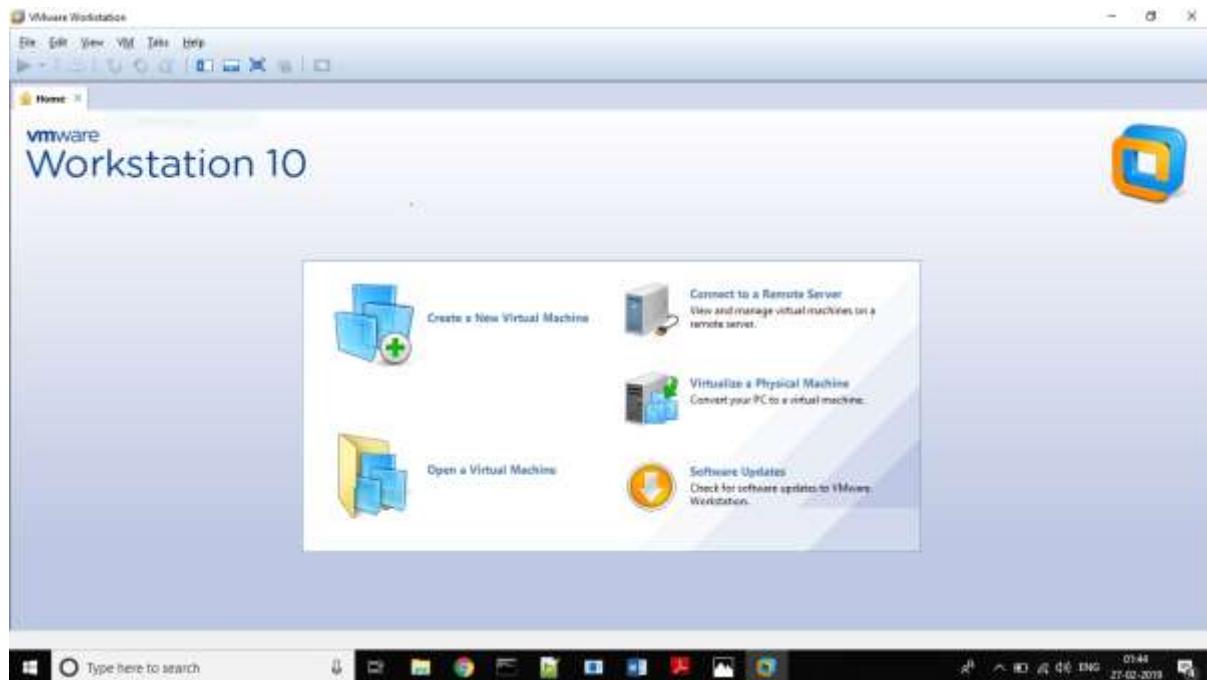
Run the website



## PRACTICAL: 3

### IMPLEMENTING PRIVATE CLOUD WITH XEN SERVER

Open VMware Workstation – And select Create a New Virtual Machine



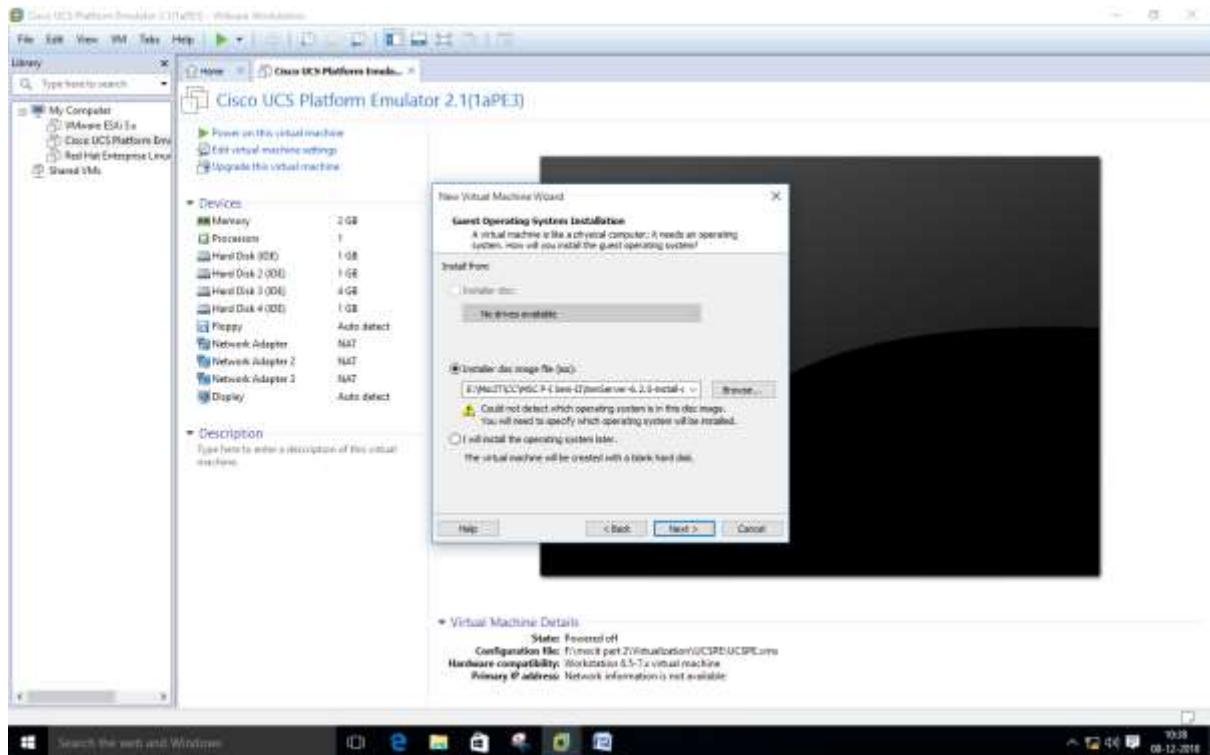
Select Typical and click Next



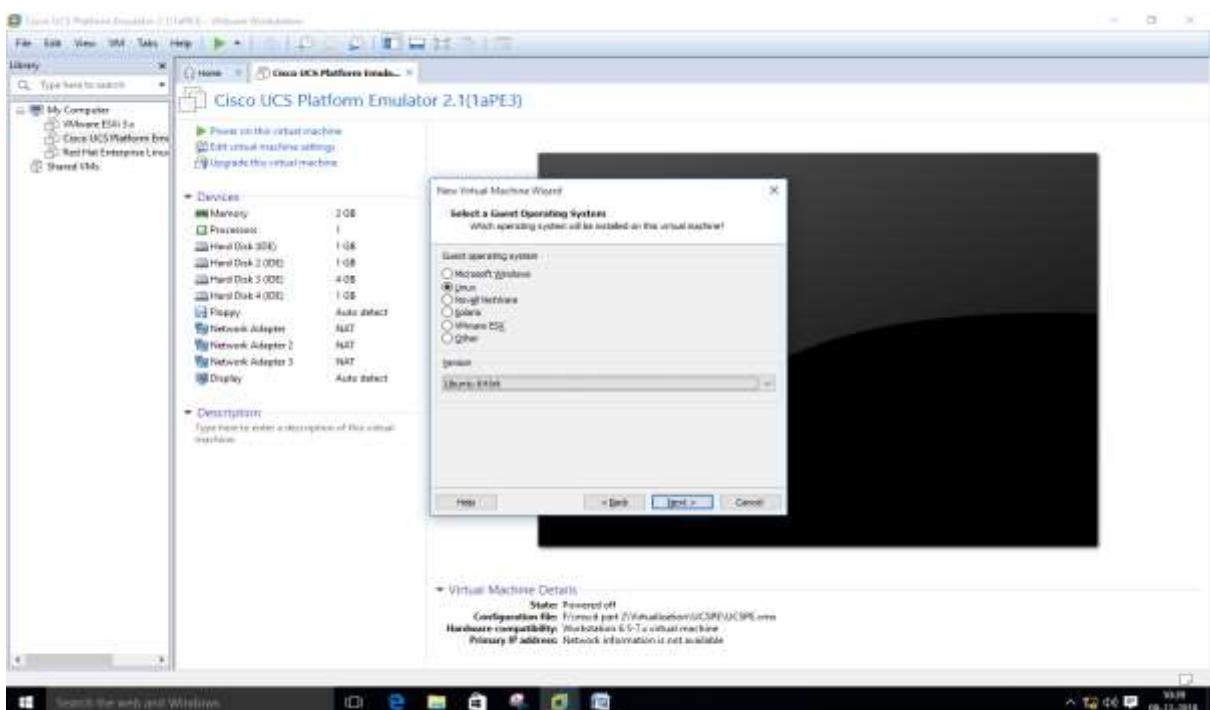
Select Installer disc\_image file(ISO). Click Browse - XenServer Iso File – For Example

**"D:\ccpraxrj\XenServer-6.2.0-install-cd.iso"**

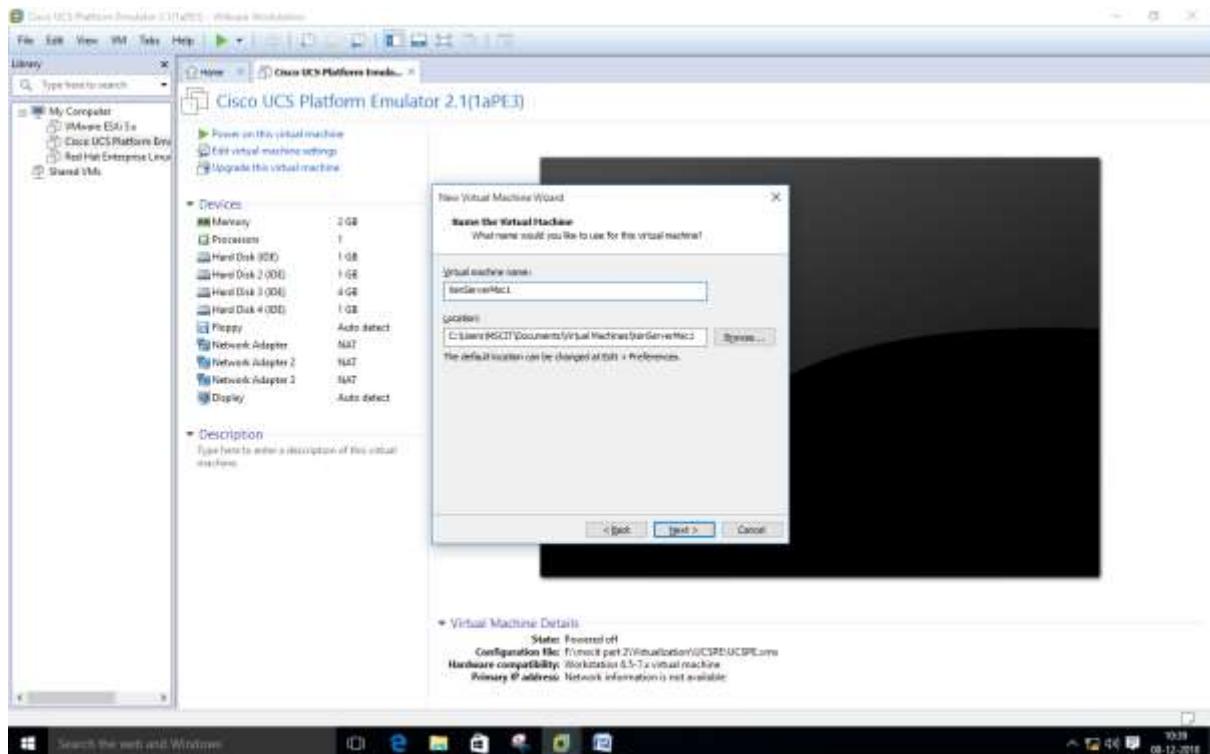
And click on next



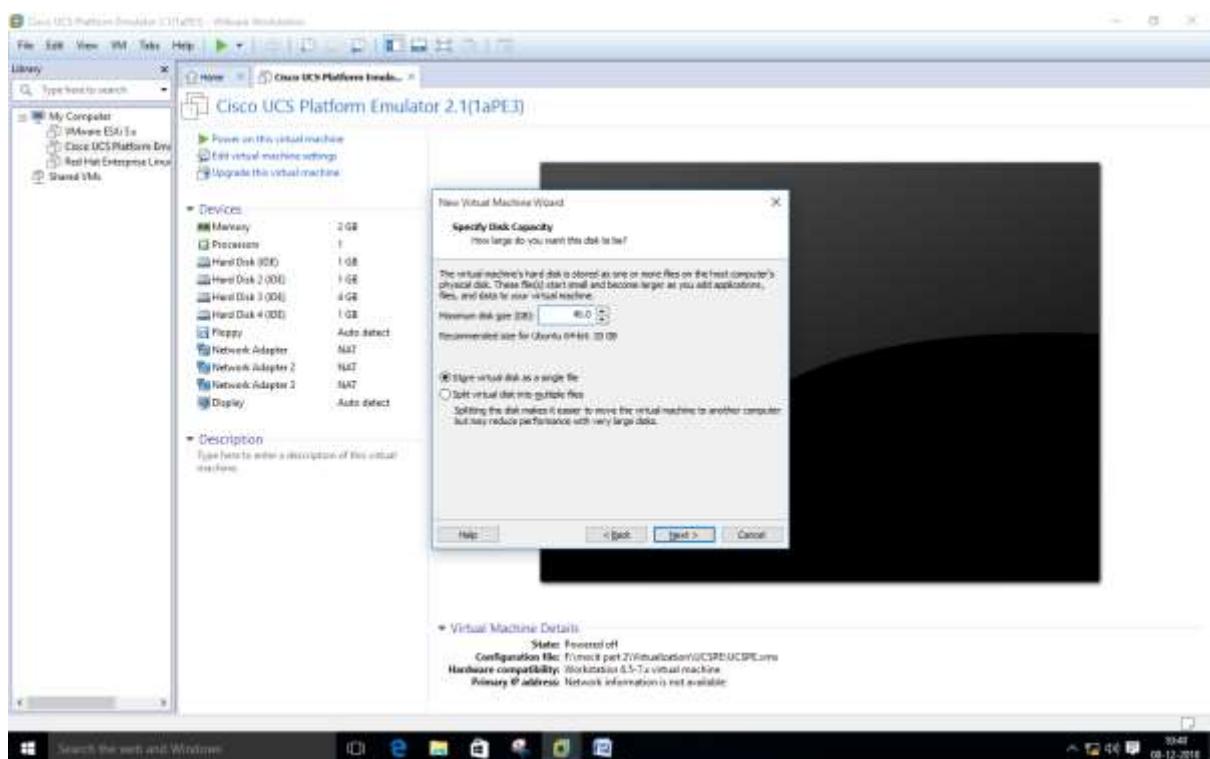
Select Guest Operating system as Linux. Version as Ubuntu. Click Net.



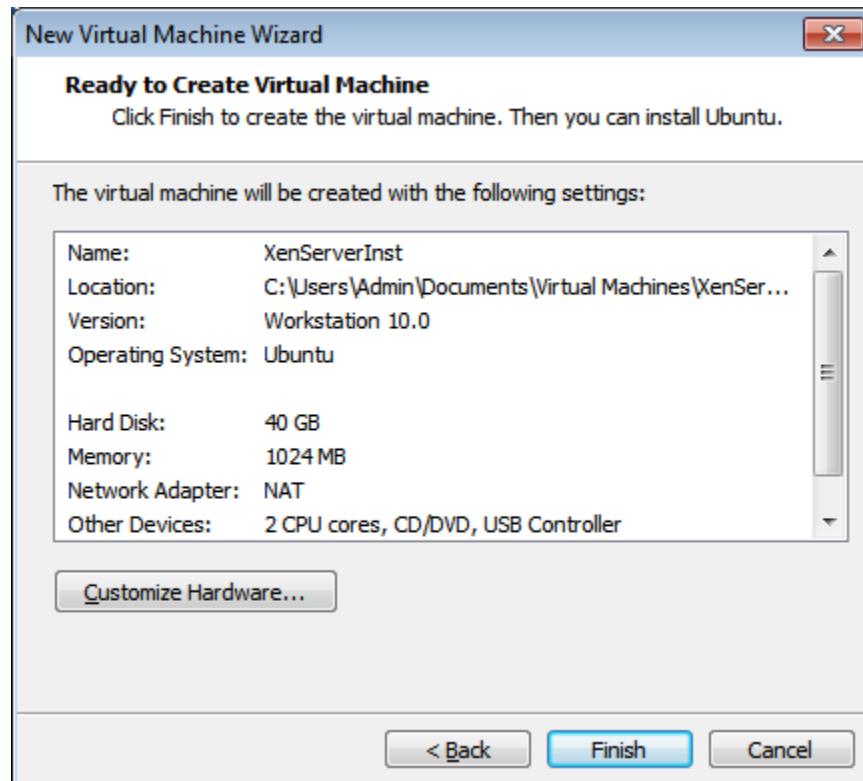
Give Virtual name – for Example “XenServerInst” and click on next



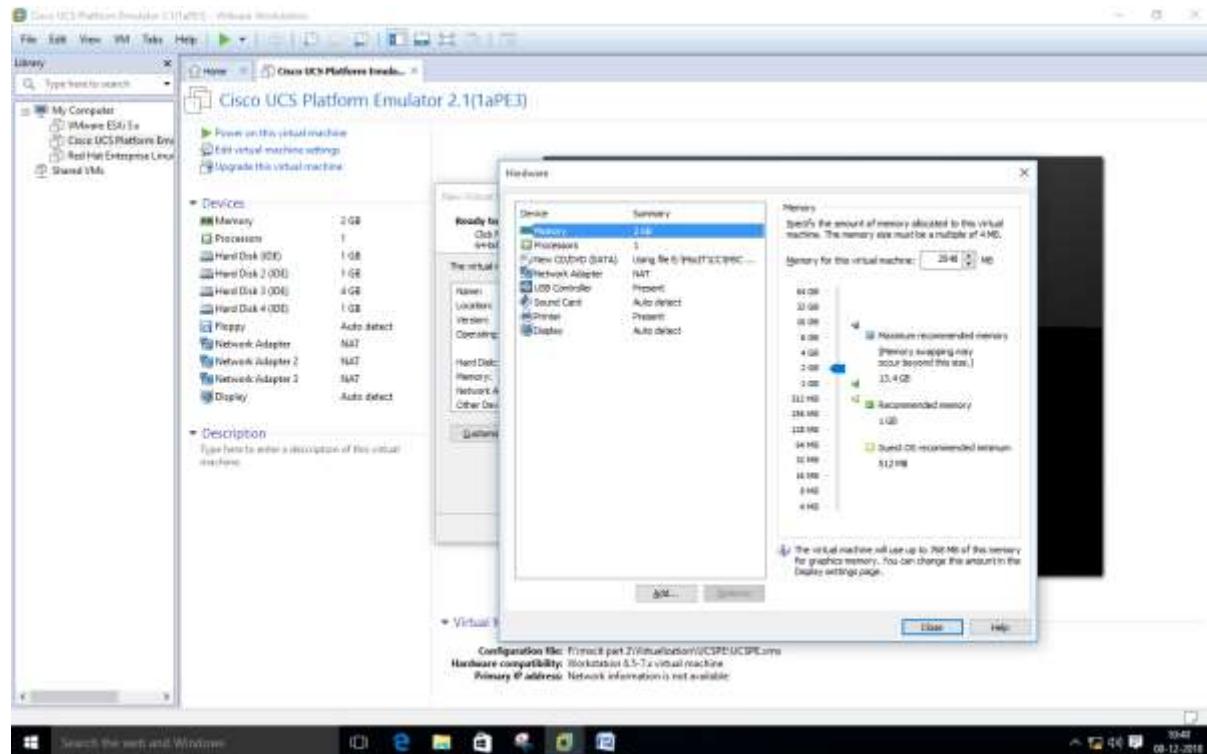
Change maximum disk size to **40 GB** and check –Store virtual disk as single file



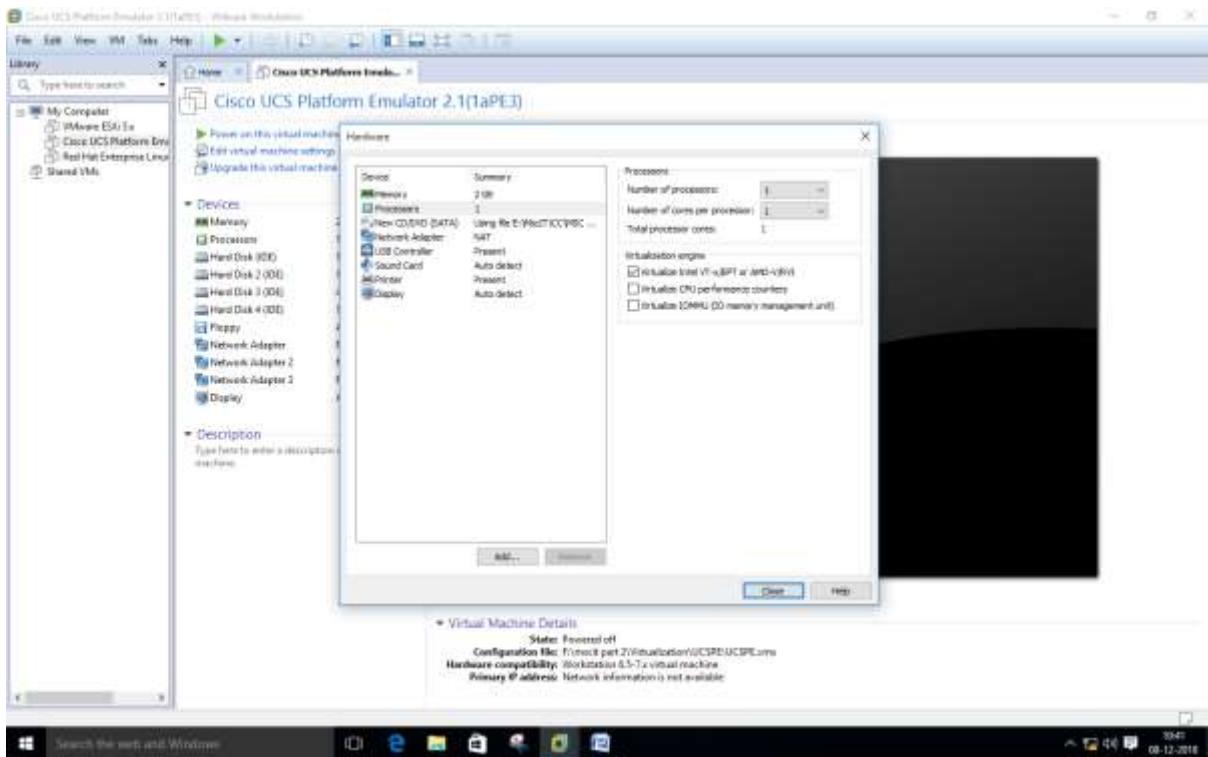
Click on **Customize Hardware option**



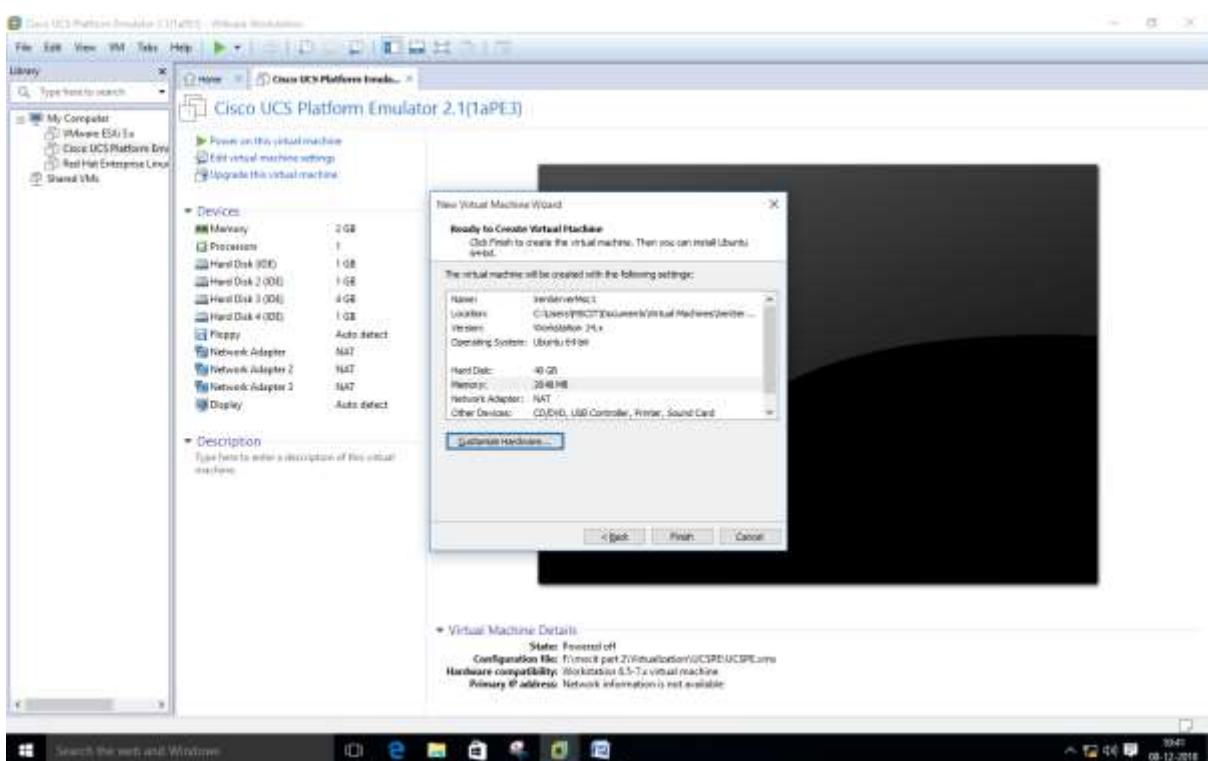
Change – Memory for this virtual machine to **2 GB** and click on close



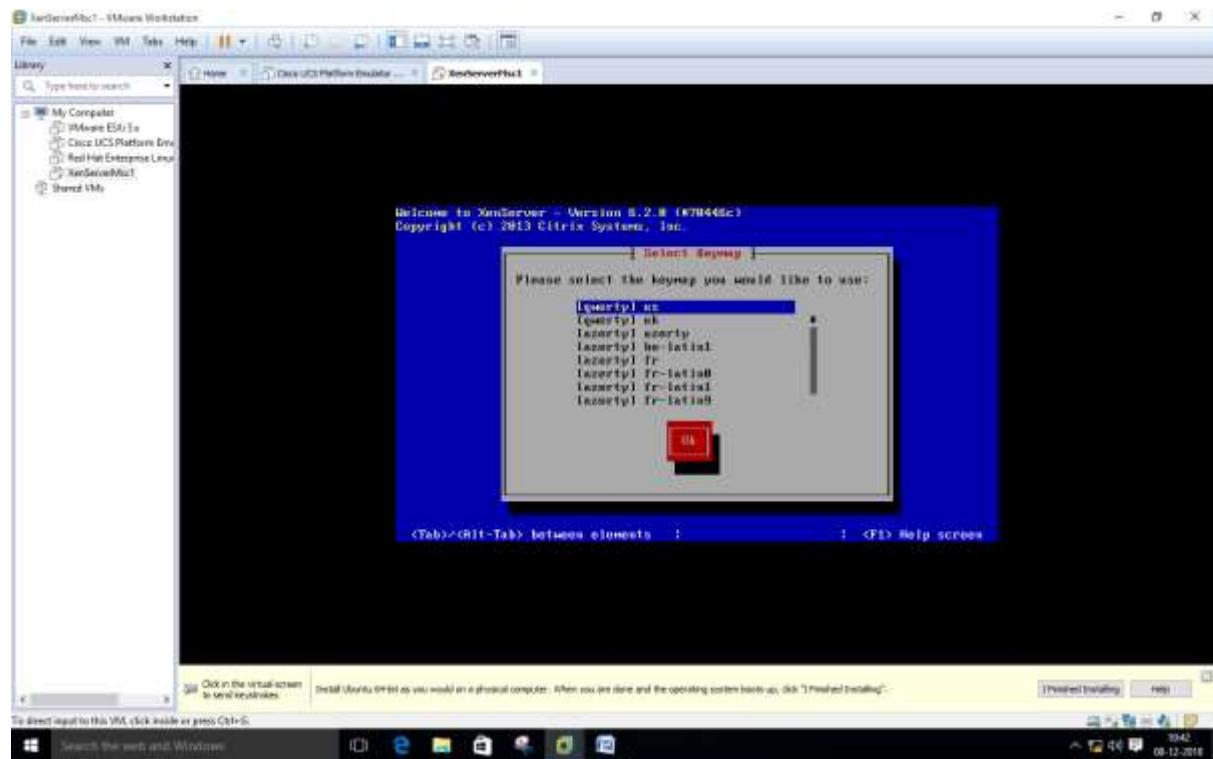
Click on Processor and select virtualize Intel VT



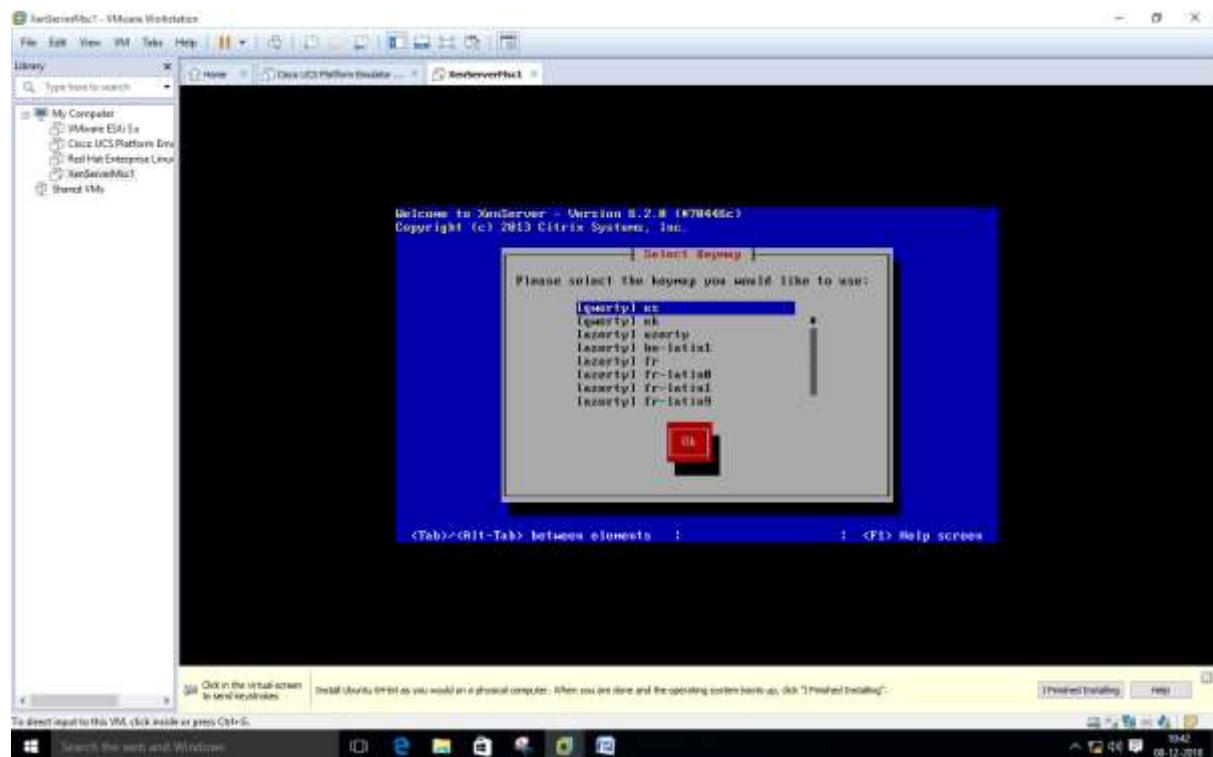
Click on Finish –



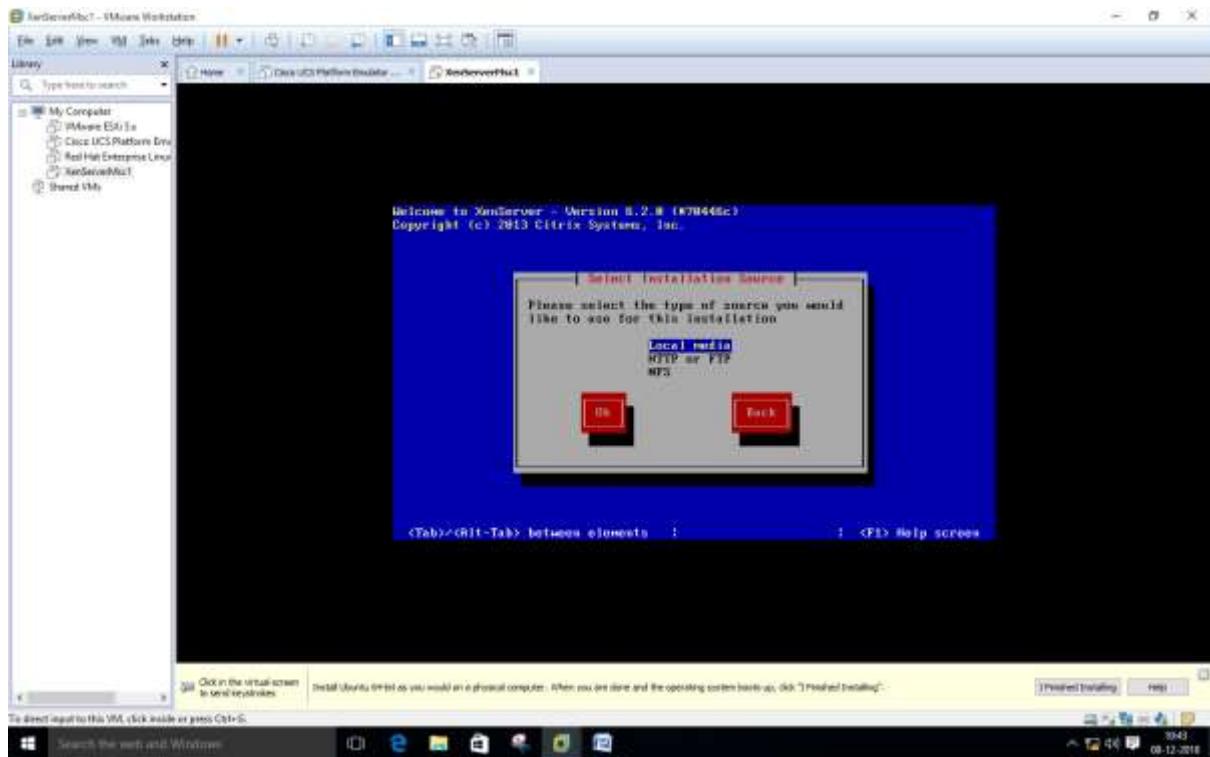
Now Power on newly created Virtual machine –  
Now select US and click on OK



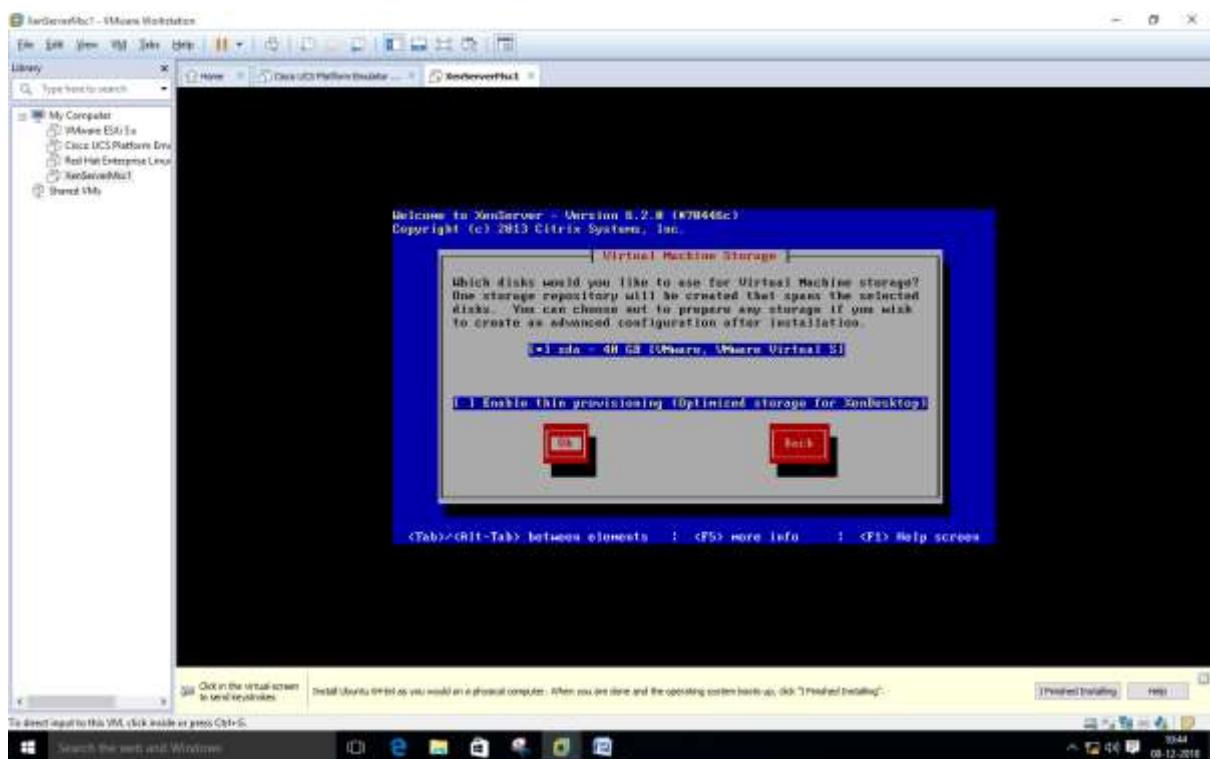
Click on OK as seen in below screenshot -



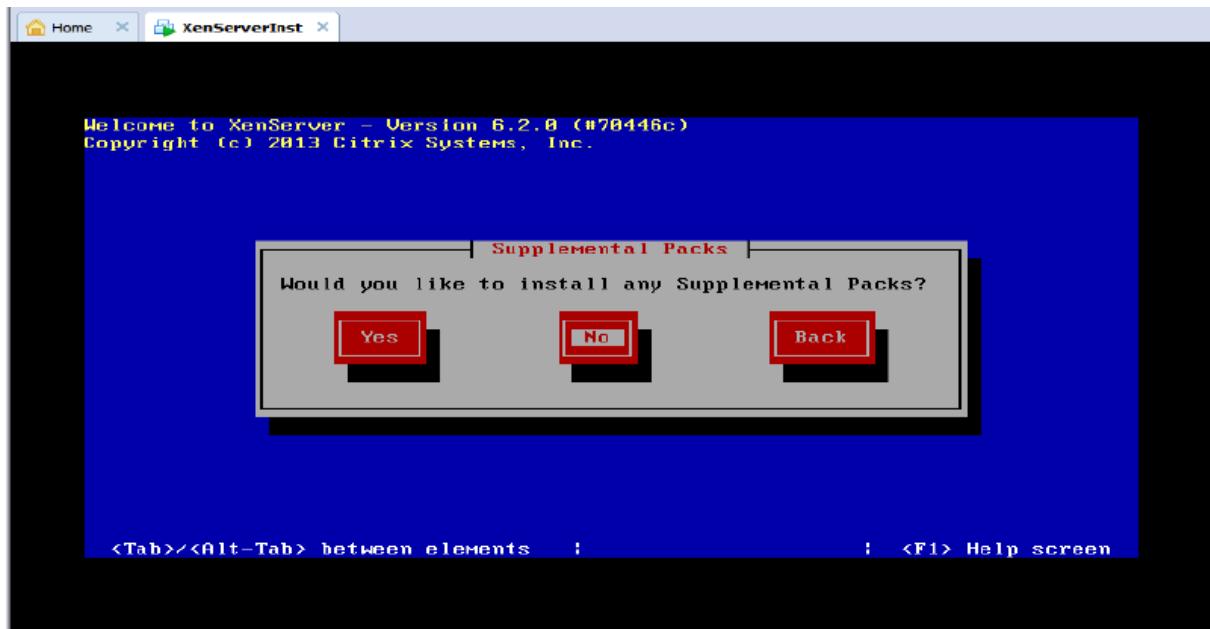
Select Local media and ok



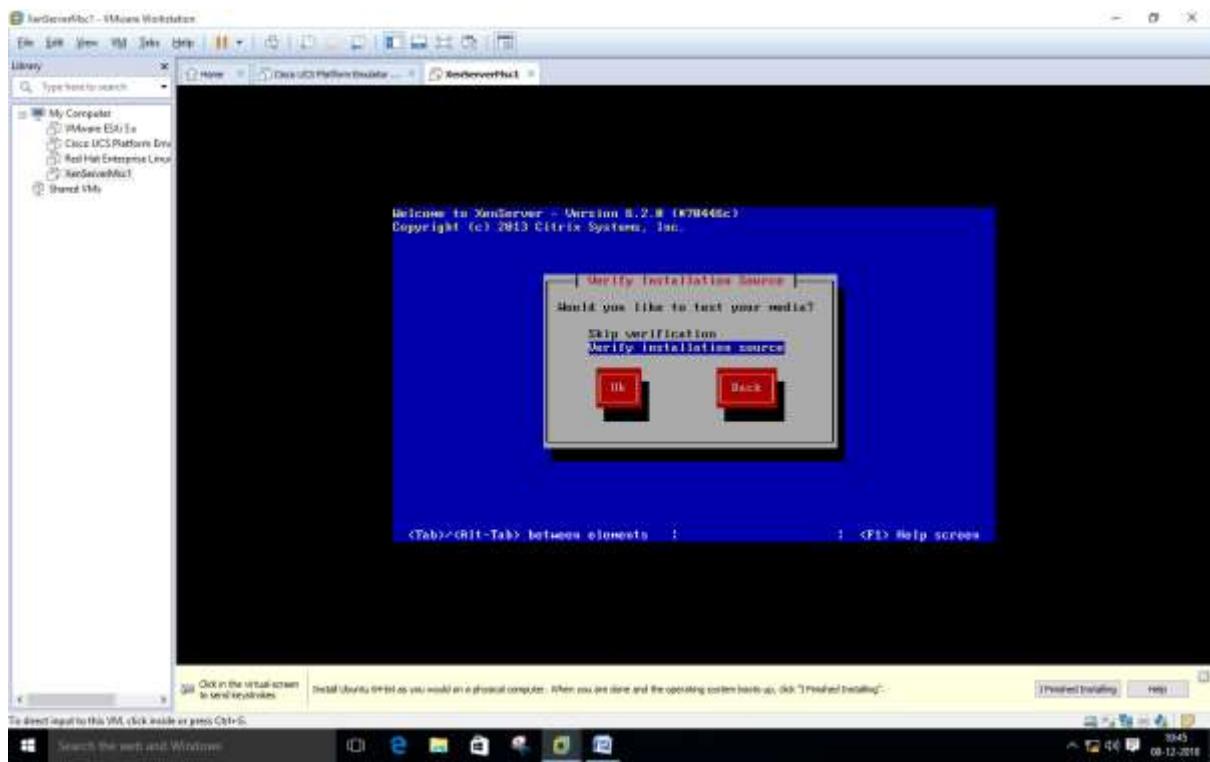
Click ok



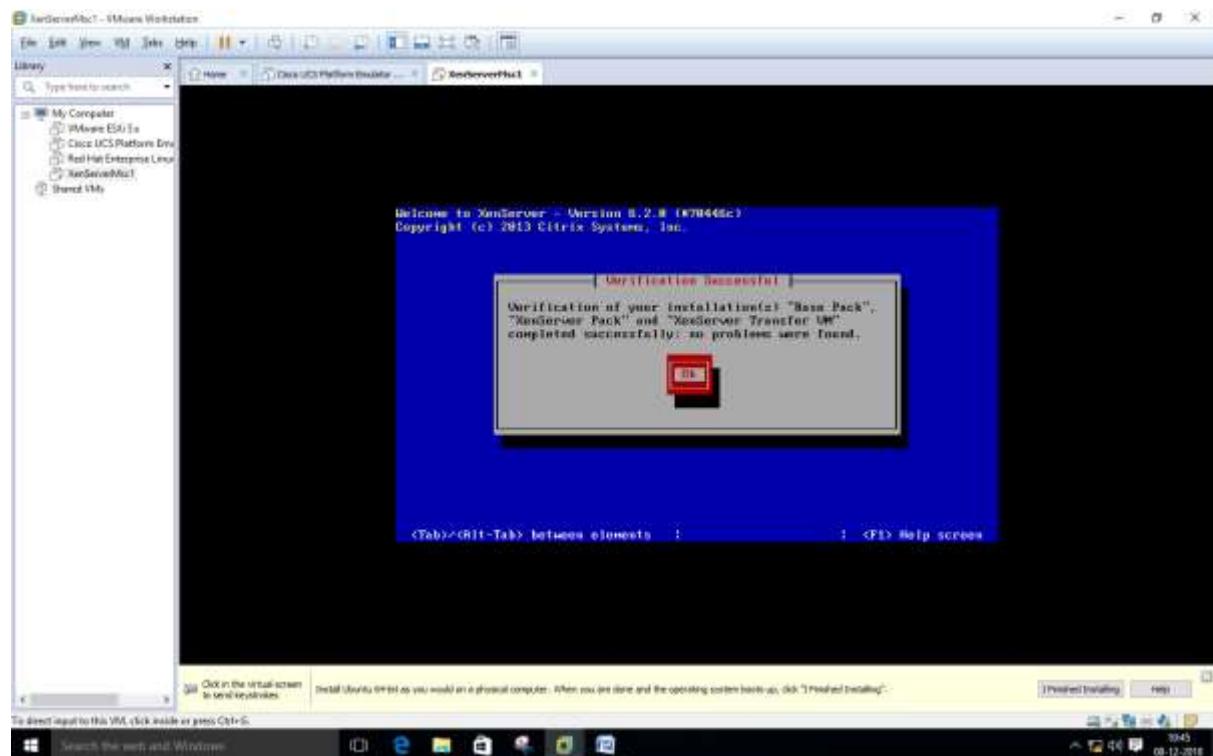
**Click No**



Here click **verify installation**

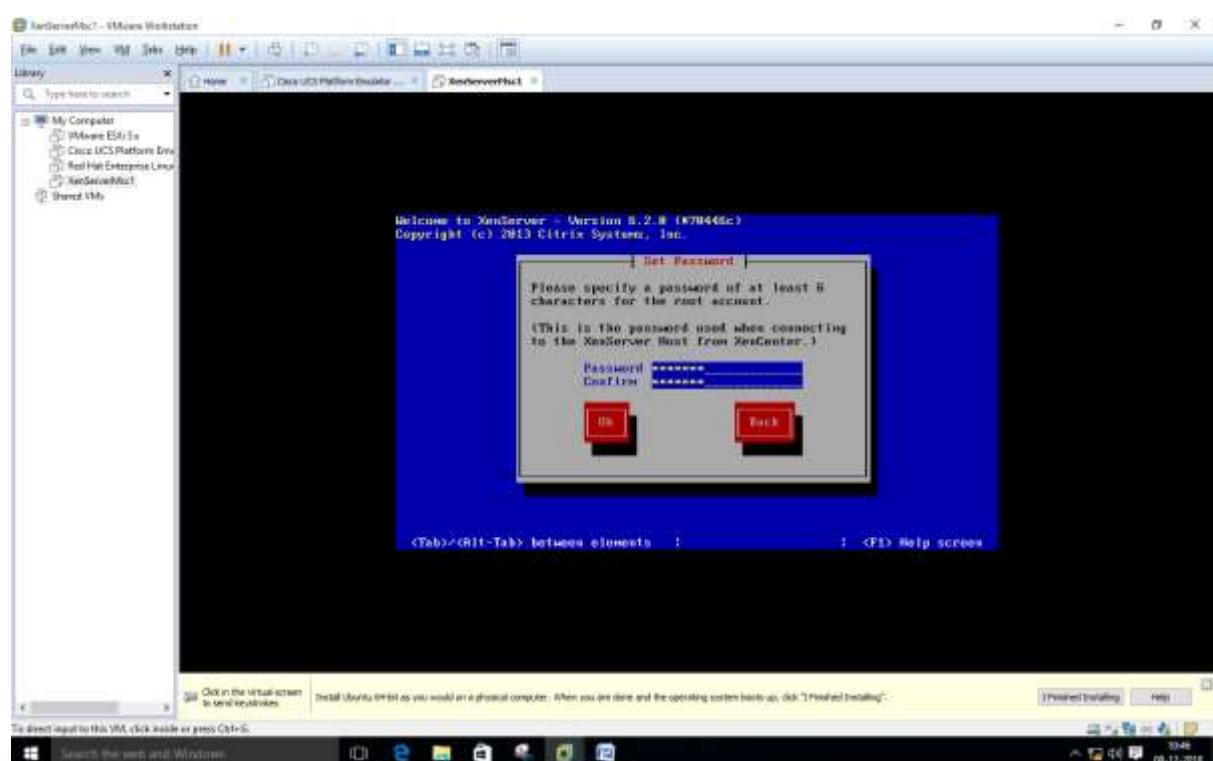


Click **ok**

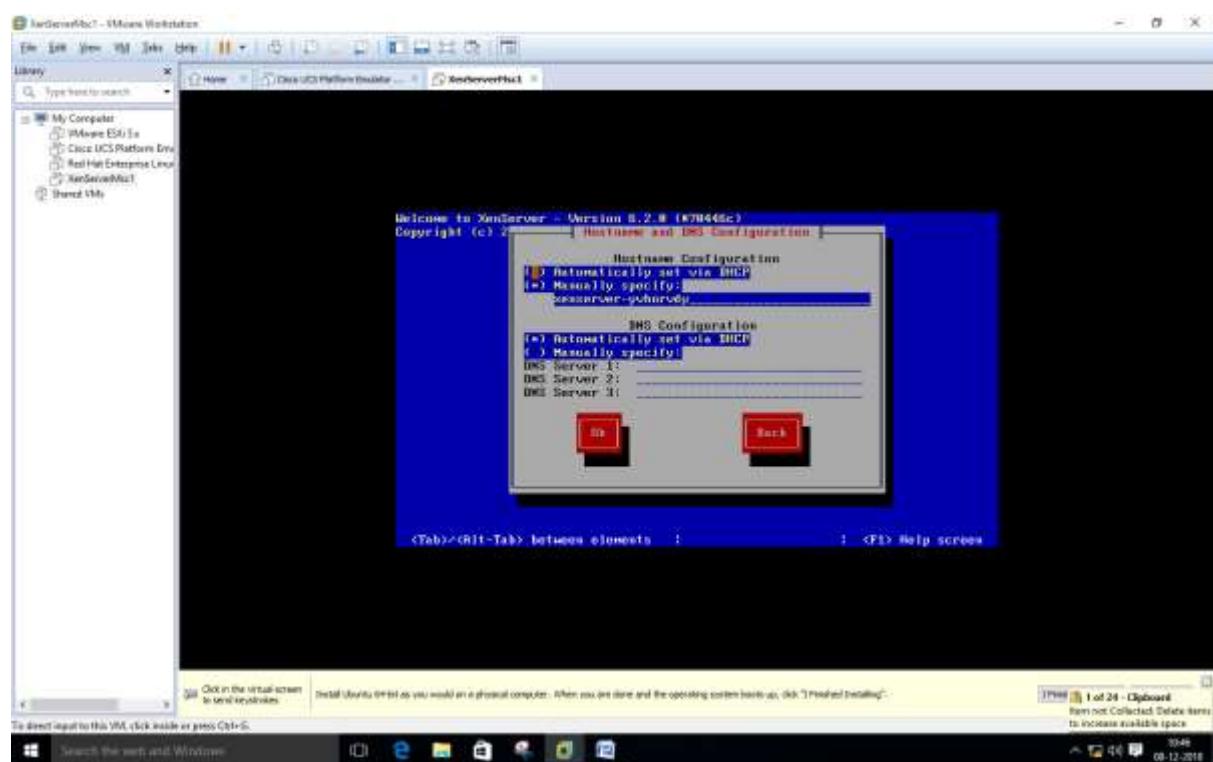
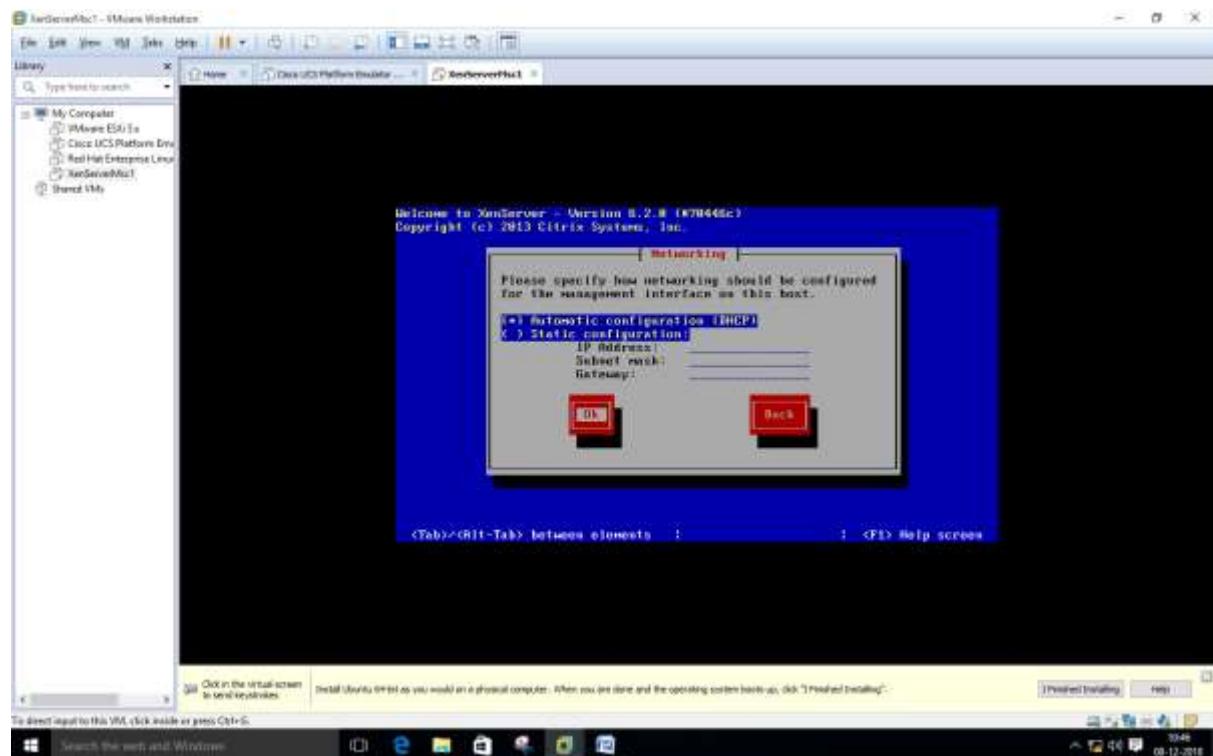


Insert password (Remember password entered) and click on Ok –

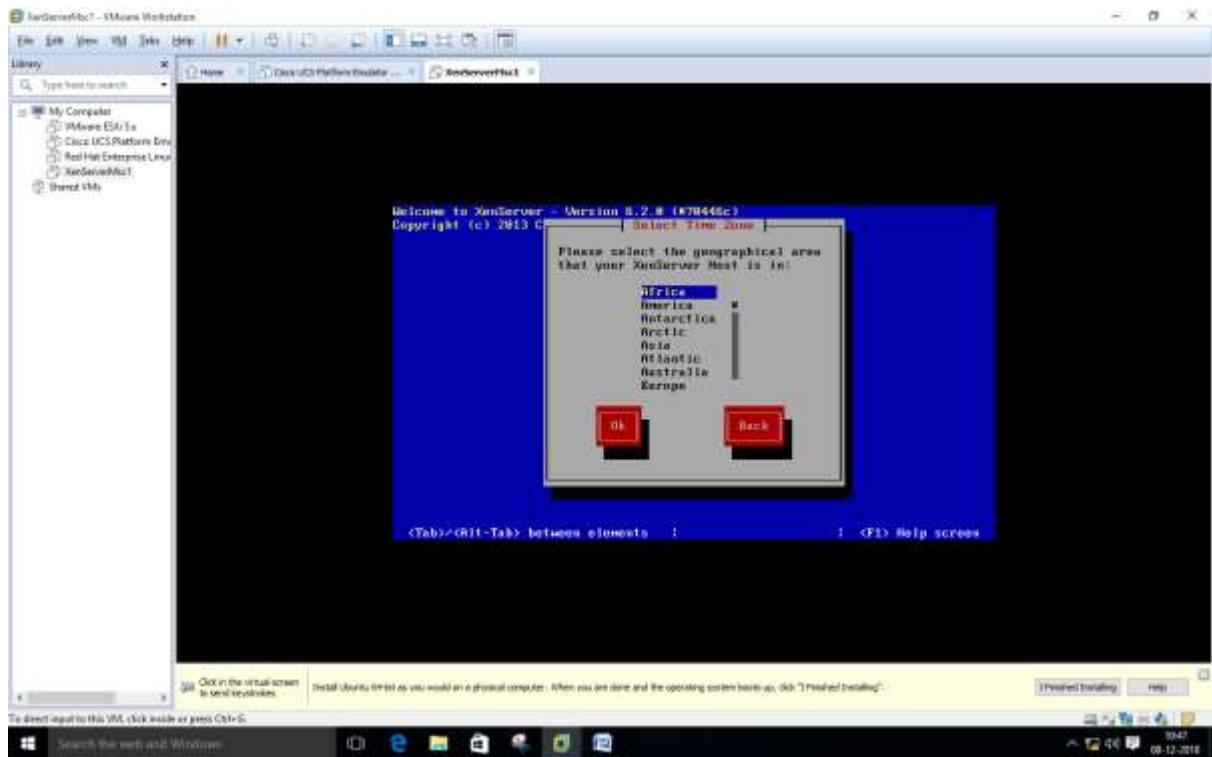
**Password:root123**



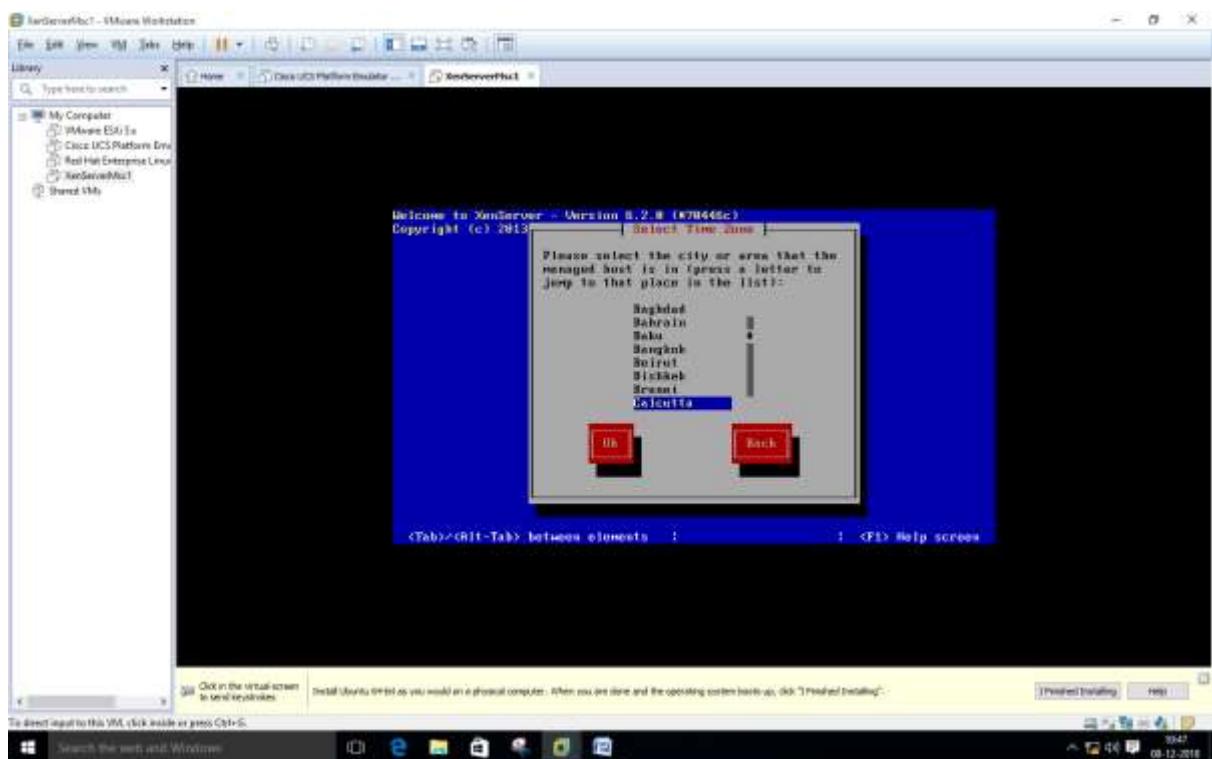
Select Automatically set via DHCP and click on OK



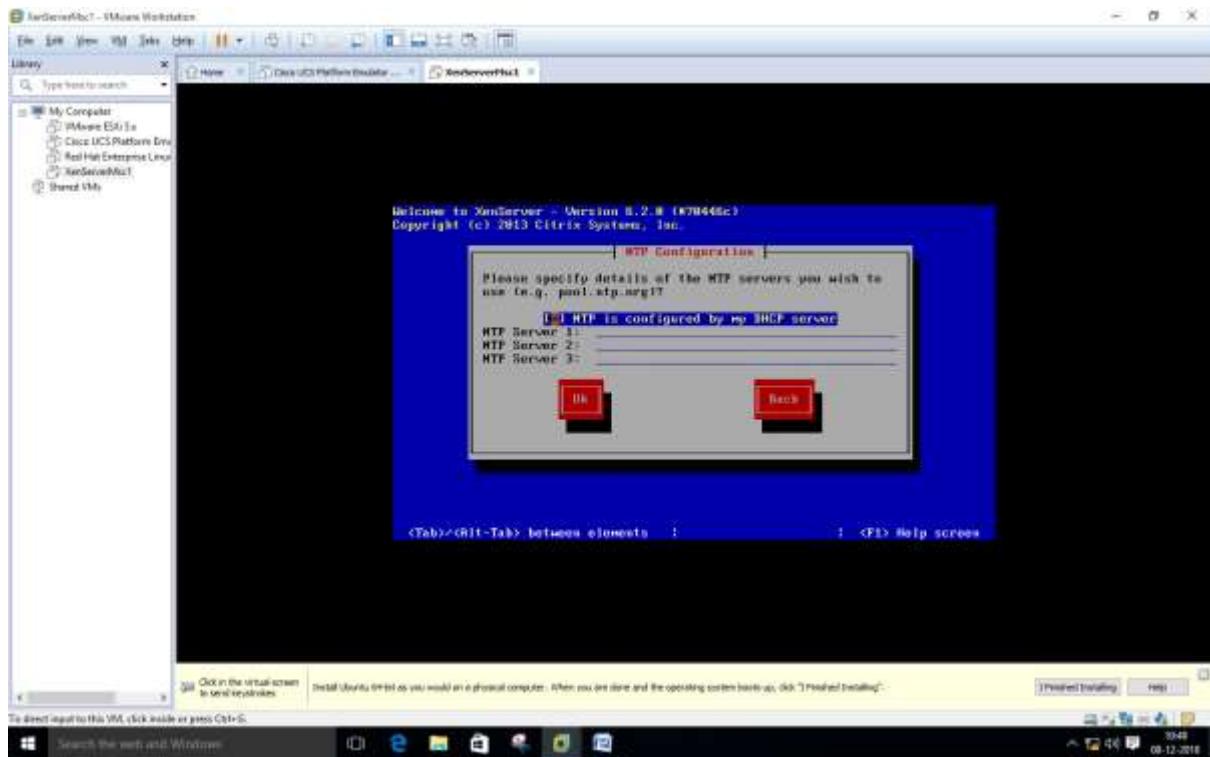
Select Asia and click on OK -



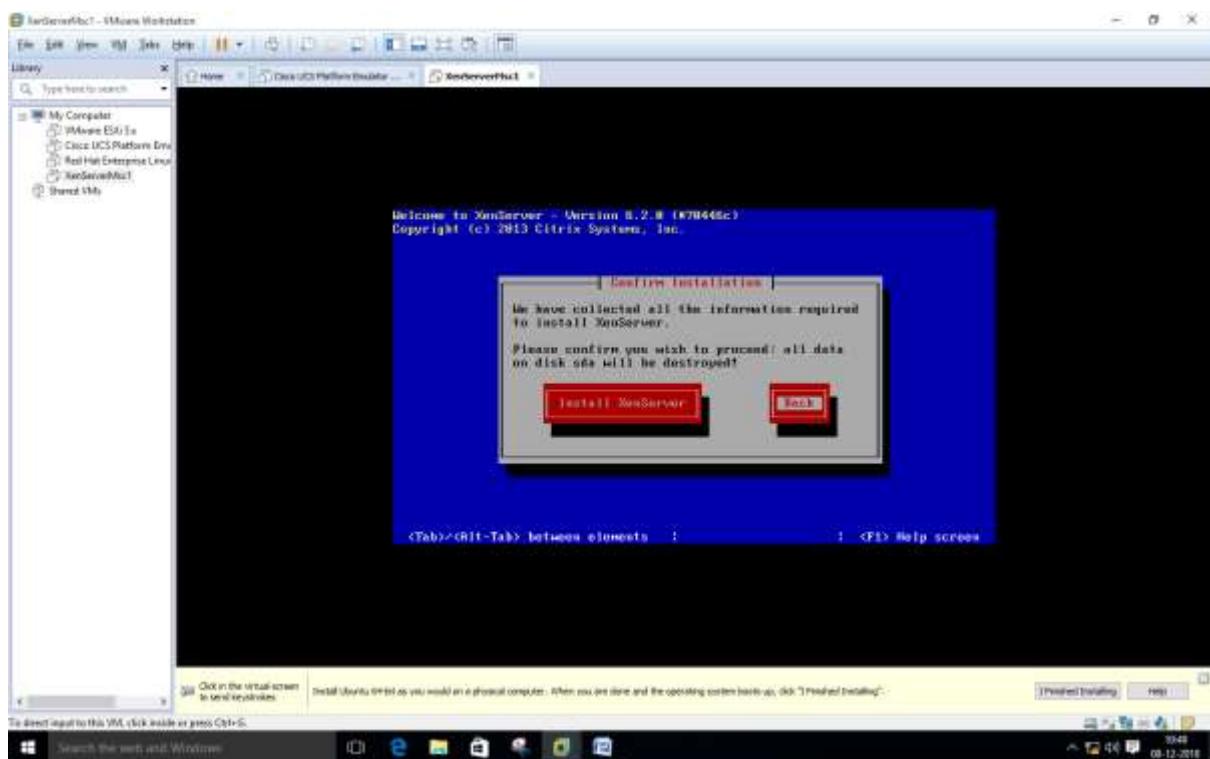
Select **Calcutta**

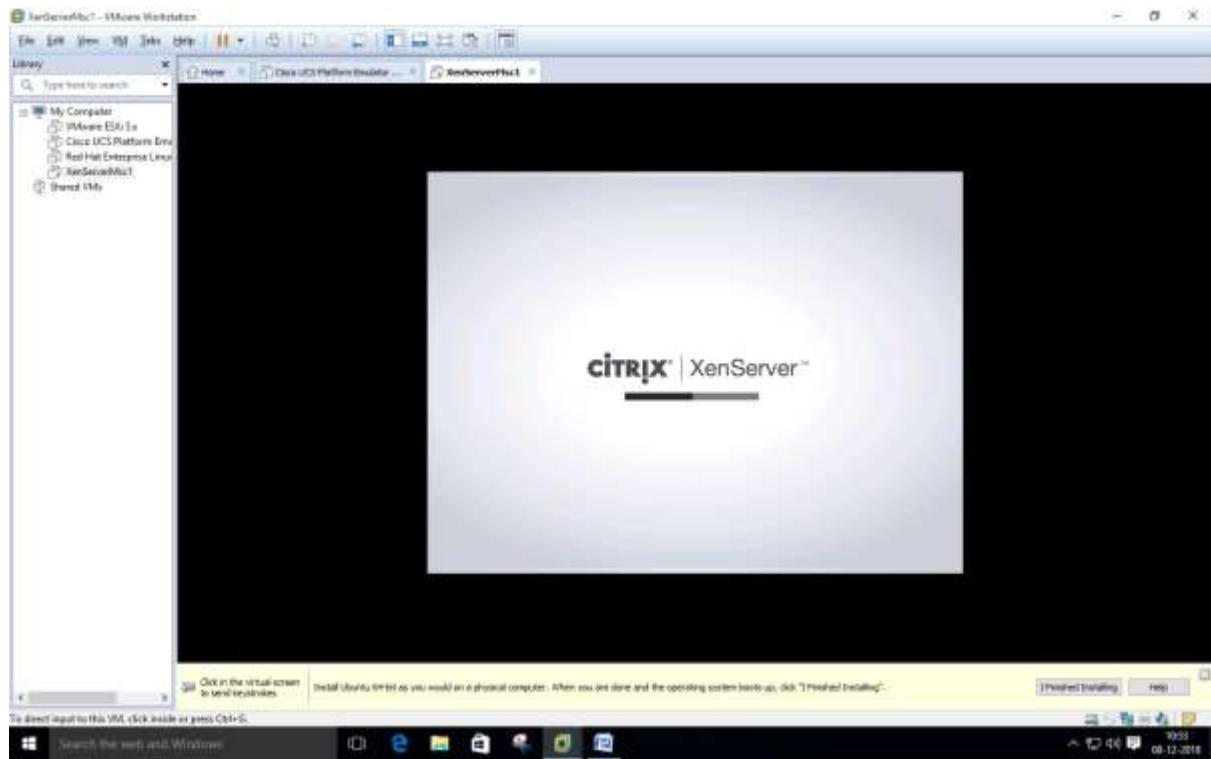


Select "Using NTP" and click on OK

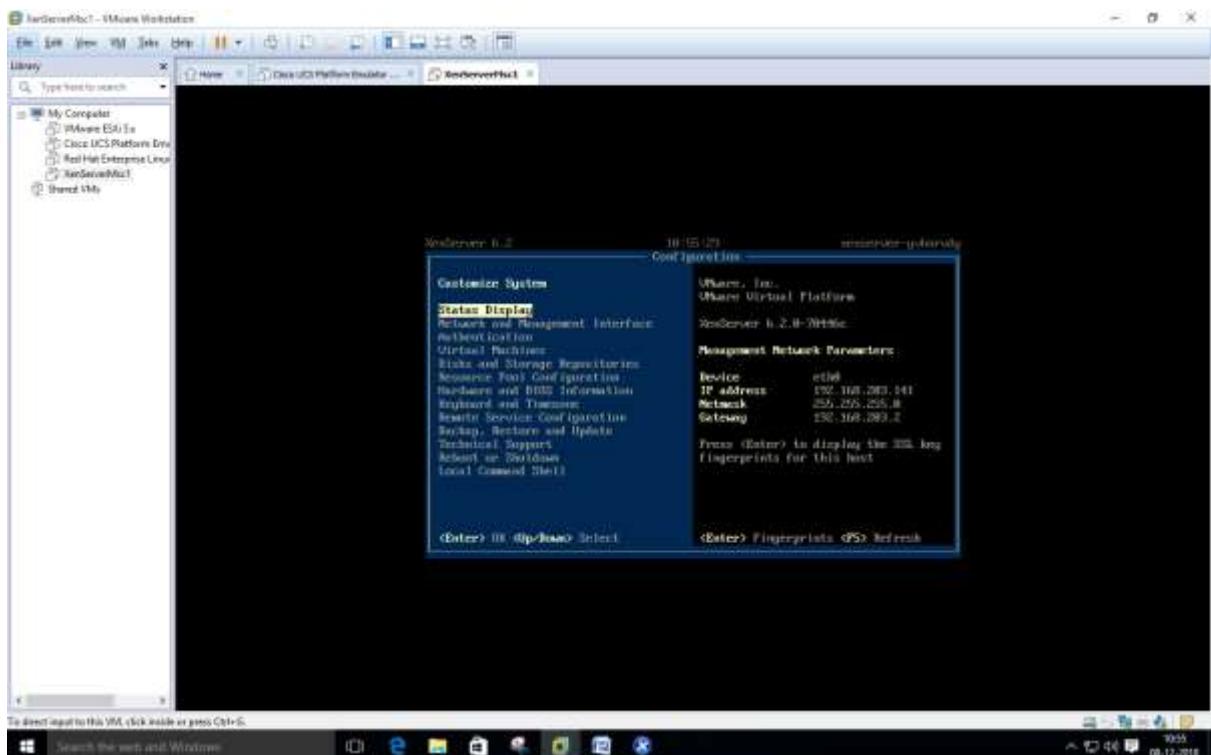


Click **Install Xen server**

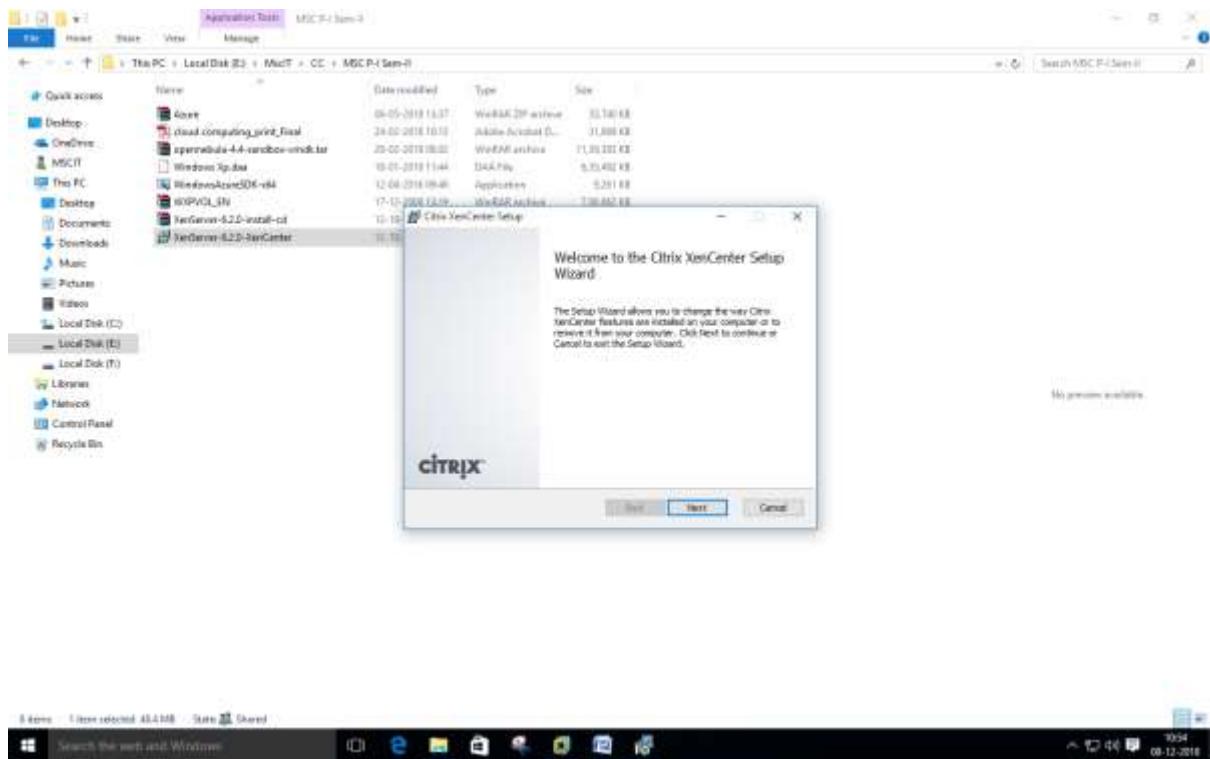




Note IP Address – “**192.168.283.141**” ping it from command prompt



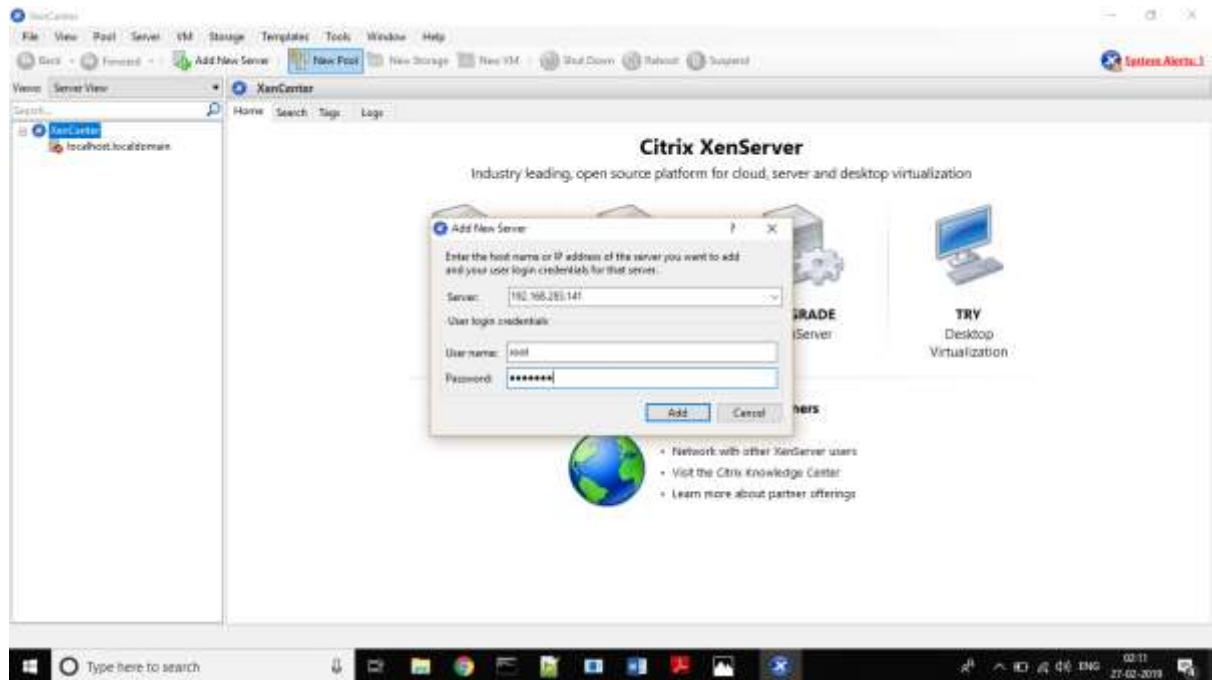
Now Install Citrix App if not installed –



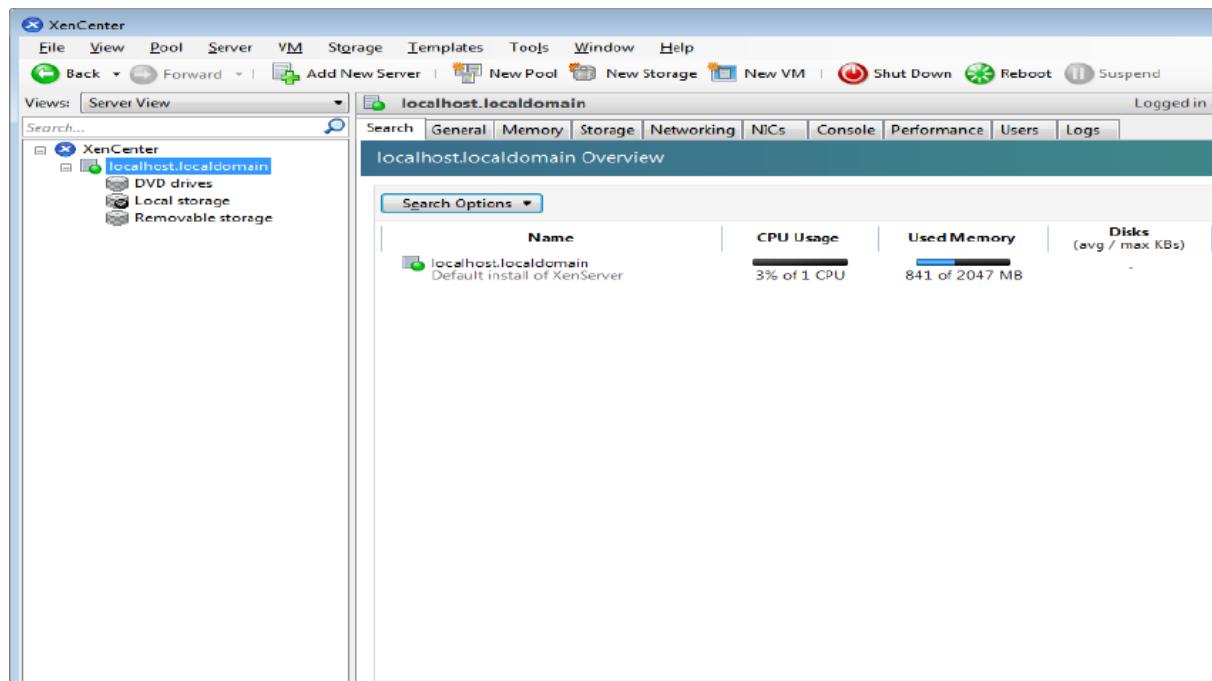
Now Open Citrix XenCenter – and Click and **Add Server4**



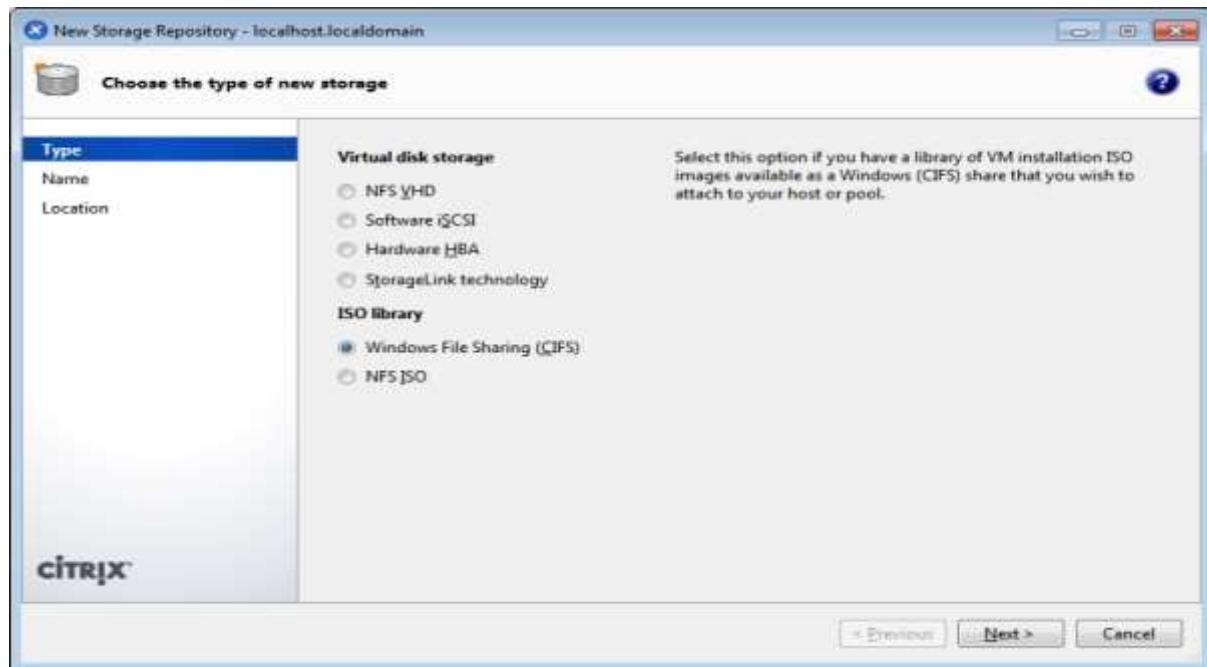
Fill IP address copied from Installation and User name as “**root**” and Password as “**root123**” which we had given during installation and Click on **Add**



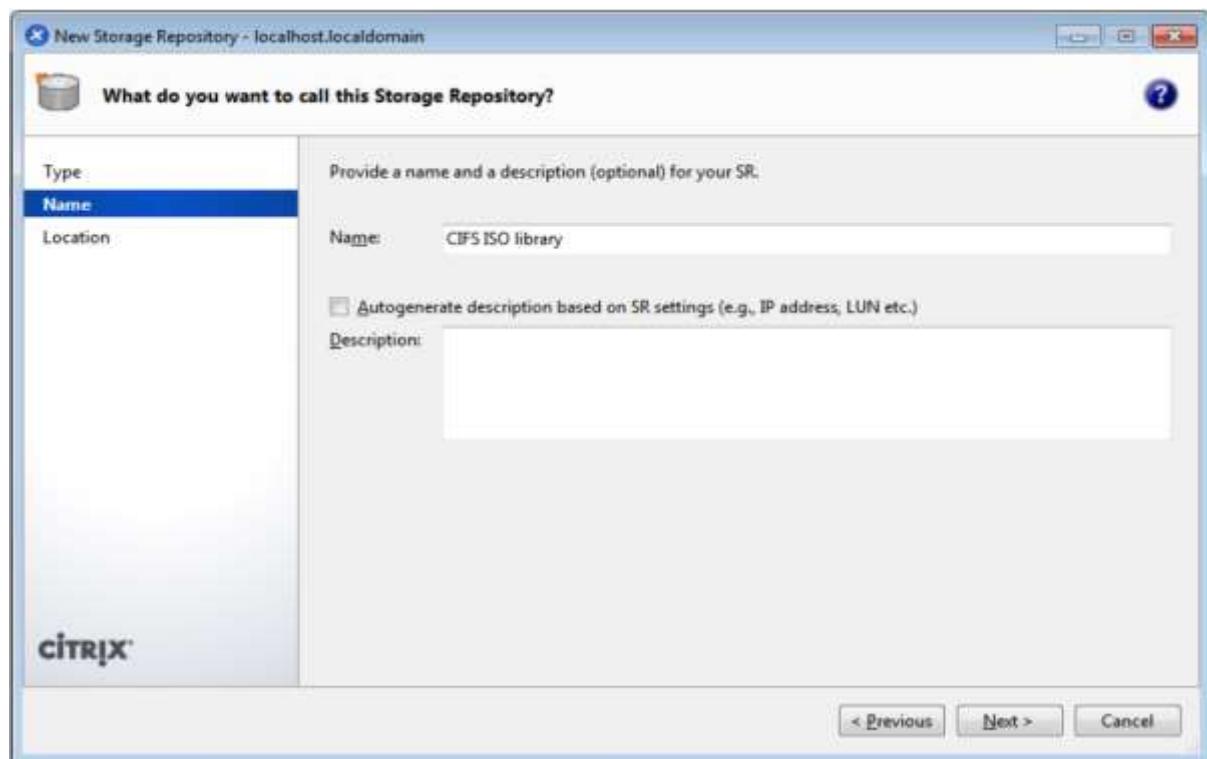
Now Click on New Storage –



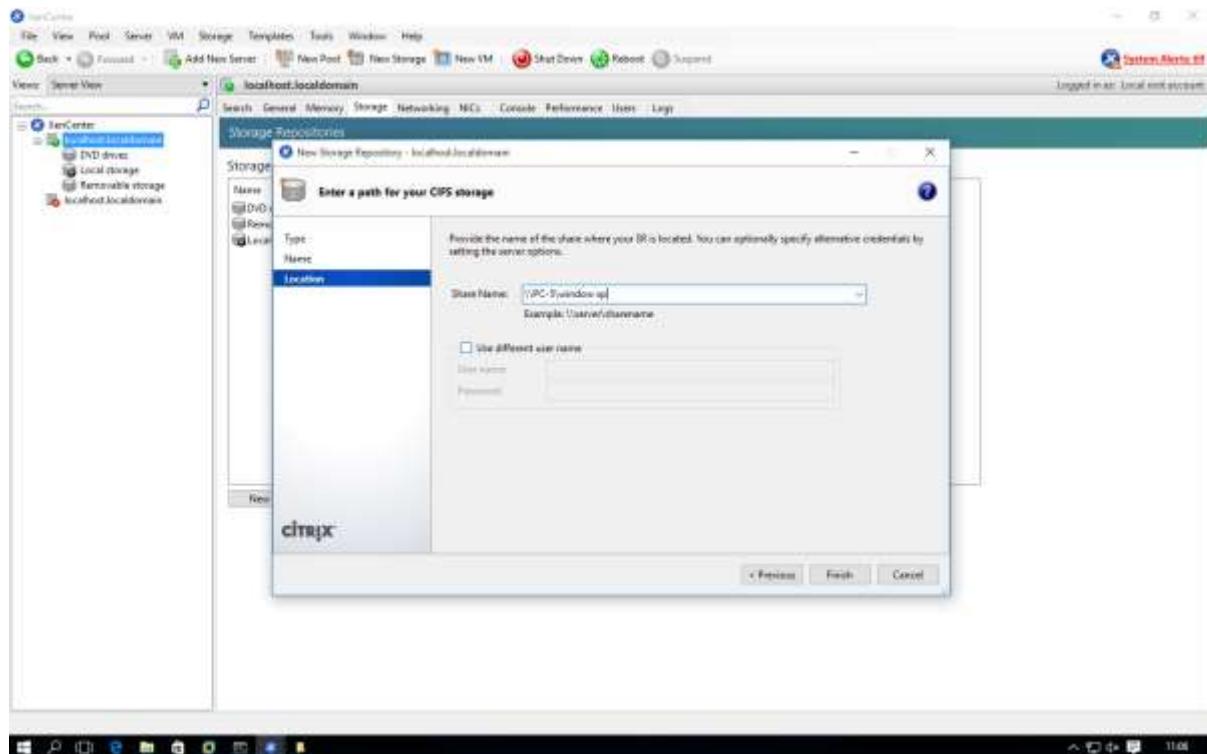
Select Window File Sharing (CIFS) and click on next -



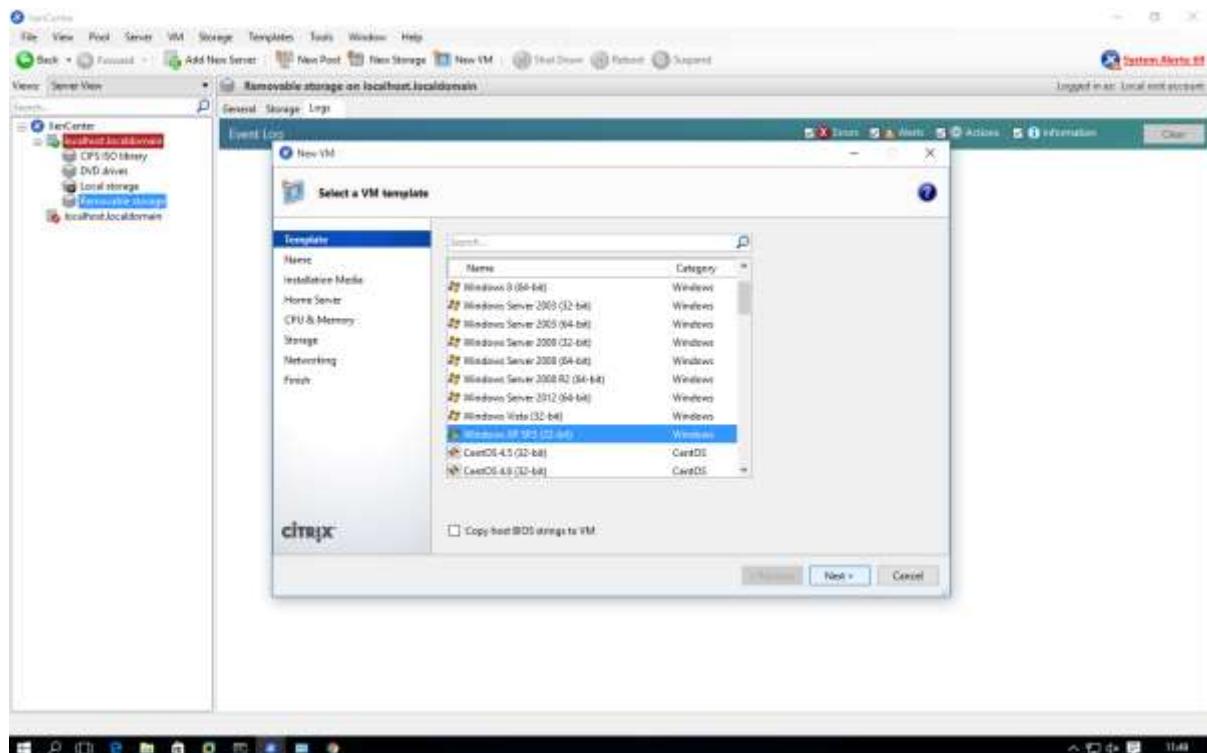
Uncheck Auto generate option Click on Next



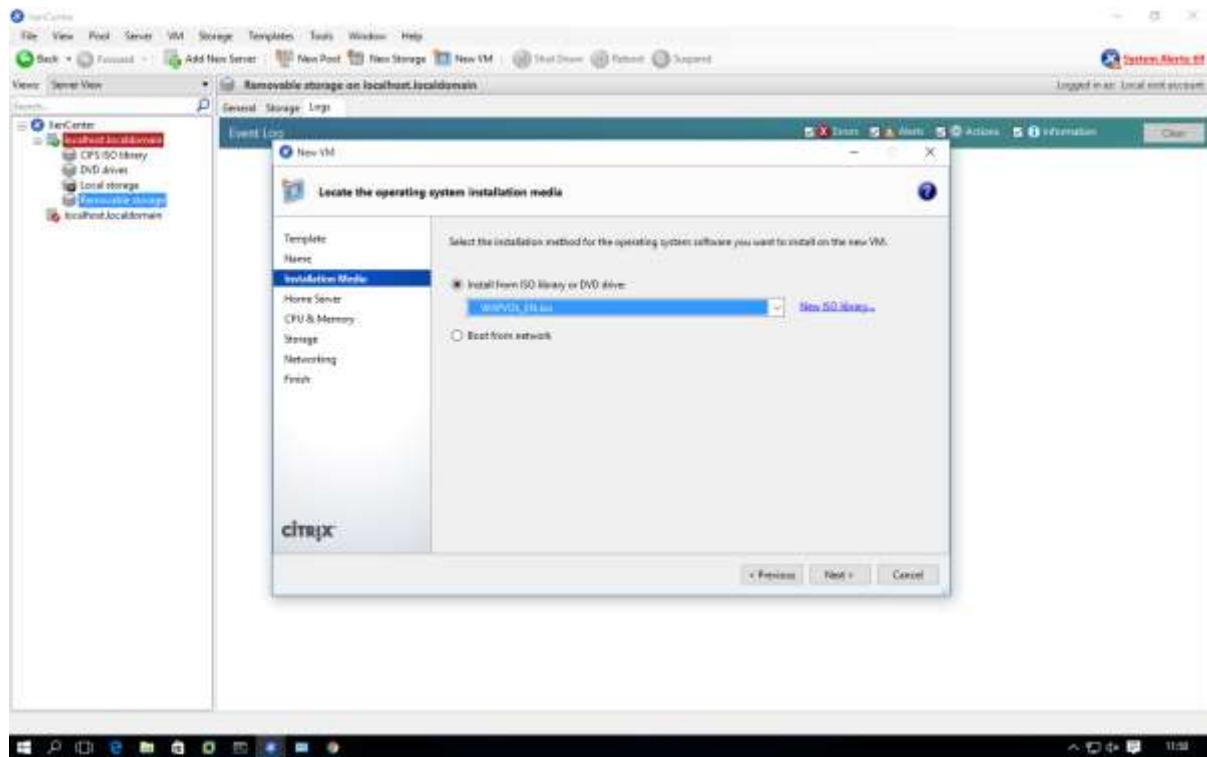
Provide the path of shared windows XP image and enter local pc credential, click on Finish



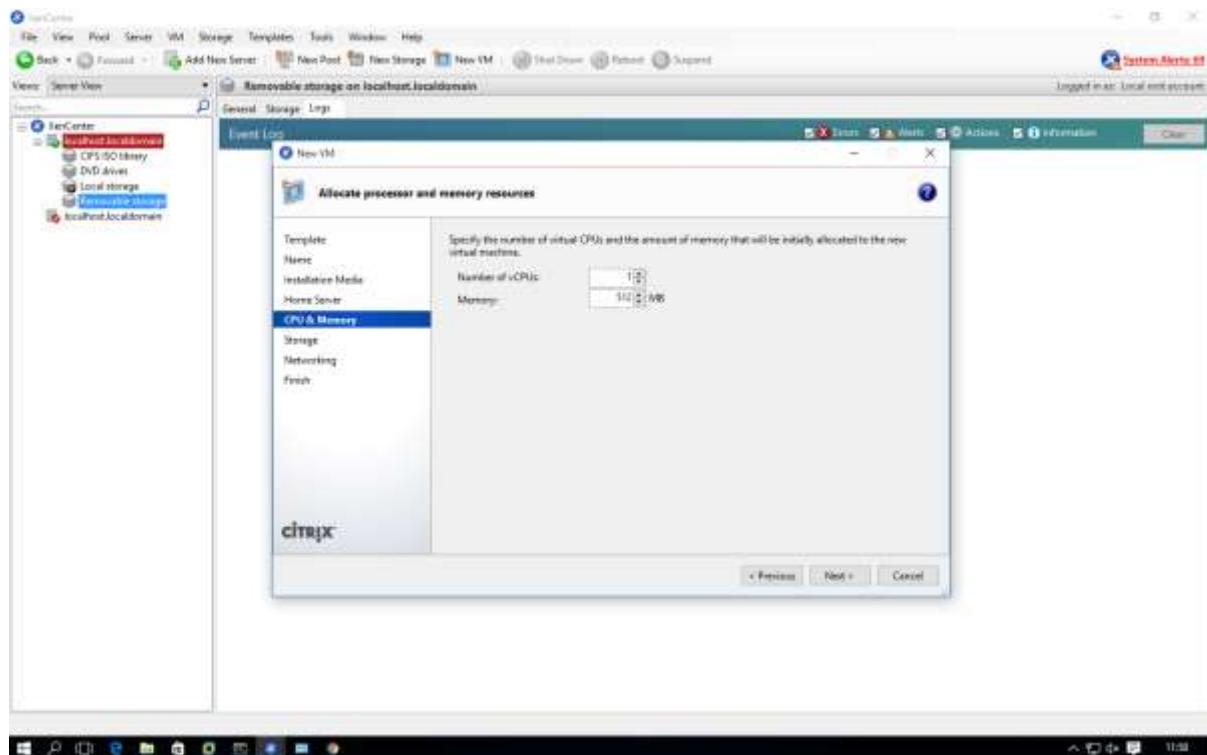
Click on New VM – and Windows XP SP3



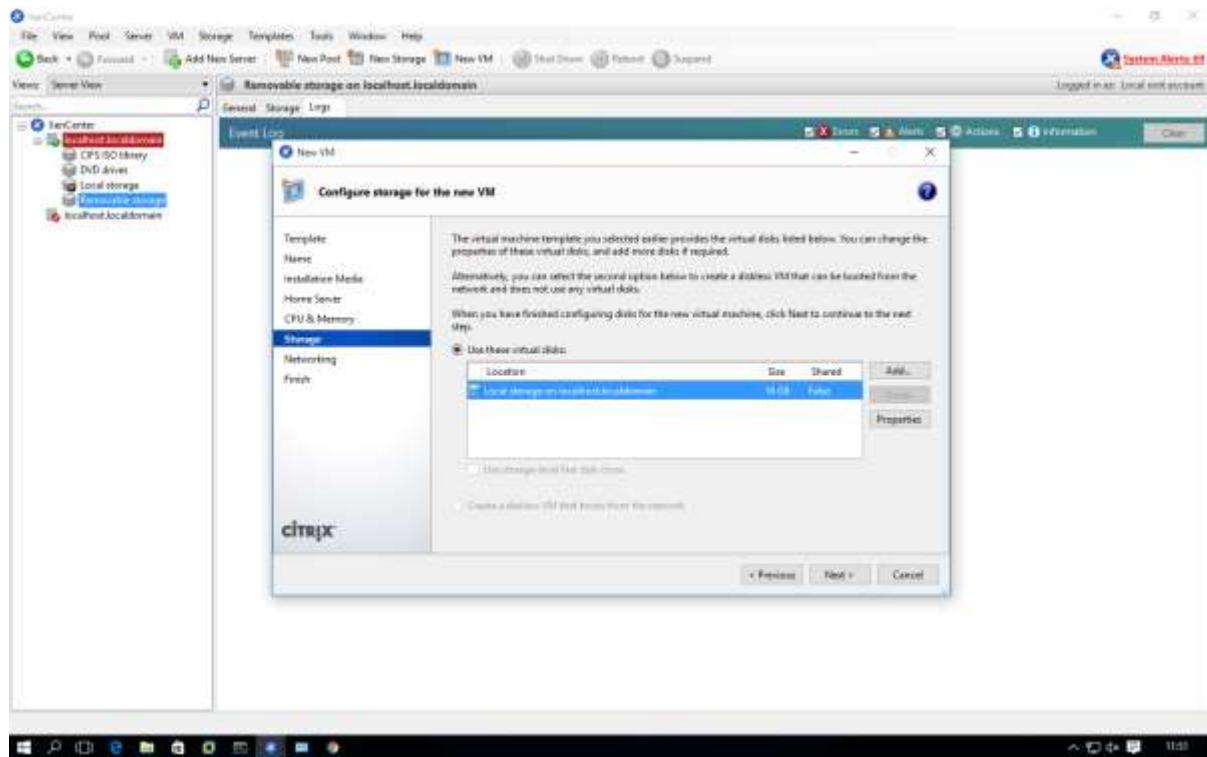
Select ISO file and click on next –



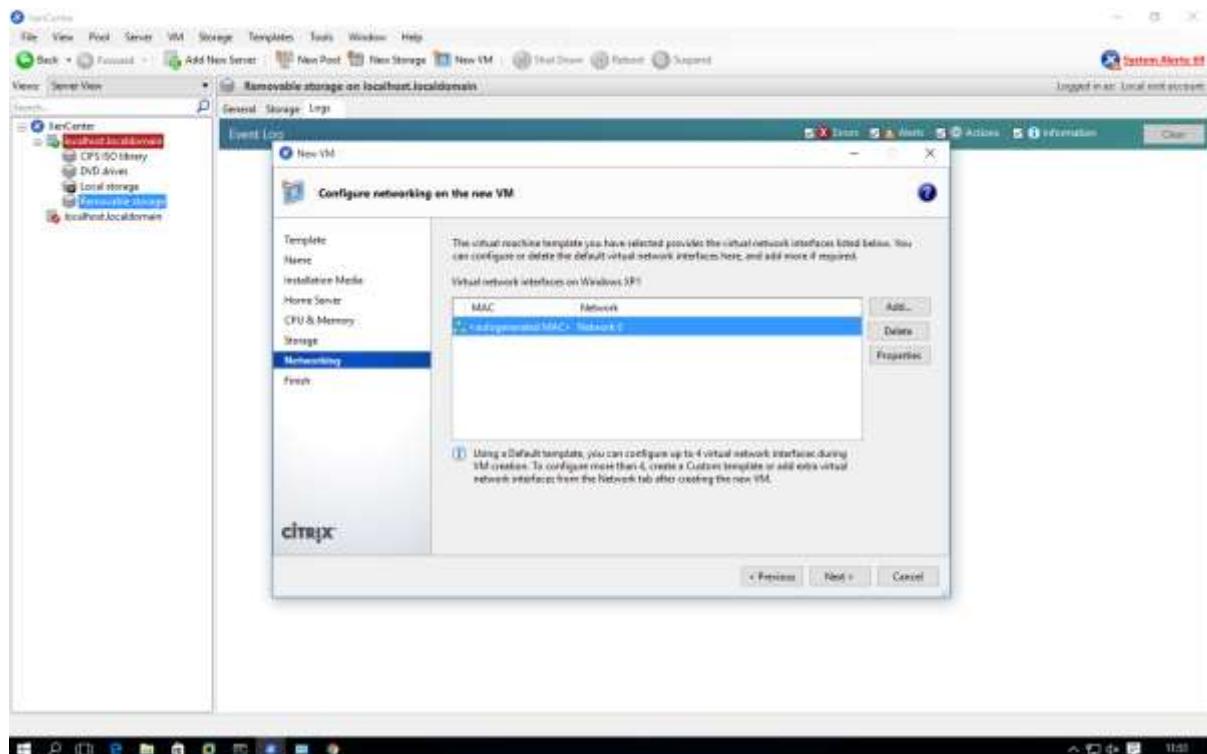
Next –



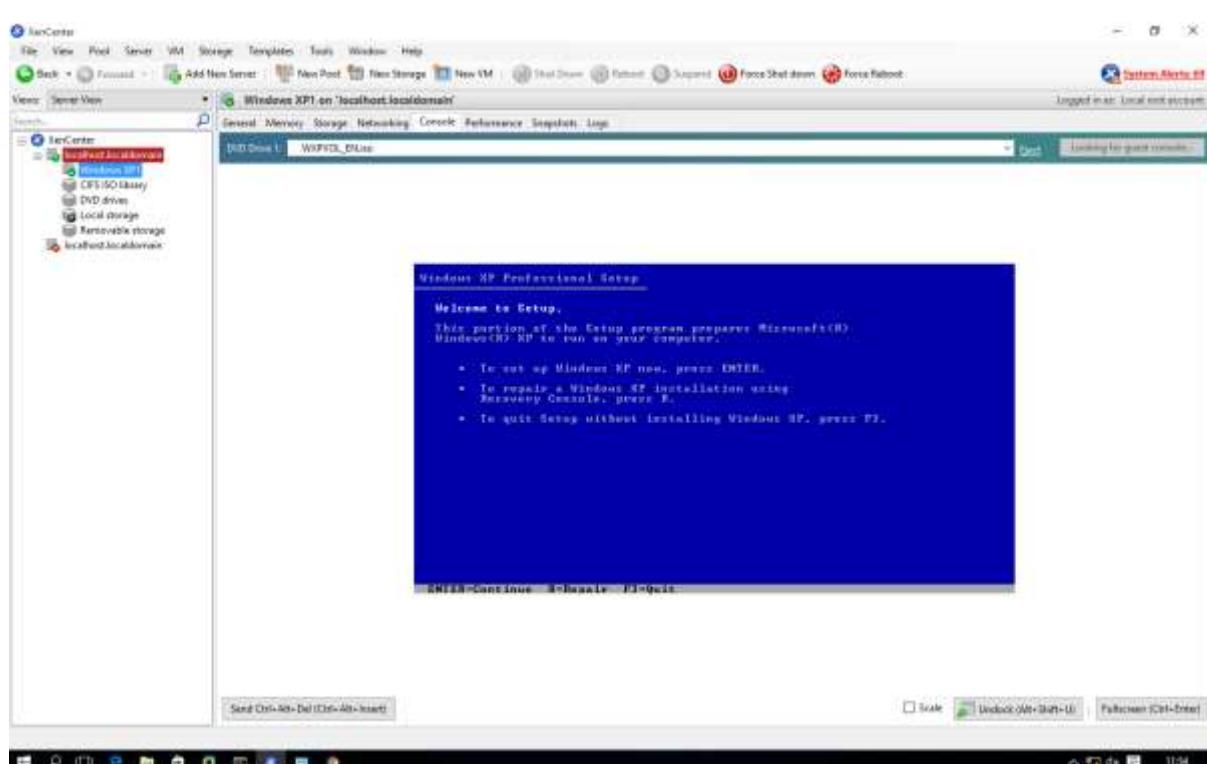
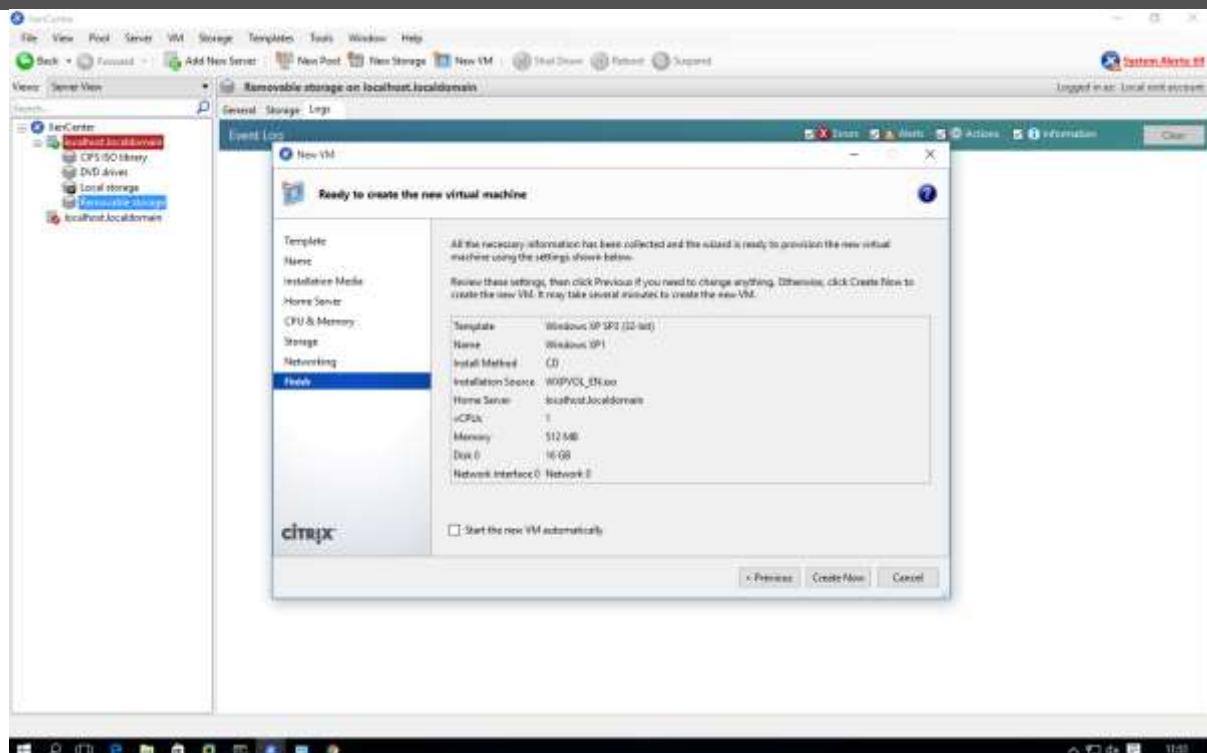
Next-



Next-



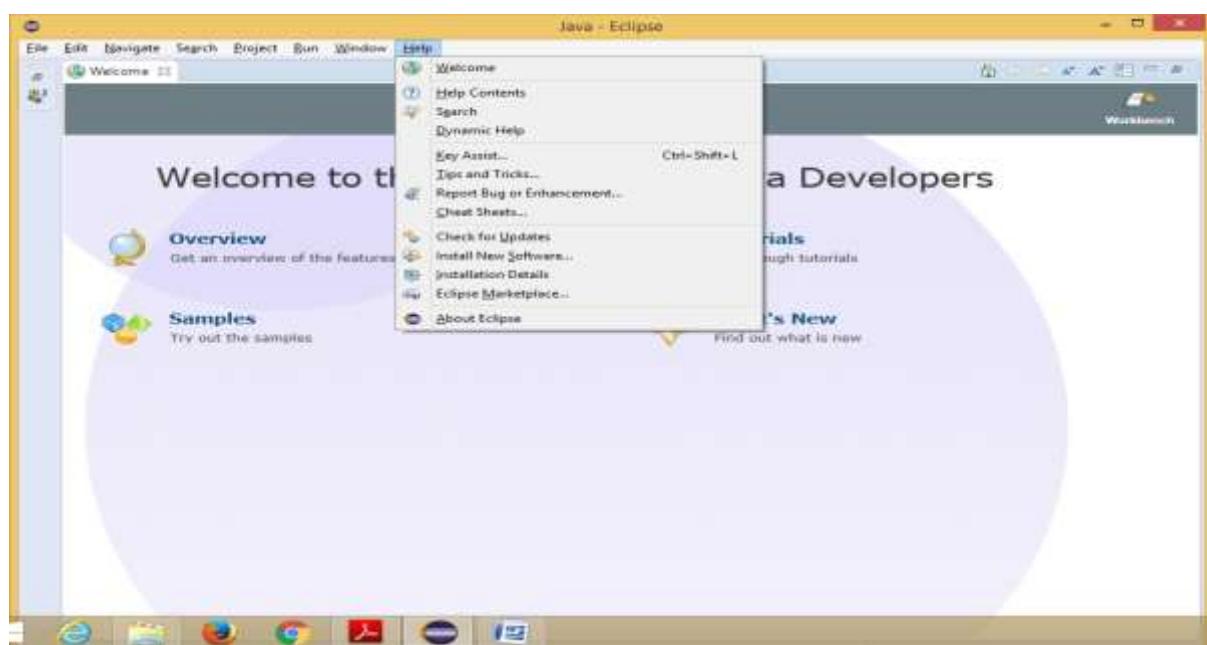
Uncheck – Start the new VM and click on create now



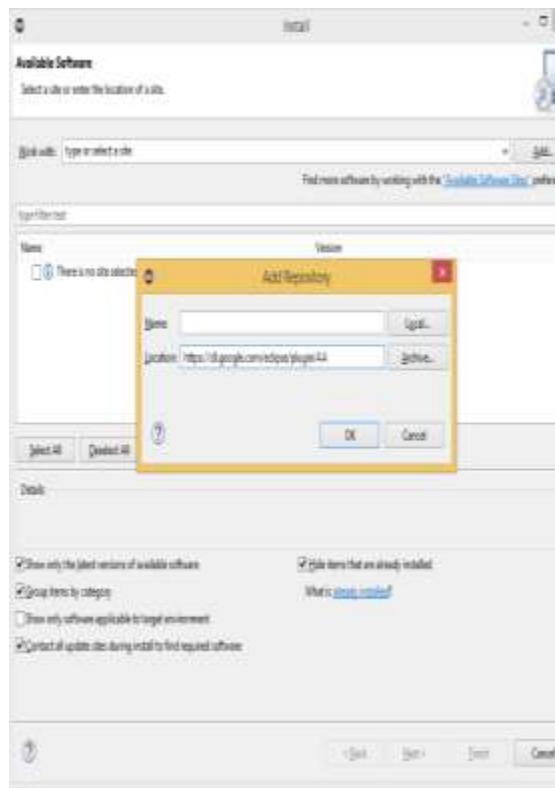
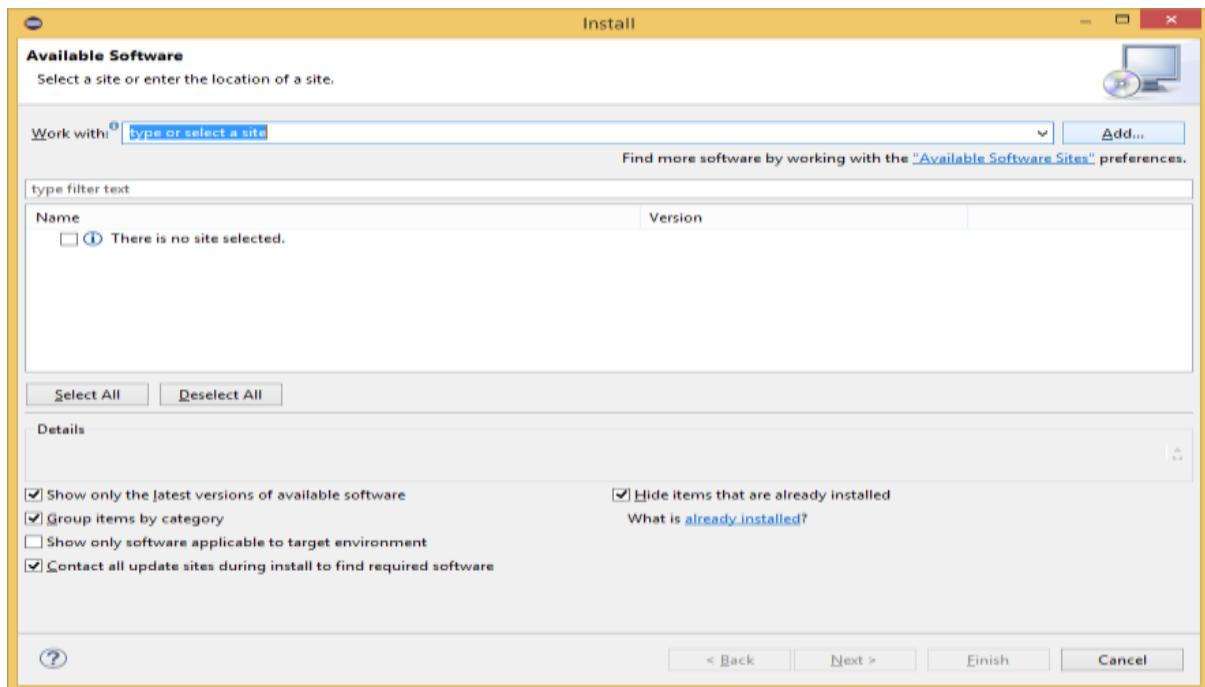
## PRACTICAL: 4

### IMPLEMENT SEARCH ENGINE – GOOGLE APP ENGINE (GAE)

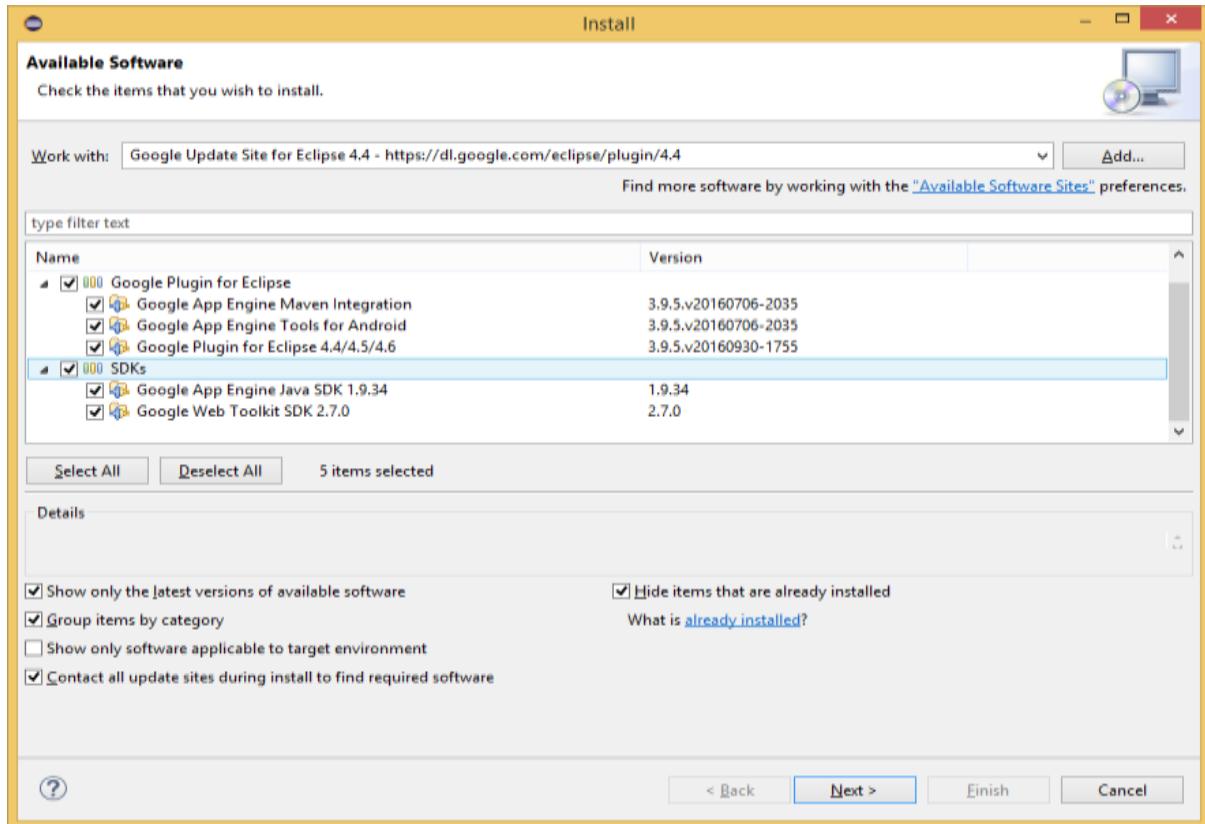
Open Eclipse Luna. Go to **Help Menu Install New Software**



In **Install** window Click on the “**Add**” button besides the **Work with** textbox. **Add Repository** window appears. Enter the **Location** as “<https://dl.google.com/eclipse/plugin/4.4>” and click on “**OK**” button.



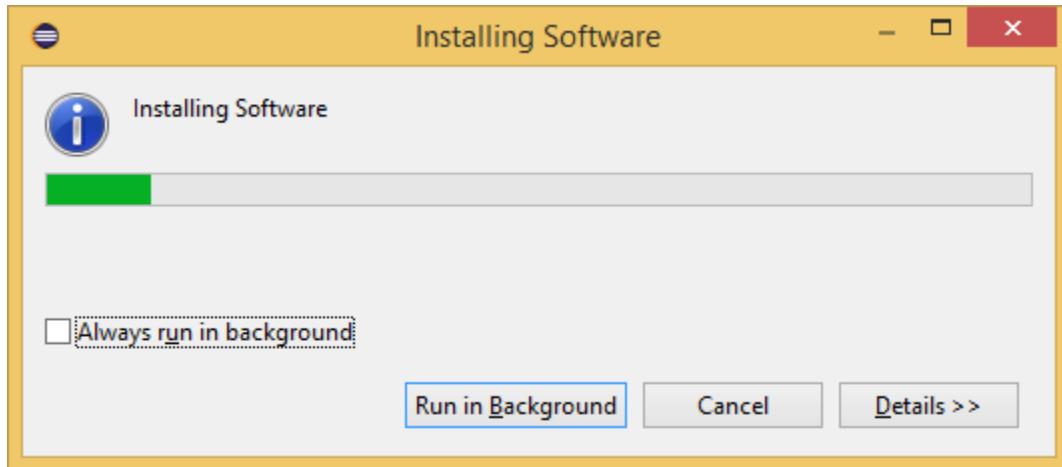
From the available software, select the required software and tools as shown in the below image for the **GAE**. Then click on the “**Next**” button.



In the **Install Details** window click on “**Next**” button.

In the Next Window “Review the Items to be Installed” then click on “**Next**”

In the next window for Review Licenses select the option “**I accept**” and click on “**Finish**” button.

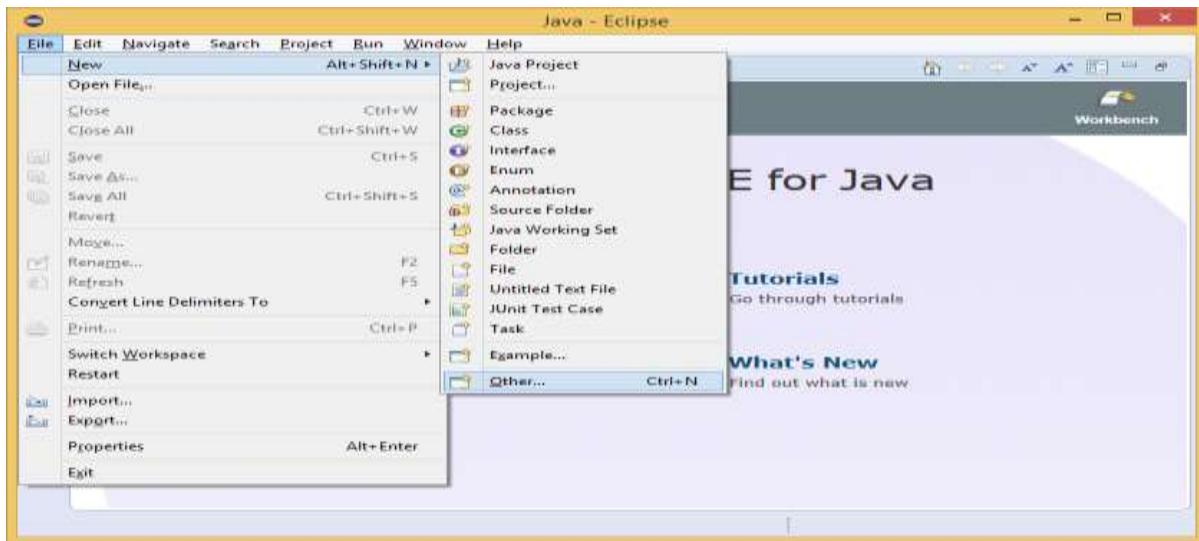


The installation is in progress...

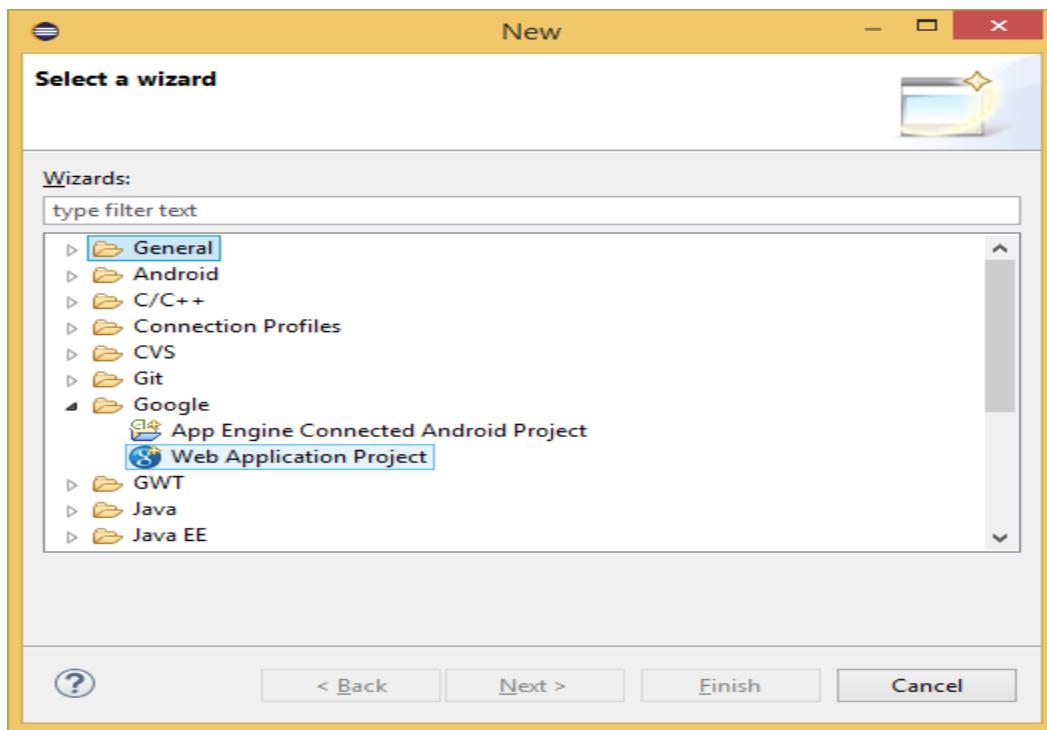
After Installation you will get option to "Restart Eclipse", click on Yes.

So that the software you selected gets updated...

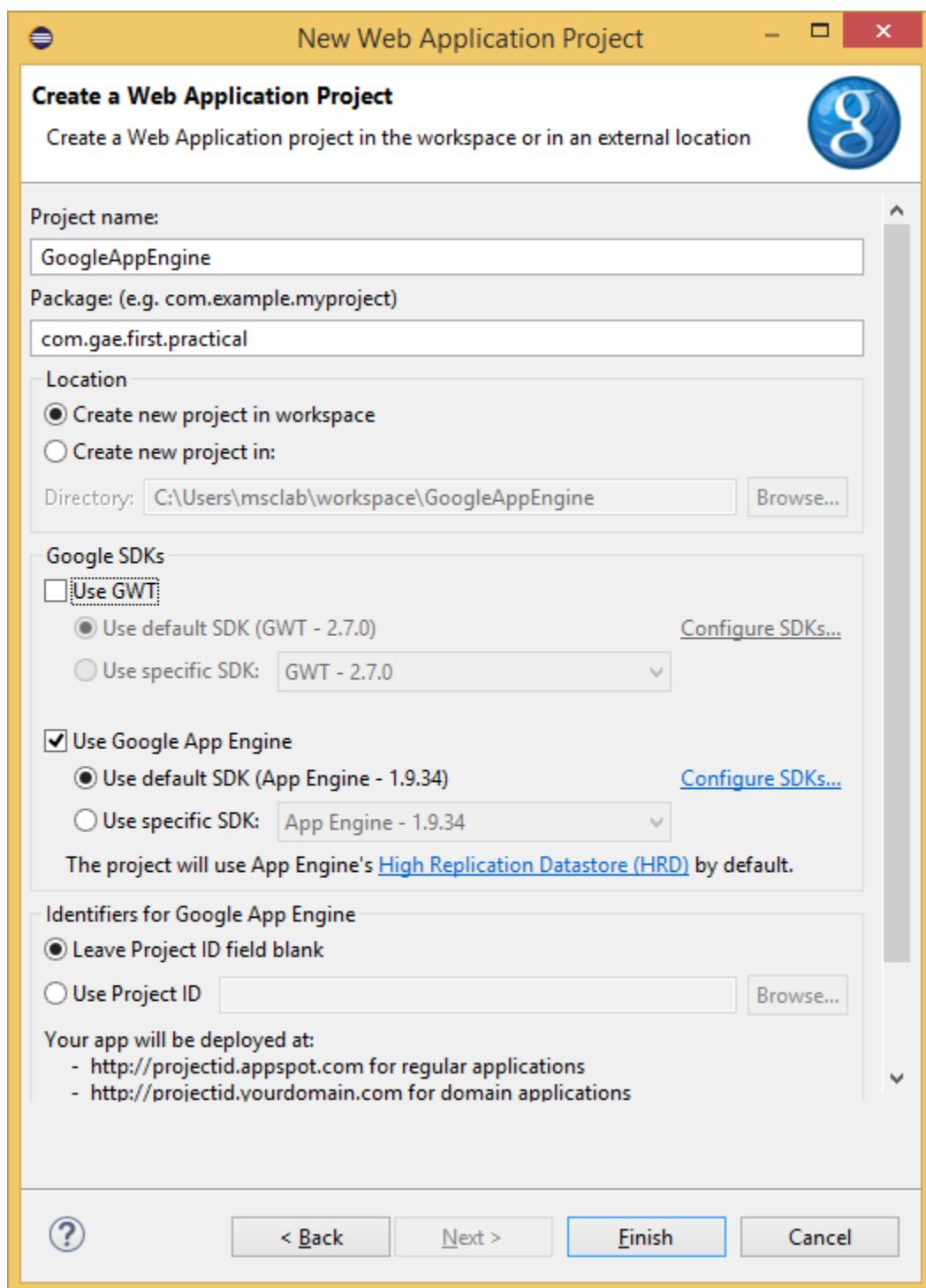
Now, go to **FileMenu->New->Other**



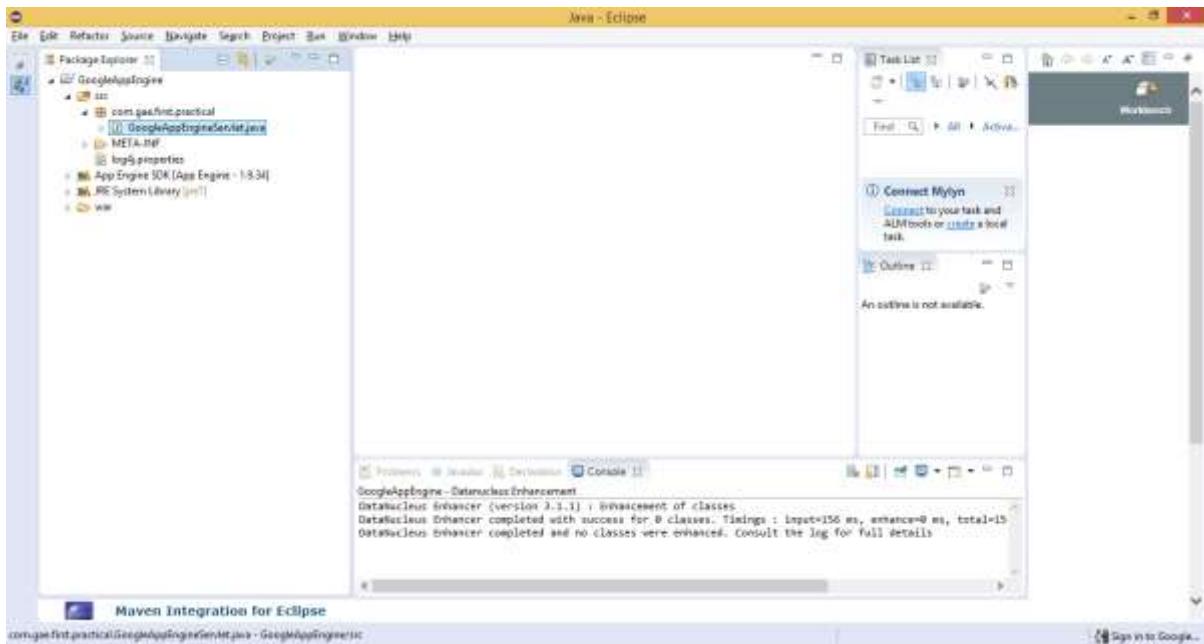
In the New window select **Google\_Web Application Project** and click on "**Next**" button.



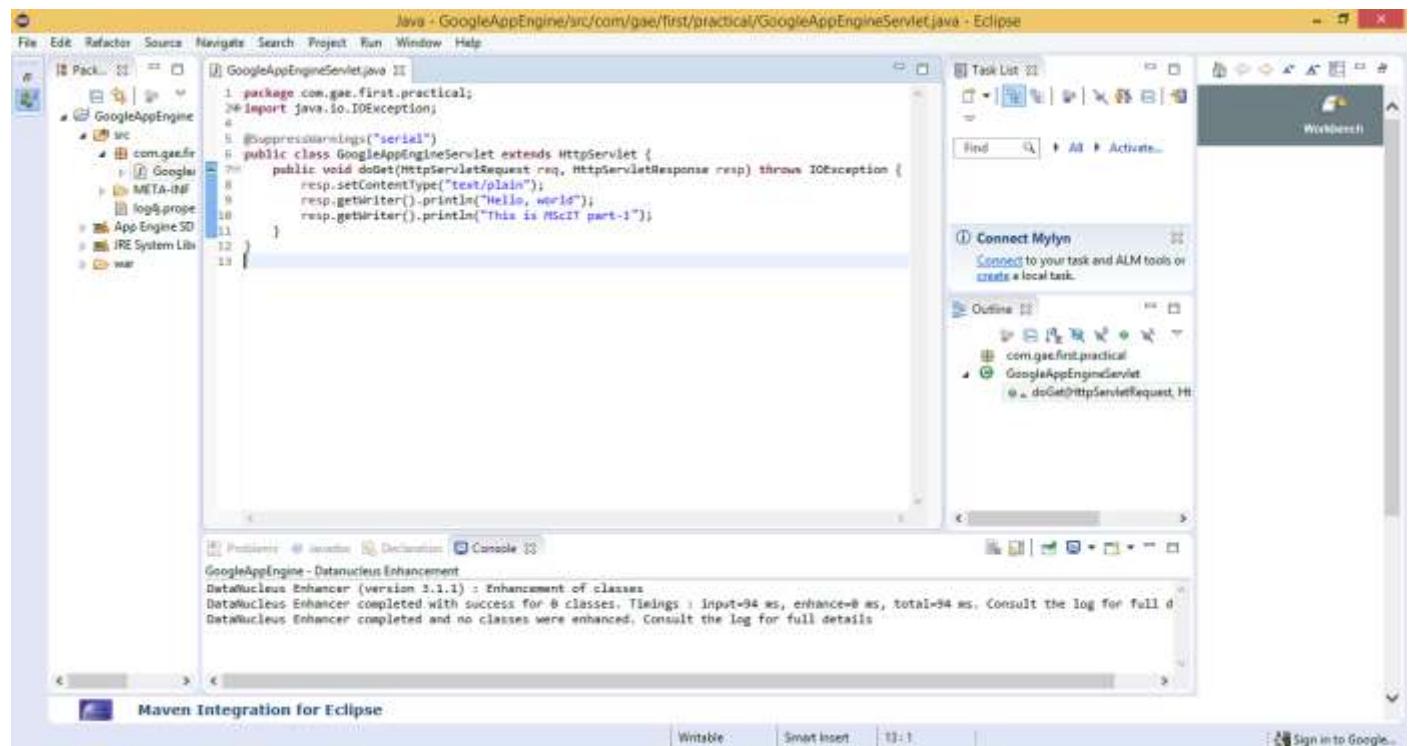
Enter the details for the new Web application project. Deselect the **Use Google Web Toolkit** option under the section **Google SDKs**. Click on the "**Finish**" button.



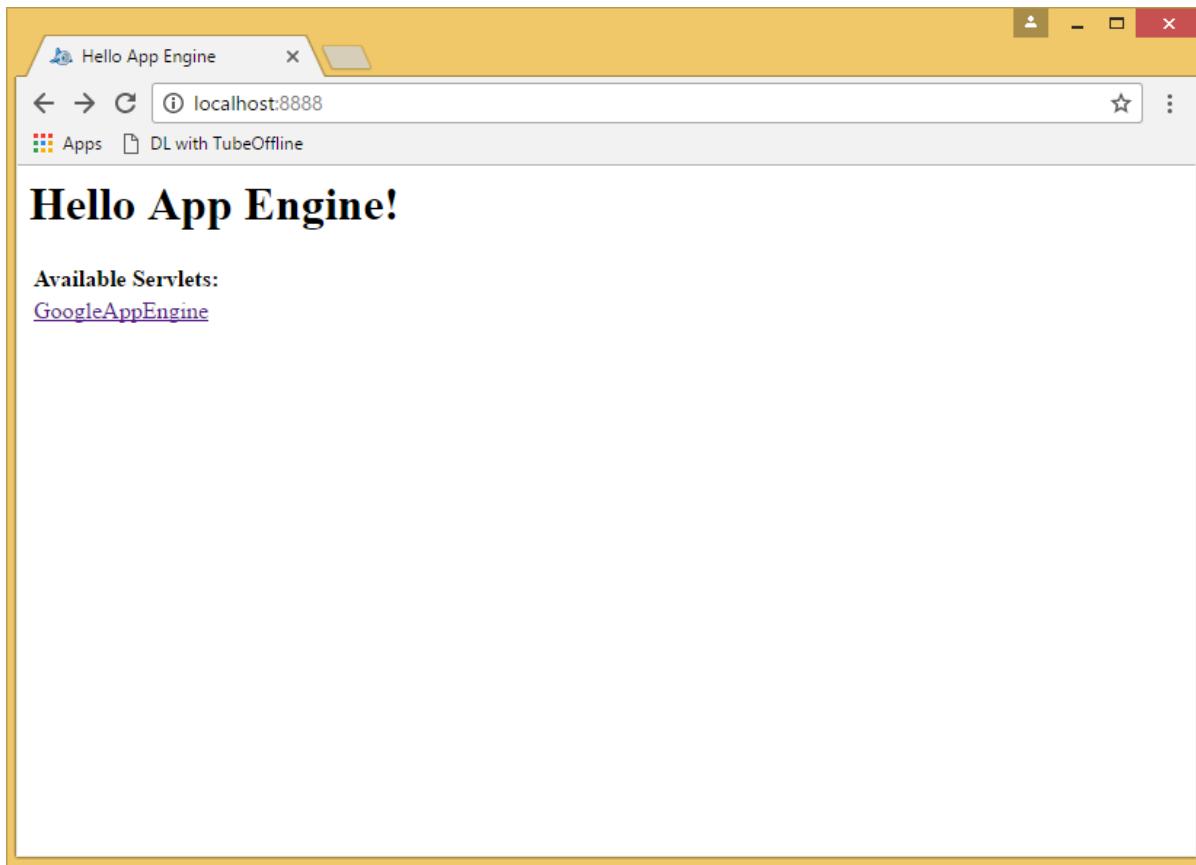
From the **Package Explorer** open the **.java** file (Here it is "**Google\_App\_EngineServlet.java**").



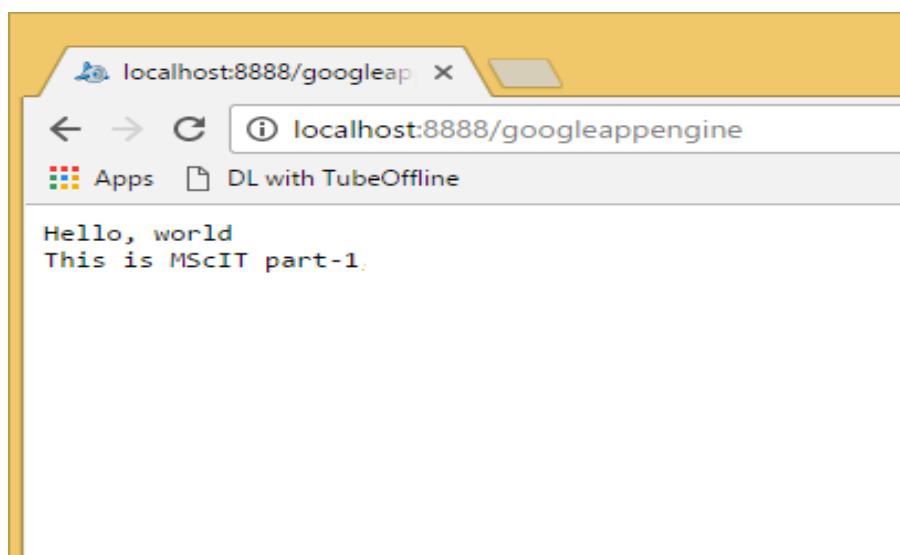
Edit the file as required (Unedited file too can be used). Here the editing is done to "what should be displayed" on the browser). **Save** the file. Click on the **Run** option available on the Tools bar.



In the browser (Here, Google Chrome) type the address as "localhost:8888" which is "Default".



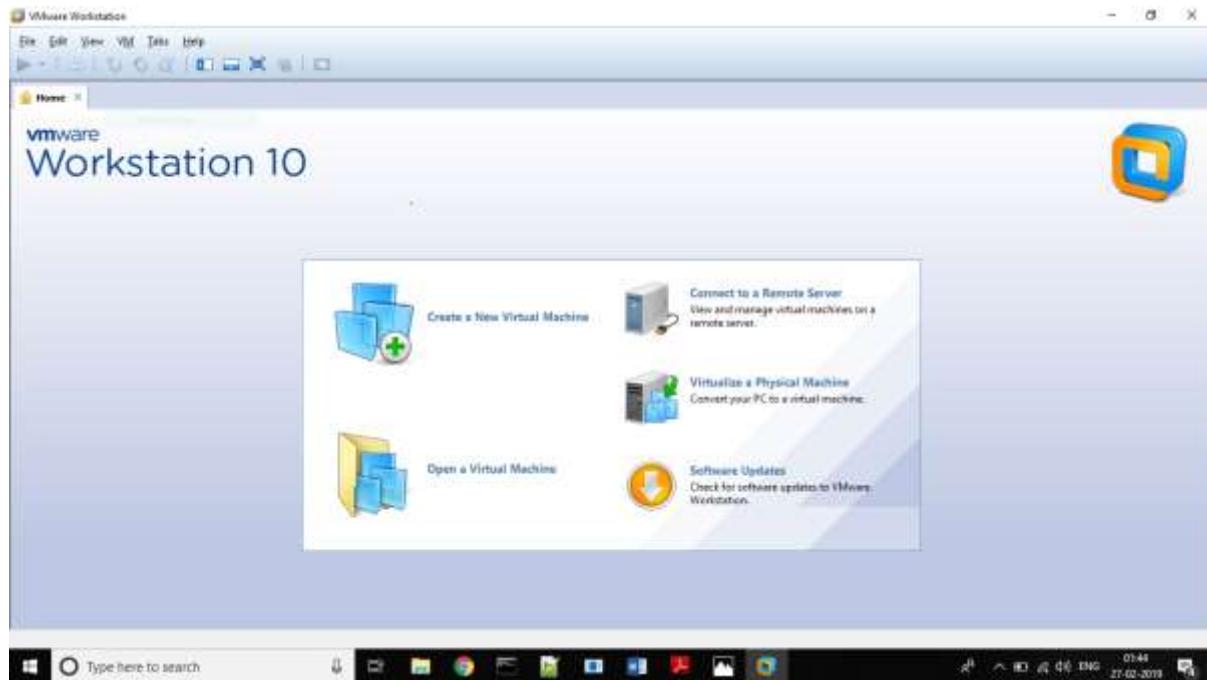
In **localhost:8888** link to the **Google\_App\_EngineServlet.java** file as **Google\_App\_Engine** is displayed. Click on this link. It will direct you to "**localhost:8888/Google\_App\_Engine**".



The **output text entered** in the **java** program is **displayed as the output** when clicked the link "**Google\_App\_Engine**".

## PRACTICAL: 5 IMPLEMENT ESXi SERVER

**Steps:** Open VMware Workstation – And select Create a New Virtual Machine

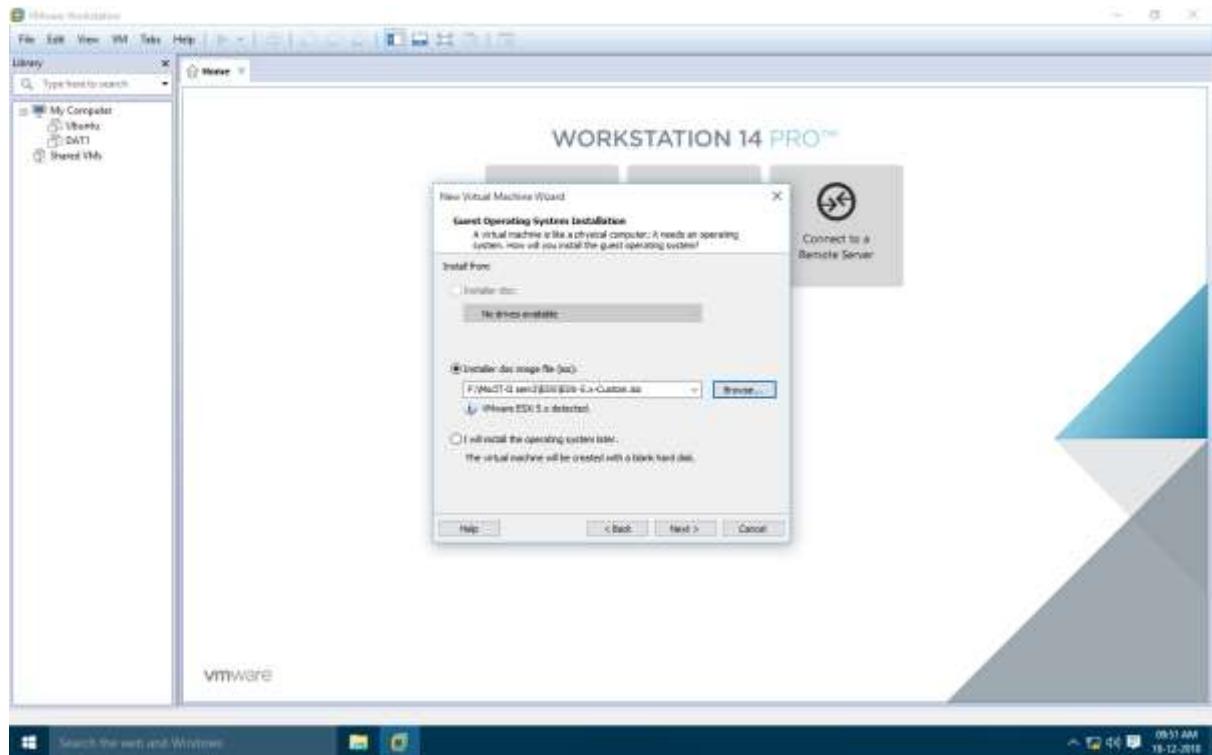


Select Typical and click Next

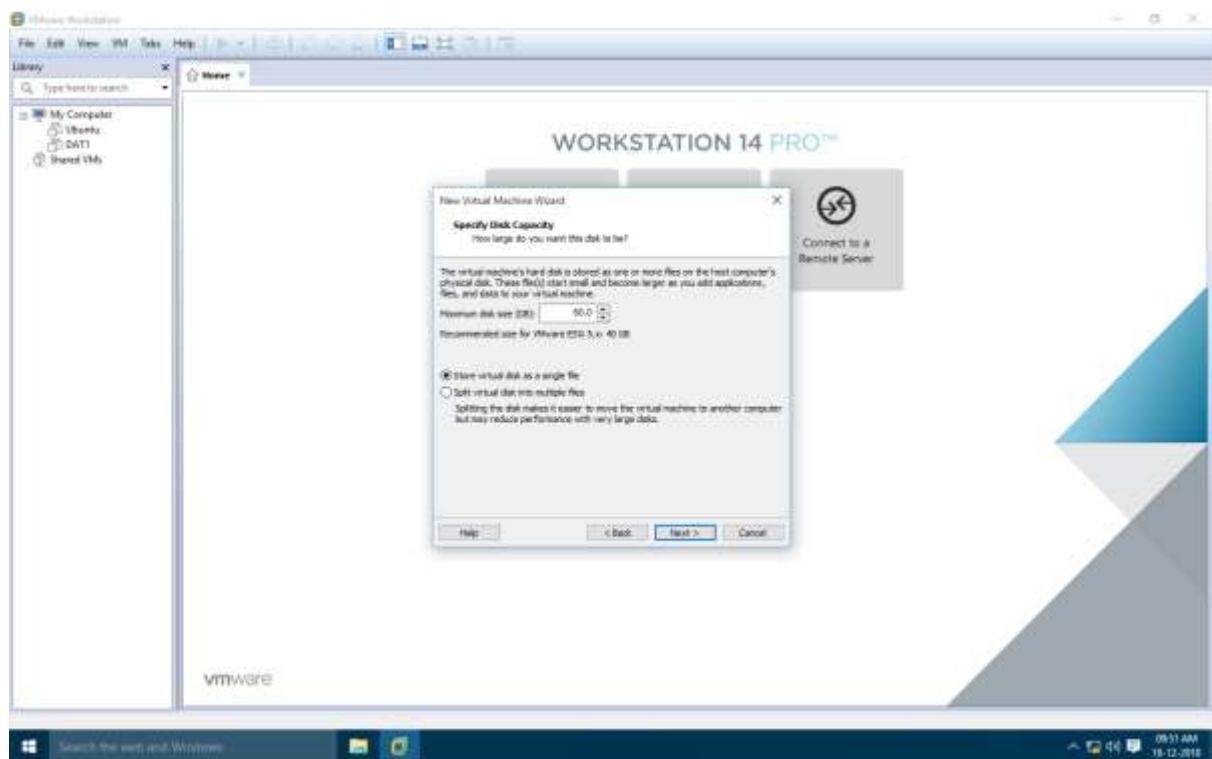


Select Installer disc\_image file(ISO). Click Browse -ESXi-5.x-Custom.iso Iso File – For Example "D:\ccpraxrj\ESXi-5.x-Custom.iso"

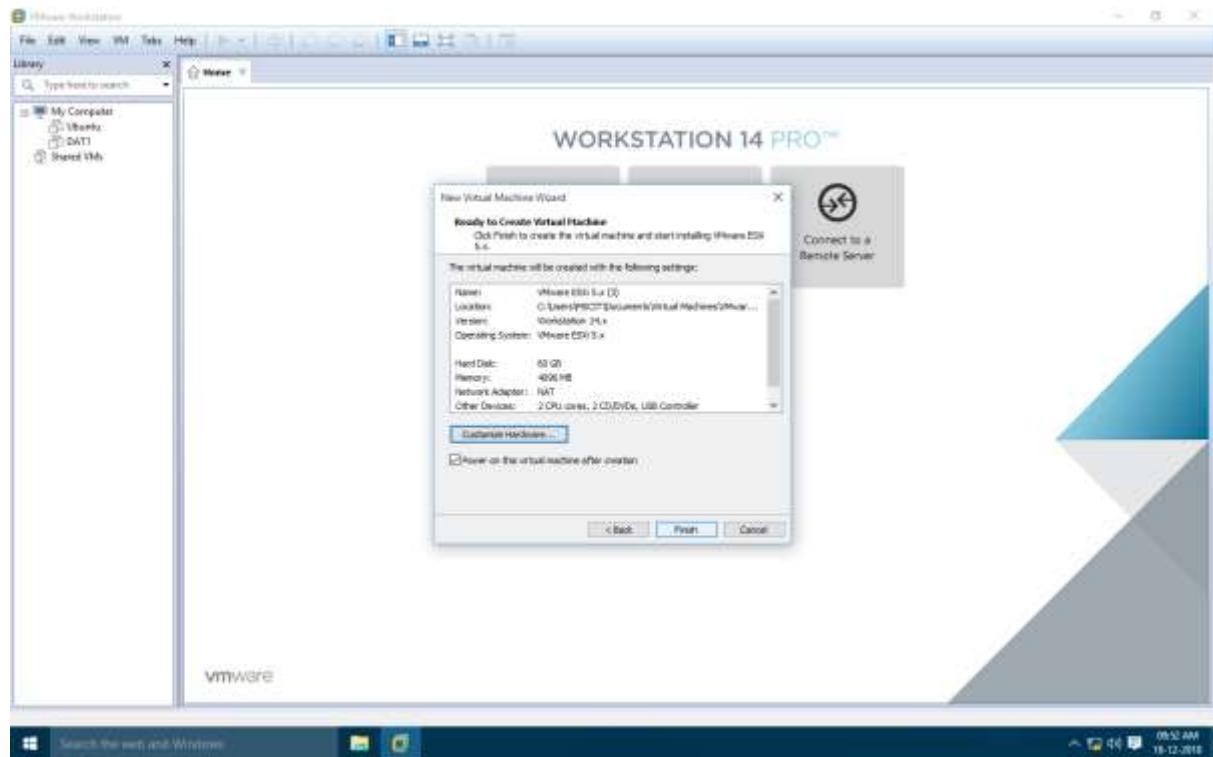
And click on next



Change maximum disk size to **60 GB** and check –Store virtual disk as single file

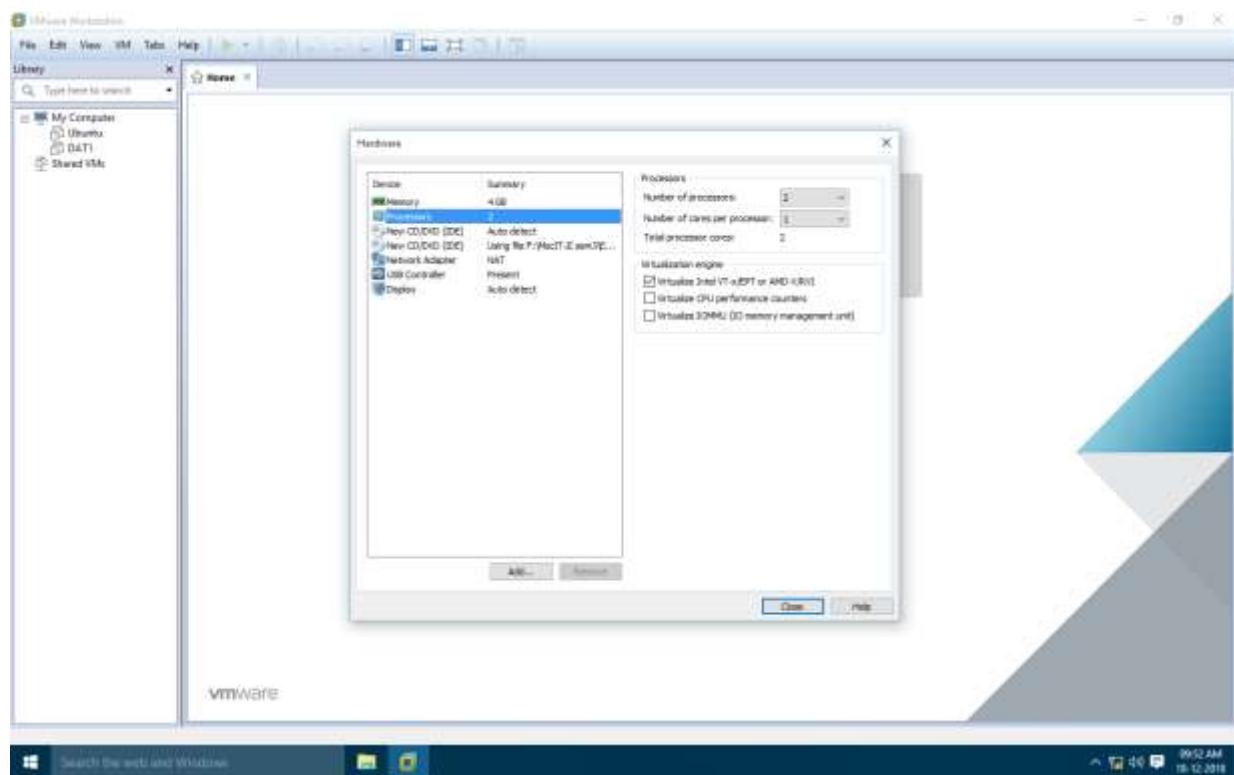


Click on **Customize Hardware option**

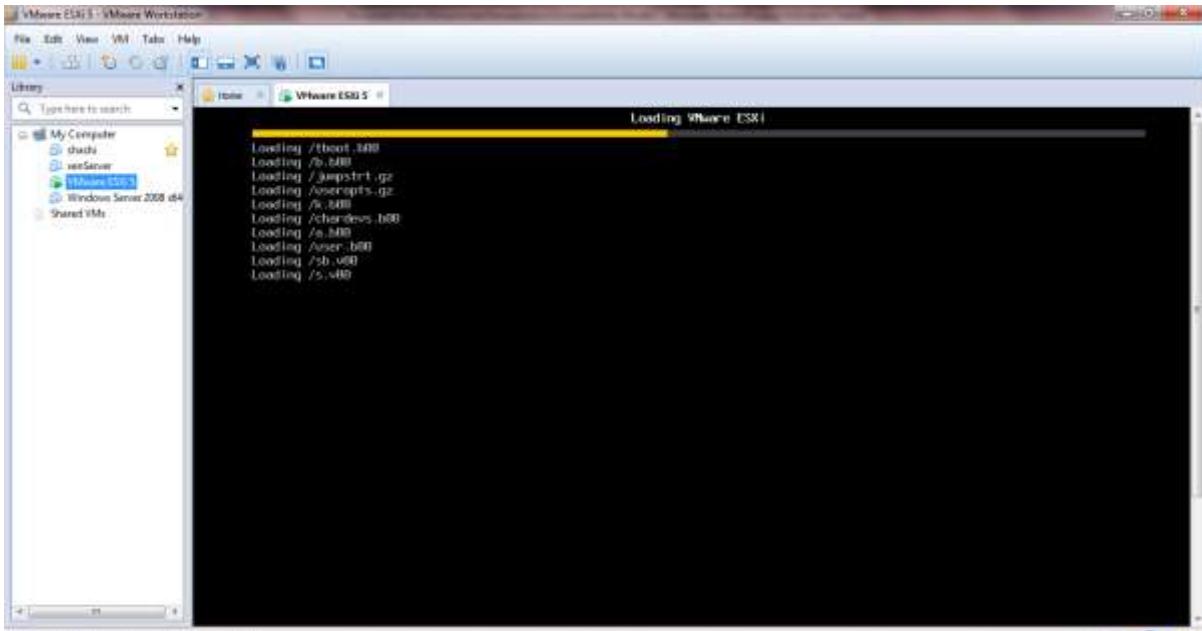


Change – Memory for this virtual machine to 4 GB and Click on Close.

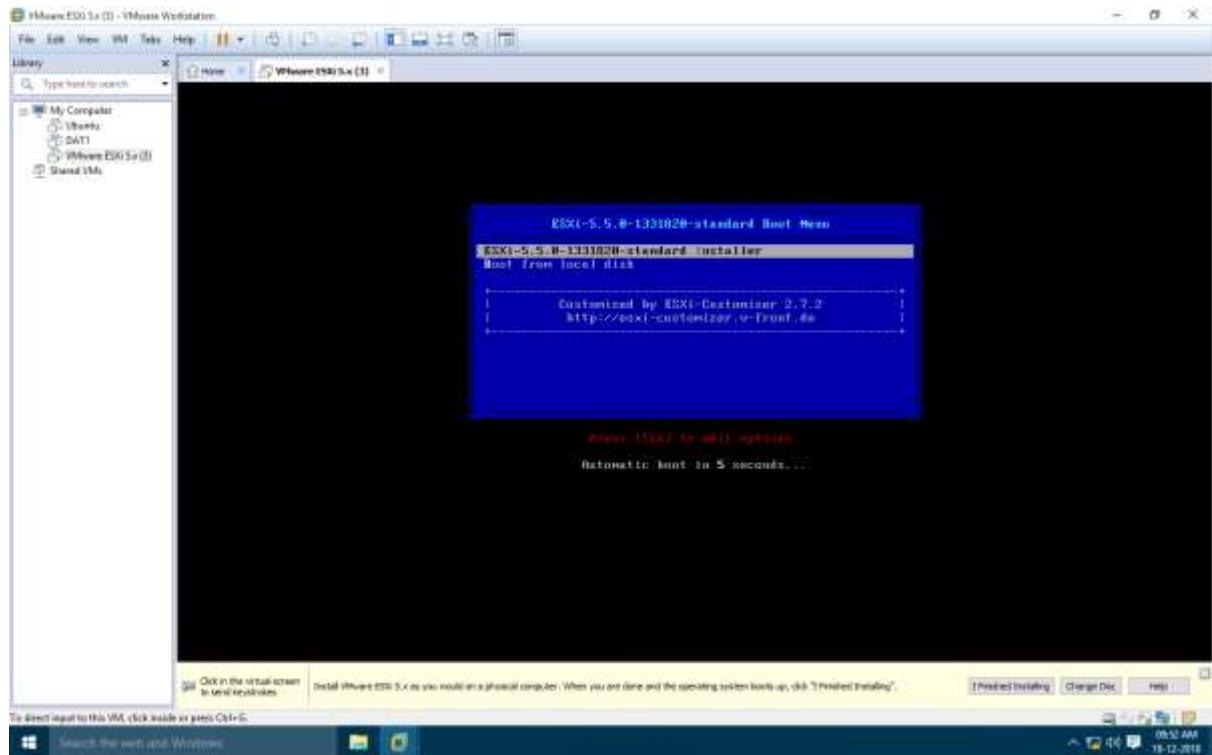
Click on Processor and select virtualize Intel VT



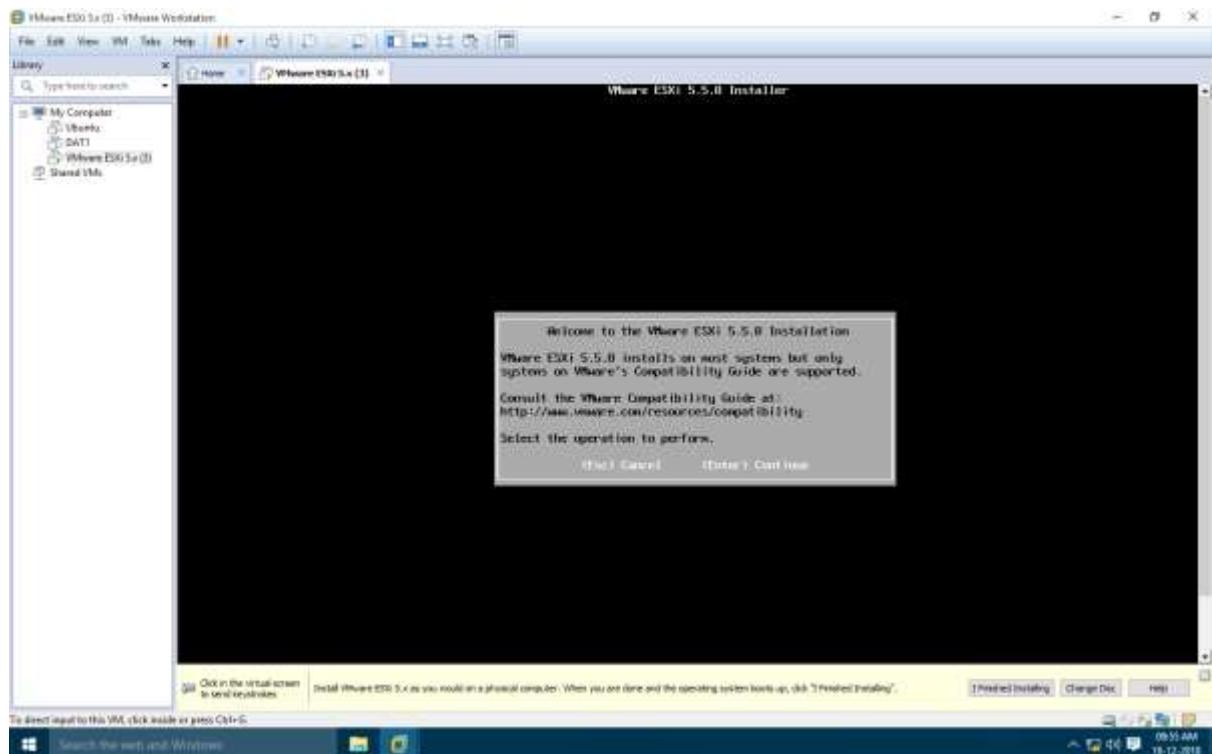
Now Power on newly created Virtual machine –



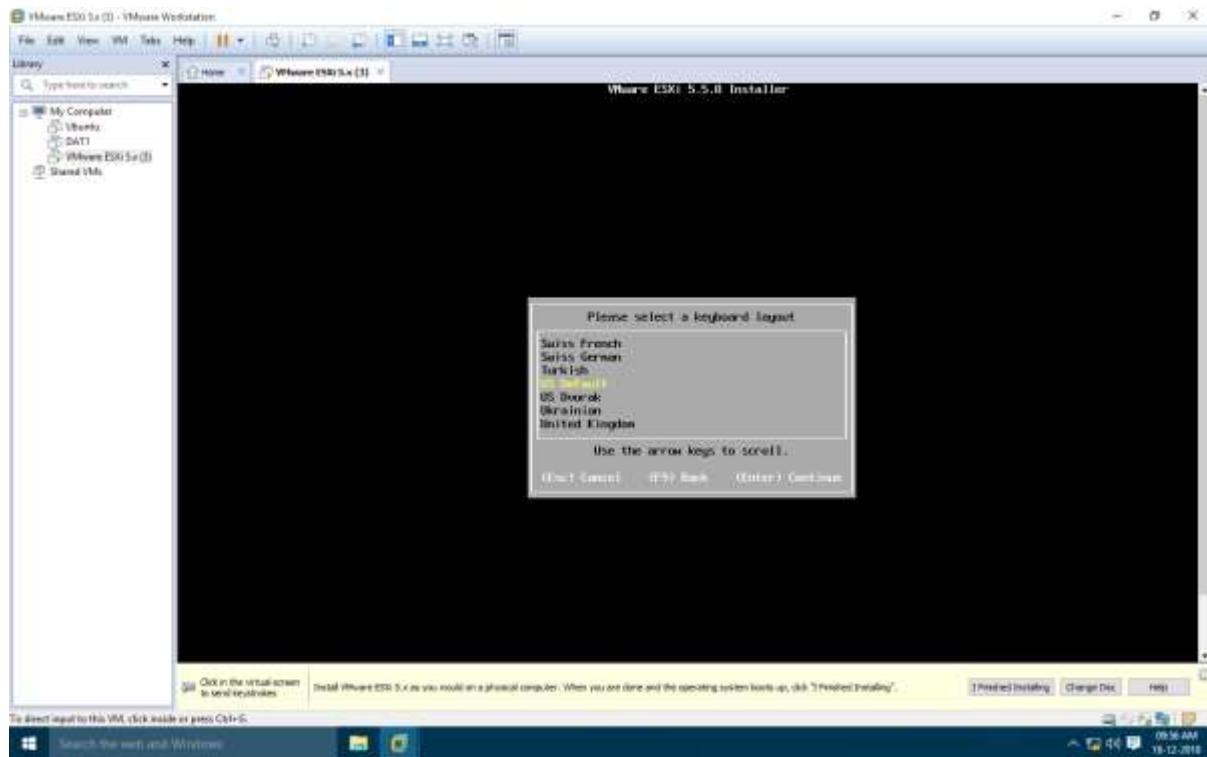
**Click on **install EXSi server****



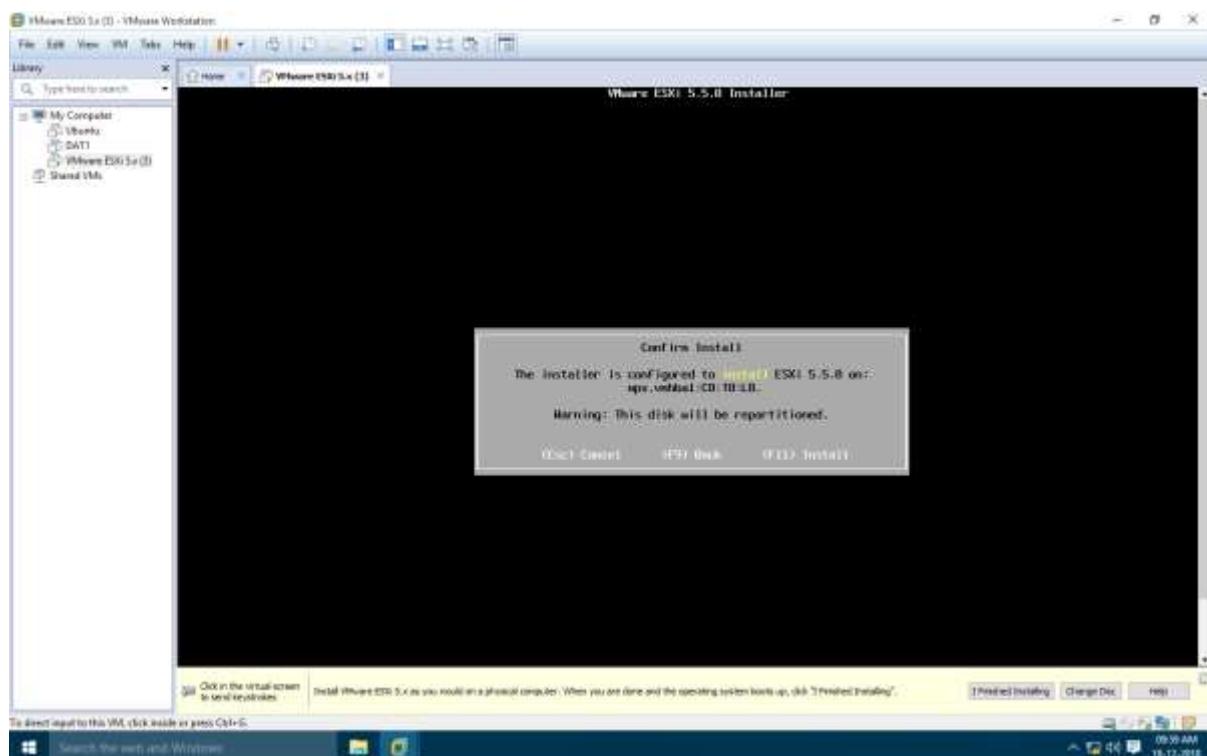
Press **enter**



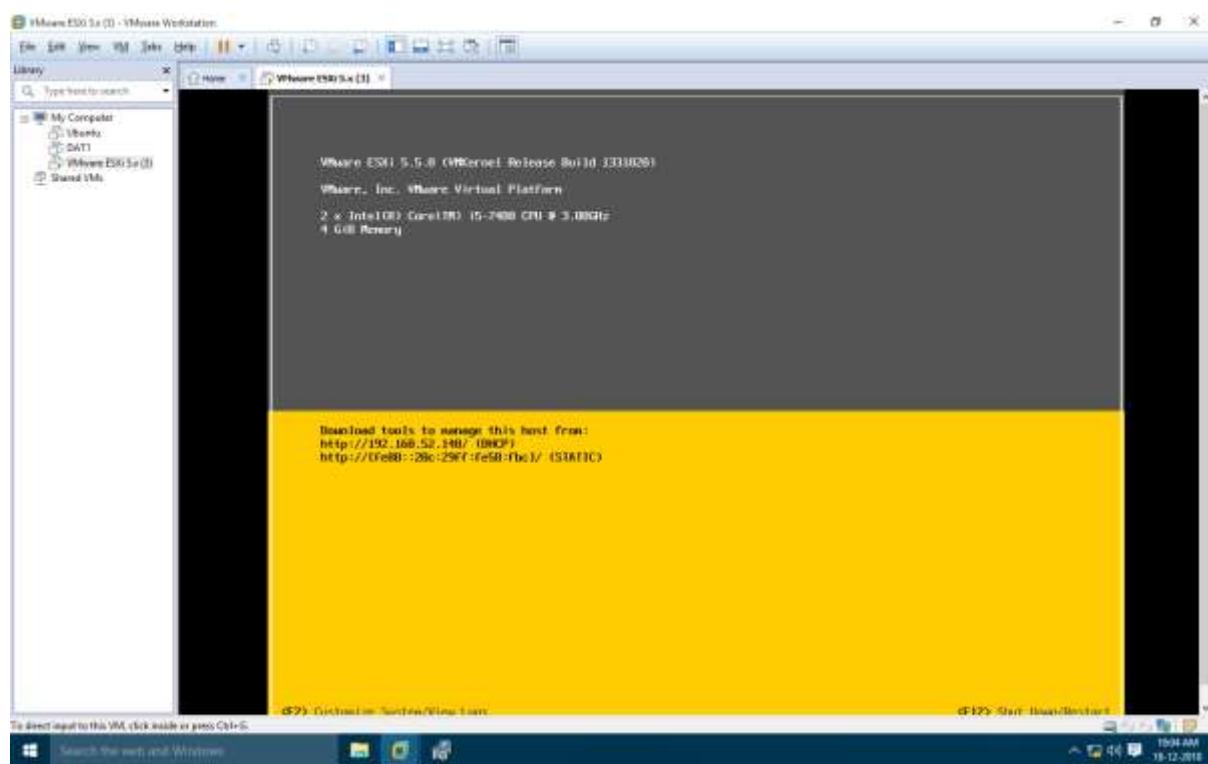
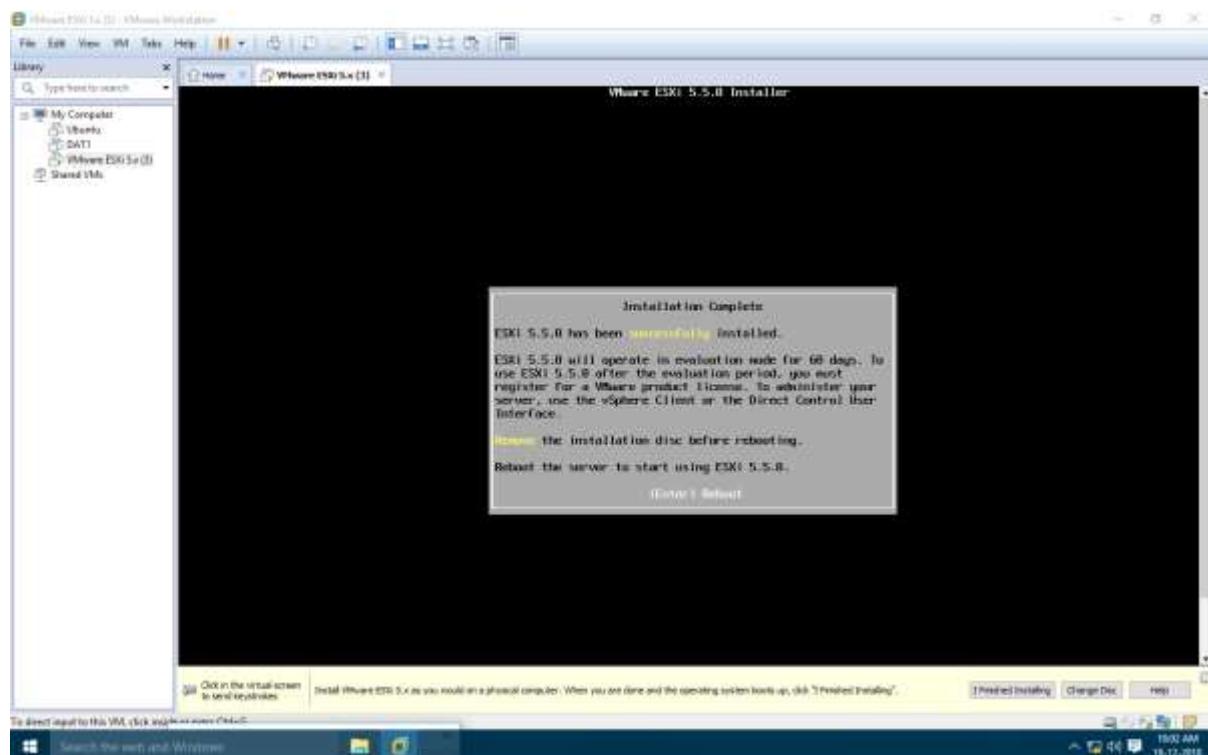
Select **US default** and click **enter**



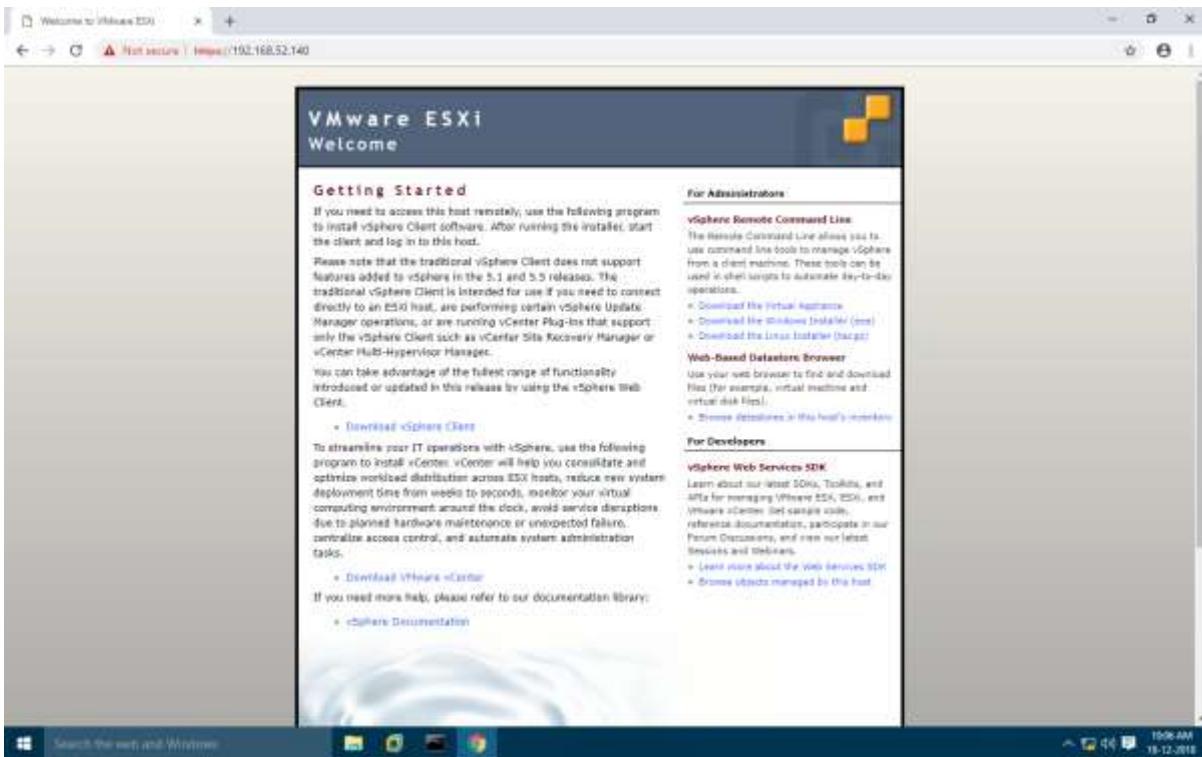
**Click install**



Press **enter** to reboot the system



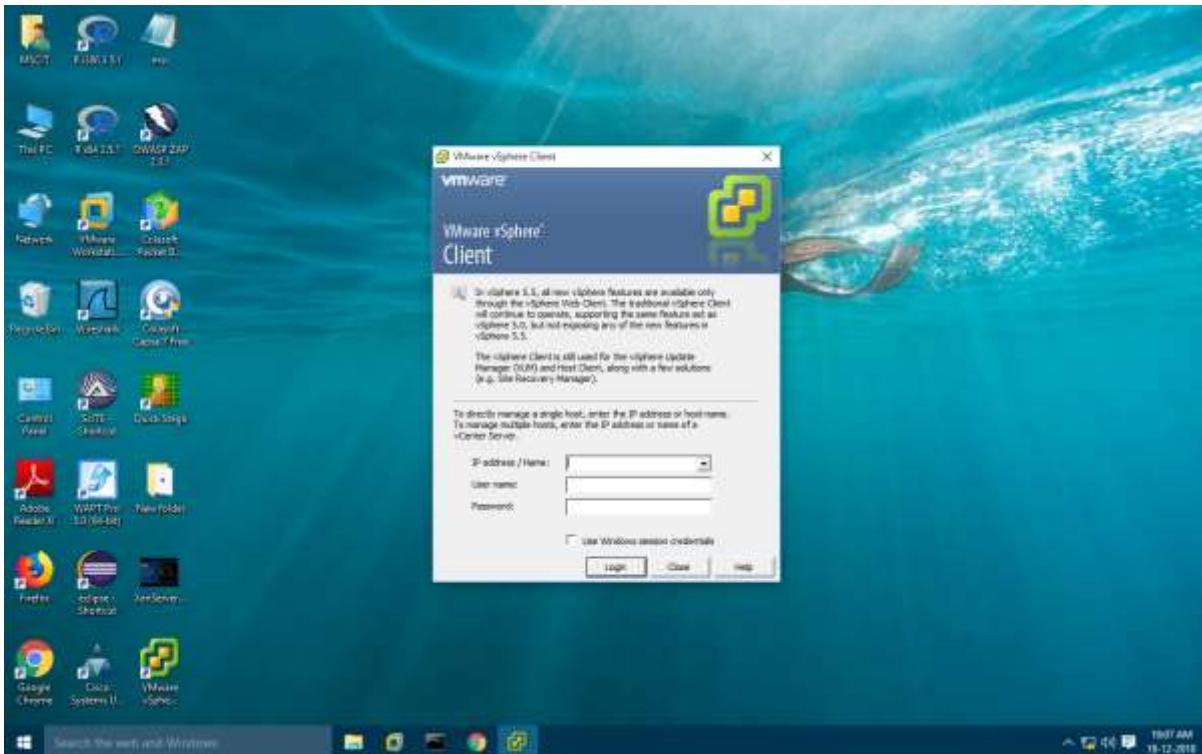
Open Browser & type respective IP Address

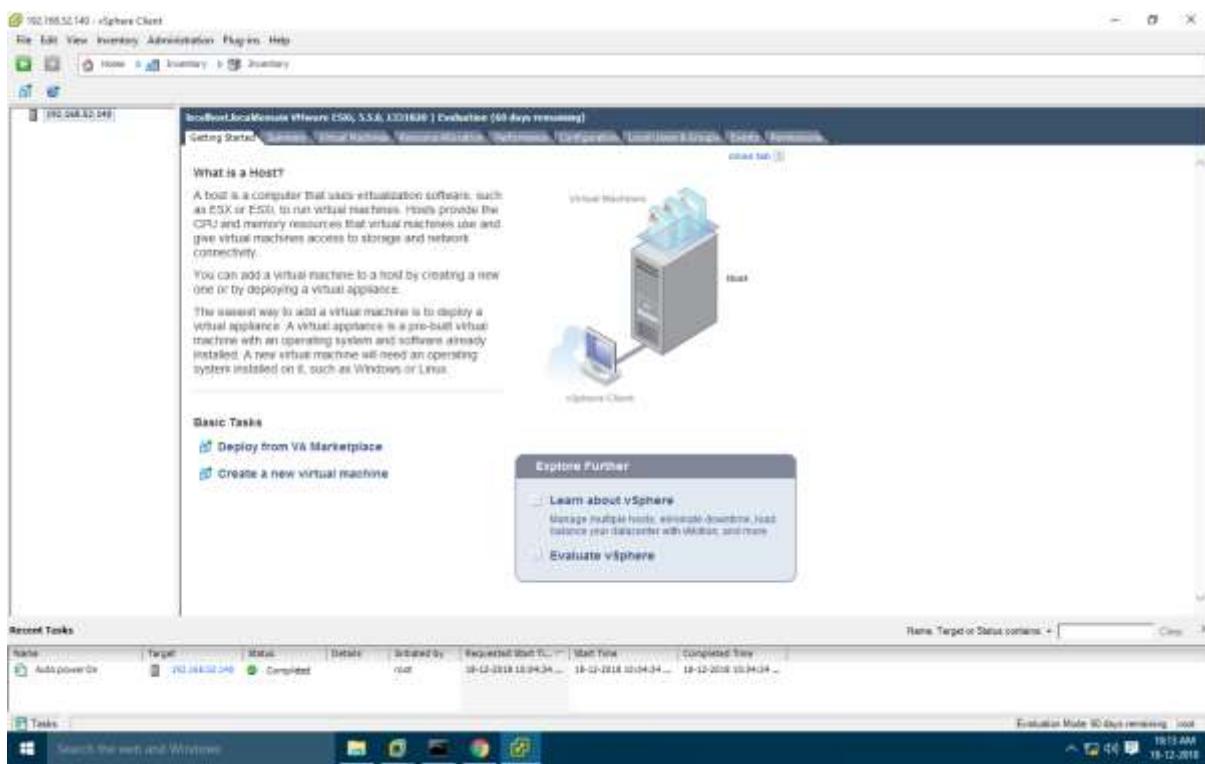
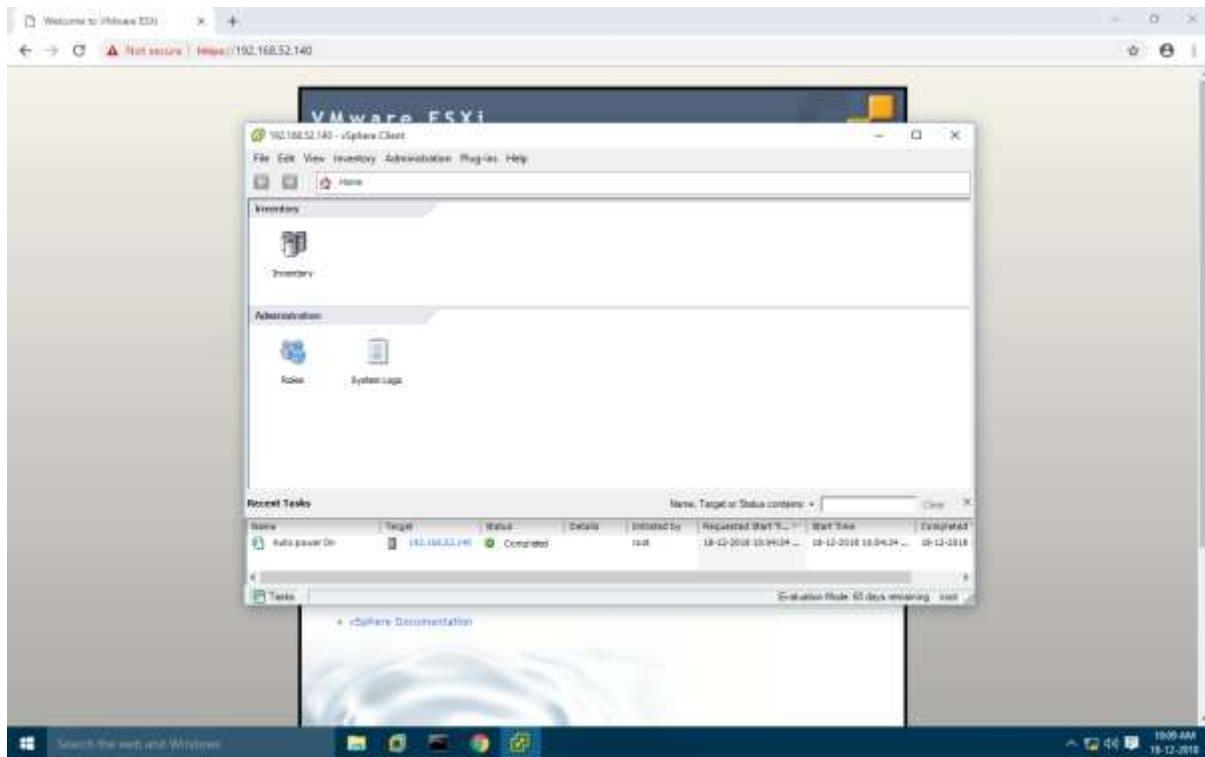


(since we already have vsphereclient so we are not going to download it, first install and open vsphareclient)

### VMware vSphere Client

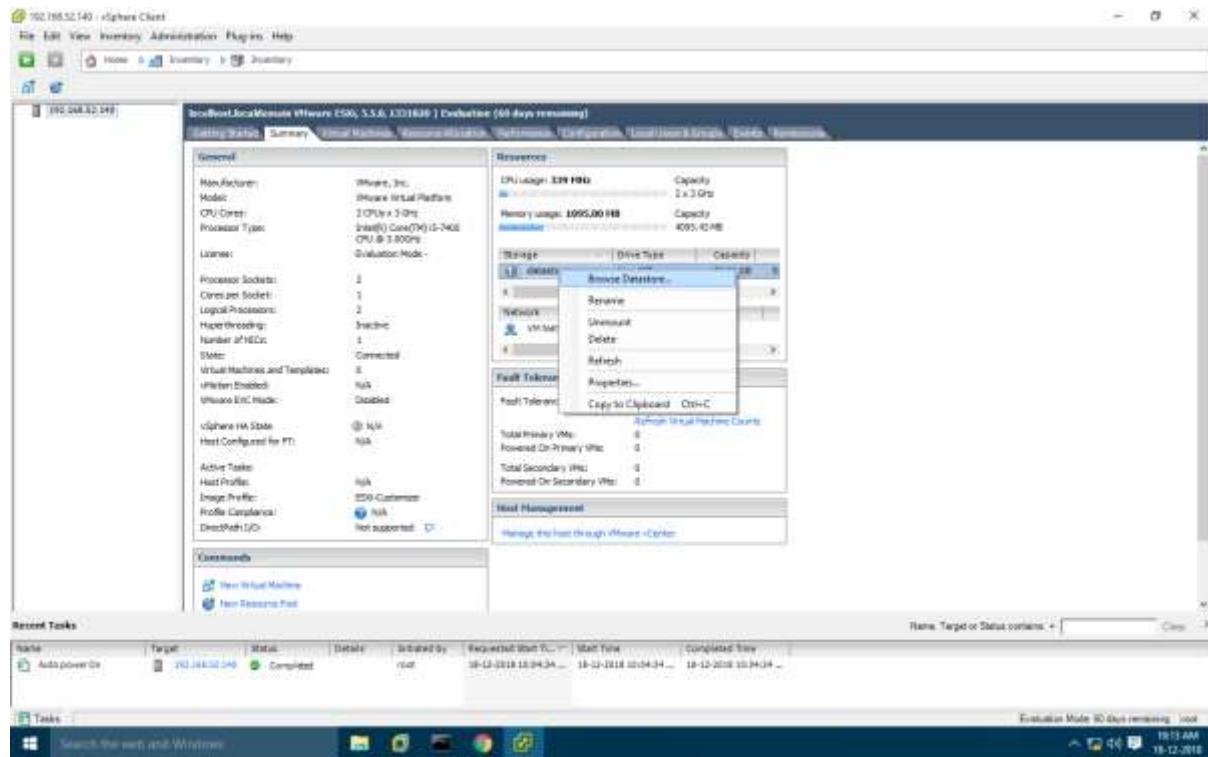
- ❖ Enter IP address (Which was assigned dynamically)
- ❖ Enter Username and Password



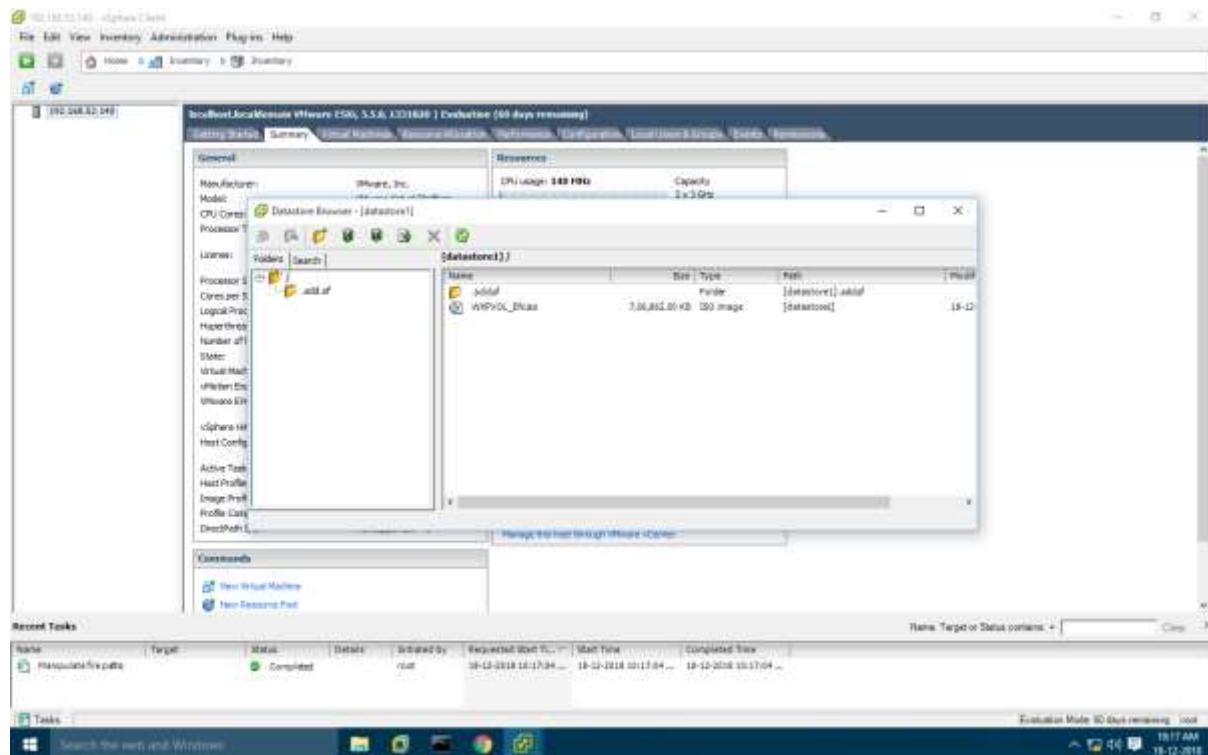


Select Summary tab.

- ❖ In Storage section, Select on datastore1 and Right-click on Browse Datastore to add iso image of Windows XP in Datastore.

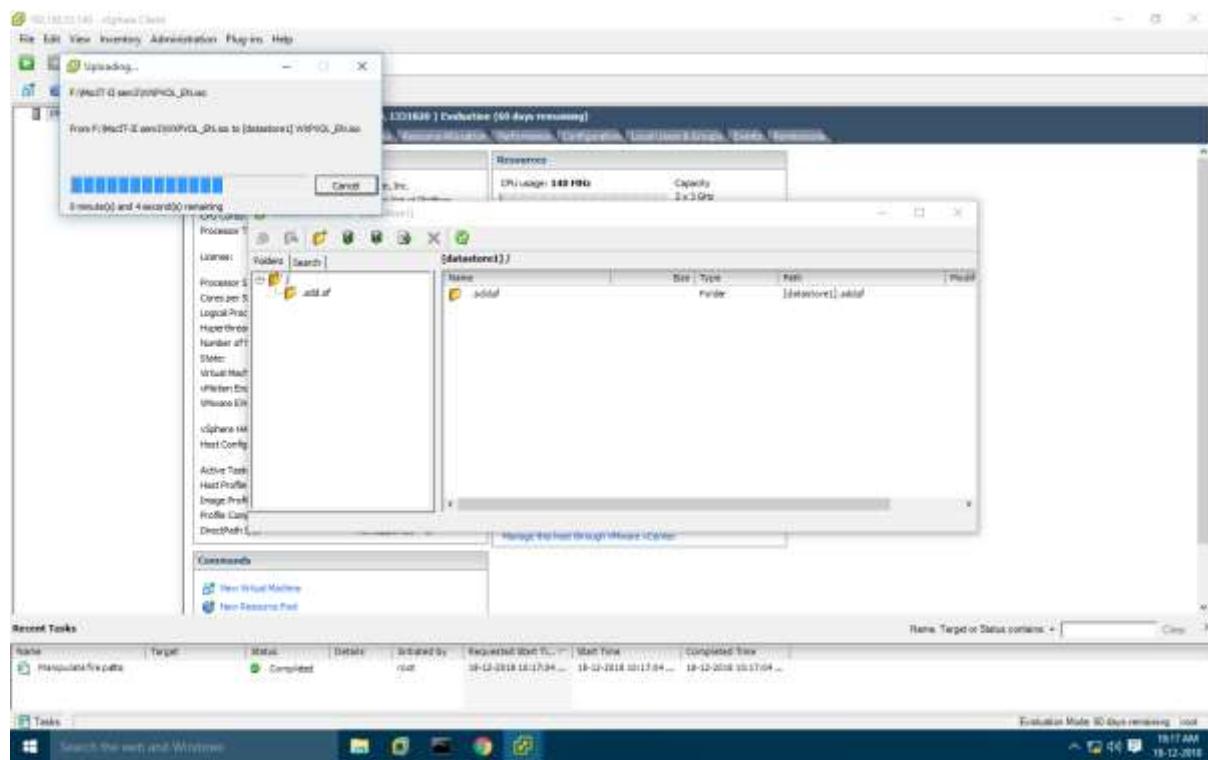


**Click on Upload Icon and Select Upload File.**



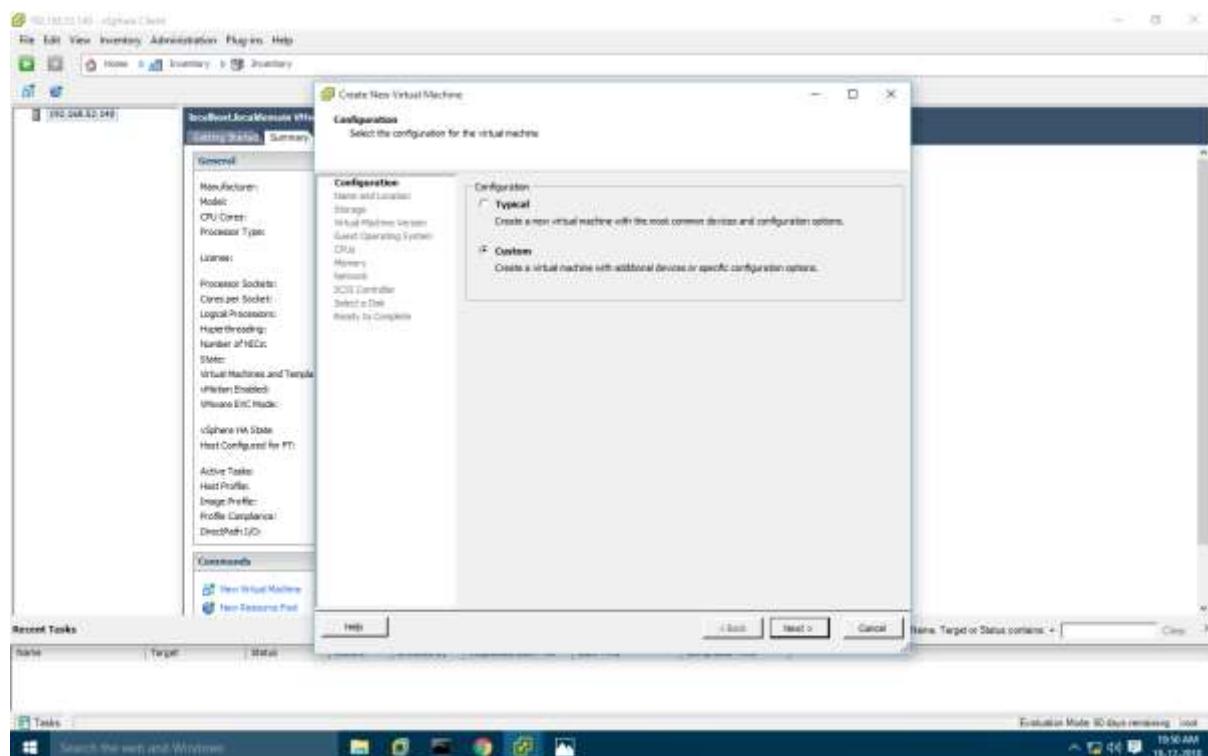
**Click on Yes**

**ROLL NO:13, SHAIKH SEEMA ABDUL RASHID, 66**

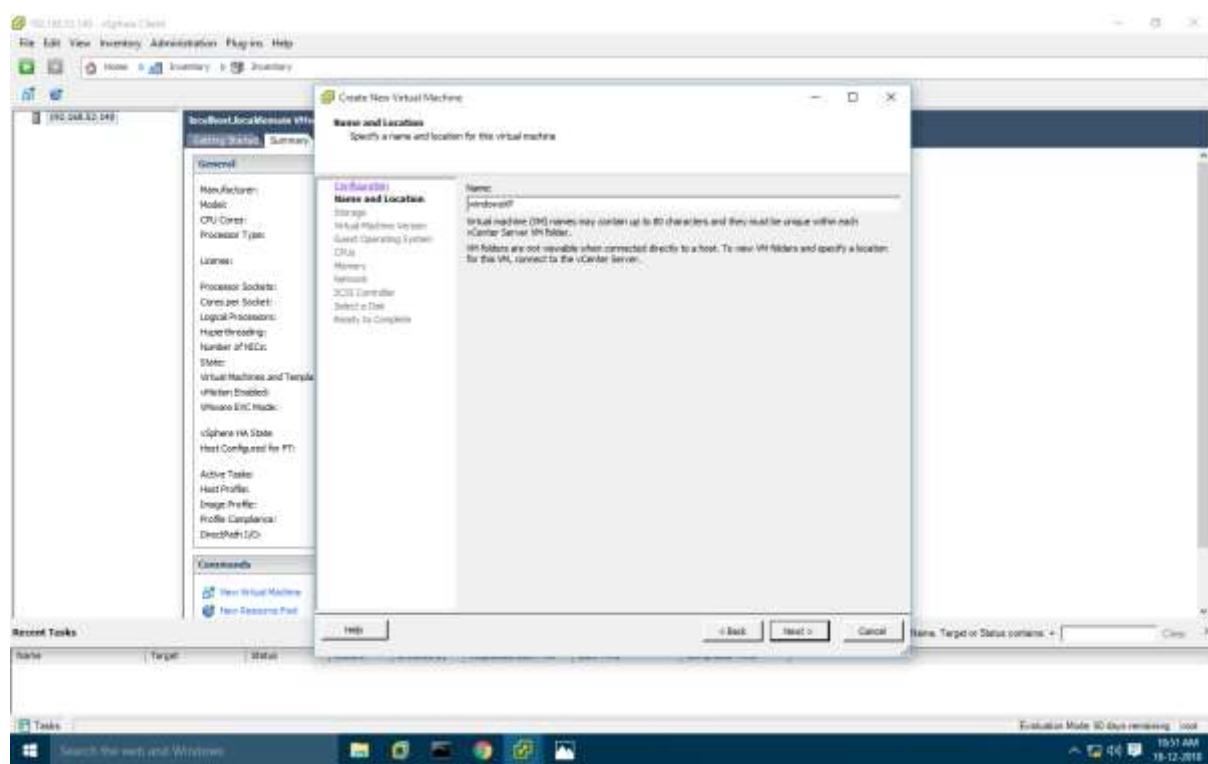


**Click on File >> New >> Virtual Machine.**

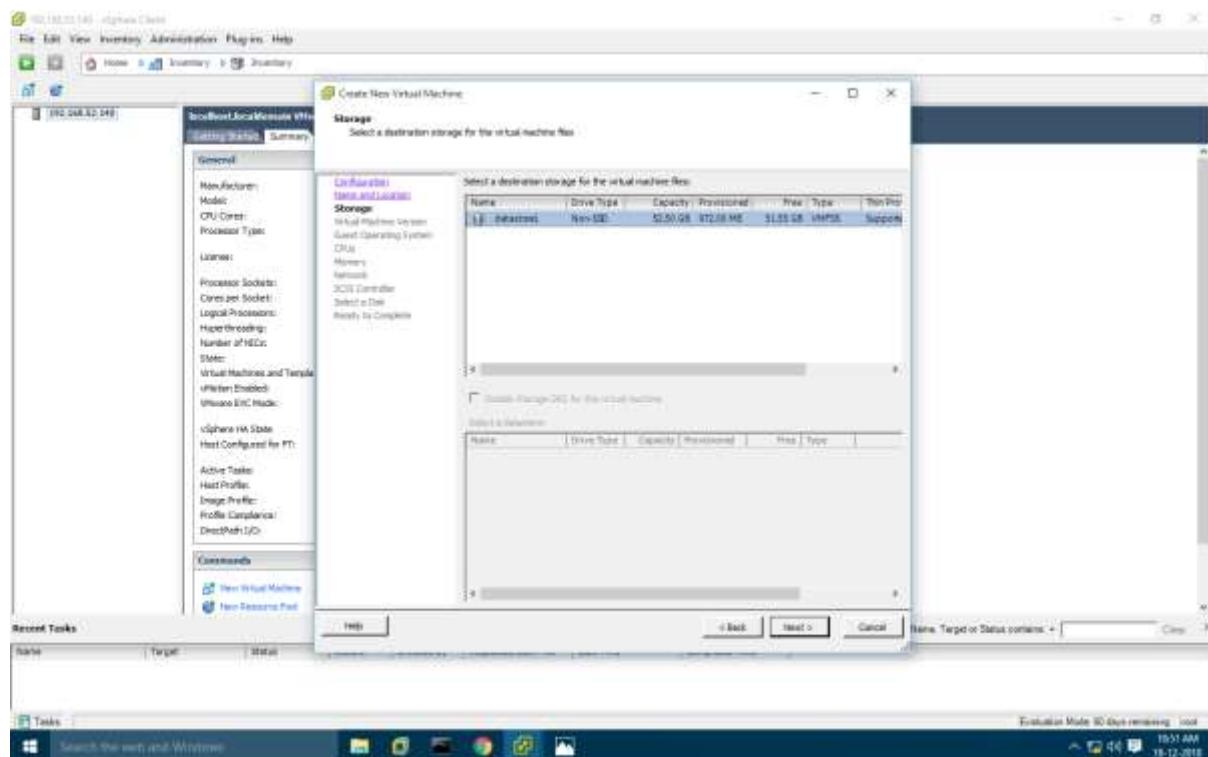
**Configuration :** Select Custom configuration.



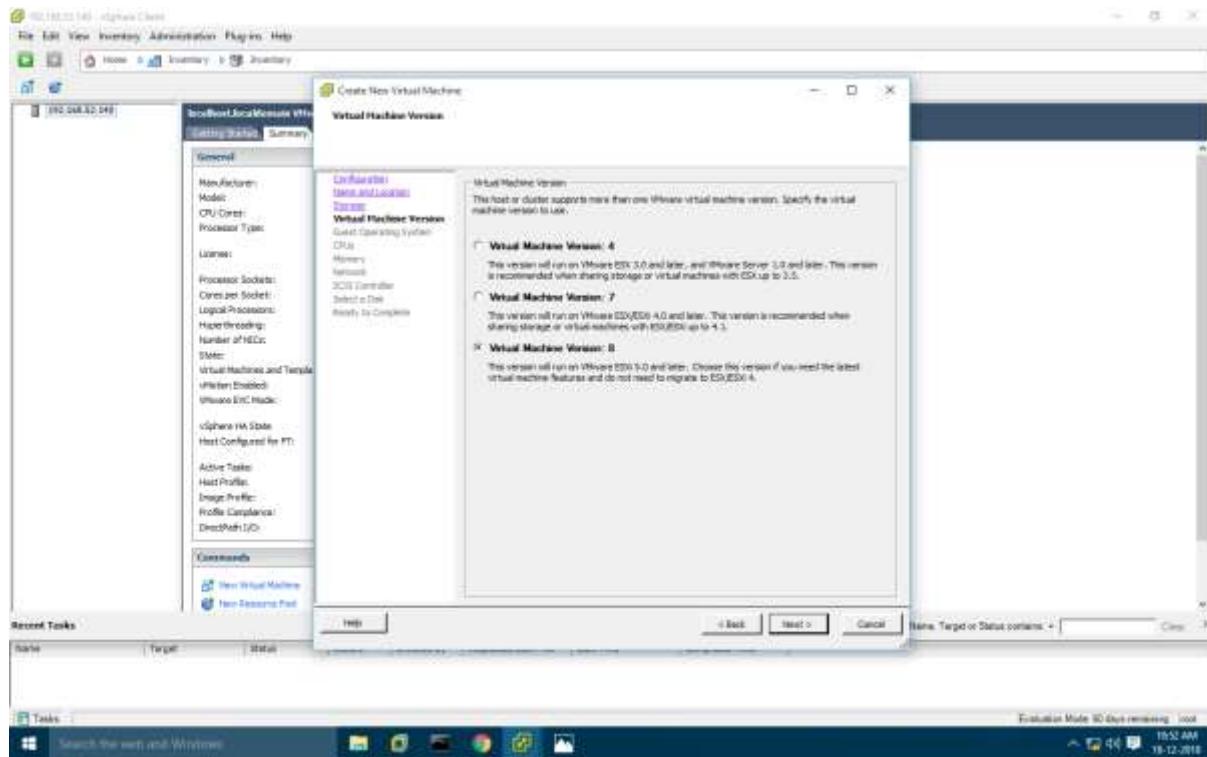
**Name and Location:** Give name to a Virtual Machine(Windows XP)



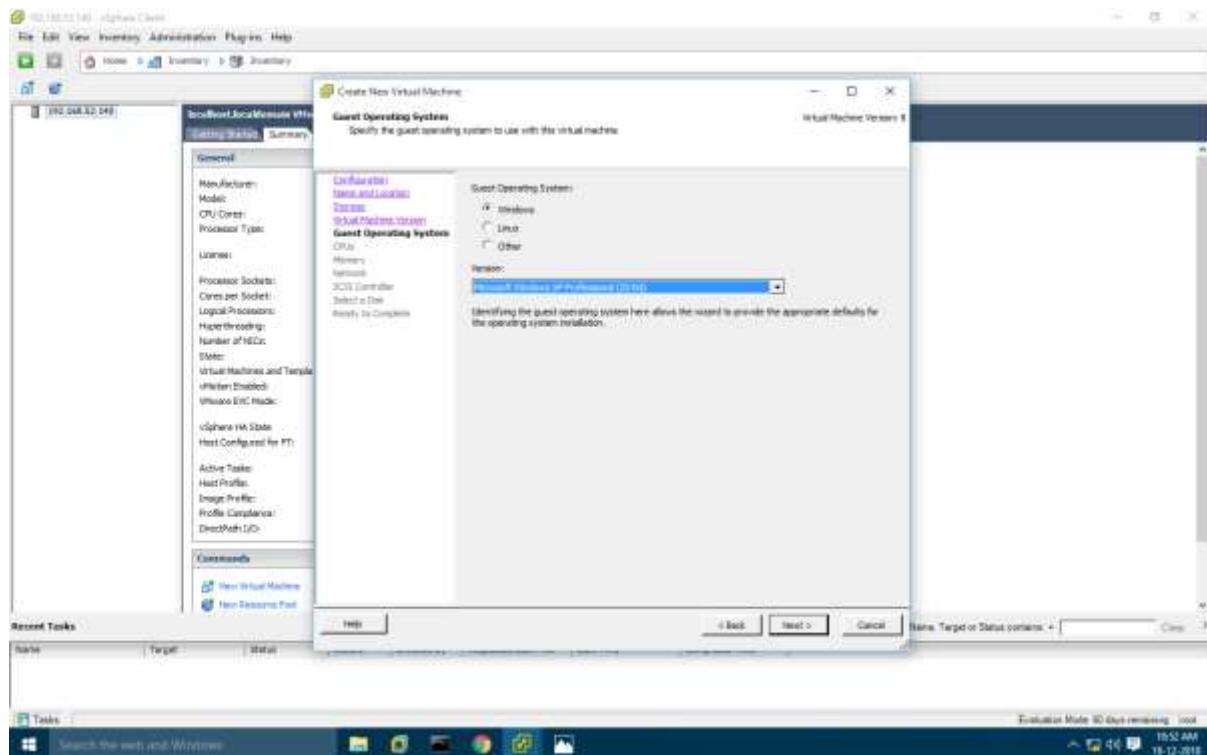
**Storage:** Select datastore1 and click Next



**Virtual Machine version :** Select Virtual Machine version 8

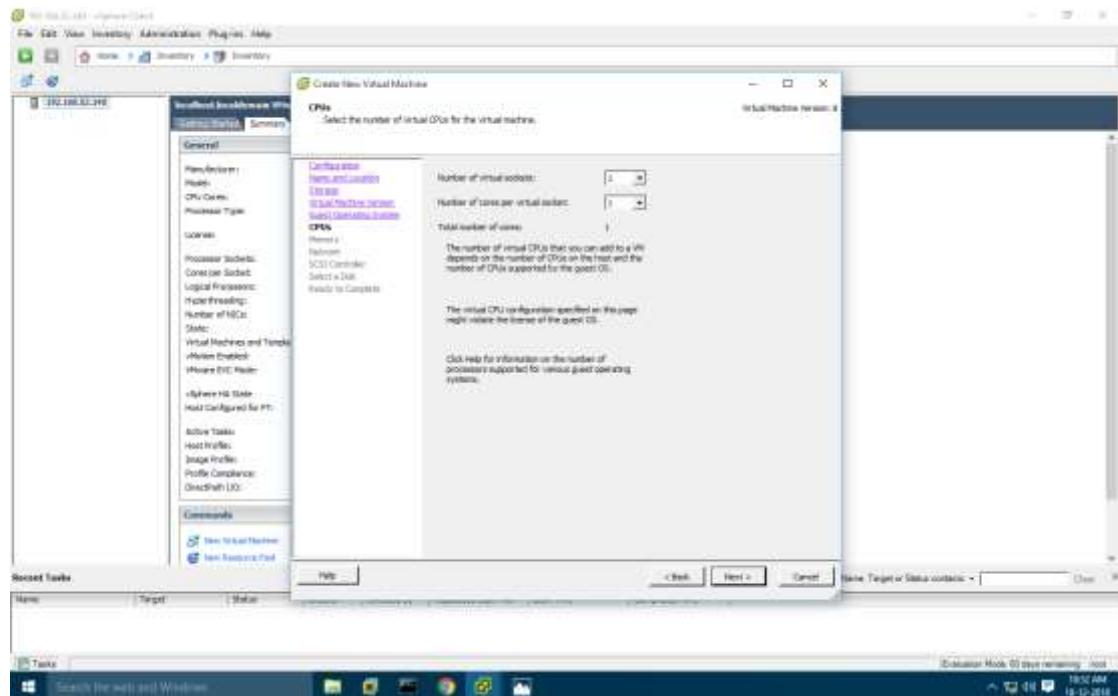


**Guest Operating System:** Windows  
**Version:** Microsoft windows XP Professional (32-bit)

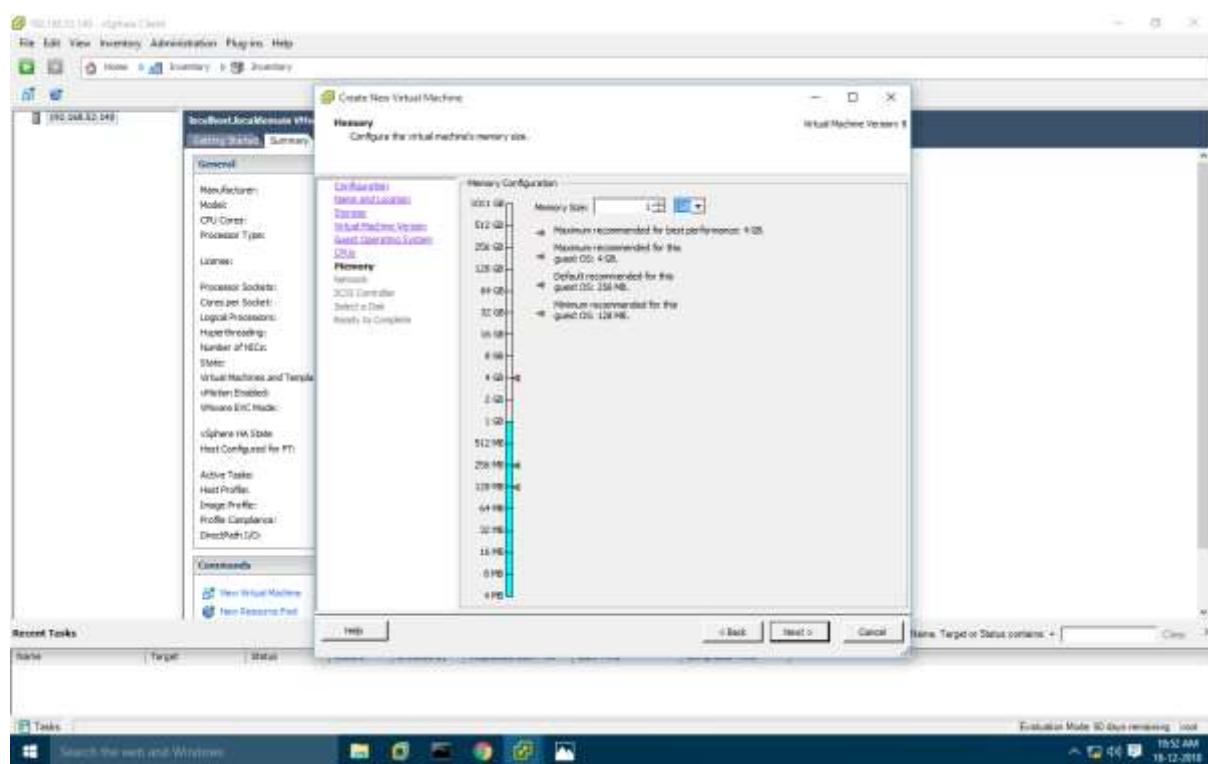


**CPUs :**  
Number of virtual sockets : 1  
Number of cores per virtual socket: 1

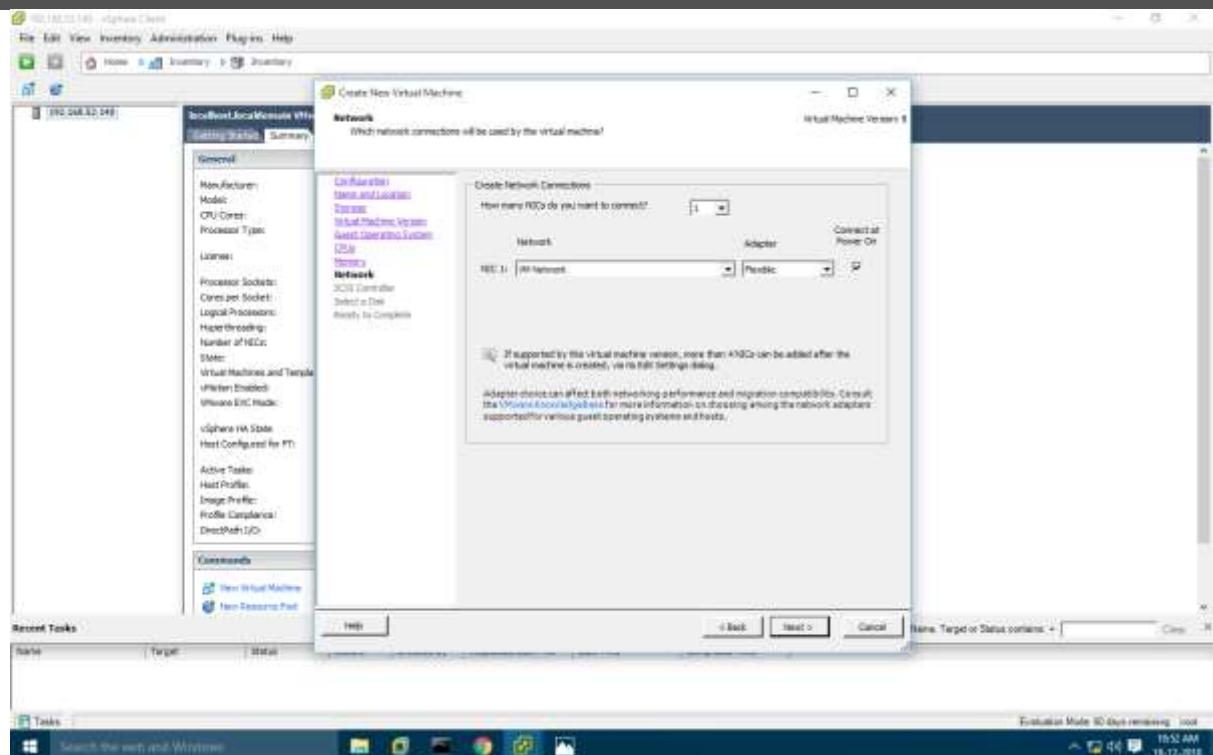
ROLL NO:13, SHAIKH SEEMA ABDUL RASHID, 69



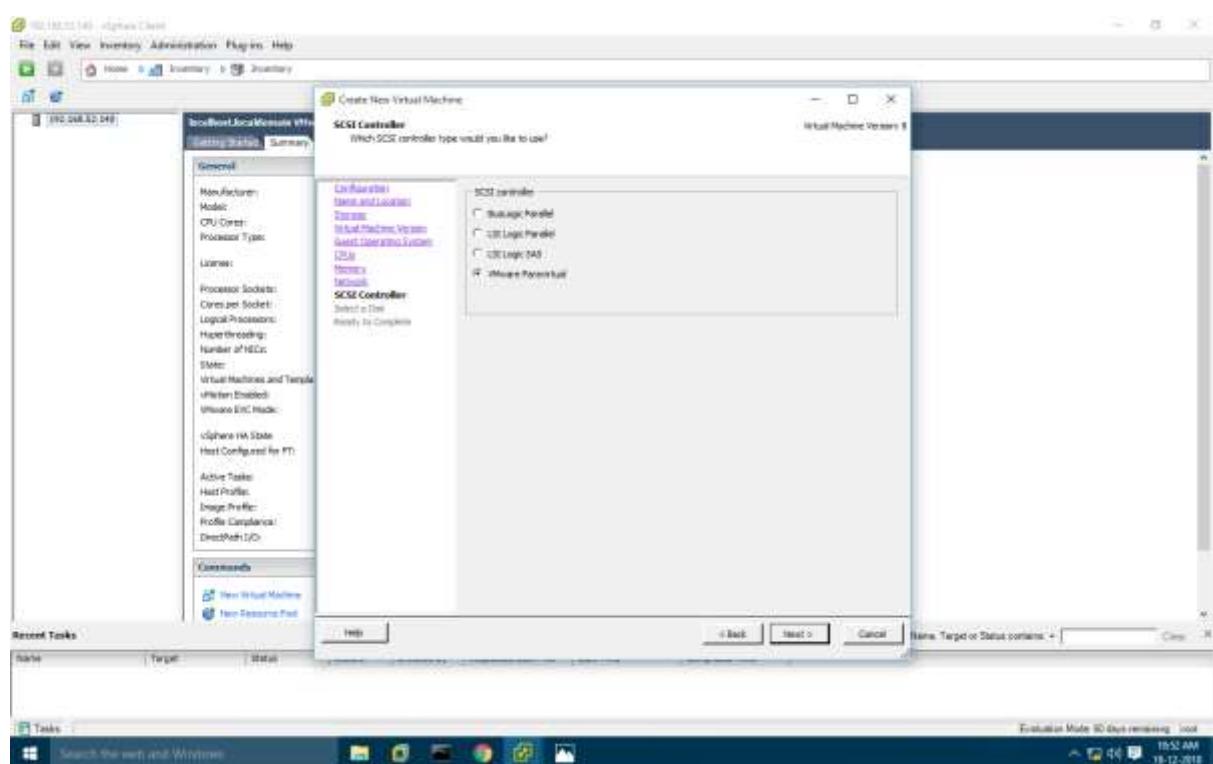
**Memory:** Memory Size : 1 GB



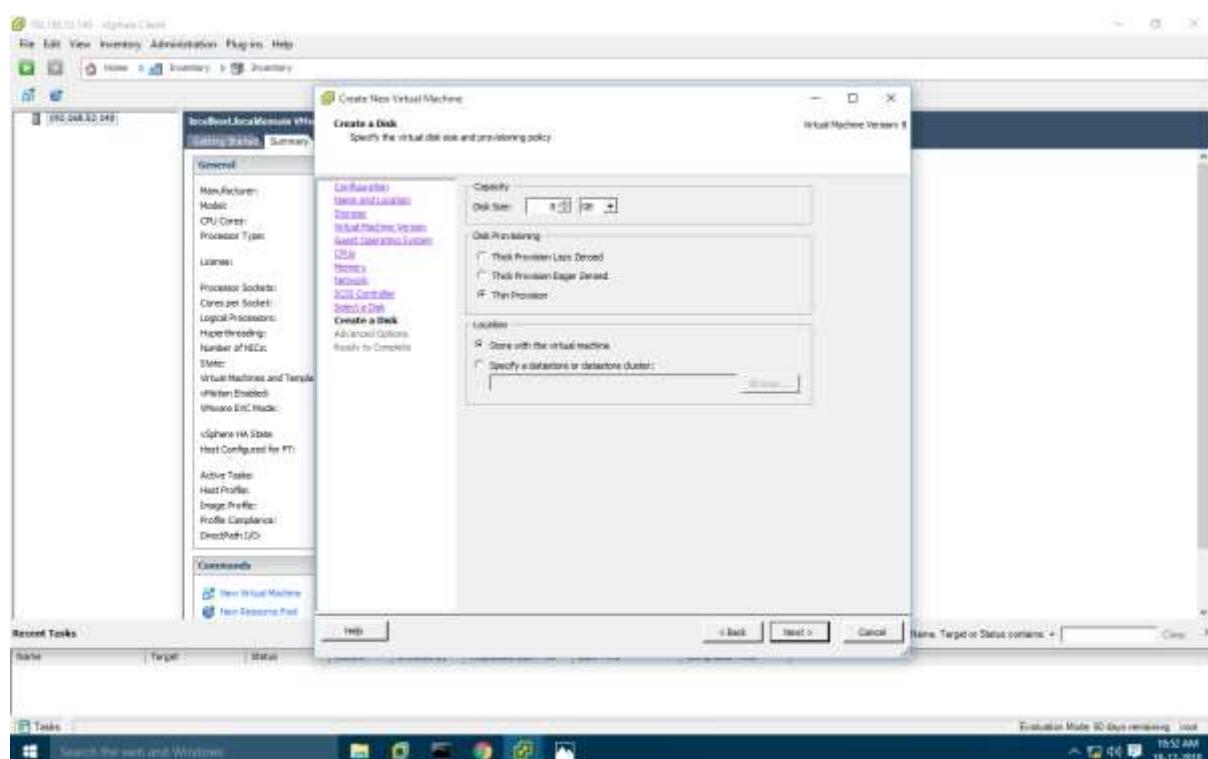
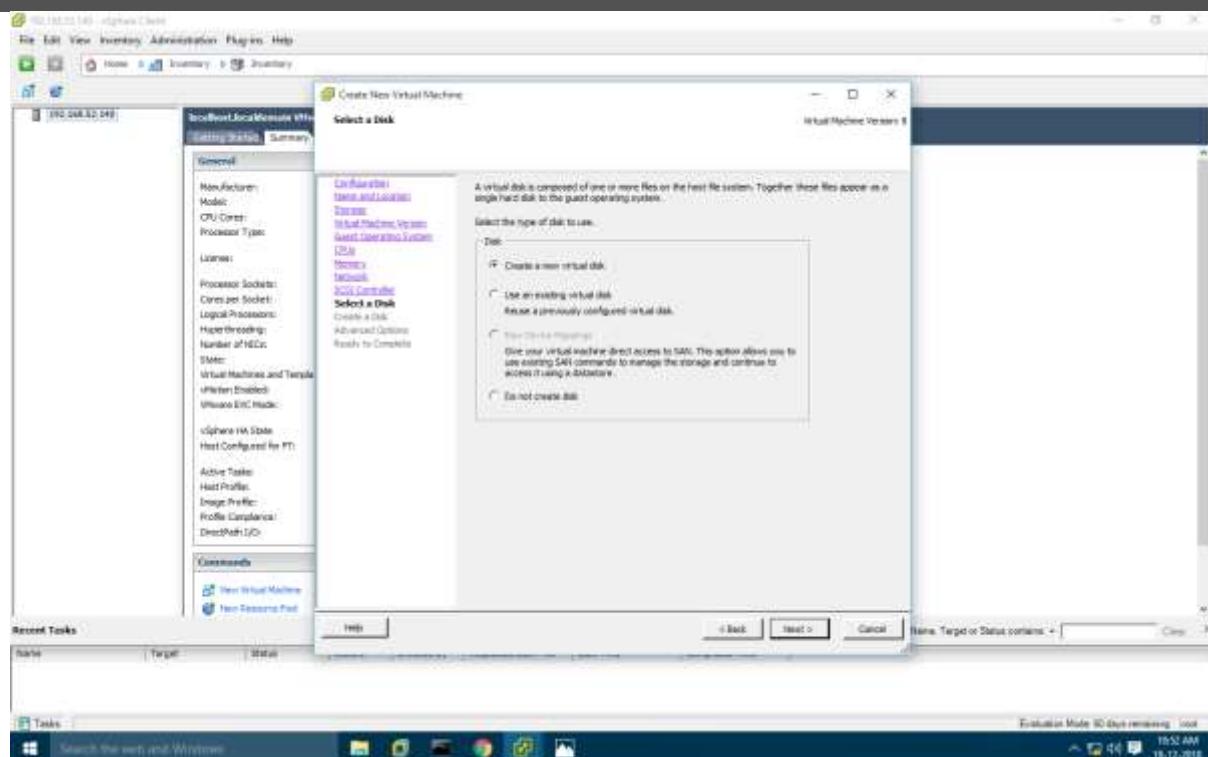
**Network:** Number of NICs : 1

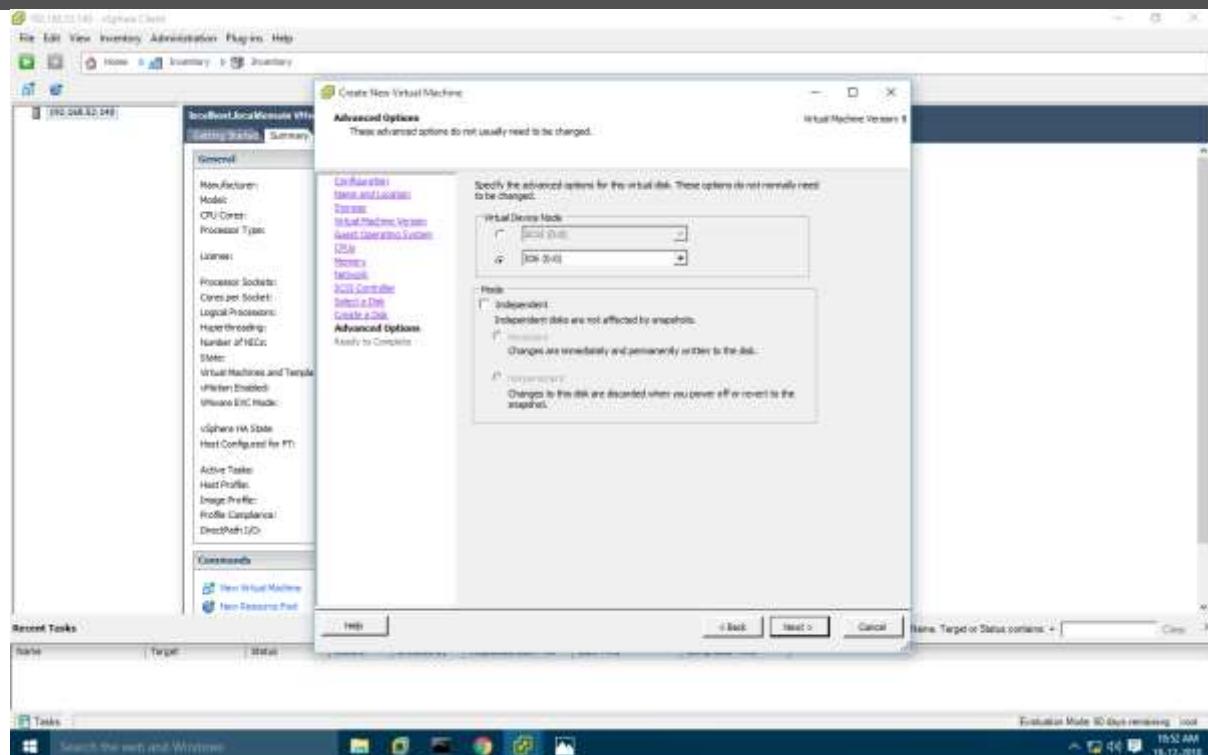


### SCSI Controller : VMware Paravirtual

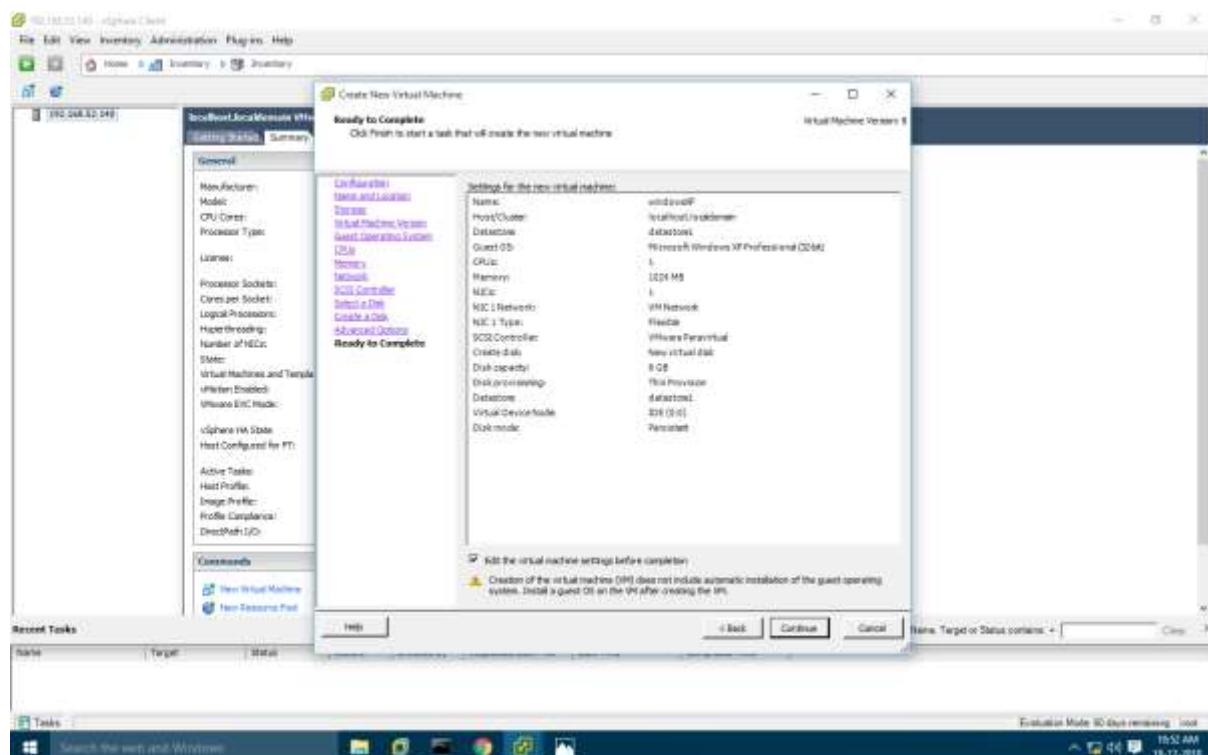


**Select a Disk:** create new virtual disk.

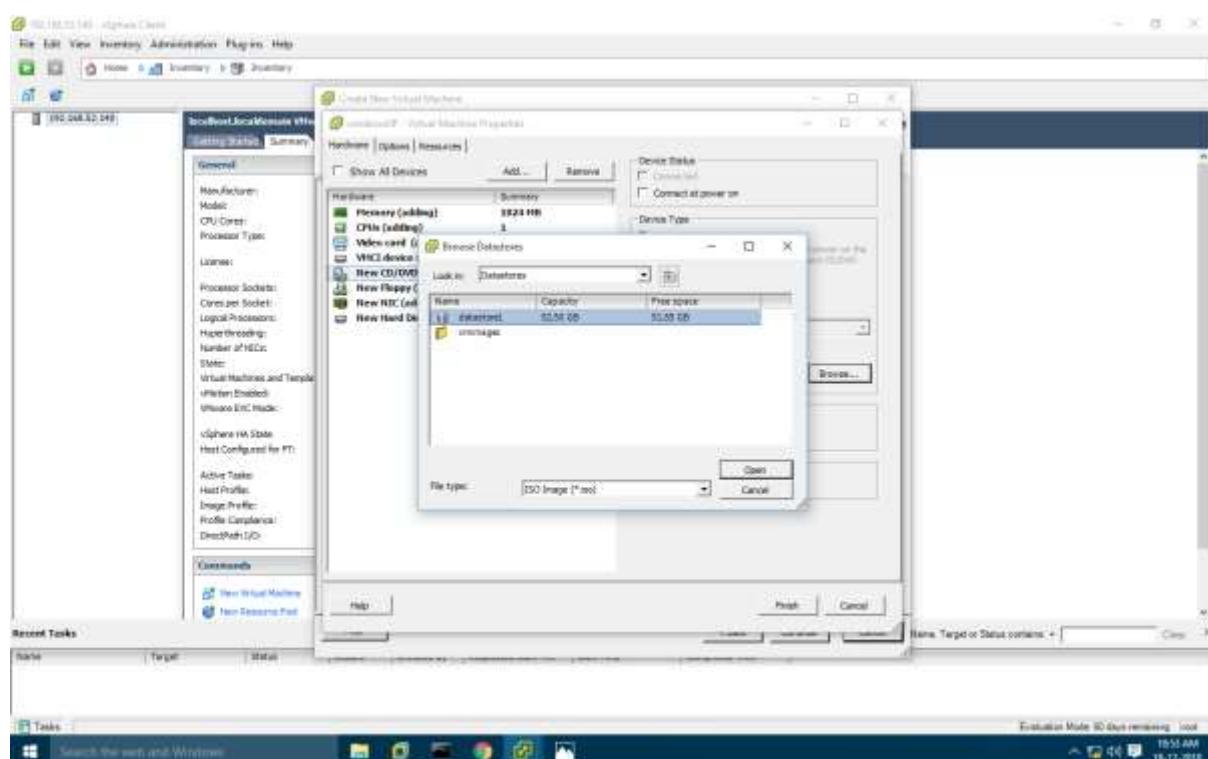
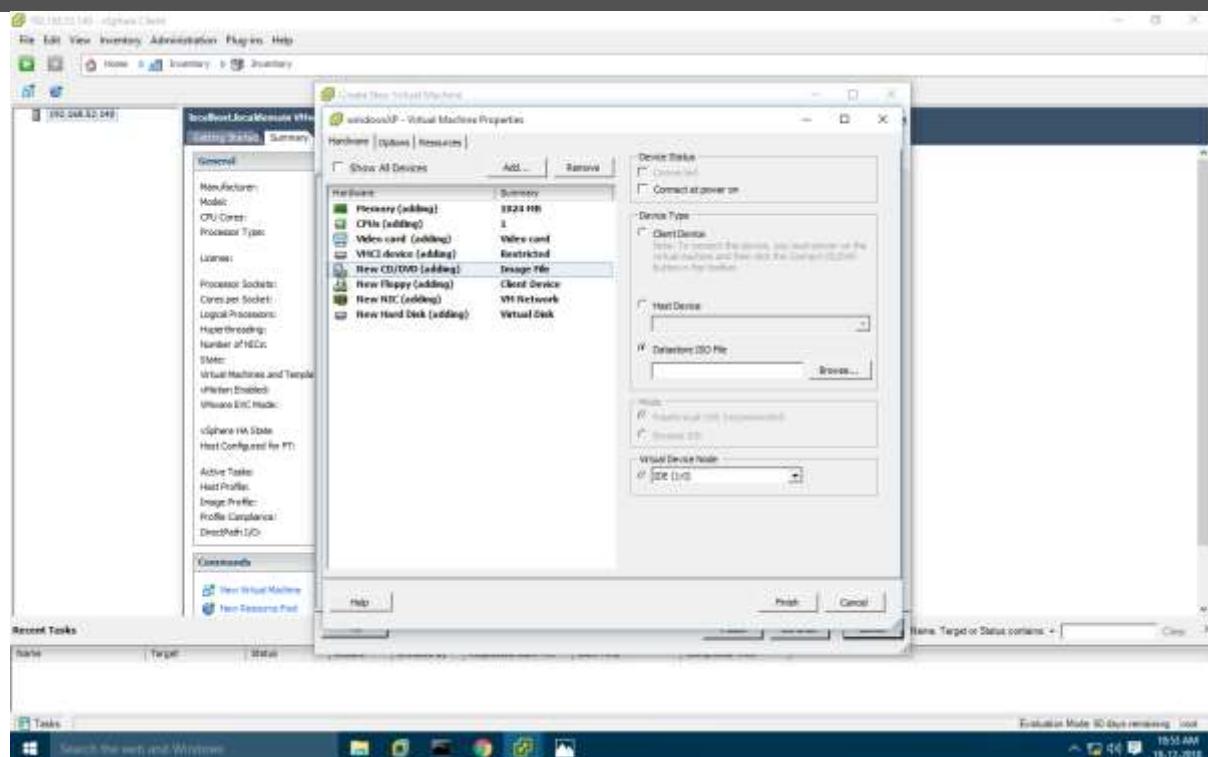


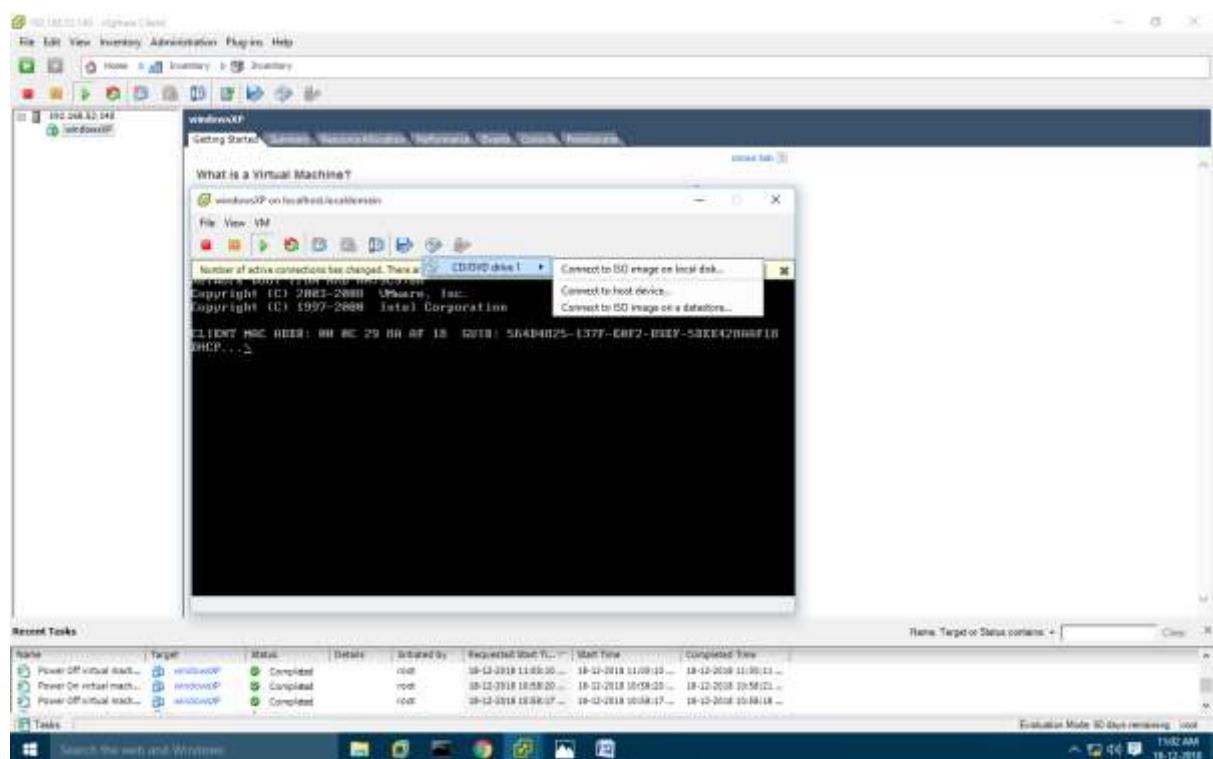
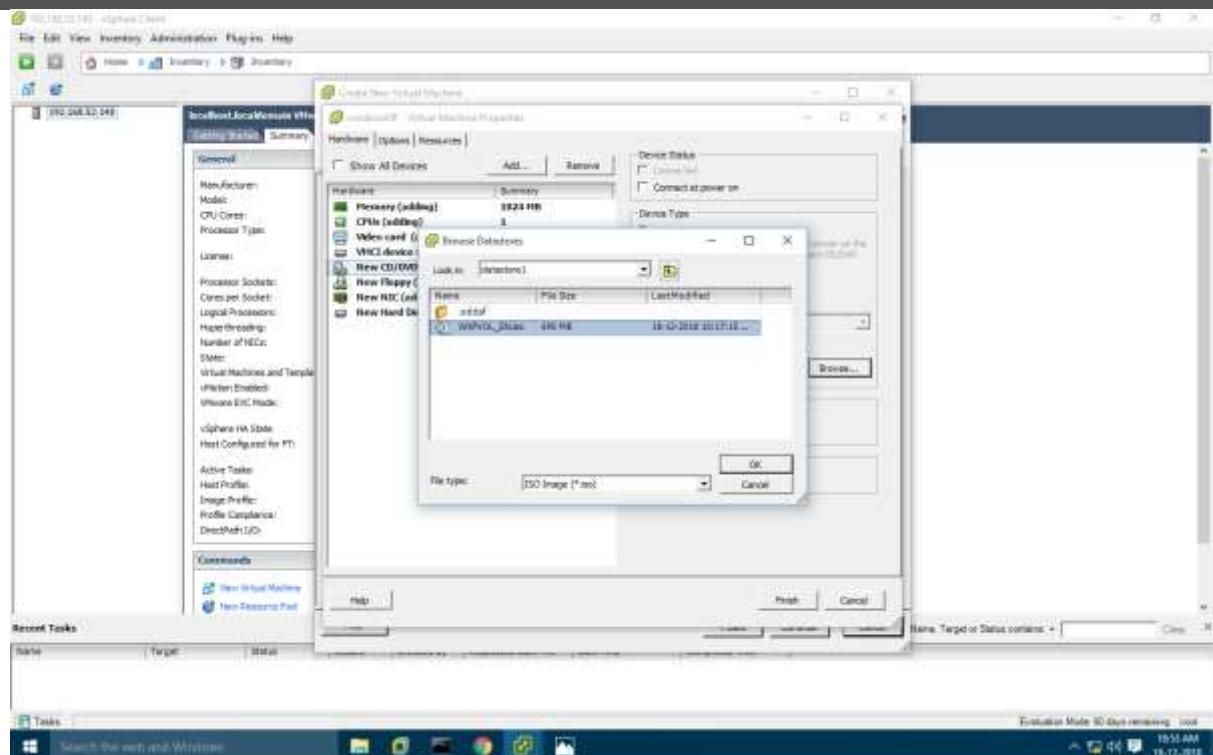


**Click edit**

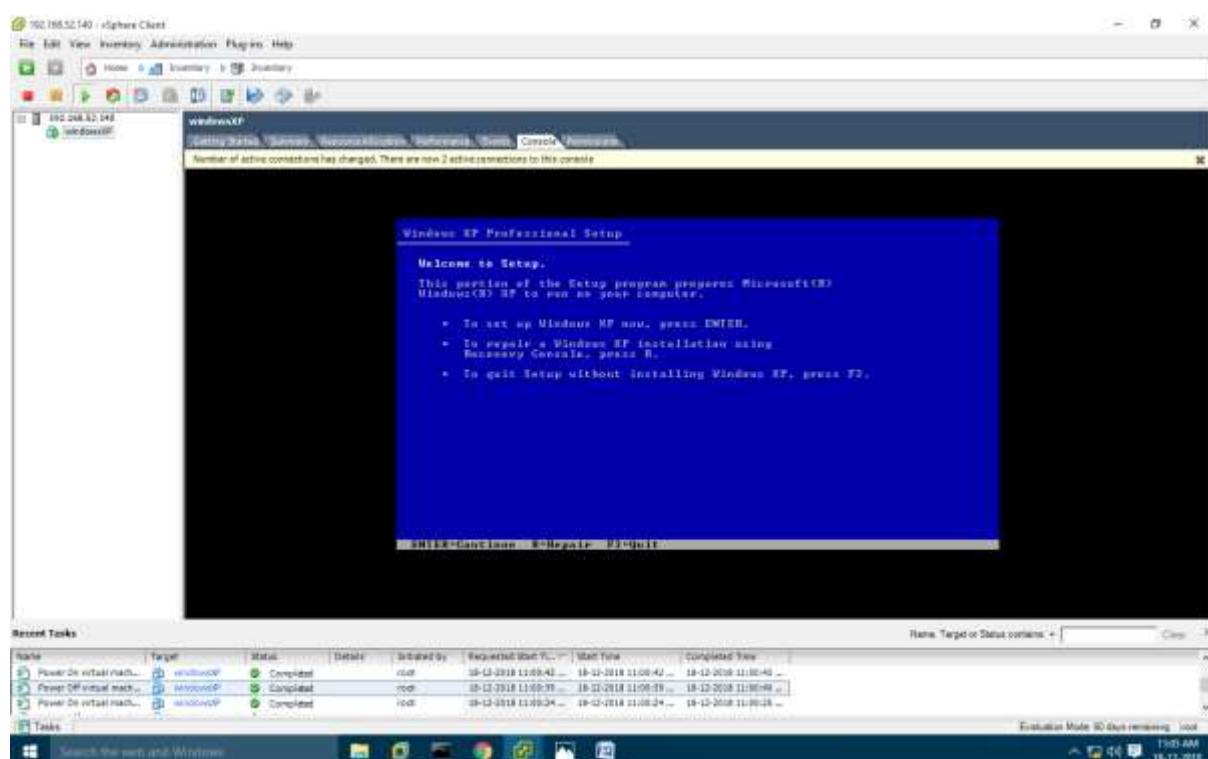
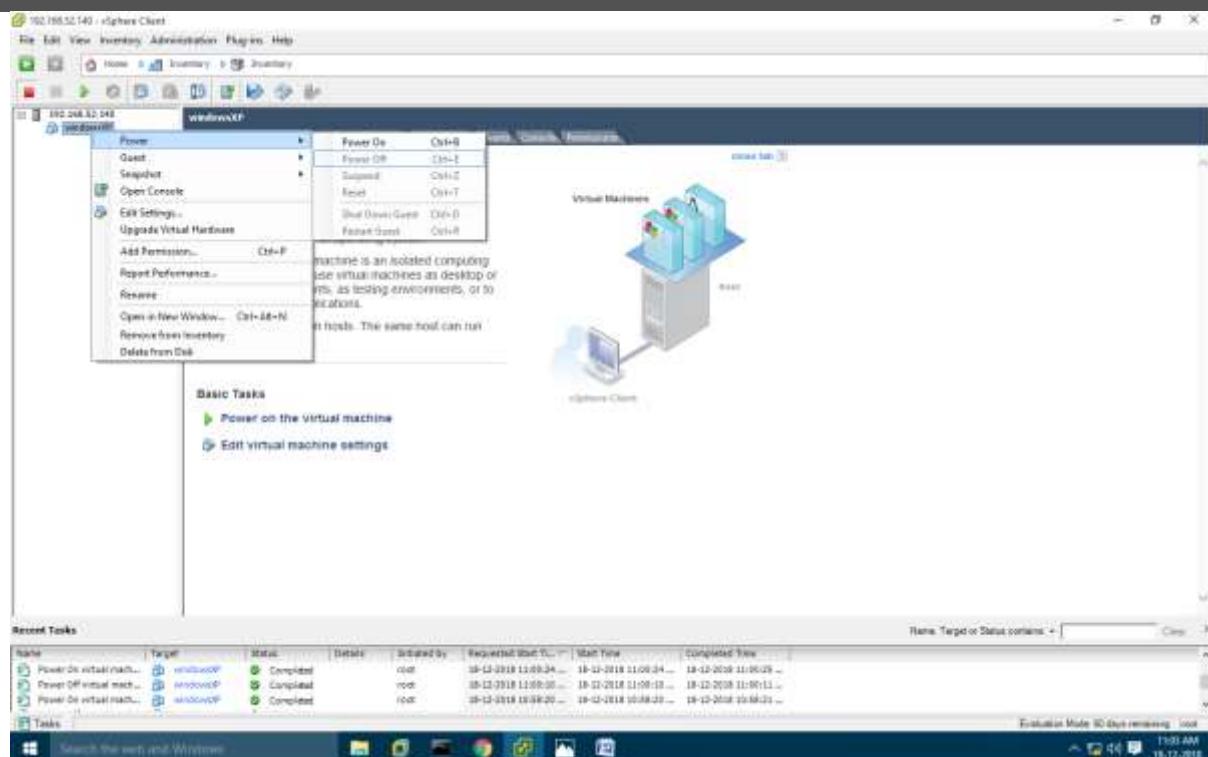


**Click on datastore**





Right Click on **Windows XP >> Power >> Power On**

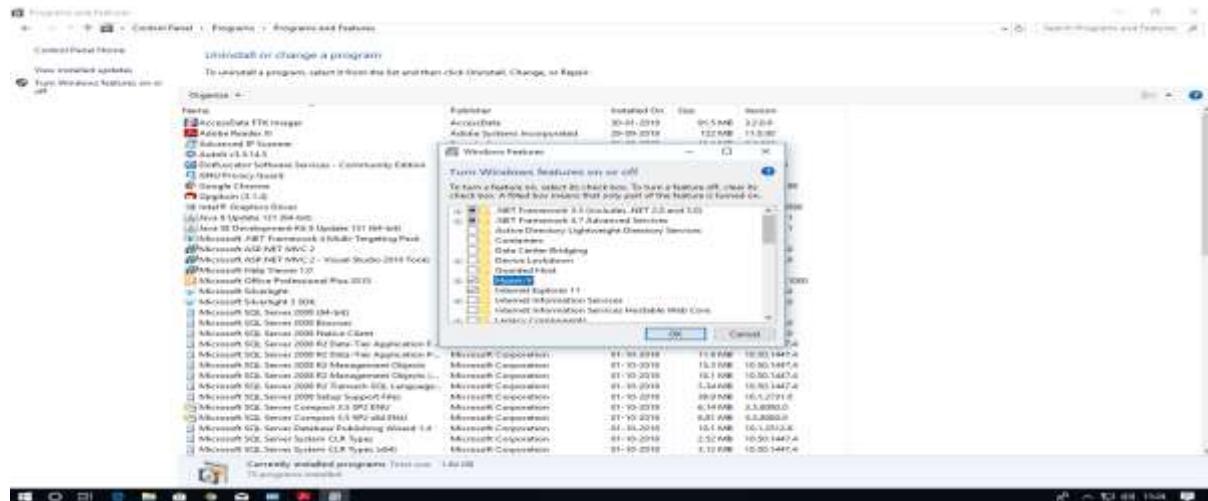


## PRACTICAL: 6

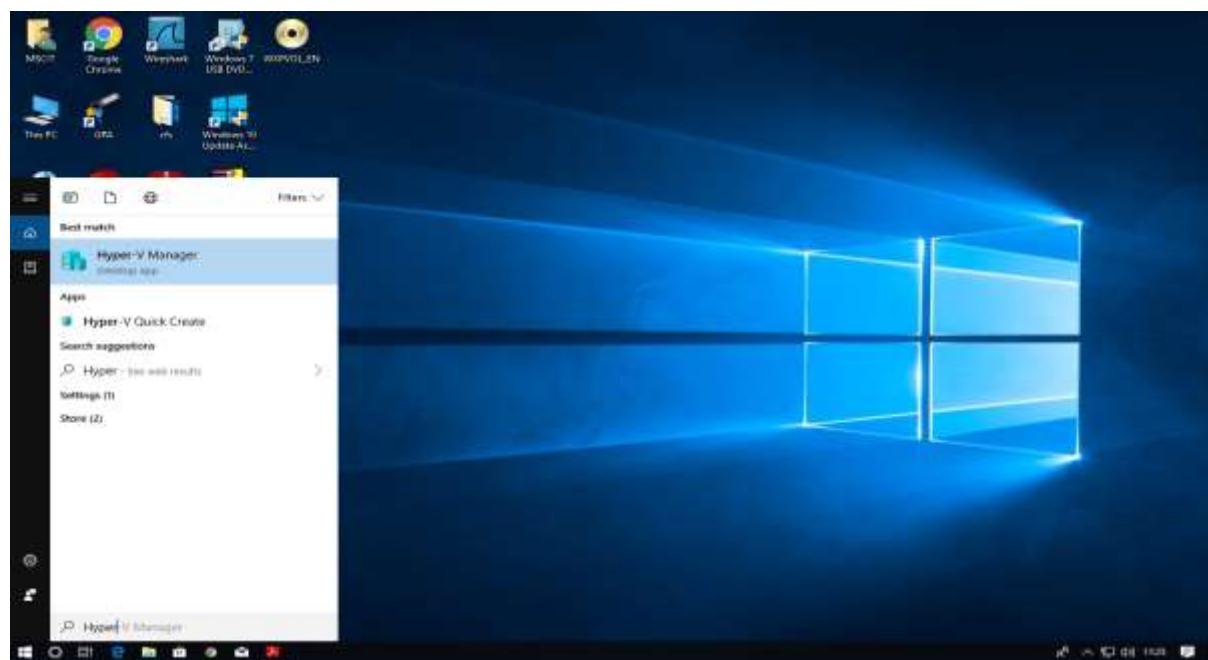
### NATIVE VIRTUALIZATION USING Hyper-V

First we have to uninstall vmware software if already installed on computer because the VMware Workstation installer does not support running on a Hyper-V virtual machine.

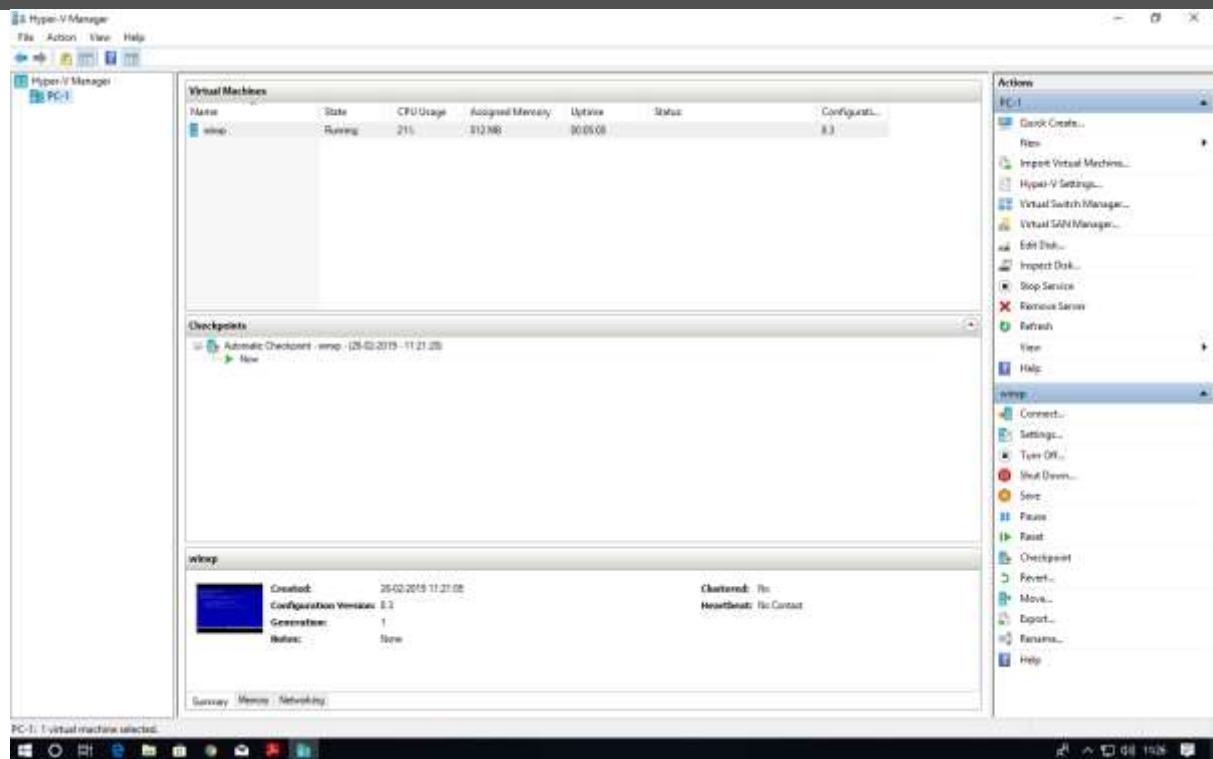
After uninstalling VMware, we can proceed to next step - go to control panel and click on uninstall a program



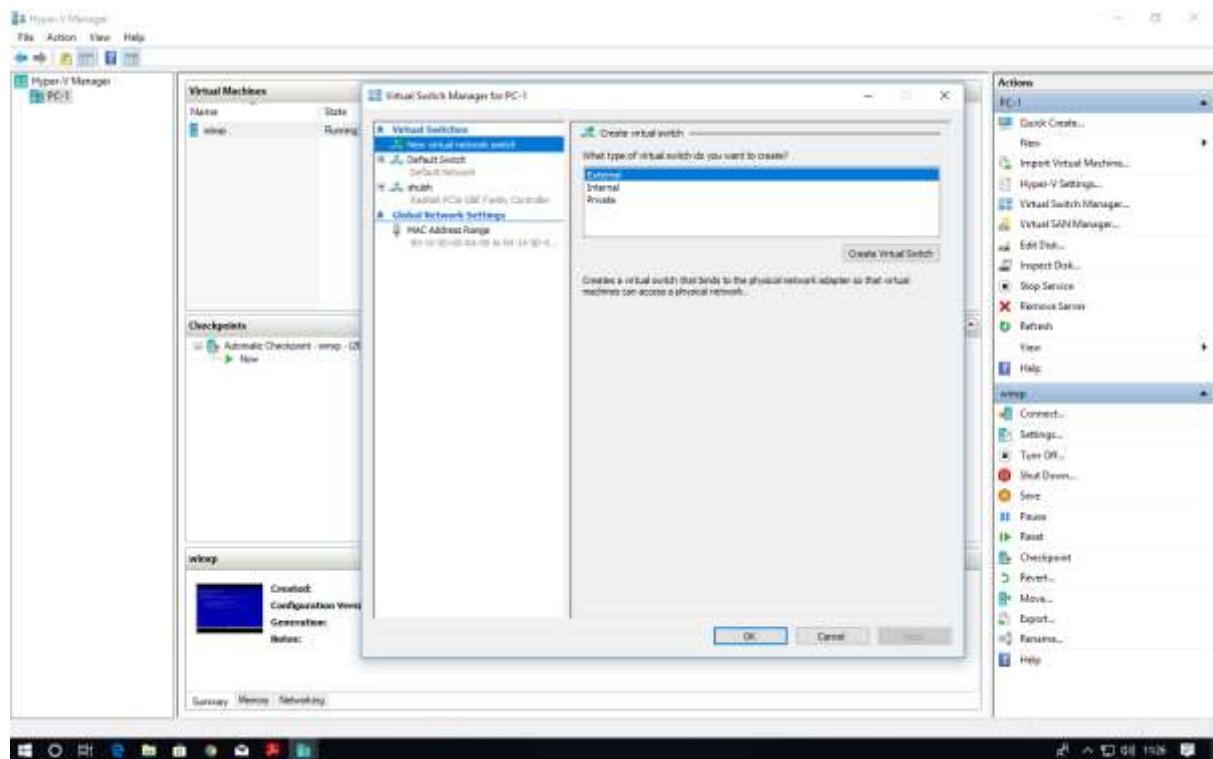
After Restart **Search for hyper-v manager in search box and open.**



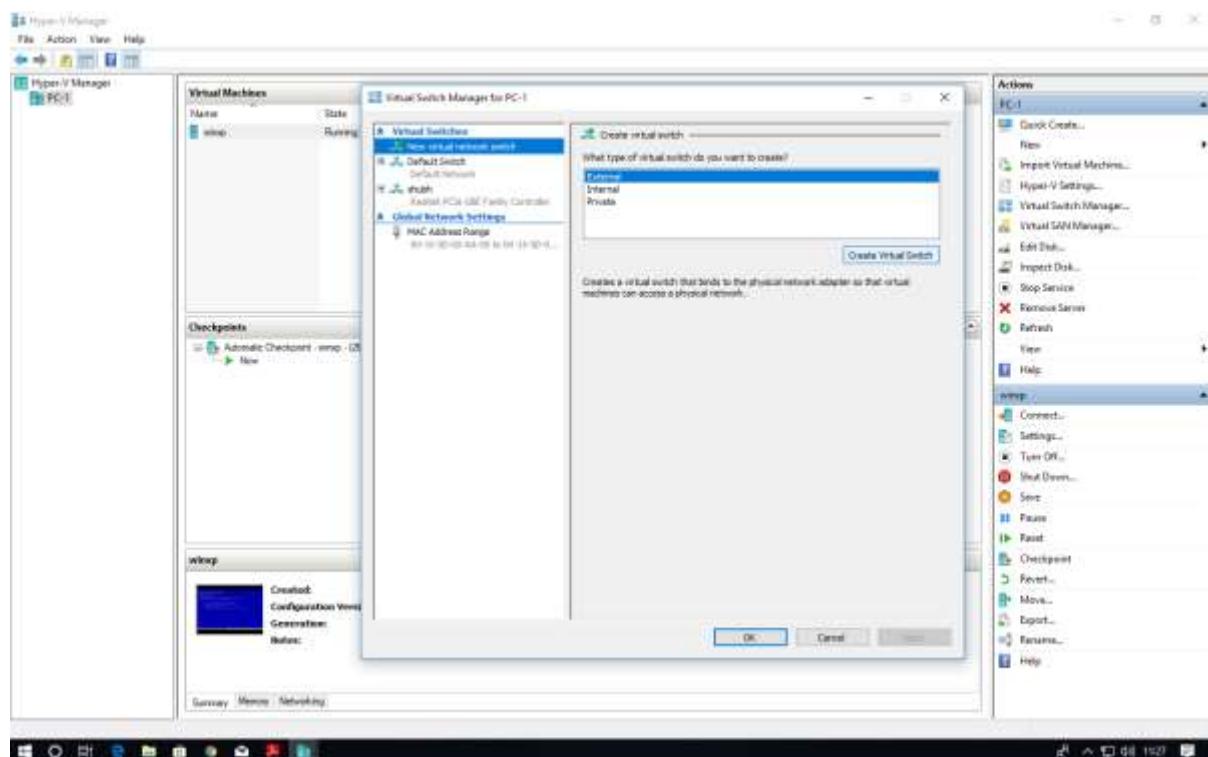
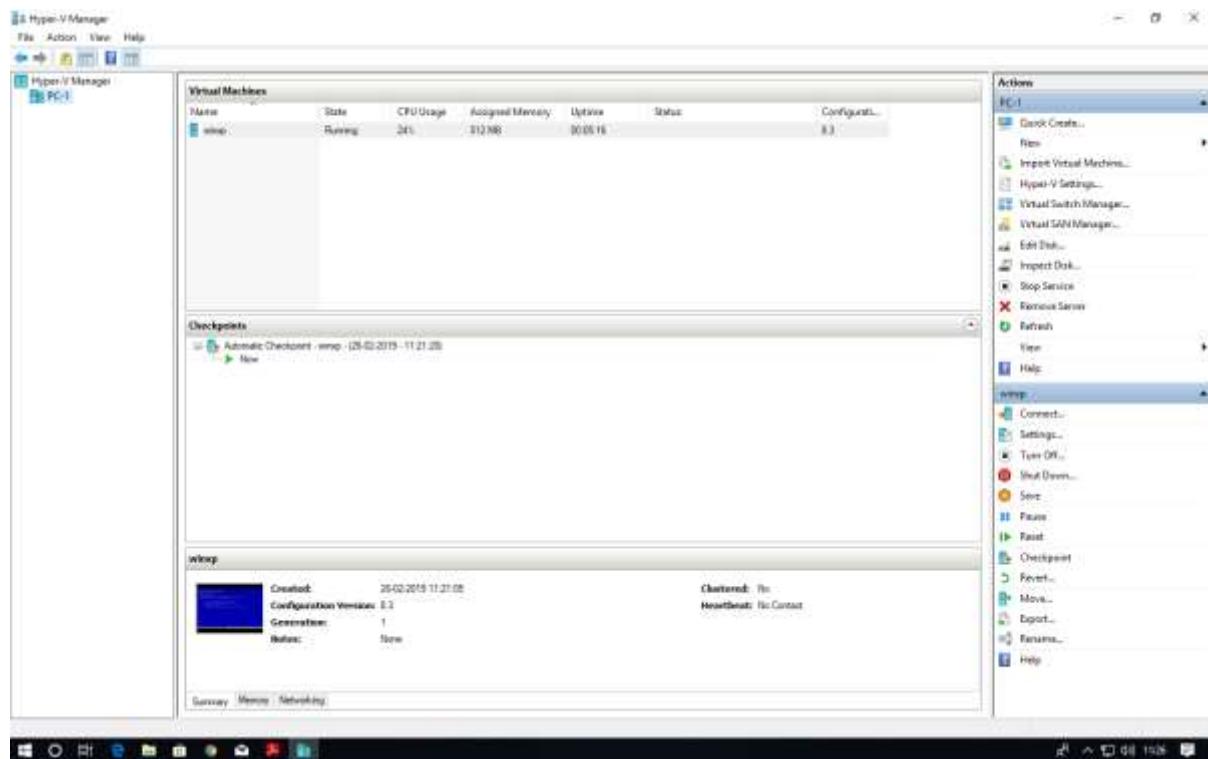
**for creating virtual machine first we have to create virtual switch**  
click on virtual switch manager option

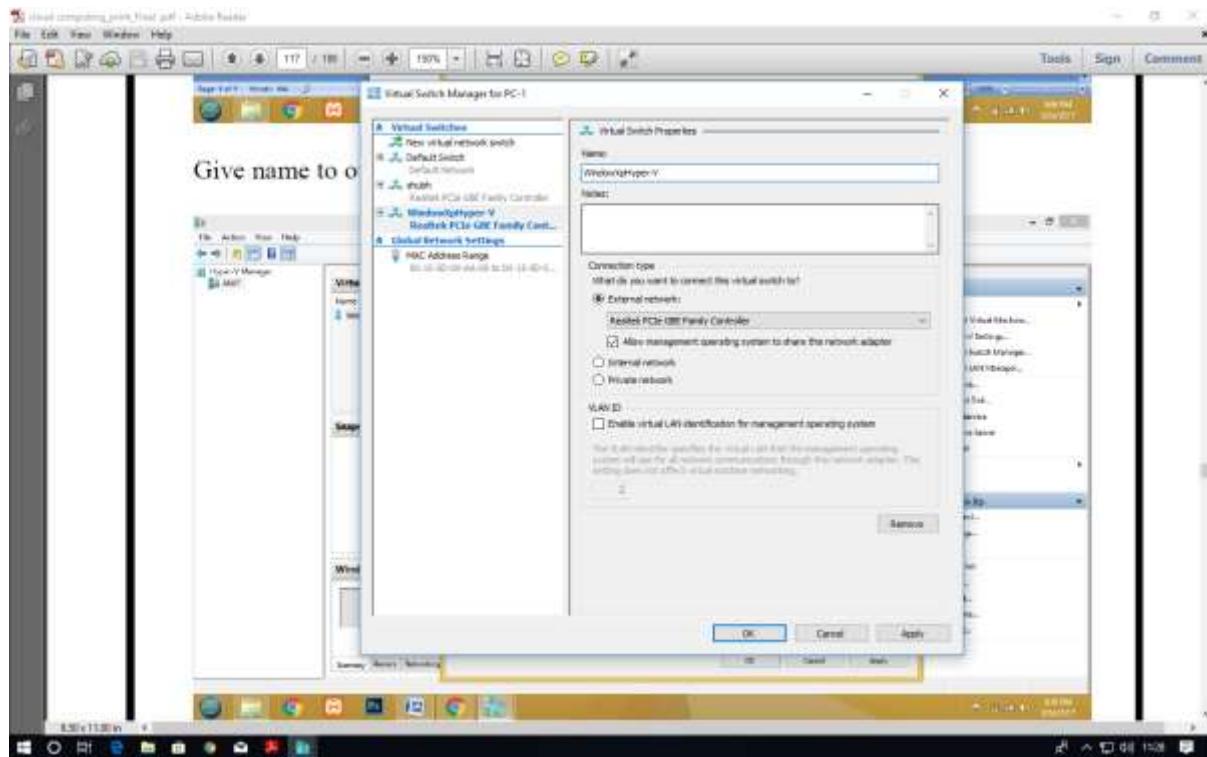


Select External as a connection type and then click on create virtual switch

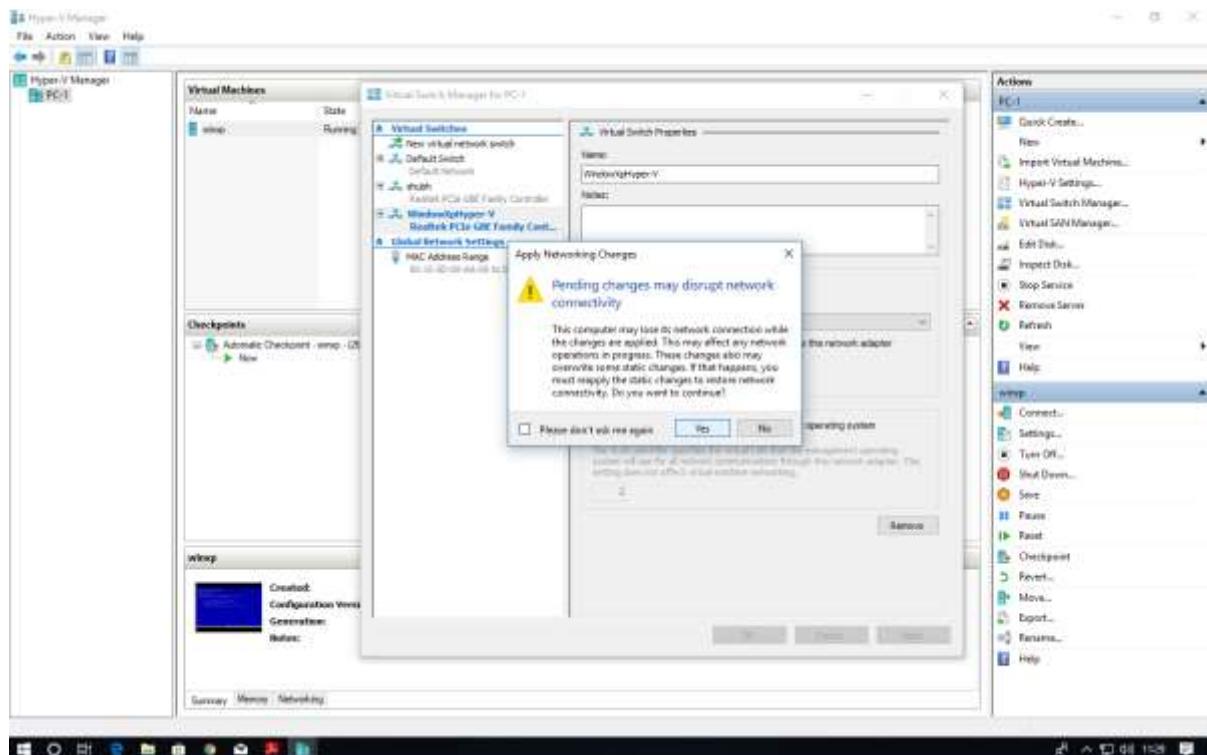


Give name to our virtual switch then click on apply button

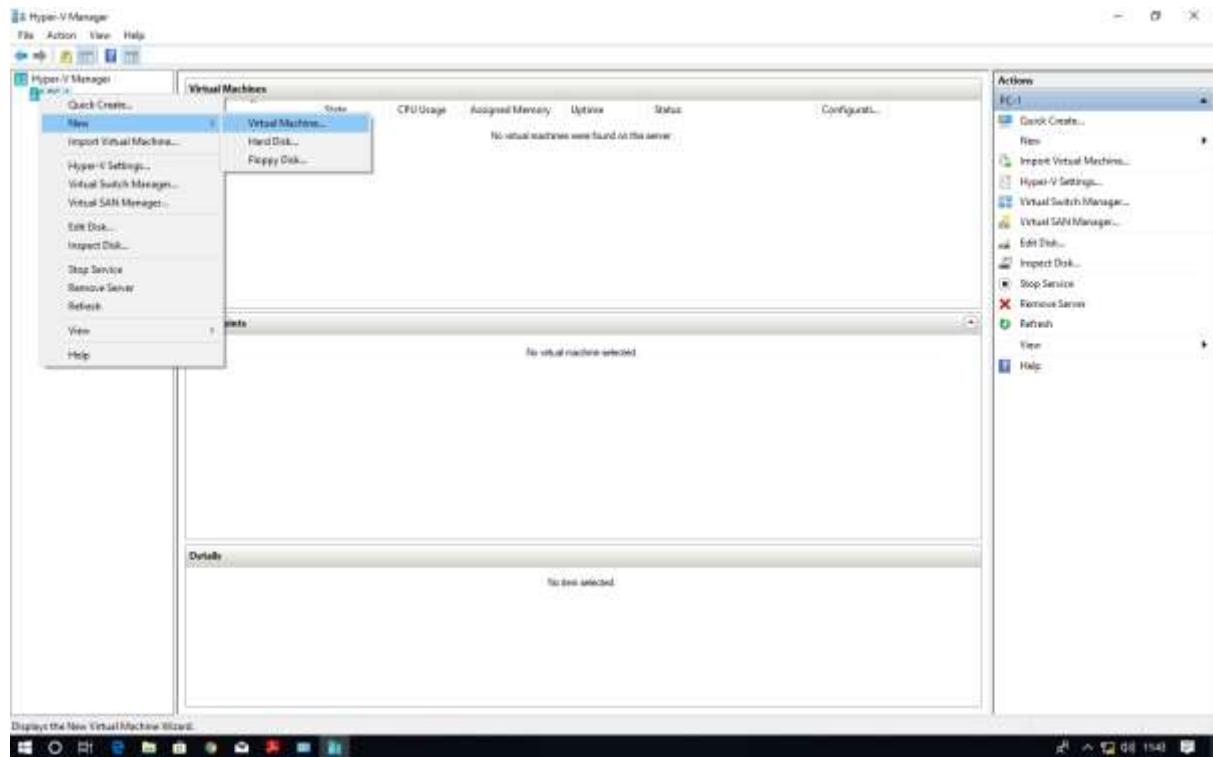




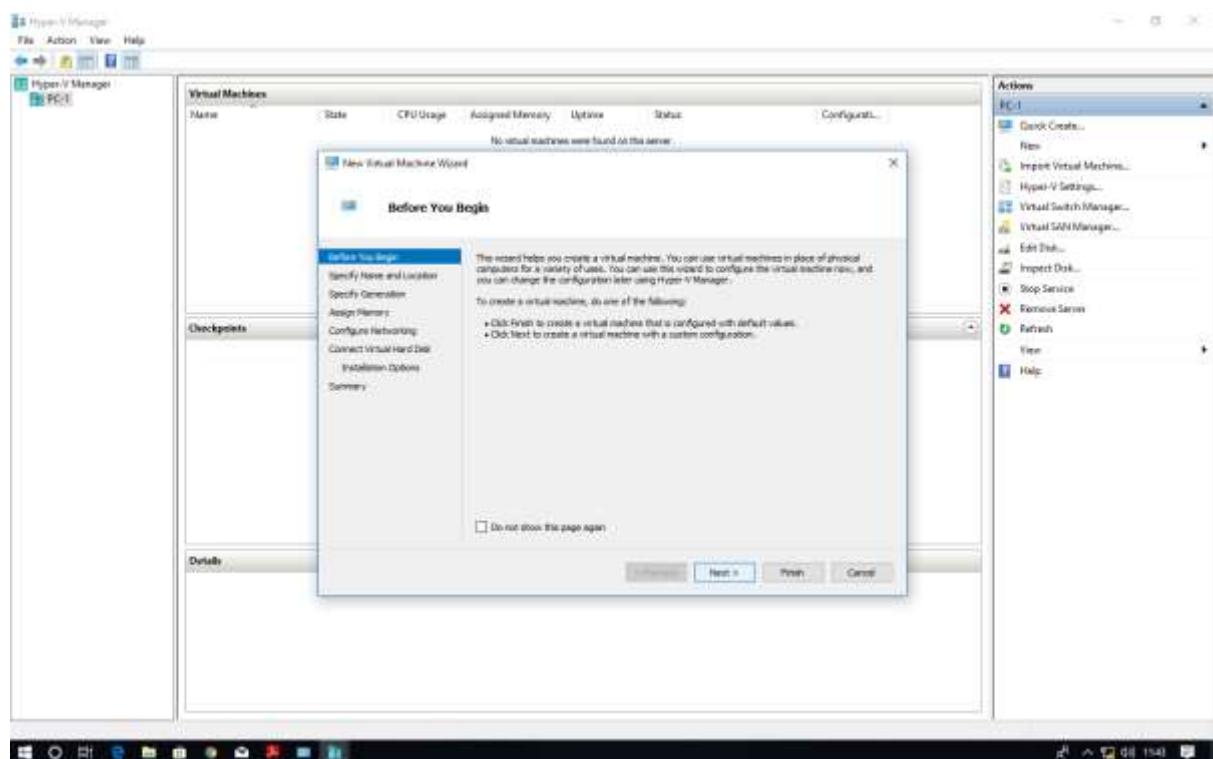
after click on **Apply button** it will show warning about our connection  
click on **yes**



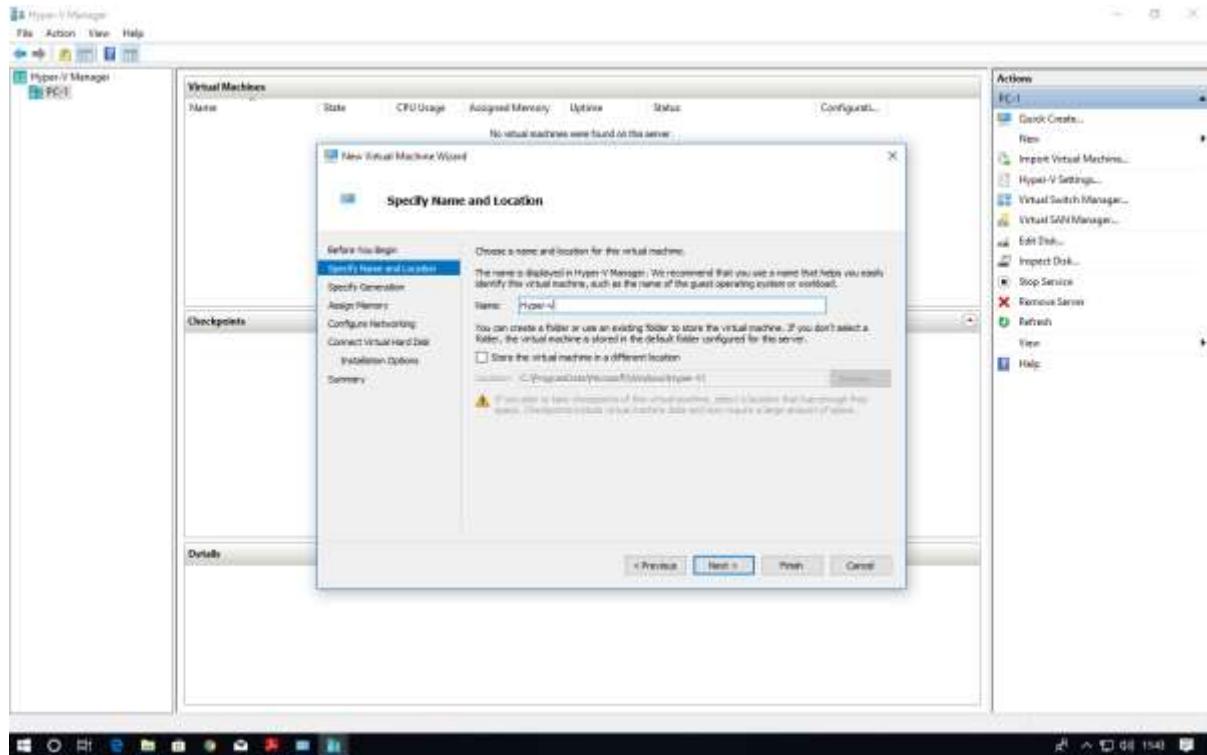
Now right click on server and select new virtual machine



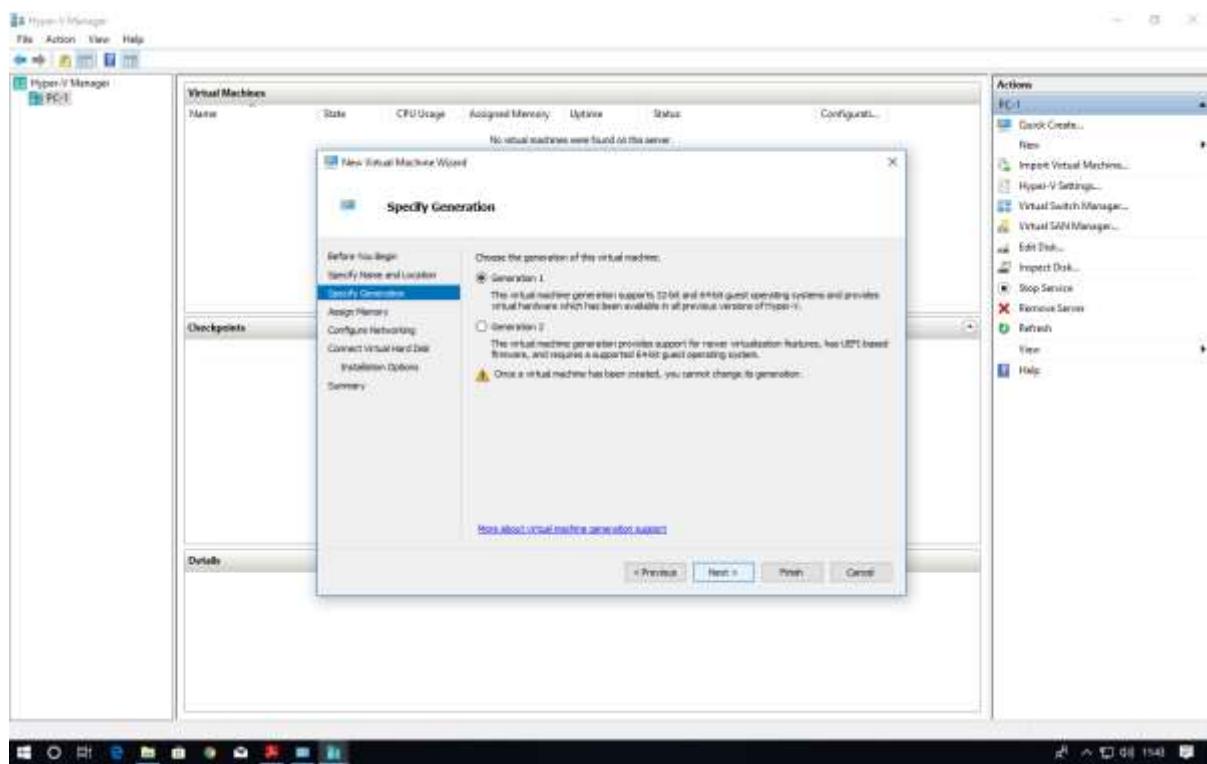
click on **next button**



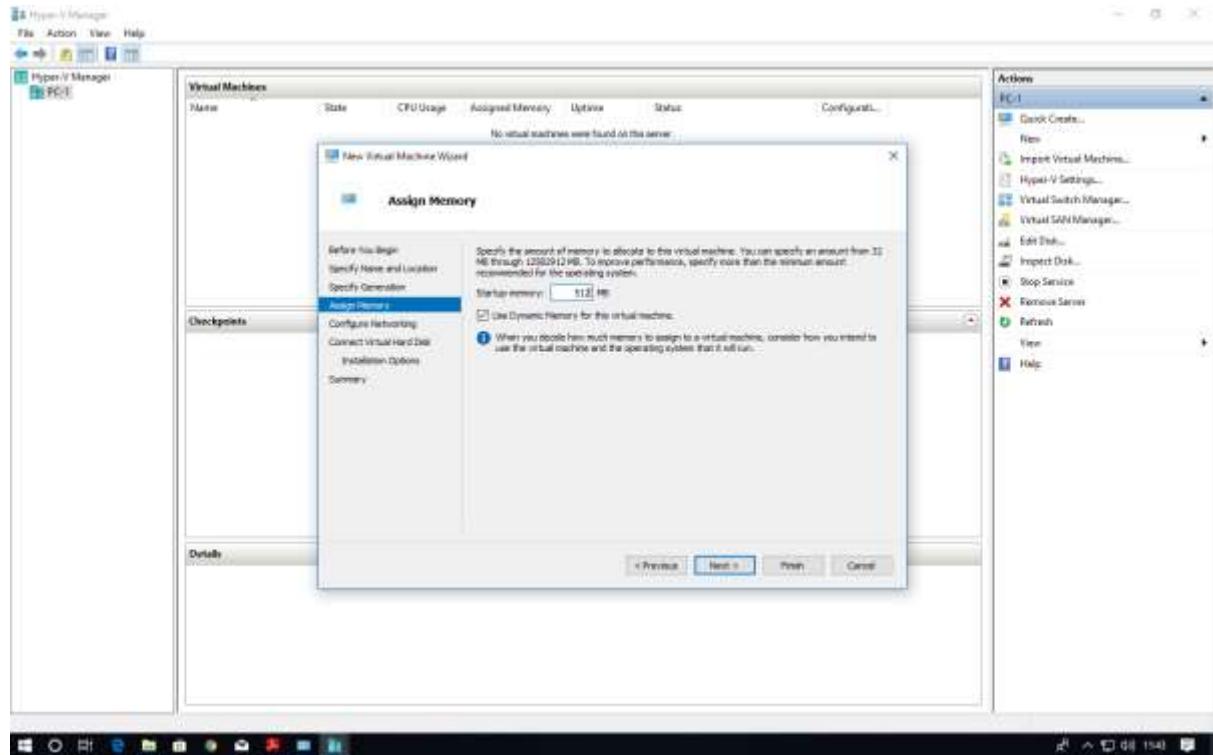
Provide **name** to virtual machine then click on **Next** button



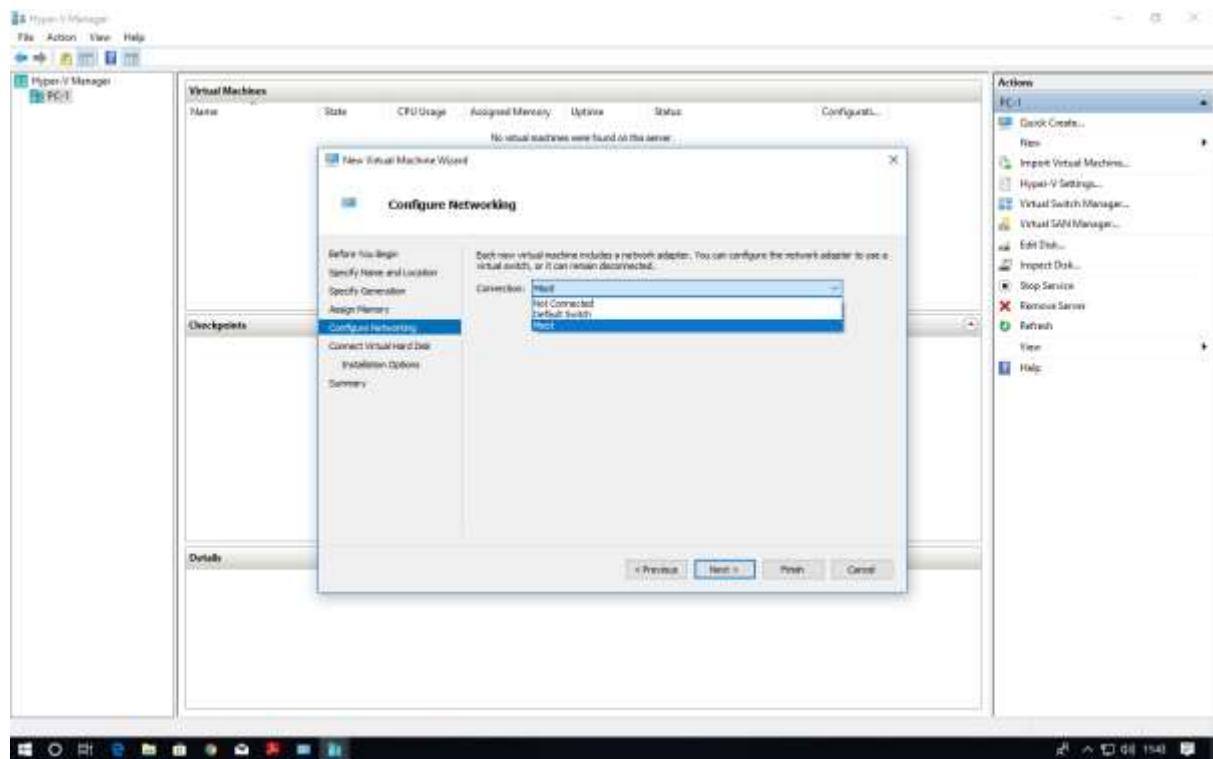
### Specify generation : generation 1



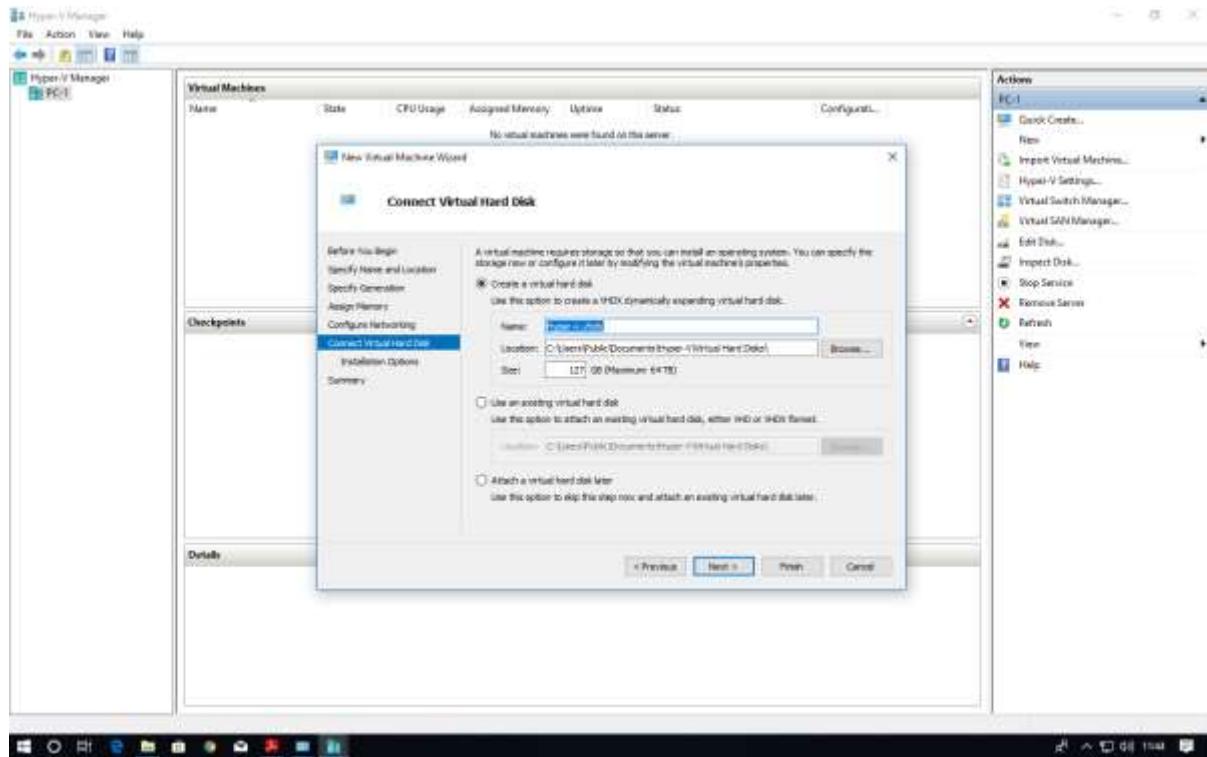
tick on use dynamic memory for this virtual machine



Select switch which we created earlier for our virtual machine from drop-down list and then click on next

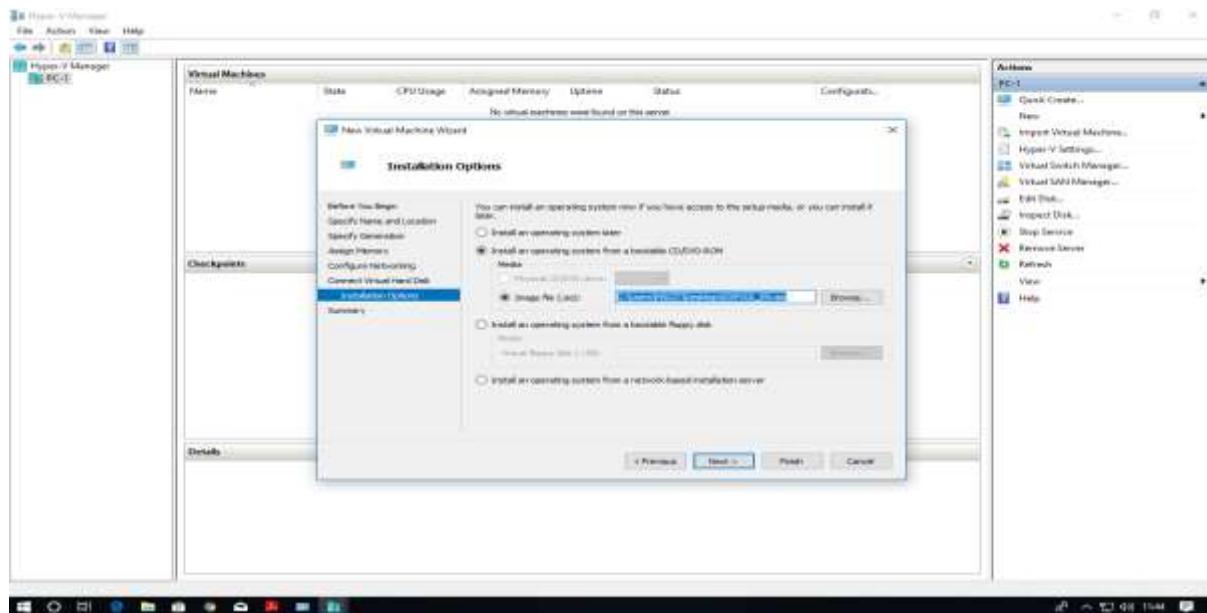


Description of virtual machine and location where it will store virtual machine related files and size require for this machine click on next

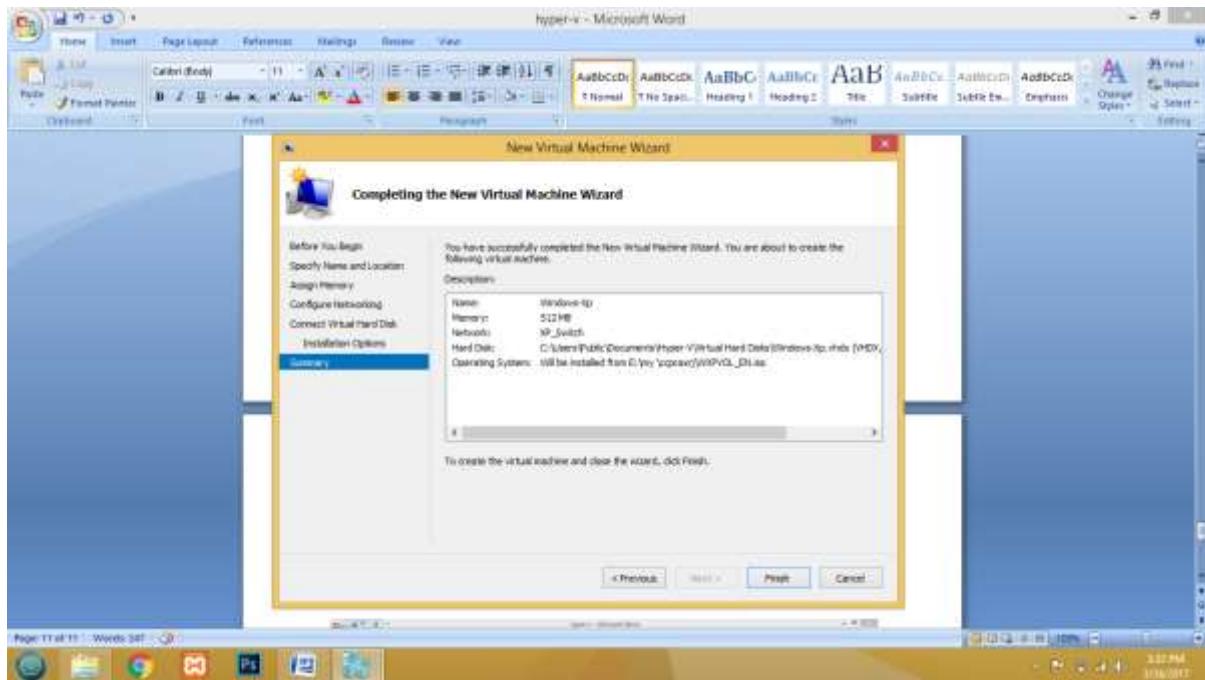


New virtual machine wizard panel will appear, where we will choose operating system which we want to install on virtual machine

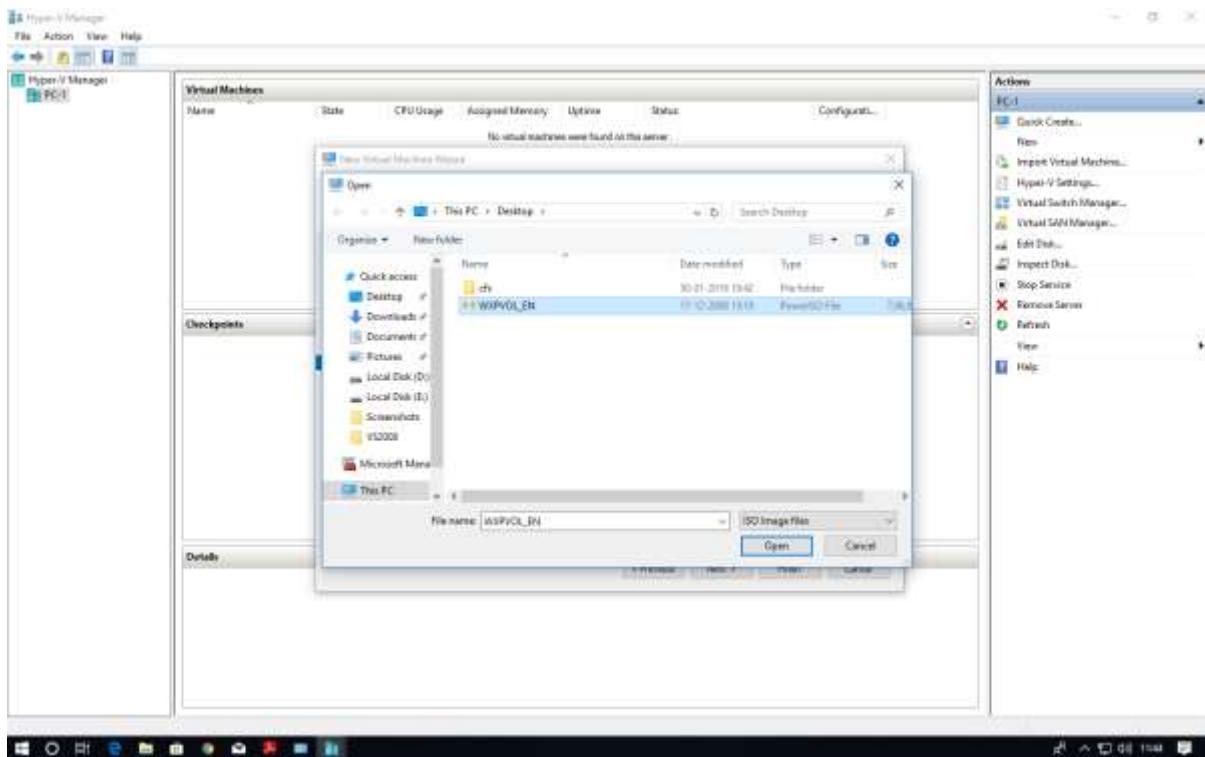
select install an operating system from boot CD/DVD-ROM and then select Image file(.iso) and browse our OS iso file then click on next button



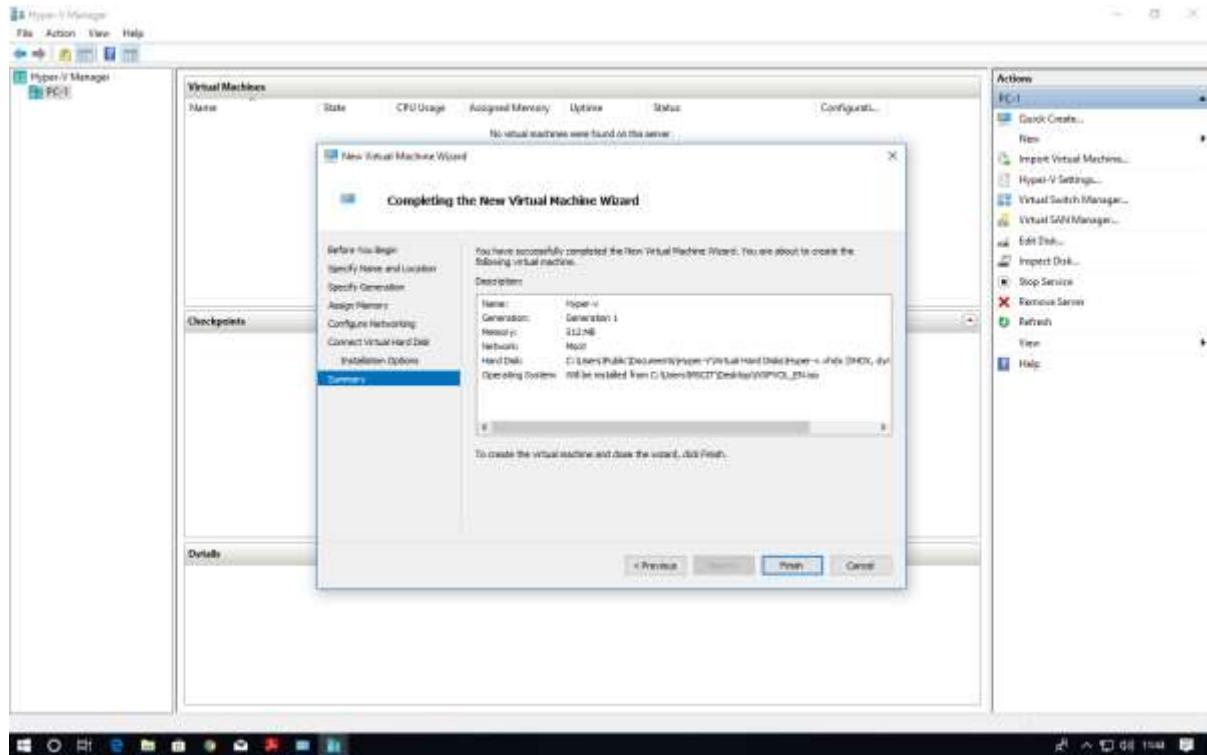
Summary report will be generated about virtual machine then click on Finish button



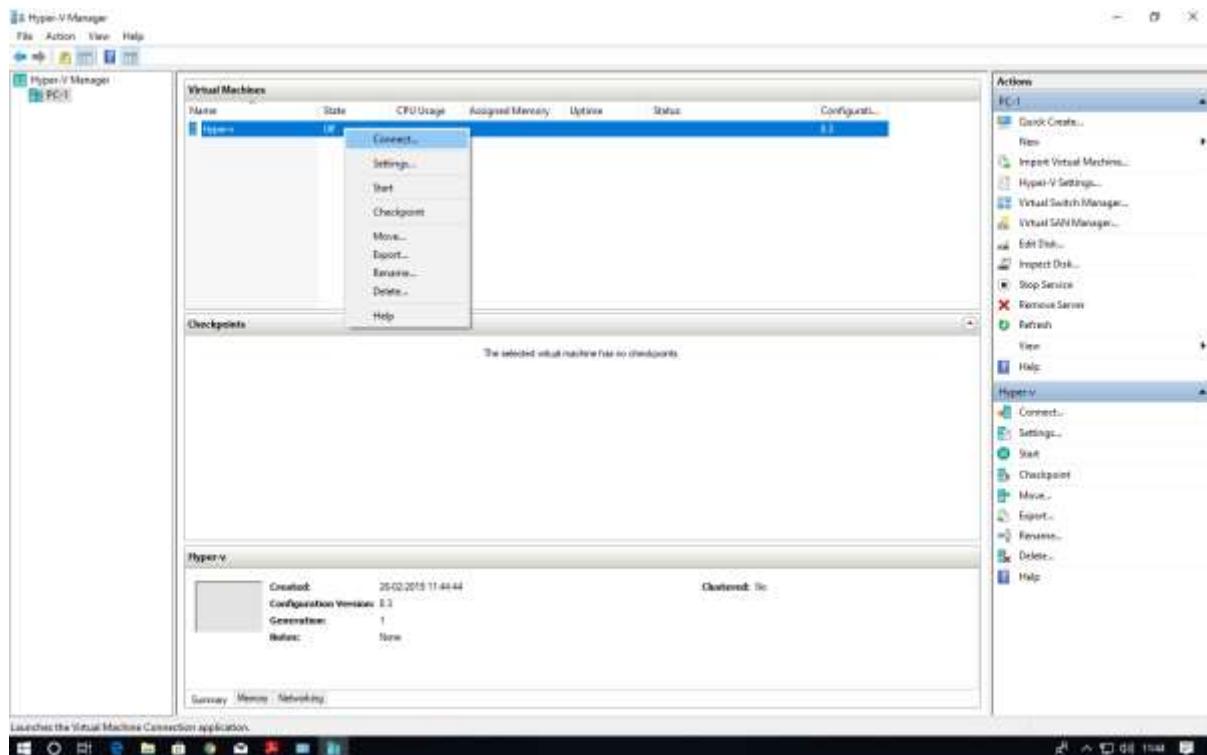
In virtual machine panel our virtual machine will appear which has off state



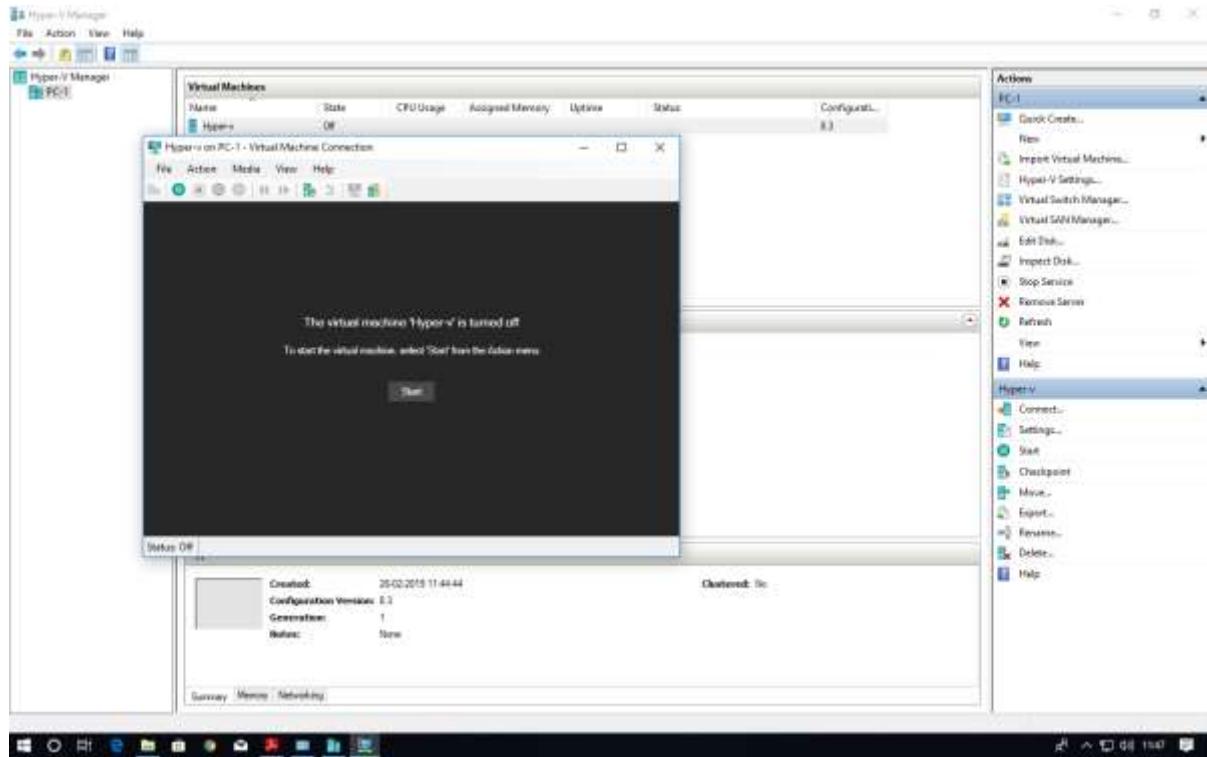
Click **finish**



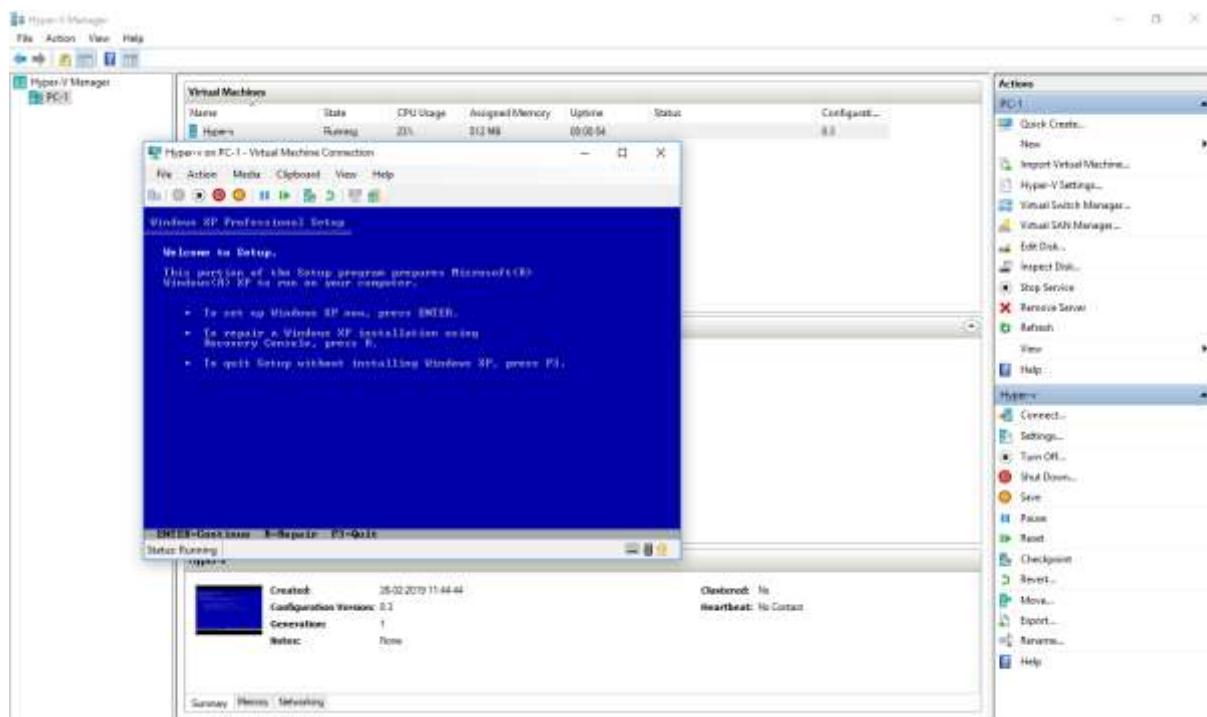
**Right click on virtual machine and click on connect option**



Now turn on virtual machine on



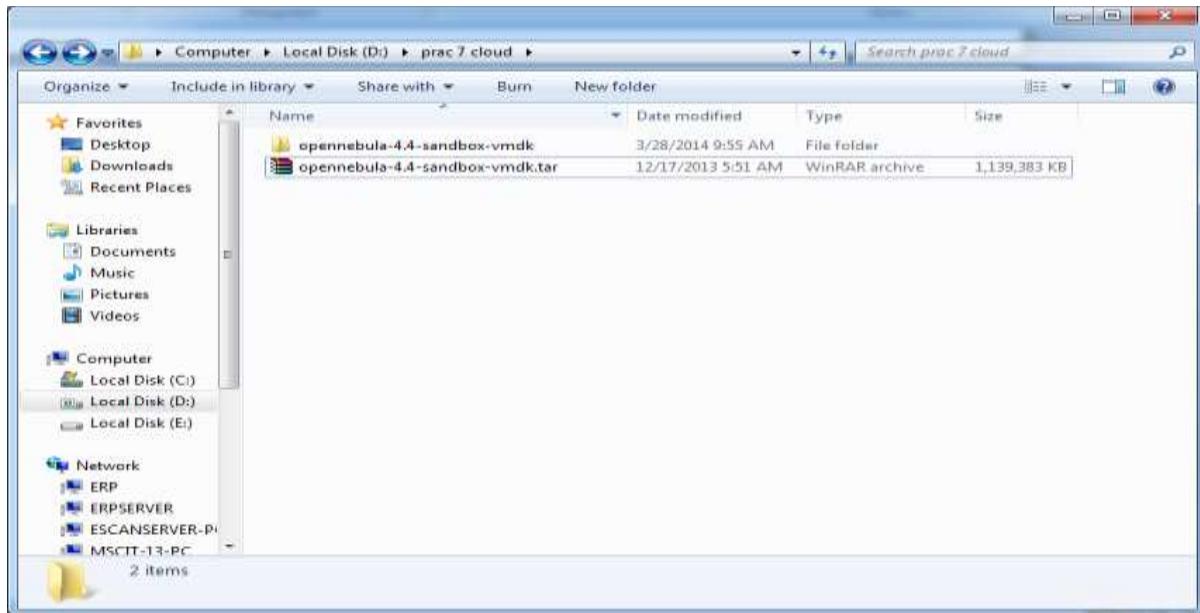
Virtual machine will start with below screen



## PRACTICAL: 7

### IMPLEMENT OPENNEBULA

**Client configuration** software needed (Download Opennebula sandbox software from opennebula.org)

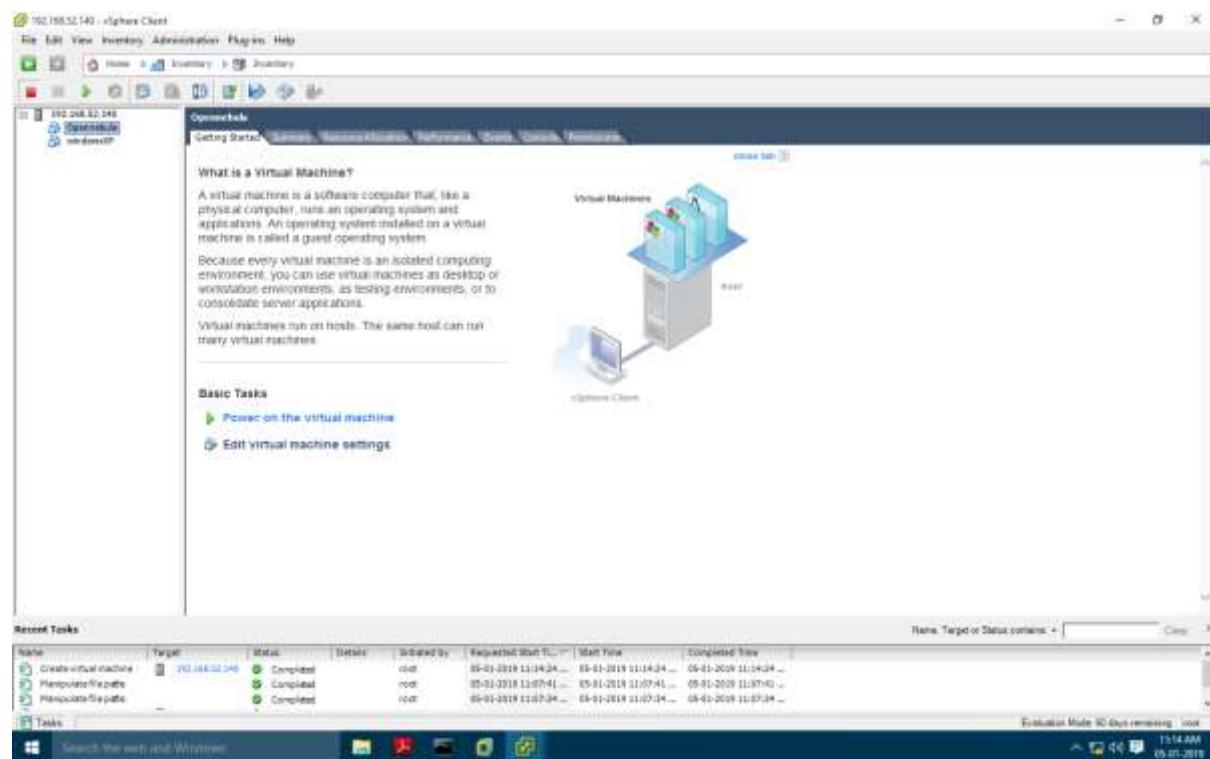


Start vSphere Client.

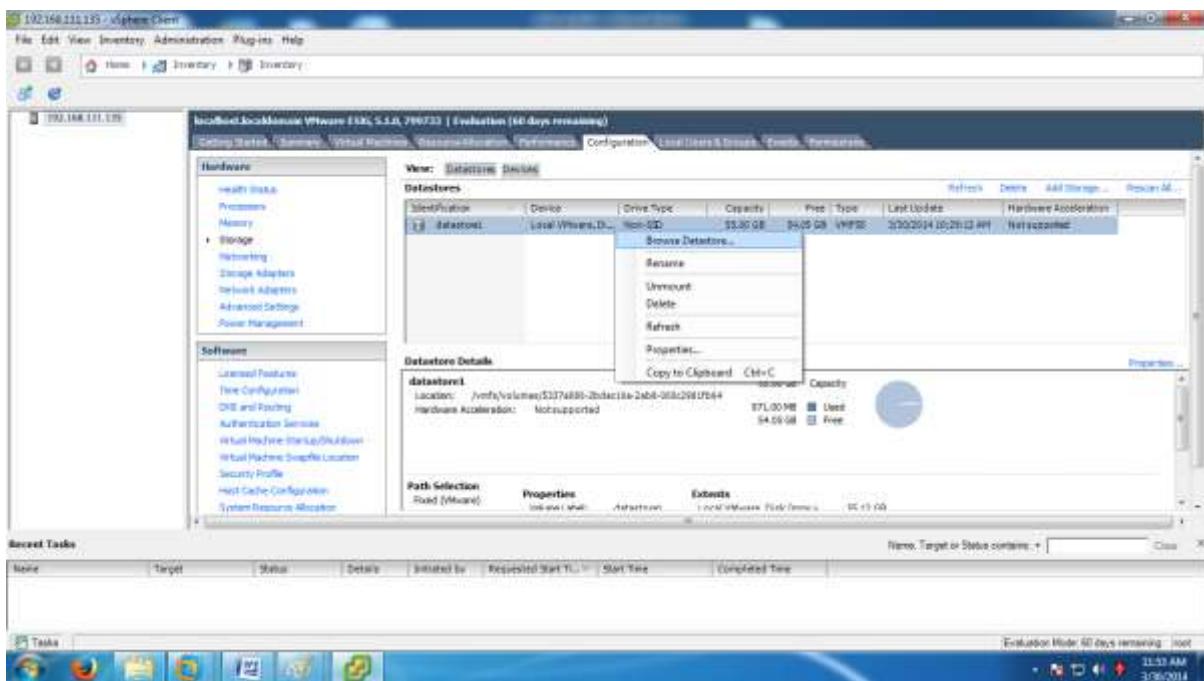
- ❖ Enter Static IP address
- ❖ Enter Username and Password. Click Login.



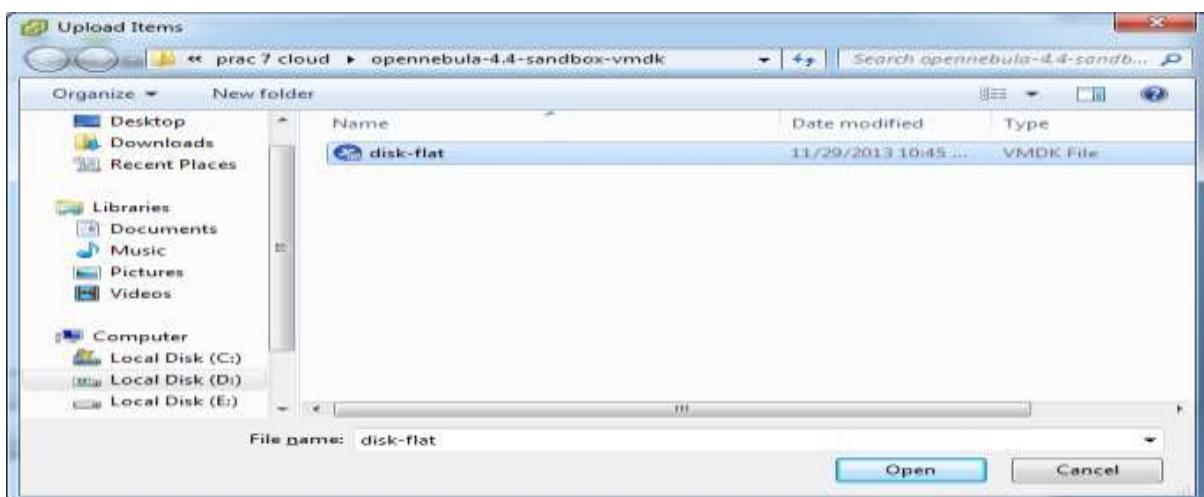
Click on ignore



Go to Configuration tab select storage and right click on data store1 and select Browse Datastore.

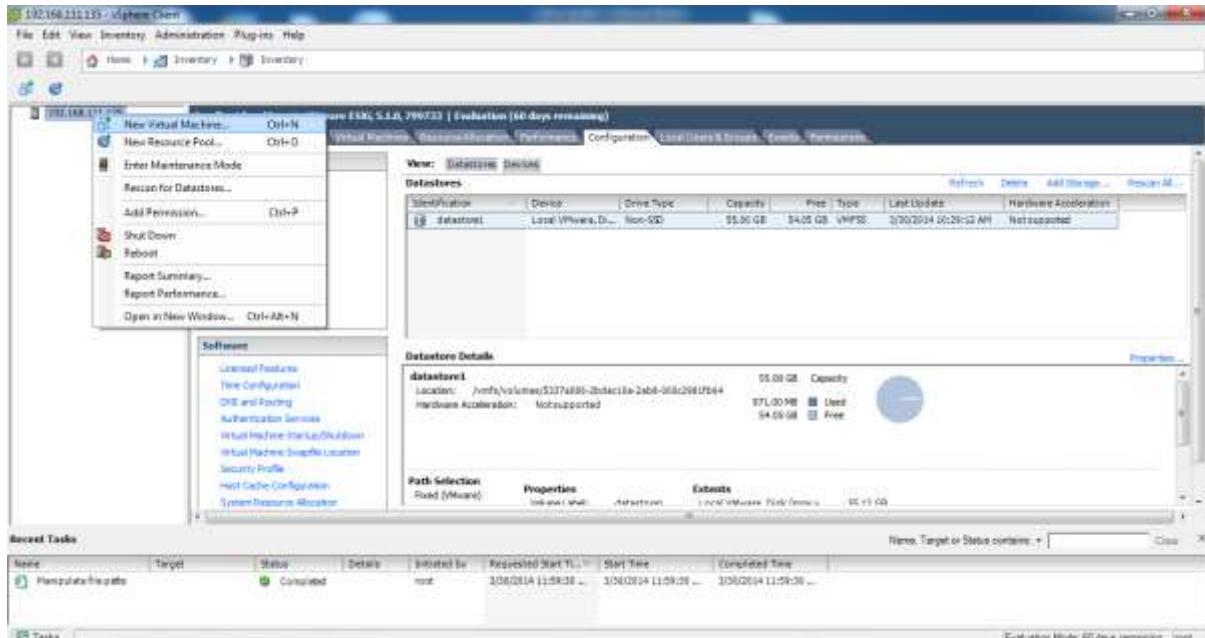


Go in this particular folder opennebula-4.4-sandbox-vmdk and select disk-flat file.

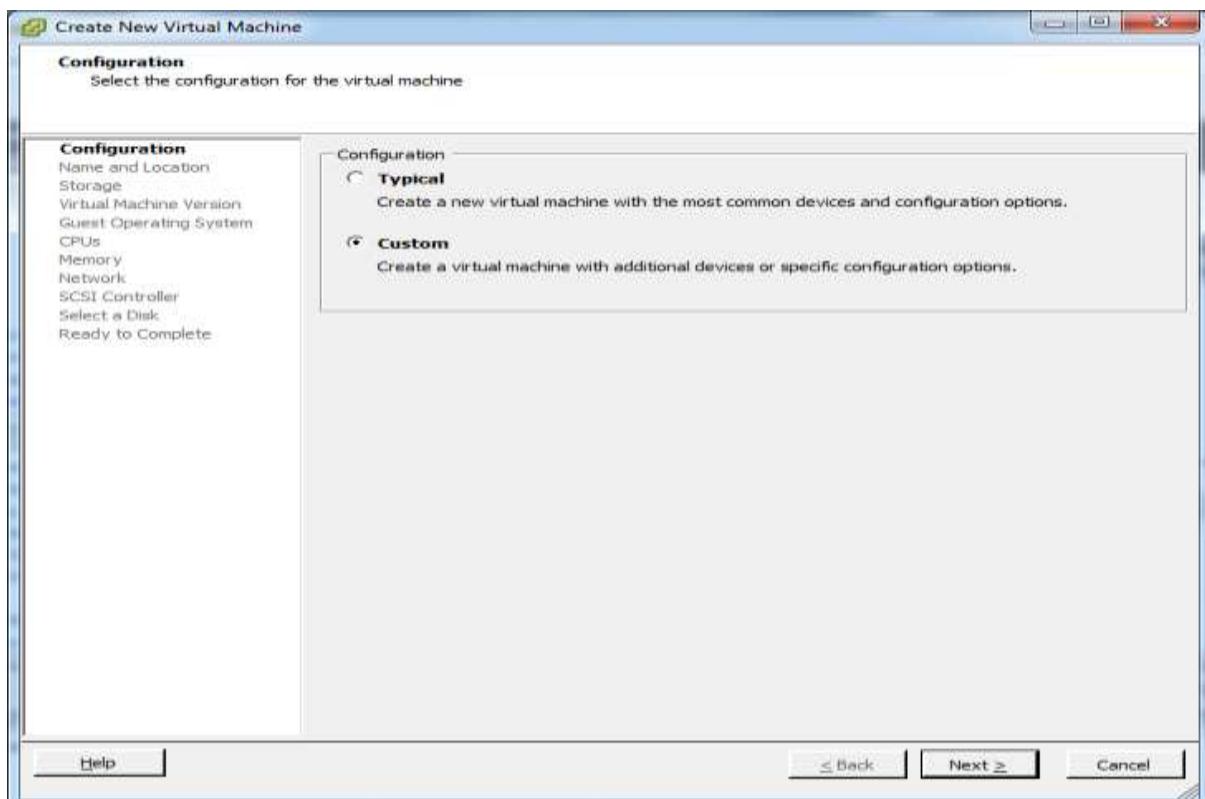


Create a new virtual machine.

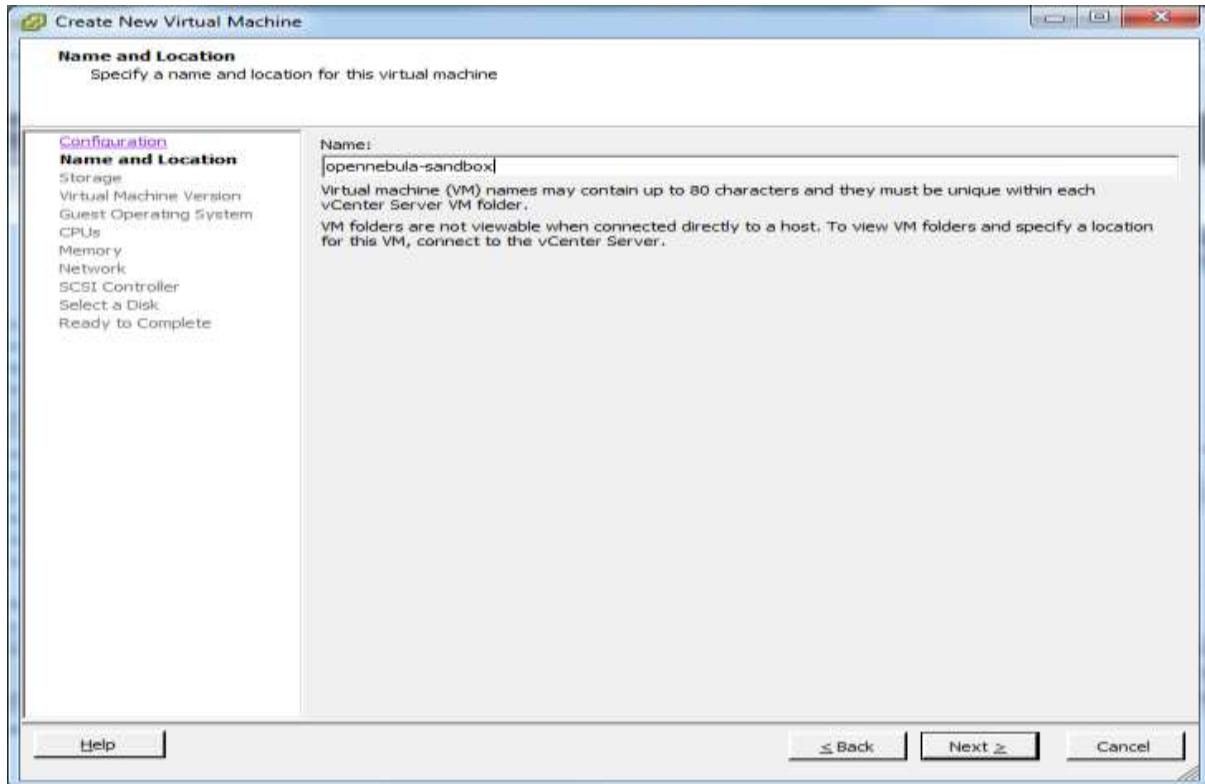
- ❖ On the VI client click on the (new virtual machine) icon



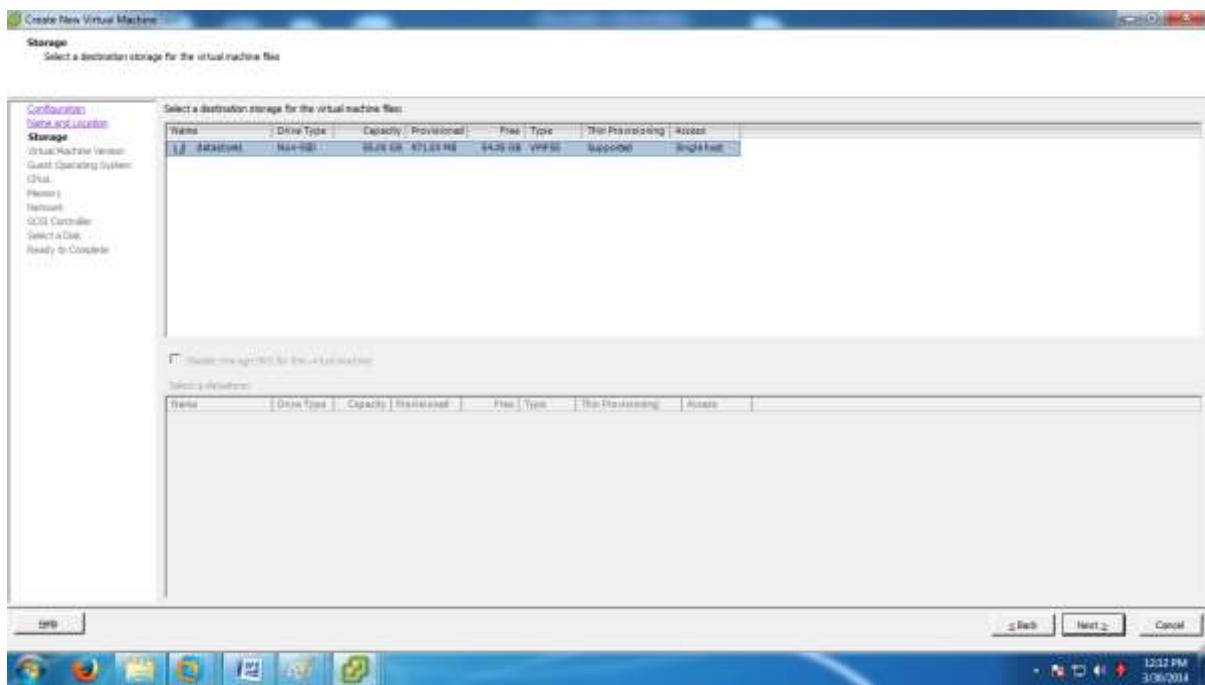
Select custom virtual machine and click on next.



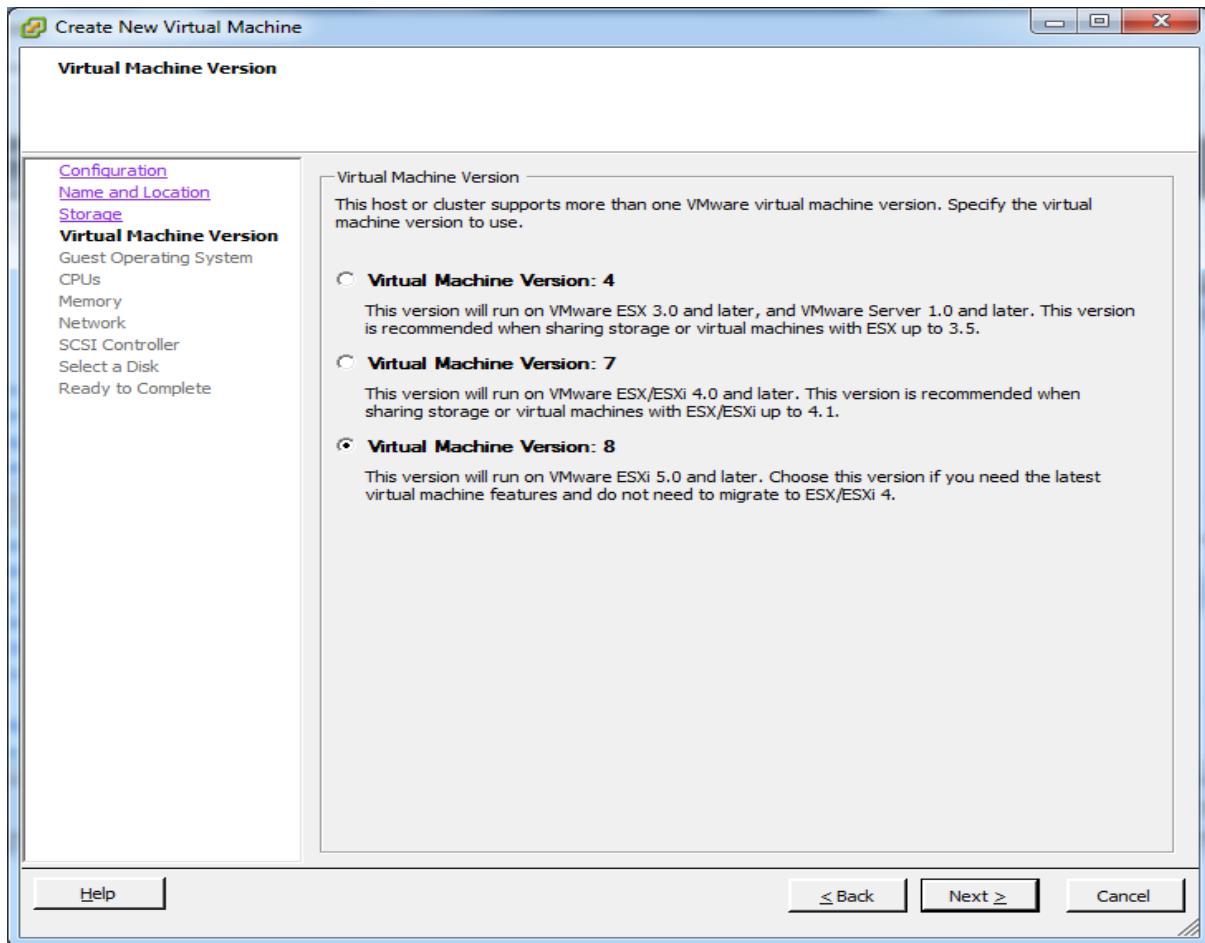
**Name :** Opennebula-sandbox and click on next.



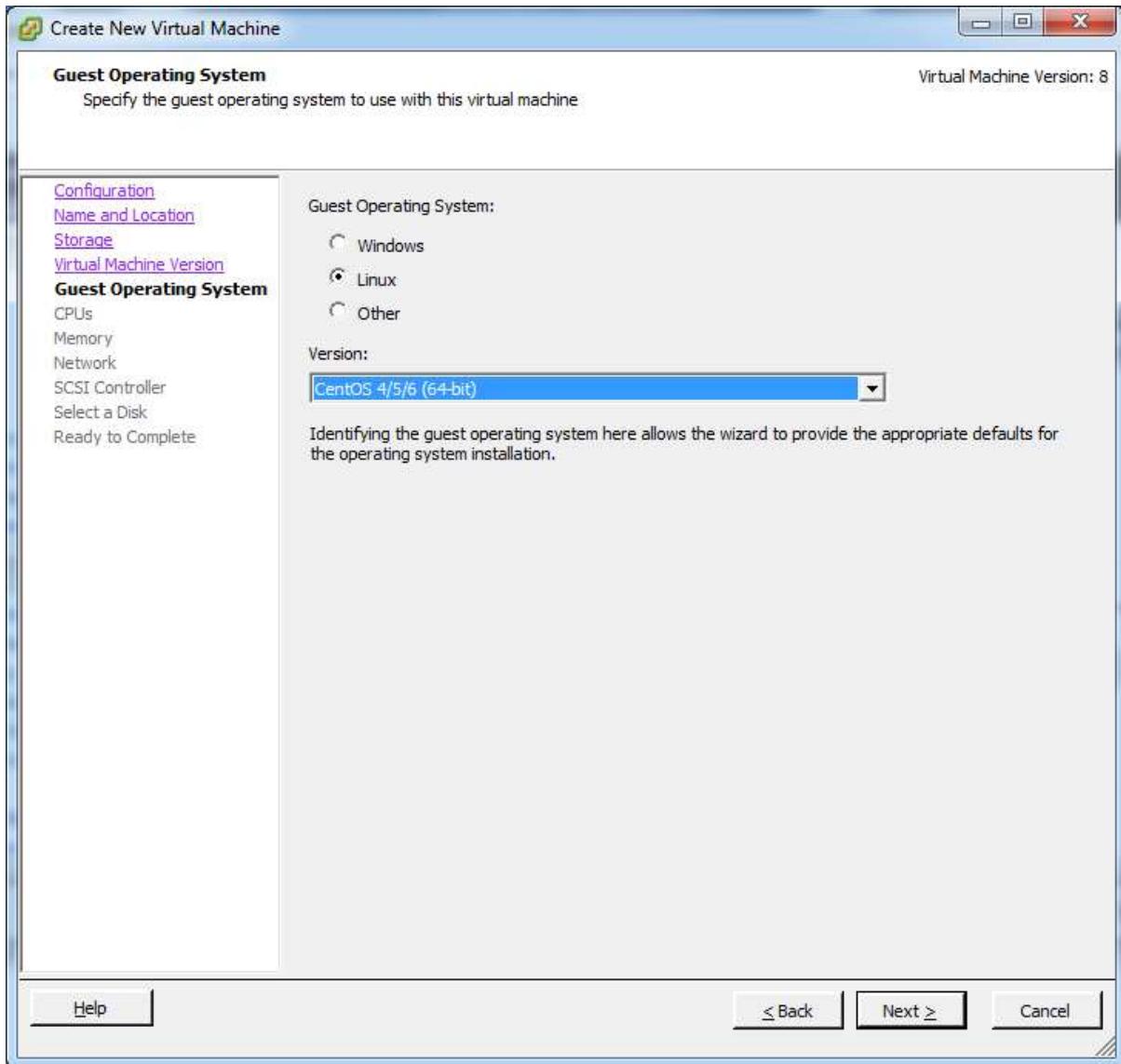
Select the same data store as in the screen and click on next.



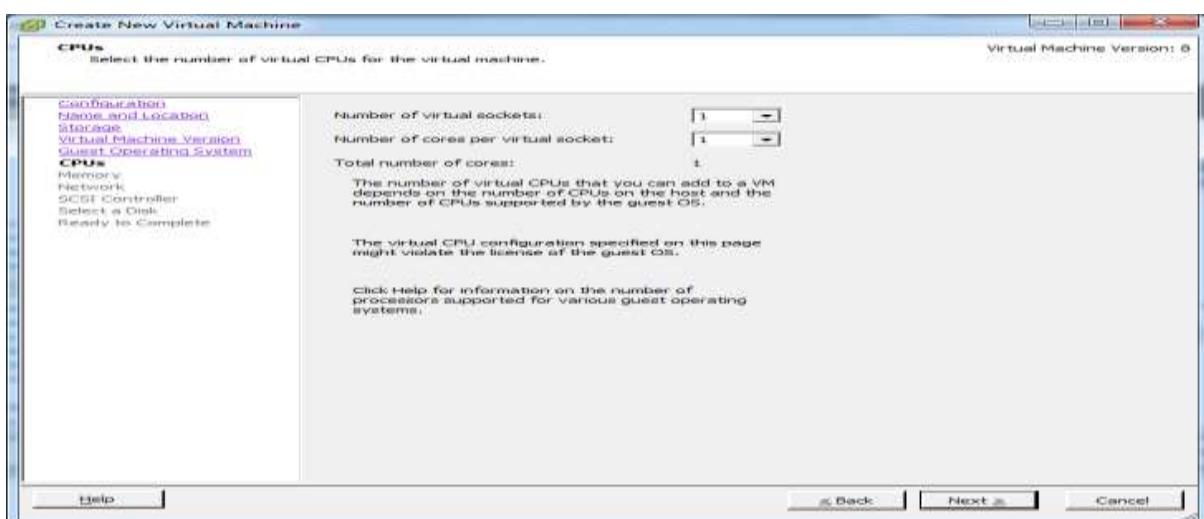
Select virtual machine version 8 and click on next.



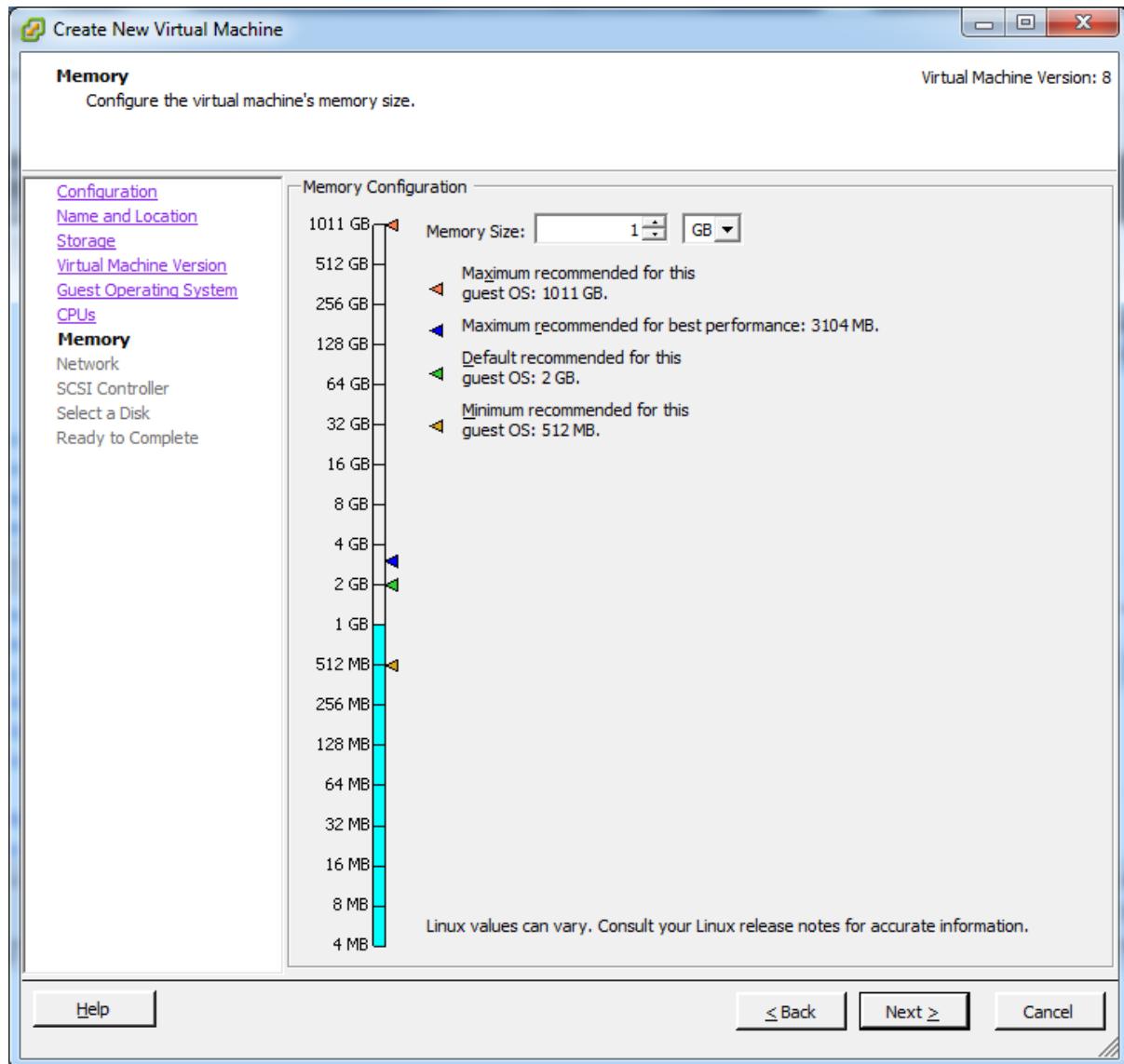
Select linux option-->and then select **CentOS 4/5/6(64-bit)** and click on **next**.



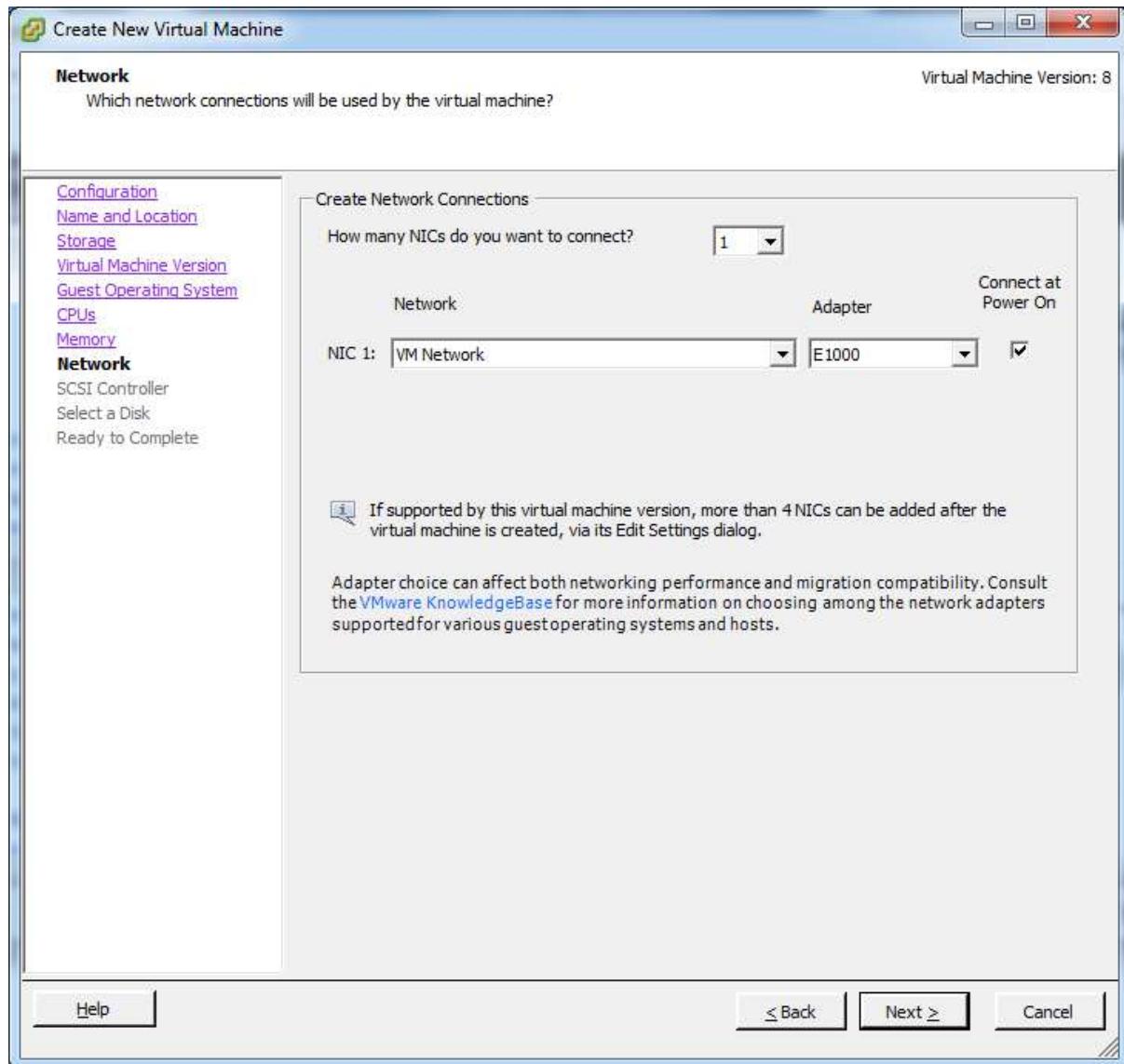
**CPUs:** Accept the defaults and click next.



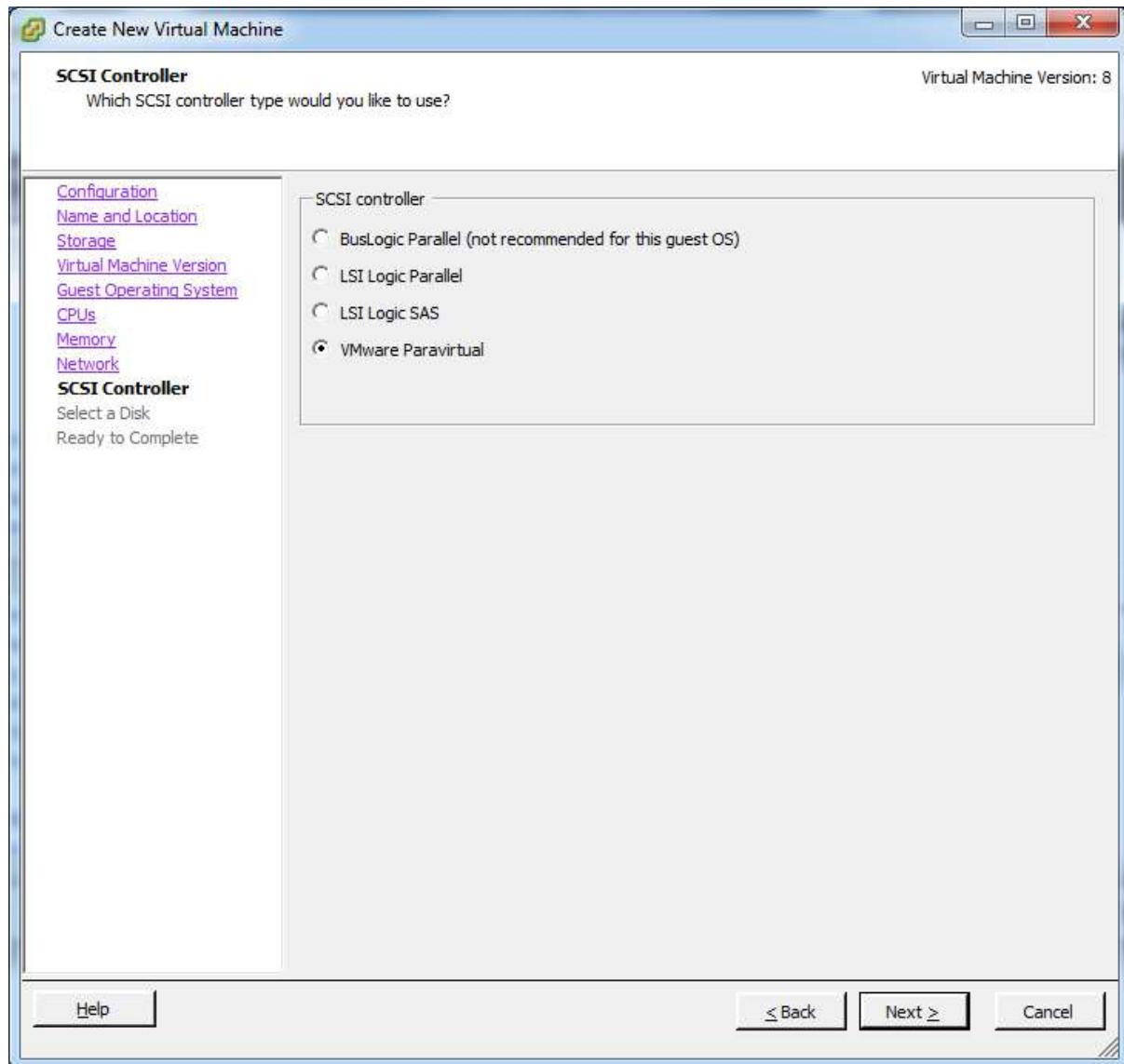
Select memory as **1 GB** and click **next**



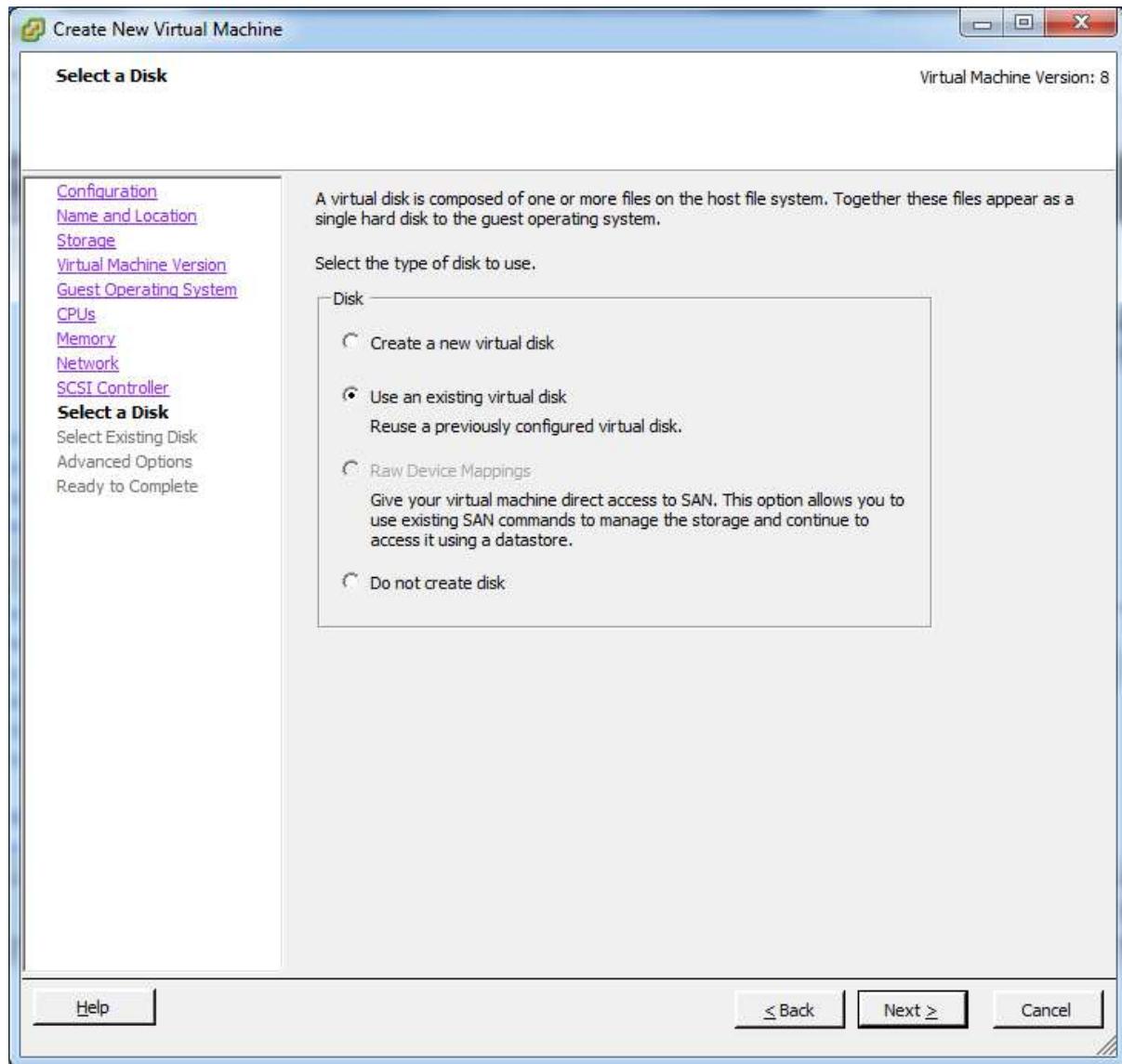
Select it as **default** and click **next**



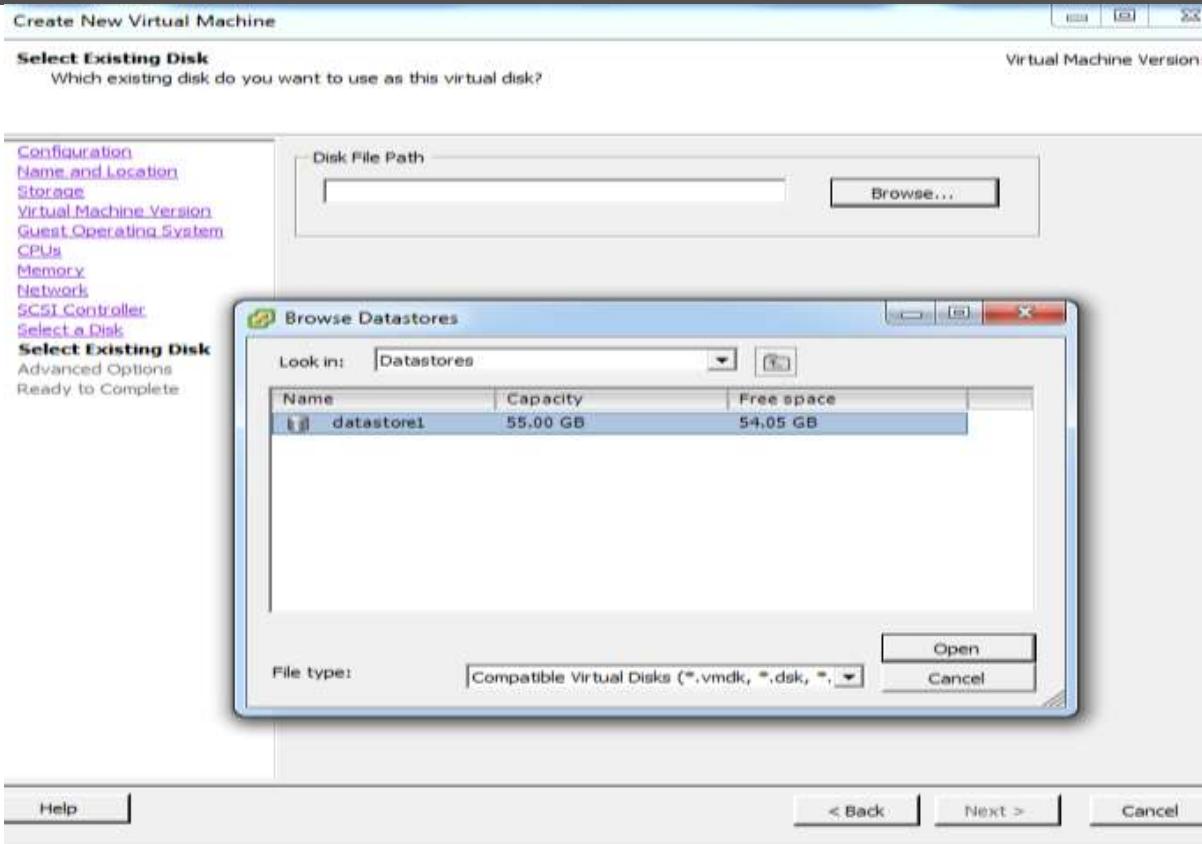
In the SCSI controller select as **VMware Paravirtual** and click **next**.



Select disk --> use an **existing virtual disk** and click **next**.

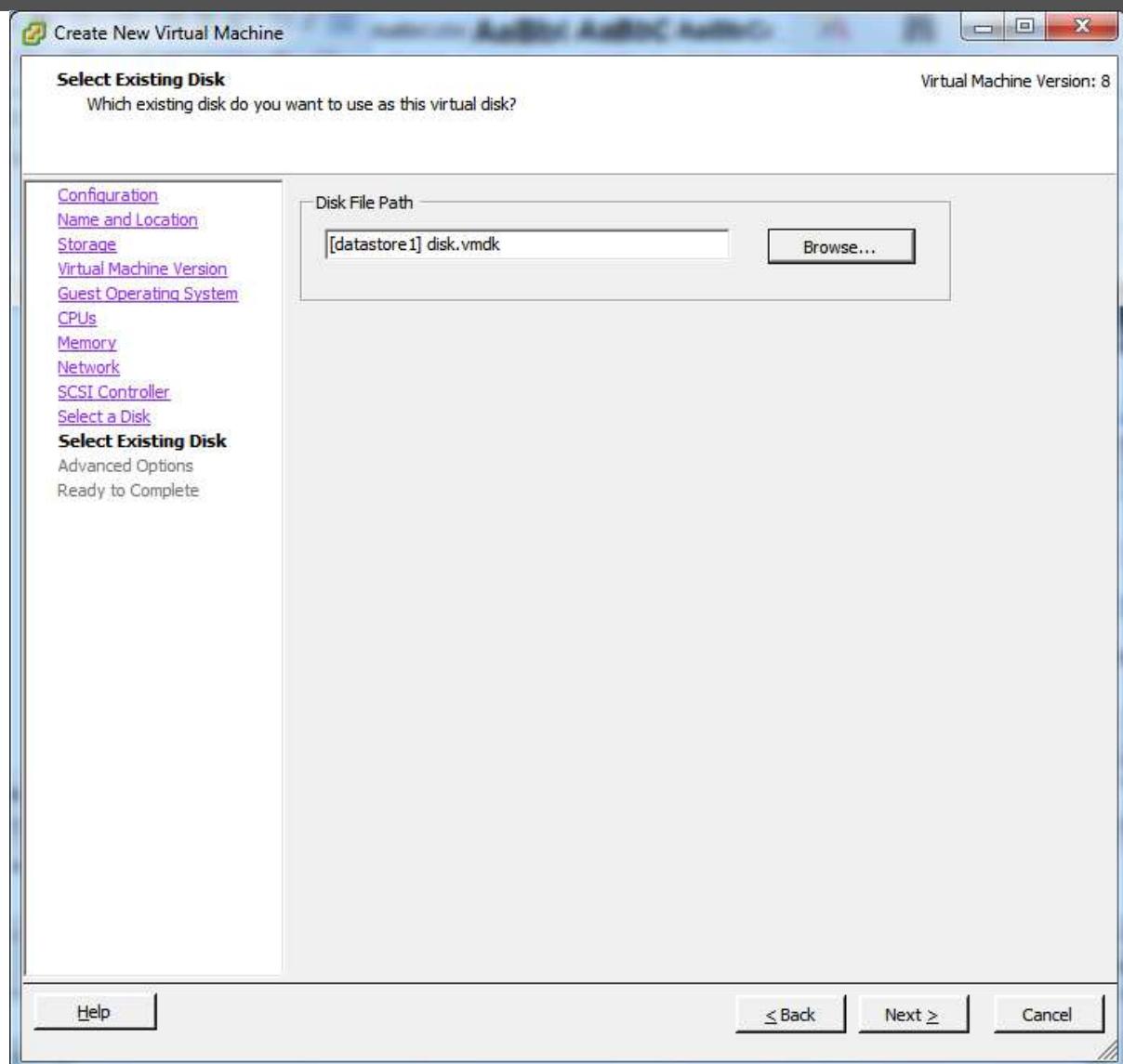


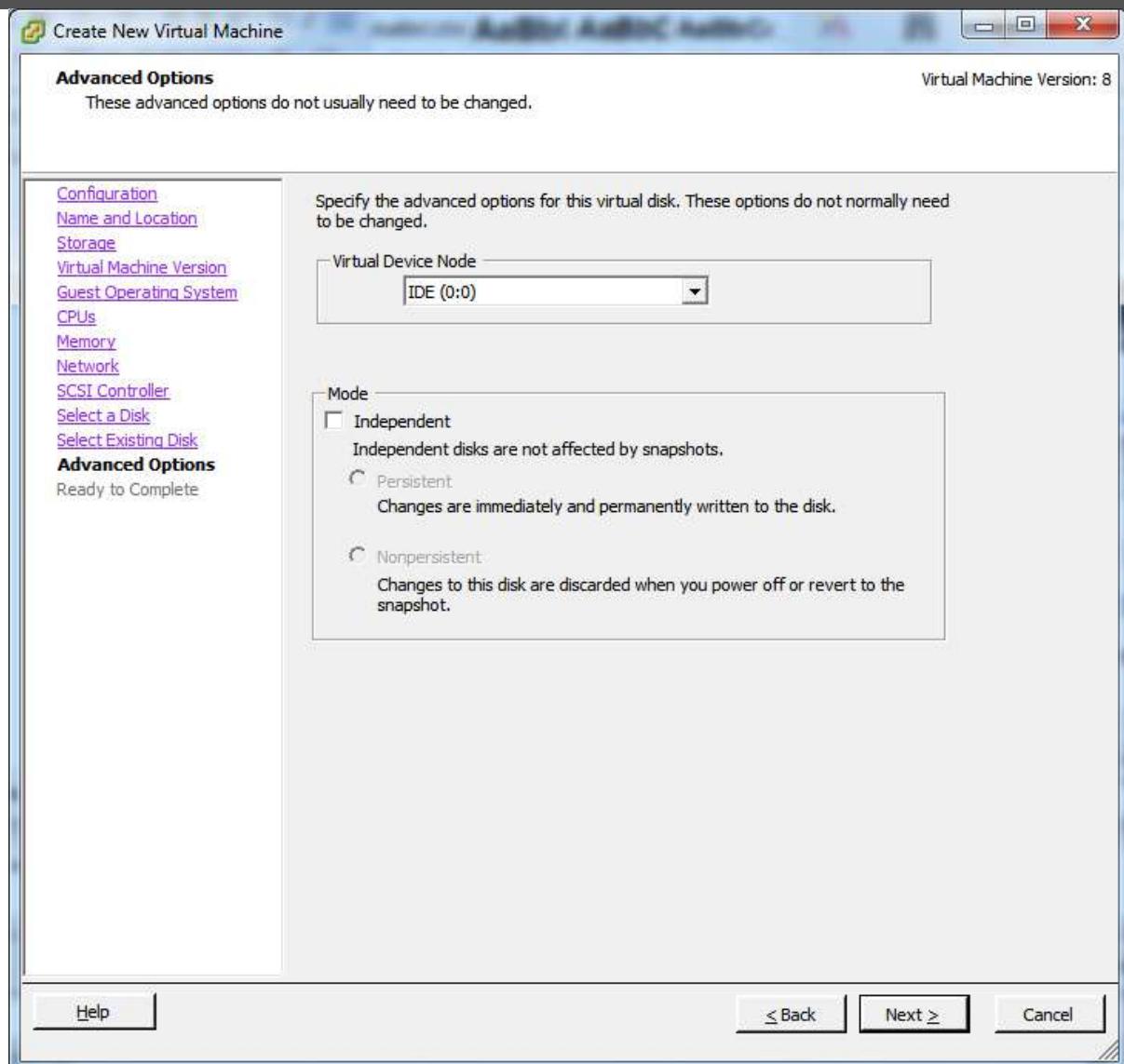
Click on **browse** and select **data store1**



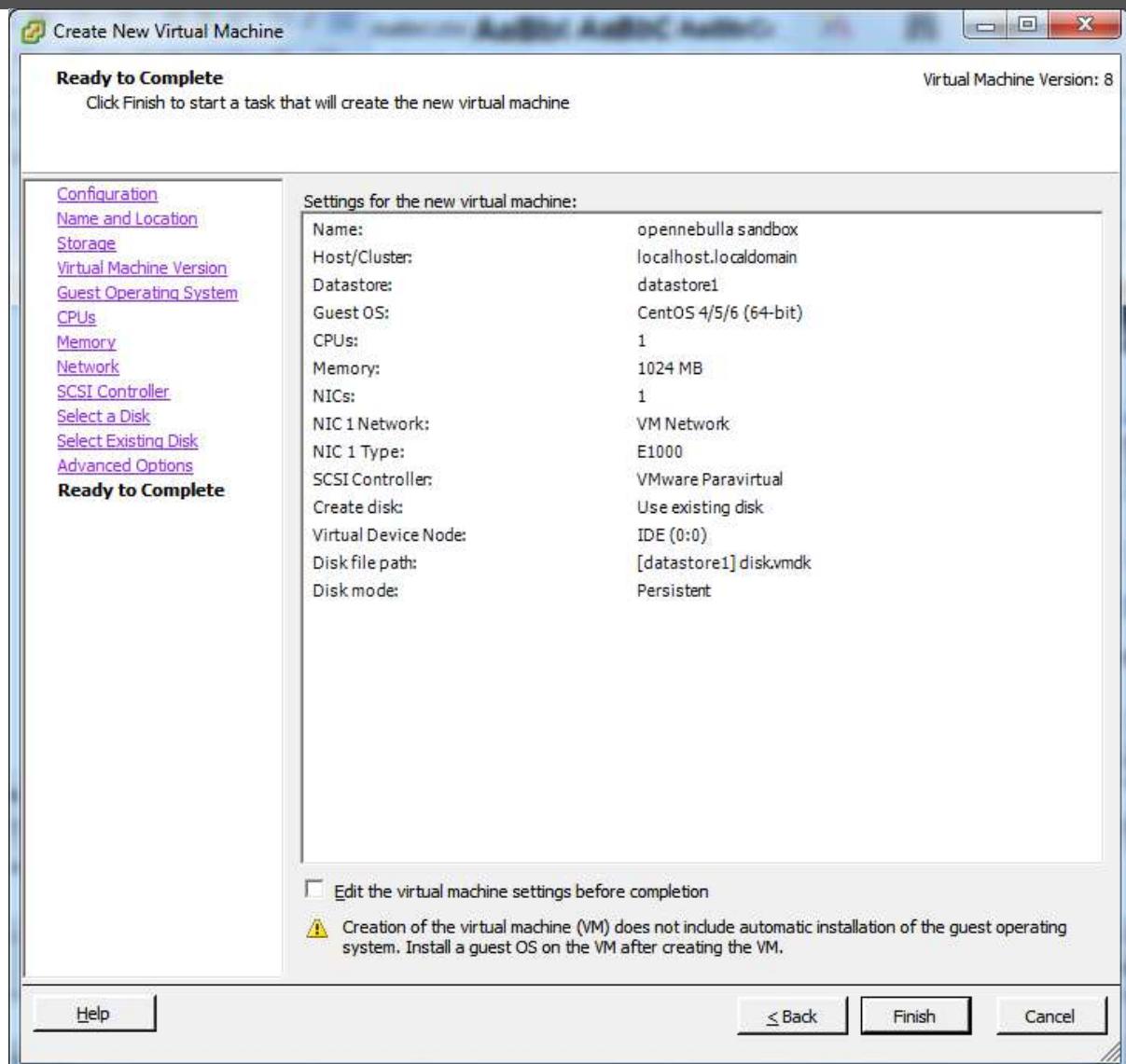
Double click on **datastore1**

You will get **disk.vmdk file** & click on **OK**

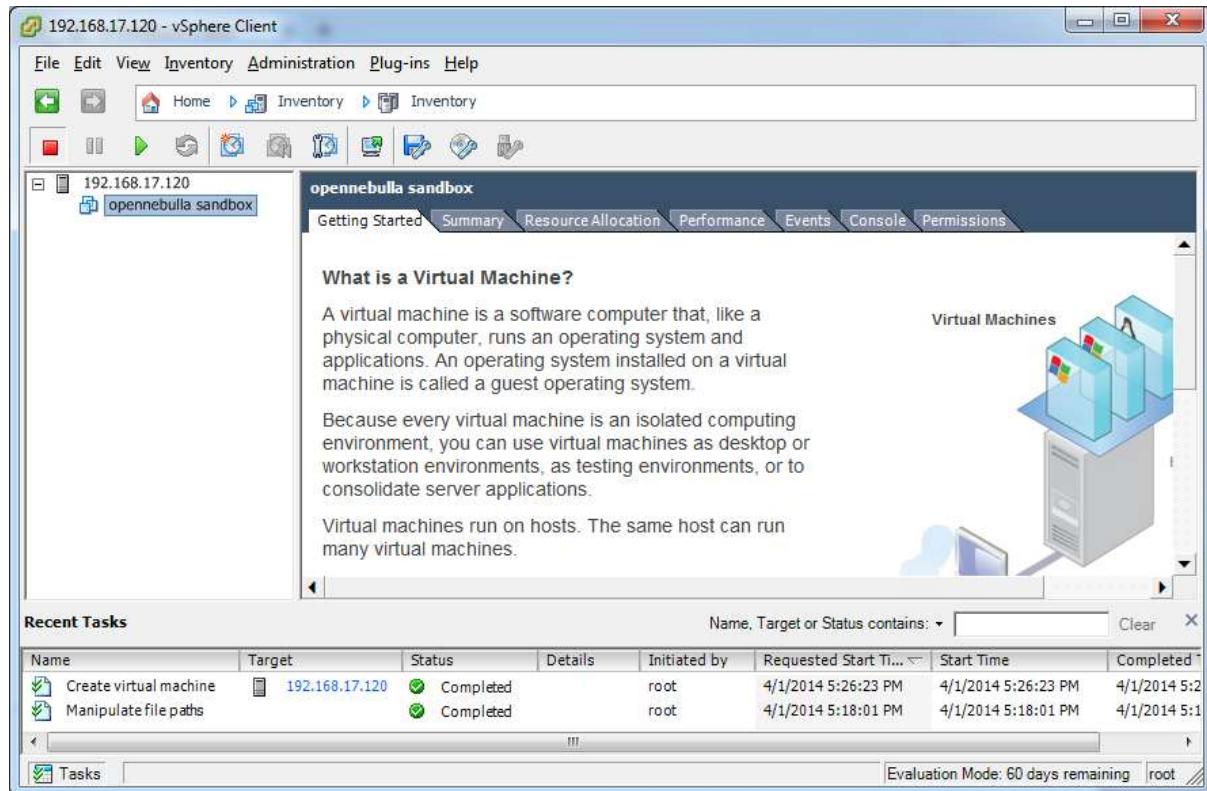




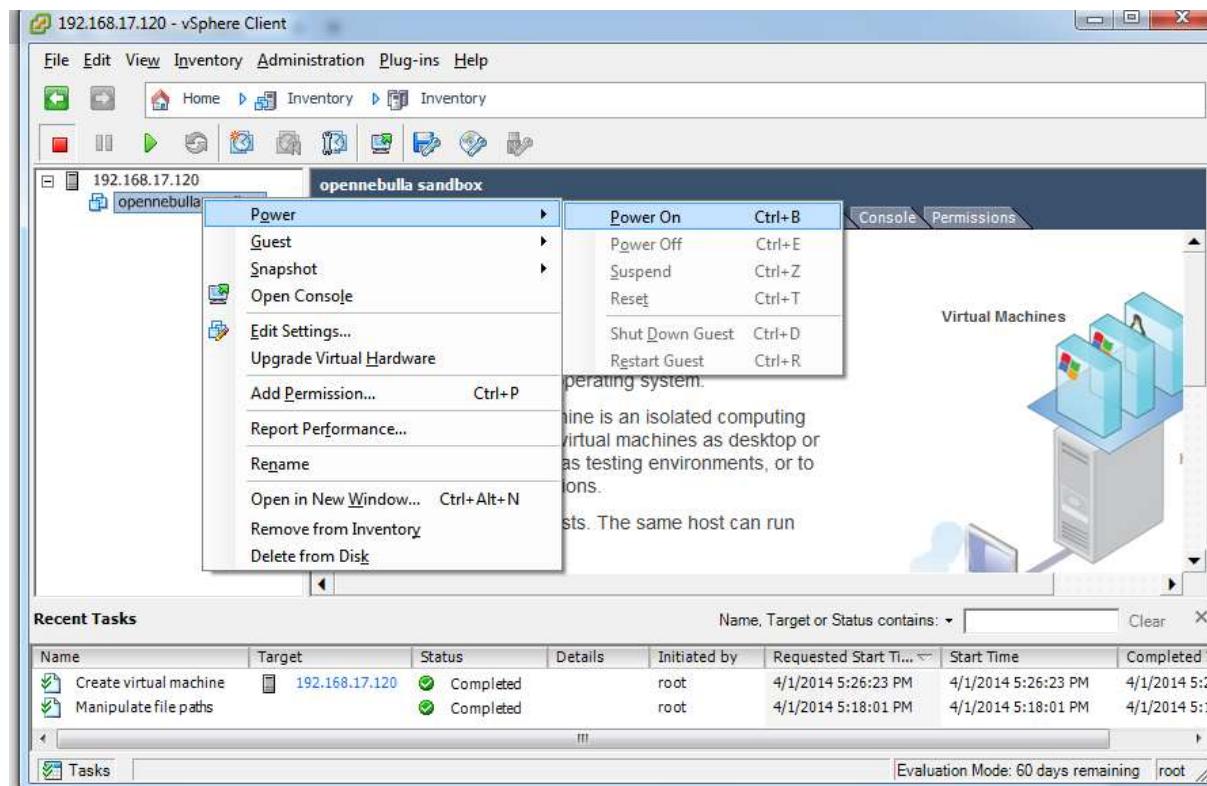
Click on **next**



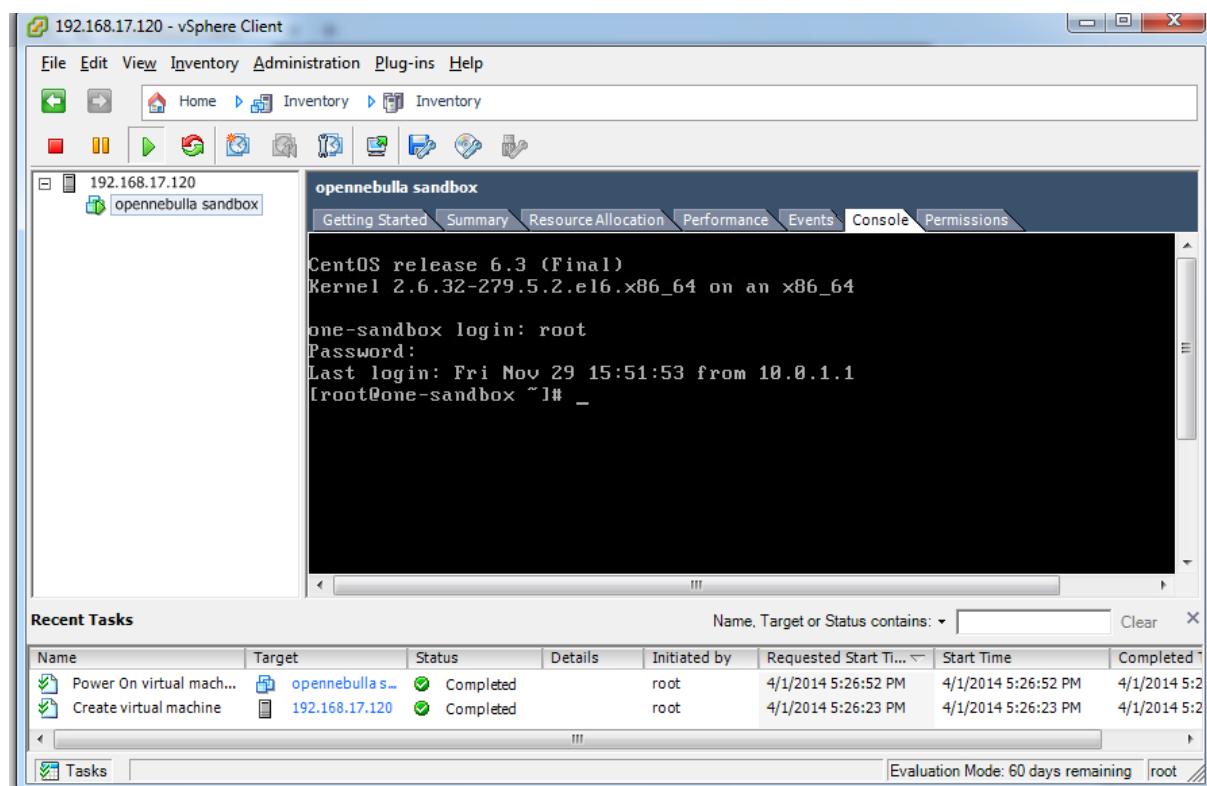
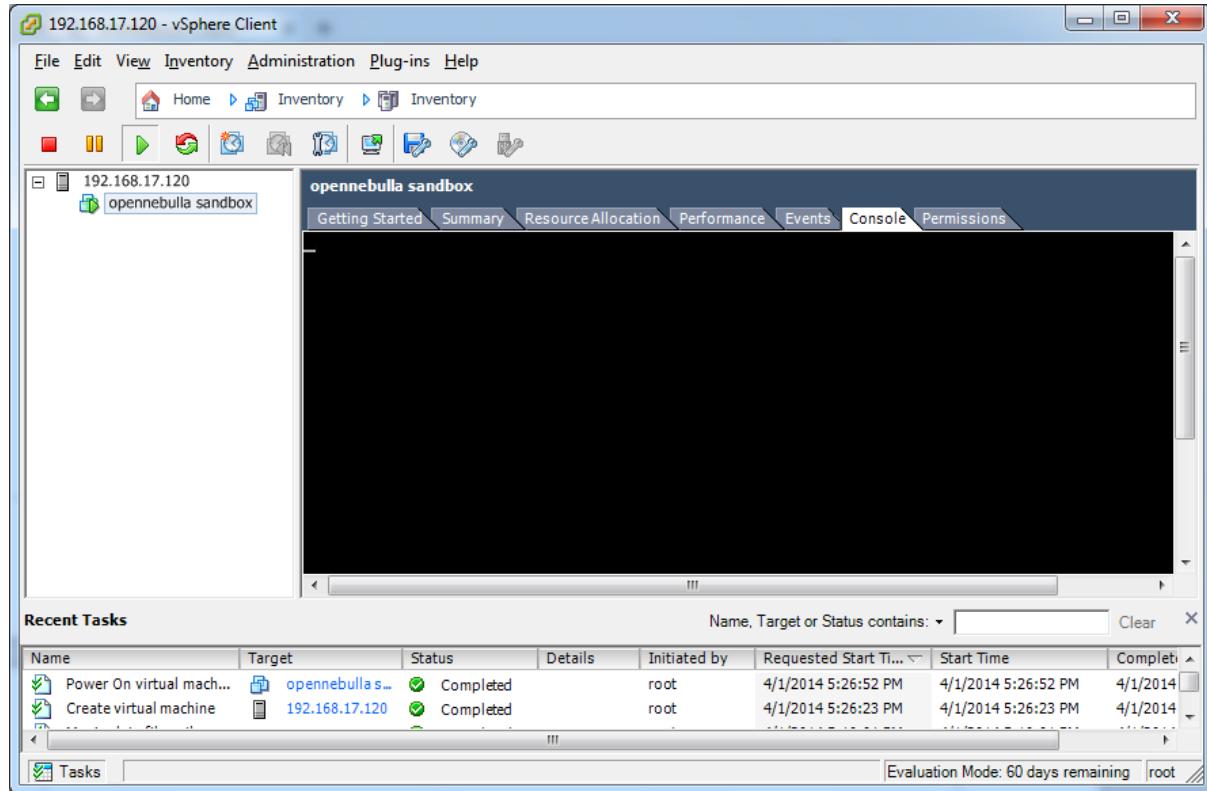
Click on **finish**



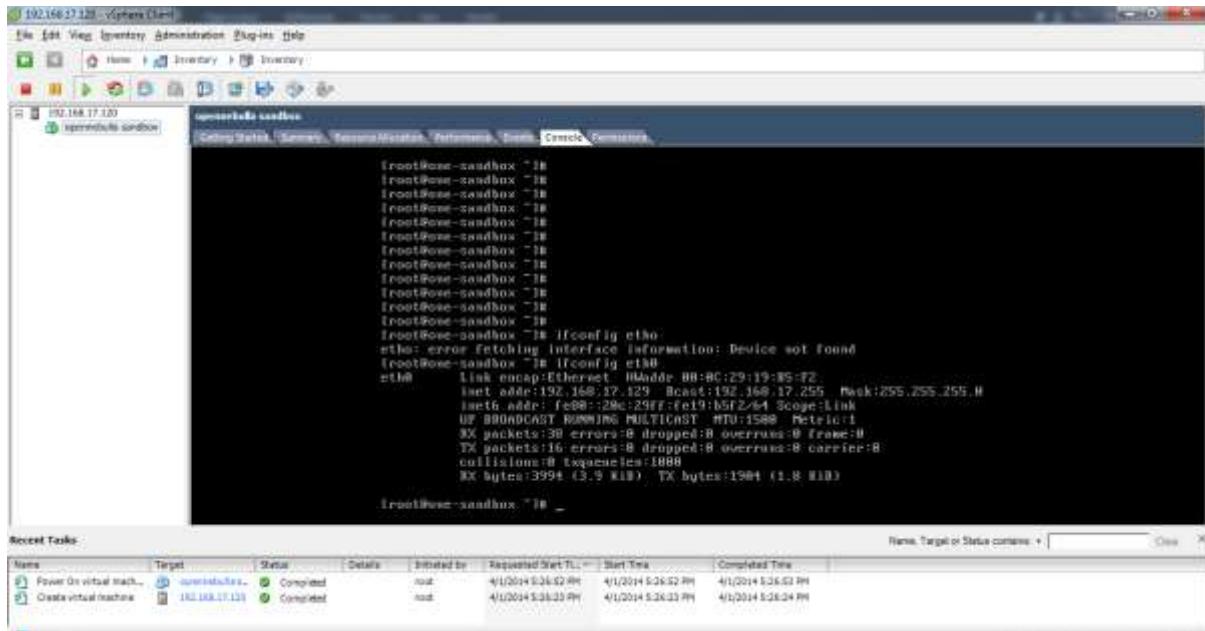
### Power on the virtual machine



Click on console tab

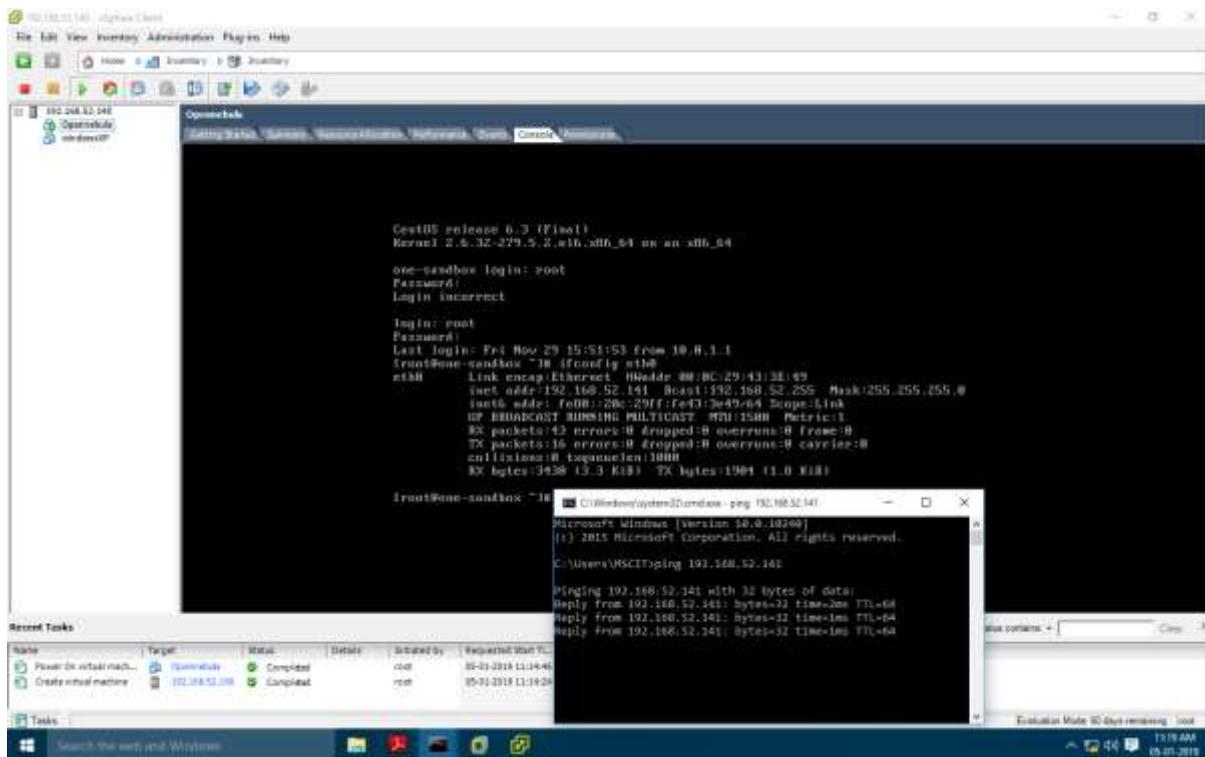


Type ifconfig eth0 command to check ip address of linux centos machine

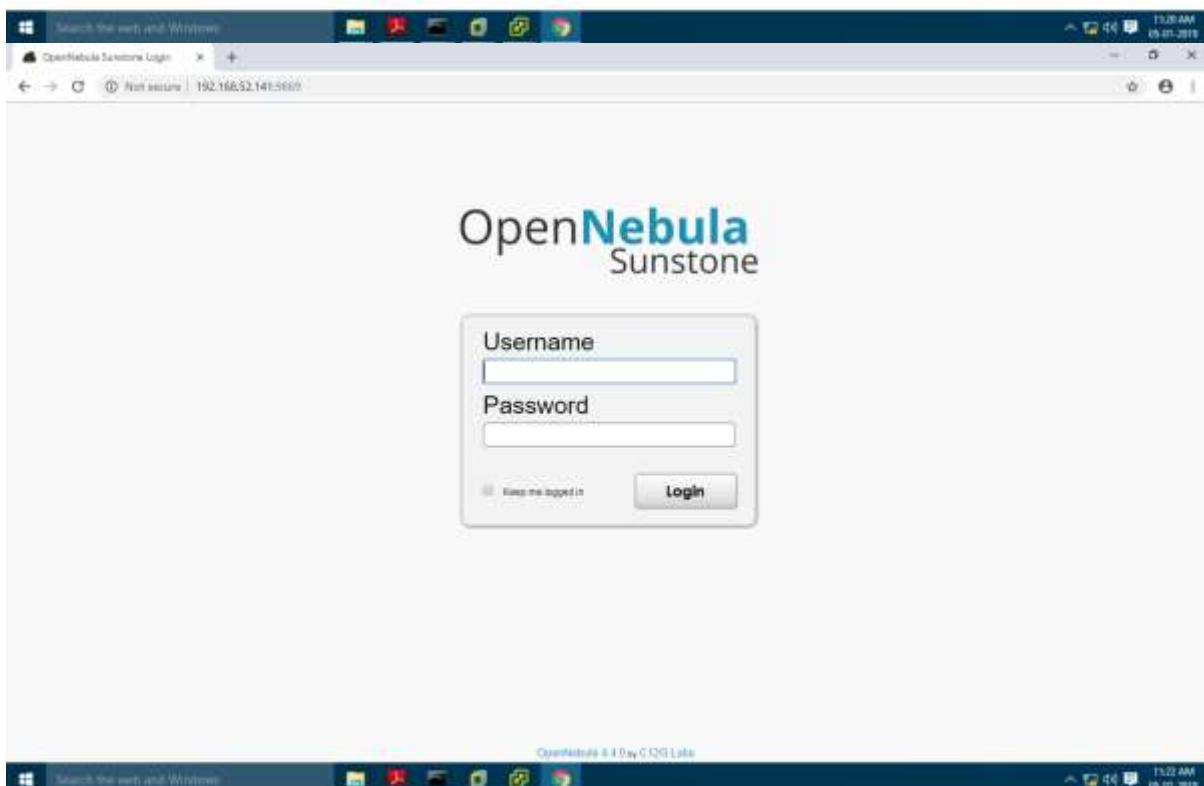
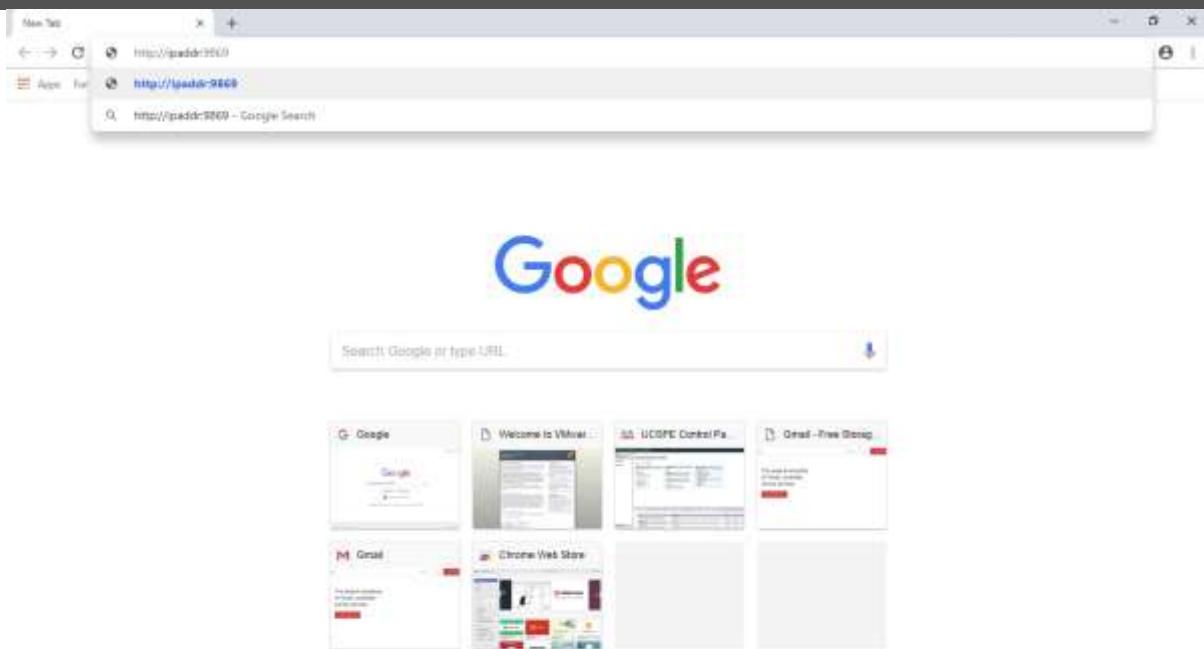


Since ip address of openebulla is 192.168.17.129

Now try to ping 192.168.17.129 openebulla on host OS



Go to Browser copy the http path and paste it.



**Type username :** oneadmin  
**password :** Opennebula

OpenNebula Sunstone

Username  
oneadmin

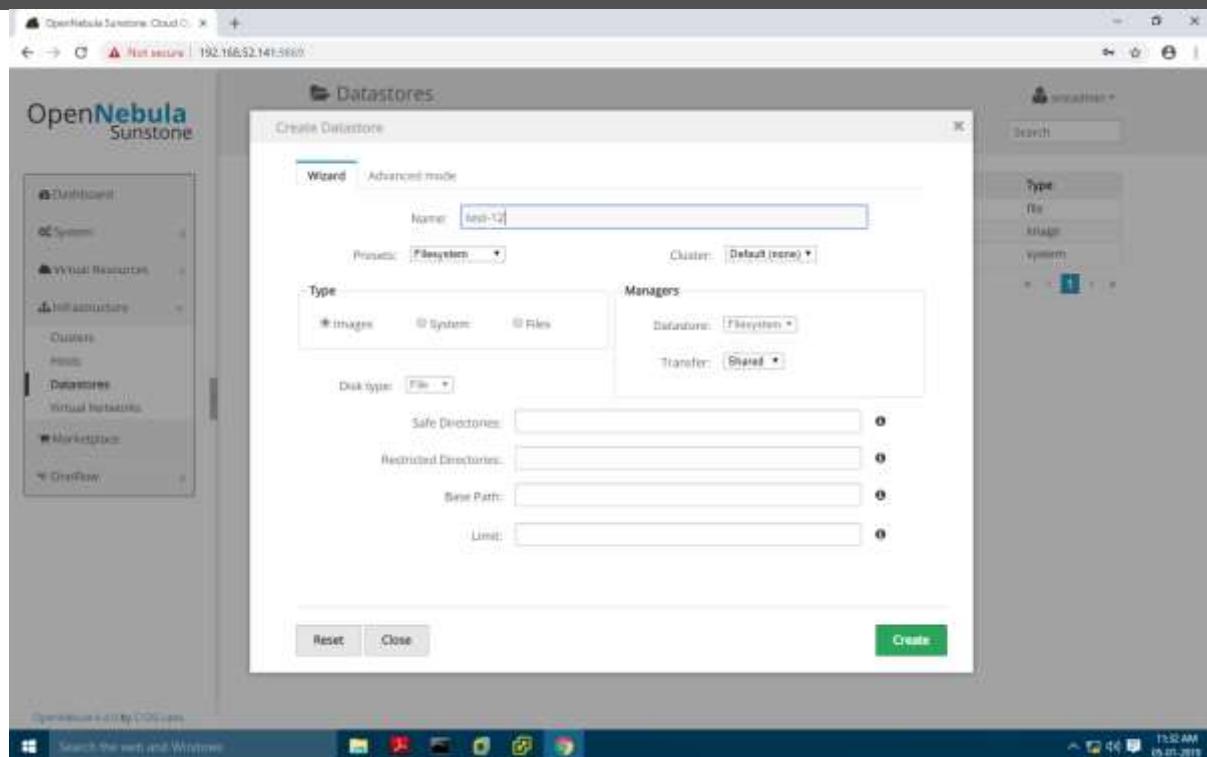
Password  
\*\*\*\*\*

Keep me logged in

ID	Owner	Group	Name	Capacity	Cluster	Type
2	oneadmin	oneadmin	tbs	1.9GB / 9.6GB (19%)	-	file
1	oneadmin	oneadmin	default	1.9GB / 9.6GB (19%)	-	image
0	oneadmin	oneadmin	system	1.9GB / 9.6GB (19%)	-	system

click on "**create**"  
 type name **test-12** and click on "**create**"



DATASTORE is created

ID	Owner	Group	Name	Capacity	Cluster	Type
100	oneadmin	oneadmin	test-12	9.8GB / 9.8GB (100%)	-	Image
2	oneadmin	oneadmin	files	9.8GB / 9.8GB (100%)	-	File
1	oneadmin	oneadmin	default	9.8GB / 9.8GB (100%)	-	Image
0	oneadmin	oneadmin	system	9.8GB / 9.8GB (100%)	-	System

now we will create "Virtual Network"

The screenshot shows the OpenNebula Sunstone web interface. On the left, a sidebar navigation includes 'Dashboard', 'System', 'Virtual Resources', 'Infrastructure' (selected), 'Clusters', 'Hosts', 'Datastores', 'Virtual Networks' (selected), 'Marketplace', and 'OneFlow'. The main content area displays a table of 'Virtual Networks' with columns: ID, Owner, Group, Name, Cluster, Type, and Leases. Two entries are listed: 'local\_test12' (Owner: oneadmin, Group: oneadmin) and 'cloud' (Owner: oneadmin, Group: oneadmin). Below the table, it says 'Showing 1 to 2 of 2 entries'. A 'Create' button is visible at the top left of the main content area. To the right, there's a detailed view of 'Virtual Network - local\_test12' with tabs for 'Information' (selected) and 'Lease management'. The 'Information' tab shows details like ID (1), Name (local\_test12), Cluster (br0), Bridge (br0), and VLAN (none). The 'Permissions' section shows ownership by 'oneadmin'. The 'Lease management' tab is partially visible. At the bottom, there's a 'Configure Attributes' section with an 'Add' button.

click on "**Create**"

provide name as "**local\_test12**"

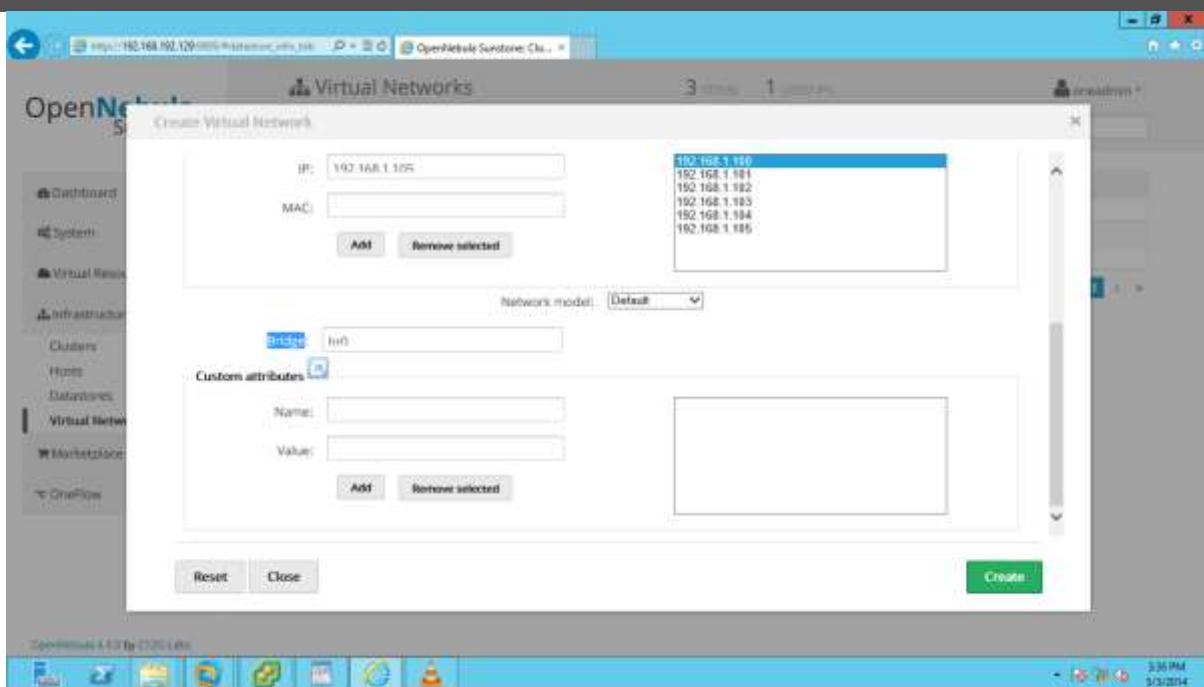
click on **Fixed Network**

provided ip address in range "**192.168.1.100**" to "**192.168.1.106**"

and also provide Bridge name :"**br0**"

The screenshot shows the 'Create Virtual Network' wizard in 'Wizard' mode. The 'Name' field is set to 'local\_test12'. Under 'Type', 'IPv4' is selected. In the 'IP Address' field, '192.168.1.105' is entered. A dropdown menu for 'Range' shows a list of IP addresses from '192.168.1.100' to '192.168.1.106', with '192.168.1.105' highlighted. The 'MAC' field is empty. At the bottom, there are 'Reset' and 'Close' buttons on the left, and a 'Create' button on the right.

+



ID	Owner	Group	Name	Cluster	Type	Leases
1	onadmin	onadmin	local_test12	-	FIXED	0
0	onadmin	onadmin	cloud	-	FIXED	0

create new user

**name :root**  
**password : opnenebula**

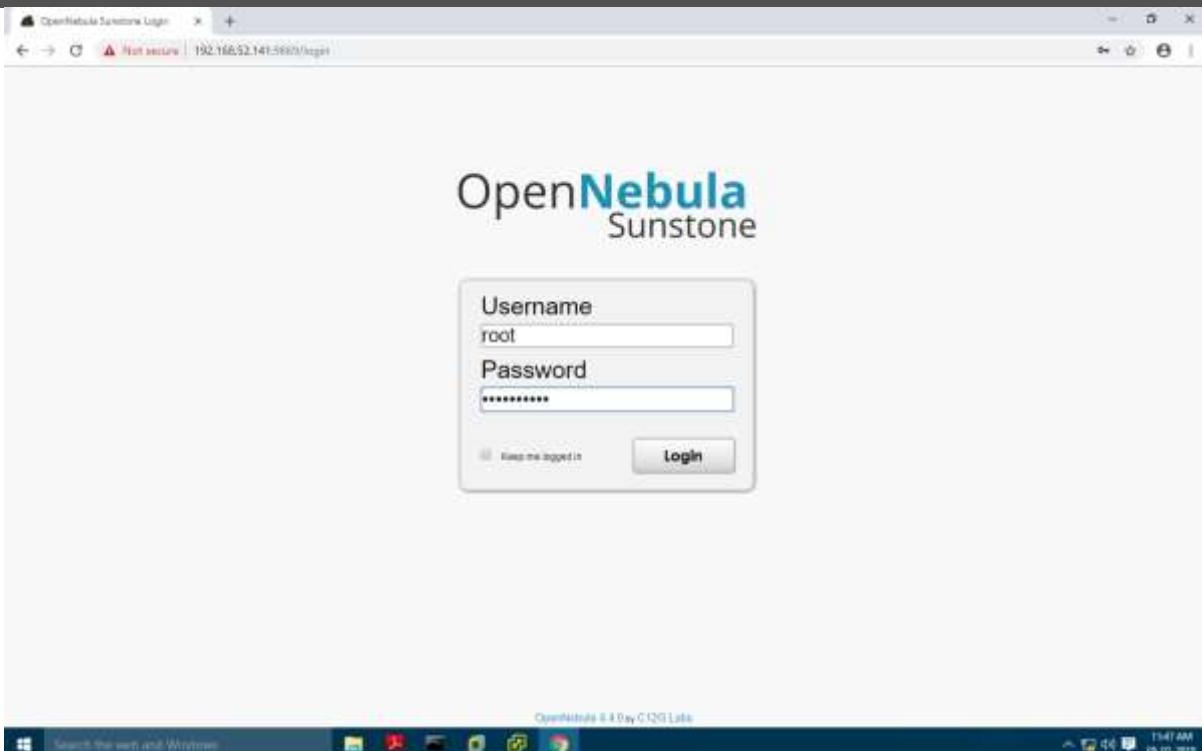
The screenshot shows the OpenNebula Sunstone web interface. On the left, there's a sidebar with navigation links like Dashboard, System, Users, Groups, ACLs, Virtual Resources, Infrastructure, and Marketplace. The main area is titled 'Users' and shows a 'Create User' dialog box. Inside the dialog, the 'Username' field is filled with 'root', the 'Password' field contains a masked password, and the 'Authentication' dropdown is set to 'Core'. At the bottom right of the dialog is a green 'Create' button.

This screenshot shows the 'Users' list page in the OpenNebula Sunstone interface. The sidebar on the left is identical to the previous screenshot. The main area lists three users in a table:

ID	Name	Group	Auth driver	VMS	Memory	CPU
2	root	users	core	0/0	0KB	0/0
1	serveradmin	onosadmin	server_ophor	0/0	0KB	0/0
0	onosadmin	onosadmin	core	0/0	0KB	0/0

A message at the bottom of the table says 'Showing 1 to 3 of 3 entries.'

now login again as  
**username** : root  
**password** : Opennebula



The screenshot shows a web browser window titled "OpenNebula Sunstone Cloud C". The address bar indicates the URL is "192.168.52.141:5667". The main content area is the "Dashboard" of the OpenNebula Sunstone interface. On the left, there is a sidebar with navigation links: "Dashboard", "Virtual Resources", "Infrastructure", "Marketplace", and "OneFlow". The main dashboard area shows network and storage statistics: 1 NETS, 0 USED %; 1 IMAGES, 40MB USED. Below these are two line graphs: "NET DOWNLOAD SPEED" and "NET UPLOAD SPEED", both showing values between 0.58% and 1.00% over a time period from 05:24 to 05:30. A red error message box in the bottom right corner states: "Error: Can't connect to OpenNebula Manager".

click on "**Virtual Resources**"  
and **images**

The screenshot shows the OpenNebula Sunstone web interface. On the left, a sidebar menu includes 'Dashboard', 'Virtual Resources' (with 'Virtual Machines', 'Templates', 'Images' selected, 'Files & Kernels', 'Infrastructure', and 'Marketplace'), and 'OneFlow'. The main content area is titled 'Images' and shows a table with one item: ID 0, Owner sunadmin, Group sunadmin, Name mylinx, Datastore default, Type Q5, Status READY, and #VMs 0. Below the table, it says 'Showing 1 to 1 of 1 entries'. At the top right of the main area are buttons for 'Delete', 'Clone', 'More...', and 'Search'. A red error box in the bottom right corner displays the message 'Error' and 'Cannot connect to OpenNebula Marketplace'. The browser address bar shows '192.168.52.141:5880'.

This screenshot shows the 'Create Image' wizard in the OpenNebula Sunstone interface. The sidebar menu is identical to the previous screenshot. The main area is titled 'Create Image' and has two tabs: 'Wizard' (selected) and 'Advanced mode'. The 'Wizard' tab contains fields for 'Name' (set to 'mylinx'), 'Type' (set to 'CDROM'), 'Description' (empty), 'Datastore' (set to 'default (id:1)'), and 'Persistence' (empty). Below these are options for 'Image location': 'Provide a path' (radio button), 'Upload' (radio button, selected), and 'Empty datastore'. A 'Choose File' button is present with the message 'No file chosen'. At the bottom are 'Reset' and 'Close' buttons, and a large green 'Create' button. A red error box in the bottom right corner displays the message 'Error' and 'Cannot connect to OpenNebula Marketplace'. The browser address bar shows '192.168.52.141:5880'.

now register blank img

The screenshot shows the OpenNebula Sunstone web interface. On the left, a sidebar menu is visible with options like Dashboard, Virtual Resources, Virtual Machines, Templates, Images, Files & Kernels, Infrastructure, Marketplace, and OneFlow. The 'Templates' option is currently selected. The main content area is titled 'Images' and displays a table with two entries:

ID	Owner	Group	Name	Datastore	Type	Status	Actions
1	root	users	wxSP	default	CBROM	READY	
2	oneadmin	oneadmin	btynux	default	OS	READY	

A red error message box in the bottom right corner states: "Error: Cannot connect to OpenNebula Marketplace".

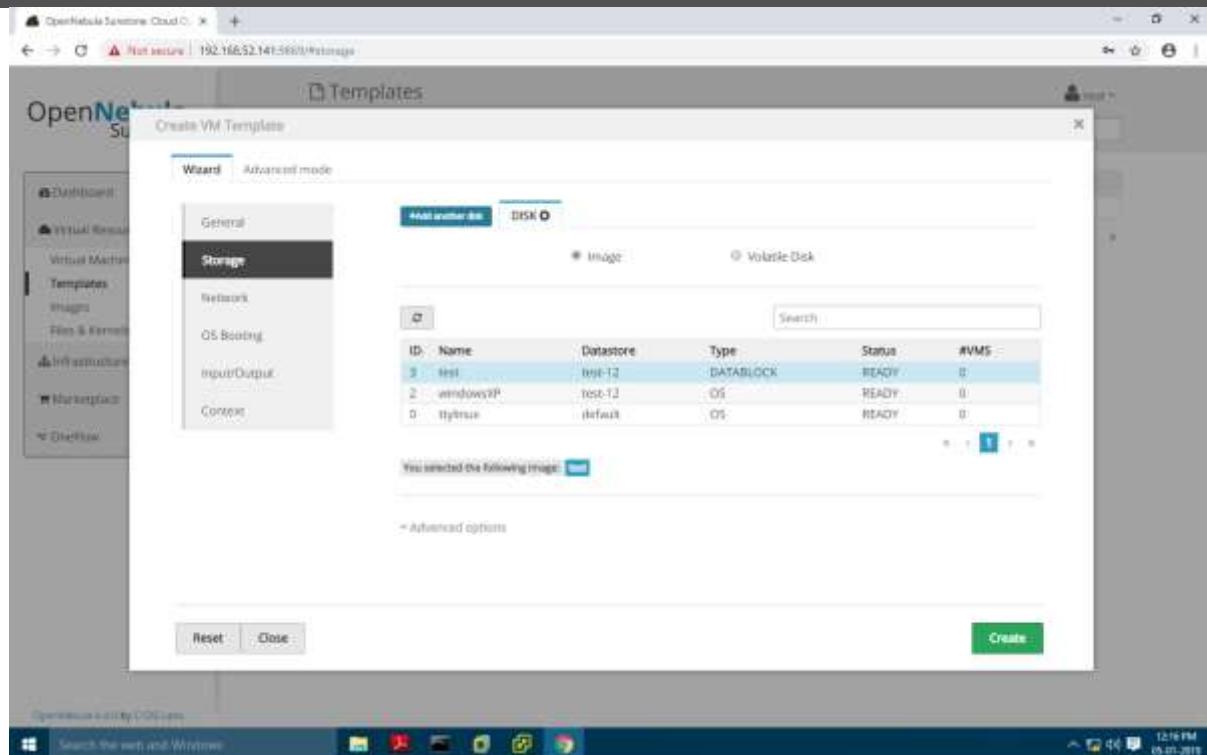
click on **template**

The screenshot shows the OpenNebula Sunstone web interface. The sidebar menu is identical to the previous screenshot, with 'Templates' selected. The main content area is titled 'Templates' and displays a table with one entry:

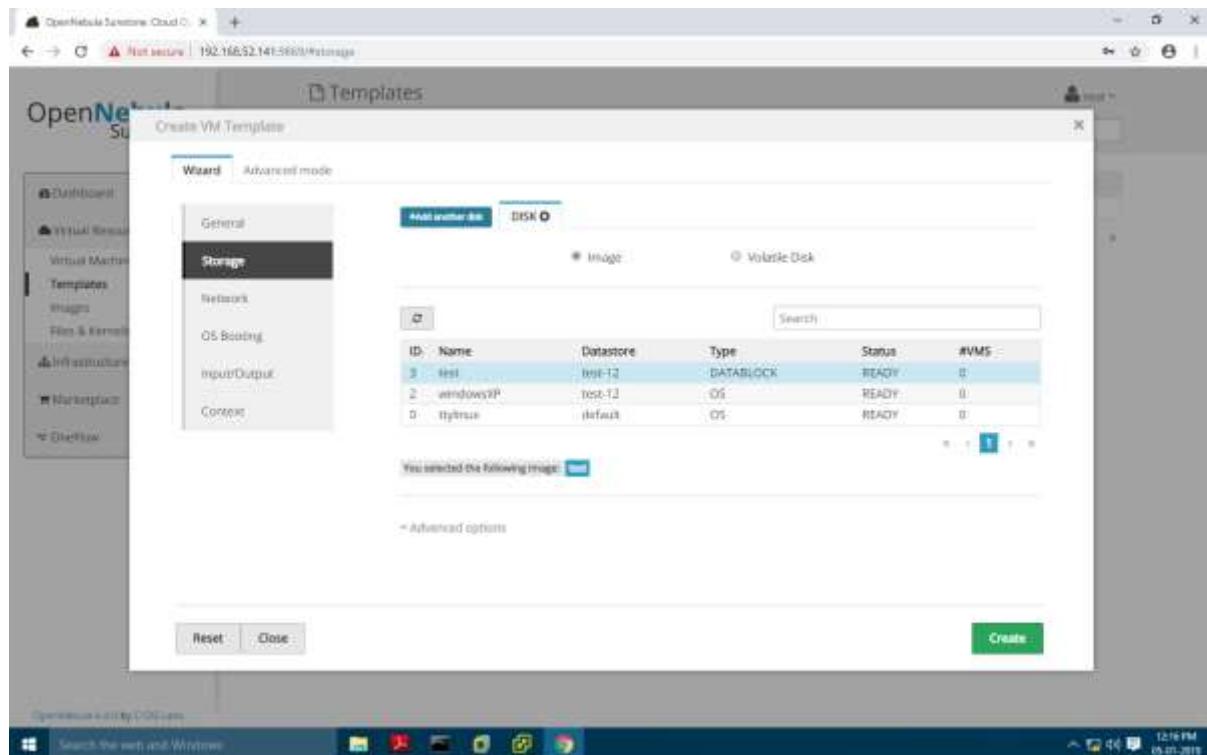
ID	Owner	Group	Name	Registration time
0	oneadmin	oneadmin	btynux	03:16:57 21/11/2012

A red error message box in the bottom right corner states: "Error: Cannot connect to OpenNebula Marketplace".

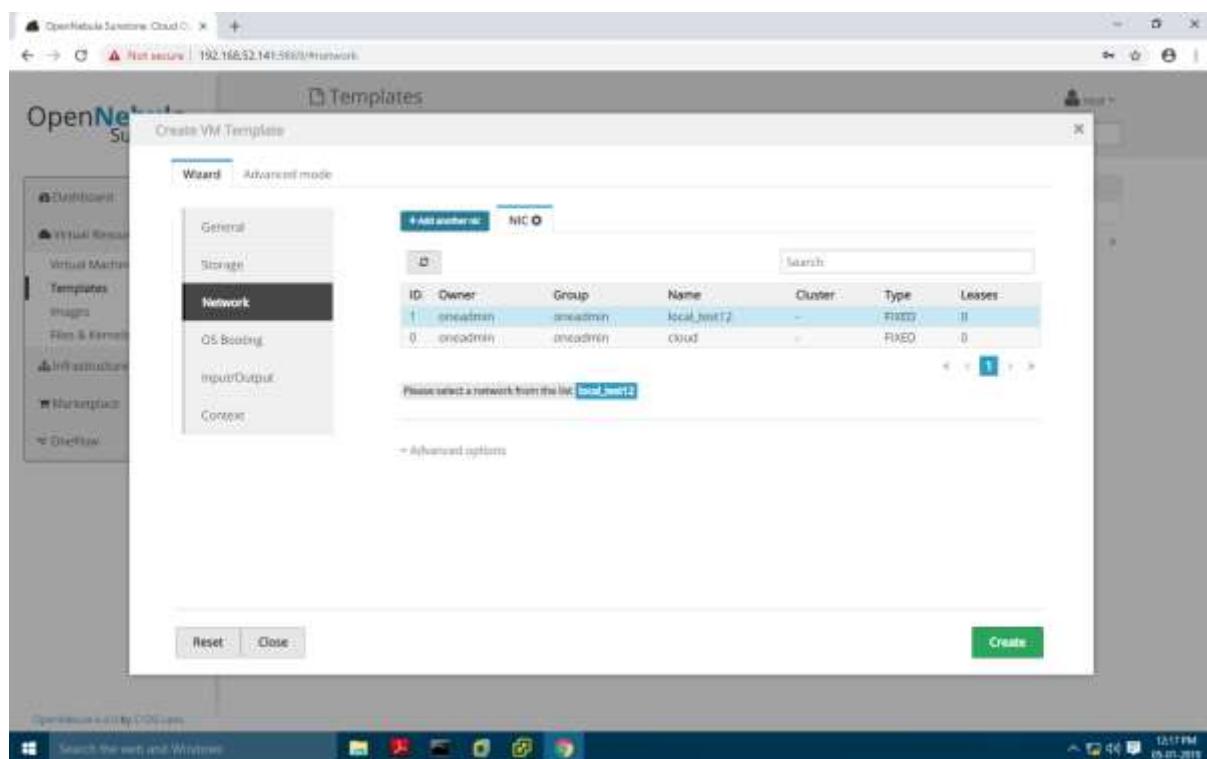
click on **storage**



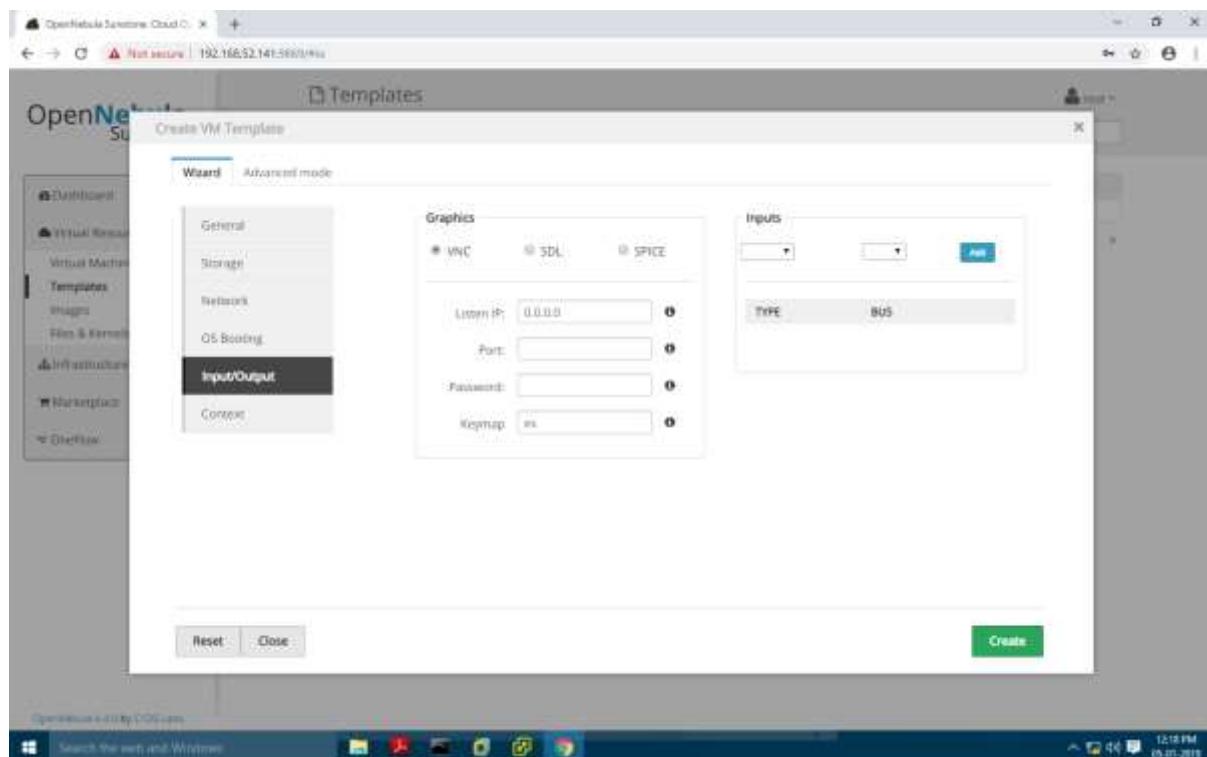
click on **add another disk**



click on "**Network**" and select network we have created



click on "**INPUT/OUTPUT**" SELECT "**VNC**"



The screenshot shows the OpenNebula Sunstone web interface. On the left, a sidebar menu includes options like Dashboard, Virtual Resources (Virtual Machines, Templates, Images, Files & Kernels), Infrastructure (Compute, Network, Storage), Marketplace, and OneFlow. The main content area displays a table of templates. The first row, 'new testin', is selected and highlighted in blue. The table columns are ID, Owner, Group, Name, and Registration time. Below the table, a message says 'Showing 1 to 2 of 2 entries'. At the top right of the main area, there are buttons for Delete, Instantiate, More, and Search, along with a user icon labeled 'root'. A secondary window titled 'Information' provides details for the selected template: ID 2, Name new testin, and Register time 12:18:20 05/01/2019. It also shows permissions for Owner, Group, and Other. The bottom of the screen shows a Windows taskbar with icons for Start, Task View, File Explorer, and others, and a system tray with a date and time indicator.

NOW click on **INSTANTIATE**

This screenshot shows the same OpenNebula Sunstone interface as above, but with a modal dialog box overlaid. The dialog is titled 'Instantiate VM Template' and contains fields for 'VM Name:' (set to 'new testin') and '# VMs:' (set to 1). There are 'Close' and 'Instantiate' buttons at the bottom. The background page remains largely the same, with the 'Information' window still visible. The Windows taskbar and system tray are also present at the bottom.

CLICK ON "VIRTUAL MACHINES"

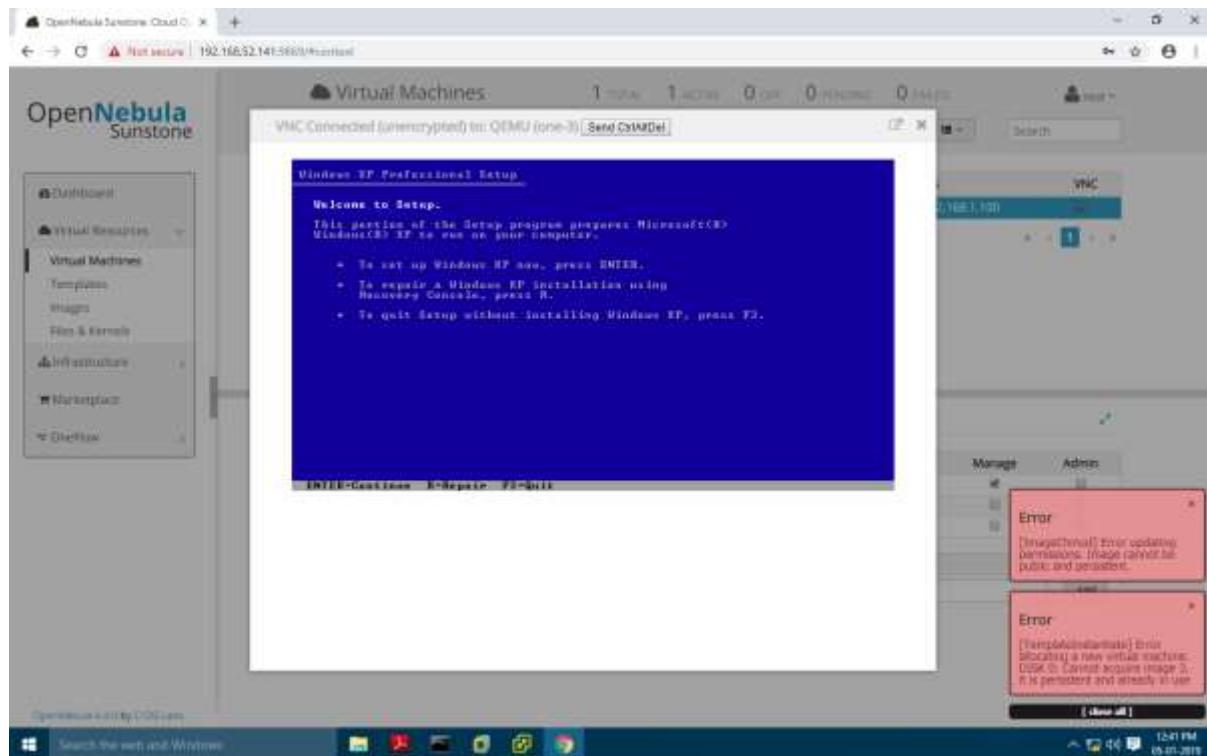
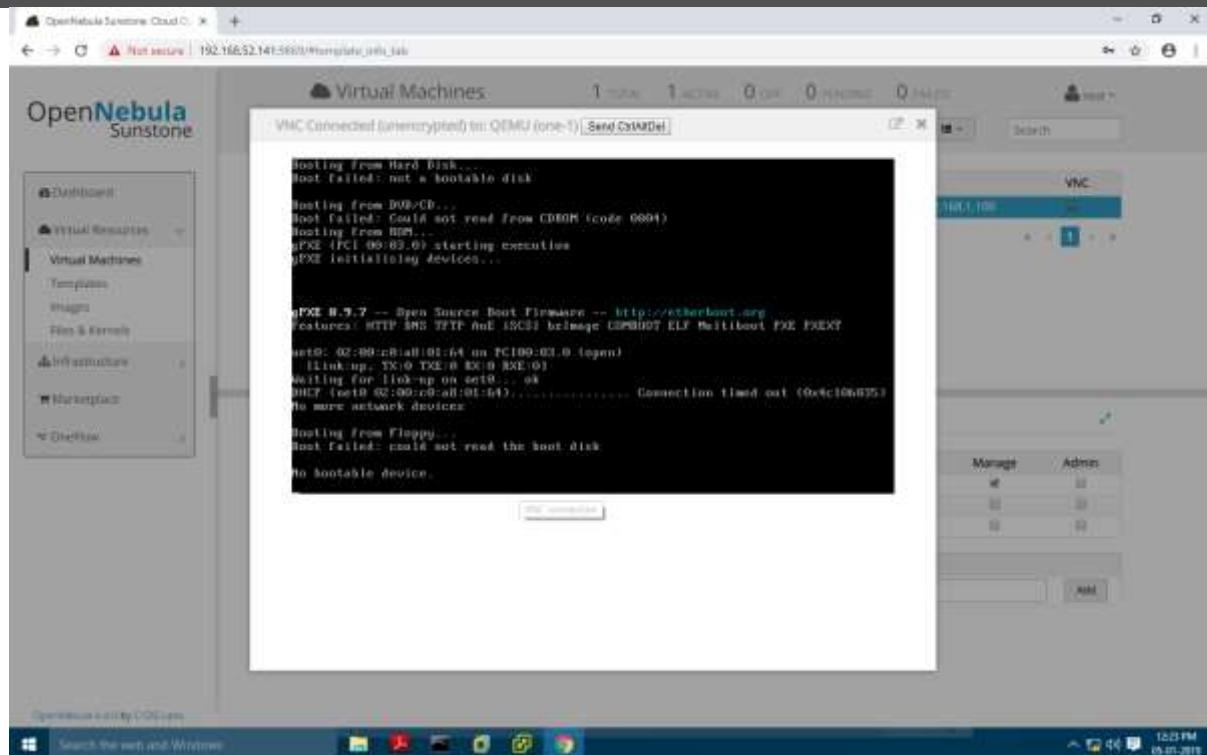
The screenshot shows the OpenNebula Sunstone web interface. The left sidebar has a 'Virtual Resources' section with 'Virtual Machines' selected. The main area displays a table of virtual machines:

ID	Owner	Group	Name	Status	Host	IPs	VNC
1	root	users	XP test12	RUNNING	one-sandbox	192.168.1.100	

At the bottom of the interface, there is a footer bar with the text "OpenNebula 4.11 by OCF Labs".

**CLICK ON REFRESH ICON**

This screenshot is identical to the one above, showing the same virtual machine details and interface layout. It includes the same sidebar, table, and footer.



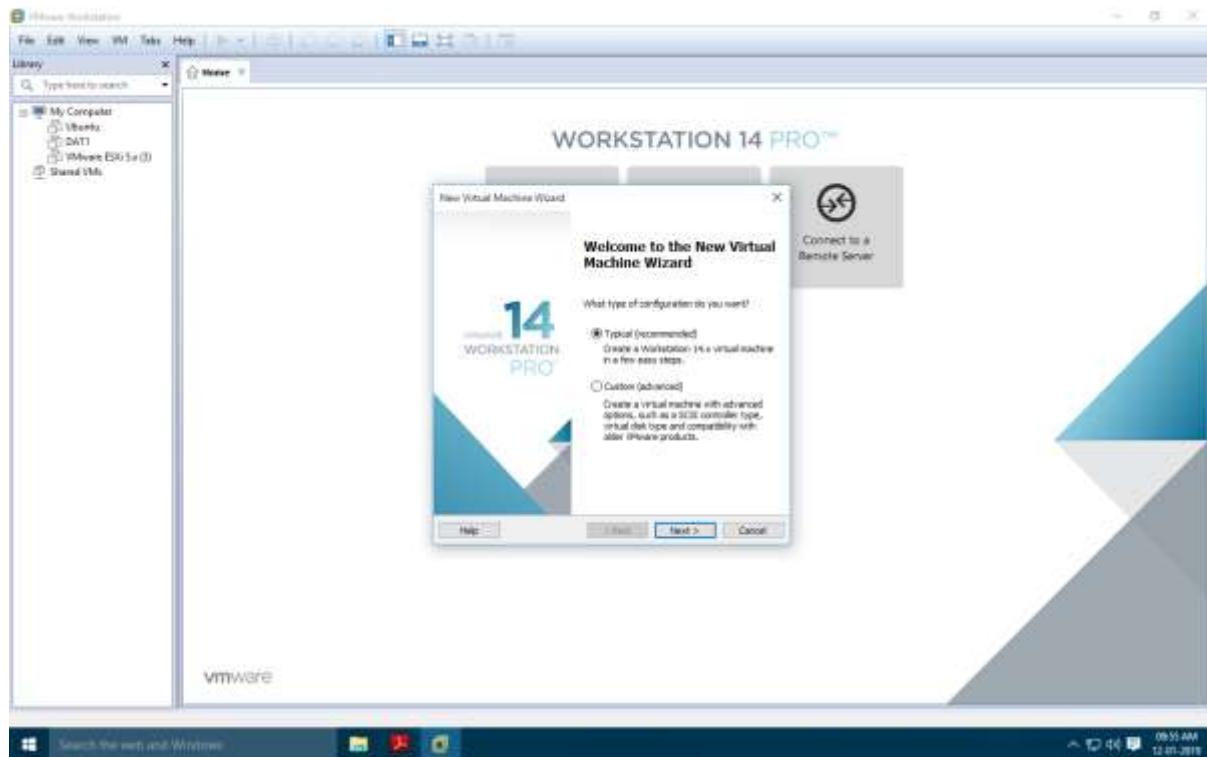
## PRACTICAL: 8

### IMPLEMENT IAAS USING EUCALYPTUS

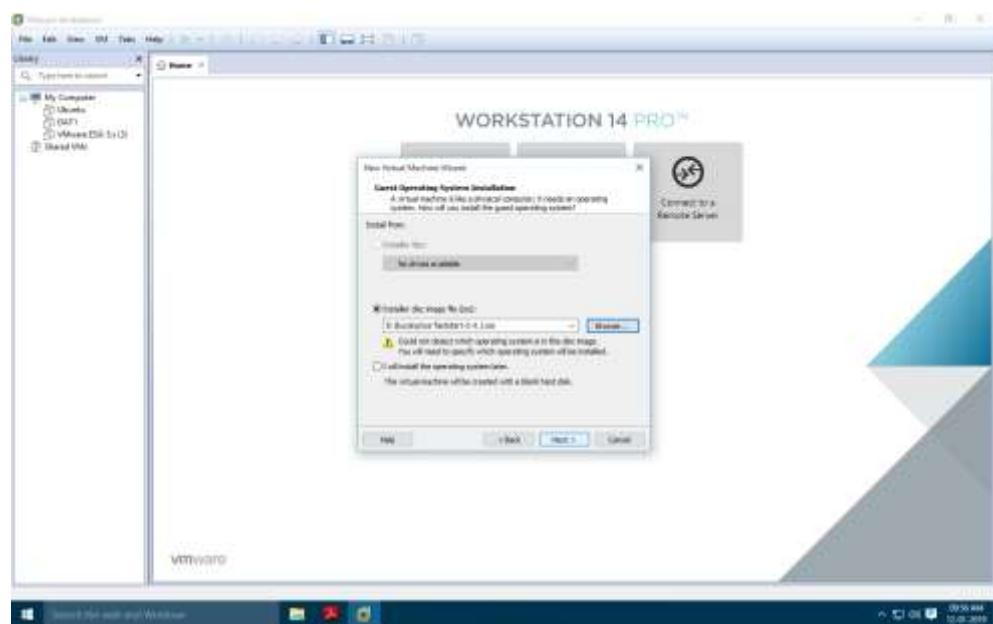
**Steps:**

Open Vmware Workstation 10 **Go on ->File ->New Virtual machine .**

Select Type of Configuration "**Typical**"



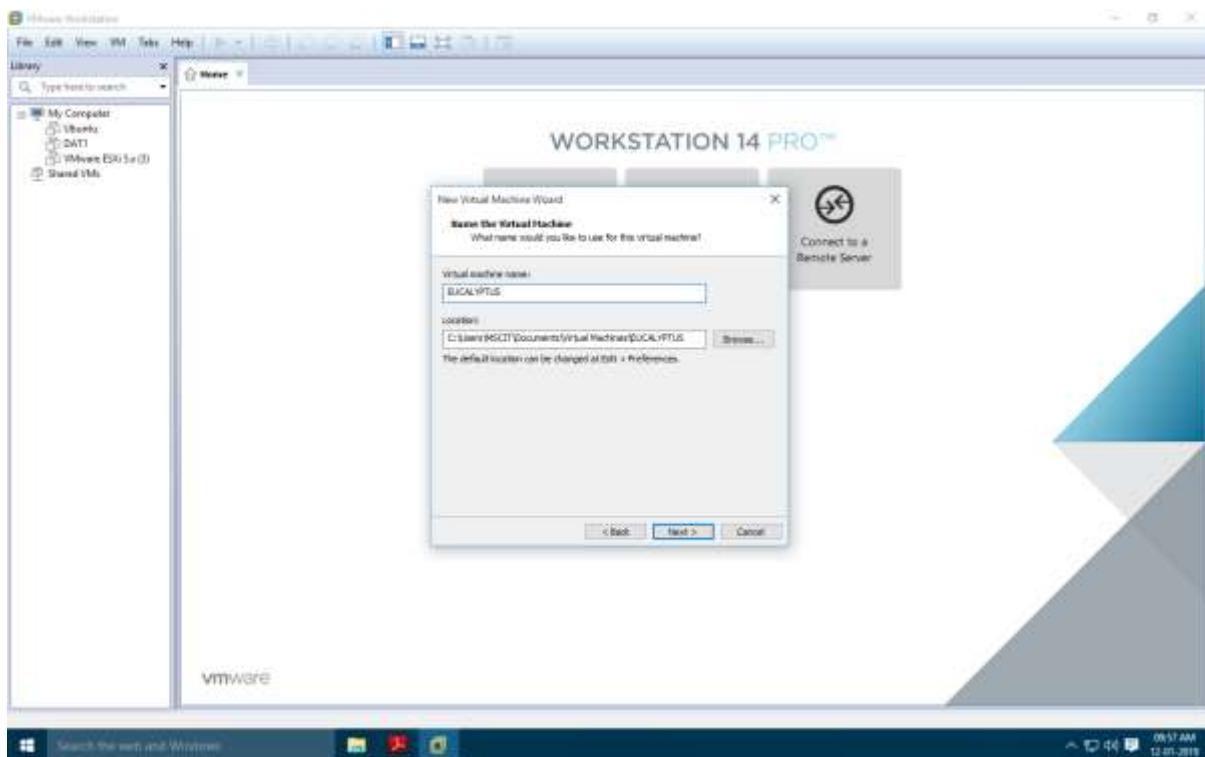
Select IOS image file **browse the path of .iso** file Next



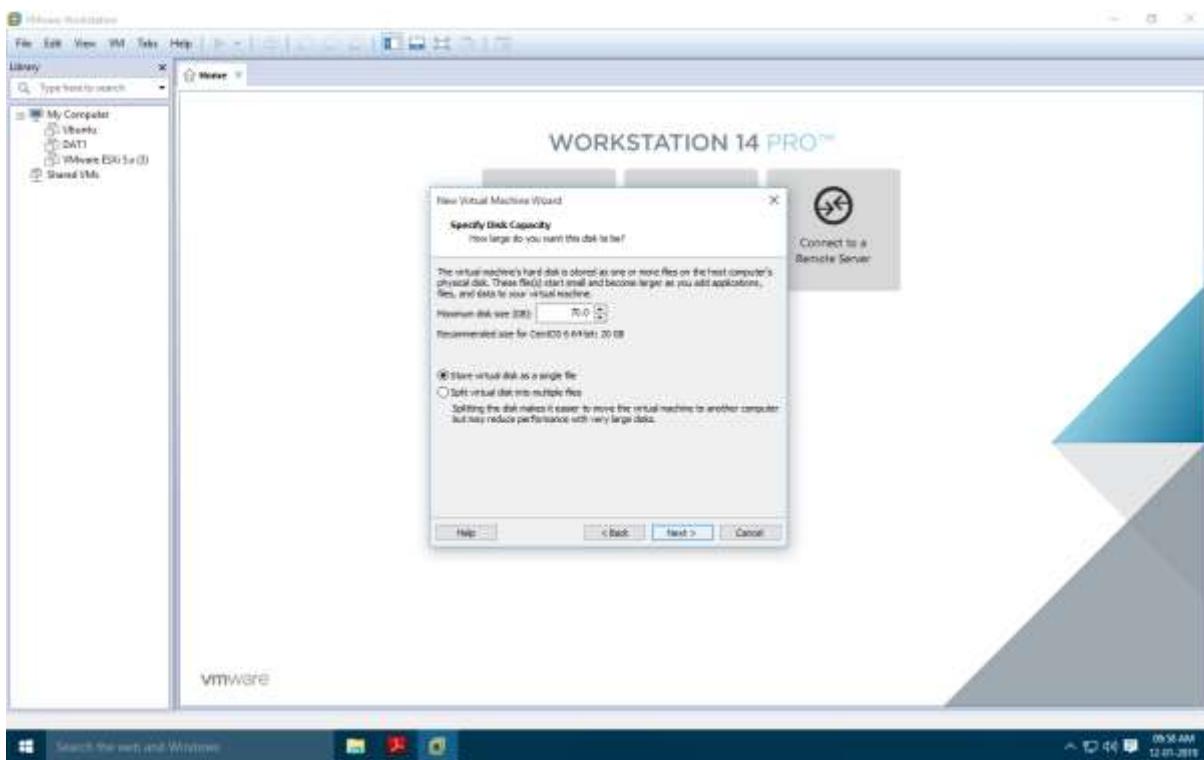
Select Guest Operating System "Linux" and version "CentOS 64-Bit"



Given the Virtual Machine Name Next



**Set Memory disk size : 70 GB & Select Store virtual disk as a single file, Click on Next.**



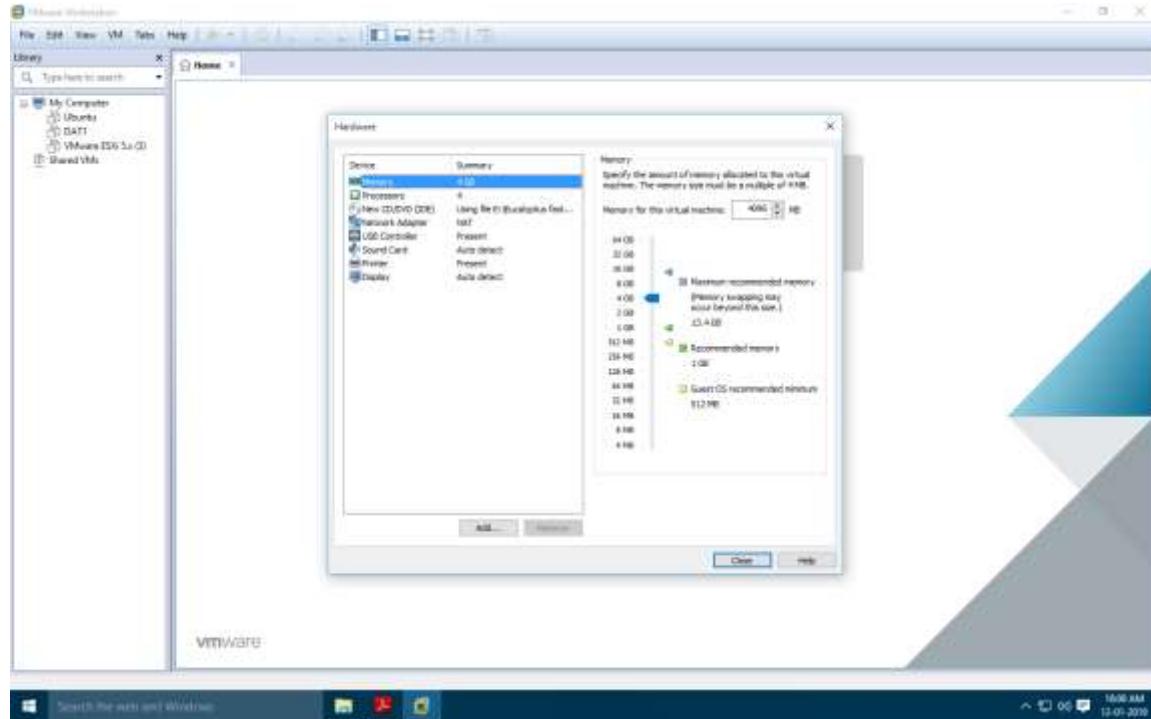
### Set below configuration setting

**RAM:** 4 to 6 gb

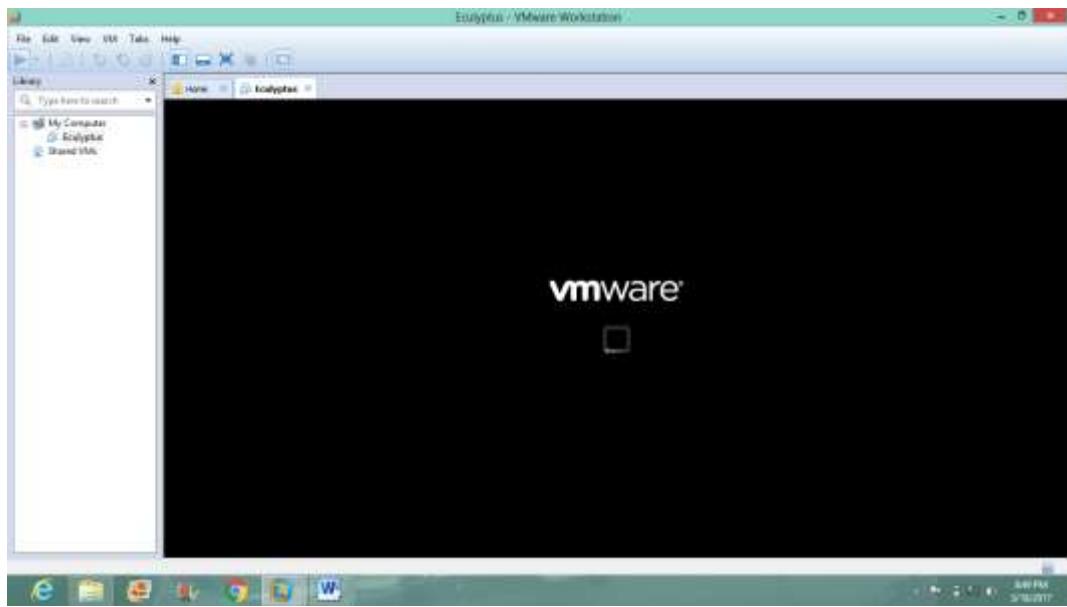
**Processors :** 2

**No of core processors :** 2

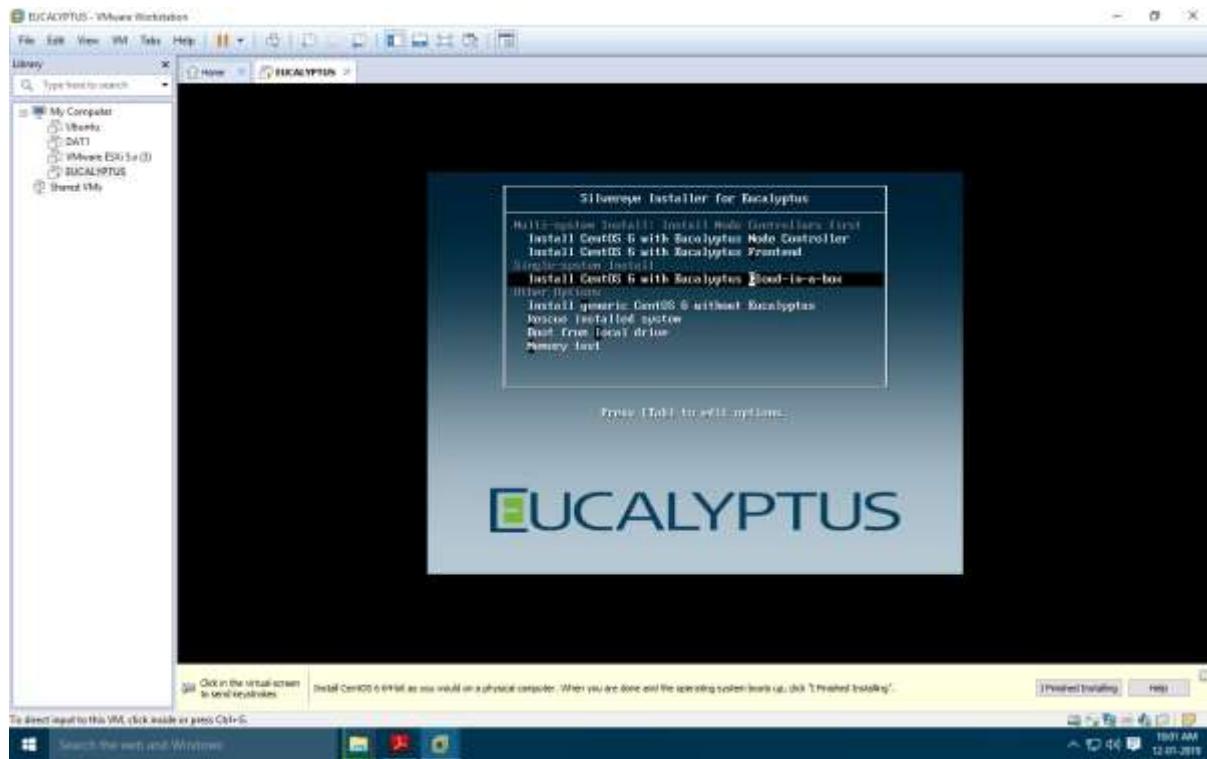
Select **Virtualize Intel VT** Click on Ok

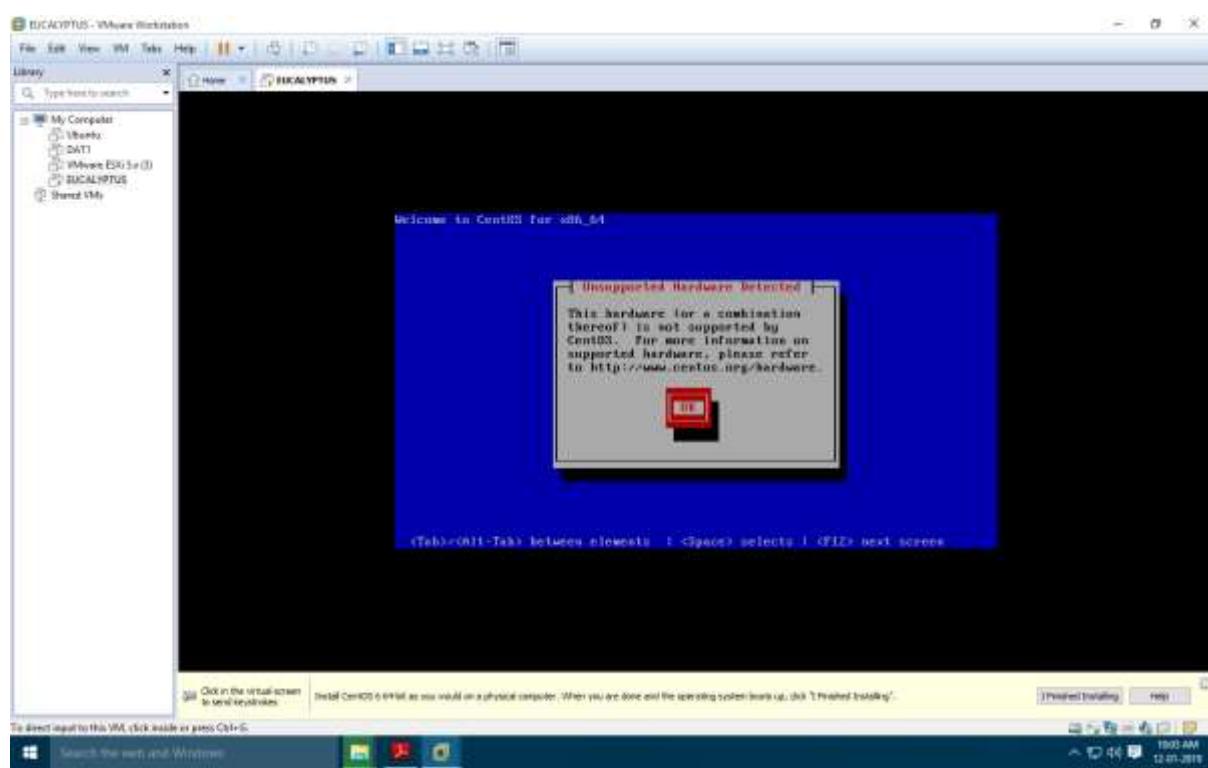
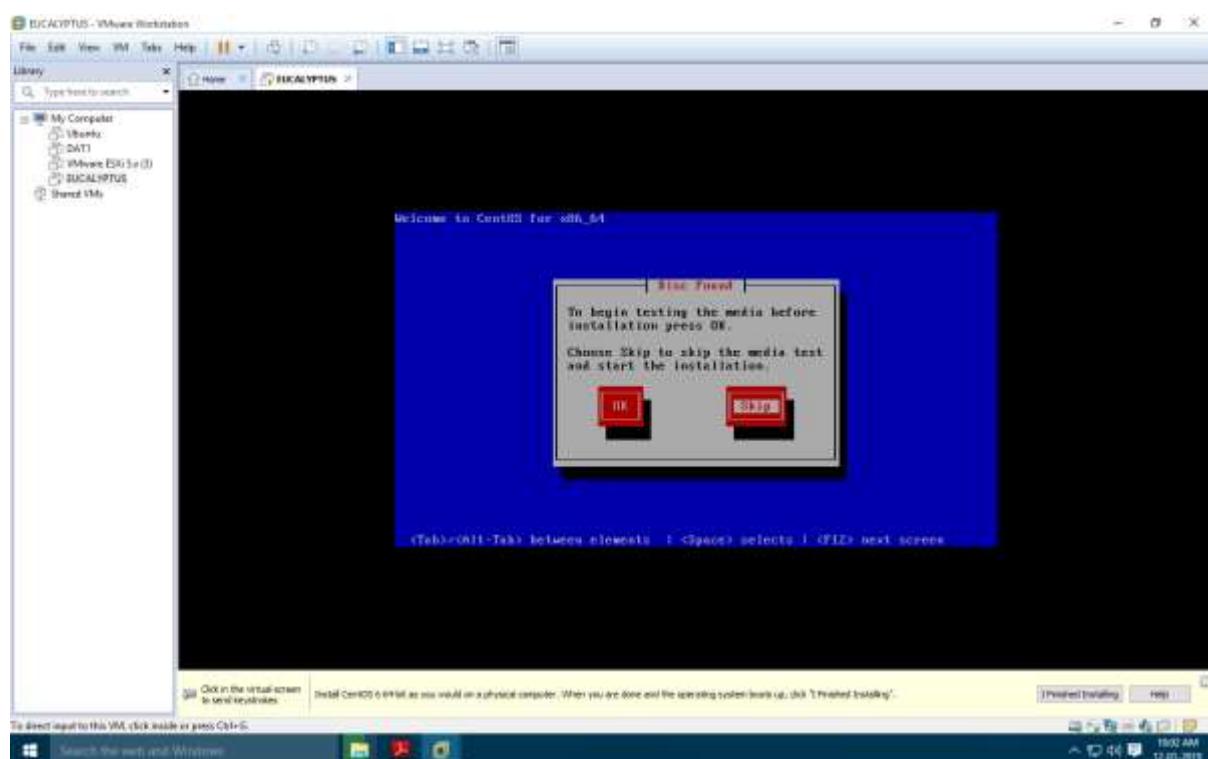


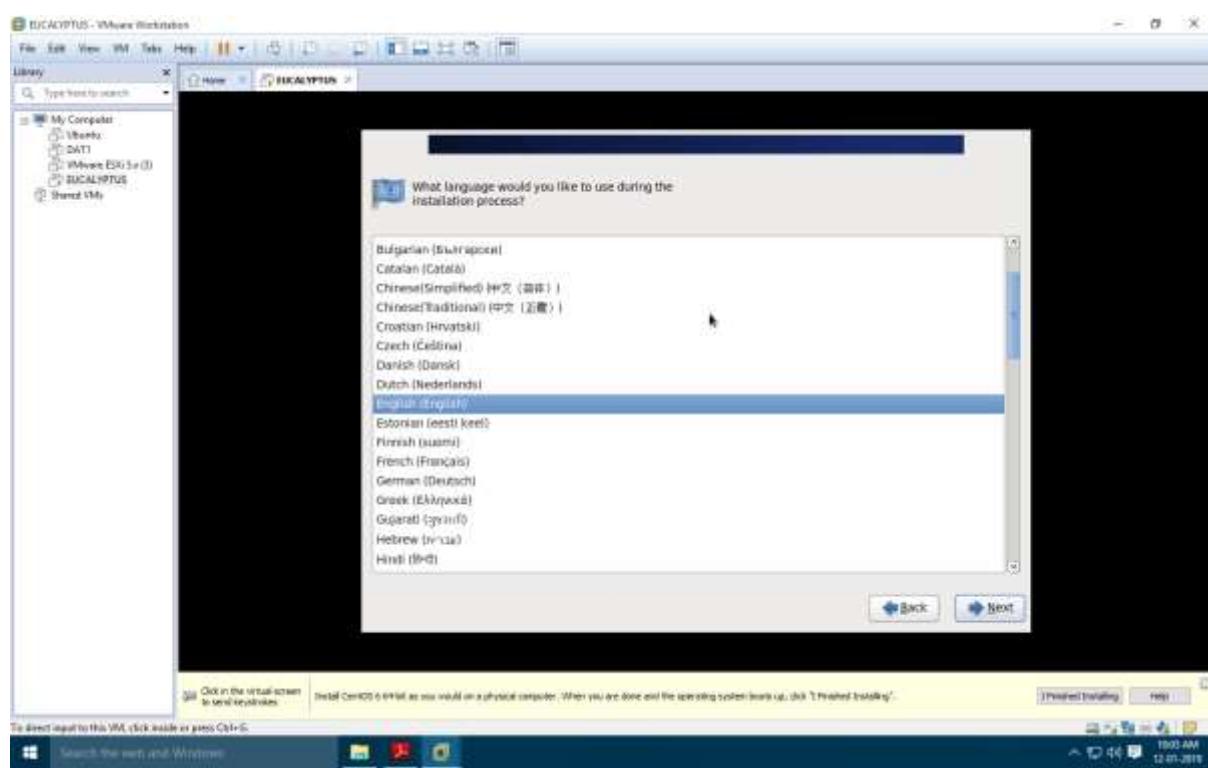
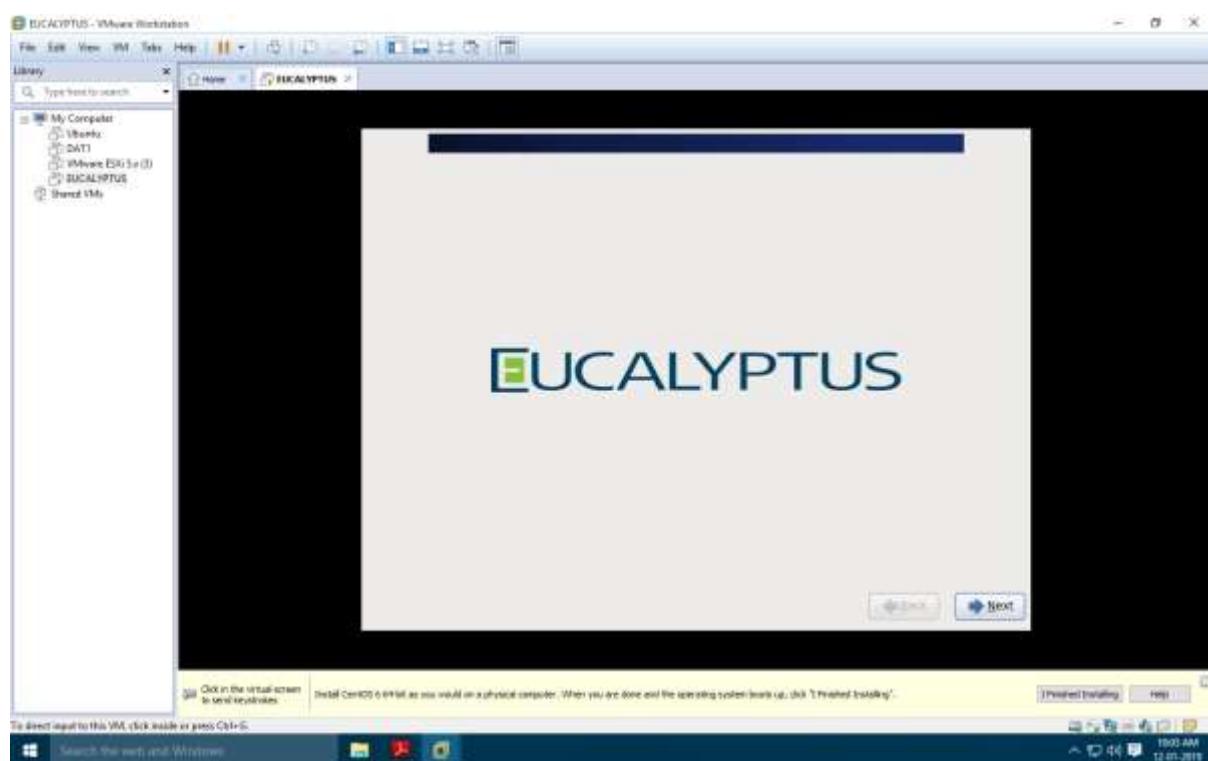
Power on virtual Machine.

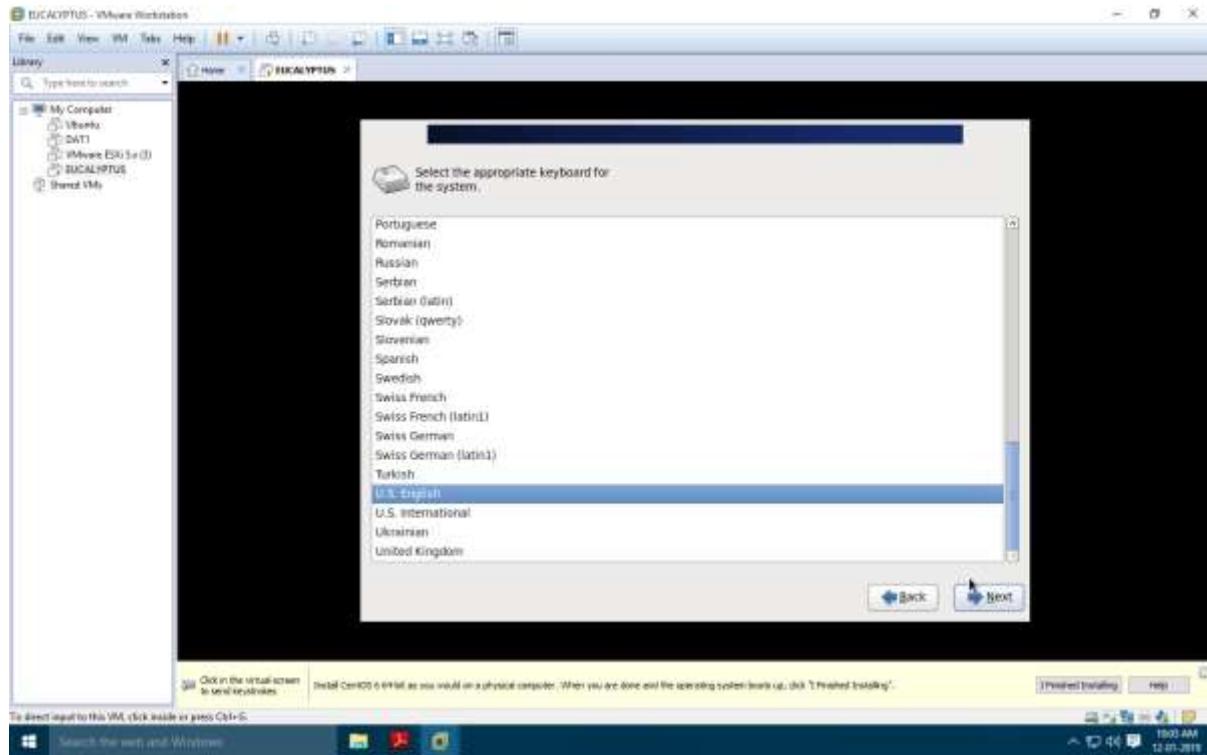


Select "Install CentOS 6 with Eucalyptus Cloud-in-a-box" Enter

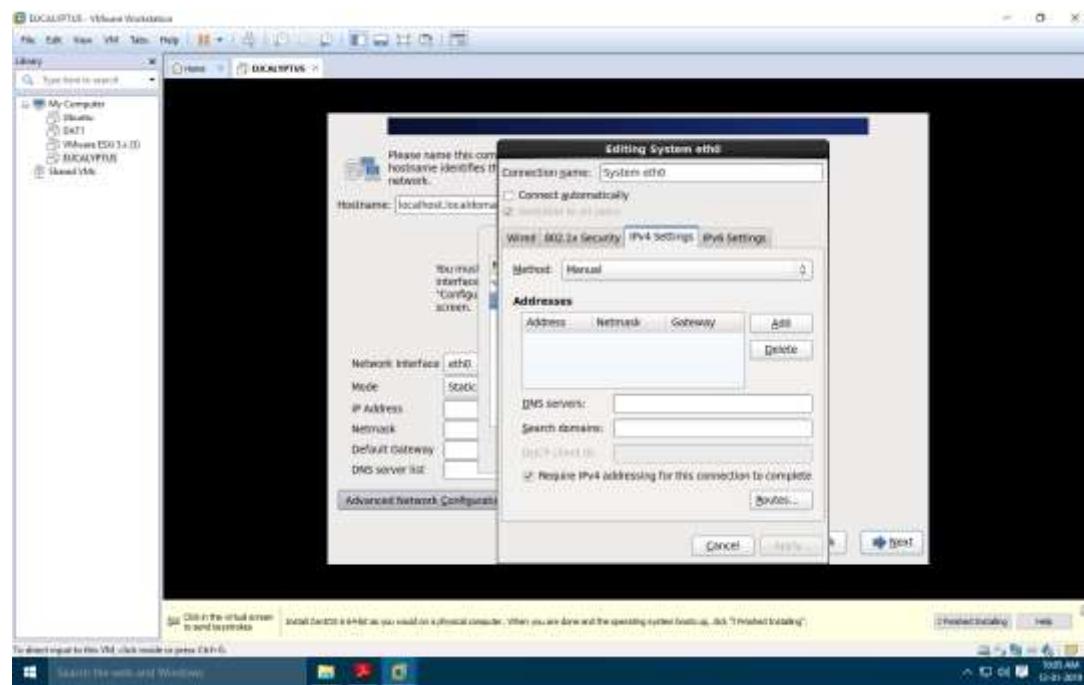


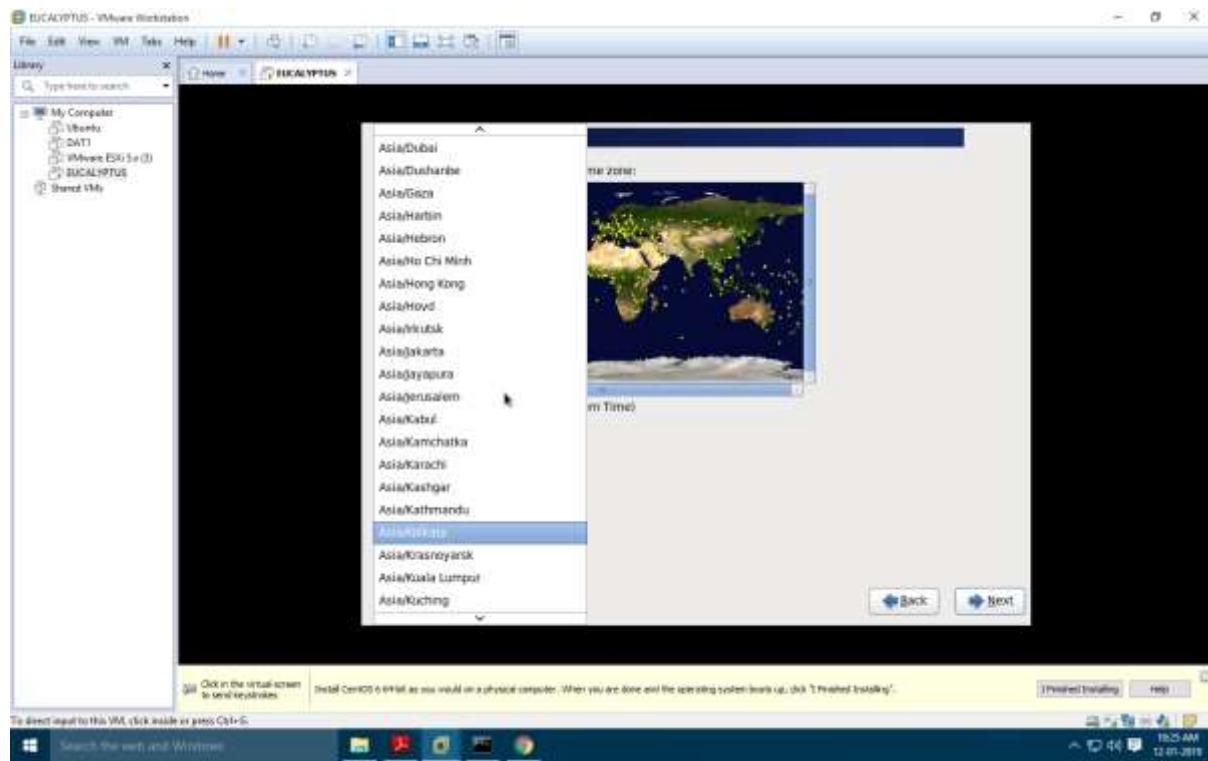
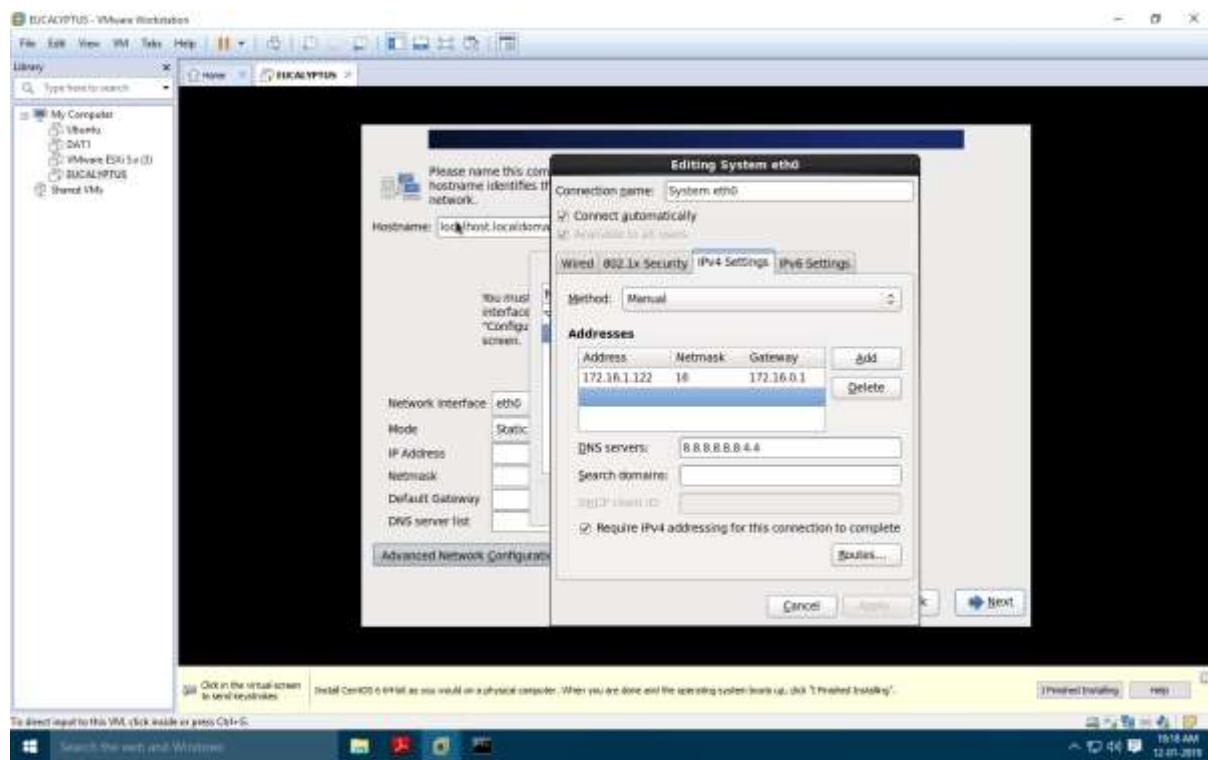






### Configure the Network Settings with your System's IPV4 address





**Enter the user name:**root

**Password:**root123

ROLL NO:13, SHAIKH SEEMA ABDUL RASHID, 127

