

CLOUD COMPUTING

PREETI MISHRA

ROLL NO: 09



Hindi Vidya Prachar Samiti's

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CERTIFICATE

This is to certify that Mr. / Miss/Mrs.**PREETI MISHRA** with Seat No **09** has successfully completed the necessary course of experiments in the subject of **CLOUD COMPUTING** during the academic year **2020 – 2021** complying with the requirements of **RAMNIRANJAN JHUNJHUNWALA COLLEGE OF ARTS, SCIENCE AND COMMERCE**, for the course of **M.Sc. (IT)** semester -I.

Internal Examiner

Date: 6/3/2021

Head of Department
Examiner

College Seal

External

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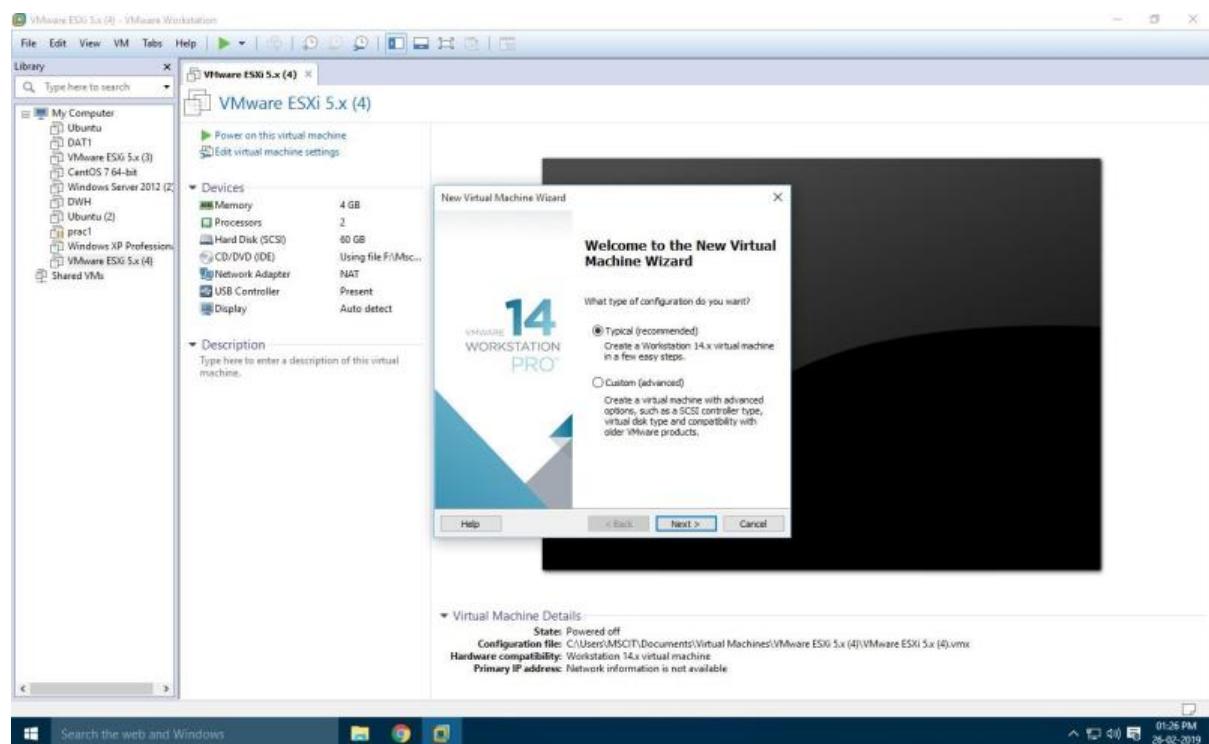
CLOUD COMPUTING

PRACTICAL: 1

IMPLEMENTING CLUSTER ON WINDOWS

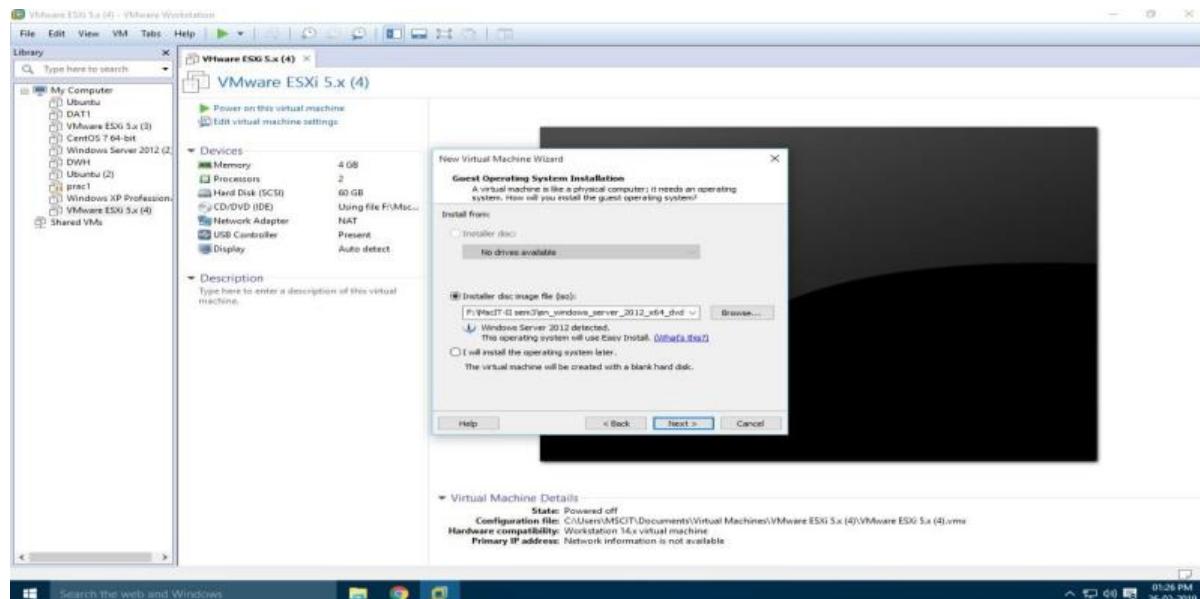
Install the **VMWare Workstation**. The **Home page** of VMWare Workstation looks like the picture below. To create a new Virtual Machine click on “**Create a New Virtual Machine**”.

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

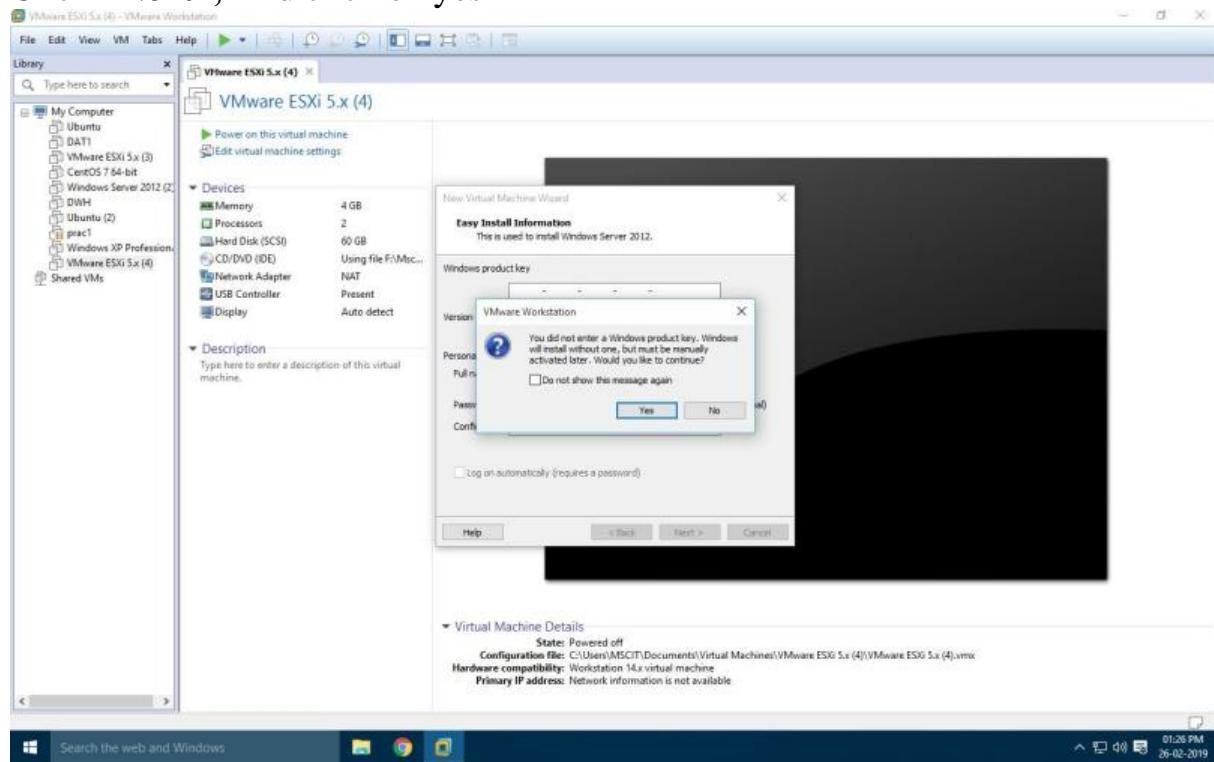


In the Next window, select the option **Install Disc** and click on **Browse** to select the windows server 2012 iso file and then click on **Next**.

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



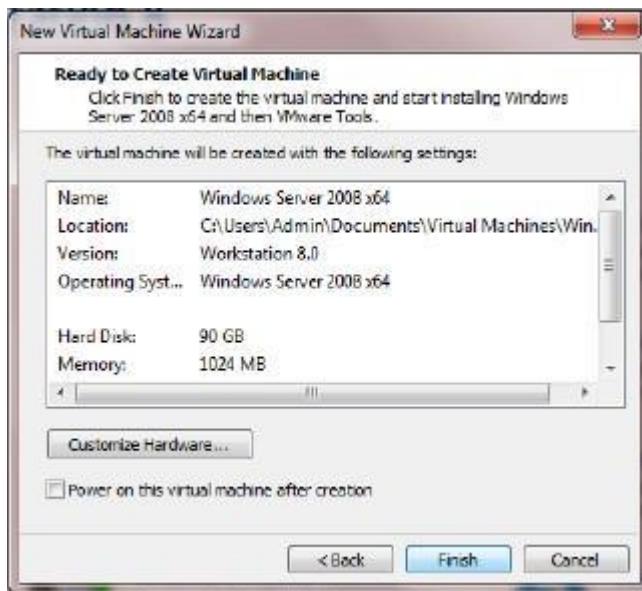
Click “**Next**”, And click on yes



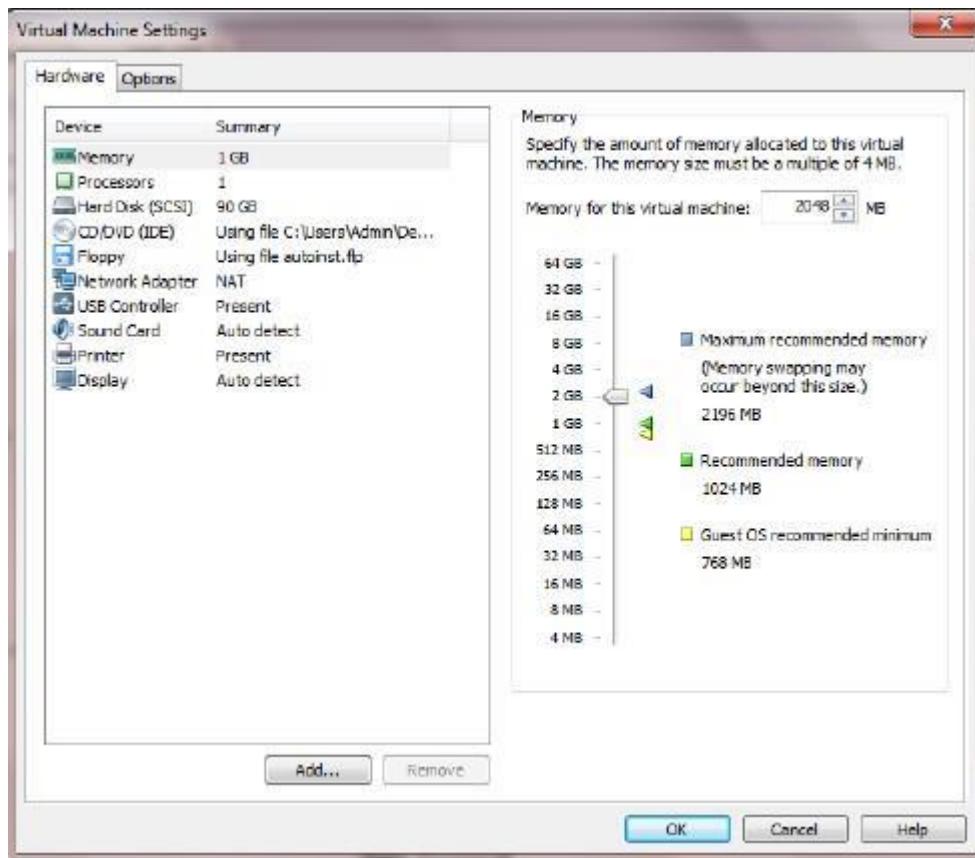
Choose “Store virtual disk as a single file” and Keep the memory size as **90GB**.
Click on “Next”.



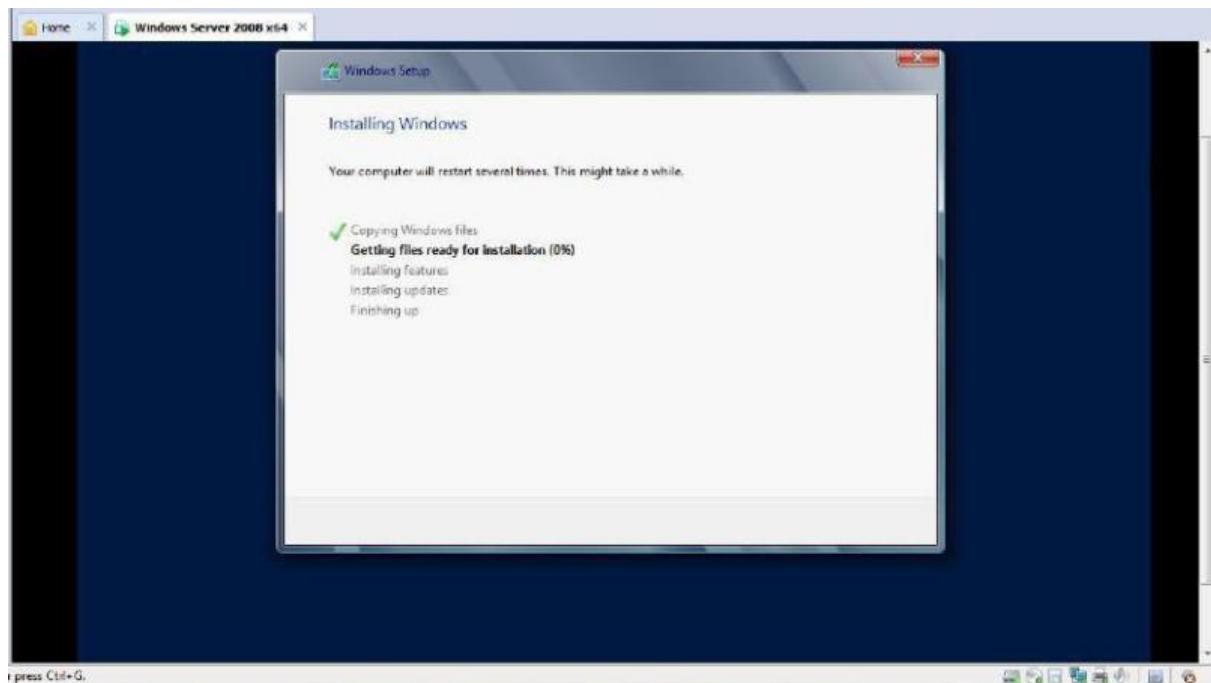
Click on “Finish” button.



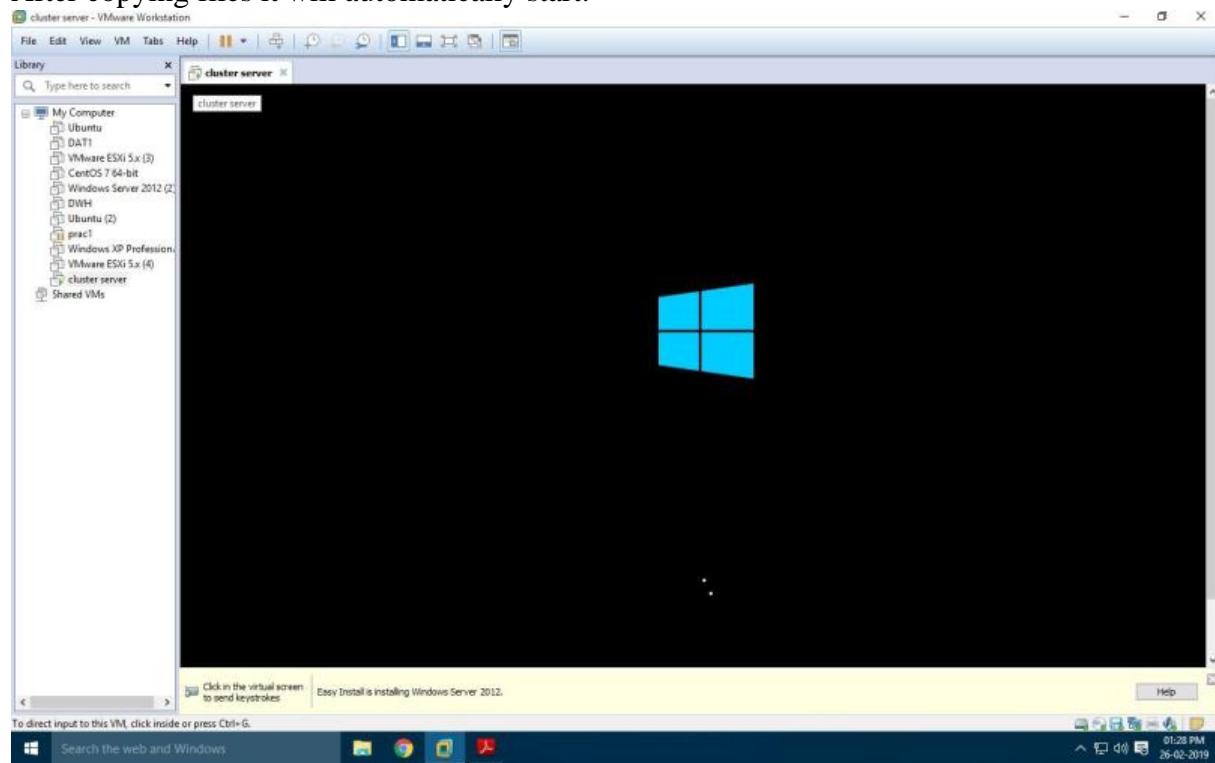
Click on **Memory** under Devices on the right side and make it to **2GB**.
Power on the virtual machine by clicking on “Power on this virtual machine”.



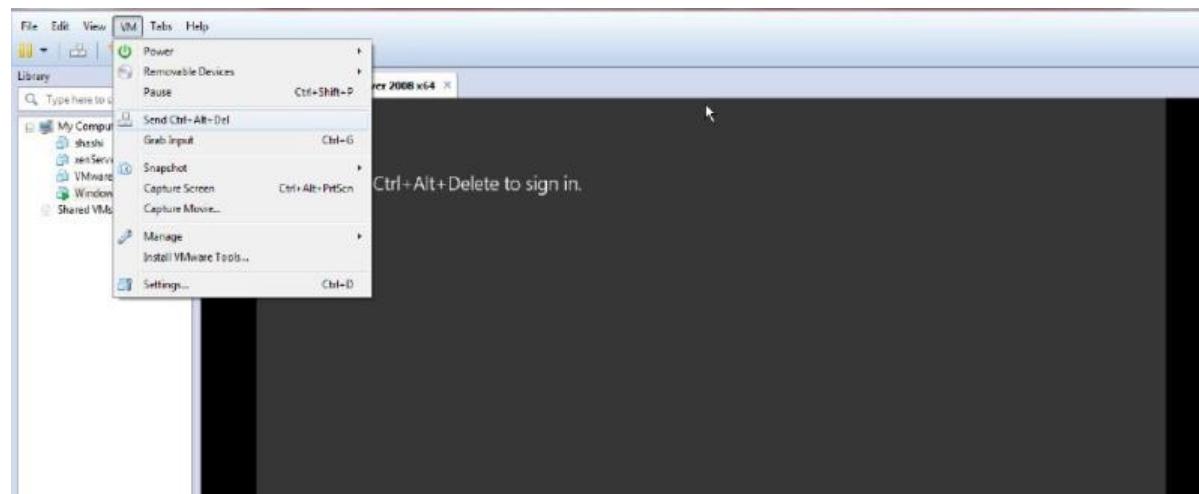
Copying of System Files will start.



After copying files it will automatically start.

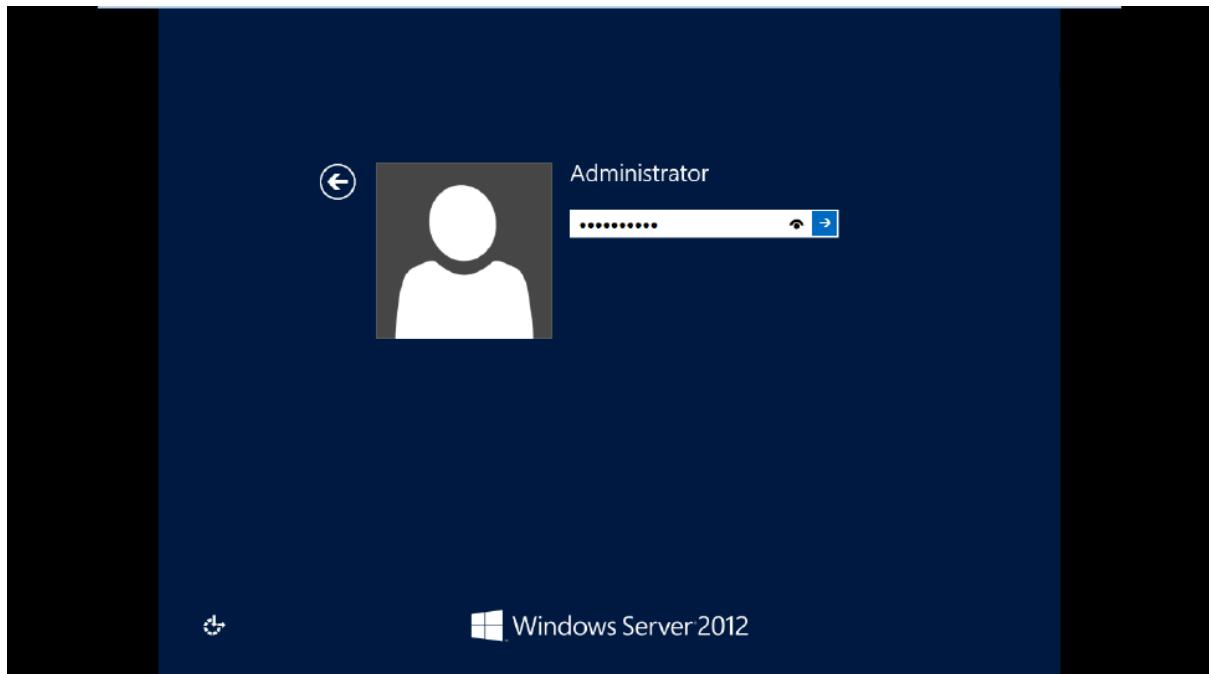


If installing on the Virtual Machine like VMWare then you need to click on the menu as show in the next screen.

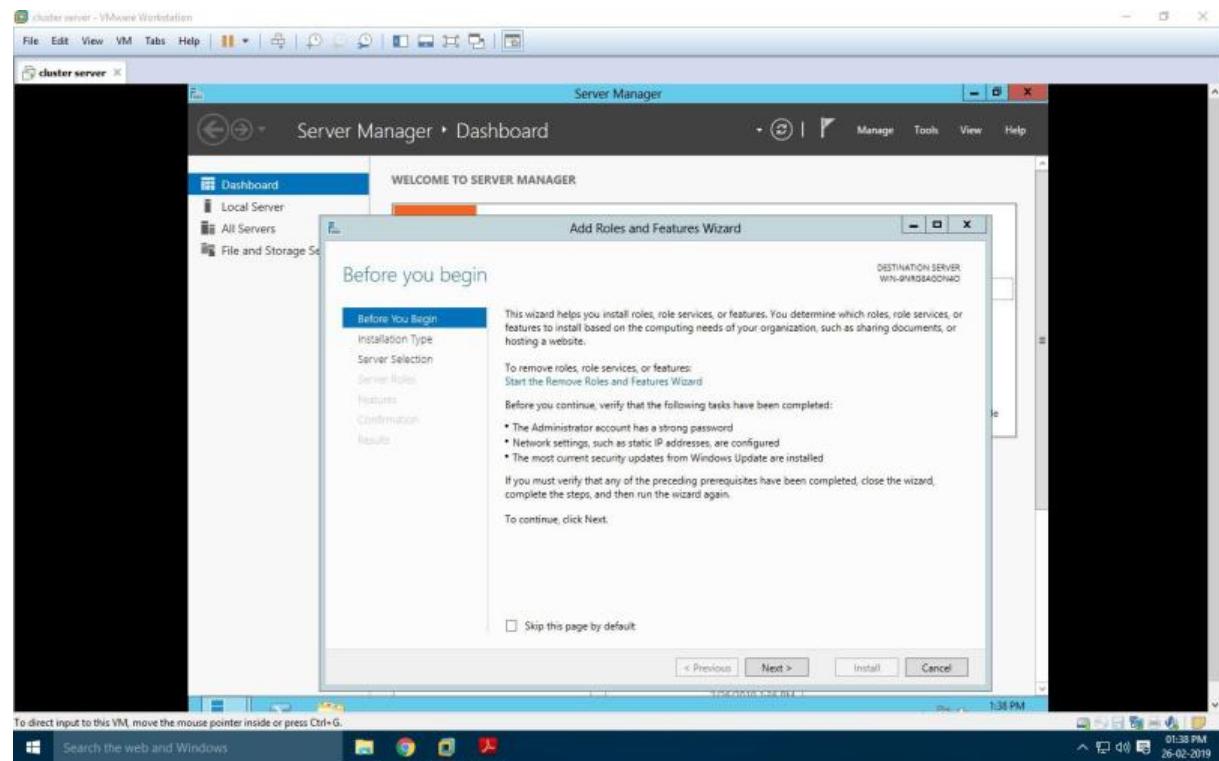


Enter the password and press "Enter" button on the keyboard

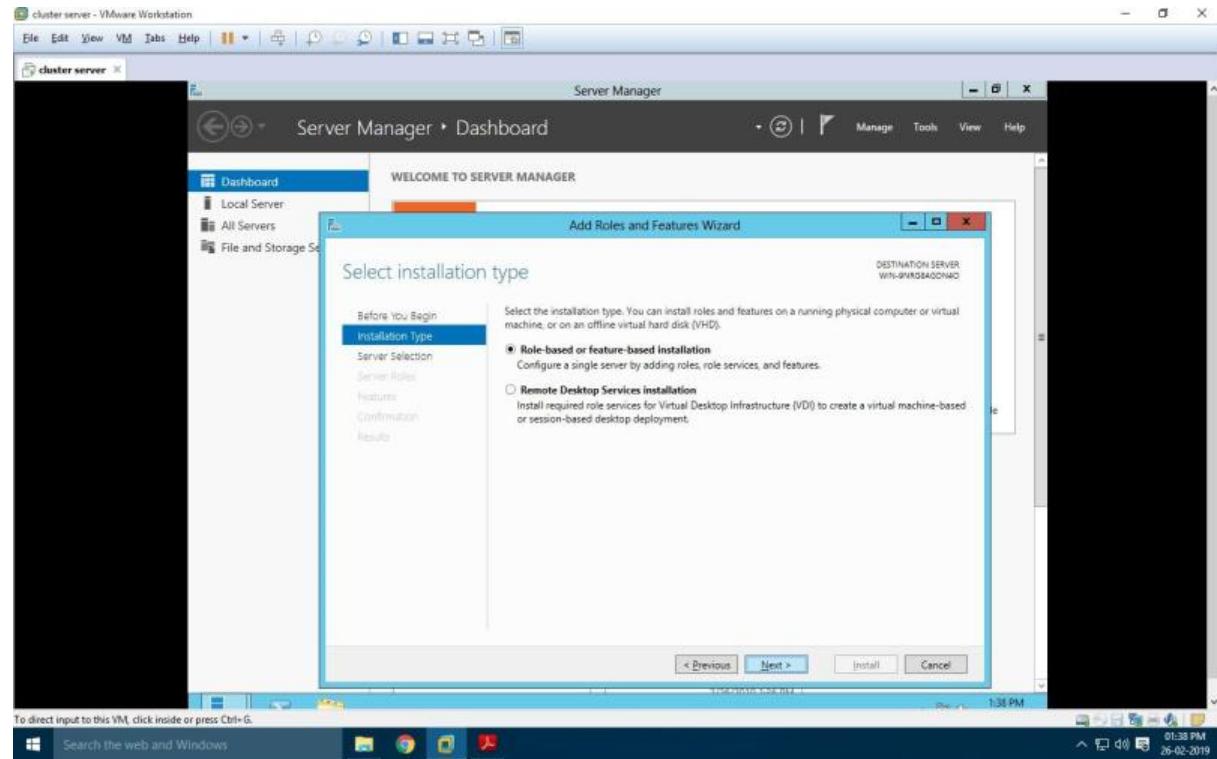
Password:Admin12345



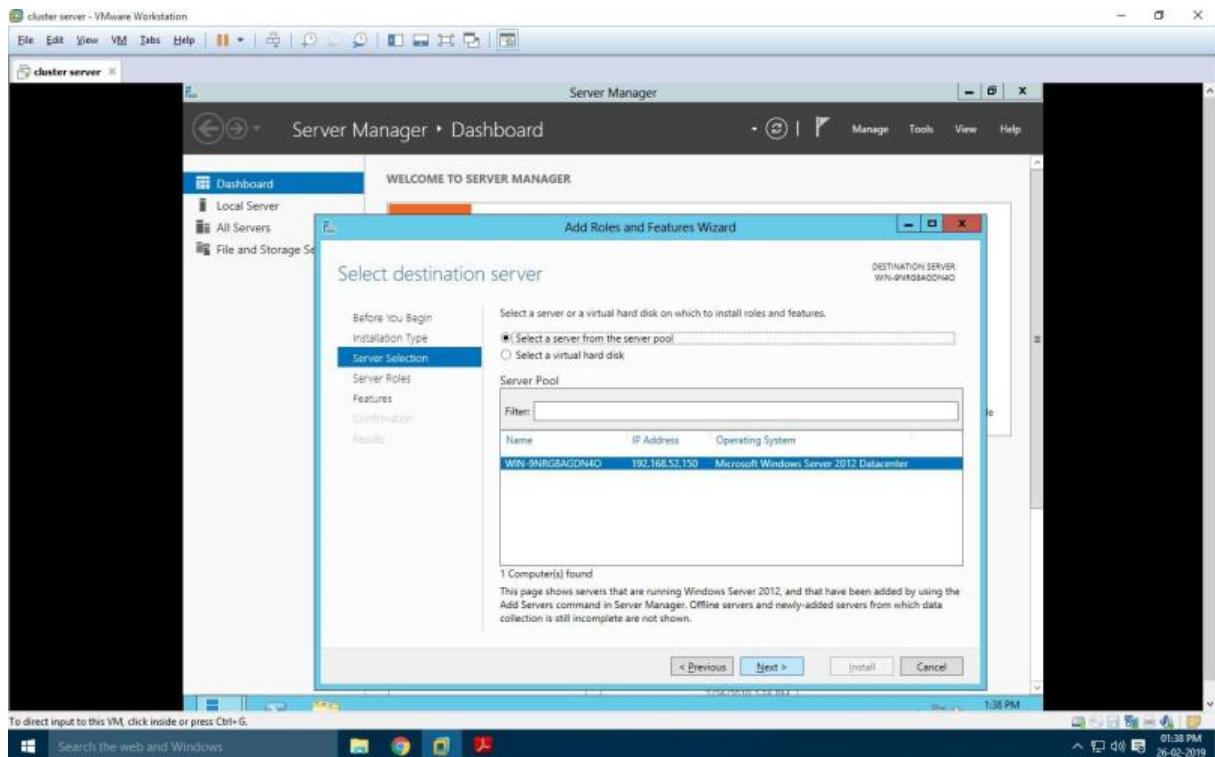
To make the current system a Domain Controller click on “Add Roles and Features” under the “Manage” menu at the top of the screen and get the “Add Roles and Feature Wizard”.



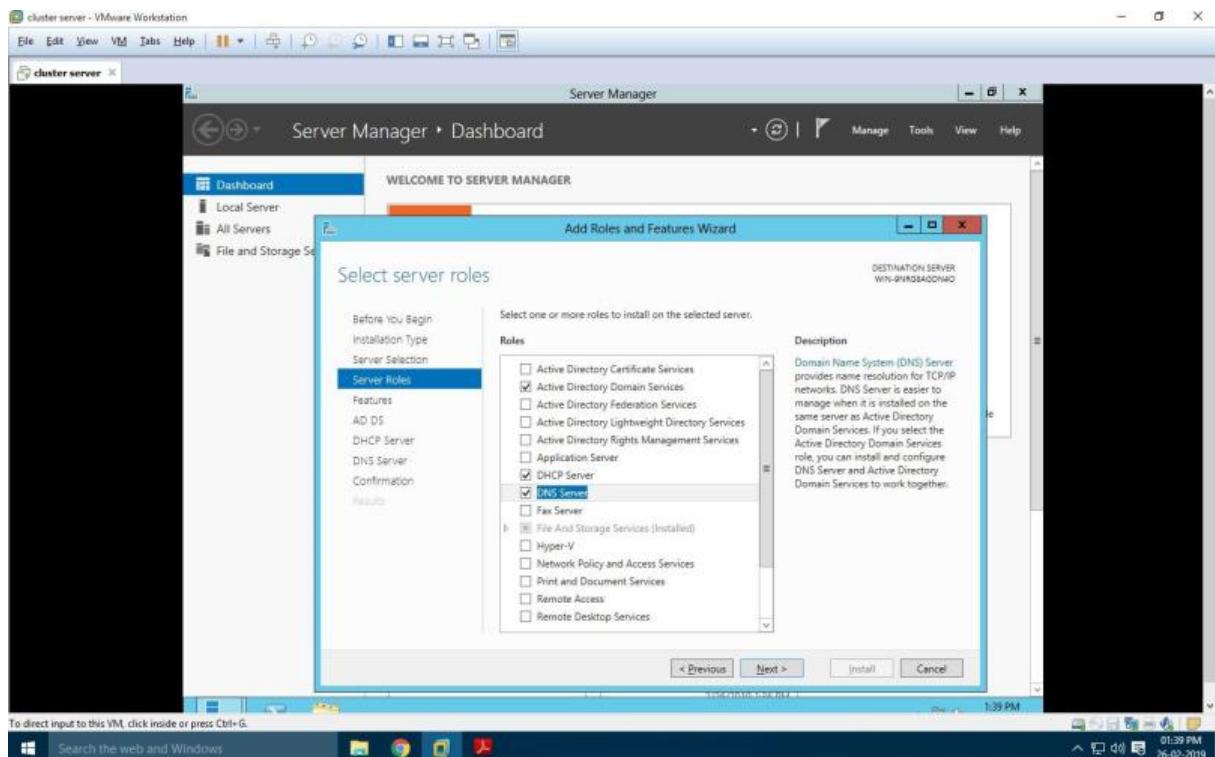
Under “select installation Type” select “Role-based or feature-based installation” and click “Next” button.



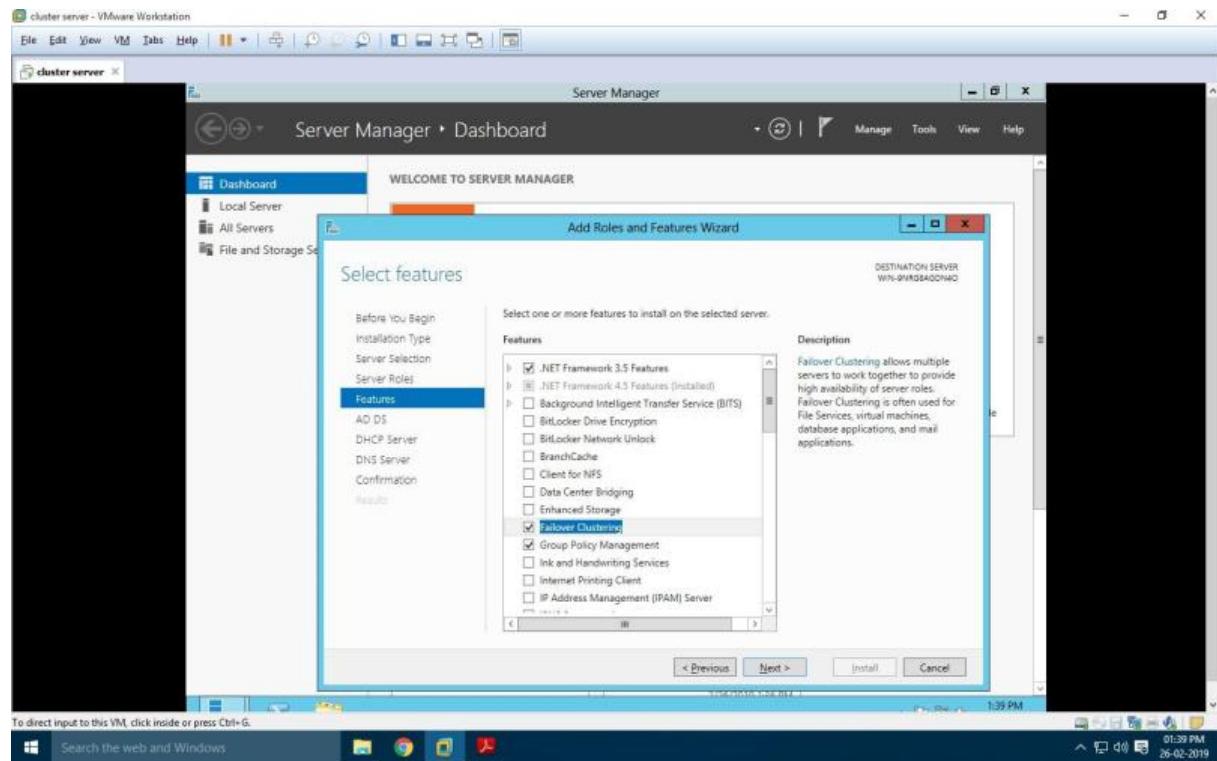
Under “select destination Server” select “Select a server from the server pool” option and select the server as shown in the screen below and click “Next”



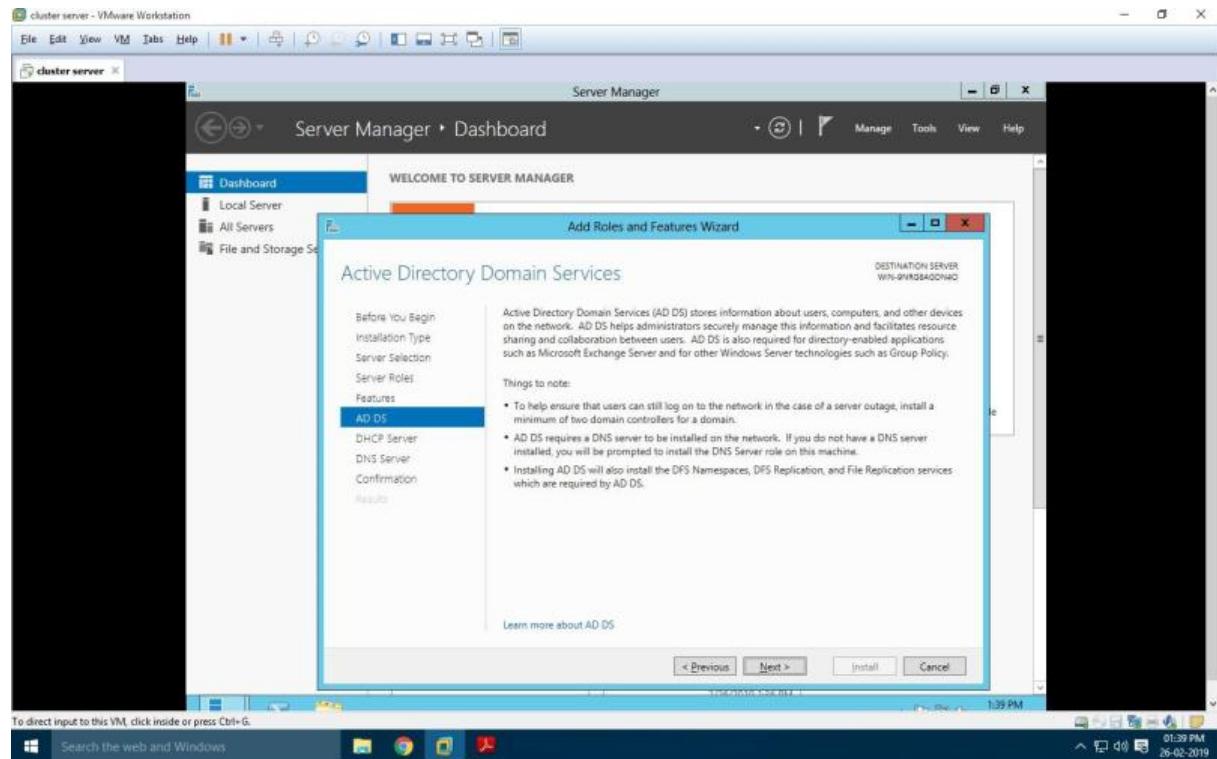
Click on “Active Directory Services”, “DNS” and “DNS” roles from the list of roles provided and click on “Add Features” button as shown in the screen. Add Features button will appear as you click on any of the roles.
After selecting the Role click “Next”.

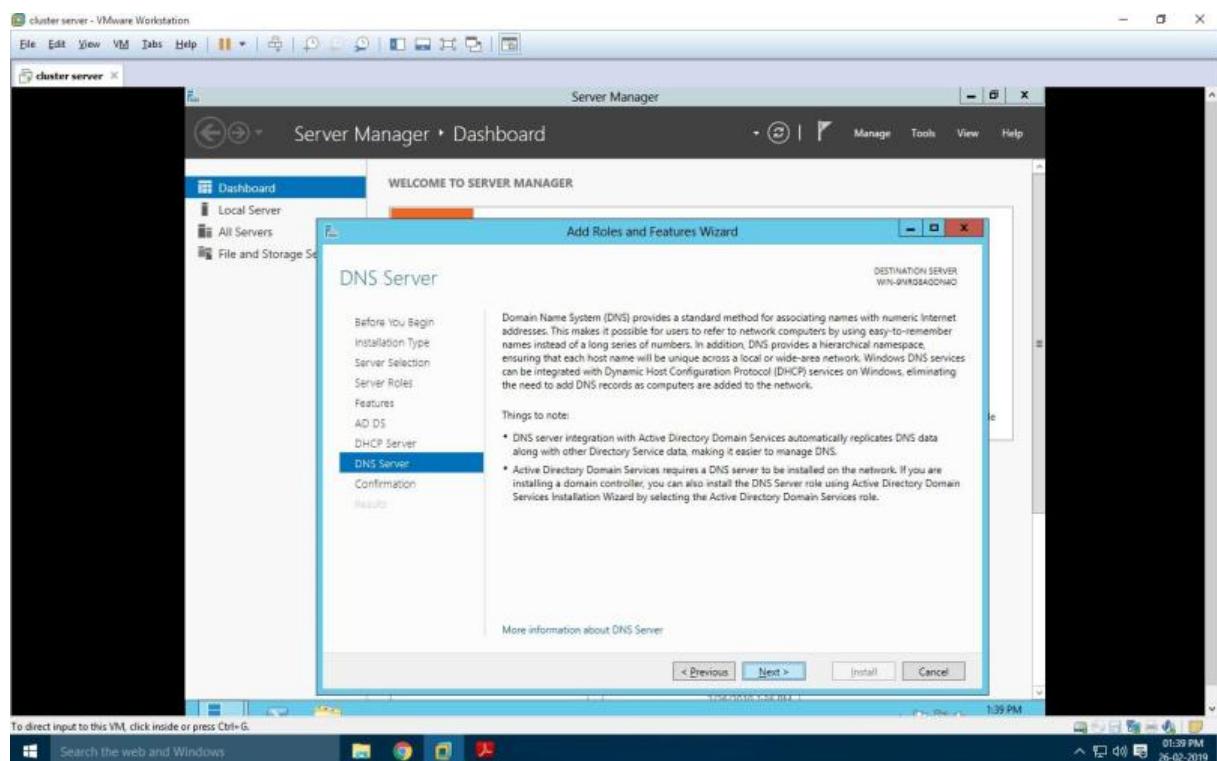
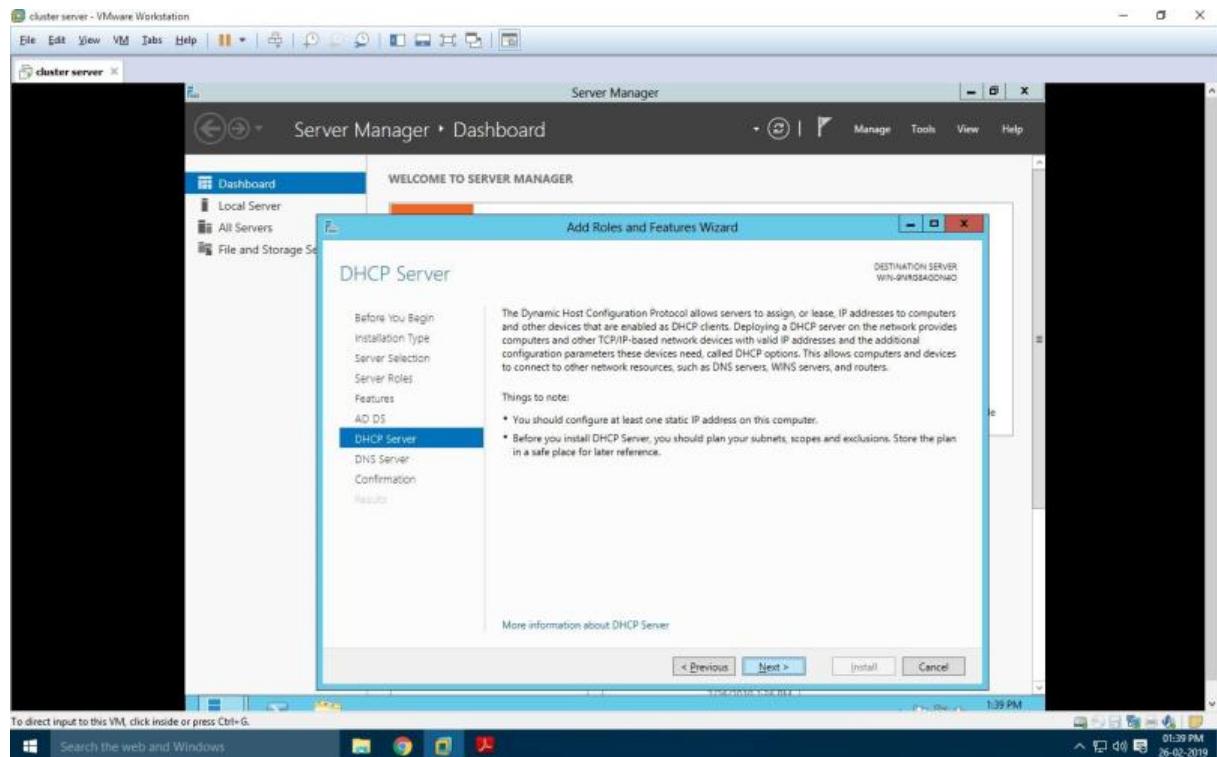


Under “Select Features” select “Failover Clustering” and “.NET Framework 3.5 Features” and click “Next”.

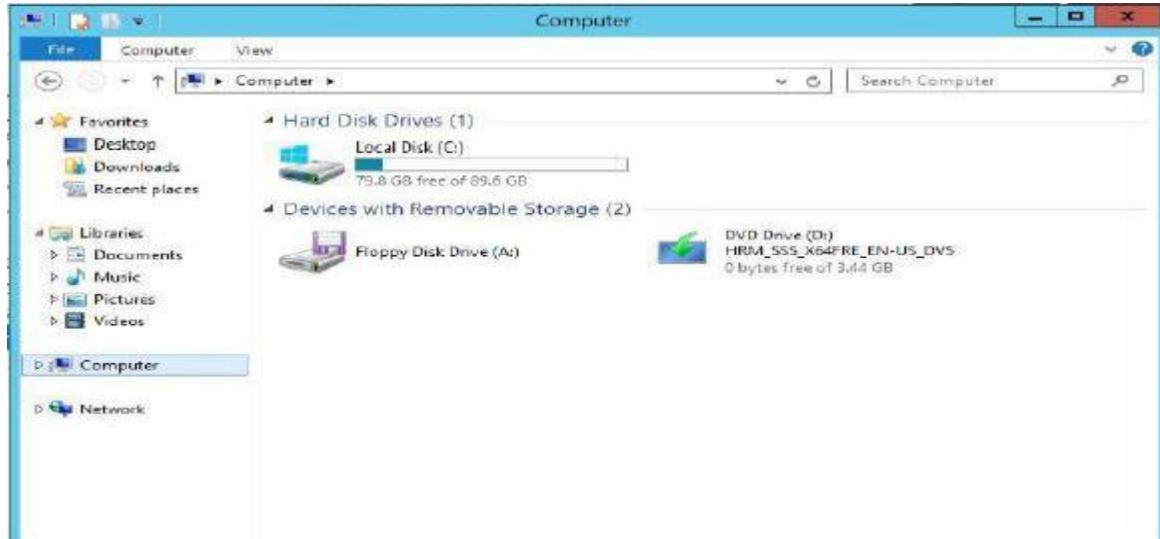


You will see the “Confirm Installation selections” then click on link “specify an alternate path”. As shown in below two screens.

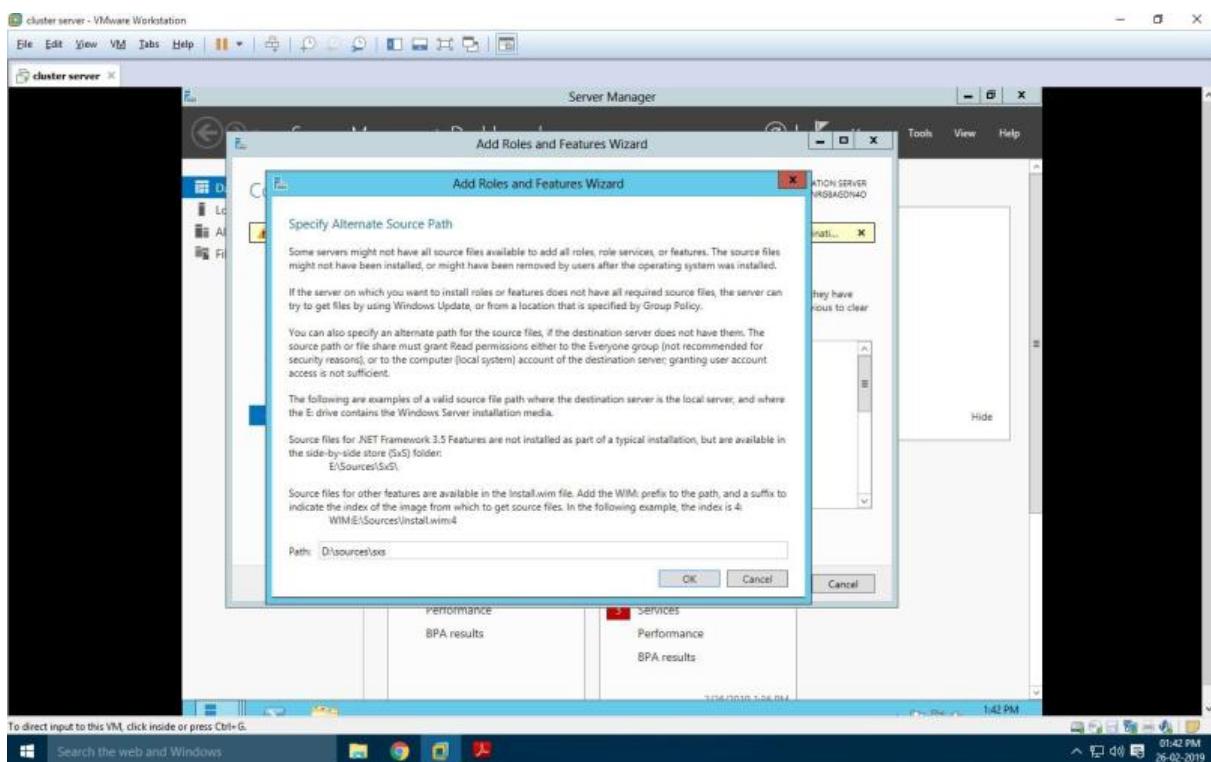




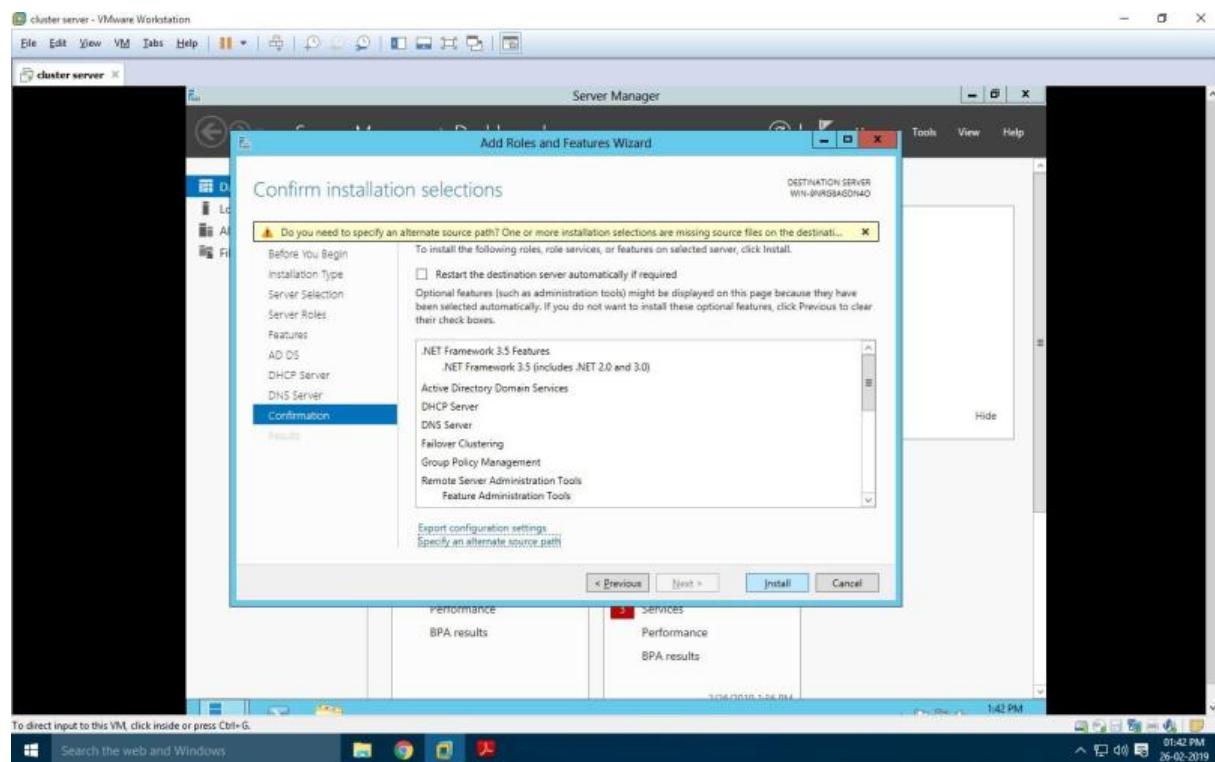
Now, For path specification Go to menu VM->use Iso image file of windows server 2012->Ok Then, Go to File Explorer->Computer -> select the DVD->VIEW FILE-> SOURCES->SXS:



Paste the path Here,

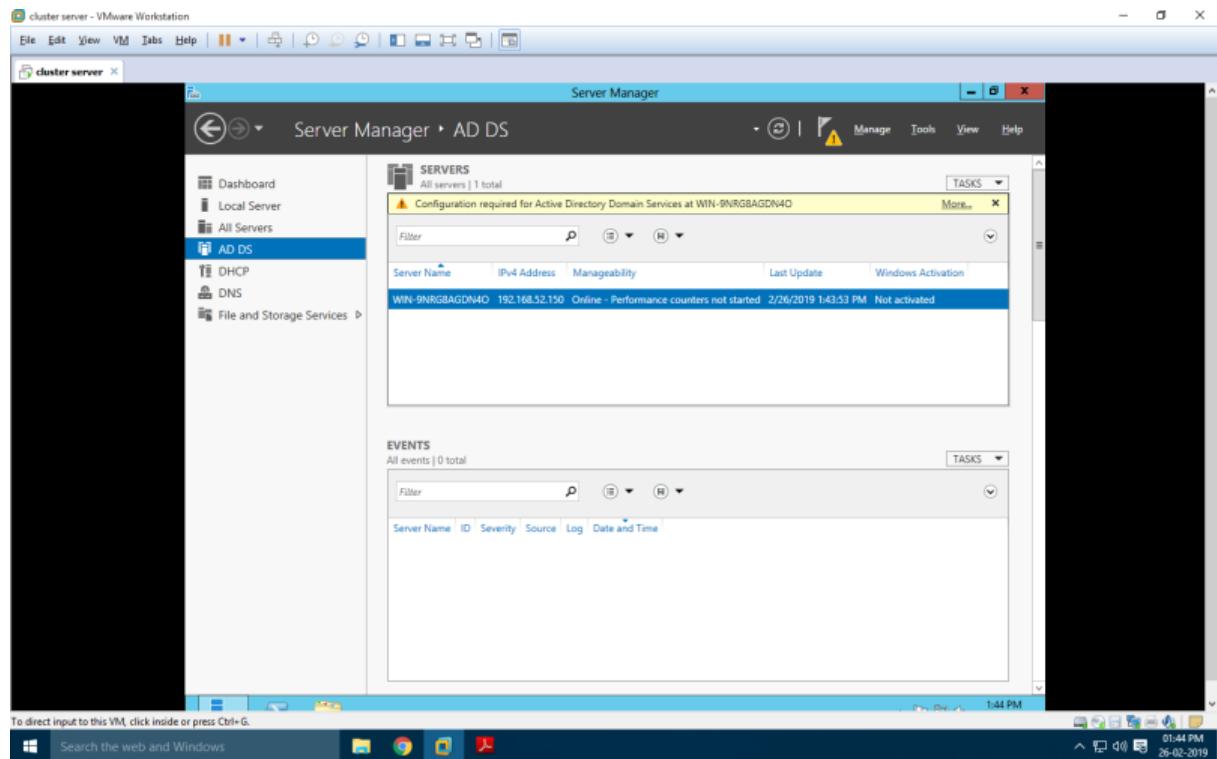


Now, Click on ok and Install button

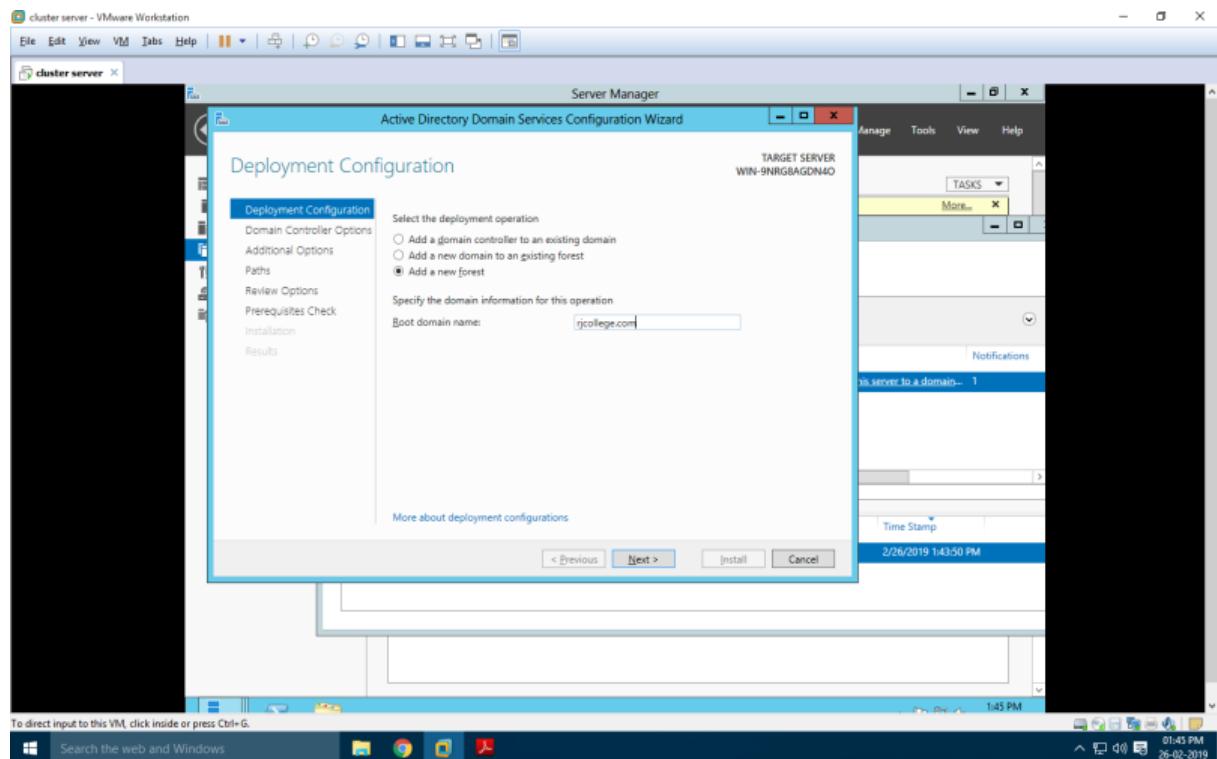


PROMOTING AS DOMAIN CONTROLLER

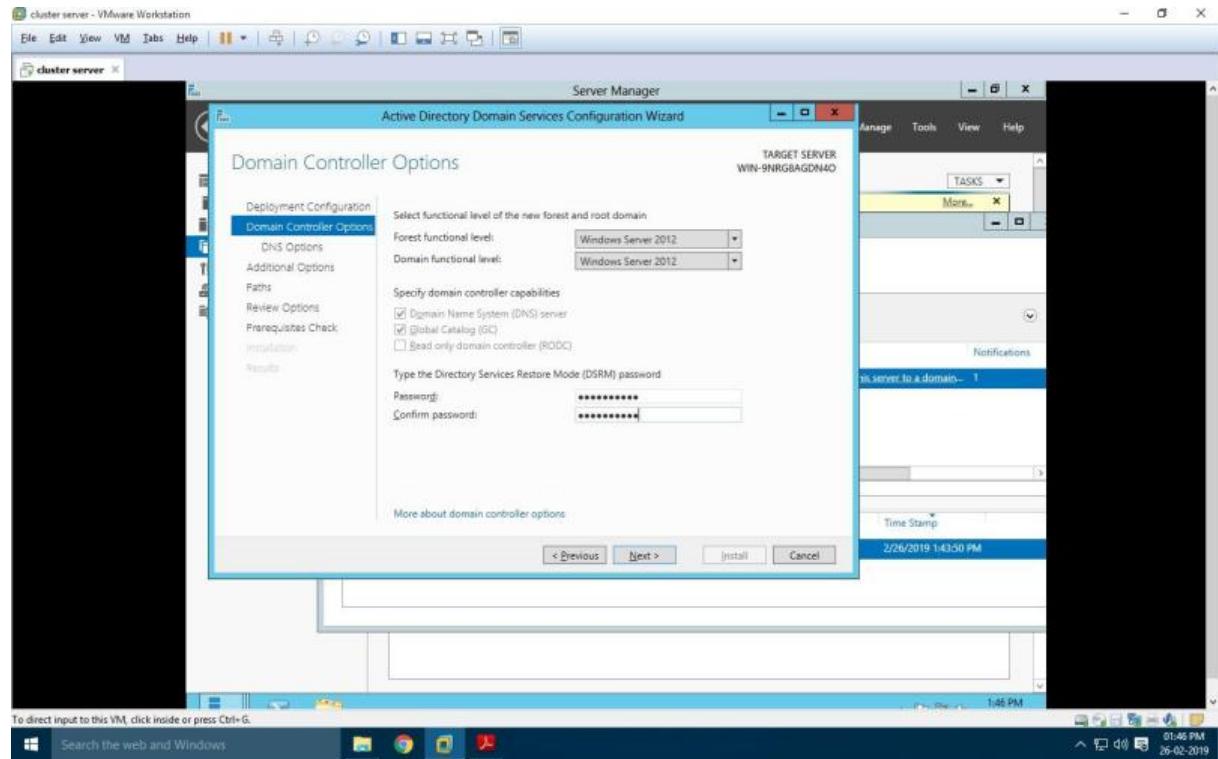
After installation Go to the “ADDS” shown on the left side in the server Manger Dashboard as shown in next screen and click on More, then Click on “Promote this server to a domain controller”.



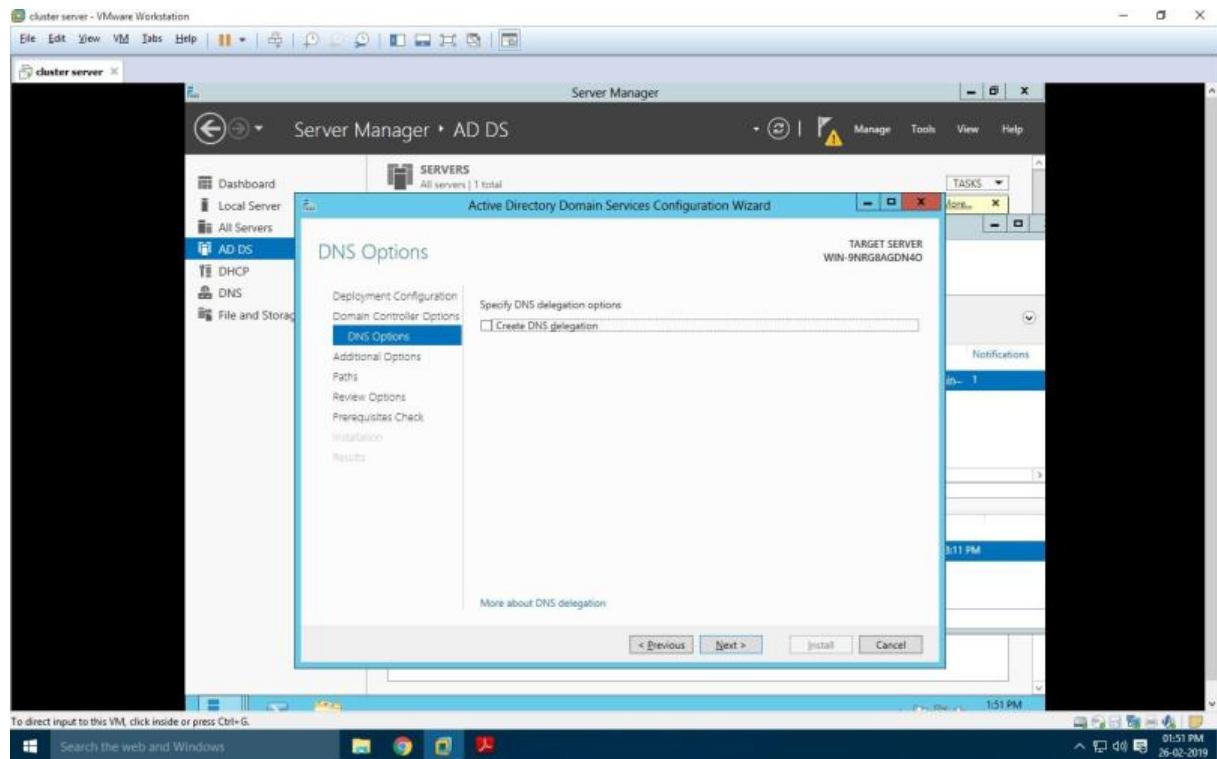
Choose “Add a new forest” option in the “Active Directory Domain services Configuration Wizard” window. Enter the Domain Name “rjcollege.com” as shown in the screen and click “Next”.



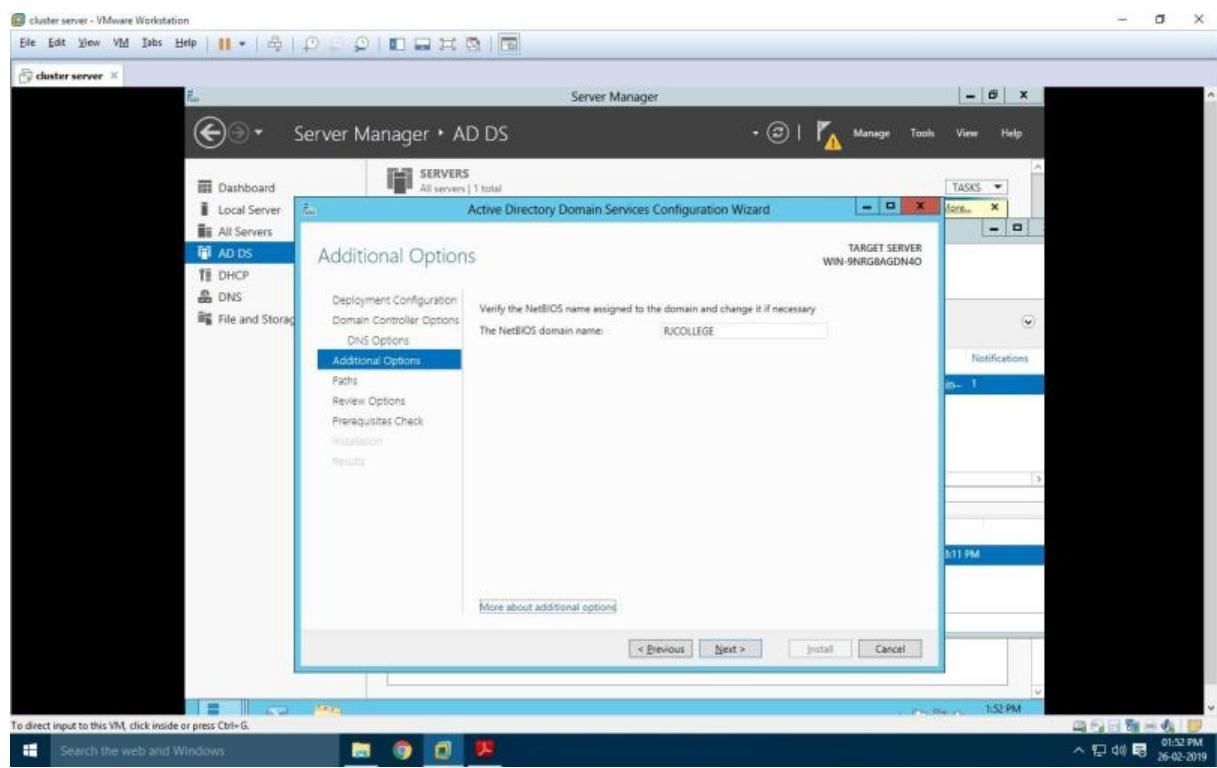
Under “Domain Controller Options” enter the alphanumeric password for the “Directory Services Restore Mode (DSRM) PASSWORD”. Preferably use the password given to the Administrators account.



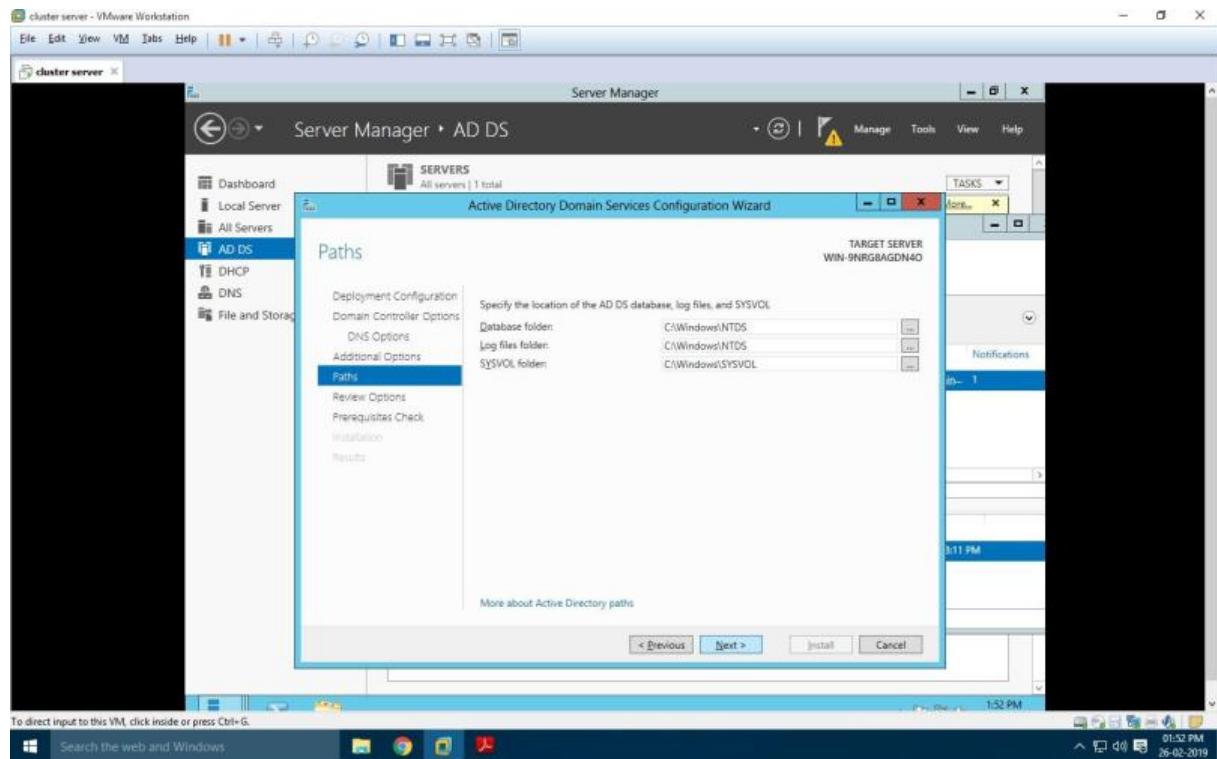
Click “Next”



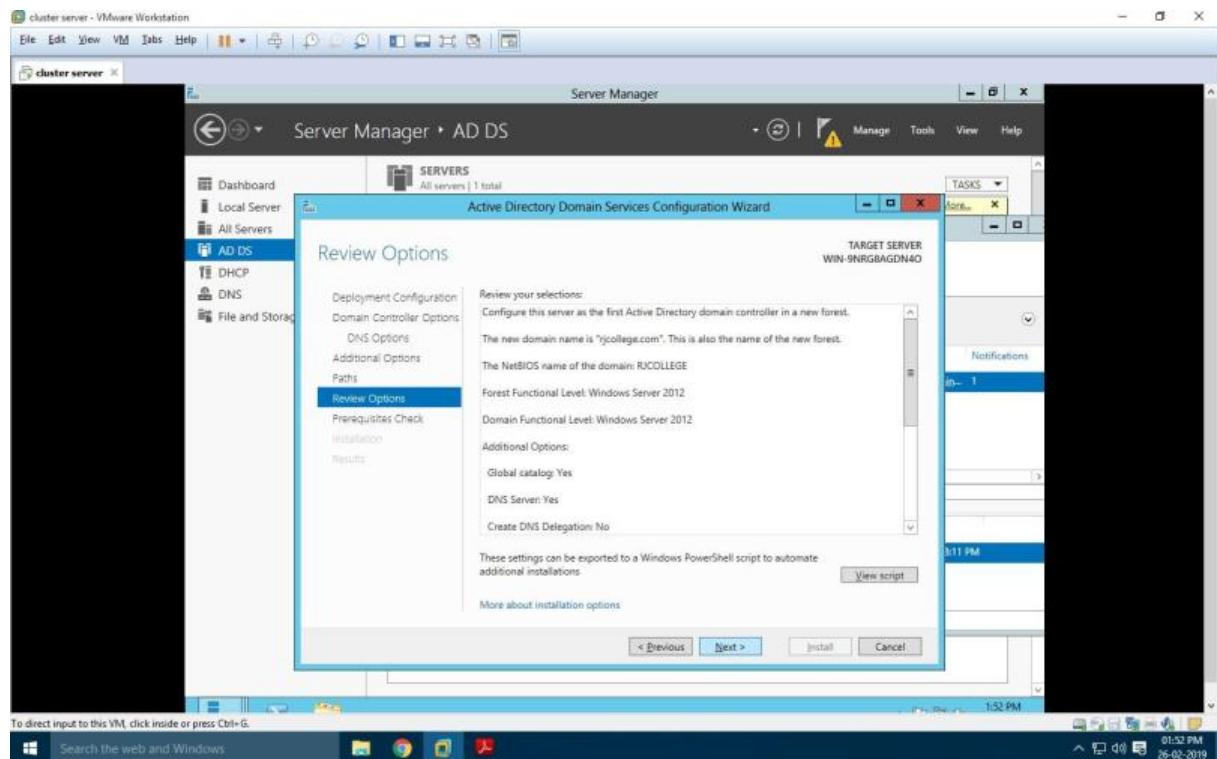
The NetBIOS Domain Name appears here automatically. Click “Next”.



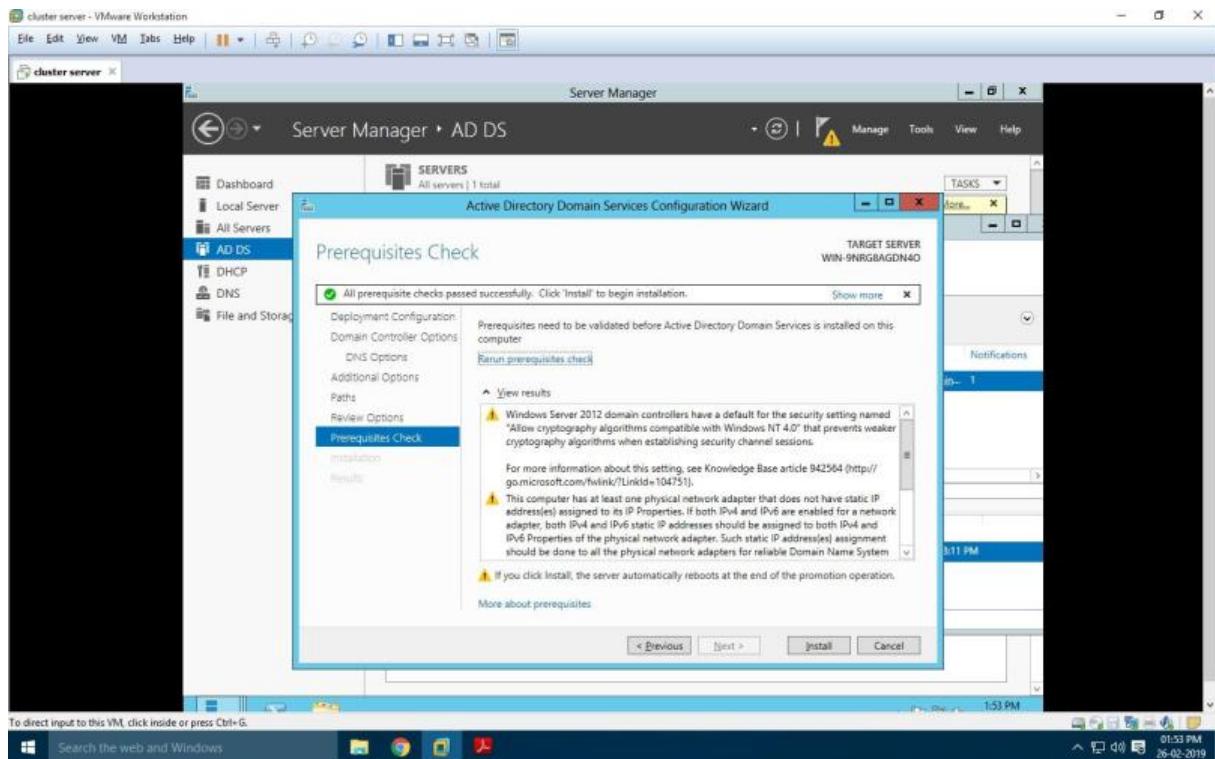
Click “Next”



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

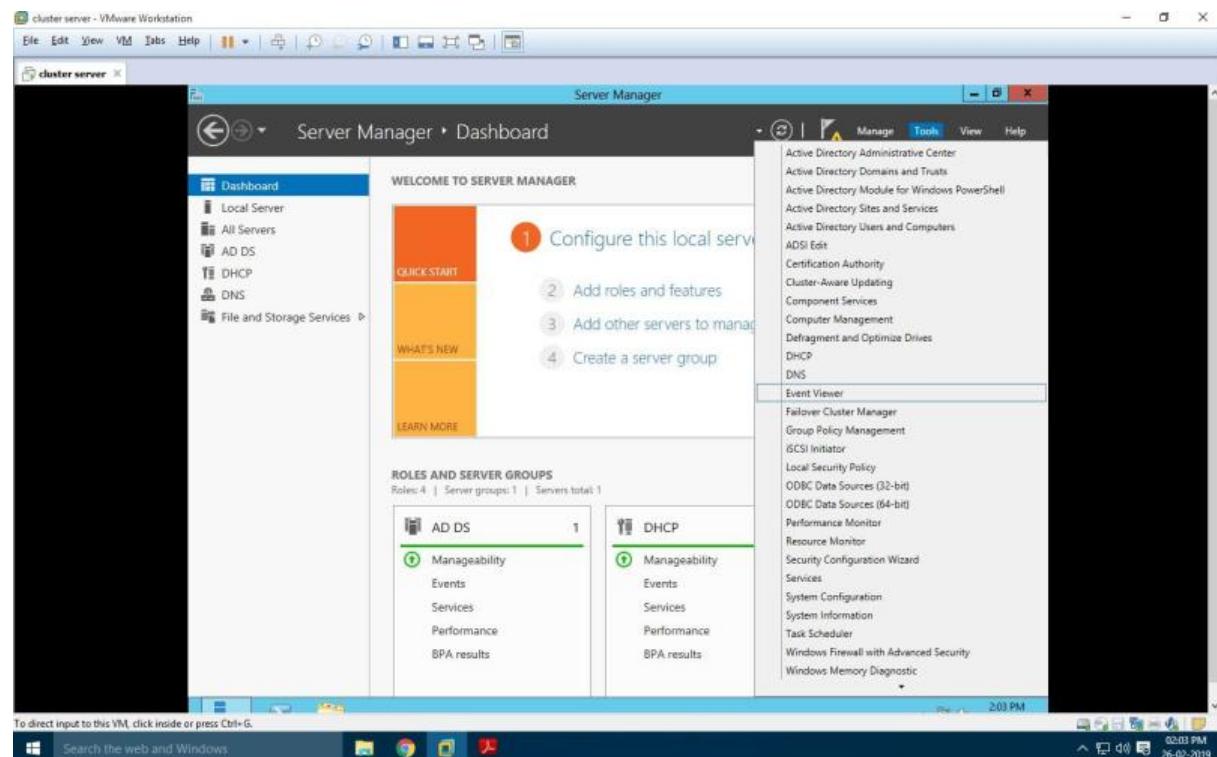


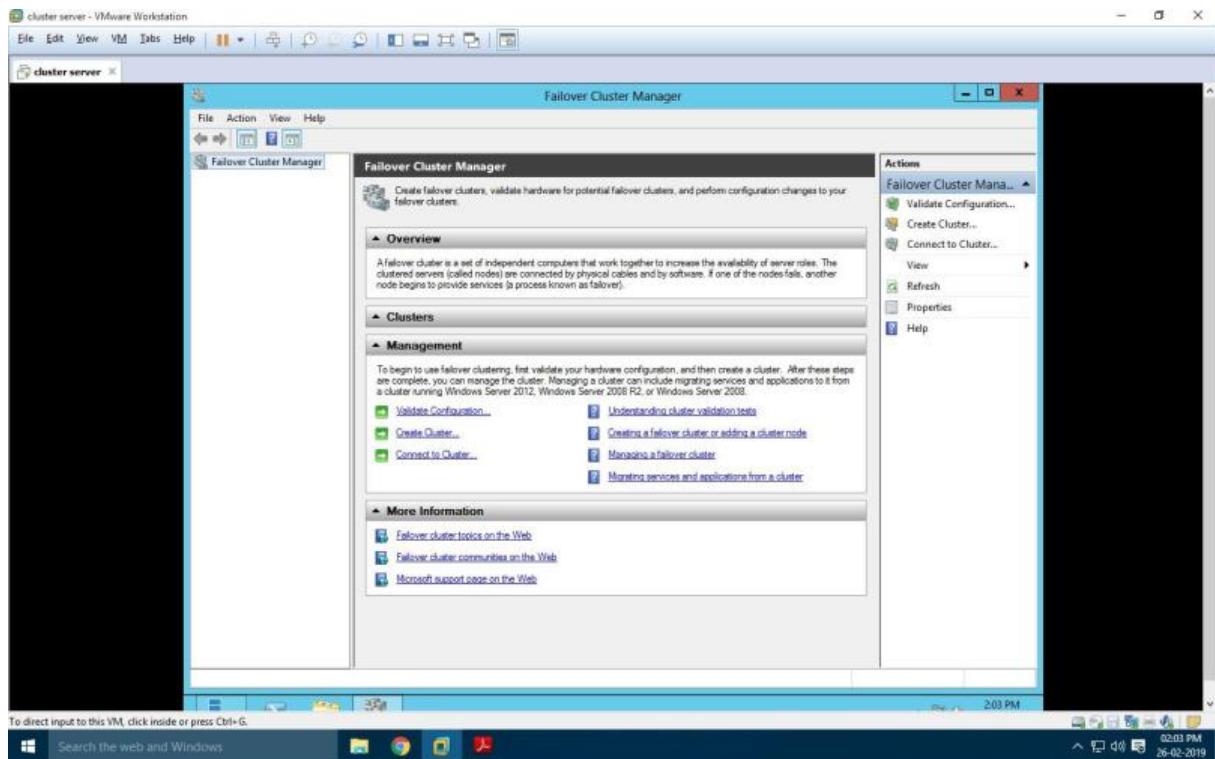
It checks for all the Prerequisites required to create a Domain Controller under “Prerequisites Check”. Click on “Install” button.



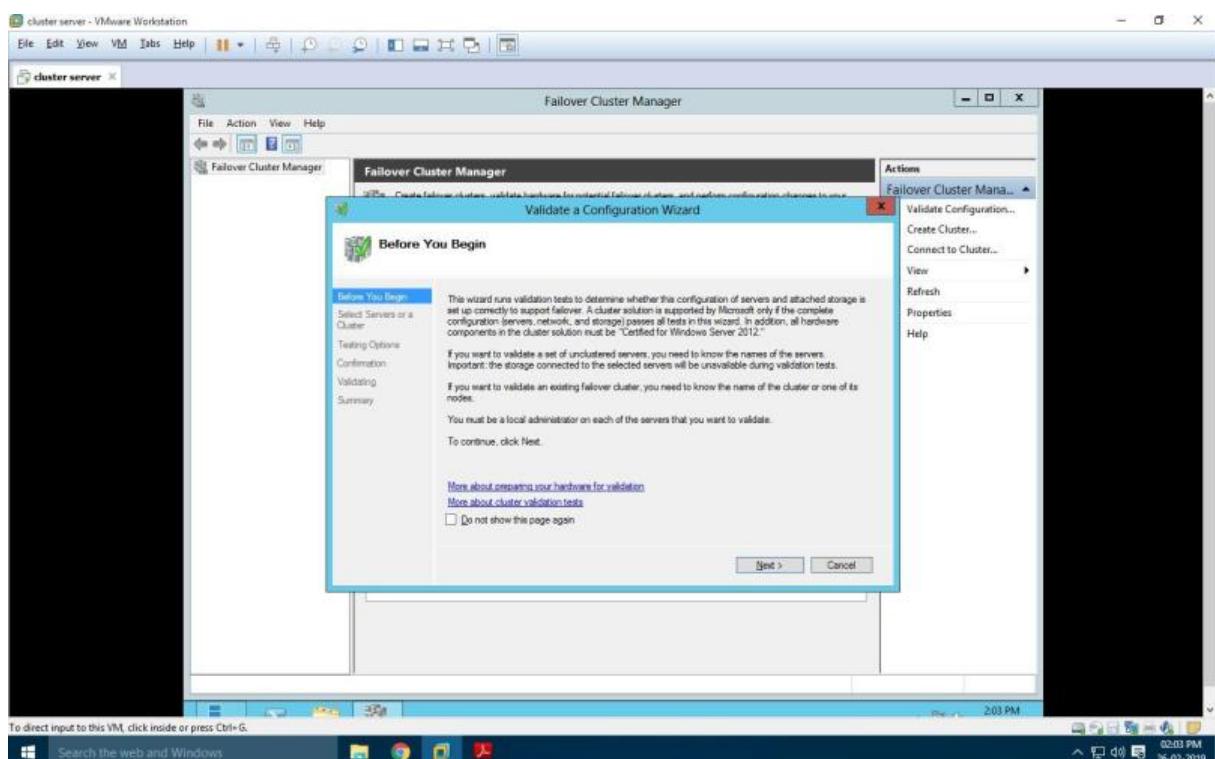
CREATING FAILOVER CLUSTER

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

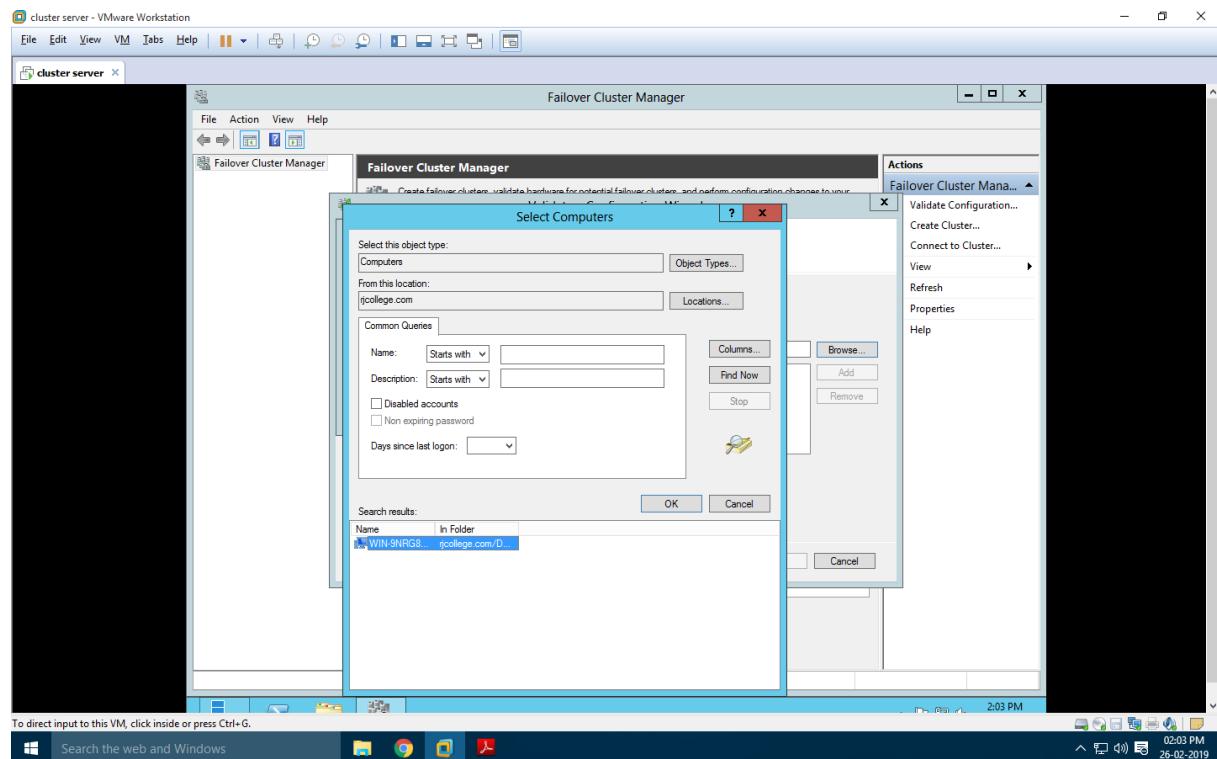




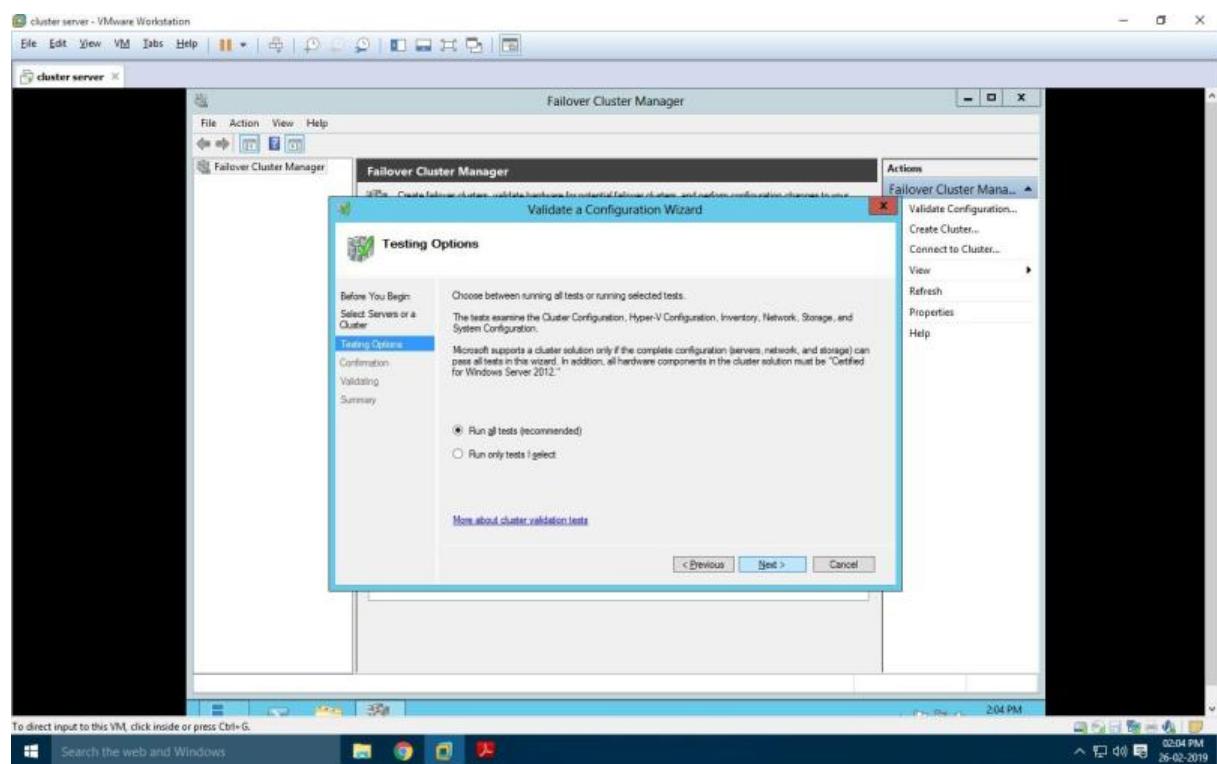
Click on “Validation Configuration” to open the “Validate a Configuration Wizard” by clicking on the “Validation Configuration” under the Management section at the bottom or right side of the screen. The nodes to be added must be validated prior to add in the cluster. Click “Next”.



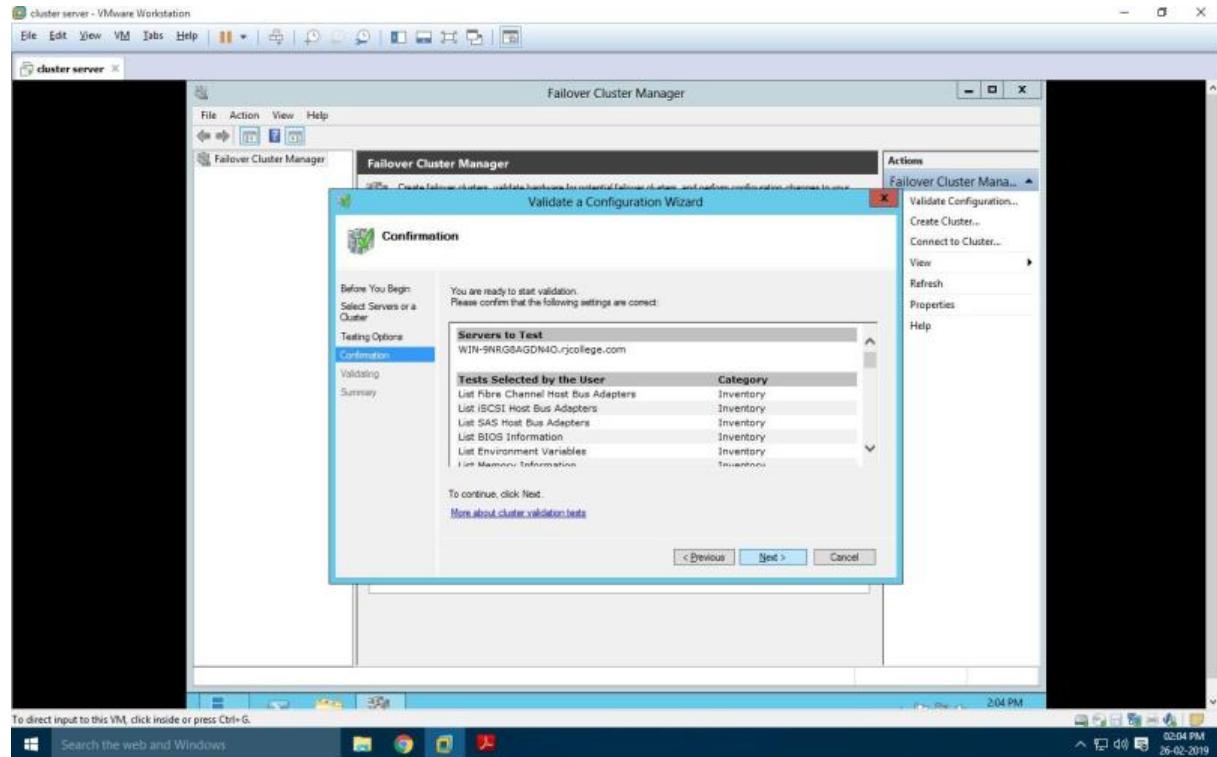
In this screen, click on Browse button and then Advanced for finding the domain node. As shown in below screens.



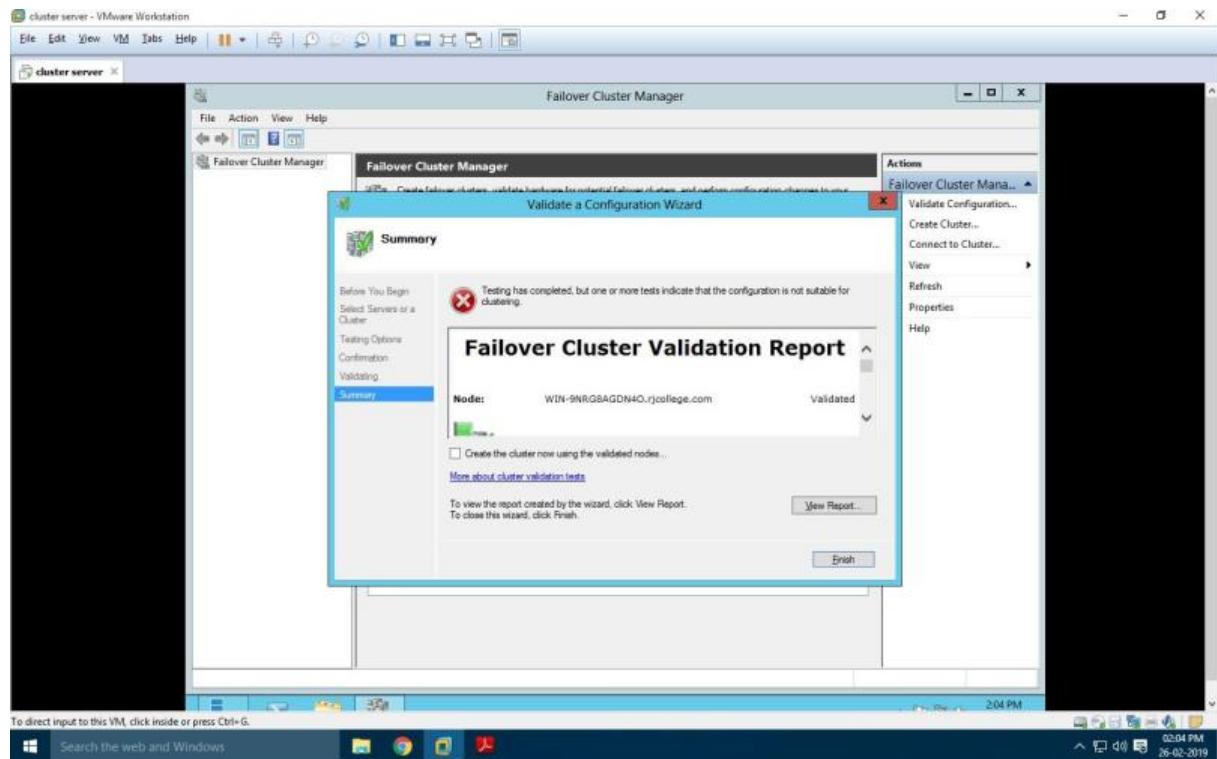
Click on run all test



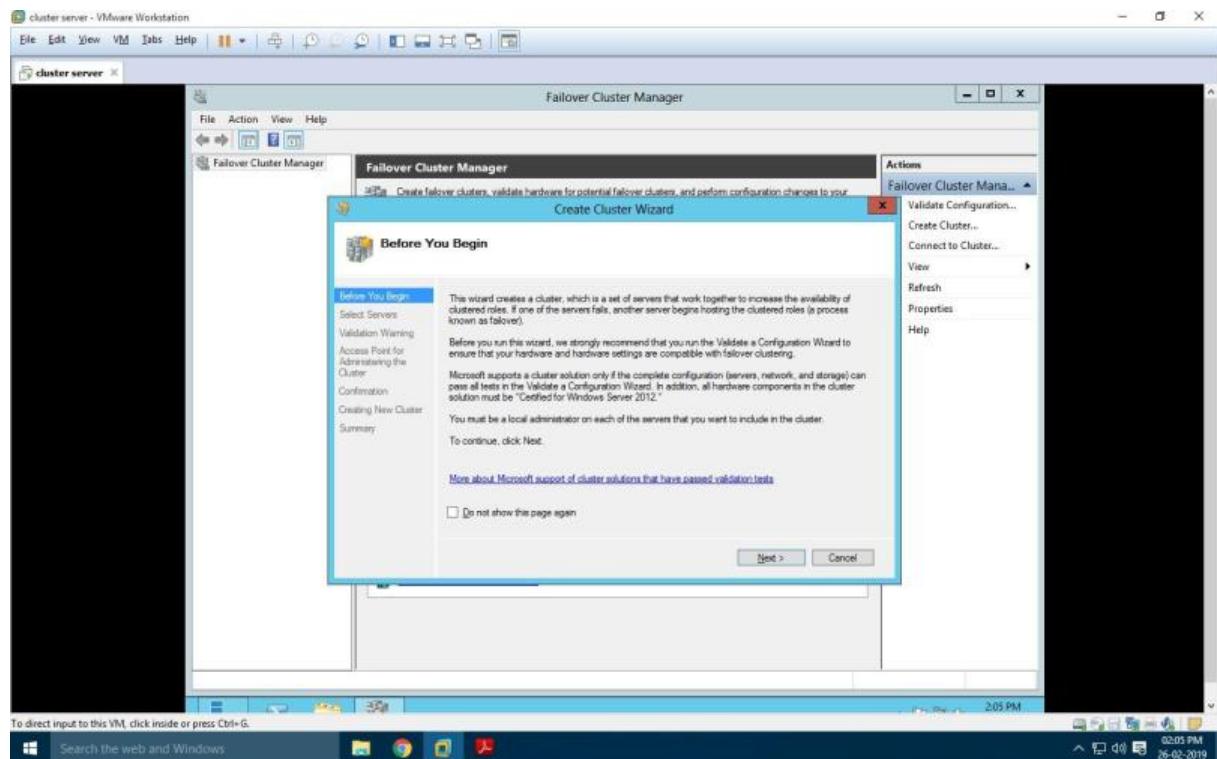
Choose “Run all the tests(recommended)” and click “Next” and then it will ask for the confirmation click “Next”. It will start all test validation.



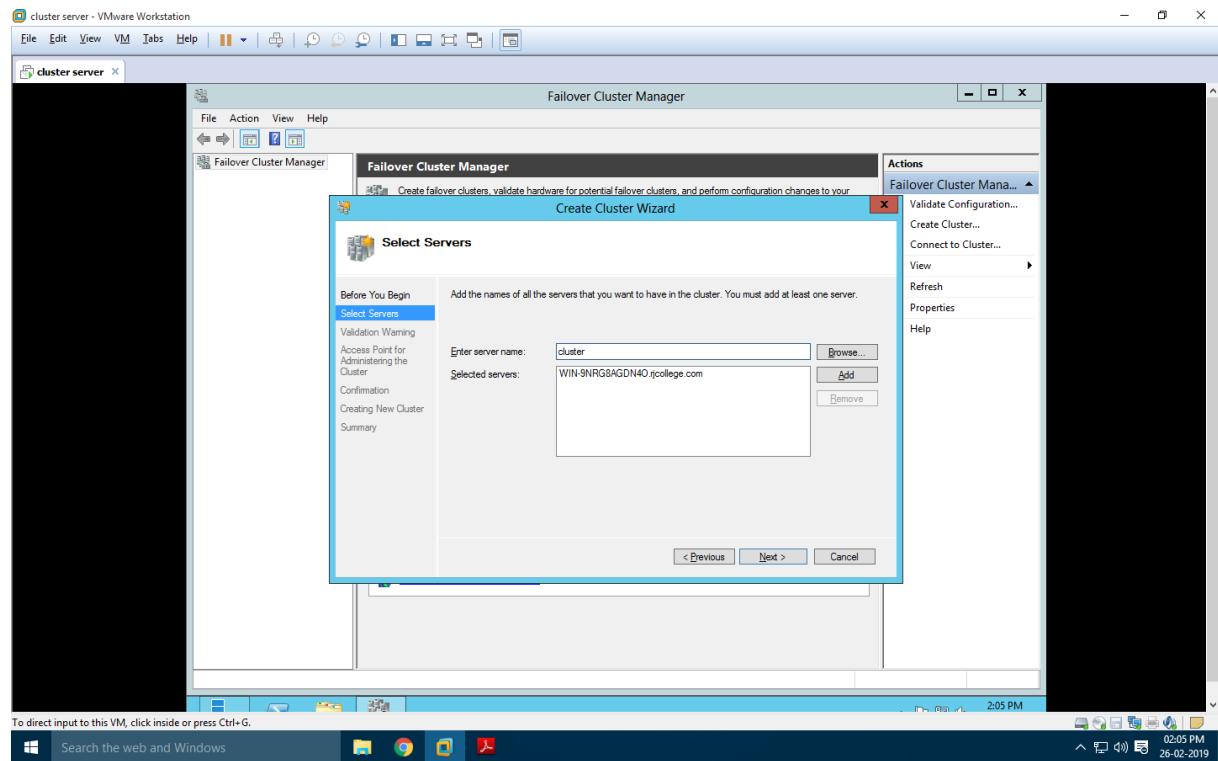
After completion it will display the summary report as shown below. If there are any errors can be seen here and you will not be allowed to create the cluster. As shown in the screen we can see that the nodes are validated. Click on finish.



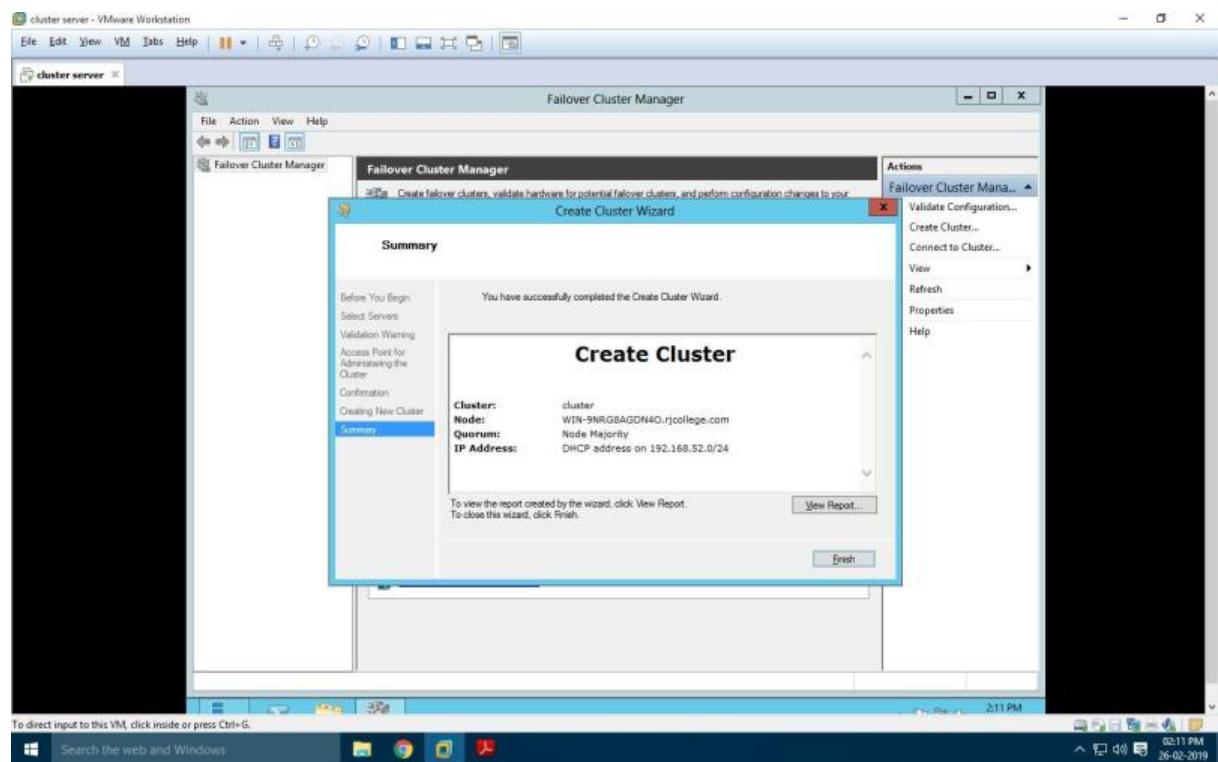
After validation completion you will create the “Create Cluster Wizard” click Next.



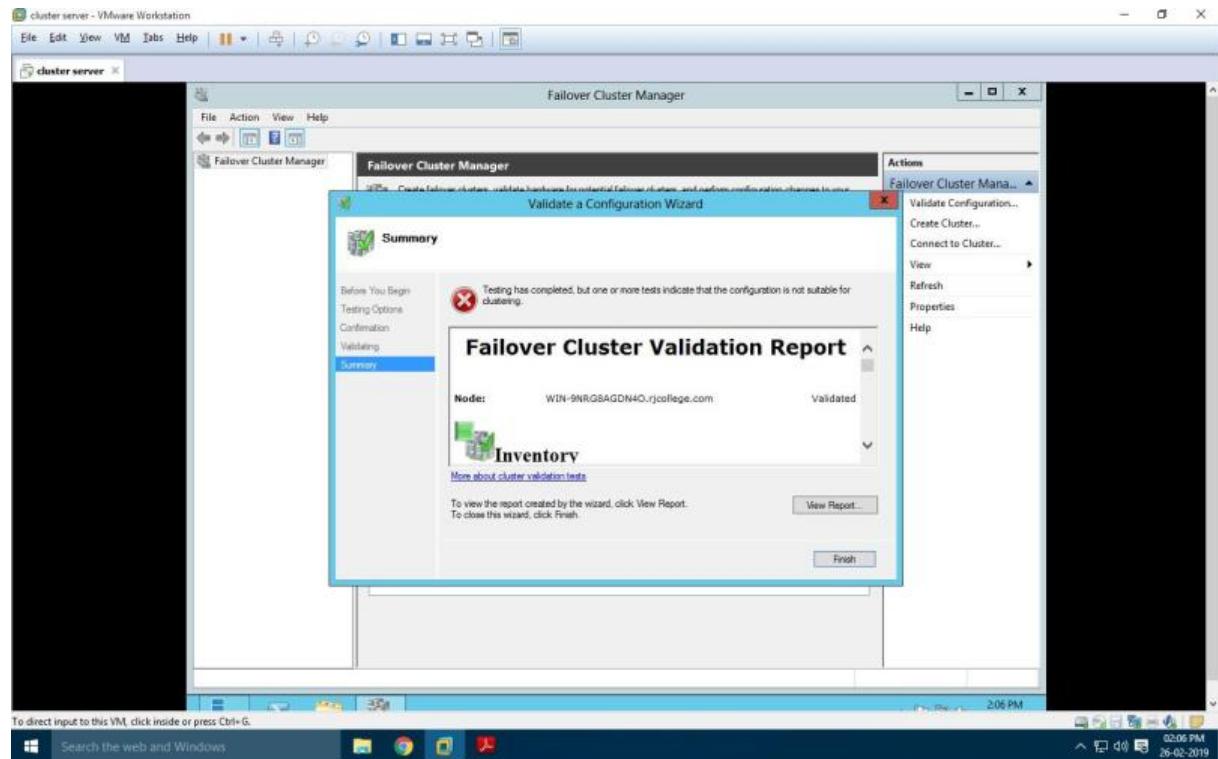
Specify the Cluster name. Cluster name here should be the NetBIOS name of the Domain Controller, so here it is RJC_Node. Click next



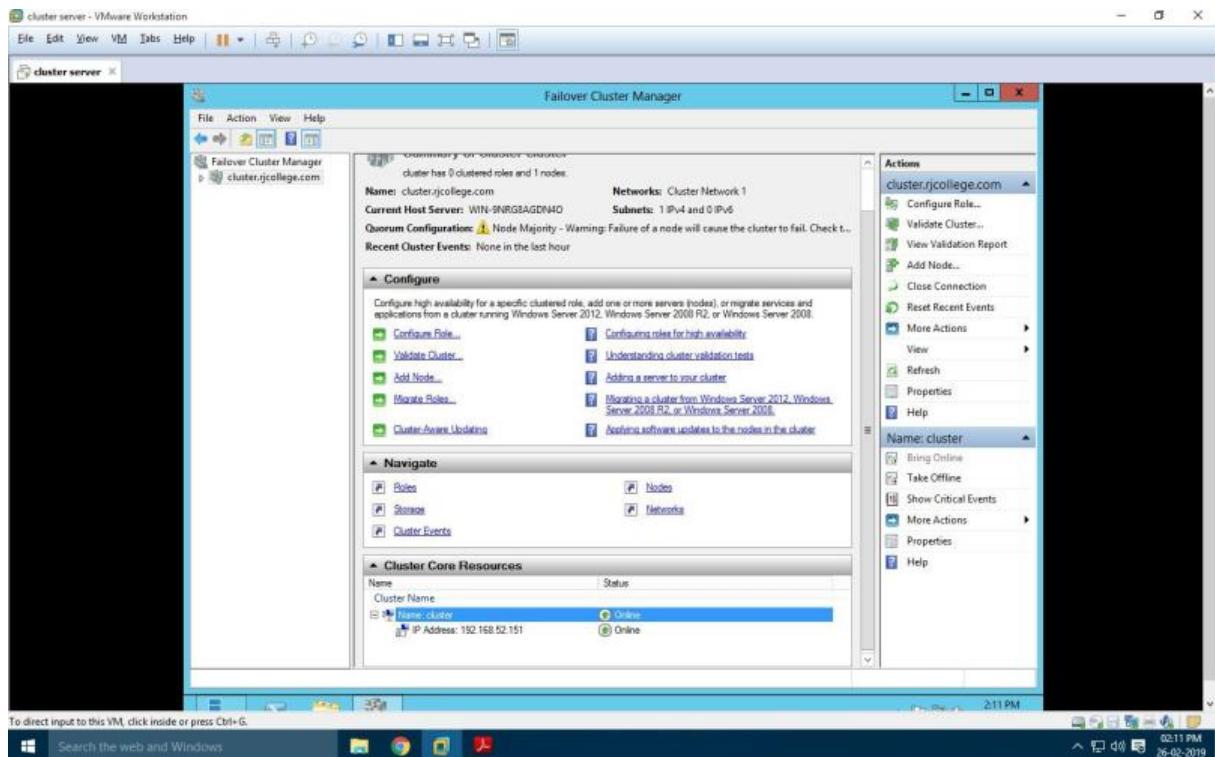
It will ask for the confirmation of cluster Creation. Click "Next".



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.

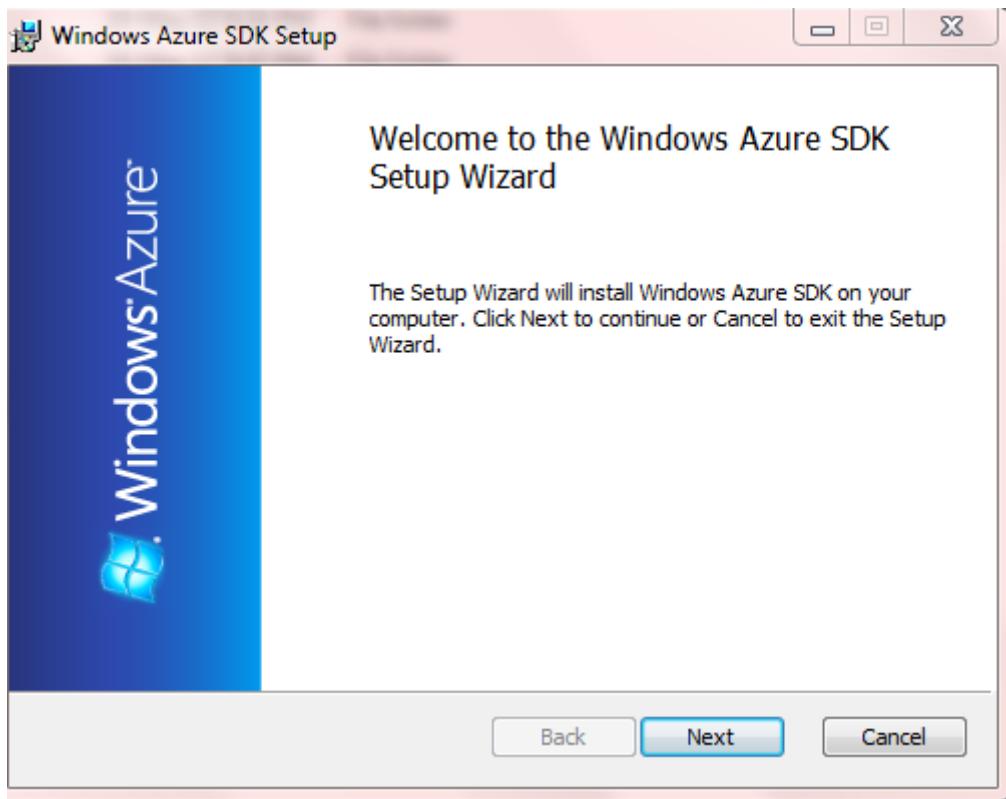


PRACTICAL: 2

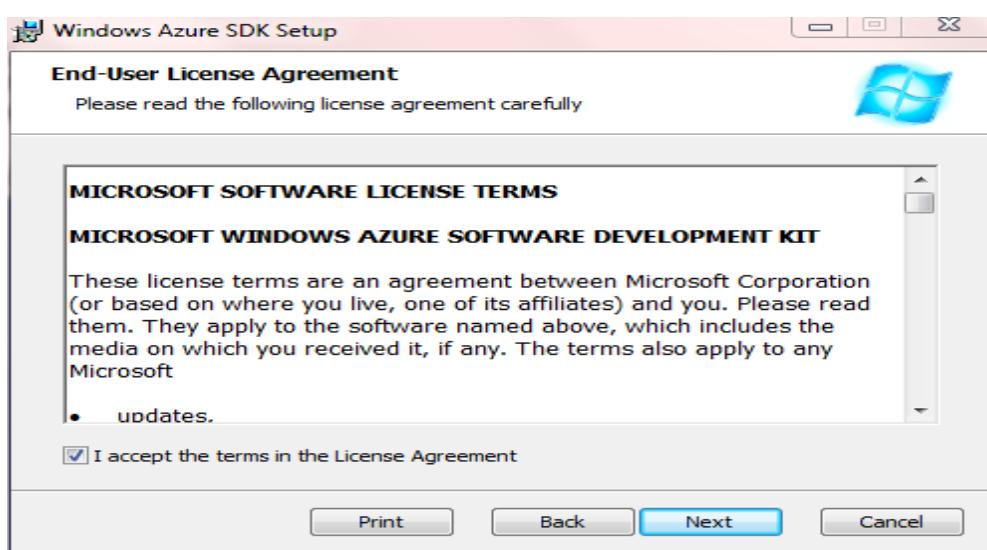
DEVELOPING APPLICATION

FOR WINDOWS AZURE

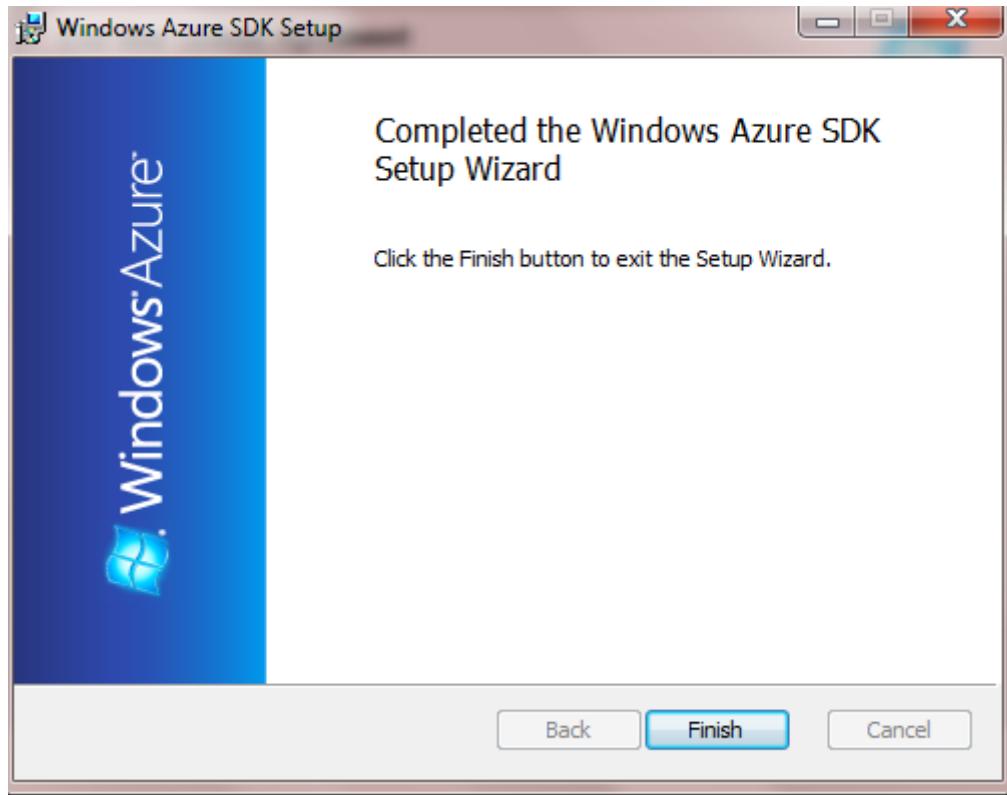
To develop an application for Windows Azure on Visual Studio install the
“Microsoft Azure SDK for .NET (VS 2010) – 2.8.2.1”



Accept the license and Click on Next.



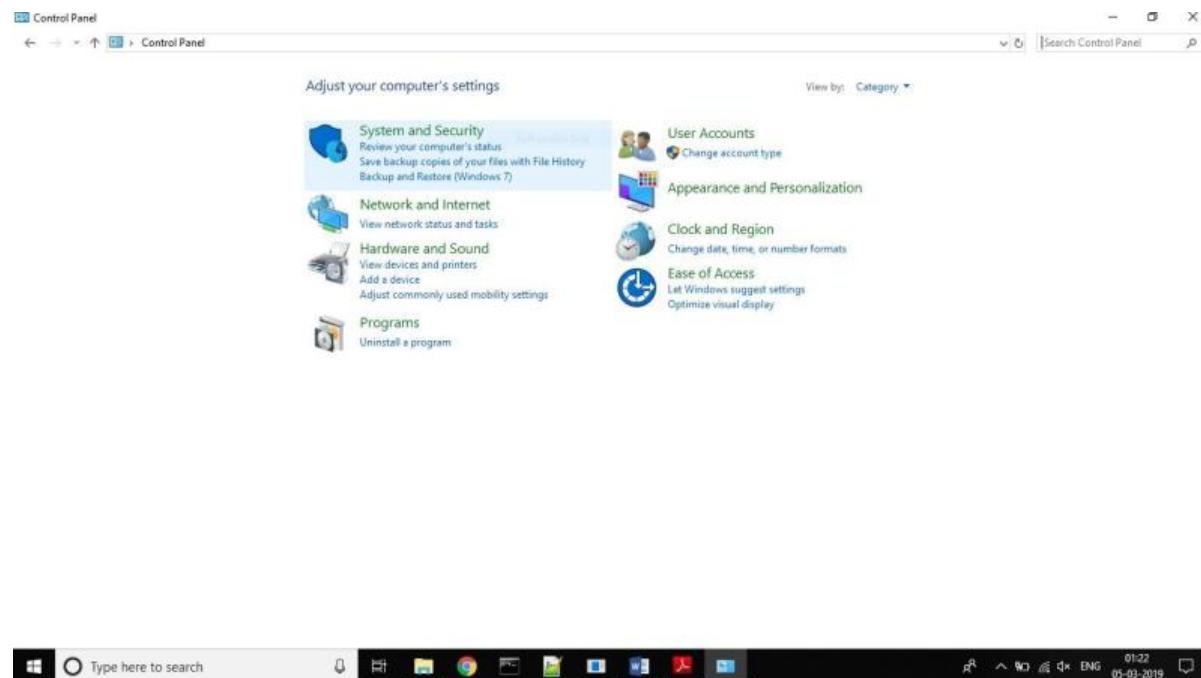
Click on Finish



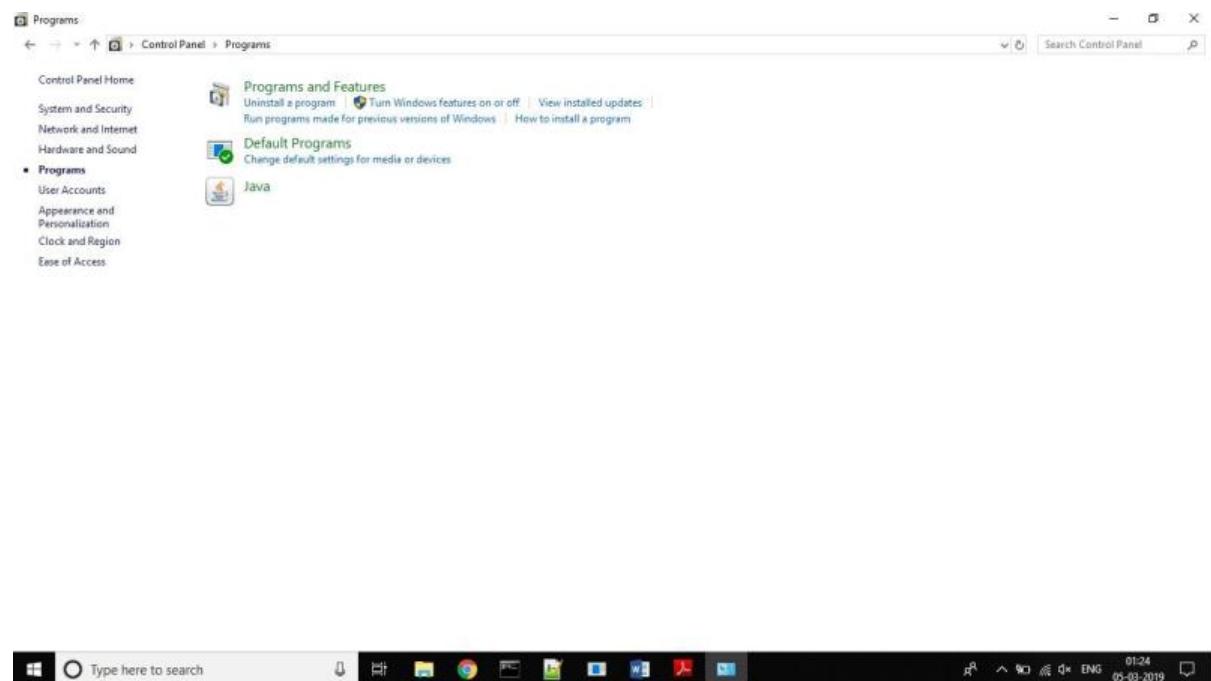
Step2:

Turn windows Features ON or OFF:

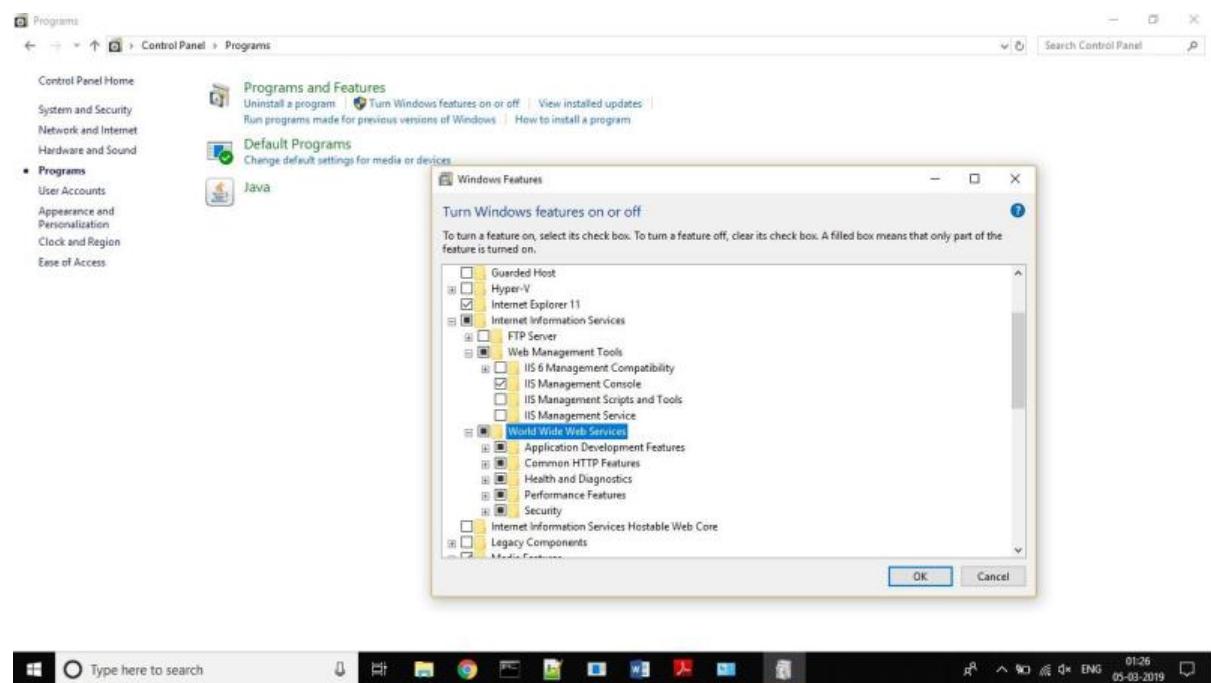
Go to Control panel and click on programs.



Turn Windows features on or off.

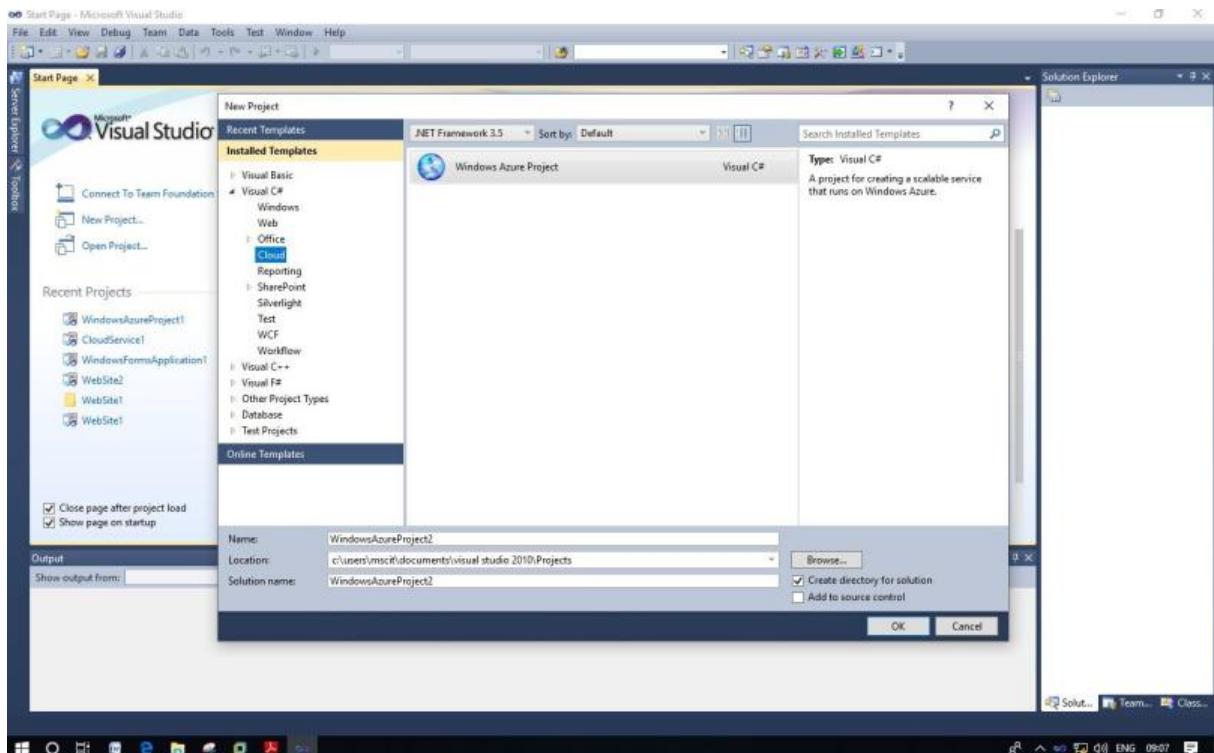


Expand the internet information services and select the following checkbox.

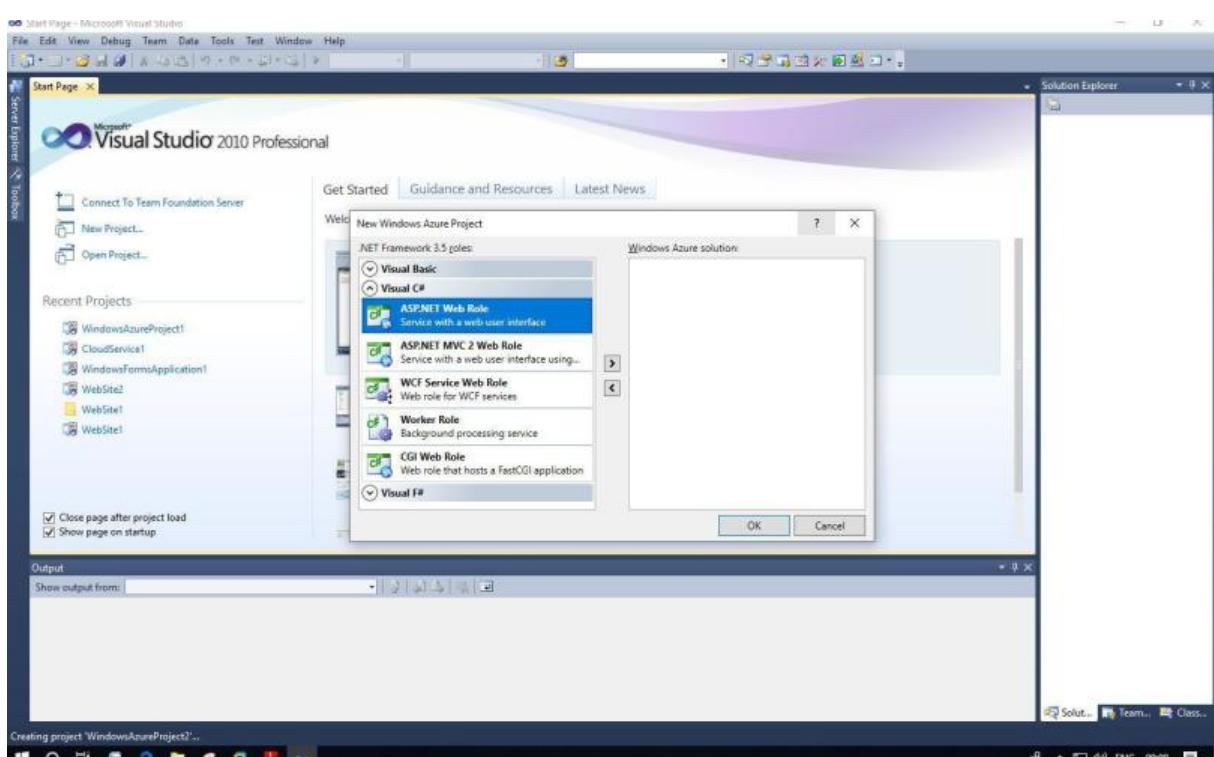


Step4:

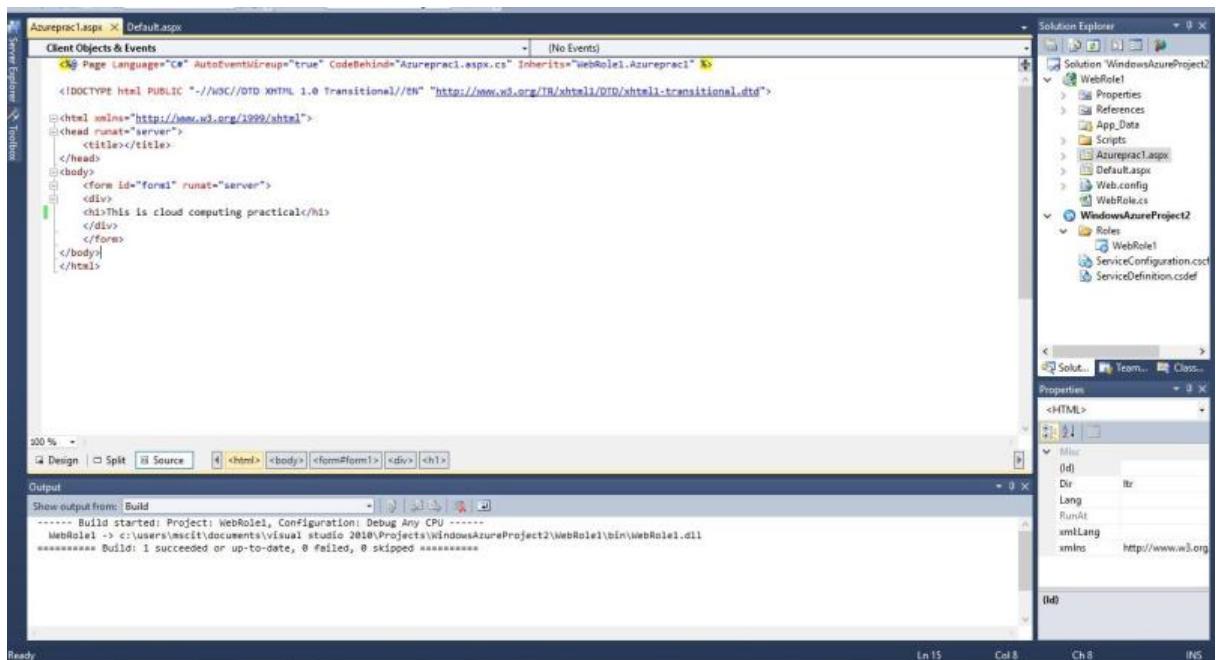
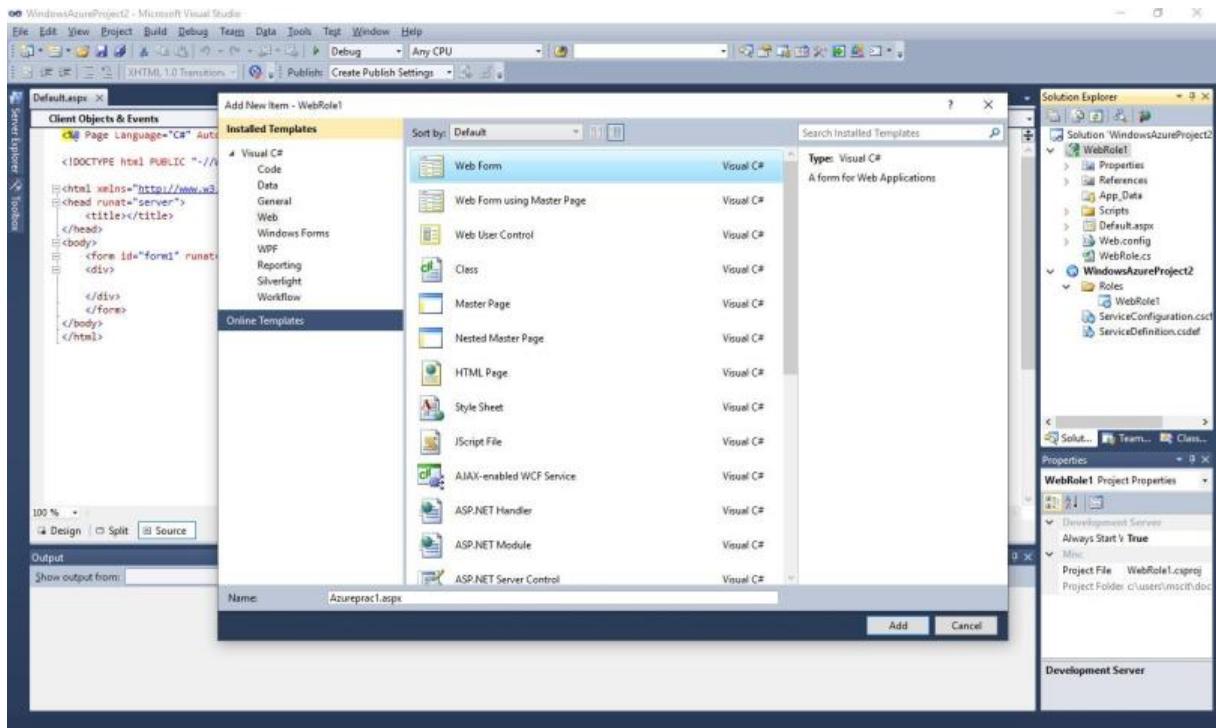
Now, Start the visual studio 2010 and Go To File->New->Project



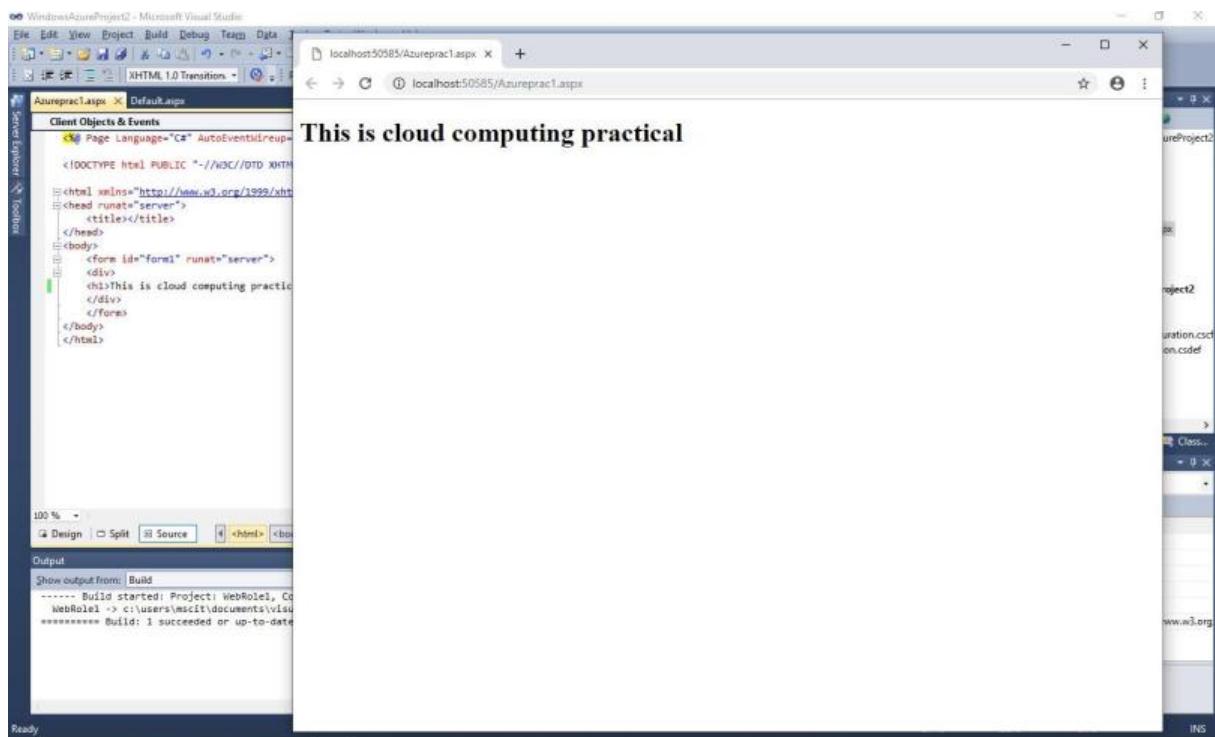
Add asp.net roles



Create a web form



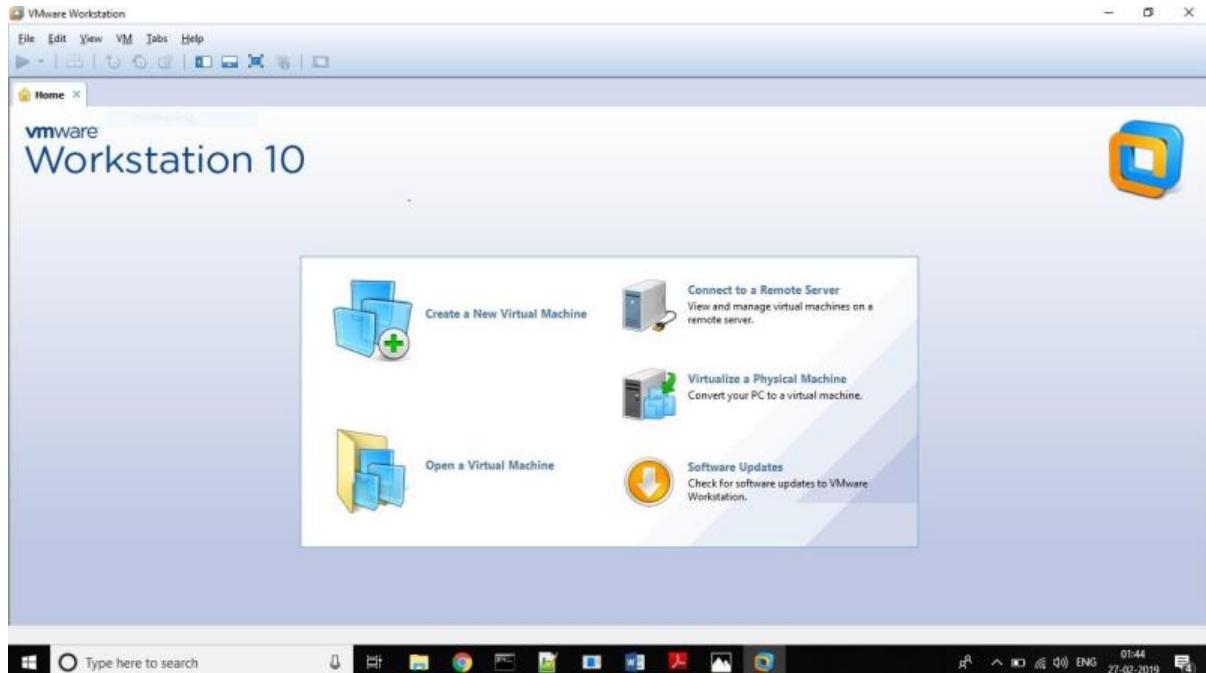
Run the website



PRACTICAL: 3

IMPLEMENTING PRIVATE CLOUD WITH XEN SERVER

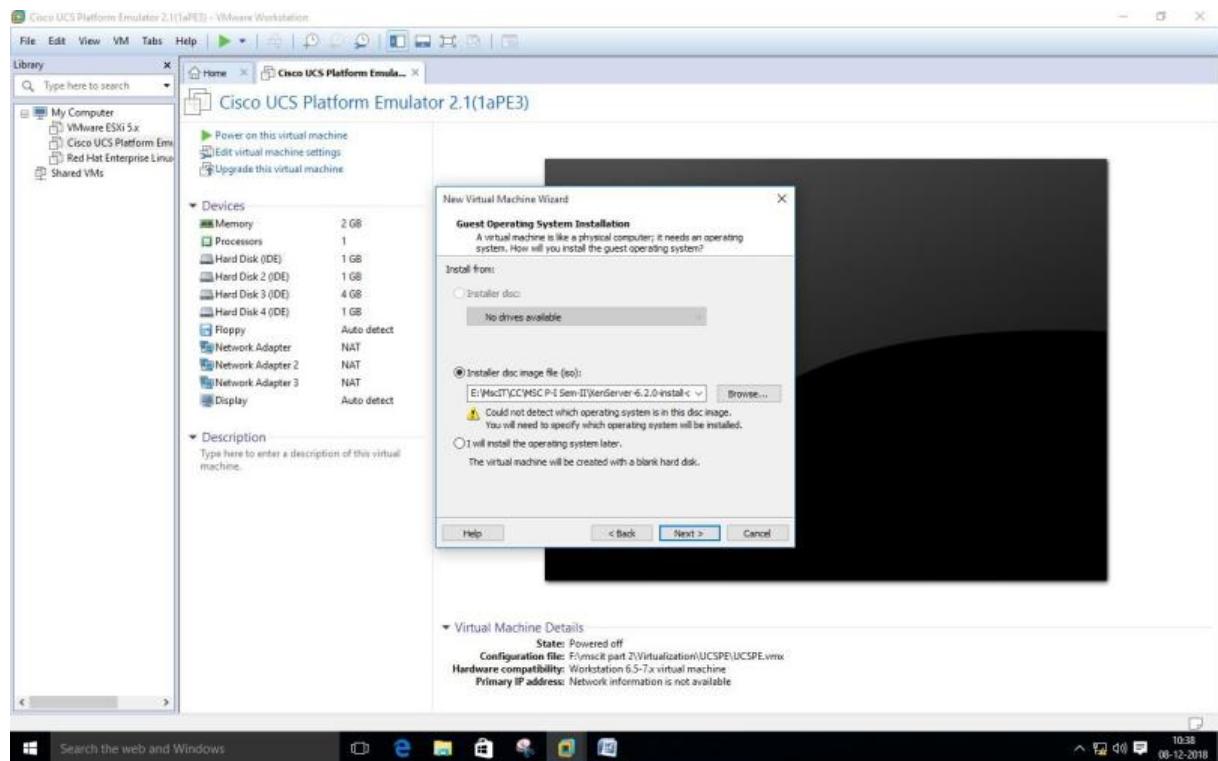
Open VMware Workstation – And select Create a New Virtual Machine



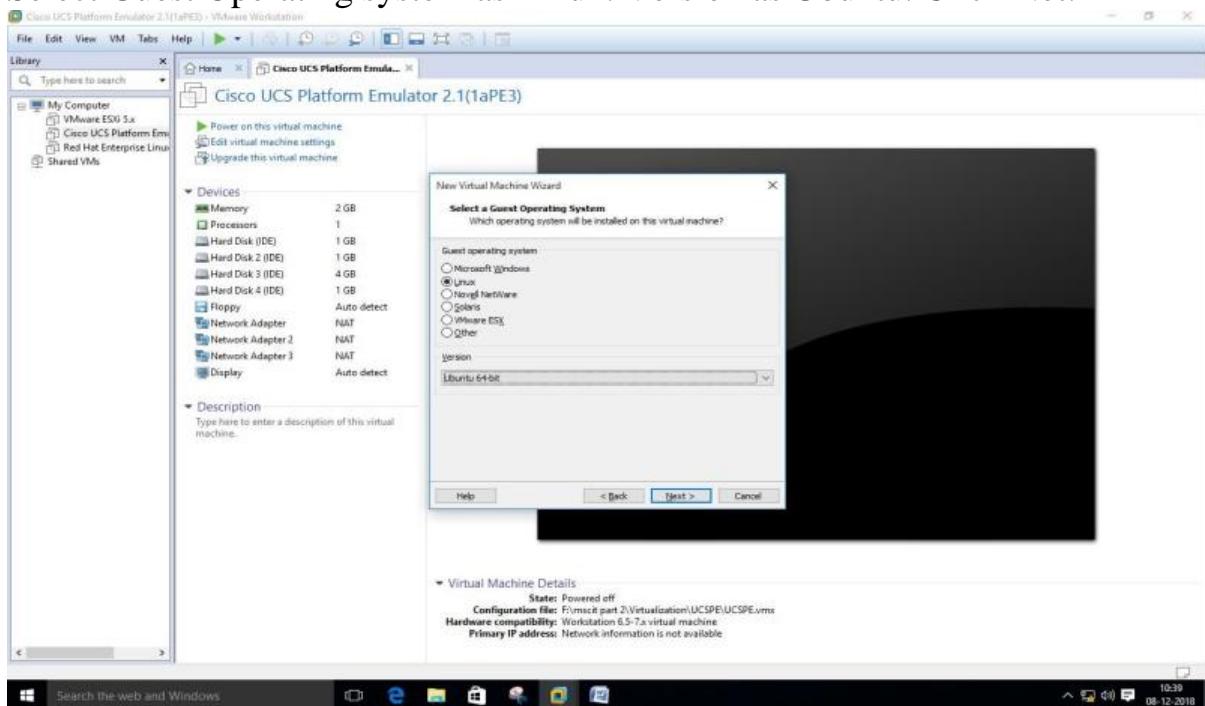
Select Typical and click Next



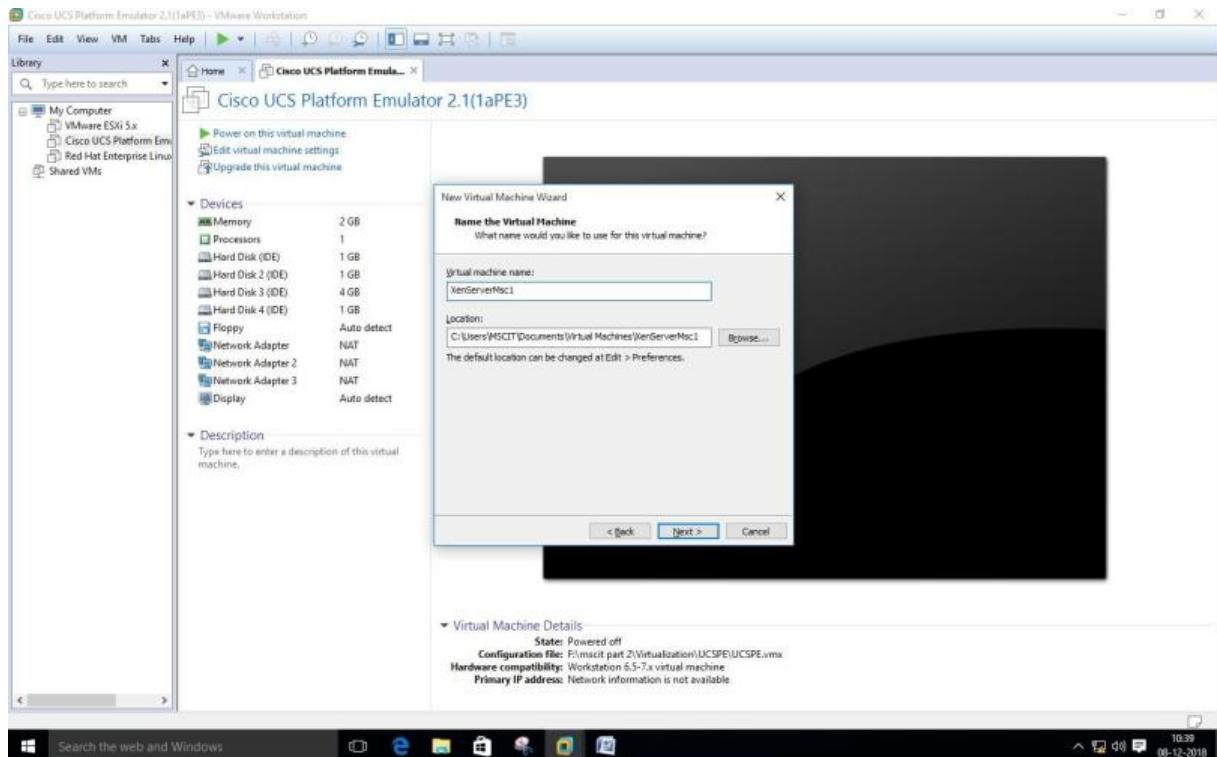
Select Installer disc_image file(ISO). Click Browse - XenServer Iso File – For Example “D:\ccpraxrj\XenServer-6.2.0-install-cd.iso”
And click on next



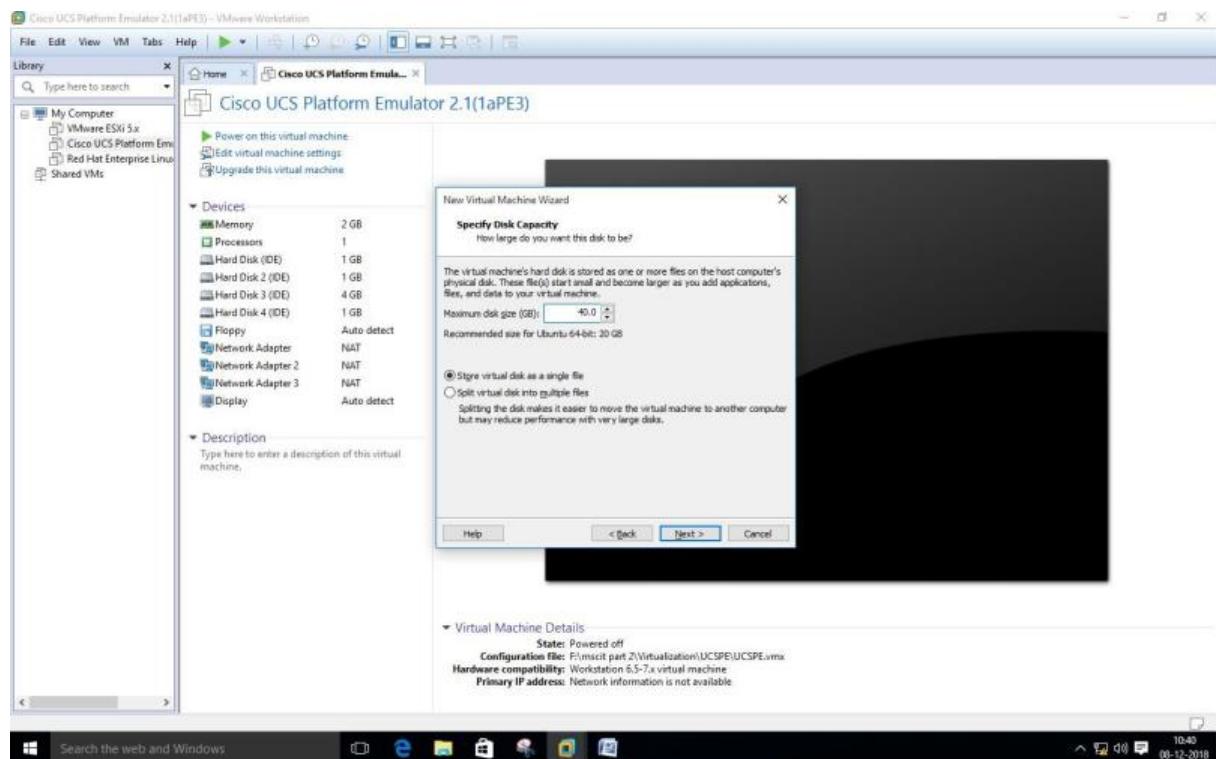
Select Guest Operating system as Linux. Version as Ubuntu. Click Net.



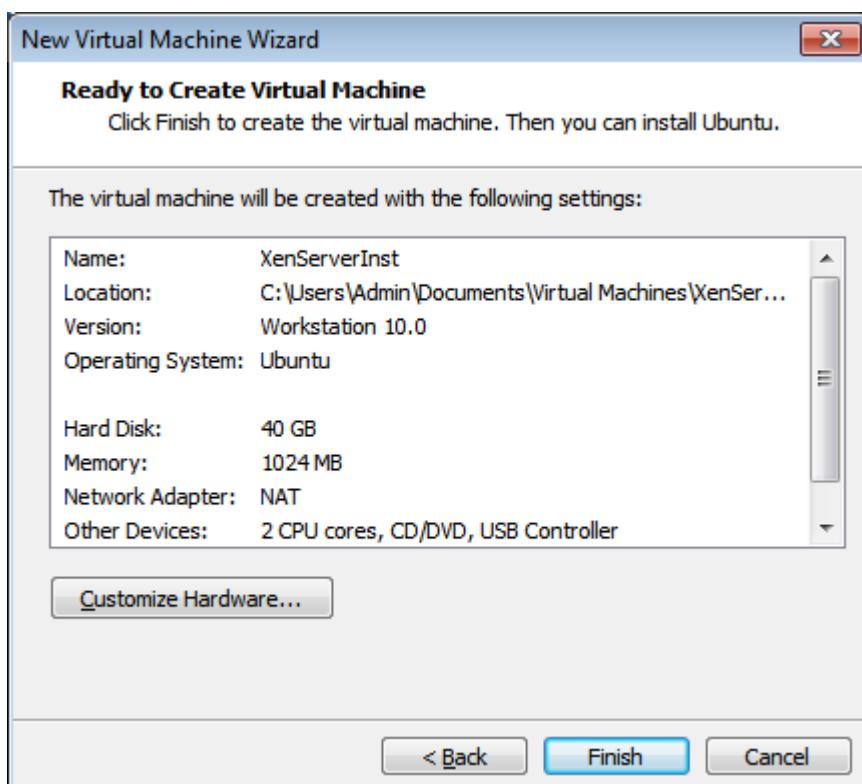
Give Virtual name – for Example “XenServerInst” and click on next



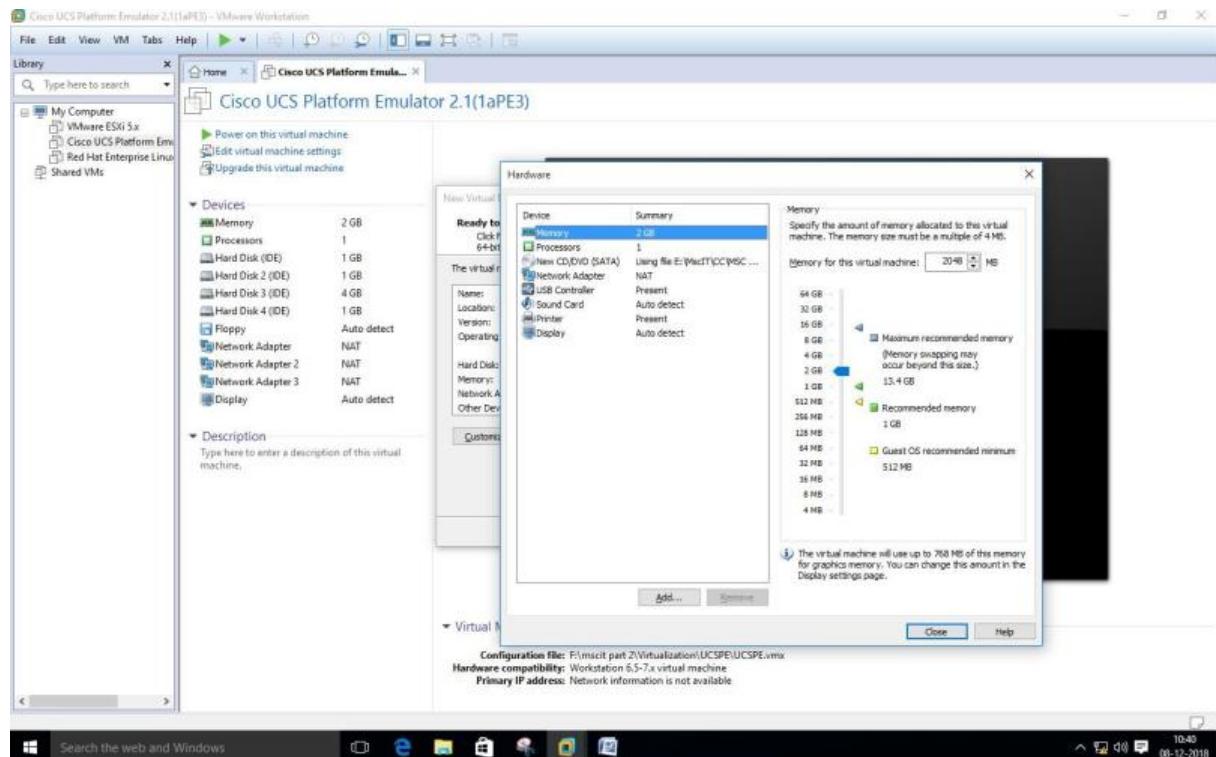
Change maximum disk size to 40 GB and check –Store virtual disk as single file



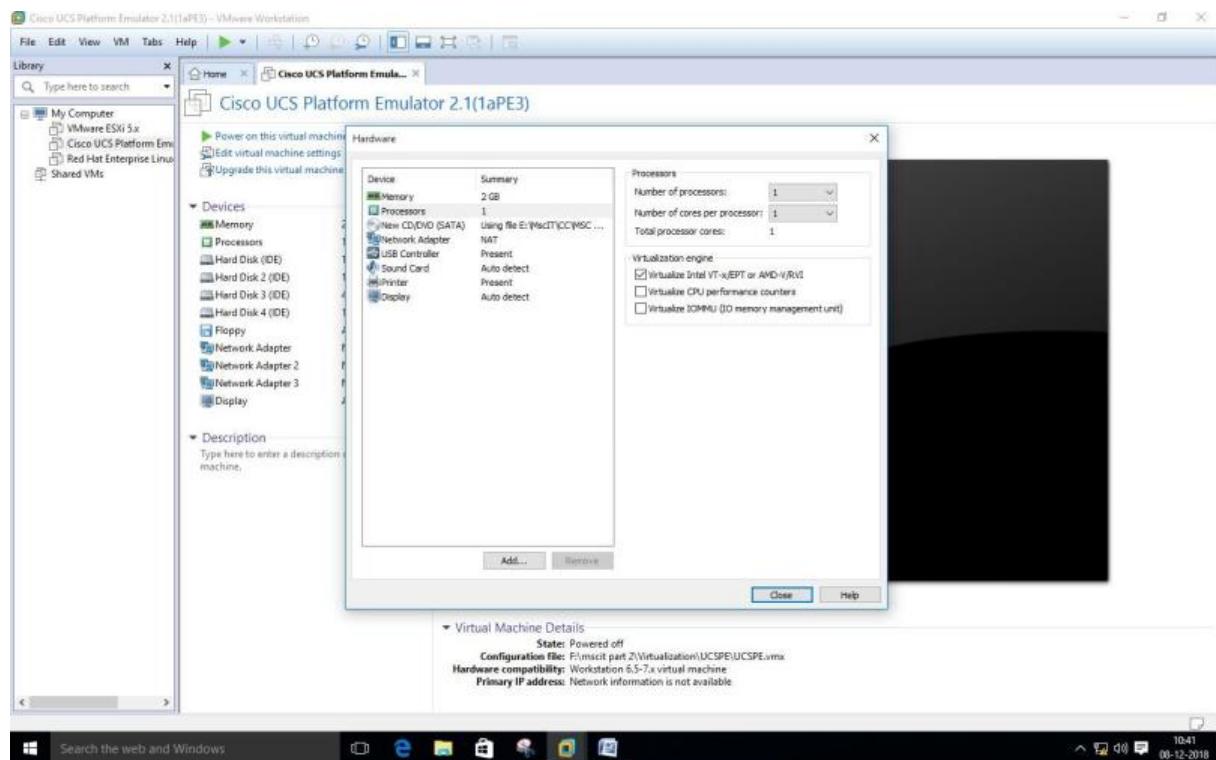
Click on Customize Hardware option



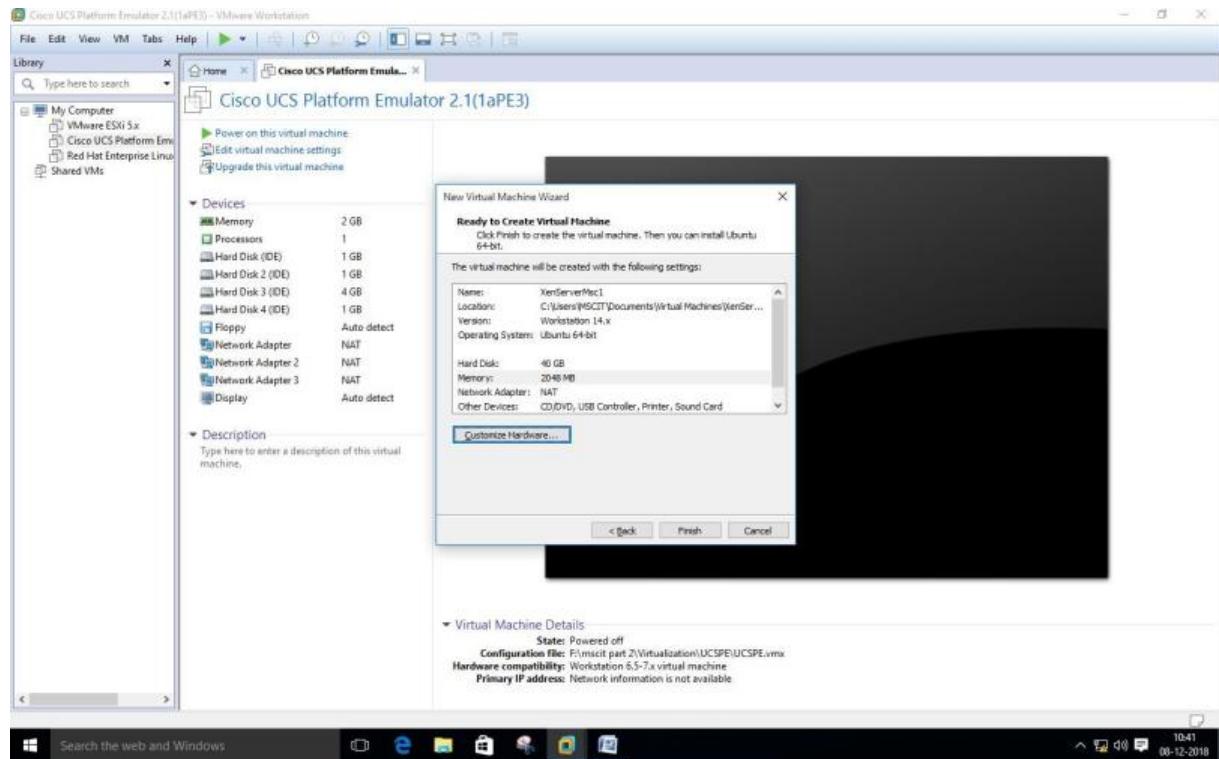
Change – Memory for this virtual machine to 2 GB and click on close



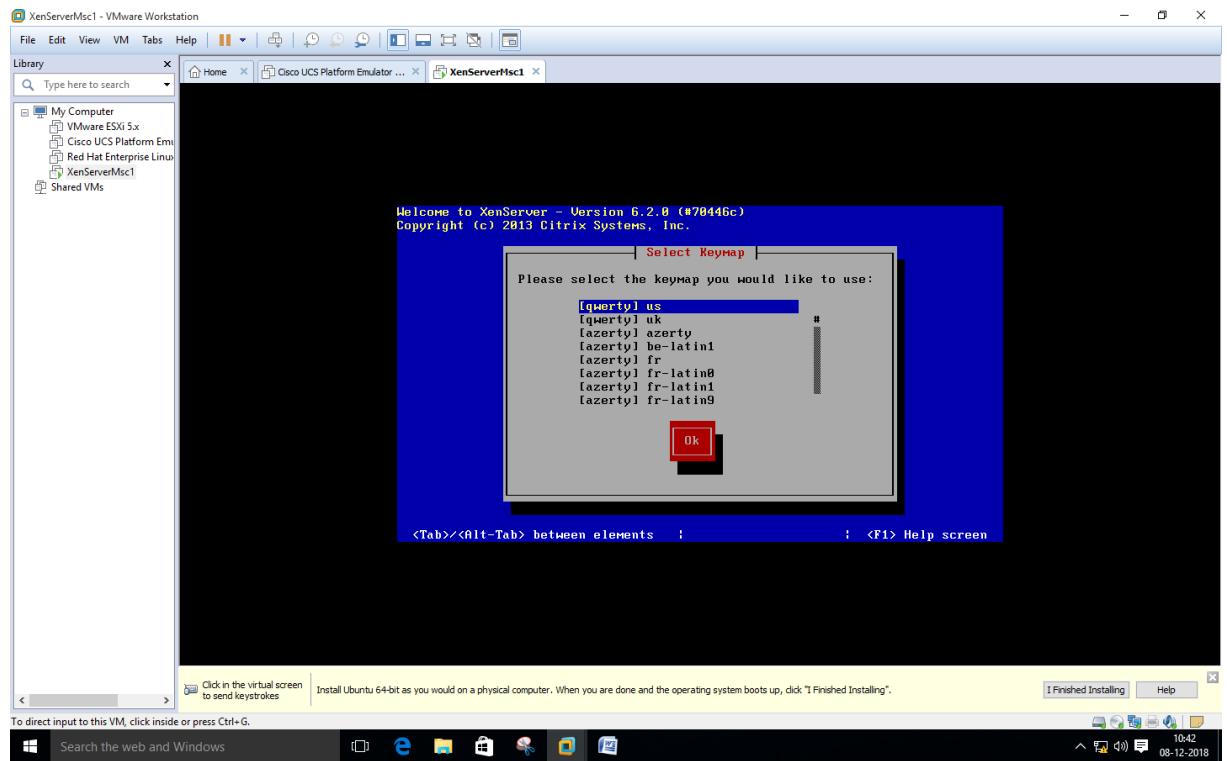
Click on Processor and select virtualize Intel VT



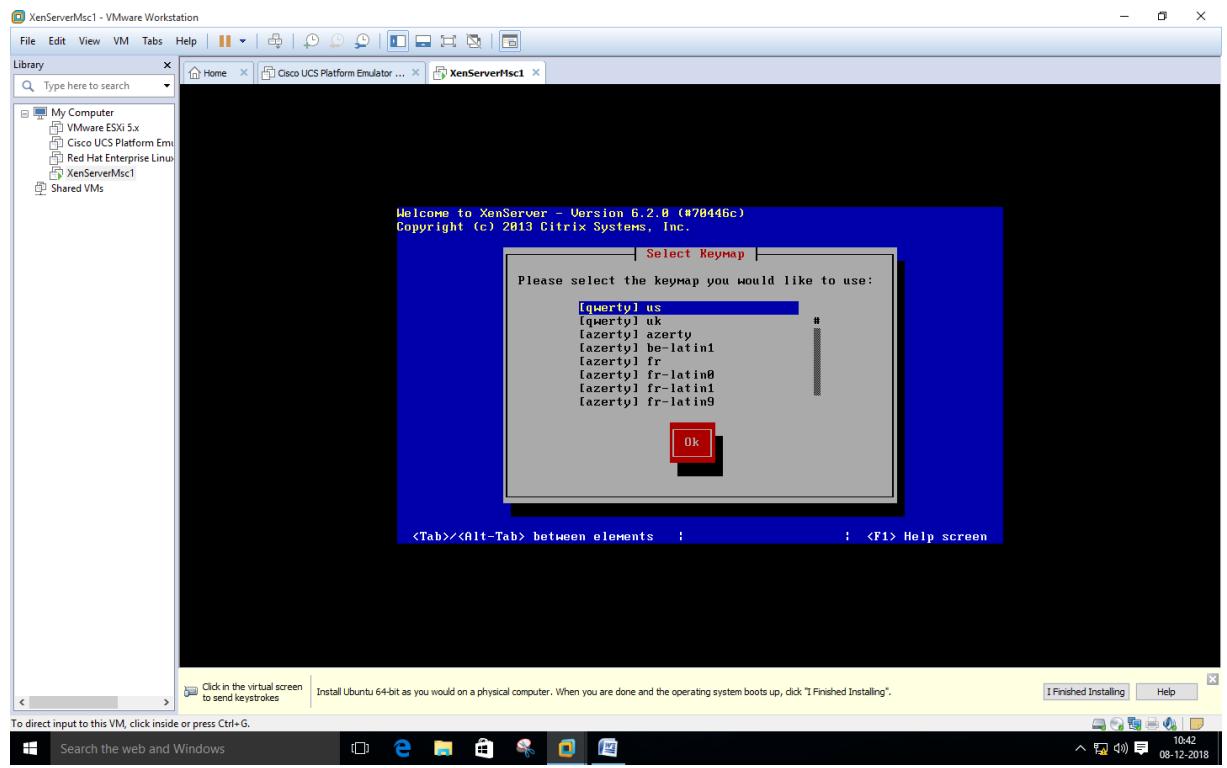
Click on Finish –



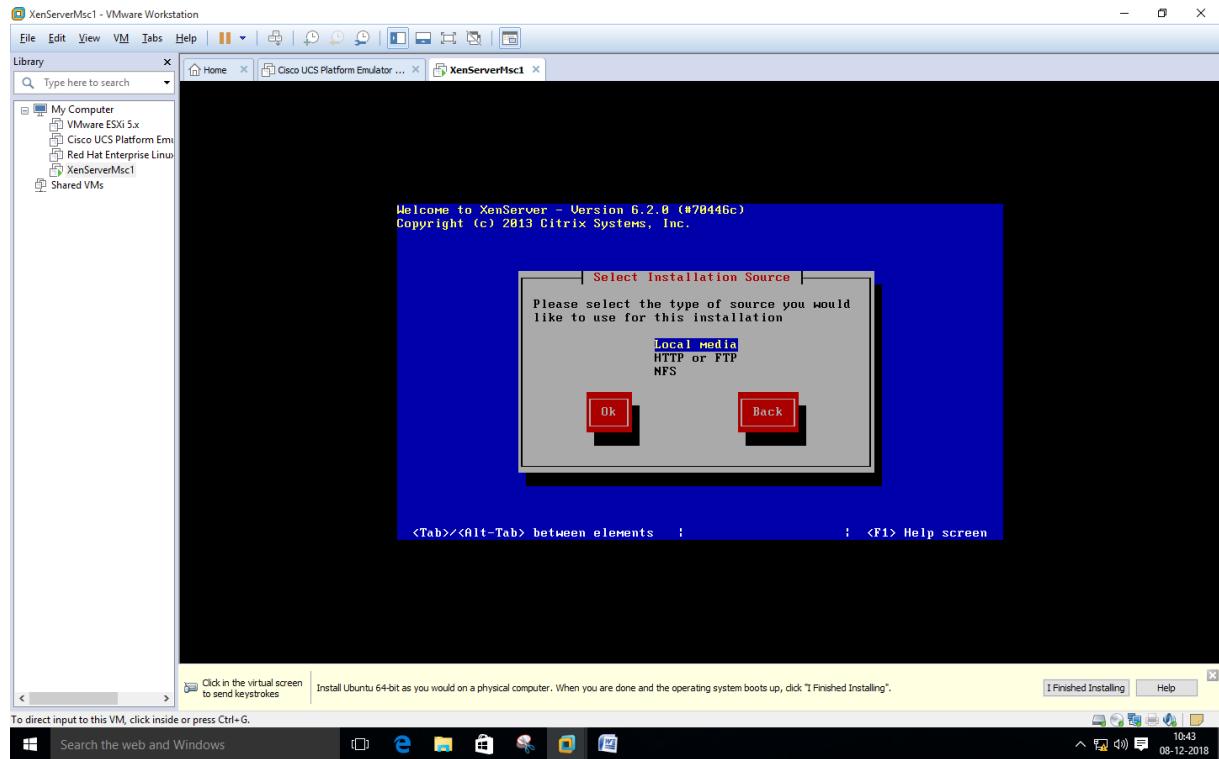
**Now Power on newly created Virtual machine –
Now select US and click on OK**



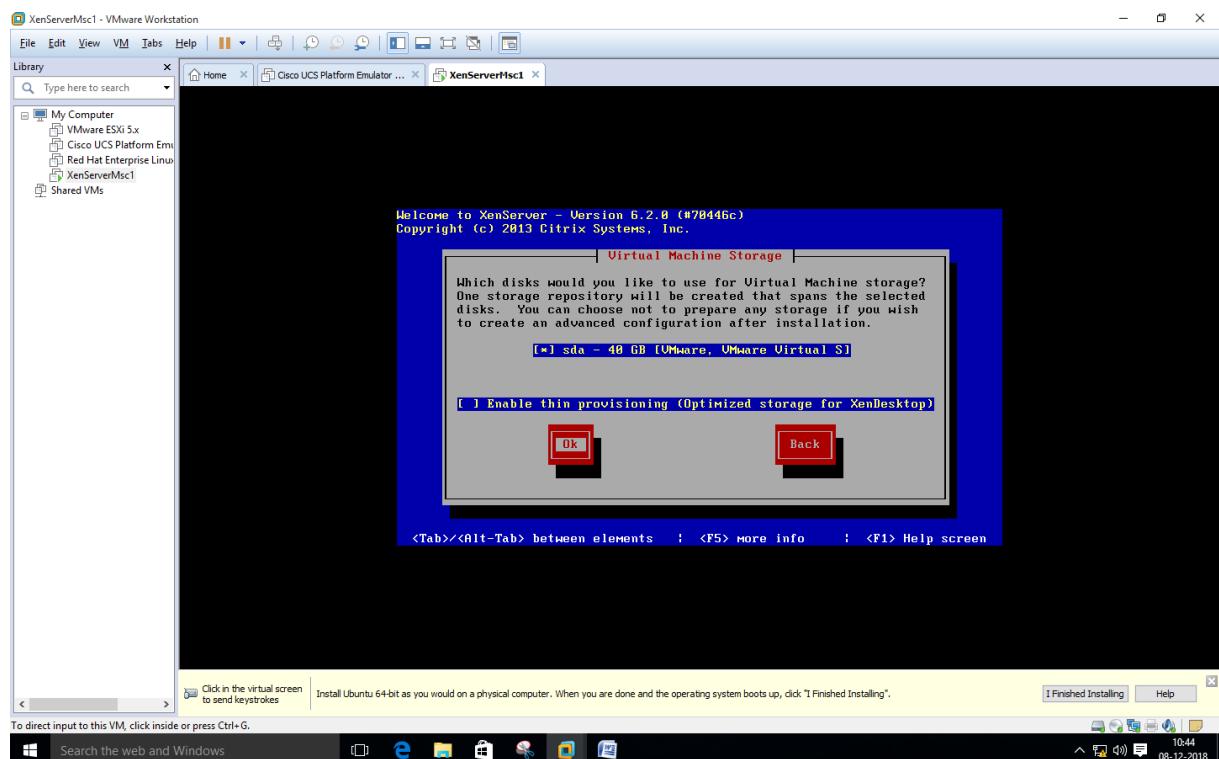
Click on OK as seen in below screenshot -



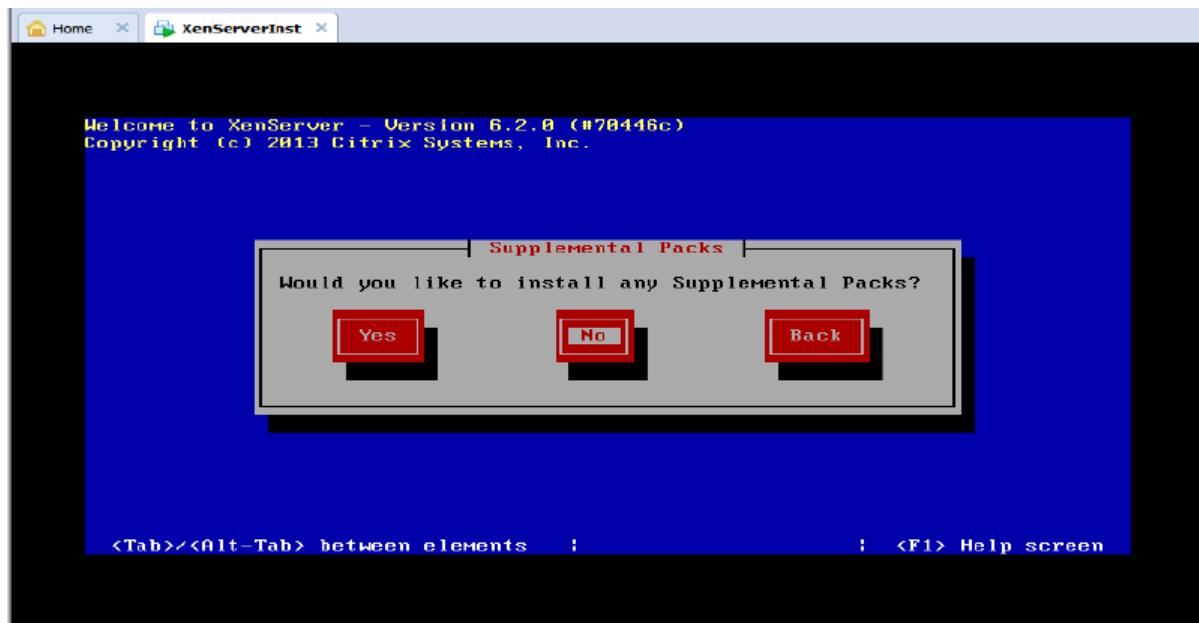
Select Local media and ok



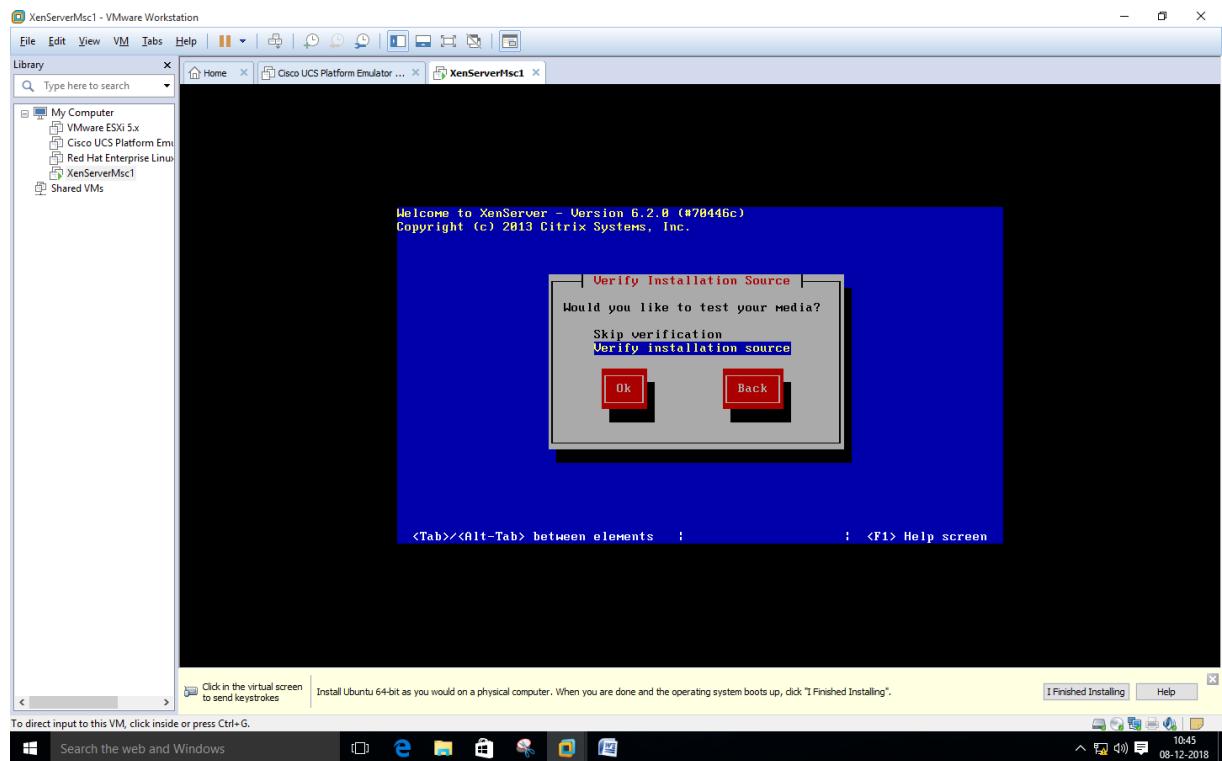
Click ok



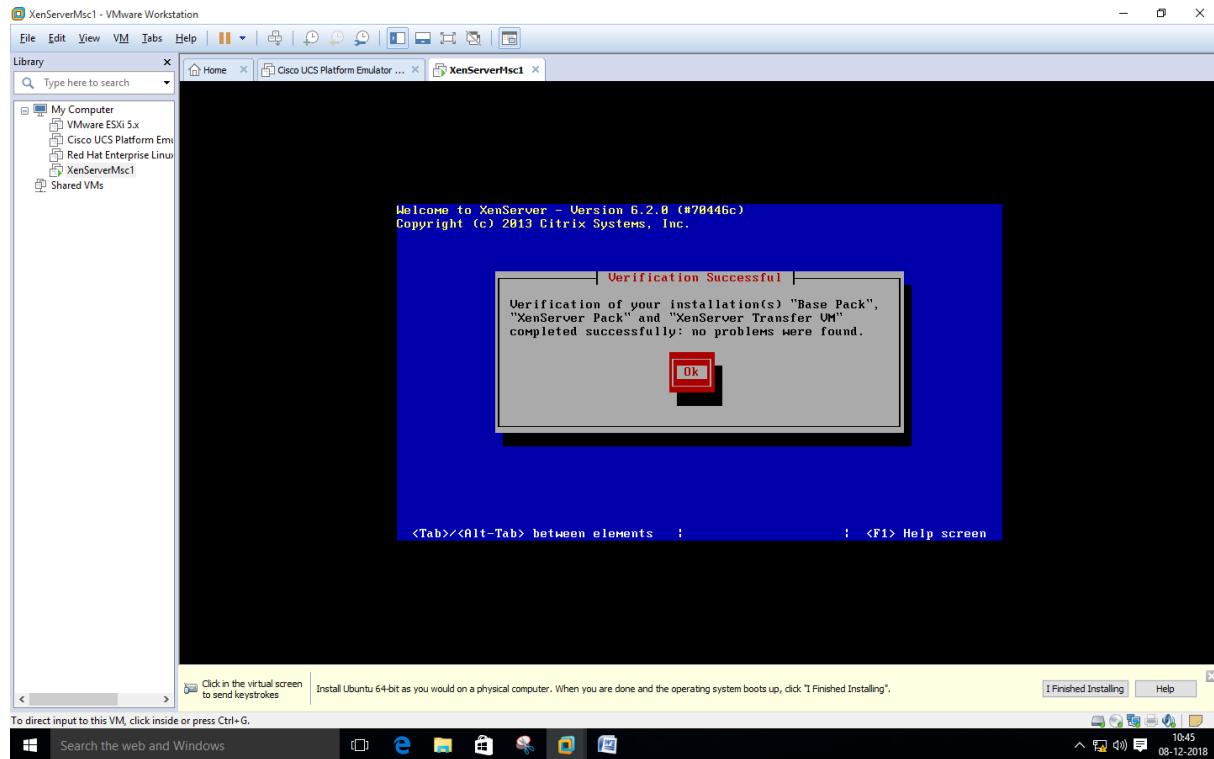
Click No



Here click verify installation

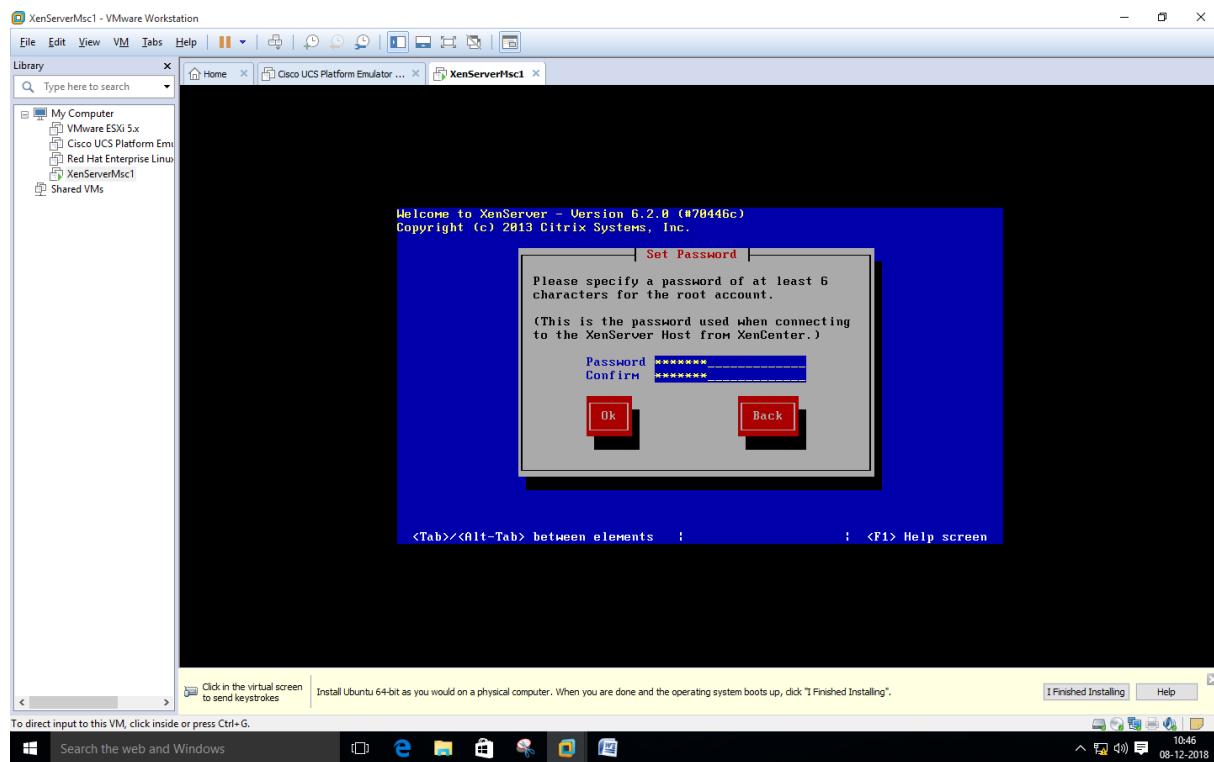


Click ok

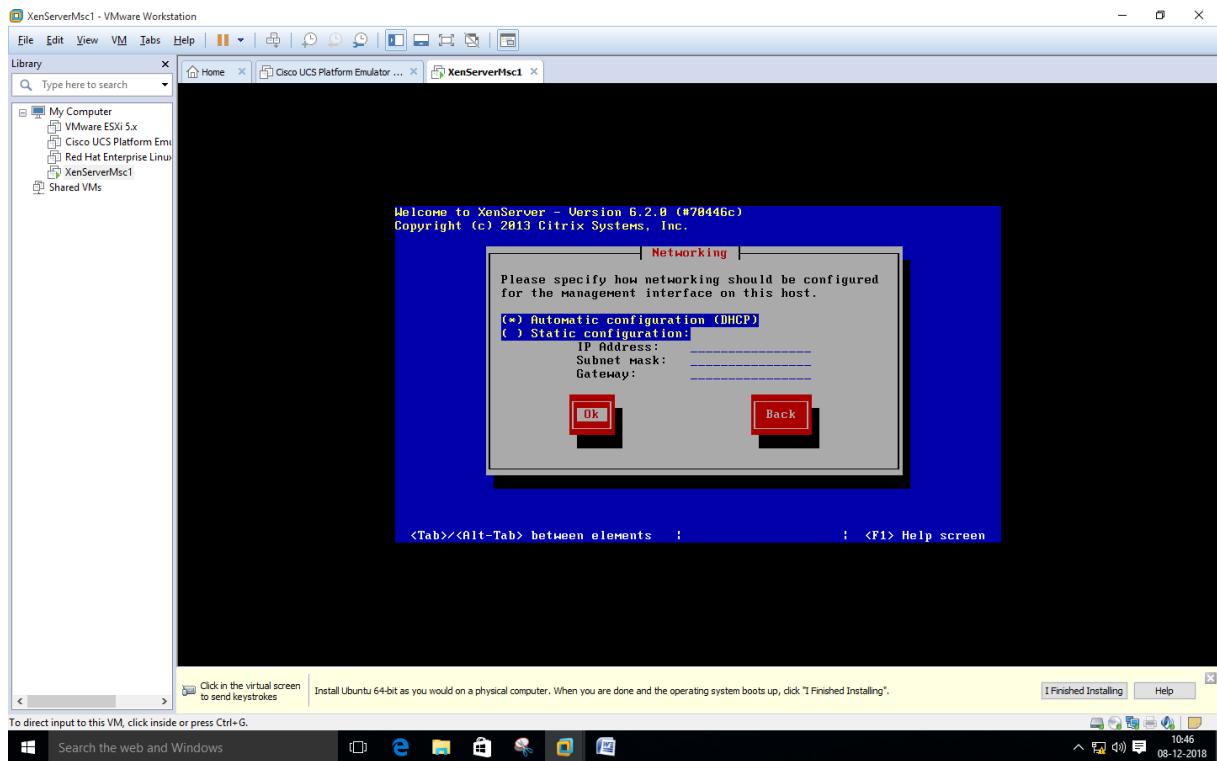


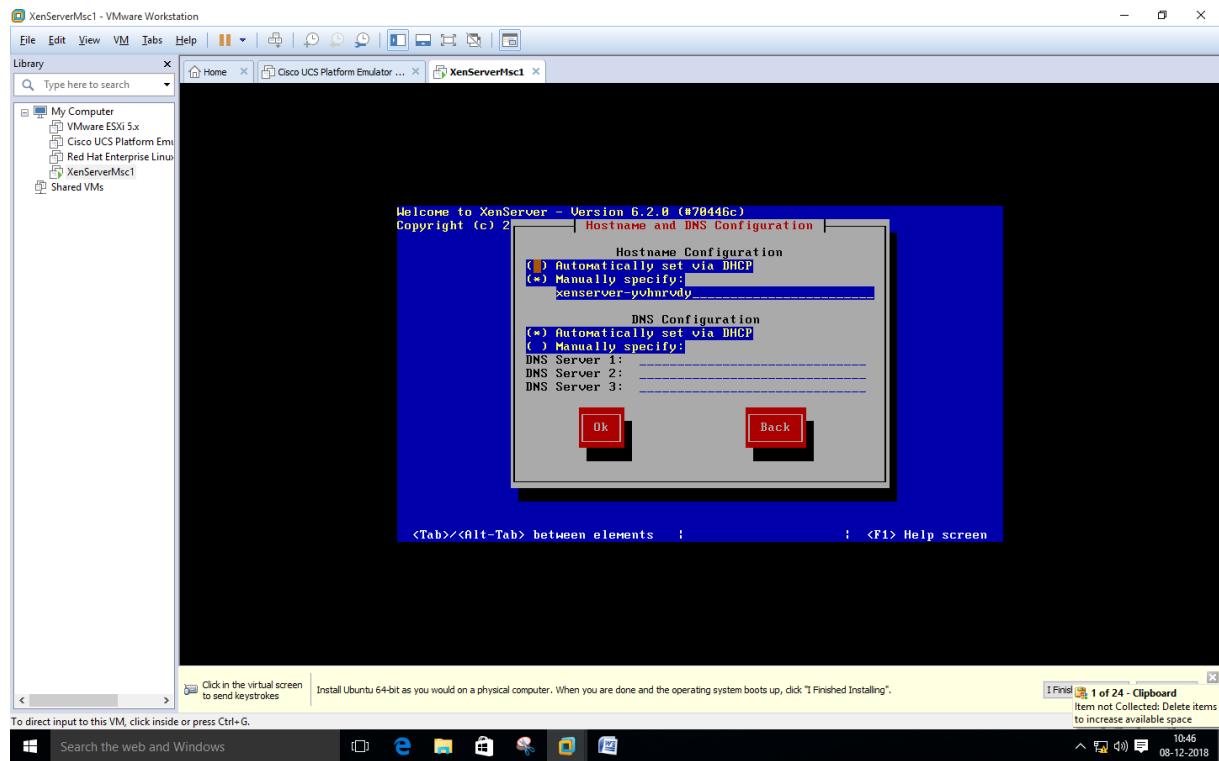
Insert password (Remember password entered) and click on Ok –

Password:root123

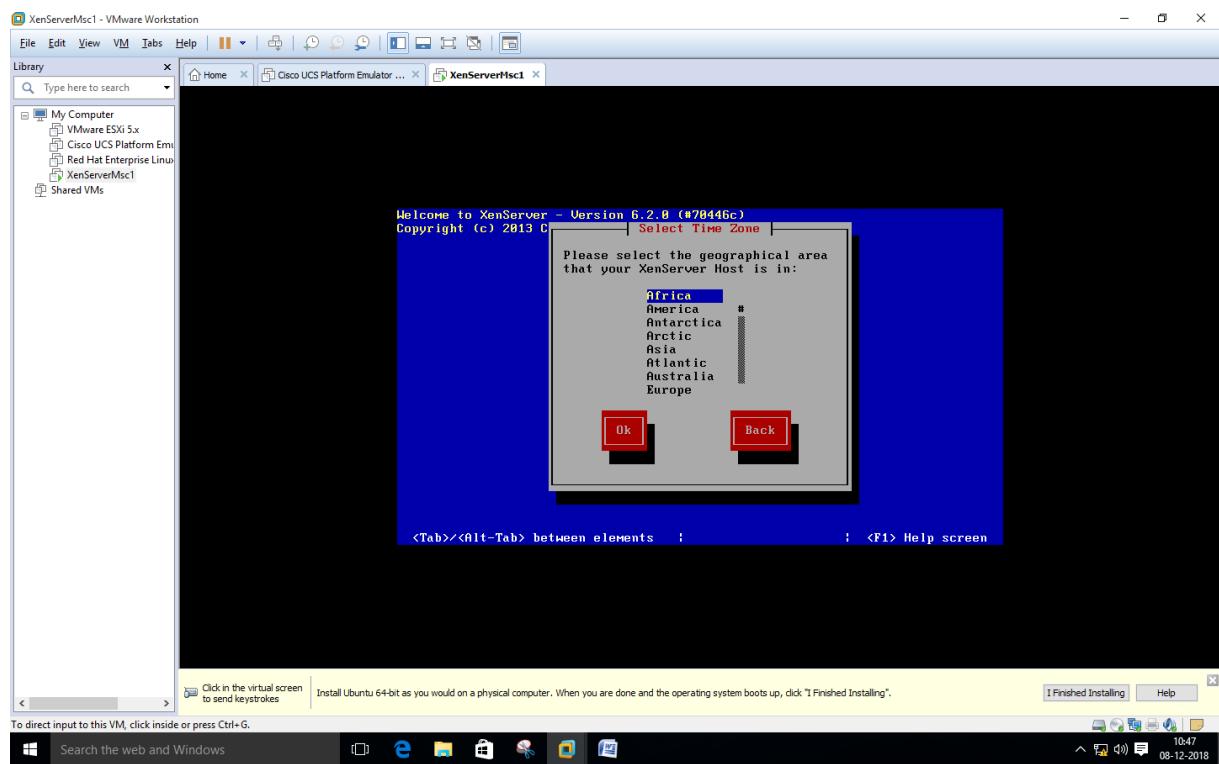


Select Automatically set via DHCP and click on OK

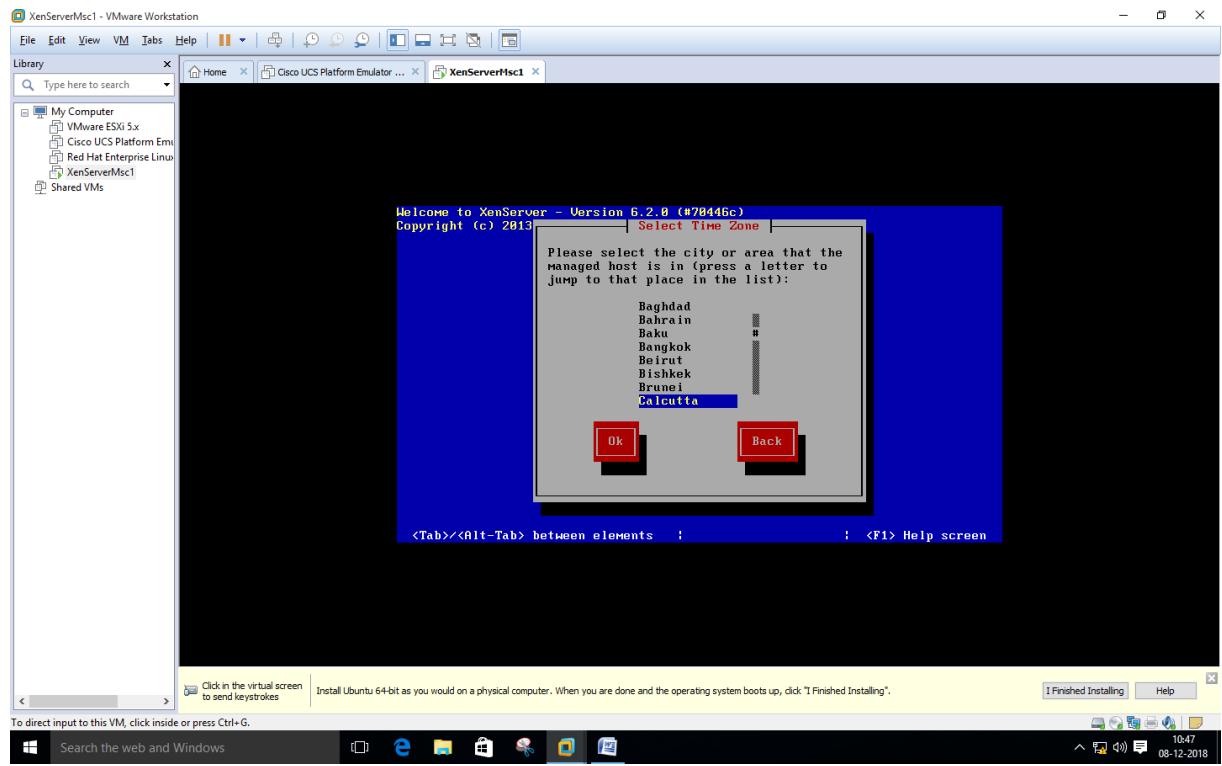




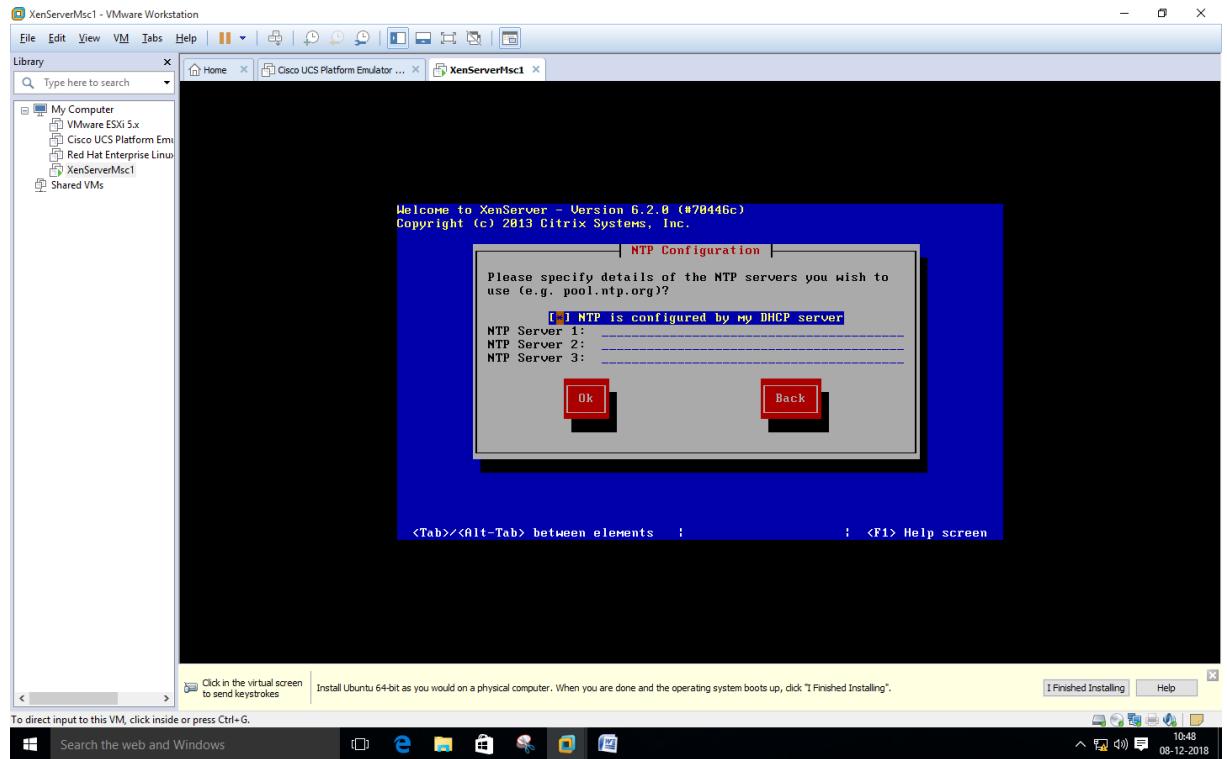
Select Asia and click on OK –



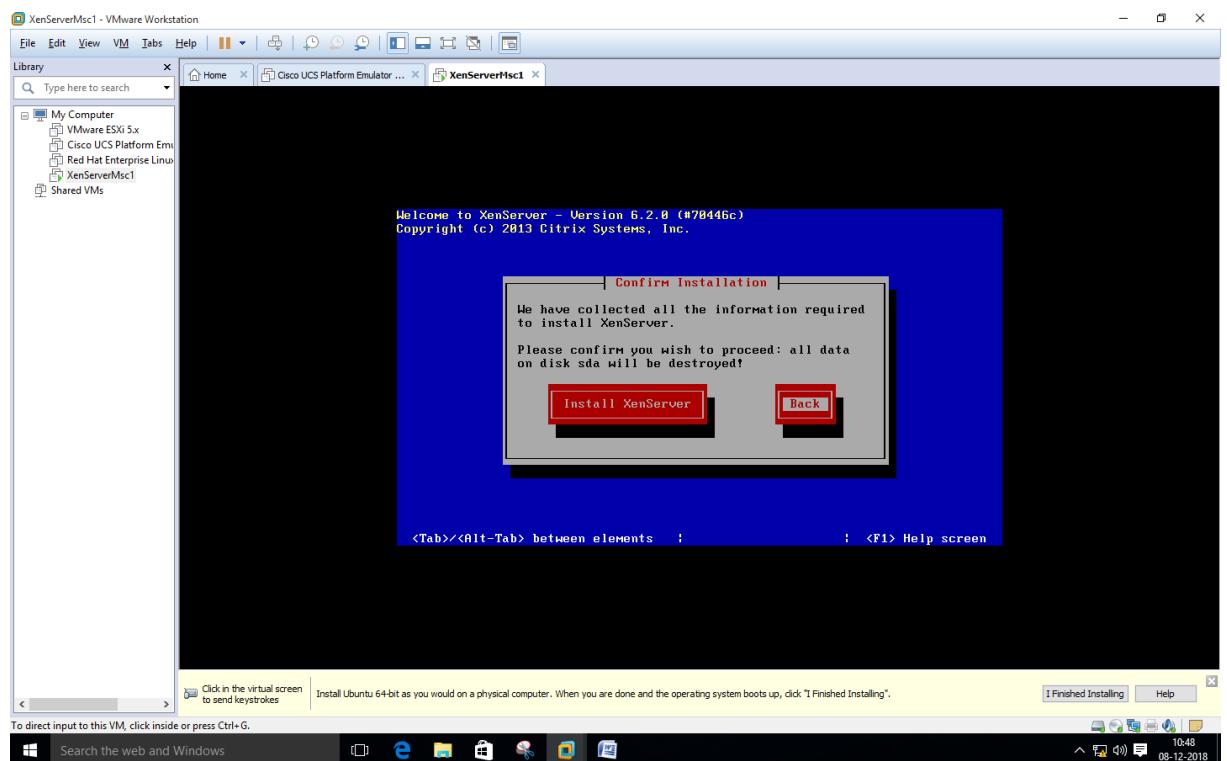
Select Calcutta

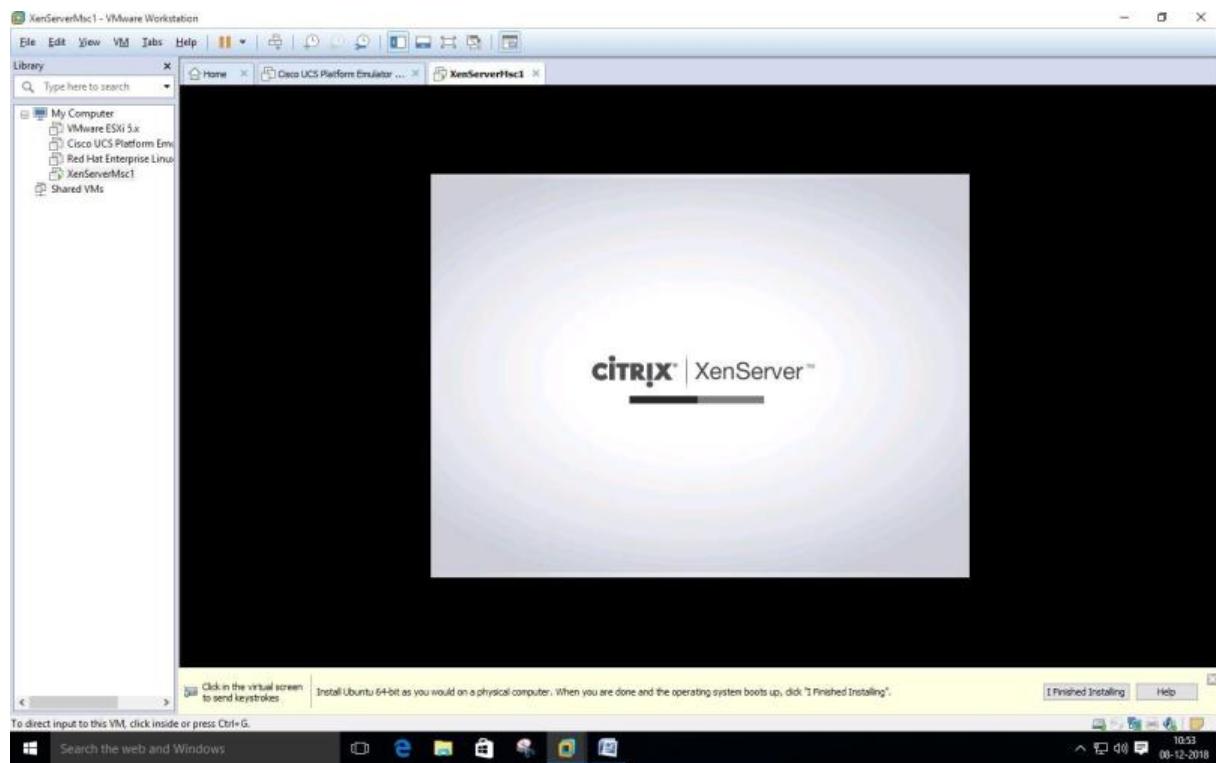


Select “Using NTP” and click on OK

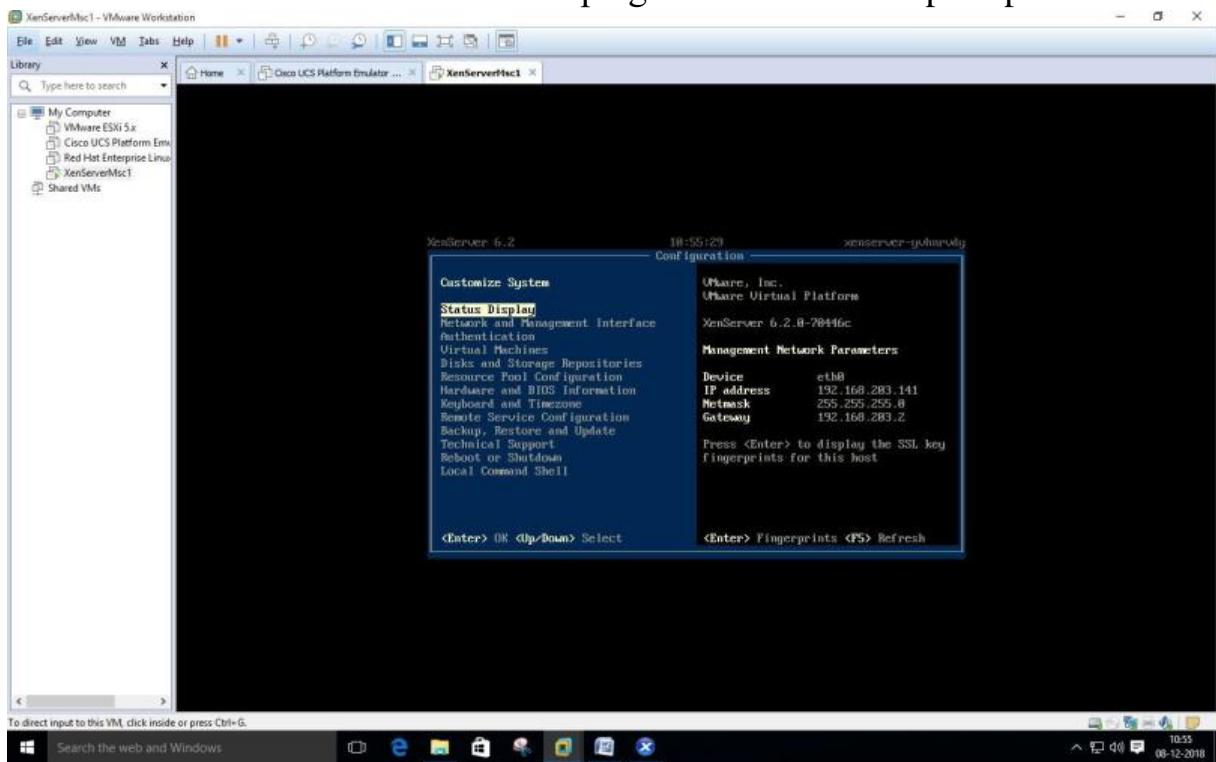


Click Install Xen server

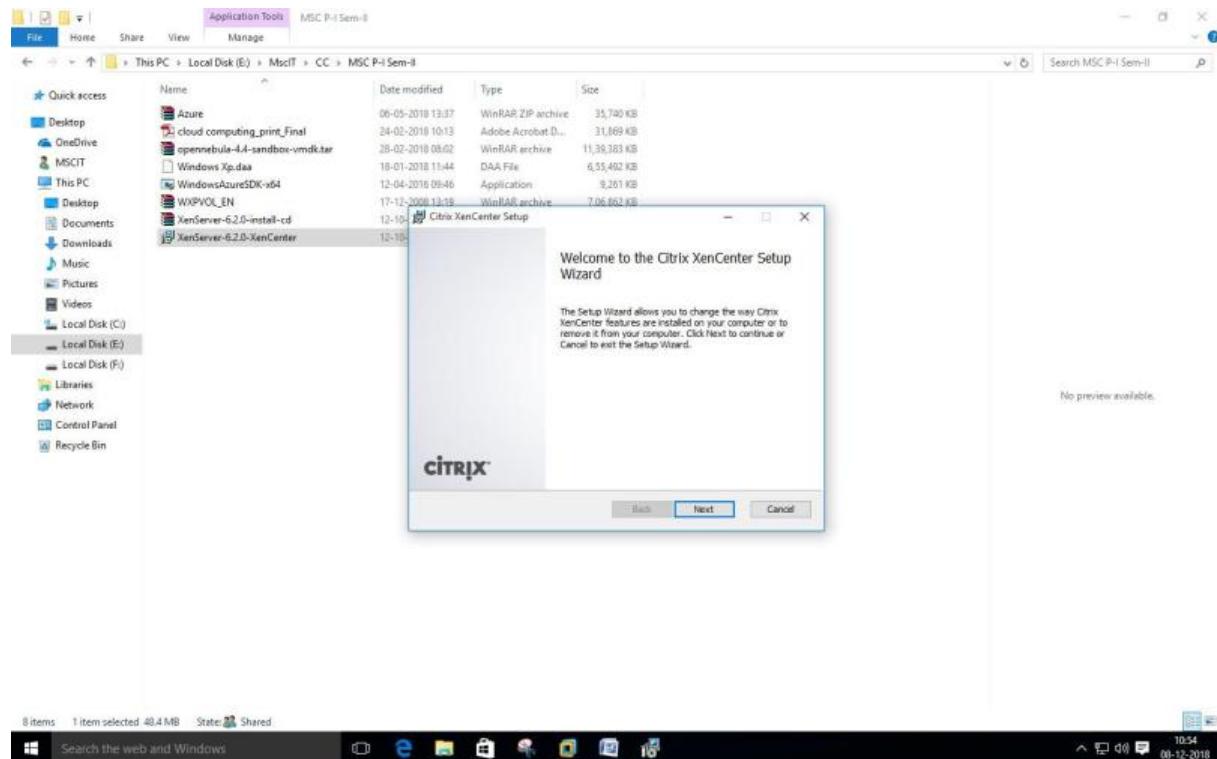




Note IP Address – “192.168.283.141” ping it from command prompt



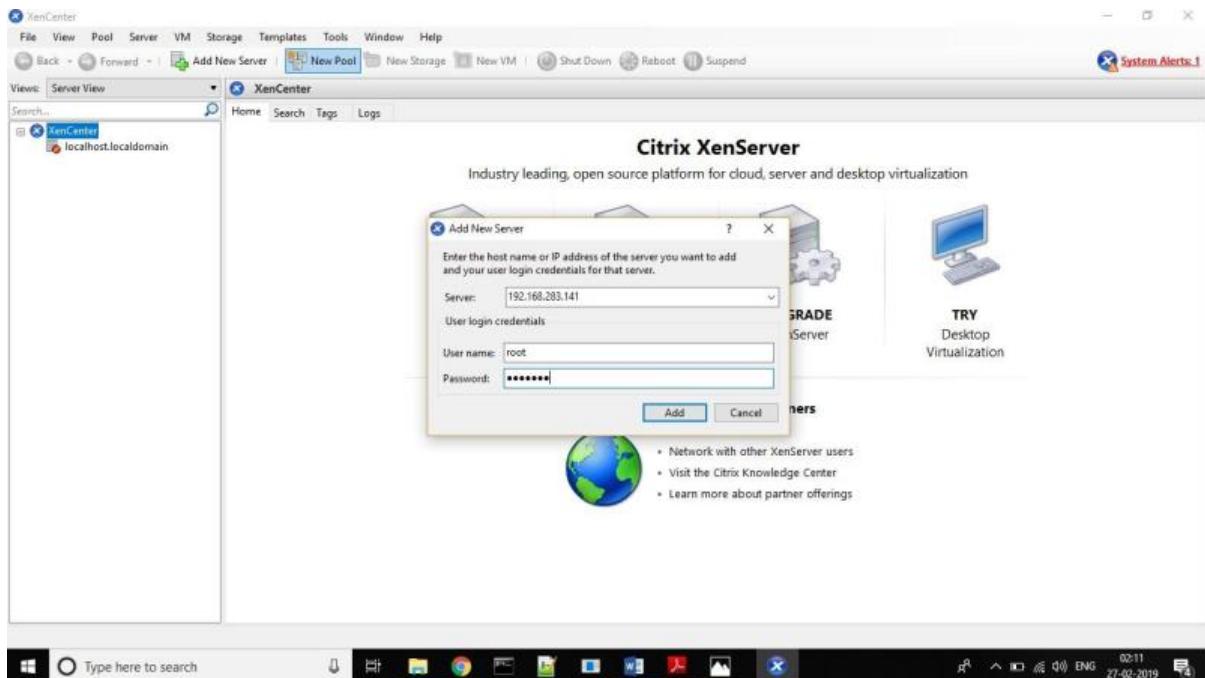
Now Install Citrix App if not installed –



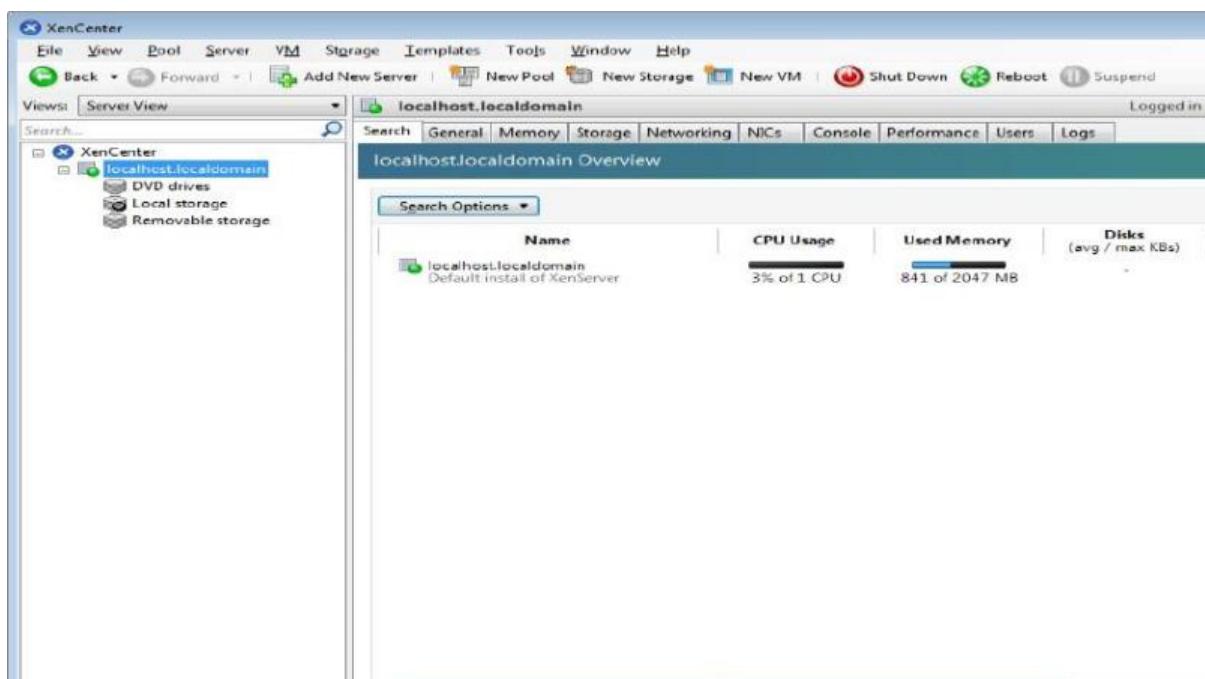
Now Open Citrix XenCenter – and Click and Add Server



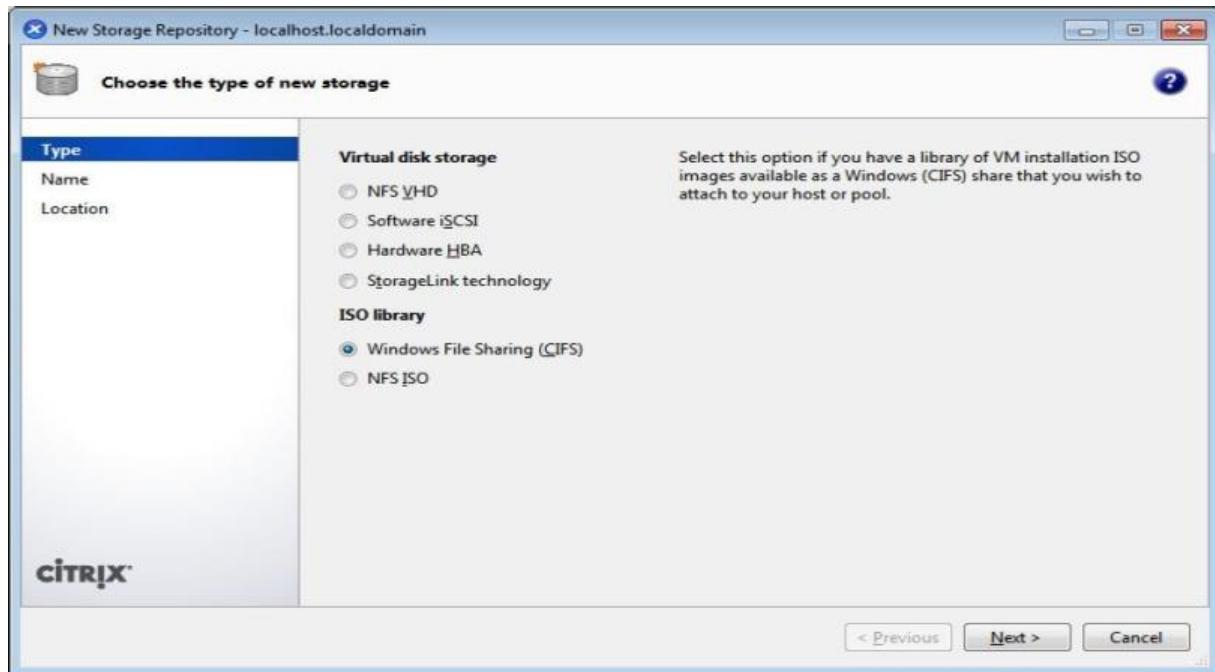
Fill IP address copied from Installation and User name as “root” and Password as “root123” which we had given during installation and Click on Add



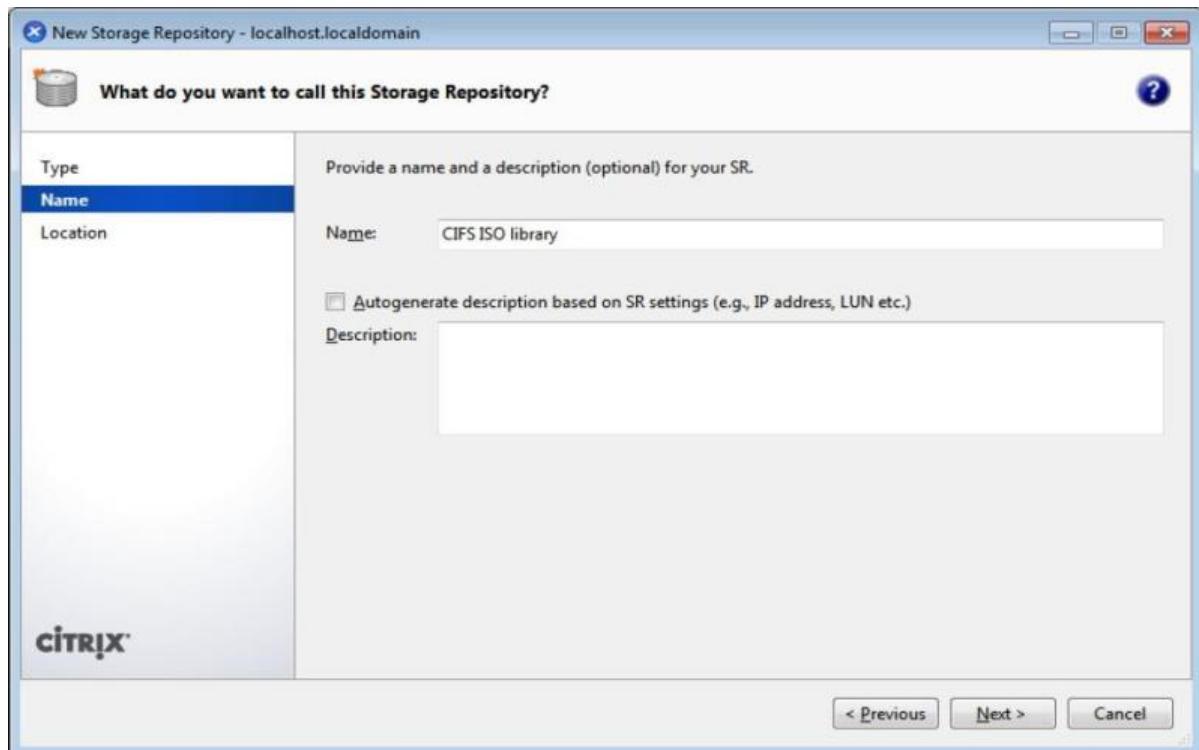
Now Click on New Storage –



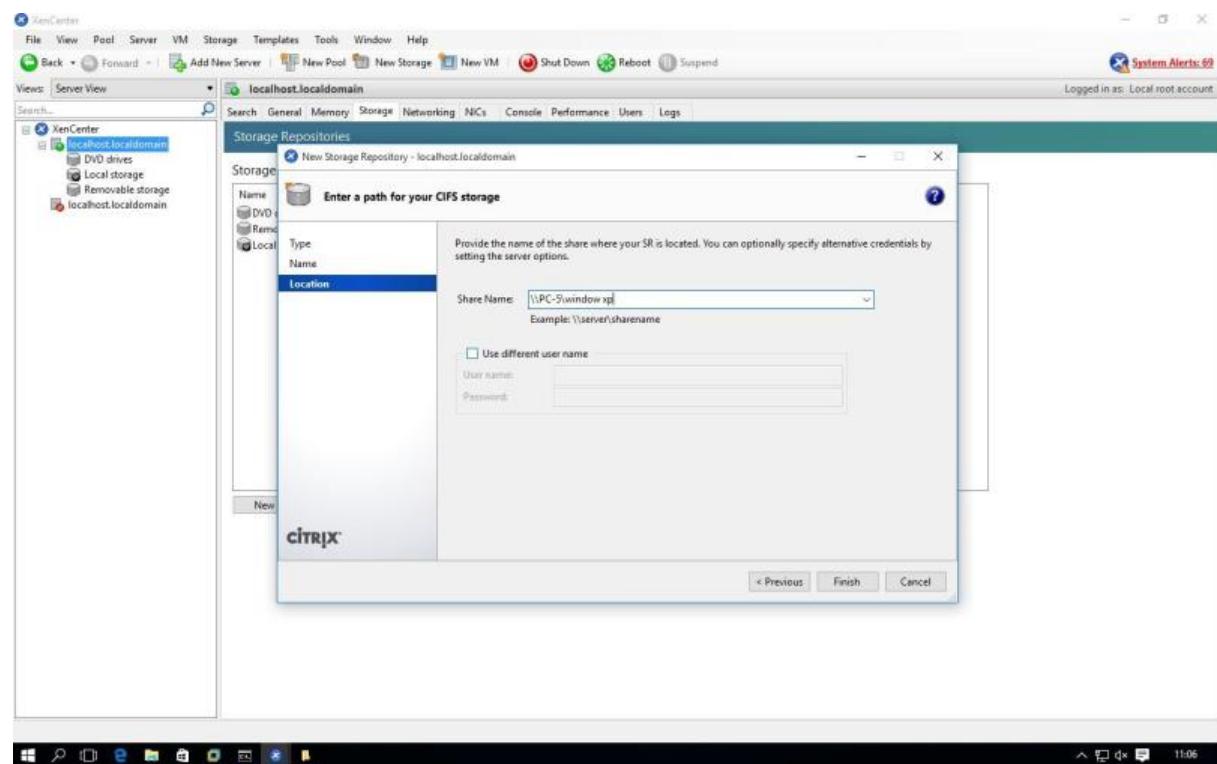
Select Window File Sharing (CIFS) and click on next –



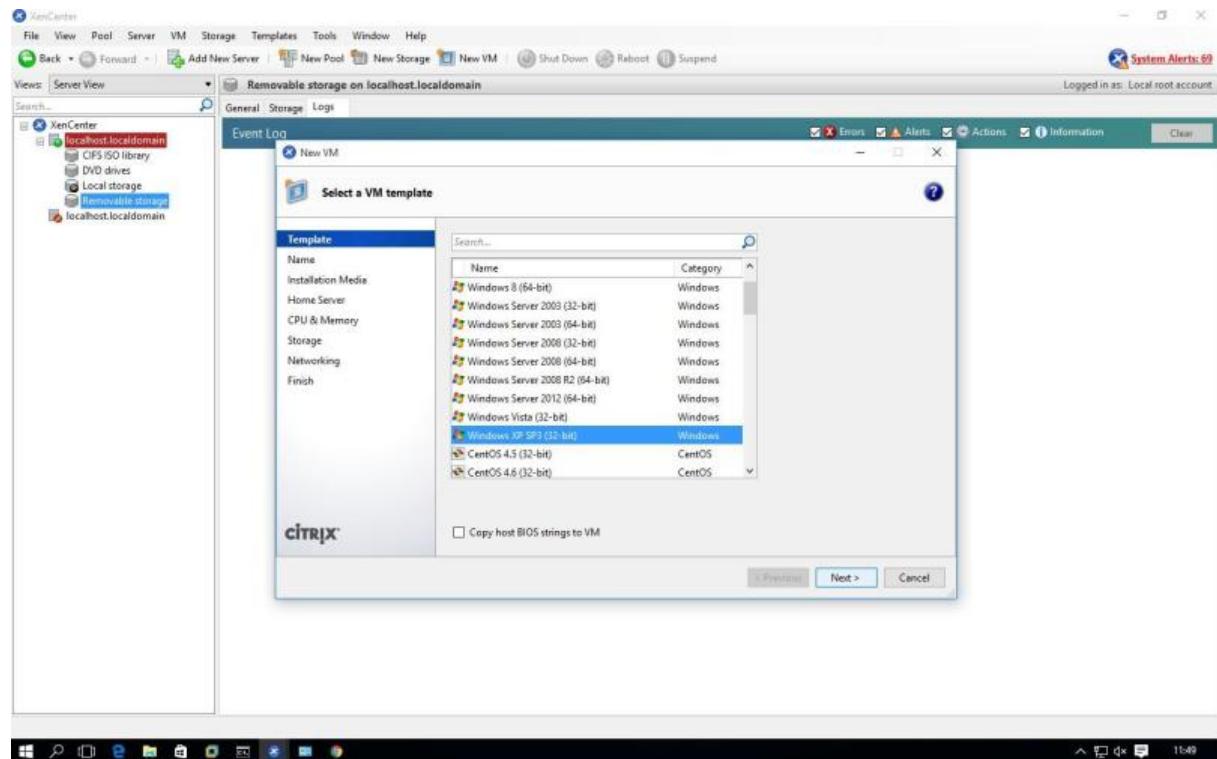
Uncheck Auto generate option Click on Next



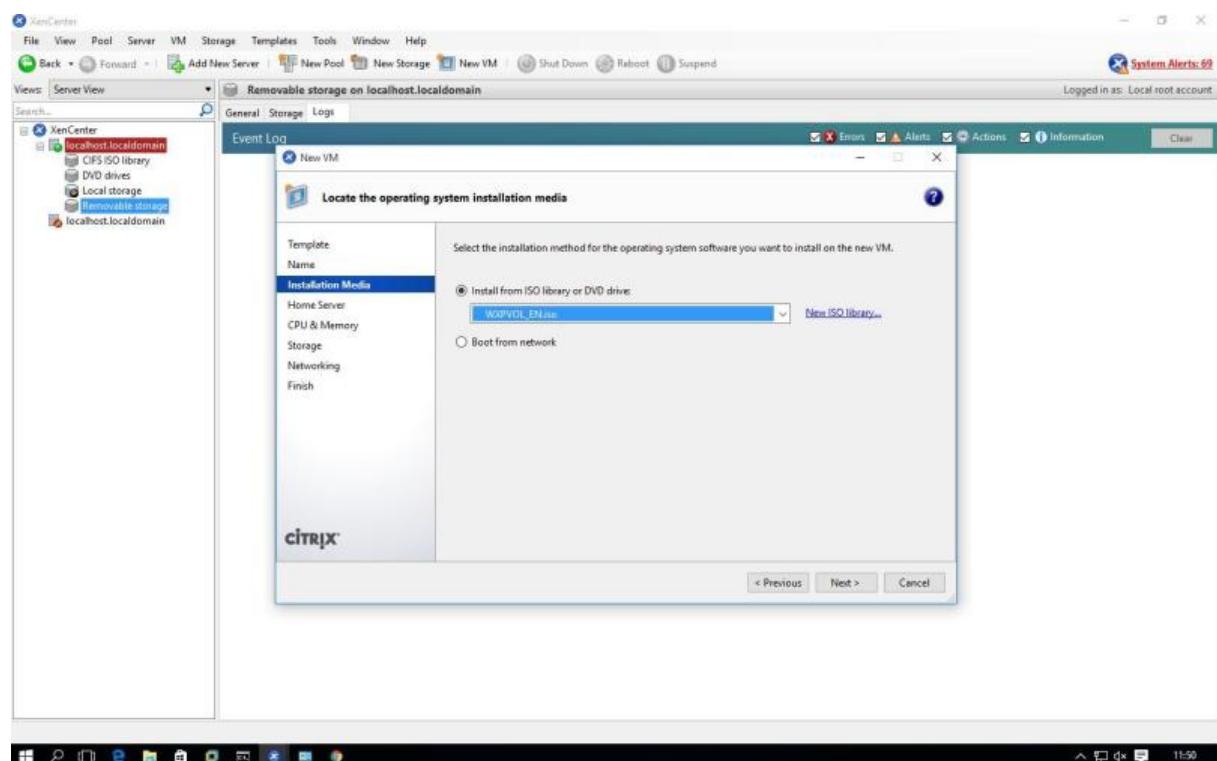
Provide the path of shared windows XP image and enter local pc credential ,,, click on Finish



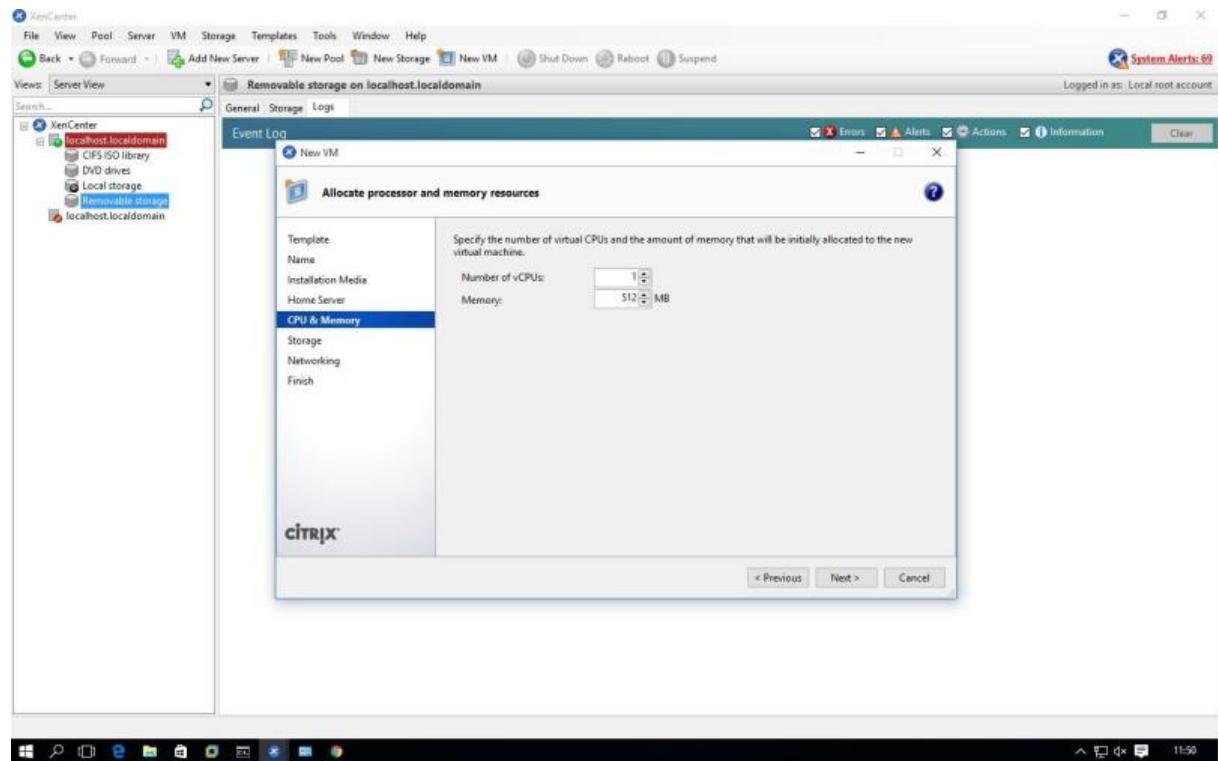
Click on New VM – and Windows XP SP3



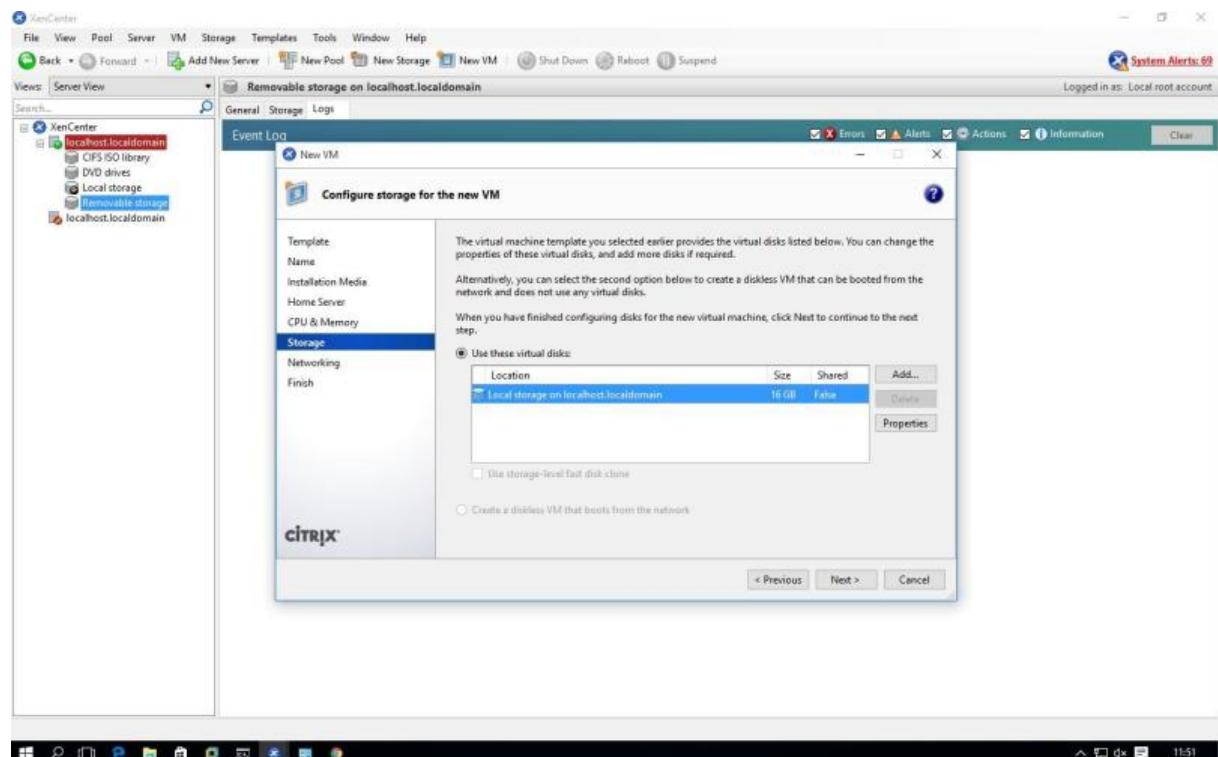
Select ISO file and click on next –



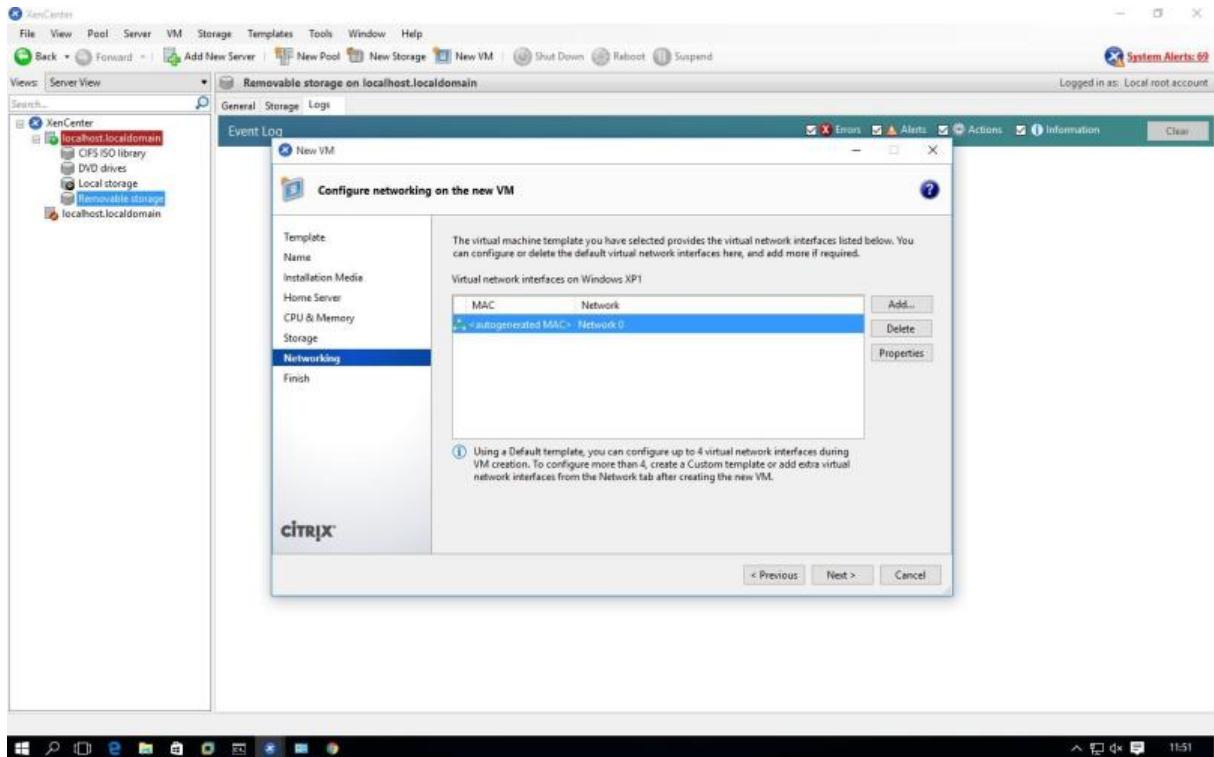
Next –



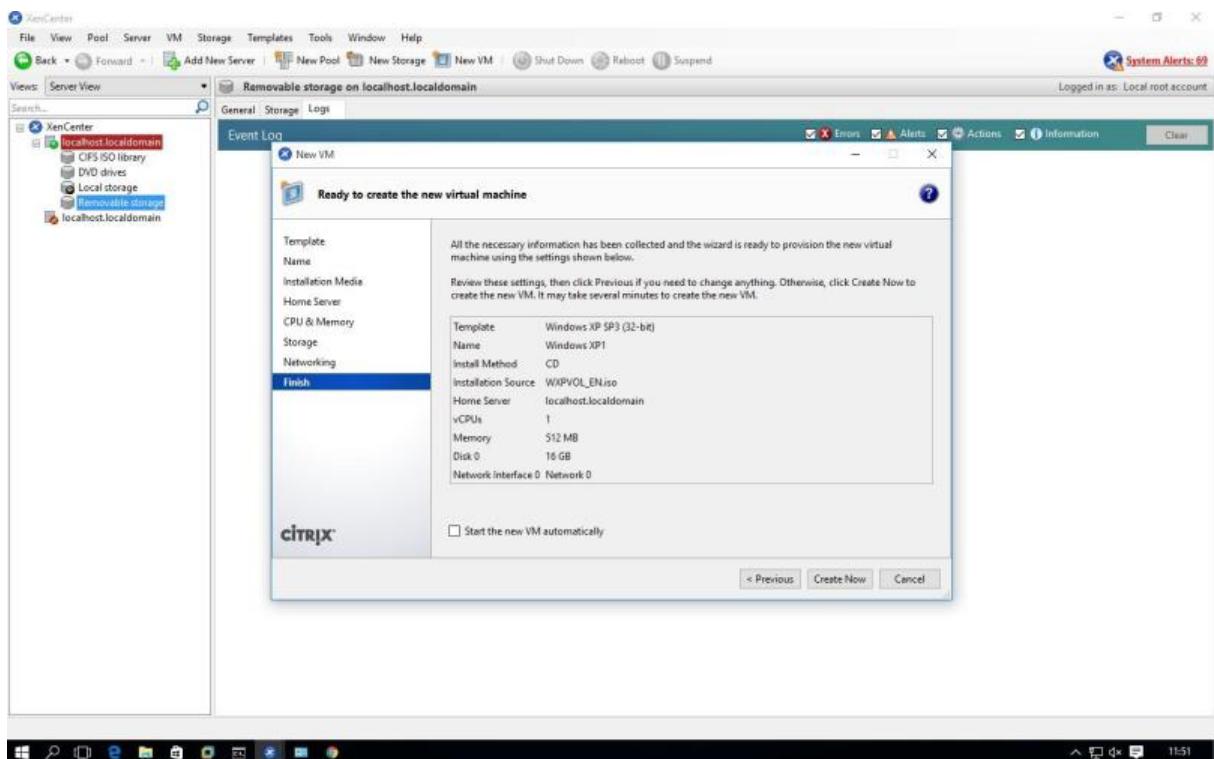
Next-

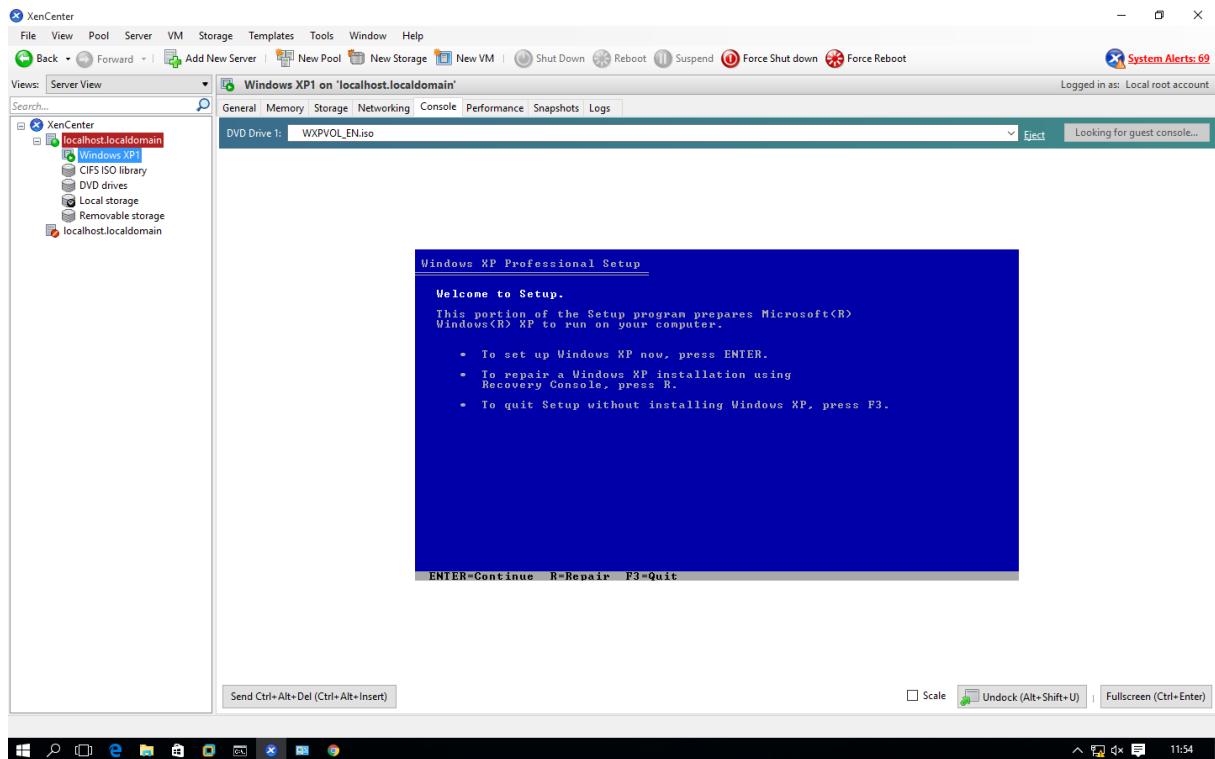


Next-



Uncheck – Start the new VM and click on create now

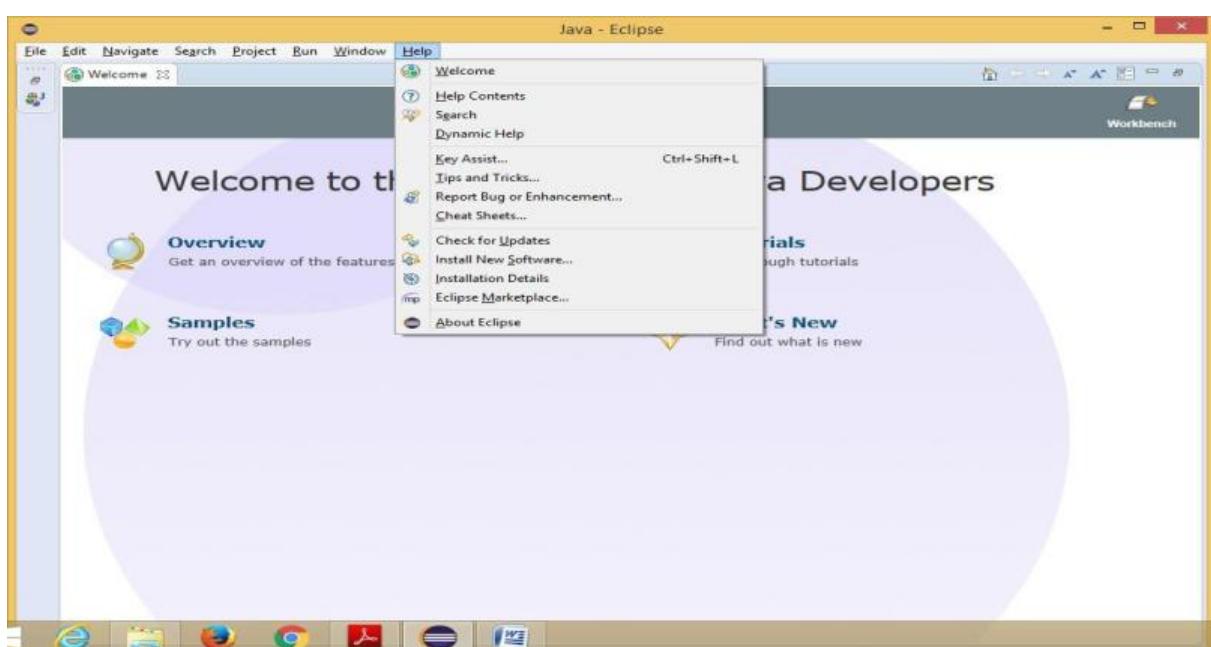
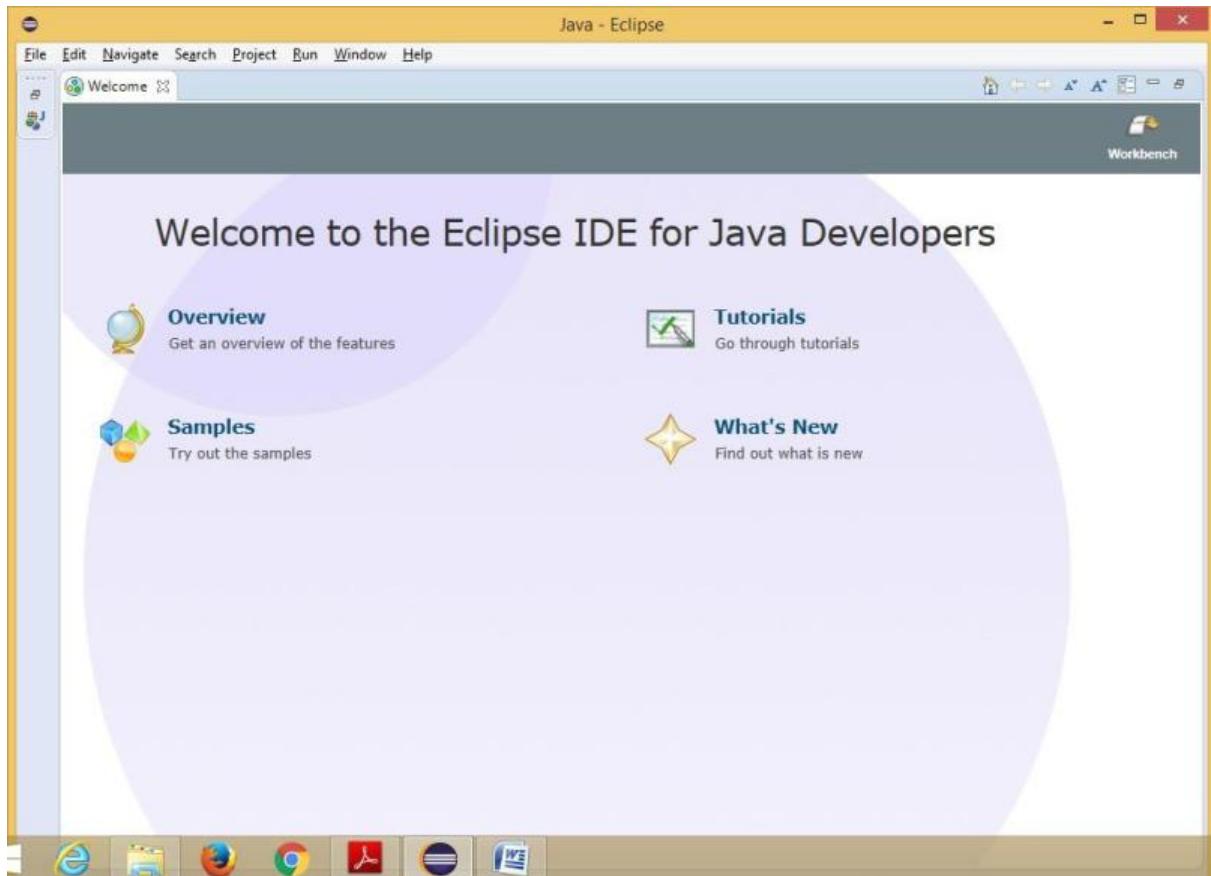




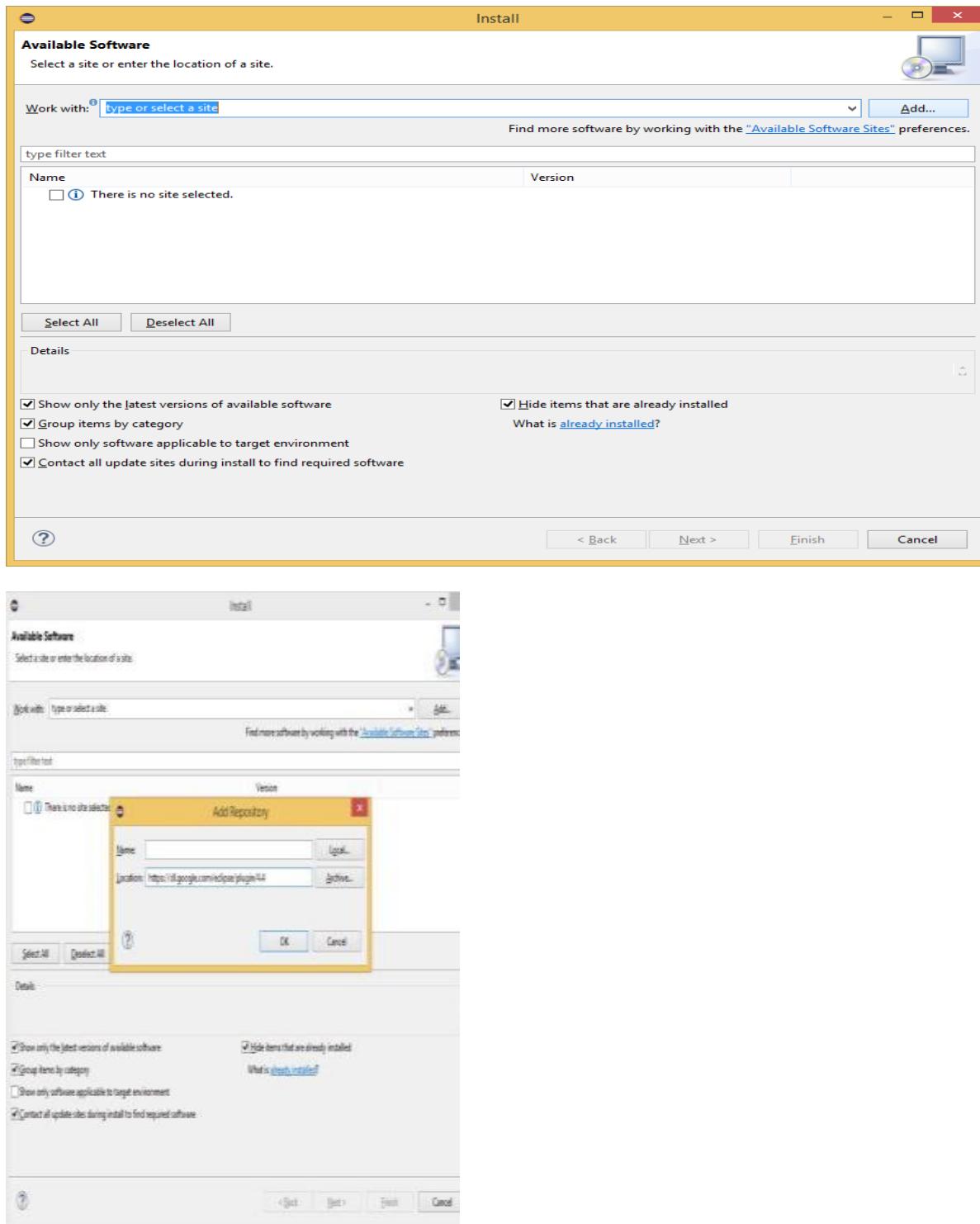
PRACTICAL: 4

IMPLEMENT SEARCH ENGINE _ GOOGLE APP ENGINE (GAE)

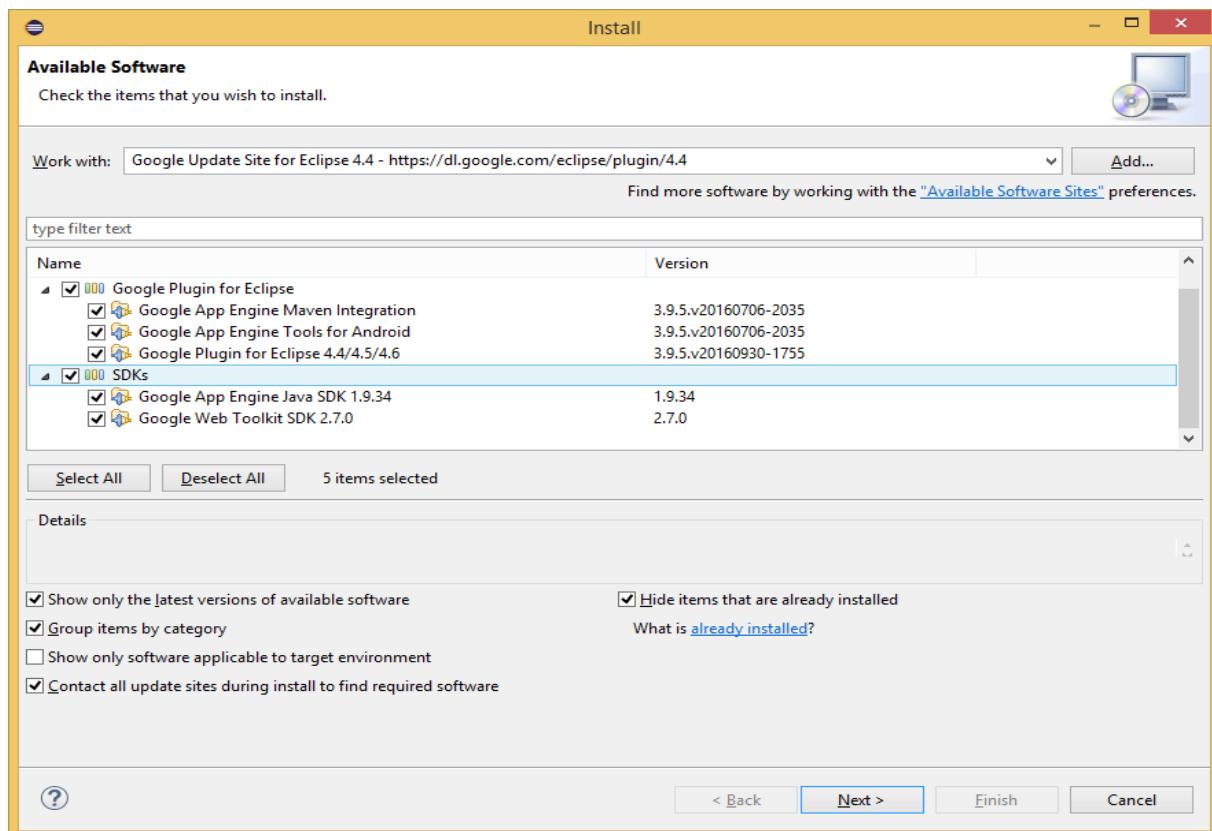
Open Eclipse Luna. Go to Help Menu Install New Software...-----



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.



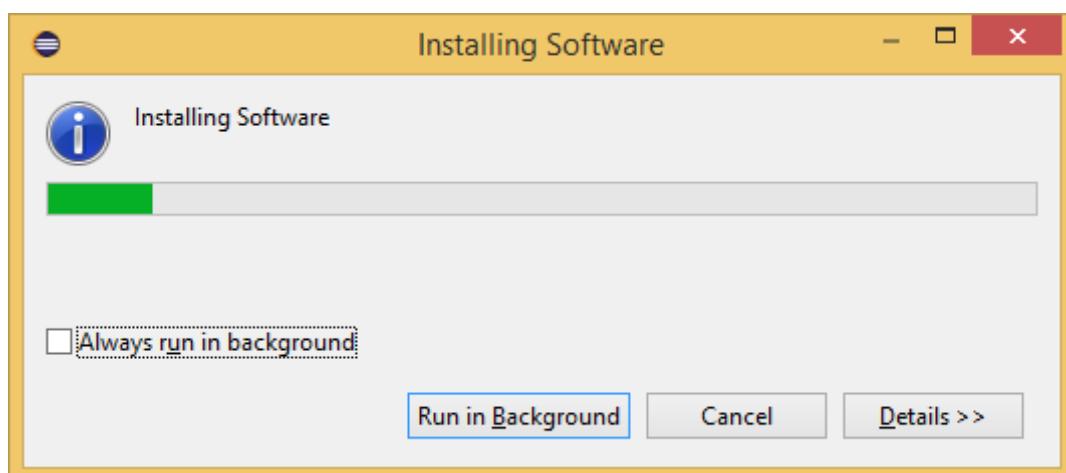
From the available software, select the required software and tools as shown in the below image for the **GAE**. Then click on the “**Next**” button.



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

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

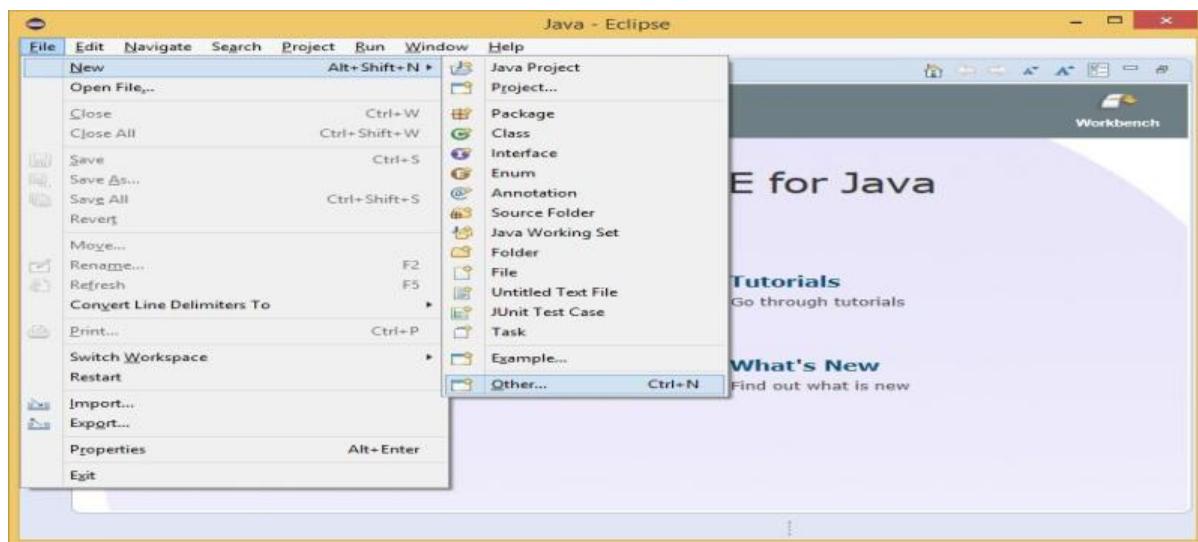
In the next window for Review Licenses select the option “**I accept.....**” and click on “**Finish**” button.



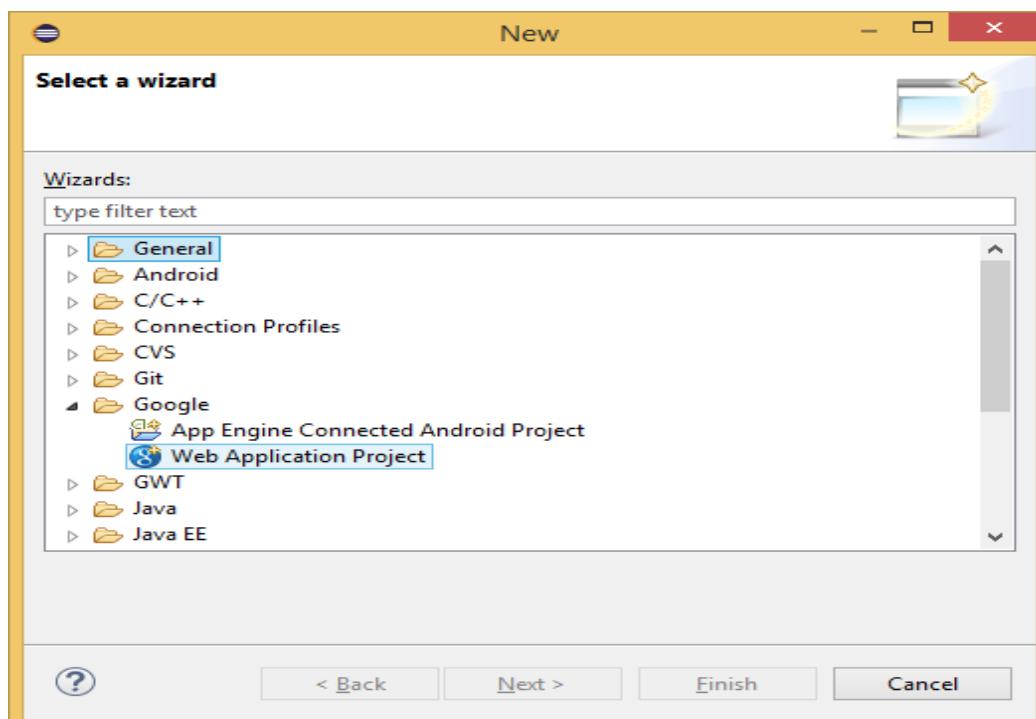
The installation is in progress...

After Installation you will get option to "Restart Eclipse", click on Yes.
So that the software you selected gets updated...

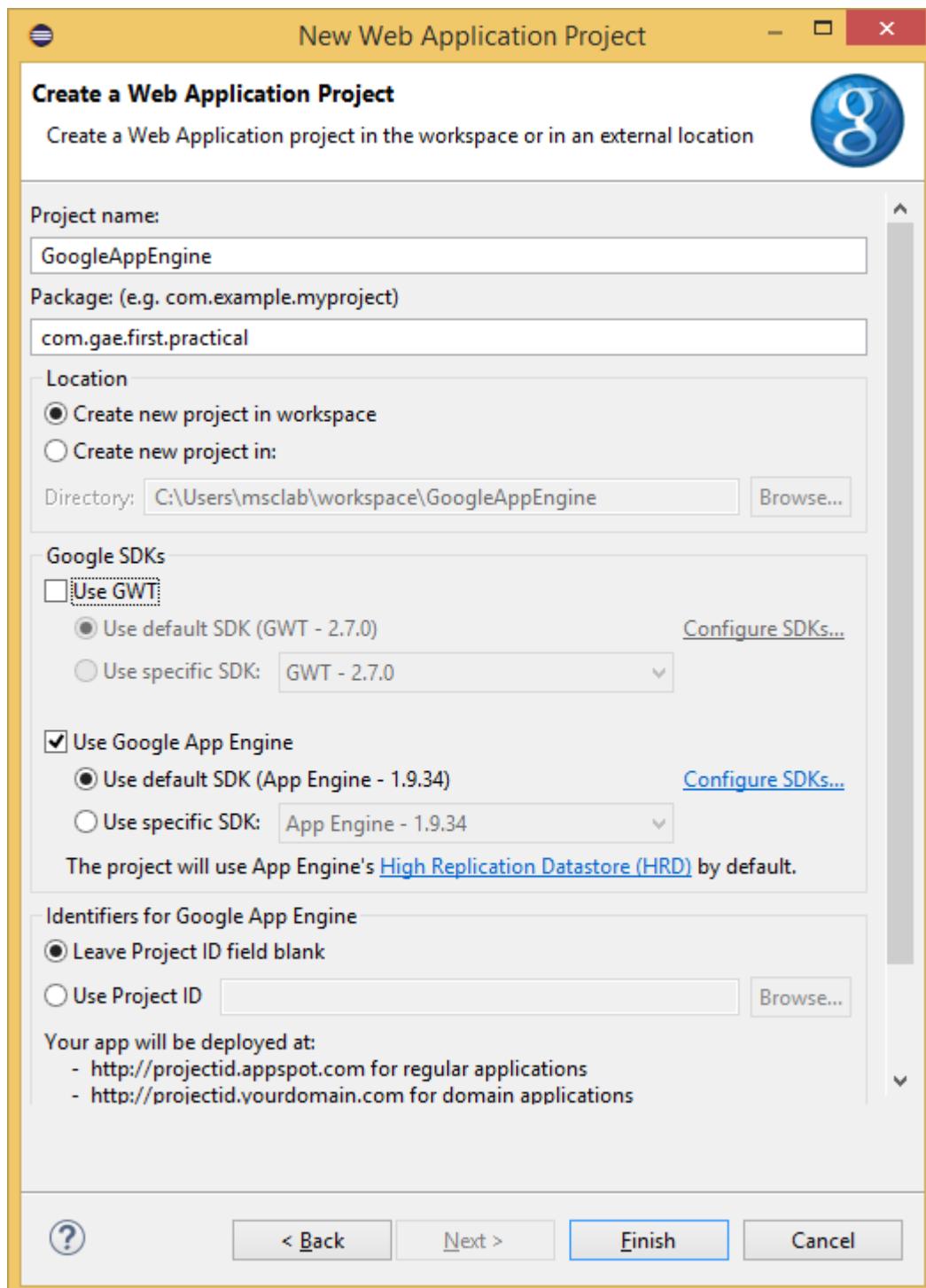
Now, go to **FileMenu->New->Other**



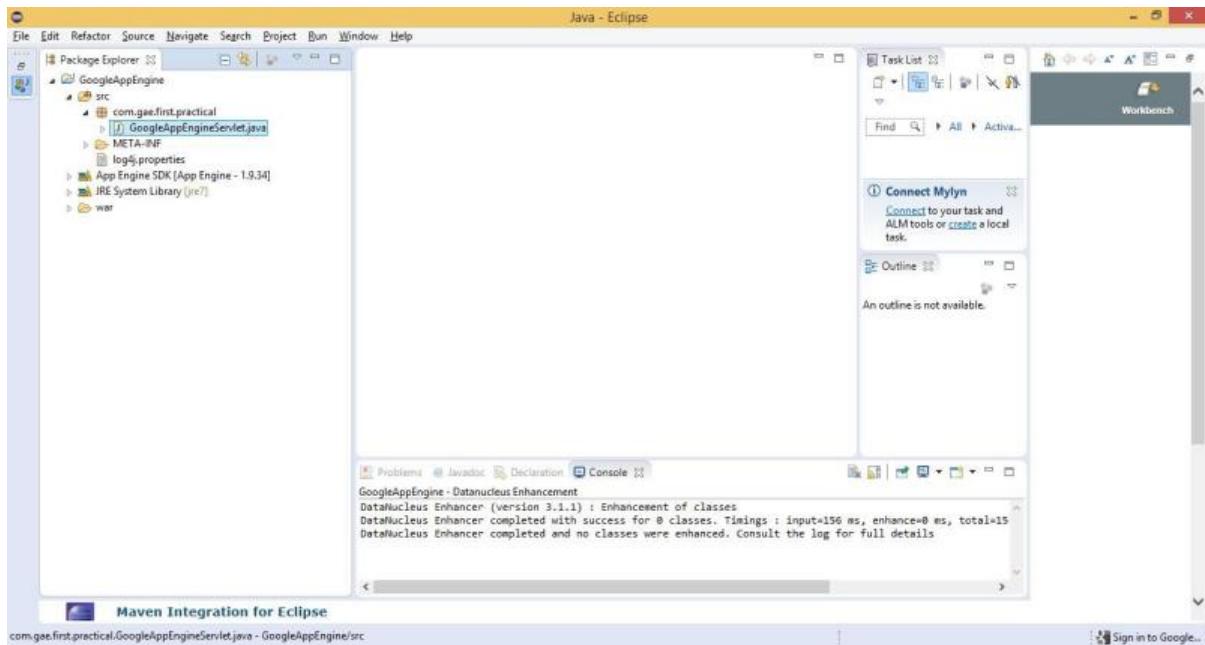
In the New window select **Google_Web Application Project** and click on “Next” button.



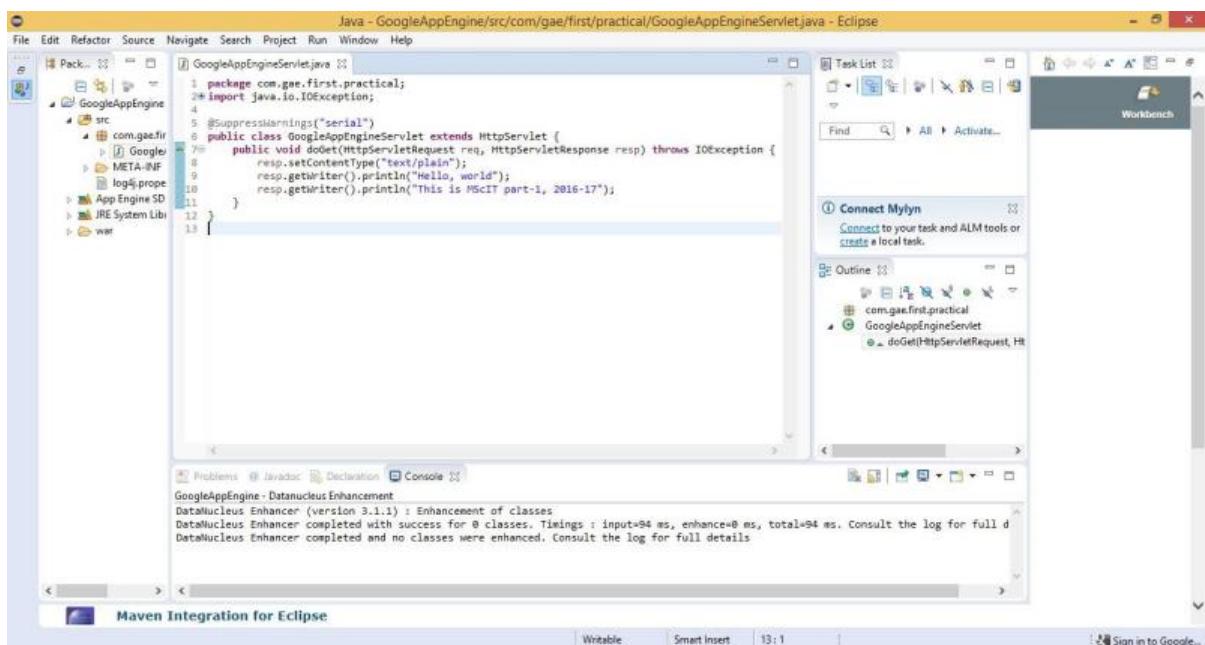
Enter the details for the new Web application project. Deselect the **Use Google Web Toolkit** option under the section **Google SDKs**. Click on the “Finish” button.



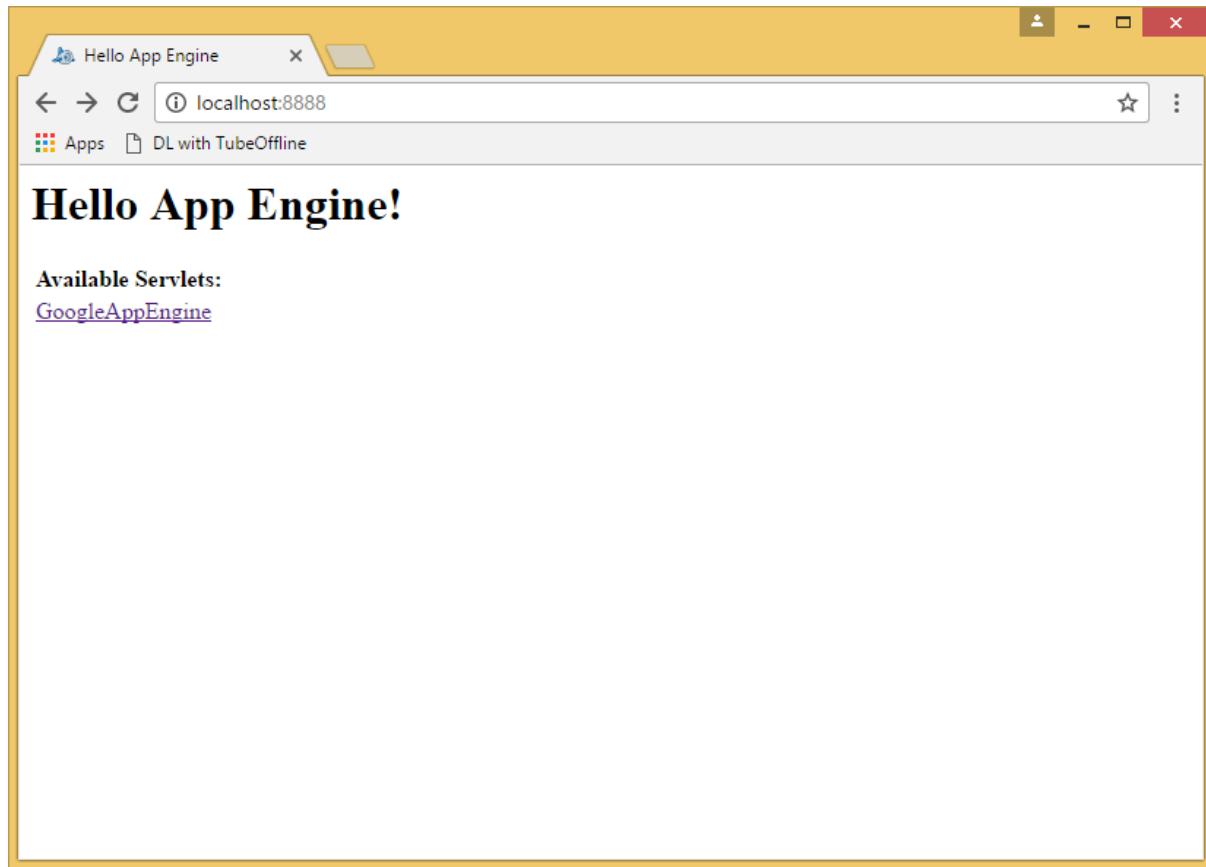
From the **Package Explorer** open the **.java** file (Here it is “**Google_App_EngineServlet.java**”).



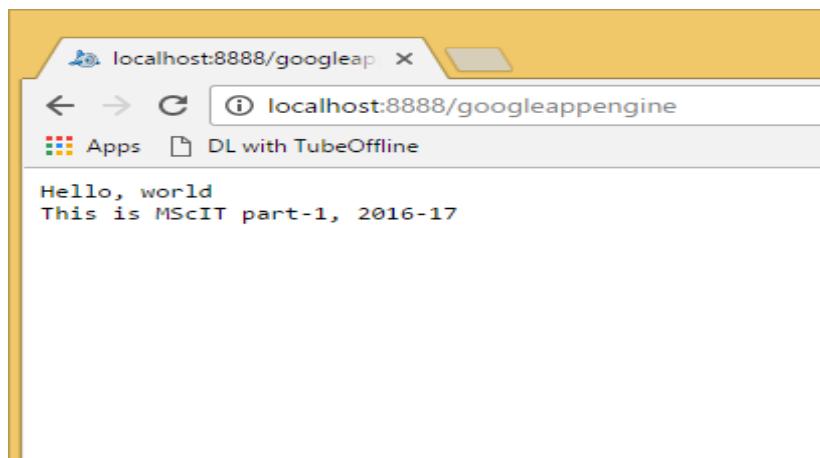
Edit the file as required (Unedited file too can be used). Here the editing is done to “what should be displayed” on the browser). **Save** the file. Click on the **Run** option available on the Tools bar.



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**”.

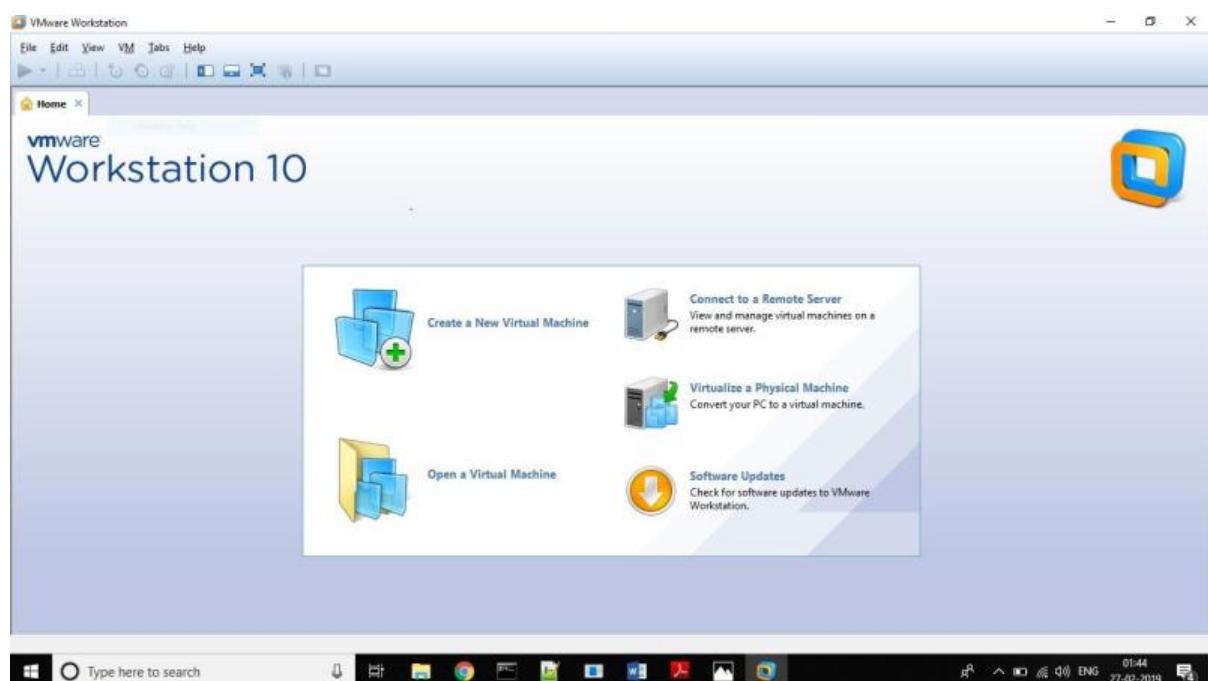


The **output text entered** in the **java** program is **displayed as the output** when clicked the link “Google_App_Engine”.

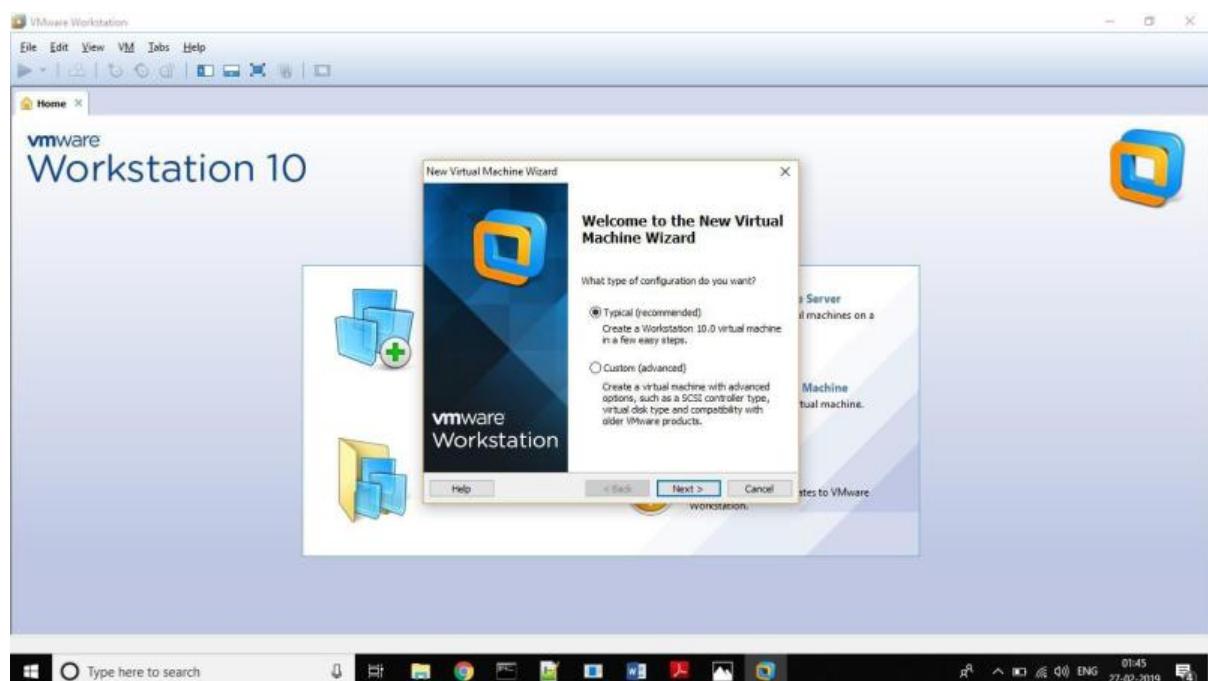
PRACTICAL: 5

IMPLEMENT ESXi SERVER

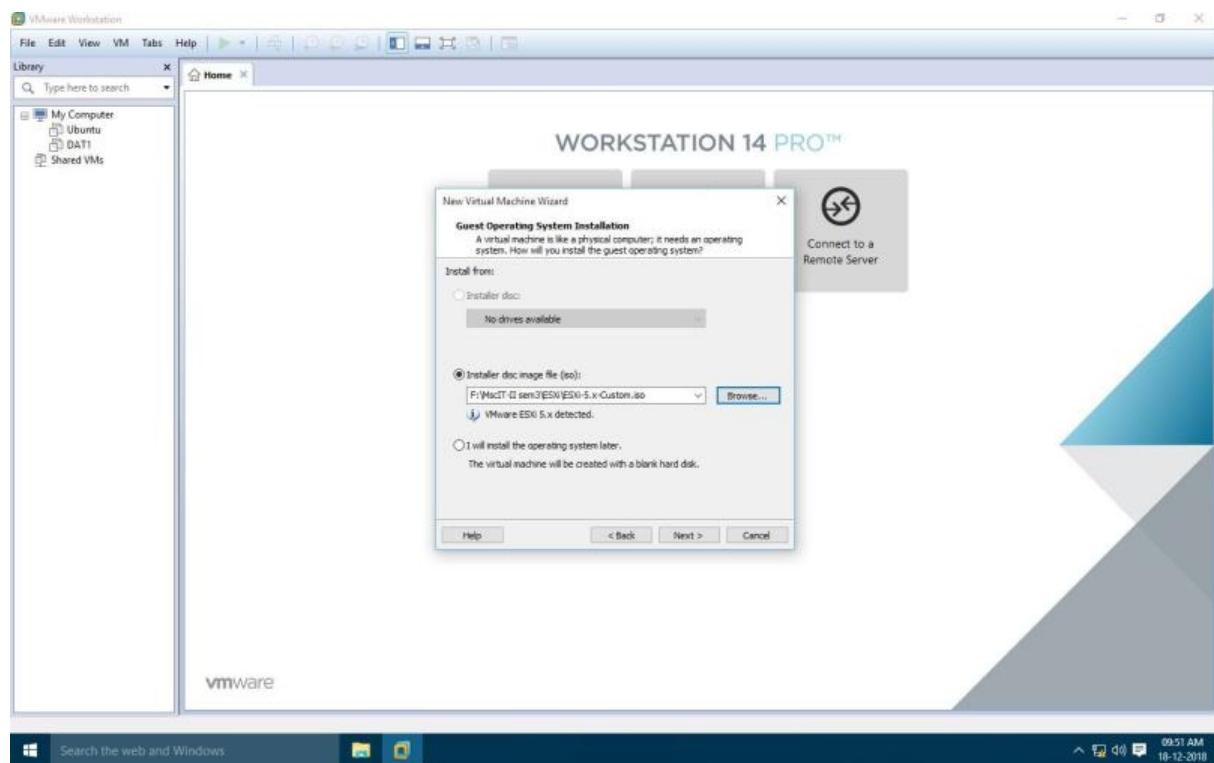
Steps: Open VMware Workstation – And select Create a New Virtual Machine



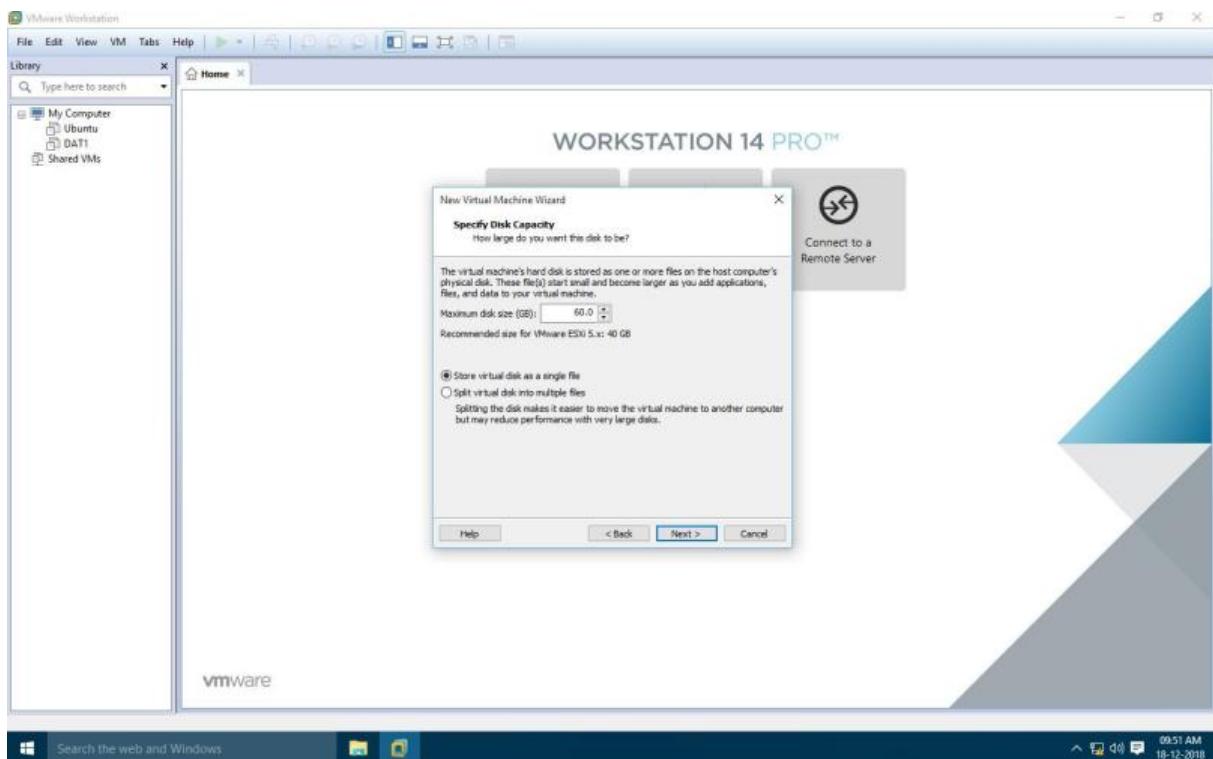
Select Typical and click Next



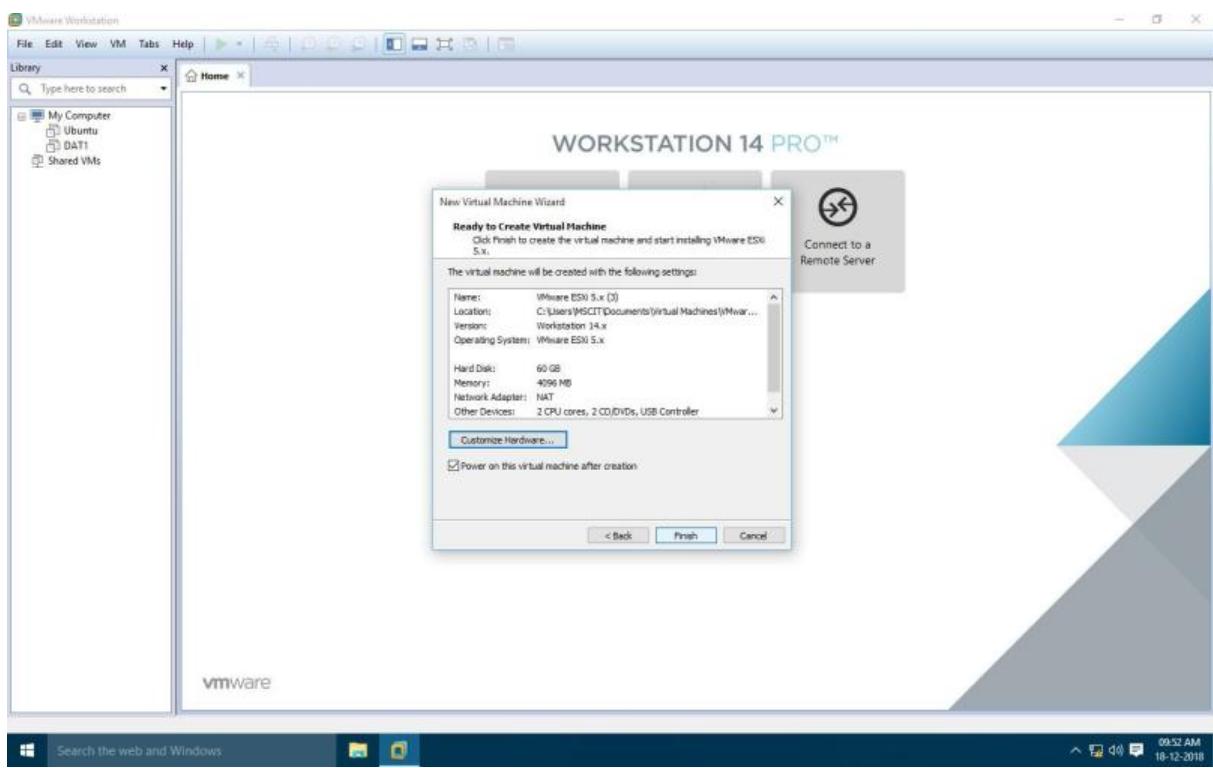
Select Installer disc_image file(ISO). Click Browse -ESXi-5.x-Custom.iso Iso File – For Example “**D:\ccpraxrj\ESXi-5.x-Custom.iso**”
And click on next



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

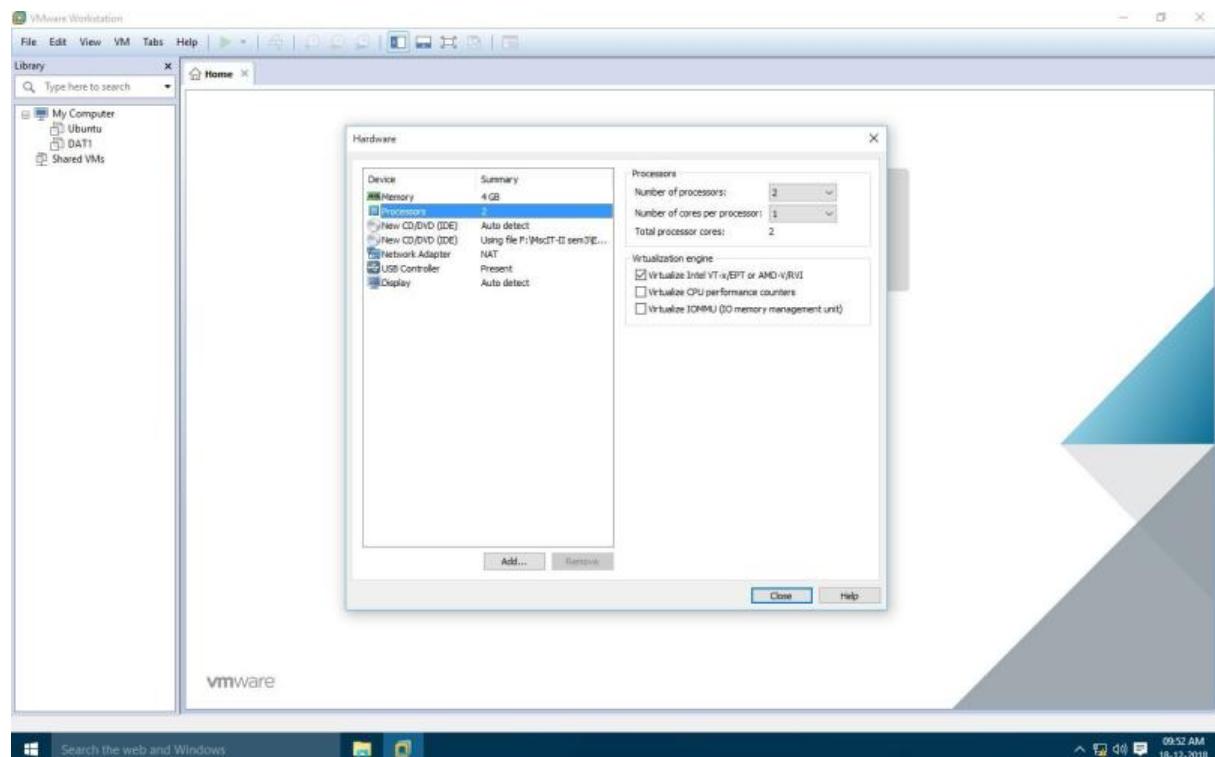


Click on Customize Hardware option

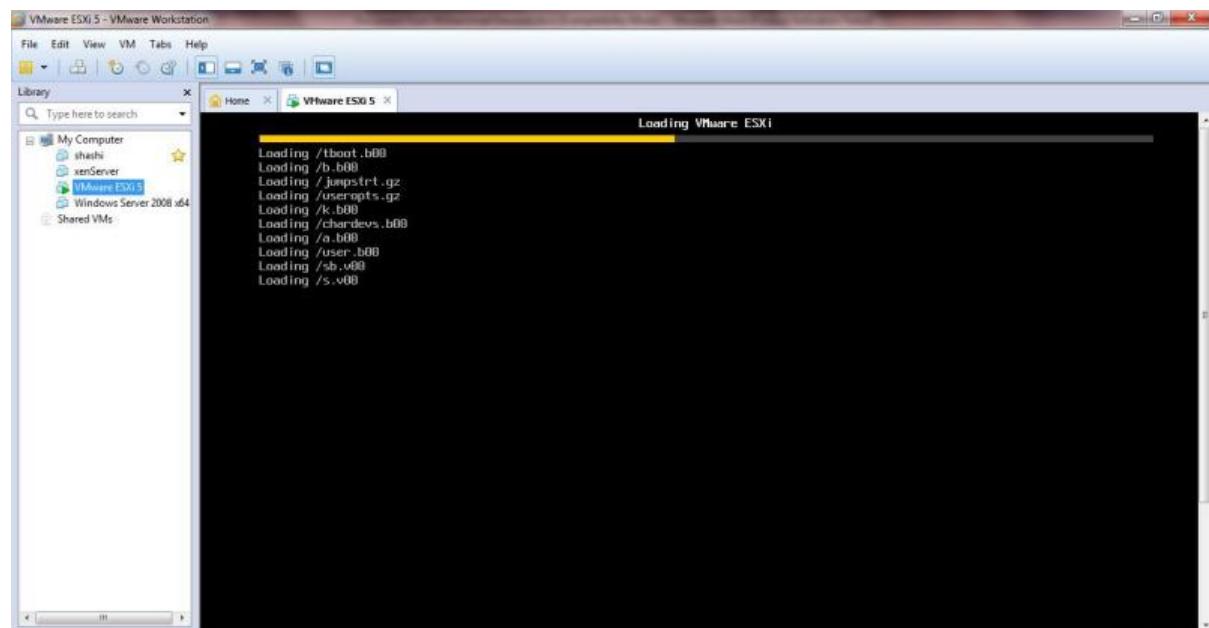


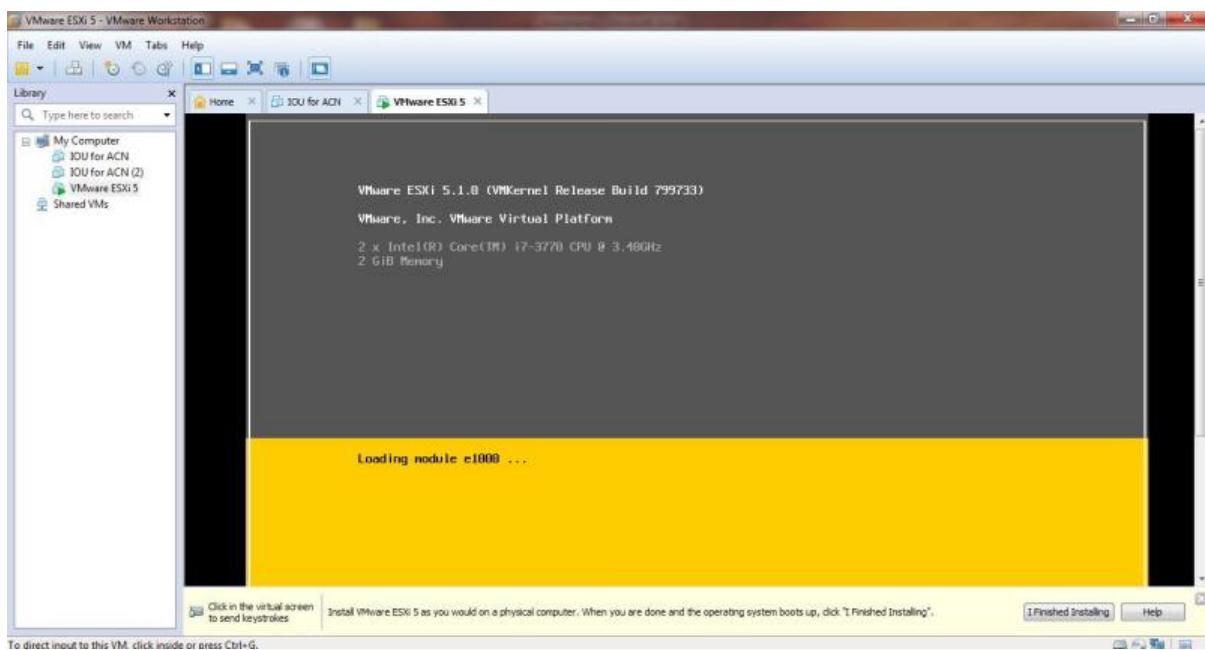
Change – Memory for this virtual machine to 4 GB and Click on Close.

Click on Processor and select virtualize Intel VT

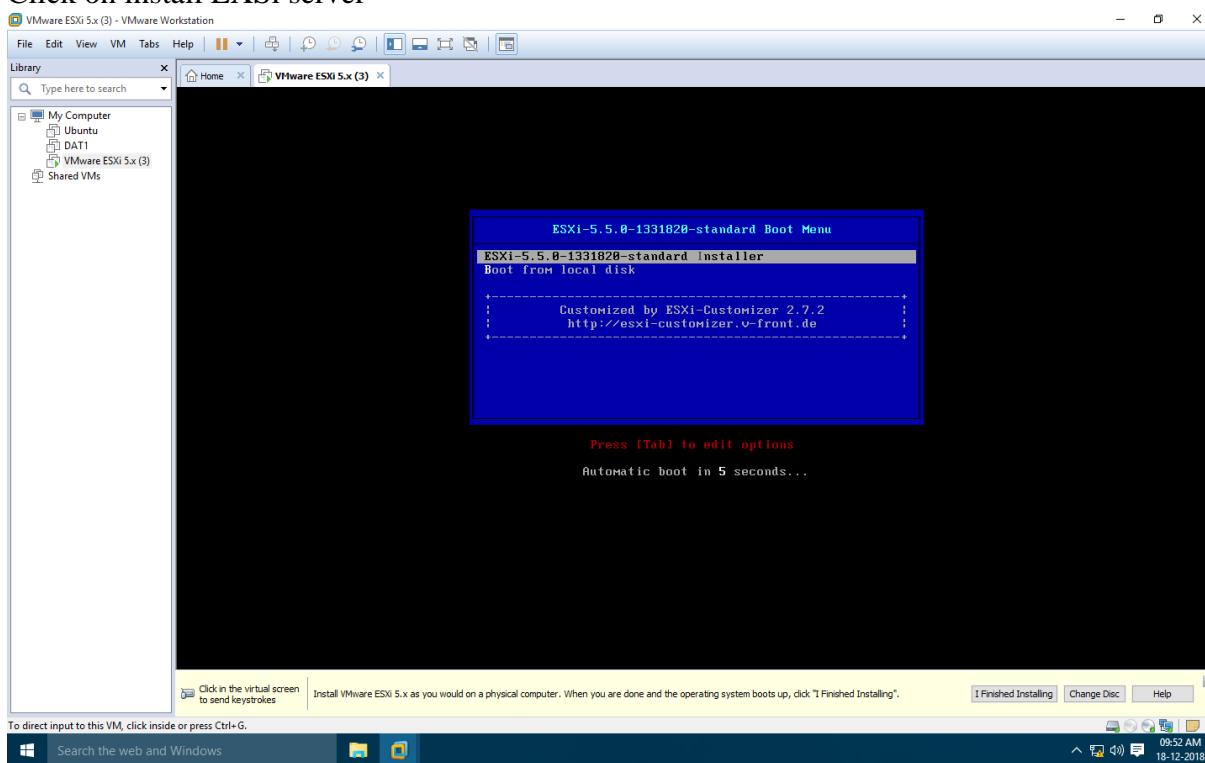


Now Power on newly created Virtual machine –

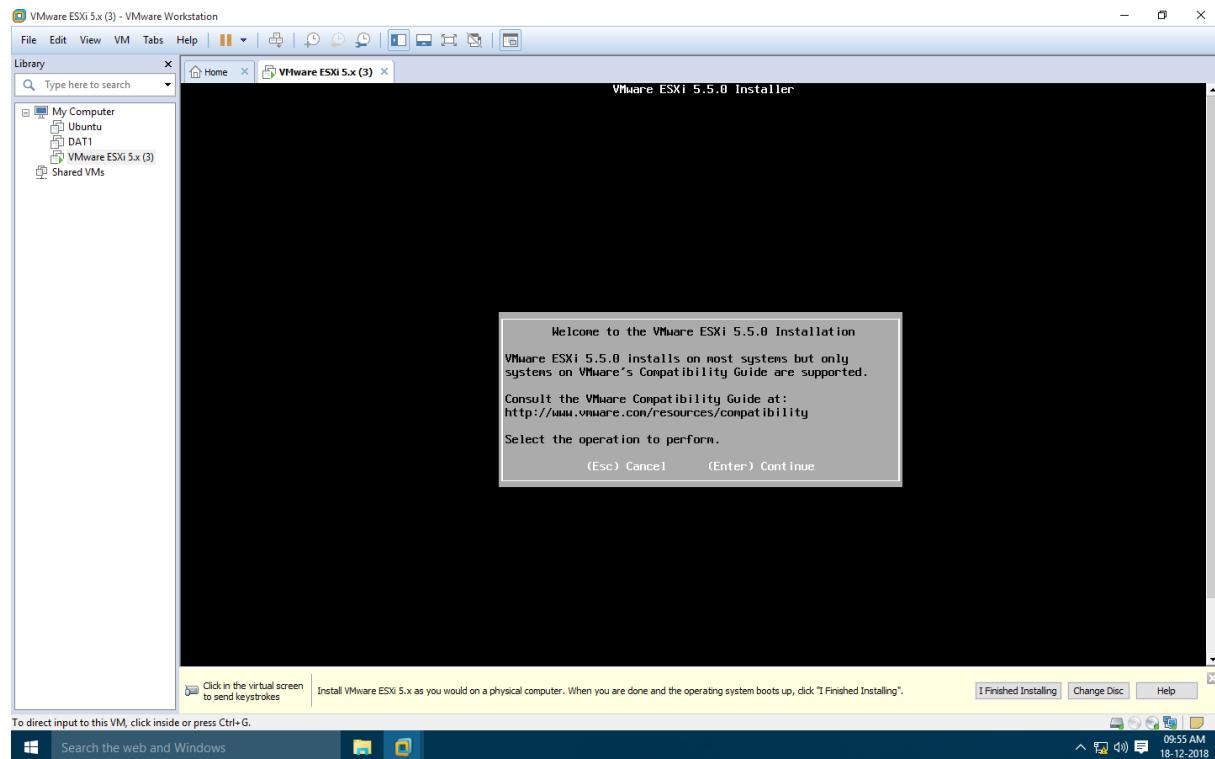




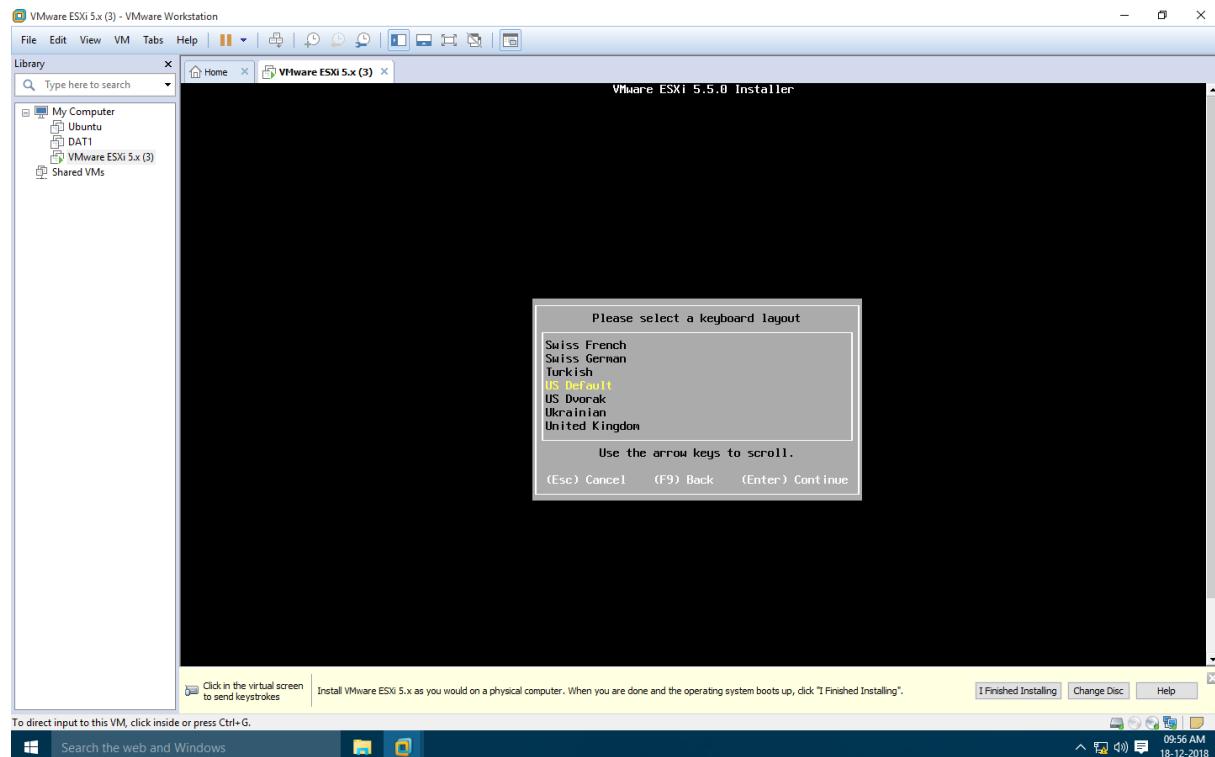
Click on install EXSi server



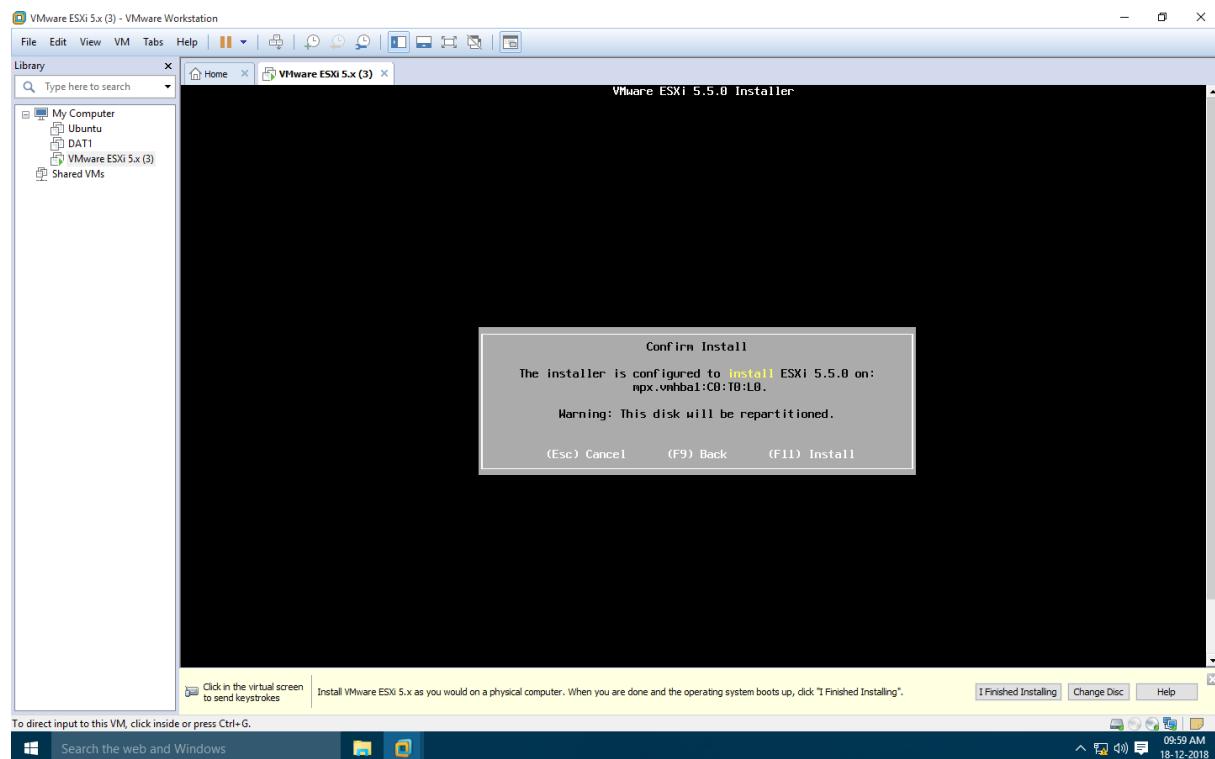
Press enter



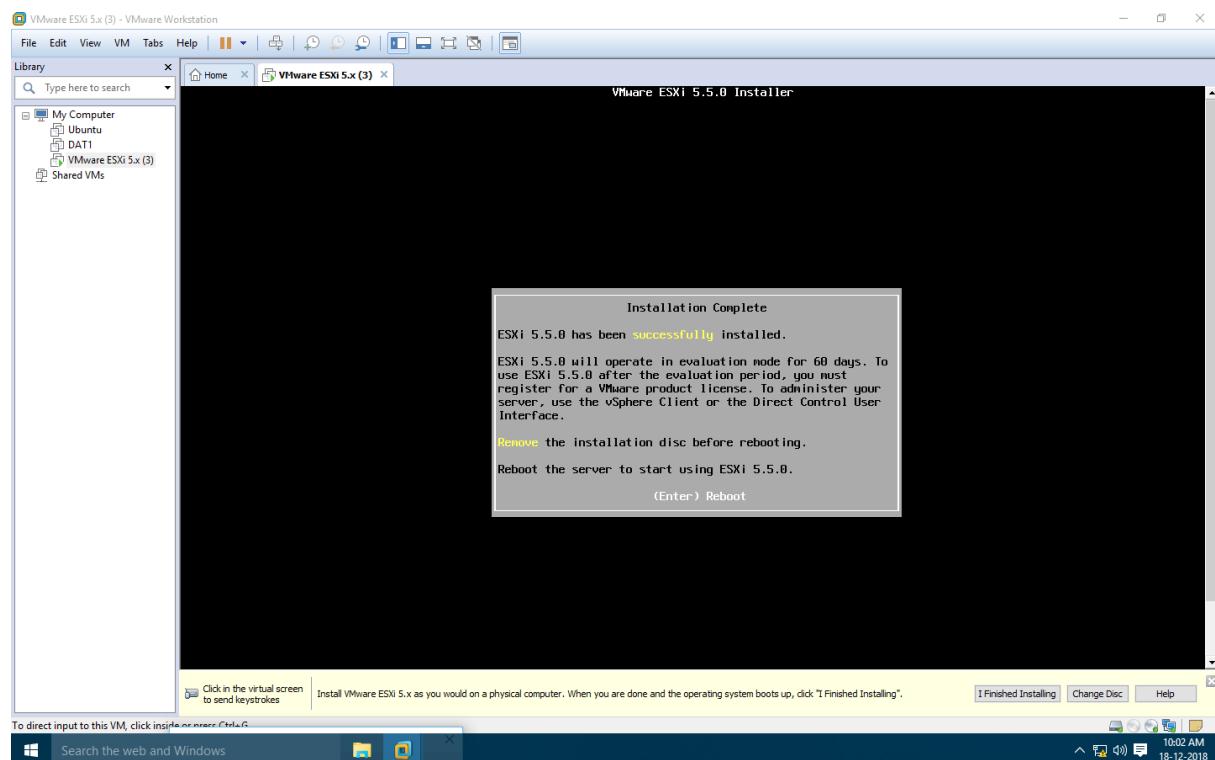
Select us default and click enter

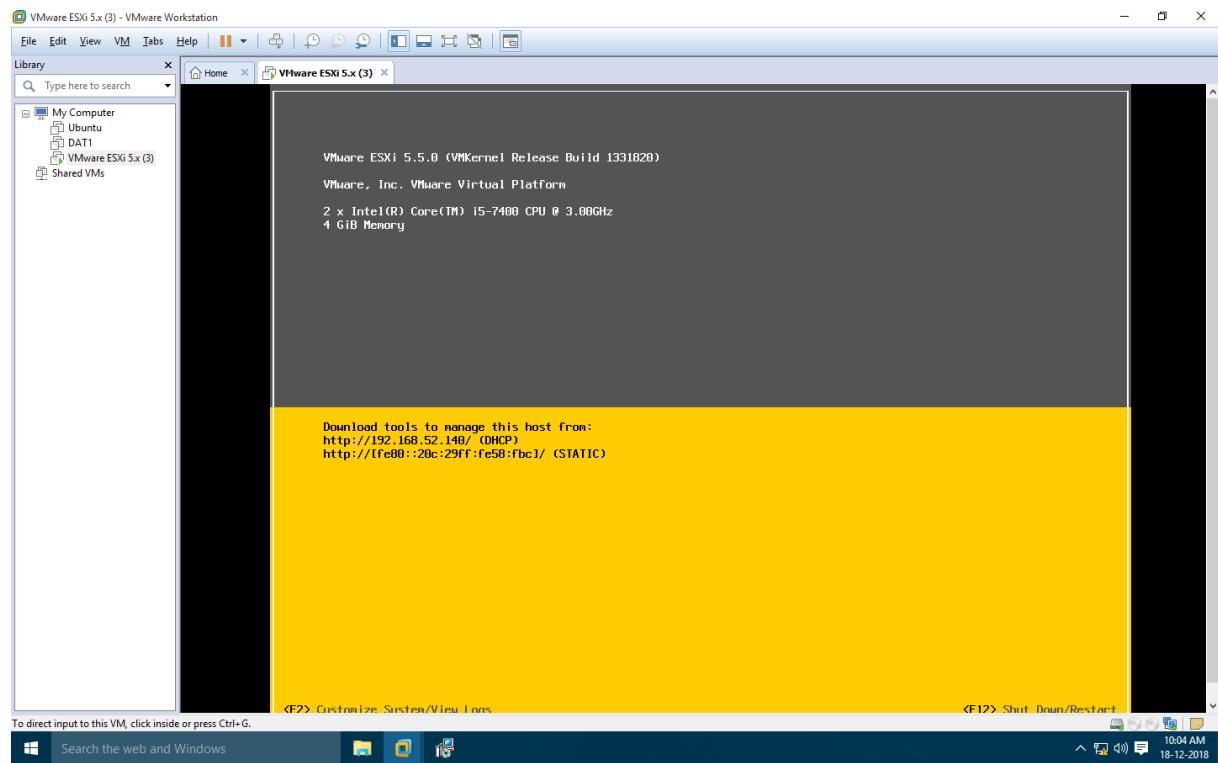


Click install

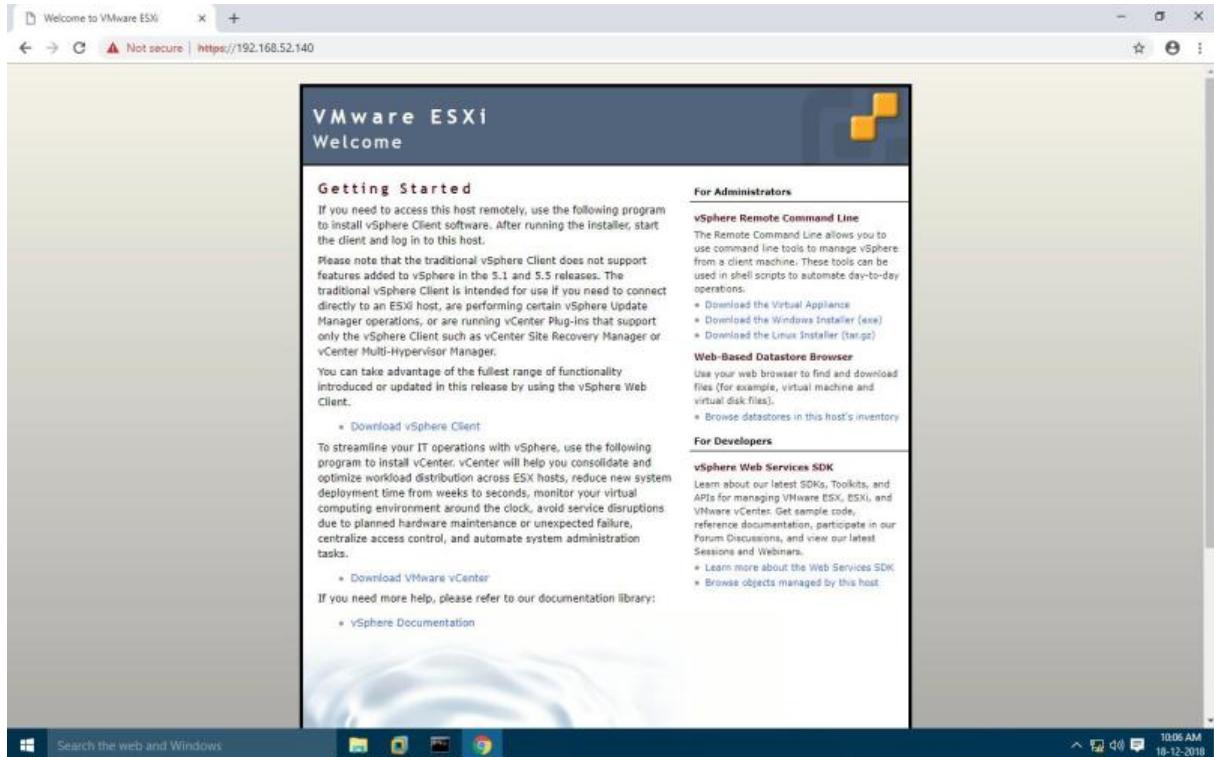


Press enter to reboot the system





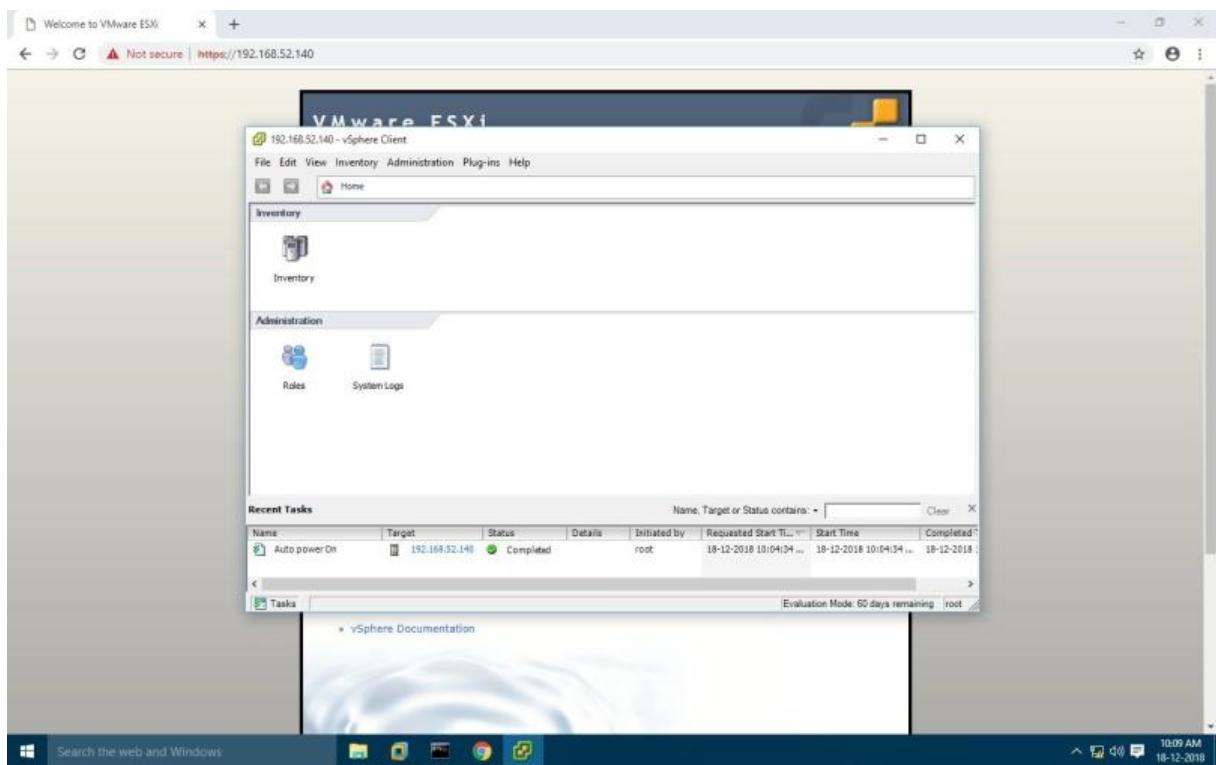
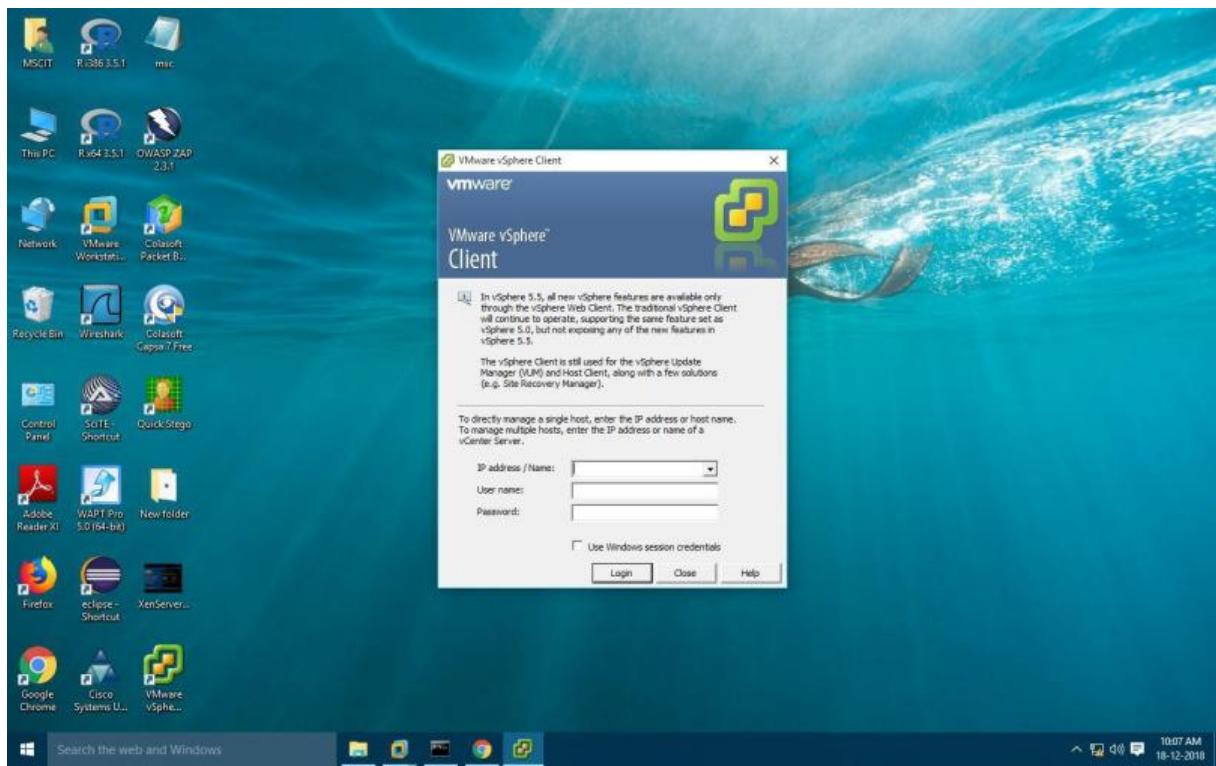
Open Browser & type respective IP Address

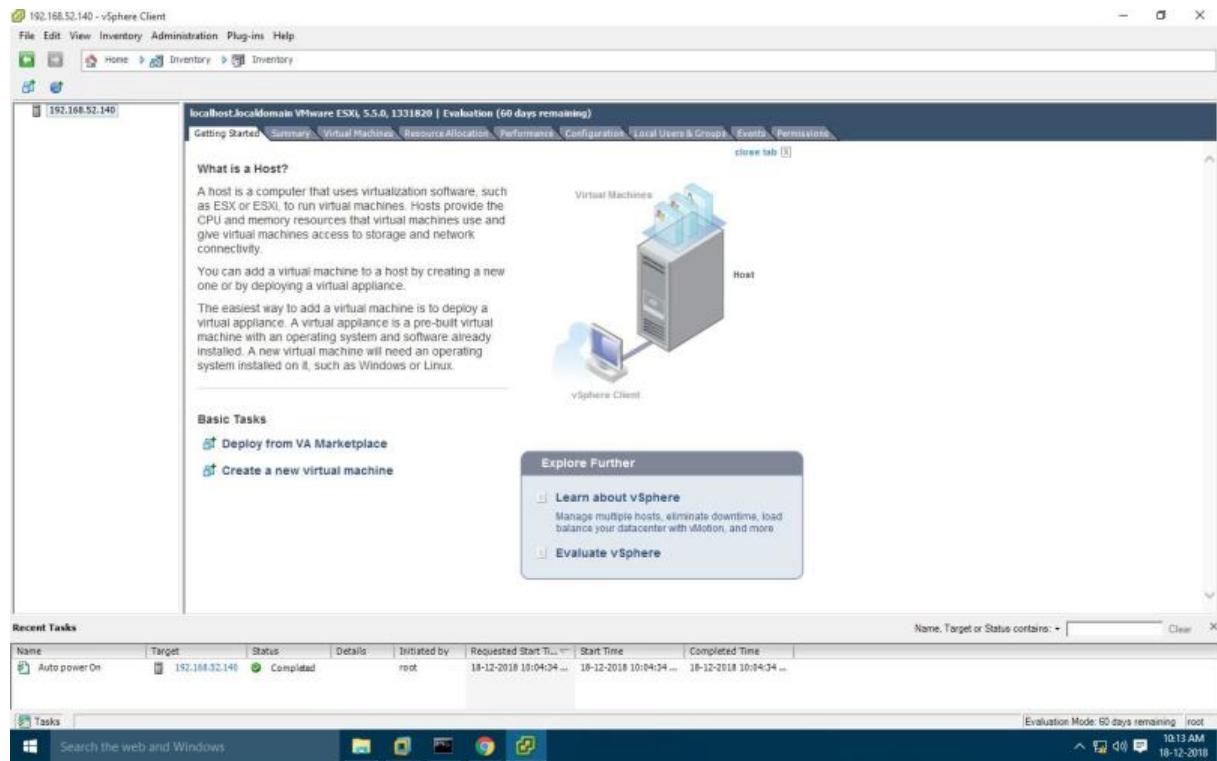


(since we already have vsphereclient so we are not going to download it,first install and open vsphereclient)

VMware vSphere Client

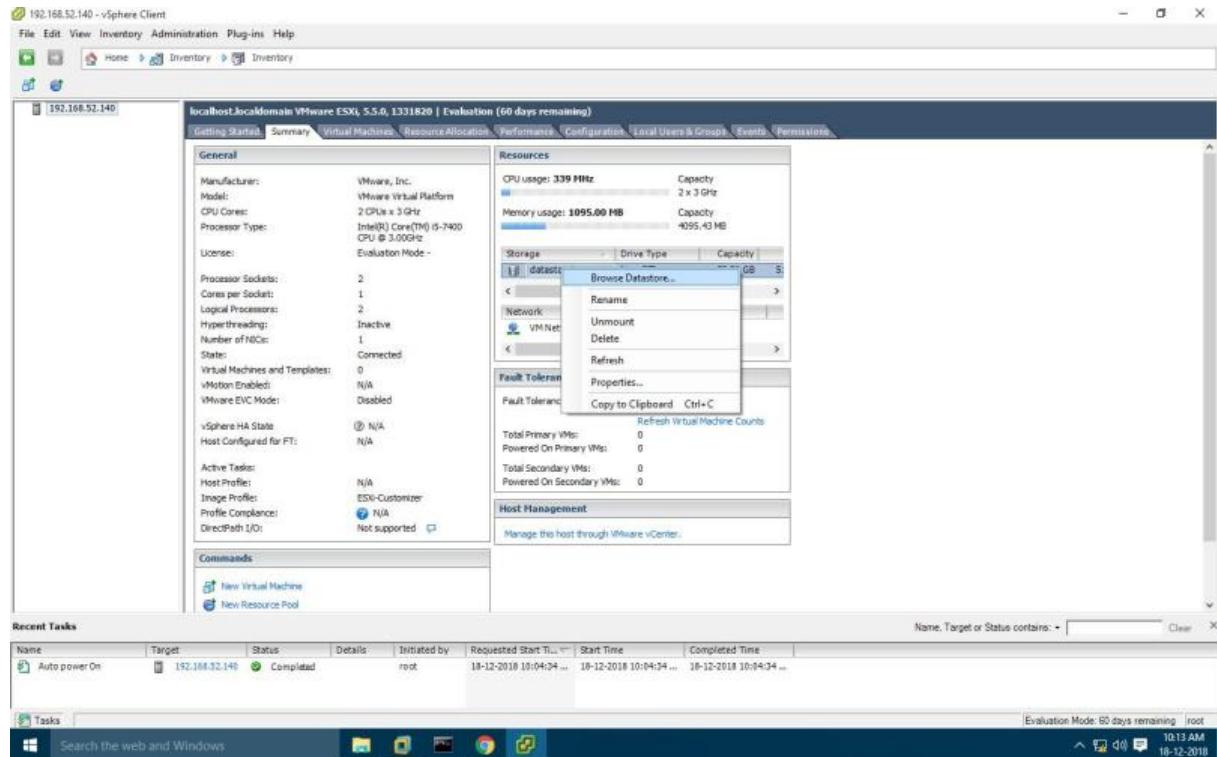
- Enter IP address (Which was assigned dynamically)
- Enter Username and Password



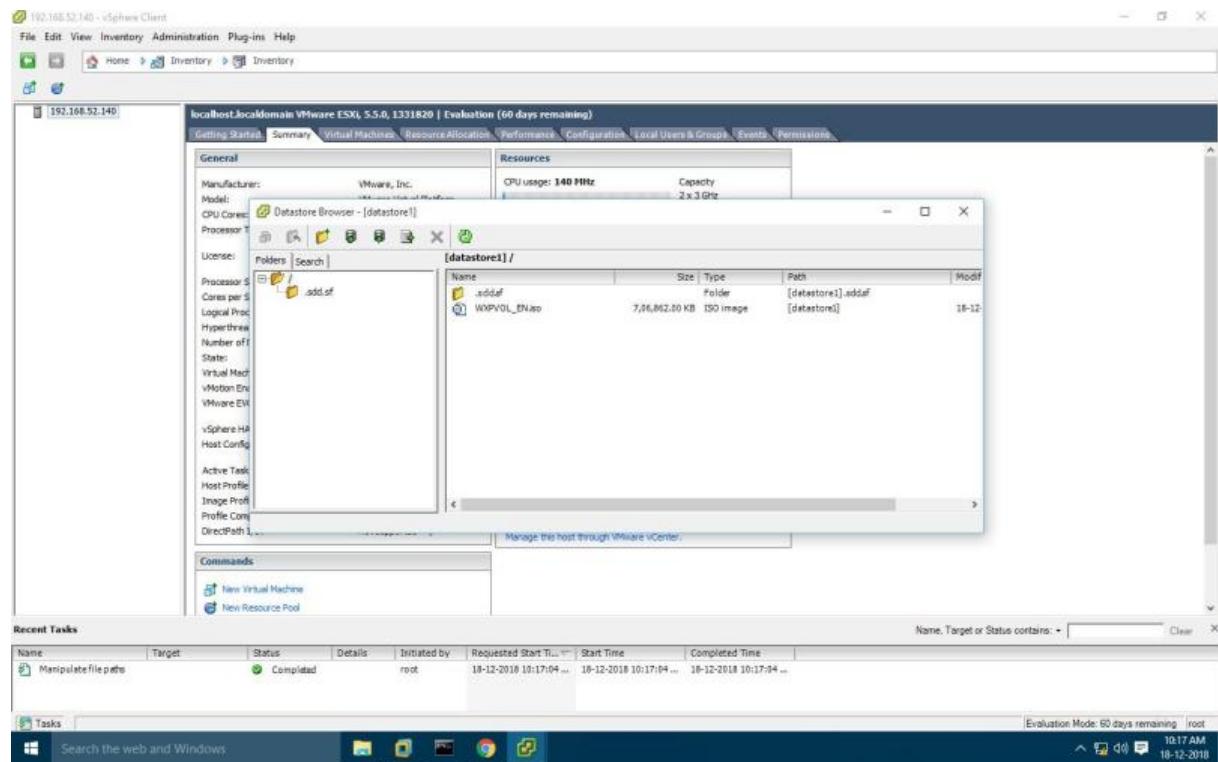


Select Summary tab.

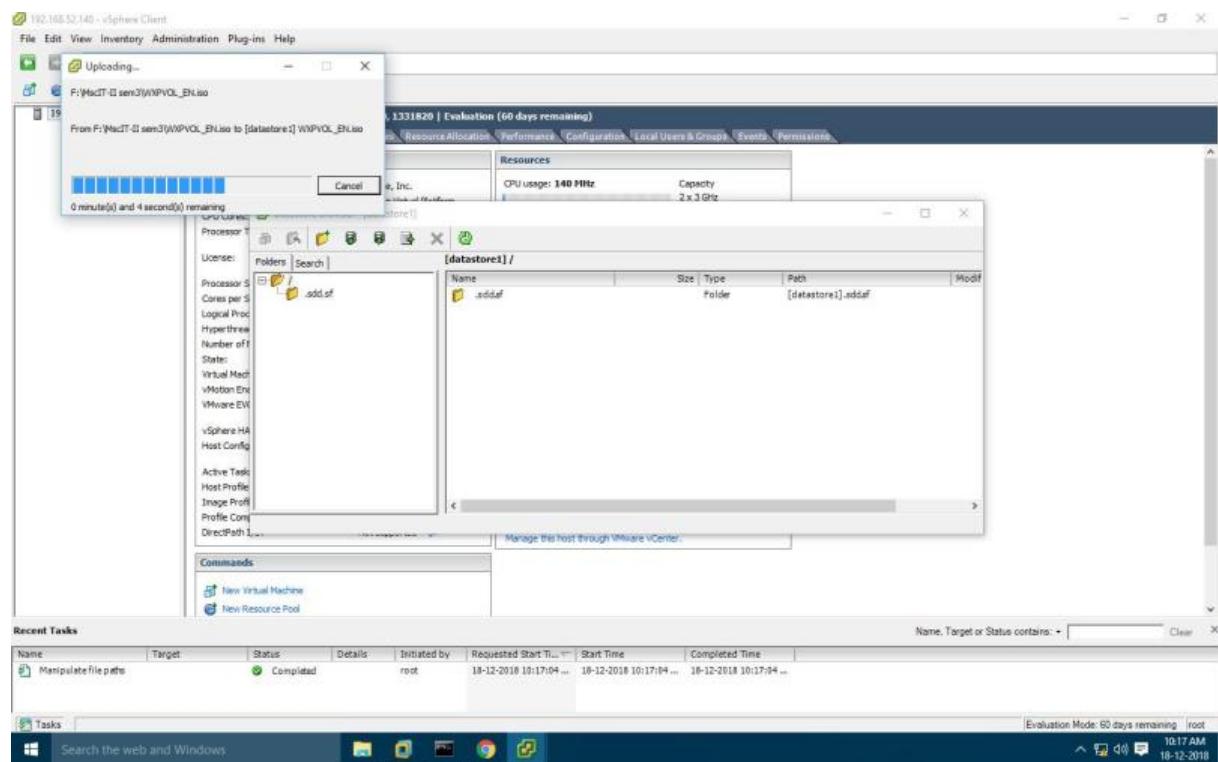
- In Storage section, Select on datastore1 and Right-click on Browse Datastore to add iso image of Windows XP in Datastore.



Click on Upload Icon and Select Upload File.

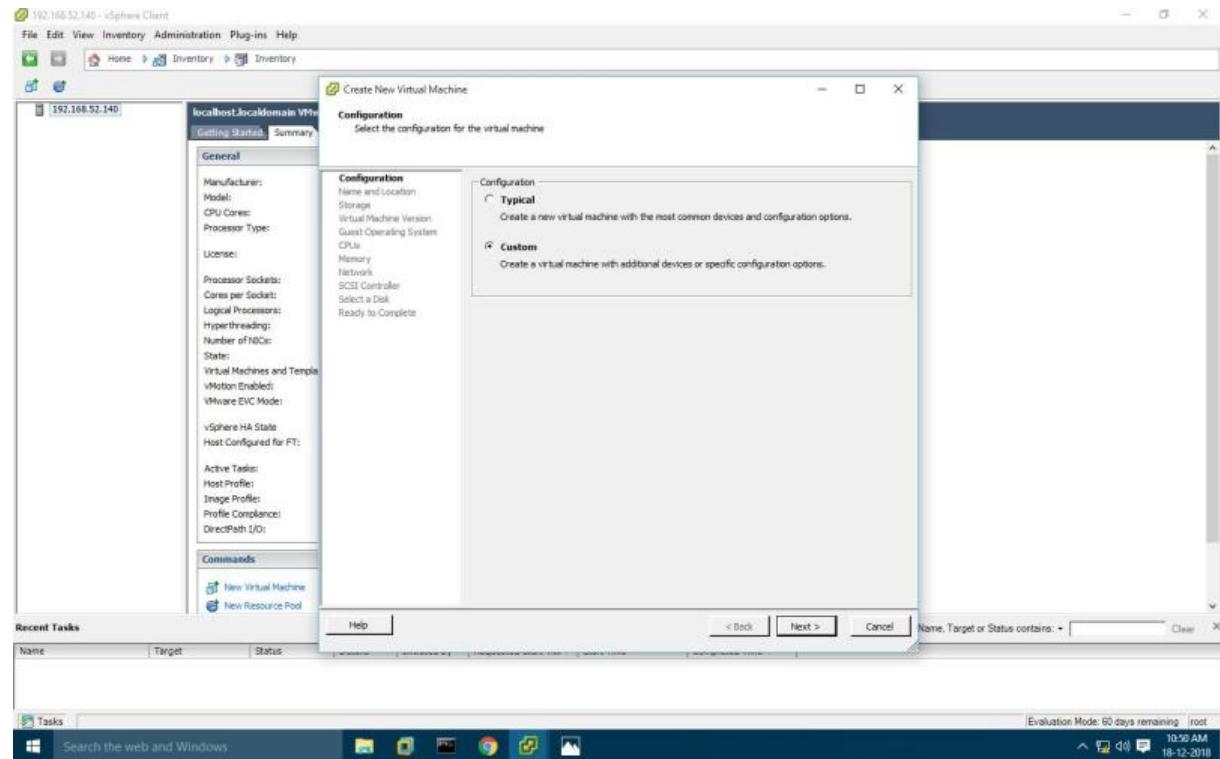


Click on Yes

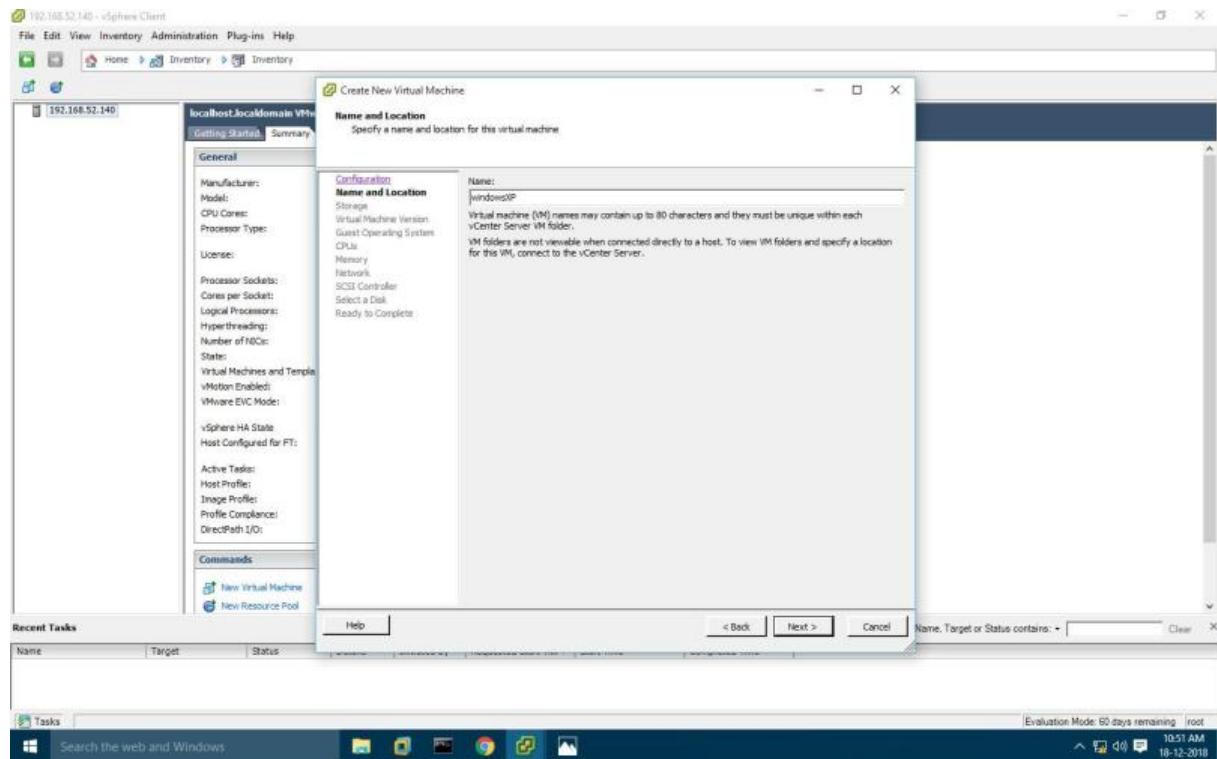


Click on File >> New >> Virtual Machine.

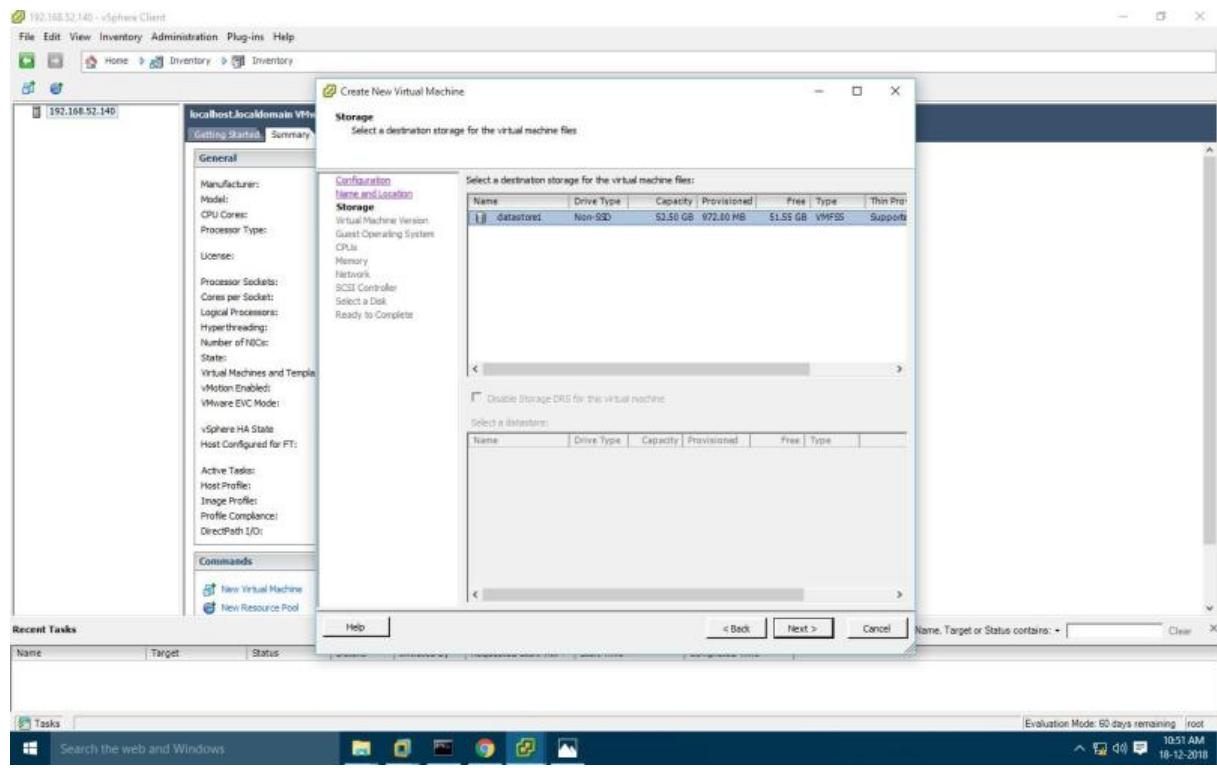
Configuration : Select Custom configuration.



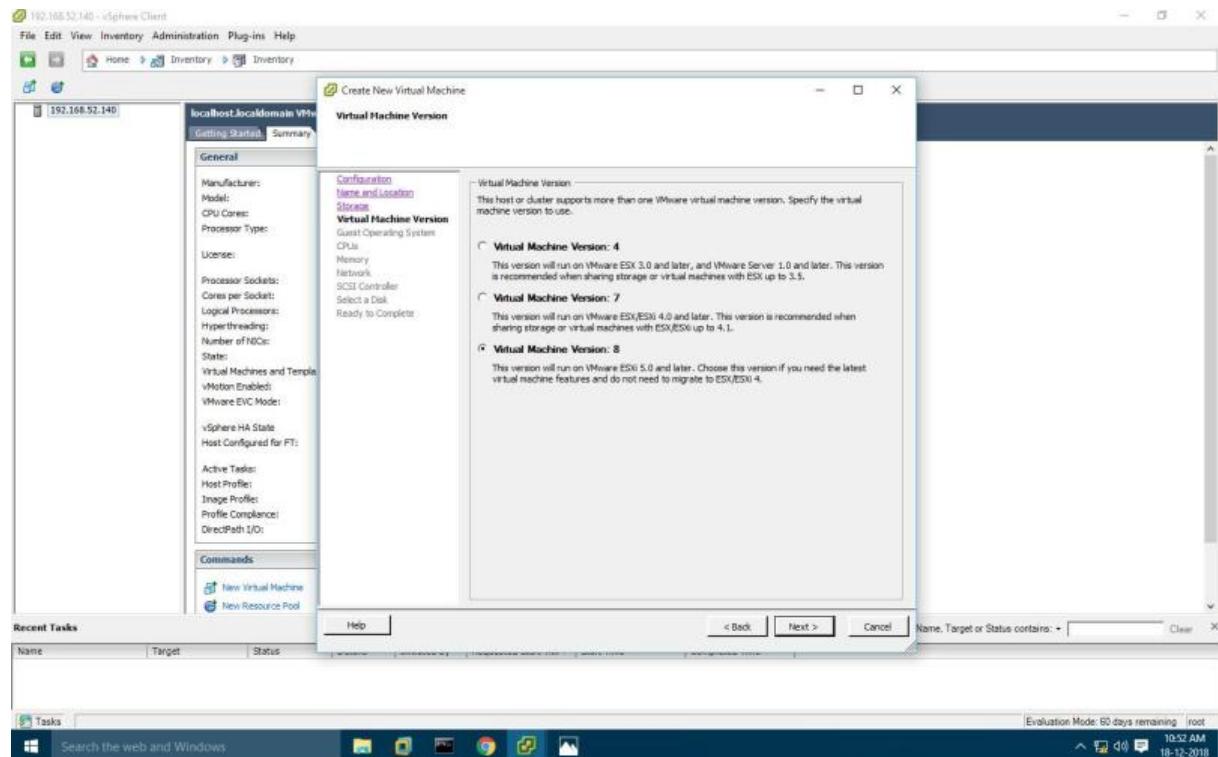
Name and Location: Give name to a Virtual Machine(Windows XP)



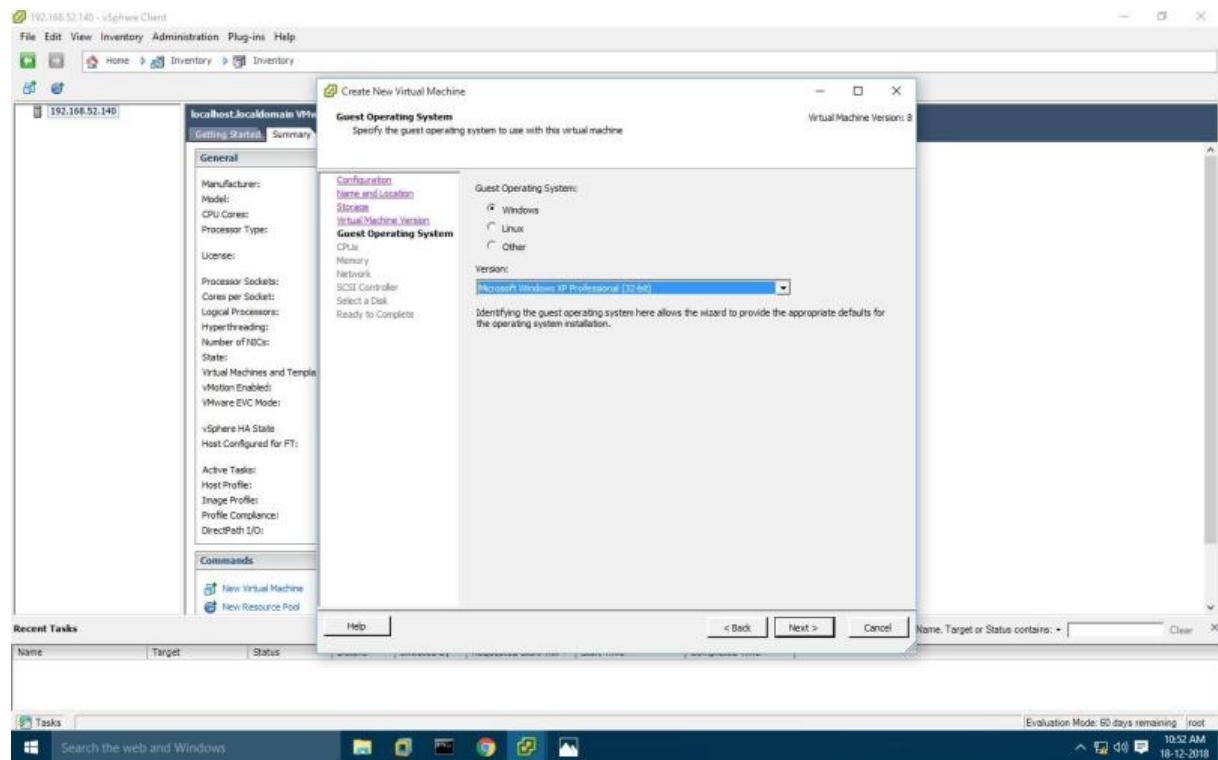
Storage:Select datastore1 and click Next



Virtual Machine version : Select Virtual Machine version 8



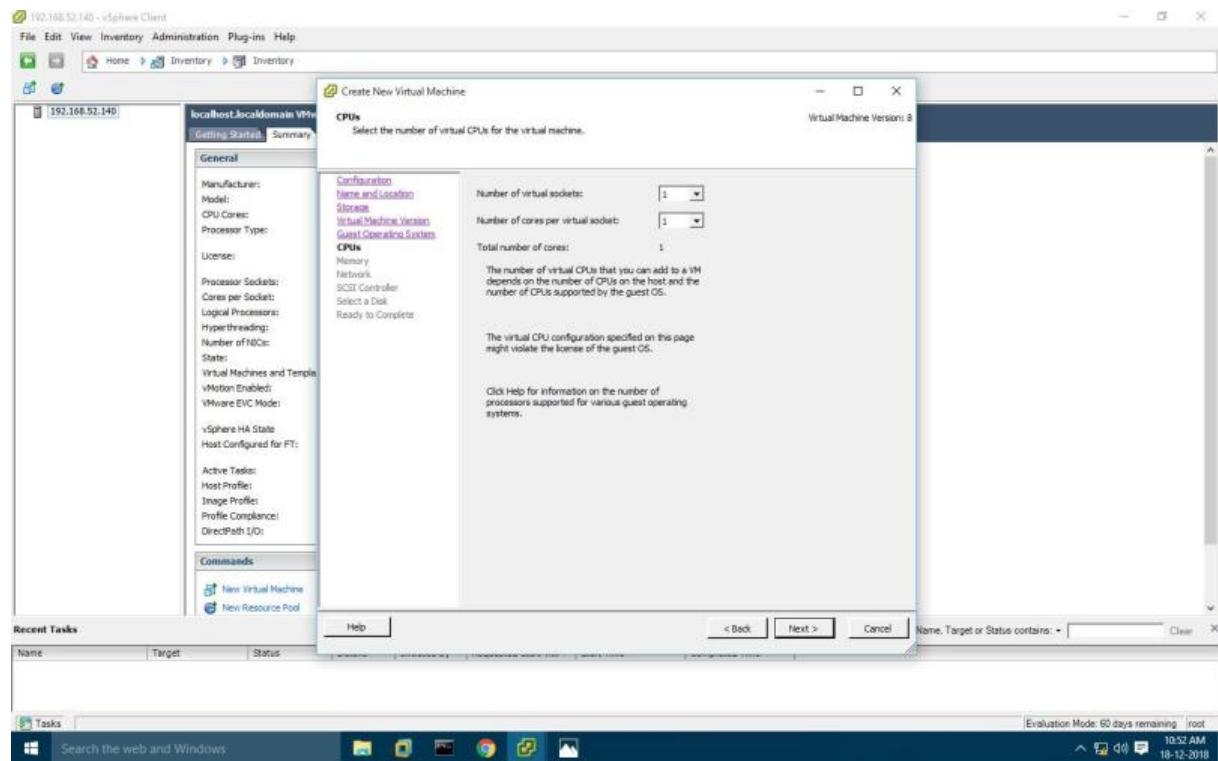
Guest Operating System: Windows Version: Microsoft windows XP Professional (32-bit)



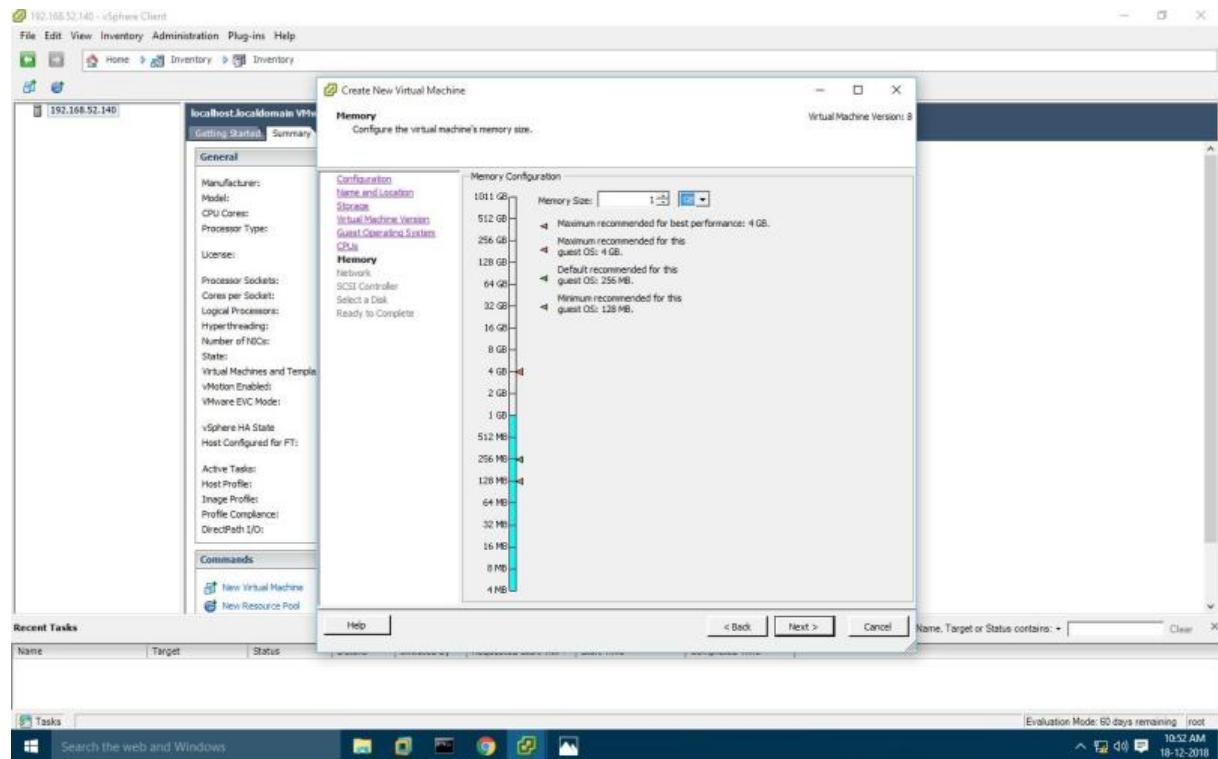
CPUs :

Number of virtual sockets : 1

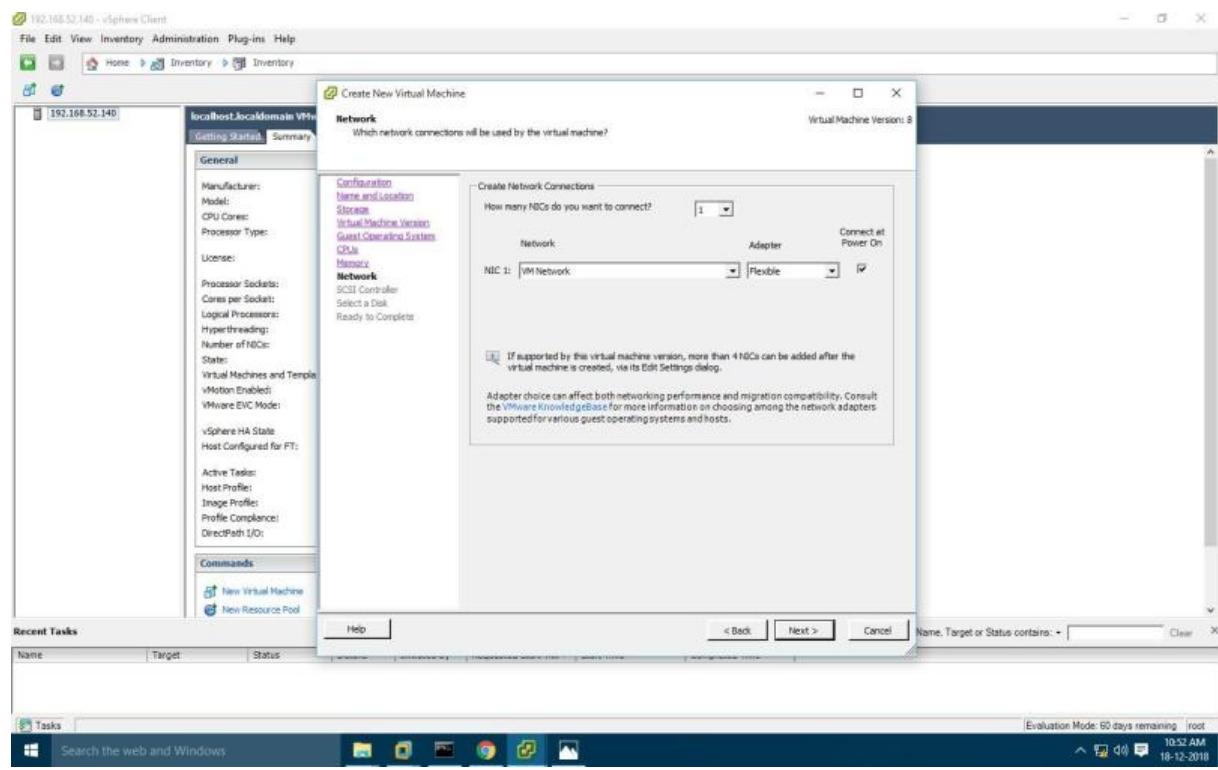
Number of cores per virtual socket: 1



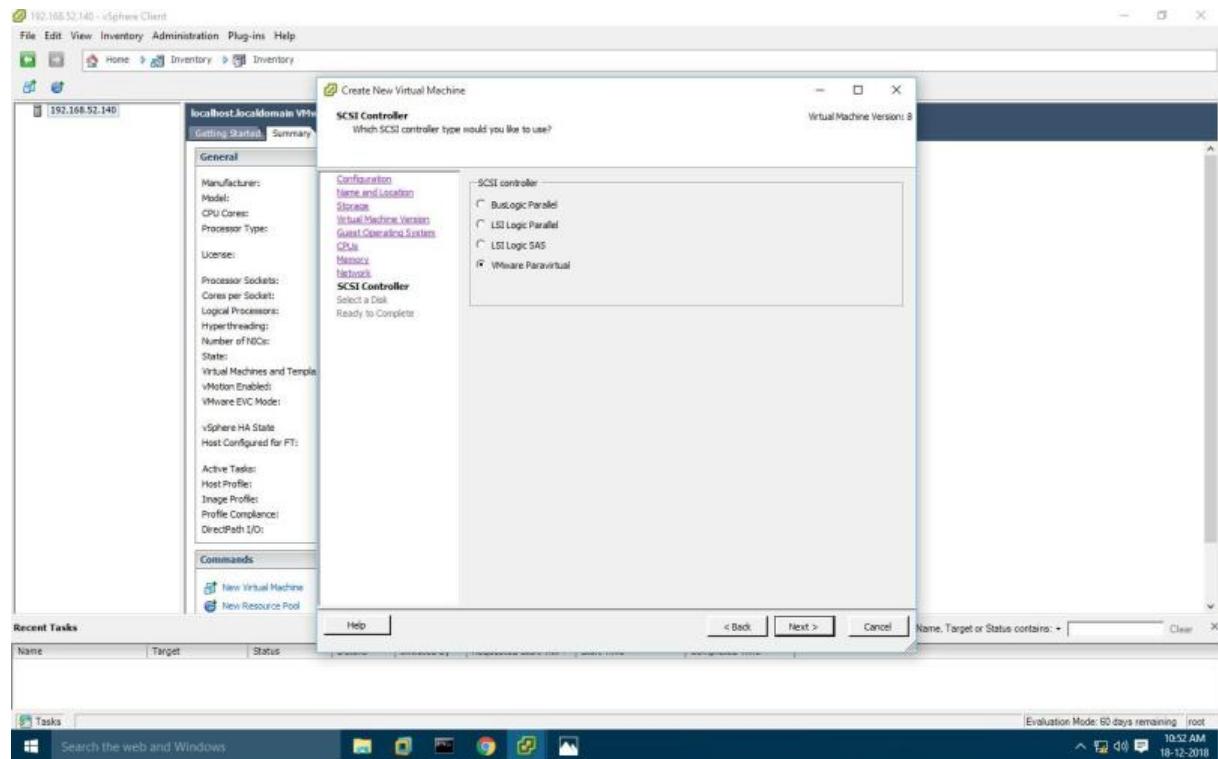
Memory: Memory Size : 1 GB



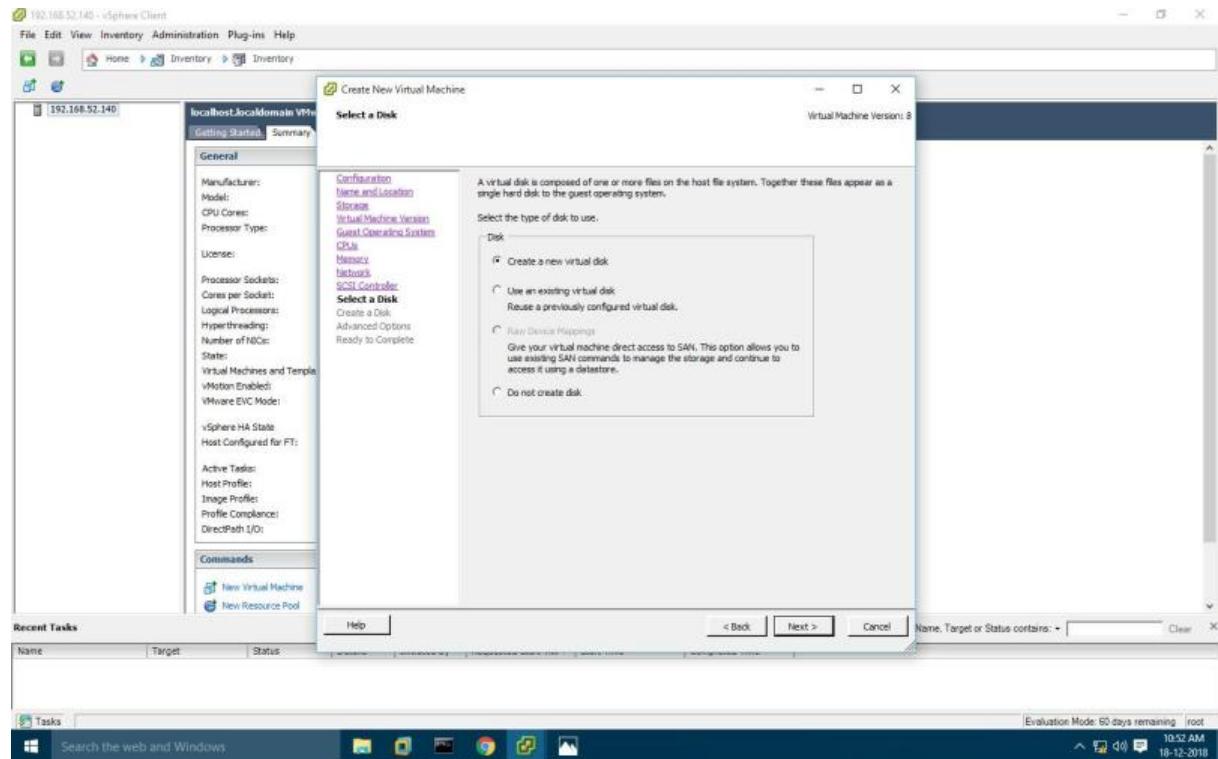
Network: Number of NICs : 1

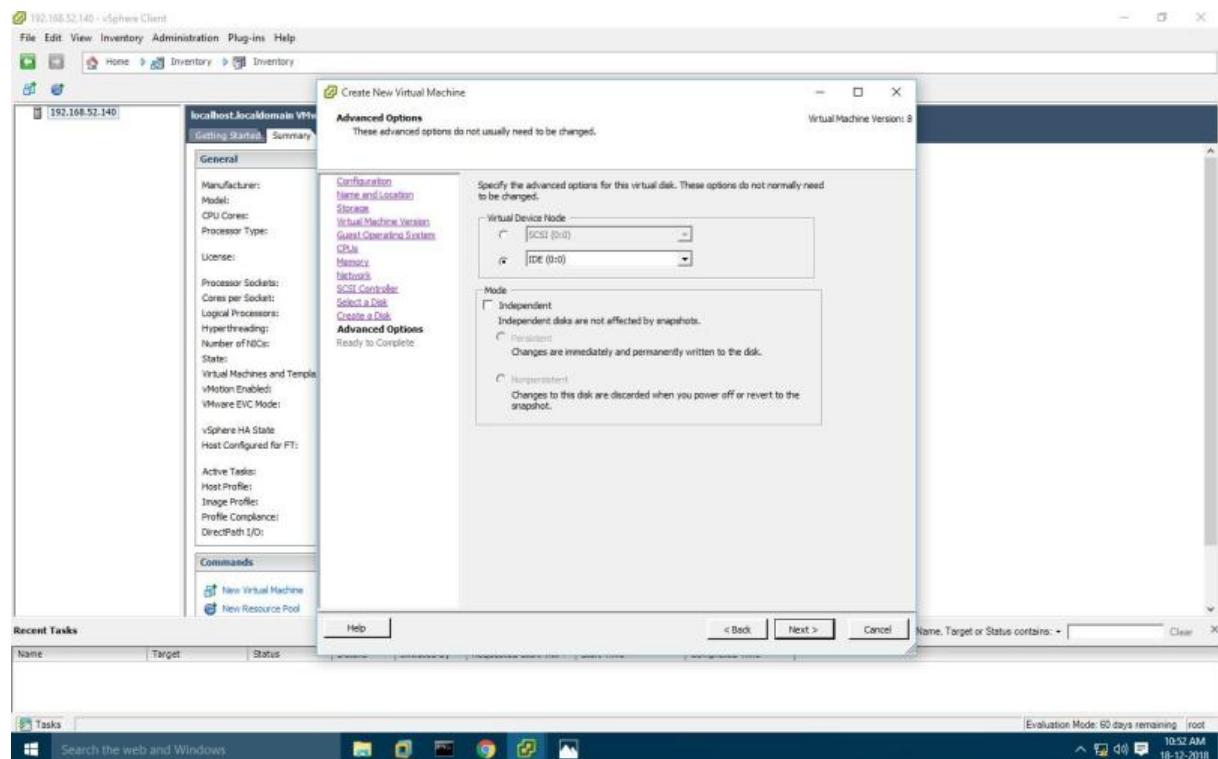
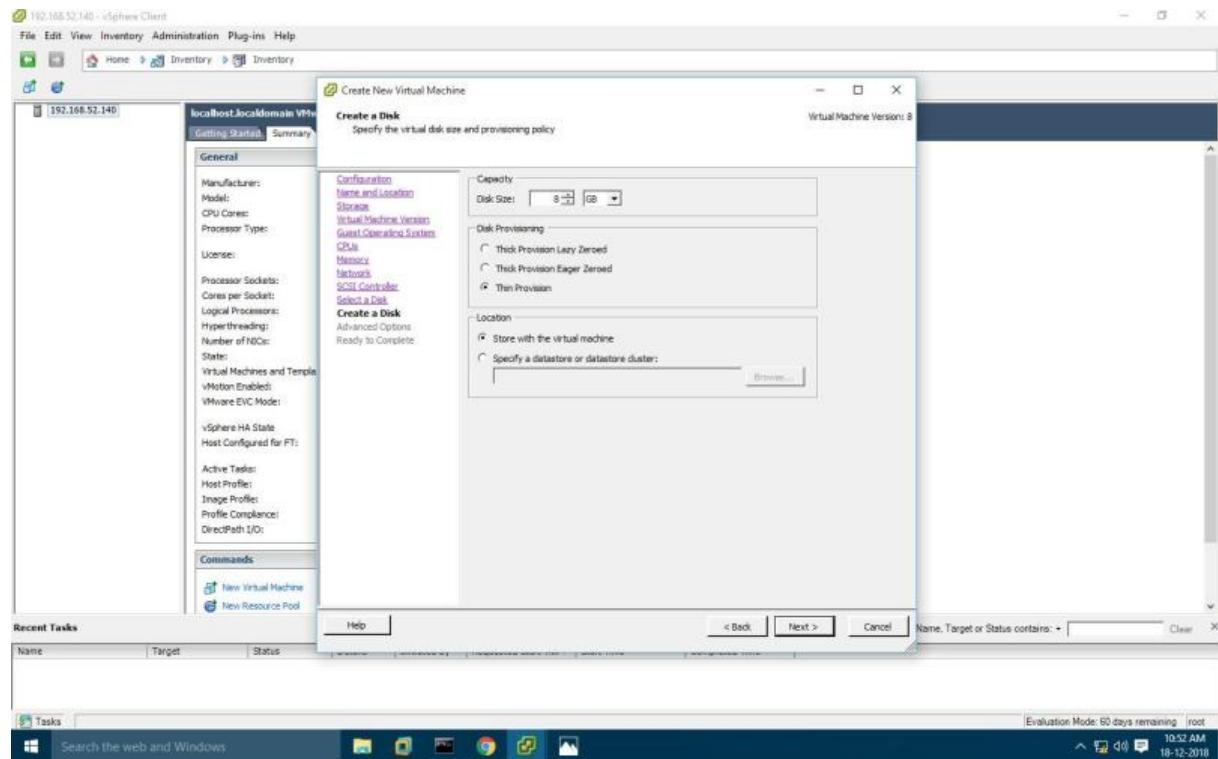


SCSI Controller : VMware Paravirtual

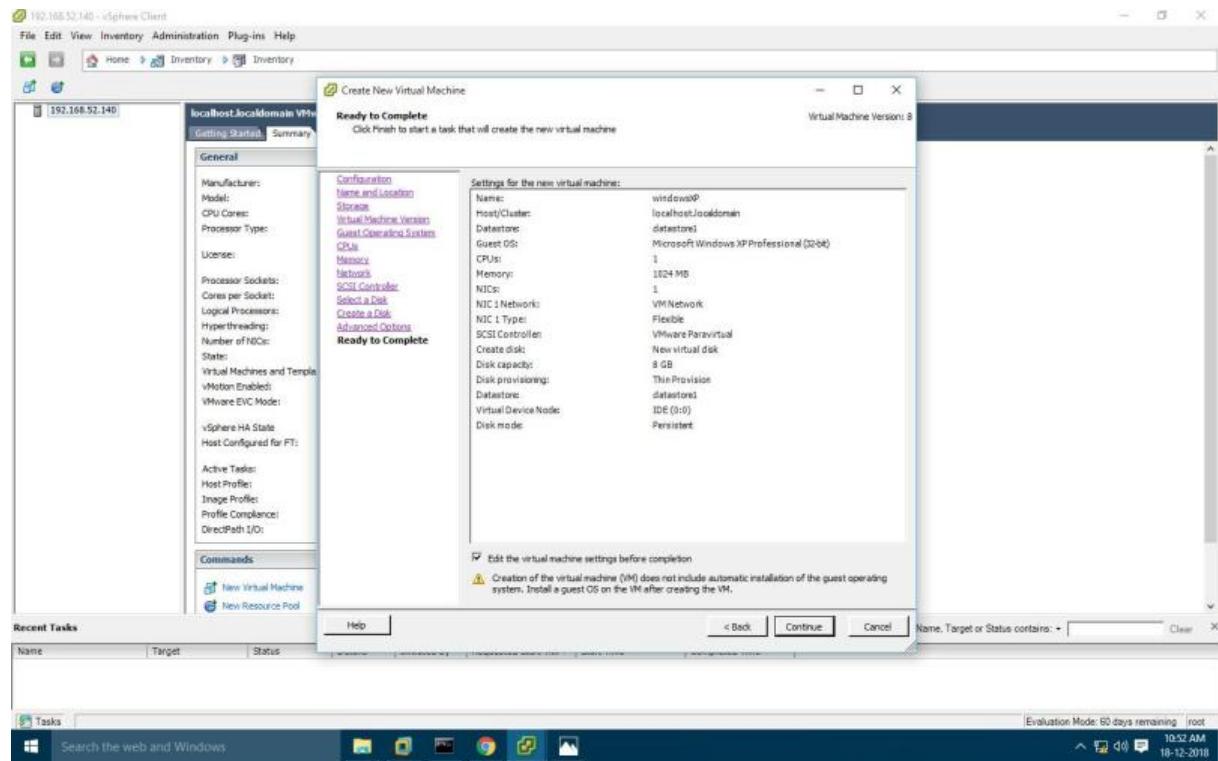


Select a Disk: create new virtual disk.

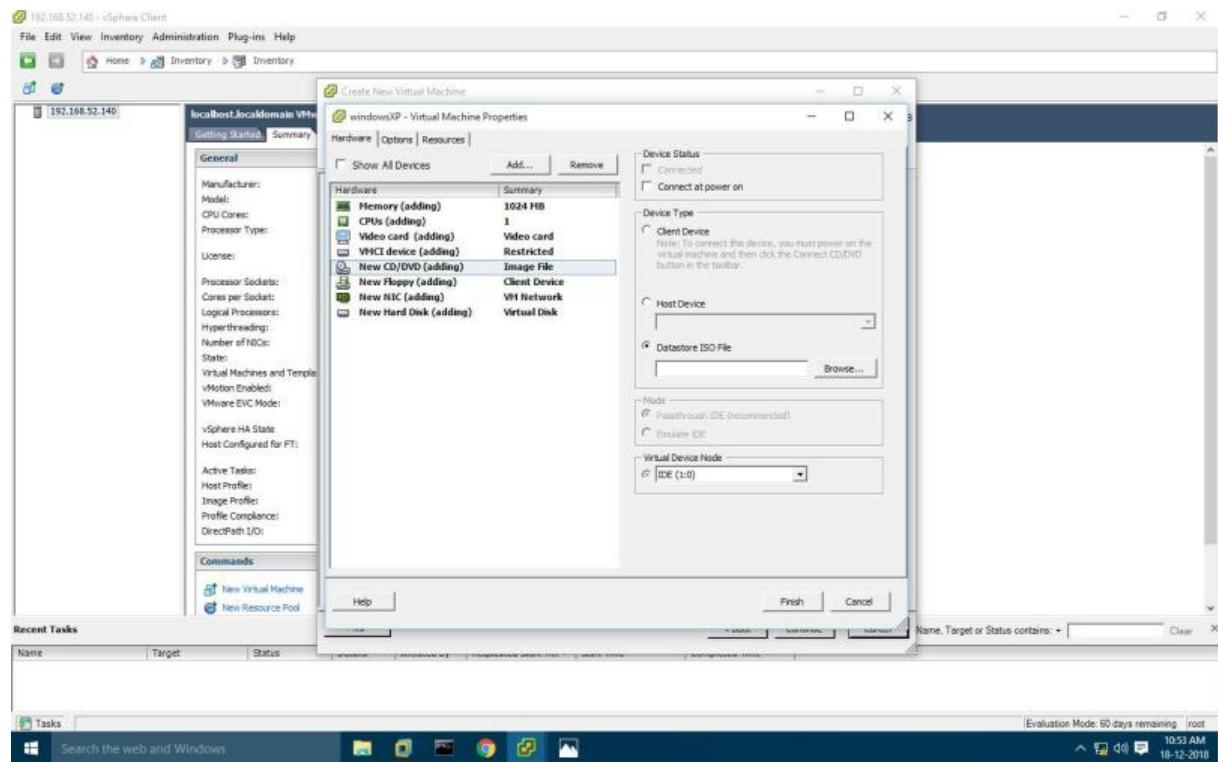


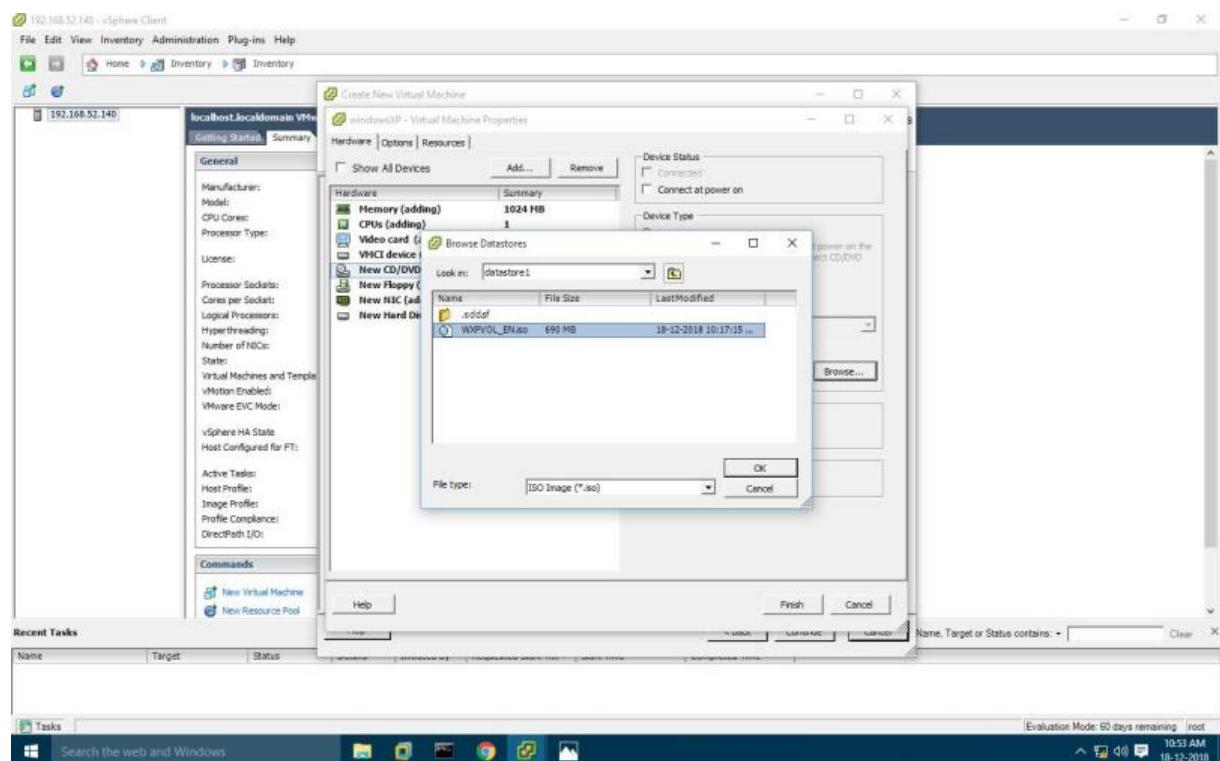
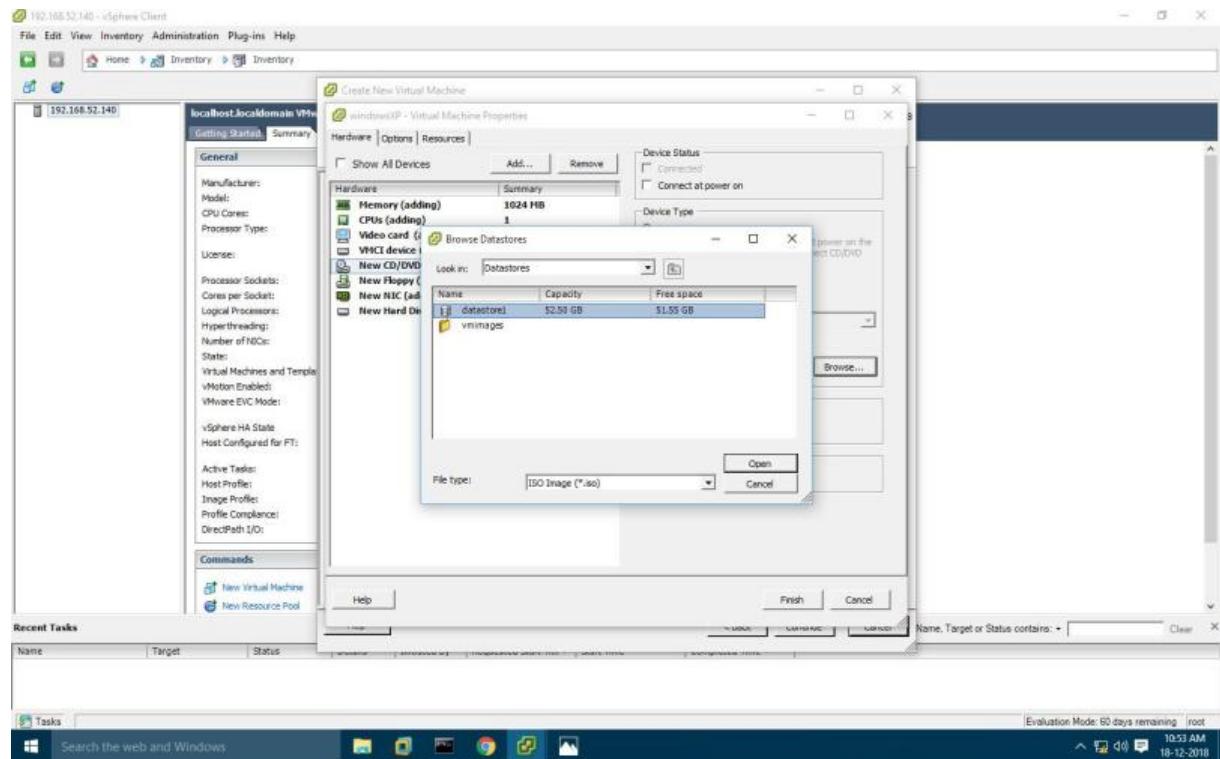


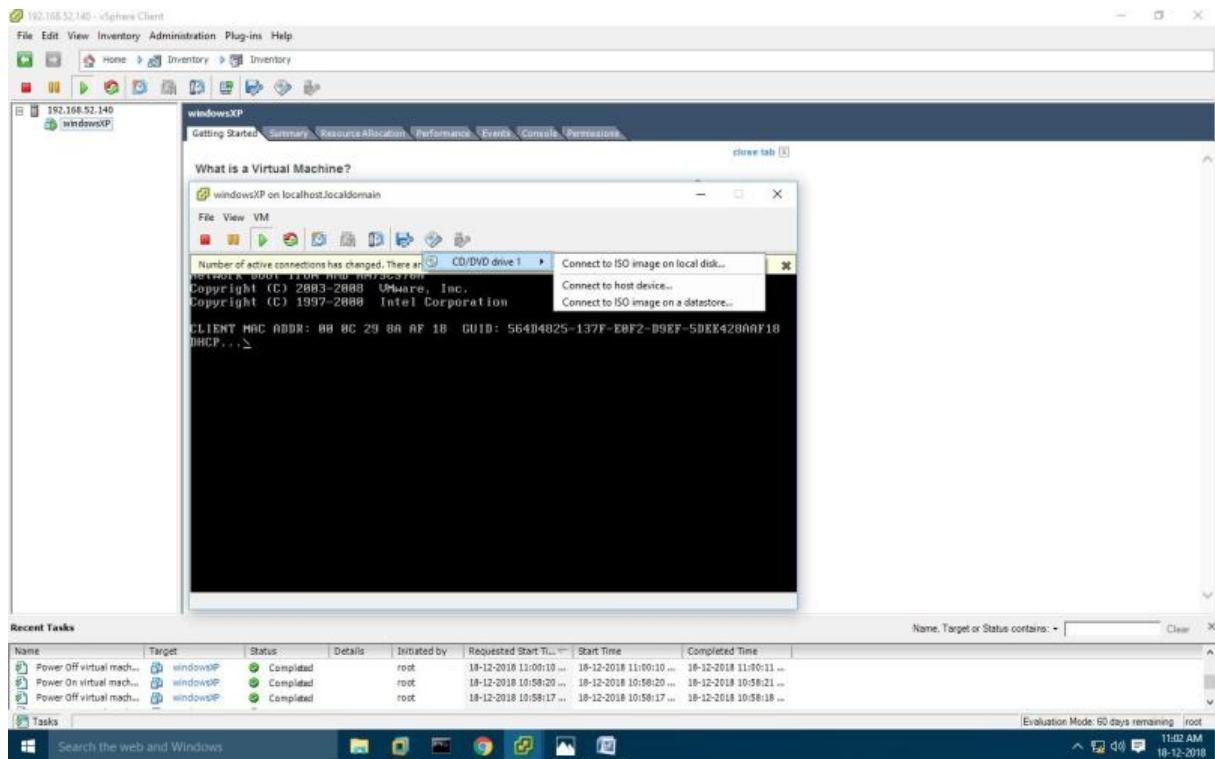
Click edit



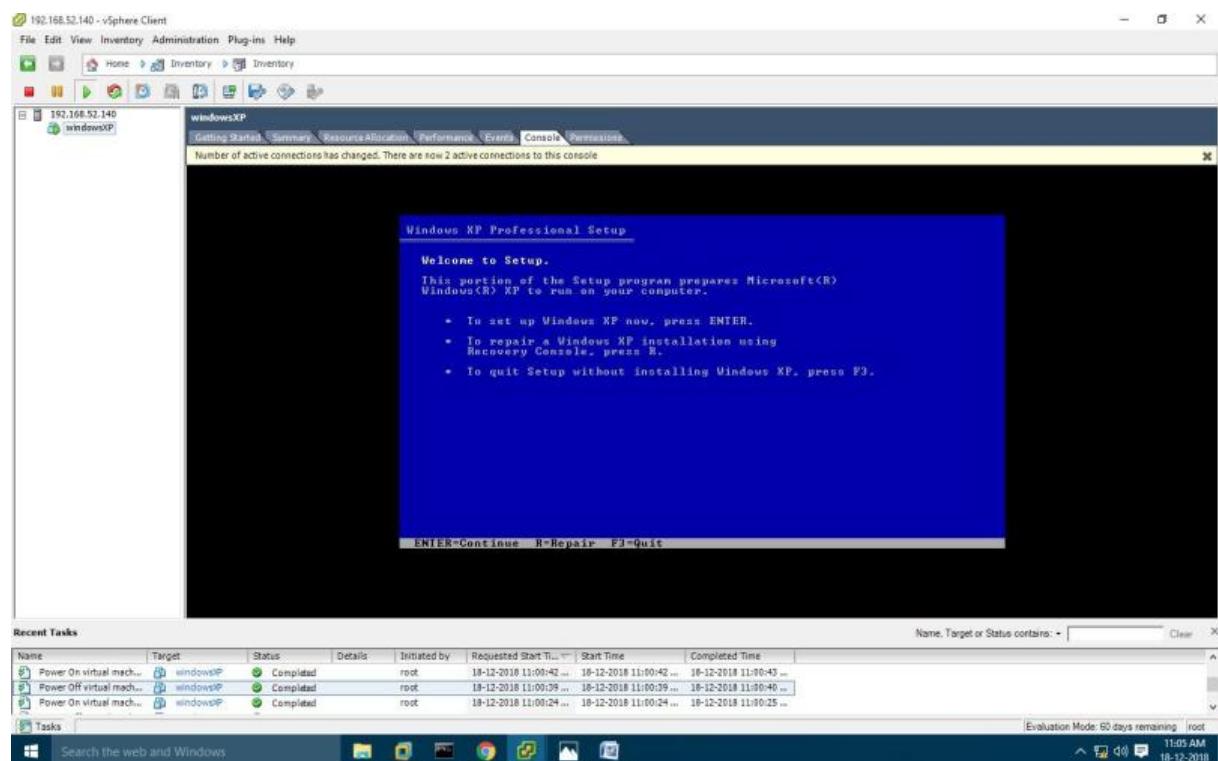
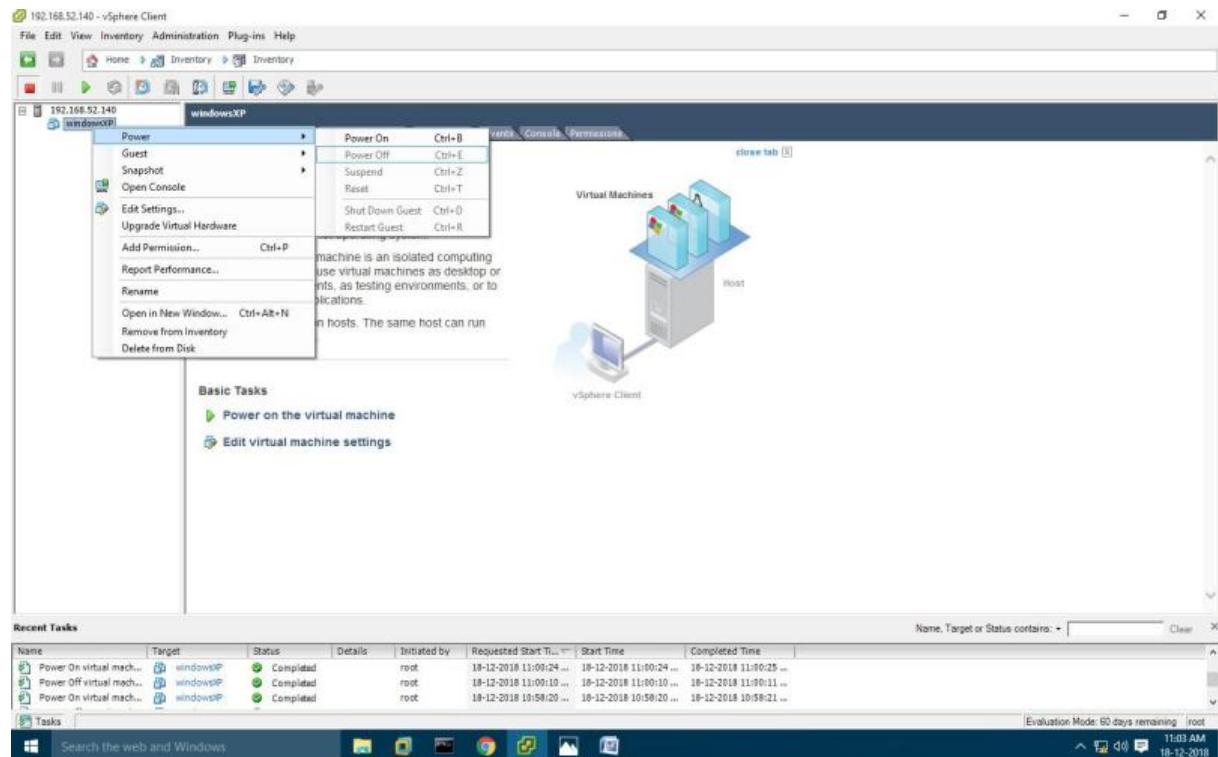
Click on datastore







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

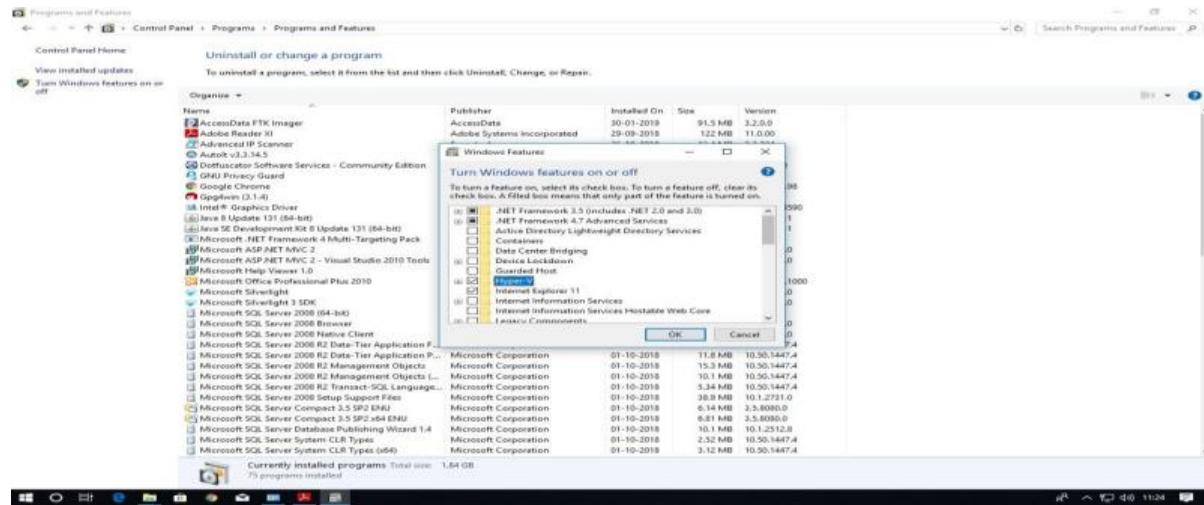


PRACTICAL: 6

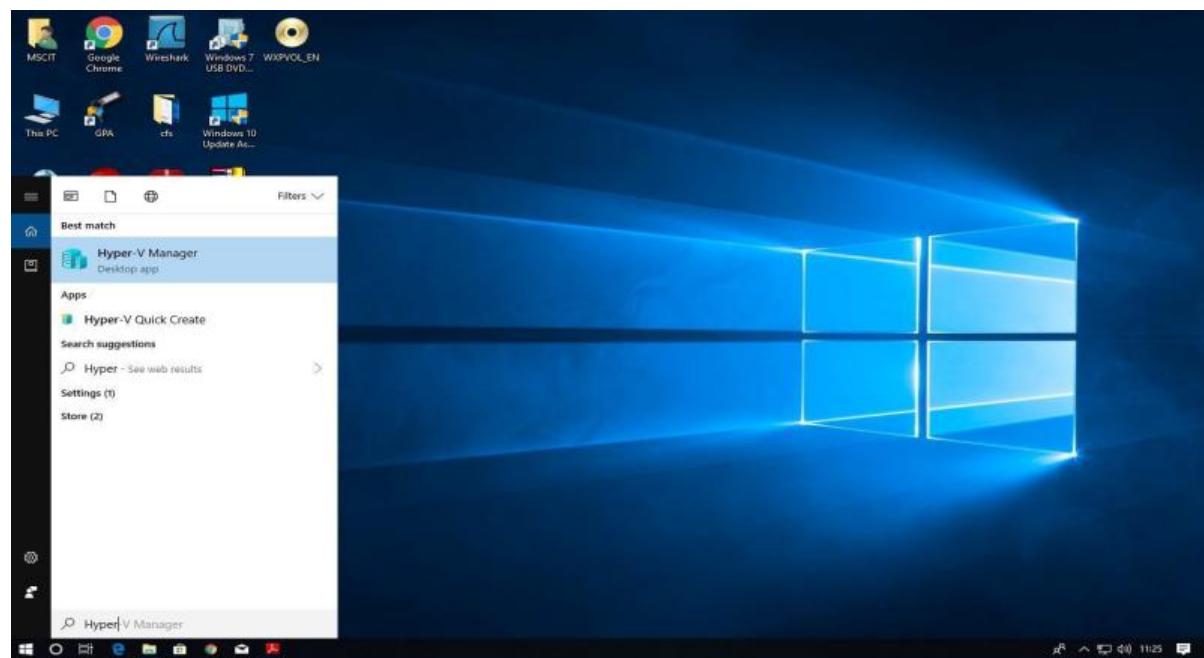
NATIVE VIRTUALIZATION USING Hyper-V

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.

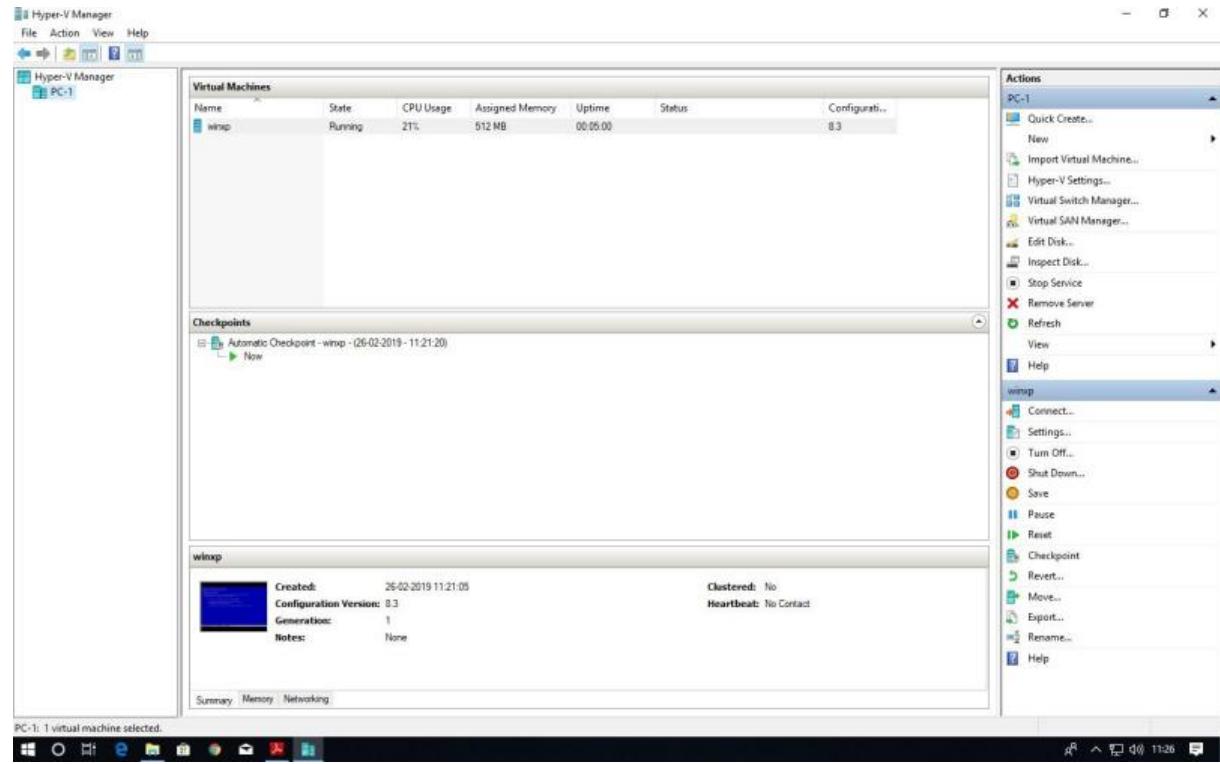
After uninstalling VMware, we can proceed to next step - go to control panel and click on uninstall a program



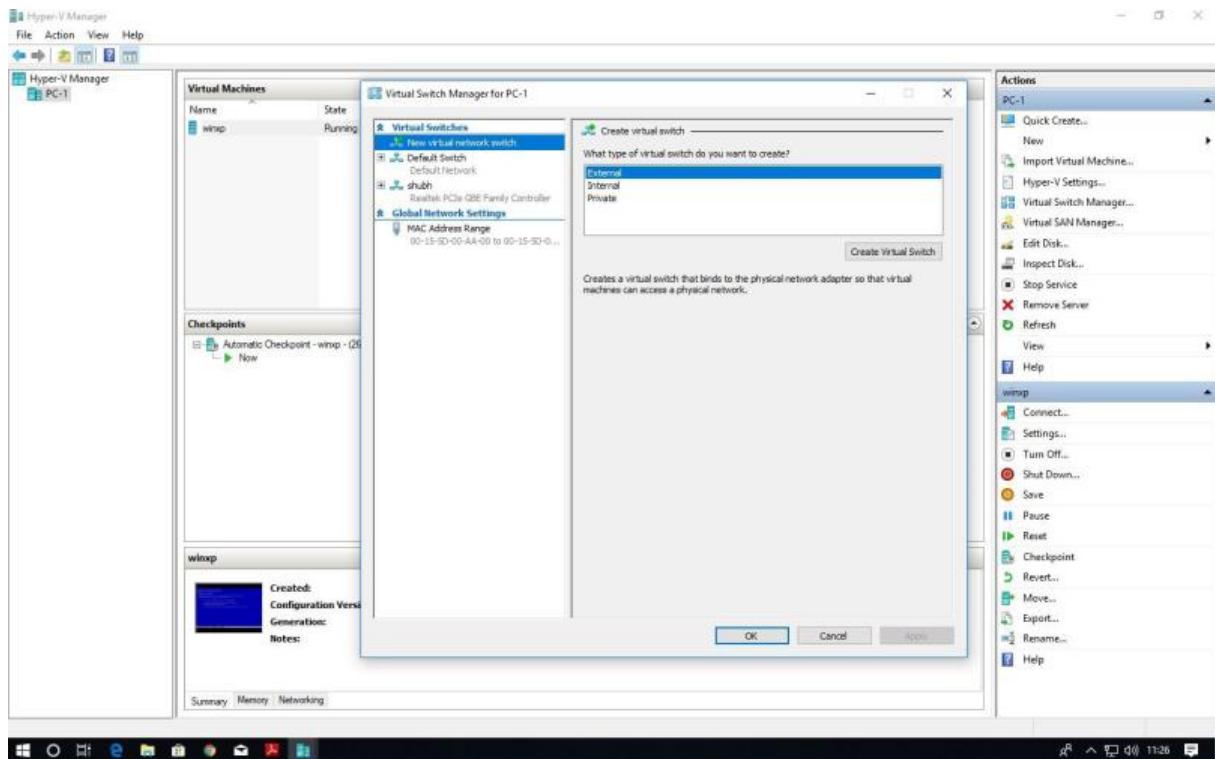
After Restart Search for hyper-v manager in search box and click on that



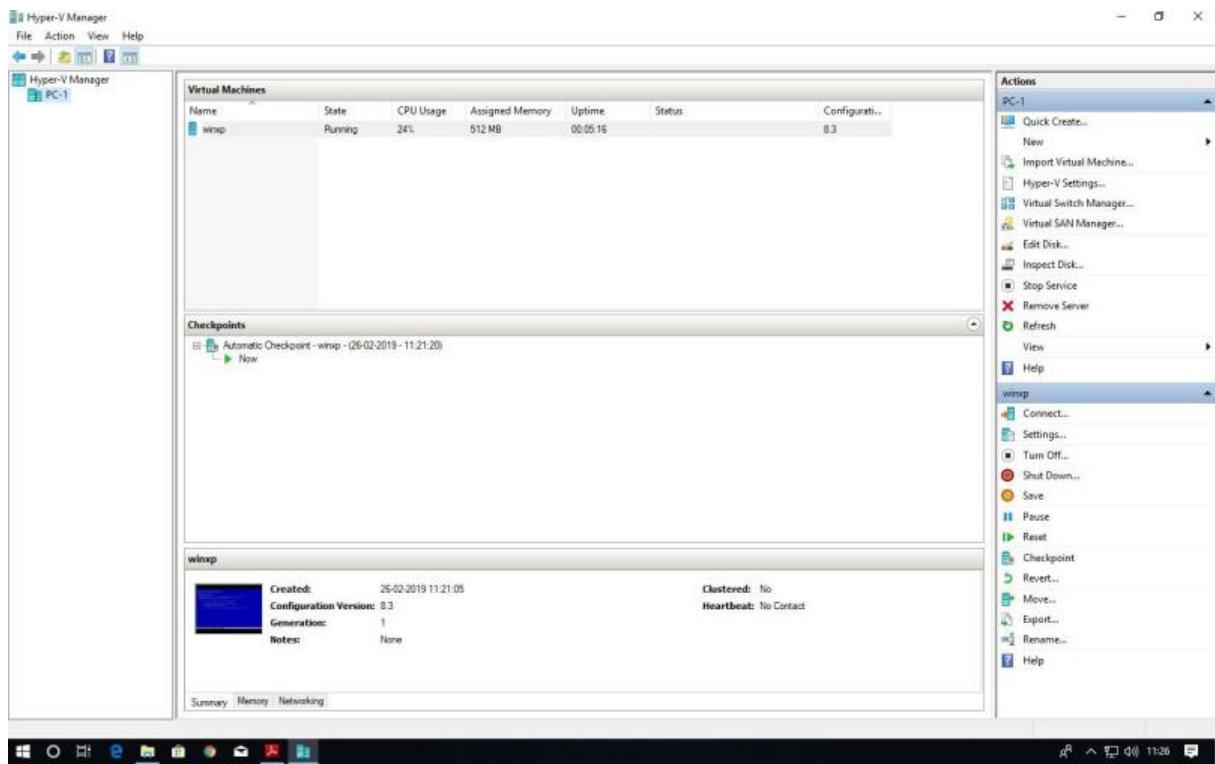
**for creating virtual machine first we have to create virtual switch
click on virtual switch manager option**

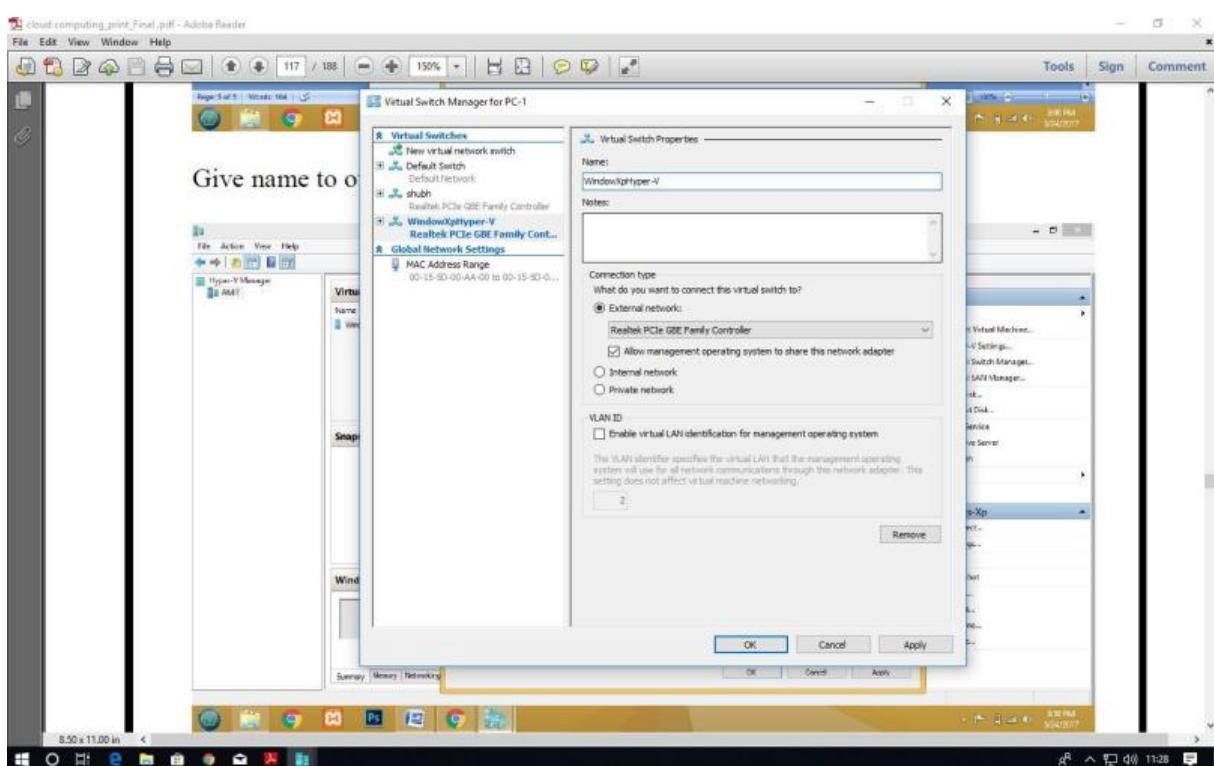
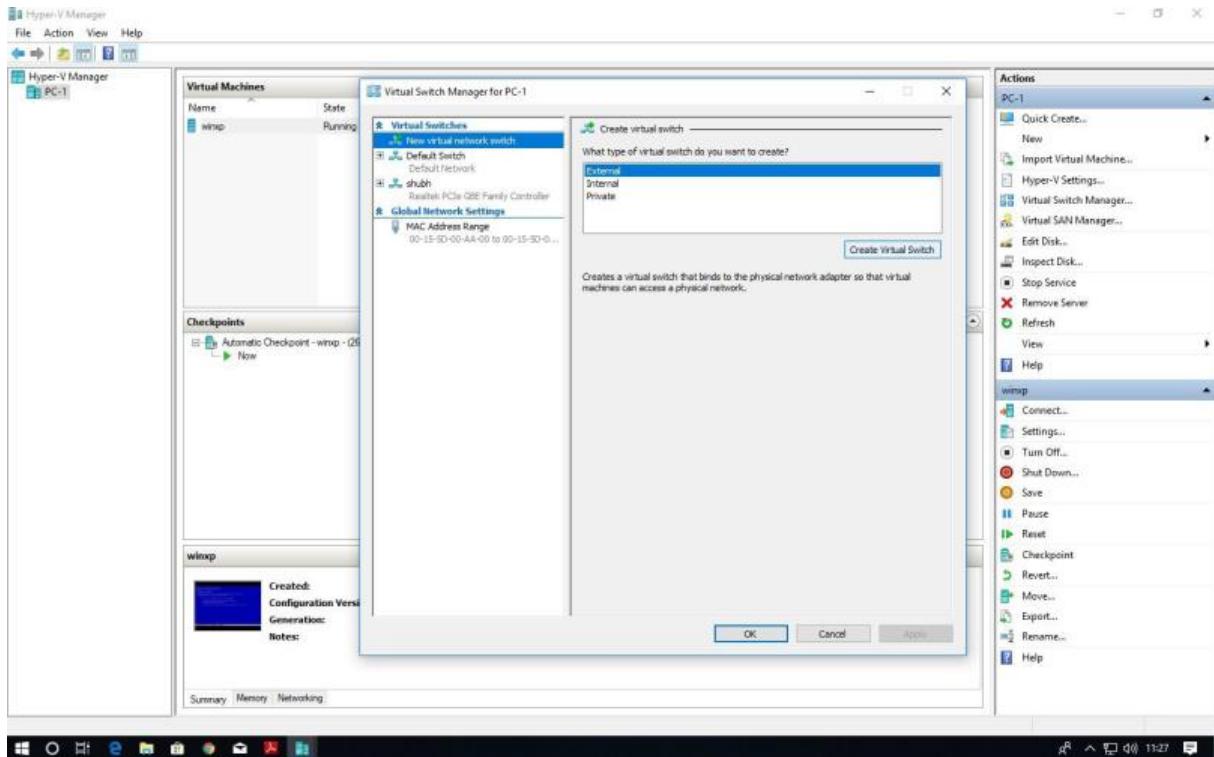


Select External as a connection type and then click on create virtual switch

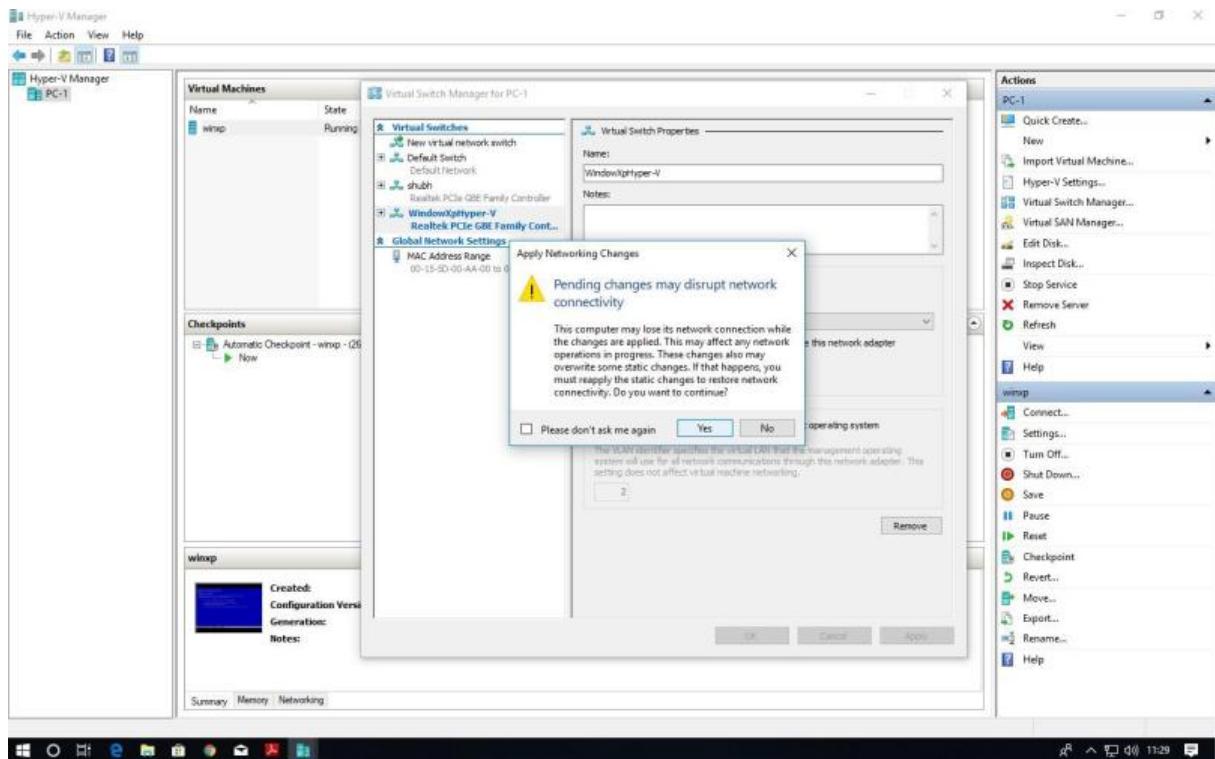


Give name to our virtual switch then click on apply button

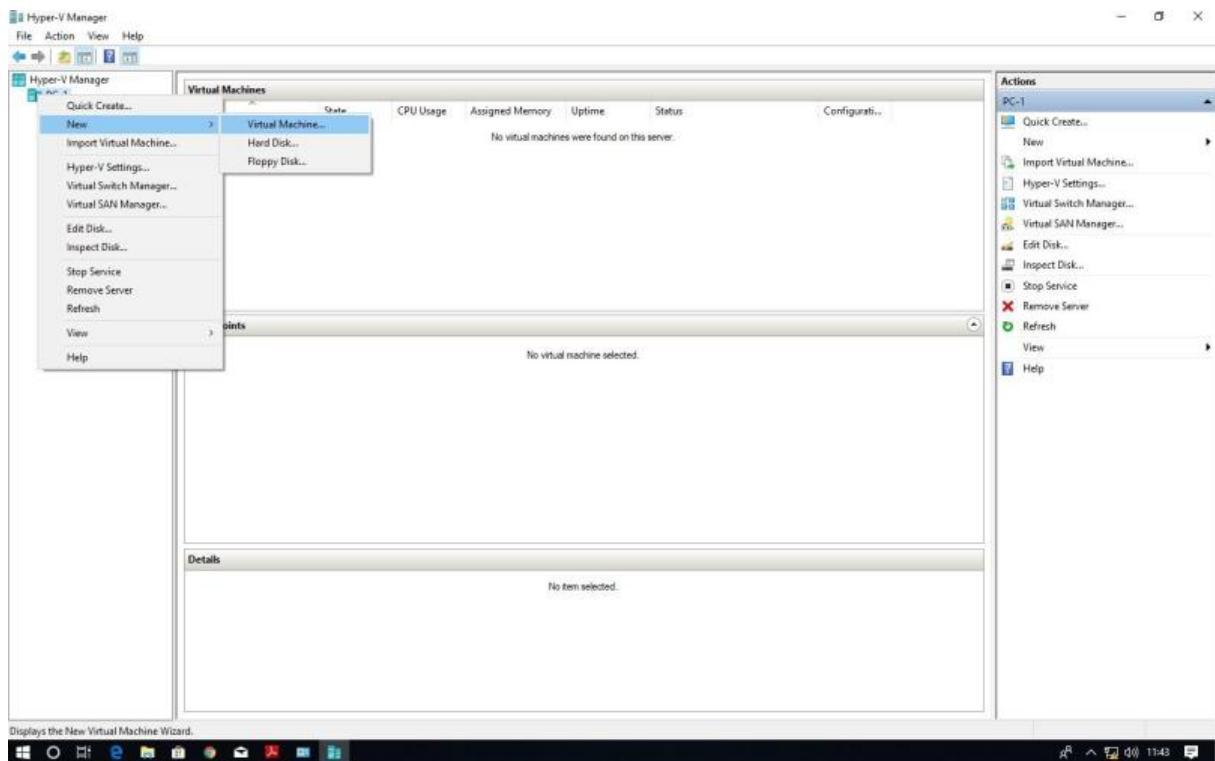




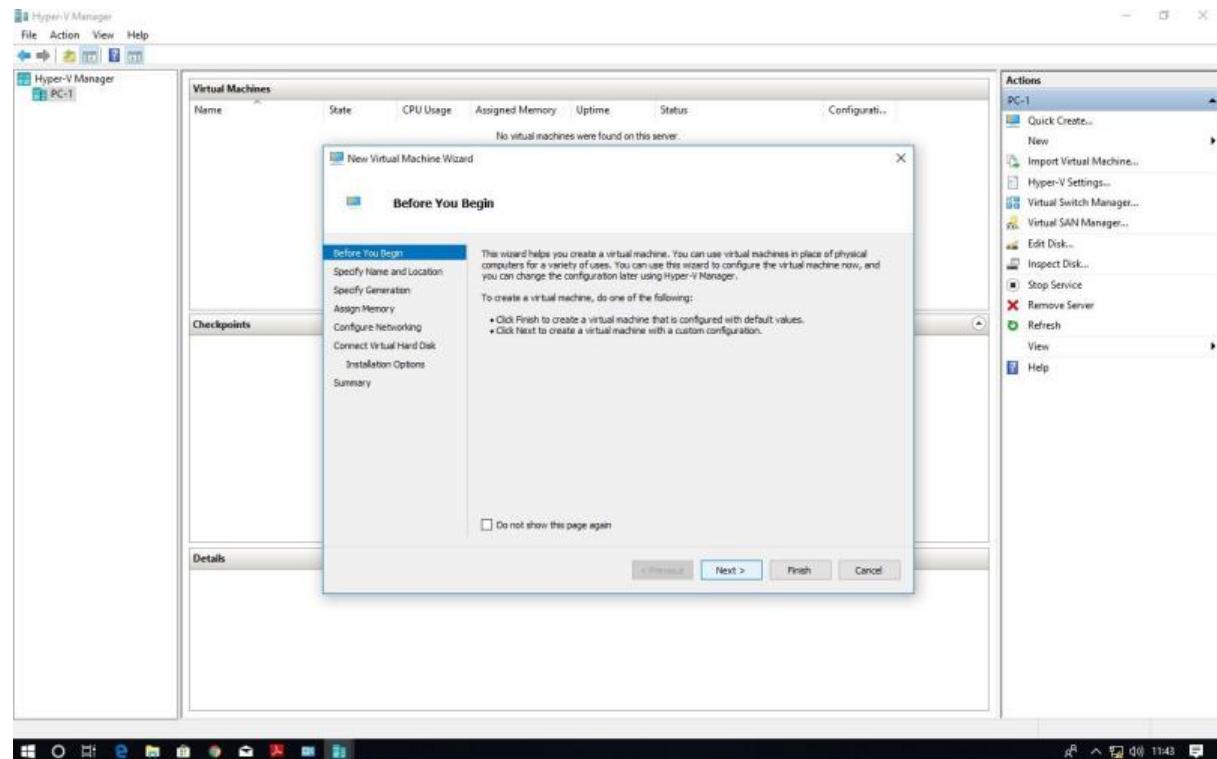
after click on Apply button it will show warning about our connection
click on yes



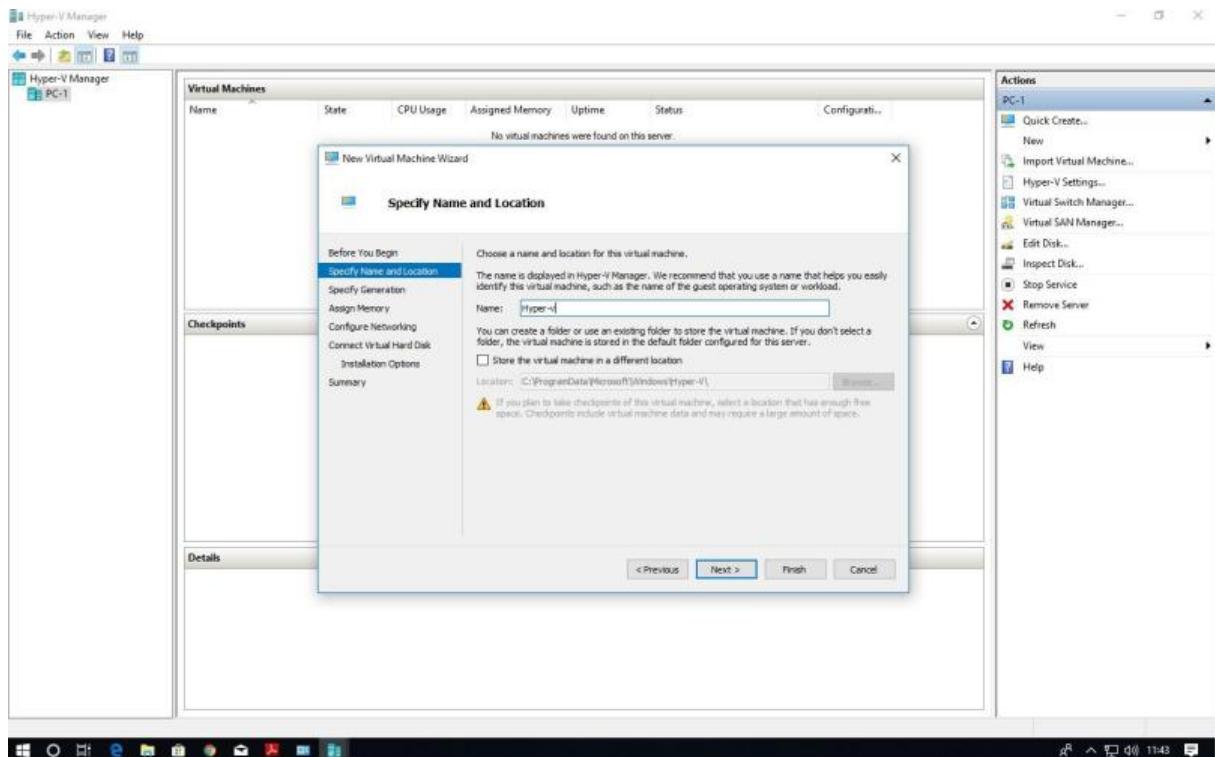
Now right click on server and select new virtual machine



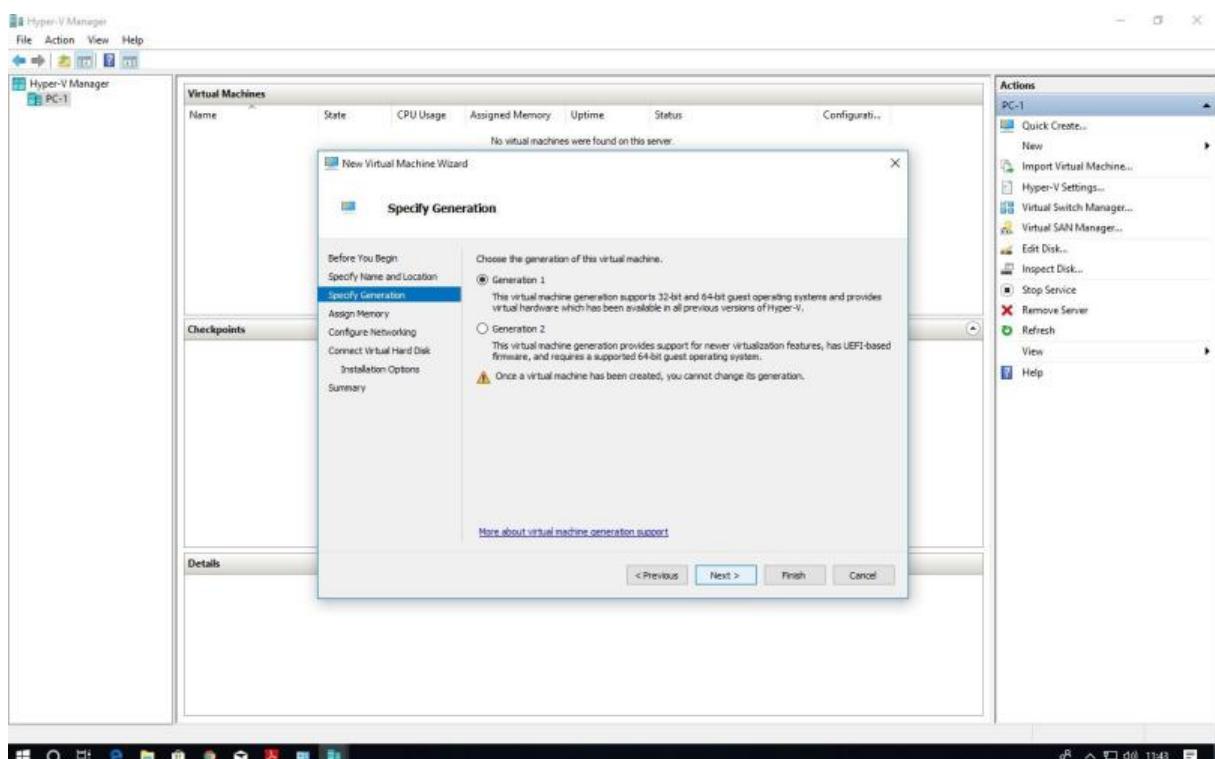
click on next button



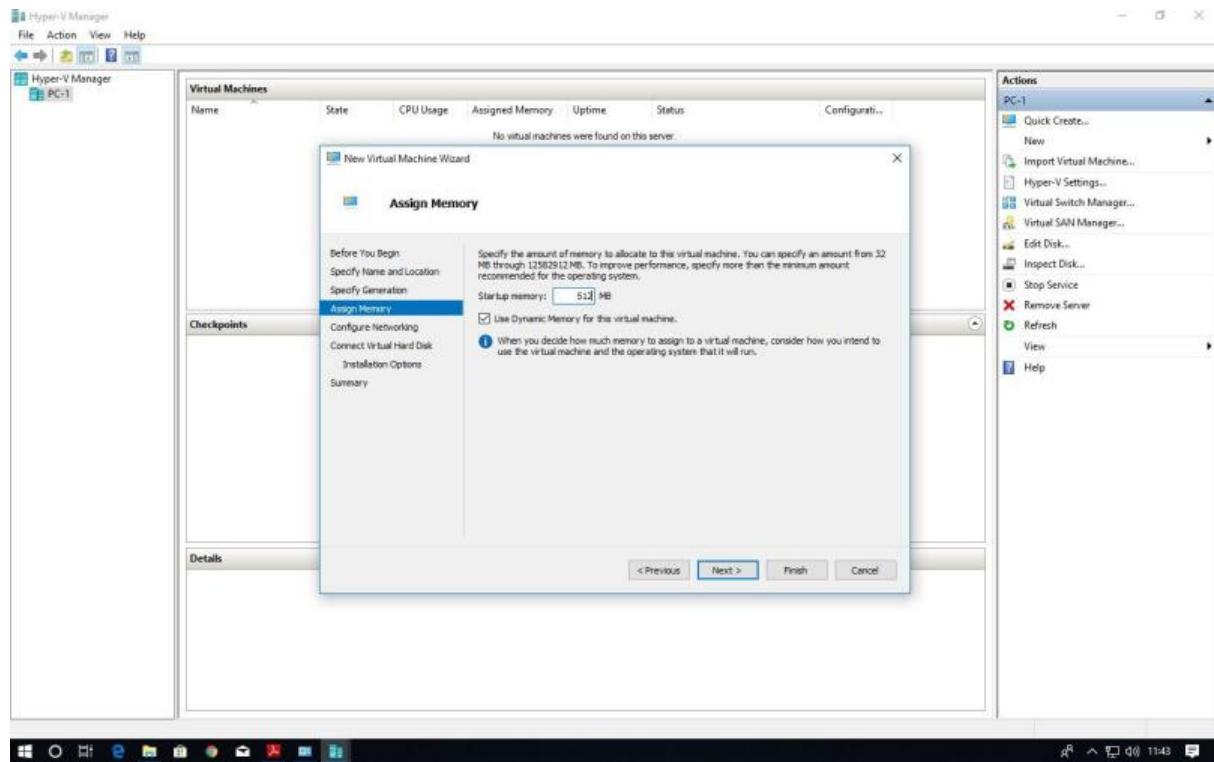
Provide name to virtual machine then click on Next button



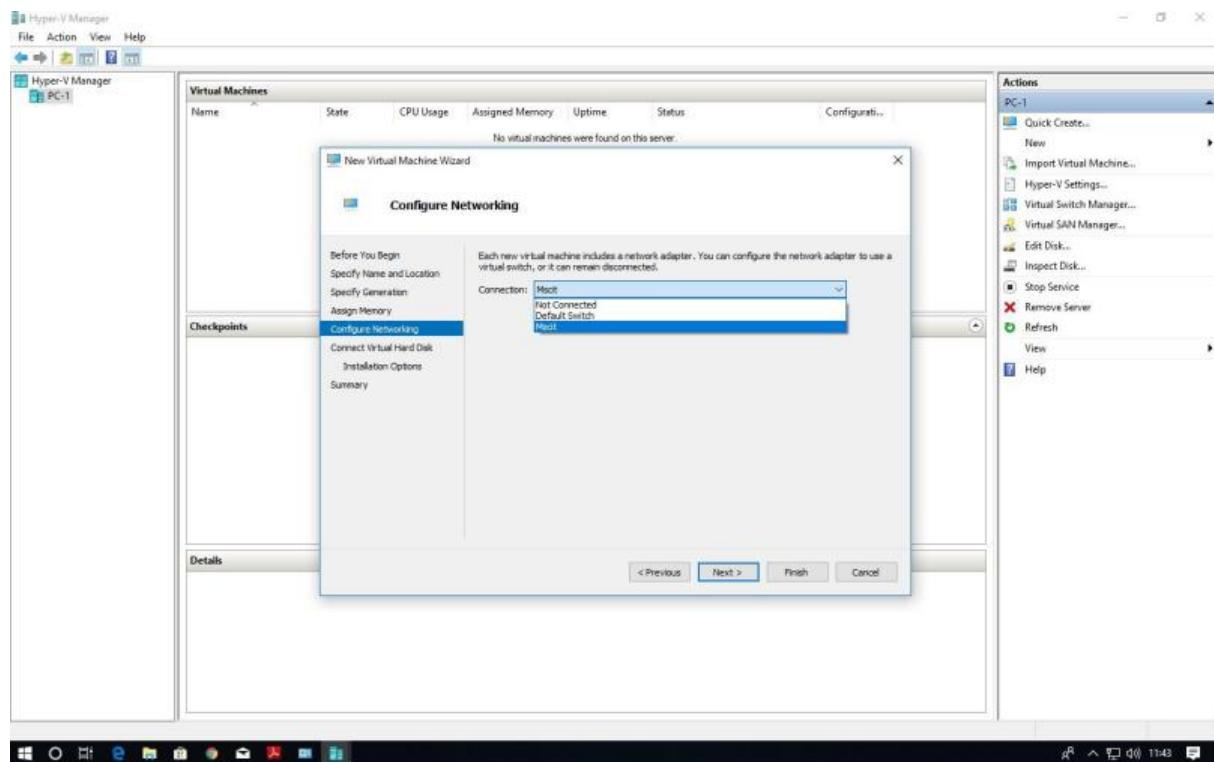
Specify generation : generation 1



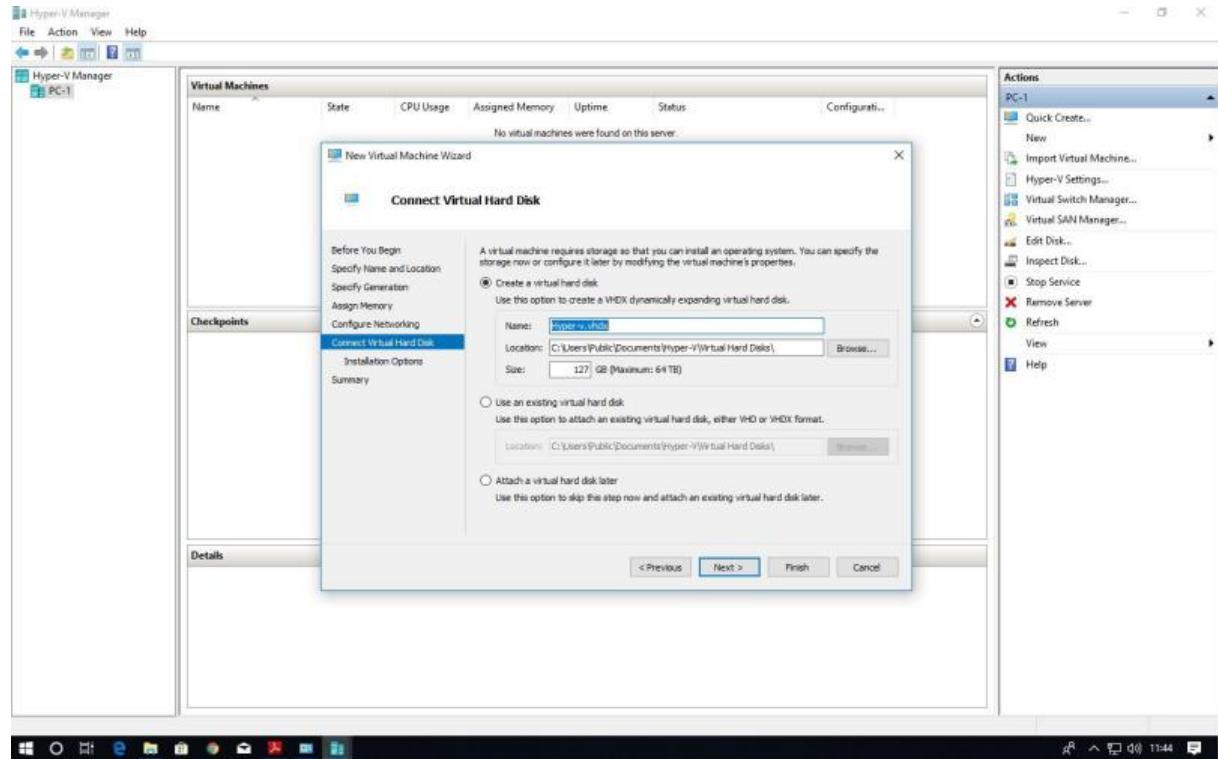
tick on use dynamic memory for this virtual machine



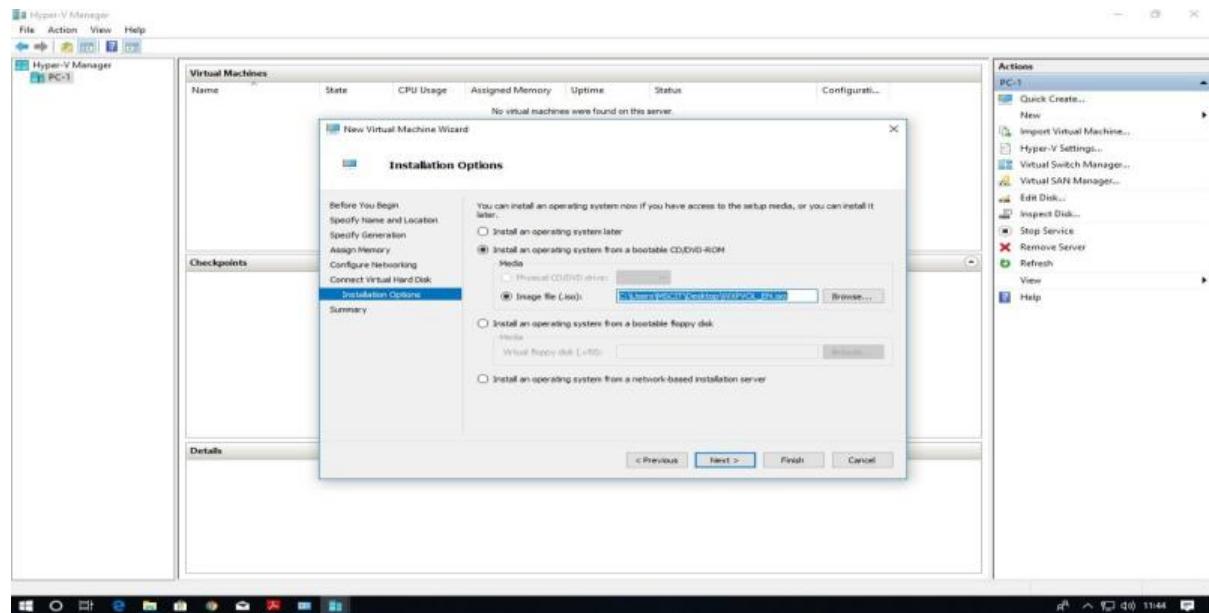
Select switch which we created earlier for our virtual machine from drop-down list and then click on next



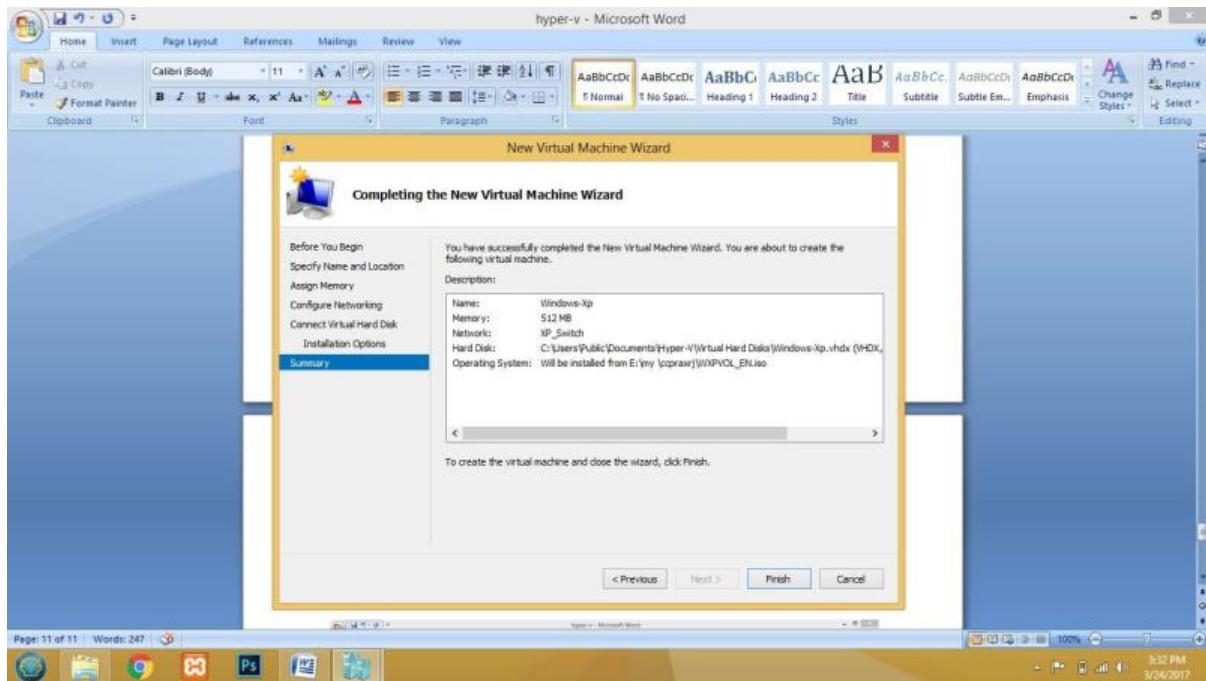
Description of virtual machine and location where it will store virtual machine related files and size require for this machine click on next



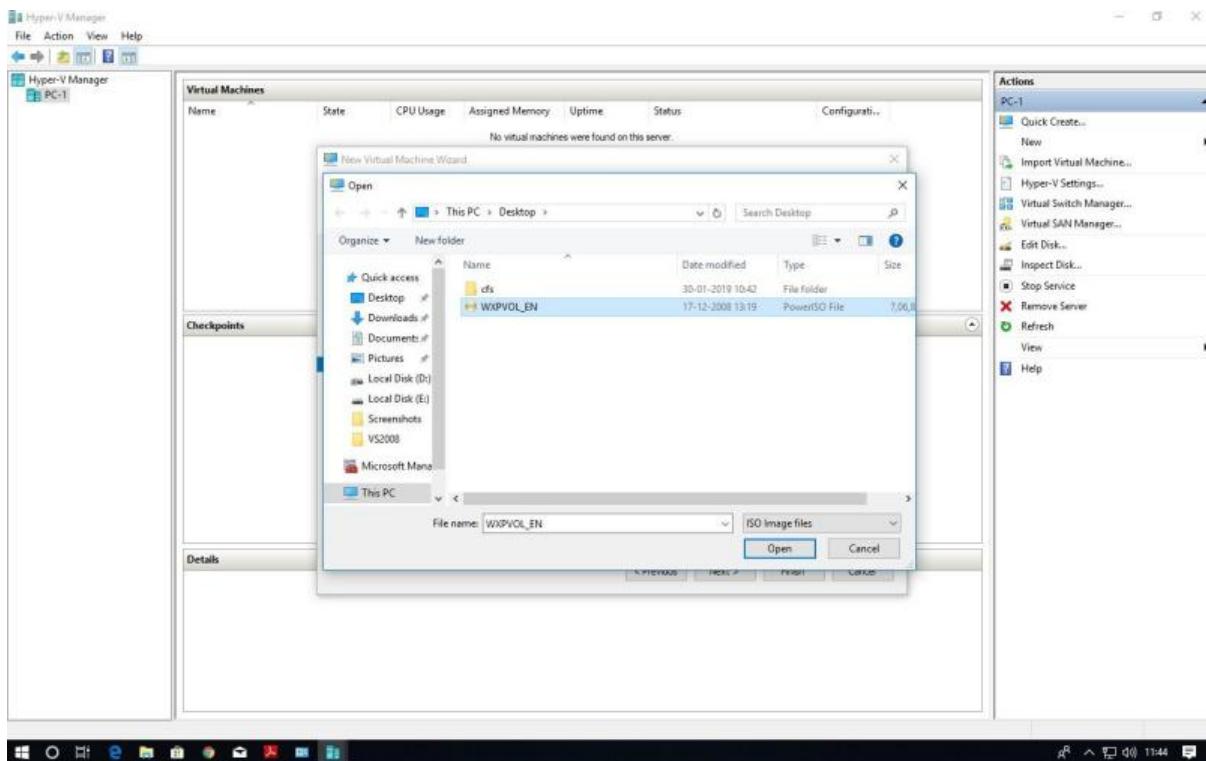
New virtual machine wizard panel will appear, where we will choose operating system which we want to install on virtual machine
select install an operating system from boot CD/DVD-ROM and then select Image file(.iso) and browse our OS iso file then click on next button



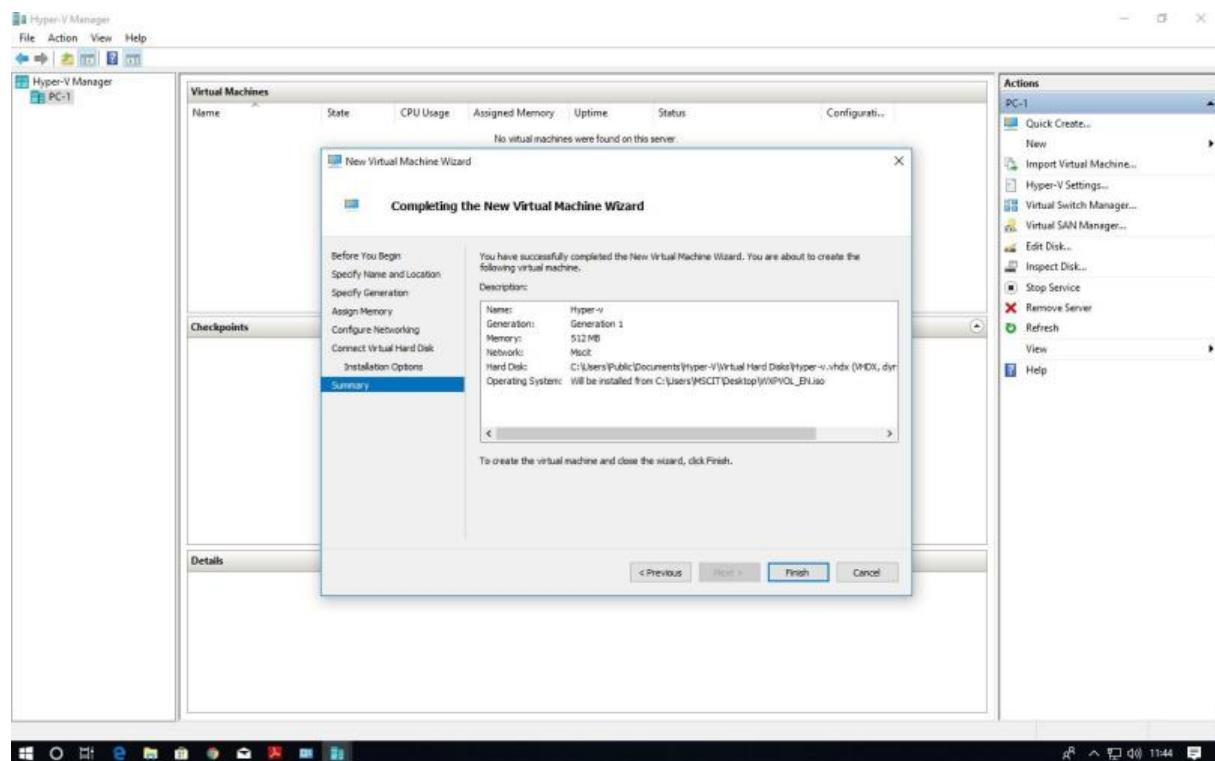
Summary report will be generated about virtual machine then click on Finish button



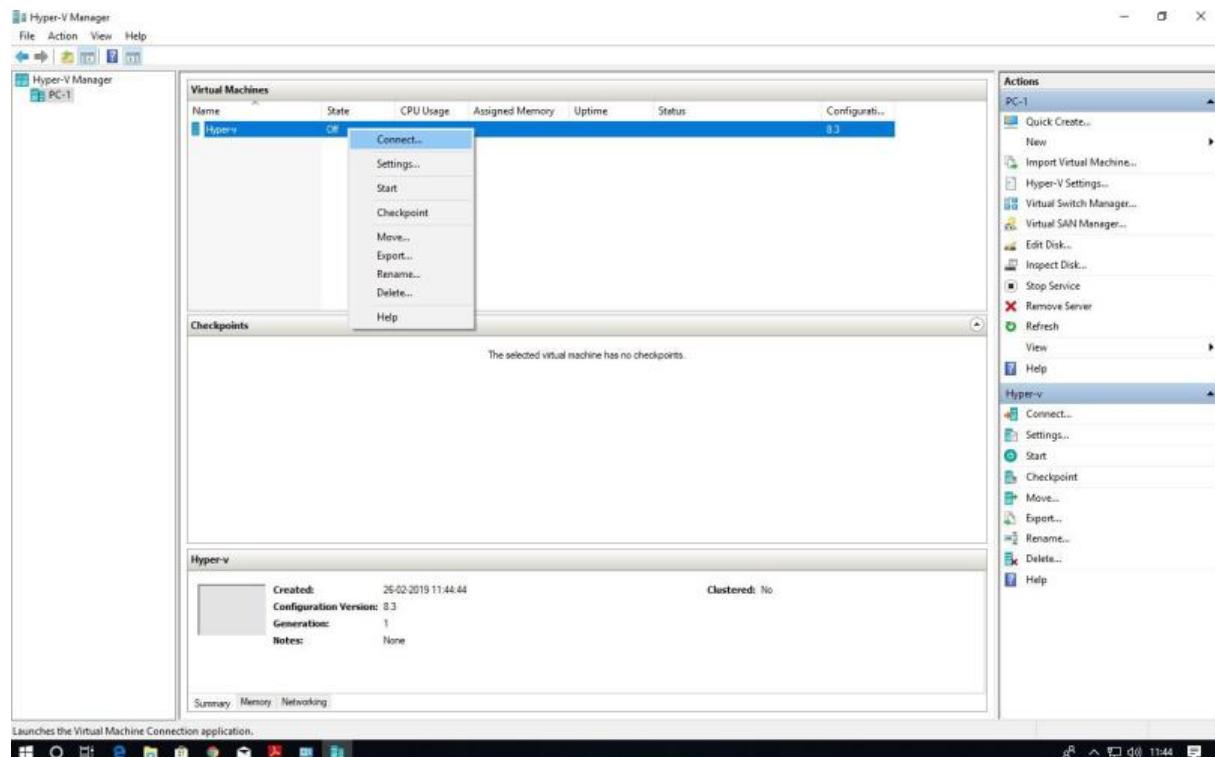
In virtual machine panel our virtual machine will appear which has off state



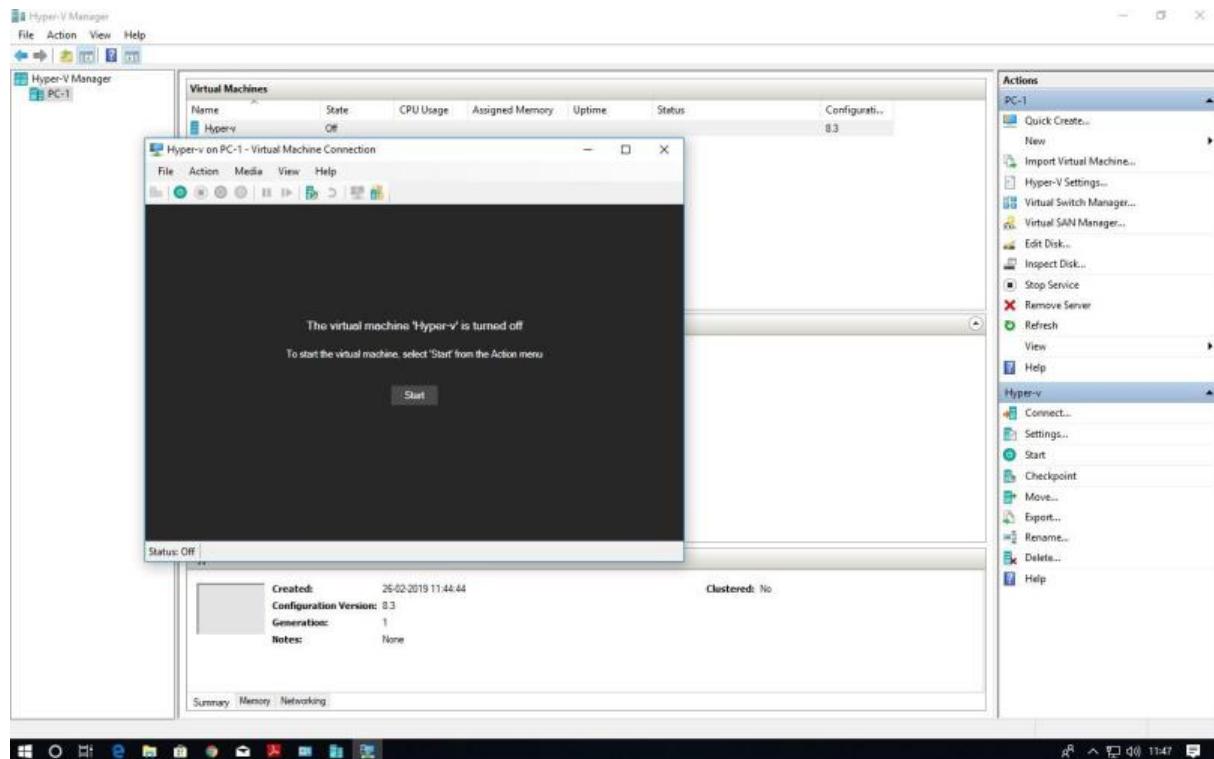
Click finish



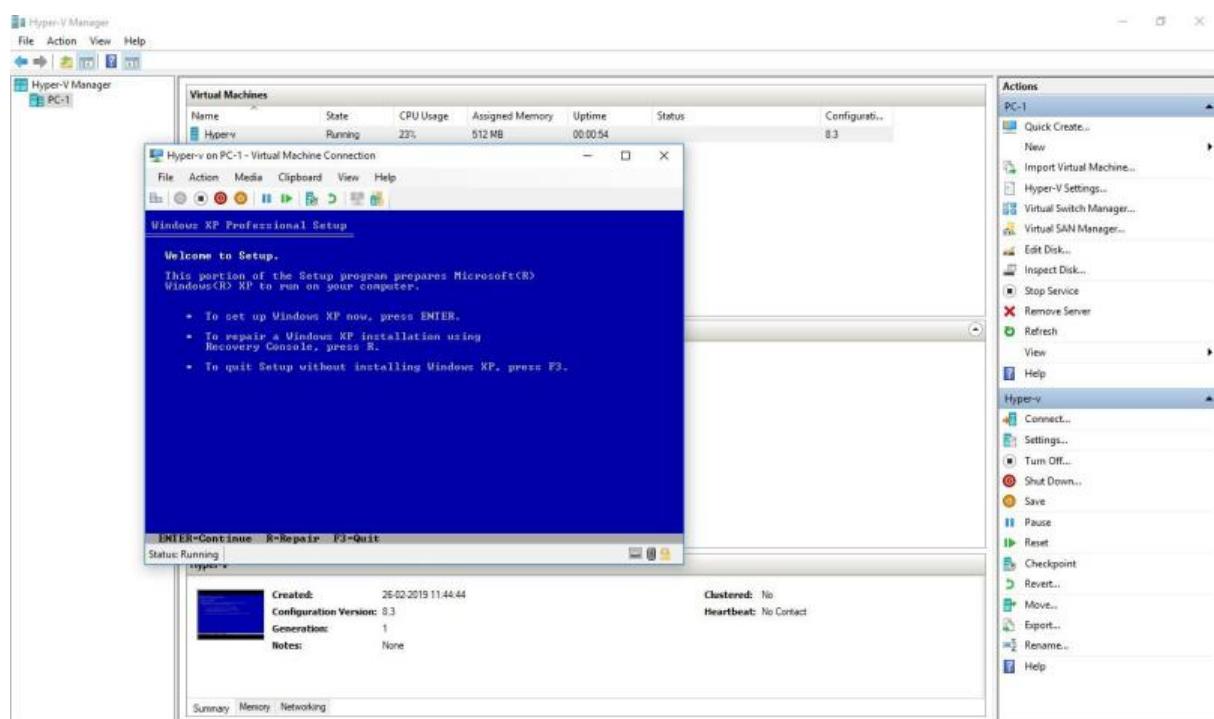
Right click on virtual machine and click on connect option



Now turn on virtual machine on



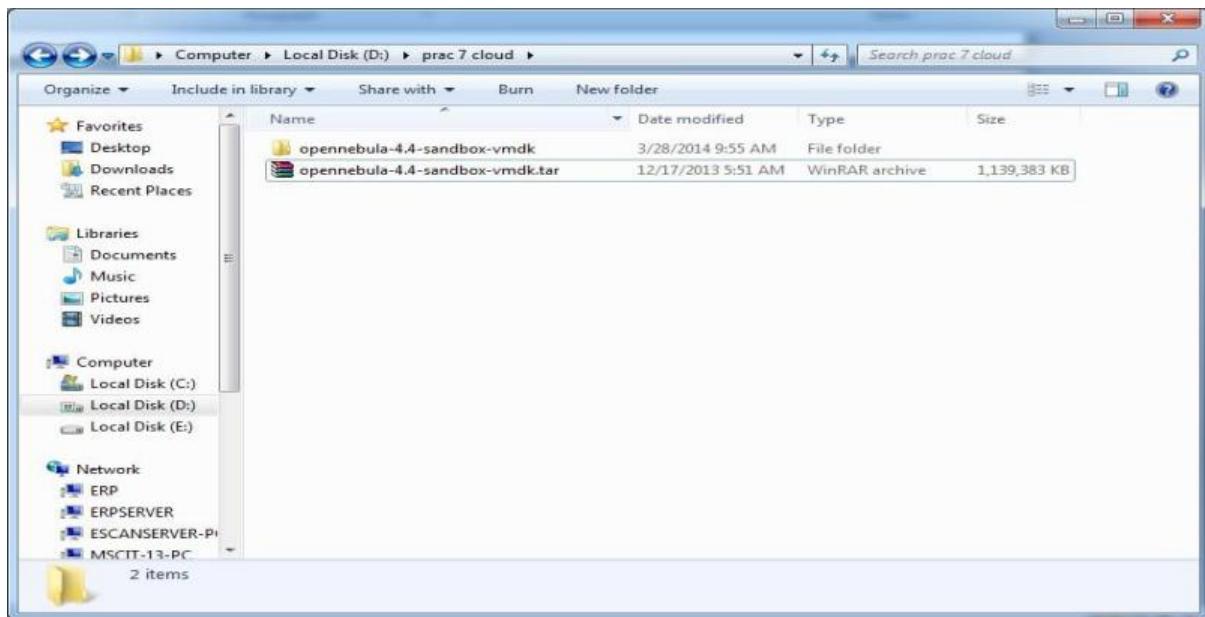
Virtual machine will start with below screen



PRACTICAL: 7

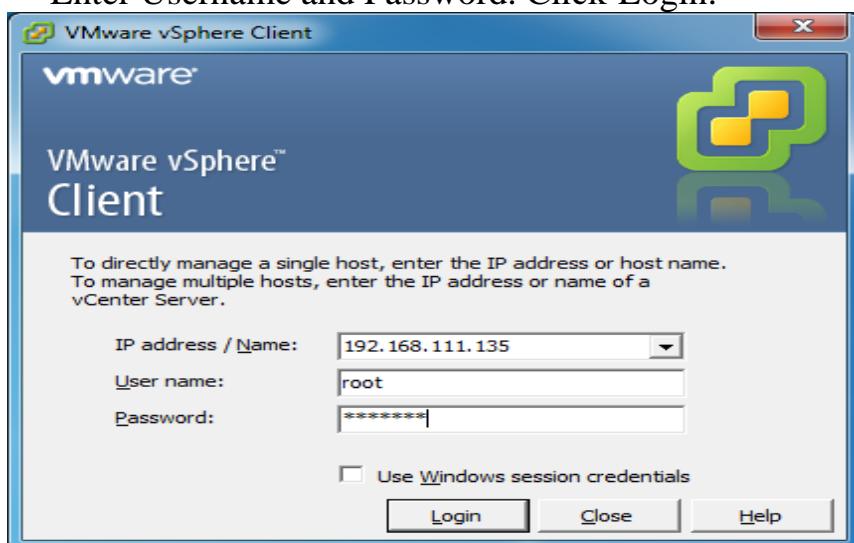
IMPLEMENT OPENNEBULA

Client configuration software needed (Download Opennebula sandbox software from open nebula.org)

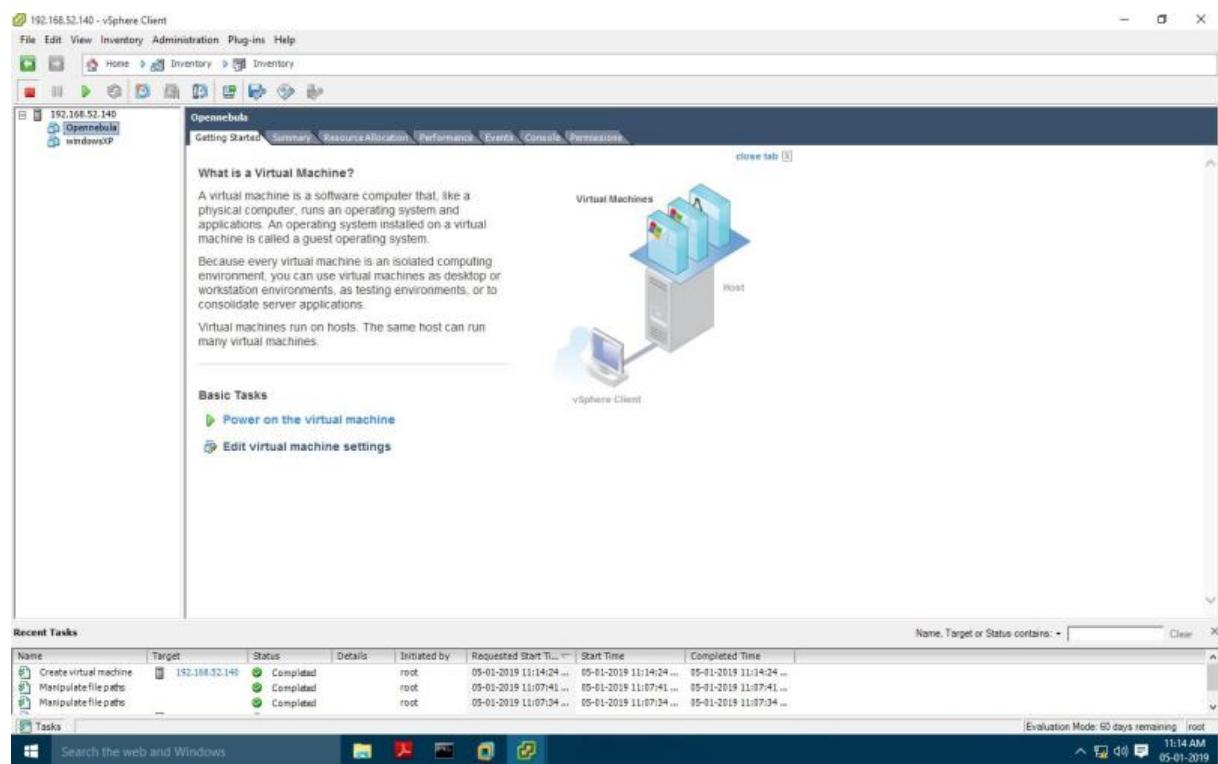


Start vSphere Client.

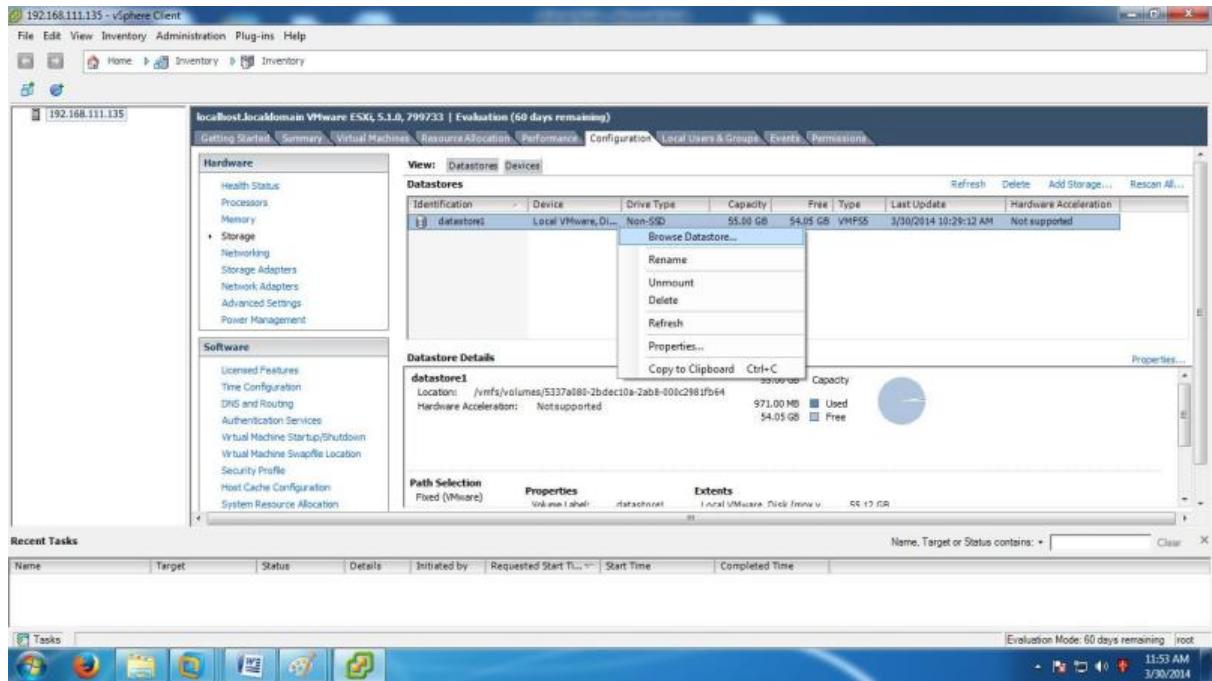
- Enter Static IP address
- Enter Username and Password. Click Login.



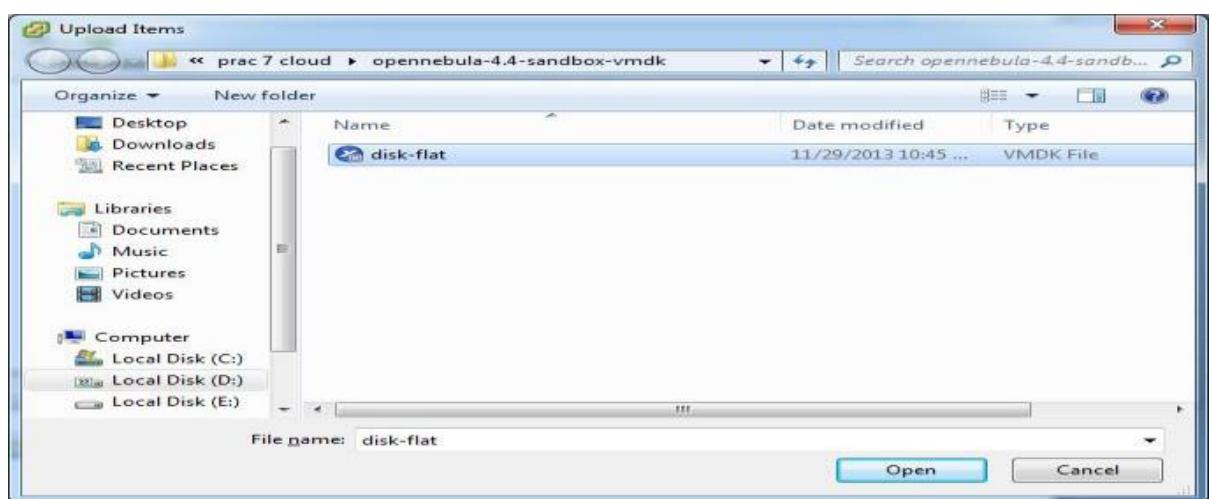
Click on ignore



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

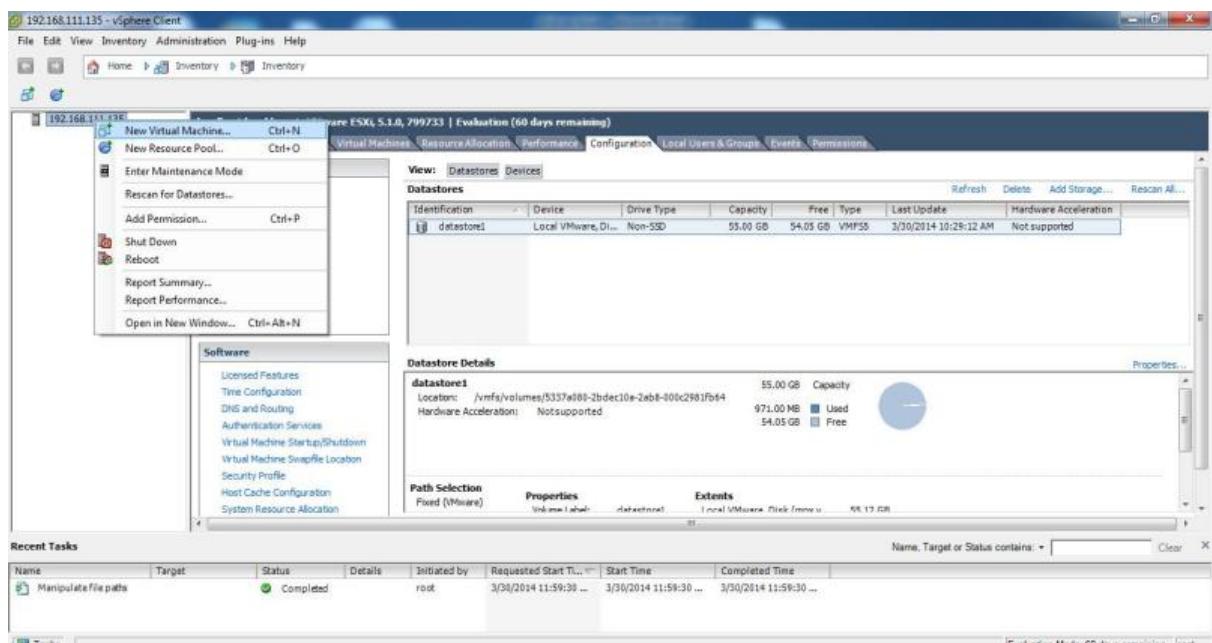


Go in this particular folder **opennebula-4.4-sandbox-vmdk** and select **disk-flat** file.

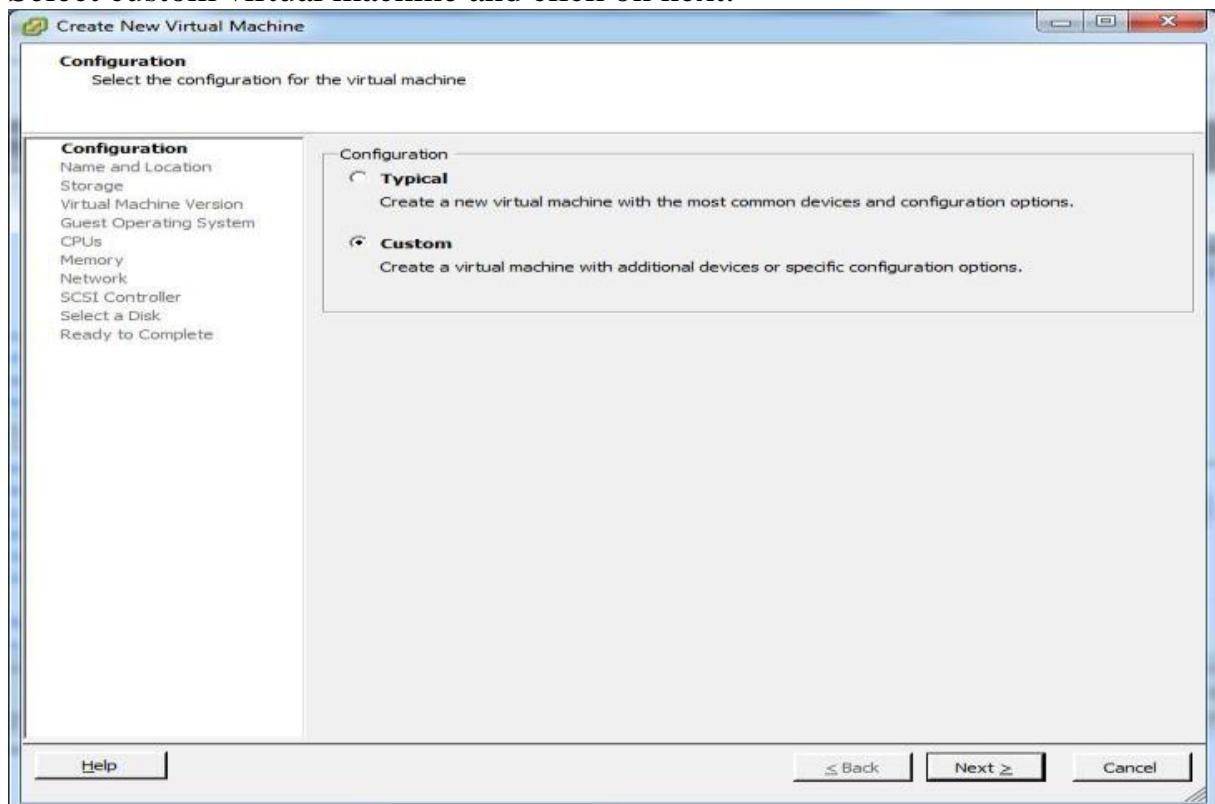


Create a new virtual machine.

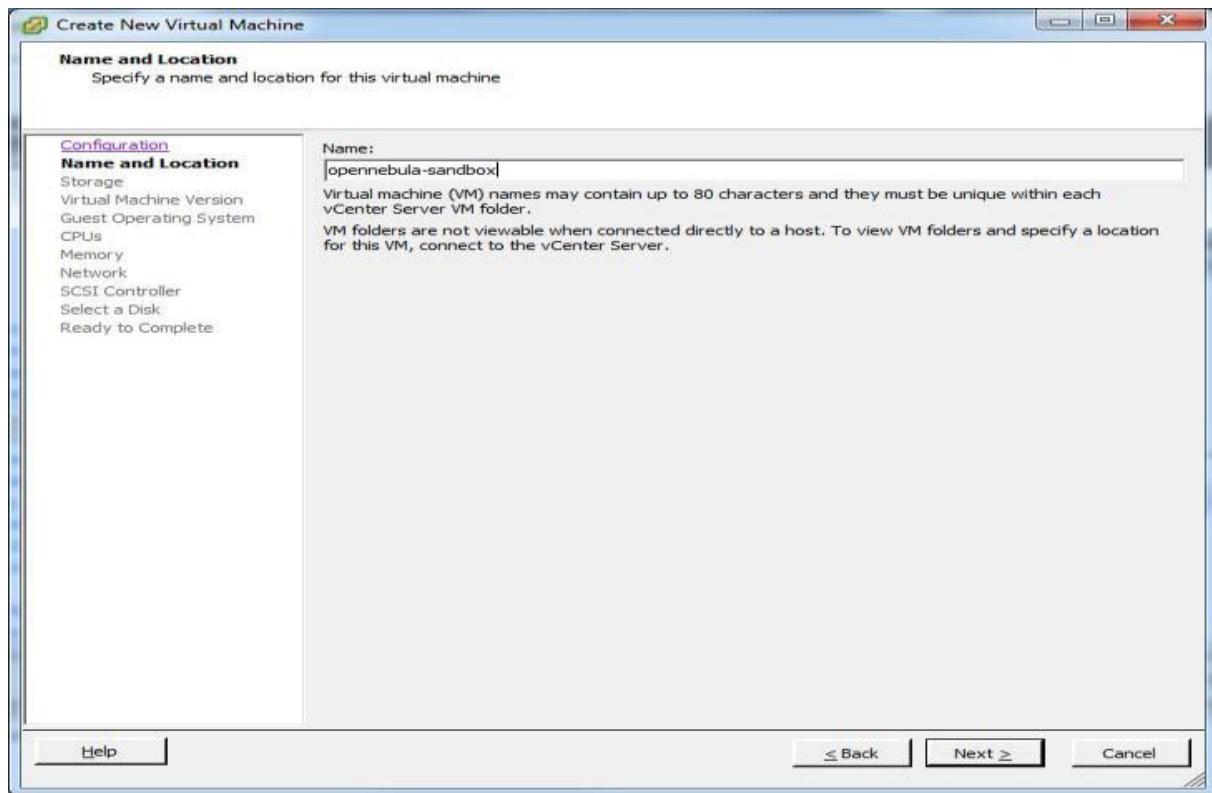
- On the VI client click on the (new virtual machine) icon



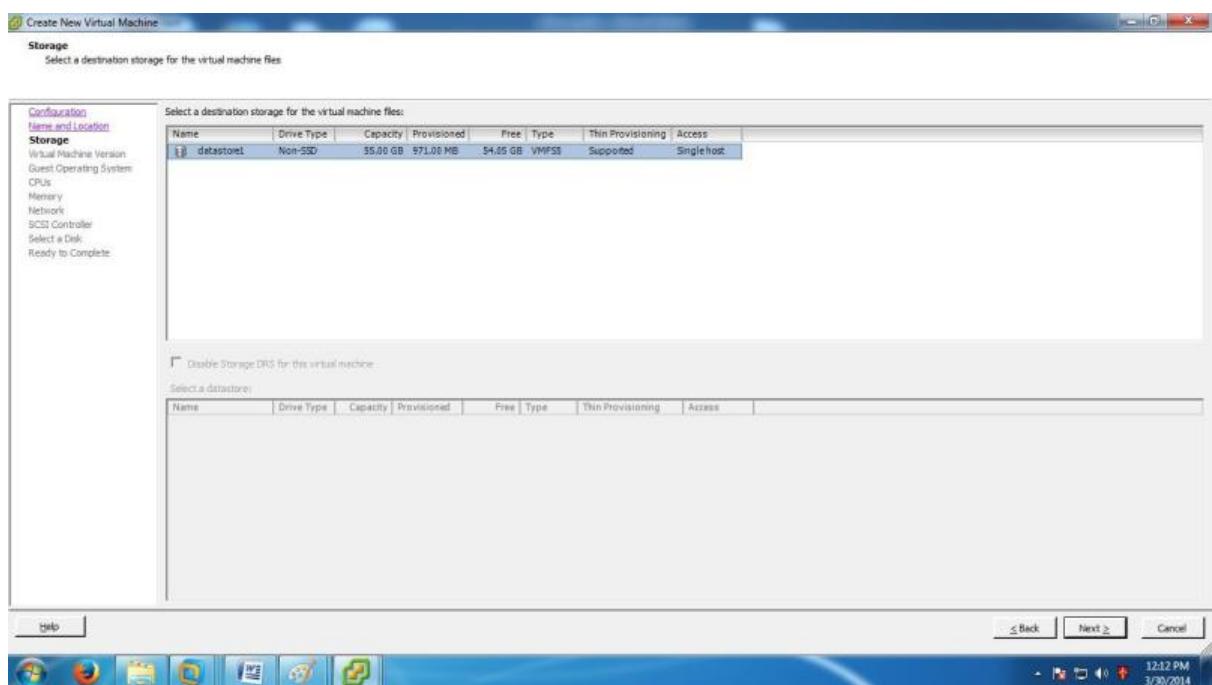
Select custom virtual machine and click on next.



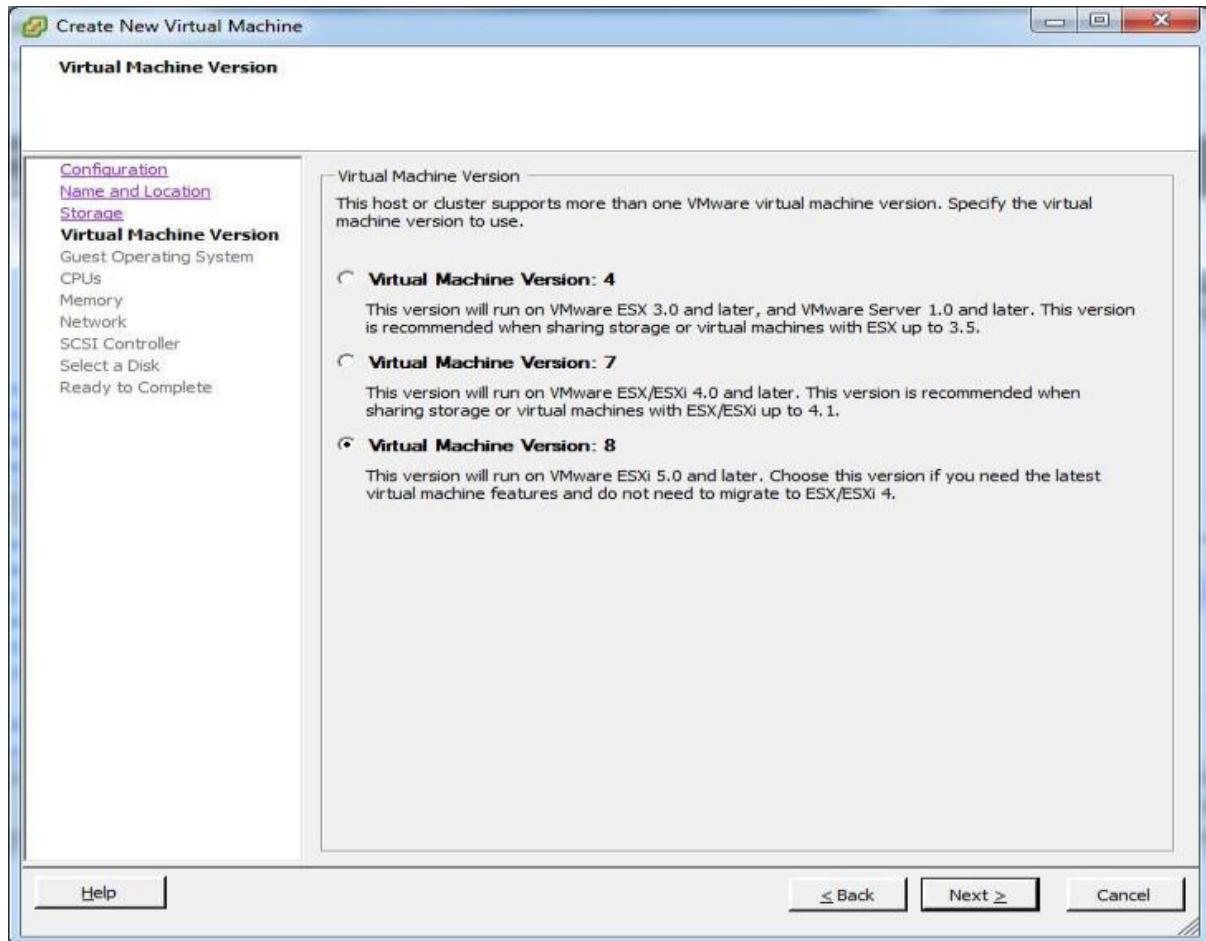
Name : Opennebula-sandbox and click on next.



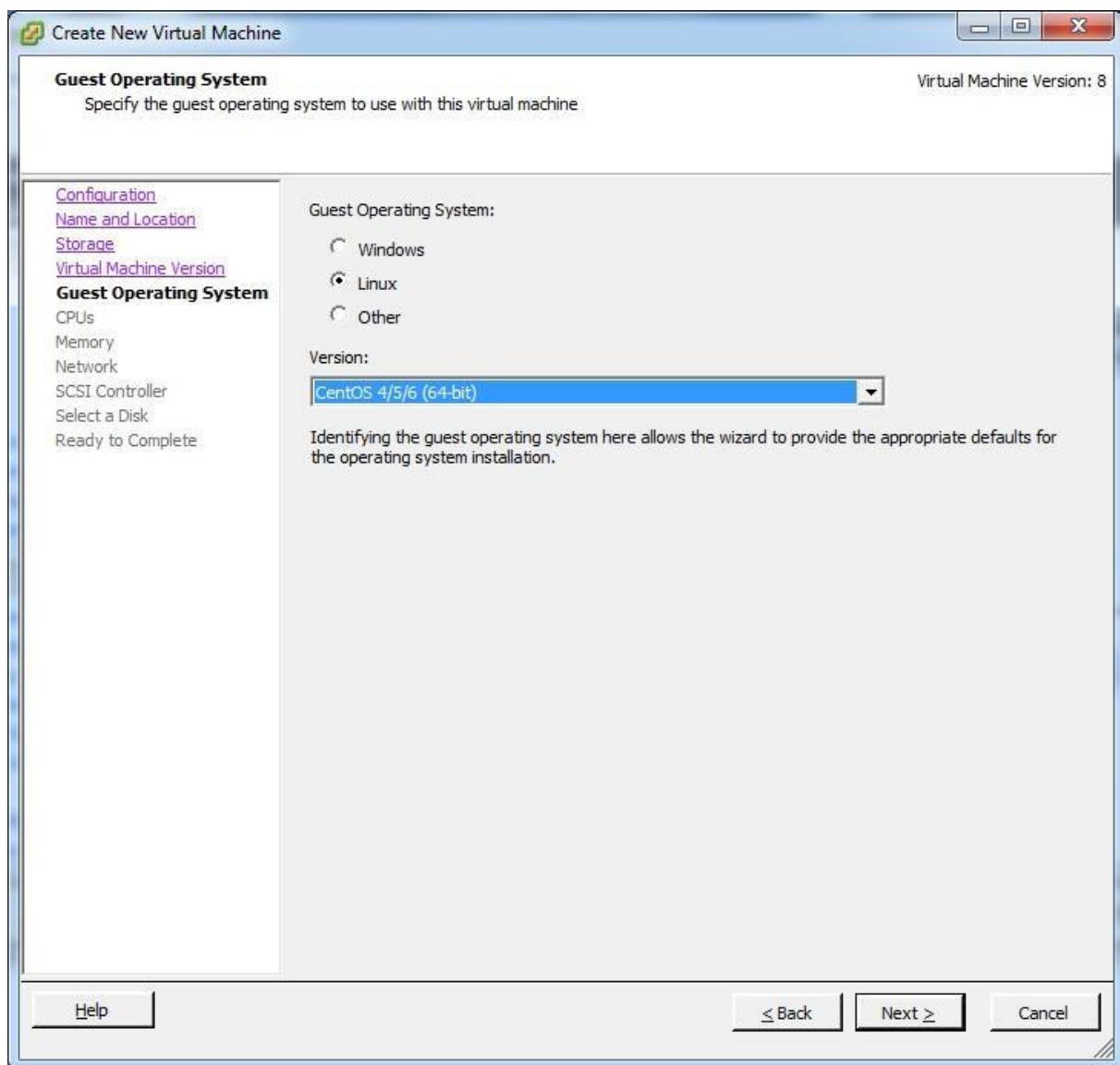
Select the same data store as in the screen and click on next.



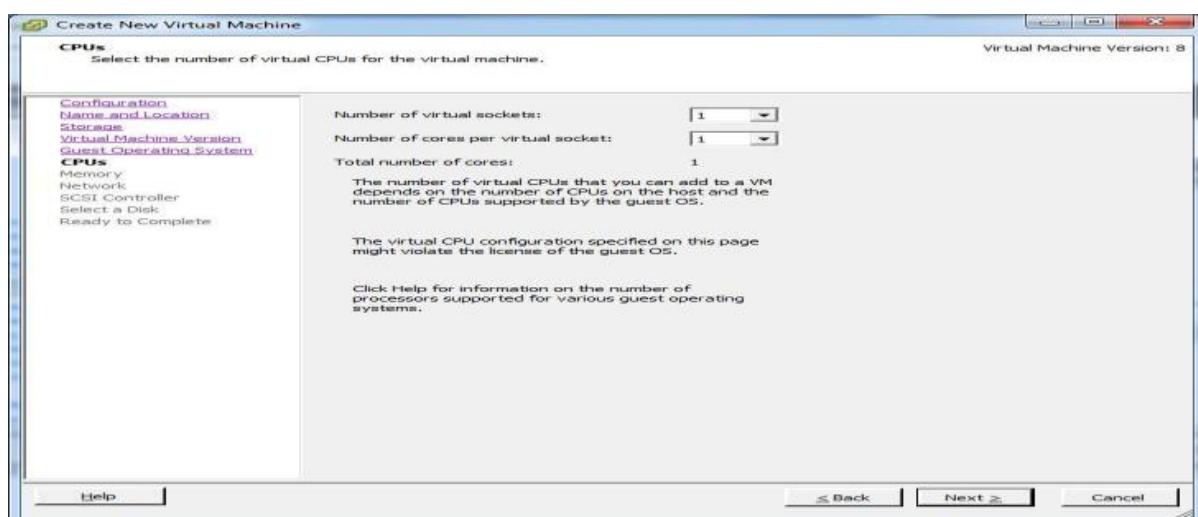
Select virtual machine version 8 and click on next.



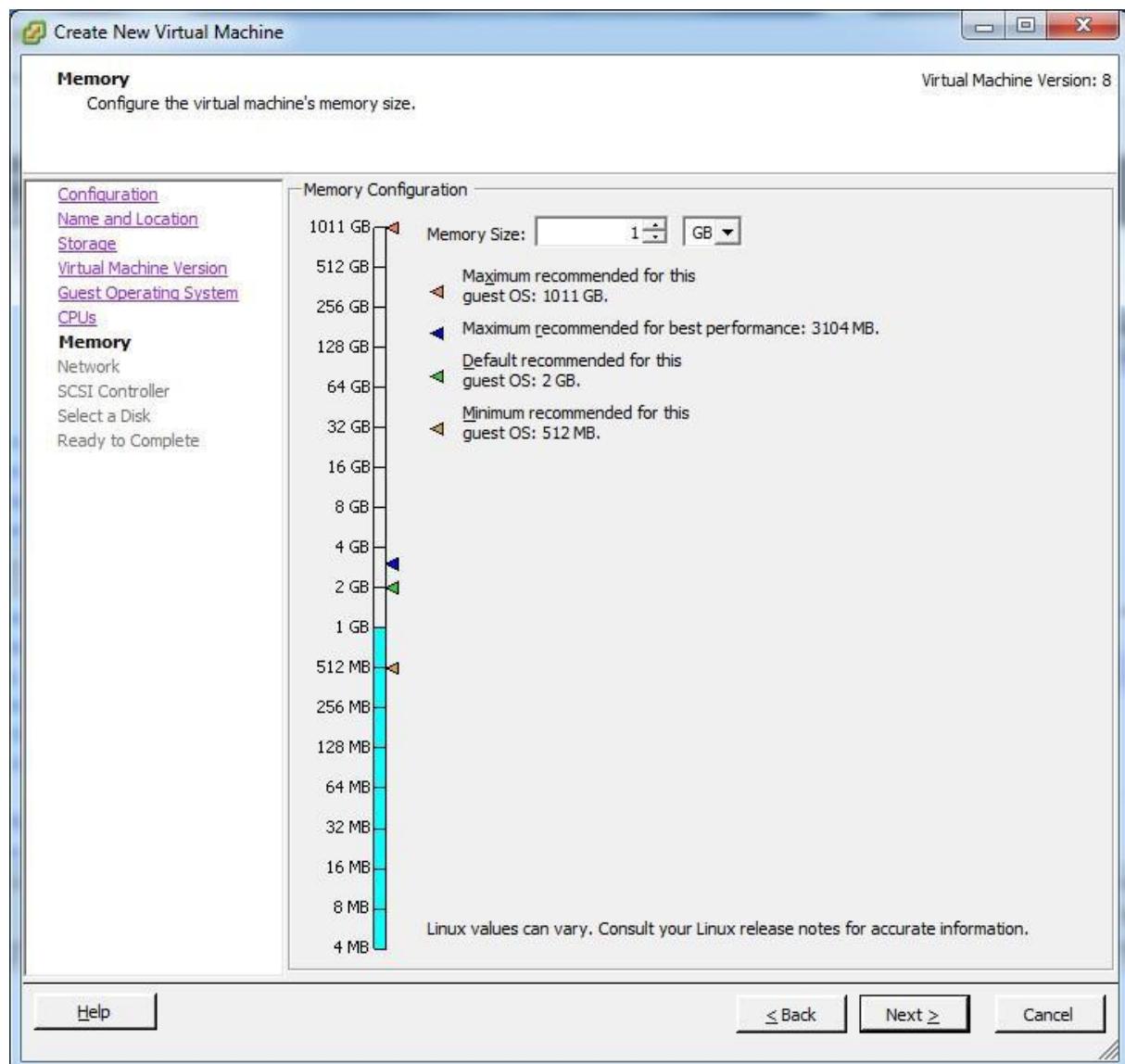
Select linux option-->and then select CentOS 4/5/6(64-bit) and click on next.



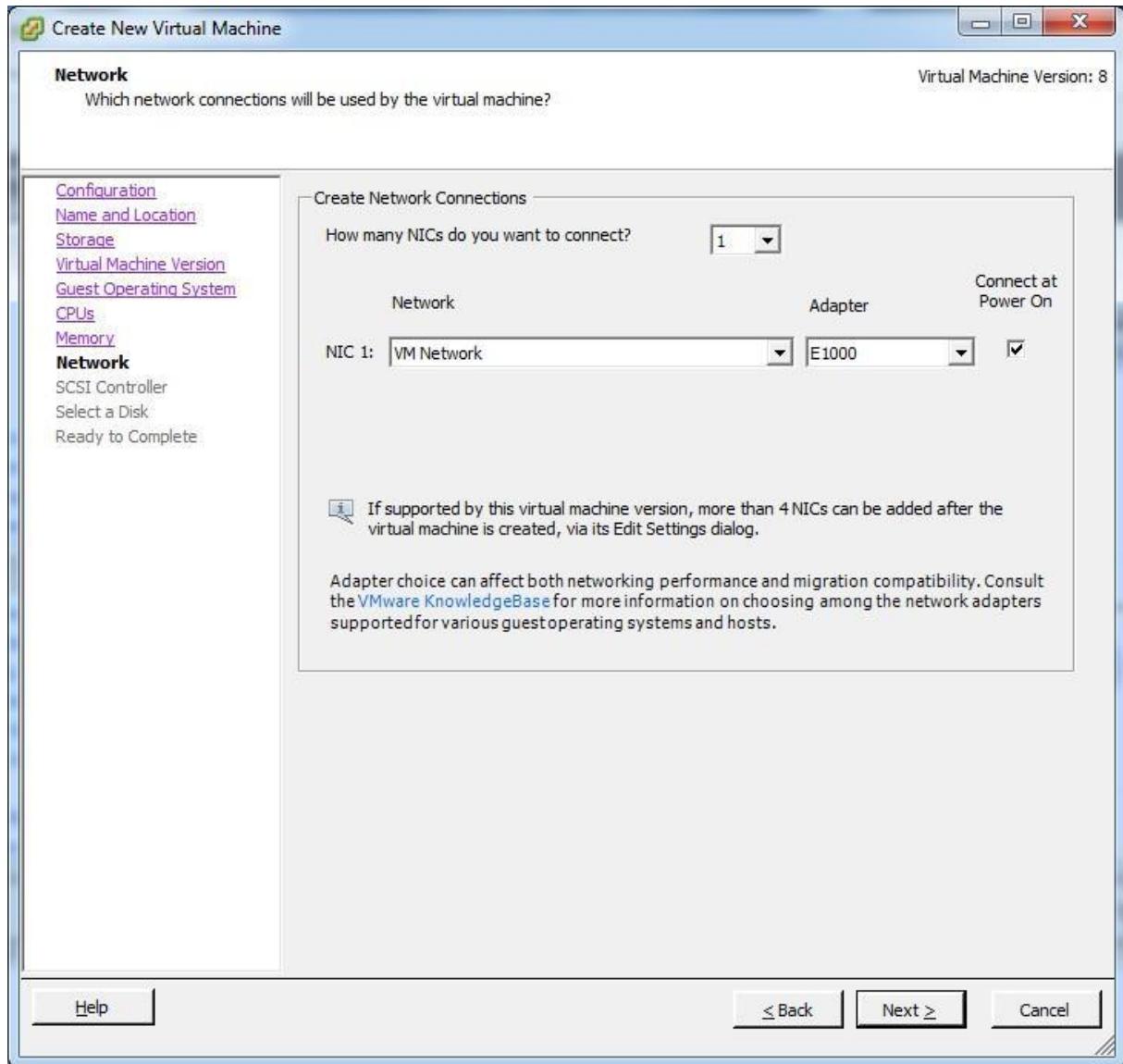
CPUs: Accept the defaults and click next.



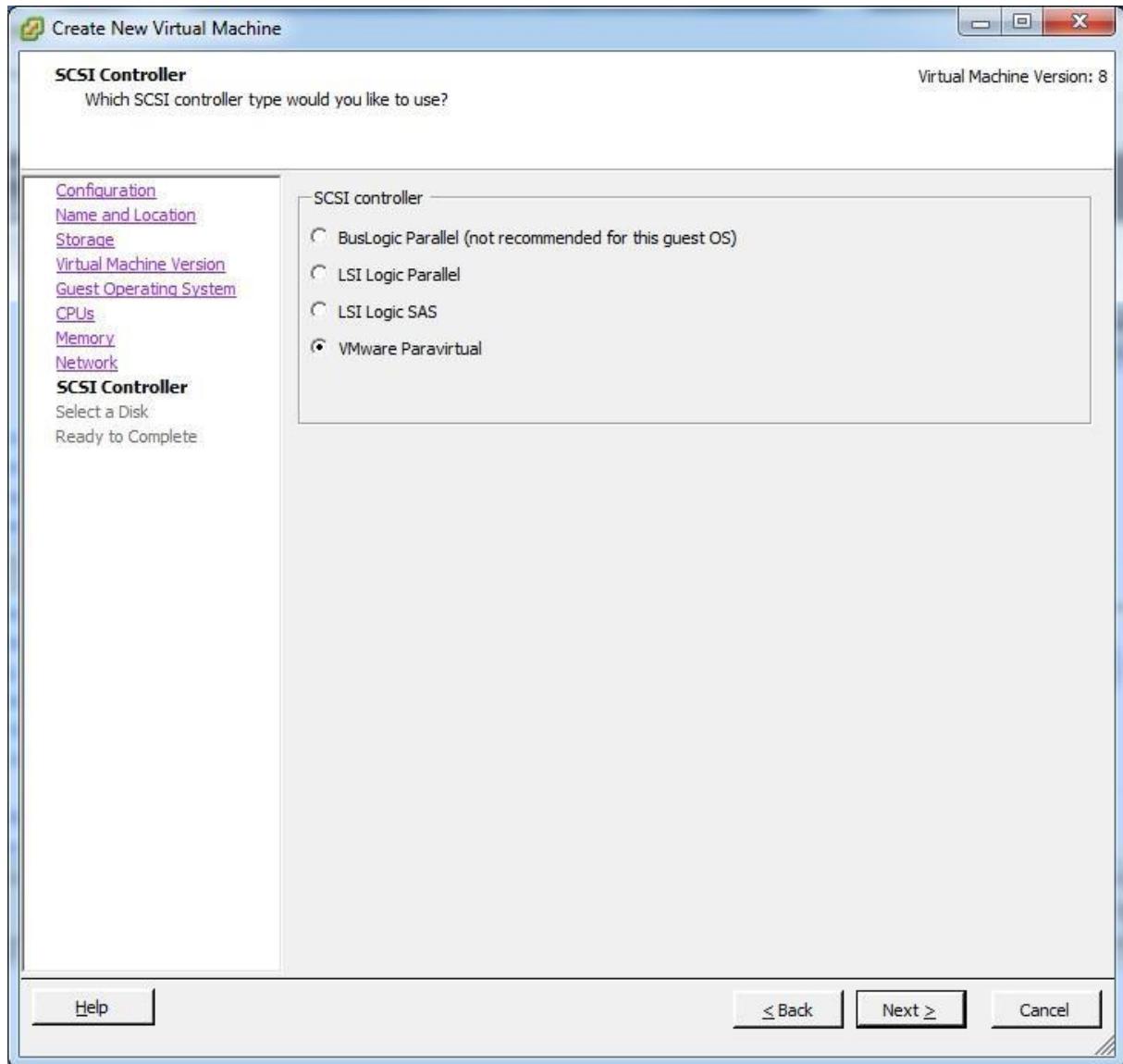
Select memory as 1 GB and click next



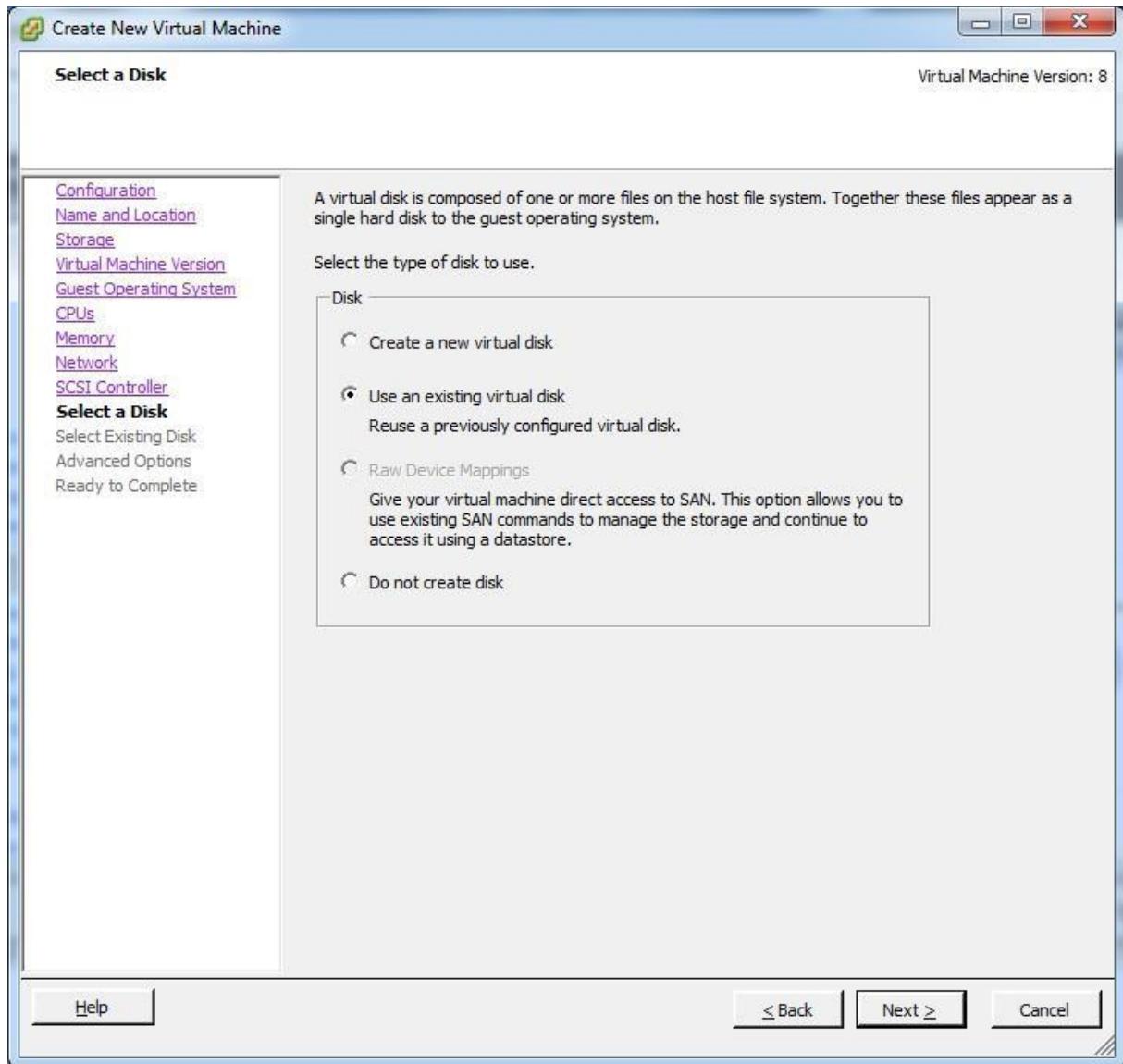
Select it as default and click next



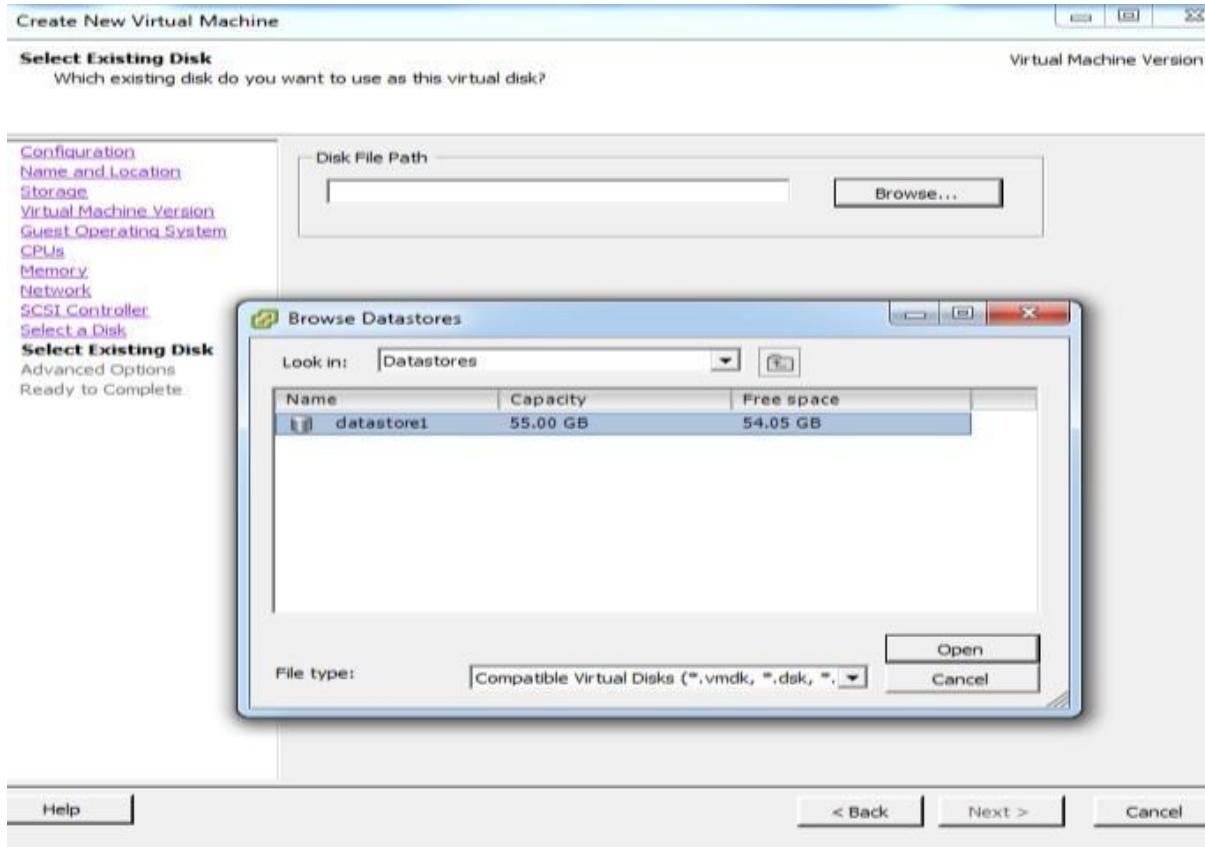
In the SCSI controller select as VMware Paravirtual and click next.



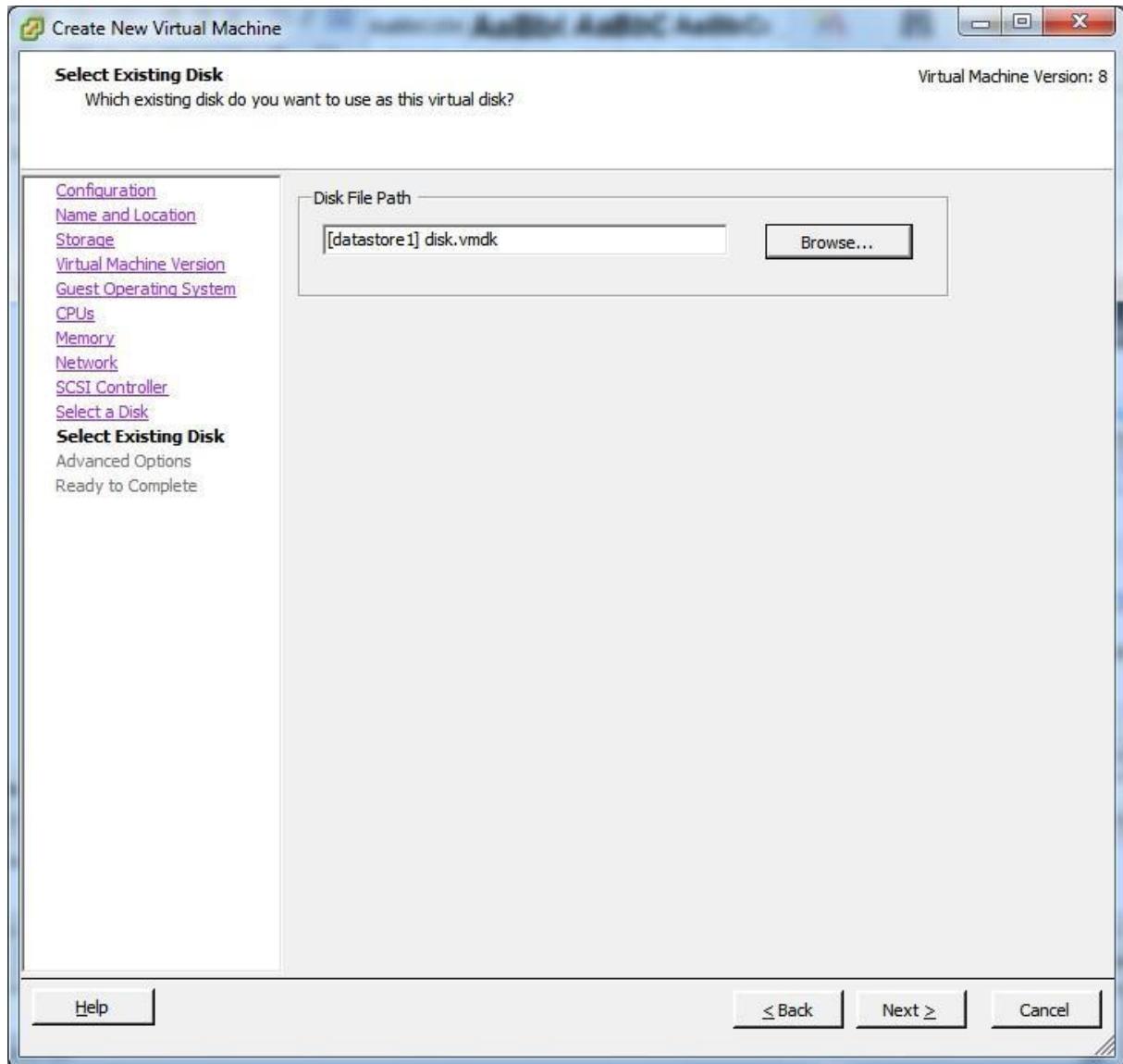
Select disk --> use an existing virtual disk and click next.

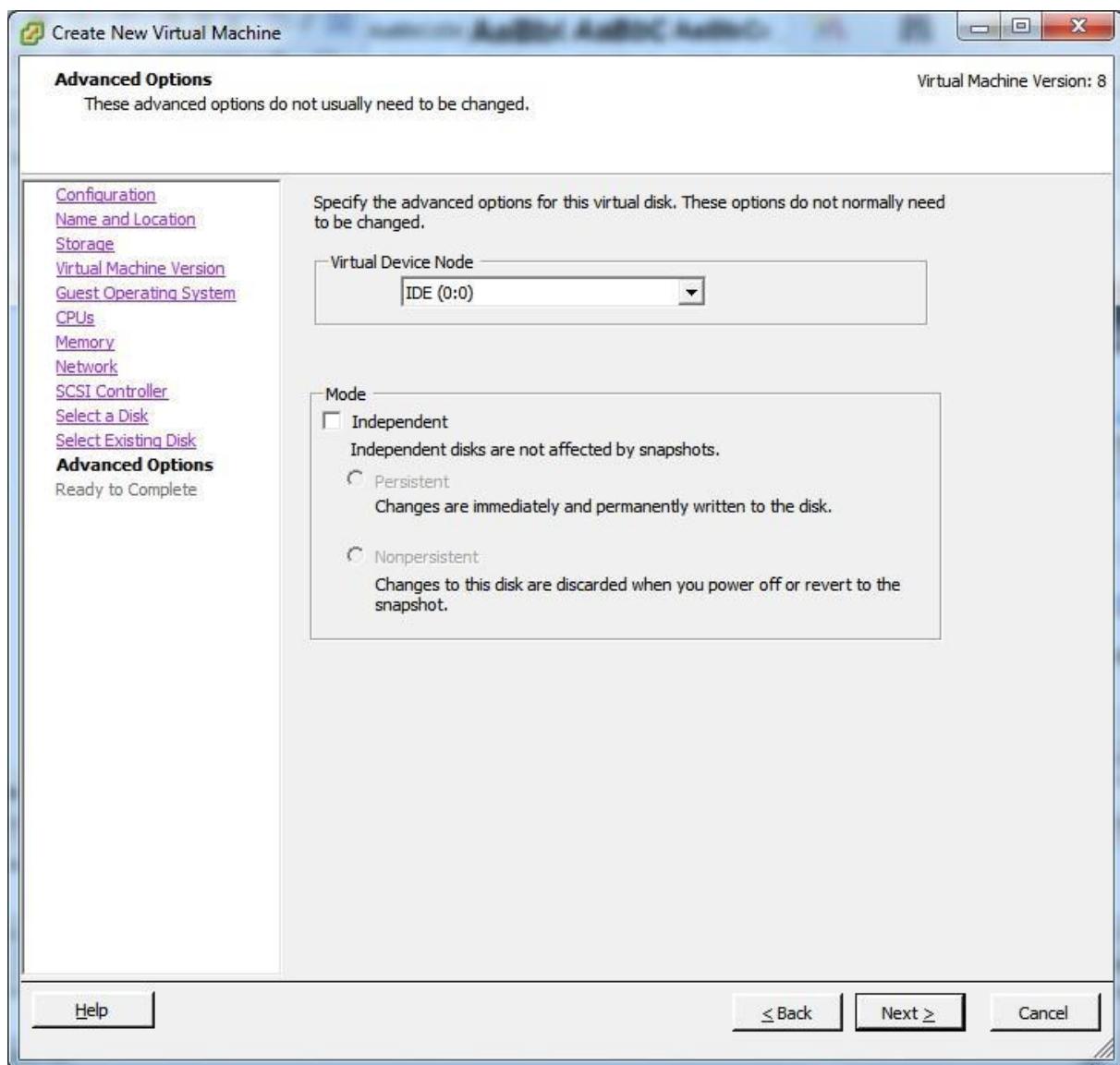


Click on browse and select data store1

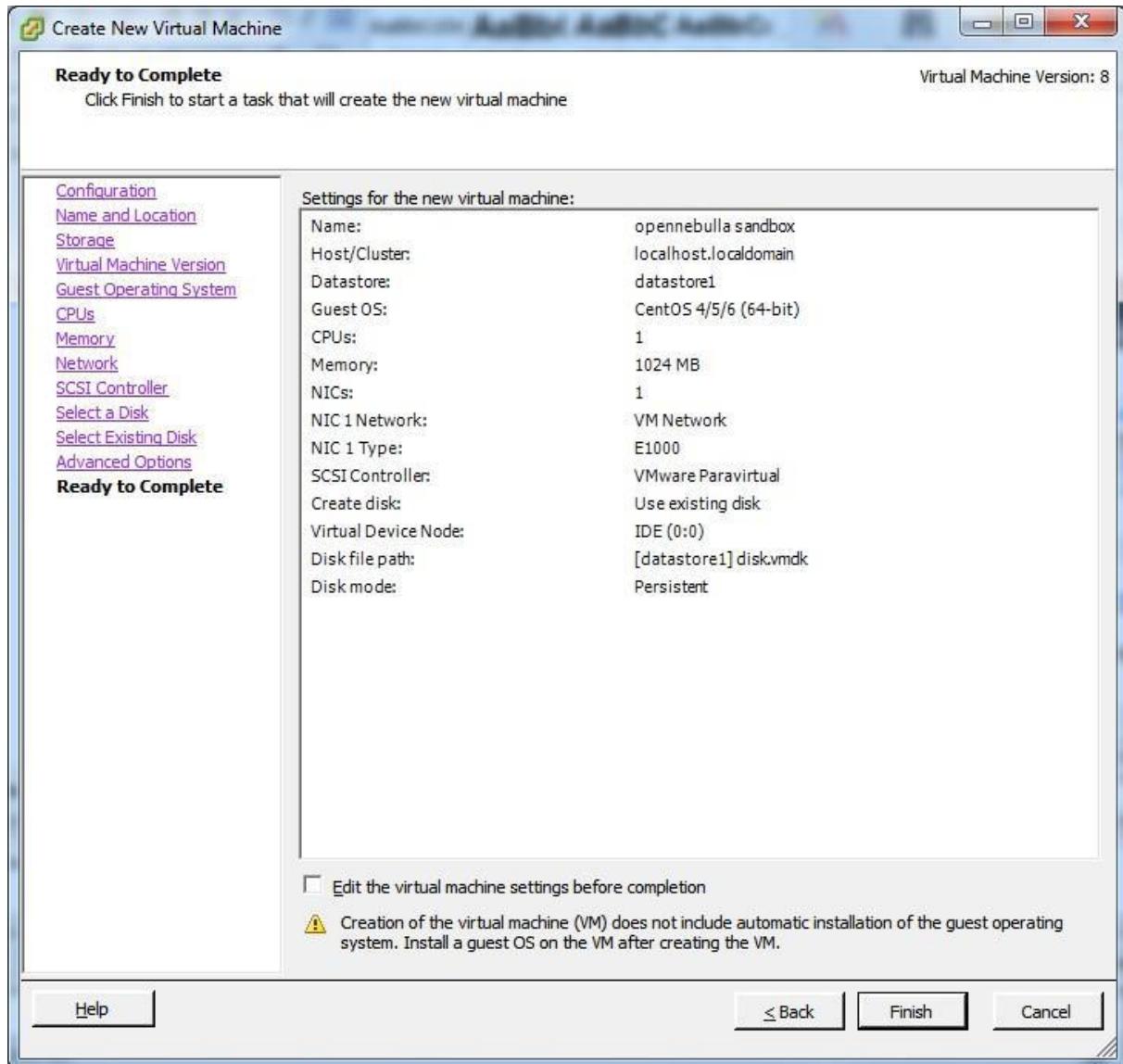


Double click on datastore1 --
You will get disk.vmdk file & click on OK

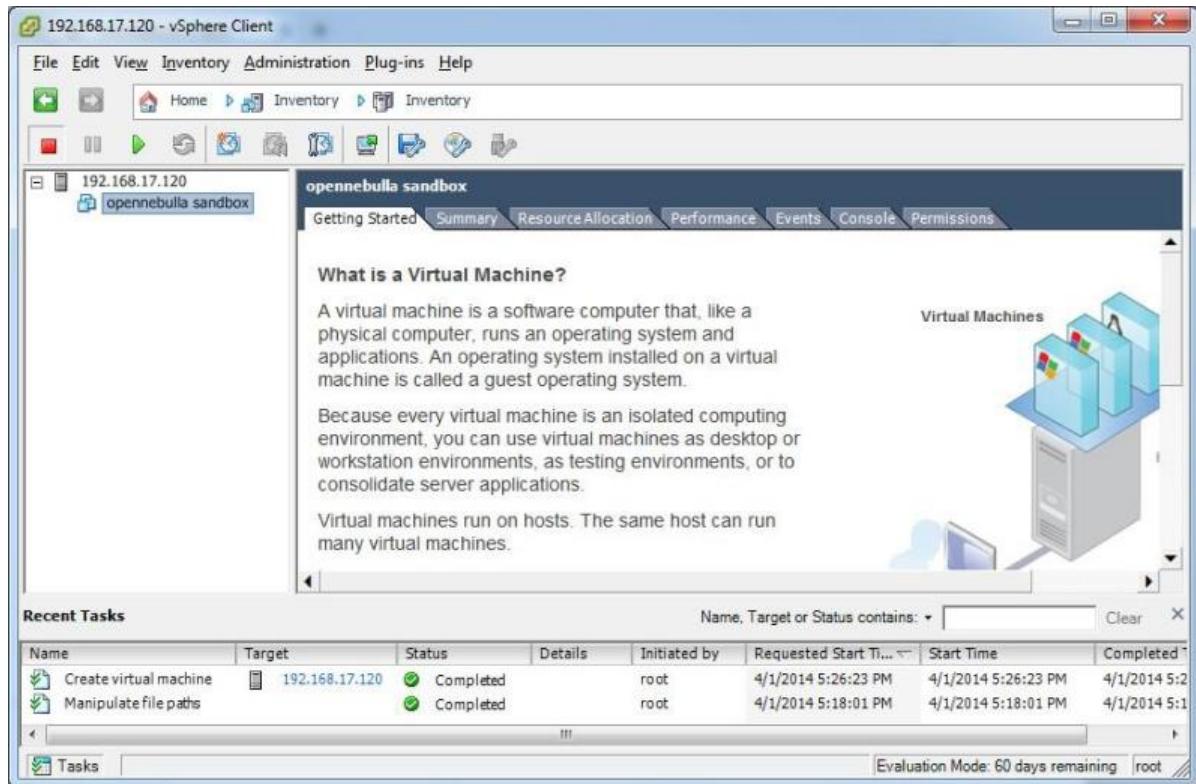




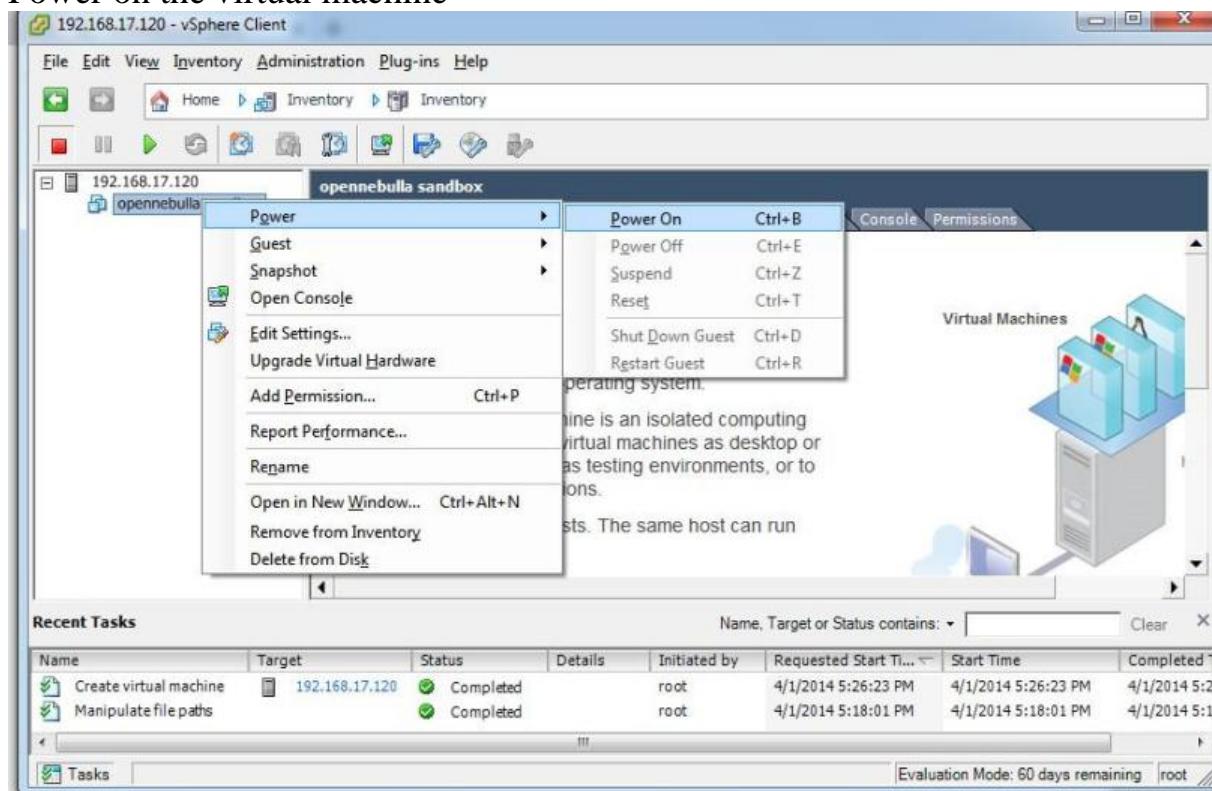
Click on next



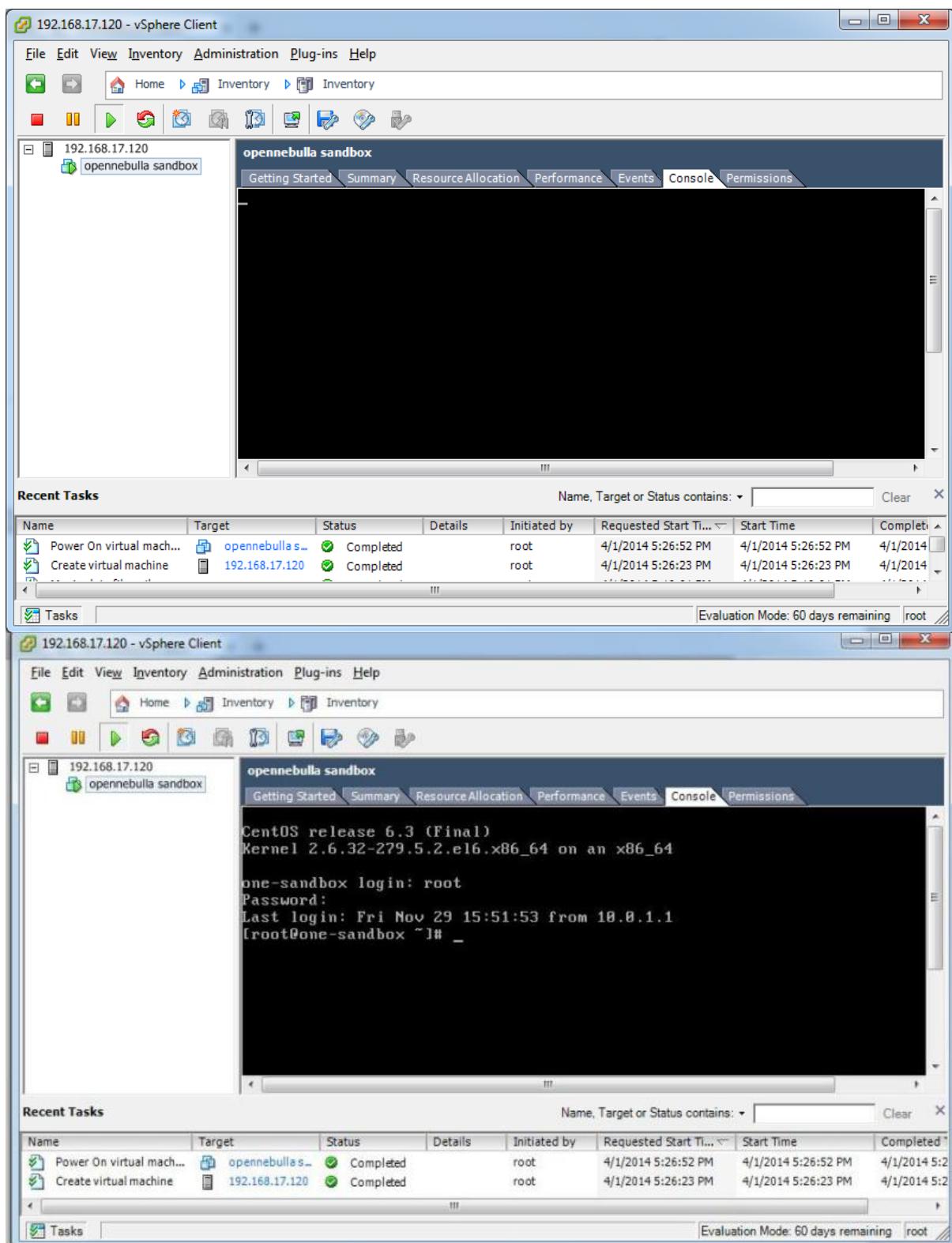
Click on finish



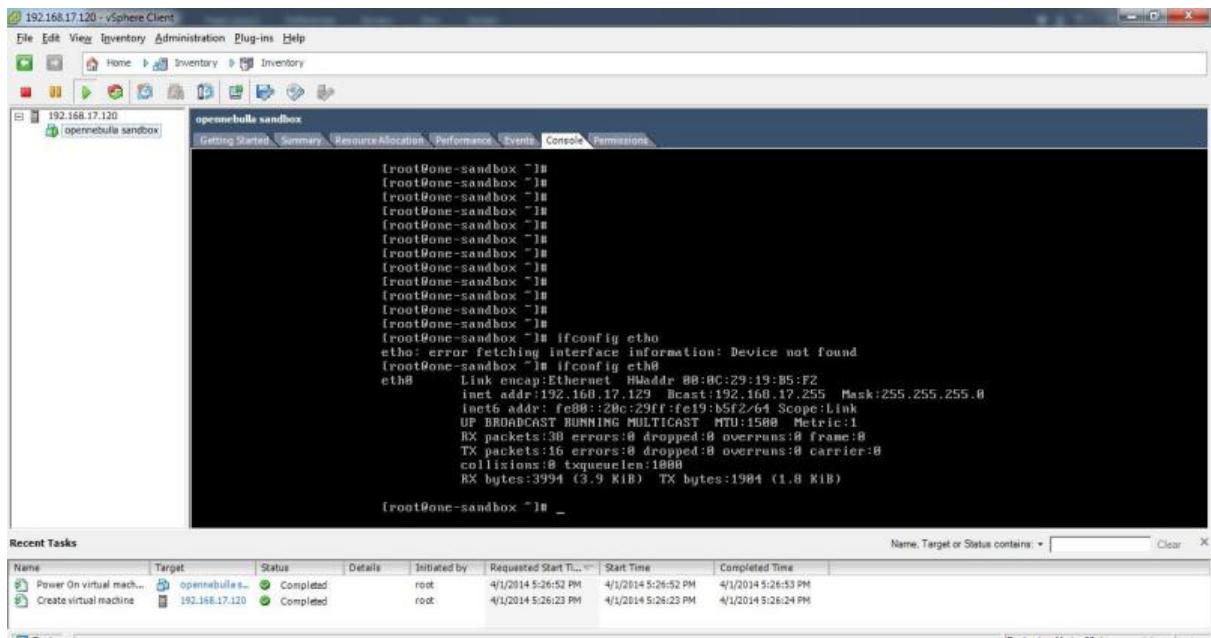
Power on the virtual machine



Click on console tab

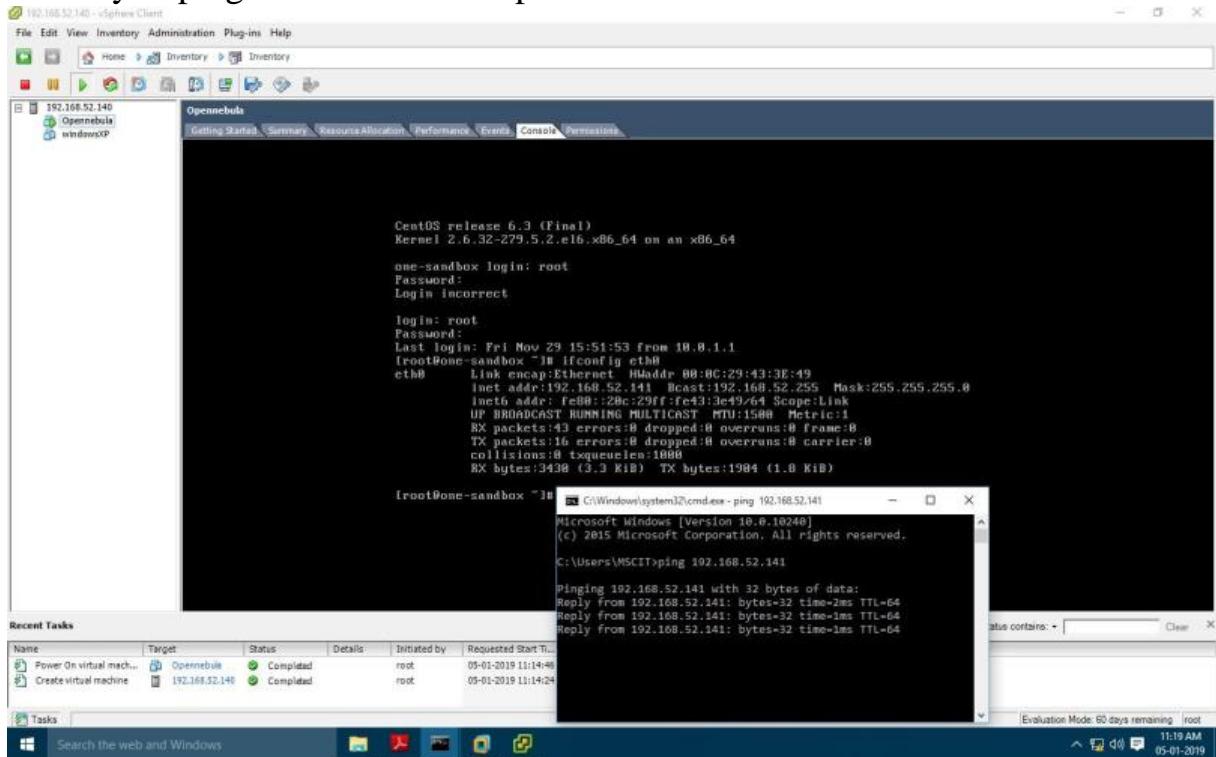


Type ifconfig eth0 command to check ip address of linux centos machine

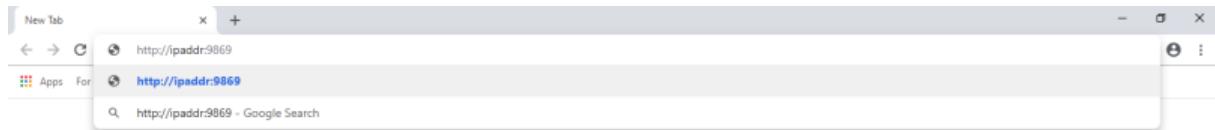


Since ip address of openebulla is 192.168.17.129

Now try to ping 192.168.17.129 openebulla on host OS



Go to Browser copy the http path and paste it.



Search Google or type URL.

A screenshot of a Windows desktop environment. At the top, there is a taskbar with icons for File Explorer, Task View, Task Manager, and a Start button. Below the taskbar, a browser window is open to the URL "Not secure | 192.168.52.141:9869". The main content of the browser is the "OpenNebula Sunstone" login page, which features a large input field for "Username" and a smaller one for "Password", along with a "Login" button and a "Keep me logged in" checkbox. The status bar at the bottom of the screen displays "OpenNebula 4.4.0 by C12G Labs" and the date "05-01-2019".

type username : oneadmin
password : Opennebula

The screenshot shows a browser window titled "OpenNebula Sunstone Login" with the URL "192.168.52.141:9869". The page displays the OpenNebula Sunstone logo. A login form is present with fields for "Username" (set to "oneadmin") and "Password" (set to "*****"). Below the form is a checkbox for "Keep me logged in" and a "Login" button. A red error message at the bottom states "Invalid username or password".

The screenshot shows a browser window titled "OpenNebula Sunstone: Cloud O..." with the URL "192.168.52.141:9869". The page displays the OpenNebula Sunstone logo and a navigation sidebar on the left with options like Dashboard, System, Virtual Resources, Infrastructure (Clusters, Hosts, Datastores, Virtual Networks), Marketplace, and OneFlow. The main content area is titled "Datastores" and shows a table of existing datastores. The table has columns for ID, Owner, Group, Name, Capacity, Cluster, and Type. The data is as follows:

ID	Owner	Group	Name	Capacity	Cluster	Type
2	oneadmin	oneadmin	files	1.9GB / 9.8GB (19%)	-	file
1	oneadmin	oneadmin	default	1.9GB / 9.8GB (19%)	-	image
0	oneadmin	oneadmin	system	1.9GB / 9.8GB (19%)	-	system

A green "Create" button is visible above the table. The status bar at the bottom indicates the URL "192.168.52.141:9869" and the time "11:28 AM 05-01-2019".

The screenshot shows a browser window titled "OpenNebula Sunstone: Cloud O..." with the URL "192.168.52.141:9869". The page displays the OpenNebula Sunstone logo and a navigation sidebar on the left with options like Dashboard, System, Virtual Resources, Infrastructure (Clusters, Hosts, Datastores, Virtual Networks), Marketplace, and OneFlow. The main content area is titled "Datastores" and shows a table of existing datastores. The table has columns for ID, Owner, Group, Name, Capacity, Cluster, and Type. The data is as follows:

ID	Owner	Group	Name	Capacity	Cluster	Type
2	oneadmin	oneadmin	files	1.9GB / 9.8GB (19%)	-	file
1	oneadmin	oneadmin	default	1.9GB / 9.8GB (19%)	-	image
0	oneadmin	oneadmin	system	1.9GB / 9.8GB (19%)	-	system

A green "Create" button is visible above the table. The status bar at the bottom indicates the URL "192.168.52.141:9869" and the time "11:30 AM 05-01-2019".

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

OpenNebula Sunstone: Cloud 192.168.52.141:9869

oneadmin

Create Datastore

Wizard Advanced mode

Name: test-12

Presets: Filesystem Cluster: Default (none)

Type

Images System Files

Datastore: Filesystem Transfer: Shared

Disk type: File

Safe Directories:

Restricted Directories:

Base Path:

Limit:

Reset Close Create

DATASTORE is created

OpenNebula Sunstone: Cloud 192.168.52.141:9869

oneadmin

Datastores

Create

ID	Owner	Group	Name	Capacity	Cluster	Type
100	oneadmin	oneadmin	test-12	1.9GB / 9.8GB (19%)	-	image
2	oneadmin	oneadmin	files	1.9GB / 9.8GB (19%)	-	file
1	oneadmin	oneadmin	default	1.9GB / 9.8GB (19%)	-	image
0	oneadmin	oneadmin	system	1.9GB / 9.8GB (19%)	-	system

Showing 1 to 4 of 4 entries

Information Images

Datastore - test-12

ID	100
Name	test-12
Cluster	-
Base path	/var/lib/one//datastores/100
Capacity	
Total	9.8GB
Used	1MB
Free	8GB
Limit	-

Permissions:

Owner	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Group	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Ownership:

Owner	oneadmin
Group	oneadmin

Configuration Attributes

now we will create "Virtual Network"

OpenNebula Sunstone: Cloud 192.168.52.141:9869/#vnet_wizard

Virtual Networks

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

Showing 1 to 2 of 2 entries

Information Lease management

Virtual Network - local_test12

ID	1
Name	local_test12
Cluster	-
Bridge	br0
VLAN	no
Physical device	--
VLAN ID	--

Permissions:

Owner	Use	Manage	Admin
Group	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Ownership

Owner	oneadmin
Group	oneadmin

Configuration Attributes

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"

Create Virtual Network

Wizard Advanced mode

Name: local_test12

Type

IPV4 IPV6

N. Address: N. Mask:
DNS: Gateway:

IP: 192.168.1.105

MAC:

Fixed network Ranged network

192.168.1.100
192.168.1.101
192.168.1.102
192.168.1.103
192.168.1.104
192.168.1.105

Reset Close Create

Virtual Networks

3 TOTAL 1 USED IPs

Create Virtual Network

IP: 192.168.1.105

MAC:

Add Remove selected

Network model: Default

Bridge: br0

Custom attributes

Name:

Value:

Add Remove selected

Reset Close Create

OpenNebula 4.4.0 by C12G Labs.

OpenNebula Sunstone Cloud 3:36 PM 5/3/2014

Virtual Networks

1 TOTAL 0 USED IPs

Create Delete More Search

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

Showing 1 to 2 of 2 entries

Information Lease management

Virtual Network - local_test12

ID	1
Name	local_test12
Cluster	-
Bridge	br0
VLAN	no
Physical device	--
VLAN ID	--

Permissions:

Owner	Use	Manage	Admin
Group	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Ownership

Owner	Group
oneadmin	oneadmin

Configuration Attributes

Search the web and Windows 11:42 AM 05-01-2019

create new user
name :root
password : opnenebula

OpenNebula Sunstone: Cloud 192.168.52.141:9869/#vnet_leases_tab

Create User

ID	Name	Group	Auth driver	VMs	Memory	CPU
1	serveradmin	oneadmin	server_cipher	0 / -	0KB / -	0 / -
0	oneadmin	oneadmin	core	-	-	-

2 TOTAL

onadmin

Search

Close Create

OpenNebula Sunstone: Cloud 192.168.52.141:9869/#vnet_leases_tab

Users

ID	Name	Group	Auth driver	VMs	Memory	CPU
2	root	users	core	-	-	-
1	serveradmin	oneadmin	server_cipher	0 / -	0KB / -	0 / -
0	oneadmin	oneadmin	core	-	-	-

2 TOTAL

onadmin

Search

Delete More

Showing 1 to 3 of 3 entries

10 ▾

OpenNebula 4.4.0 by C12G Labs.

Search the web and Windows

11:45 AM 05-01-2019

now login again as
username : root
password : Opennebula

The screenshot shows a web browser window titled "OpenNebula Sunstone Login". The address bar indicates the URL is 192.168.52.141:9869/login and the connection is not secure. The main content area displays the "OpenNebula Sunstone" logo and a login form. The login form contains fields for "Username" (root) and "Password" (redacted), a "Keep me logged in" checkbox, and a "Login" button.

The screenshot shows a web browser window titled "OpenNebula Sunstone: Cloud". The address bar indicates the URL is 192.168.52.141:9869. The main content area displays the "Dashboard" page. On the left is a sidebar with navigation links: Dashboard, Virtual Resources, Infrastructure, Marketplace, and OneFlow. The dashboard itself shows network and storage statistics: 1 VNets, 0 USED IPs; 1 IMAGES, 40MB USED. Below these are two line graphs: "NET DOWNLOAD SPEED" and "NET UPLOAD SPEED", both showing values from 0B/s to 1B/s over time from 05:29 to 05:30. A red error message box at the bottom right states "Error: Cannot connect to OpenNebula Marketplace".

click on "Virtual Resources"
and images

OpenNebula Sunstone: Cloud 192.168.52.141:9869

Not secure 192.168.52.141:9869

OpenNebula Sunstone

Dashboard Virtual Resources Virtual Machines Templates Images Files & Kernels Infrastructure Marketplace OneFlow

Images

1 TOTAL 40MB USED

Create Delete Clone More Search

ID	Owner	Group	Name	Datastore	Type	Status	#VMS
0	oneadmin	oneadmin	ttylinux	default	OS	READY	0

Showing 1 to 1 of 1 entries

Error Cannot connect to OpenNebula Marketplace

192.168.52.141:9869

Search the web and Windows Not secure 192.168.52.141:9869

OpenNebula Sunstone: Cloud 192.168.52.141:9869

Not secure 192.168.52.141:9869

OpenNebula Sunstone

Dashboard Virtual Resources Virtual Machines Templates Images Files & Kernels Infrastructure Marketplace OneFlow

Images

Create Image

Wizard Advanced mode

Name: winXP Type: CDROM Datastore: default (id 1) Persistent:

Description:

Image location:

Provide a path Upload Empty datablock

Choose File No file chosen

Advanced options

Reset Close Create

Error Cannot connect to OpenNebula Marketplace

now register blank img

OpenNebula Sunstone

Images

ID	Owner	Group	Name	Datastore	Type	Status	#VMS
1	root	users	winXP	default	CDROM	READY	0
0	oneadmin	oneadmin	ttylinux	default	OS	READY	0

Error
Cannot connect to OpenNebula Marketplace

click on template

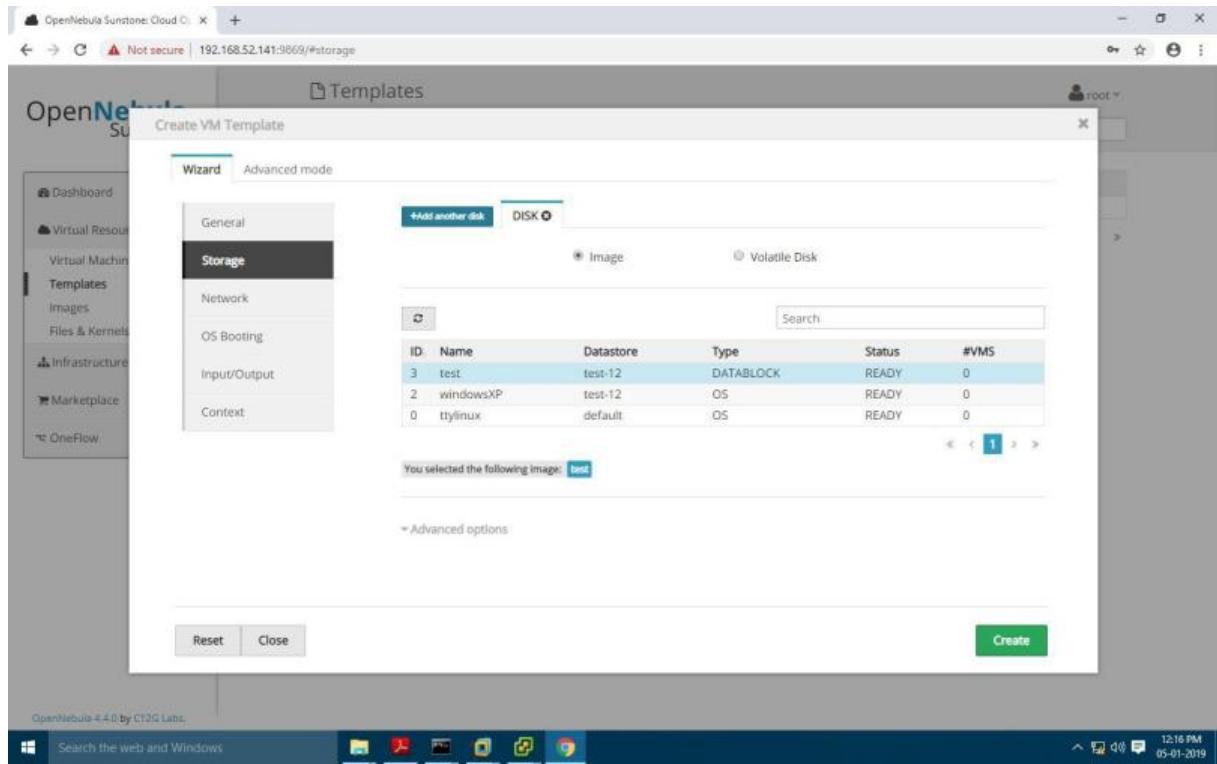
OpenNebula Sunstone

Templates

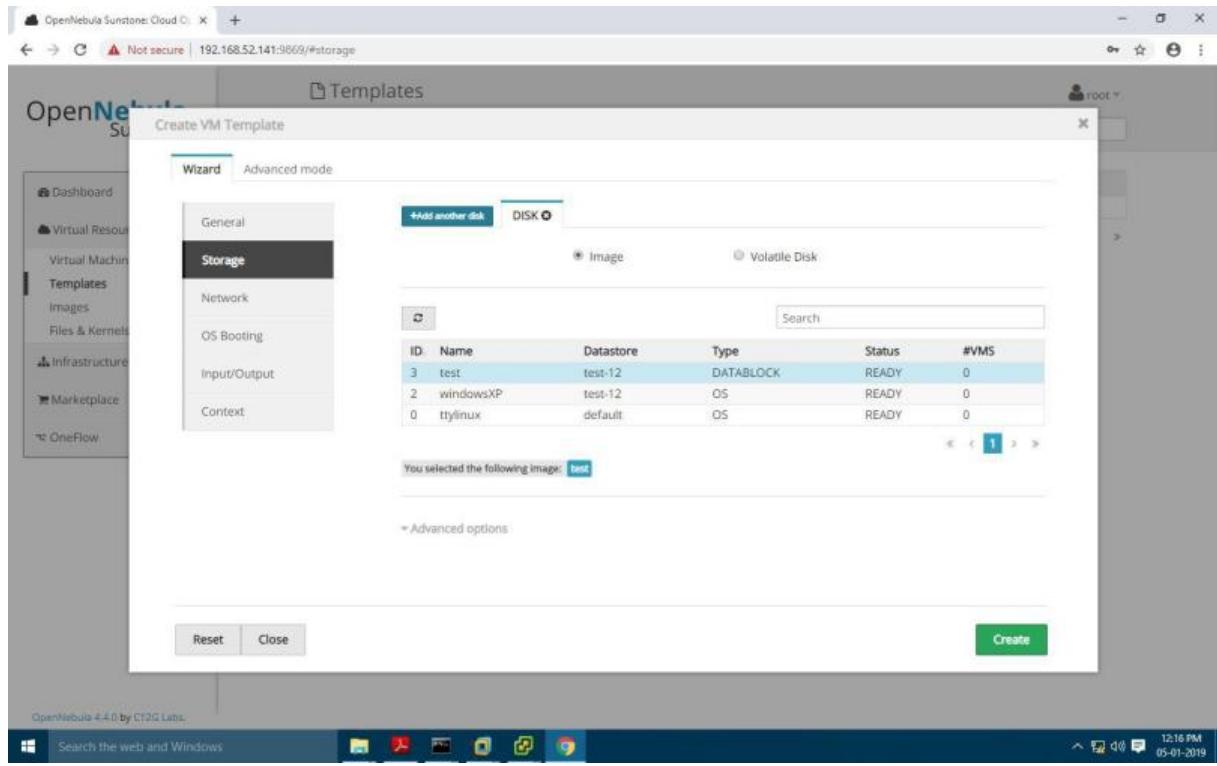
ID	Owner	Group	Name	Registration time
0	oneadmin	oneadmin	ttylinux	03:16:57 21/11/2012

Error
Cannot connect to OpenNebula Marketplace

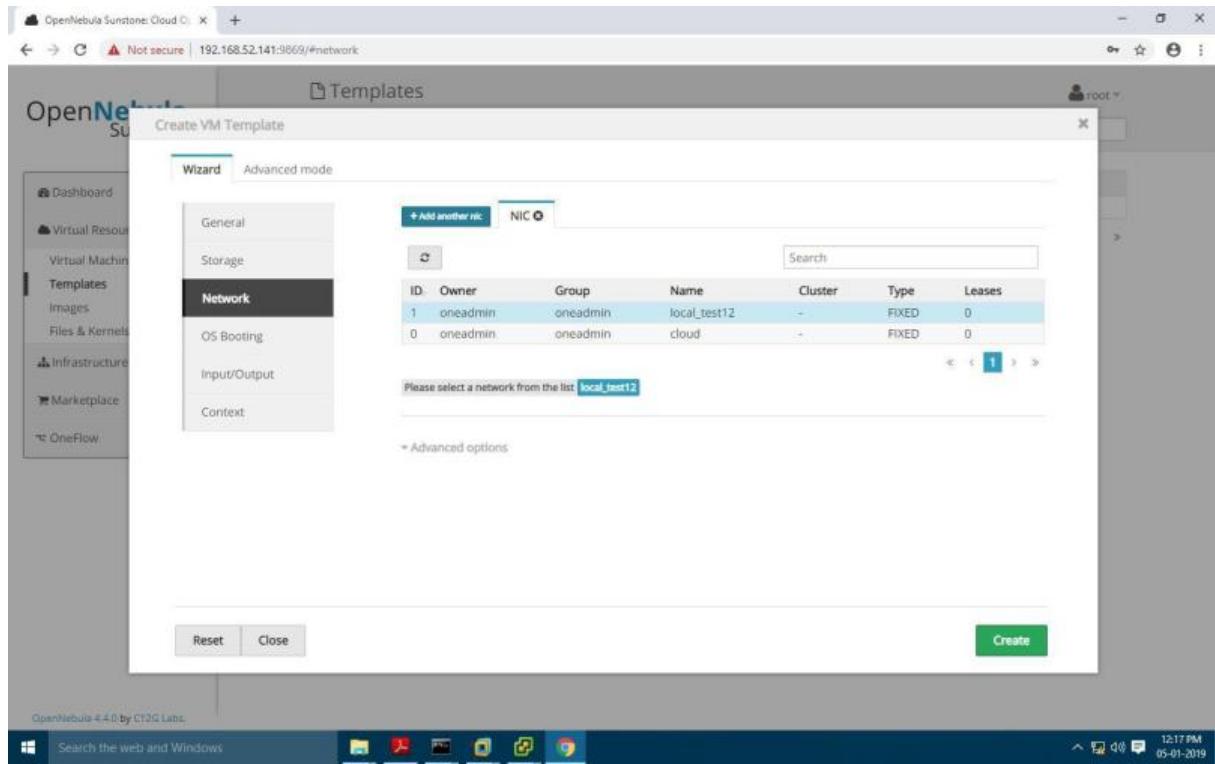
click on storage



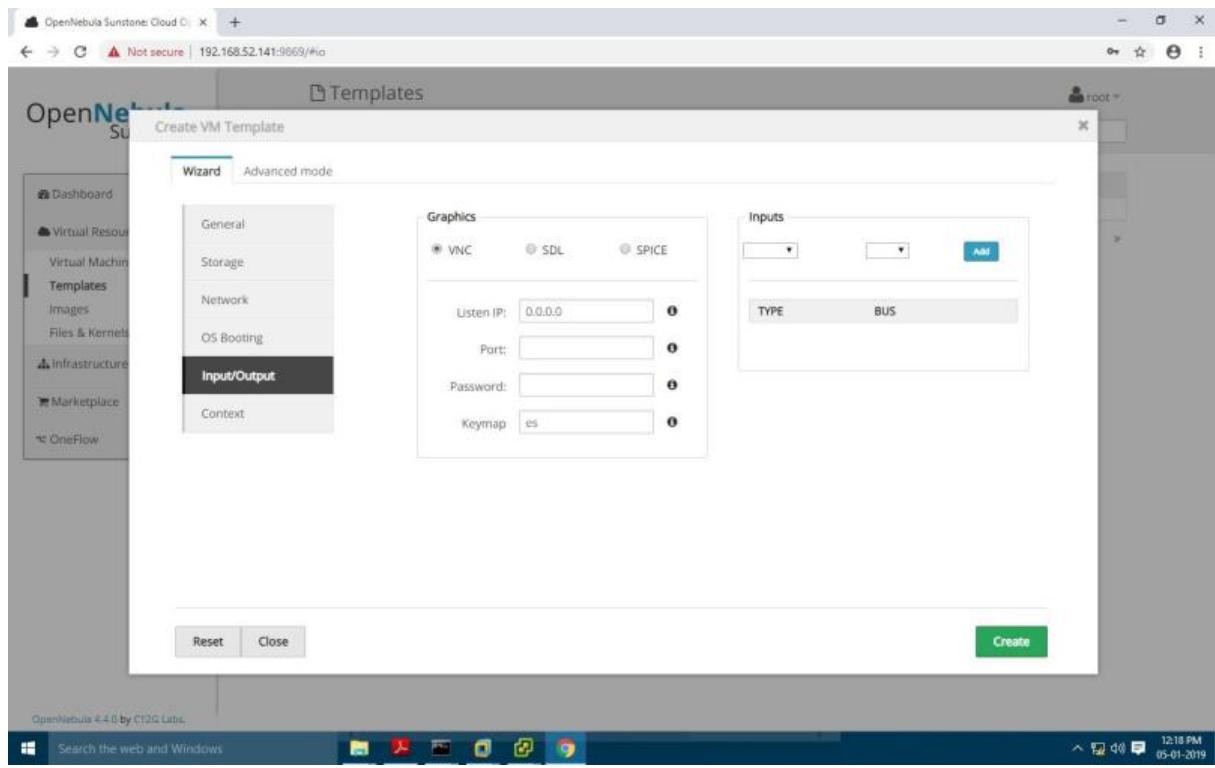
click on add another disk



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, Marketplace, and OneFlow. The main content area displays a table of templates. One template, 'new testbn' (ID: 2, Owner: root, Group: users), is selected and shown in a detailed view on the right. The detailed view includes fields for ID, Name, and Register time, and a permissions table for Owner, Group, and Other.

NOW click on INSTANTIATE

The screenshot shows the same OpenNebula Sunstone interface. A modal dialog box titled 'Instantiate VM Template' is open in the center. It contains fields for 'VM Name:' (set to 'XP test12') and '# VMs:' (set to '1'). Below these fields are 'Close' and 'Instantiate' buttons. The background shows the same template list and detailed view as the previous screenshot.

CLICK ON "VIRTUAL MACHINES"

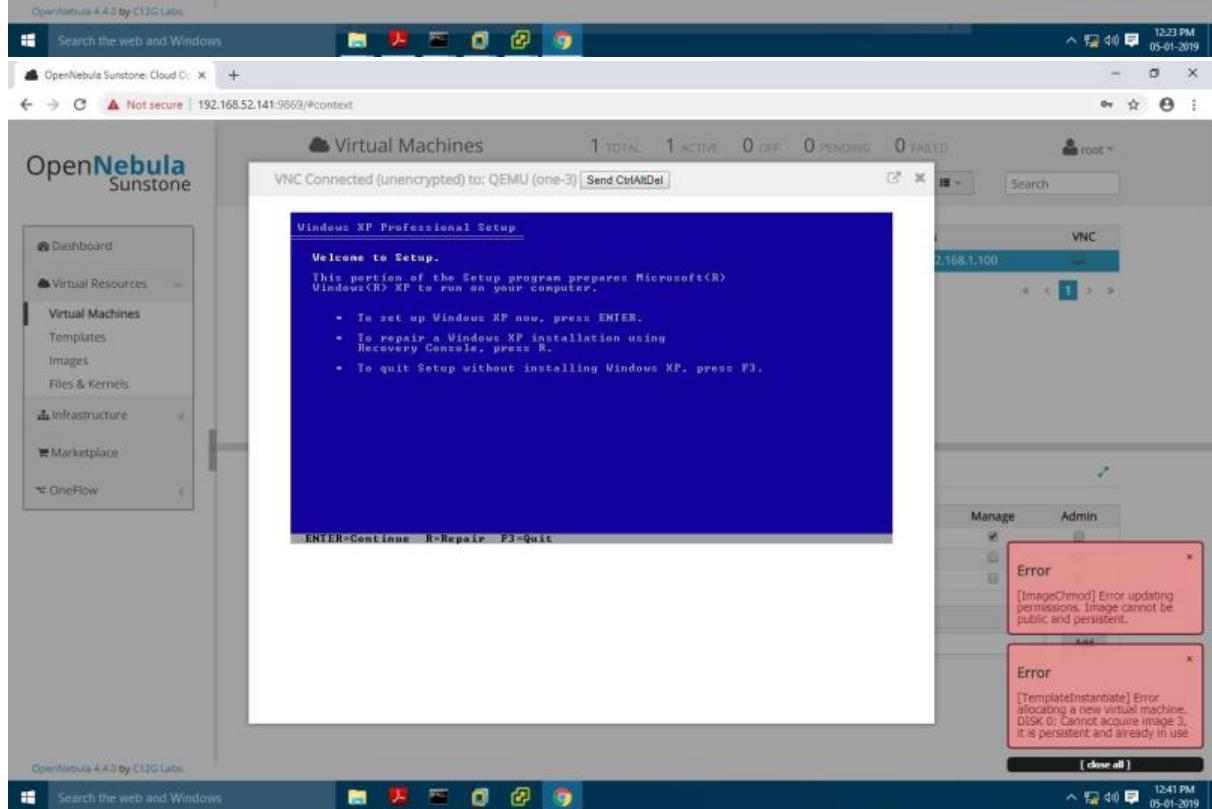
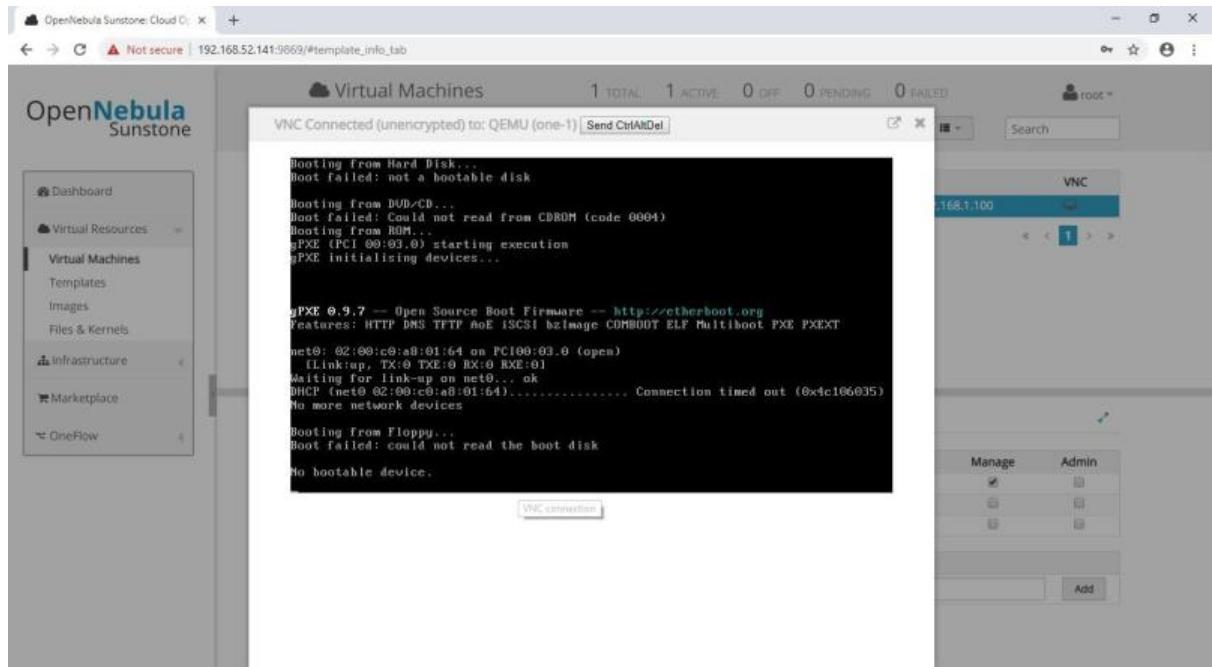
The screenshot shows the OpenNebula Sunstone web interface. On the left, a sidebar menu includes options like Dashboard, Virtual Resources (Virtual Machines, Templates, Images, Files & Kernels), Infrastructure, Marketplace, and OneFlow. The main content area displays a table titled "Virtual Machines" with one entry:

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

Below the table, it says "Showing 1 to 1 of 1 entries". At the top right of the main area, there are navigation icons and a user dropdown set to "root". A status bar at the bottom indicates "OpenNebula 4.4.0 by C12G Labs." and shows the date and time as "05-01-2019 12:20 PM".

CLICK ON REFRESH ICON

This screenshot is identical to the one above, showing the same virtual machine details and interface elements. It demonstrates that the refresh operation did not change the displayed information.



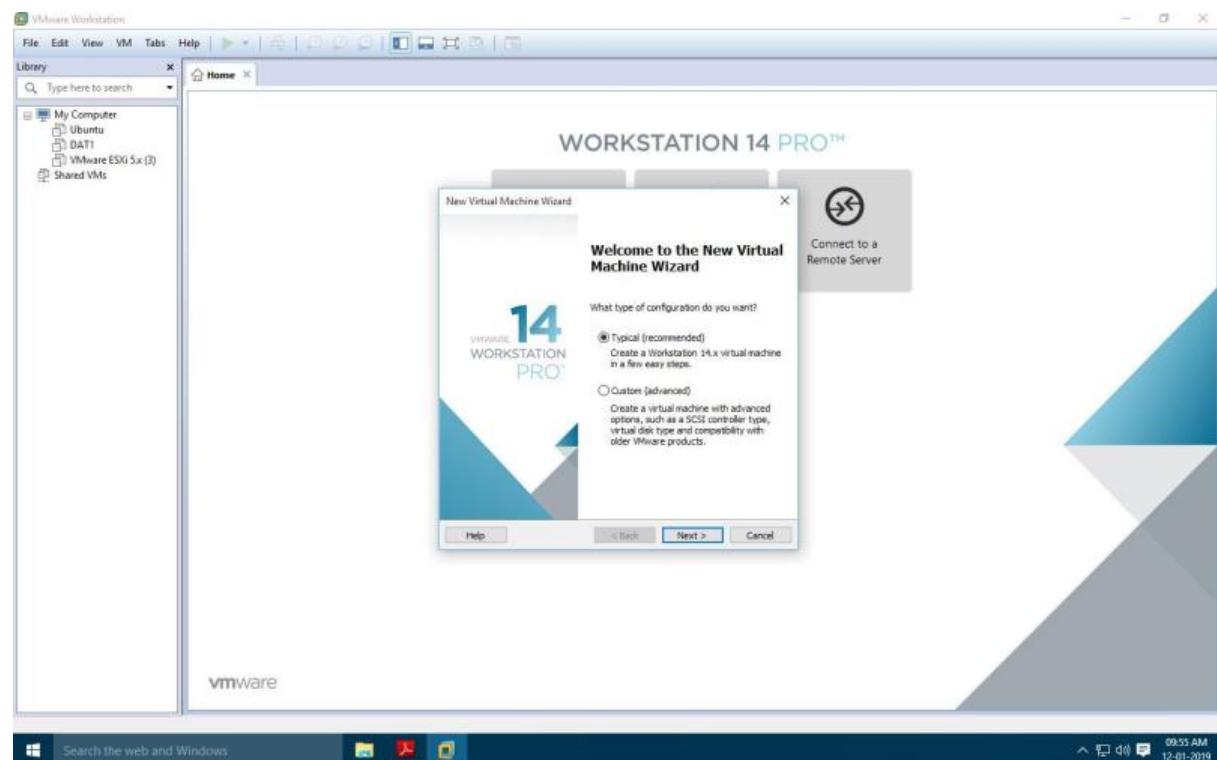
PRACTICAL: 8

IMPLEMENT IAAS USING EUCALYPTUS

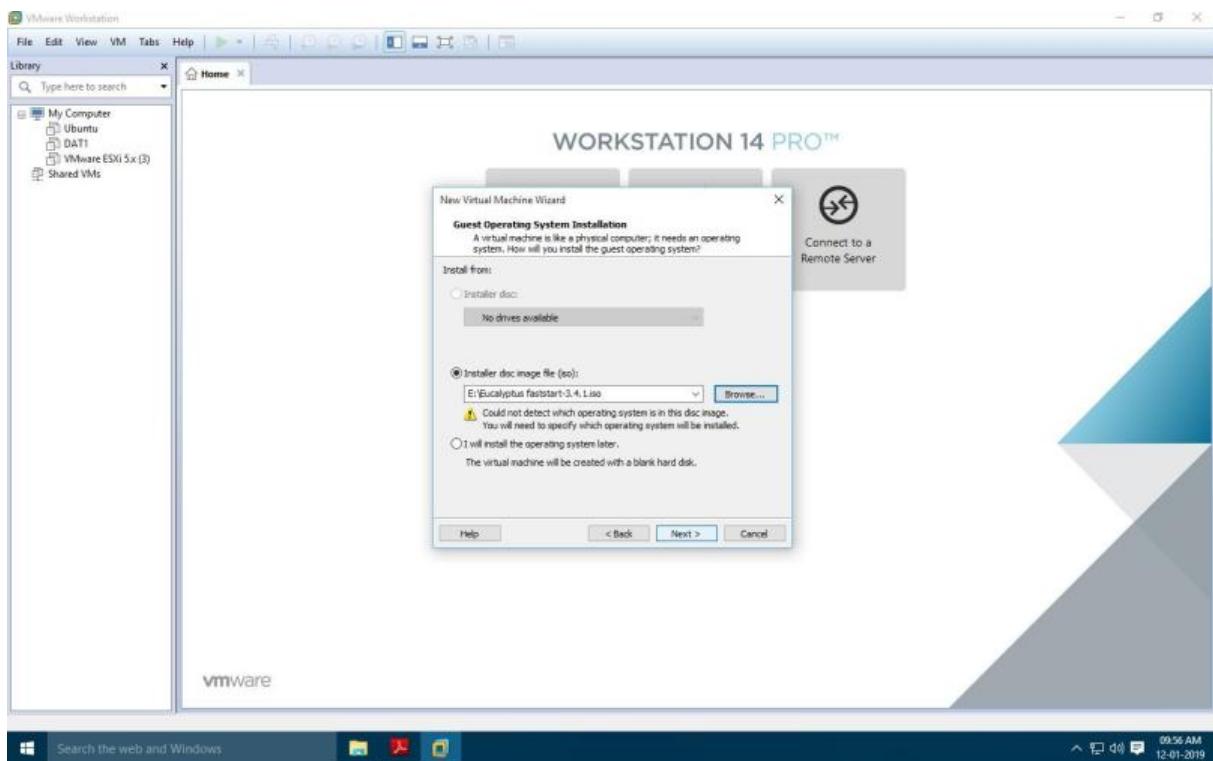
Steps:

Open Vmware Workstation 10 Go on →File →New Virtual machine .

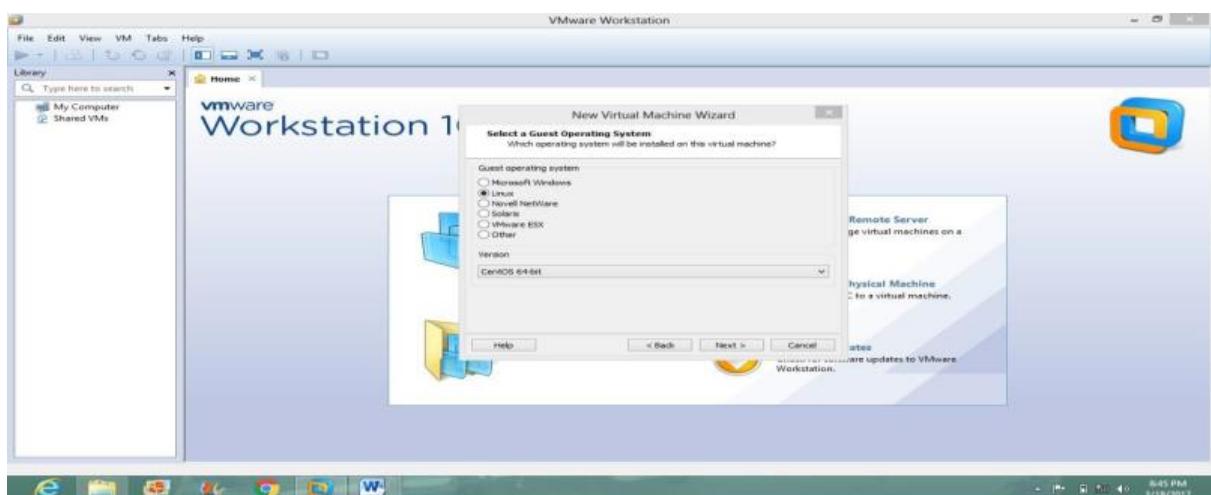
Select Type of Configuration “Typical”



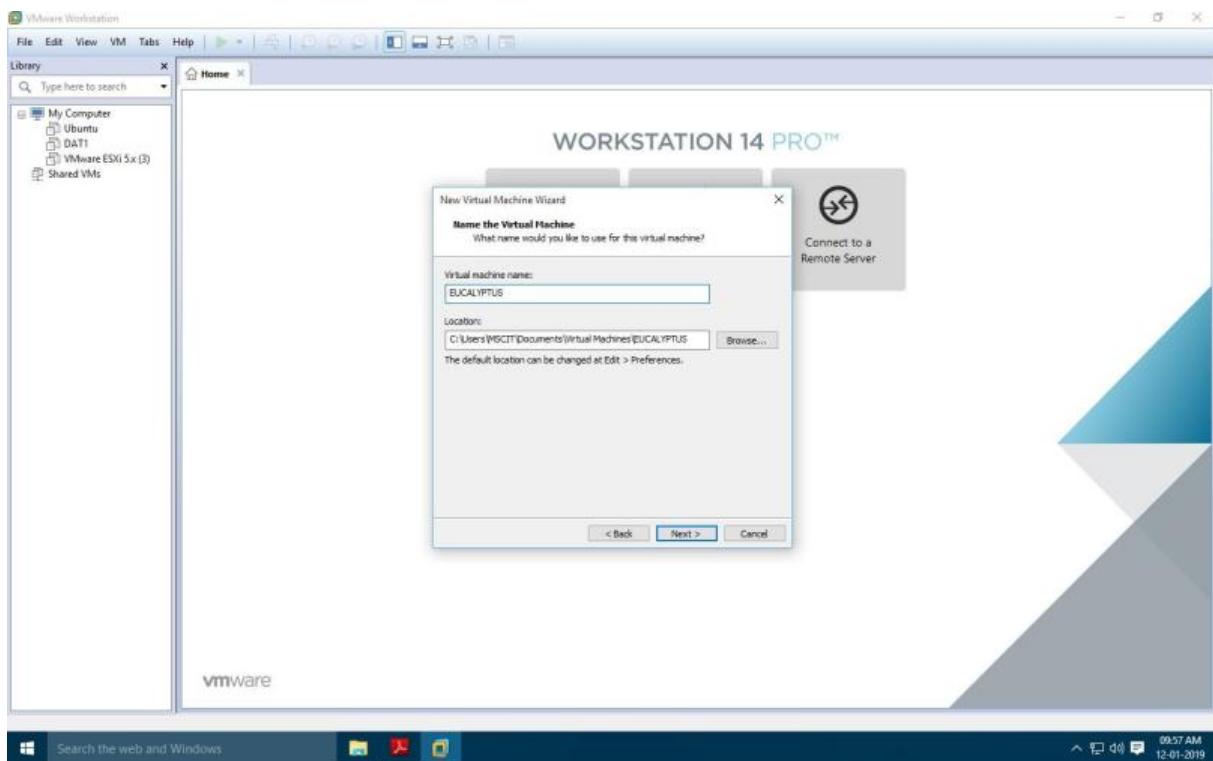
Select **IOS** image file browse the path of .iso file → Next



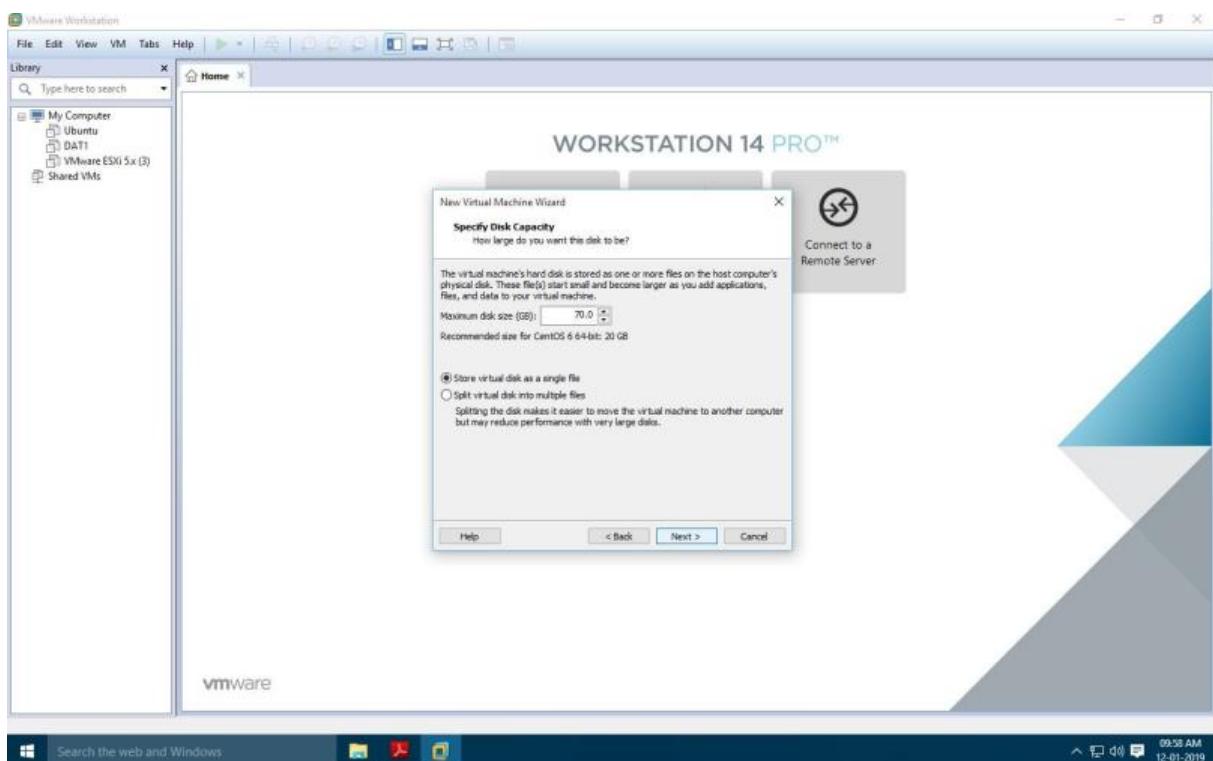
Select Guest Operating System “Linux” and version “CentOS 64-Bit”



Given the Virtual Machine Name → Next



Set Memory disk size : 70 GB & Select Store virtual disk as a single file →Next.



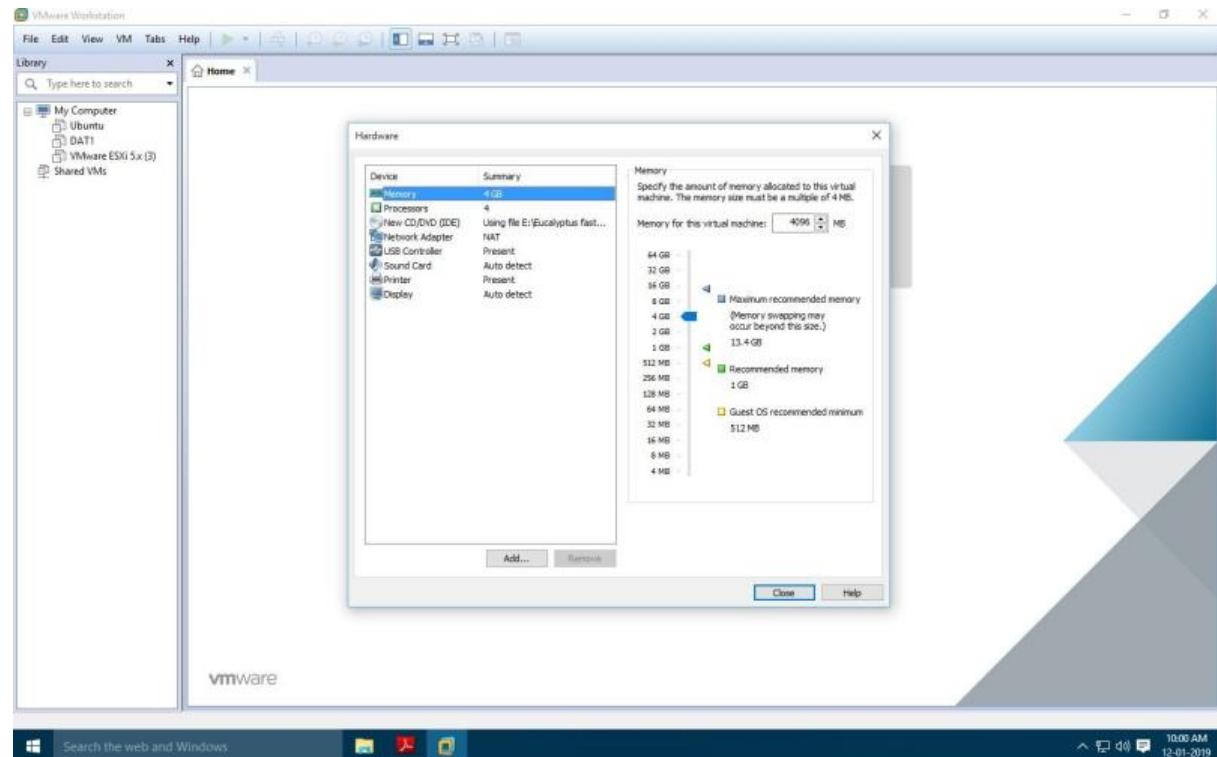
Set below configuration setting

RAM: 4 to 6 gb

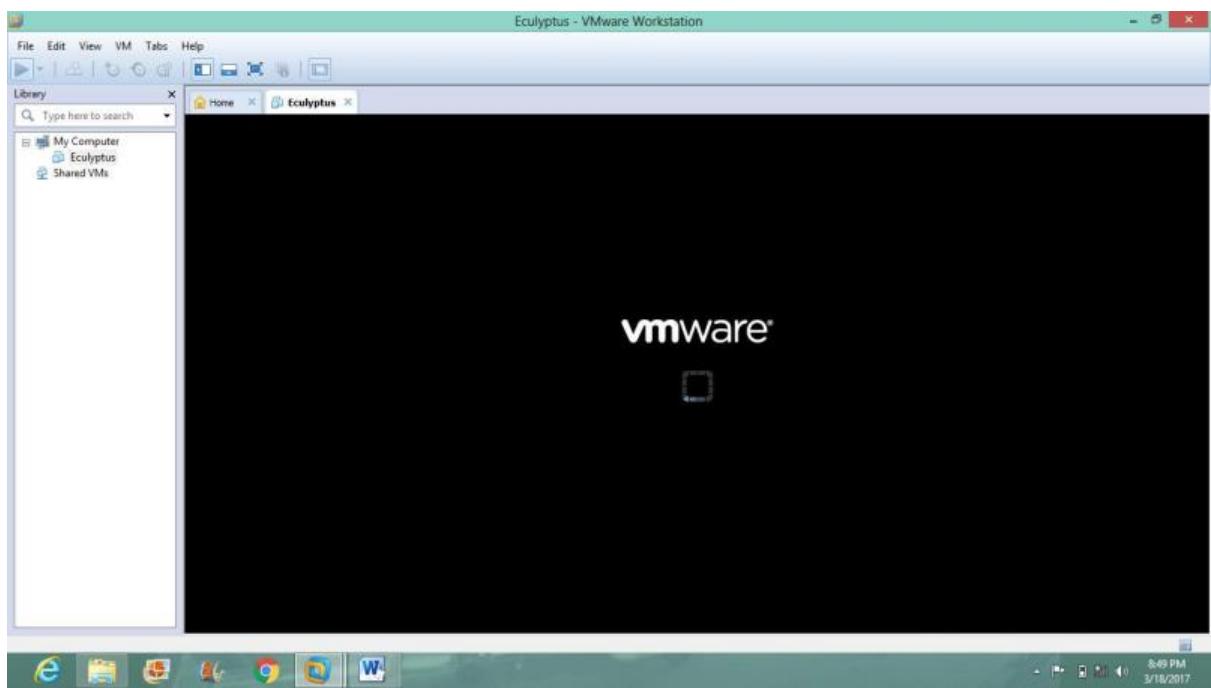
Processors : 2

No of core processors : 2

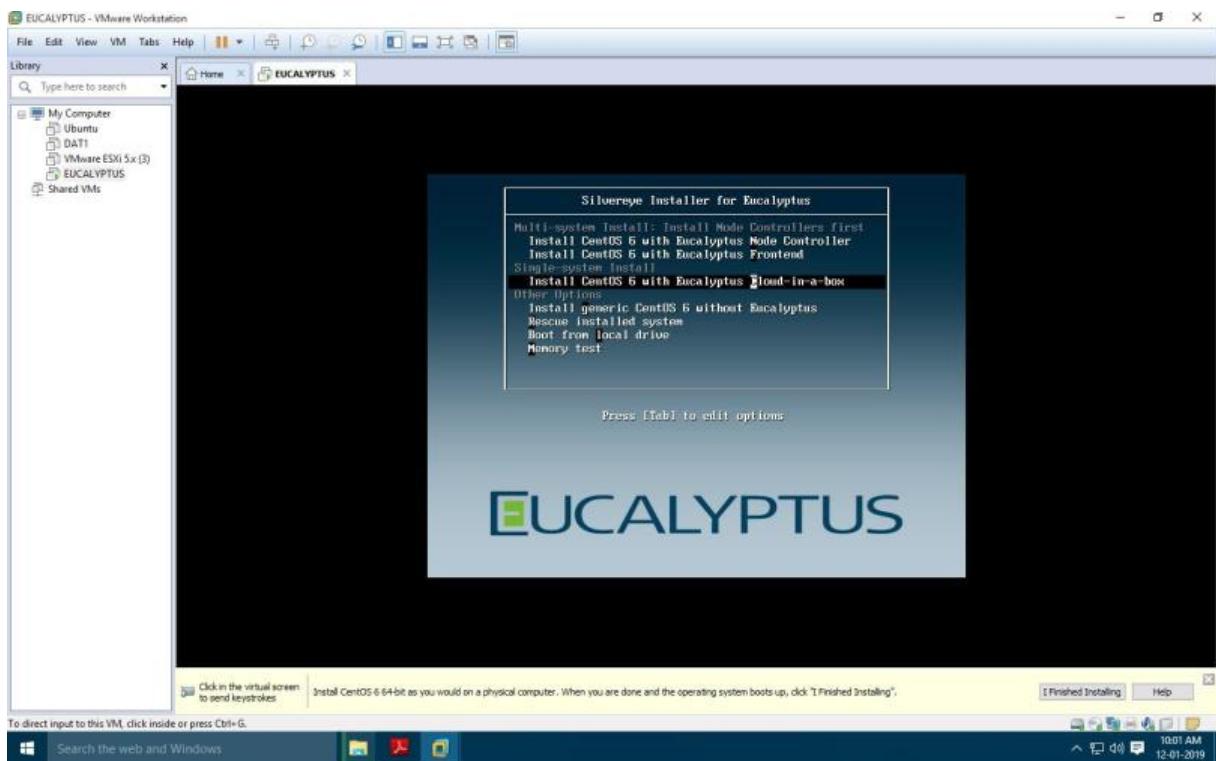
Select Virtualize Intel VT Click on Ok

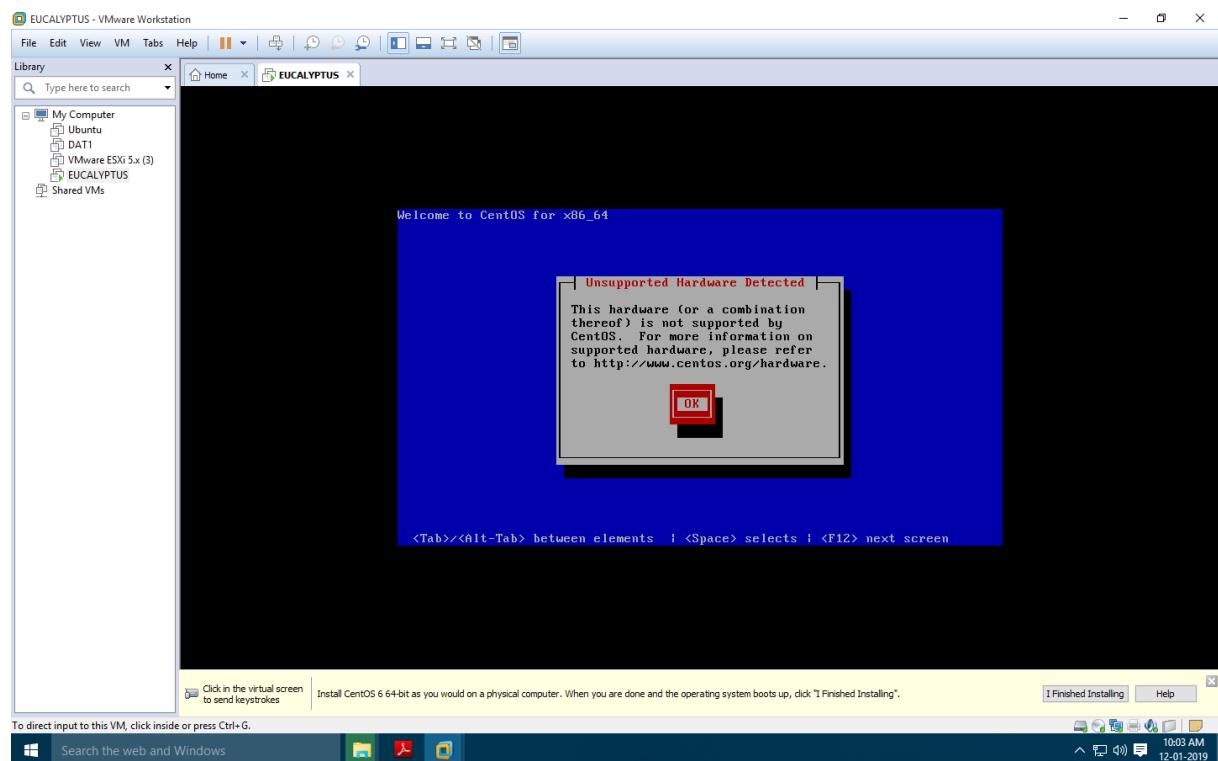
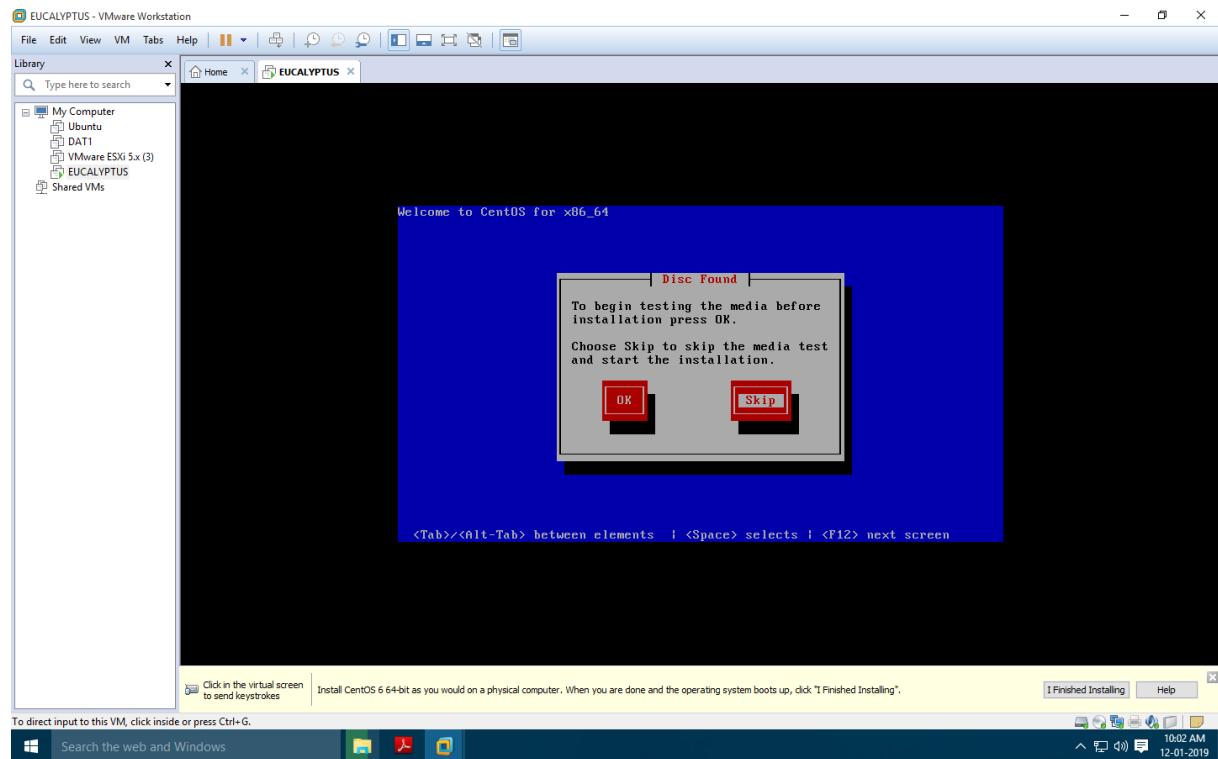


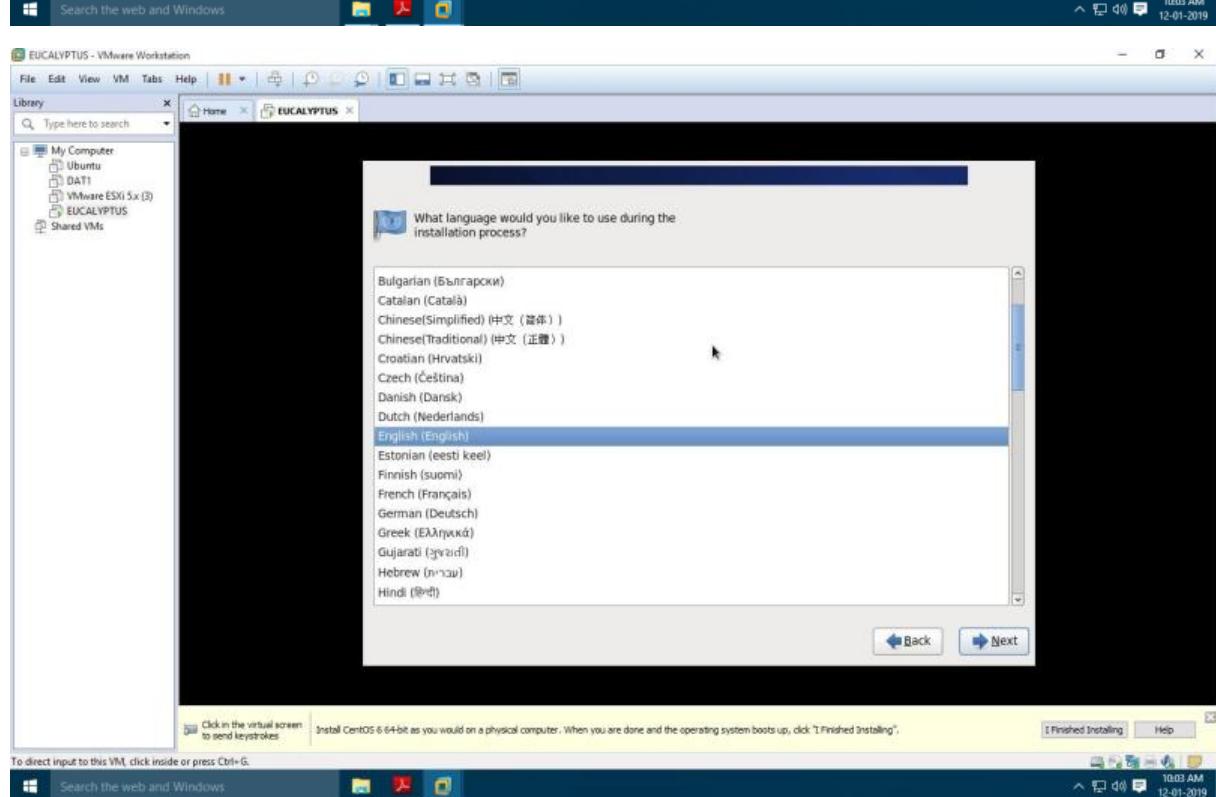
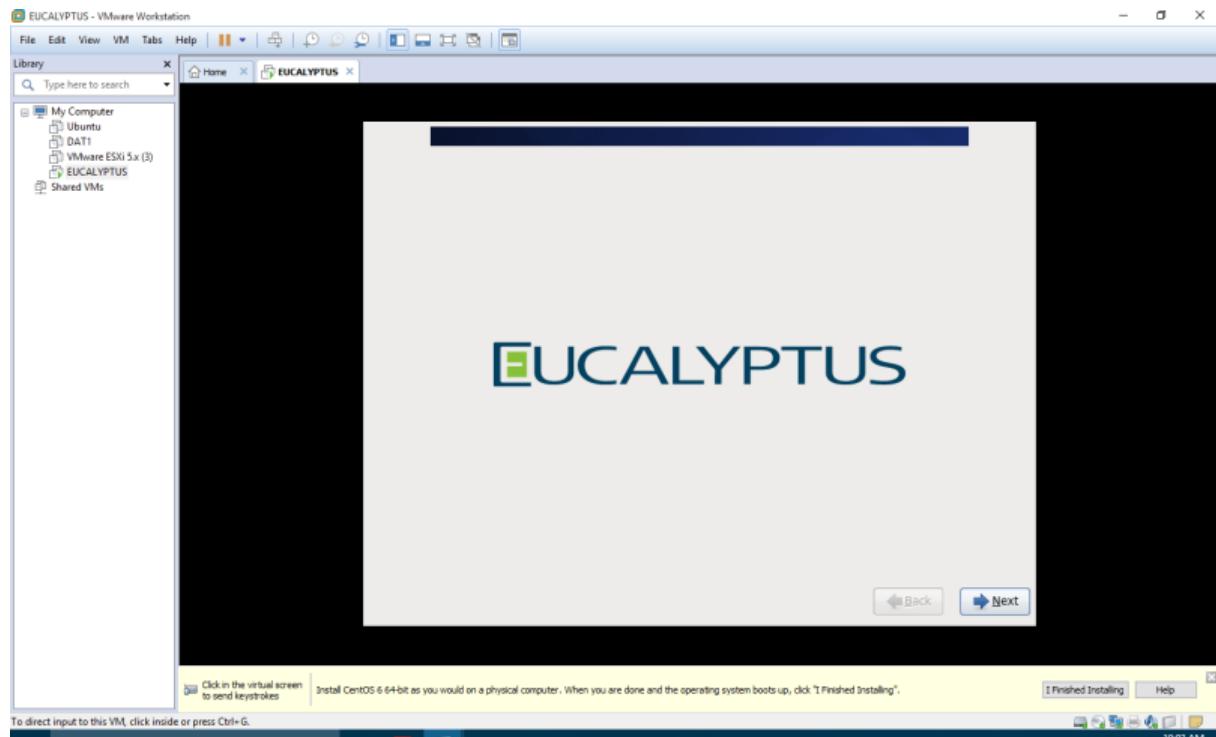
Power on virtual Machine.

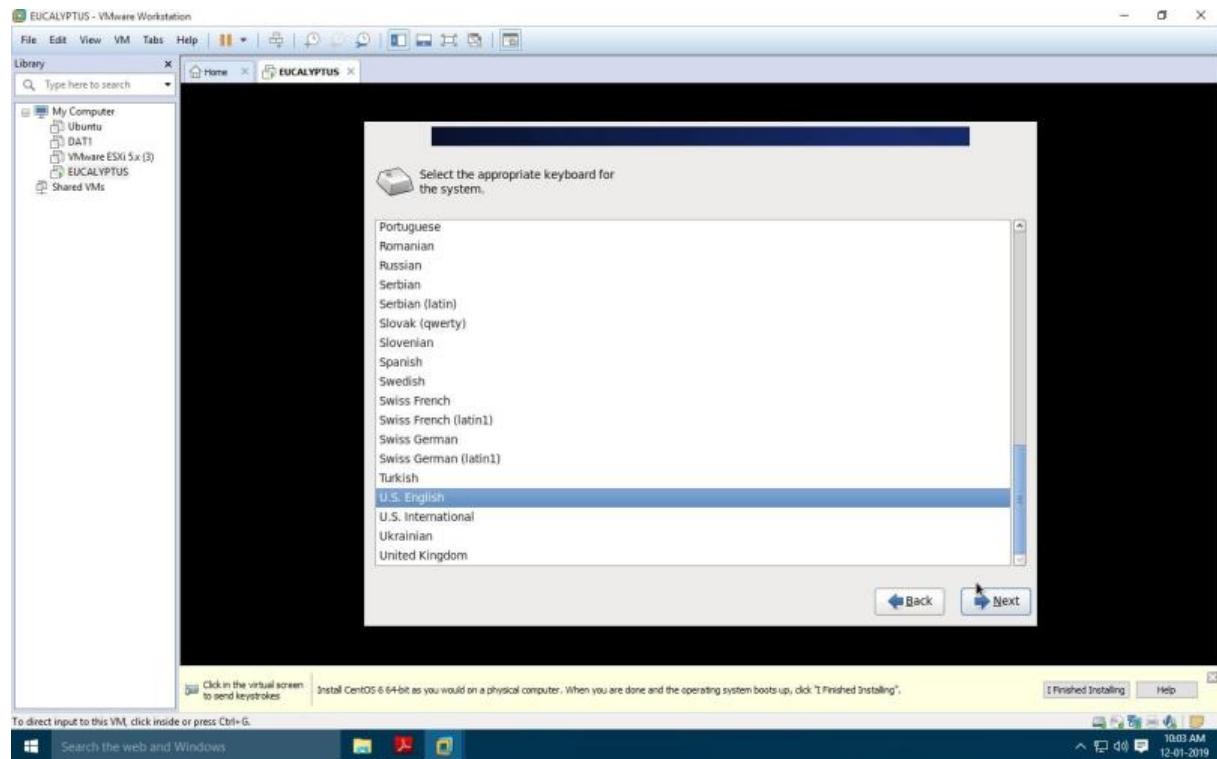


Select “Install CentOS 6 with Eucalyptus Cloud-in-a-box” → Enter

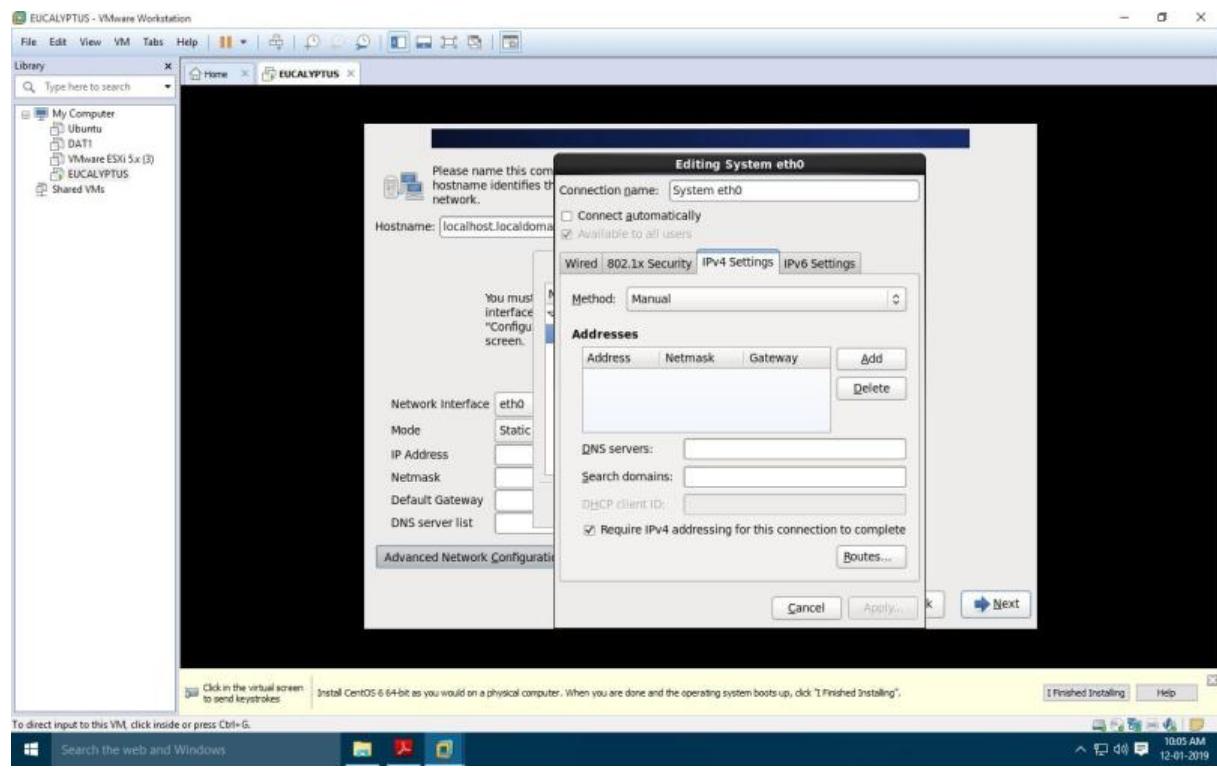


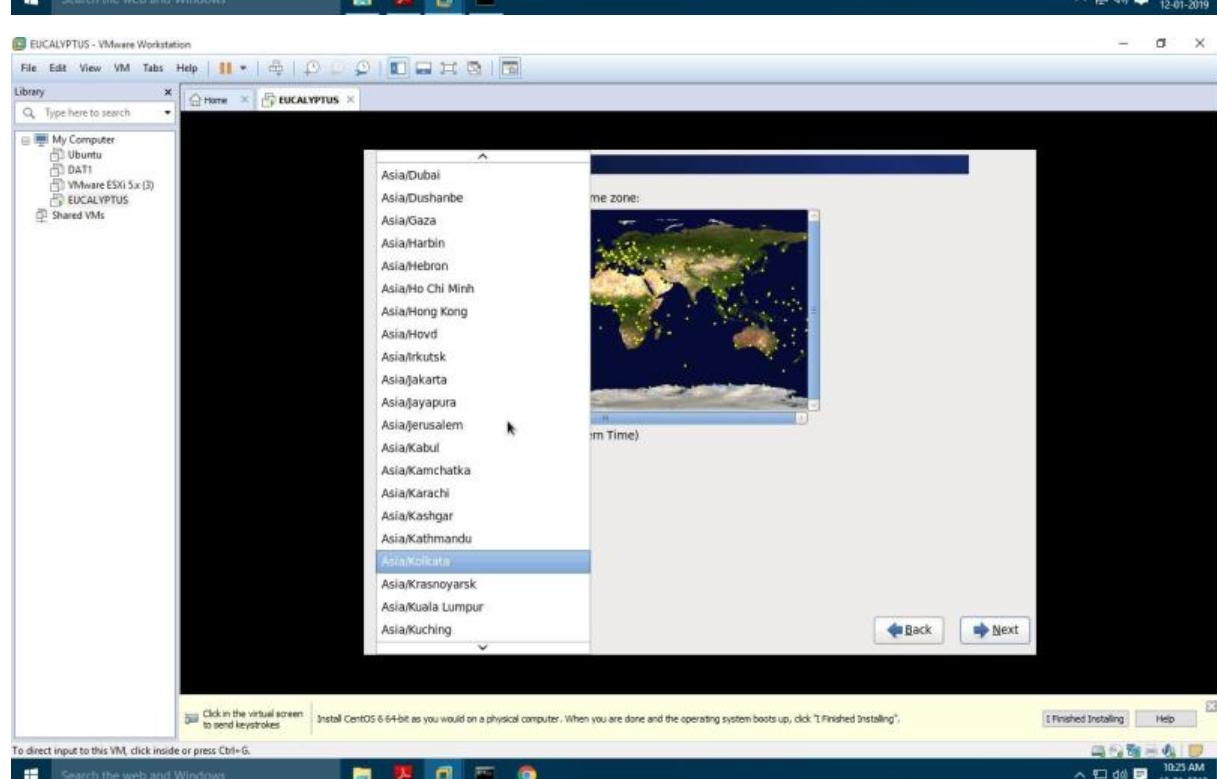
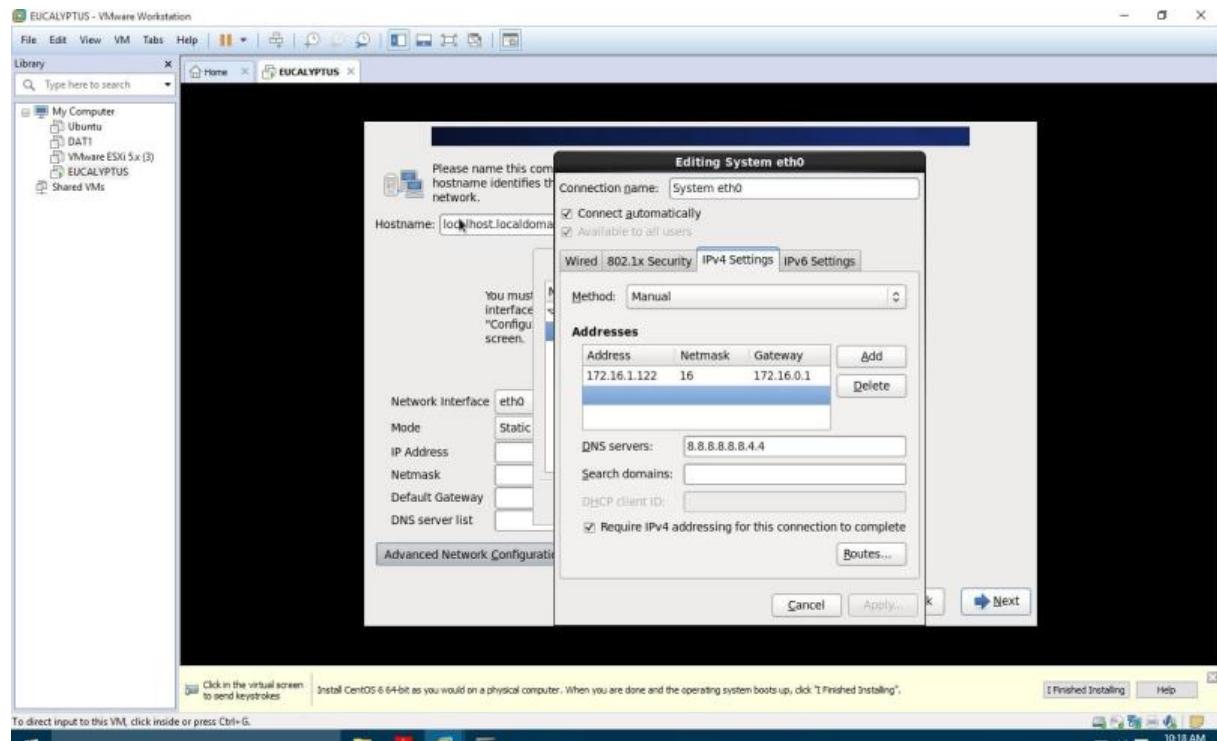






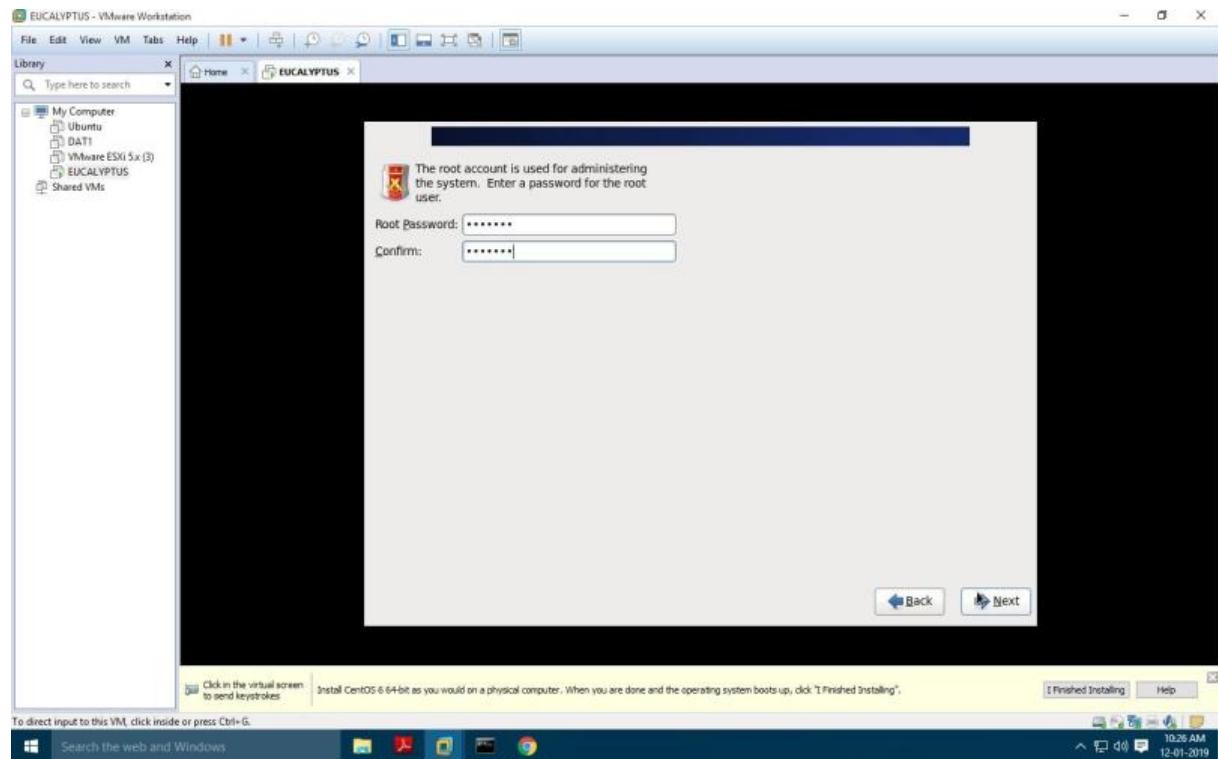
Configure the Network Settings with your System's IPV4 address

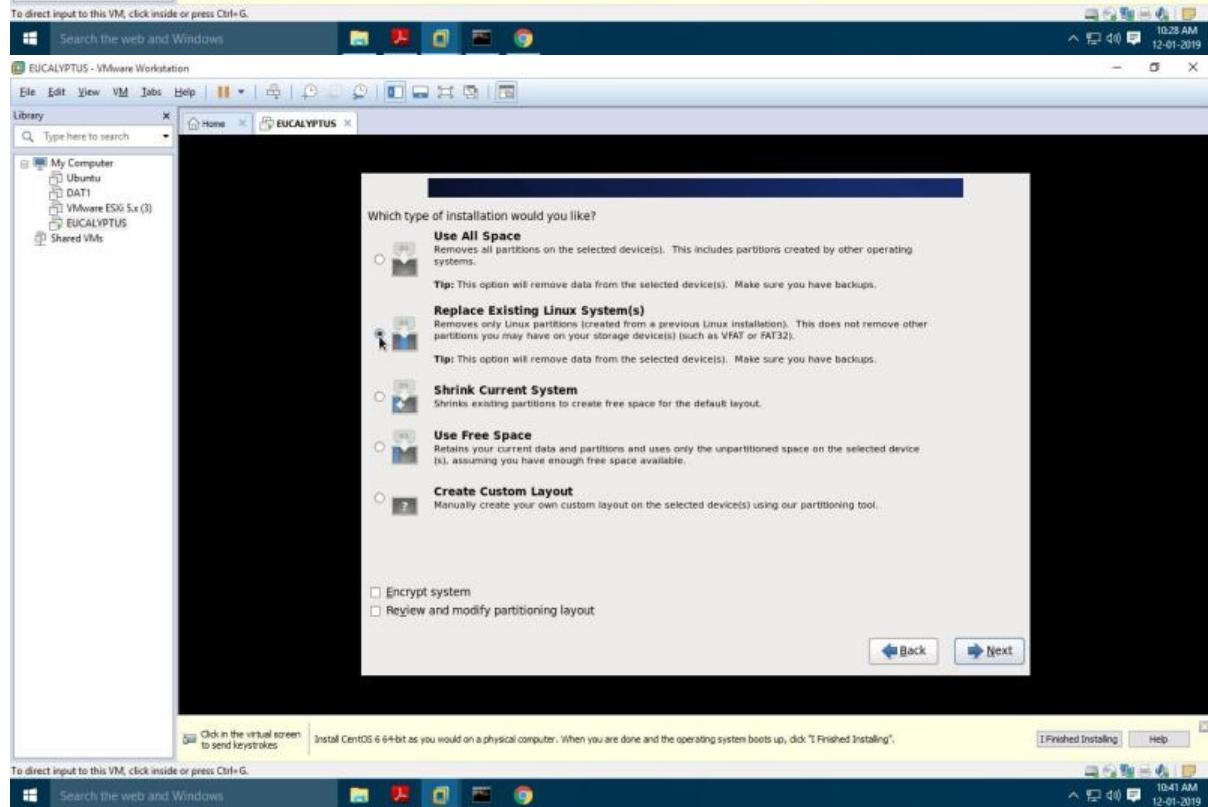
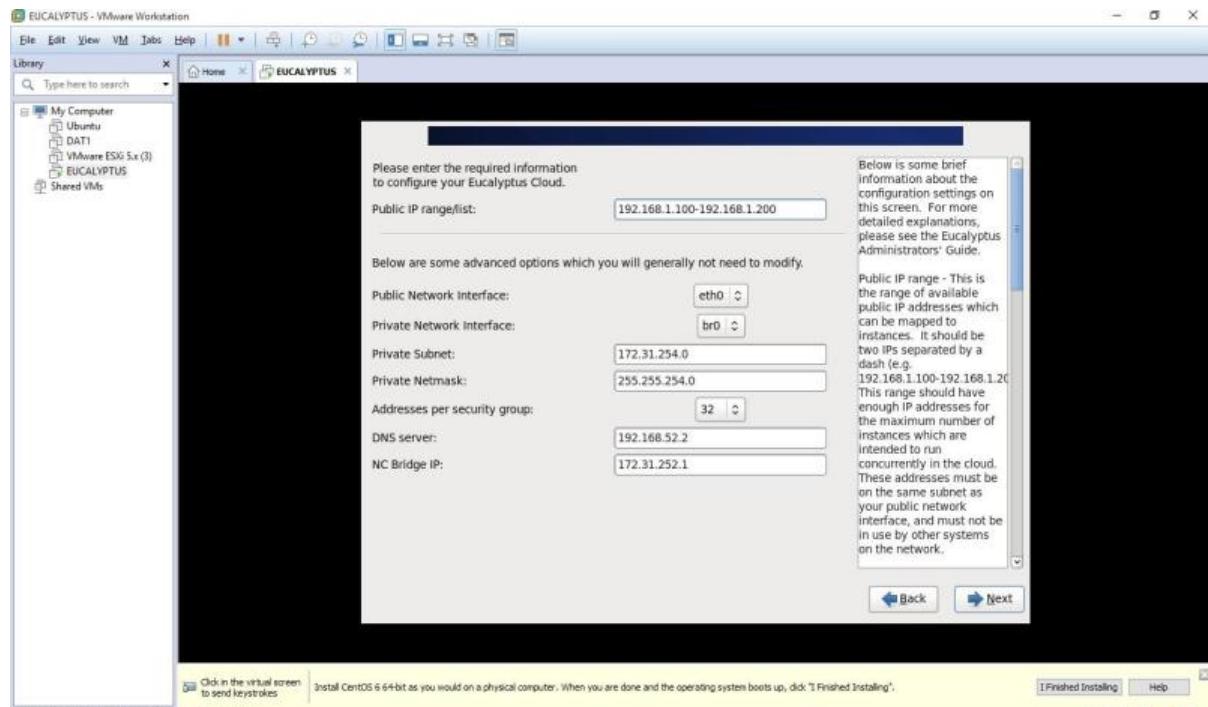


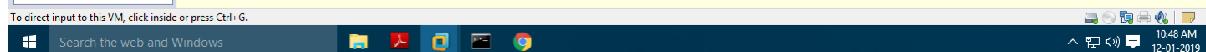
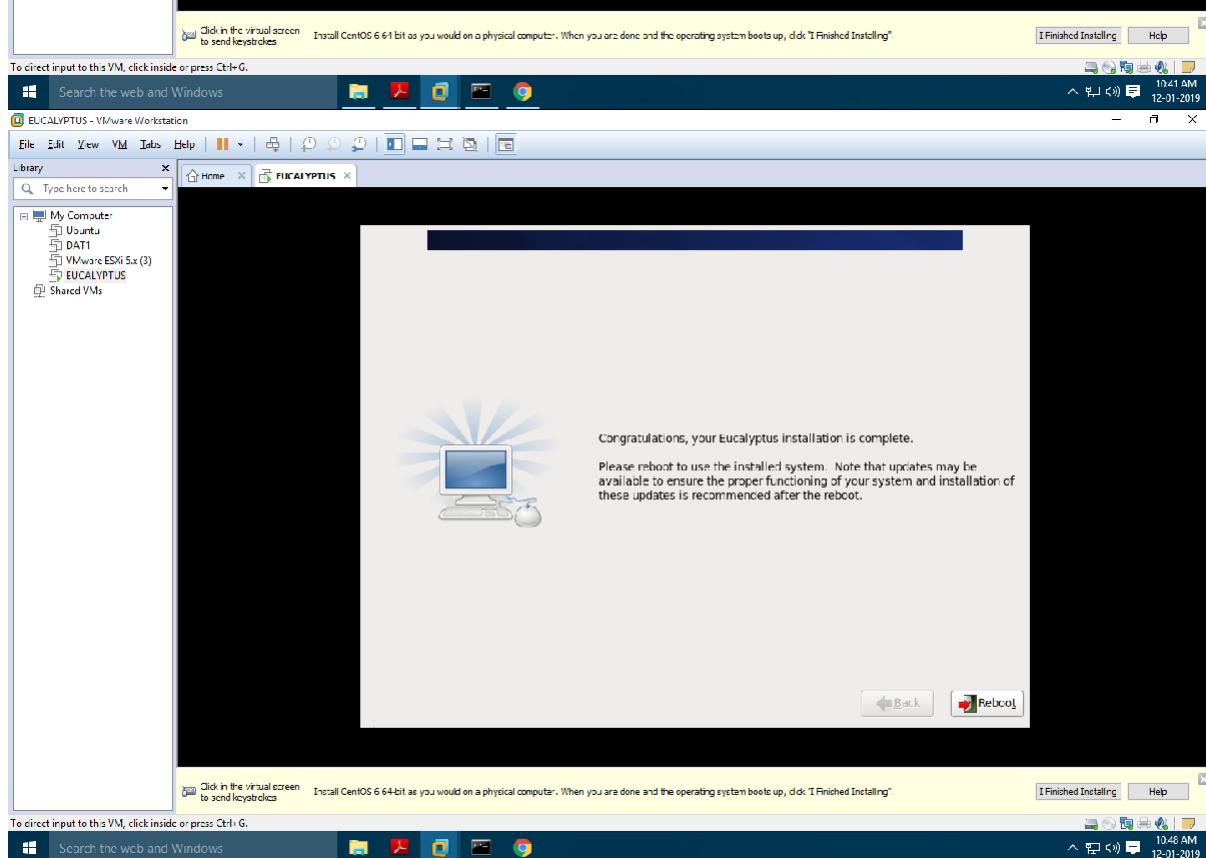
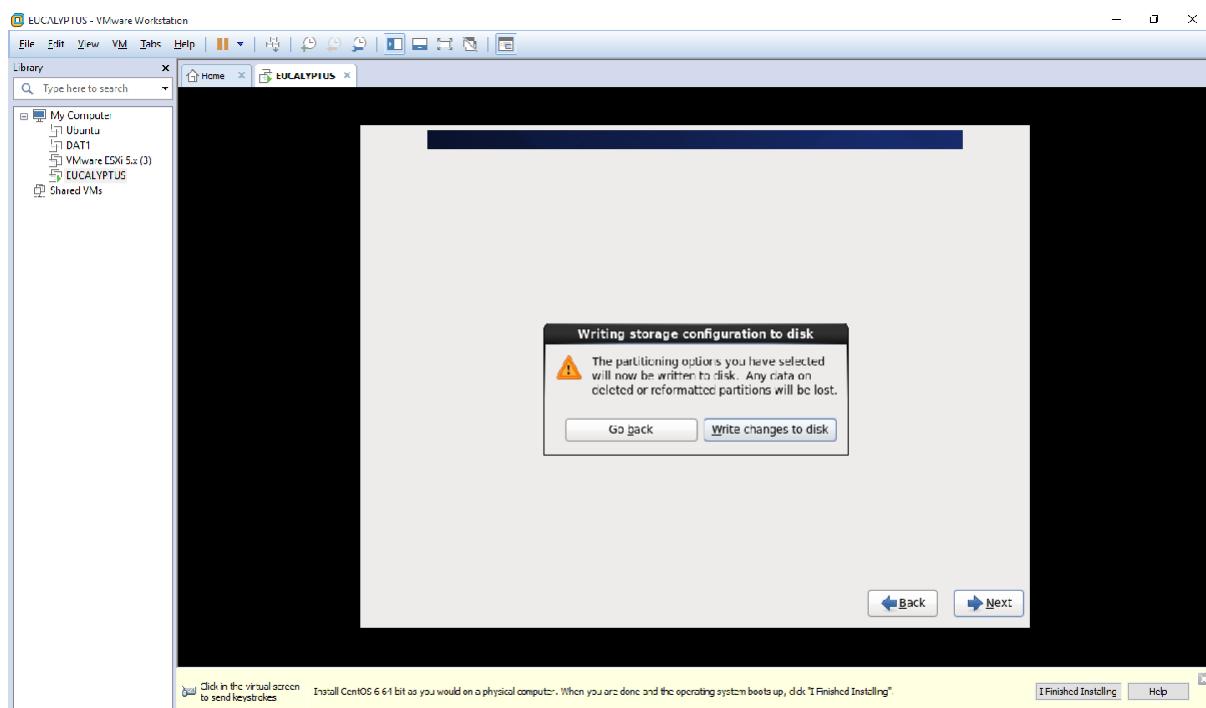


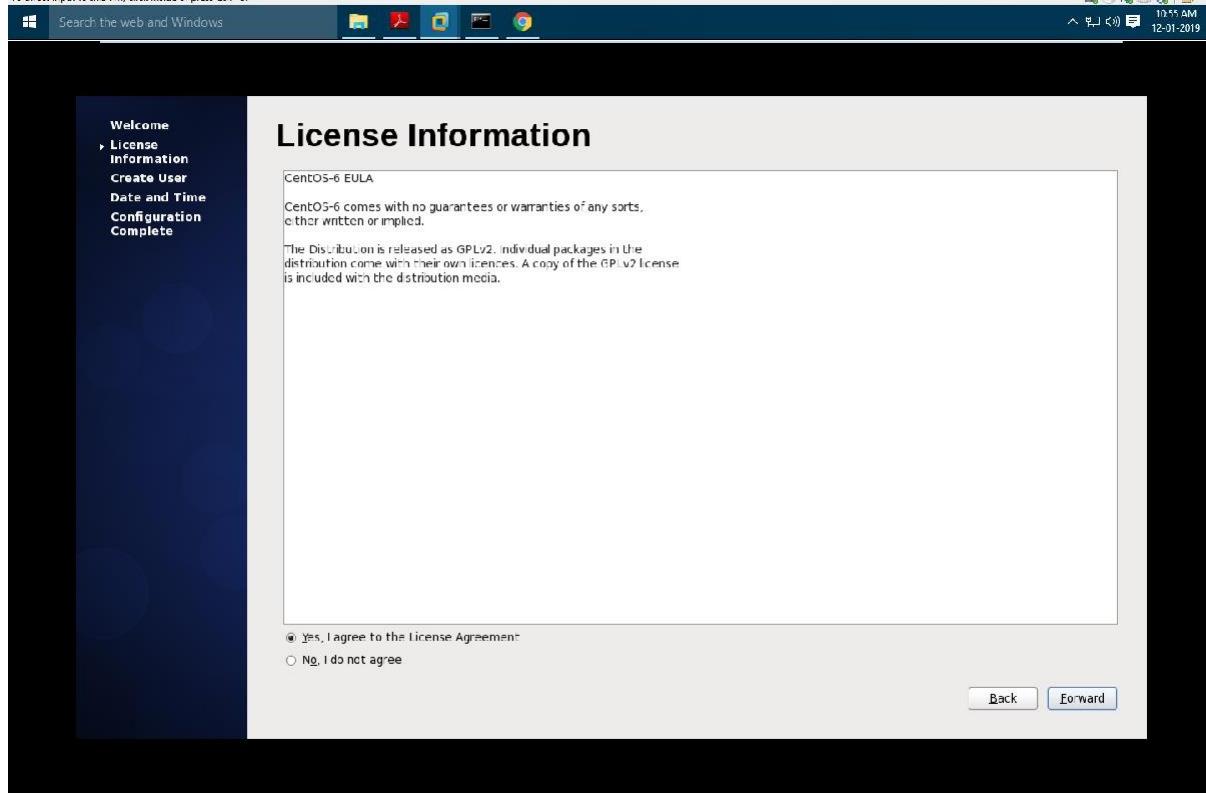
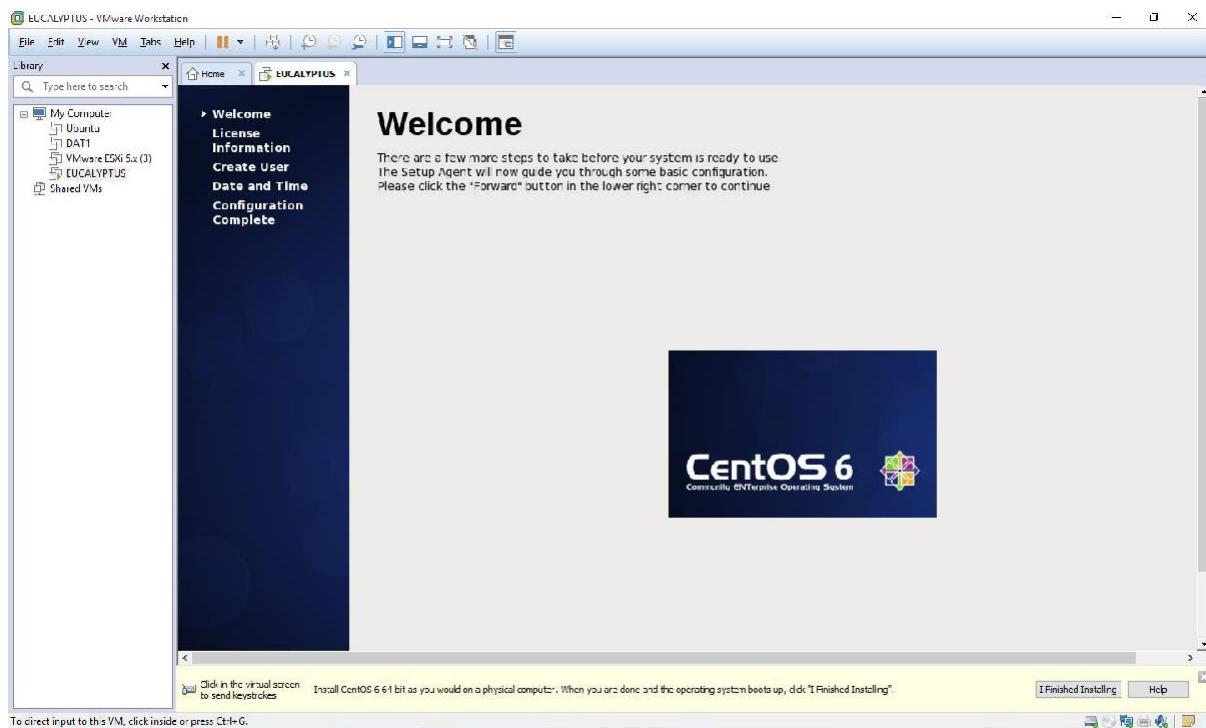
Enter the user name:root

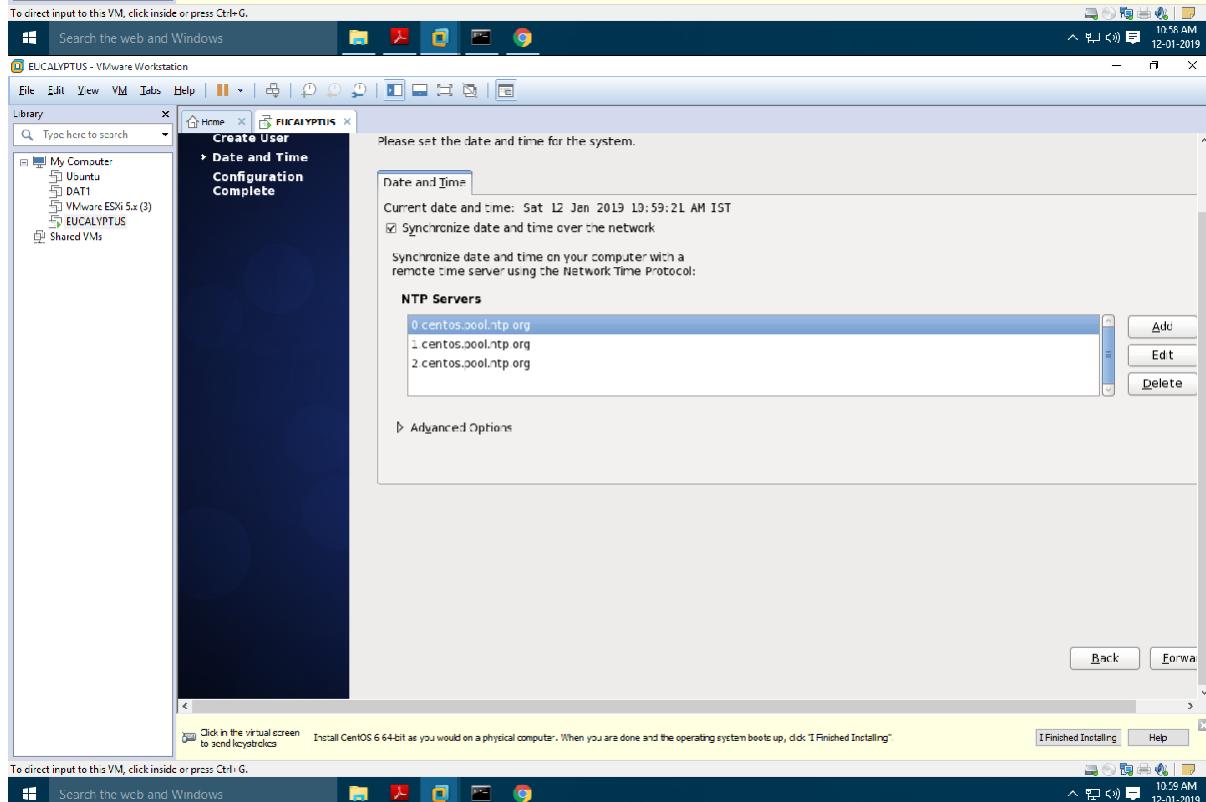
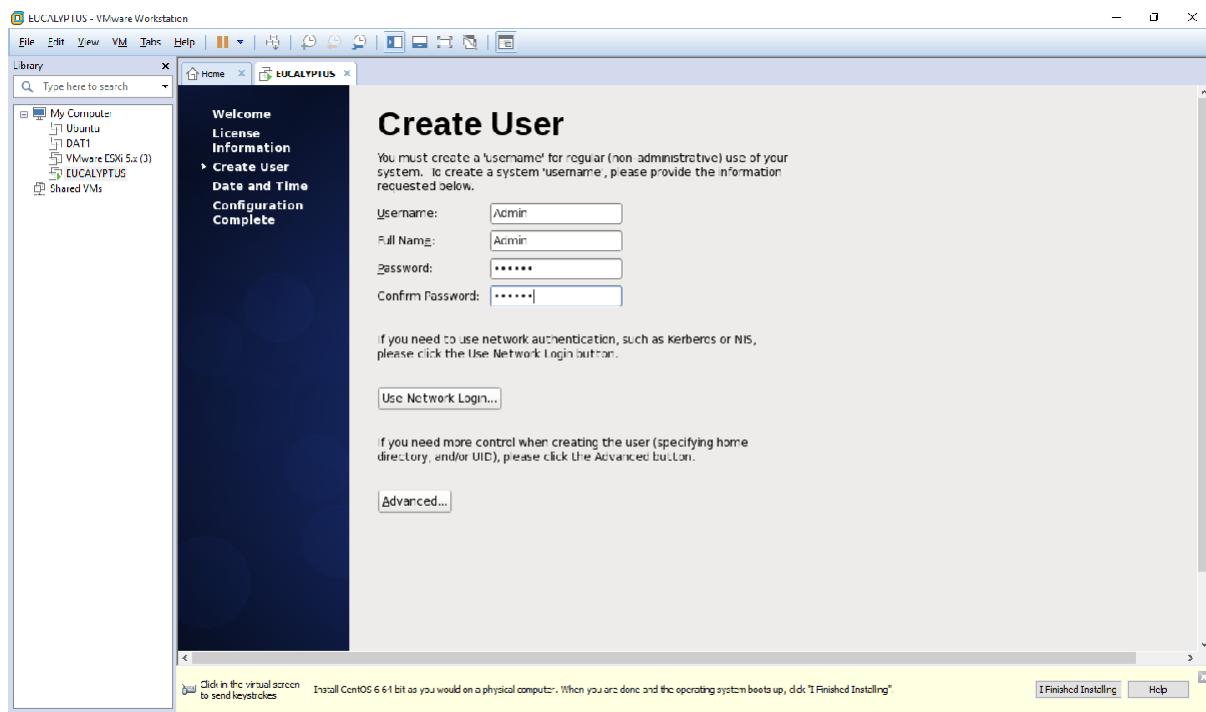
Password:root123

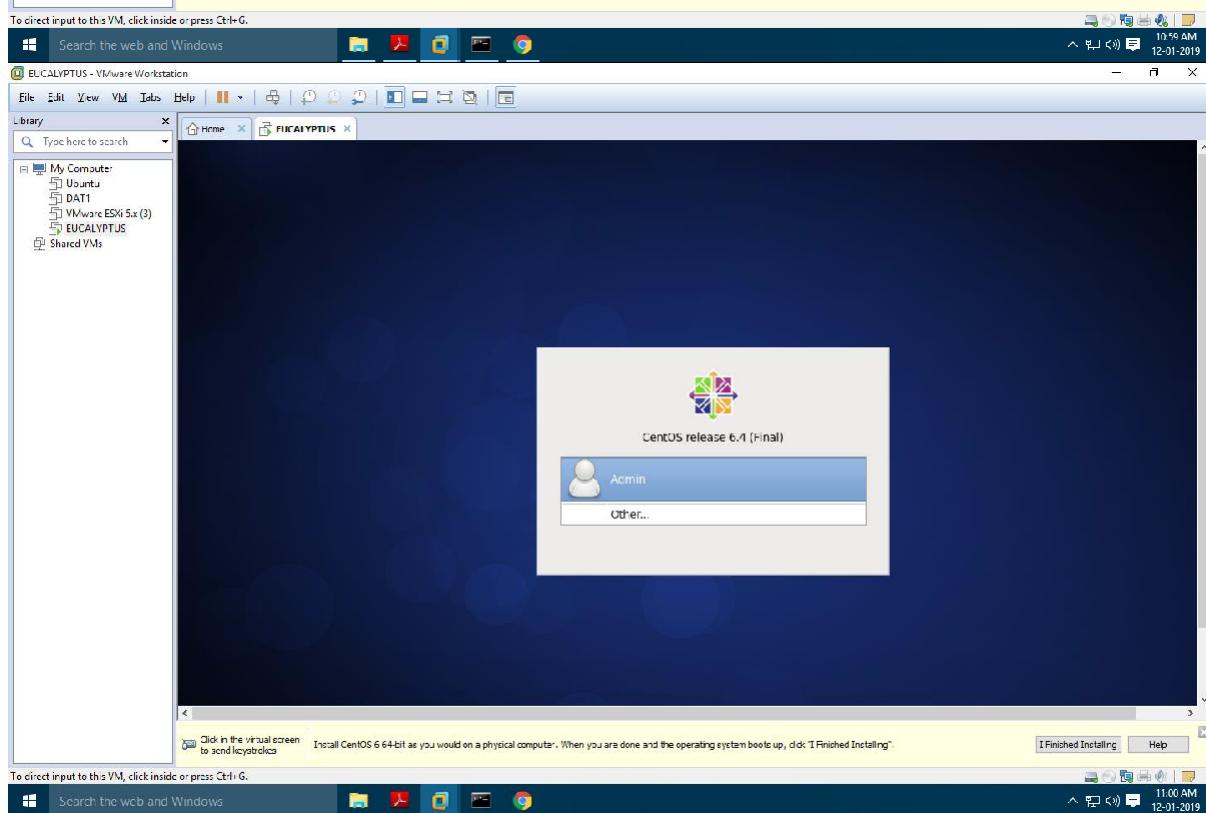
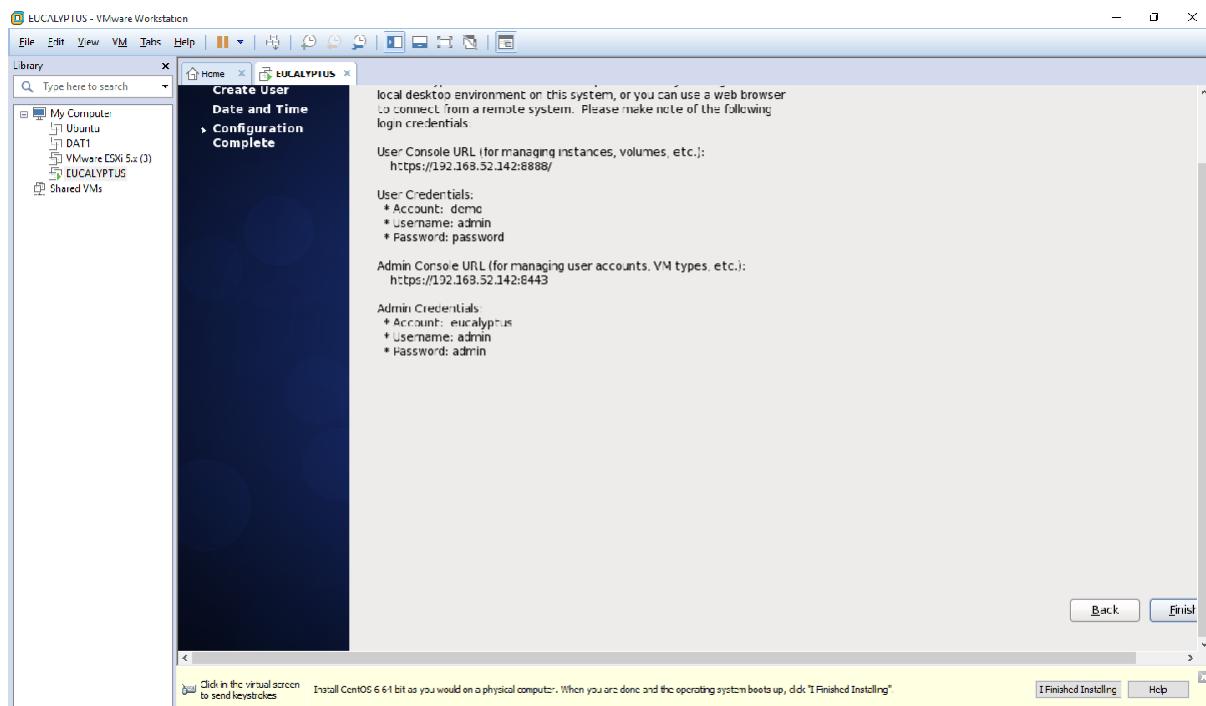


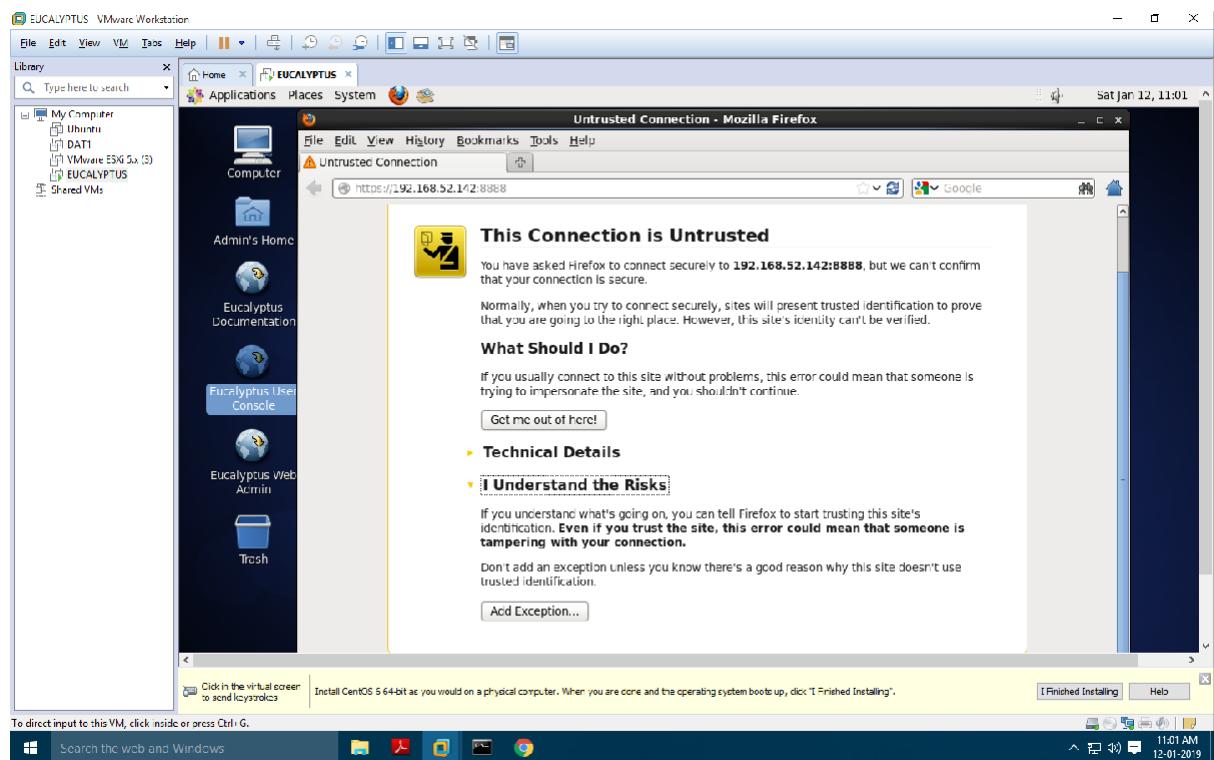
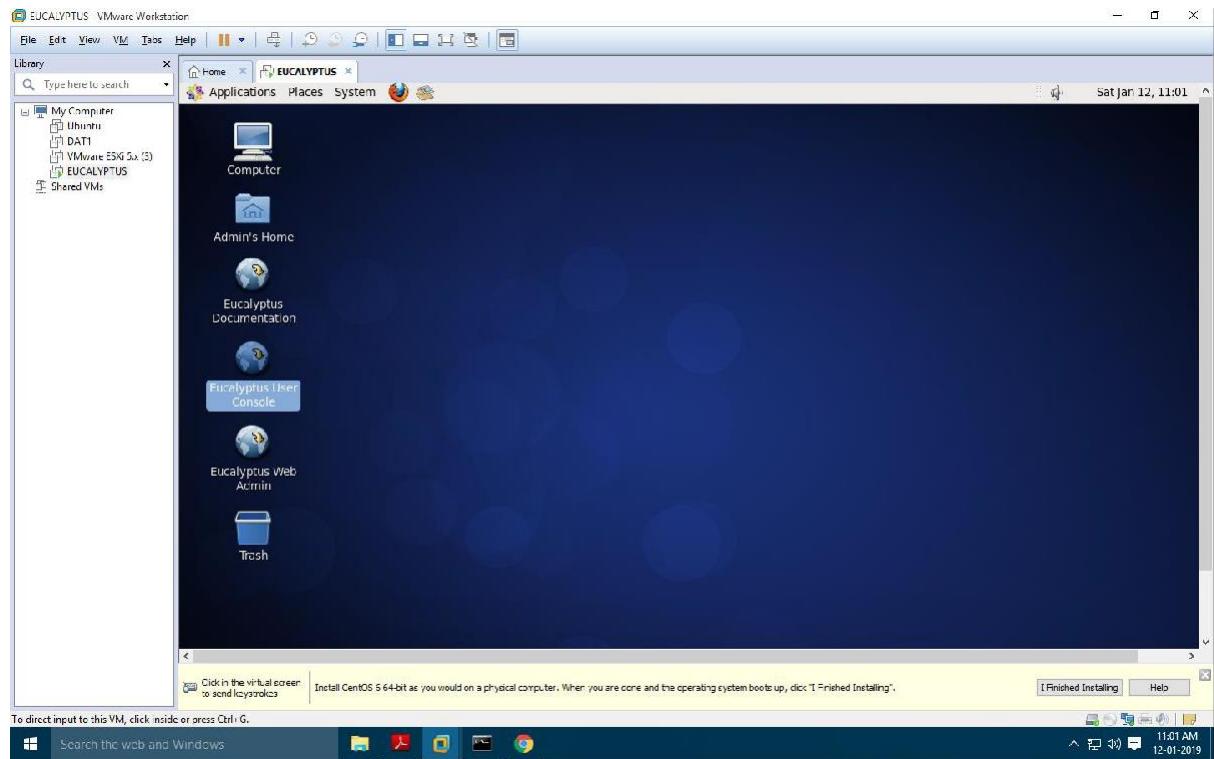


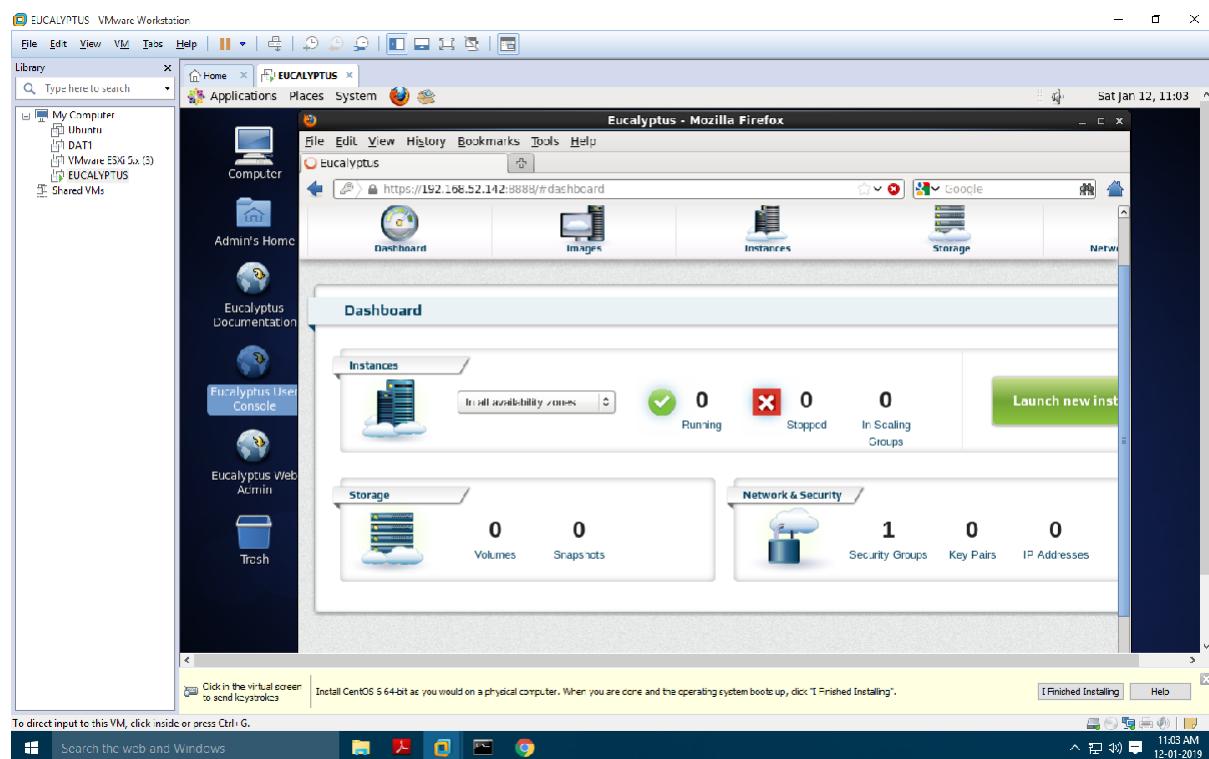
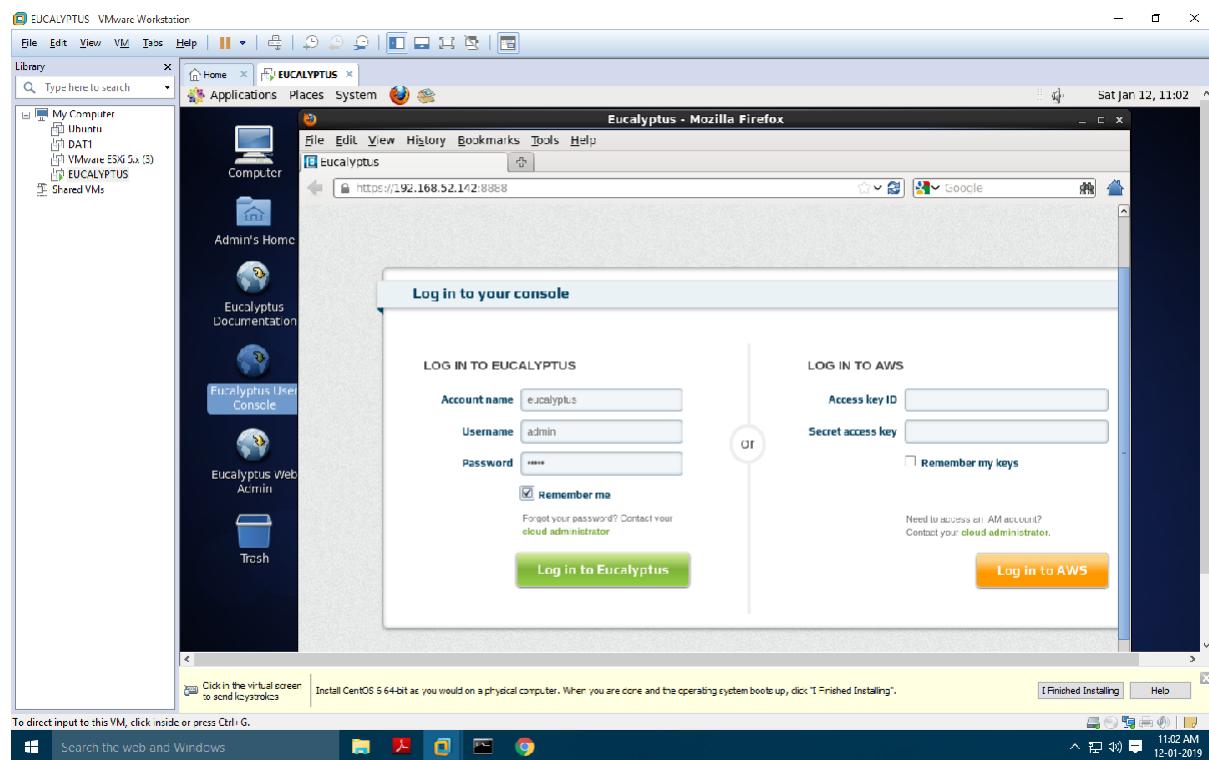


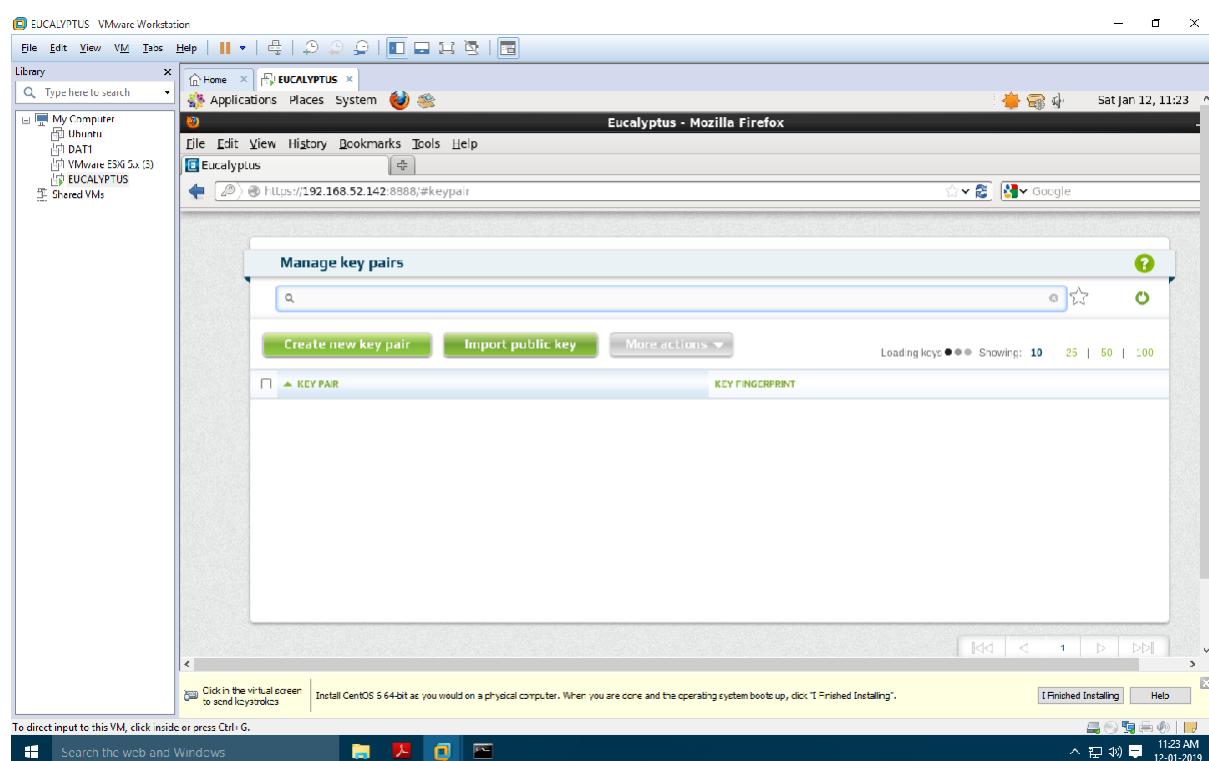
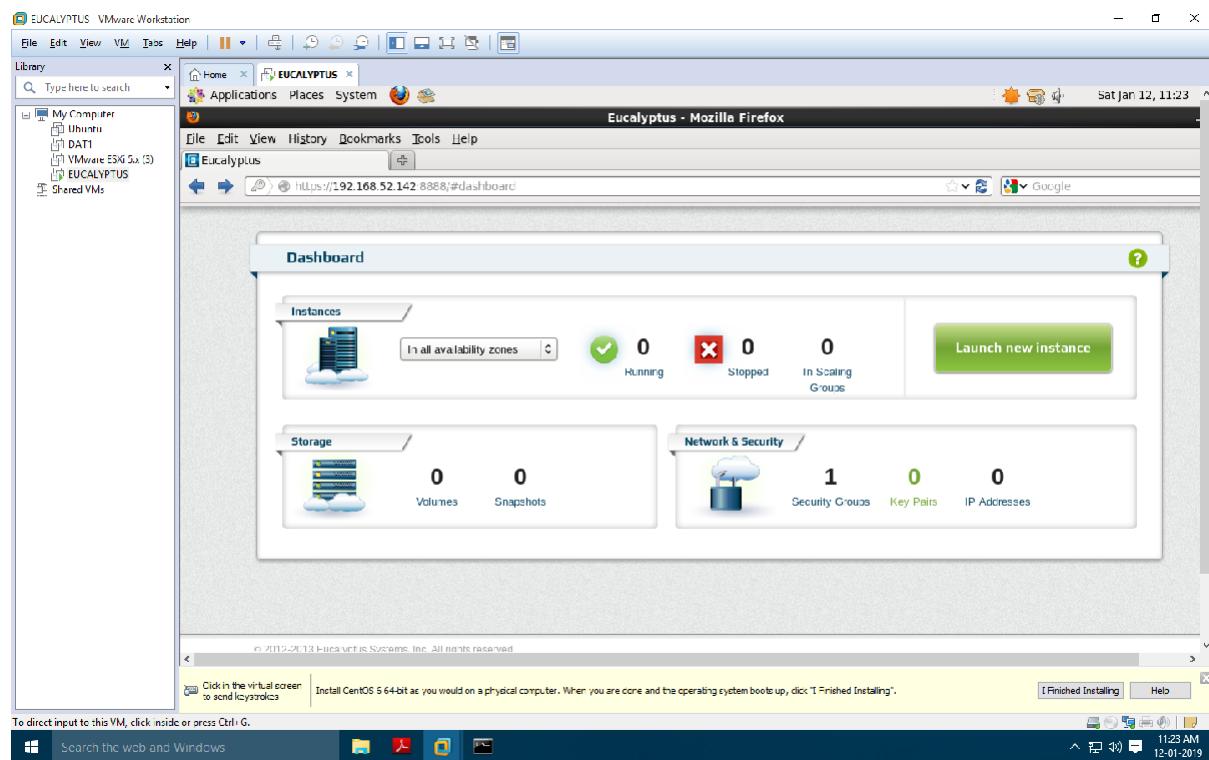


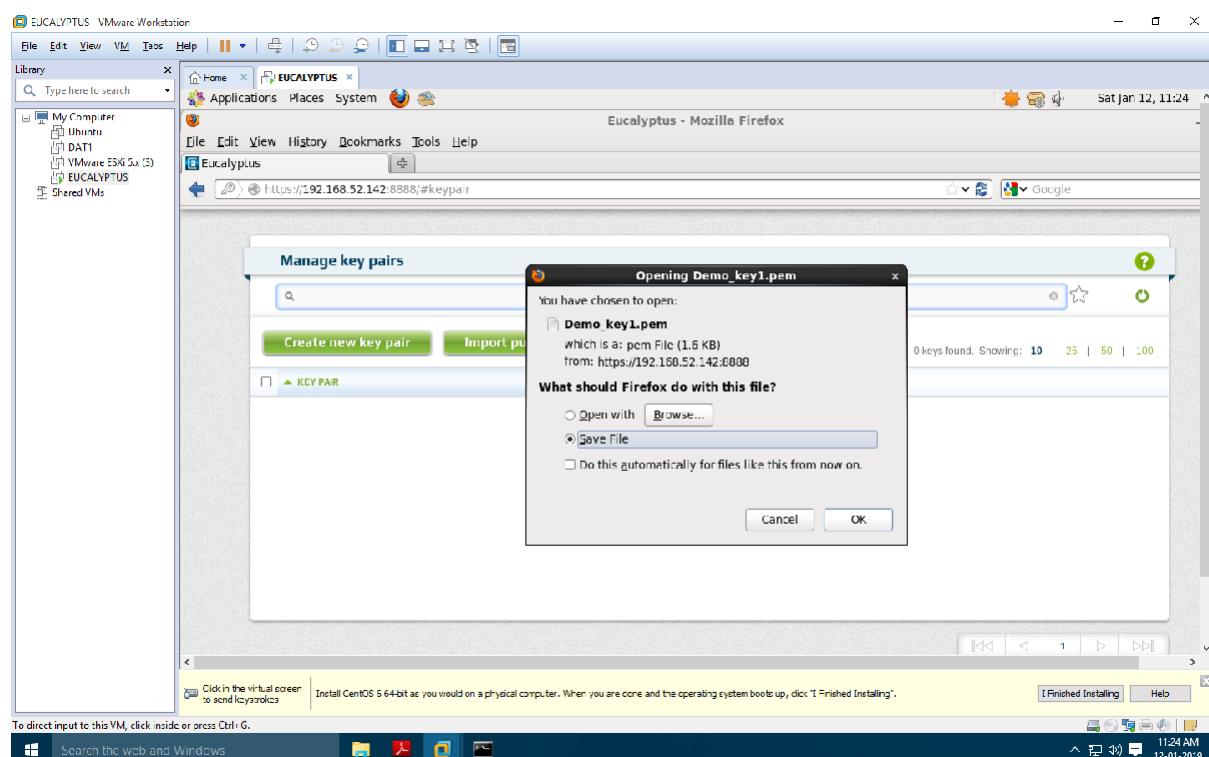
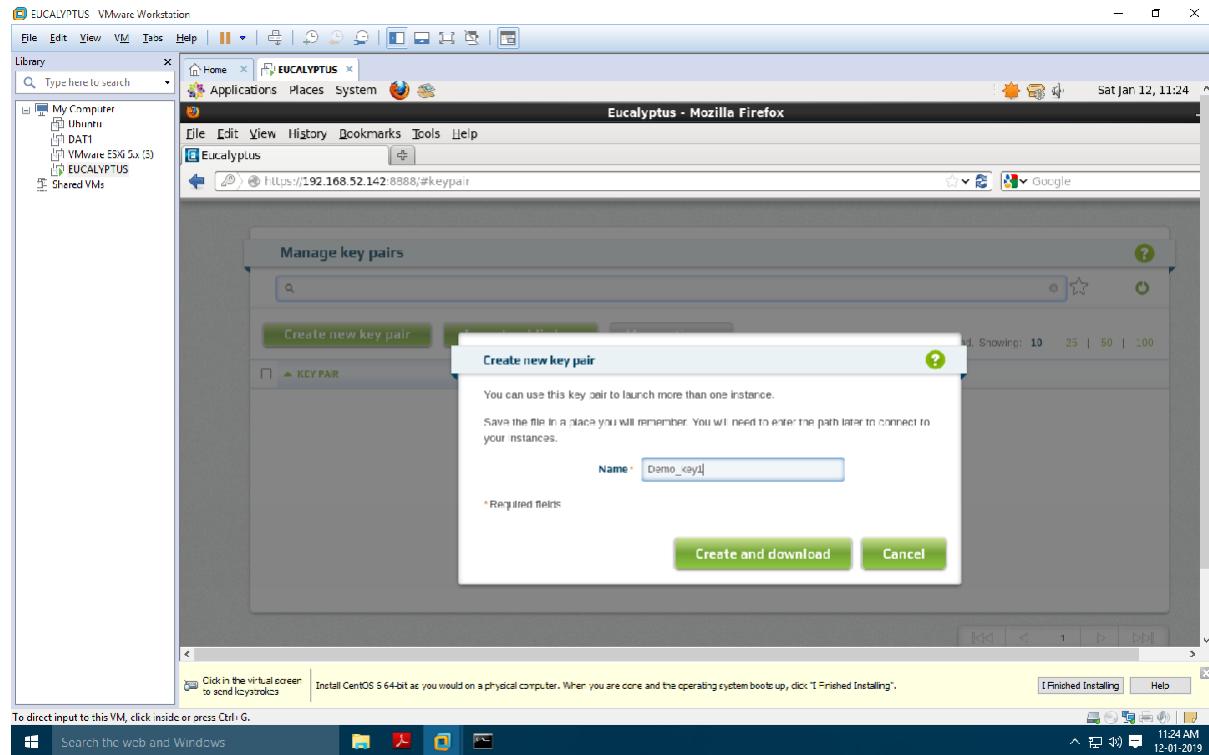


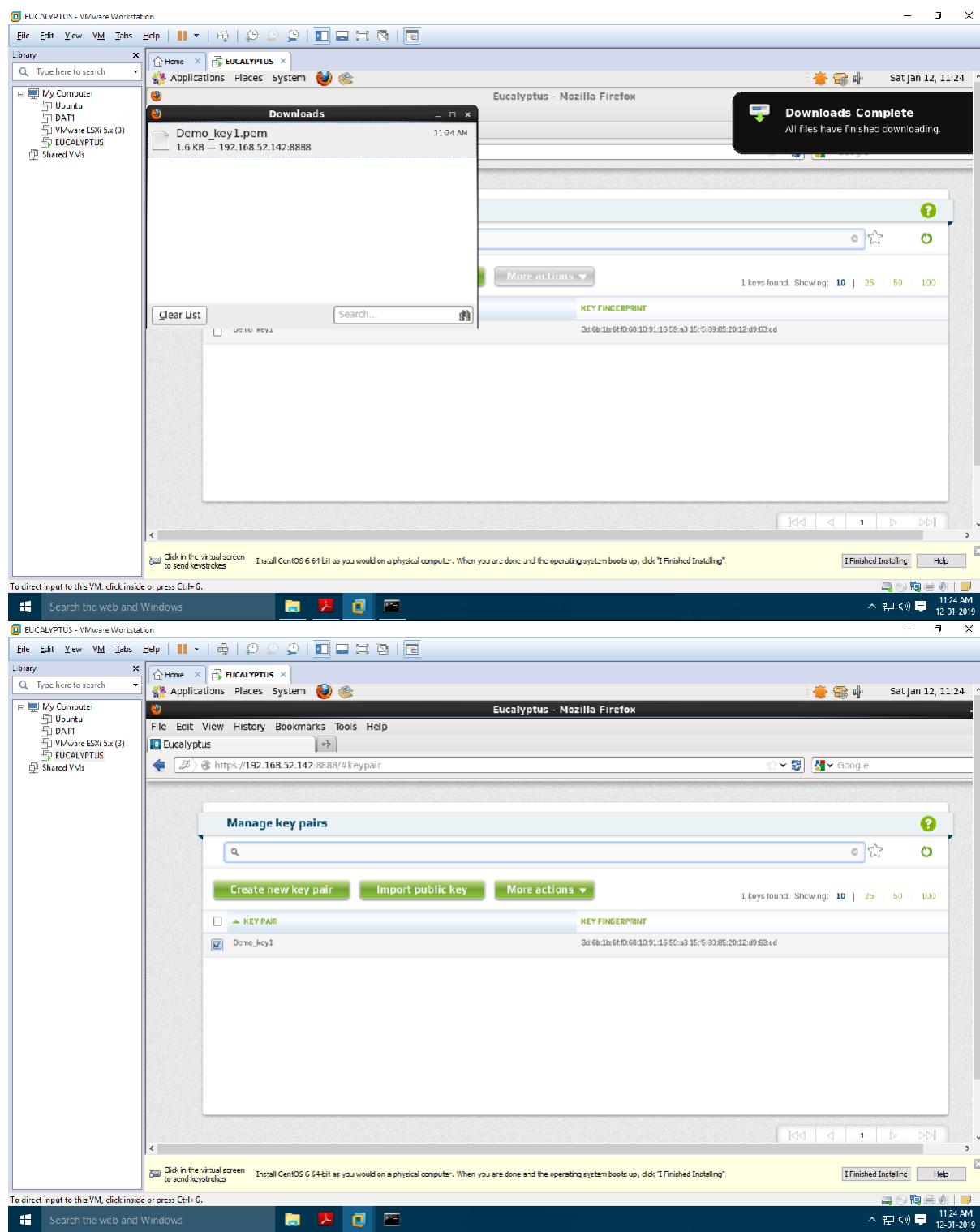


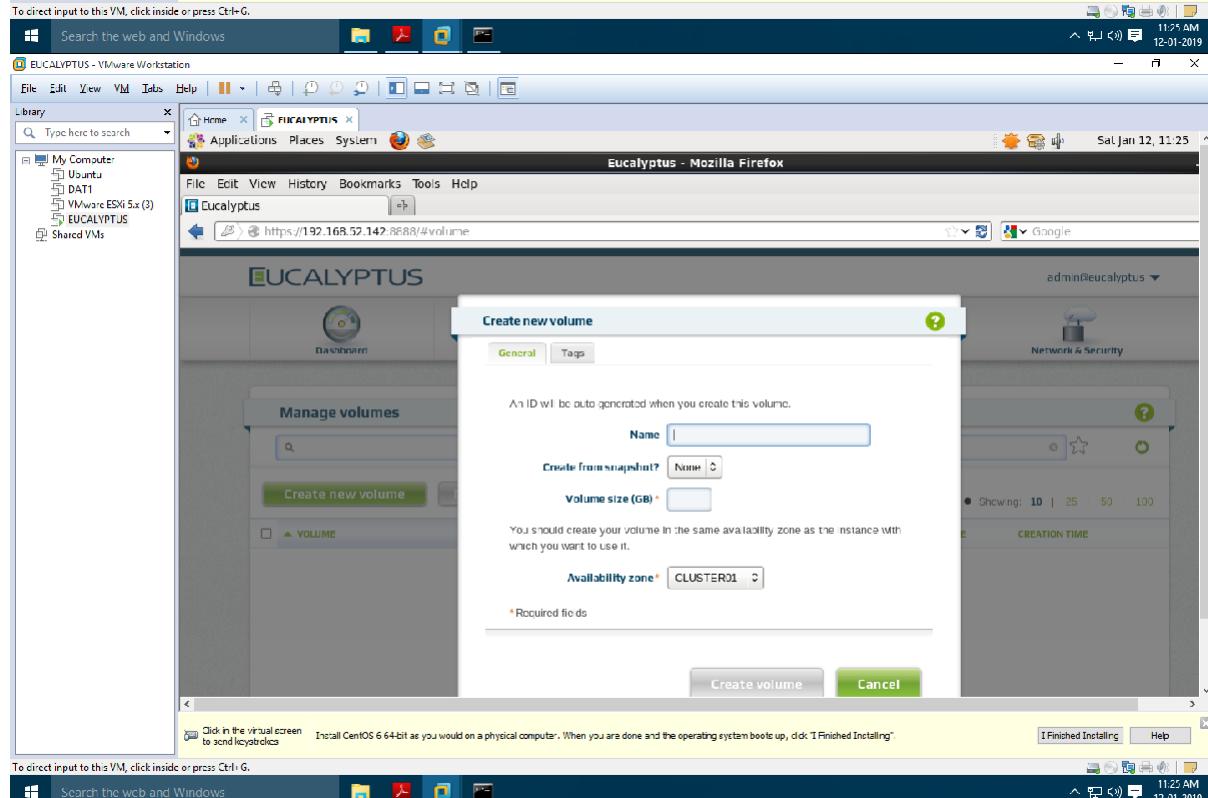
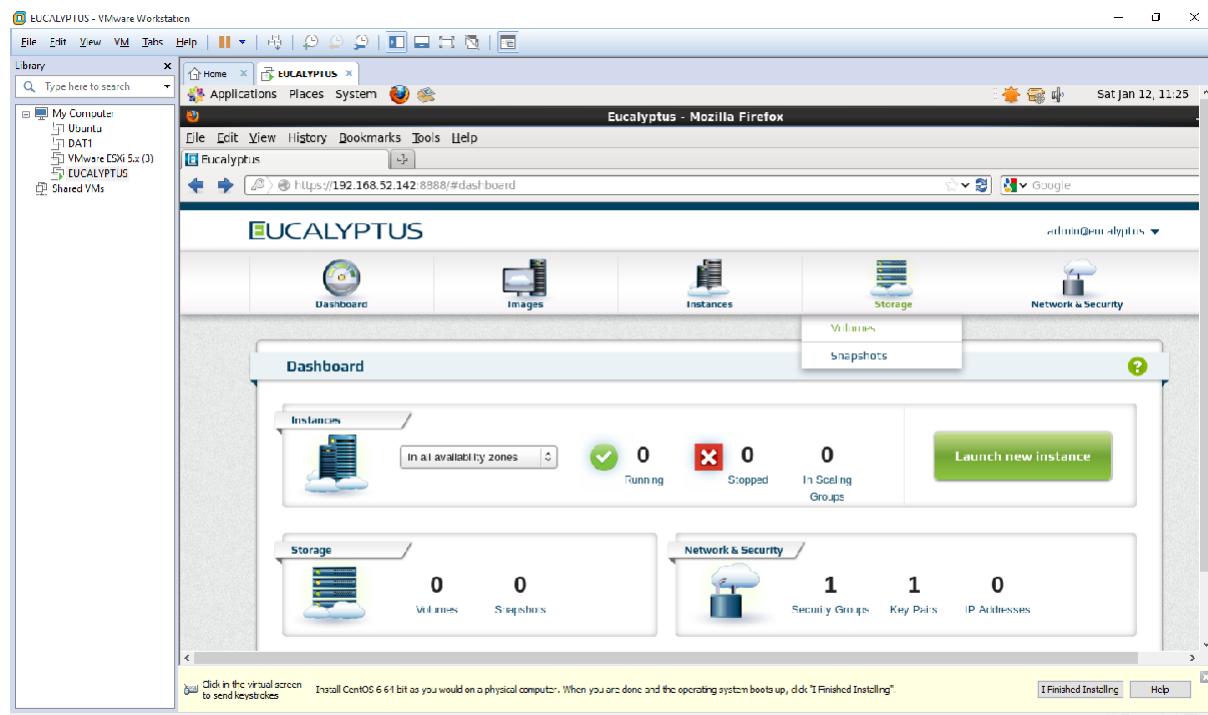












EUCALYPTUS - VMware Workstation

File Edit View VM Info Help

Library

My Computer: Ubuntu, DATI, VMware ESXi 5.5 (3), EUCALYPTUS, Shared VMs

Type here to search

EUCALYPTUS

Applications Places System Mozilla Firefox

Sat Jan 12, 11:26

Eucalyptus - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Eucalyptus https://192.168.52.142:8888/#dashboard

Google

EUCALYPTUS

Dashboard Images Instances Storage Network & Security

admin@eucalyptus

Instances

0 Running 0 Stopped 0 In Scaling Groups

Launch new instance

Storage

0 Volumes 0 Snapshots

Network & Security

1 Security Groups 1 Key Pairs 0 IP Addresses

Specify Groups
Key Pairs
IP Addresses

Click in the virtual screen to send keystrokes. Install CentOS 6 64-bit as you would on a physical computer. When you are done and the operating system boots up, click "I Finished Installing".

I Finished Installing Help

To direct input to this VM, click inside or press Ctrl+G.

Search the web and Windows

11:26 AM 12-01-2019

EUCALYPTUS - VMware Workstation

File Edit View VM Info Help

Library

My Computer: Ubuntu, DATI, VMware ESXi 5.5 (3), EUCALYPTUS, Shared VMs

Type here to search

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Applications Places System Mozilla Firefox

Sat Jan 12, 11:26

Eucalyptus - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Eucalyptus https://192.168.52.142:8888/#sgroup

Google

EUCALYPTUS

Dashboard

Create new security group

Manage security groups

Group Rules Tags

Name * Description *

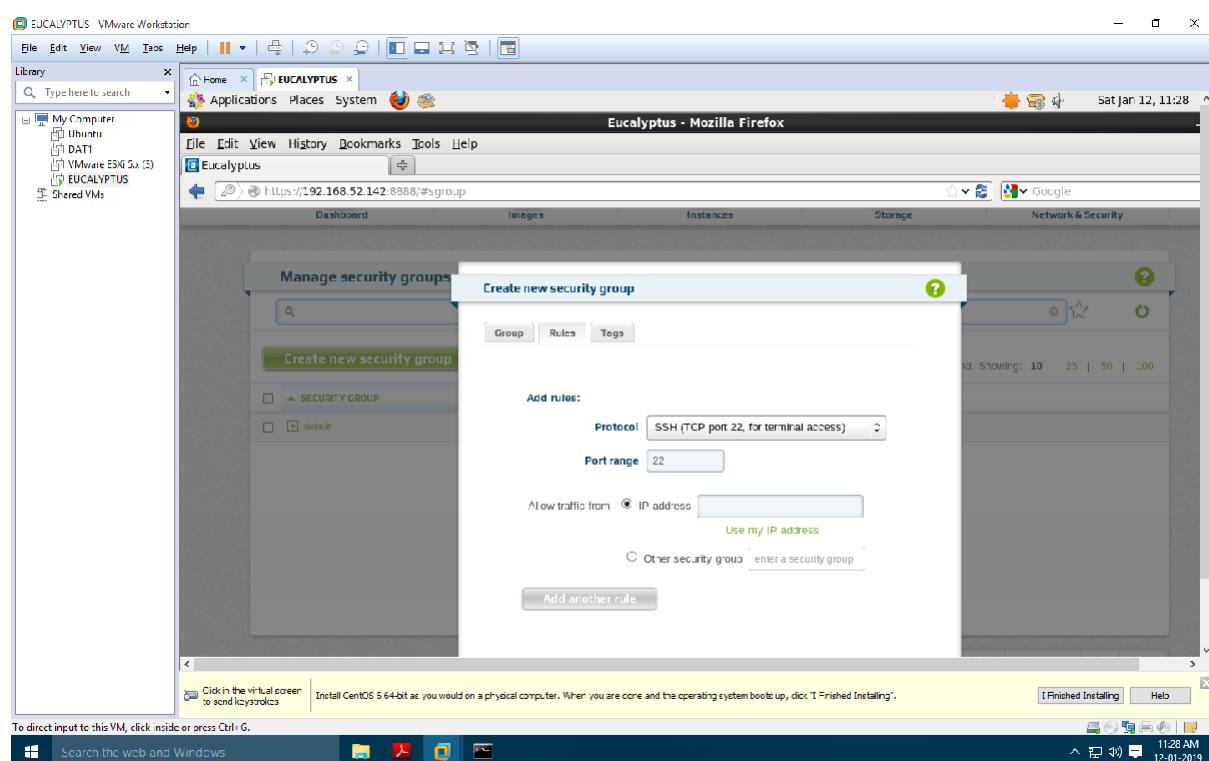
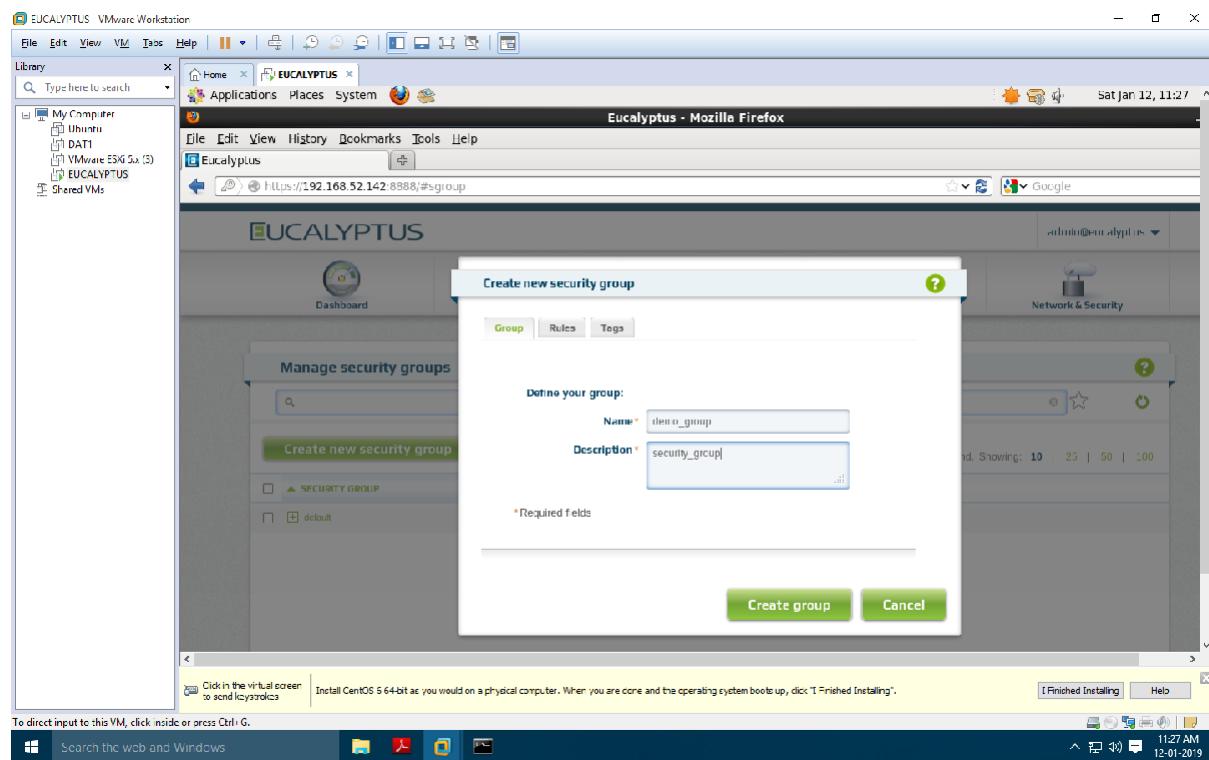
Required fields

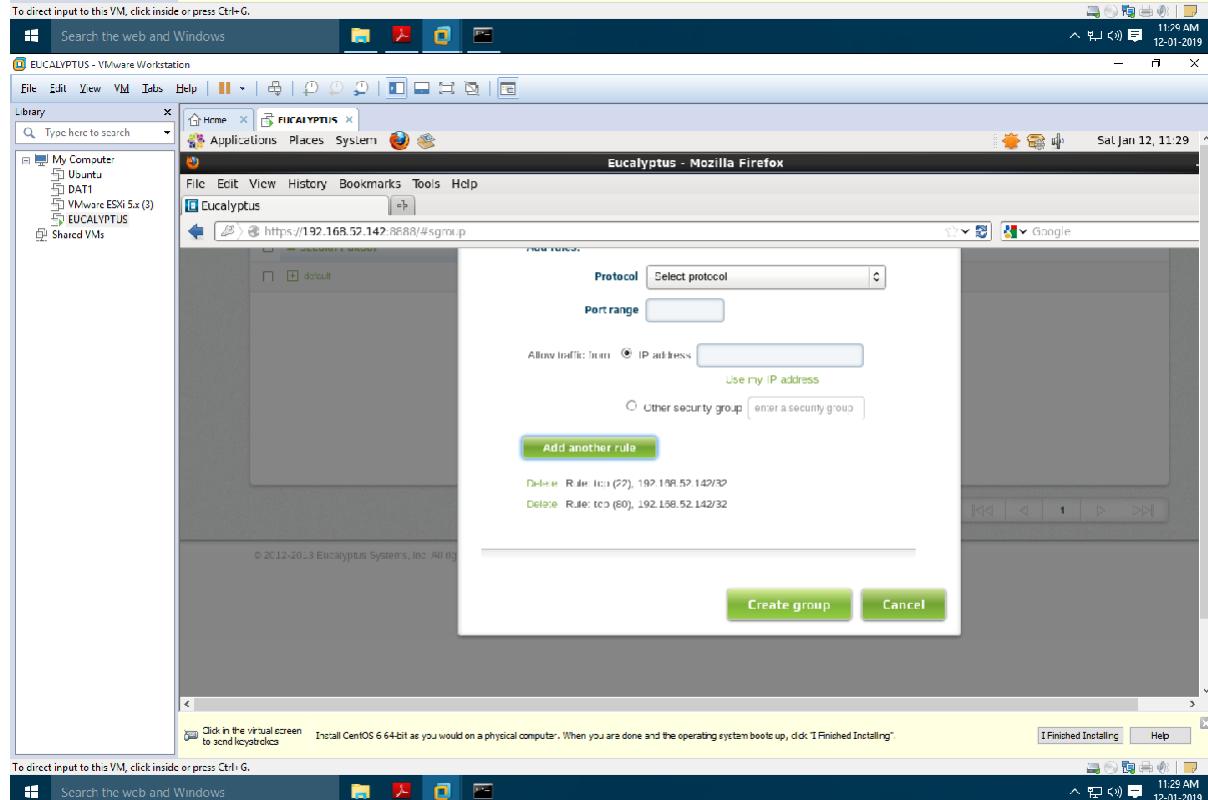
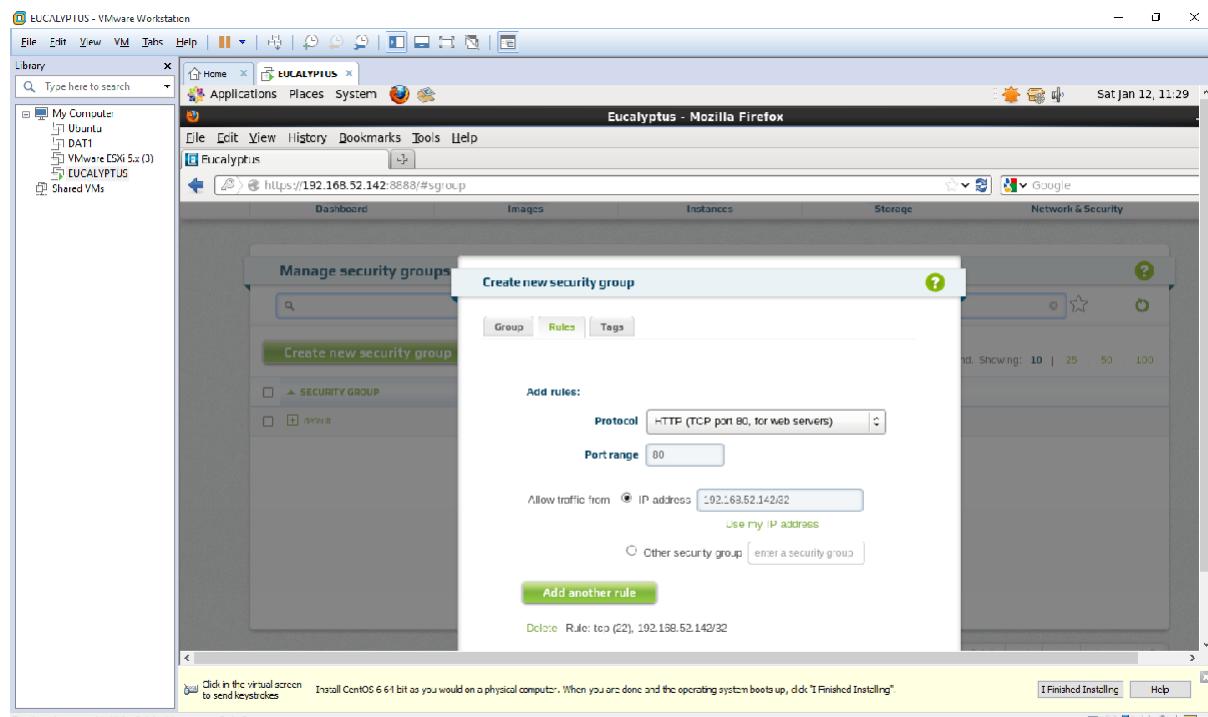
Create group Cancel

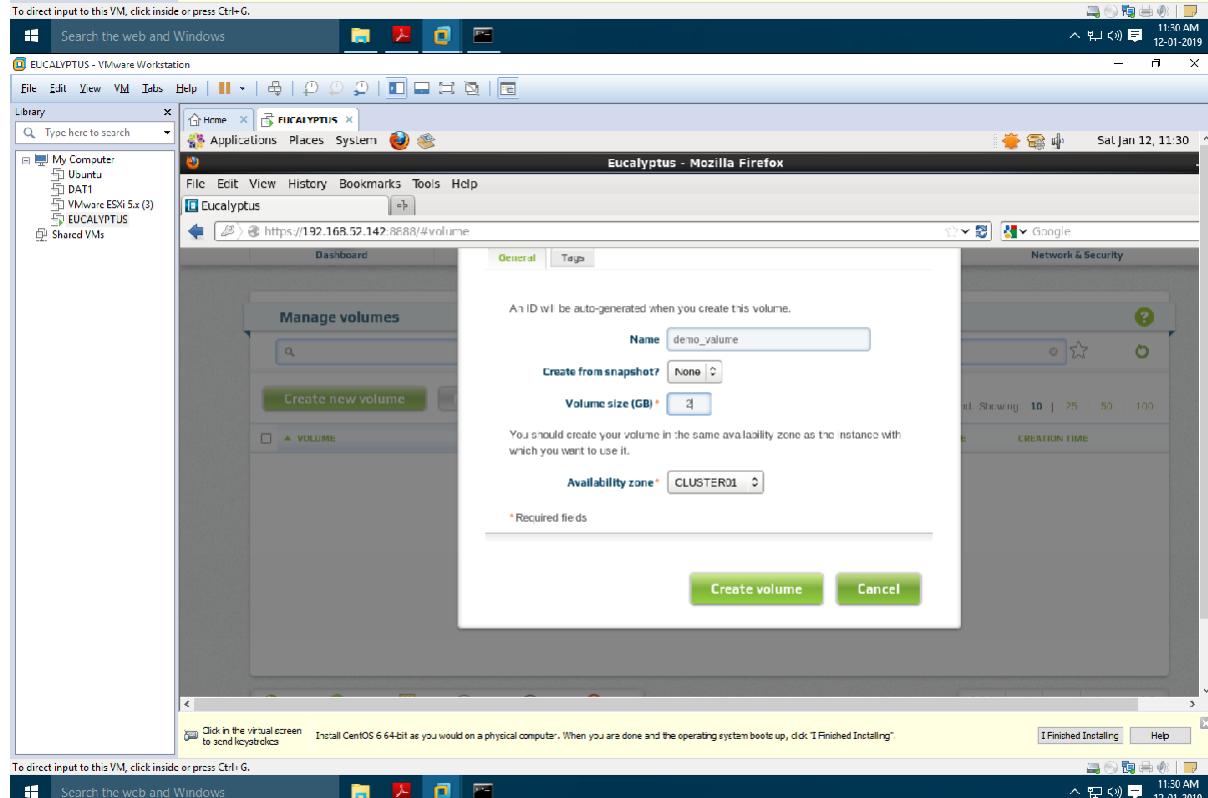
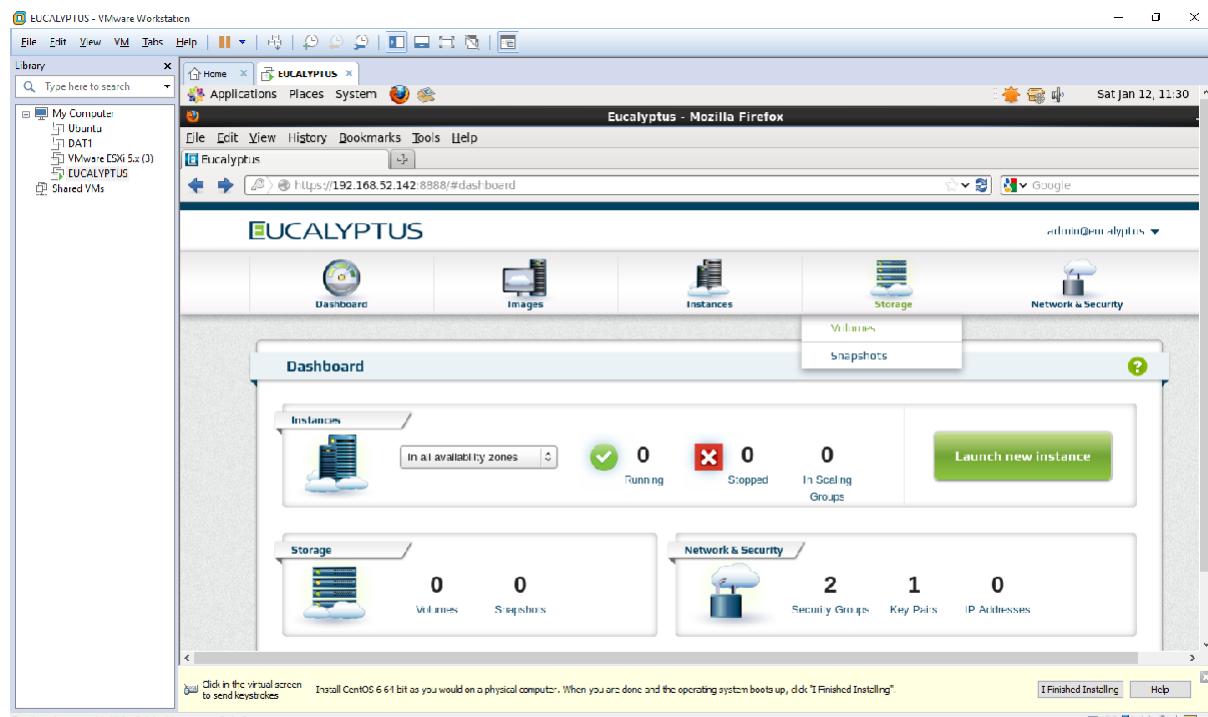
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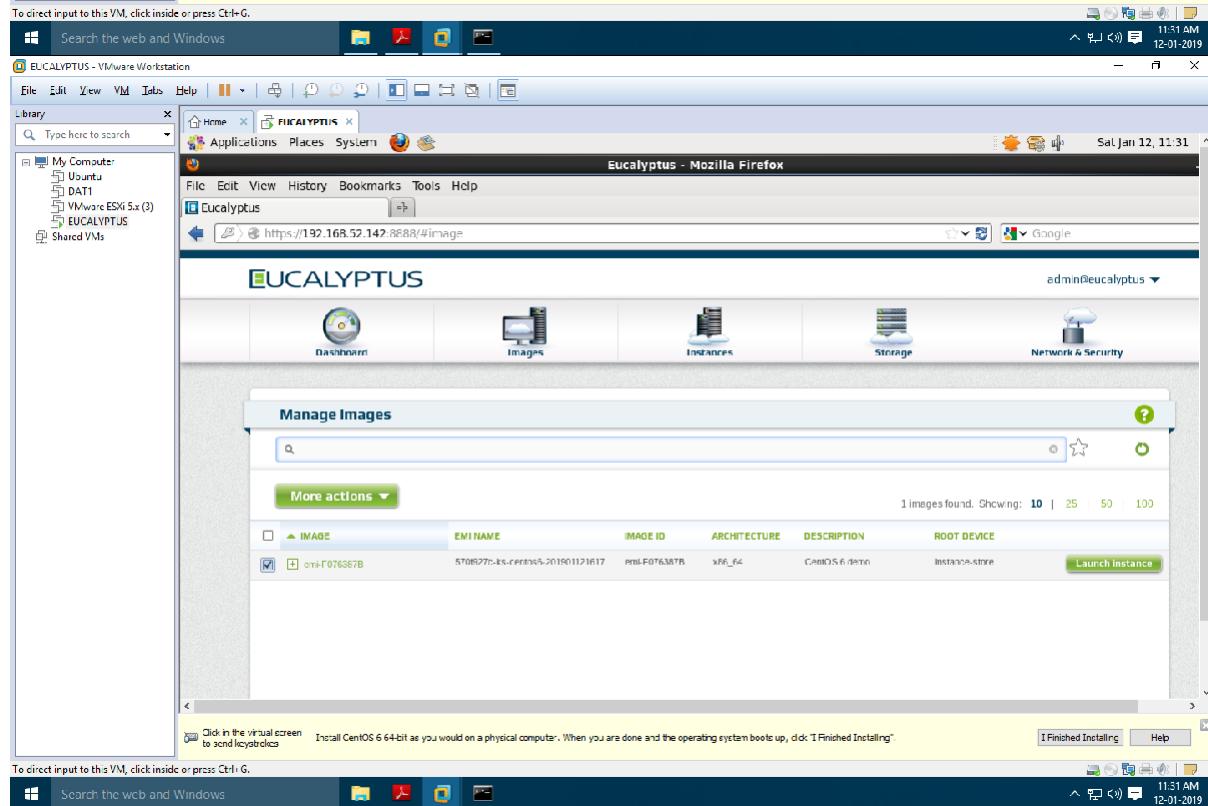
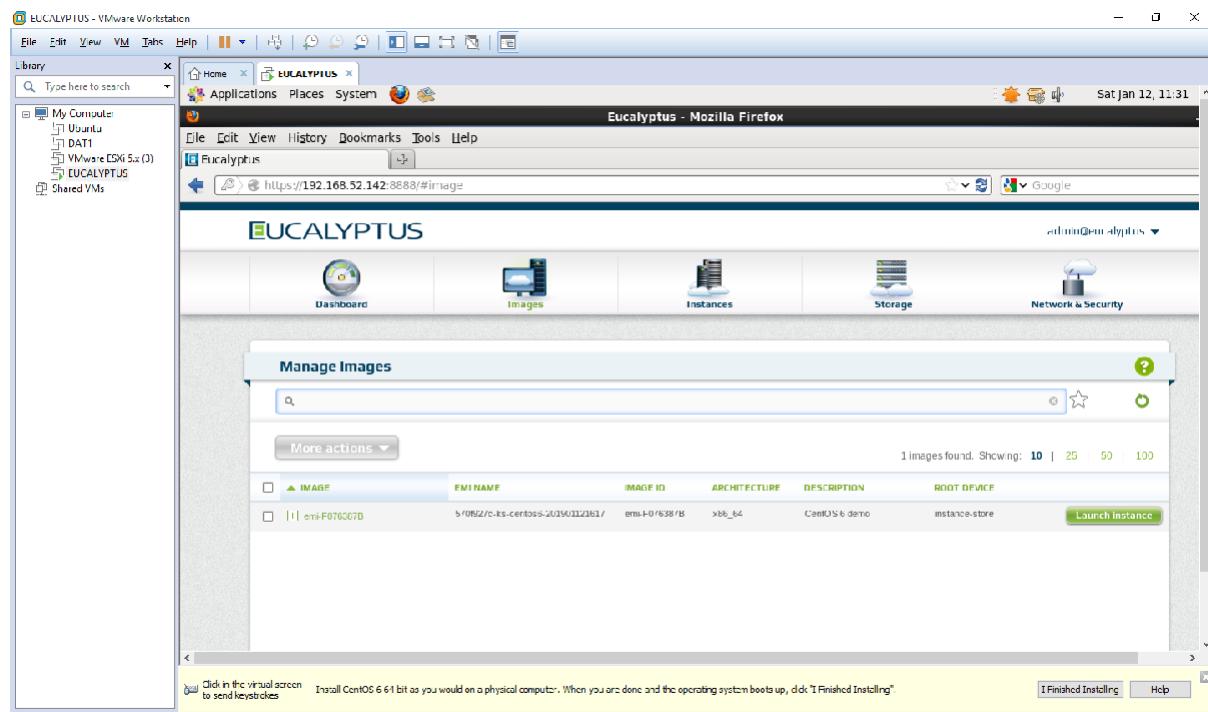
I Finished Installing Help

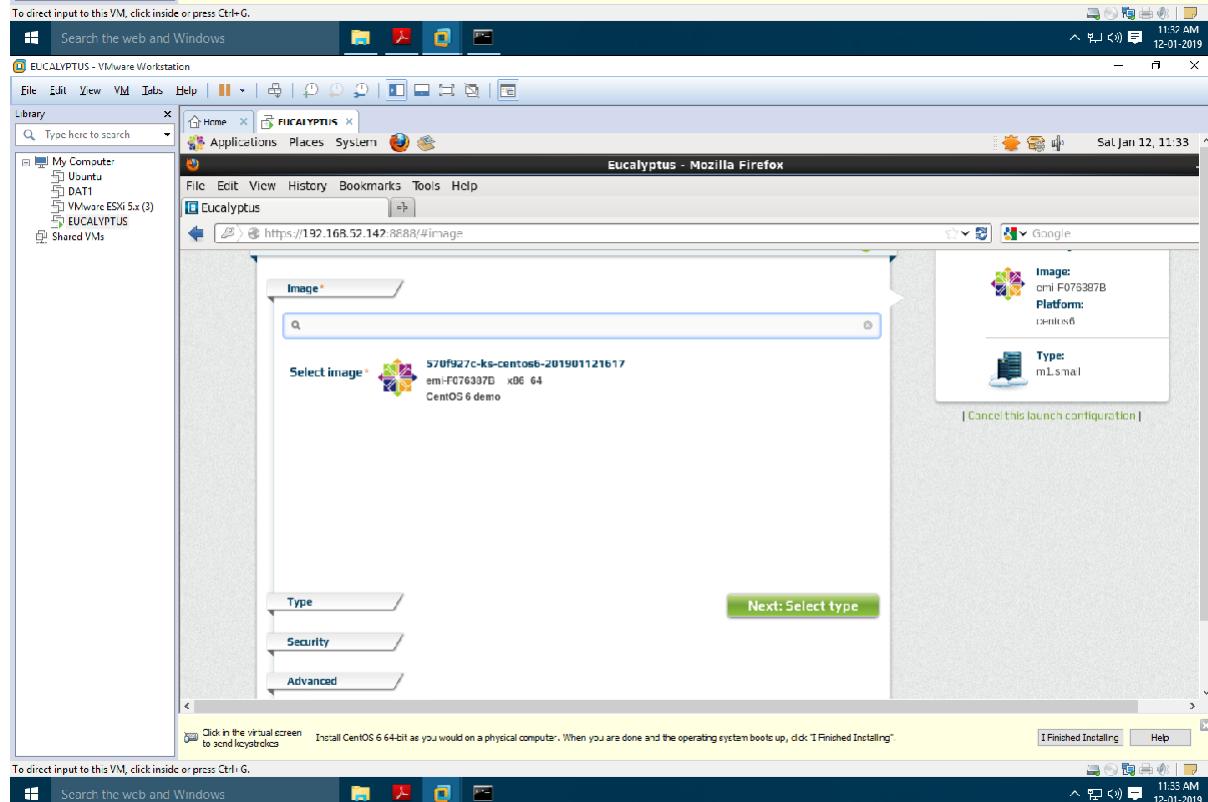
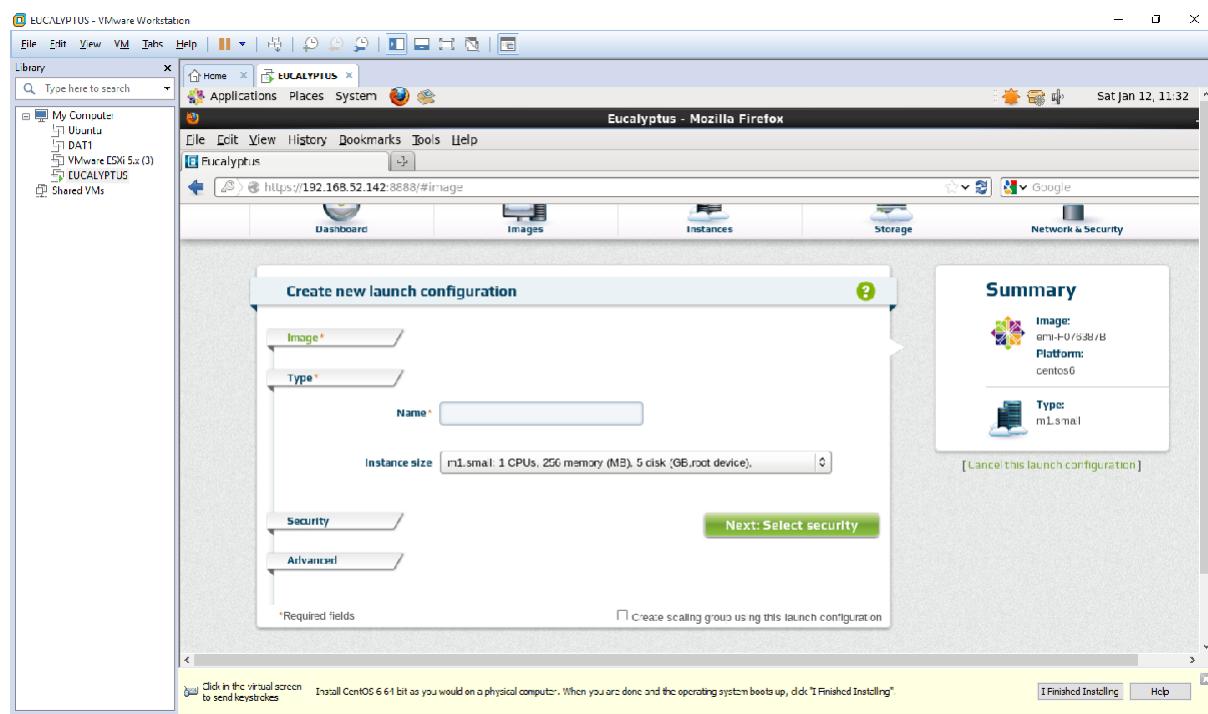
11:26 AM 12-01-2019

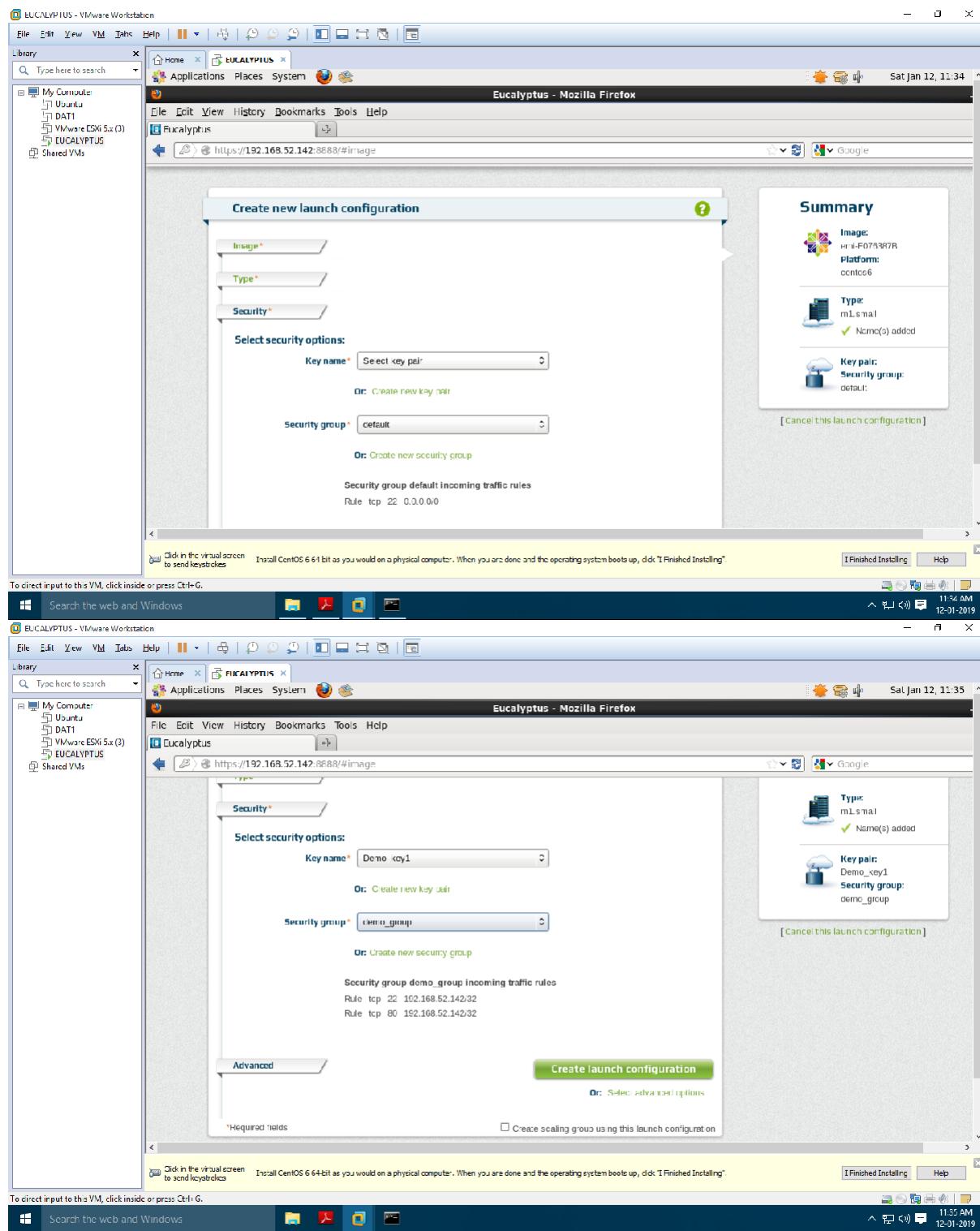












EUCALYPTUS - VMware Workstation

File Edit View VM Info Help

Library

My Computer: Ubuntu, DAT1, VMware ESX 5.x (3), EUCALYPTUS, Shared VMs

Type here to search

EUCALYPTUS

Applications Places System Mozilla Firefox

Sat Jan 12, 11:37

Eucalyptus - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Eucalyptus https://192.168.52.142:8888/#instance

Google

EUCALYPTUS

Dashboard Images Instances Storage Network & Security

Instances

Manage instances

Launch new instance More actions

INSTANCE STATUS IMAGE ID AVAILABILITY ZONE PUBLIC ADDRESS PRIVATE ADDRESS KEY NAME SECURITY GROUP LAUNCH TIME

To direct input to this VM, click inside or press Ctrl+G.

Click in the virtual screen to send keystrokes. Install CentOS 6 64-bit as you would on a physical computer. When you are done and the operating system boots up, click "I Finished Installing".

I Finished Installing Help

Search the web and Windows

11:57 AM 12-01-2019

EUCALYPTUS - VMware Workstation

File Edit View VM Info Help

Library

My Computer: Ubuntu, DAT1, VMware ESX 5.x (3), EUCALYPTUS, Shared VMs

Type here to search

EUCALYPTUS

Applications Places System Mozilla Firefox

Sat Jan 12, 11:37

Eucalyptus - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Eucalyptus https://192.168.52.142:8888/#launcher

Google

Create new instance

An ID will be auto generated when you launch this instance.

Image

Select image 570f927c-ks-centos6-201901121617 emi-FC76387B x86_64 CentOS 6 demo

Type

Next: Select type

Summary

Image: emi-F073387B Platform: centos6

[Cancel this instance]

To direct input to this VM, click inside or press Ctrl+G.

Click in the virtual screen to send keystrokes. Install CentOS 6 64-bit as you would on a physical computer. When you are done and the operating system boots up, click "I Finished Installing".

I Finished Installing Help

11:57 AM 12-01-2019

EUCALYPTUS - VMware Workstation

Eucalyptus - Mozilla Firefox

File Edit View VM Info Help | Home EUCALYPTUS Applications Places System

Zone: CLUSTER01 ✓ Name(s) added

Instance name(s): my_instance

Instance size: m1.small: 1 CPUs, 256 memory (MiB), 5 disk (GB,root device)

Availability zone: CLUSTER01

Instance tags:

KEY	VALUE
Name	my_instance

Security Advanced

Next: Select security

To direct input to this VM, click inside or press Ctrl+G.

Click in the virtual screen to send keystrokes. Install CentOS 6 64-bit as you would on a physical computer. When you are done and the operating system boots up, click "I Finished Installing".

11:38 AM Sat Jan 12, 11:38 12-01-2019

EUCALYPTUS - VMware Workstation

Eucalyptus - Mozilla Firefox

Type: m1.small Instances: 1 Zone: CLUSTER01 ✓ Name(s) added ✓ Tag(s) added

Key pair: Demo_key1 Security group: demo_group

Select security options:

Key name: Demo_key1 Or: Create new key pair

Security group: demo_group Or: Create new security group

Security group demo_group incoming traffic rules:

- Rule: tcp 22 192.168.52.142/32
- Rule: http 80 192.168.52.142/32

Advanced

Launch instance(s)

Or: Select advanced options

To direct input to this VM, click inside or press Ctrl+G.

Click in the virtual screen to send keystrokes. Install CentOS 6 64-bit as you would on a physical computer. When you are done and the operating system boots up, click "I Finished Installing".

11:38 AM Sat Jan 12, 11:38 12-01-2019

