

VIRTUALIZATION

A Practical Report

Submitted in partial fulfilment of the Requirements for the award of the Degree of

MASTER OF SCIENCE (INFORMATION TECHNOLOGY)

By

Mr. Hrishikesh Rajesh Chavan

Roll Number: 01

Under the esteemed guidance of

Prof. Aditi Prajapati



DEPARTMENT OF INFORMATION TECHNOLOGY

RAMNIRANJAN JHUNJHUNWALA COLLEGE

Ghatkopar (West),

Mumbai – 400 086



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Mumbai – 400 086

CERTIFICATE

This is to certify that Mr./Miss./Mrs. **Hrishikesh Rajesh Chavan** with Roll No: **1** has successfully completed the necessary course of experiments in the subject of **Virtualization** during the academic year **2021 – 2022** complying with the requirements of **Ramniranjan Jhunjhunwala College of Arts, Science and Commerce**, for the course of M.Sc. (IT) Semester **II**.

Internal Guide

Prof. Aditi Prajapati

Coordinator

Prof. Aditi Prajapati

Date:

24/03/2022

College Seal

Virtualization Practical

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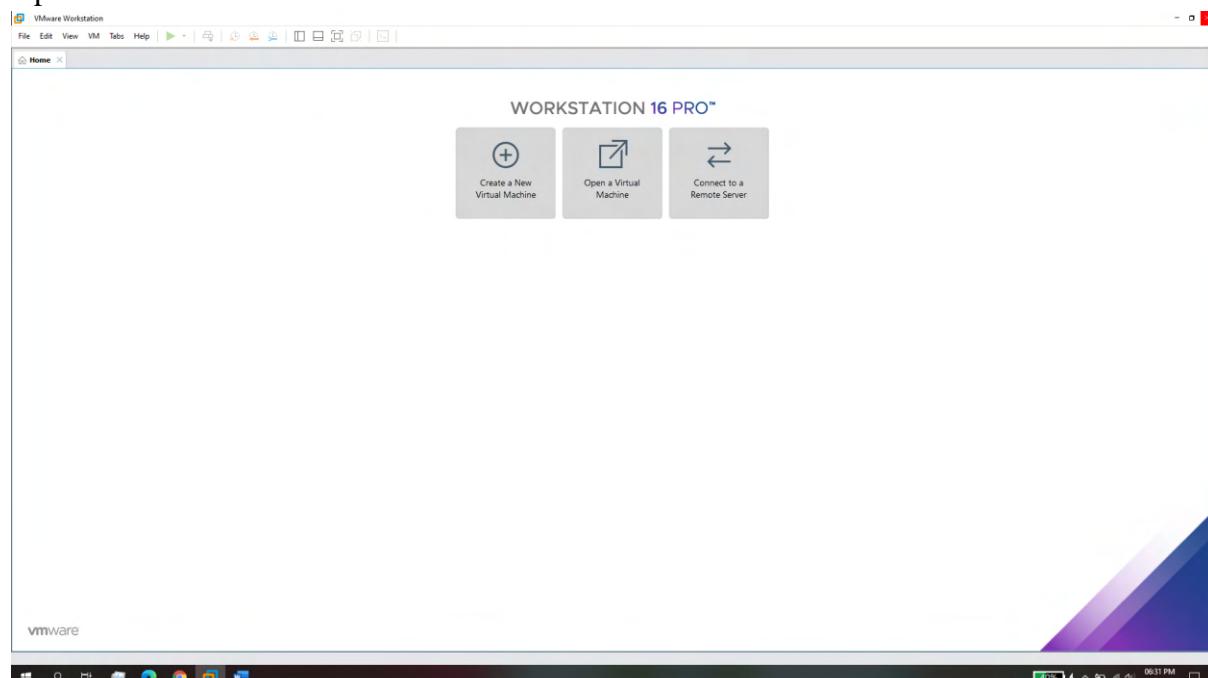
Practical 1

Implement VMwareESXi for server virtualization

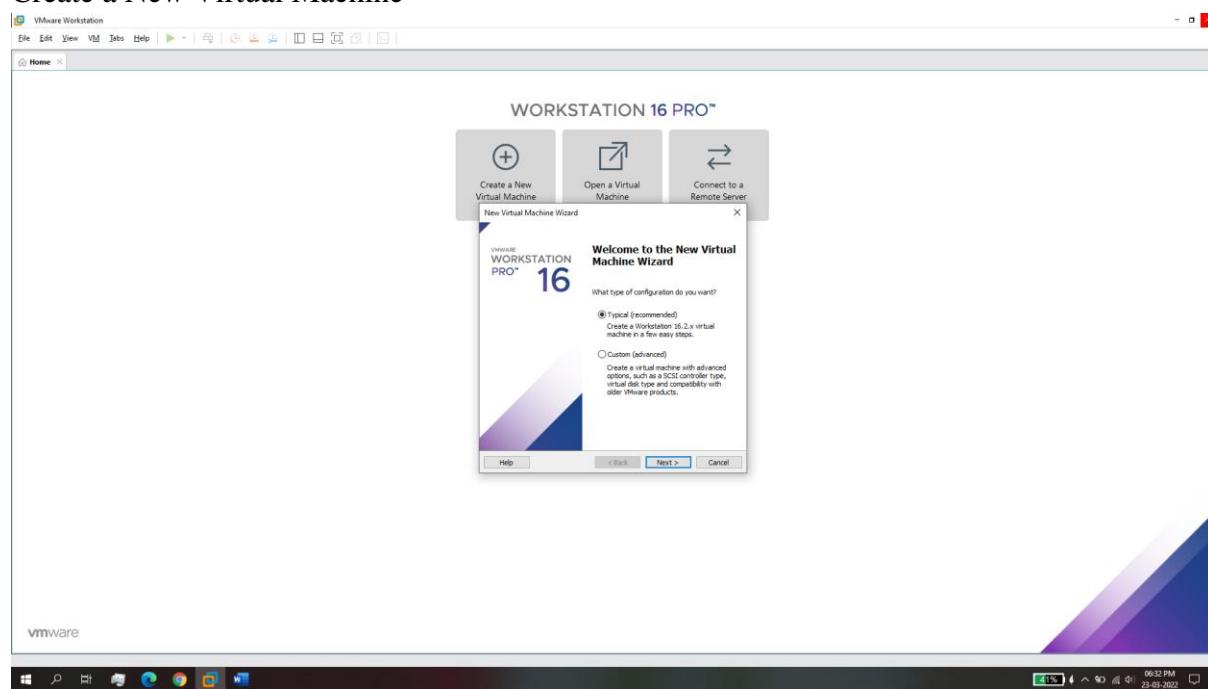
A. Install VMwareESXi server and vSphere client.

Steps:

Open VMware Workstation Pro

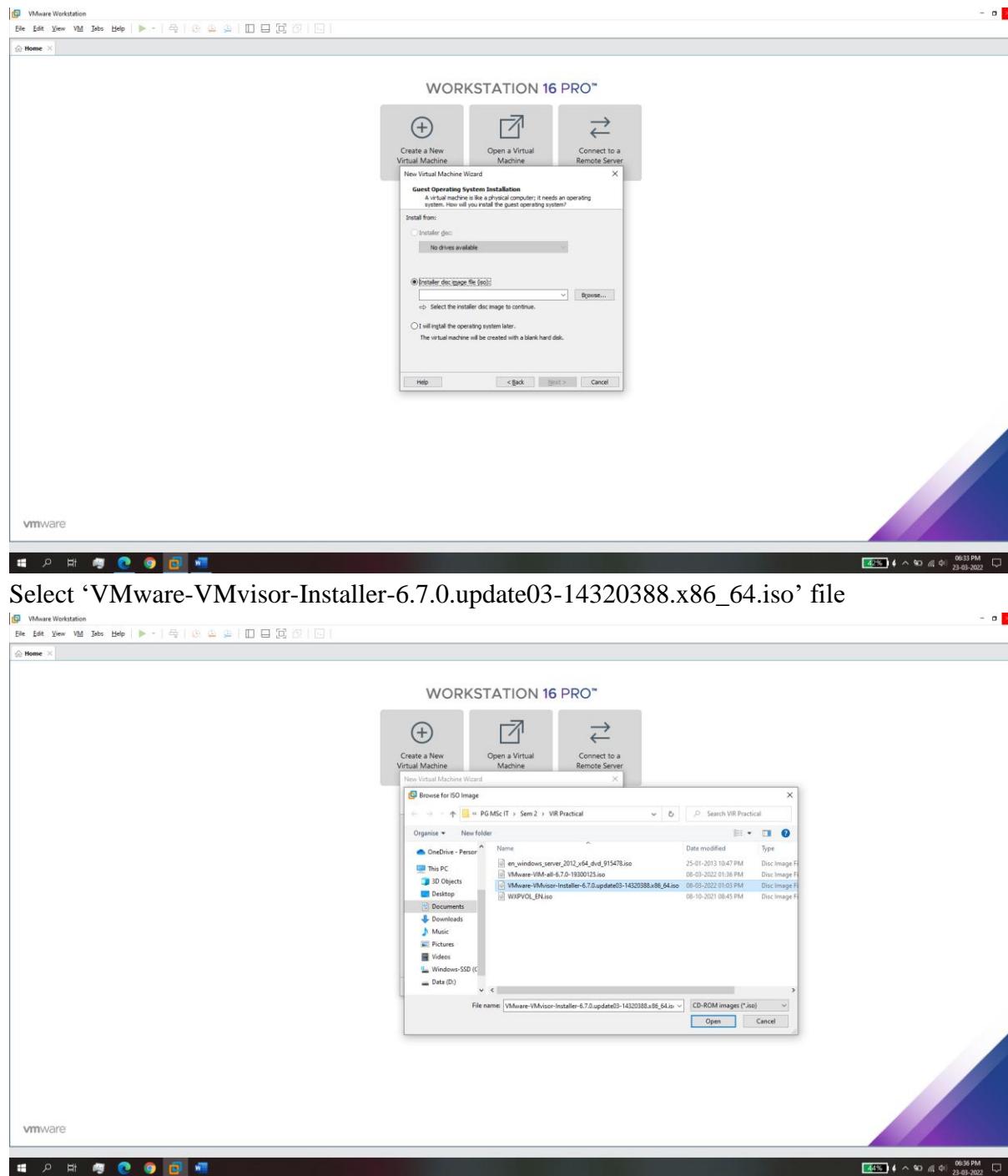


Create a New Virtual Machine

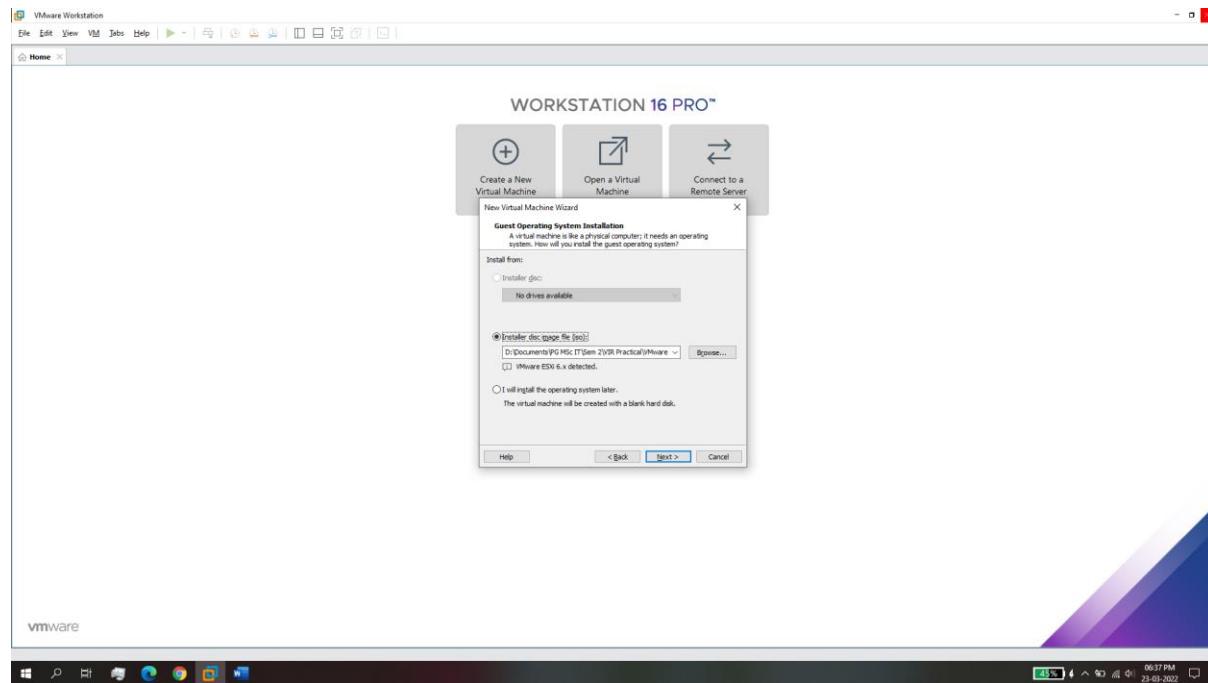


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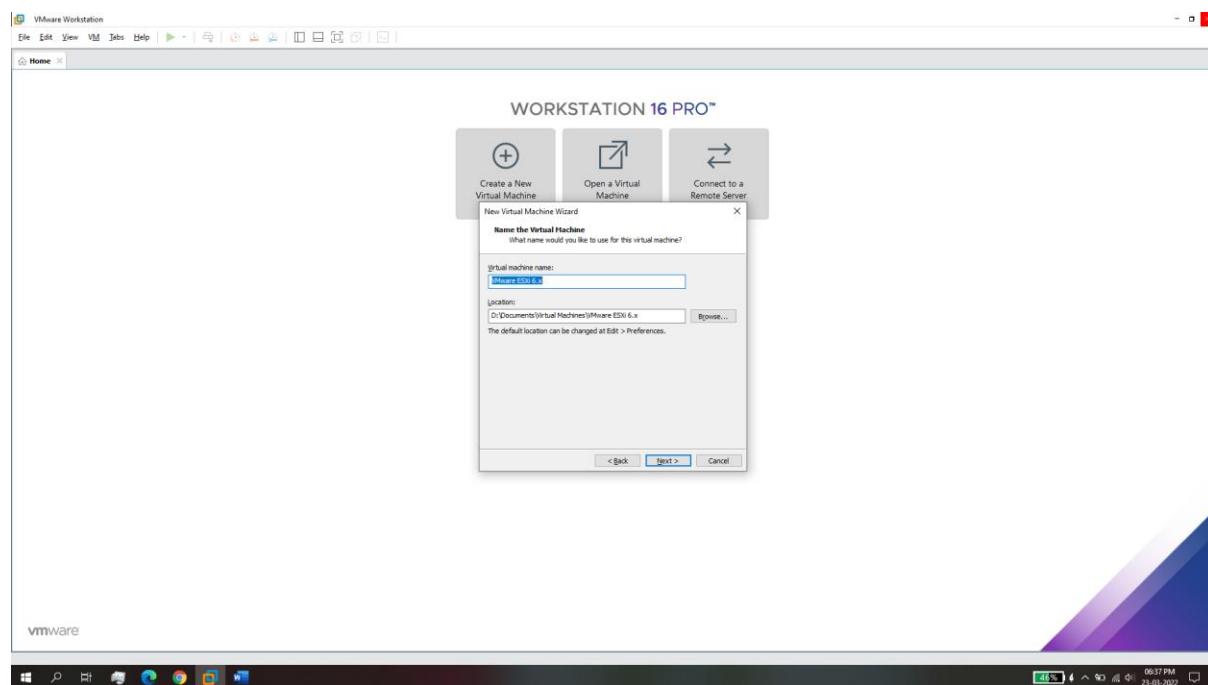
Click on ‘browse’



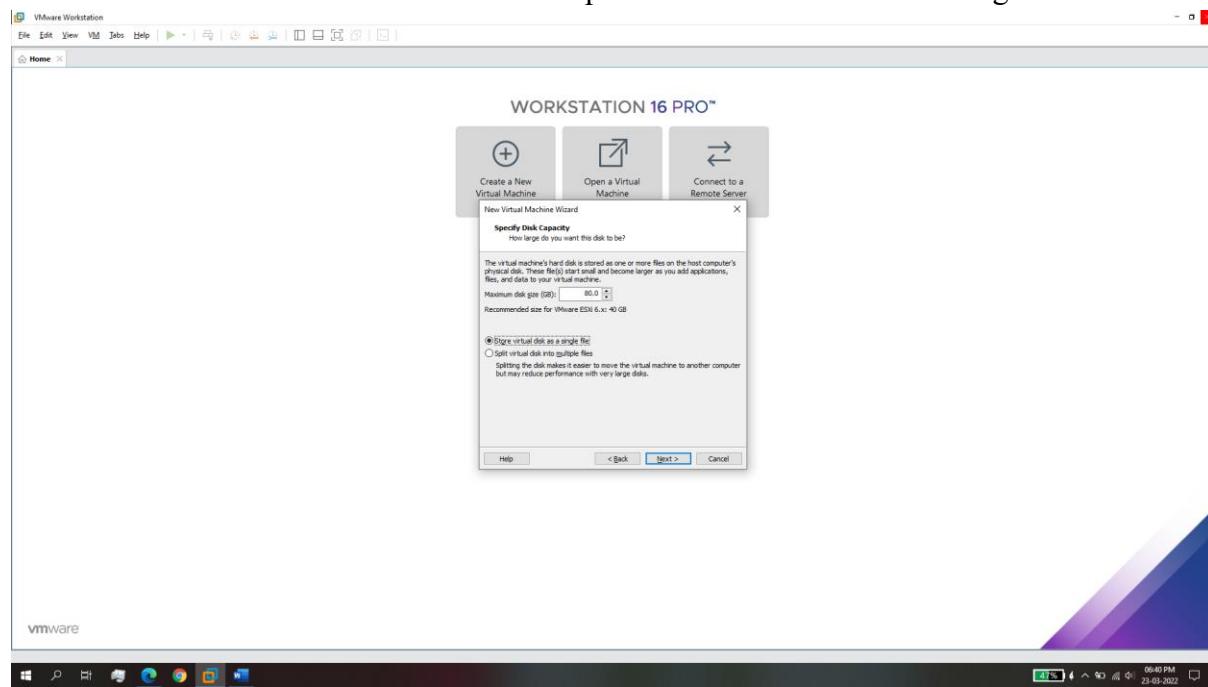
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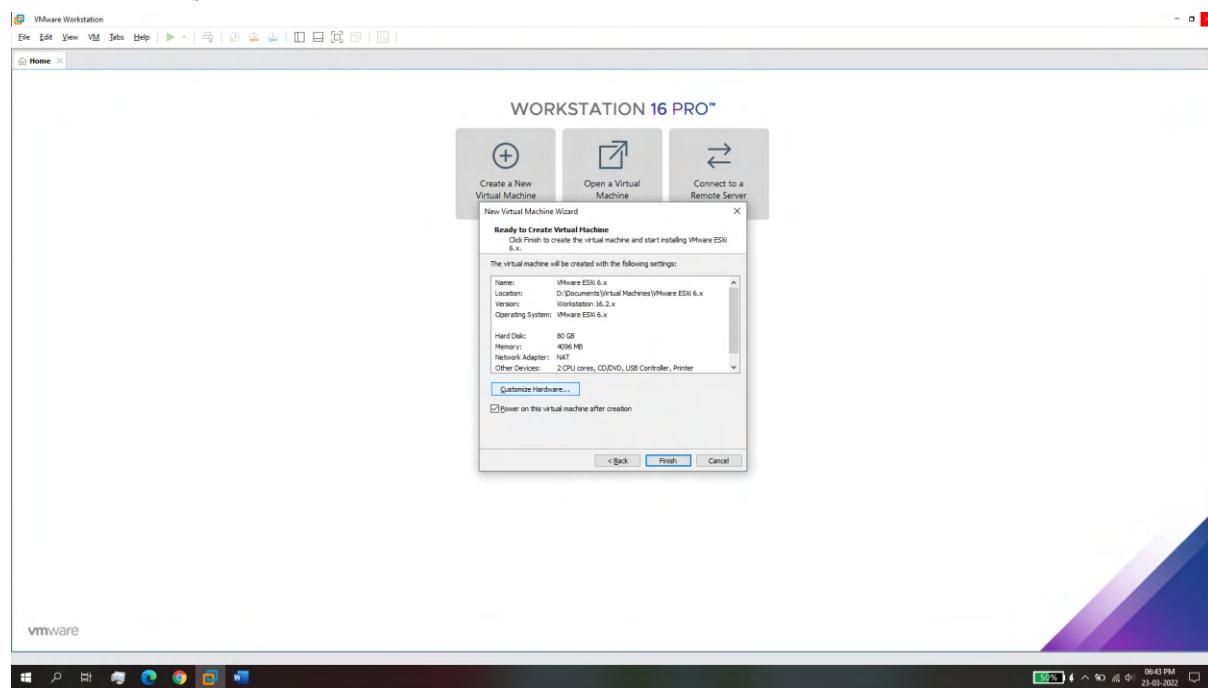
Click on ‘Next’



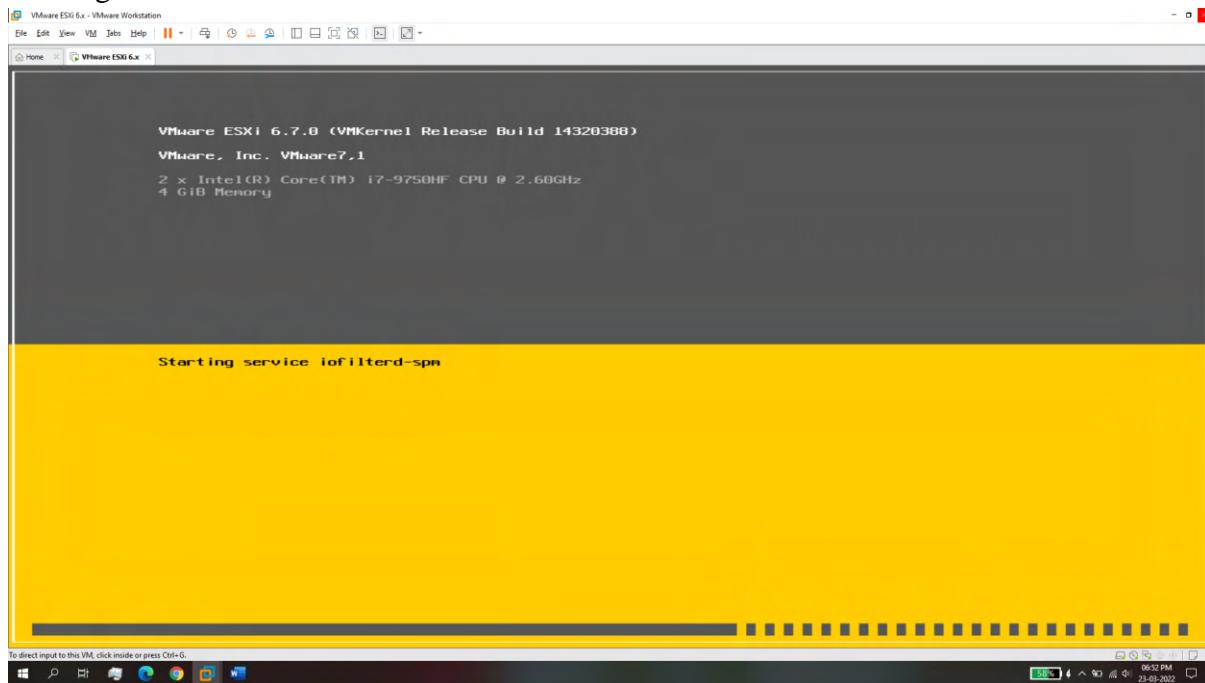
Set Maximum disk size '80 GB' and select option 'Store virtual disk as a single file'



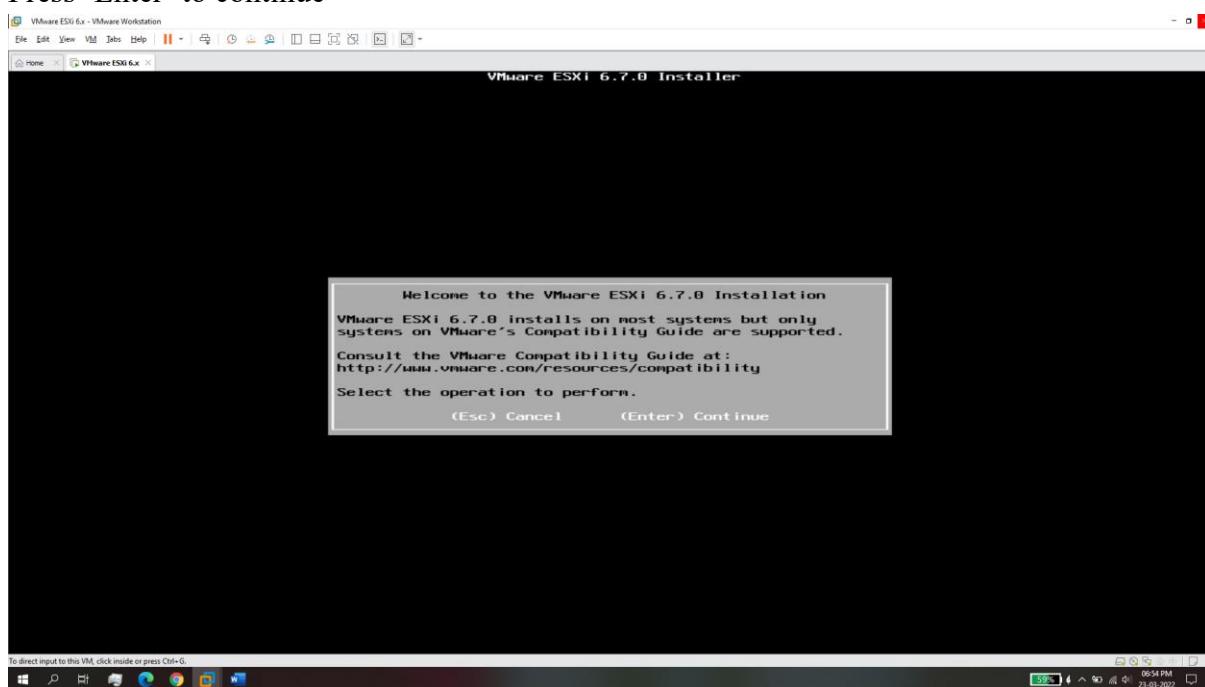
Click on 'Finish'



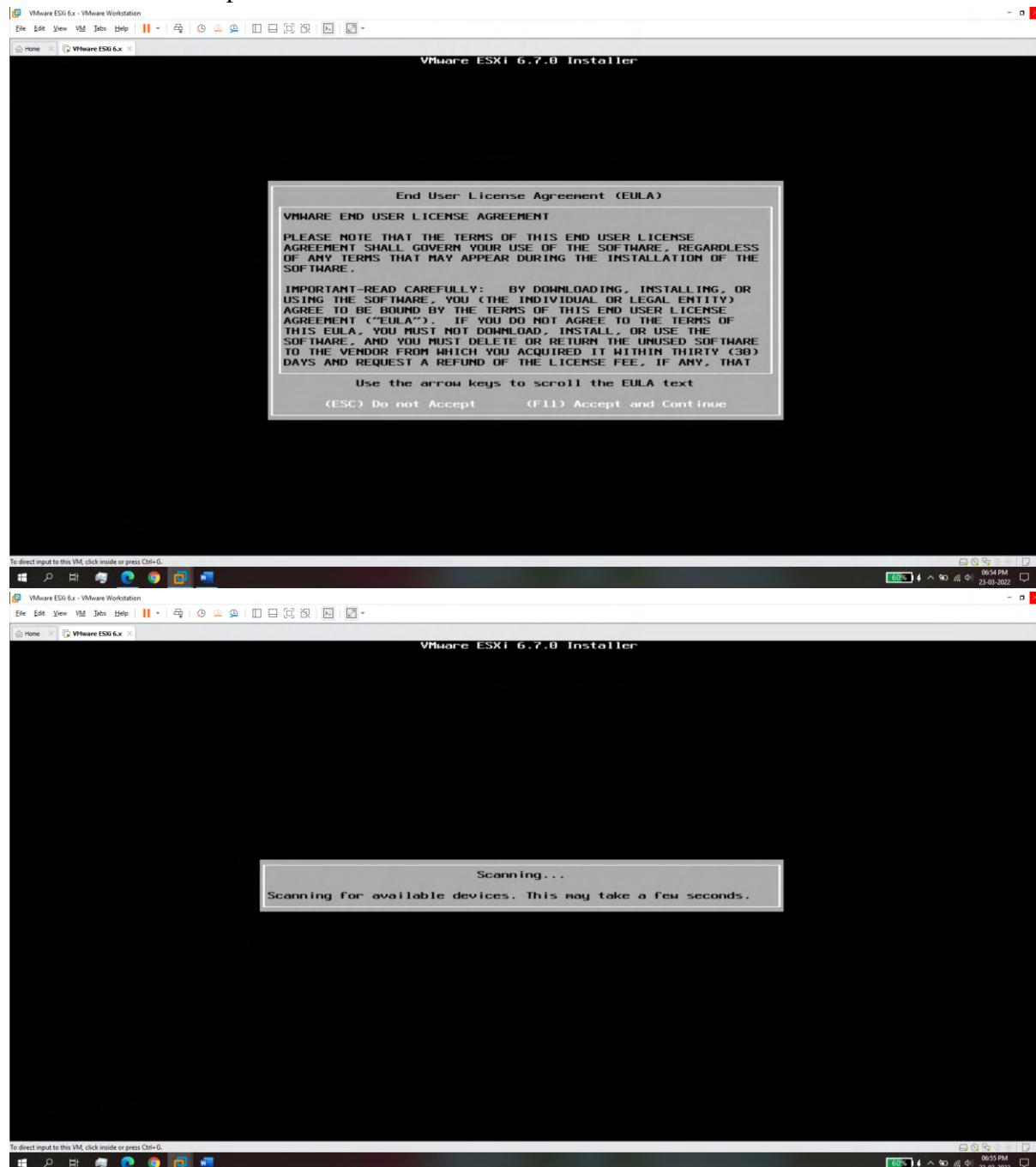
Booting VMwareESXi Server



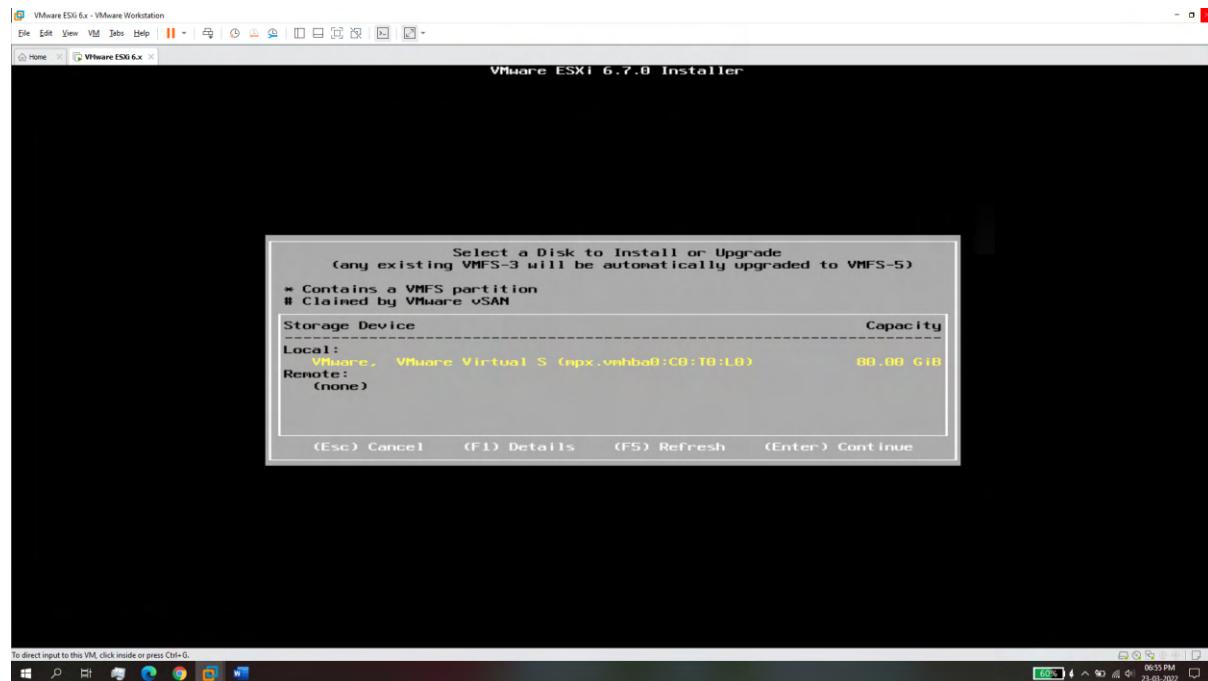
Press 'Enter' to continue



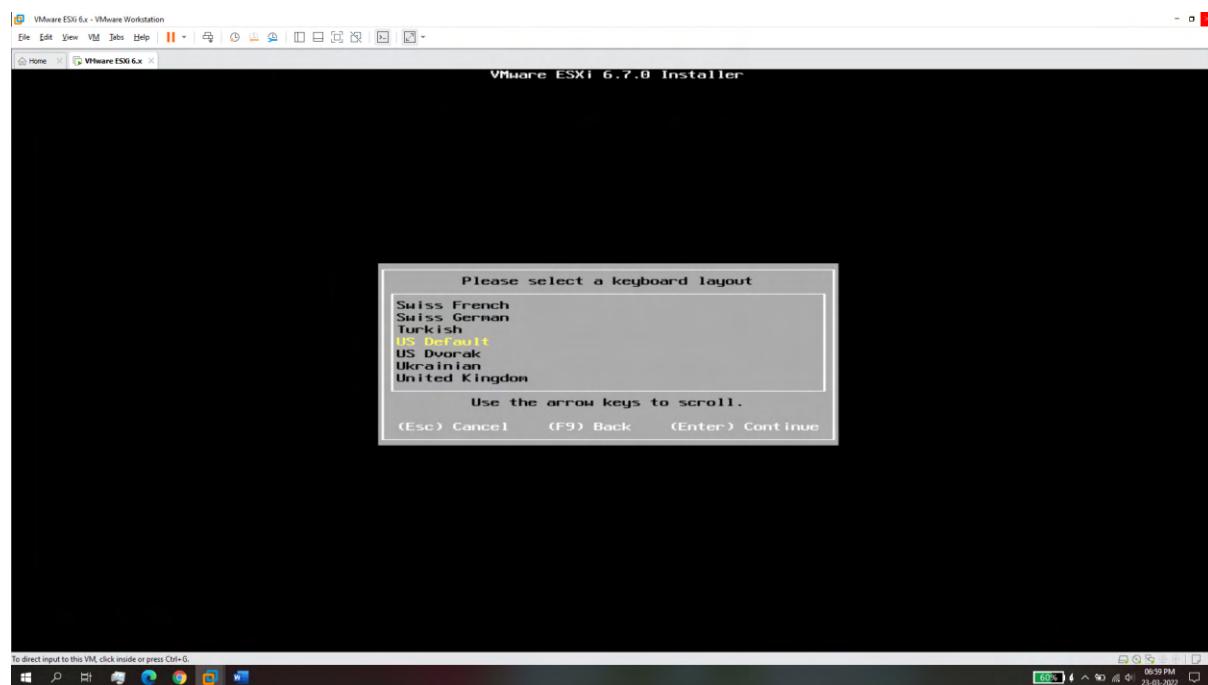
Press 'F11' to Accept and Continue



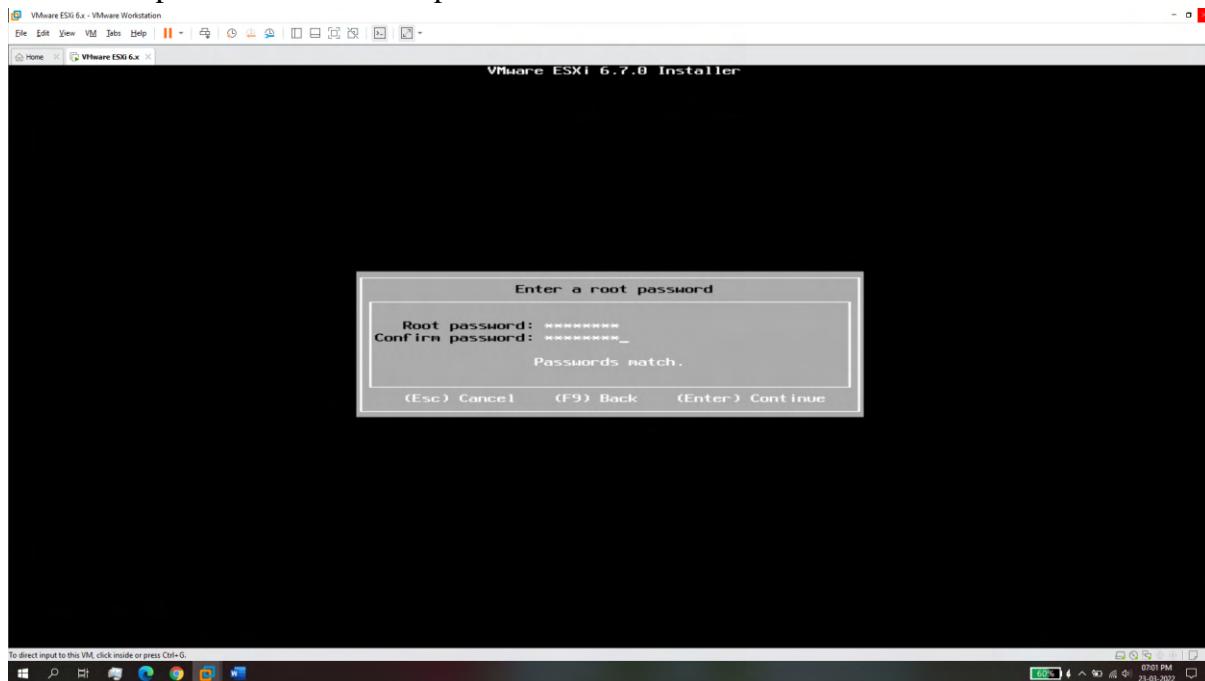
Press ‘Enter’ to continue



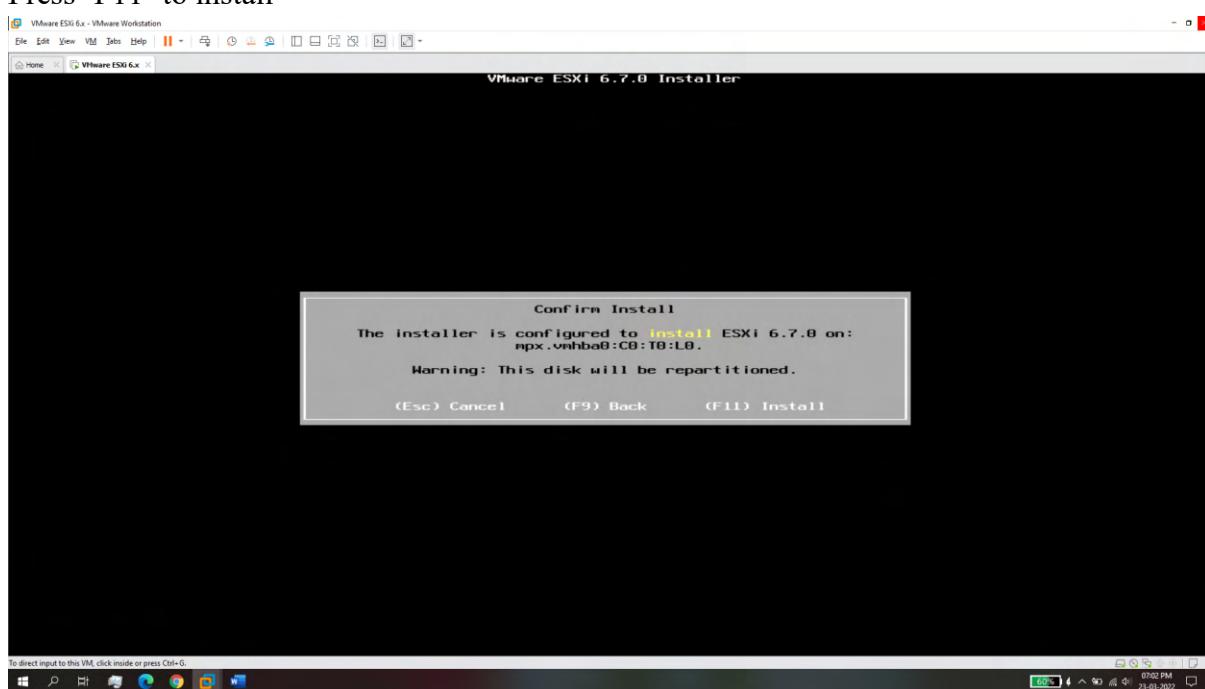
Press ‘Enter’ to continue



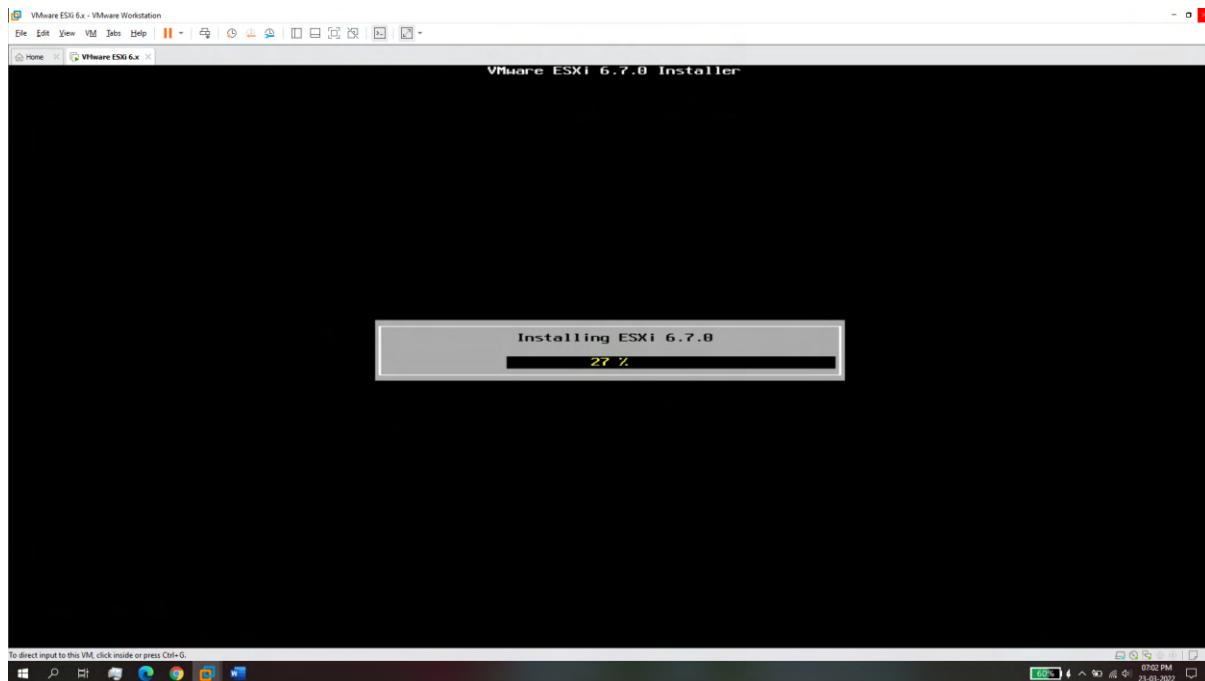
Enter Root password & Confirm password: It@13579



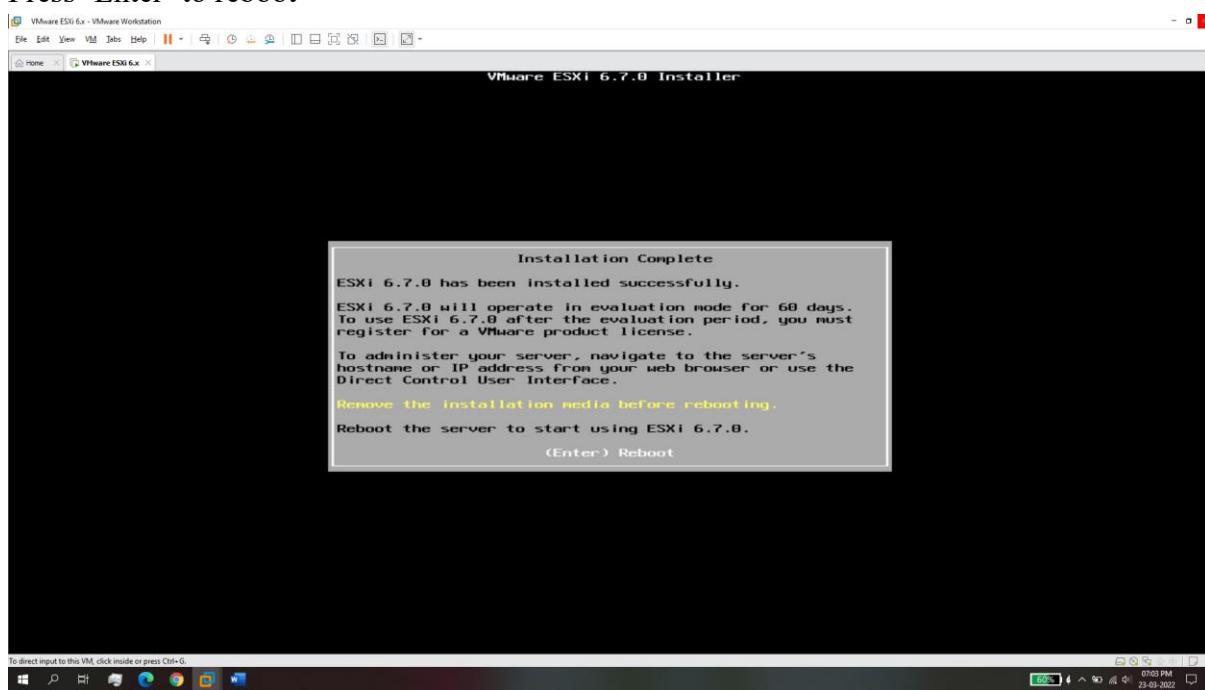
Press 'F11' to install



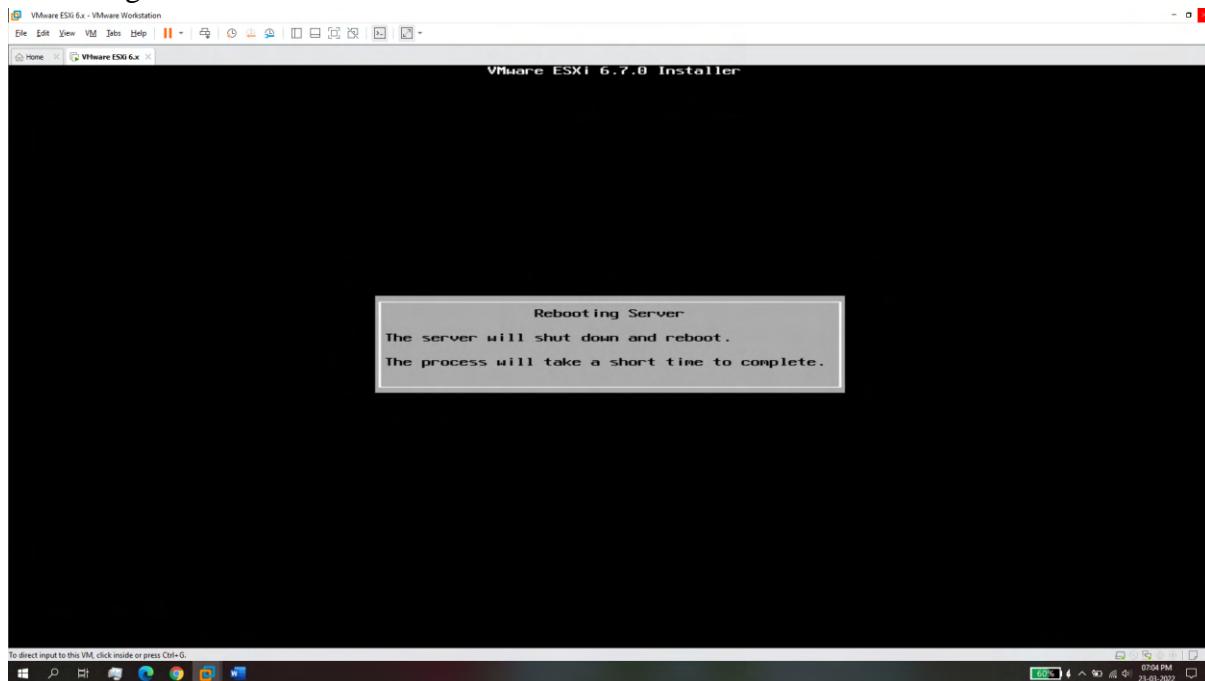
Installation start



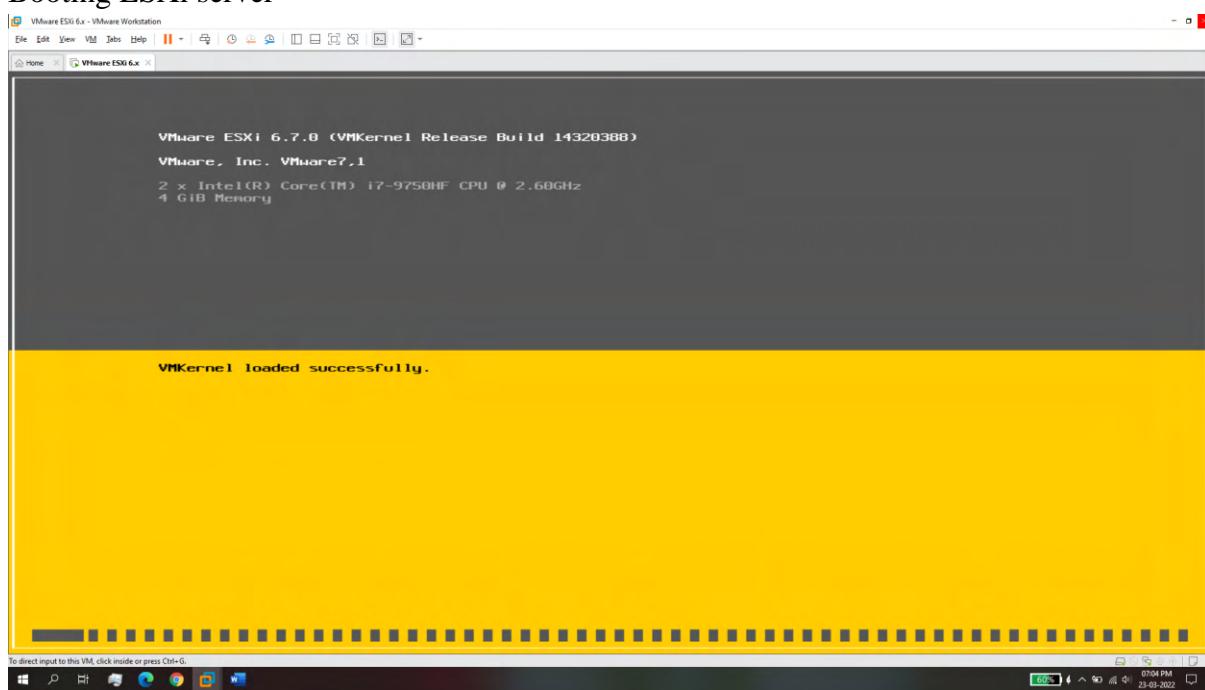
Press 'Enter' to reboot



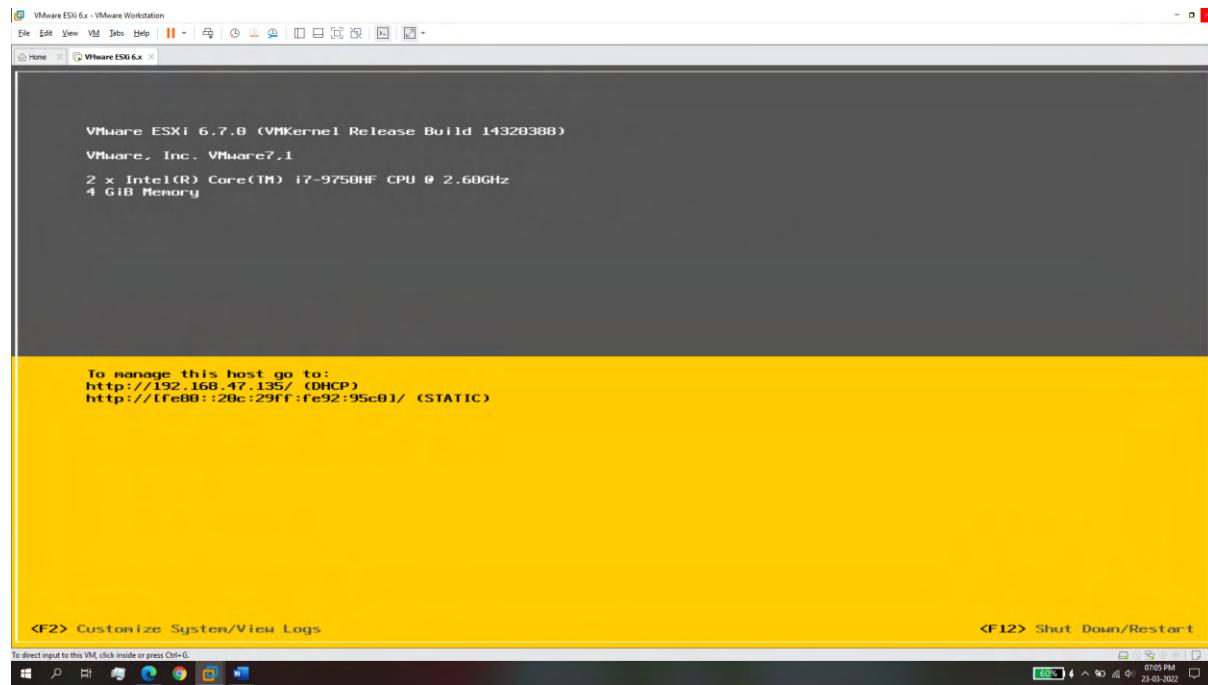
Rebooting ESXi server



Booting ESXi server



Started the ESXi server

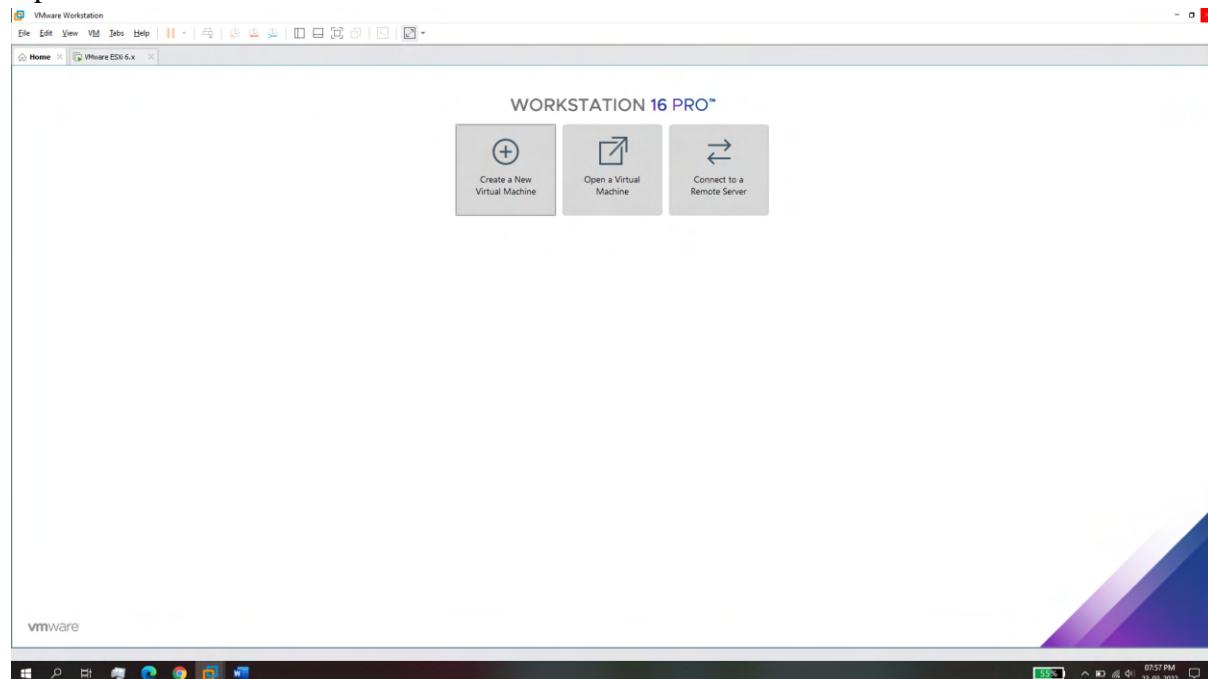


Host IP Address: 192.168.47.135

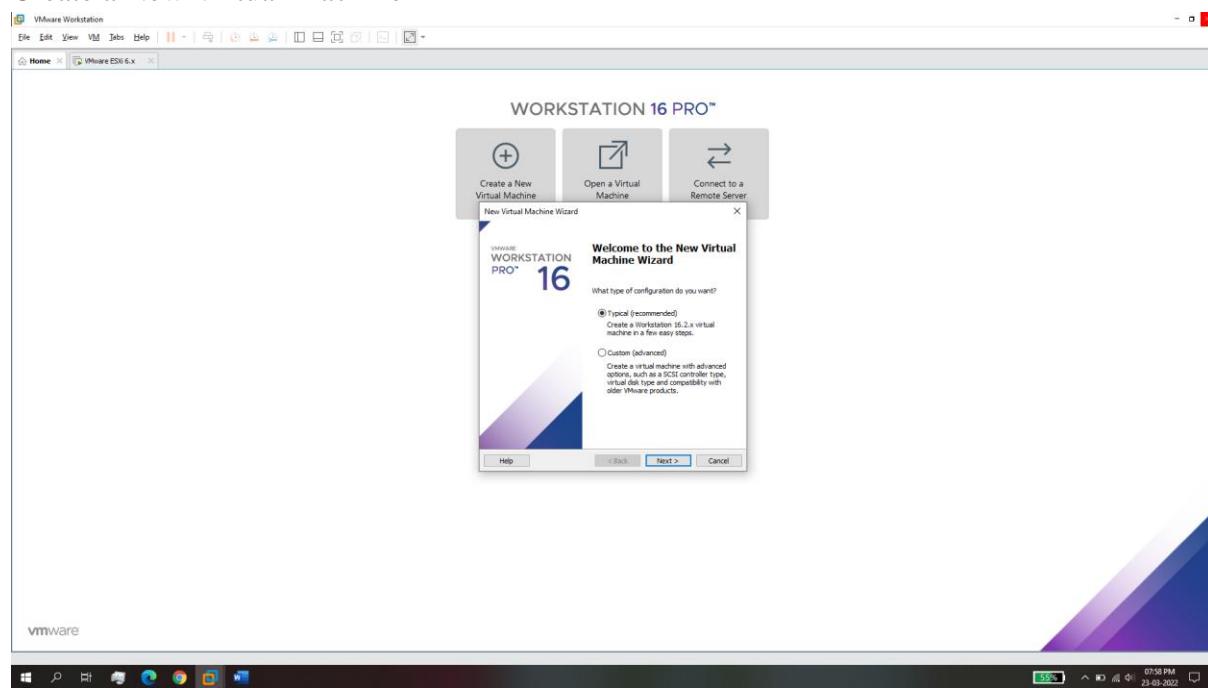
B. Install vCenter Single Sign-On as Part of a vCenter Server Simple Install.

Steps:

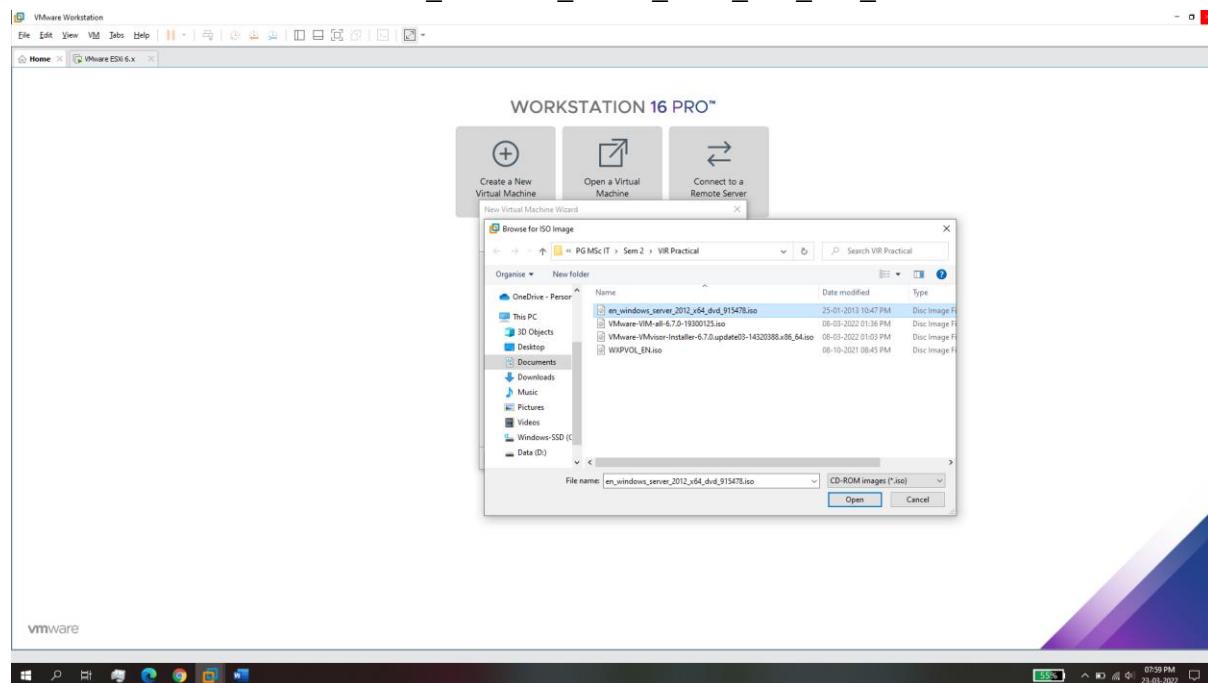
Open VMware Workstation Pro



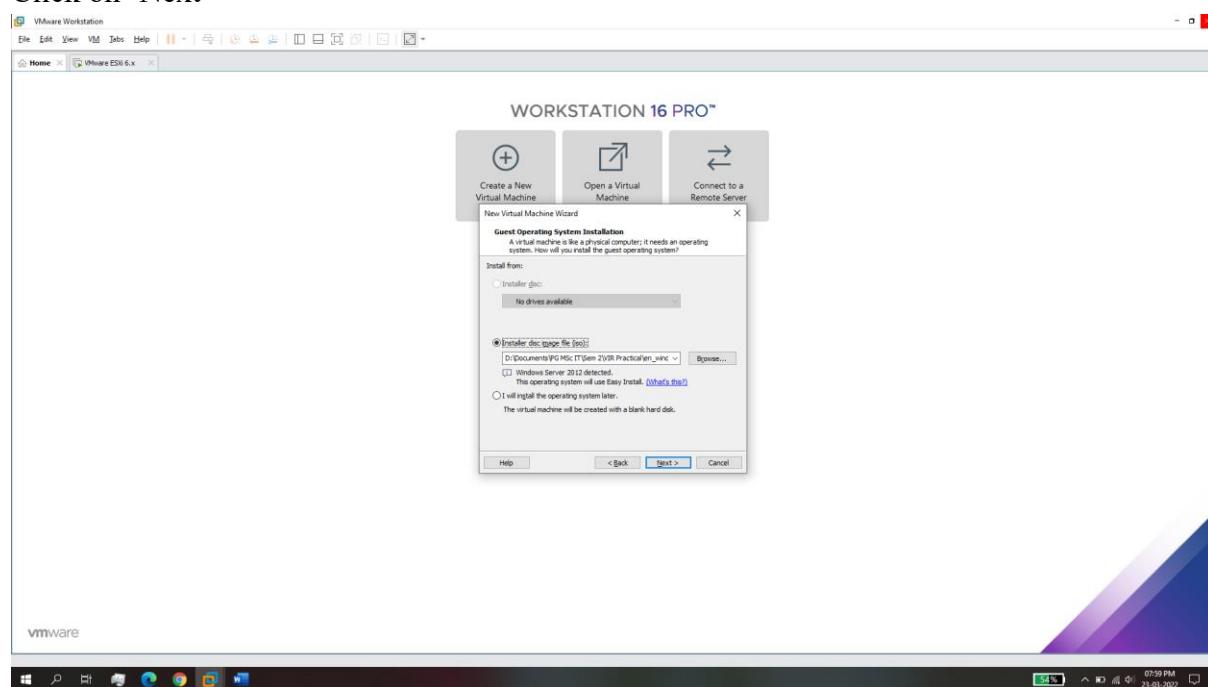
Create a New Virtual Machine then click on 'Next'



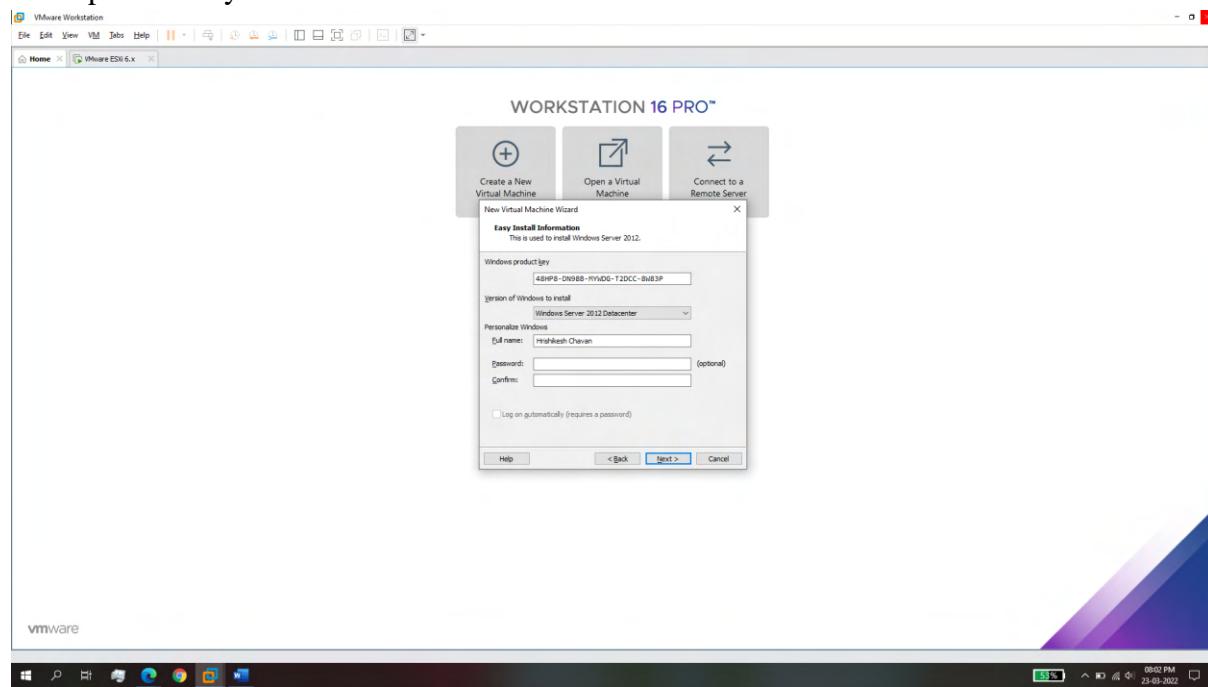
Click on ‘browse’ and select ‘en_windows_server_2012_x64_dvd_915478.iso’ file



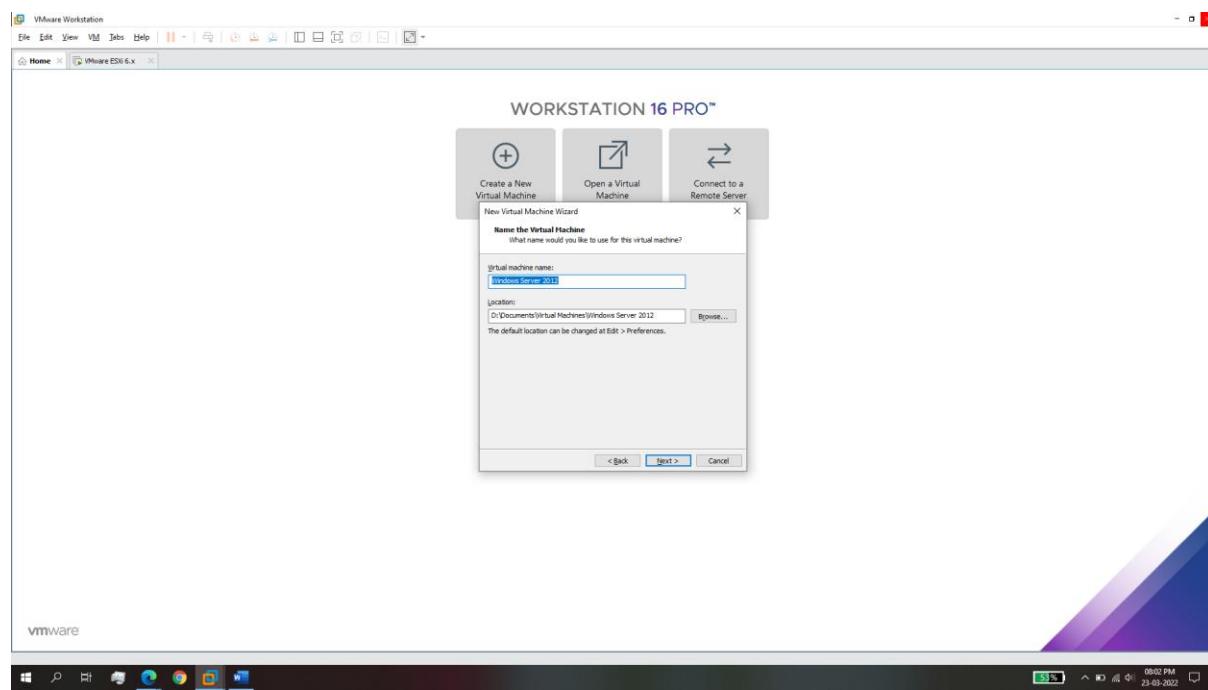
Click on ‘Next’



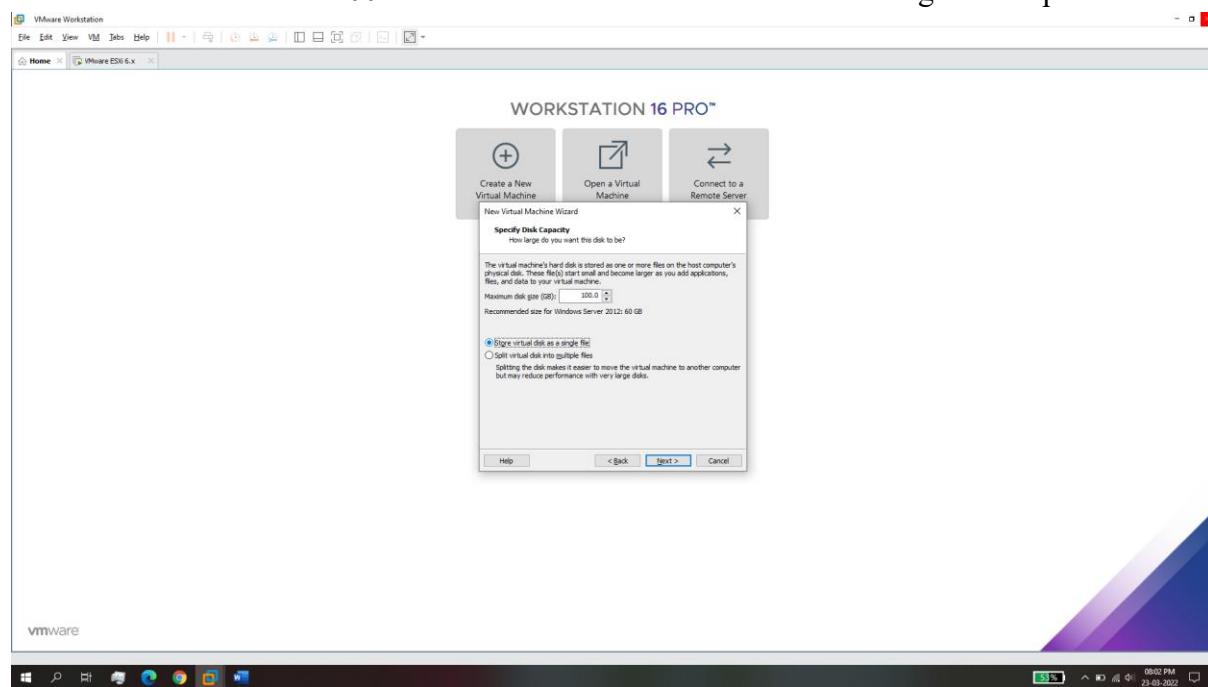
Enter product key and Full name



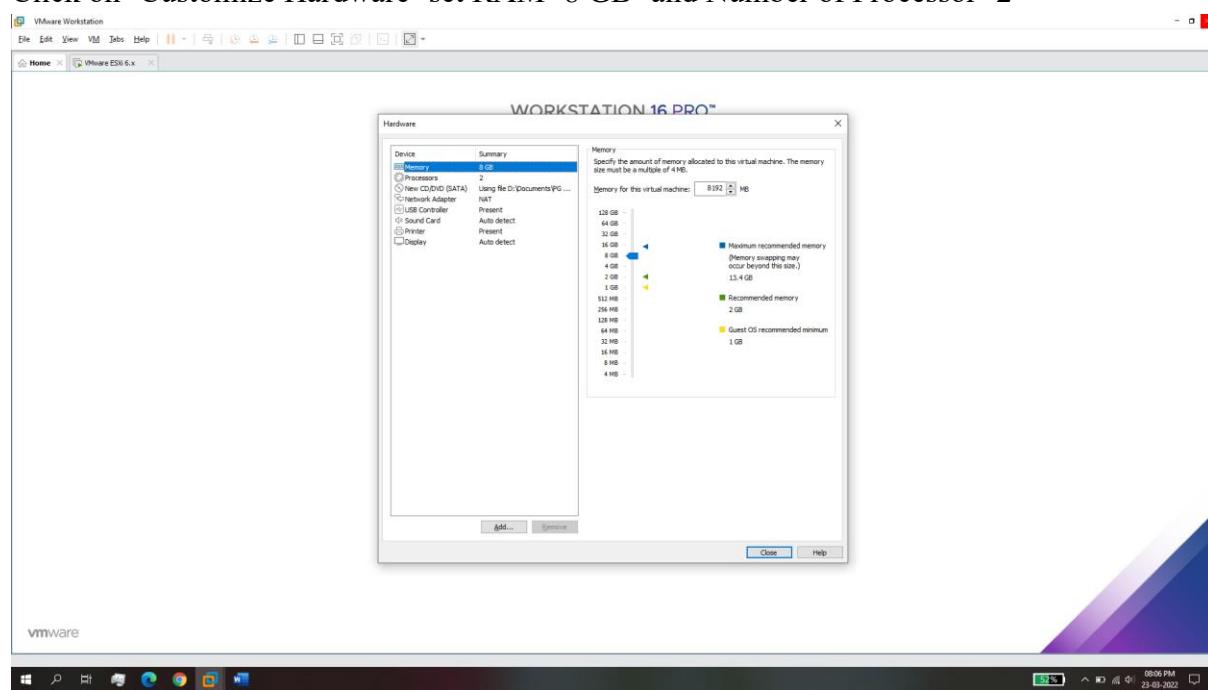
Click on 'Next'



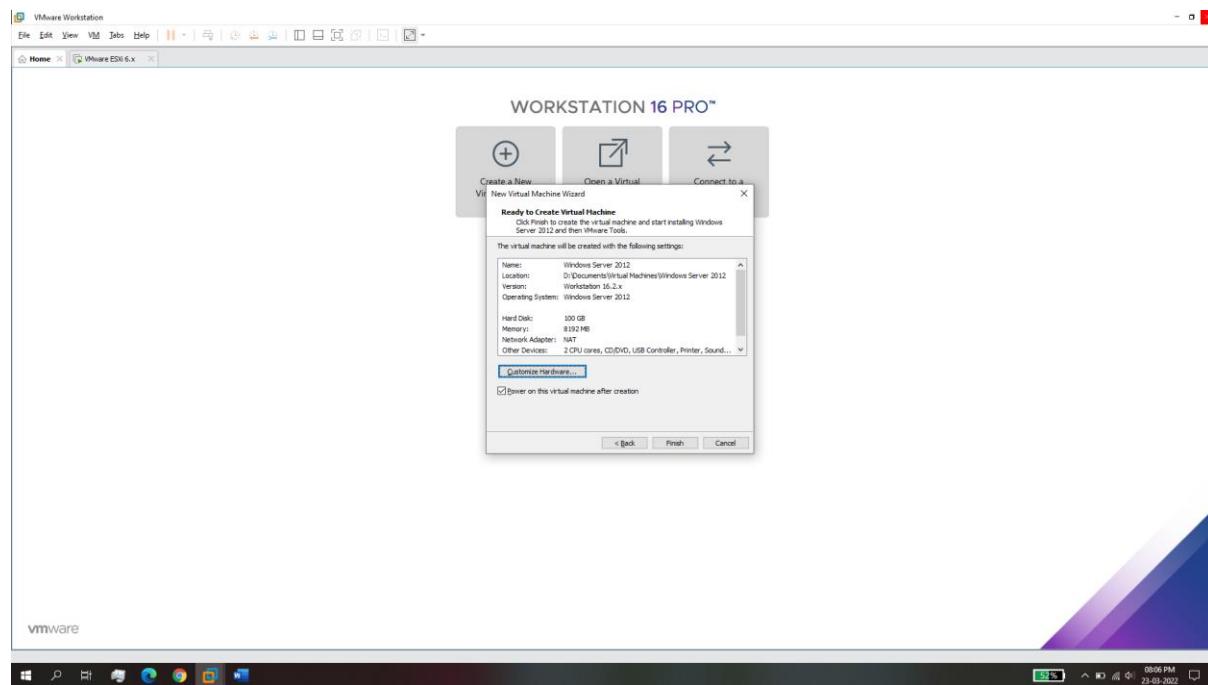
Set Maximum disk size ‘100 GB’ and select ‘Store virtual disk as a single file’ option



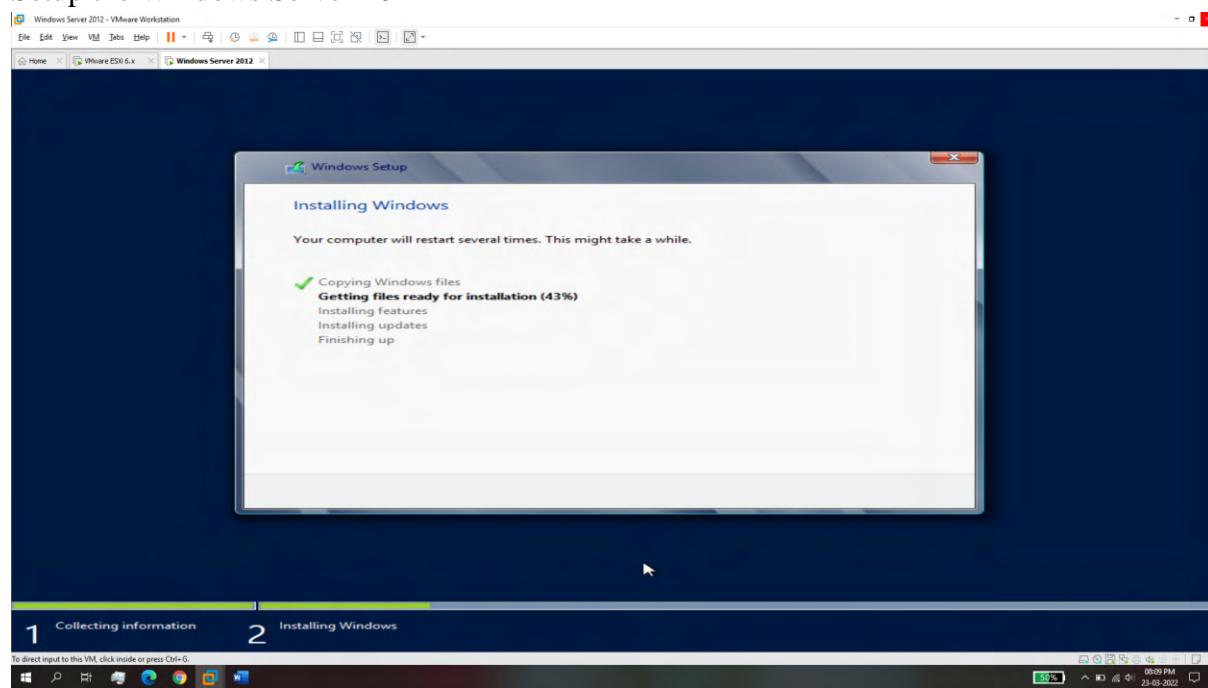
Click on ‘Customize Hardware’ set RAM ‘8 GB’ and Number of Processor ‘2’



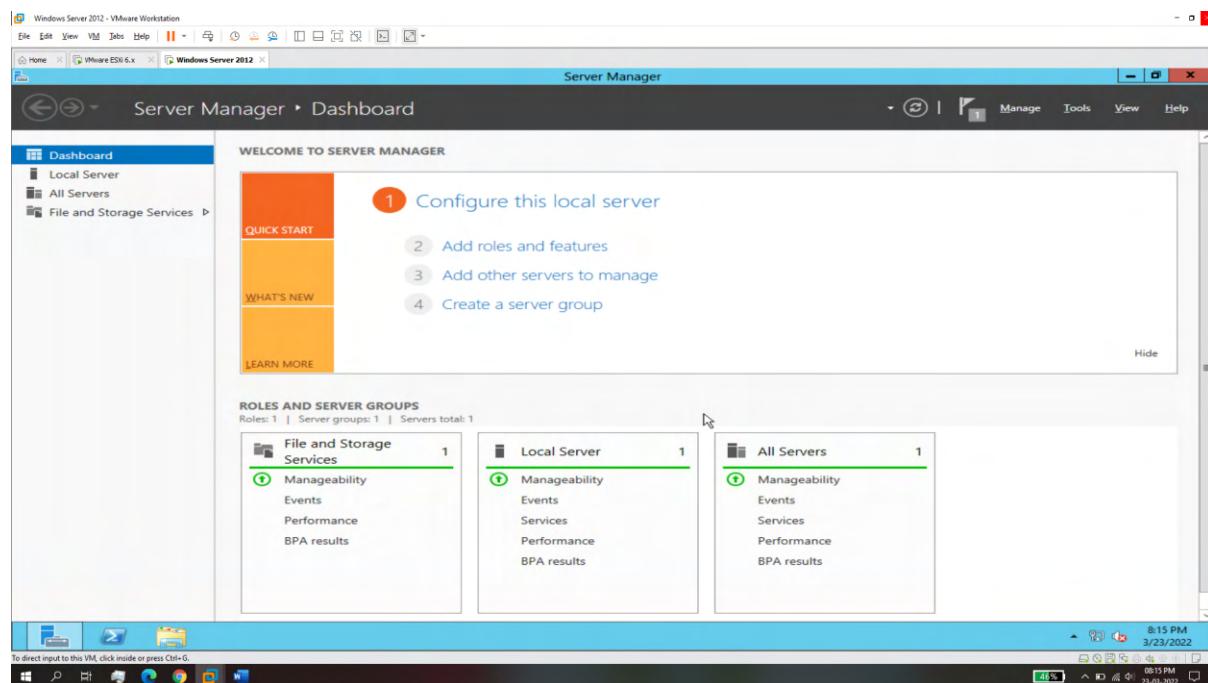
Click on 'Finish'



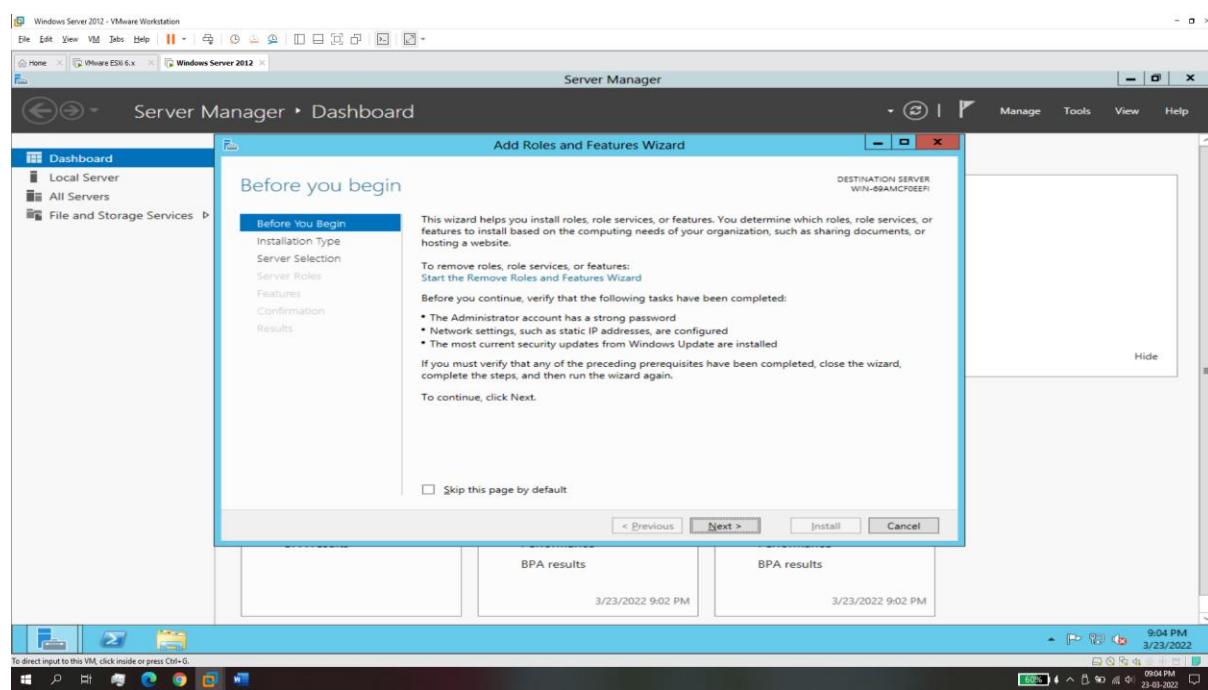
Setup the Windows Server 2012



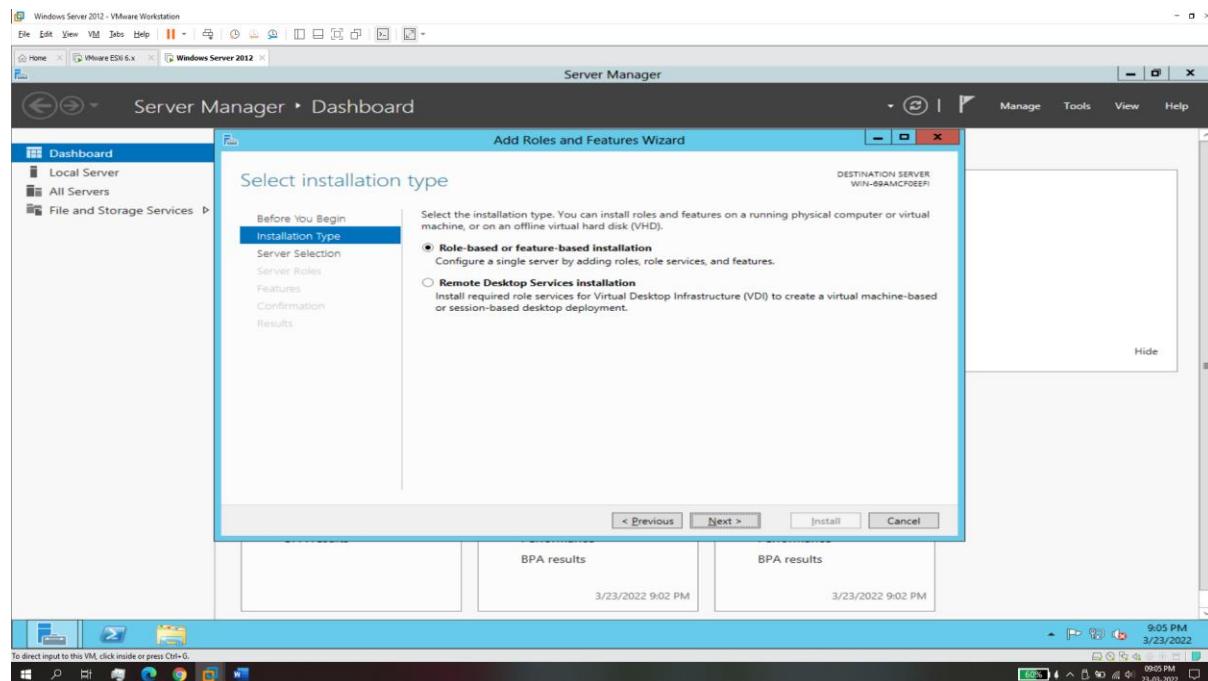
Click on ‘Add roles and features’



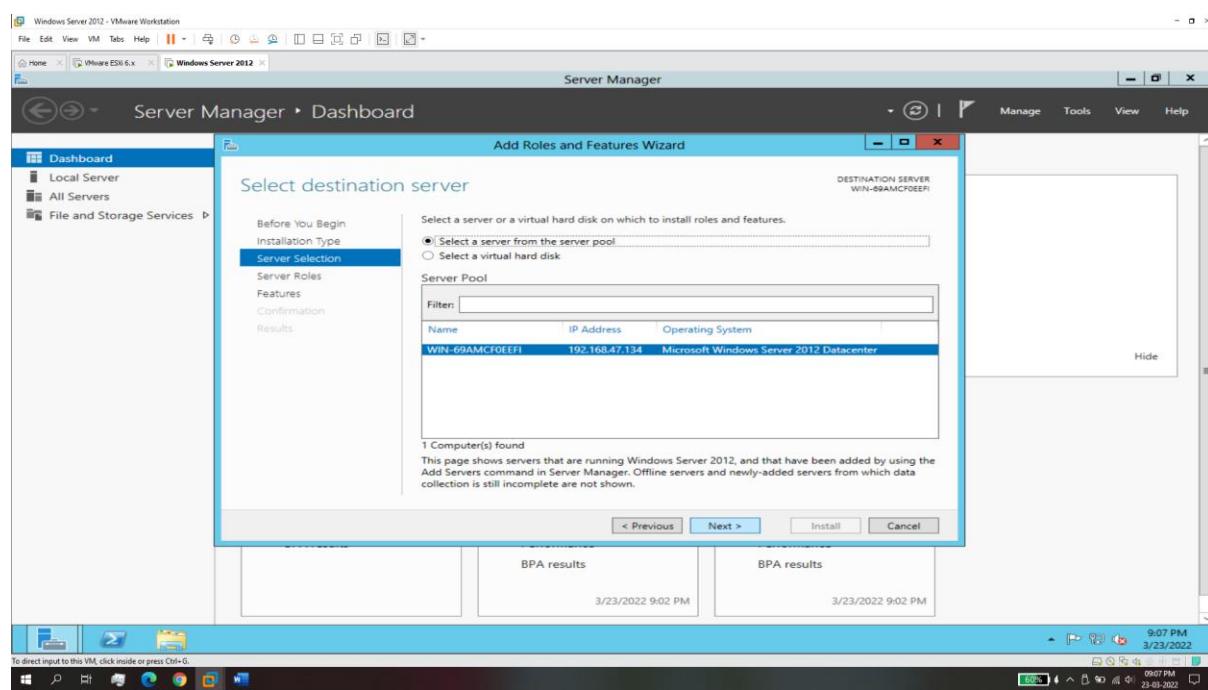
Click on ‘Next’



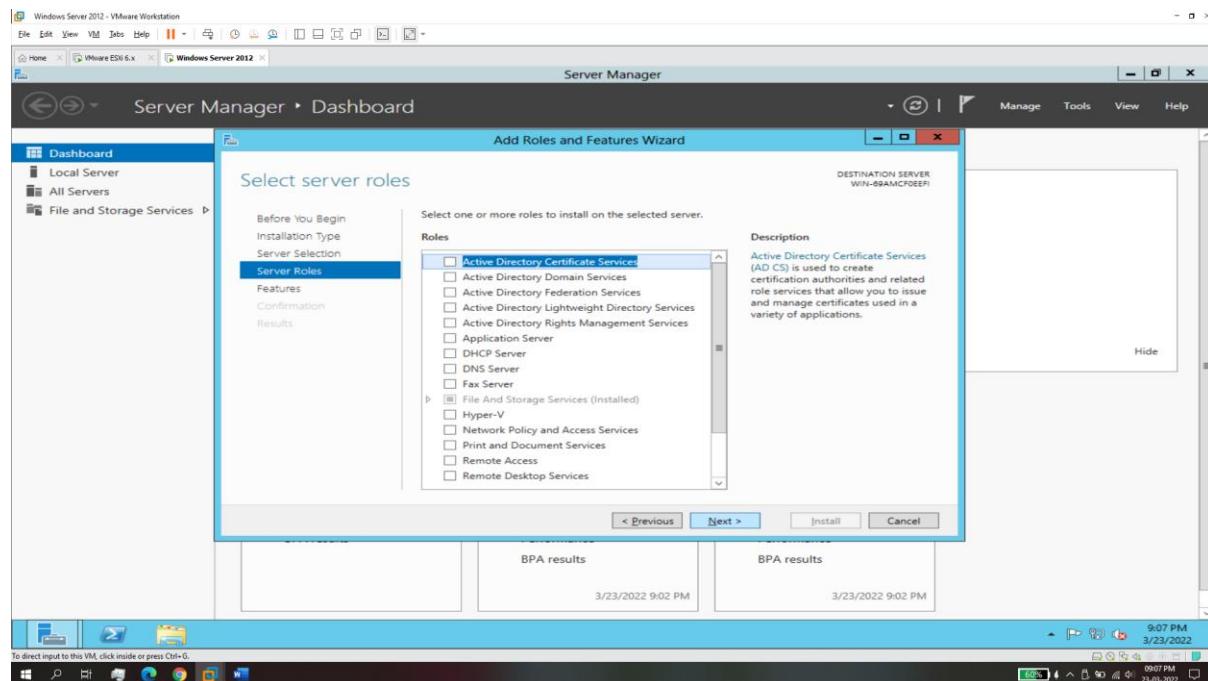
Click on ‘Next’



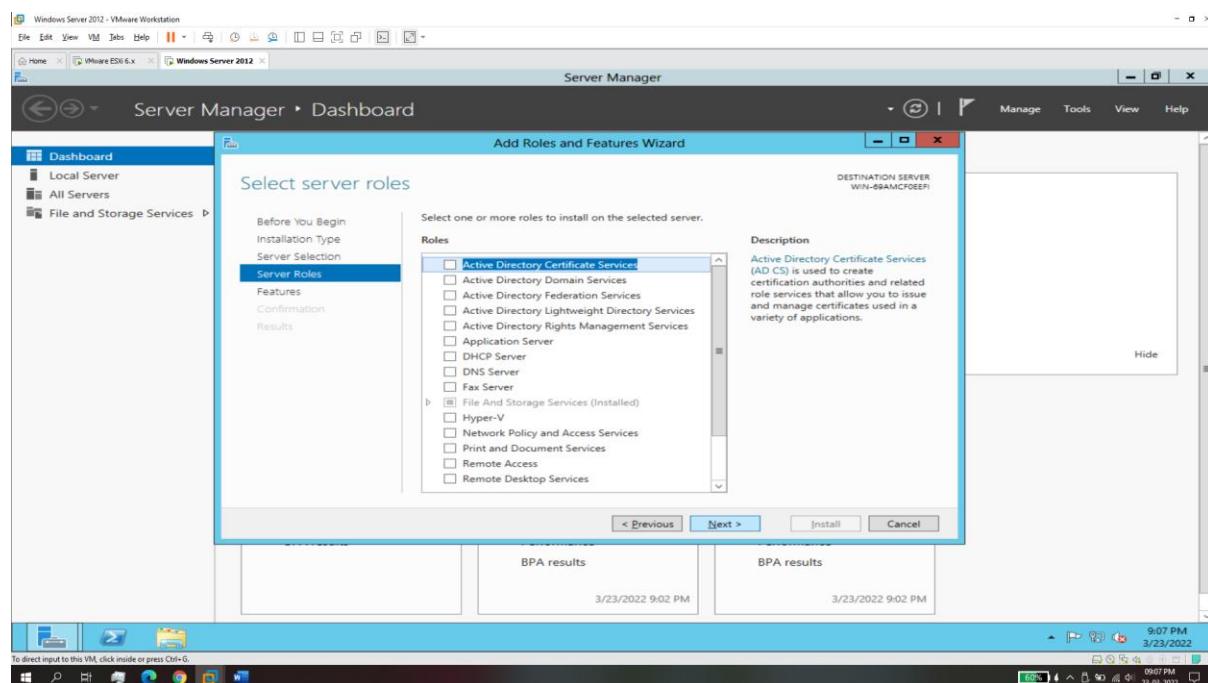
Click on ‘Next’



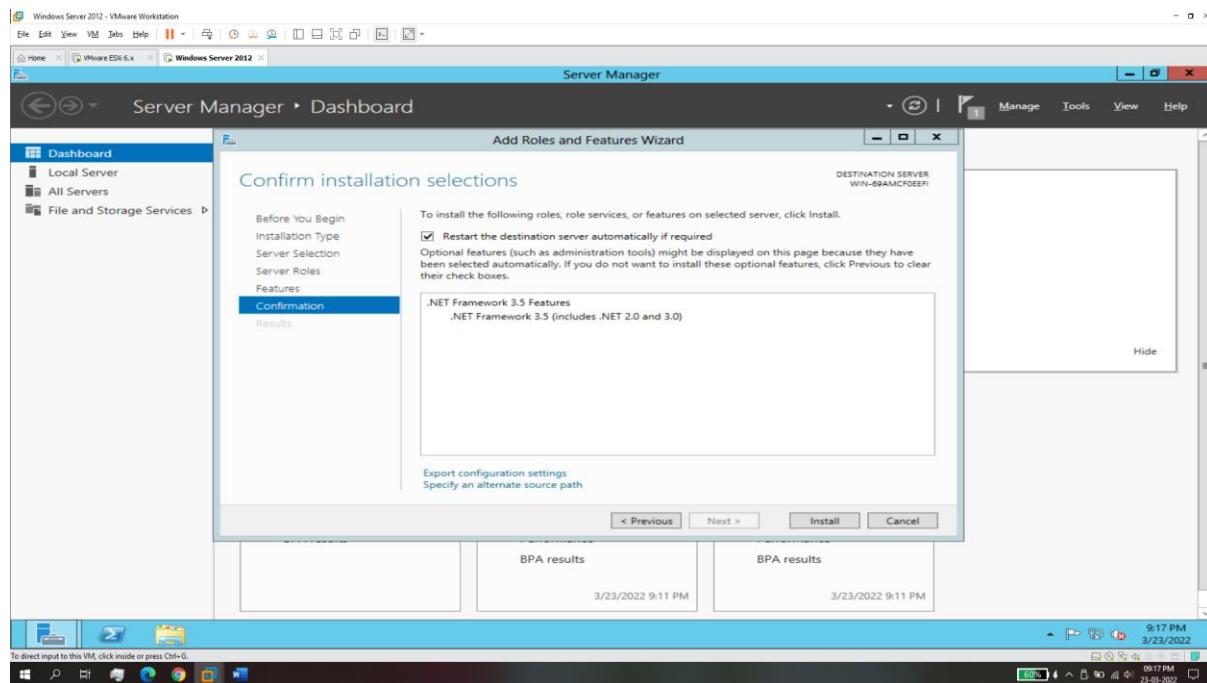
Click on ‘Next’



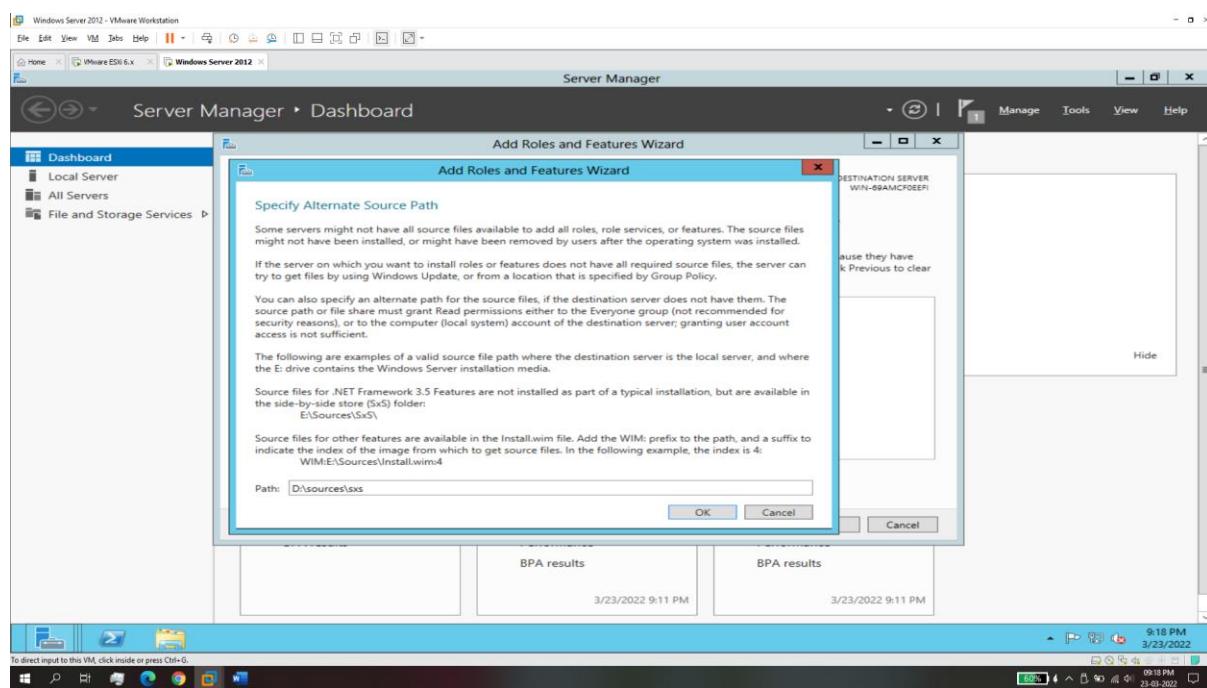
Select ‘.NET Framework 3.5 Features’ then click on ‘Next’



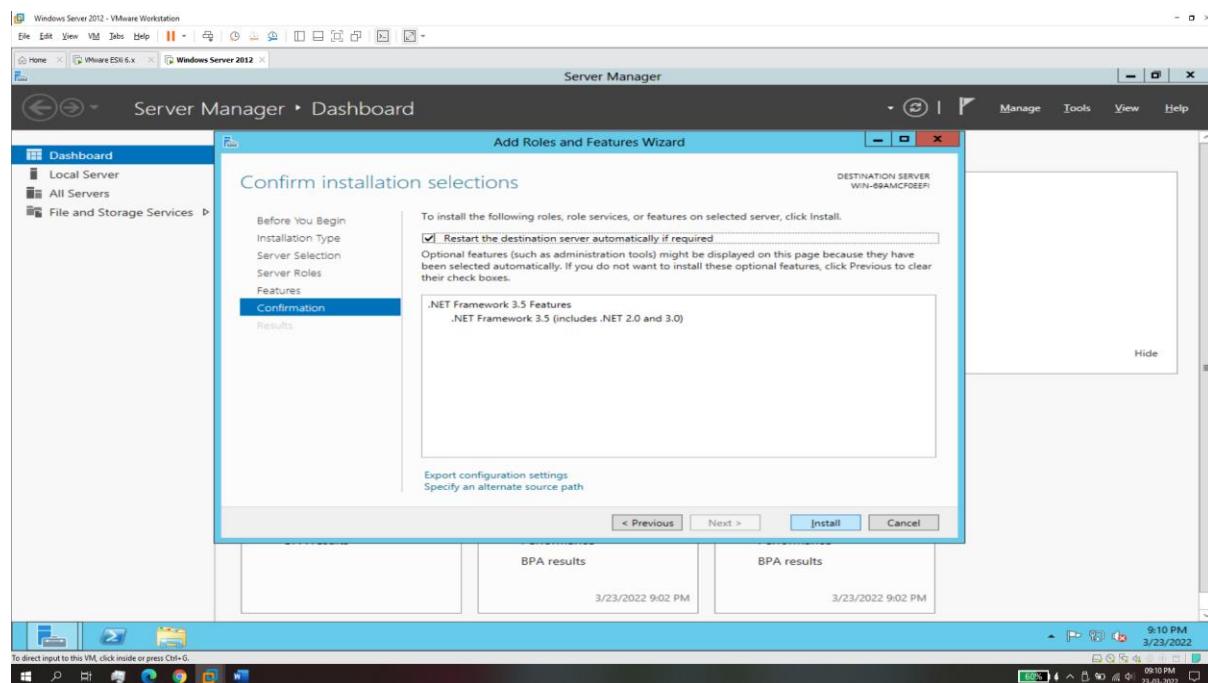
Click on ‘Specify an alternate source path’



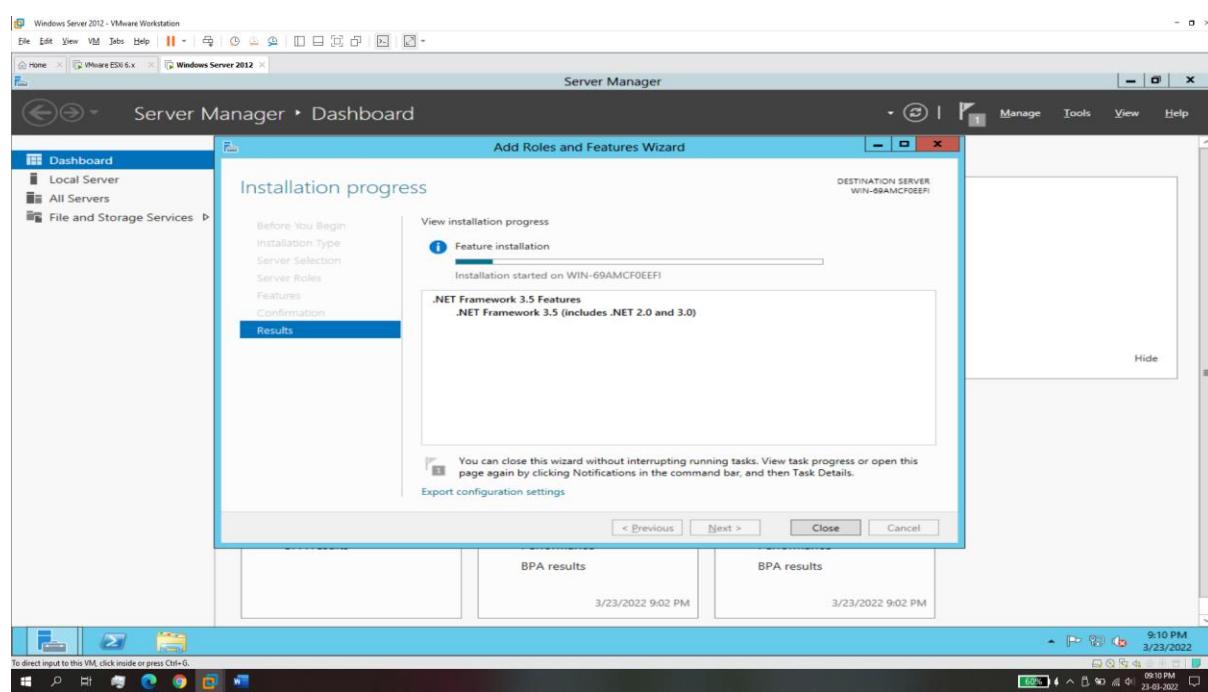
Enter the source path 'D:\sources\sxs' then click on 'Ok' button



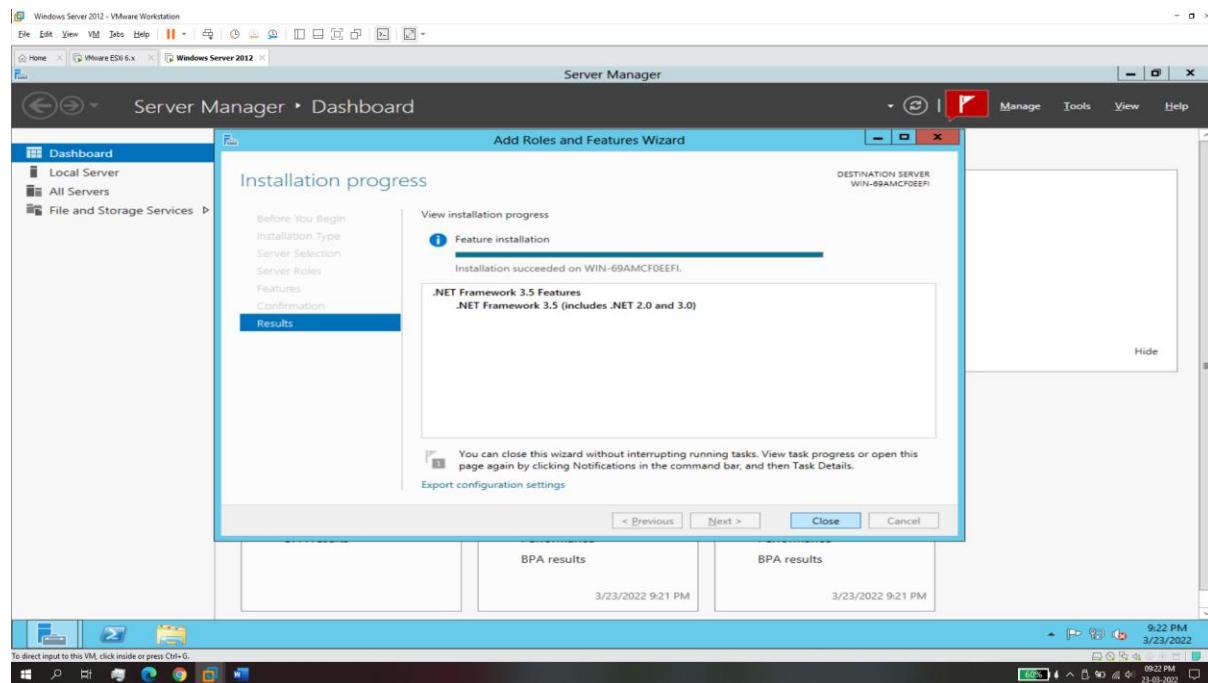
Click on ‘Install’



‘.NET Framework 3.5 Features’ installation start

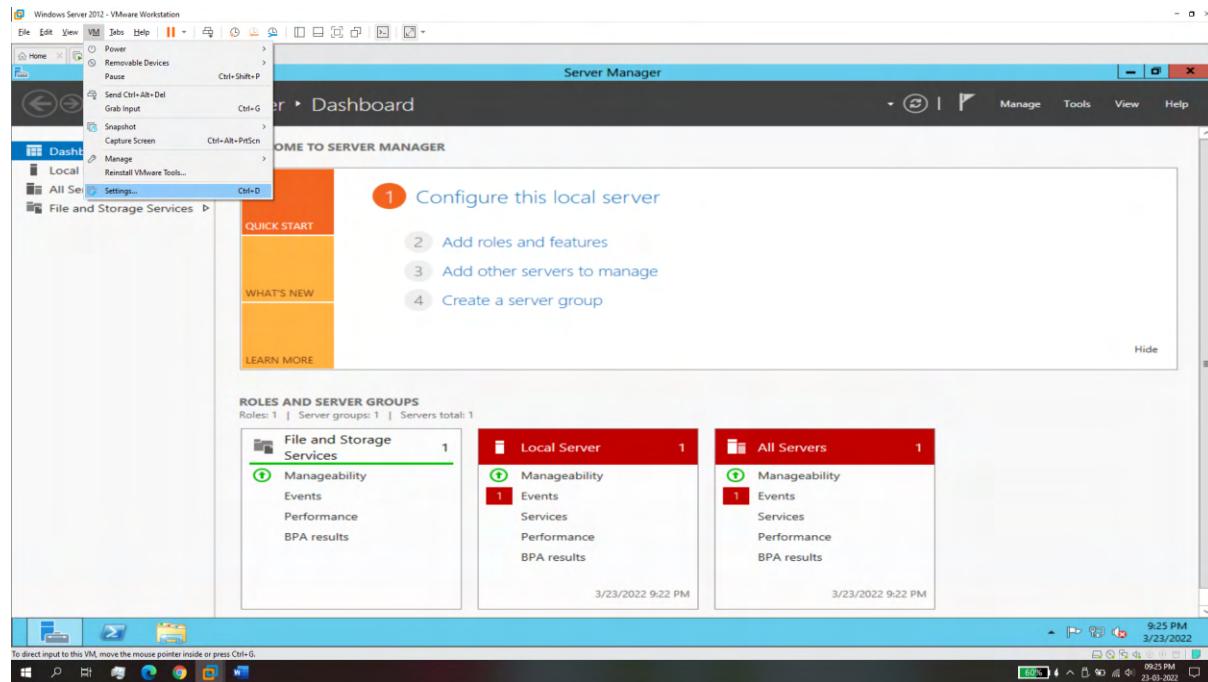


‘.NET Framework 3.5 Features’ install successfully then click on ‘Close’

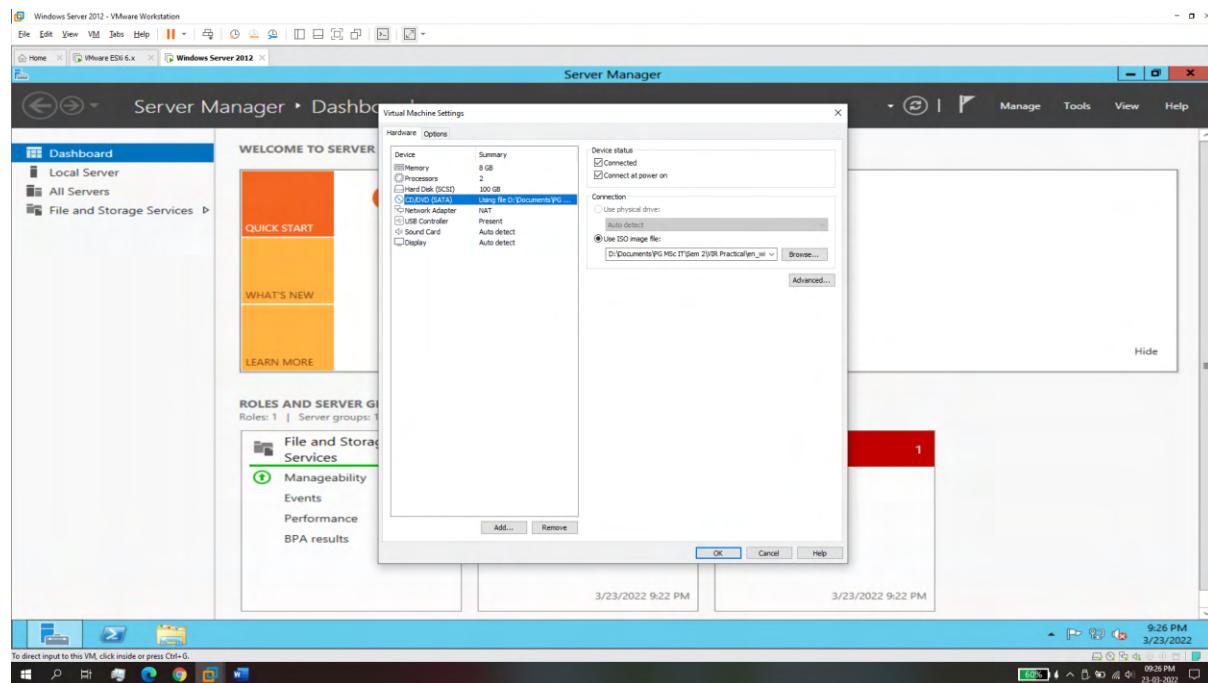


Install vCenter Server for Windows

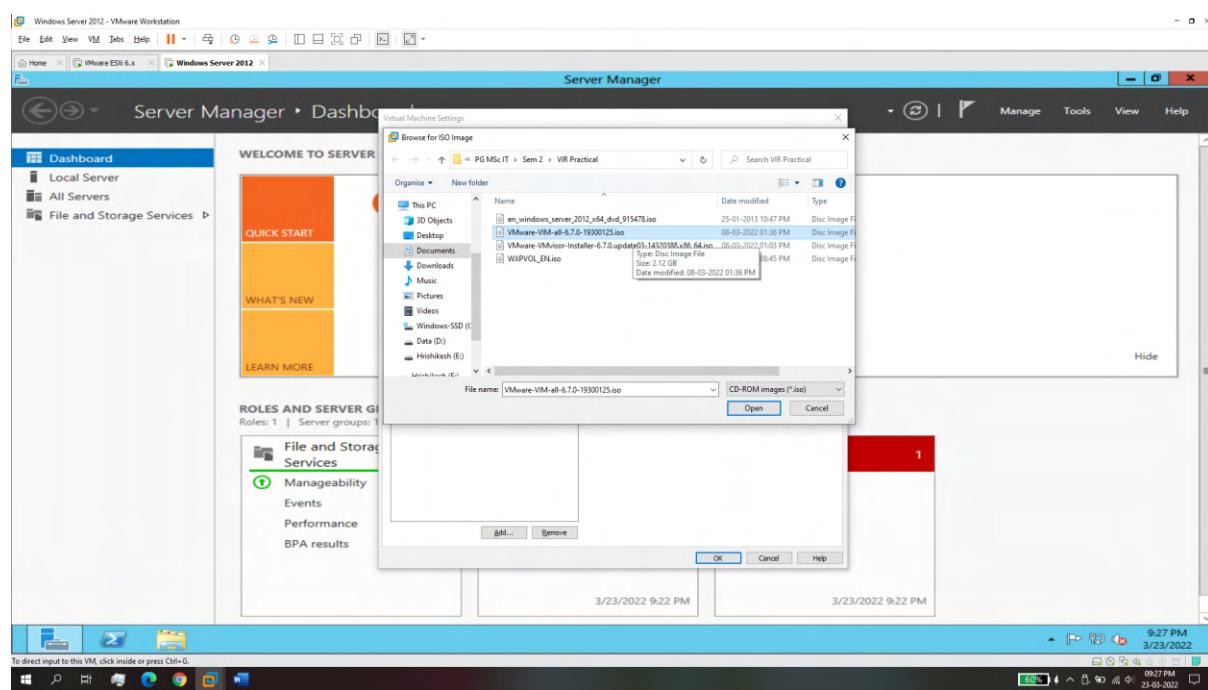
Click on ‘VM’ option and go to setting



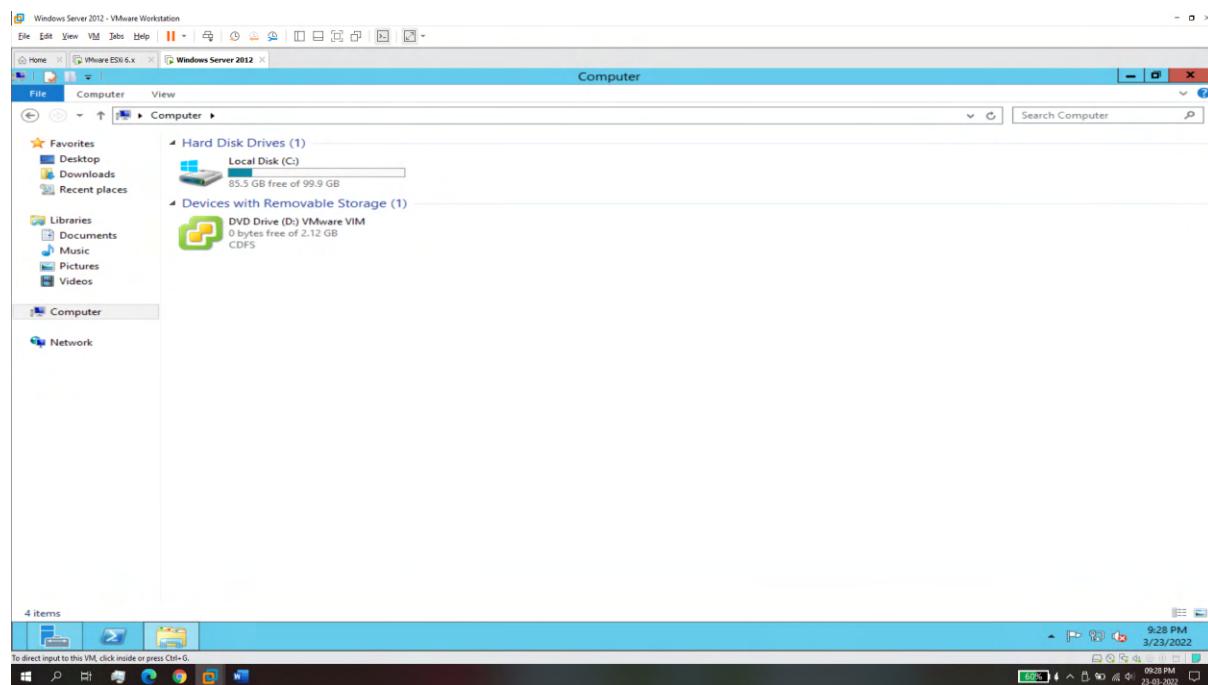
Select the CD/DVD(SATA) option



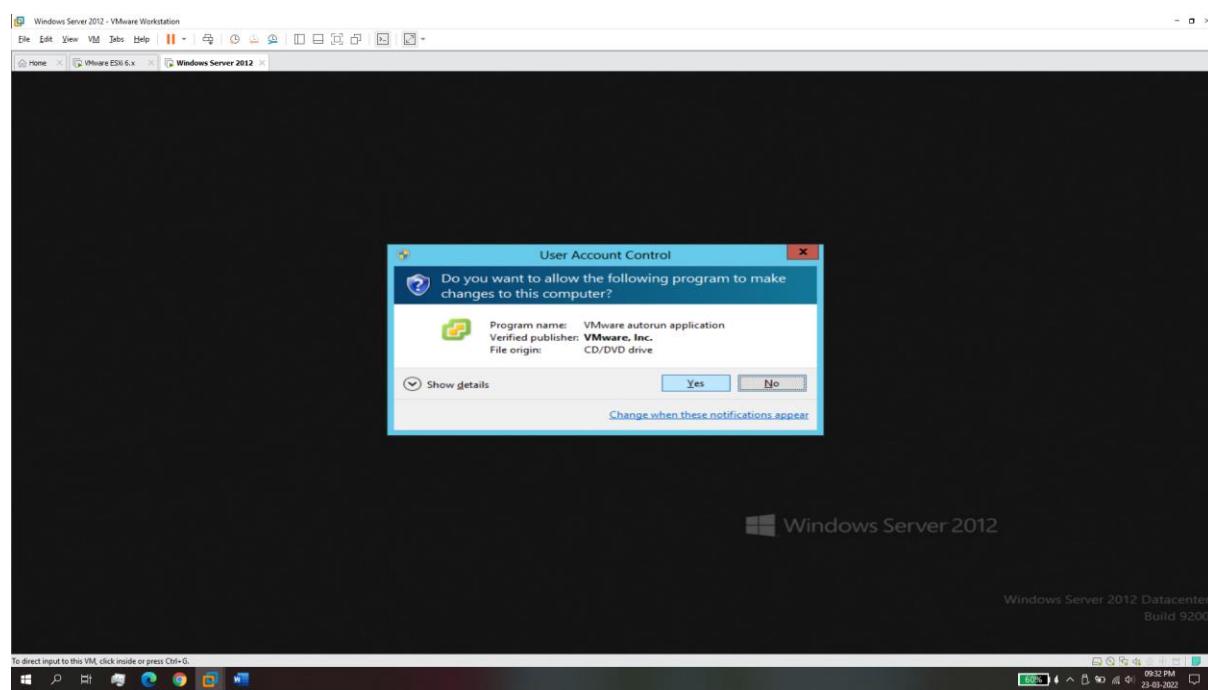
Click on ‘browse’ and select the vCenter Server file and click on the OK button



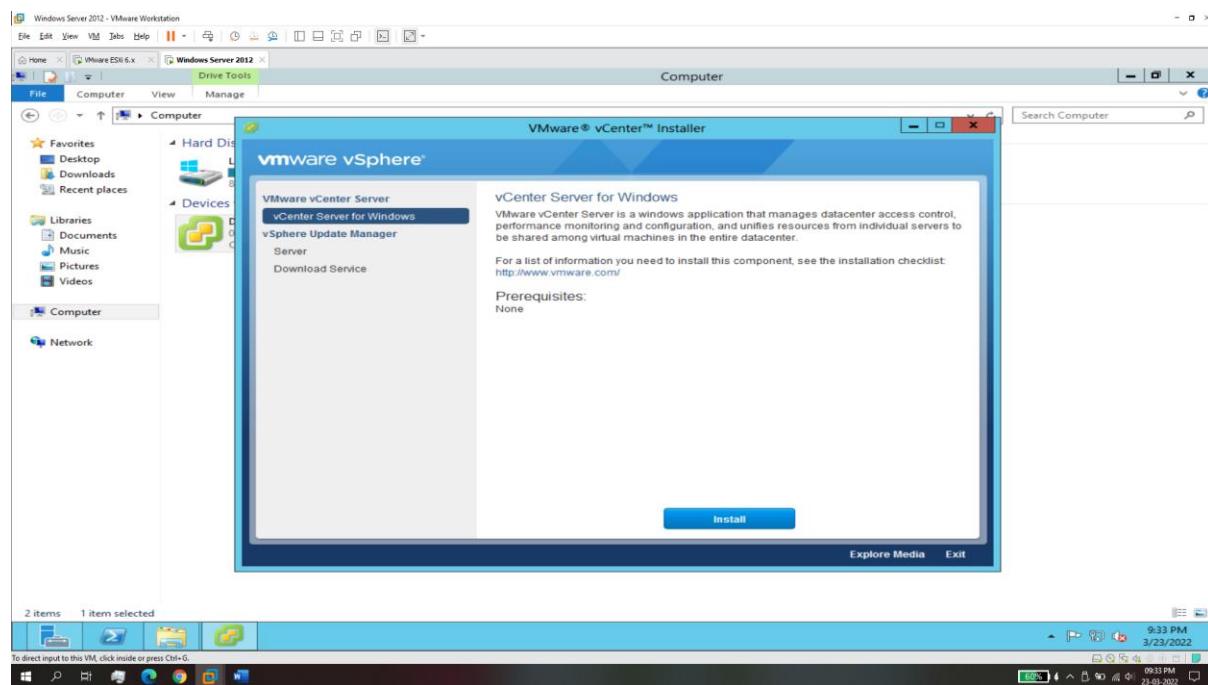
Open file explorer you can see ‘DVD Drive (D:) VMware VIM’ double click on it



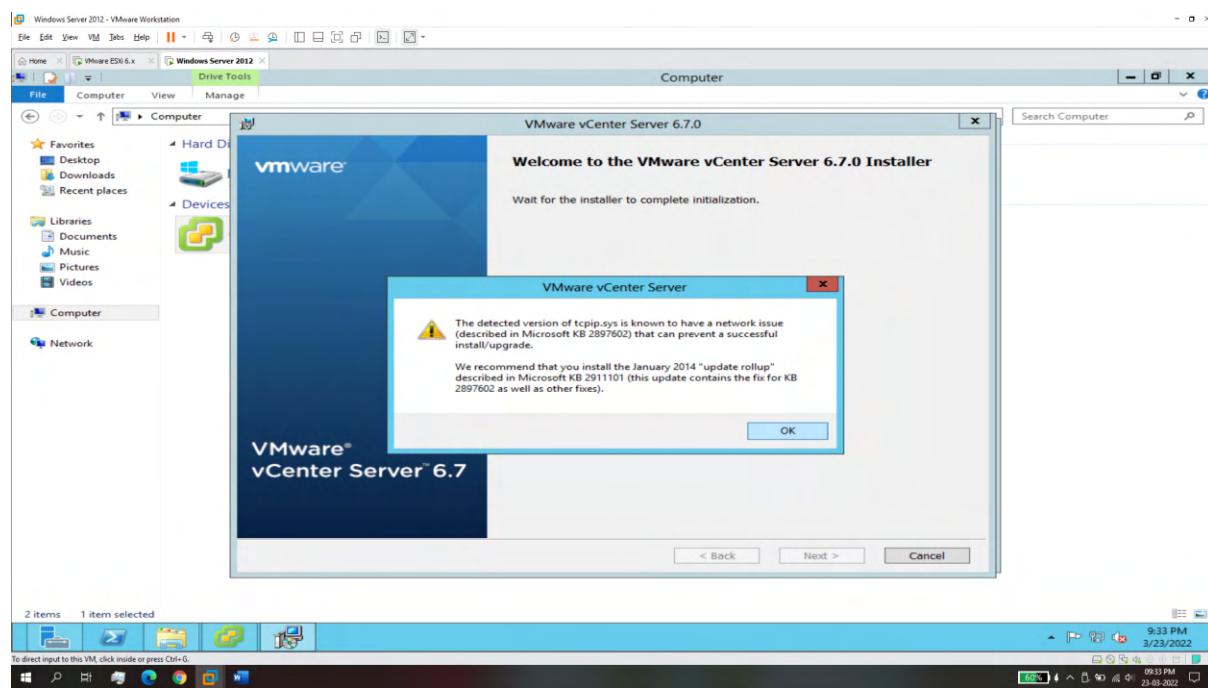
Click on ‘Yes’



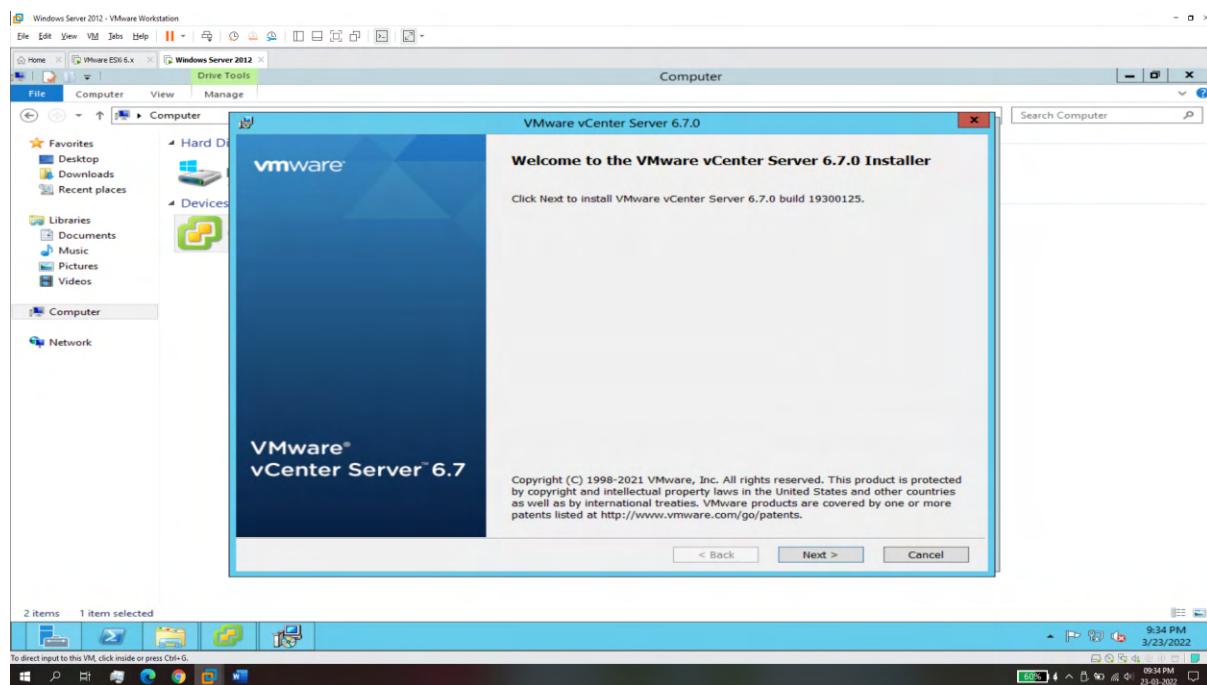
Click on ‘Install’



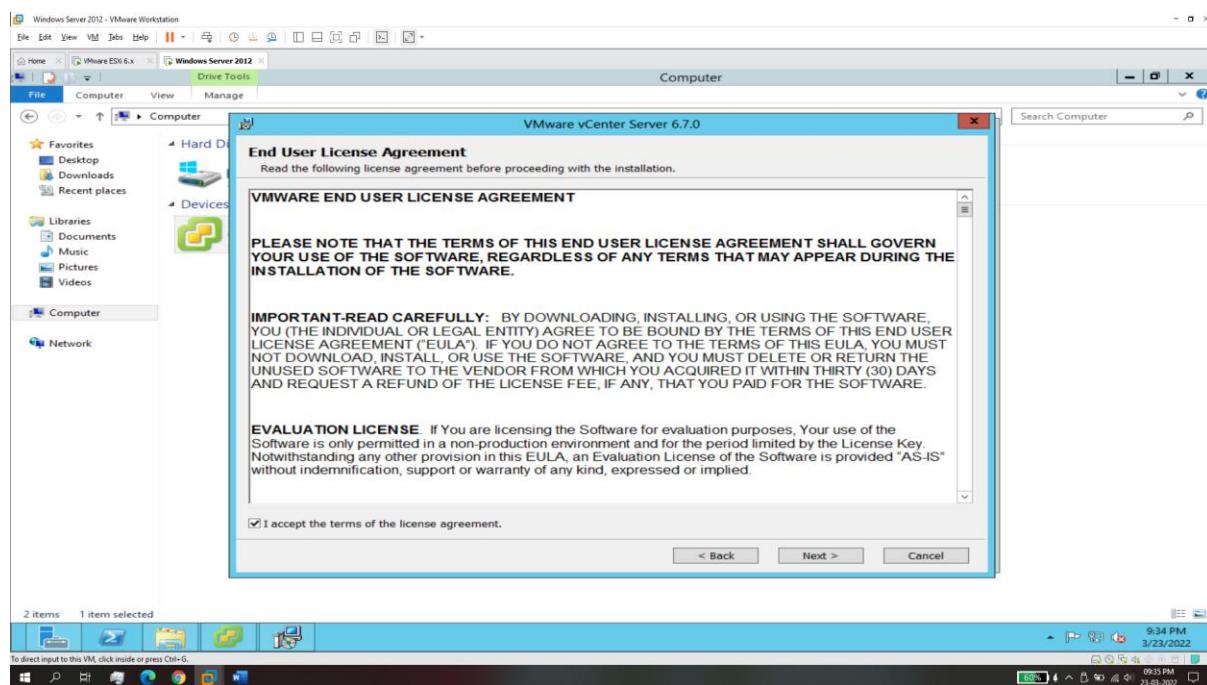
Click on ‘OK’ button



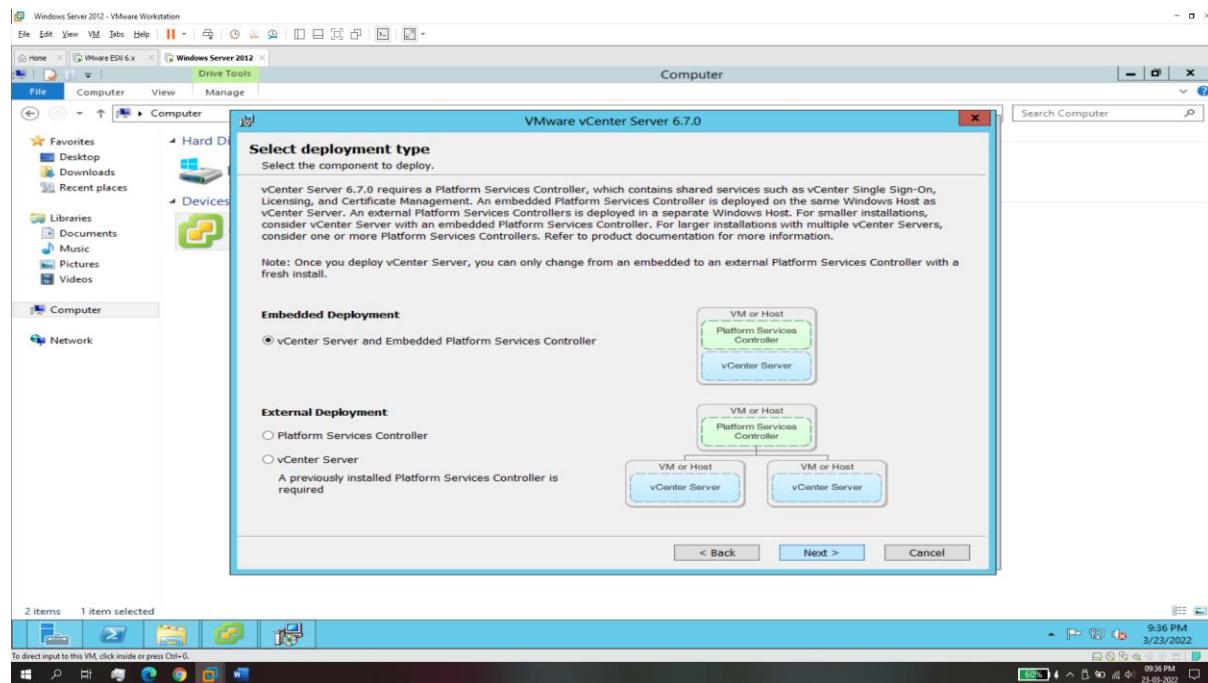
Click on ‘Next’



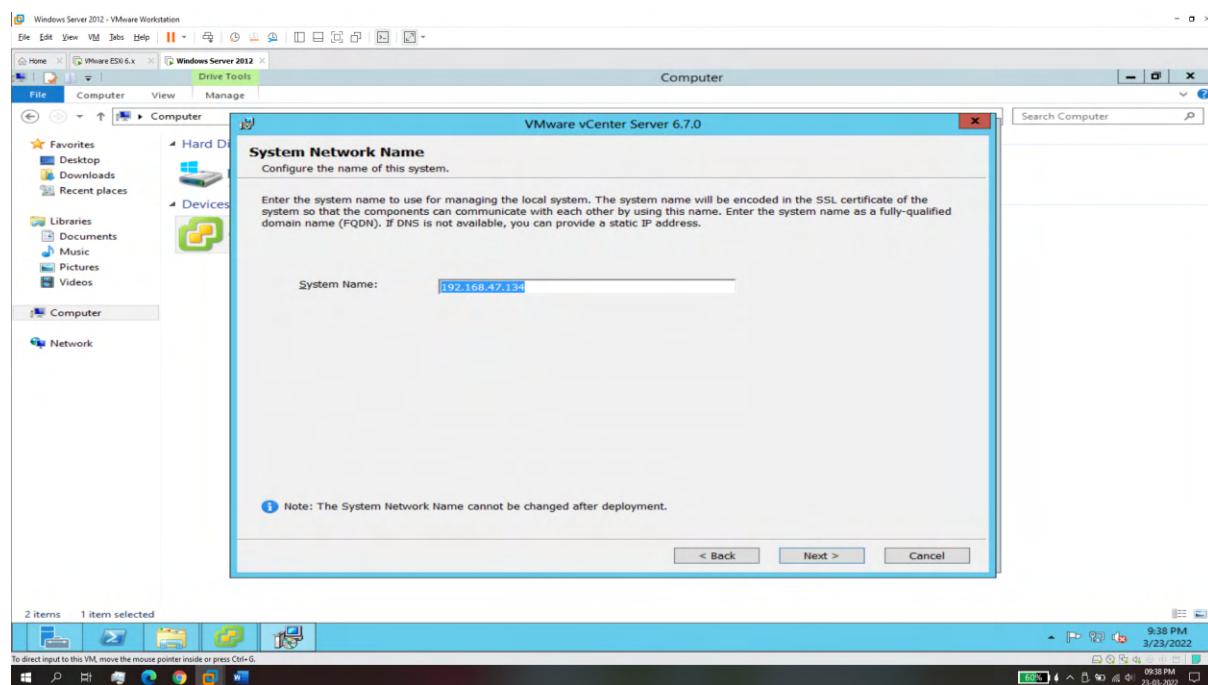
Accept the licence agreement then ‘Next’



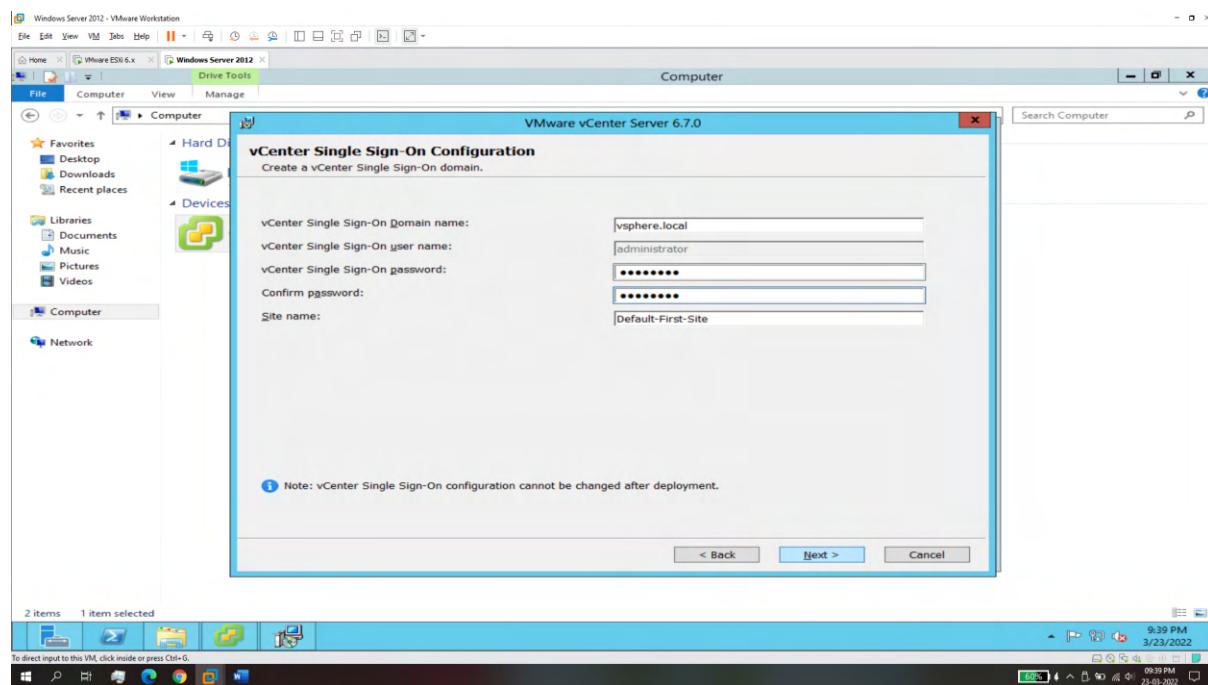
Click on ‘Next’



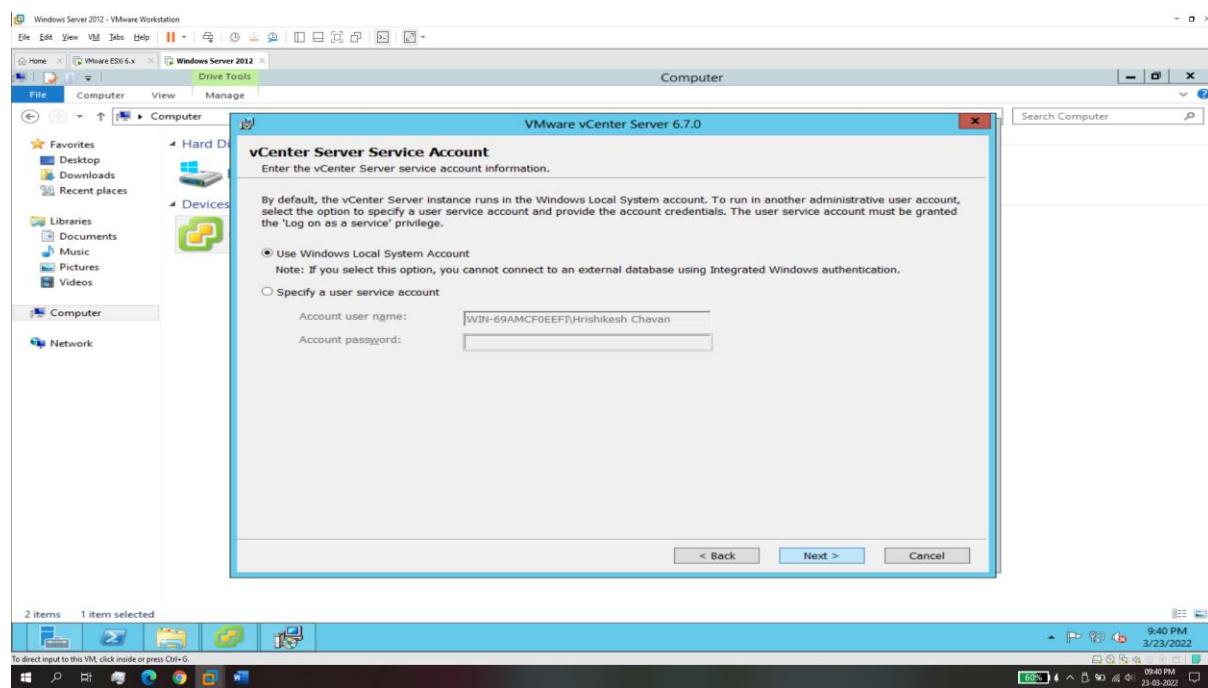
Enter IP address of windows server 2012 “192.168.47.134” then click on ‘Next’



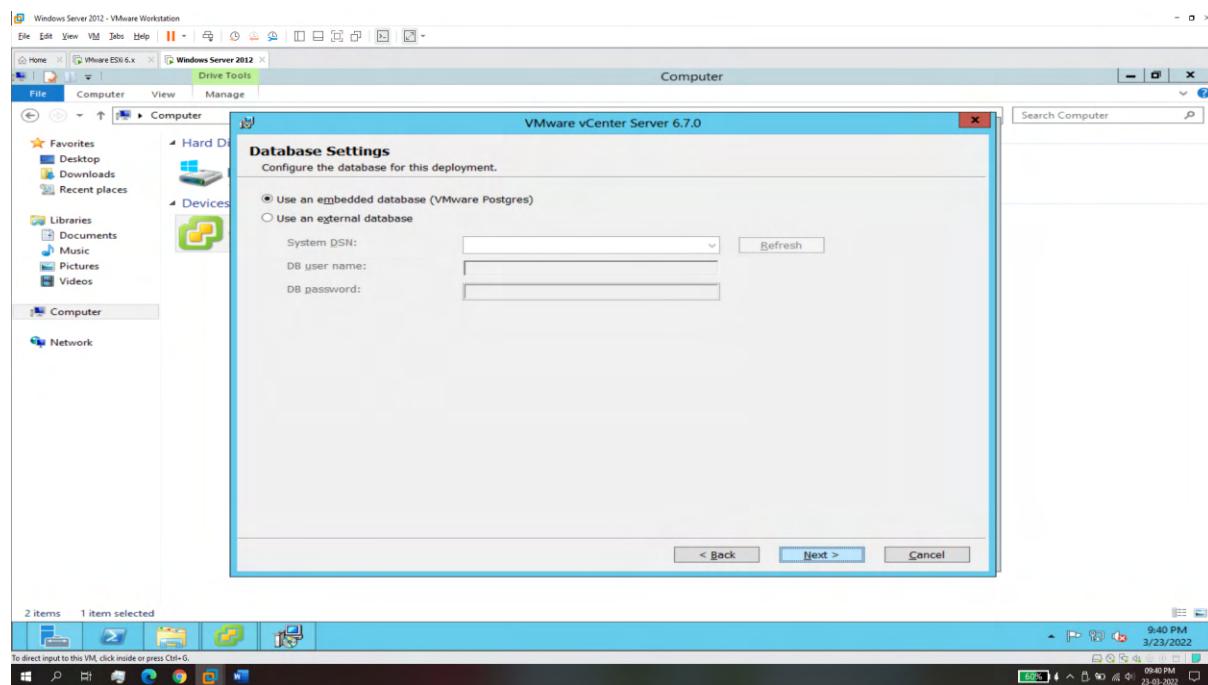
Set the password is It@13579 and Click on the Next button



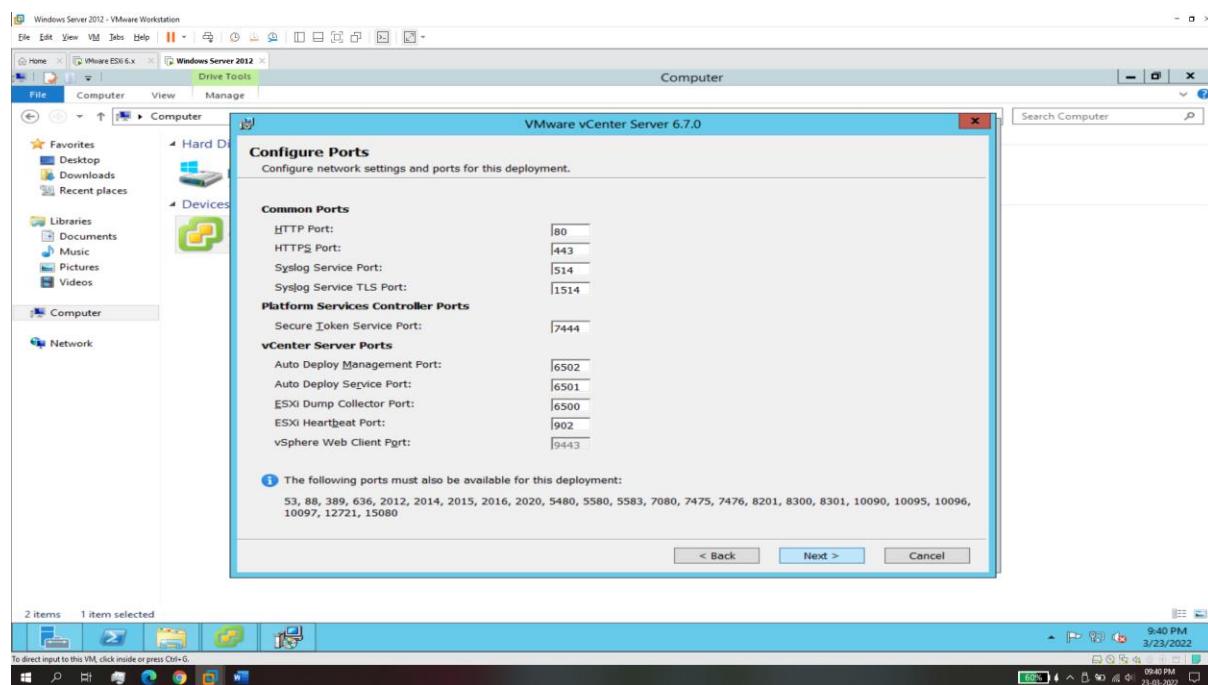
Click on 'Next'



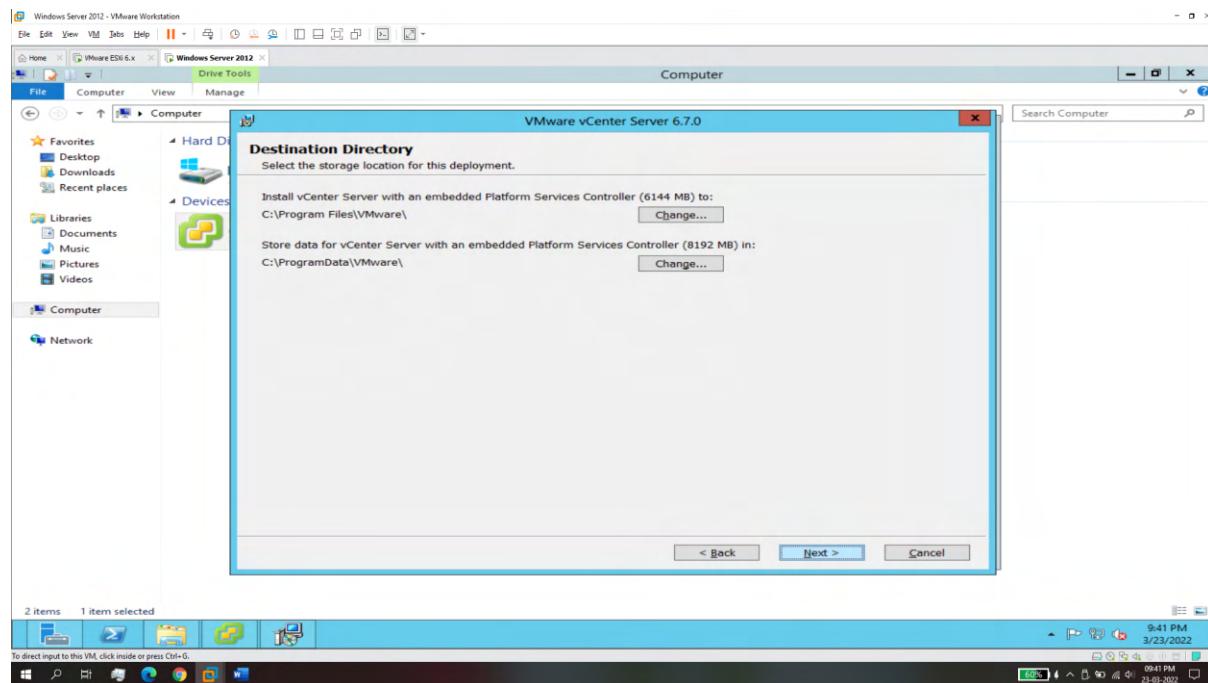
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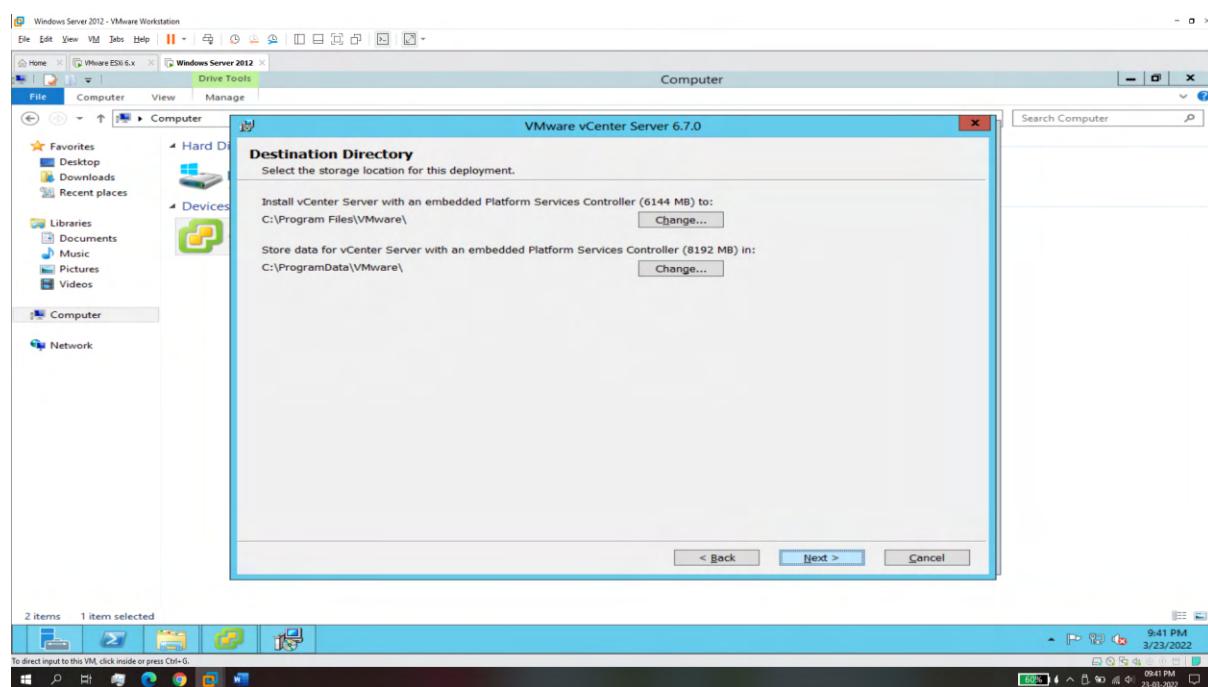
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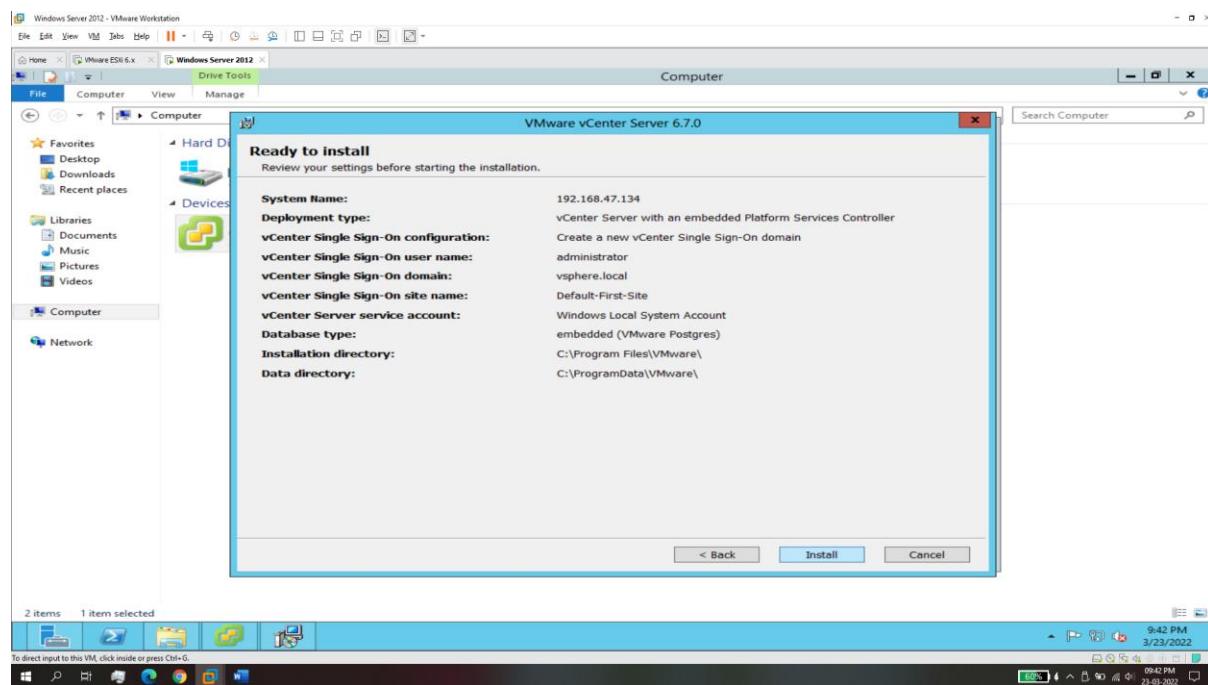
Click on “Next”



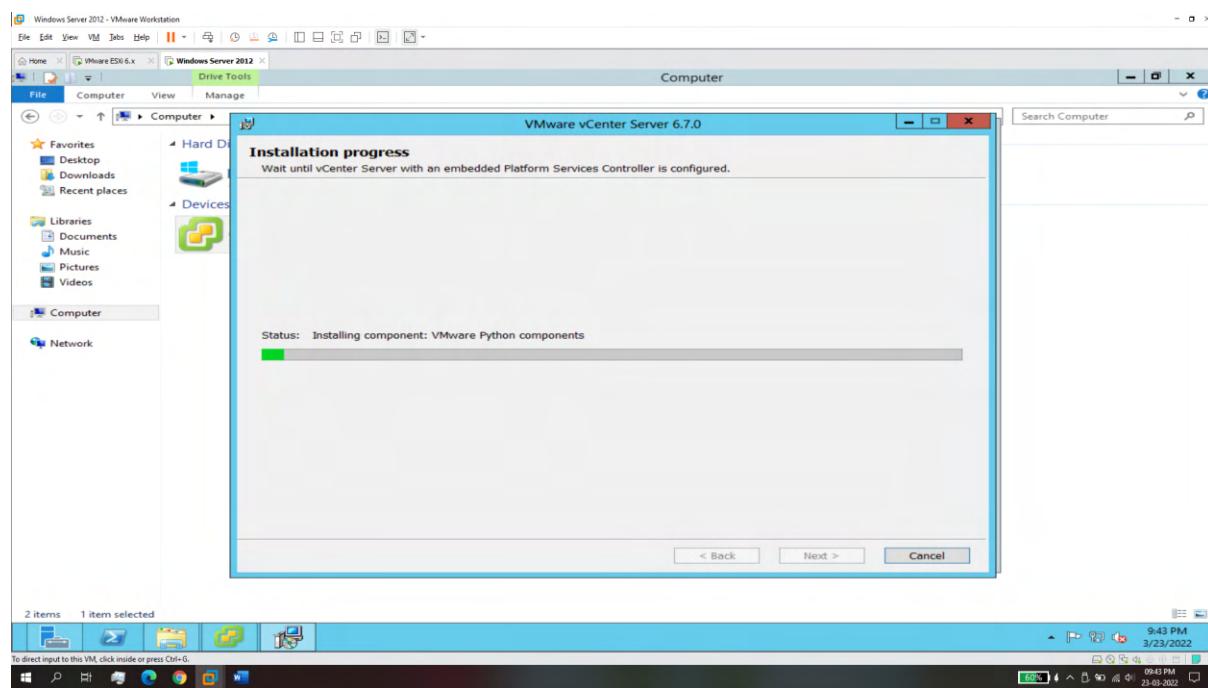
Click on ‘Next’



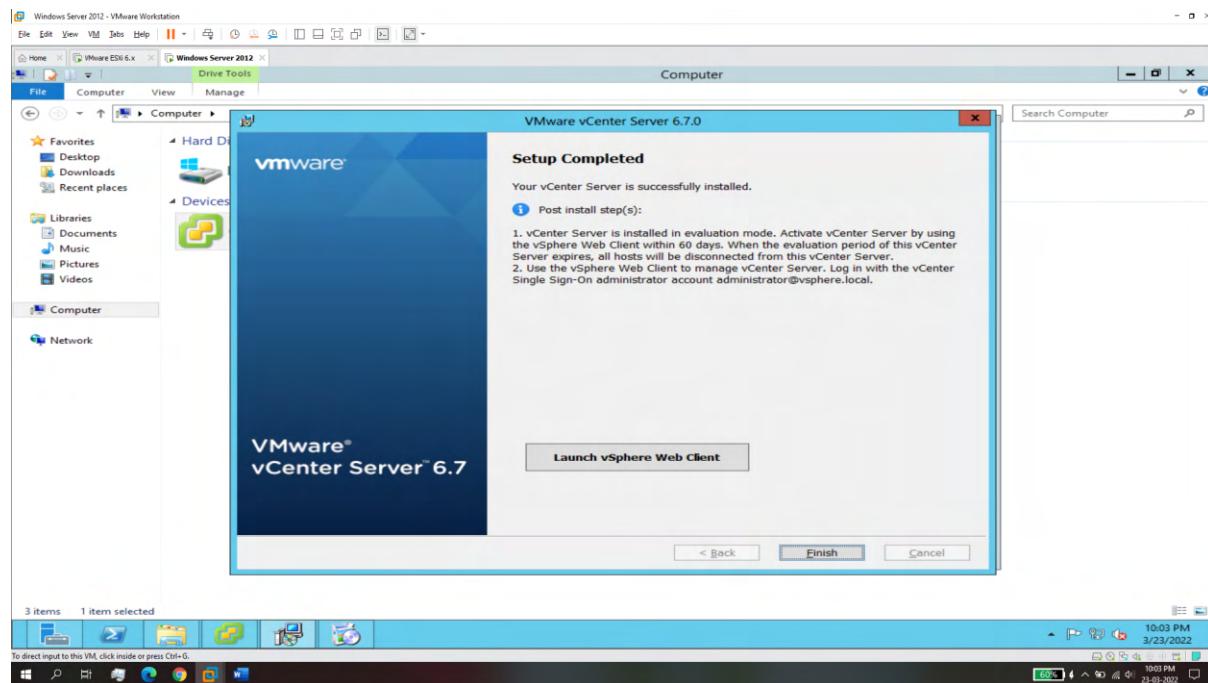
Click on ‘Install’



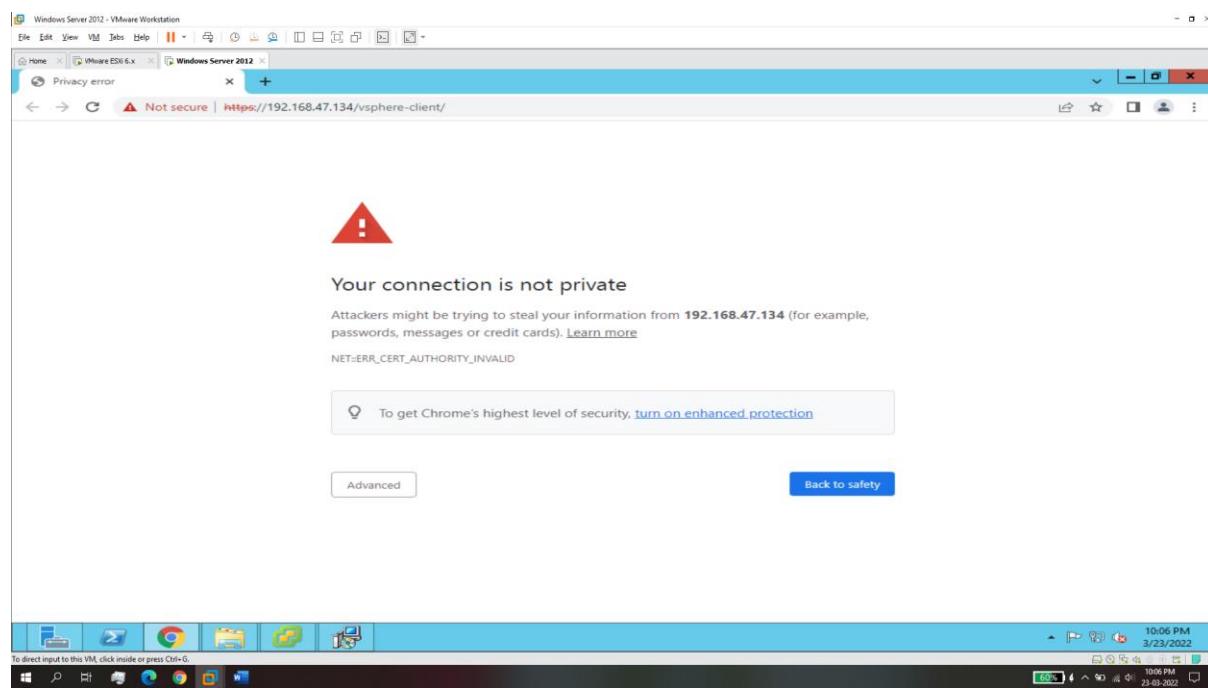
Installation Progress



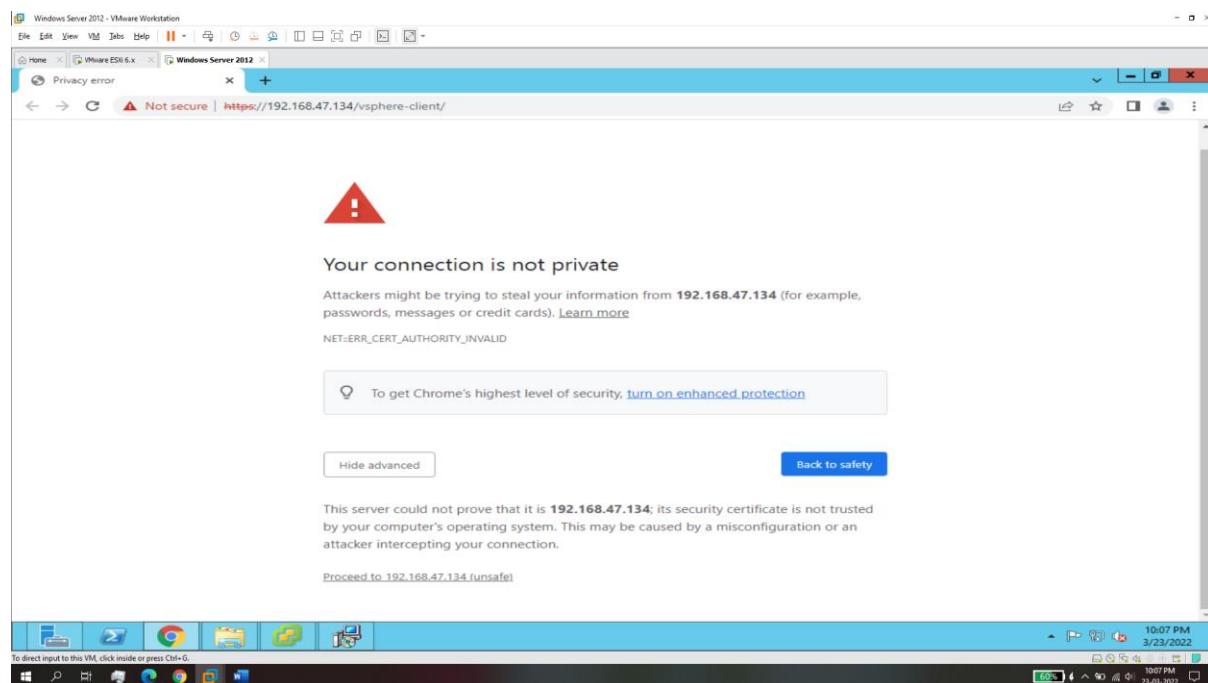
Setup Completed then click on ‘Launch vSphere web client’



Click on an Advanced button



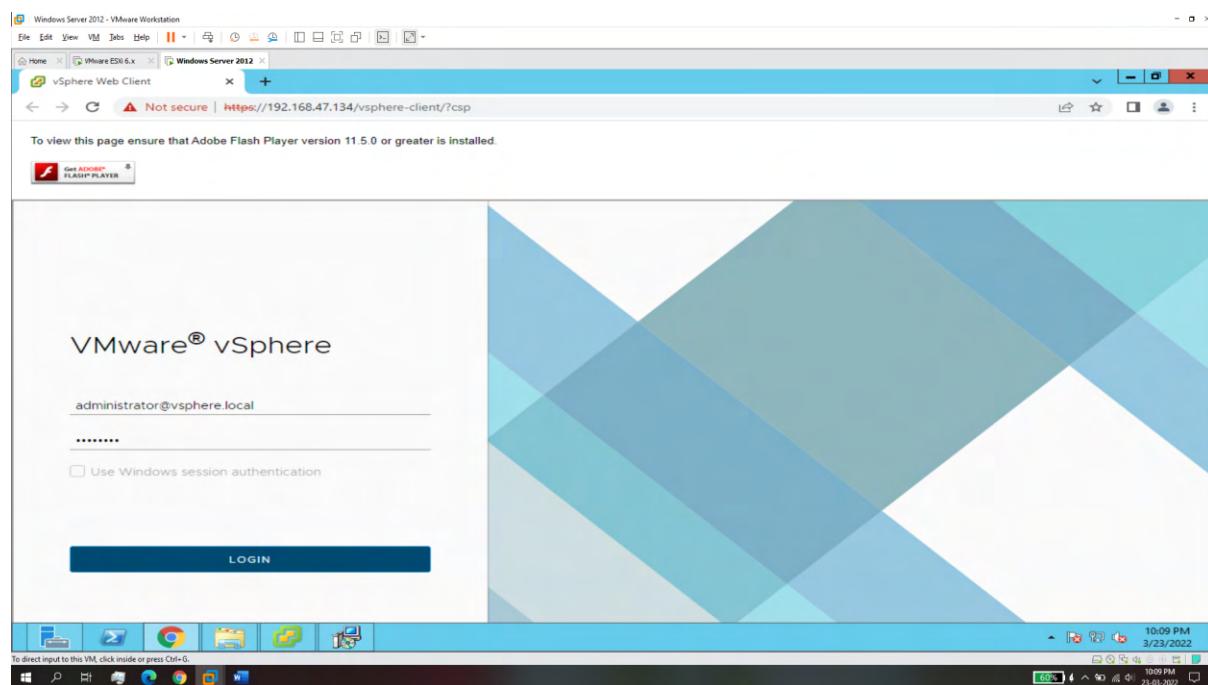
Click on ‘proceed to Ip address’

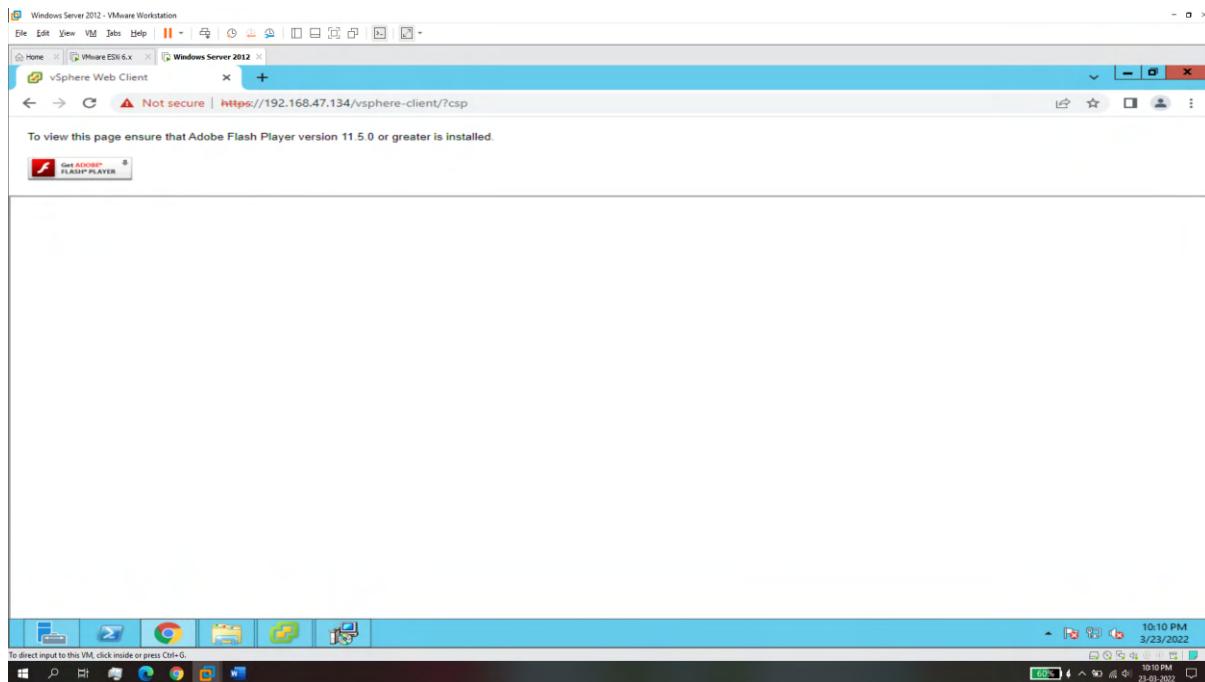


Now we can connect to the VMWare vCentre through its user interface.

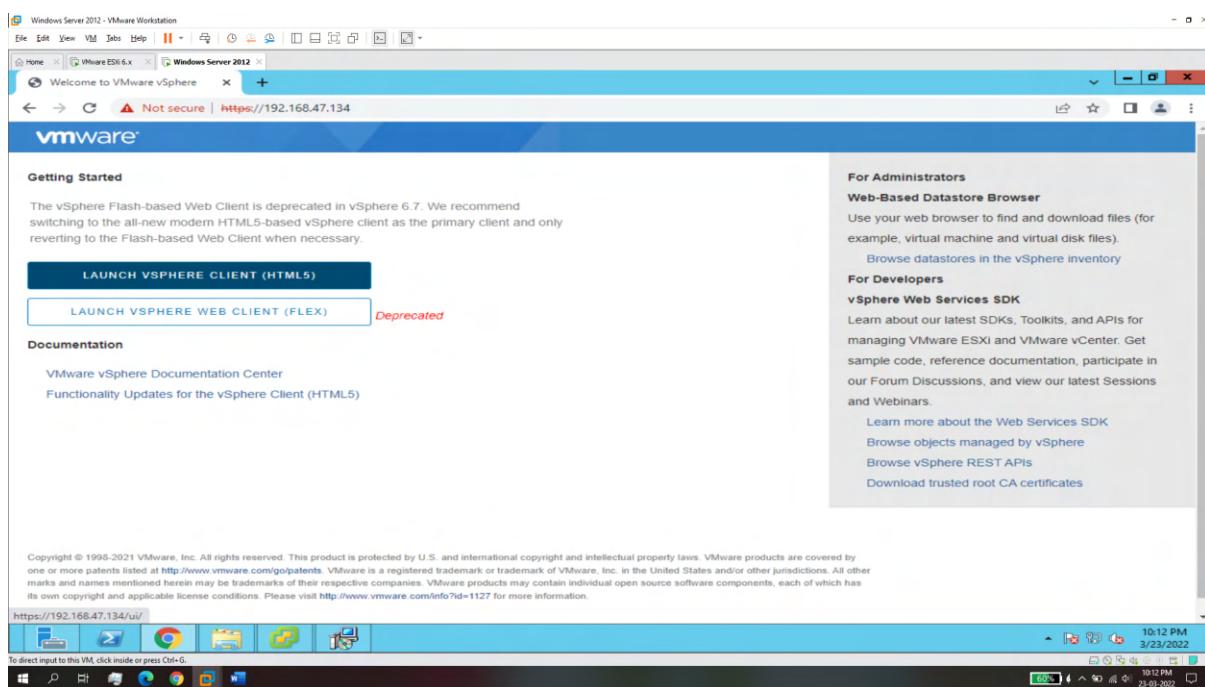
Username: administrator@vsphere.local

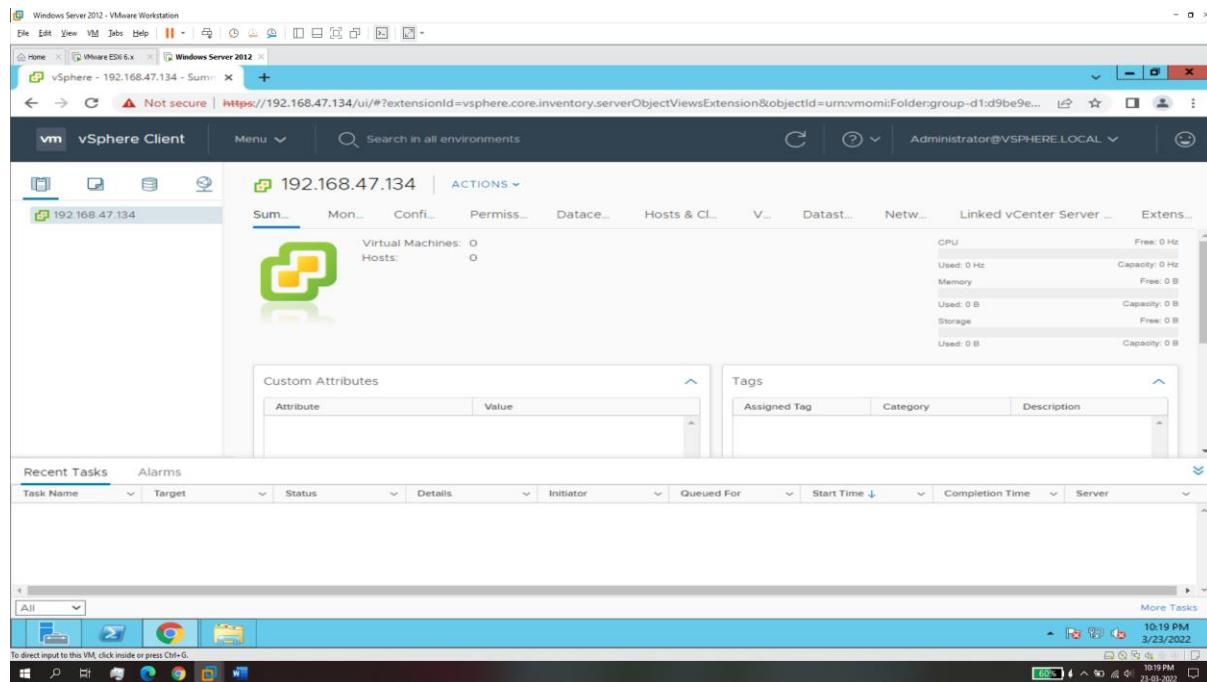
Password: It@13579





Remove 'vsphere-client/?csp'





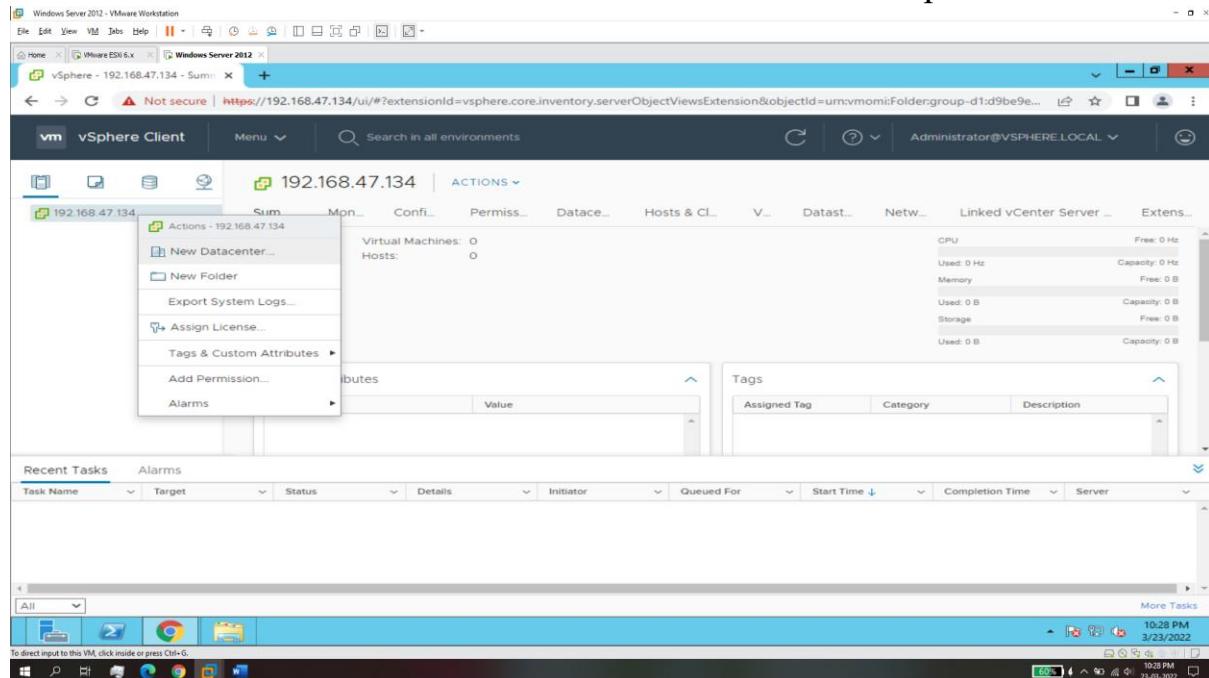
Practical 2

Manage VMwareESXi server with vCentre server.

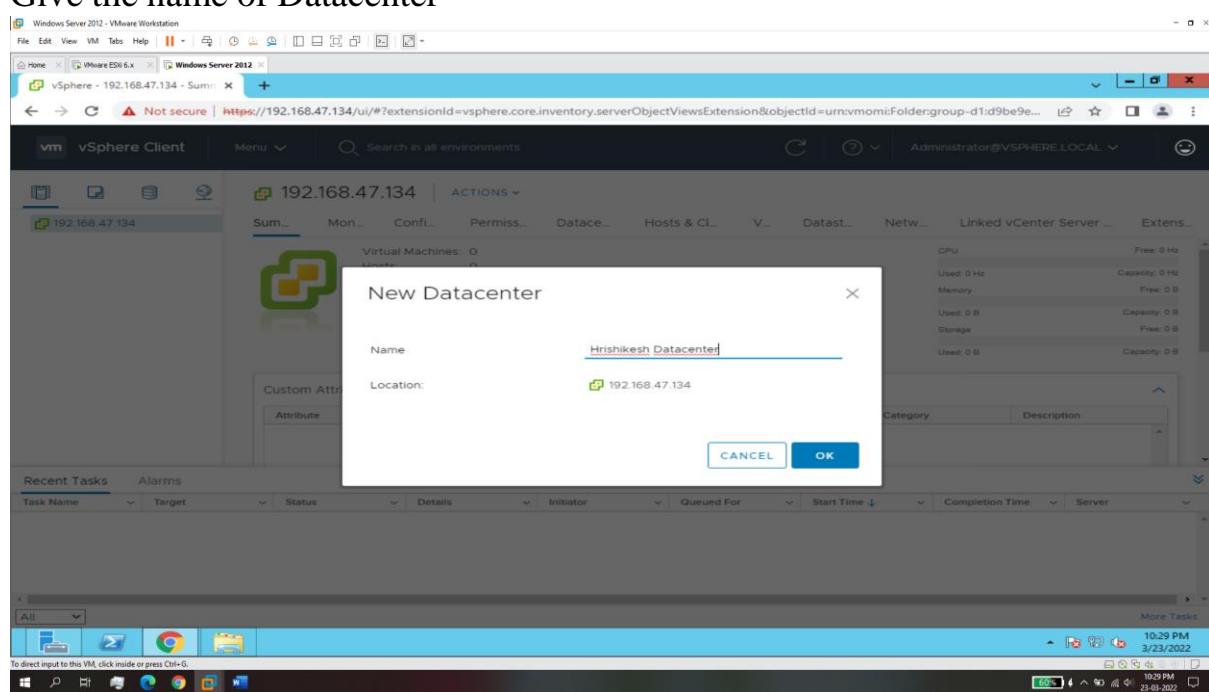
A. Create a virtual machine in VMware ESXi Server.

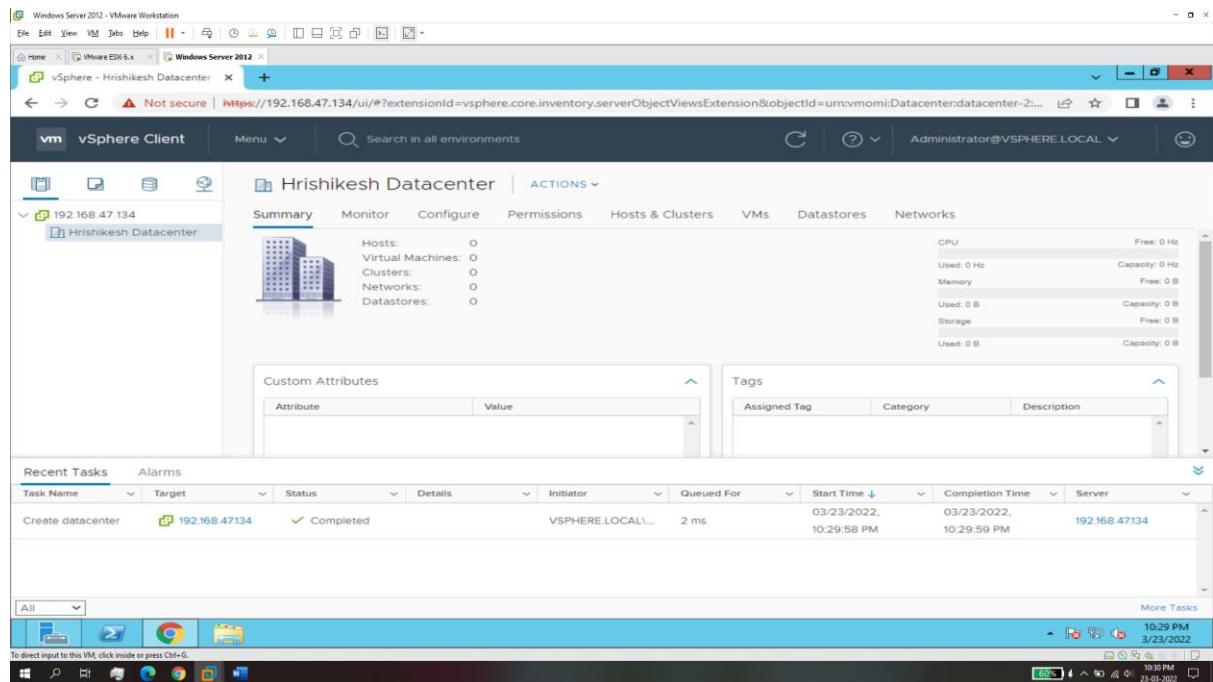
Create Datacenter and Add host on it:

After successful login, the below screen will appear, and after that click on the “Create a datacenter” button to add the datacenter into the vSphere server.

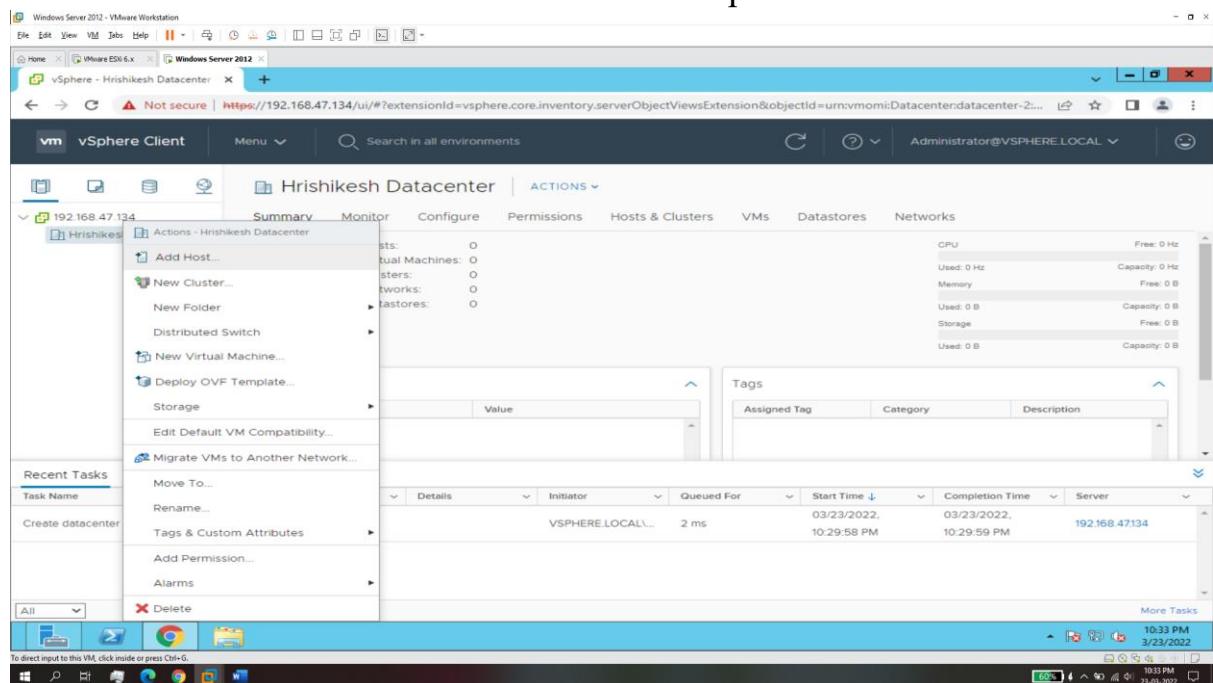


Give the name of Datacenter

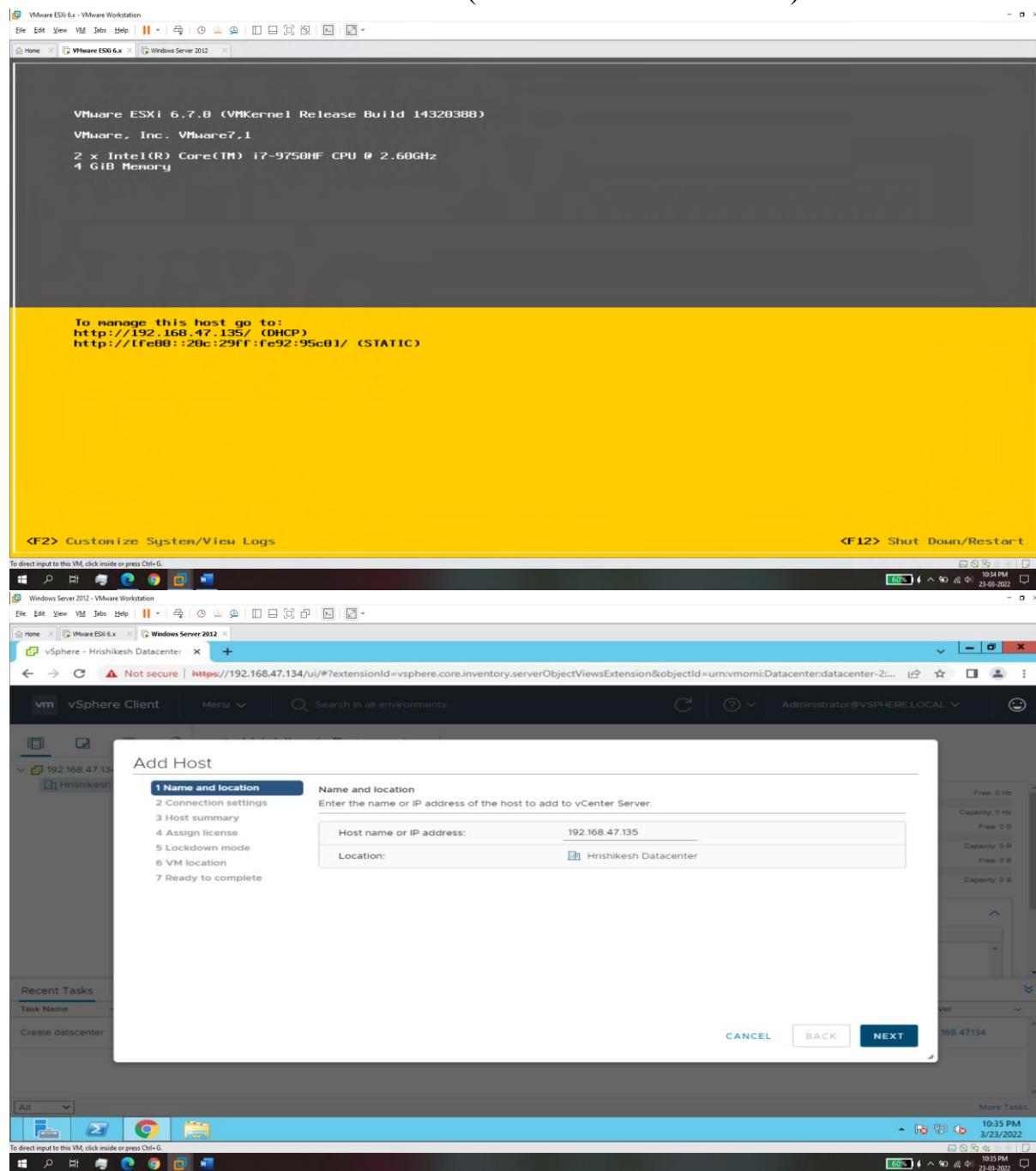




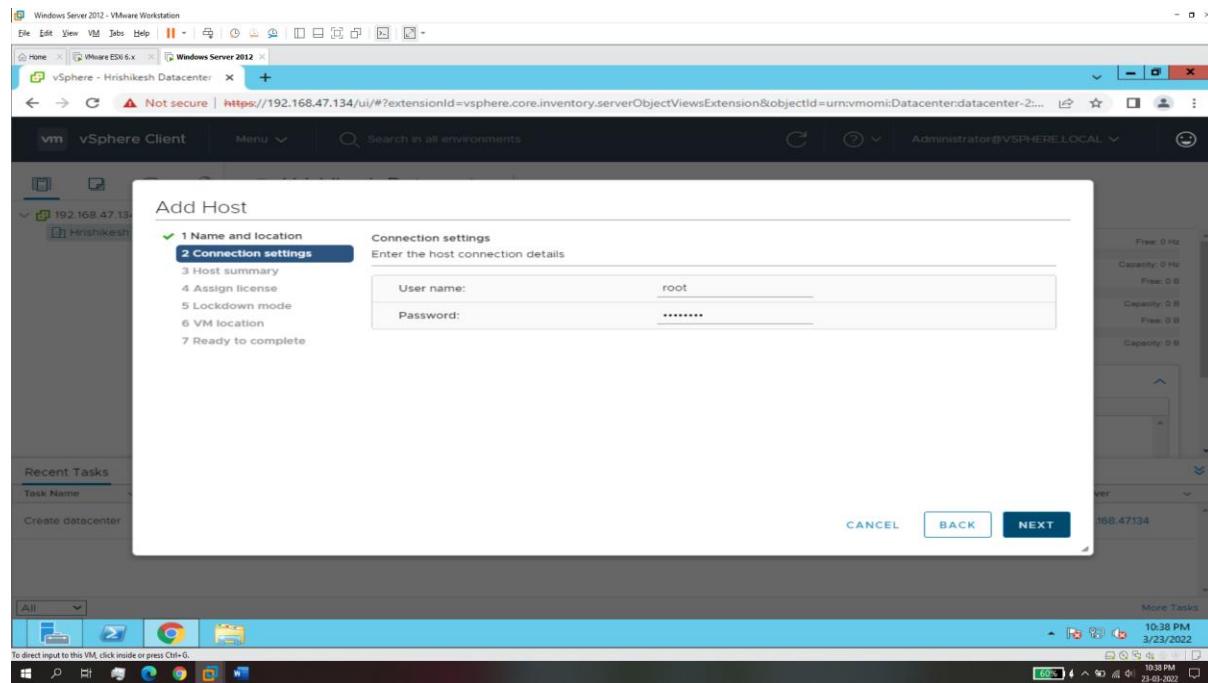
After that change, the name of the datacenter as you want, now click the “Add a host” button to add the host machine into the vSphere server.



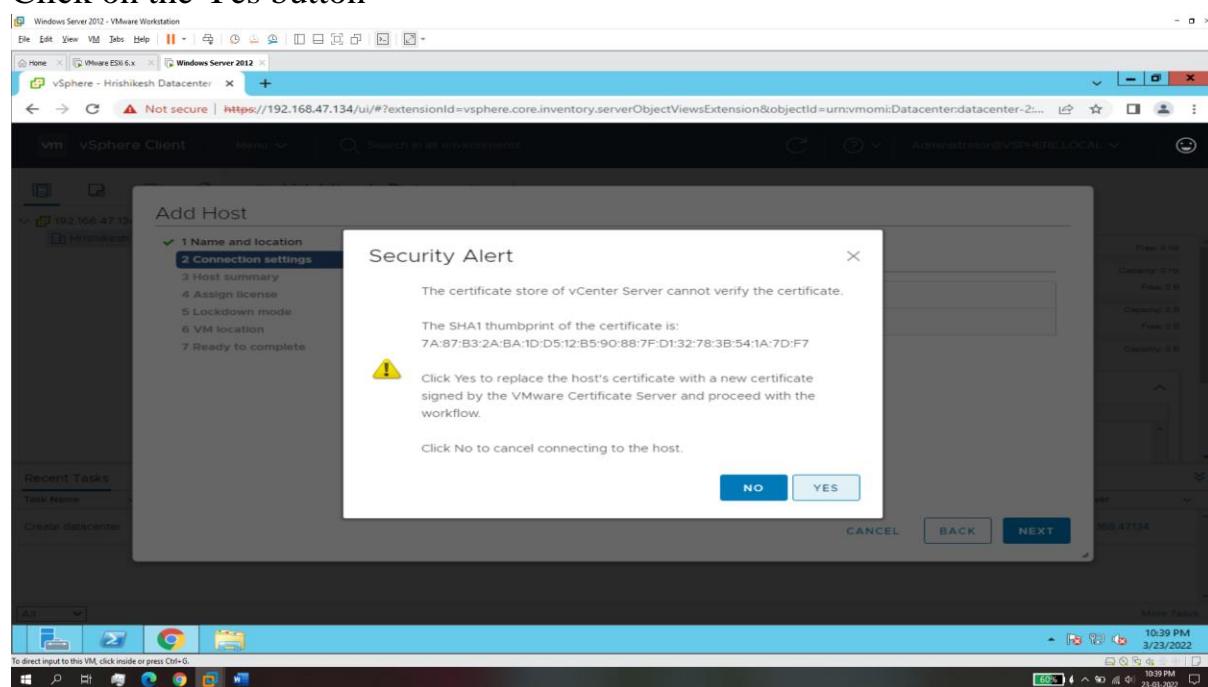
Enter the IP address of the host machine and enter the credential of the host machine i.e. of VMWare Esxi 6. x. (i.e. Practical No.1 A last)



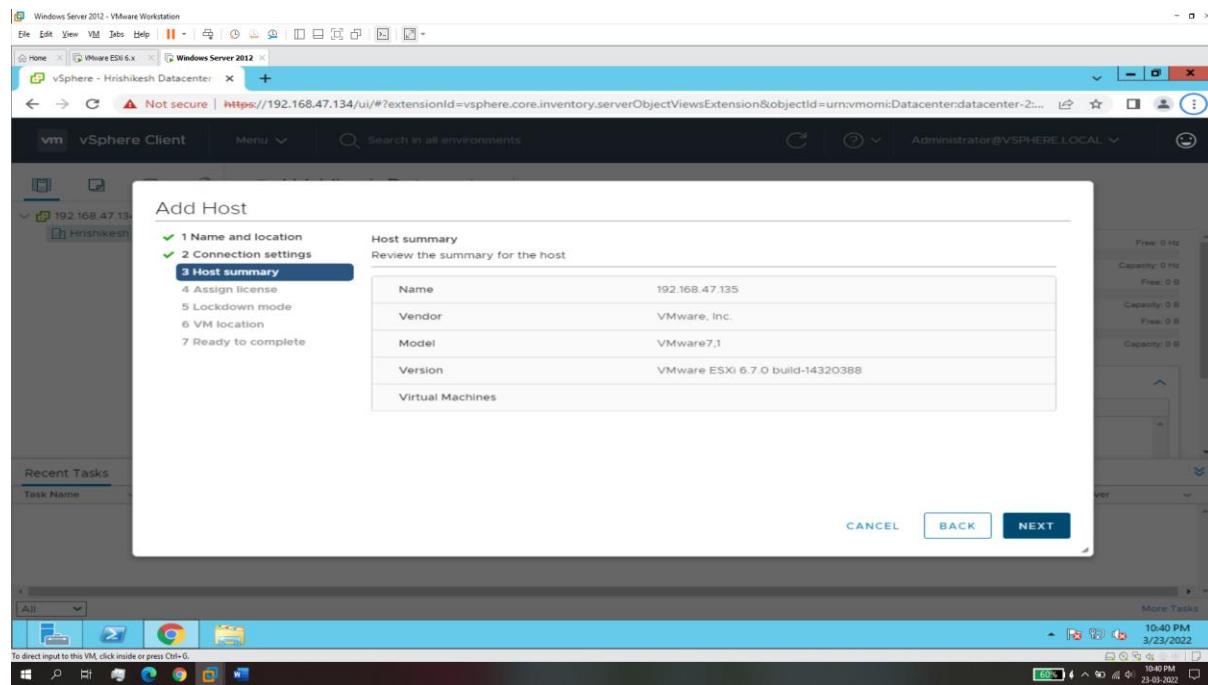
Username: root
 Password: It@13579



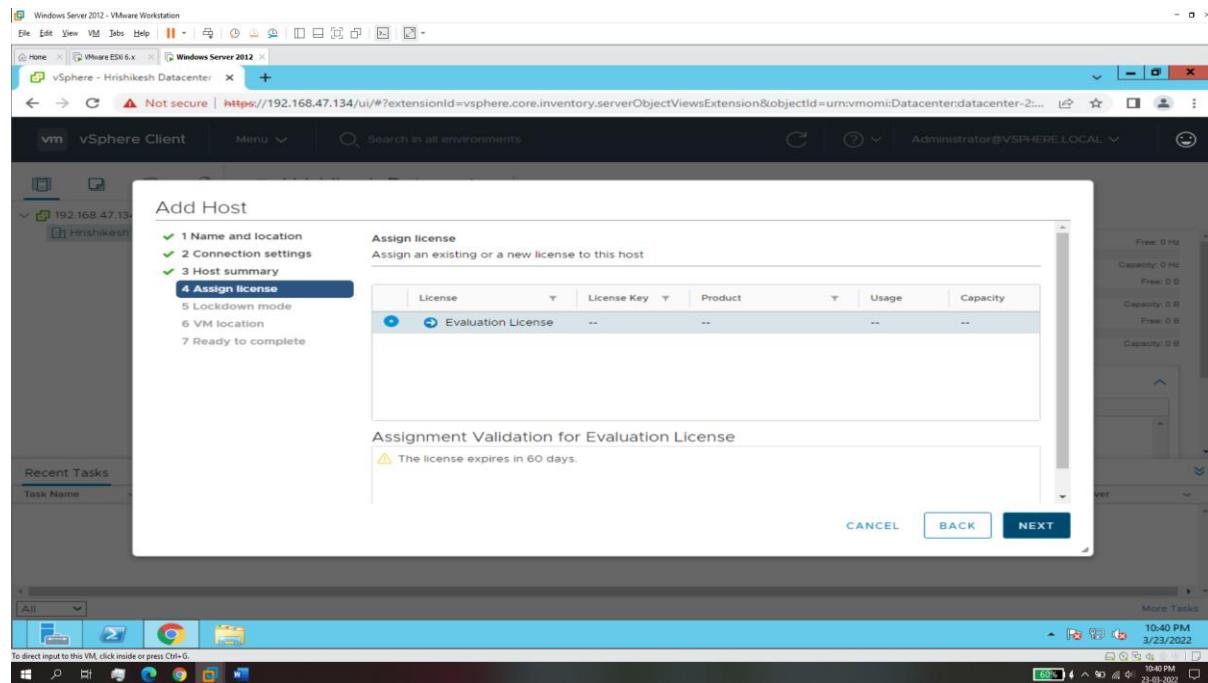
Click on the Yes button



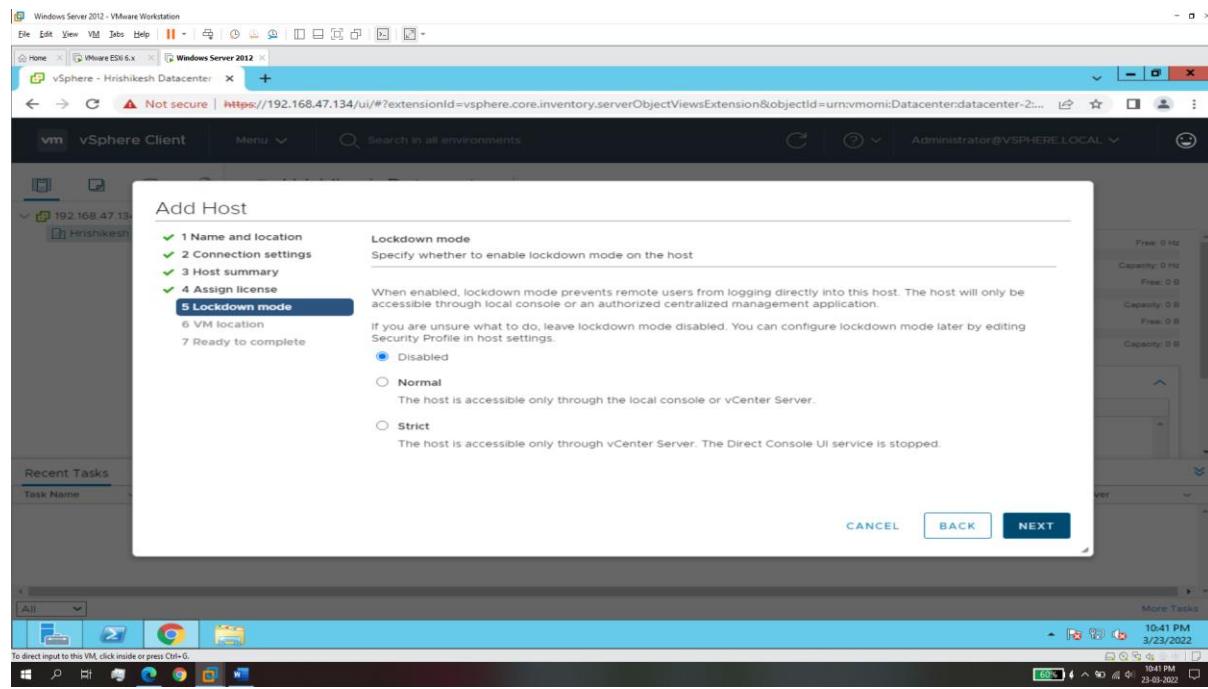
Click on 'Next'



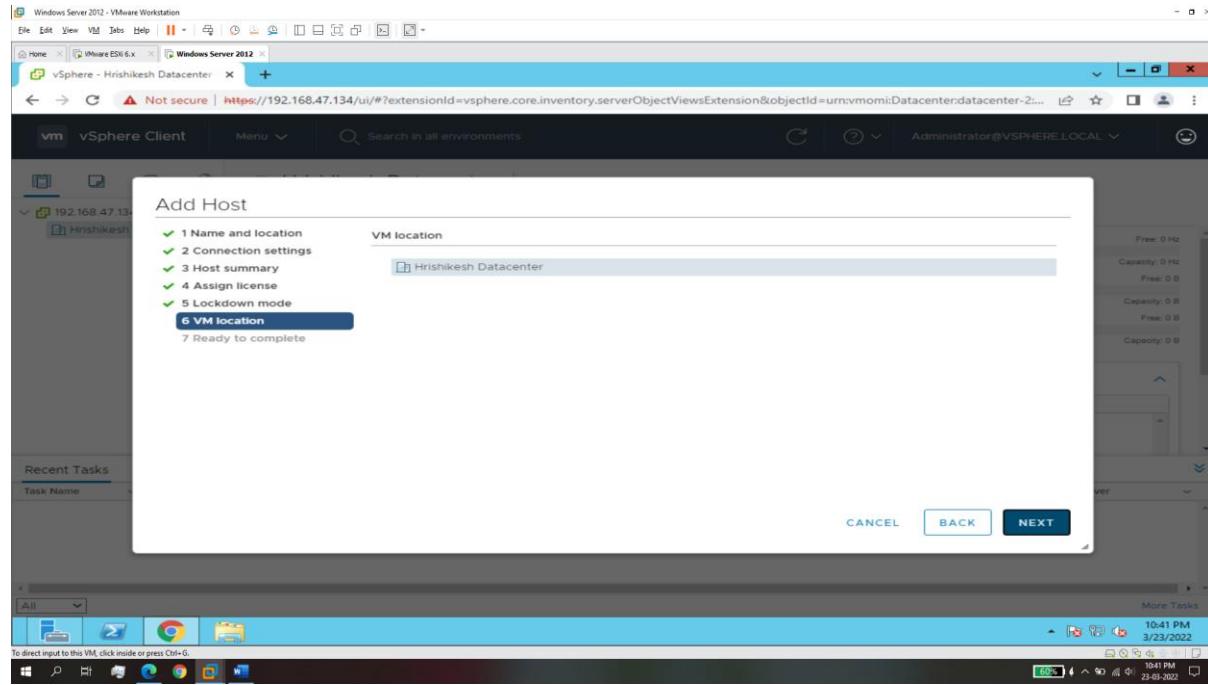
Click on 'Next'



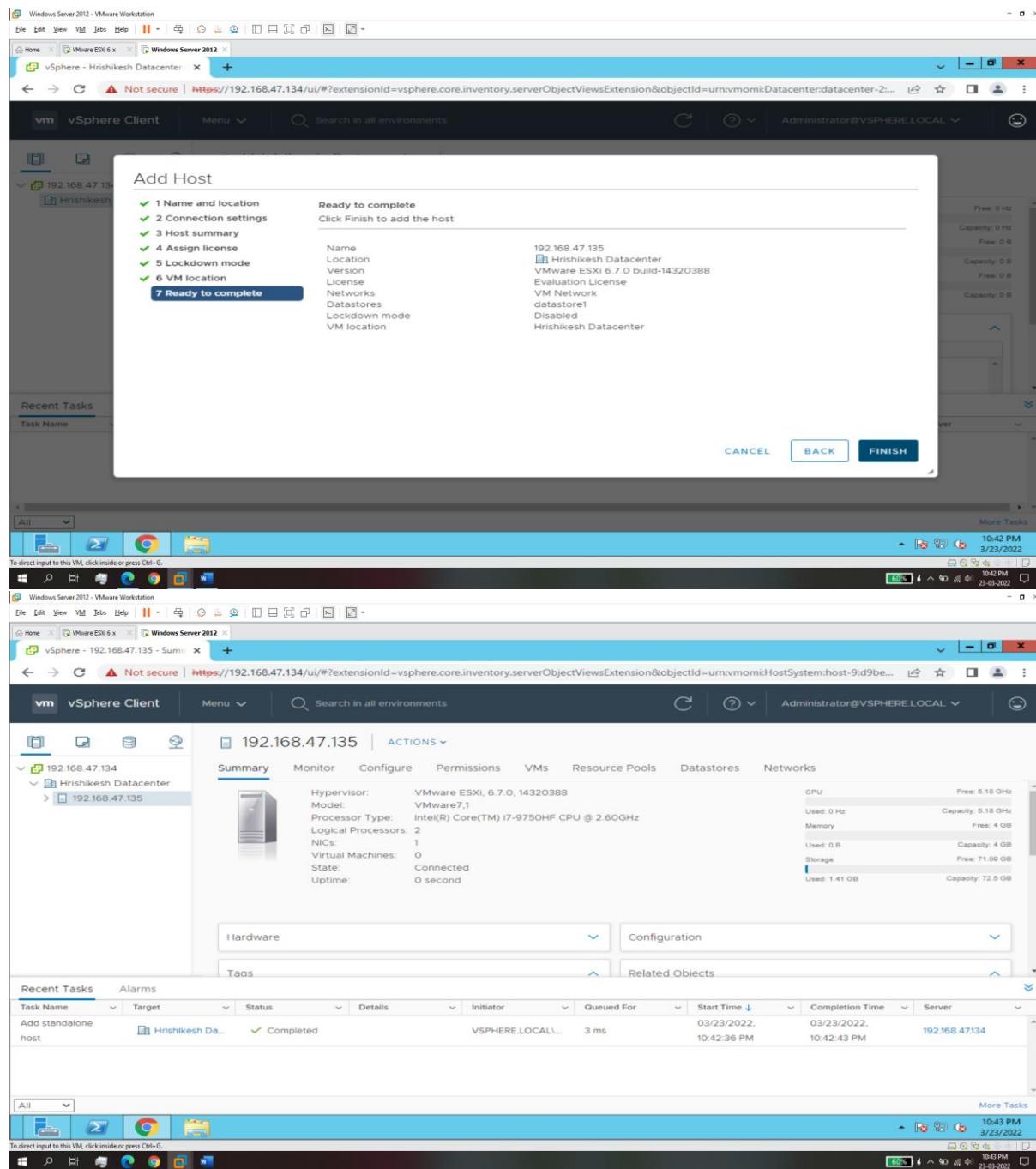
Click on 'Next'



Click on 'Next'



Click on 'Finish'

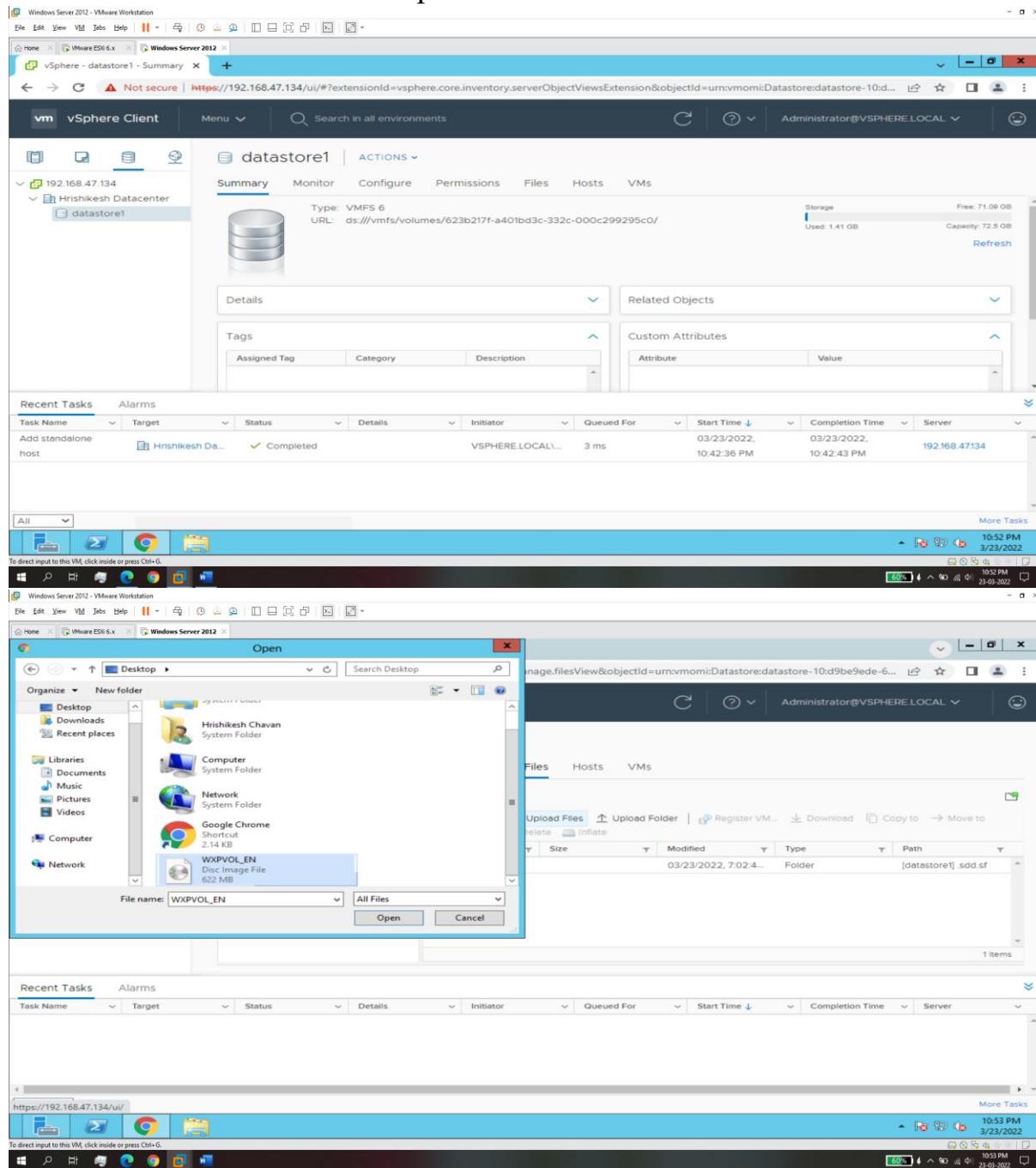


Create Virtual Machine into host:

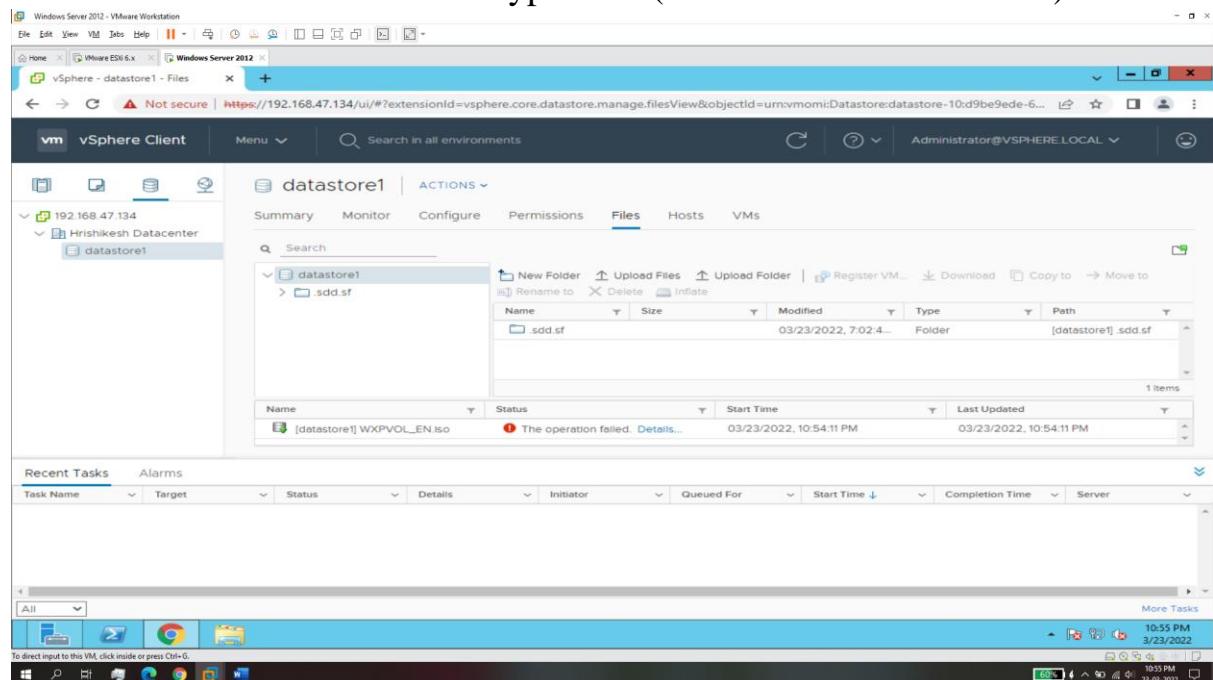
For the creation of a virtual machine into the host, we need to add the virtual machine iso file (WXPVOL_EN.iso) into the datastore.

For that go to the configuration tab of the host and then click on the Storage button. After that double click on datastore1.

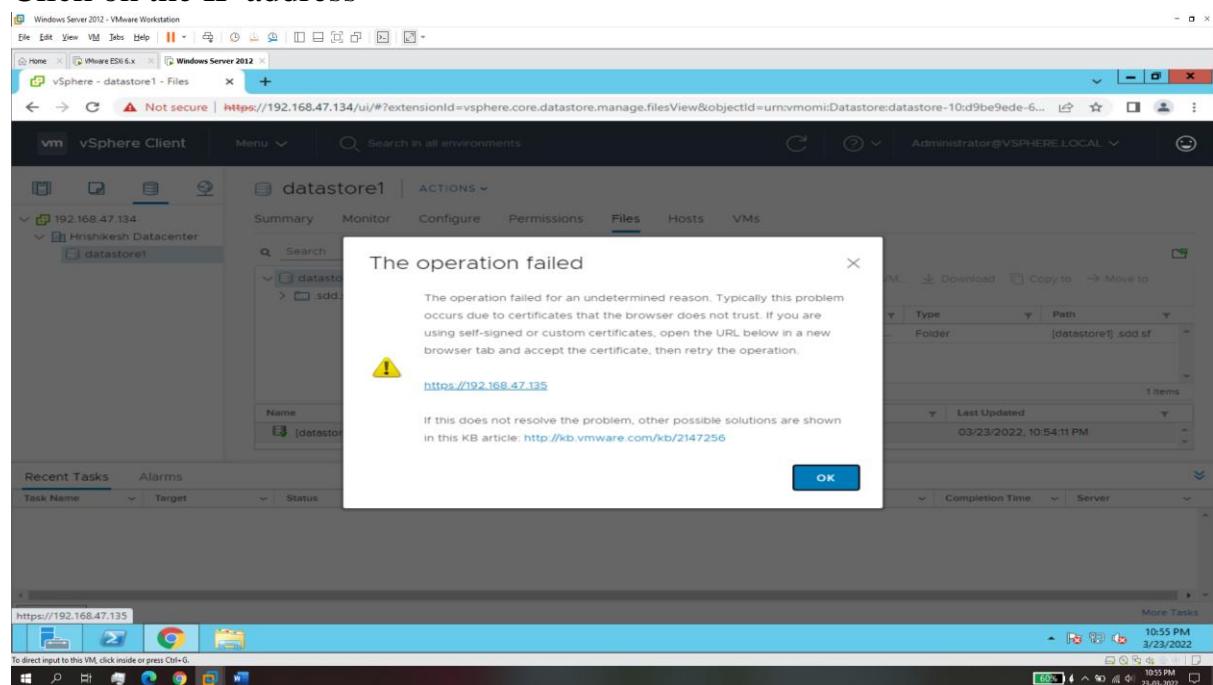
After that, you will be seen the below screen, just click on the “Browse this datastore” button Click on the upload file button and browse the iso file.



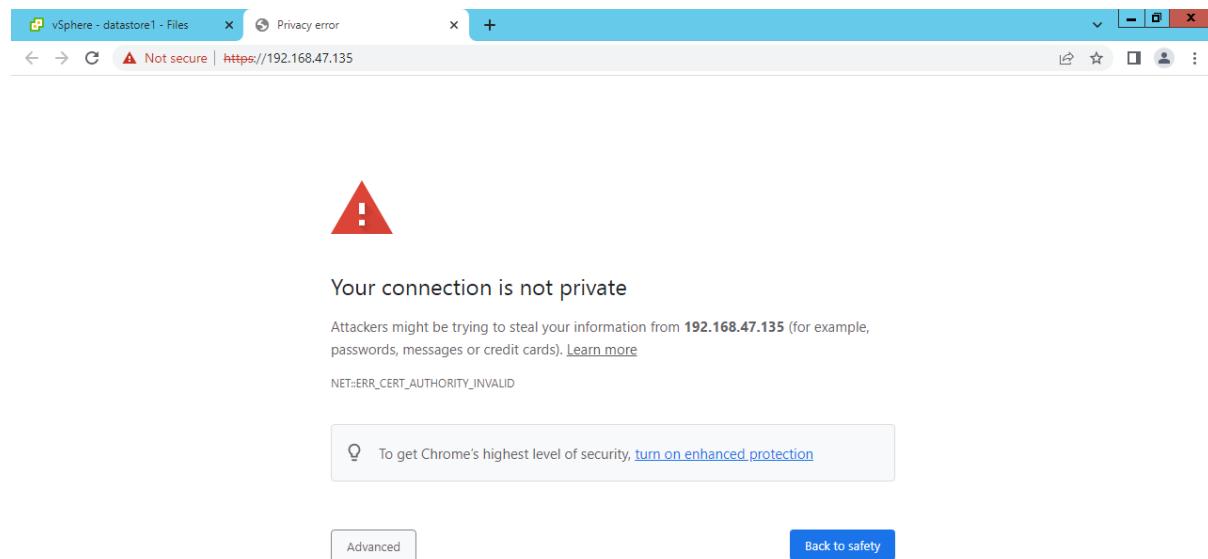
Click on details and browse the hyperlink. (Note: Click on the Details)



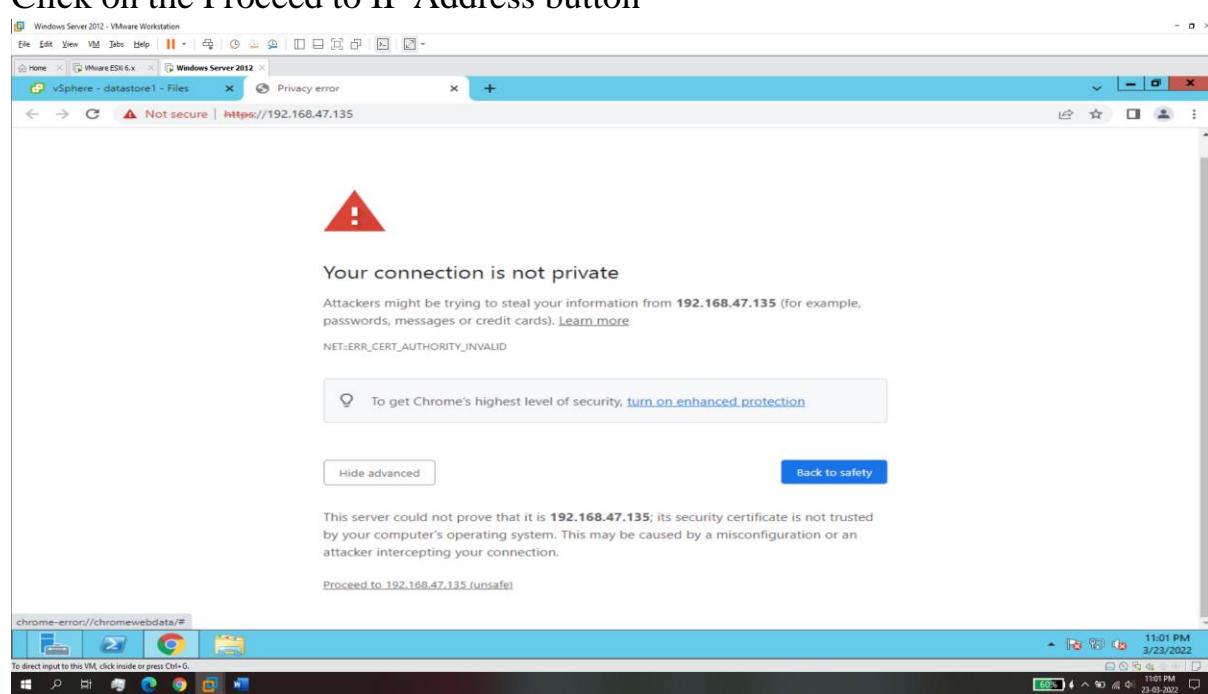
Click on the IP address



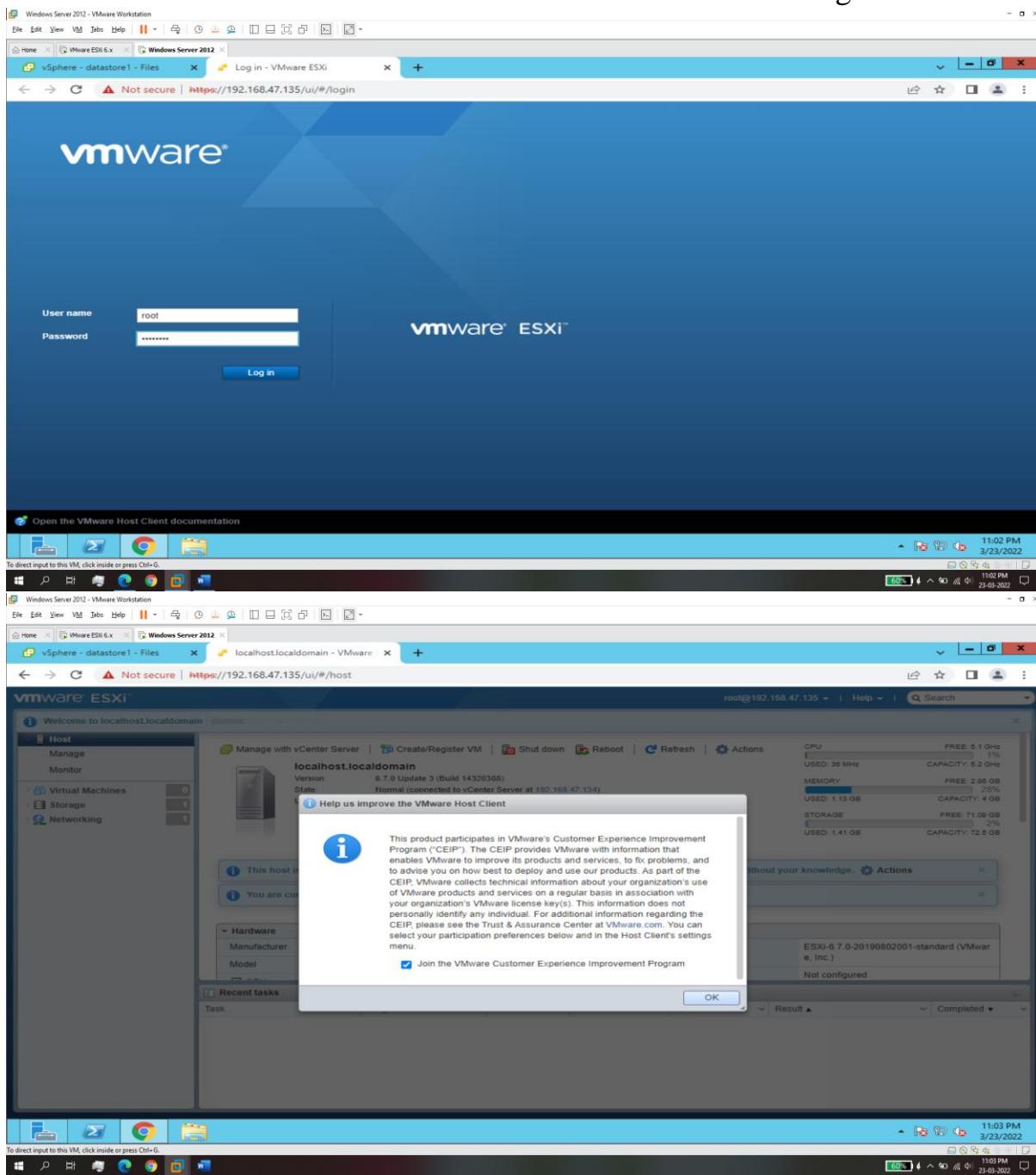
Click on the Advanced button

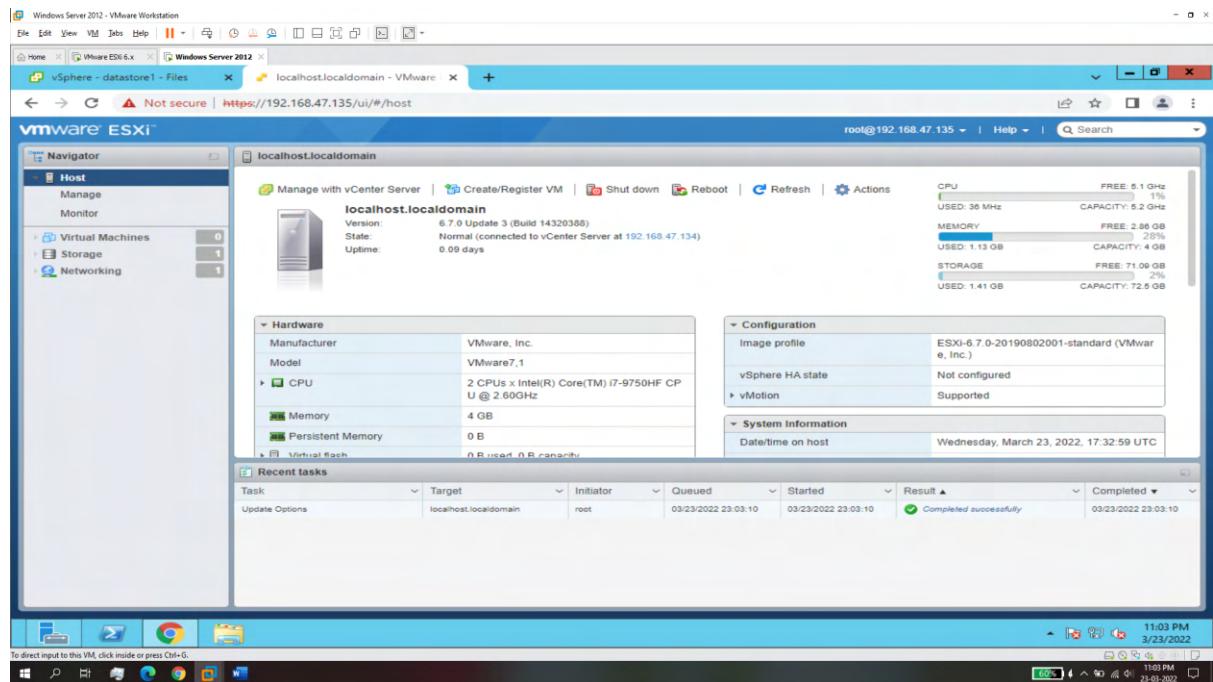


Click on the Proceed to IP Address button

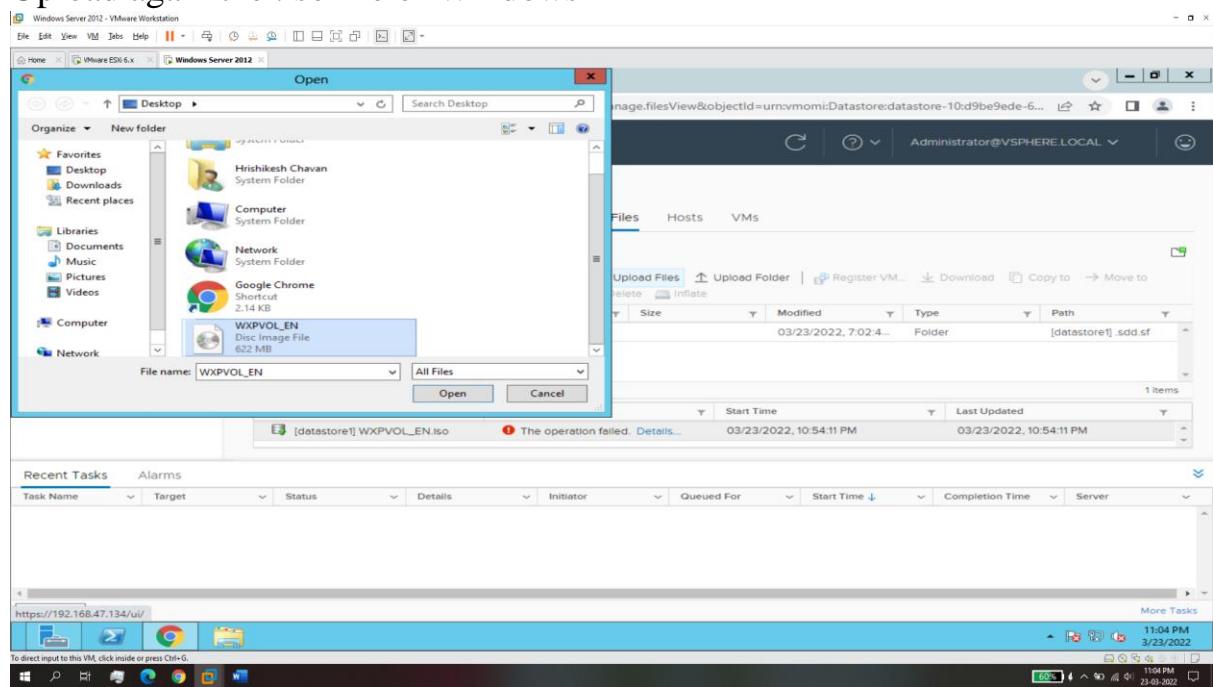


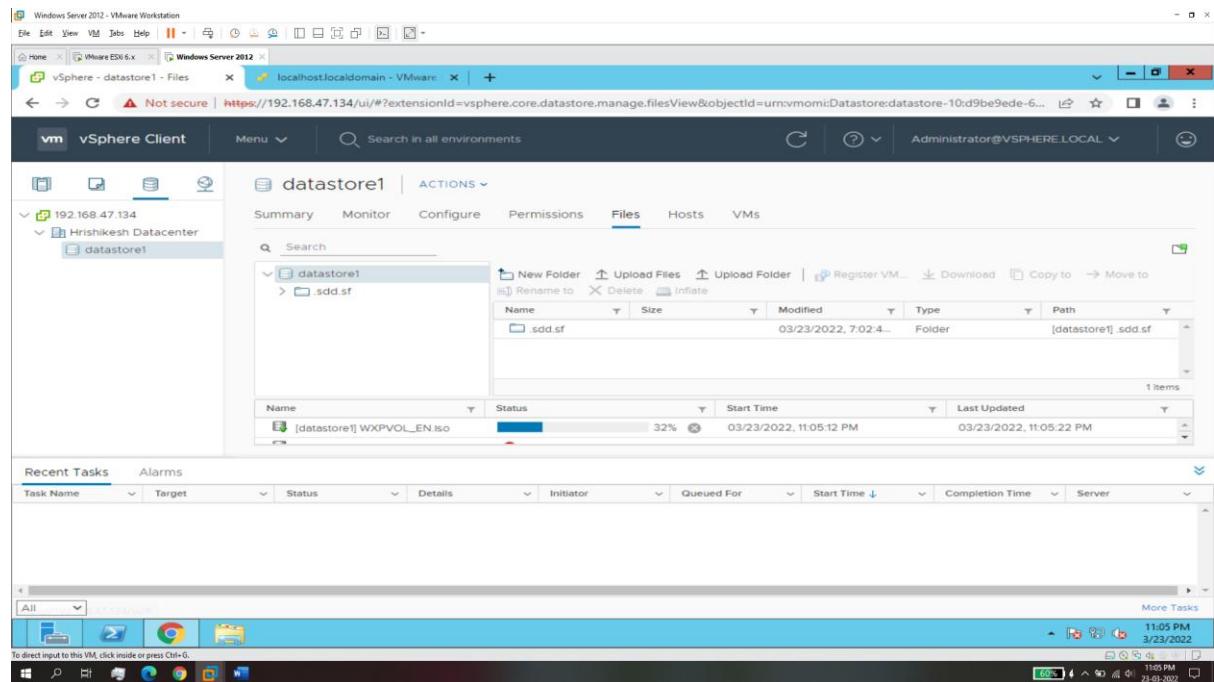
Enter the Username: root and Password: It@13579 when creating ESXi Server



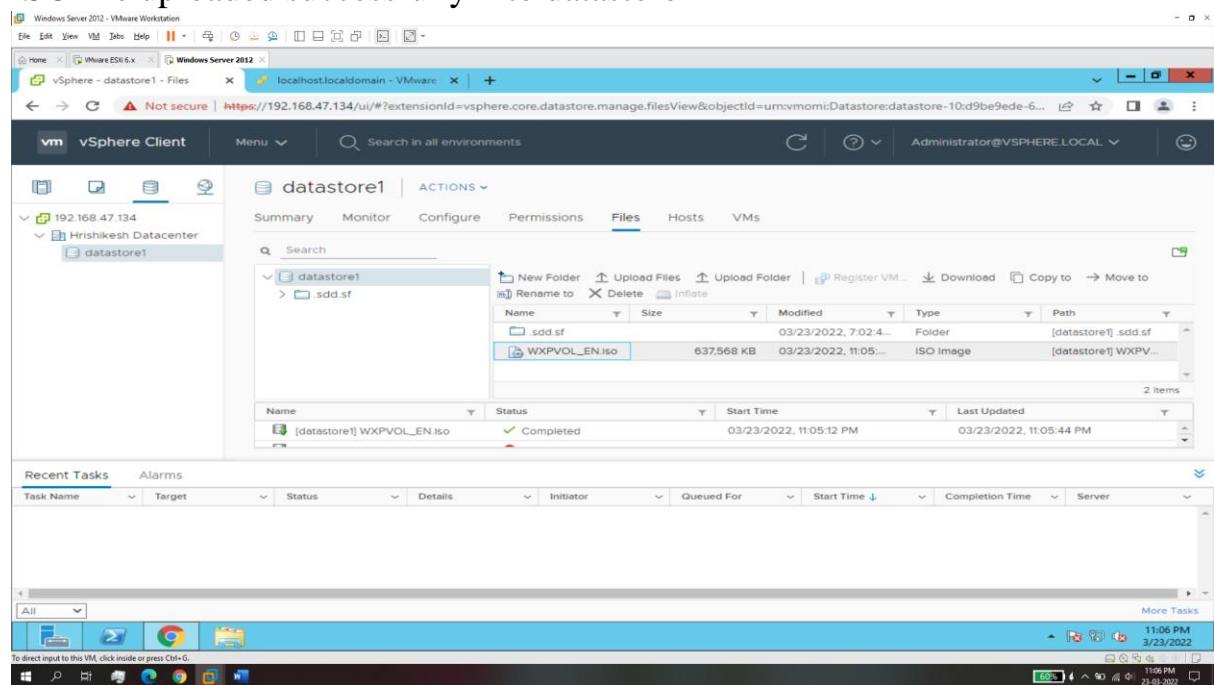


Upload again the .iso file of WindowsXP

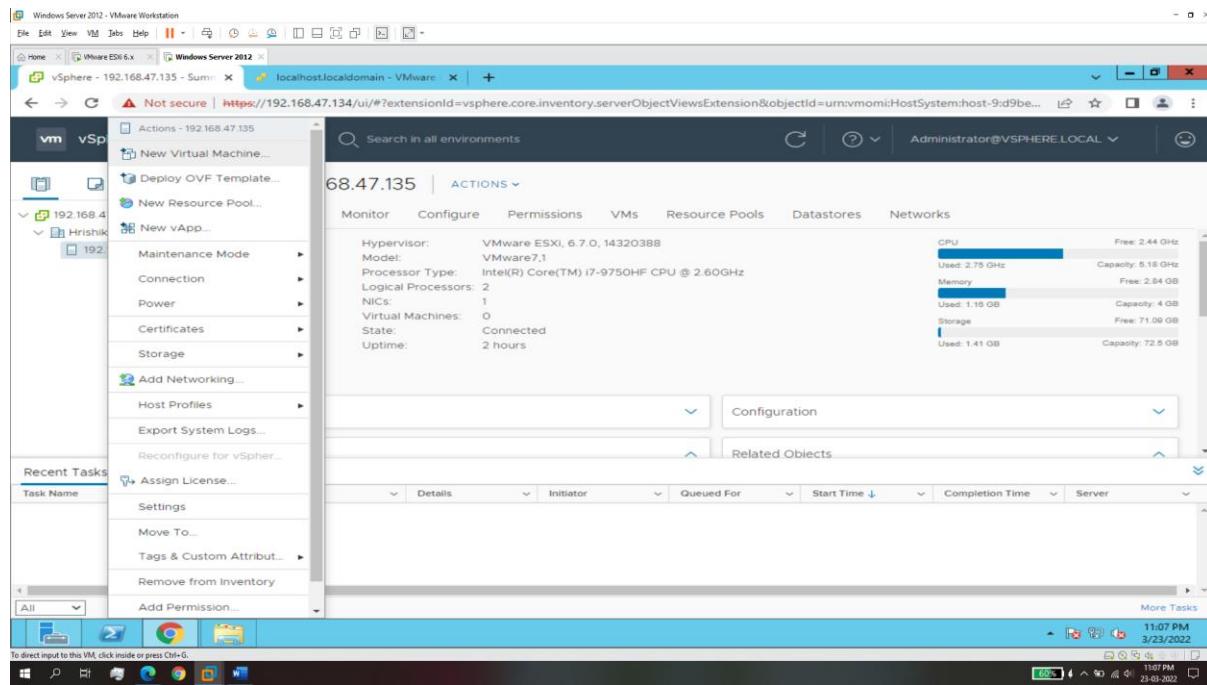




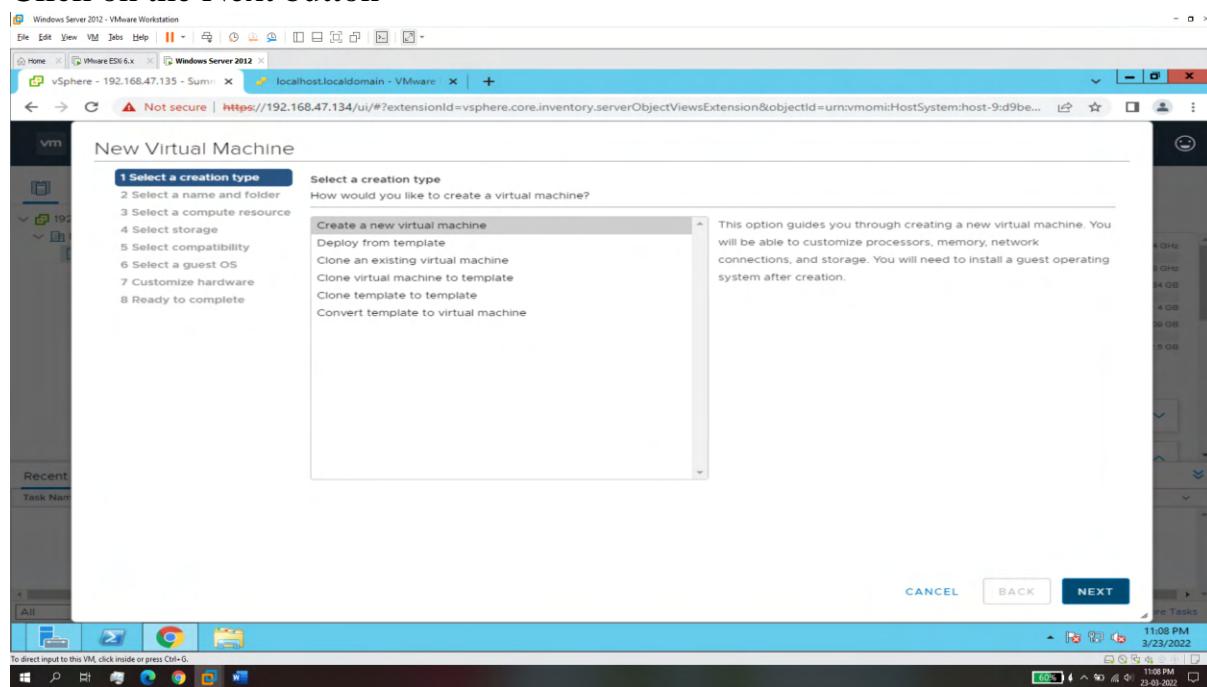
ISO file uploaded successfully into datastore



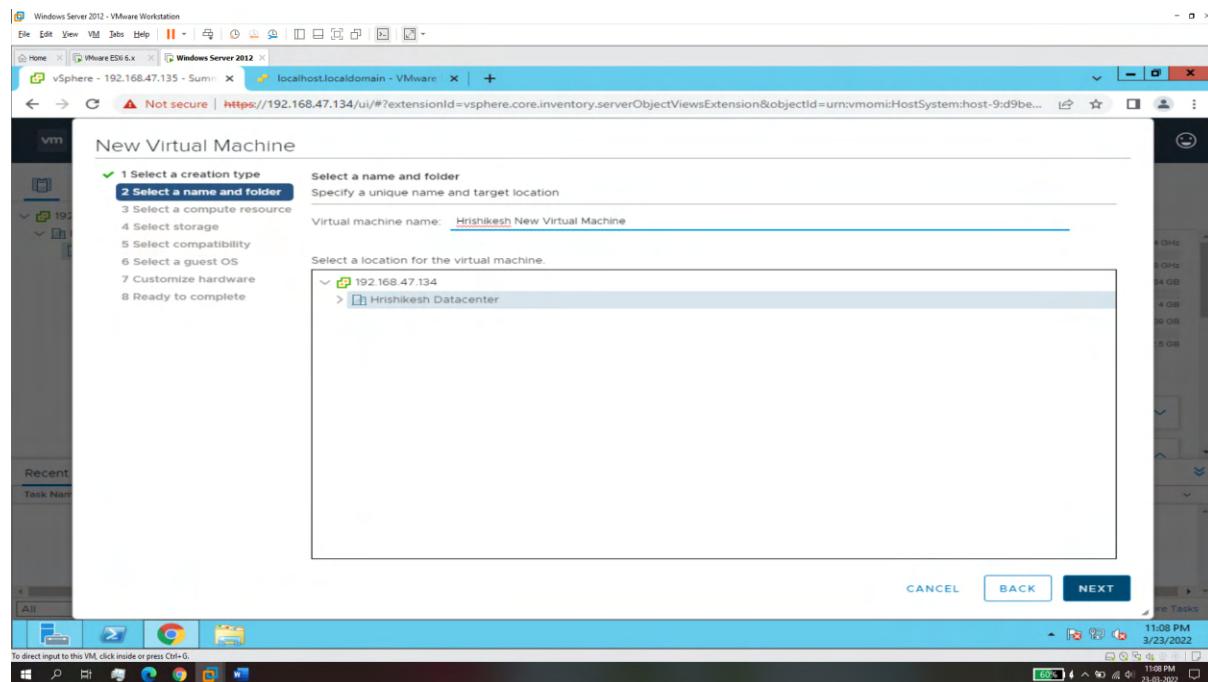
Again go to the host tab and right-click on the host (IP_address of Host) and select New Virtual Machine



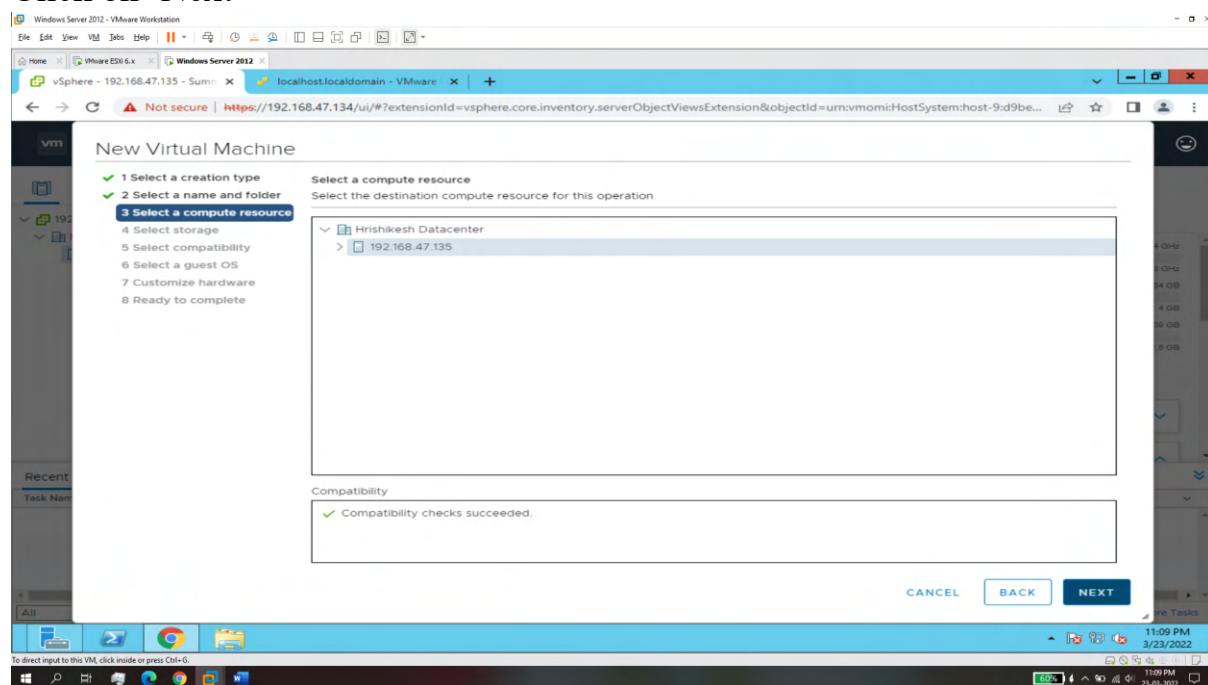
Click on the Next button



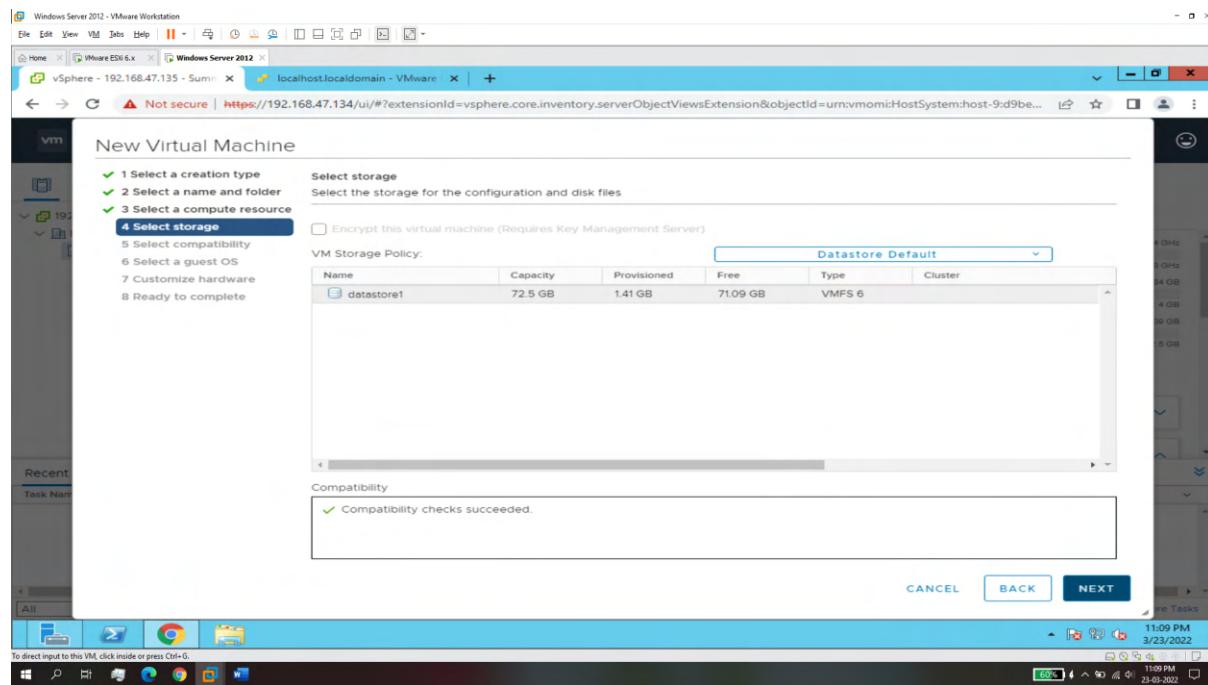
Click on 'Next'



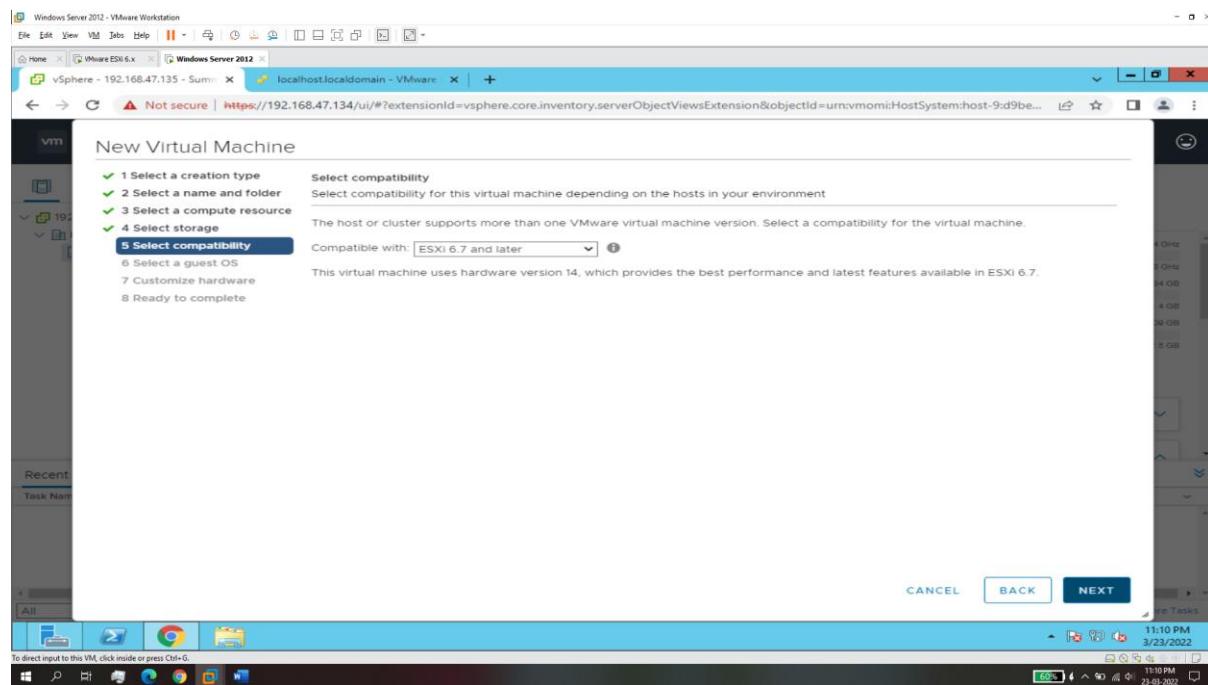
Click on 'Next'



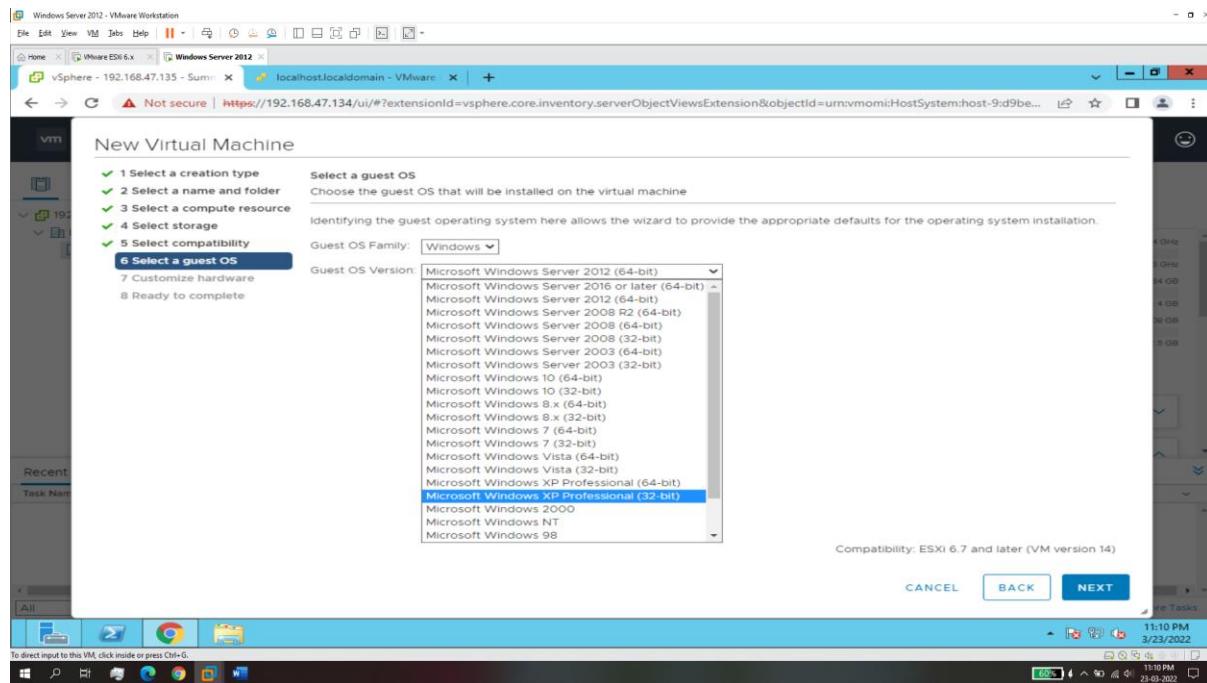
Click on 'Next'



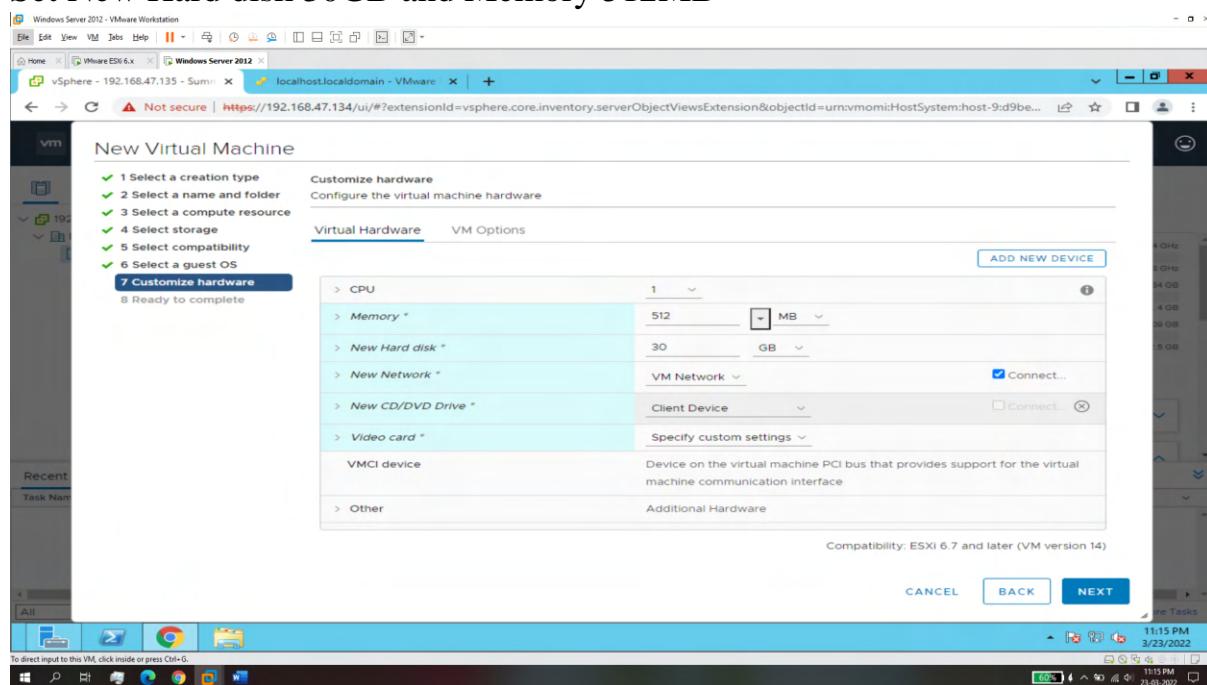
Click on 'Next'

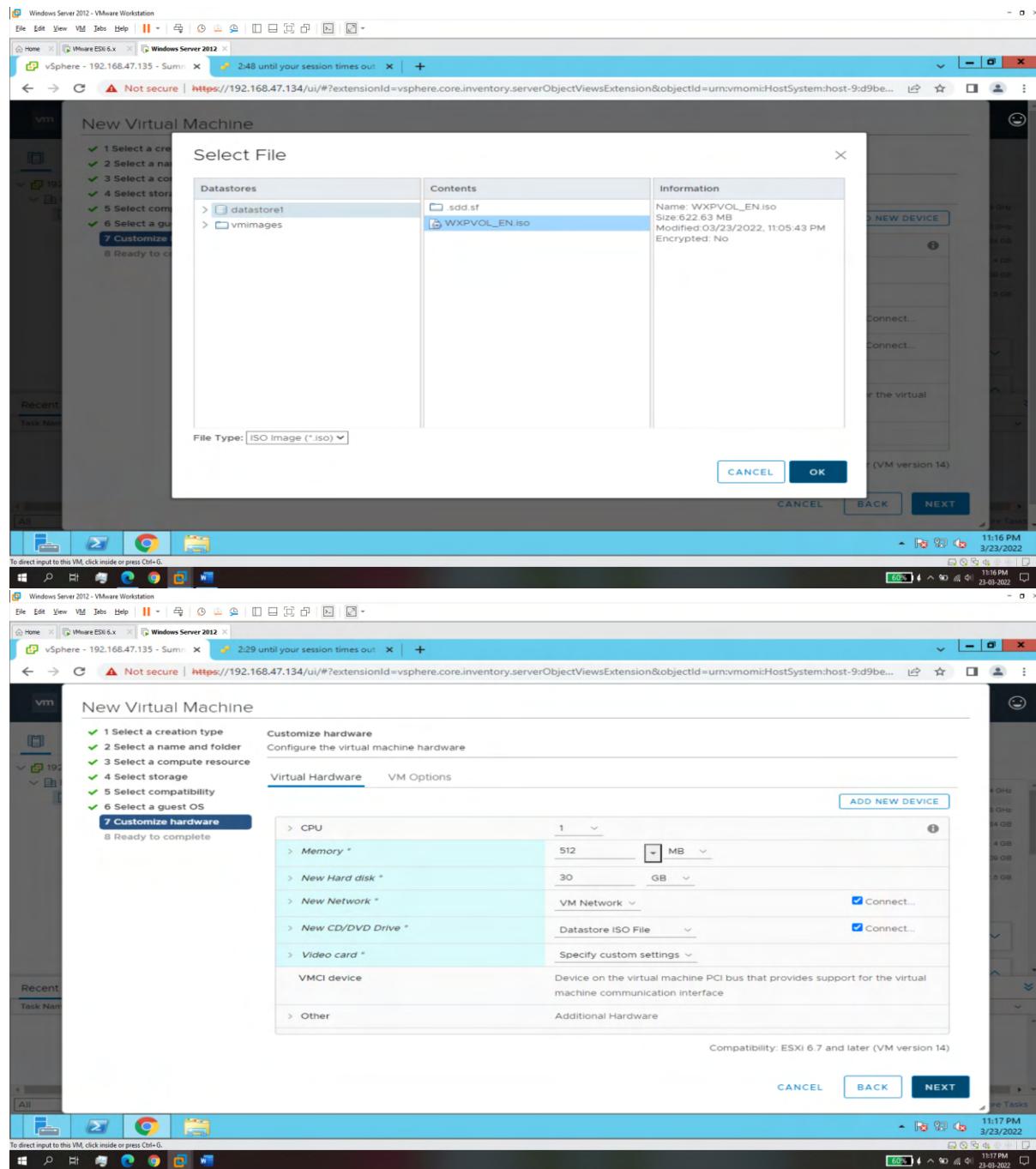


Select Guest OS version: 'Microsoft Windows XP Professional (32 bit)' then 'Next'

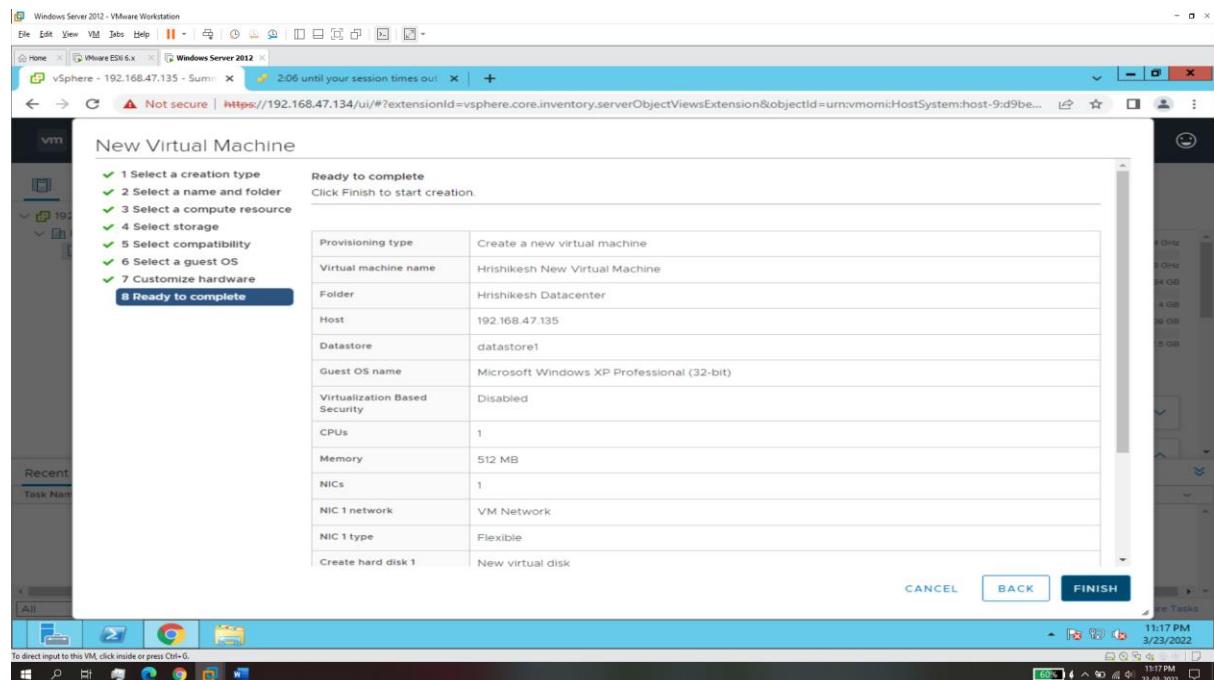


Set New Hard disk 30GB and Memory 512MB

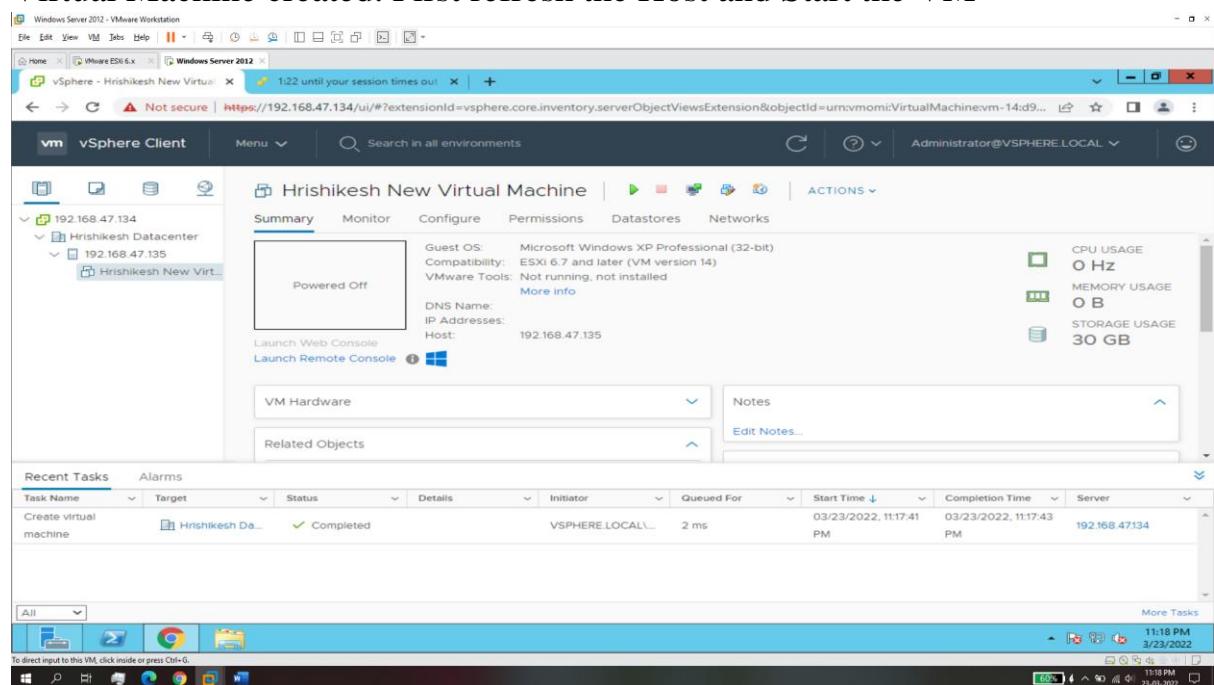




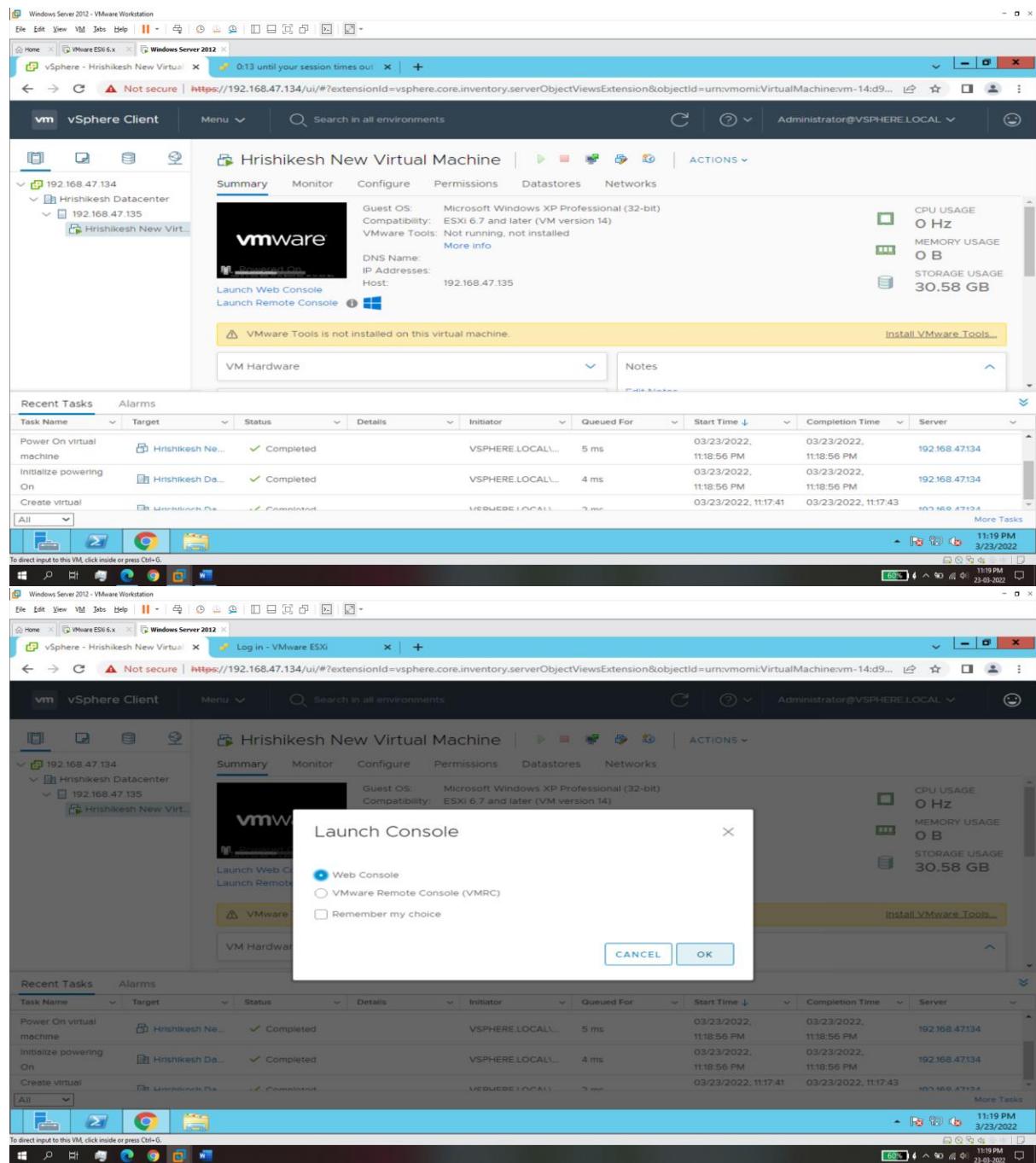
Click on 'Finish'

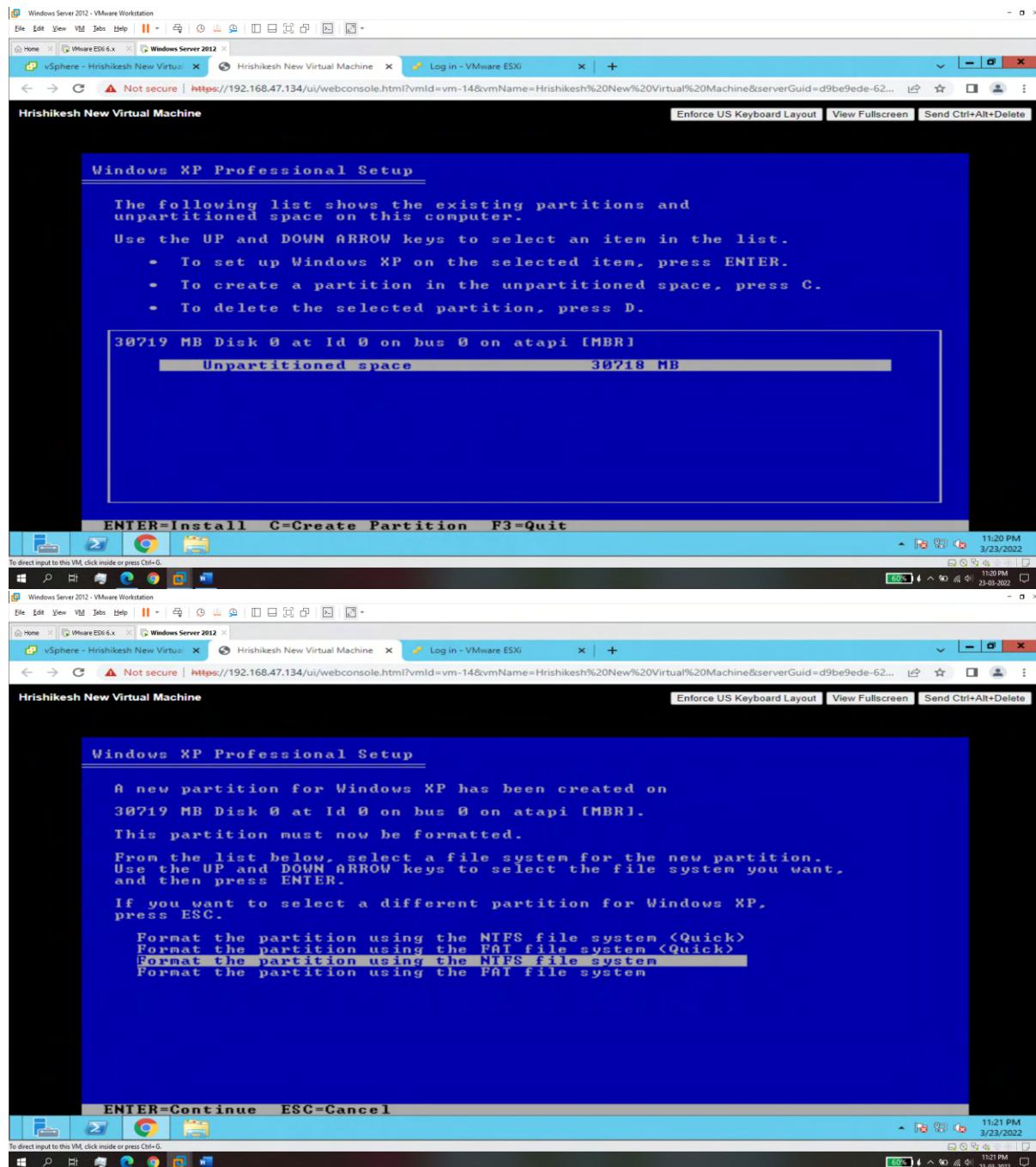


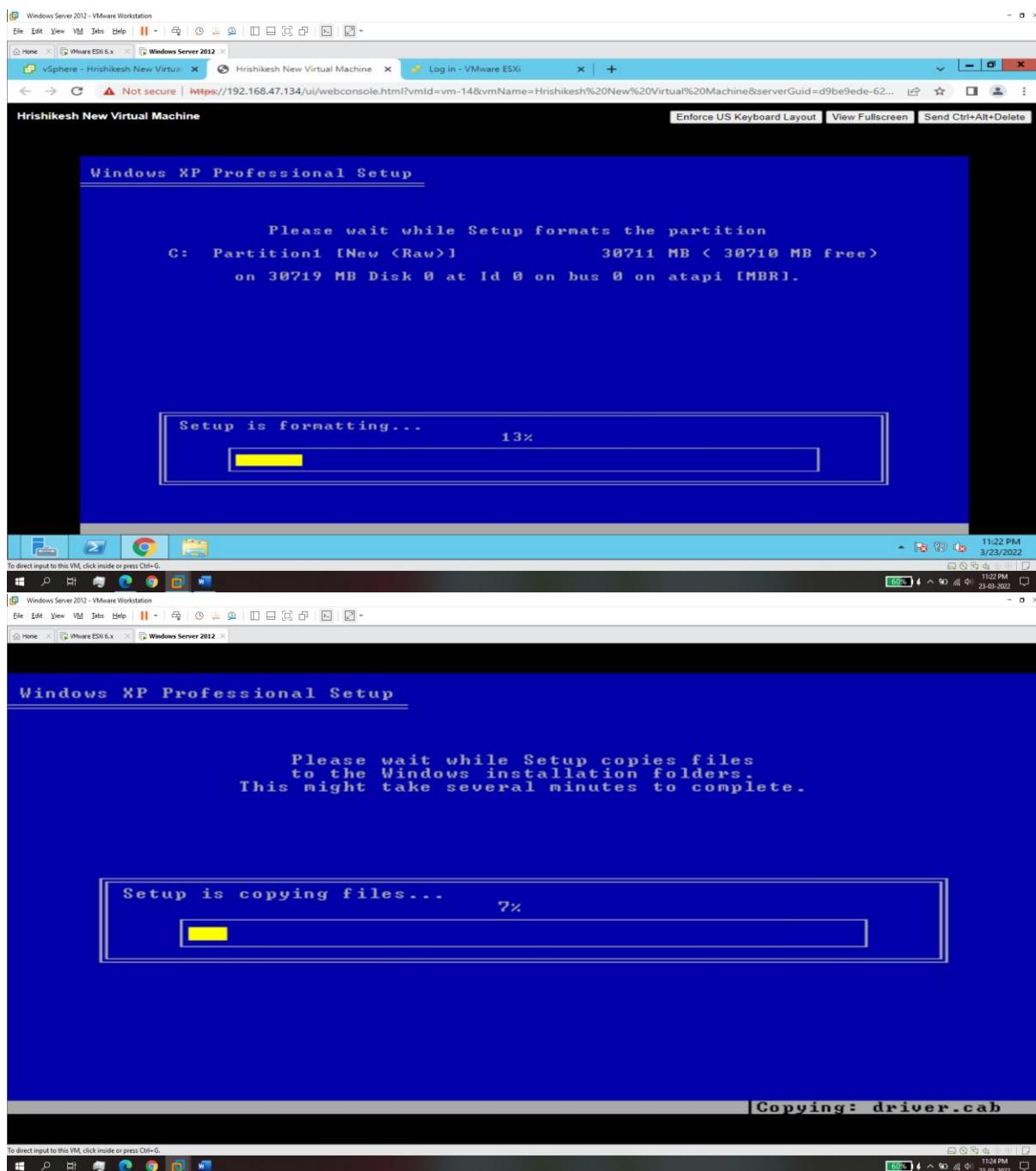
Virtual Machine created. First refresh the Host and Start the VM

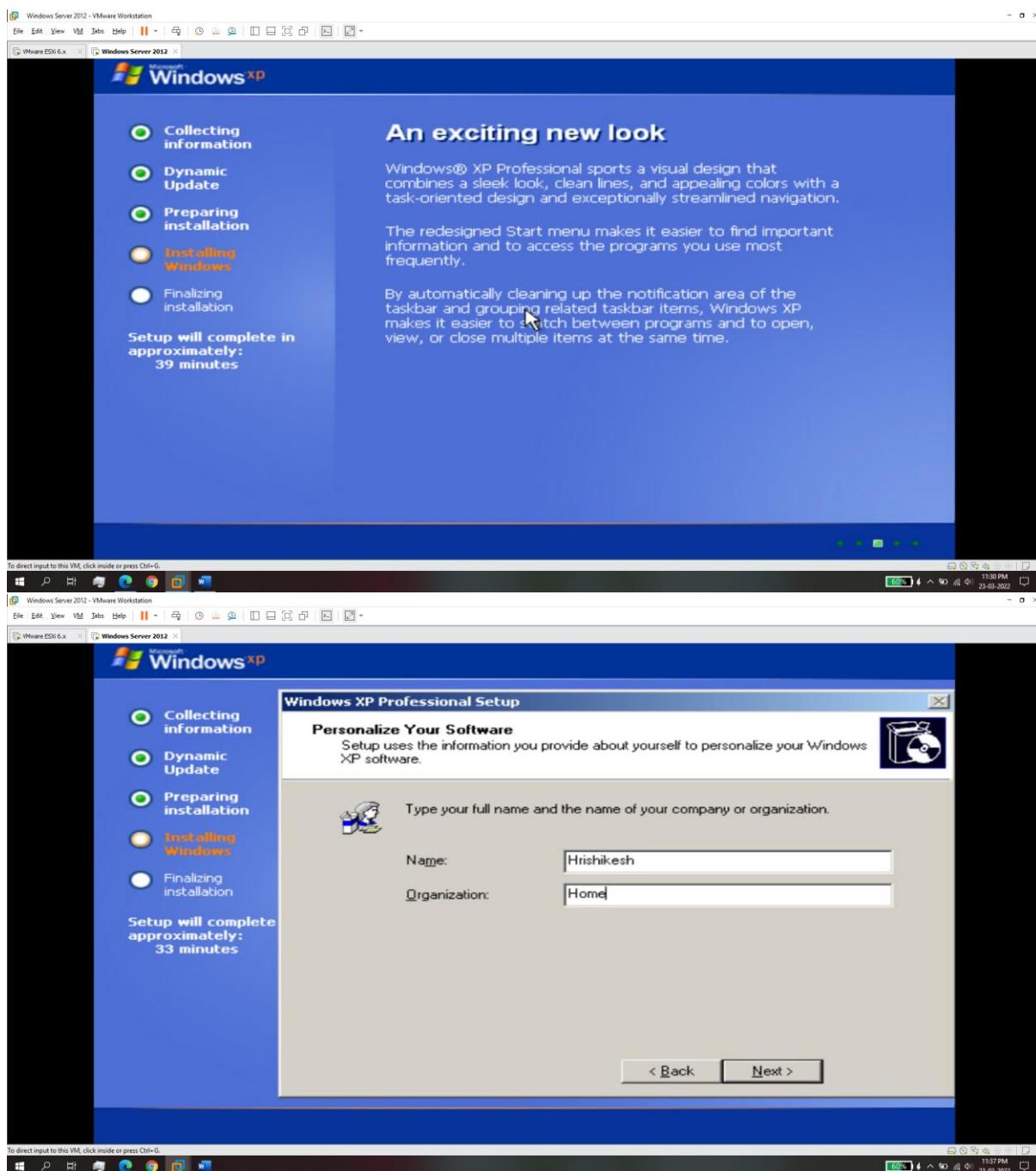


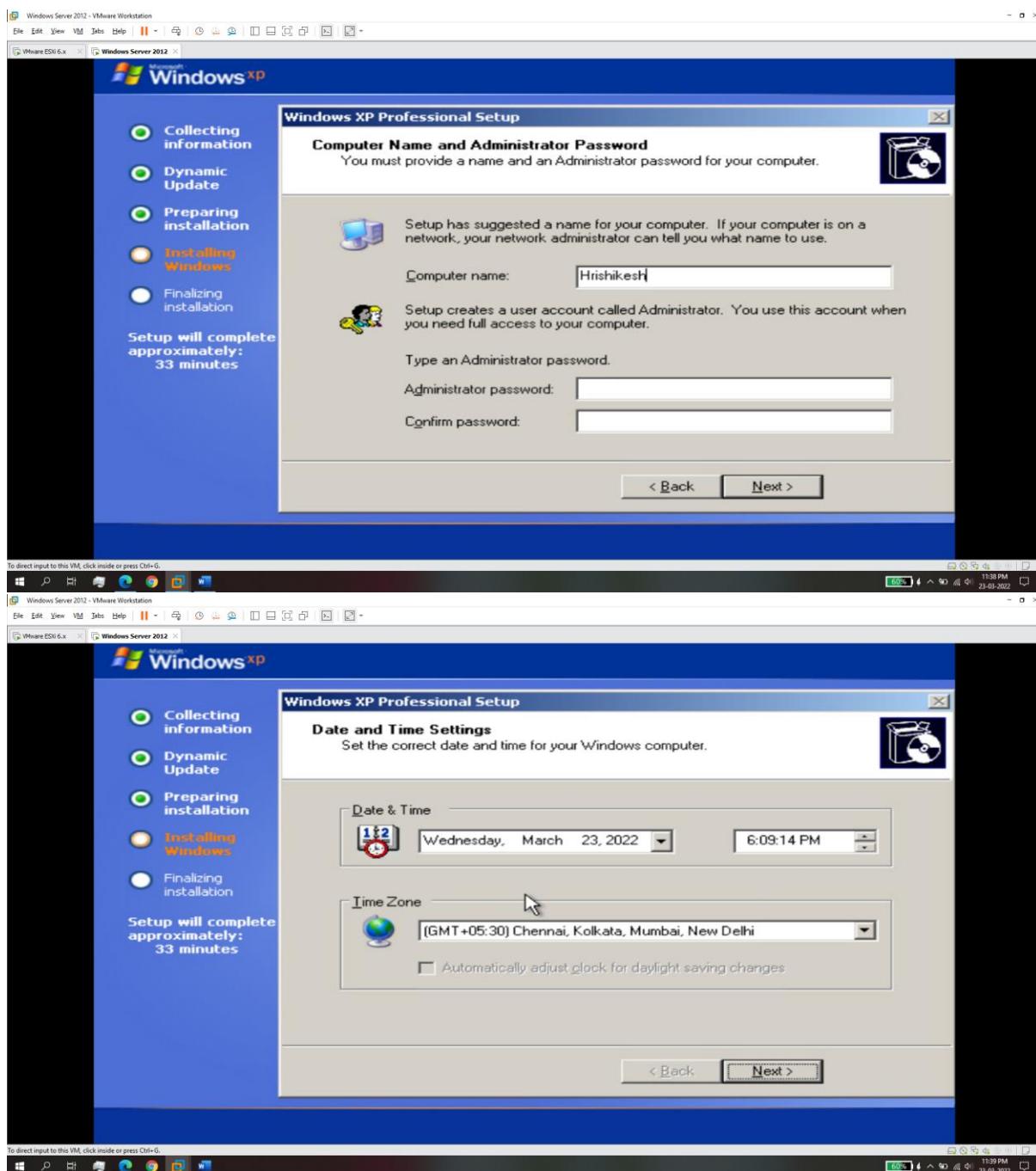
Click on the Launch Web Console

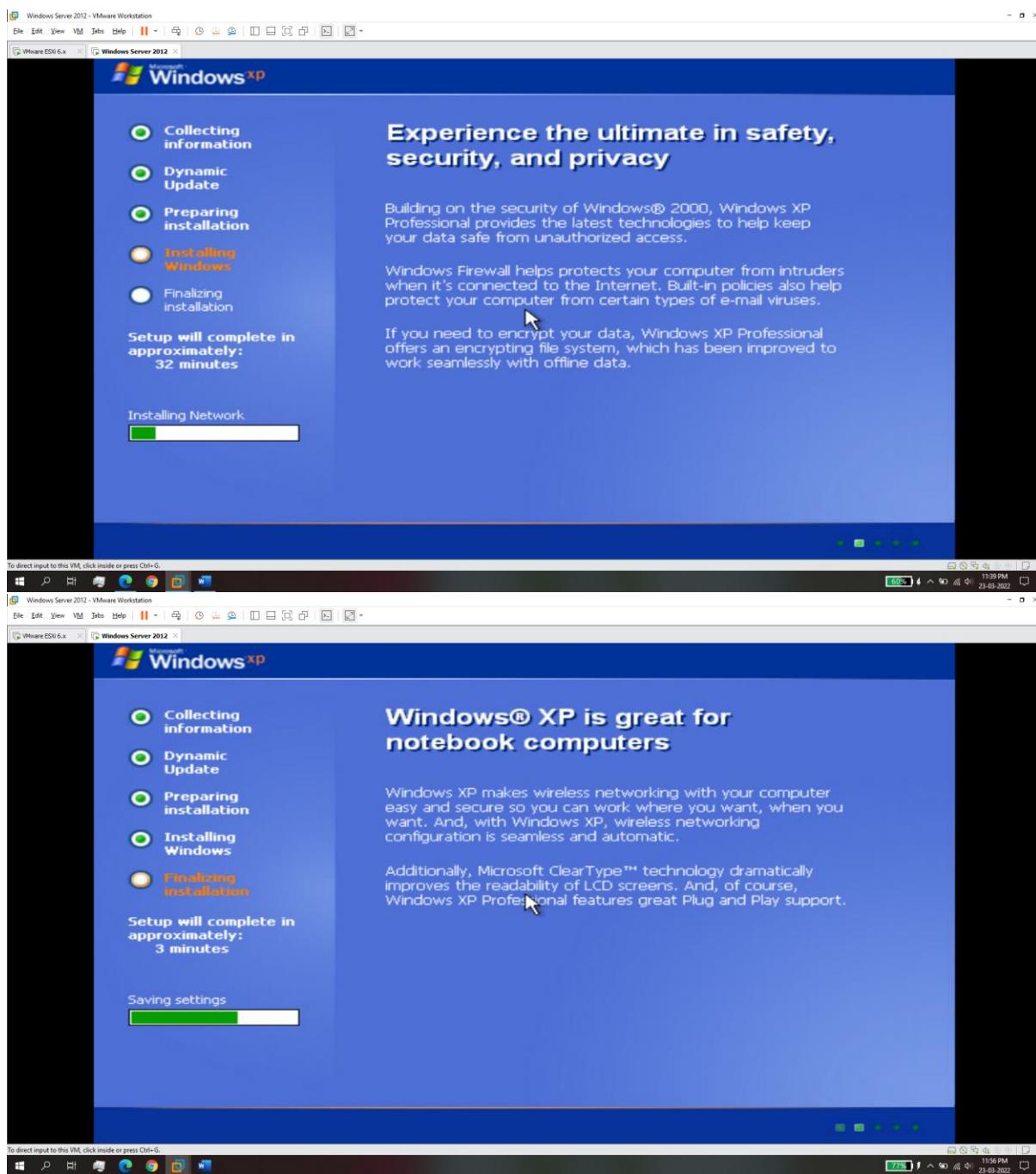


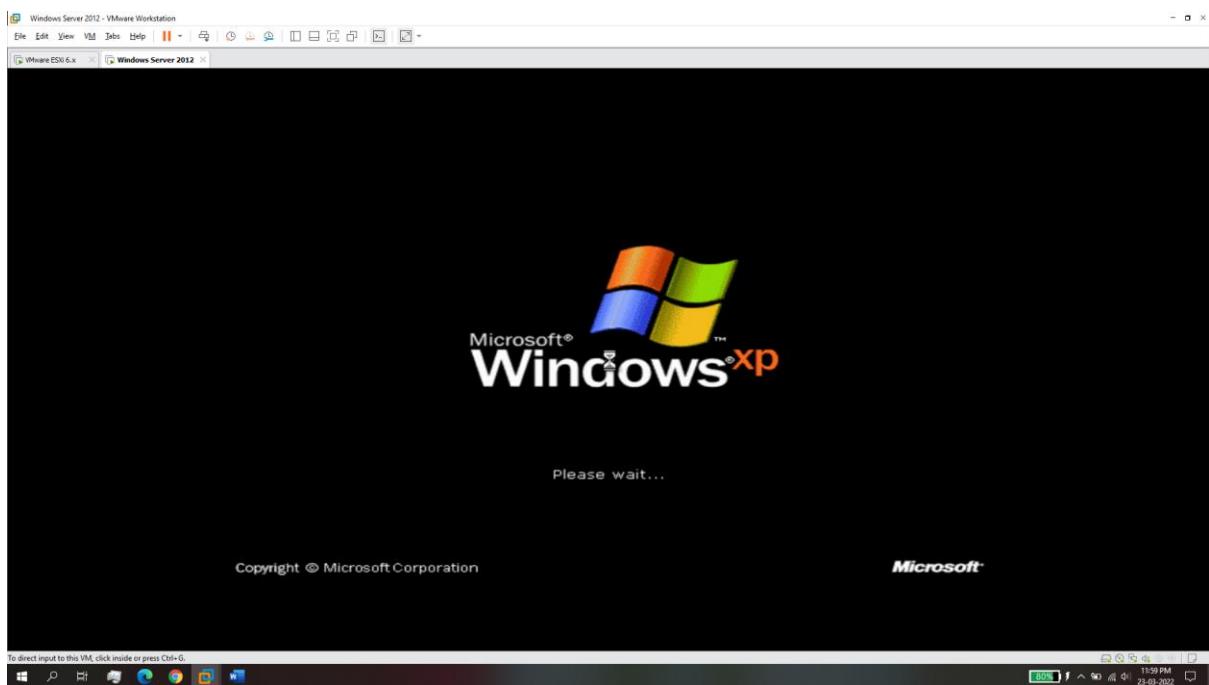










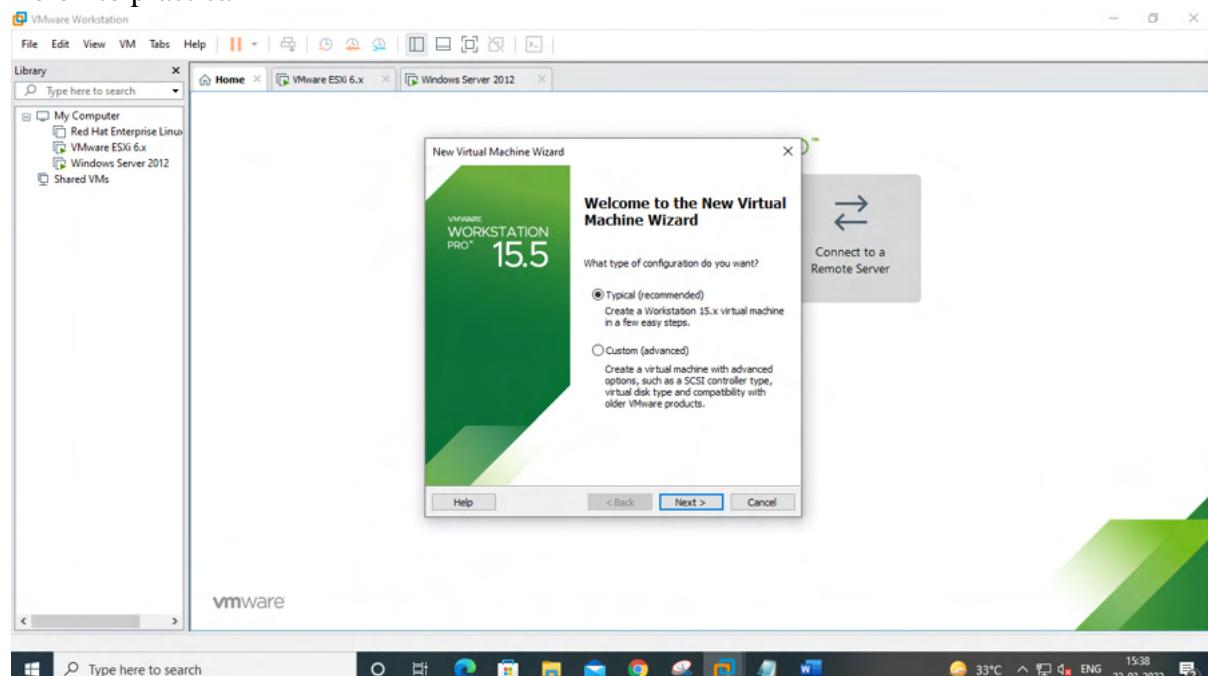


B. Migrate the virtual machine from one ESXi server to another ESXi server

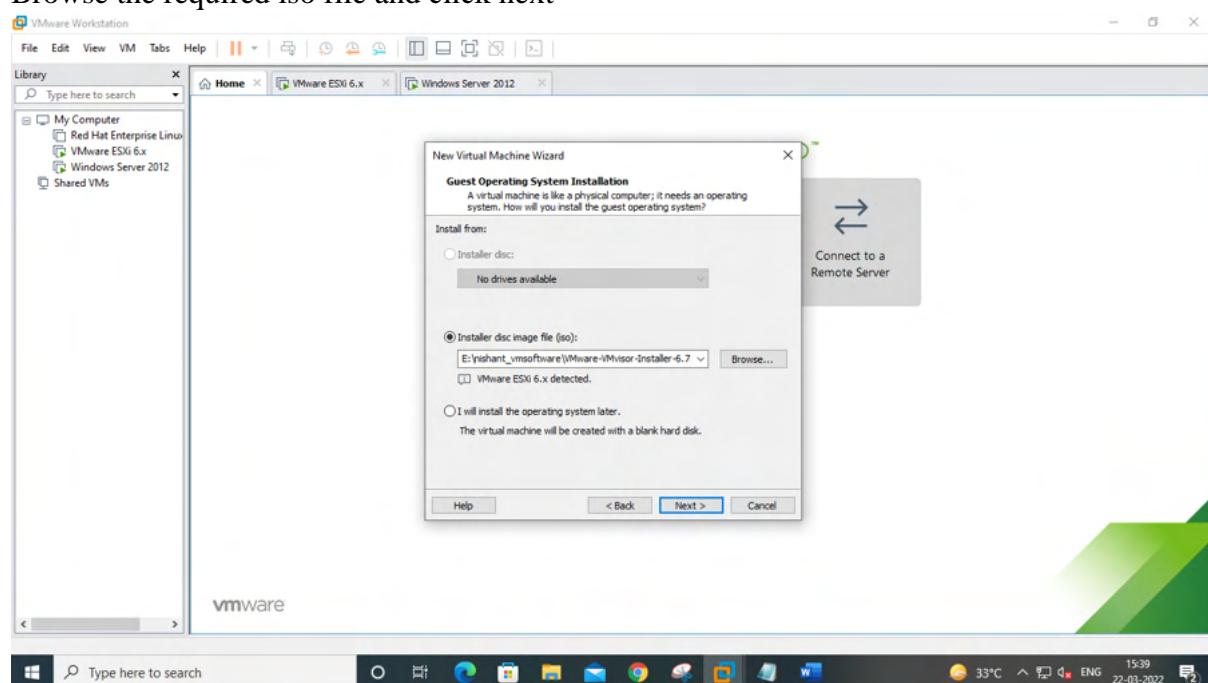
Steps:

Click on new virtual machine and click next

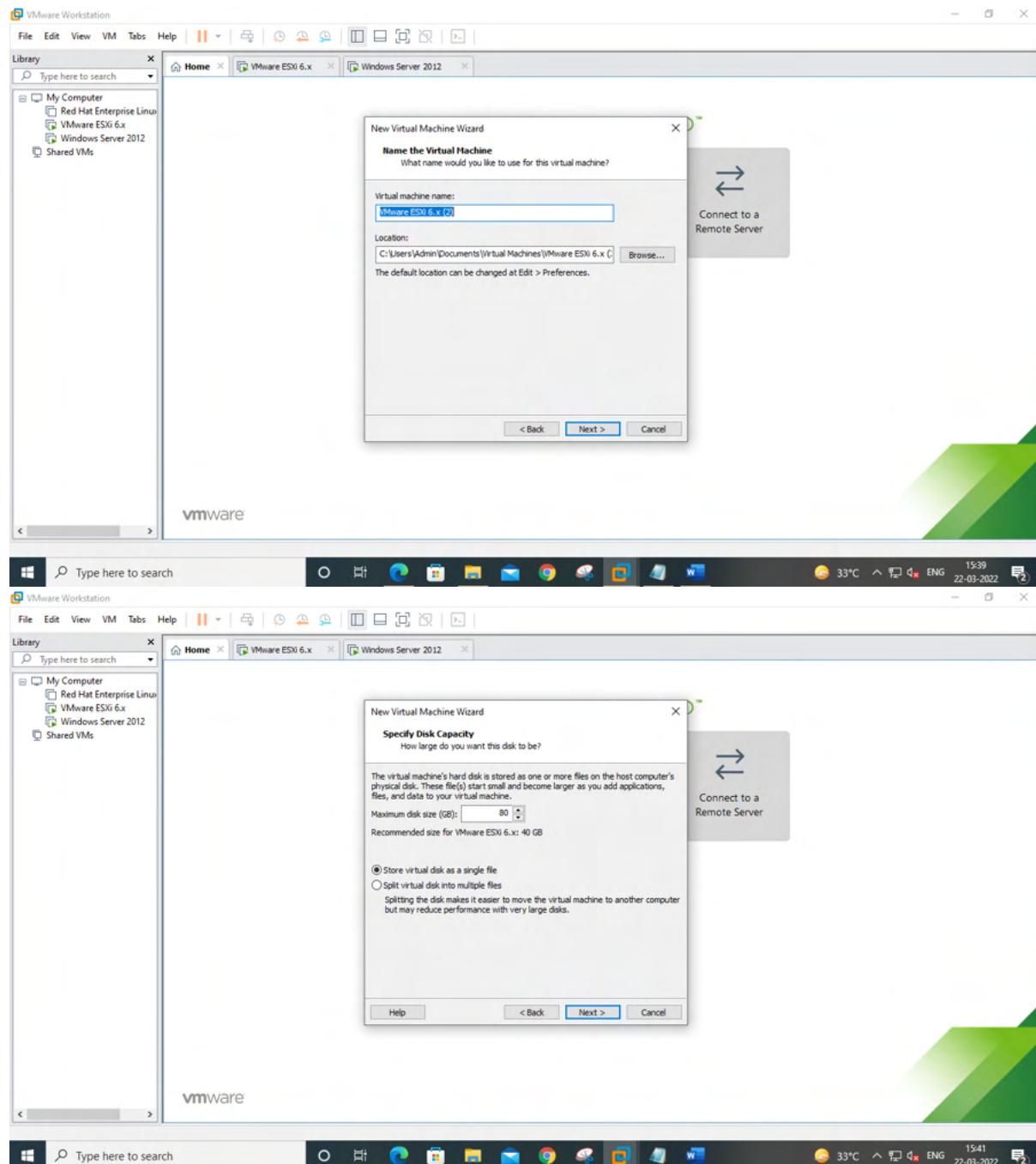
Refer to practical 1A

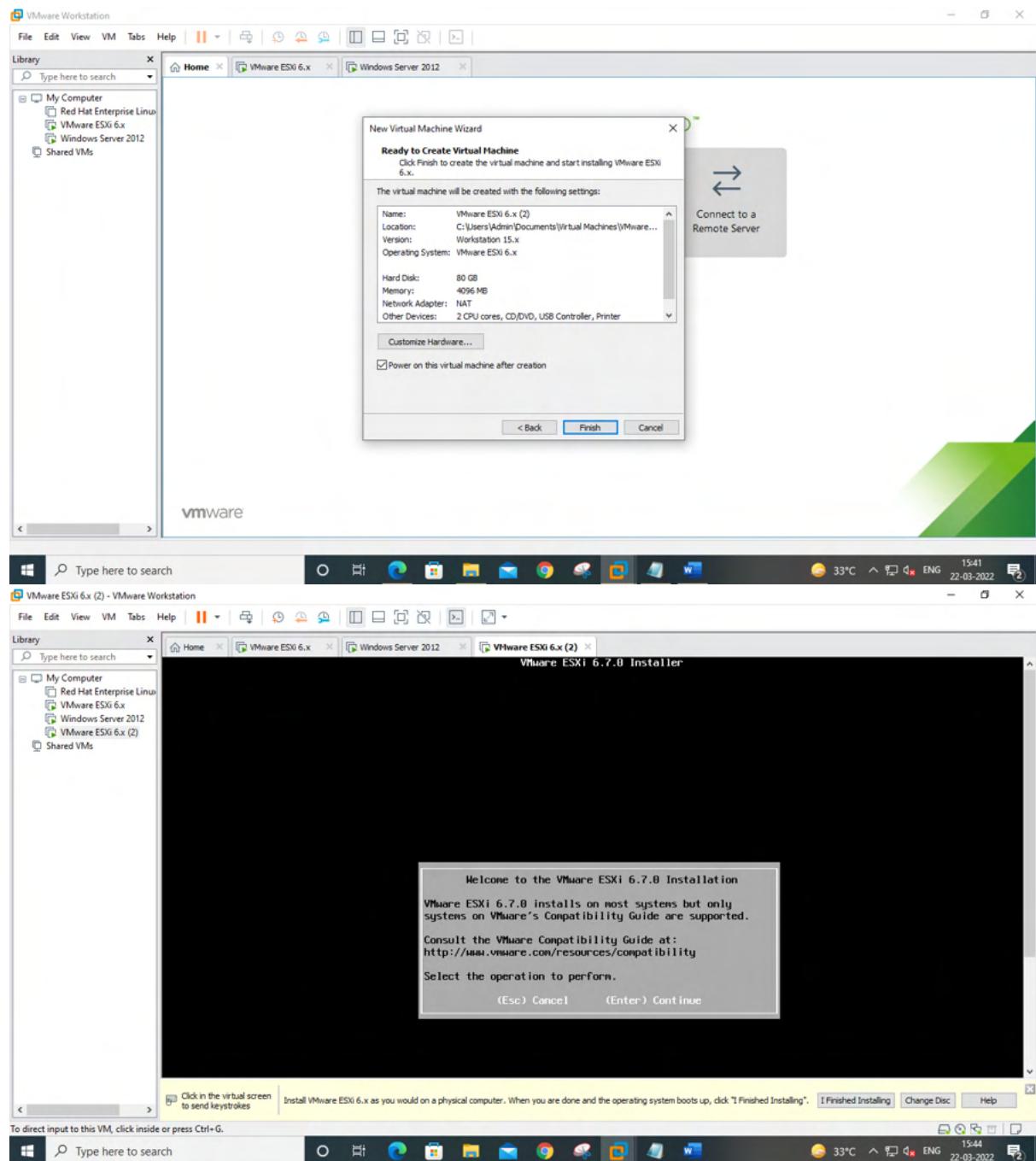


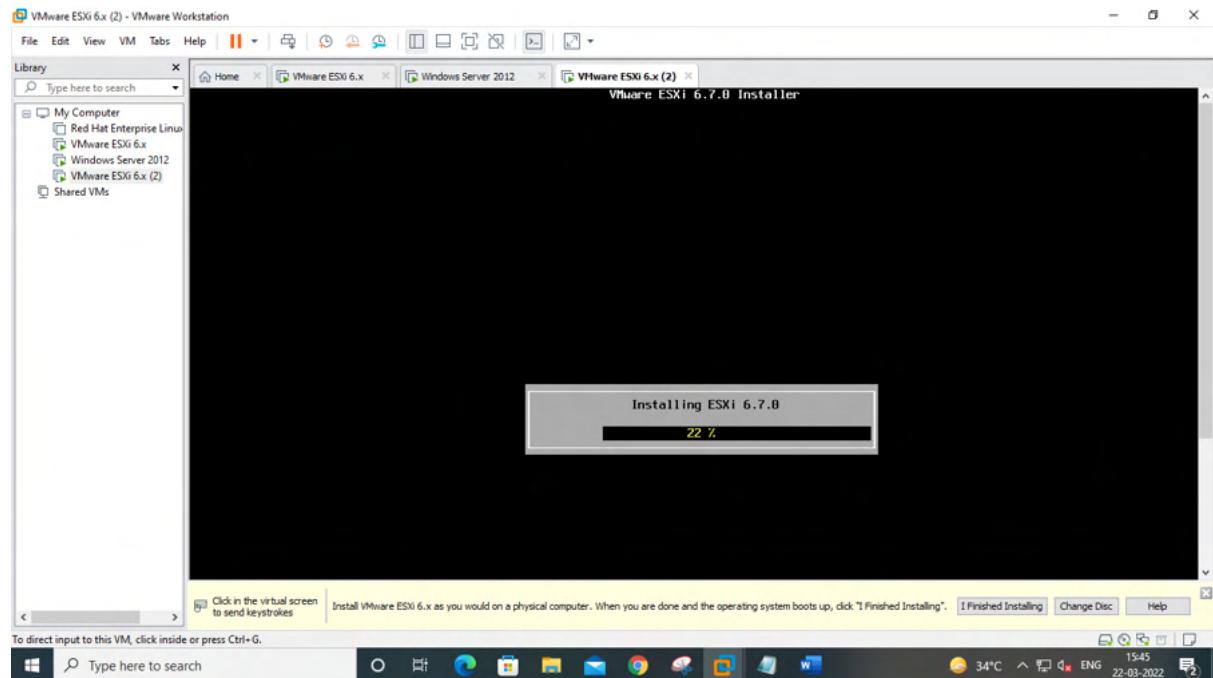
Browse the required iso file and click next



Click next

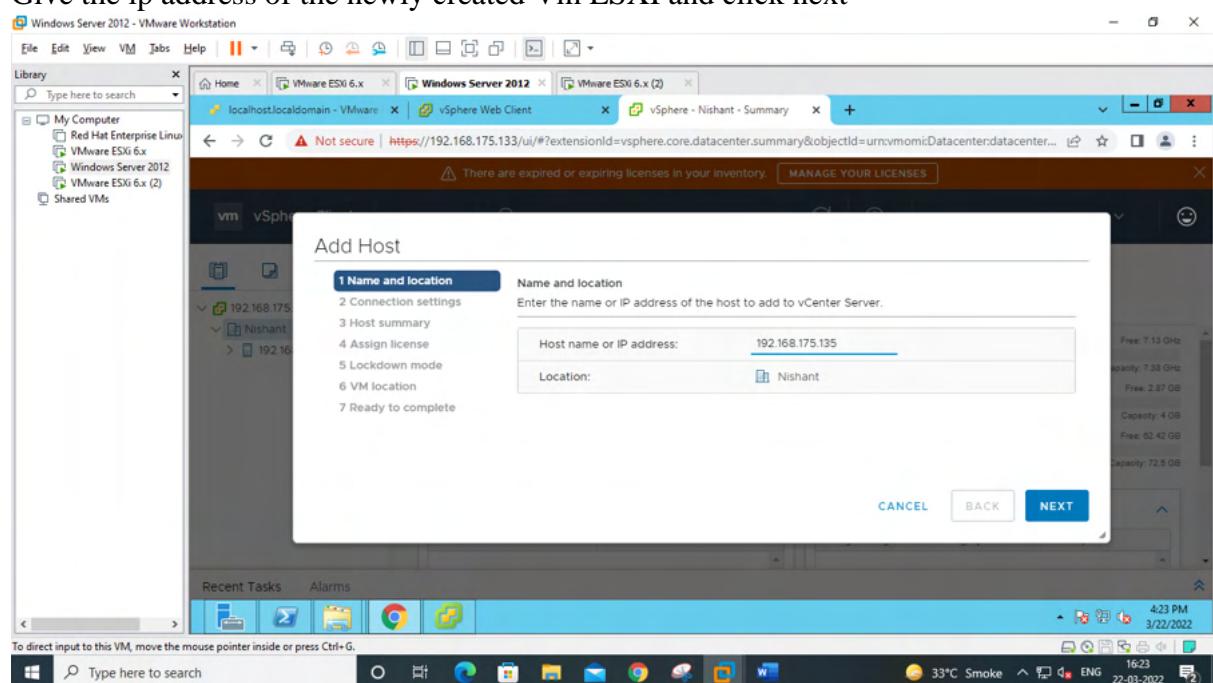




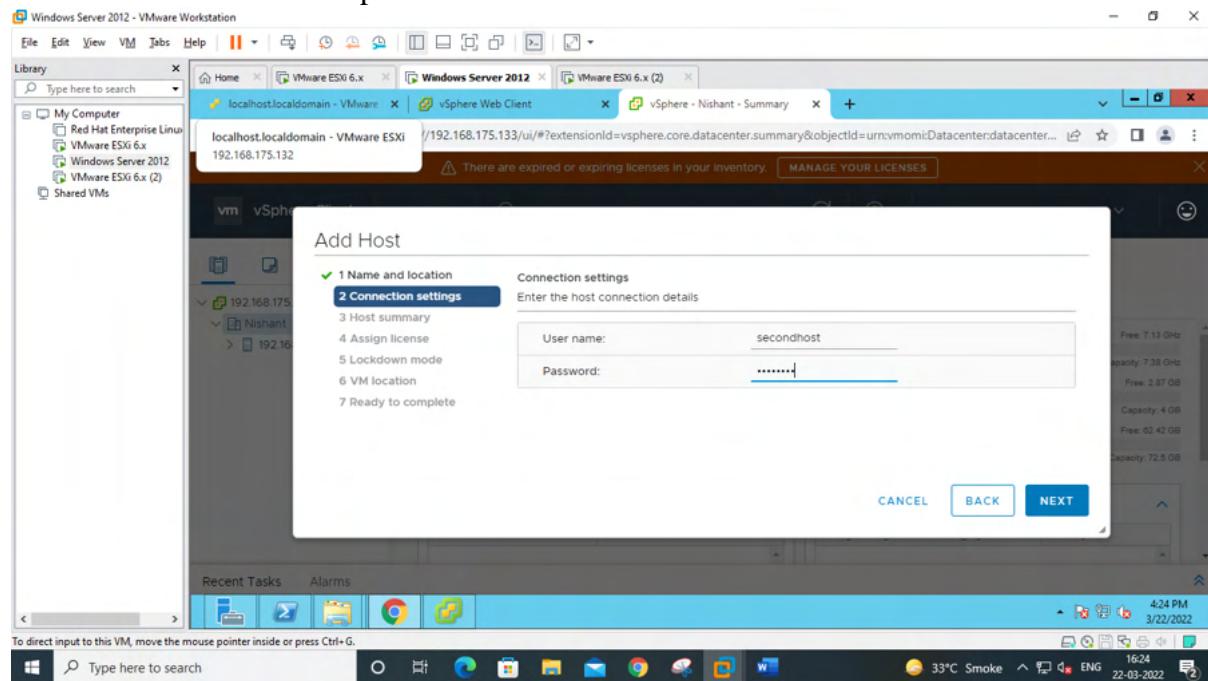


Right click and add new host.

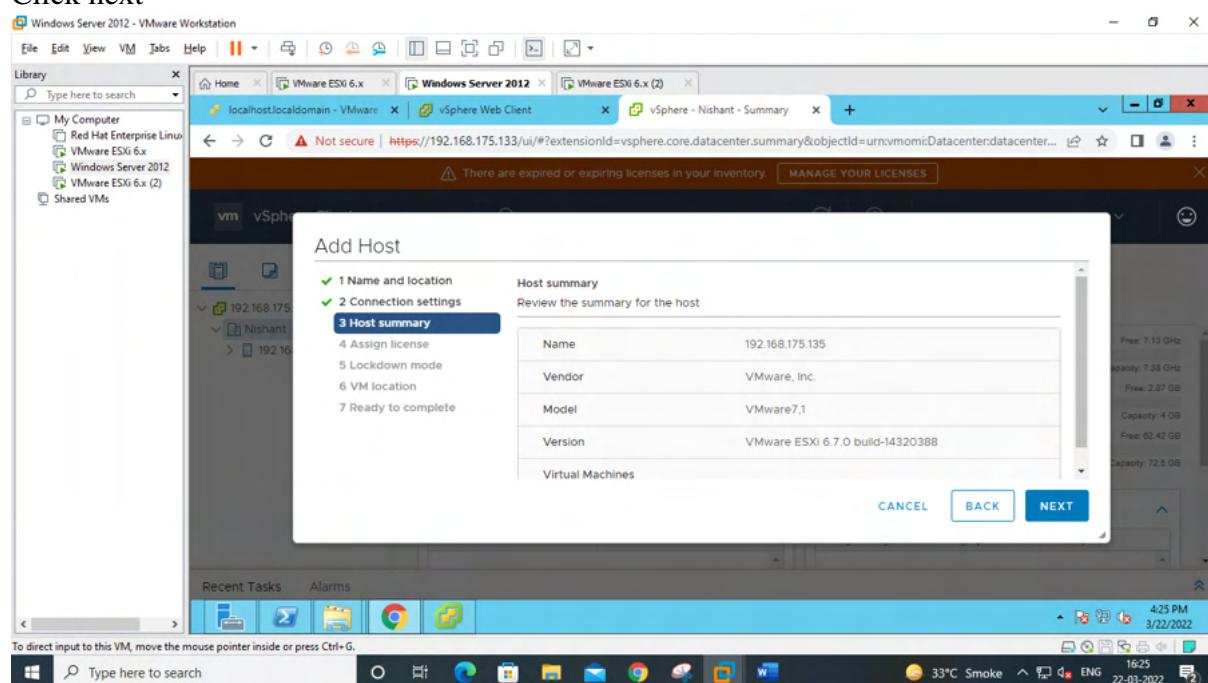
Give the ip address of the newly created Vm ESXI and click next



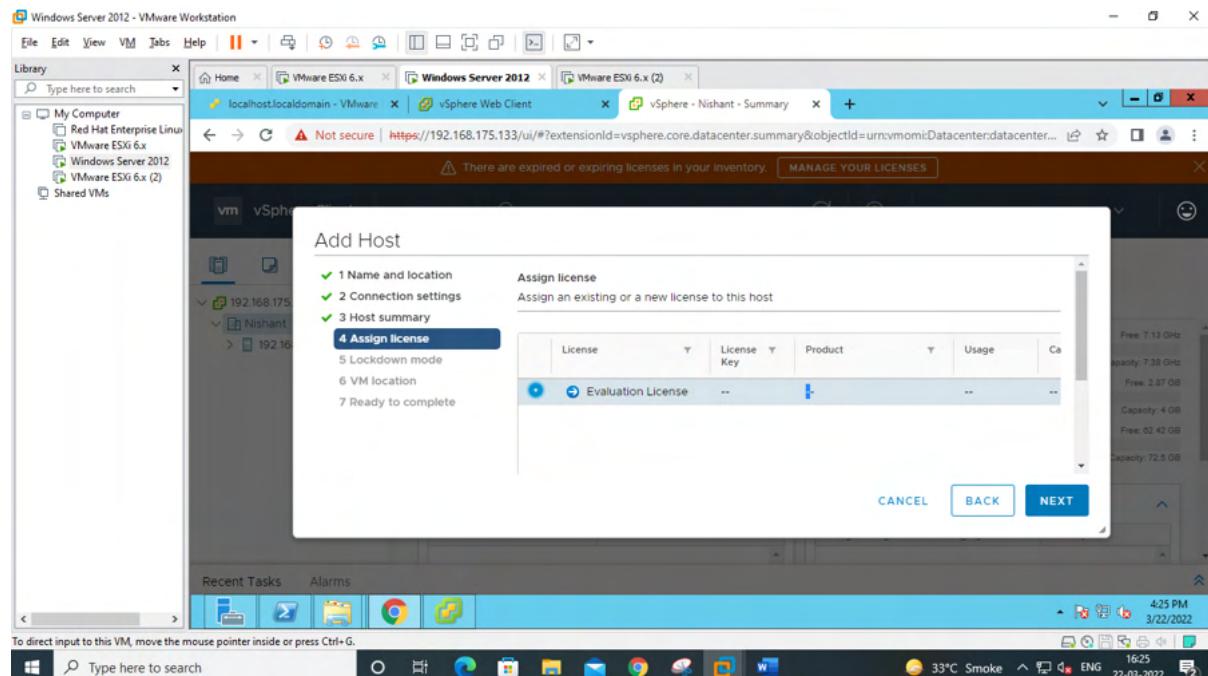
Give the username and the password



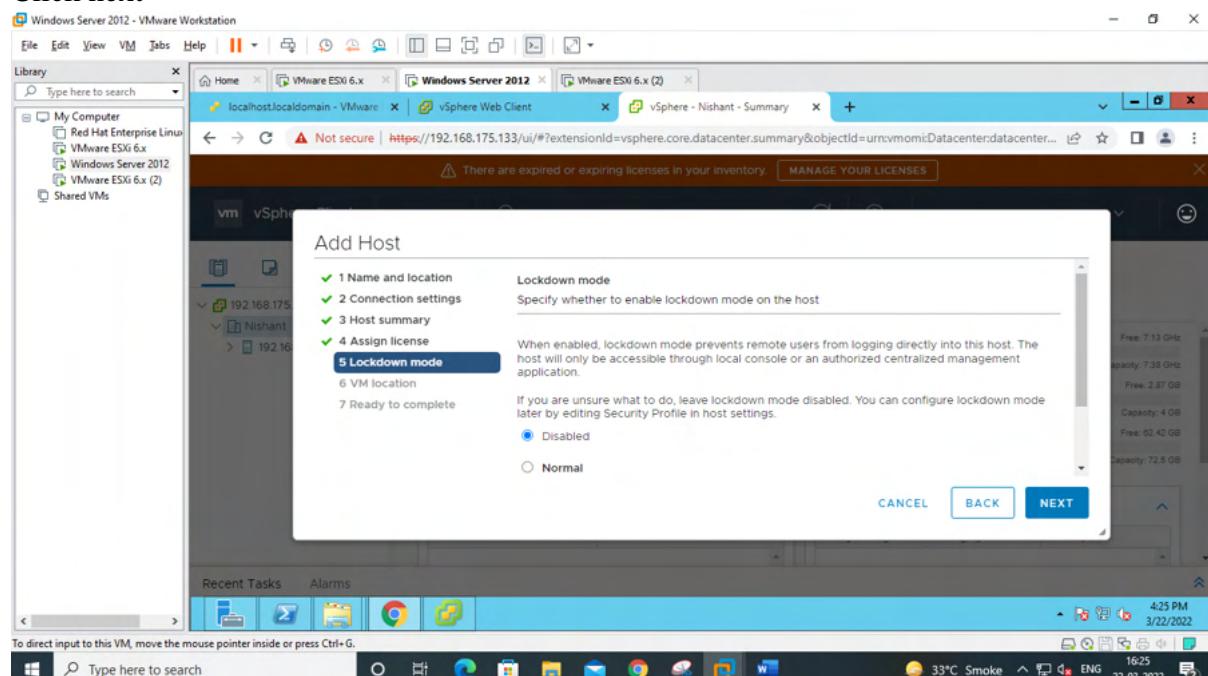
Click next

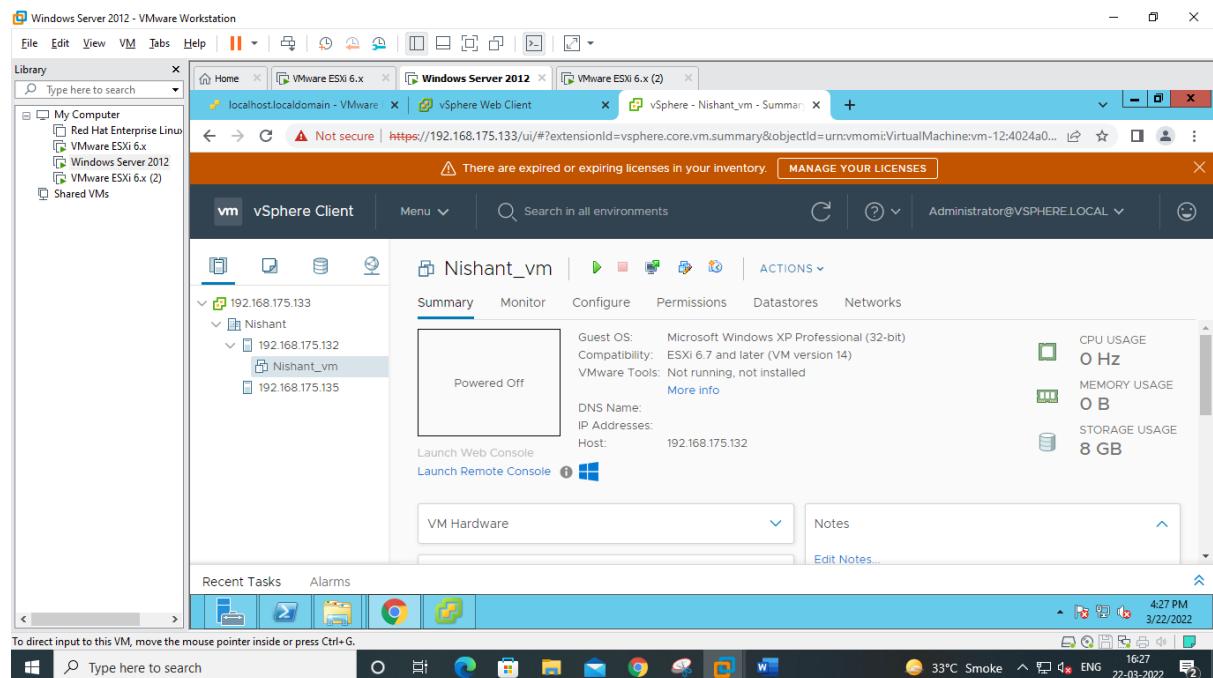


Select the license and click next

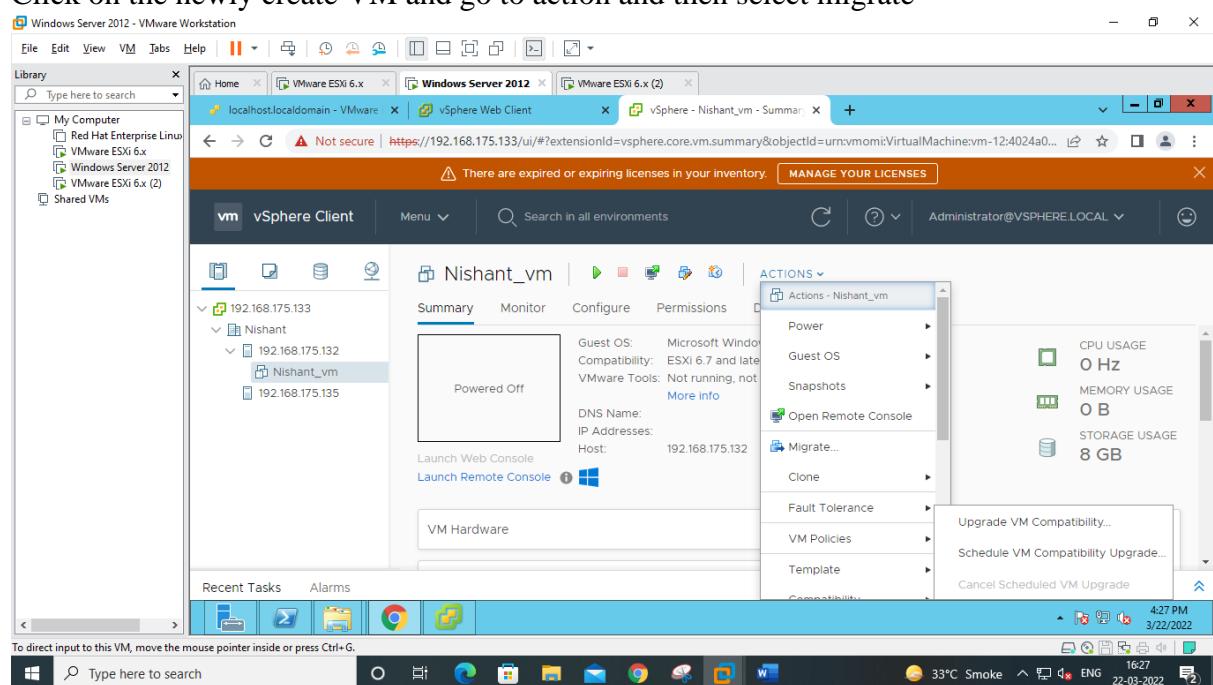


Click next

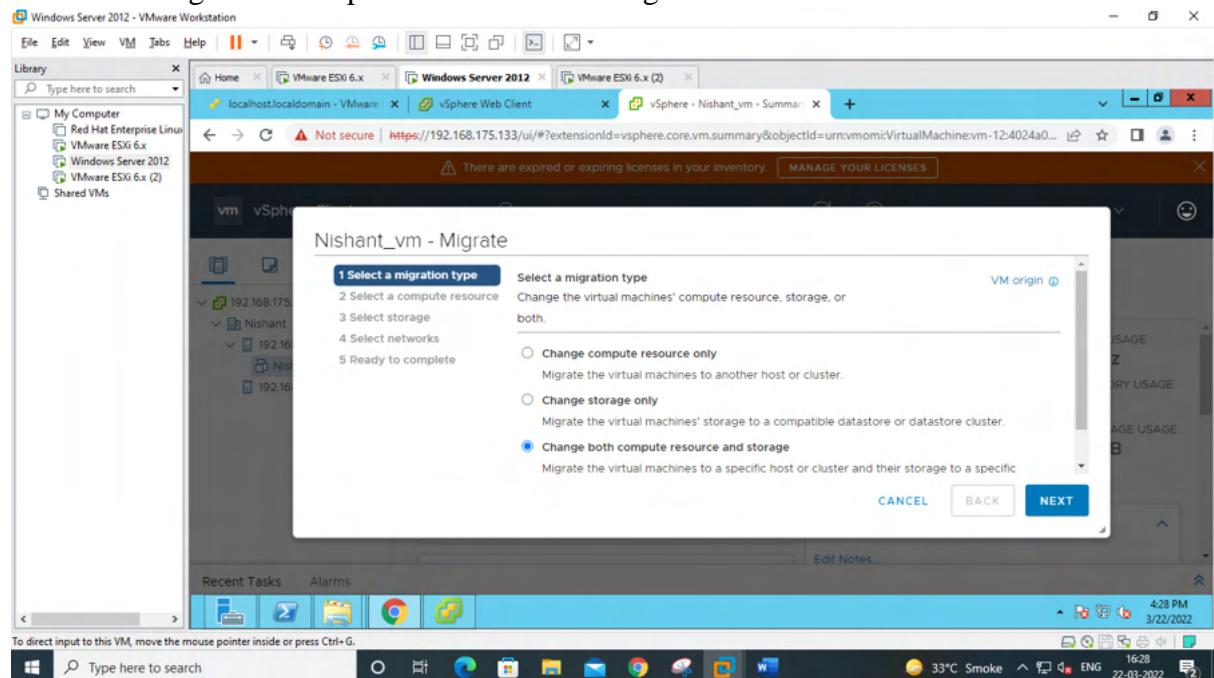




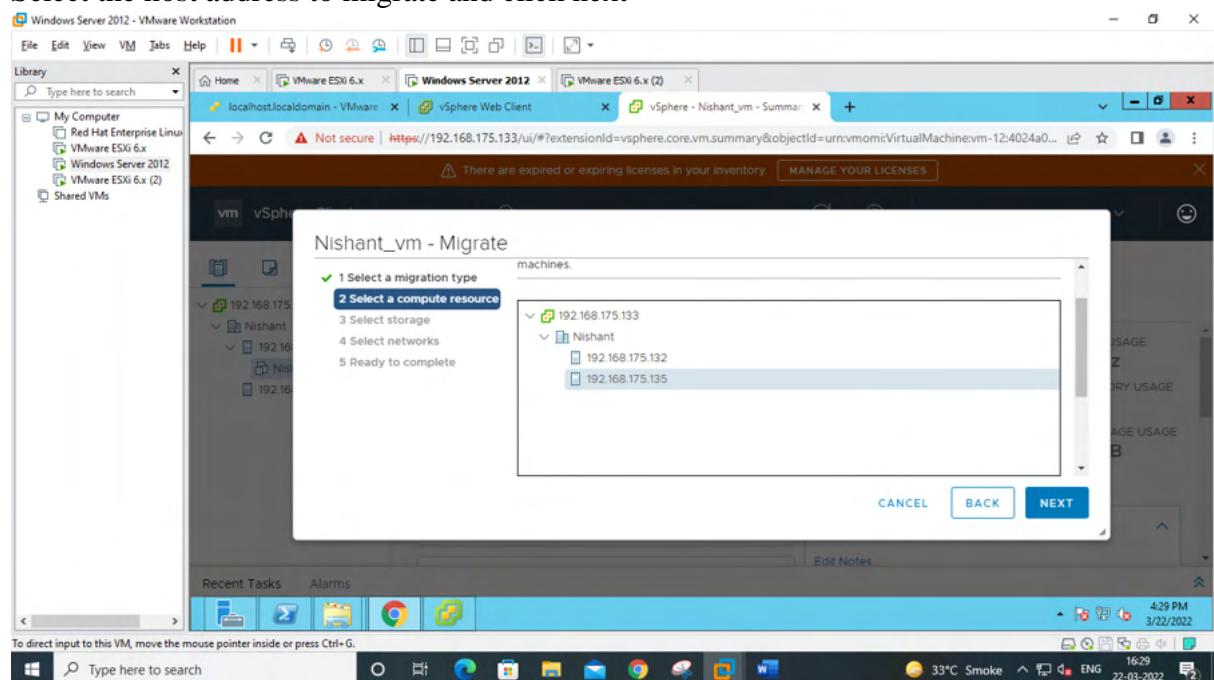
Click on the newly create VM and go to action and then select migrate



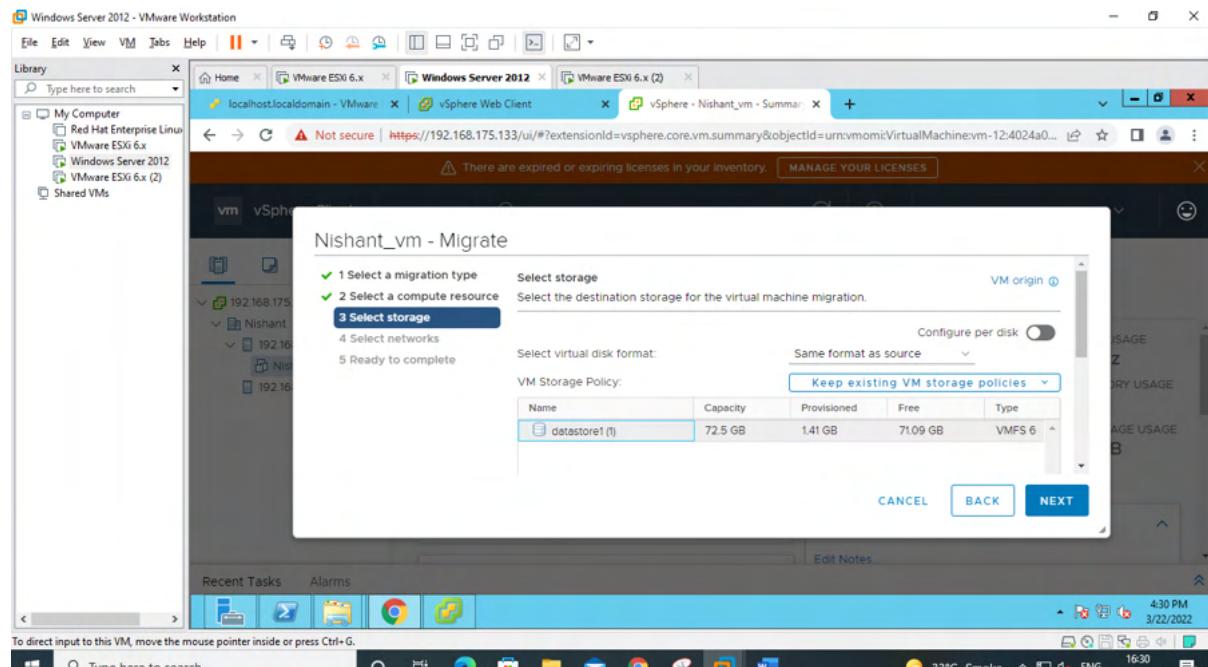
Click on change both compute resource and storage and click next



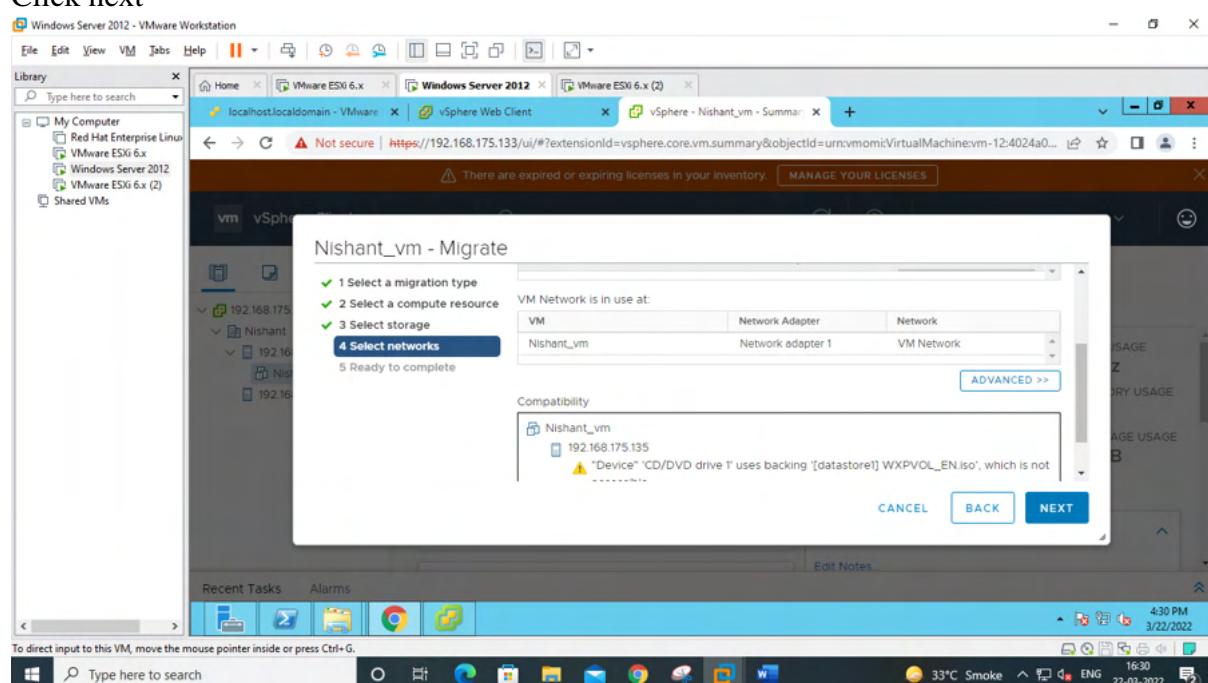
Select the host address to migrate and click next



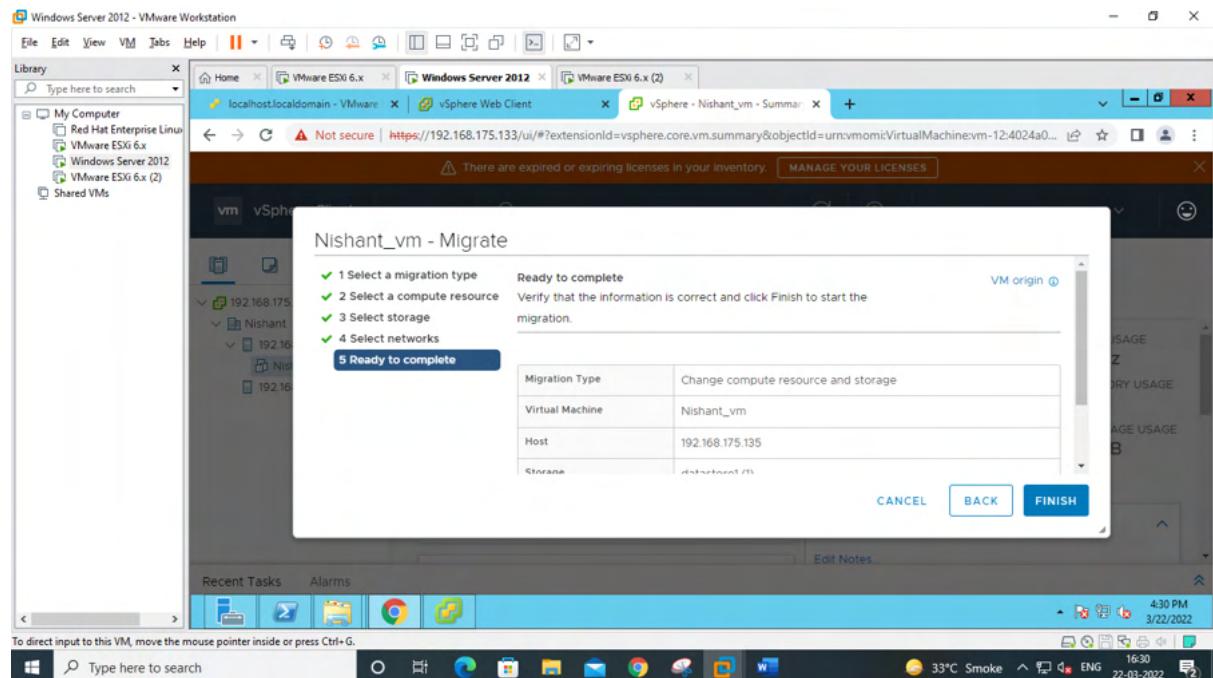
Select the datastore and click next



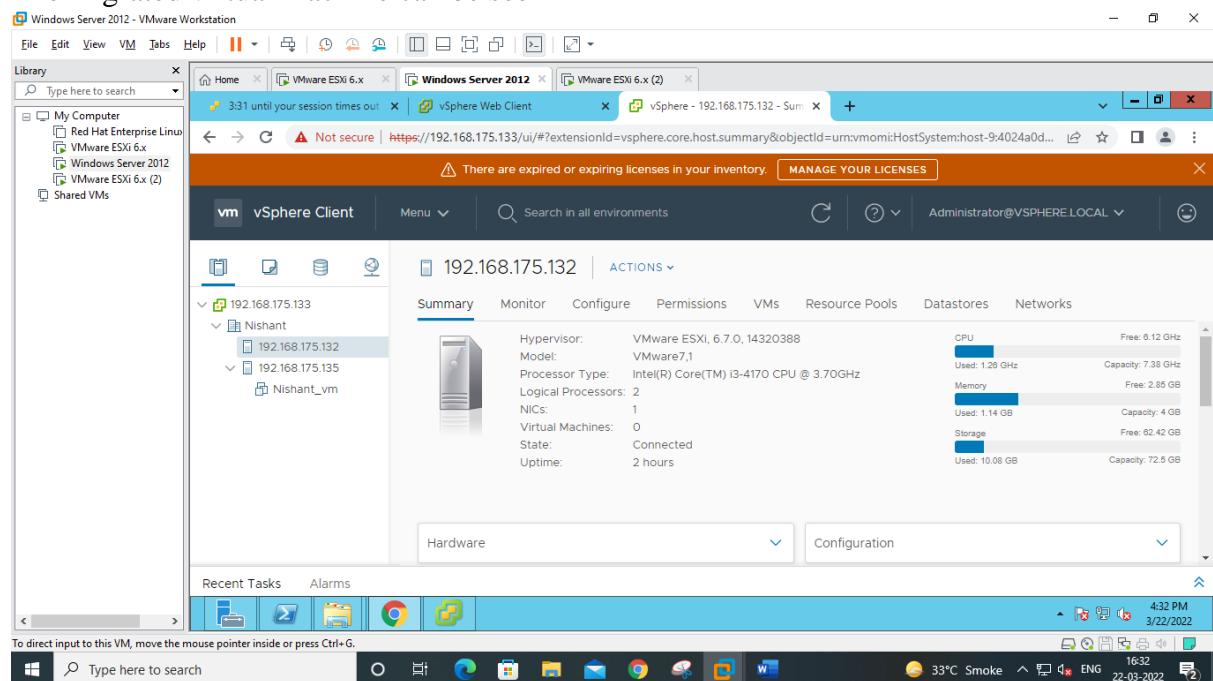
Click next



Review and the finish



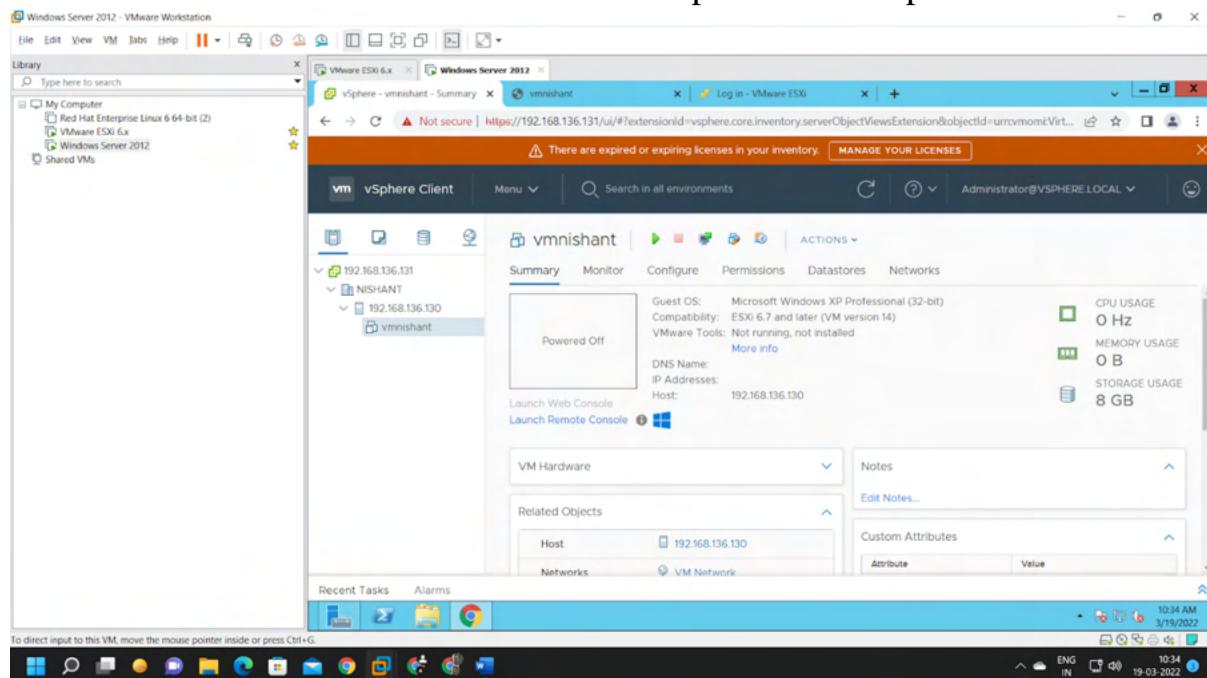
The migrated virtual machine can be seen



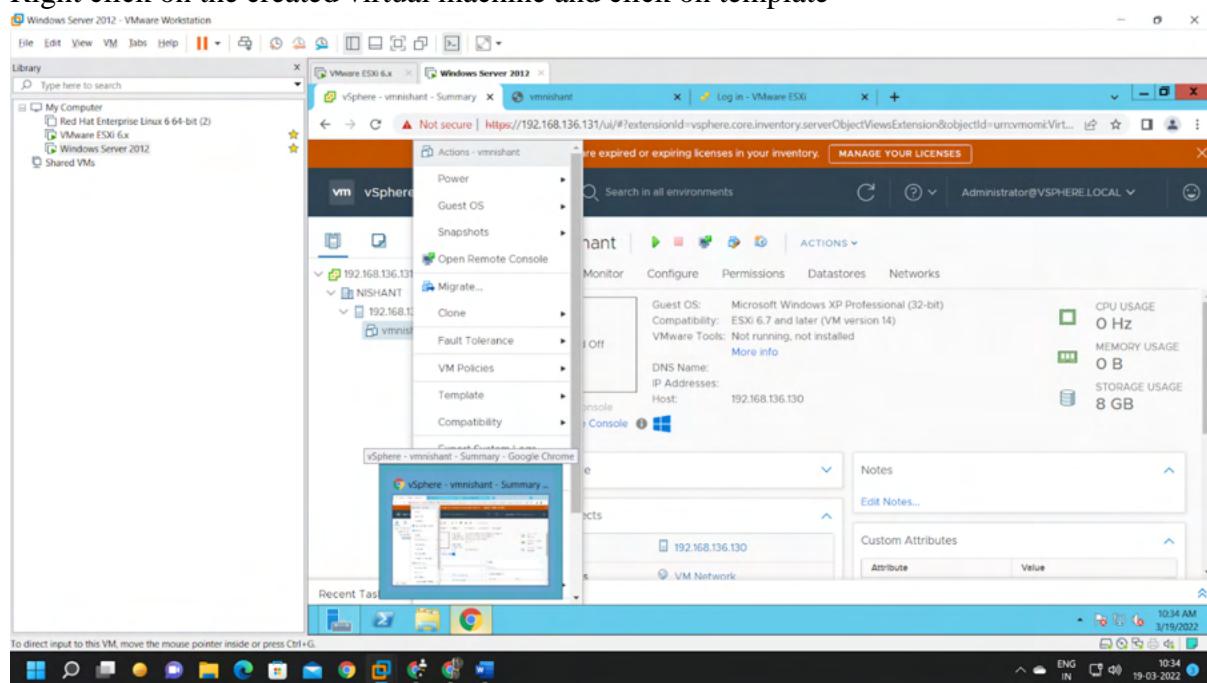
PRACTICAL 3

Create a Template in the vSphere Client

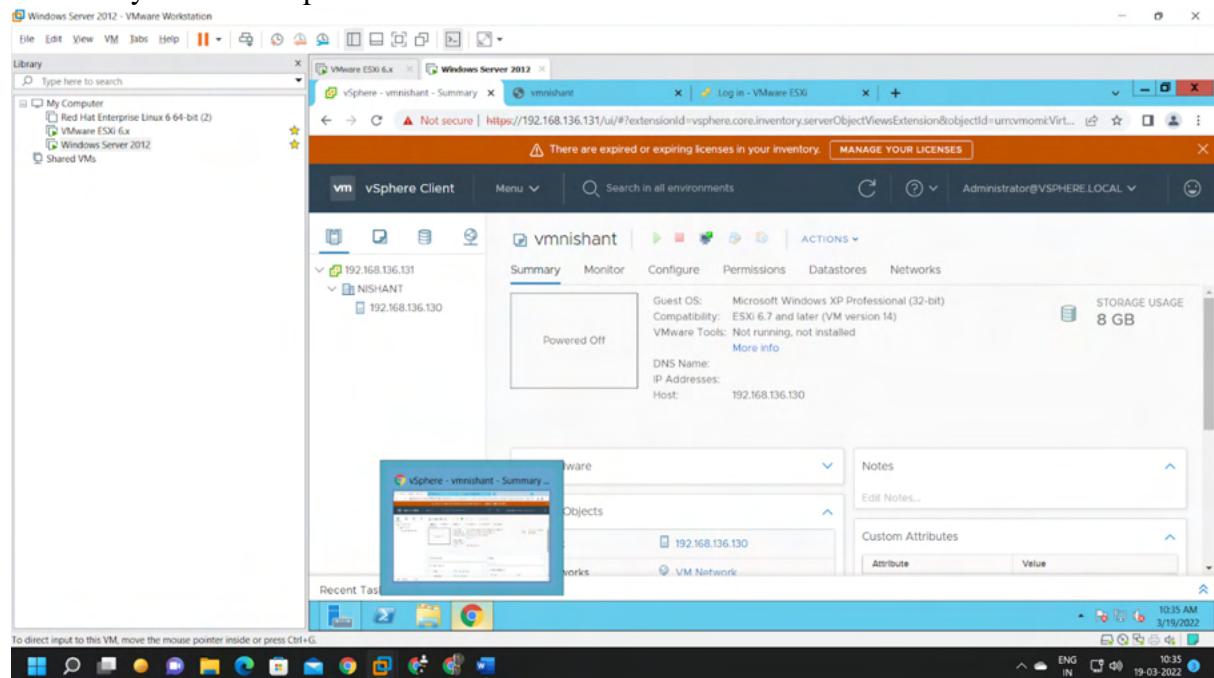
A. Clone a Virtual Machine to a Template in the vSphere Client



Right click on the created virtual machine and click on template

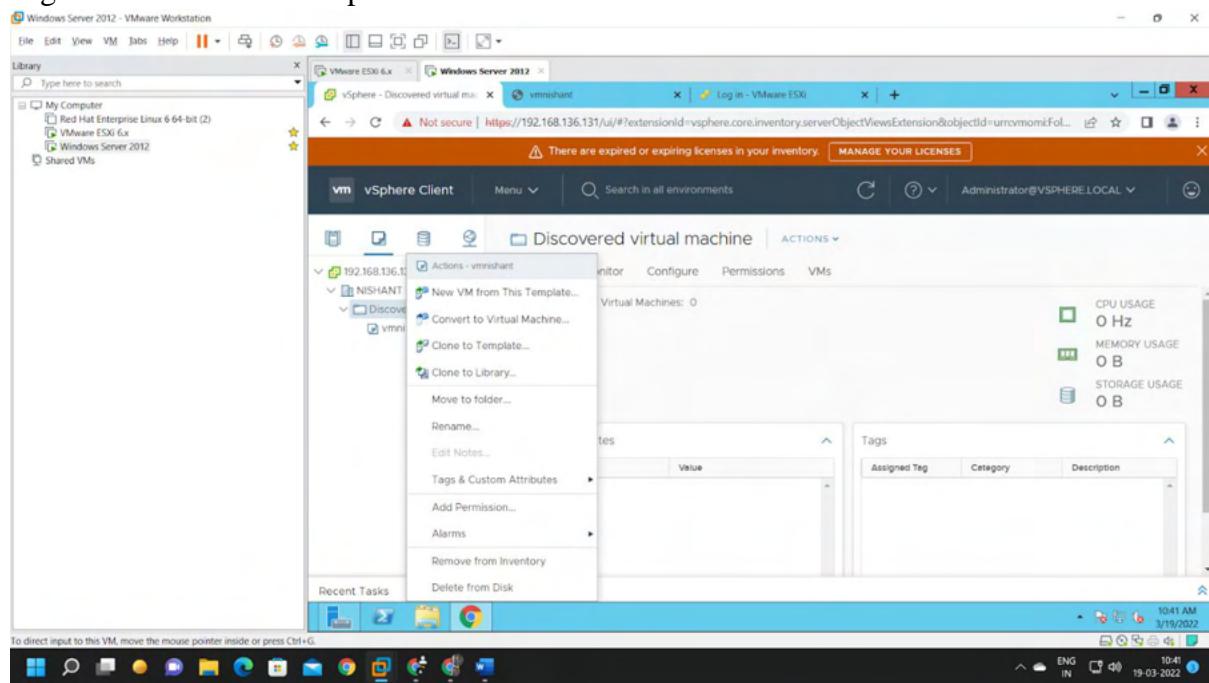


The newly created template can be seen



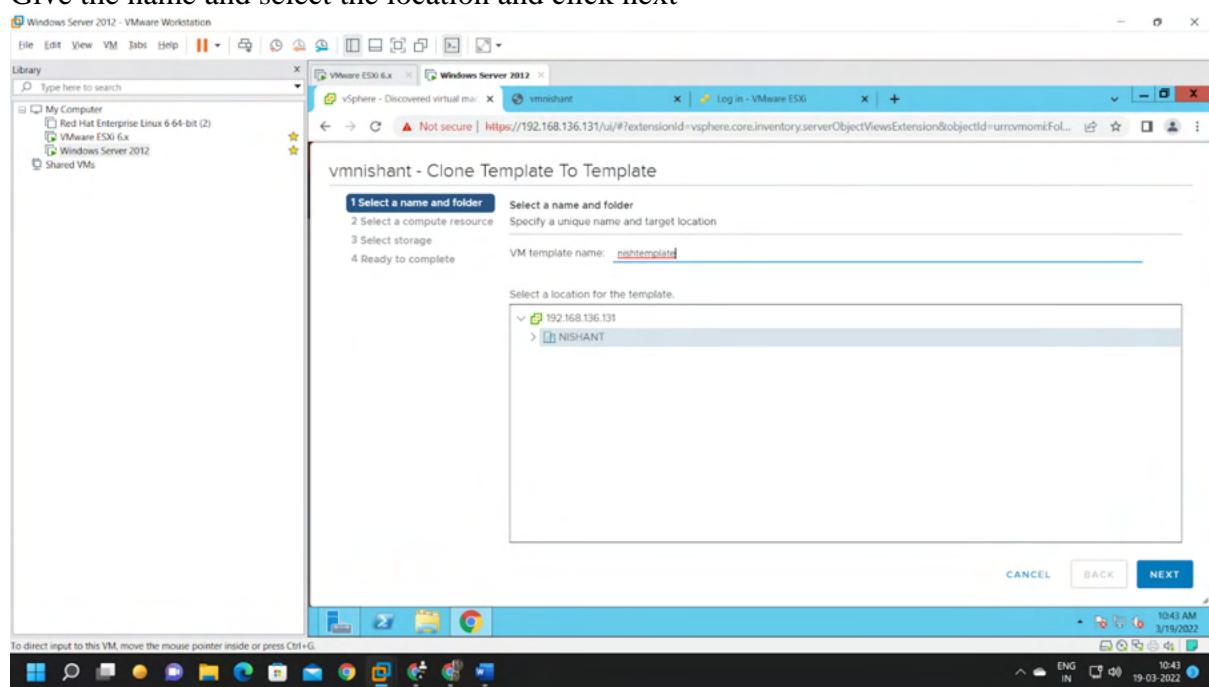
B Clone a Template in the vSphere Client

Right click on created template

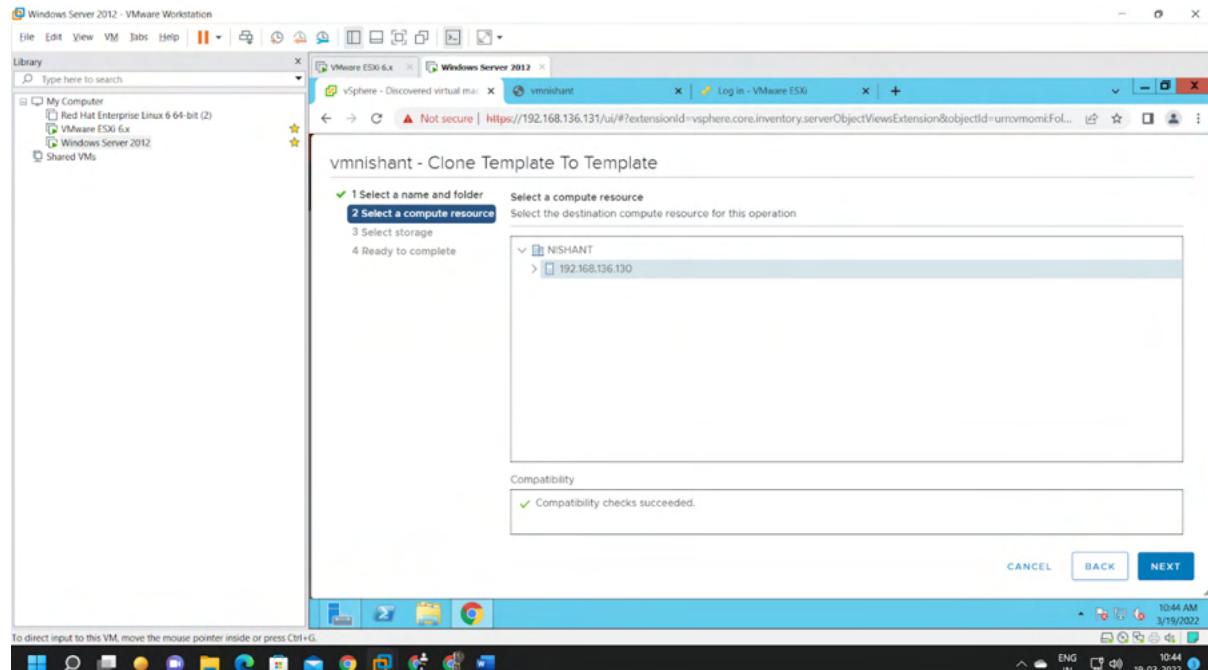


Select clone to template

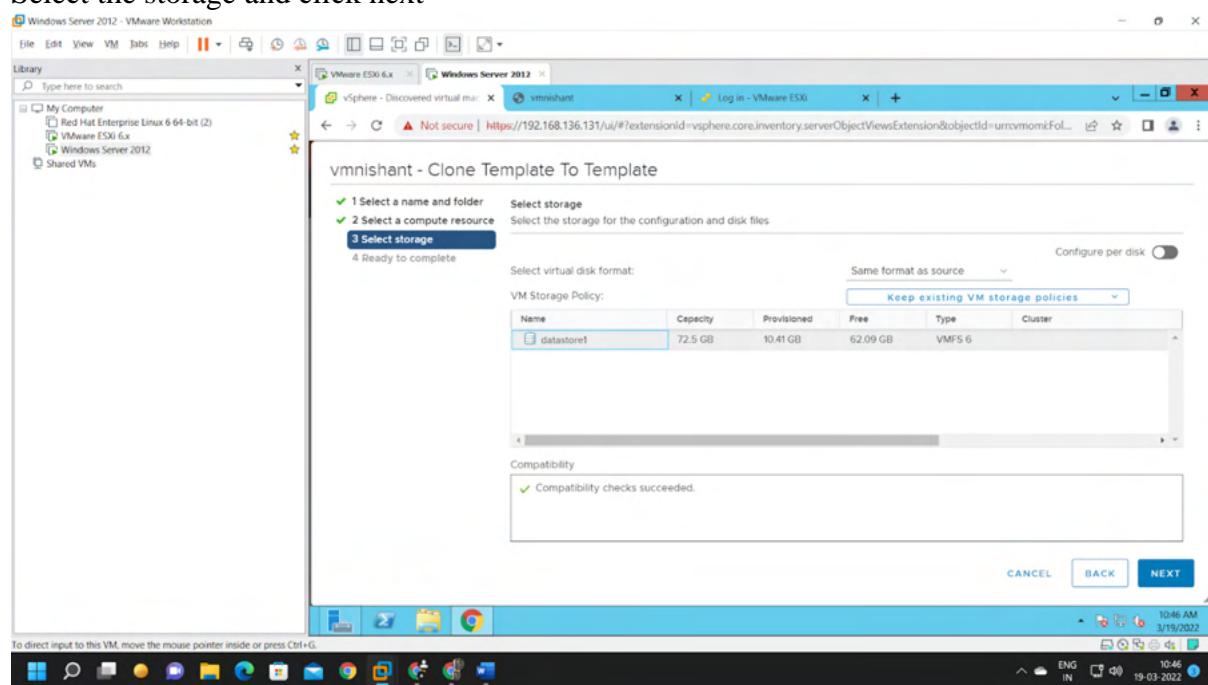
Give the name and select the location and click next



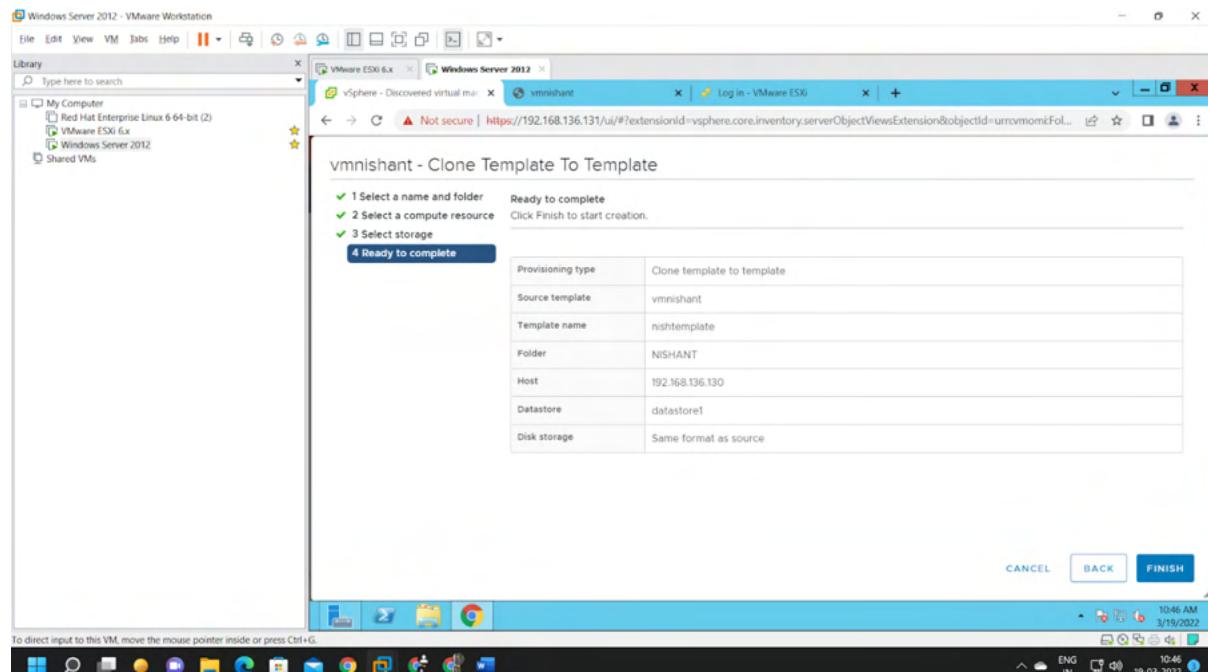
Click next



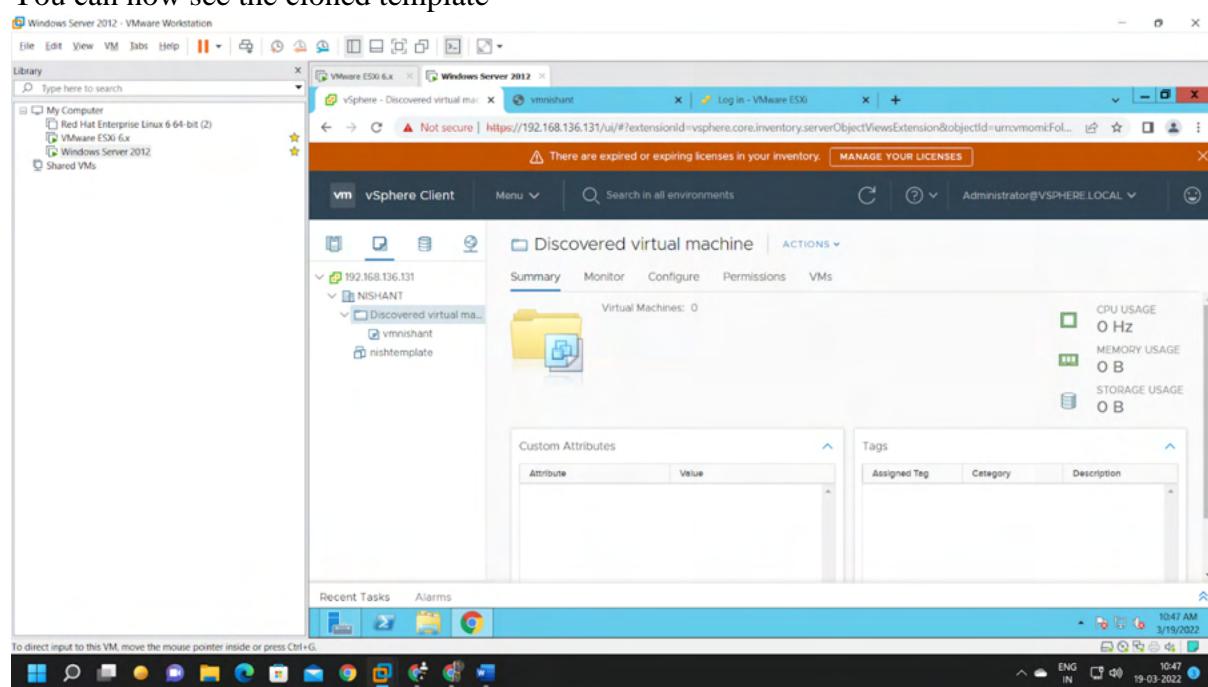
Select the storage and click next



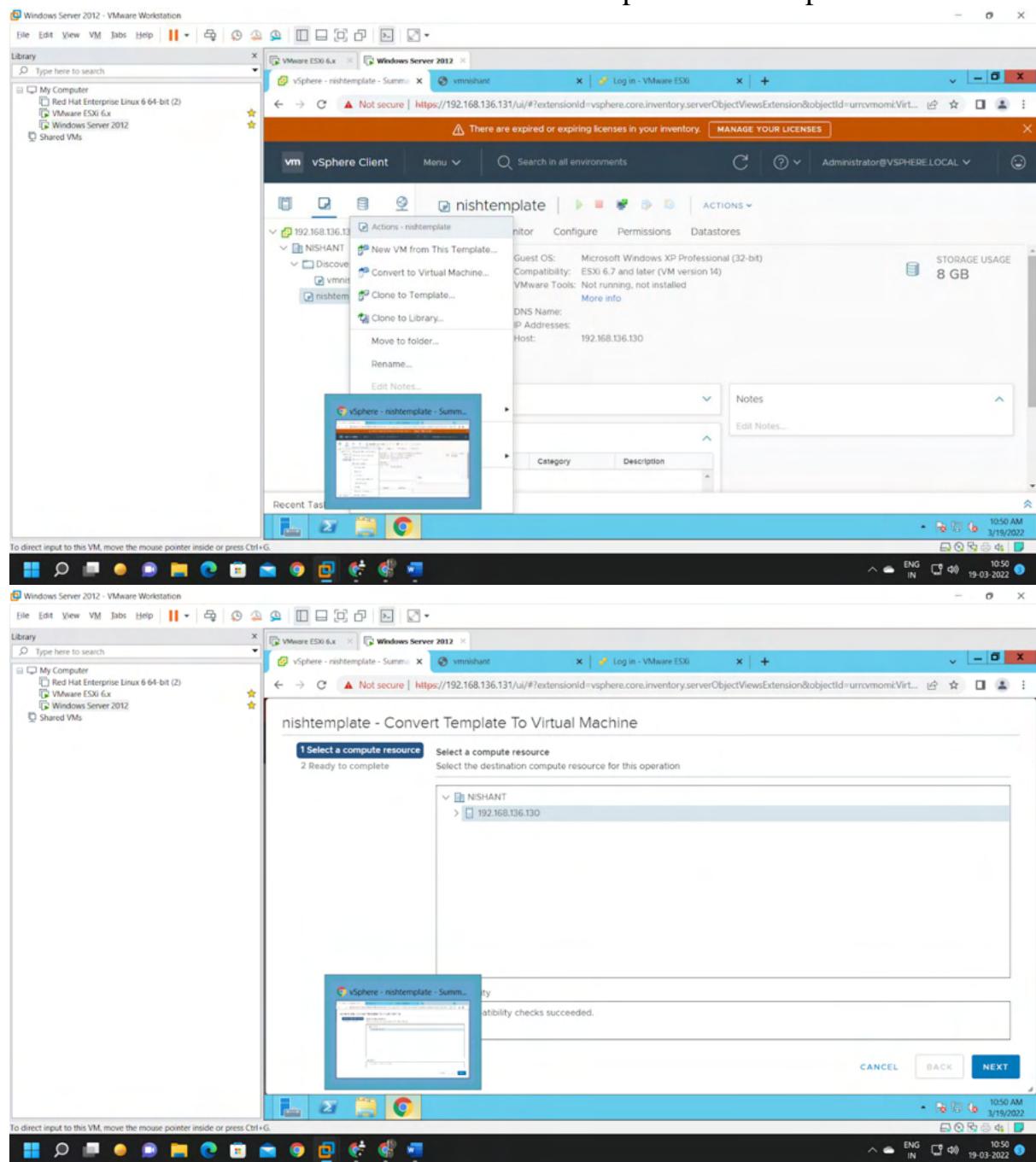
Review and finish

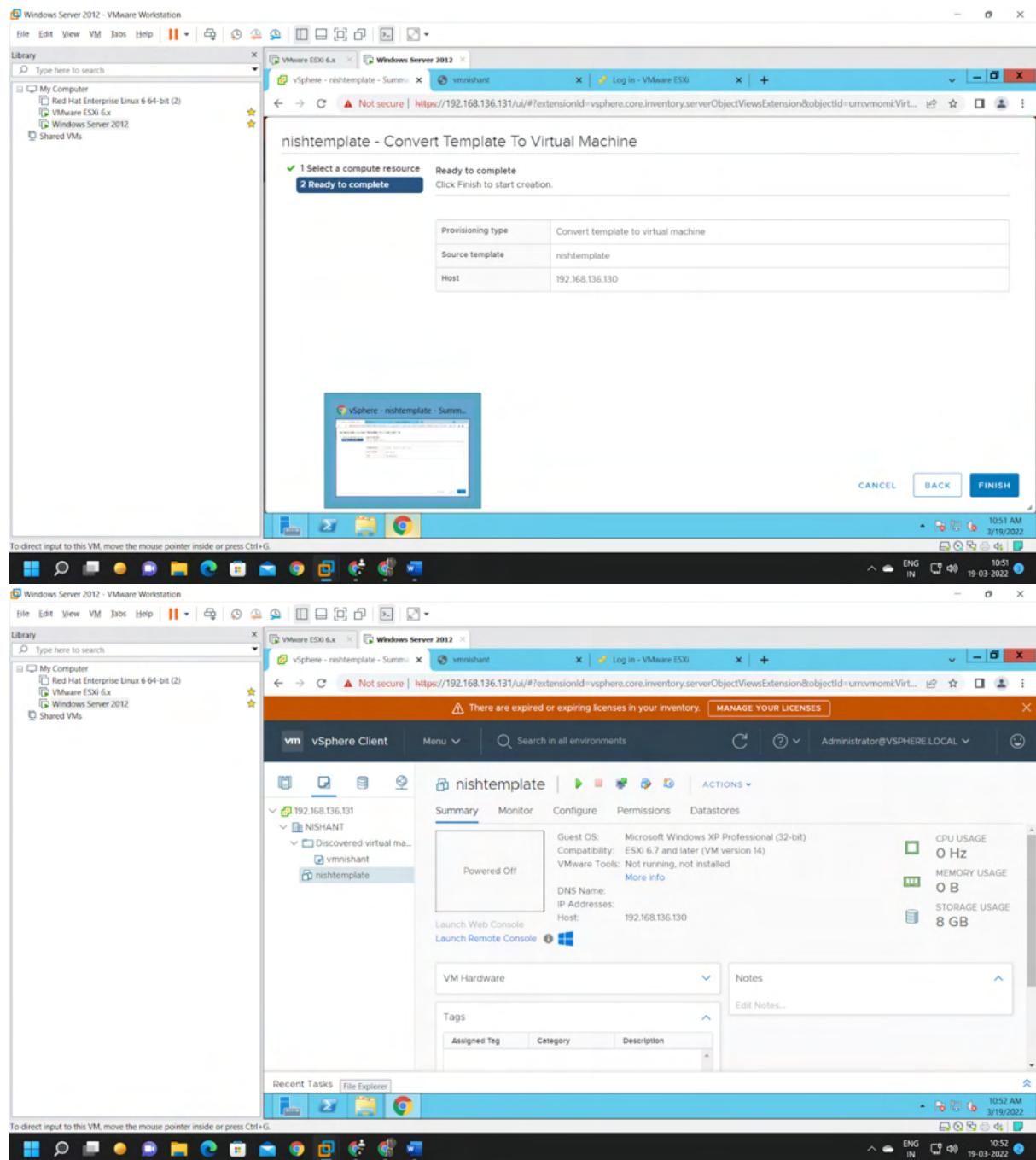


You can now see the cloned template



C. Convert a Virtual Machine from a Template in the vSphere Client





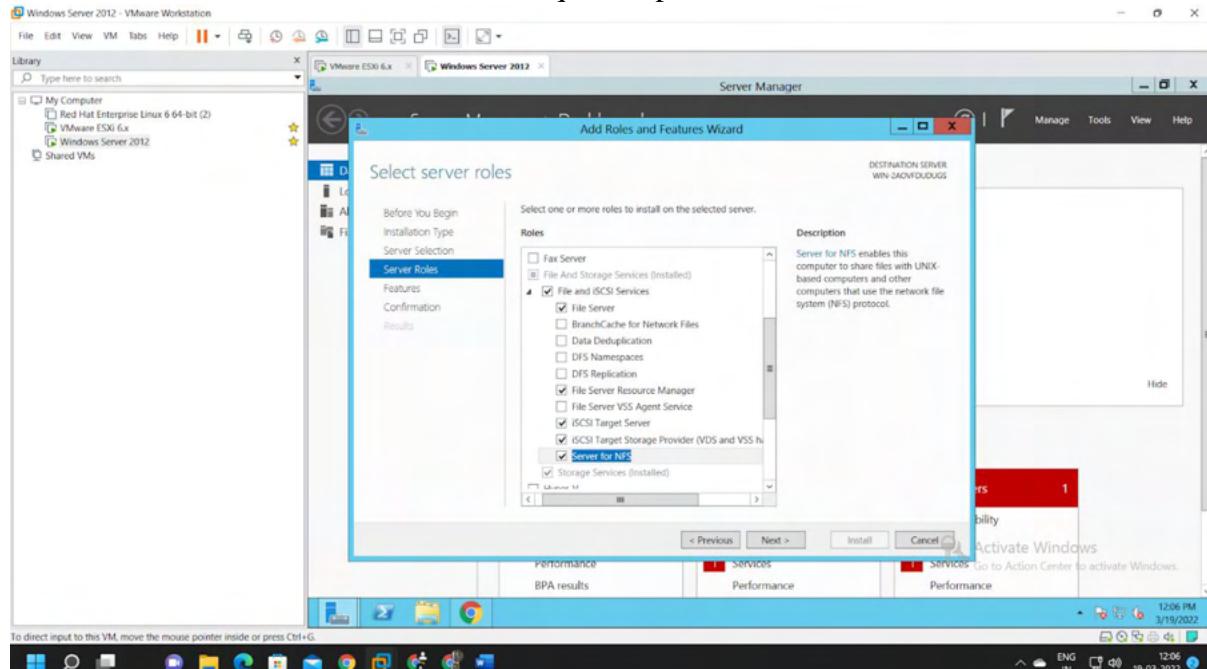
PRACTICAL 4

Manage the storage and Security of VMware ESXi server.

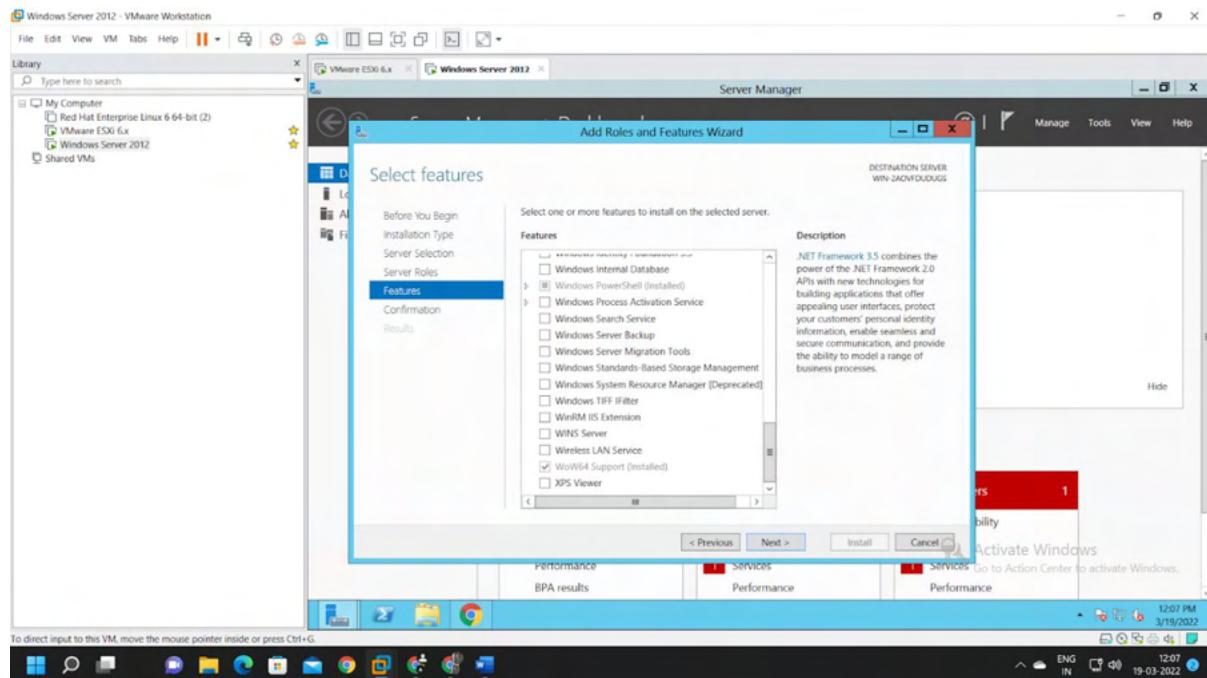
A. Add Virtual storage in VMware ESXi Server with vSphere Client.

Click on add roles and features and go to server roles.

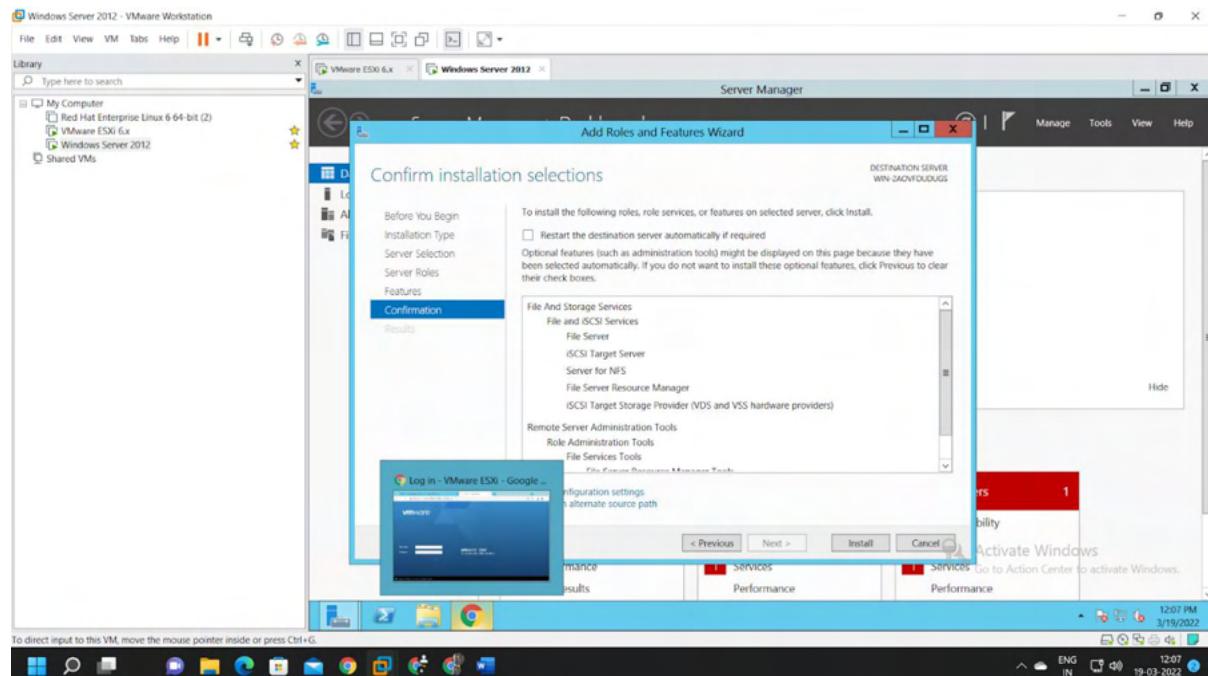
Select file and Iscsi Services. Select the required options as shown below and click next



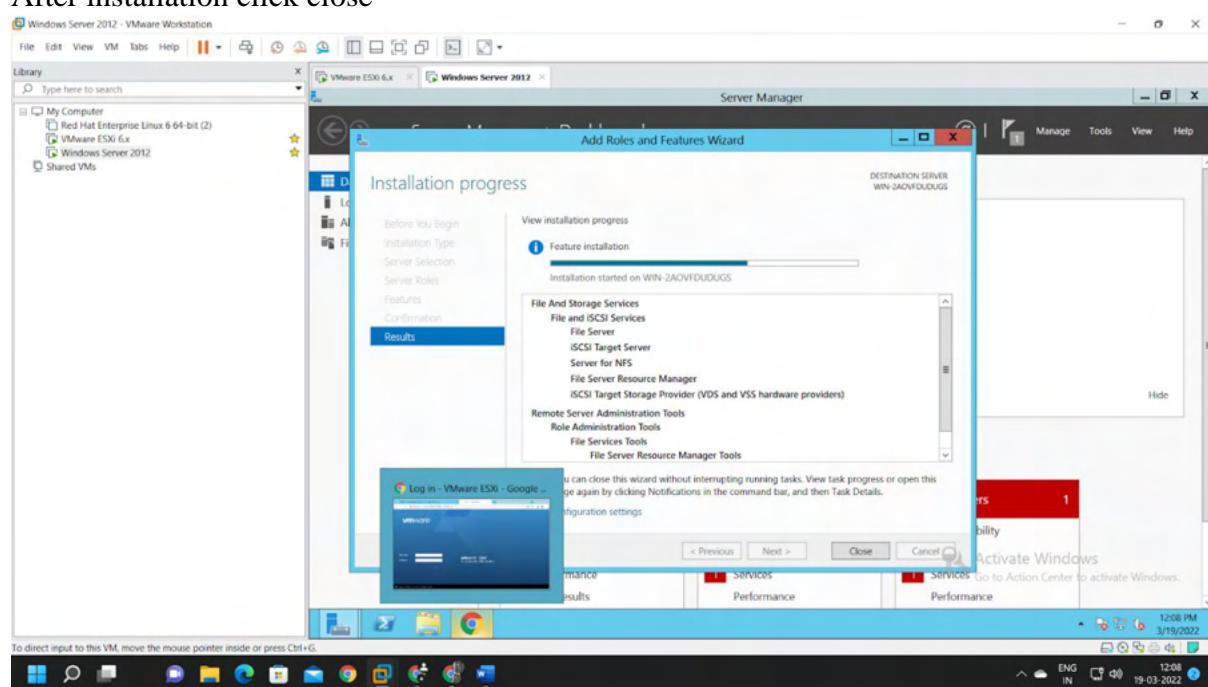
Click next

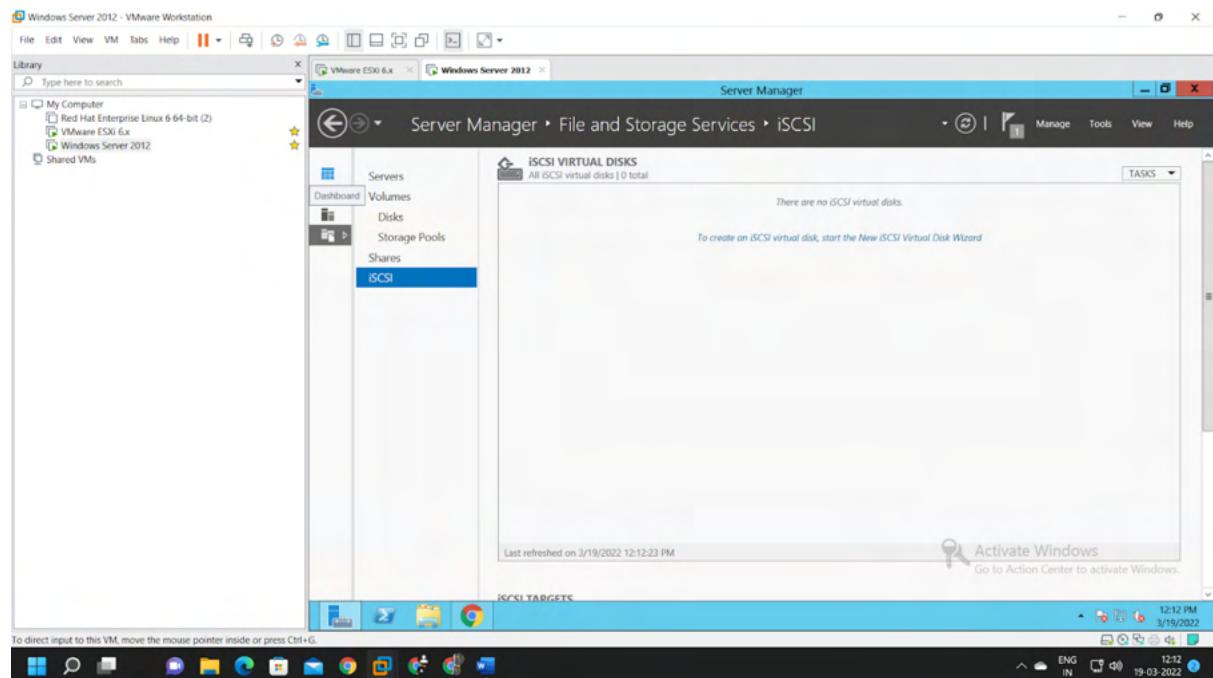


Click on install

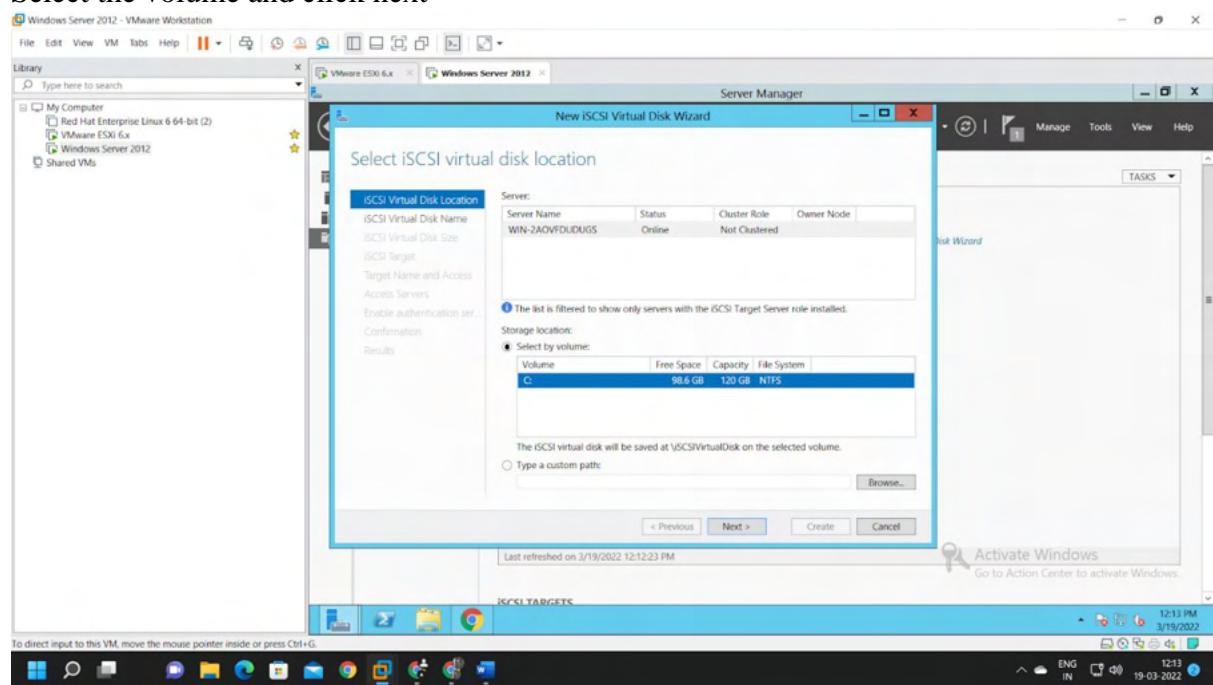


After installation click close

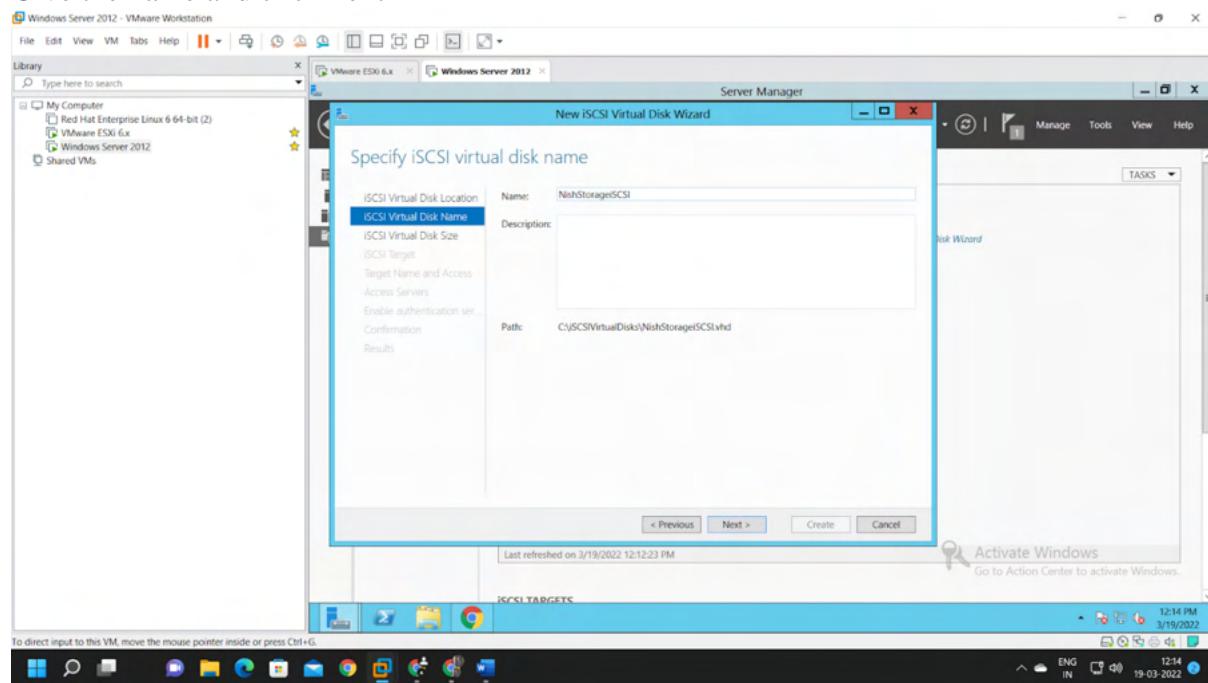




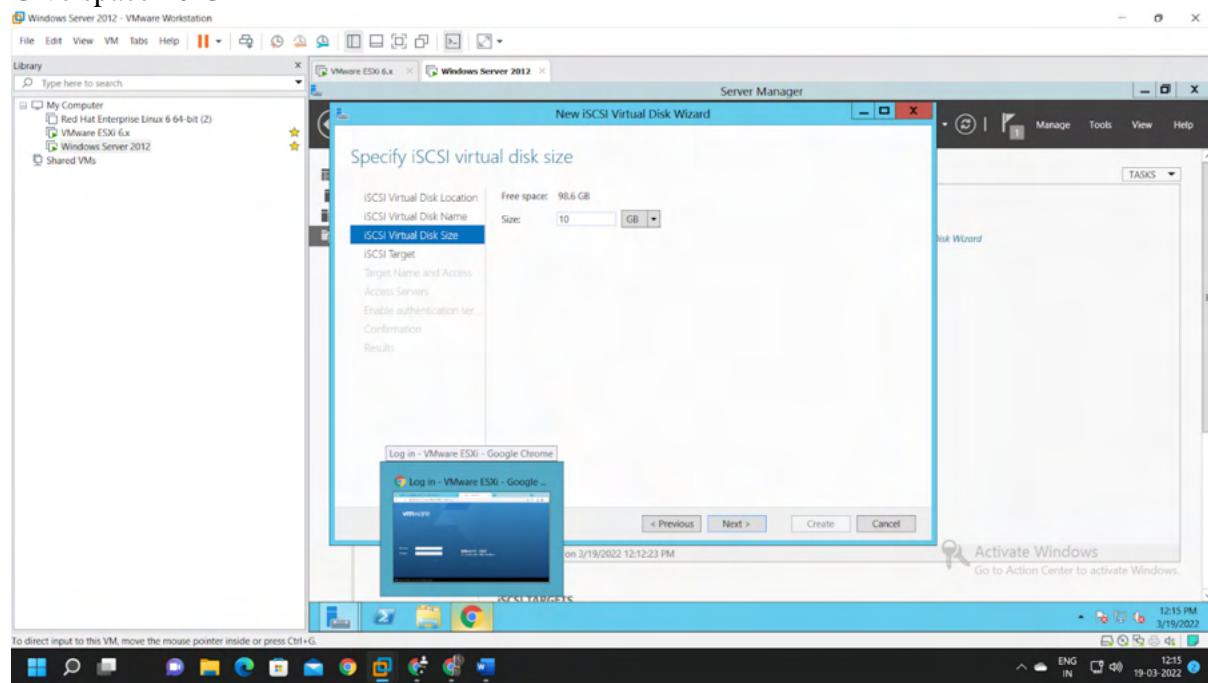
Select the volume and click next



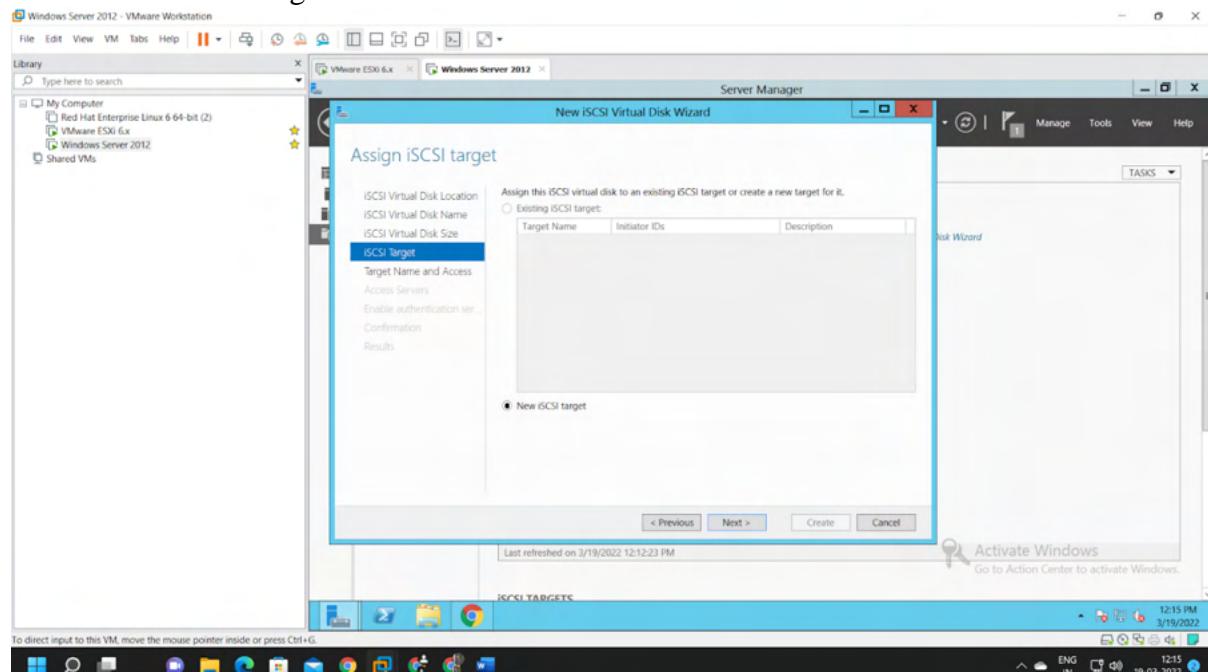
Give the name and click next



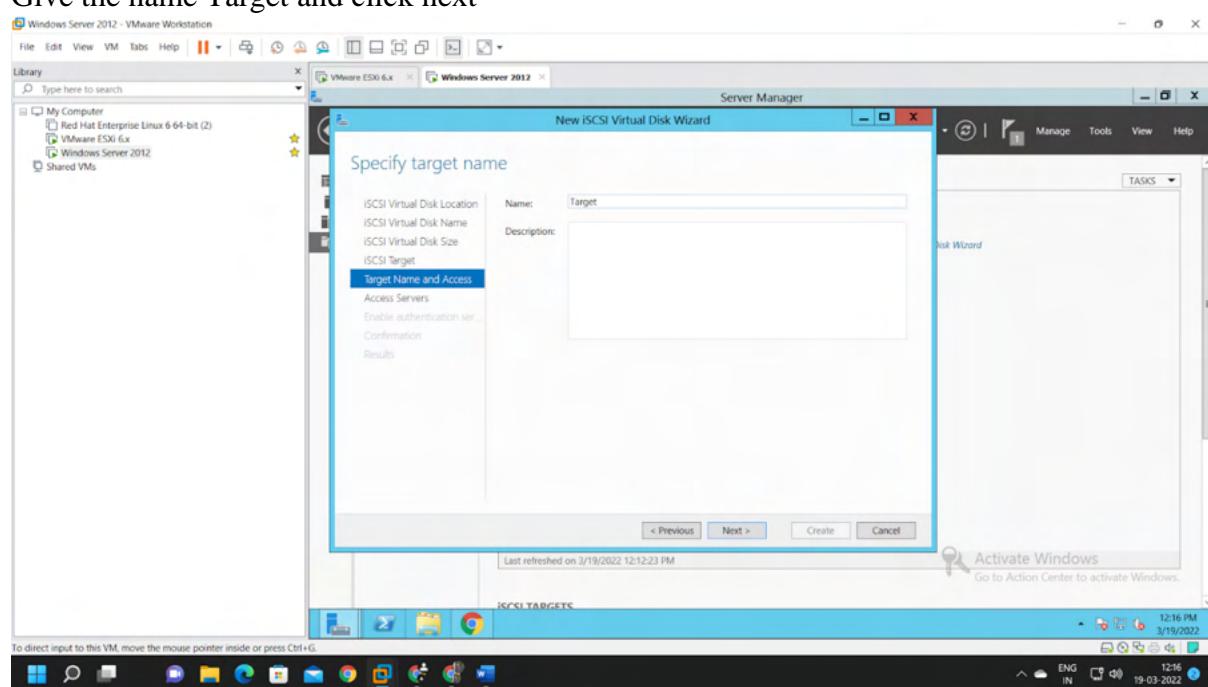
Give space 10 GB



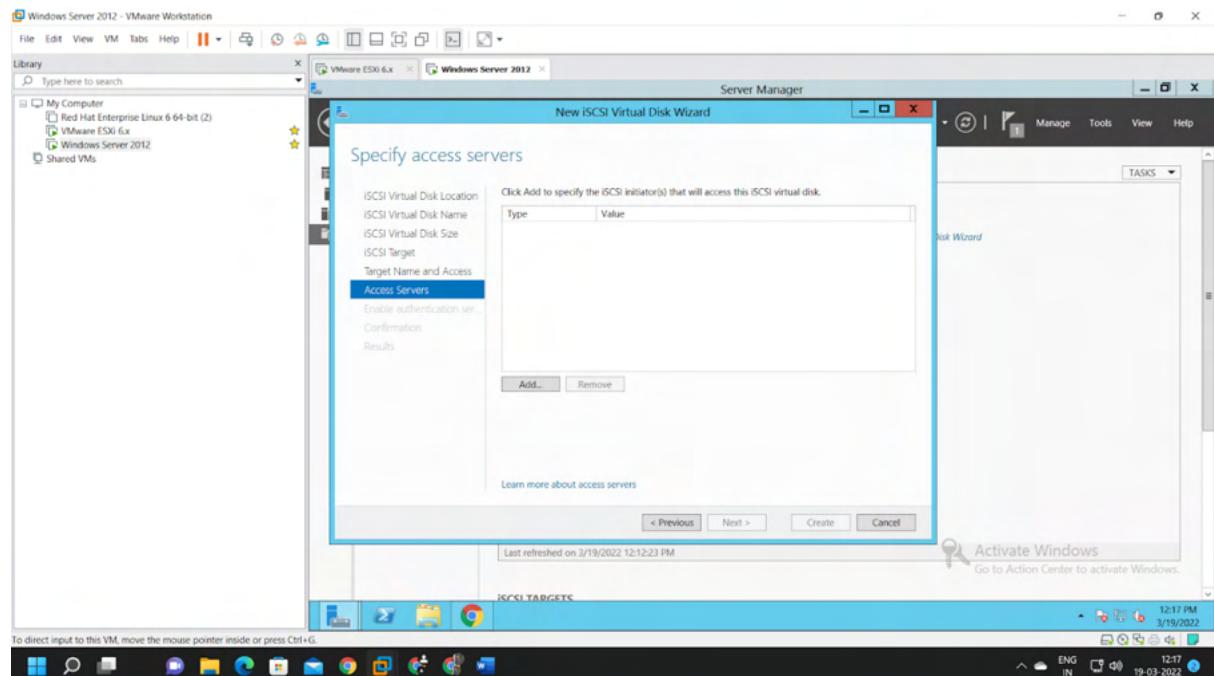
Click on new iSCSI target and click next



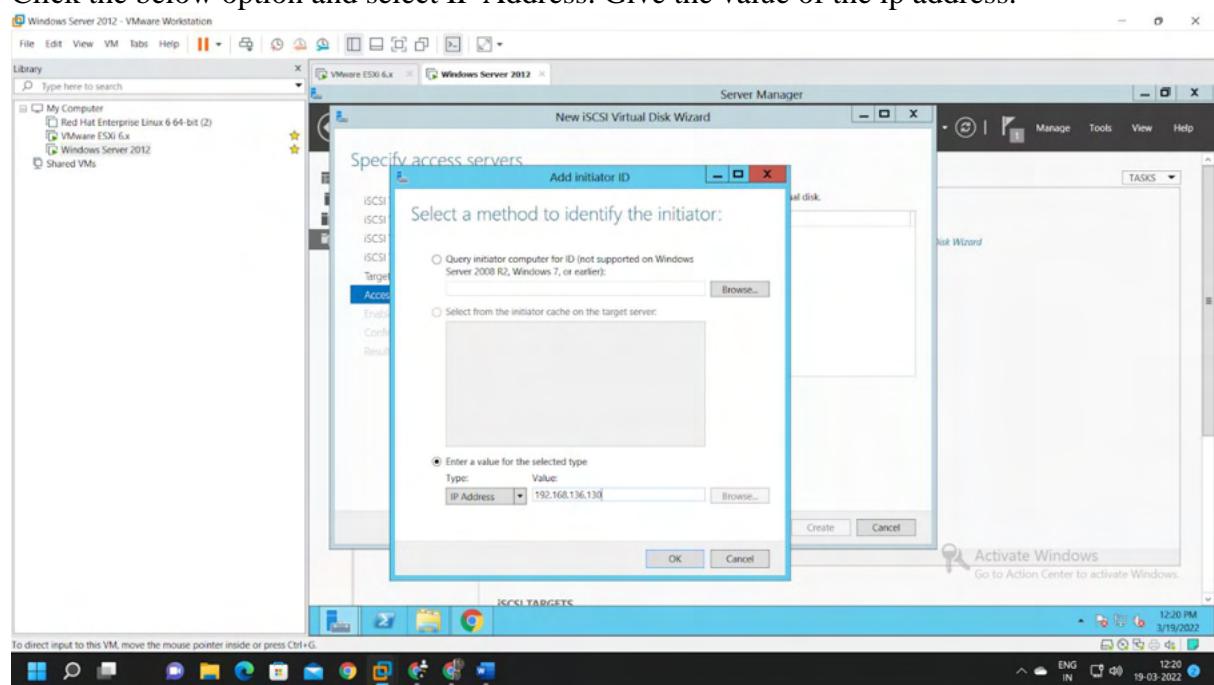
Give the name Target and click next



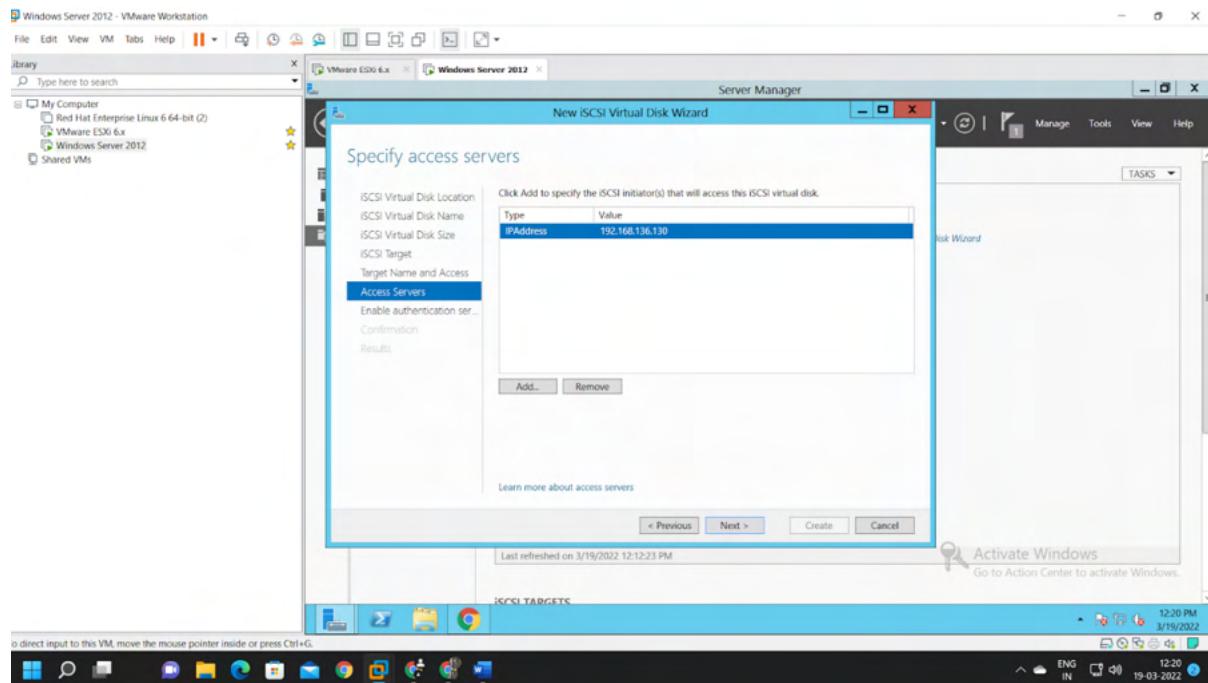
Click on add



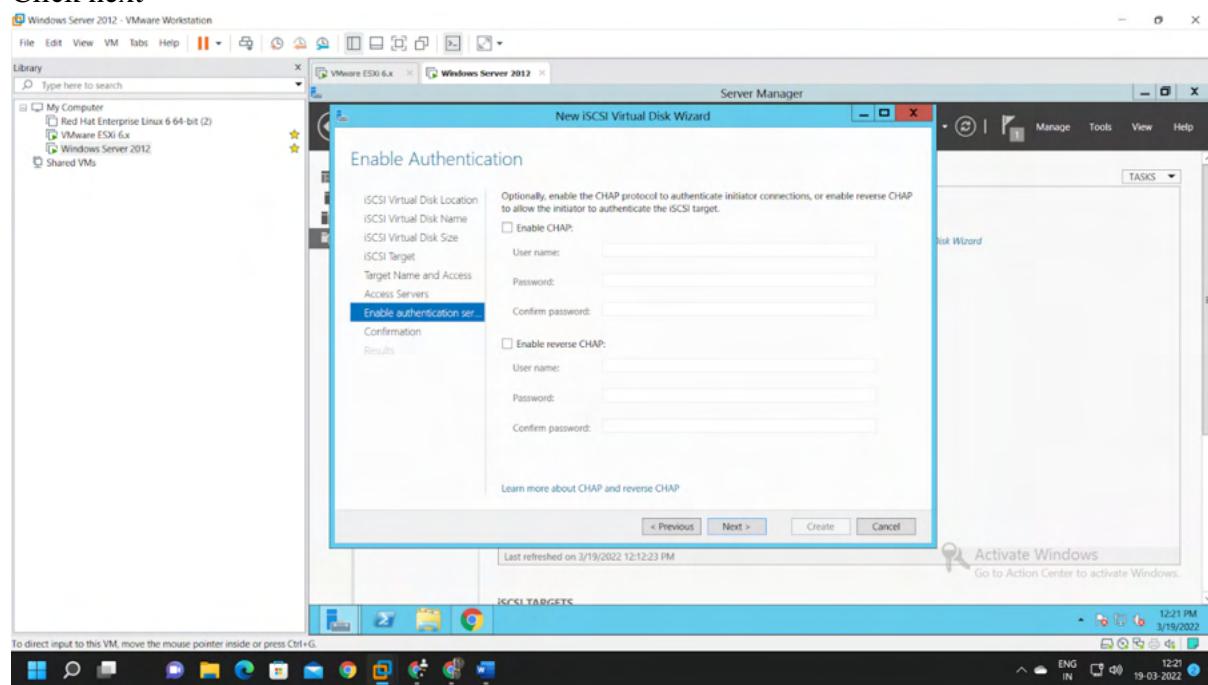
Click the below option and select IP Address. Give the value of the ip address.



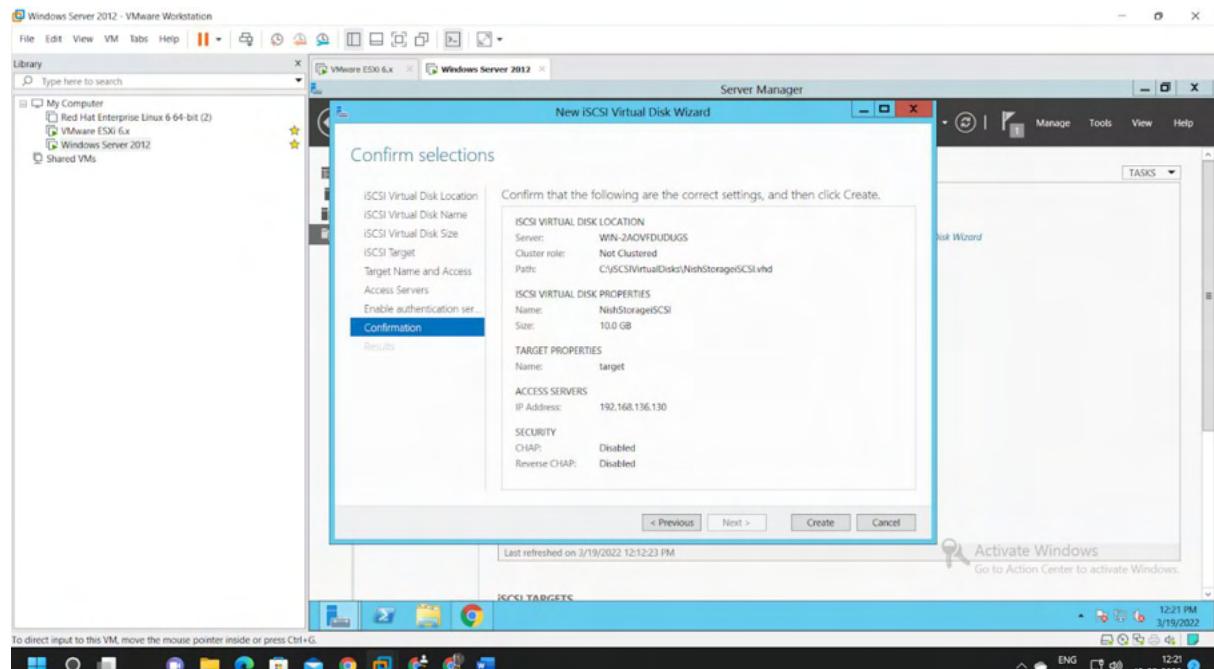
Select IP address and click next



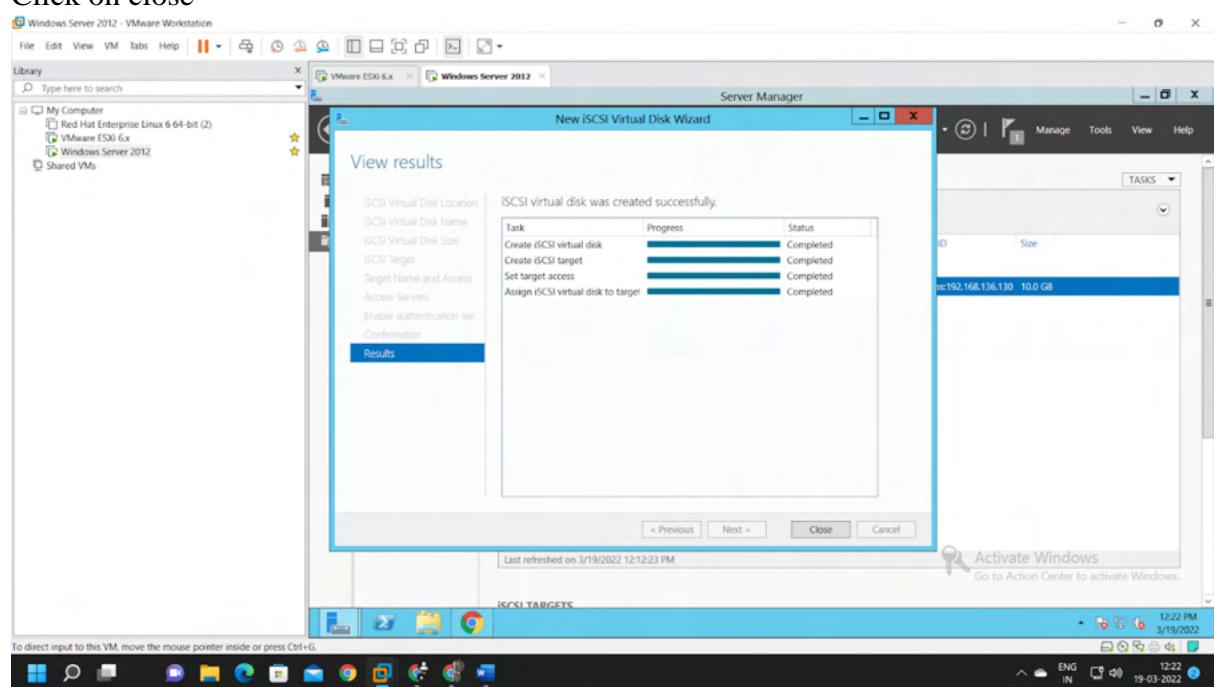
Click next

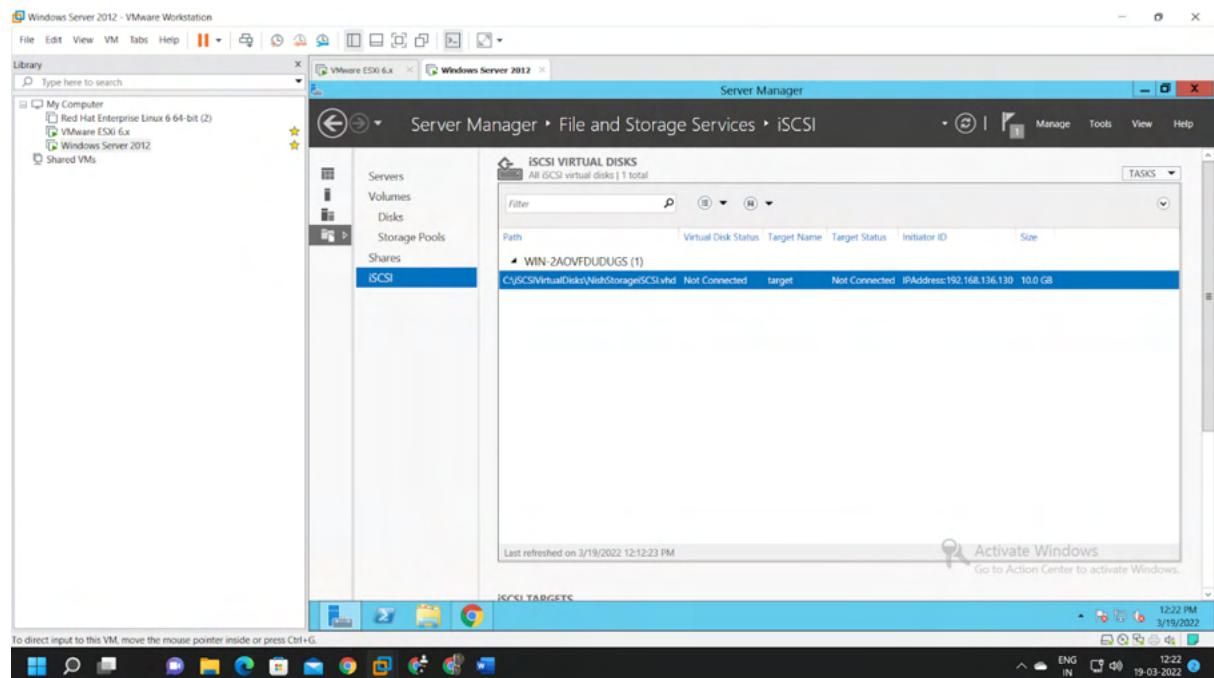


Review and click on create



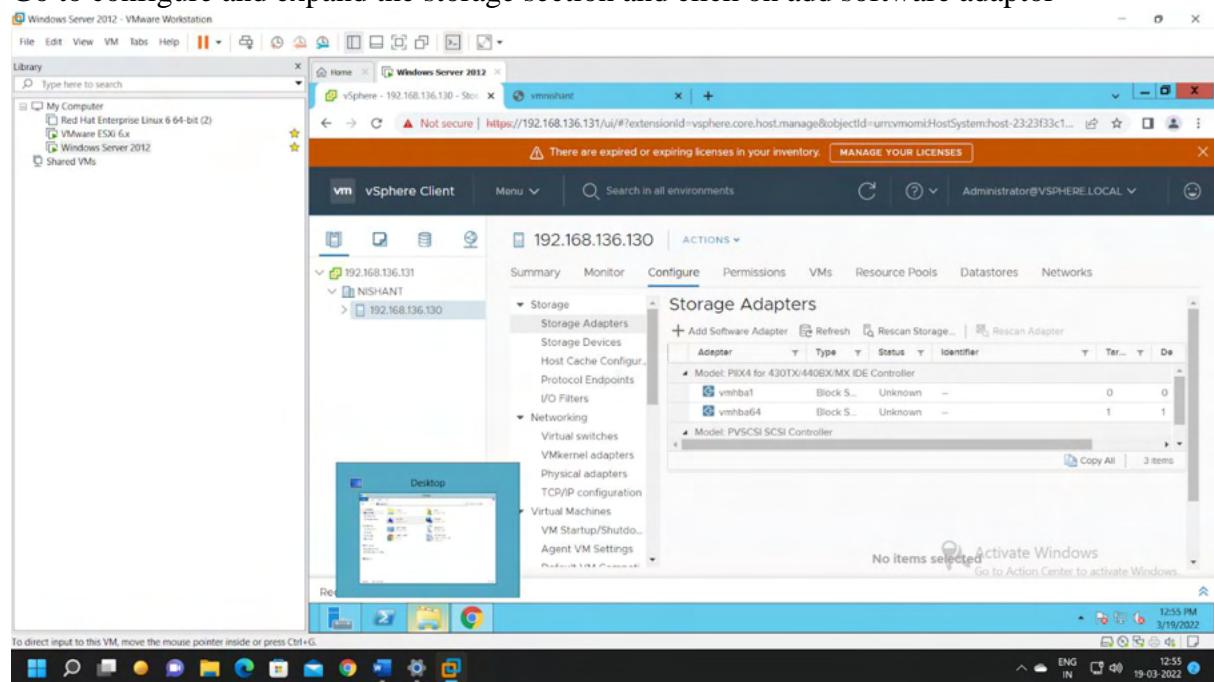
Click on close



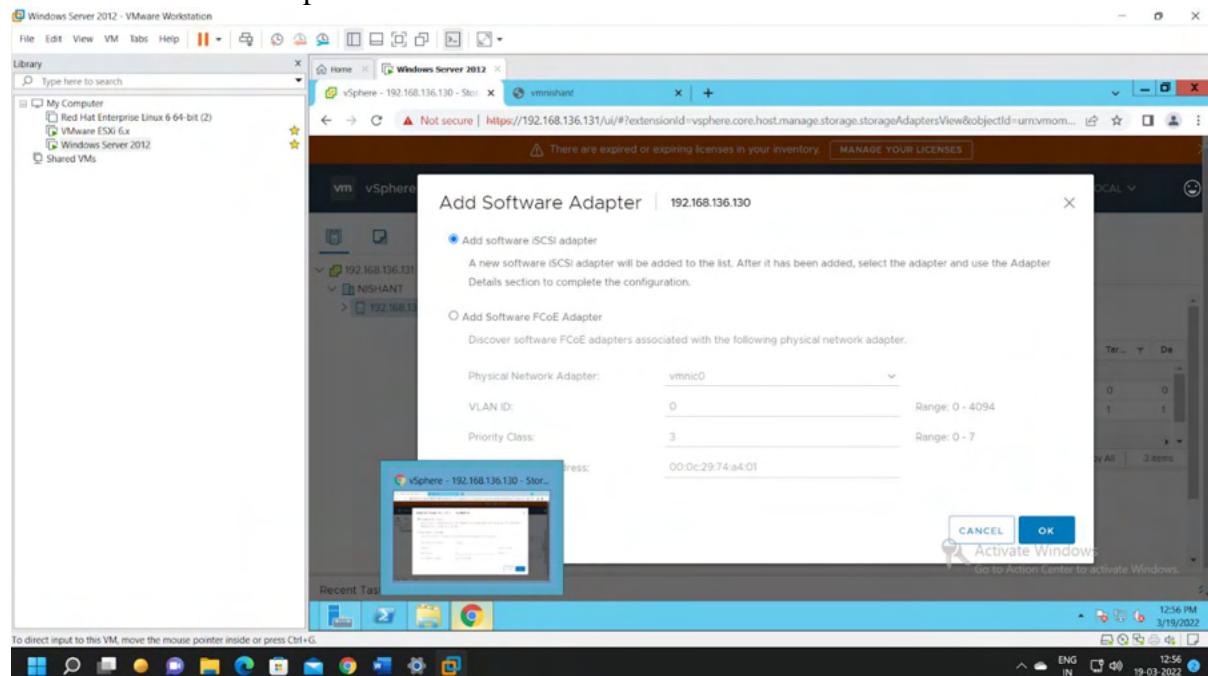


STEP 2

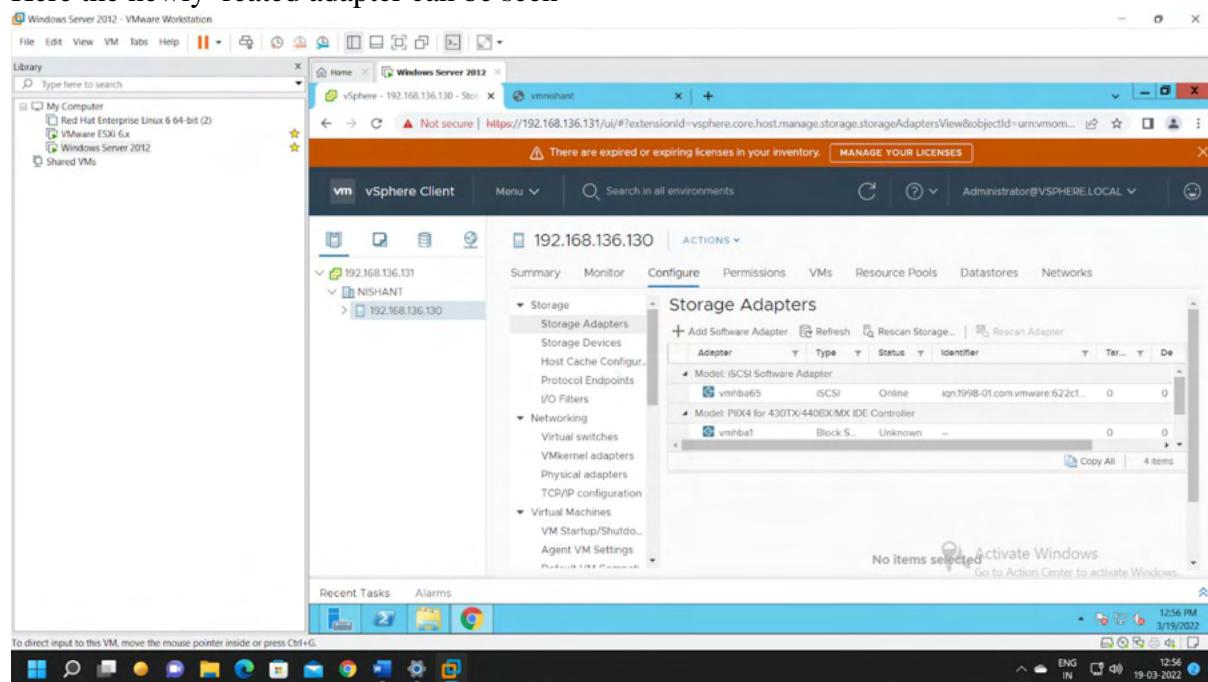
Go to configure and expand the storage section and click on add software adaptor



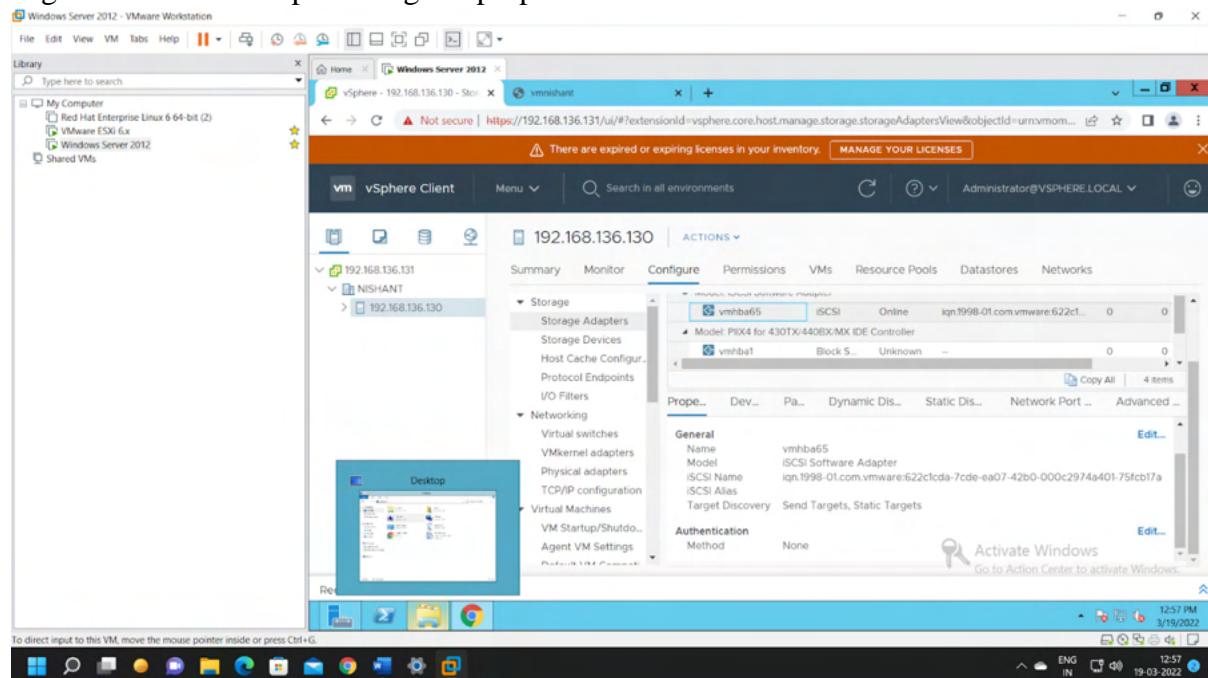
Add software Iscsi adapter and click ok



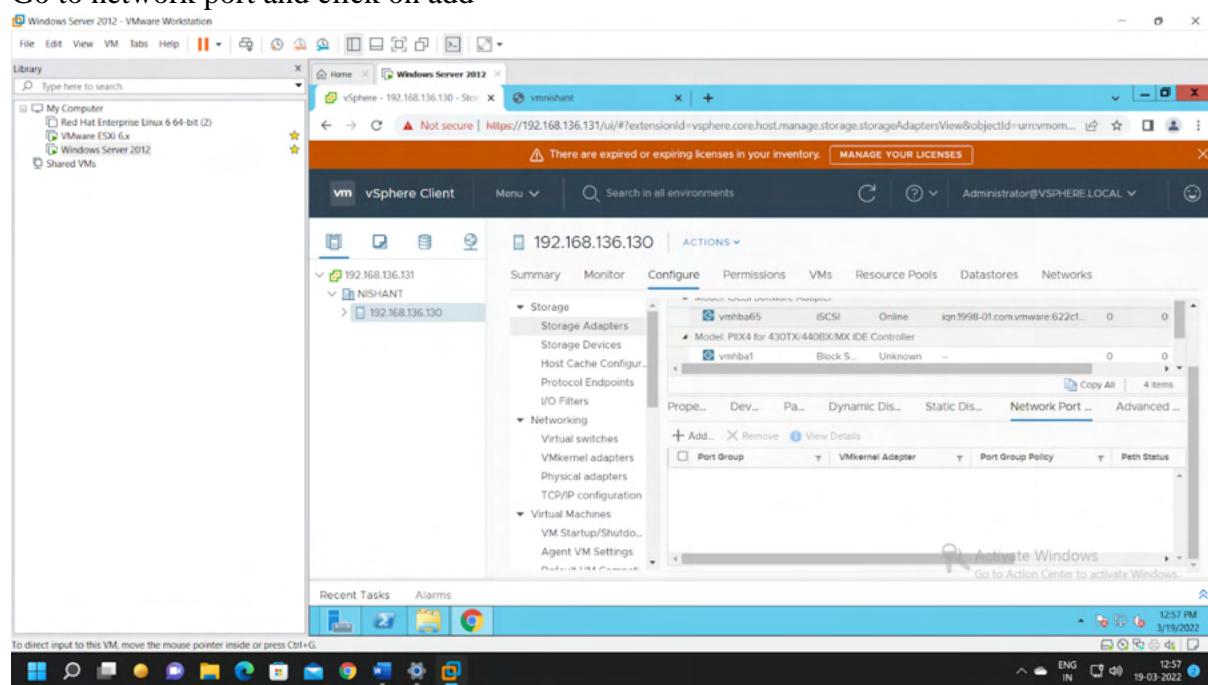
Here the newly created adapter can be seen



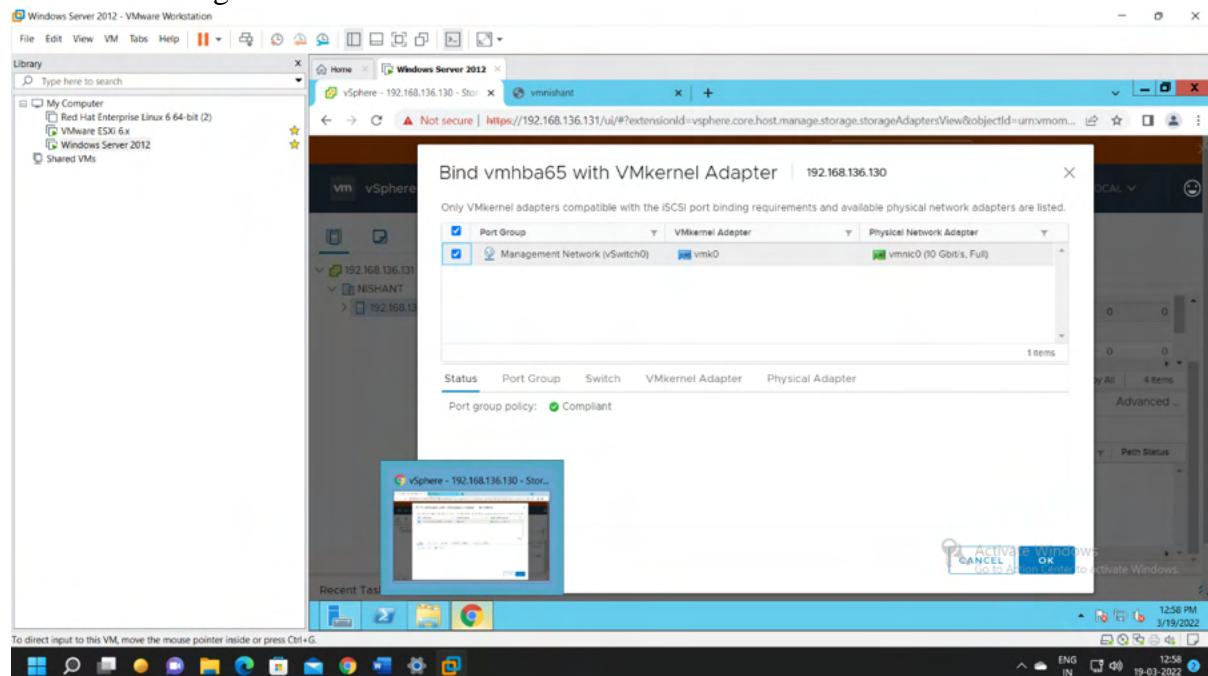
Right click on the adapter and go to properties



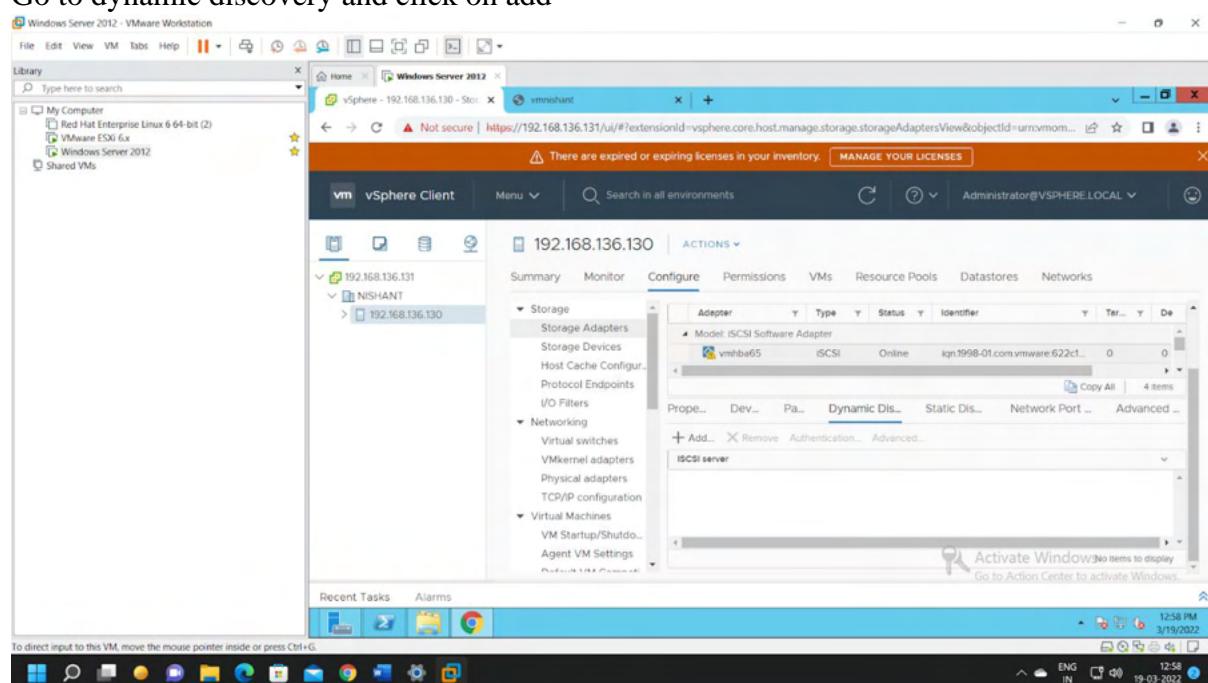
Go to network port and click on add



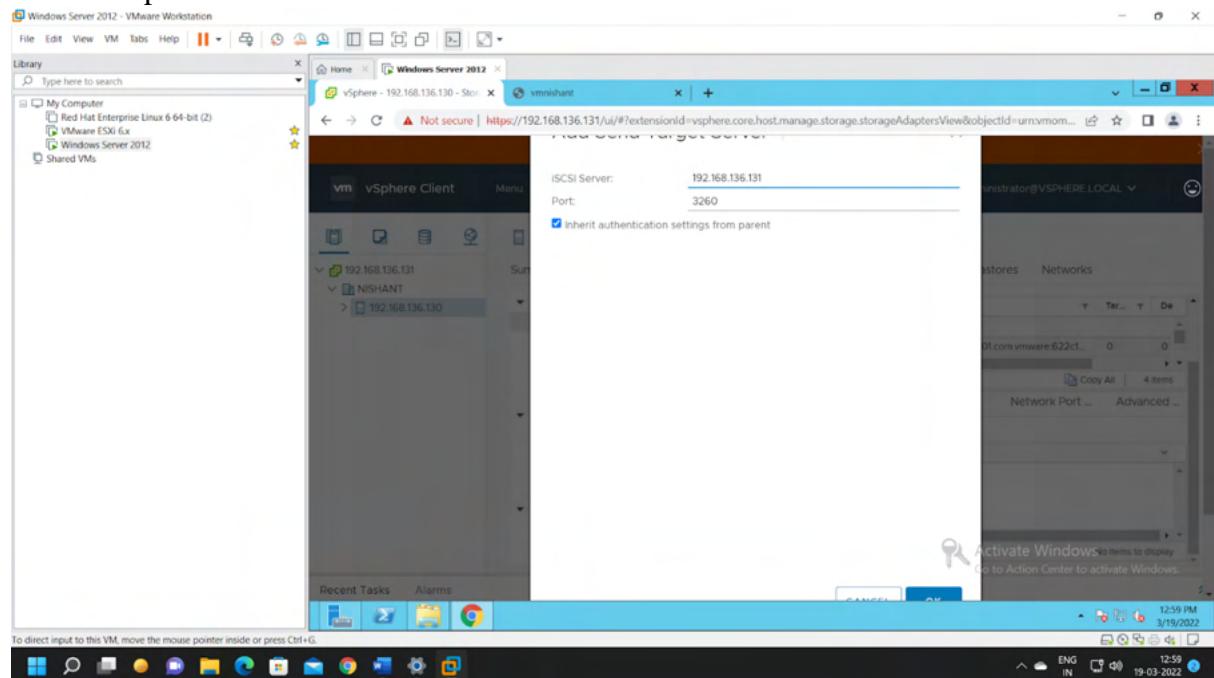
Select the management network switch and click ok



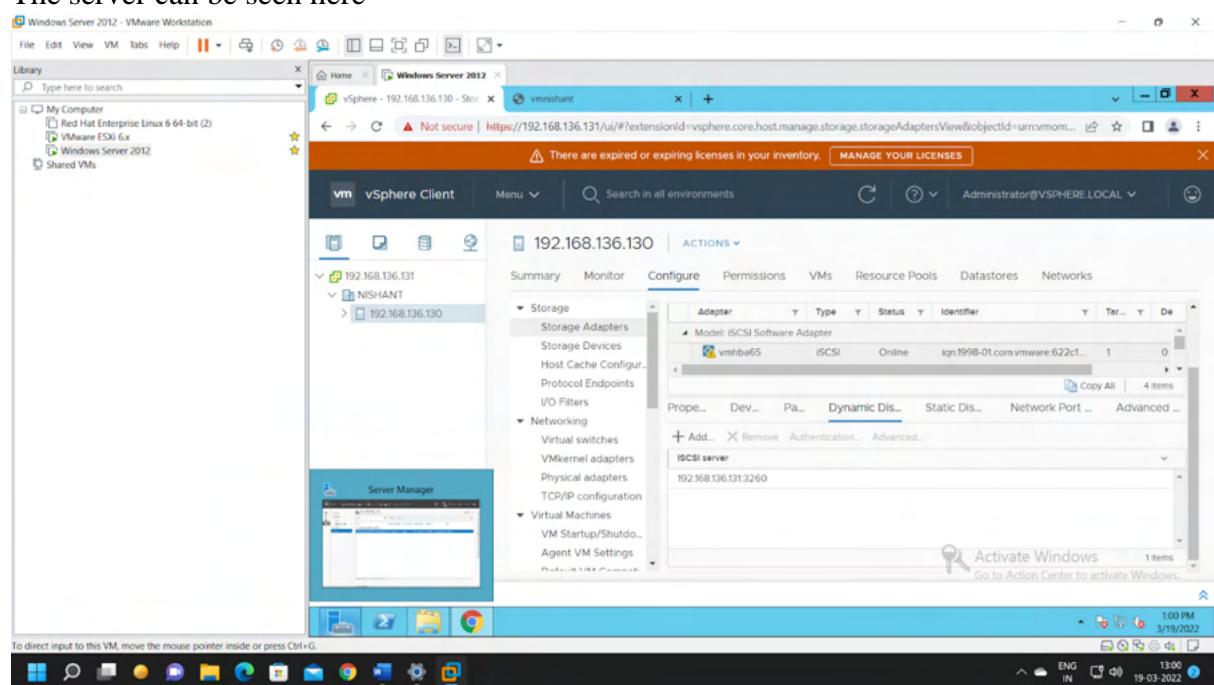
Go to dynamic discovery and click on add



Enter the ip address and click ok

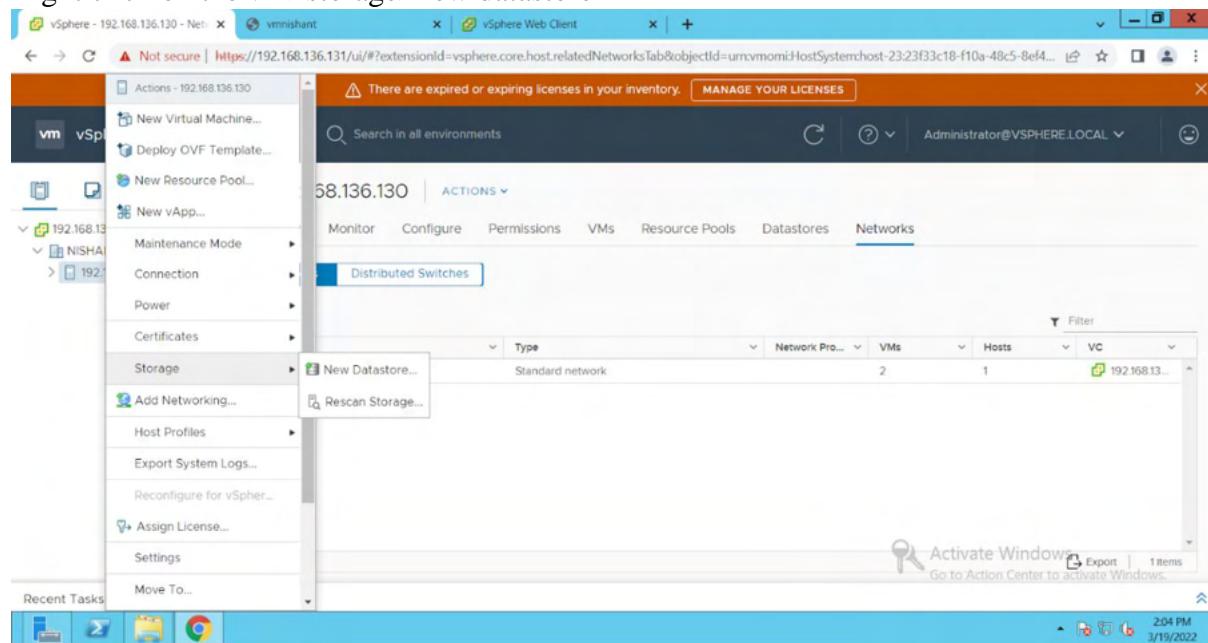


The server can be seen here

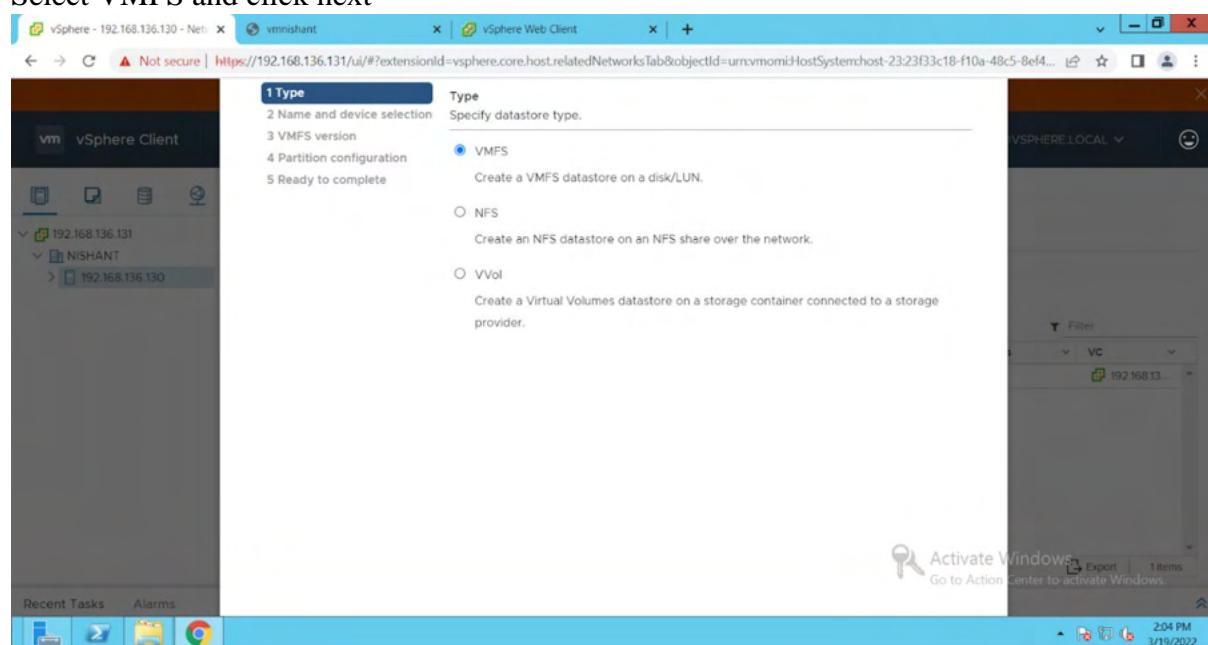


STEP 3

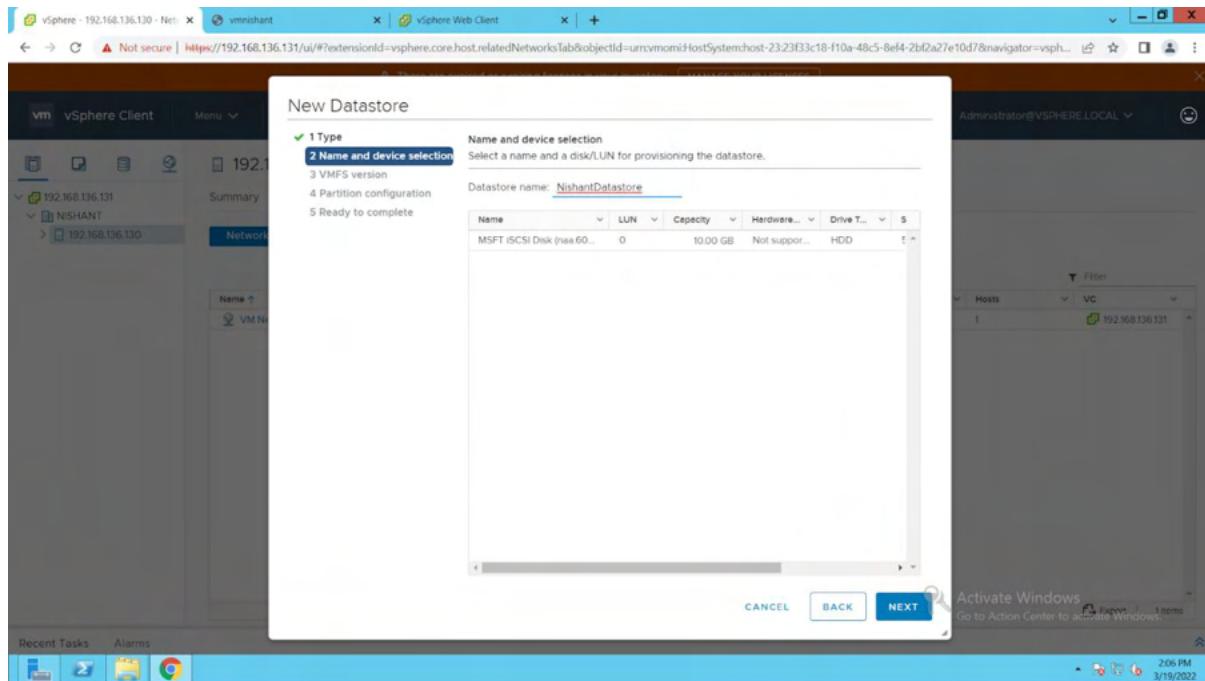
Right click on the vm>storage>new datastore



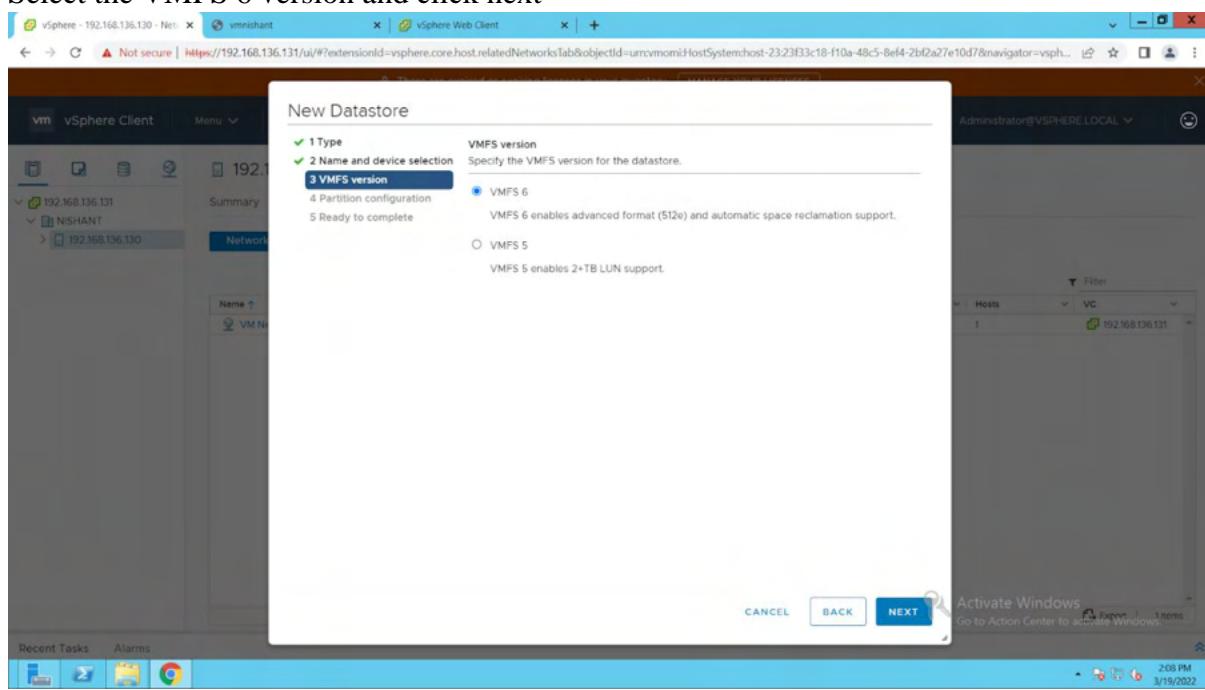
Select VMFS and click next



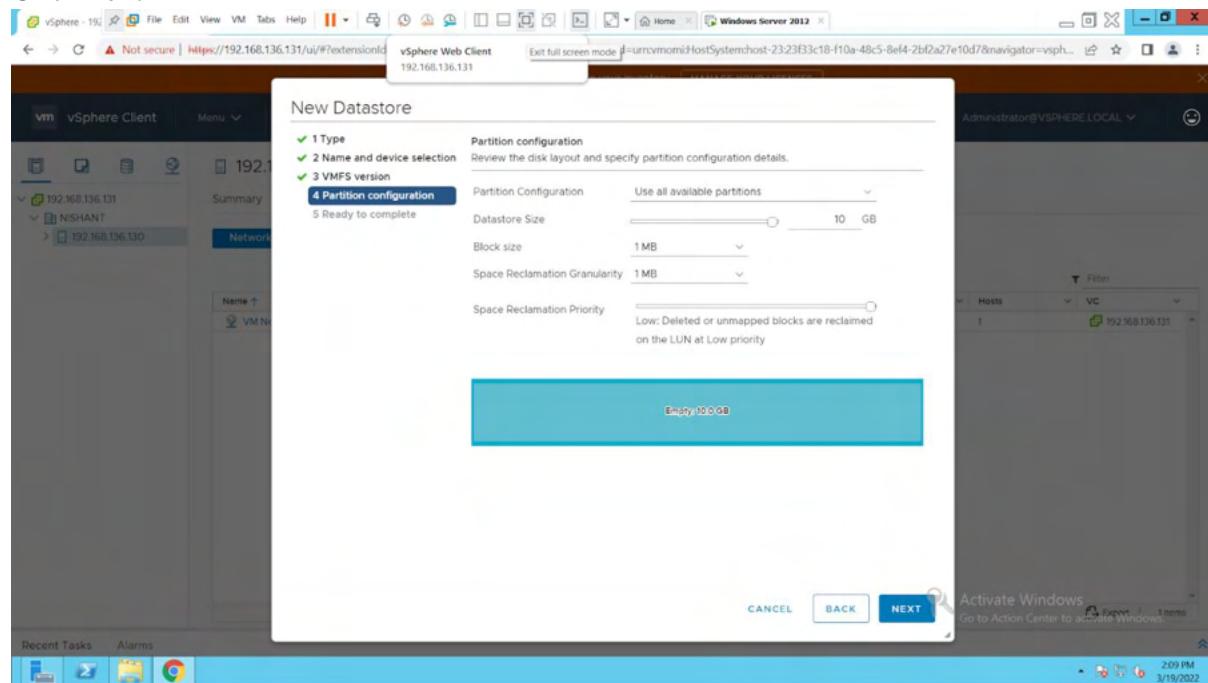
Enter the name and click on next



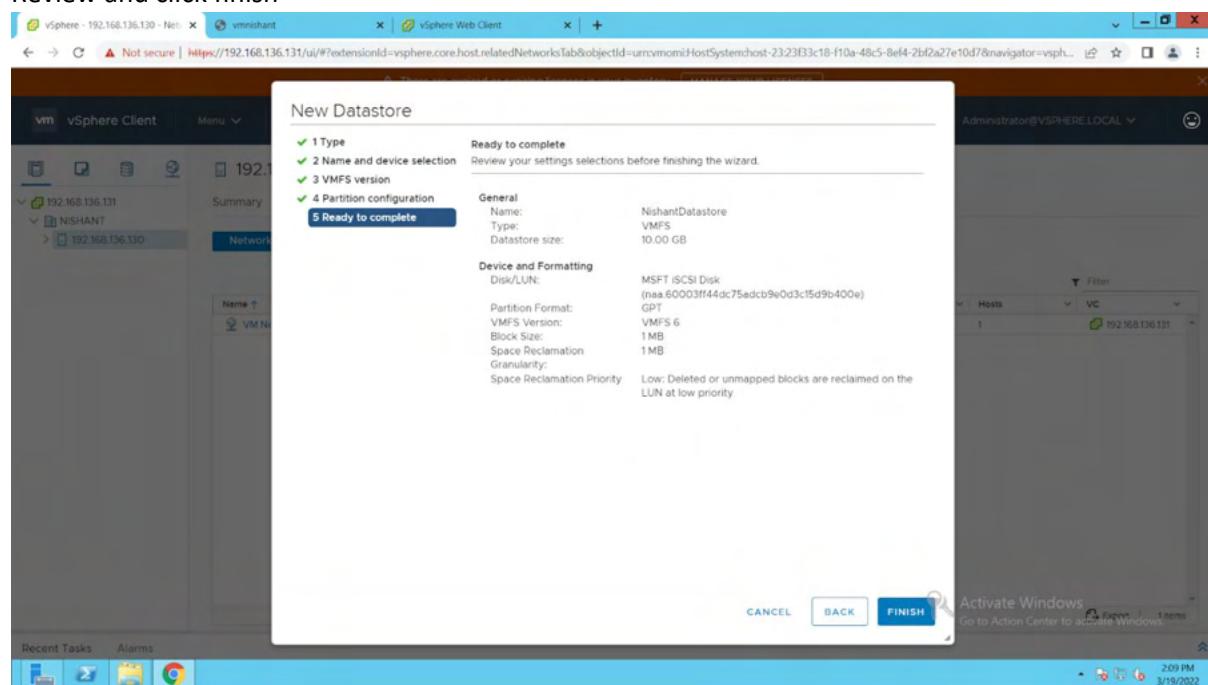
Select the VMFS 6 version and click next



Click next

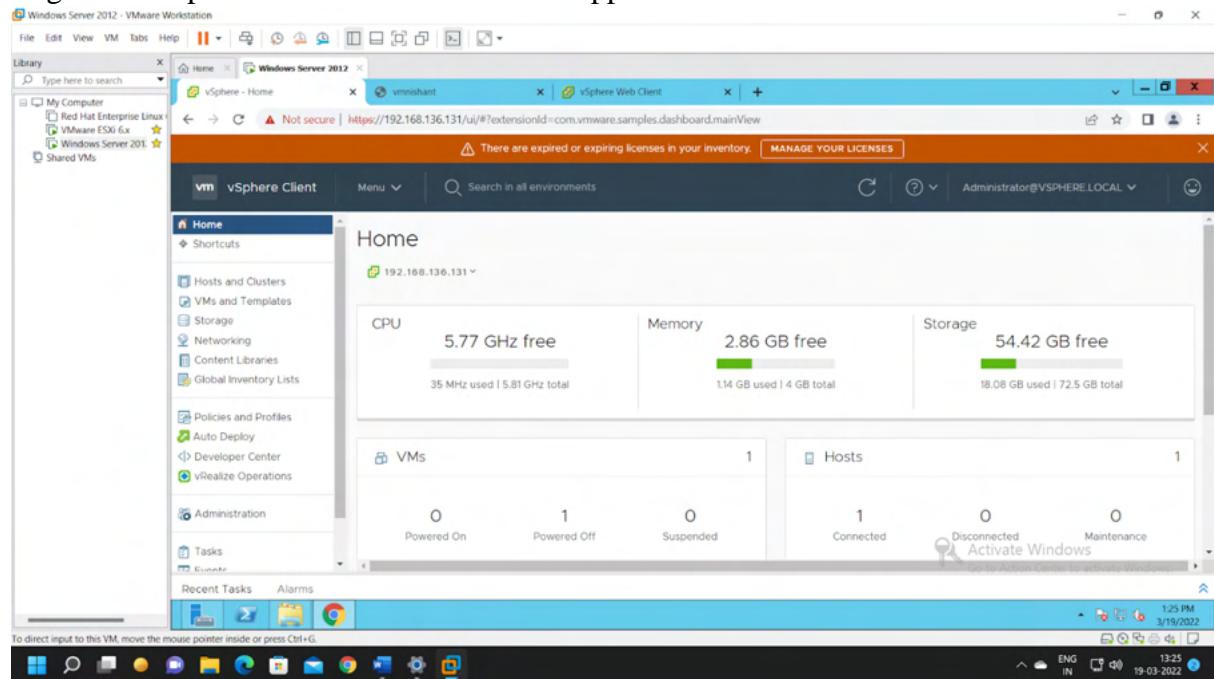


Review and click finish

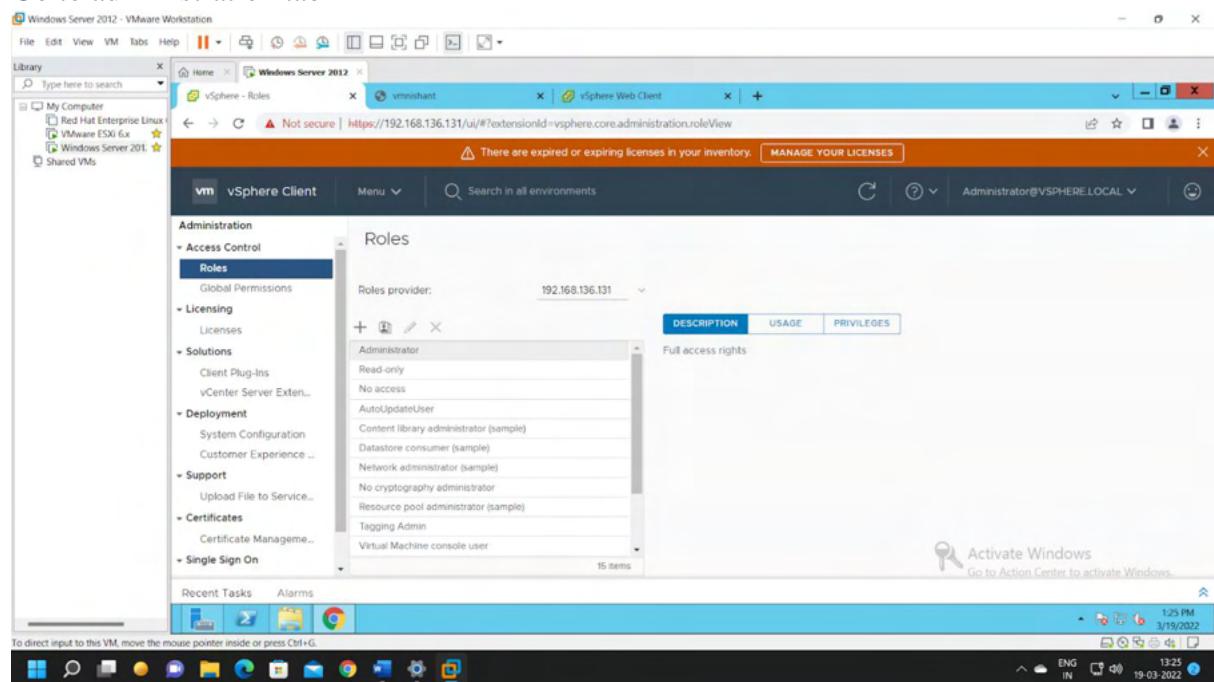


B Create a one user account of VMware ESXi server using vSphere WebClient Application

Login into vSphere server from Web Client application.



Go to administration tab



Click on users and groups

The screenshot shows the vSphere Client interface for managing users and groups. The 'Users' tab is active, and the domain is set to 'WIN-2AOVFDUDUGS'. The user list displays two entries:

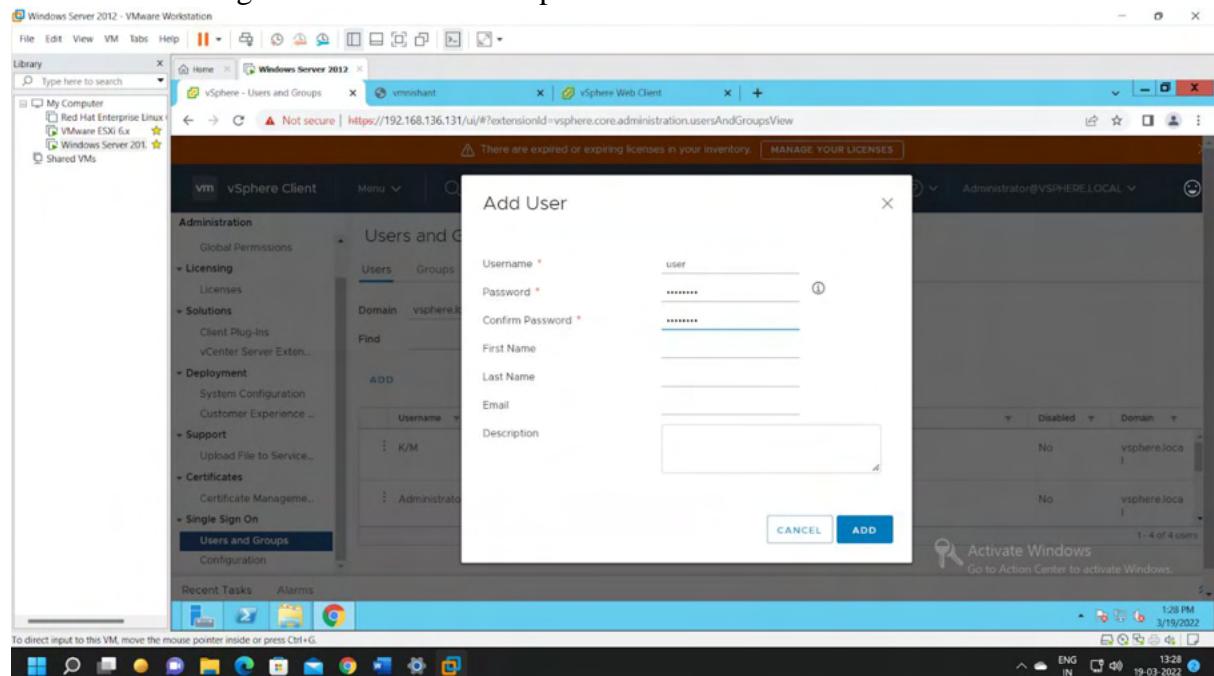
Username	First Name	Last Name	Email	Description	Locked	Disabled	Domain
vsan-health	vsan-health			SVCUSER	No	No	WIN-2AOVFDUDUGS
netdumper	netdumper			SVCUSER	No	No	WIN-2AOVFDUDUGS

Select domain

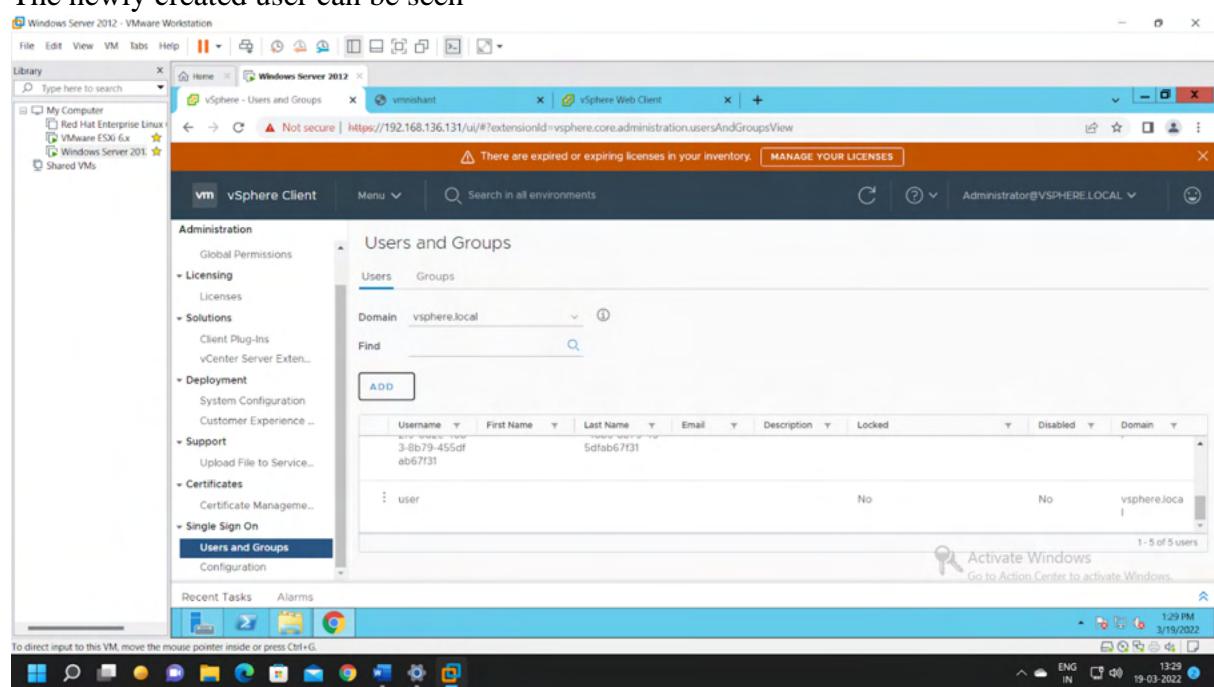
The screenshot shows the vSphere Client interface for managing users and groups. The 'Users' tab is active, and the domain is set to 'vsphere.local'. A new user, 'K/M', is being added. The user list shows one entry:

Username	First Name	Last Name	Email	Description	Locked	Disabled	Domain
K/M					No	No	vsphere.local

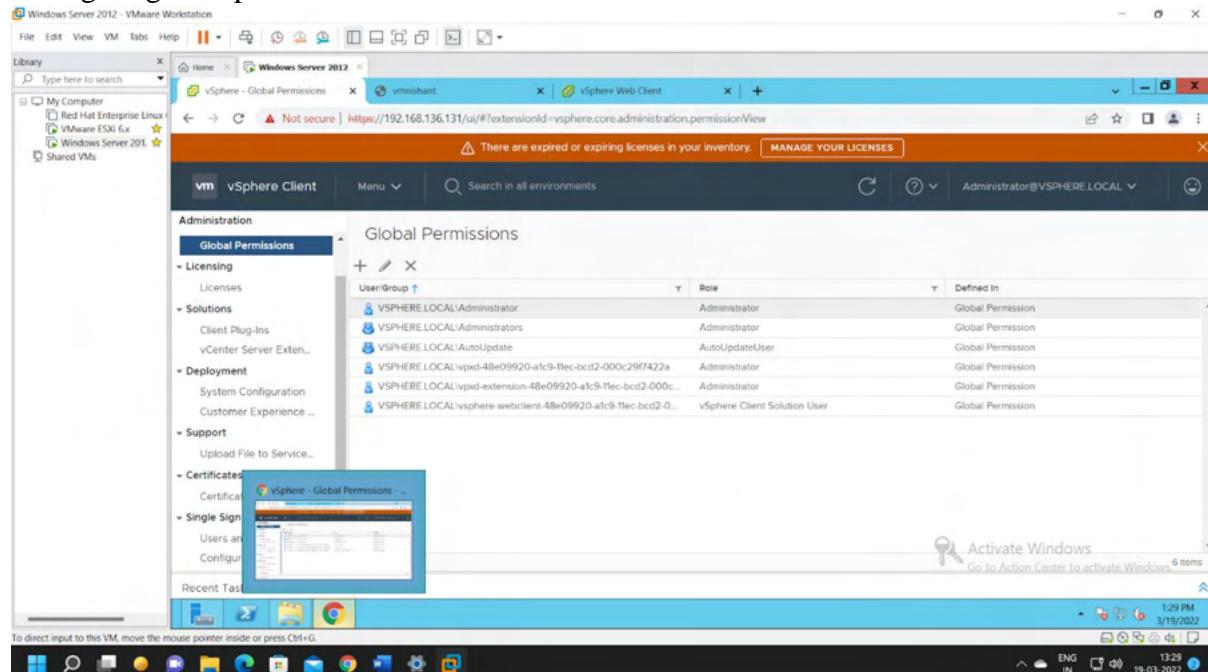
Click on add and give the user name and password and click add



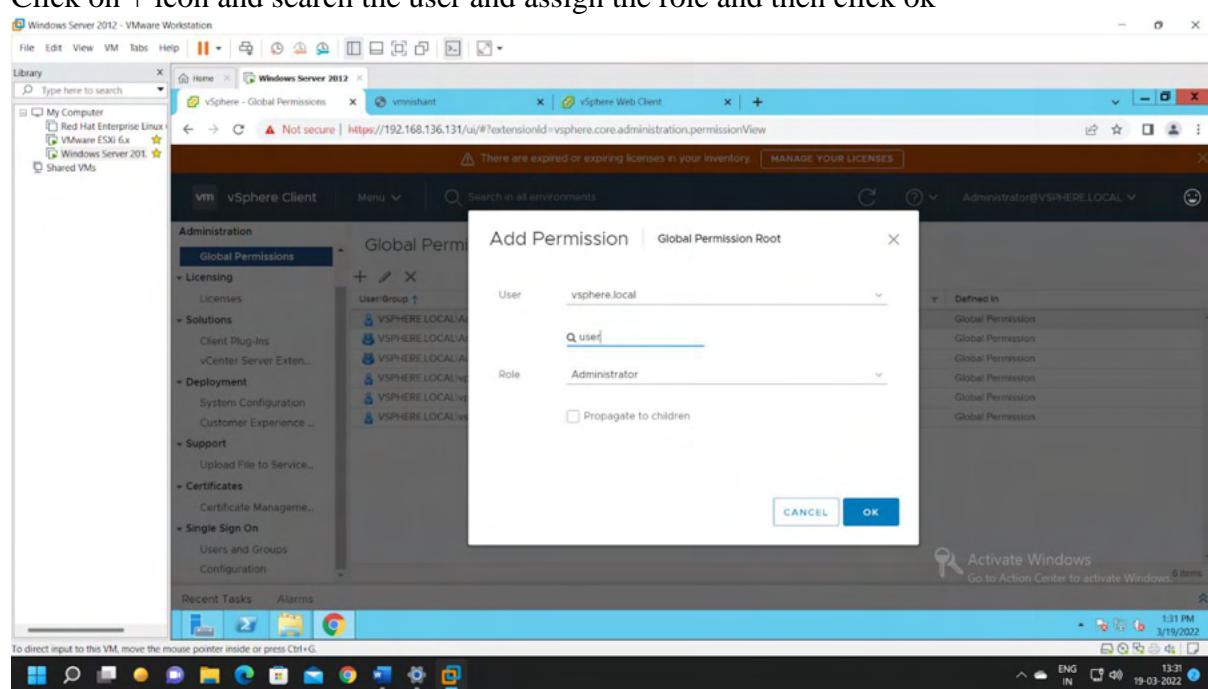
The newly created user can be seen



Now goto global permissions



Click on + icon and search the user and assign the role and then click ok



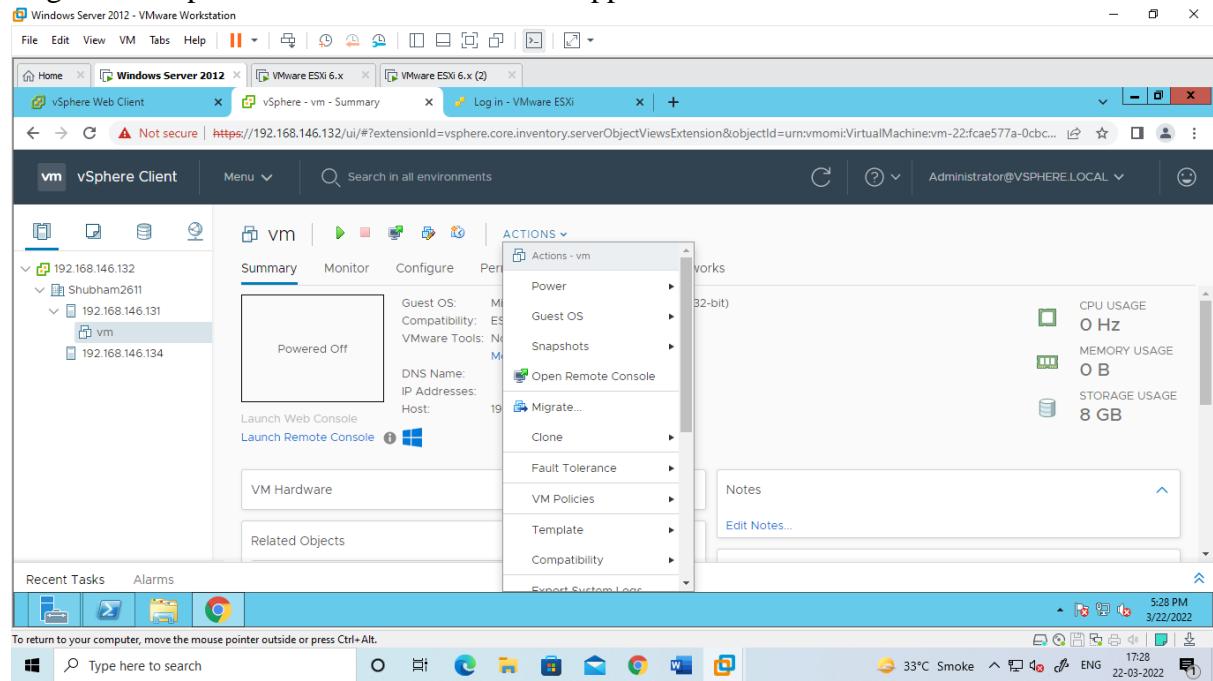
The newly given administrator role to the user can be seen

User/Group	Role	Defined In
VSPhERE.LOCAL\Administrator	Administrator	Global Permission
VSPhERE.LOCAL\Administrators	Administrator	Global Permission
VSPhERE.LOCAL\AutoUpdate	AutoUpdateUser	Global Permission
VSPhERE.LOCAL\user	Administrator	Global Permission
VSPhERE.LOCAL\vpnid-48e09920-afc9-1fec-bcd2-000c29f7422a	Administrator	Global Permission
VSPhERE.LOCAL\vpnid-extension-48e09920-afc9-1fec-bcd2-000c...	Administrator	Global Permission
VSPhERE.LOCAL\vsphere-webclient-48e09920-afc9-1fec-bcd2-000c...	vsphere Client Solution User	Global Permission

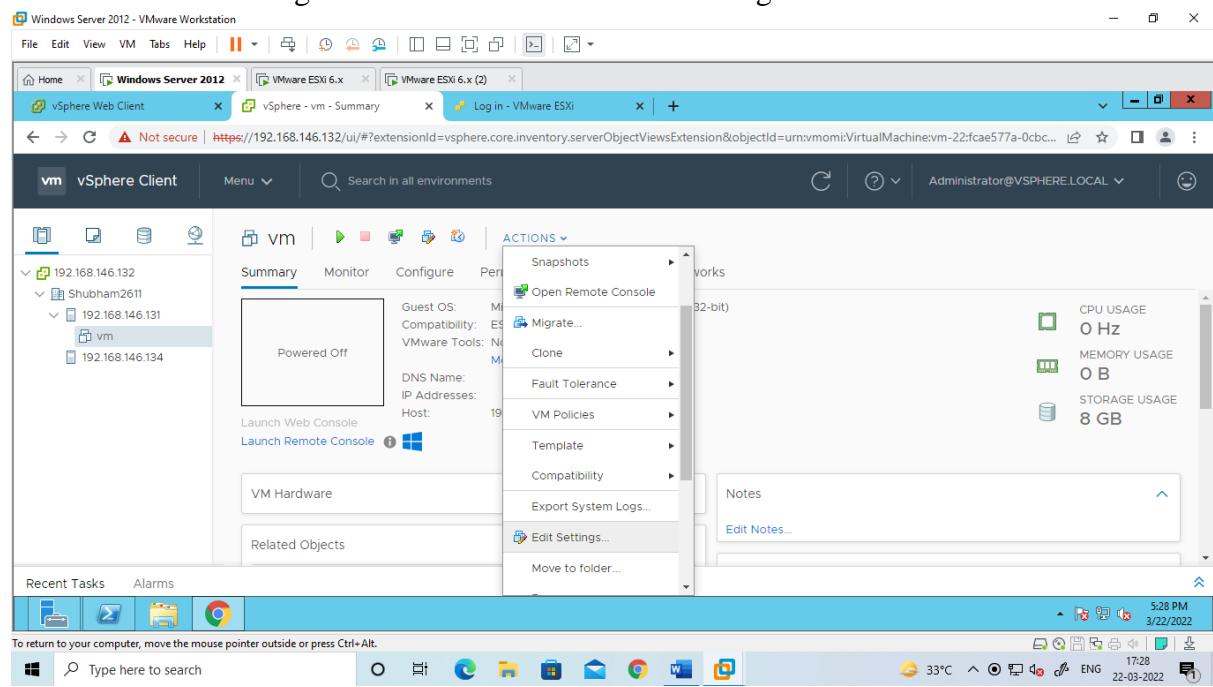
C. Prevent Users from Spying on Remote Console Sessions

Steps:

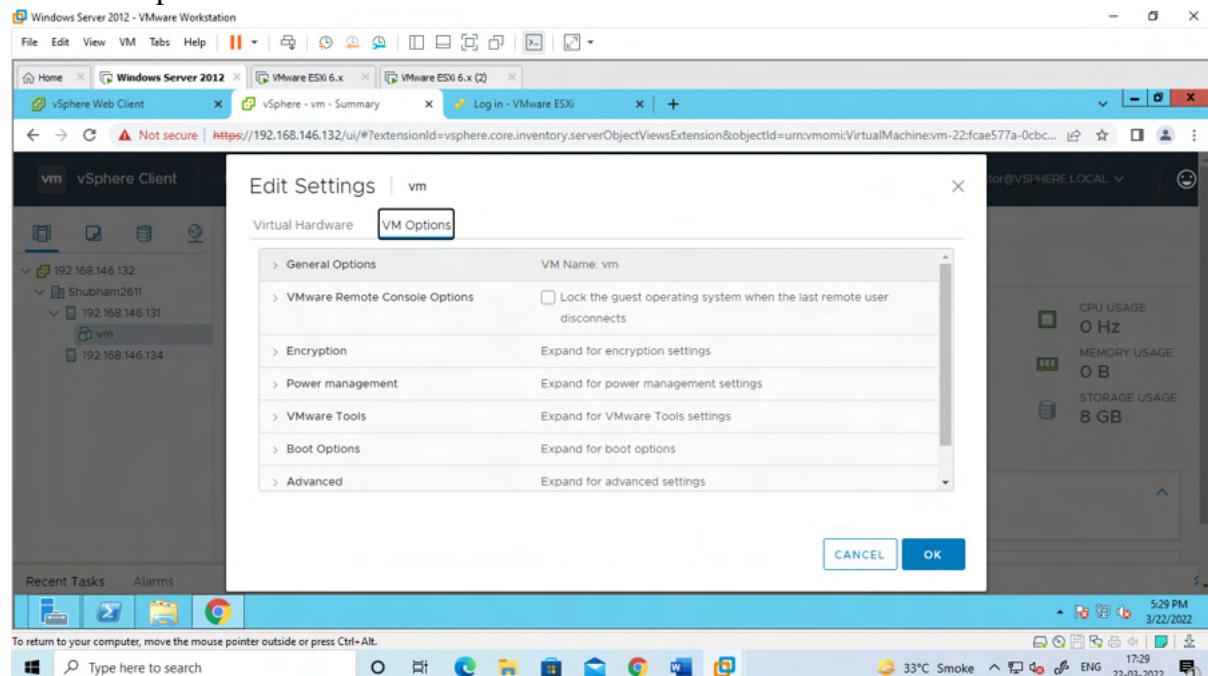
Login into vSphere server from Web Client application



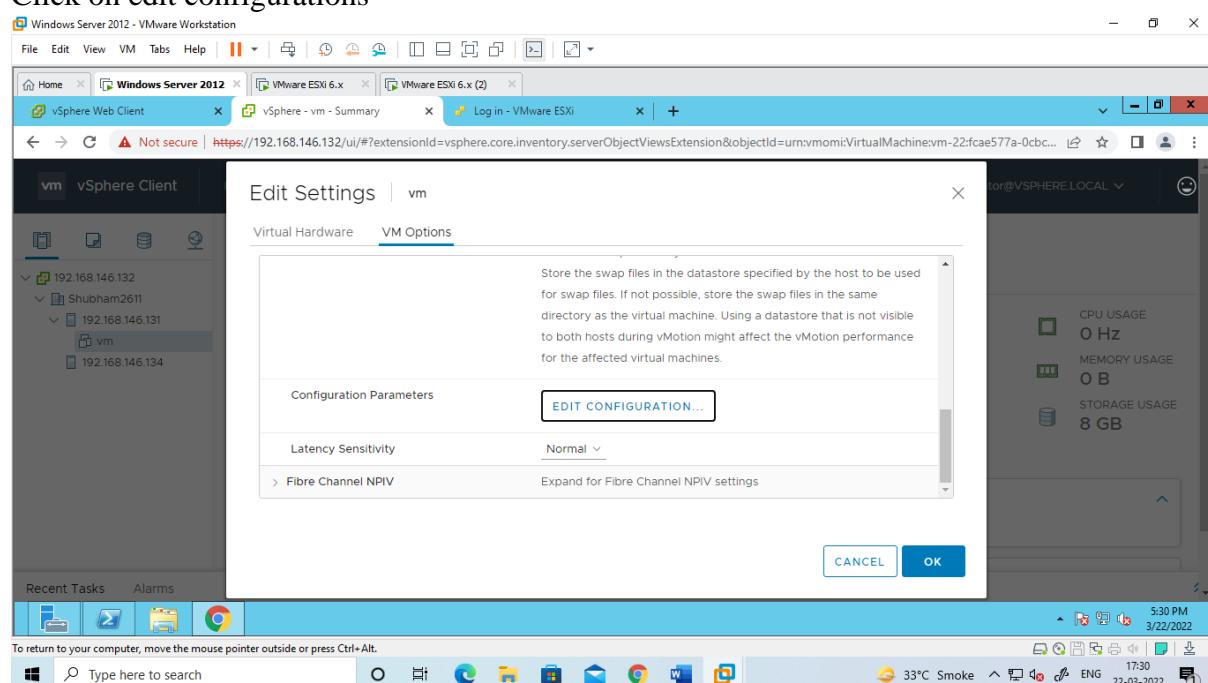
Click on vm and then go to actions and click on edit settings



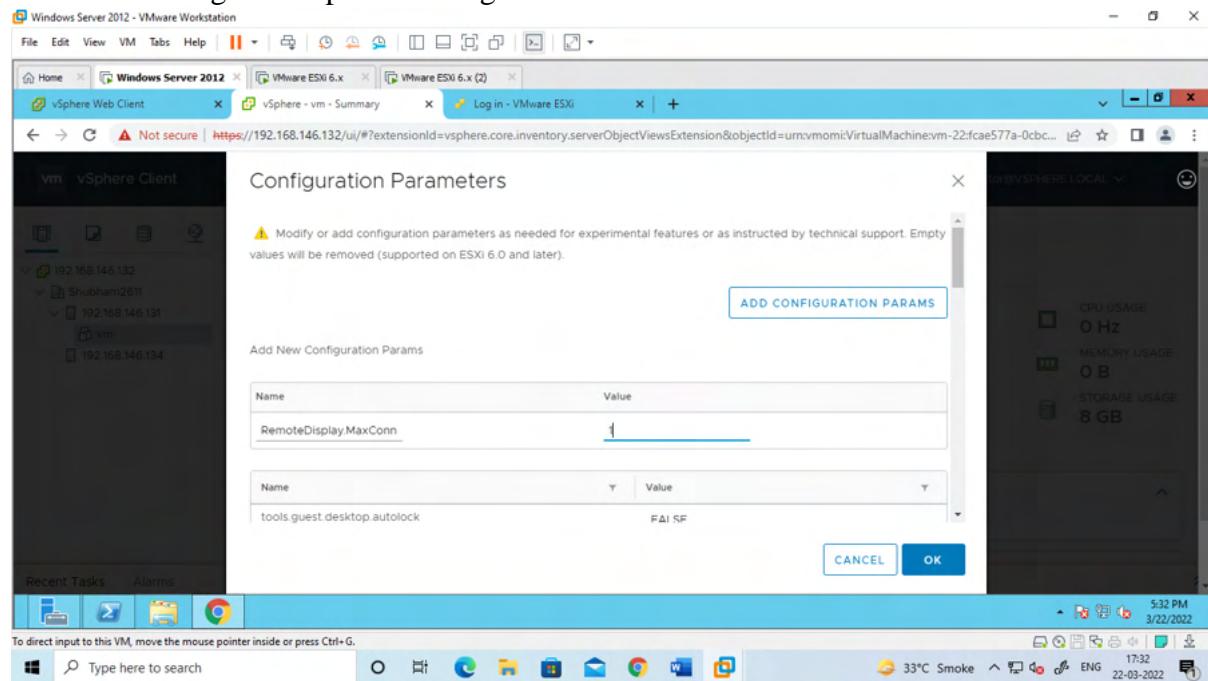
Go to vm options



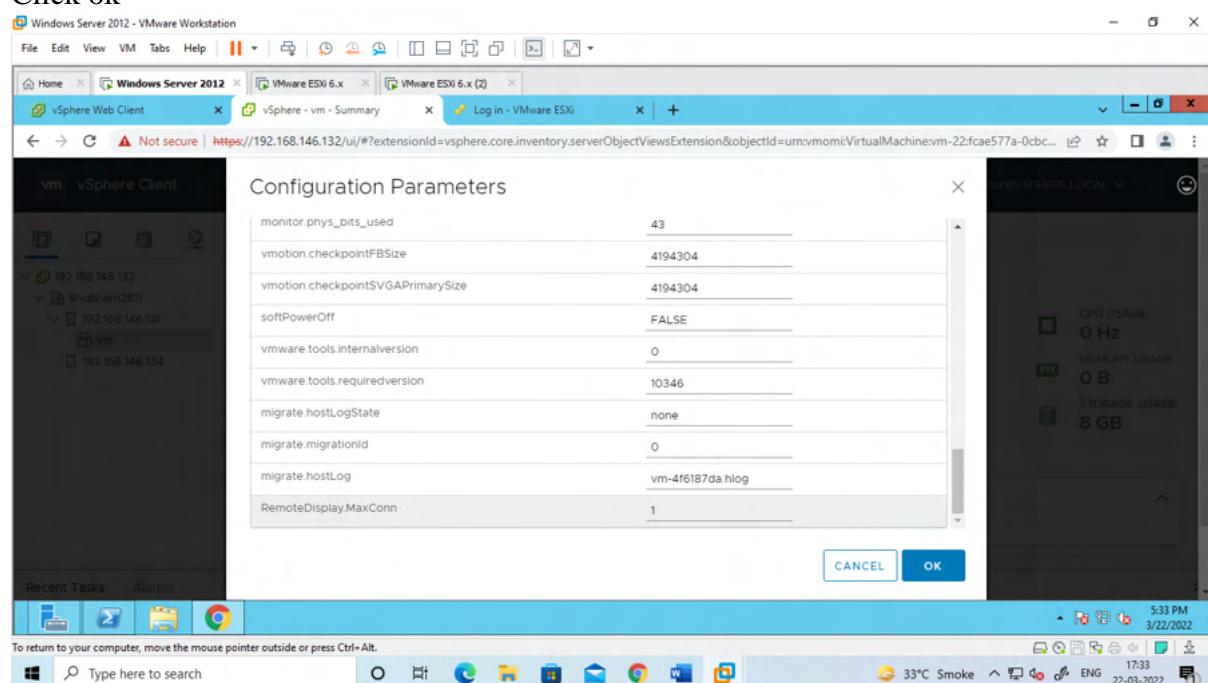
Click on edit configurations



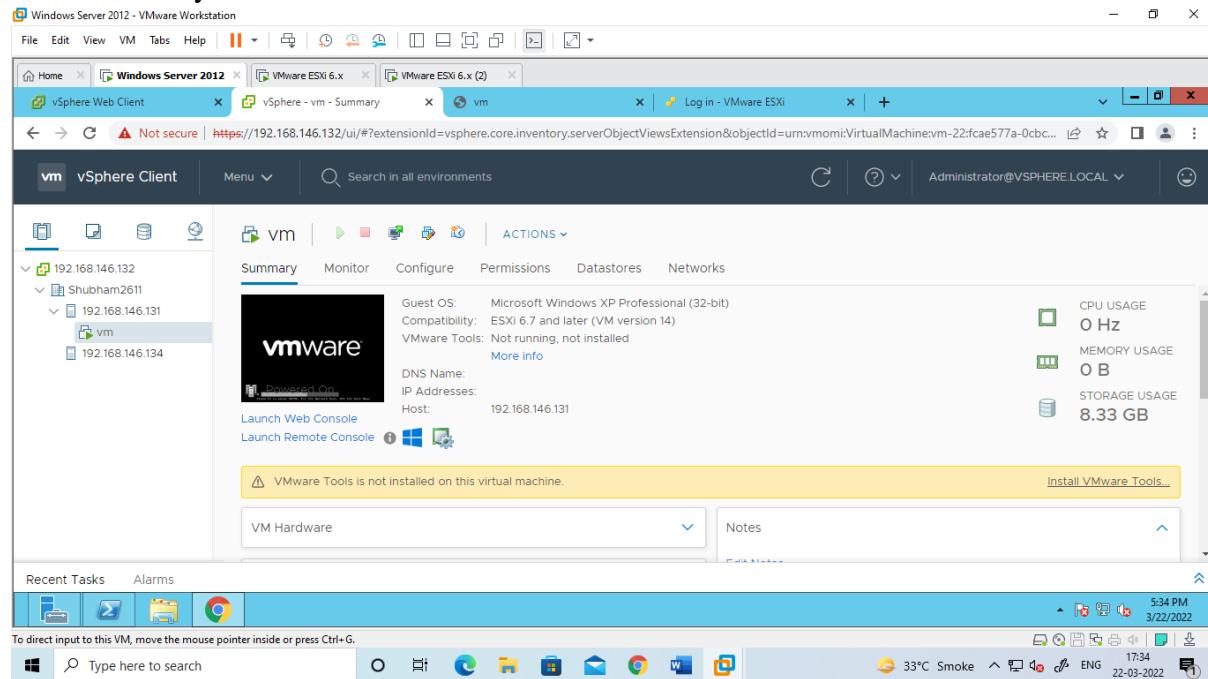
Go to add configuration params and give the value 1 and click ok



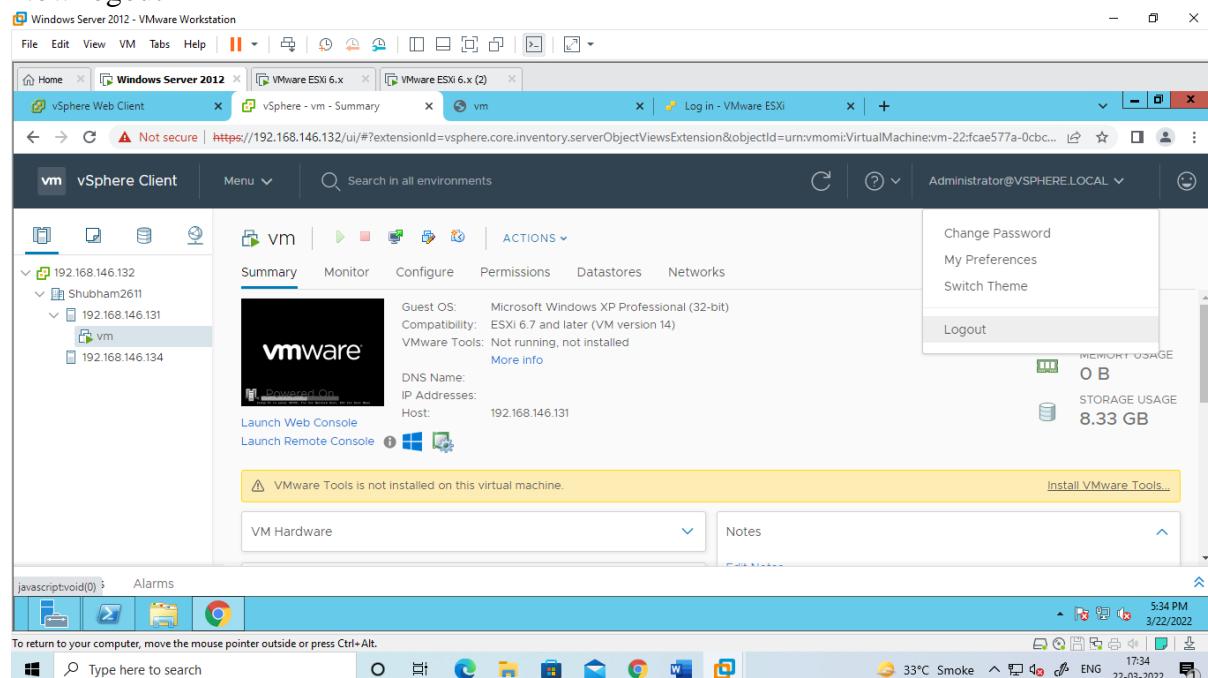
Click ok



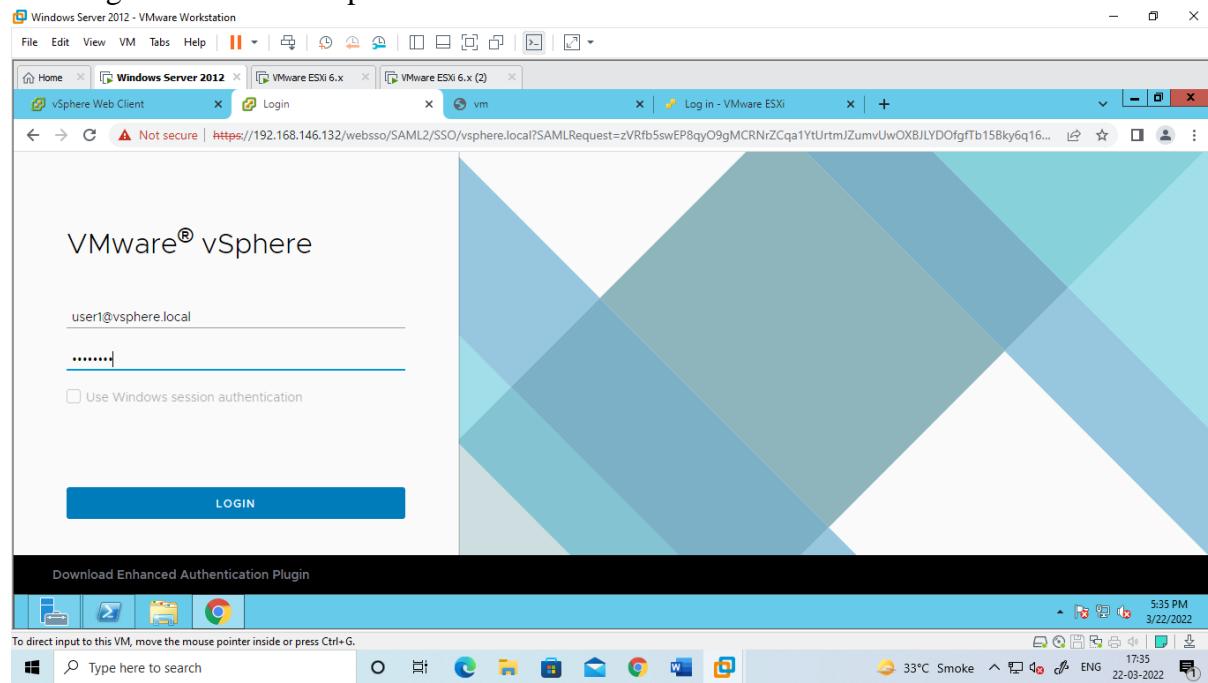
Go to summary



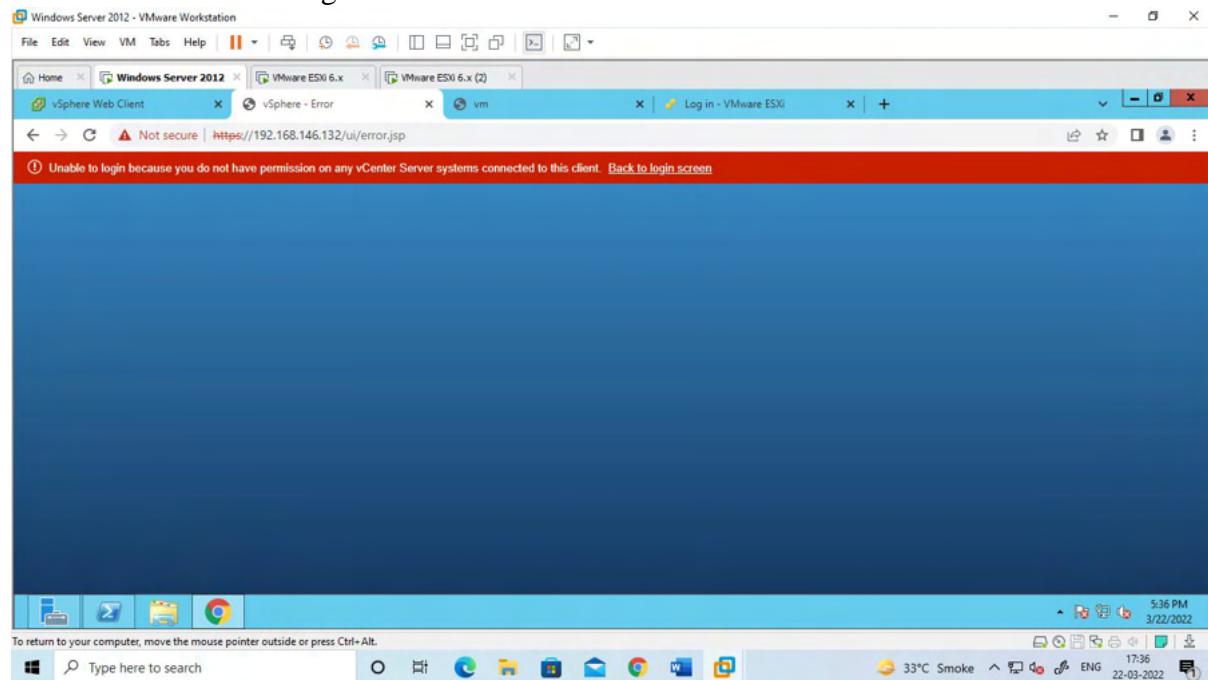
Now logout



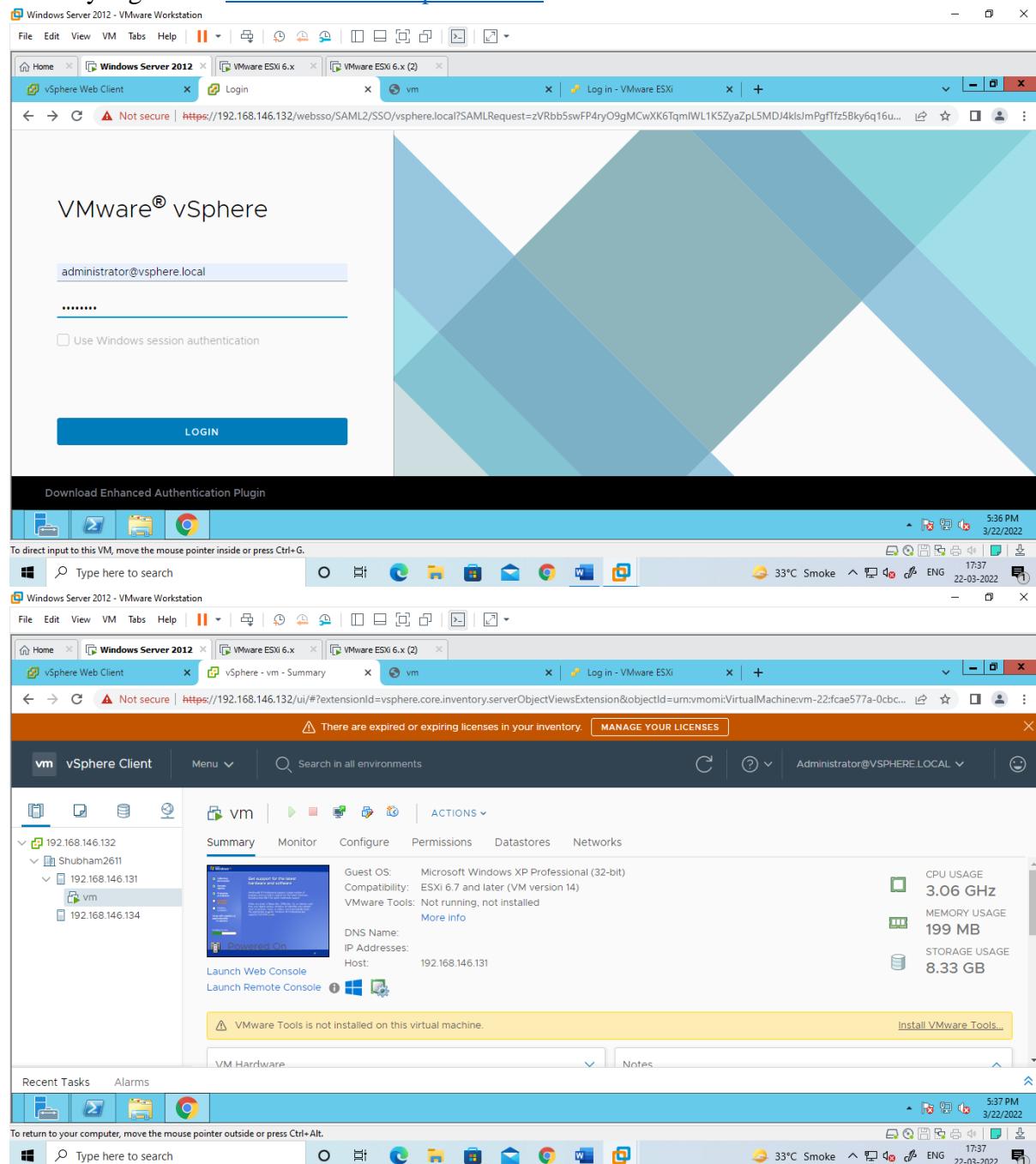
Now login with user1@vsphere.local



You will be unable to login



Now try login with administrator@vsphere.local



Go to global permissions

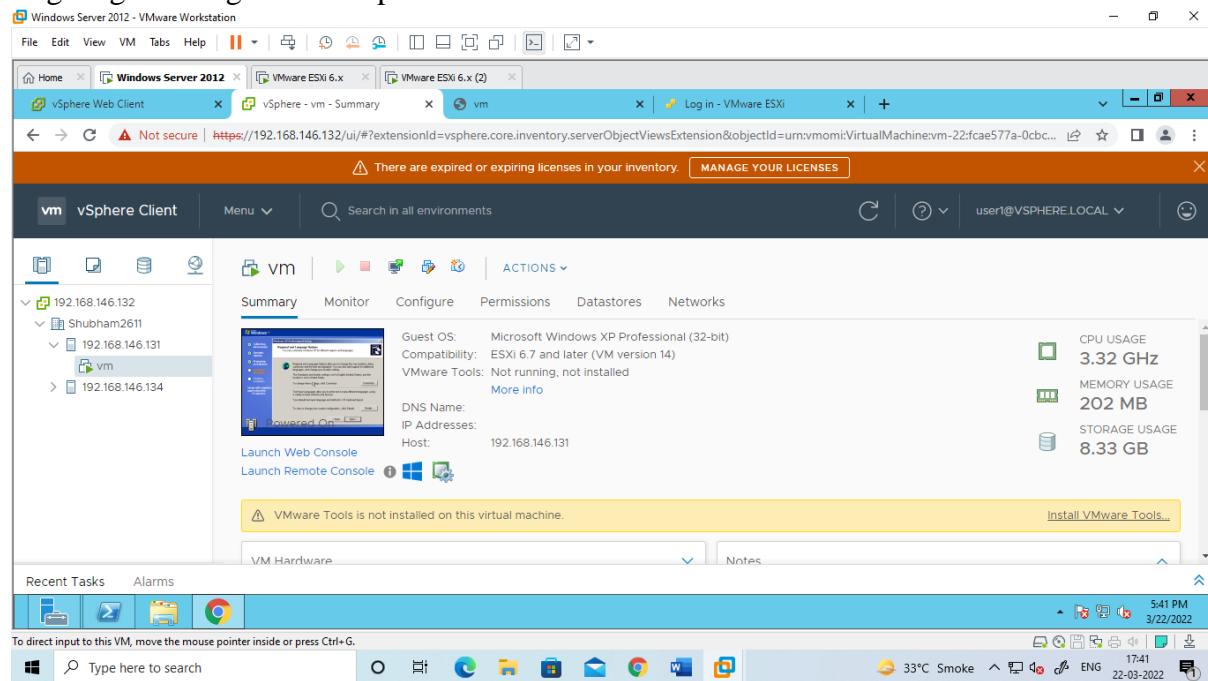
The screenshot shows the vSphere Client interface. The left sidebar has 'Global Permissions' selected under 'Access Control'. The main area displays a table of global permissions for users and groups. One row for 'user1' is highlighted.

User/Group	Role	Defined In
VSPhERE LOCAL\Administrator	Administrator	Global Permission
VSPhERE LOCAL\Administrators	Administrator	Global Permission
VSPhERE LOCAL\AutoUpdate	AutoUpdateUser	Global Permission
VSPhERE LOCAL\user1	Administrator	Global Permission
VSPhERE LOCAL\vpxd-795dfb20-a9c0-1fec-b308-000c29519012	Administrator	Global Permission
VSPhERE.LOCAL\vpxd-extension-795dfb20-a9c0-1fec-b308-000c2...	Administrator	Global Permission
VSPhERE.LOCAL\vsphere-webclient-795dfb20-a9c0-1fec-b308-00...	vSphere Client Solution User	Global Permission

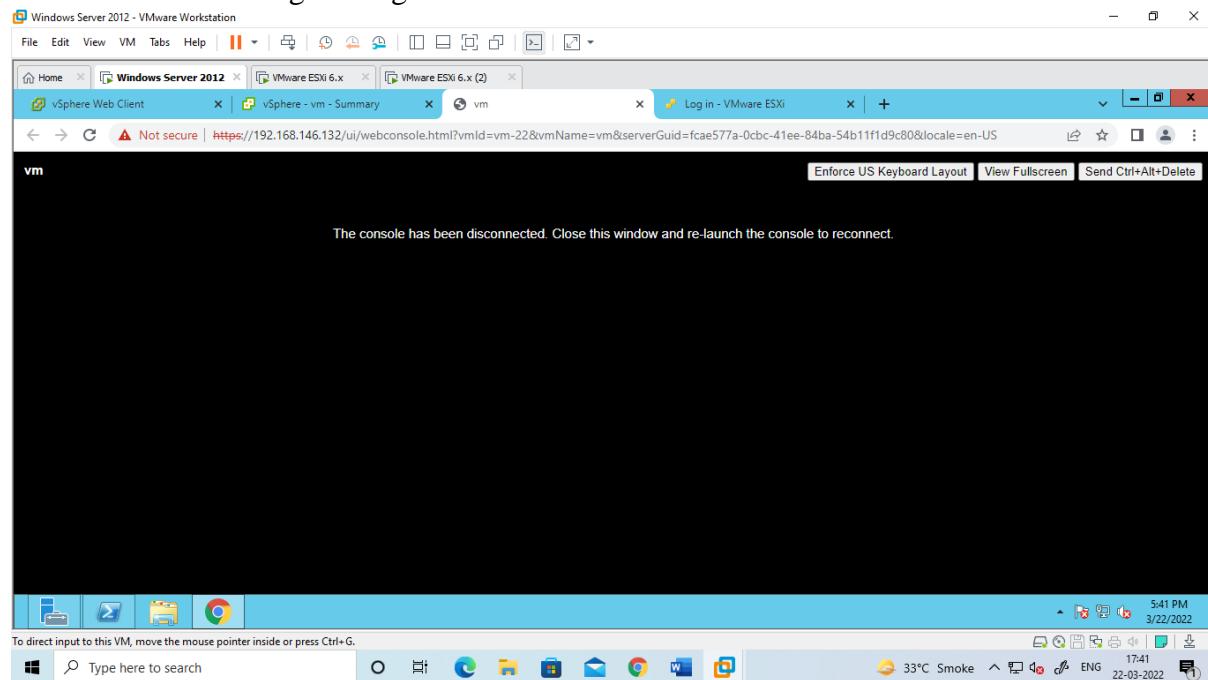
Click on propagate to children and click ok

The screenshot shows the 'Change Role' dialog box. It has fields for 'Domain' (VSPhERE LOCAL), 'User' (user1), and 'Role' (Administrator). The 'Propagate to children' checkbox is checked and highlighted with a blue box. The 'OK' button is visible at the bottom right.

Login again using user1@vsphere.local



You will be able to login using the user1 id



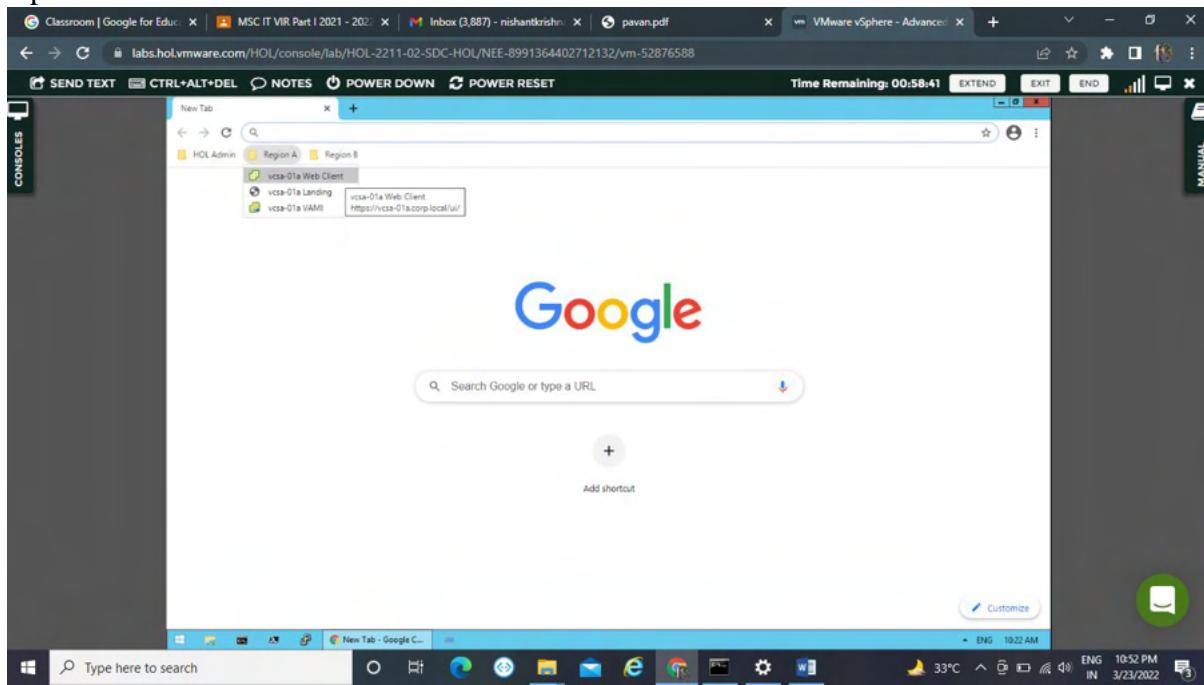
PRACTICAL 5

Upgrade the VMware ESXi server 6.7 to 7.0 using simple installation.

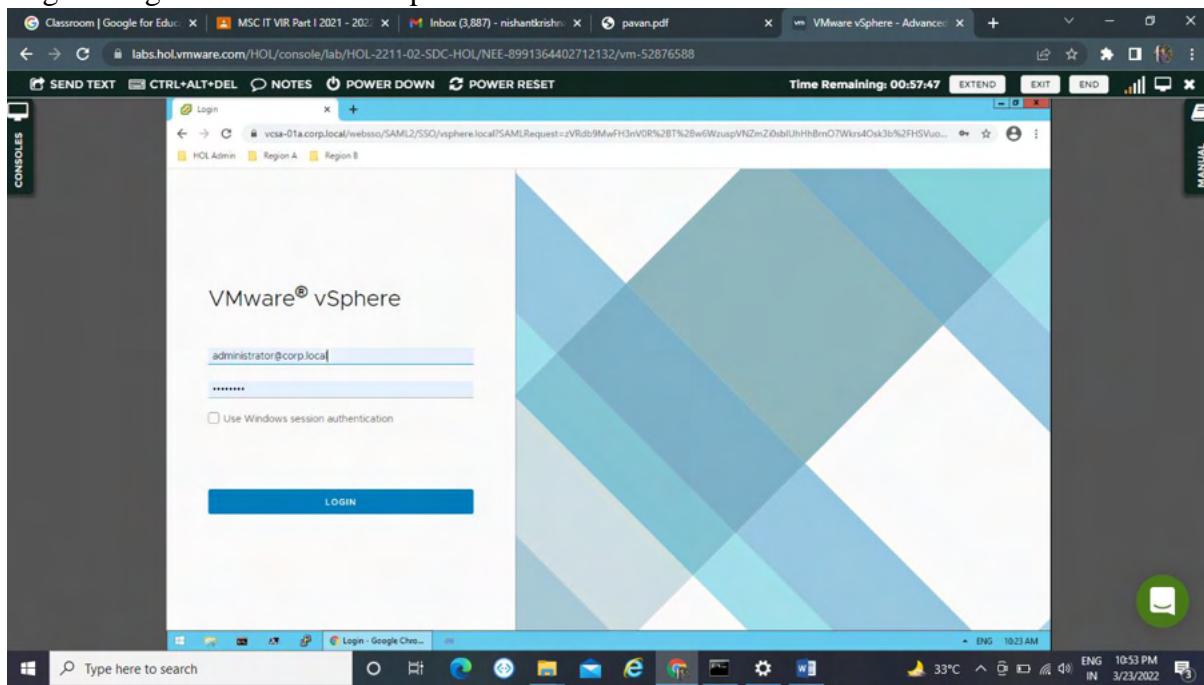
Go to the VMware website labs.hol.vmware.com/HOL/catalogs/enrollments/lab/NEE-8991364402712132

The hands on lab will open

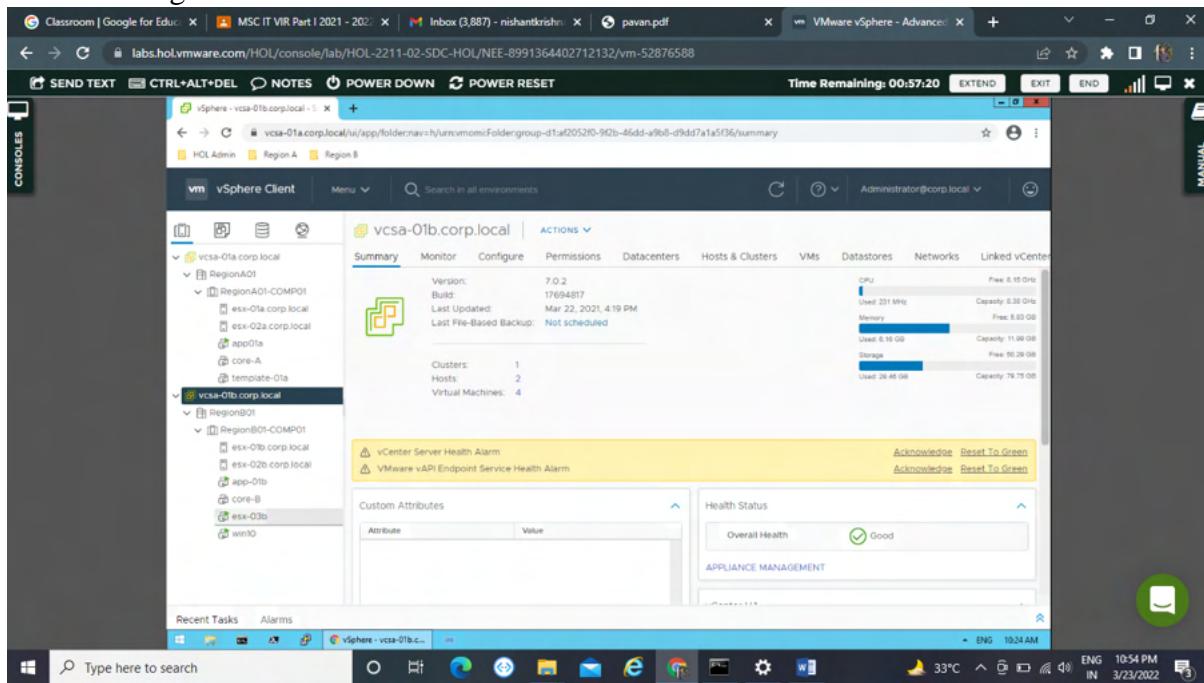
Open the chrome browser and select the vcsa-01a Web Client



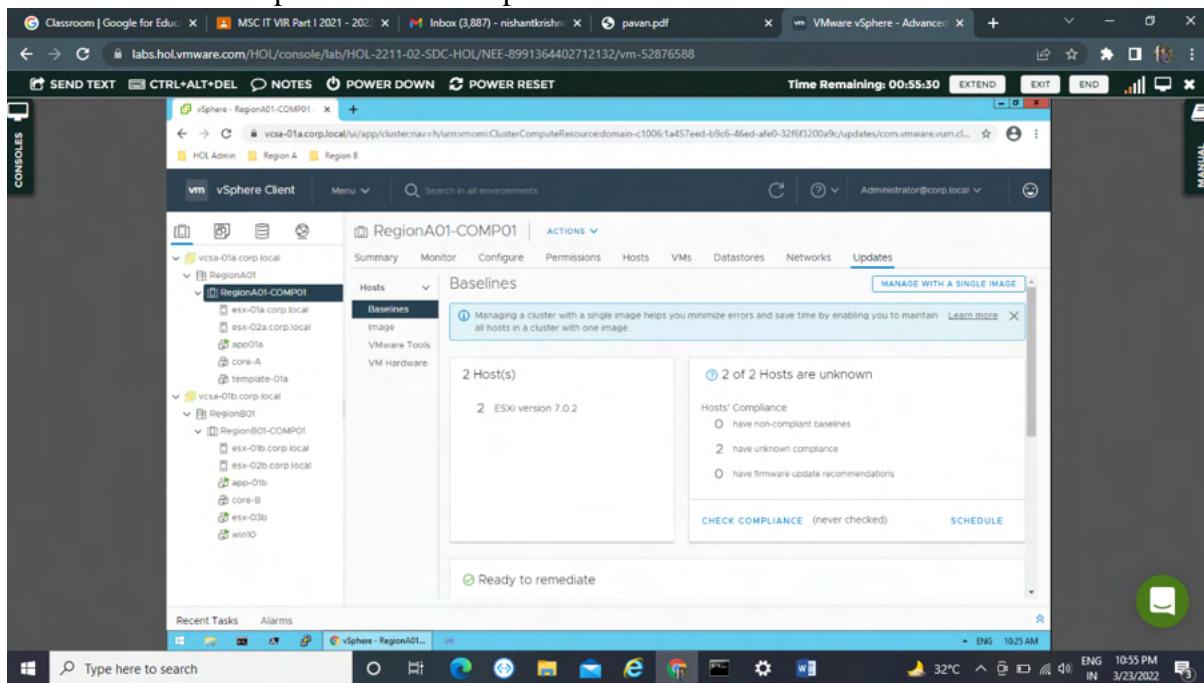
Login using administrator@corp.local



Go to the RegionA01-COMP01



Select the Baseline option inside the Update Tab



Go to Menu and click on the Lifecycle Manager

The screenshot shows the VMware vSphere Client interface. In the left sidebar, under 'Lifecycle Manager', the 'Updates' tab is selected. A callout box highlights this tab with the text: 'Using a single image helps you minimize errors and save time by enabling you to maintain one image with one image.' Below this, it says '2 of 2 Hosts are unknown' and lists 'Hosts' Compliance' status: 'have non-compliant baselines' (radio button selected), 'have unknown compliance' (radio button selected), and 'have firmware update recommendations'. At the bottom right of the interface, there is a green circular icon with a white square inside.

Click on the Update Tab

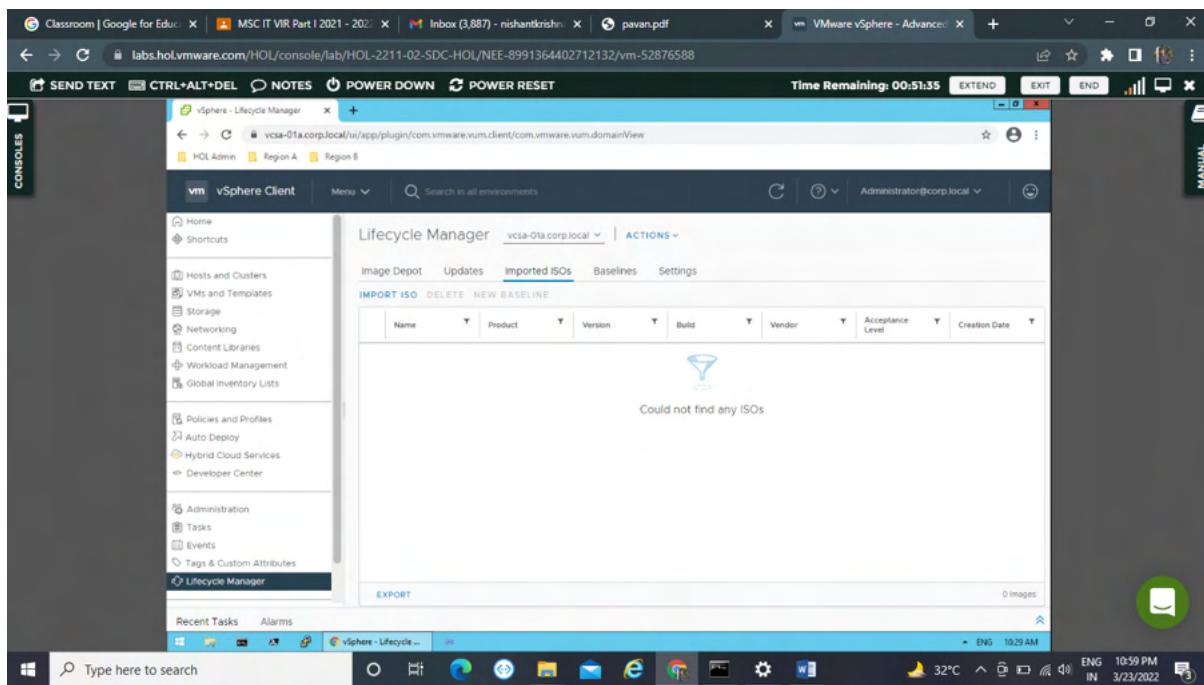
The screenshot shows the VMware vSphere Client interface. In the left sidebar, under 'Lifecycle Manager', the 'Updates' tab is selected. The main pane displays a table titled 'ESXi Versions' with columns: Name, Version, Release Date, and Category. The table lists several ESXi versions, all categorized as 'Enhancement'. The table has three tabs at the top: 'Image Depot', 'Updates' (which is selected), 'Imported ISOs', 'Baselines', and 'Settings'. At the bottom right of the interface, there is a green circular icon with a white square inside.

Filter the Name i.e. esxi 7.0

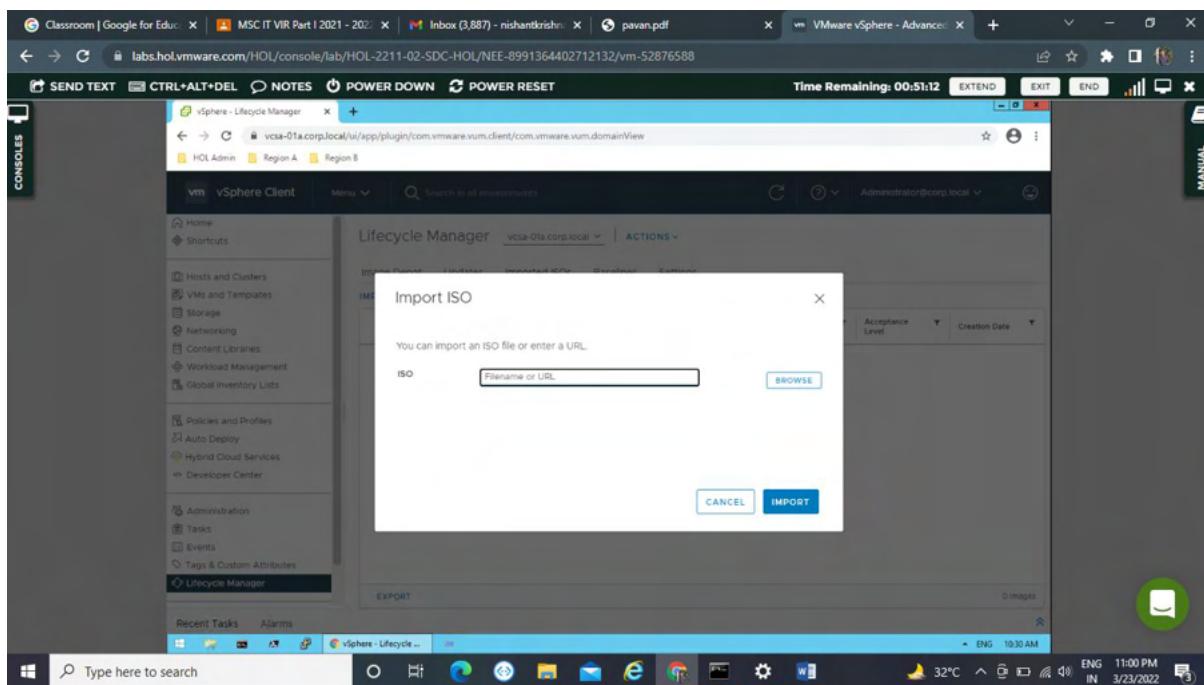
The screenshot shows the vSphere Lifecycle Manager interface. In the search bar at the top, the text 'esxi 7.0' has been typed. Below the search bar, a table lists various software updates. The first update in the list is highlighted with a yellow background, matching the search term.

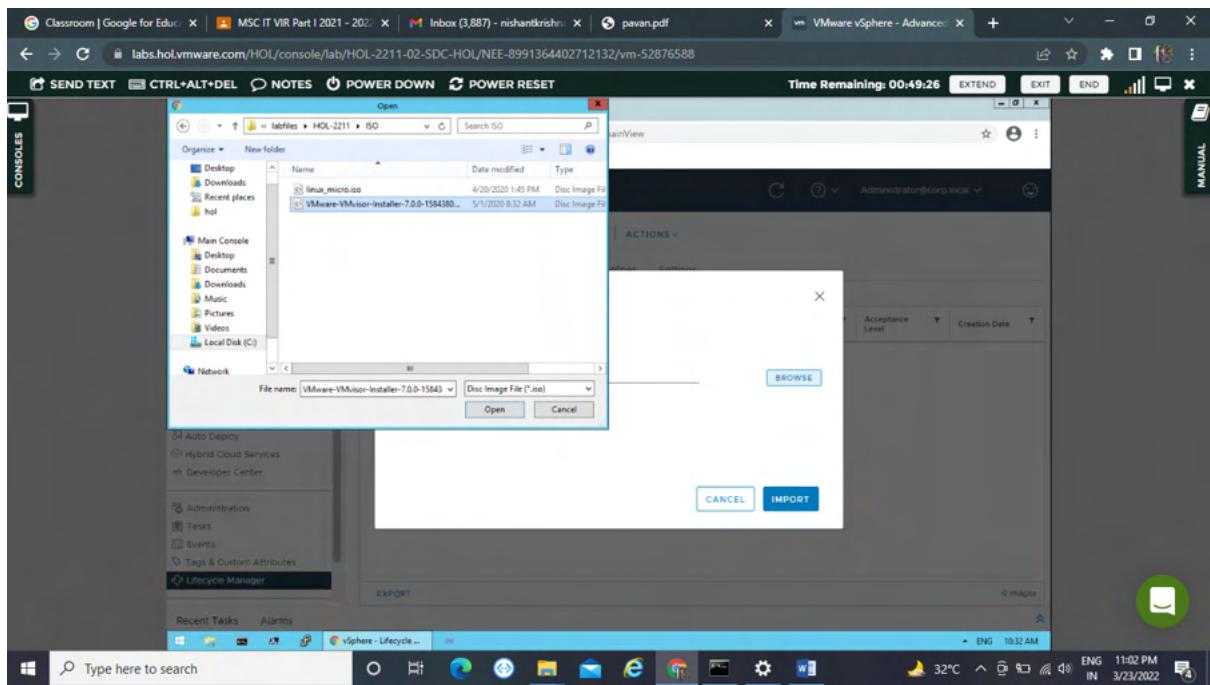
Name	ID	Severity	Type	Category	ESXi Version	Impact	Vendor
VMware ESXi 7.0...	850804	Critical	Rollup	BugFix	7.0	Reboot, Maintenance Mo...	VMware
VMware ESXi 7.0...	719627	Critical	Rollup	Security	7.0	Reboot, Maintenance Mo...	VMware
VMware ESXi 7.0...	ESX70U1c-171682	Critical	Rollup	Security	7.0	Reboot, Maintenance Mo...	VMware
VMware ESXi 7.0...	ESX70U1d-17325551	Critical	Rollup	BugFix	7.0	Reboot, Maintenance Mo...	VMware
VMware ESXi 7.0...	ESX70U1d-175510...	Critical	Rollup	BugFix	7.0	Reboot, Maintenance Mo...	VMware
VMware ESXi 7.0...	ESX70b-16324942	Critical	Rollup	BugFix	7.0	Reboot, Maintenance Mo...	VMware
VMware ESXi 7.0...	ESX70U2a-178673...	Important	Rollup	Enhance...	7.0	Reboot, Maintenance Mo...	VMware

Go to the Imported ISOs Tab and Click on the Import ISO button

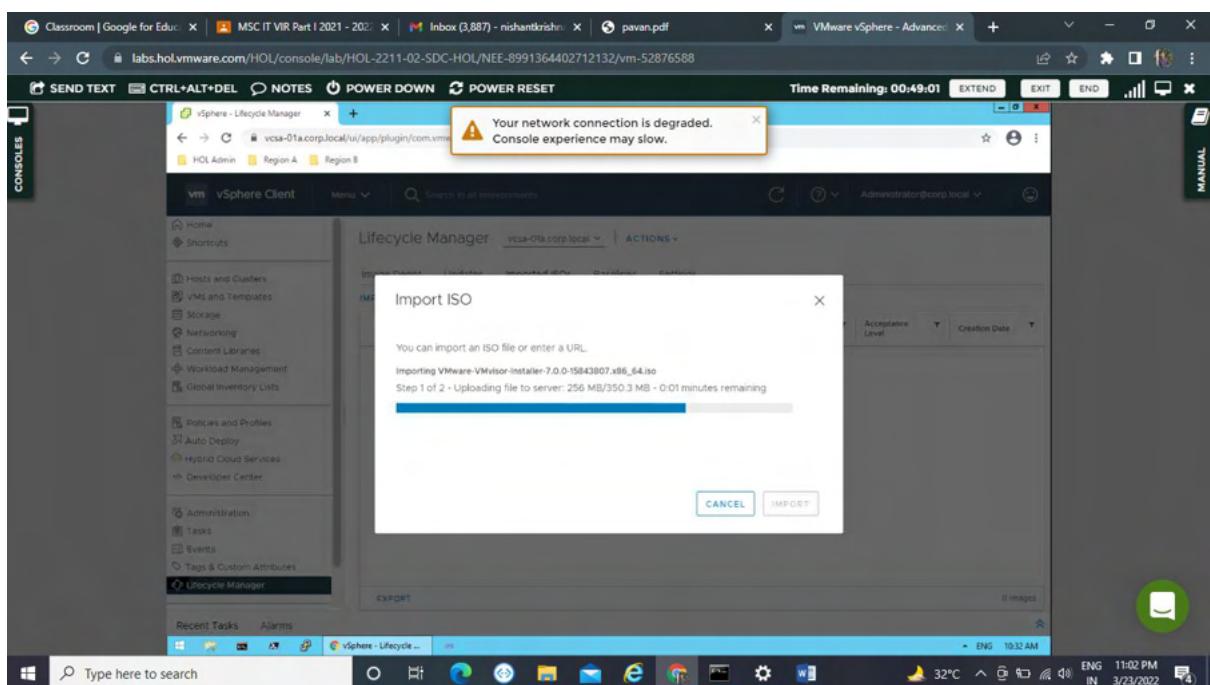


Click on the Browse button and browse the ISO file of VMvisor-installer respected path mention into the image and open it. After select the iso file then click on the Import button





The file will upload within few minutes



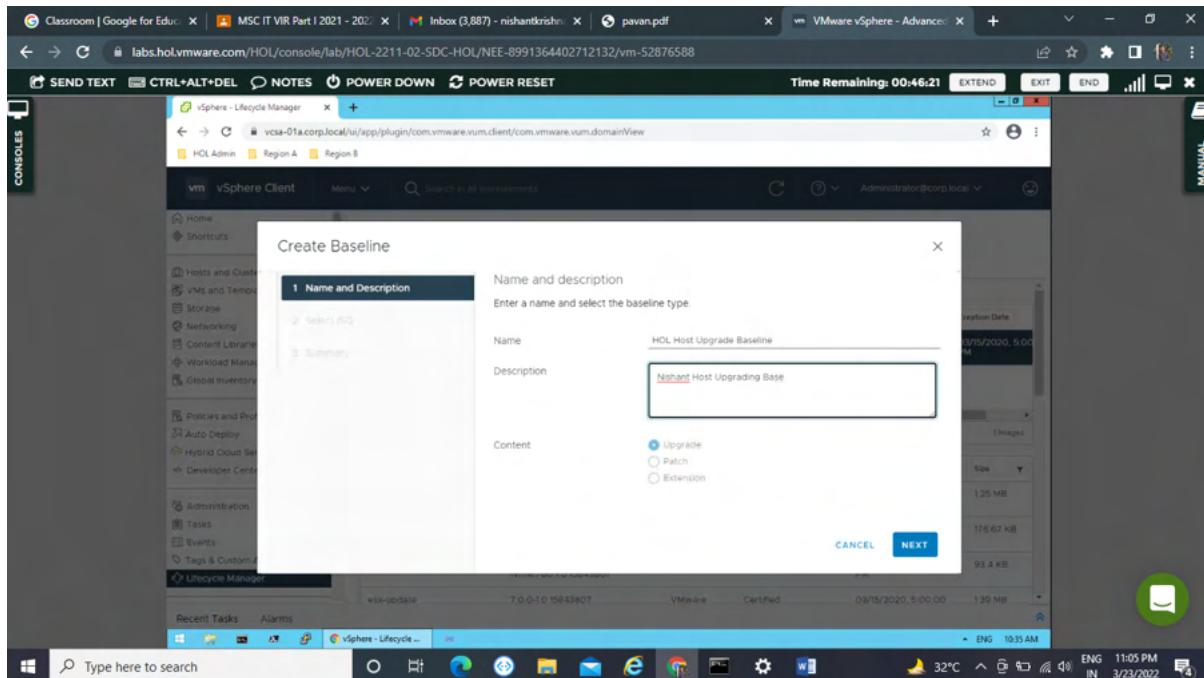
Go to an Imported ISOs Tab then view the uploaded iso file present

Name	Product	Version	Build	Vendor	Acceptance Level	Creation Date
ESXi-7.0-0-15843807-standard	VMware ESXi	7.0.0	15843807	VMware, Inc.	Partner	03/15/2020, 5:00:00 PM

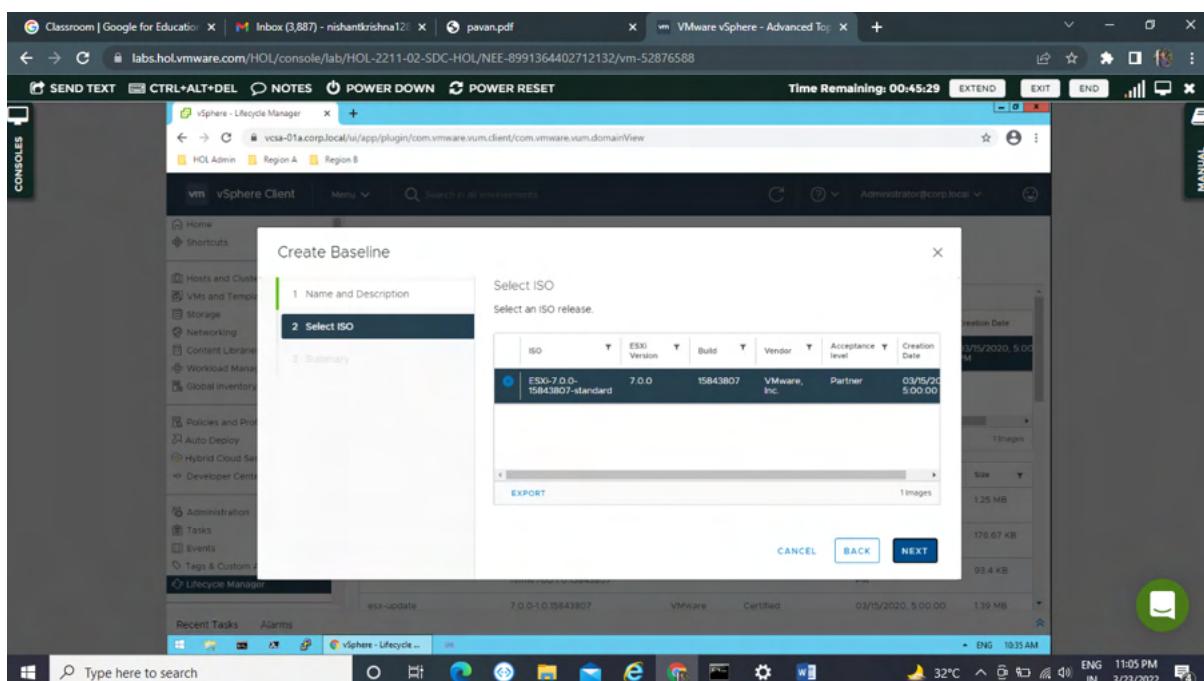
Select on the particular iso file mention on the image and Click on the New Baseline

Name	Version	Vendor	Acceptance Level	Creation Date	Size
cpu-microcode	7.0.0-1.15843807	VMware	Certified	03/15/2020, 5:00:00 PM	1.25 MB
elnet	12.0.1250.0-5vmw.700.1.0.15843807	VMW	Certified	03/15/2020, 5:00:00 PM	176.67 KB
islmr3	7.712.50.0-7vmw.700.1.0.15843807	VMW	Certified	03/15/2020, 5:00:00 PM	93.4 KB
esxi-update	7.0.0-1.15843807	VMware	Certified	03/15/2020, 5:00:00 PM	1.39 MB
ESXi-7.0-0-15843807-standard	7.0.0	VMware	Partner	03/15/2020, 5:00:00 PM	

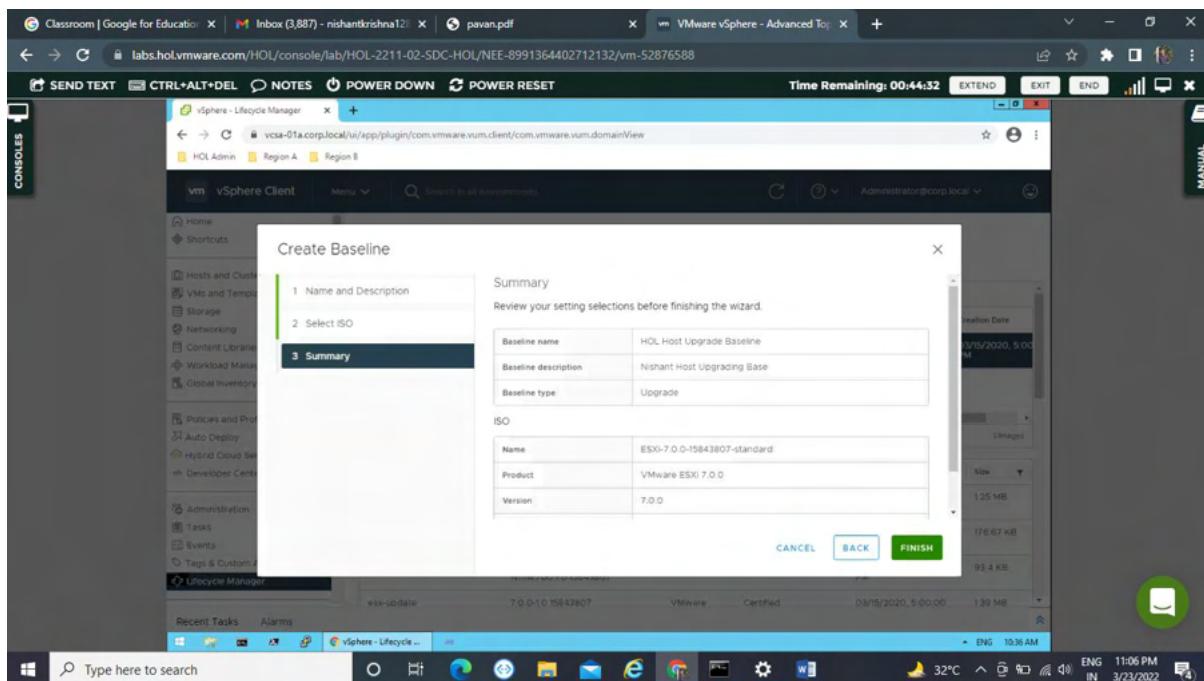
Enter the required field to fill it then click on the Next button



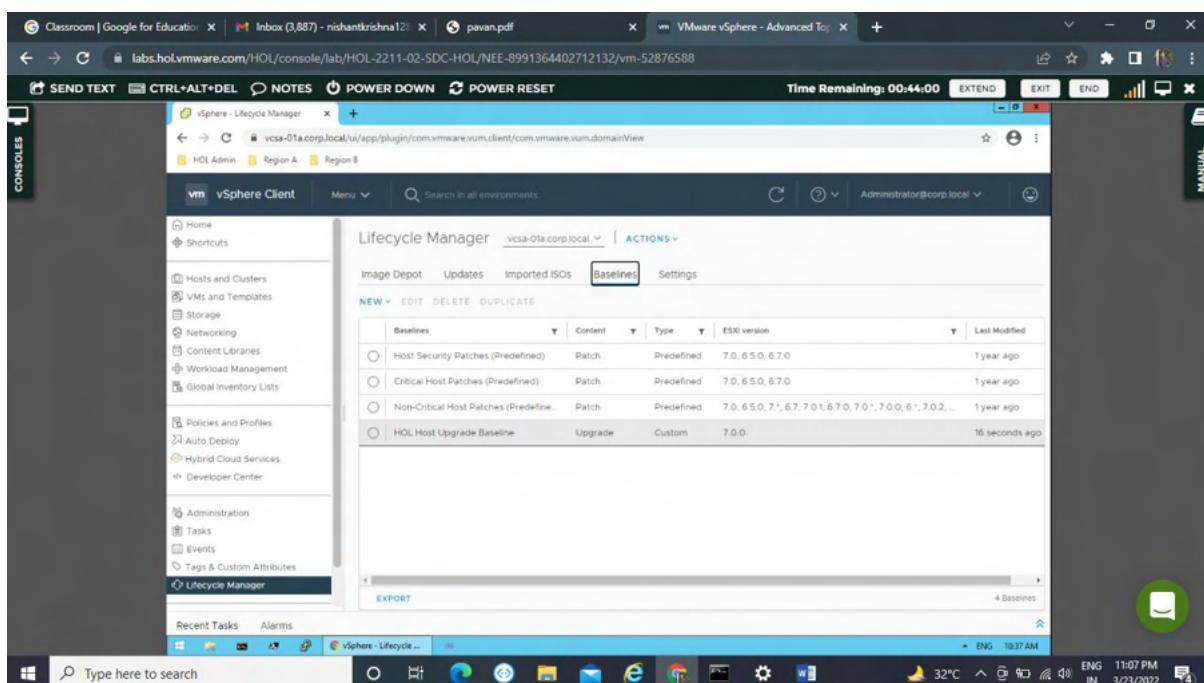
Select ISO file and click on the Next button

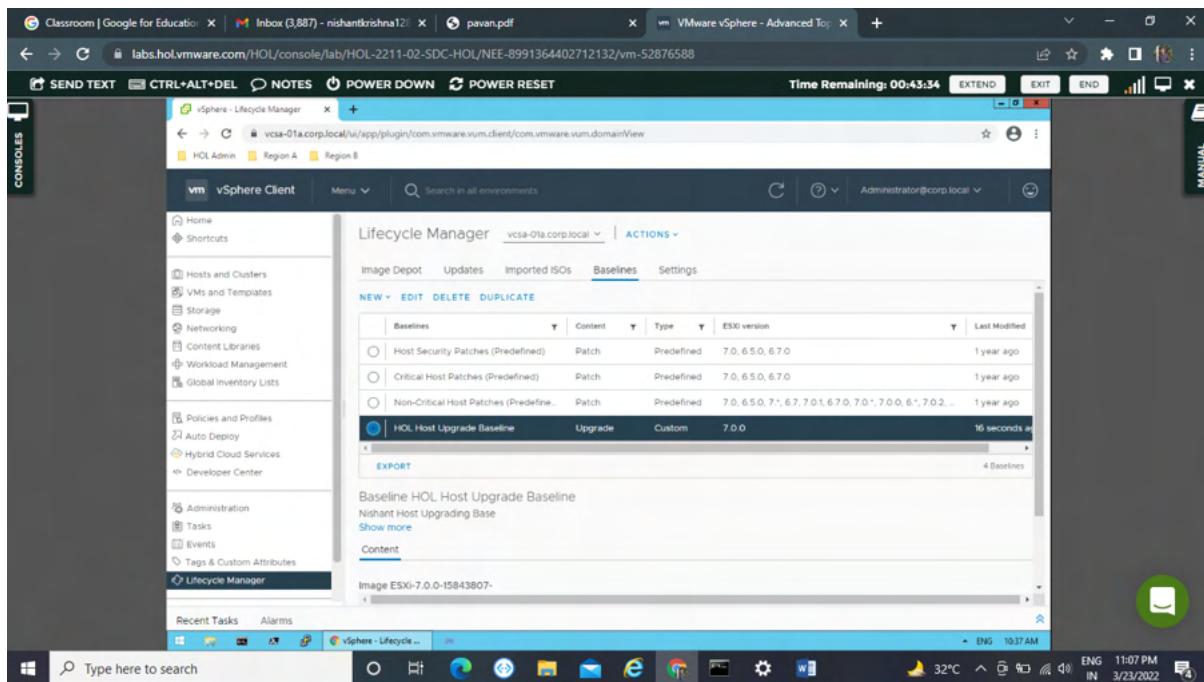


View the summary of Create baseline and Click on Finish button

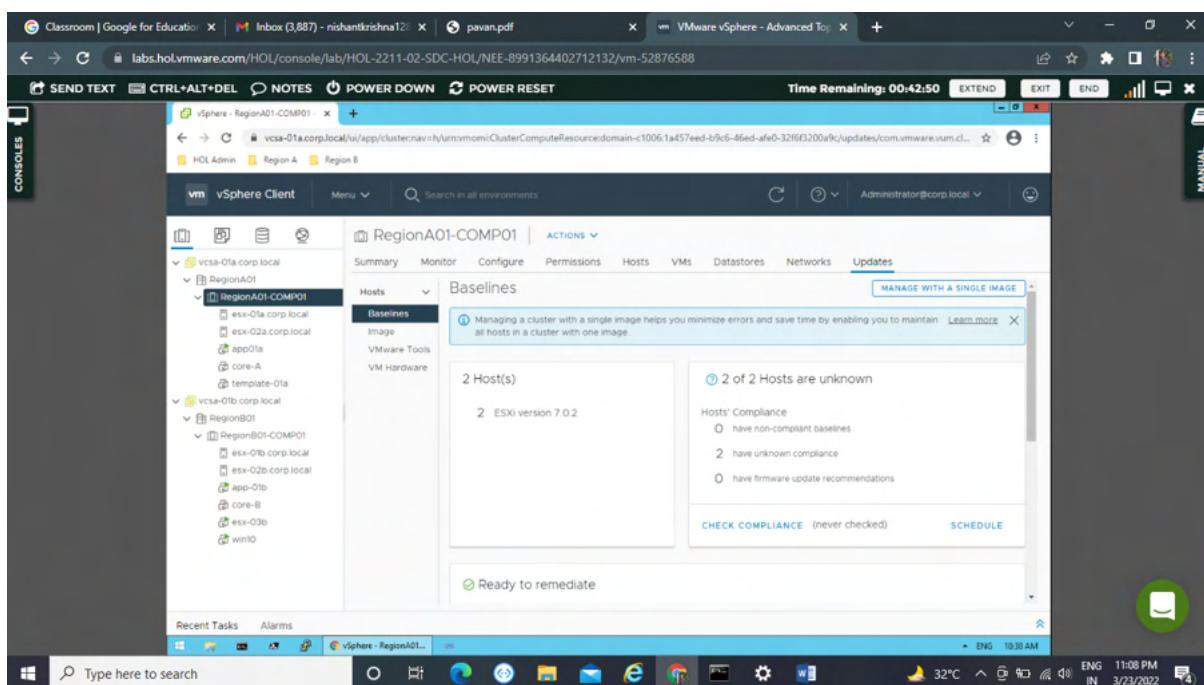


Click on the Baselines tab and select the recently created Baseline option

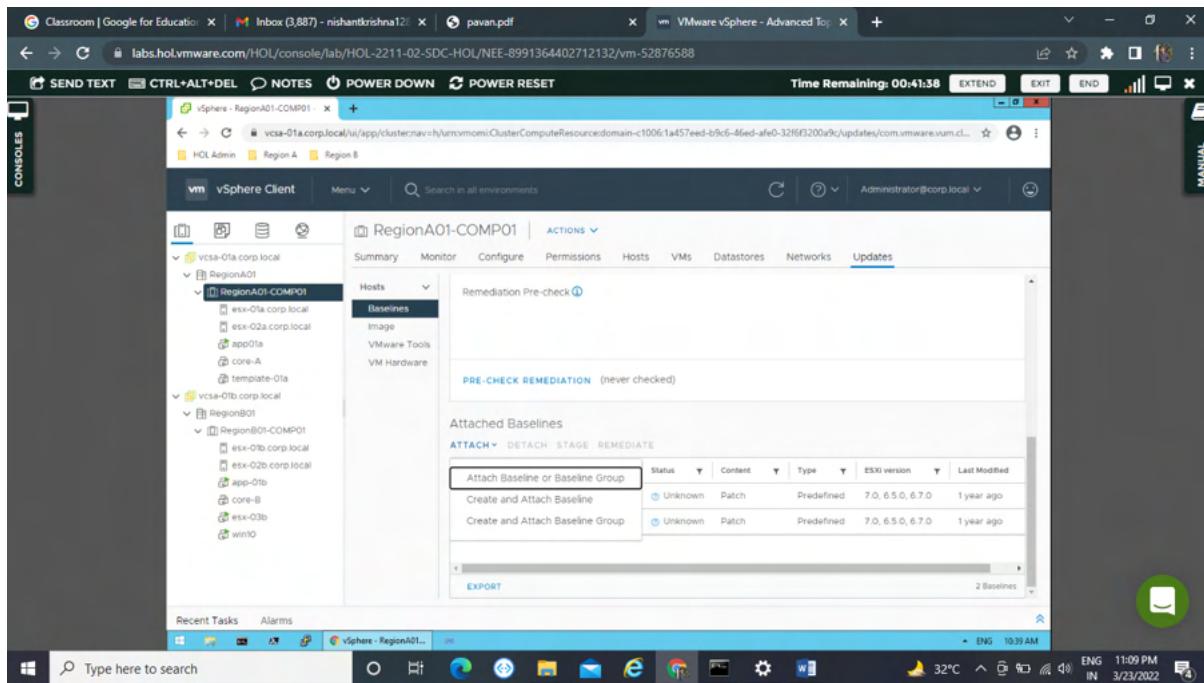




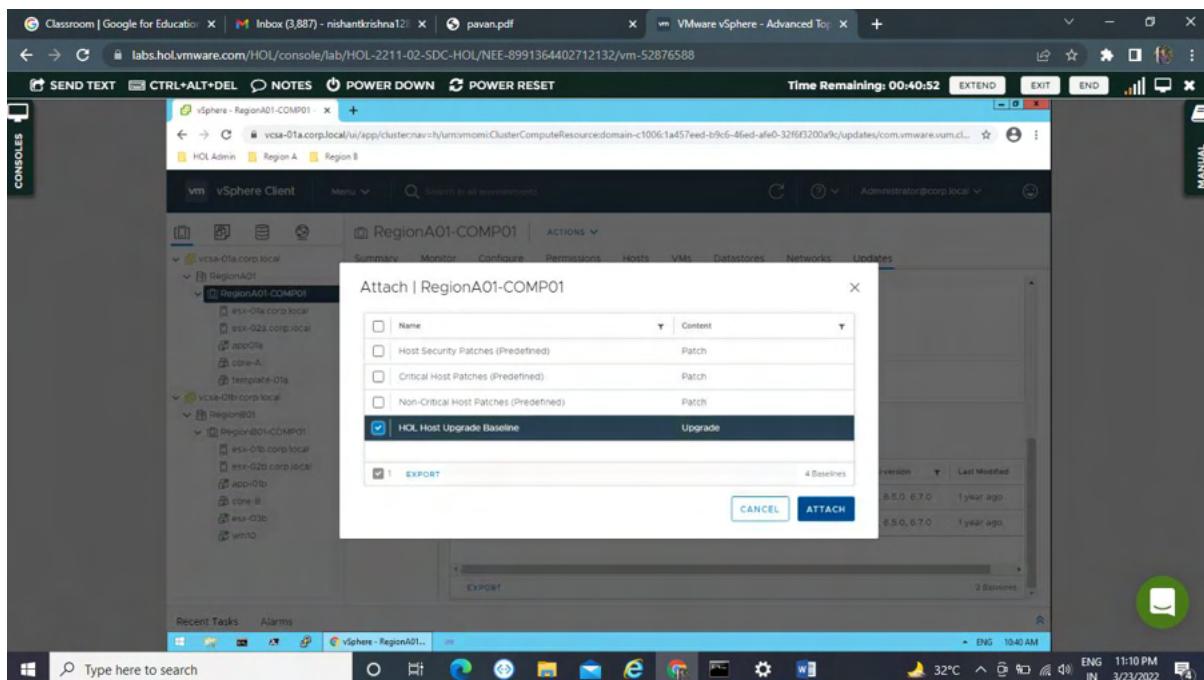
Go to the RegionA01-COMP01 and Tab on the Update tab and Click on the Baselines



Scroll down the page. Select the Attach Baselines or Baselines Group on click an Attach button i.e. inside the Attached Baselines



Check the Created Baseline inside the Attach | RegionA01-COMPO1 and Click on Attach button



View the Attach Baseline inside the Attached Baseline section

Attached Baselines	Status	Content	Type	ESXi version	Last Modified
Host Security Patches (Predefined)	Unknown	Patch	Predefined	7.0, 6.5.0, 6.7.0	1 year ago
Critical Host Patches (Predefined)	Unknown	Patch	Predefined	7.0, 6.5.0, 6.7.0	1 year ago
HOL Host Upgrade Baseline	Unknown	Upgrade	Custom	7.0.0	3 minutes ago

Scroll up Click on the Check Compliance inside the Baseline section

Hosts	Compliance
2 Host(s)	2 of 2 Hosts are unknown
	Hosts' Compliance
	<input type="radio"/> have non-compliant baselines
	<input checked="" type="radio"/> have unknown compliance
	<input type="radio"/> have firmware update recommendations

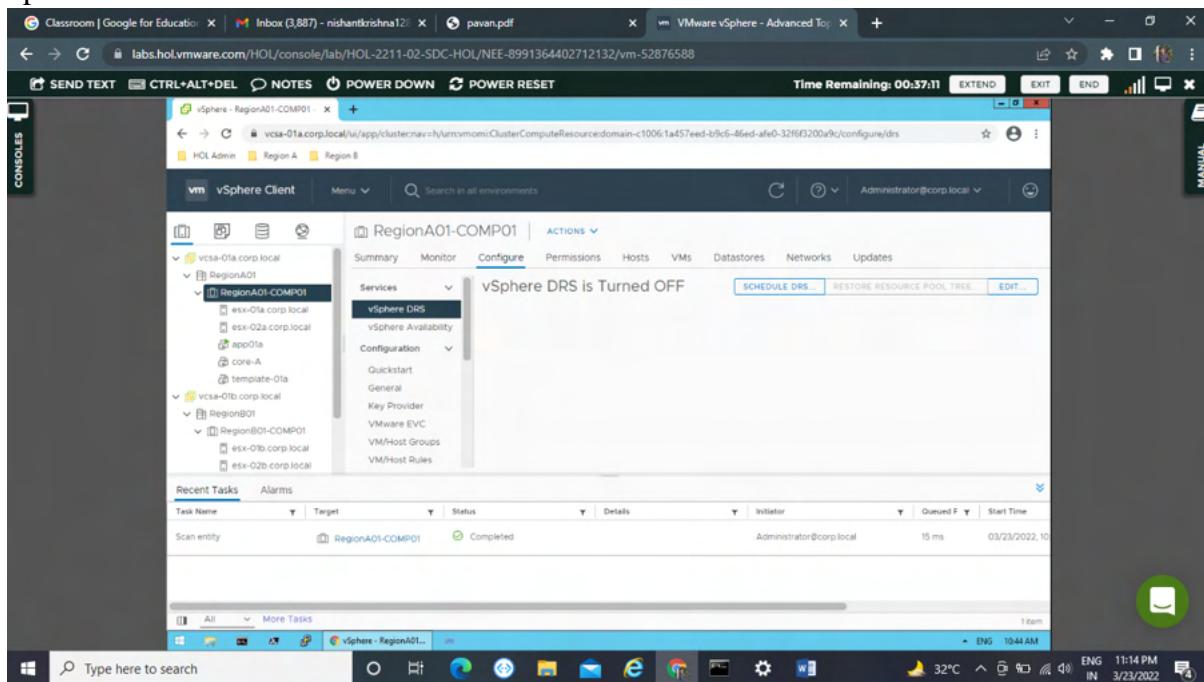
In Recent Task show the progress of recent activity

The screenshot shows the VMware vSphere Client interface. The left sidebar displays a tree view of vCenter locations: vcse-01a.corp.local, RegionA01, RegionB01, and vcse-01b.corp.local. The main pane is titled 'RegionA01-COMP01' and shows the 'Updates' tab selected. It displays a summary for '2 Host(s)' running 'ESXi version 7.0.2'. A message indicates '2 of 2 Hosts are compliant'. Below this, there's a list of recent tasks:

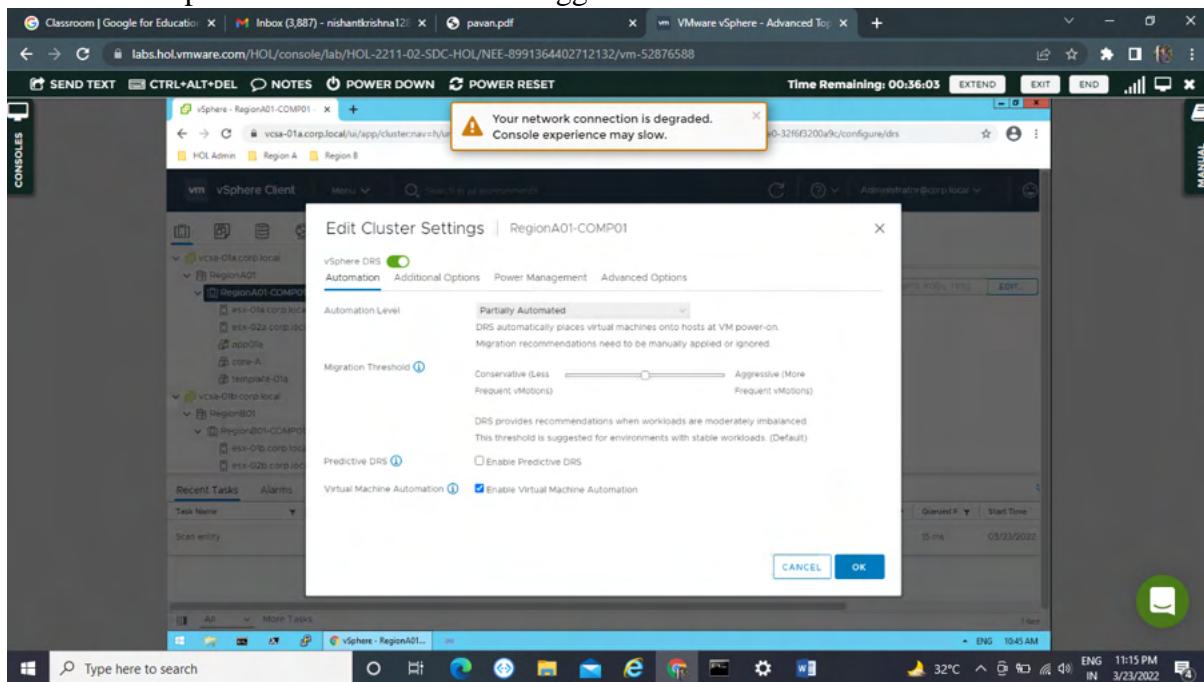
Task Name	Target	Status	Initiator	Queued P	Start Time
Scan entity	RegionA01-COMP01	Completed	Administrator@corp.local	15 ms	03/23/2022, 10:43 AM
Import ESXi image	vcse-01a.corp.local	Completed	Administrator@corp.local	99 ms	03/23/2022, 10:43 AM

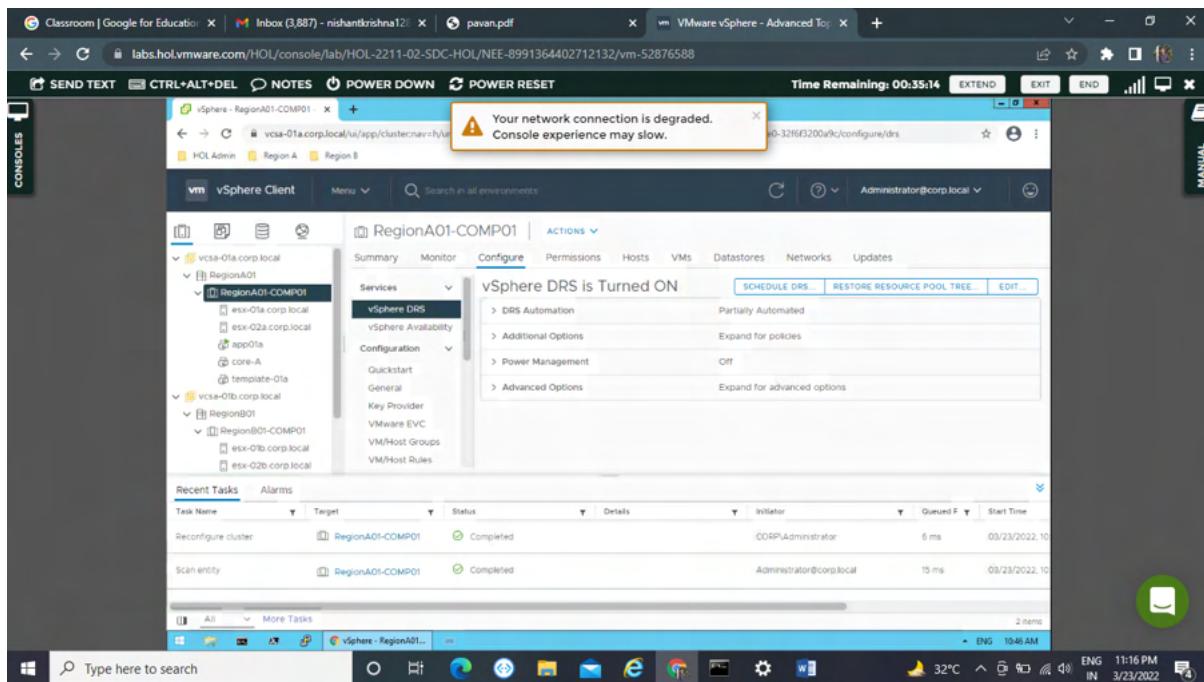
This screenshot is similar to the previous one, but the 'Actions' menu is open over the 'Recent Tasks' section. The menu options include: Add Hosts..., New Virtual Machine..., New Resource Pool..., New Namespace, Deploy OVF Template..., New vApp..., Import VMs, Storage, Host Profiles, Edit Default VM Compatibility..., Licensing, and Settings.

Right click on the RegionA01-COMP01 and click on the Settings
 Go to the Configure Tab and Click on the vSphere DRS option. Inside the vSphere DRS option have Edit button click on the button

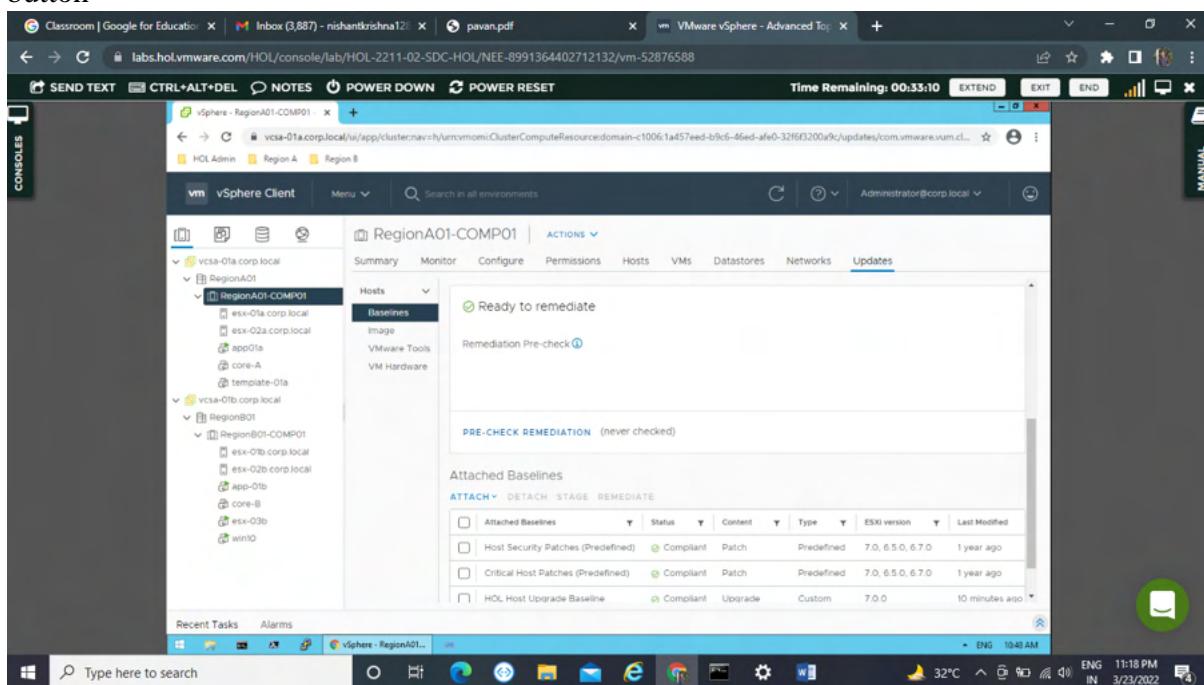


Enable the vSphere DRS on click on the toggle and Click OK

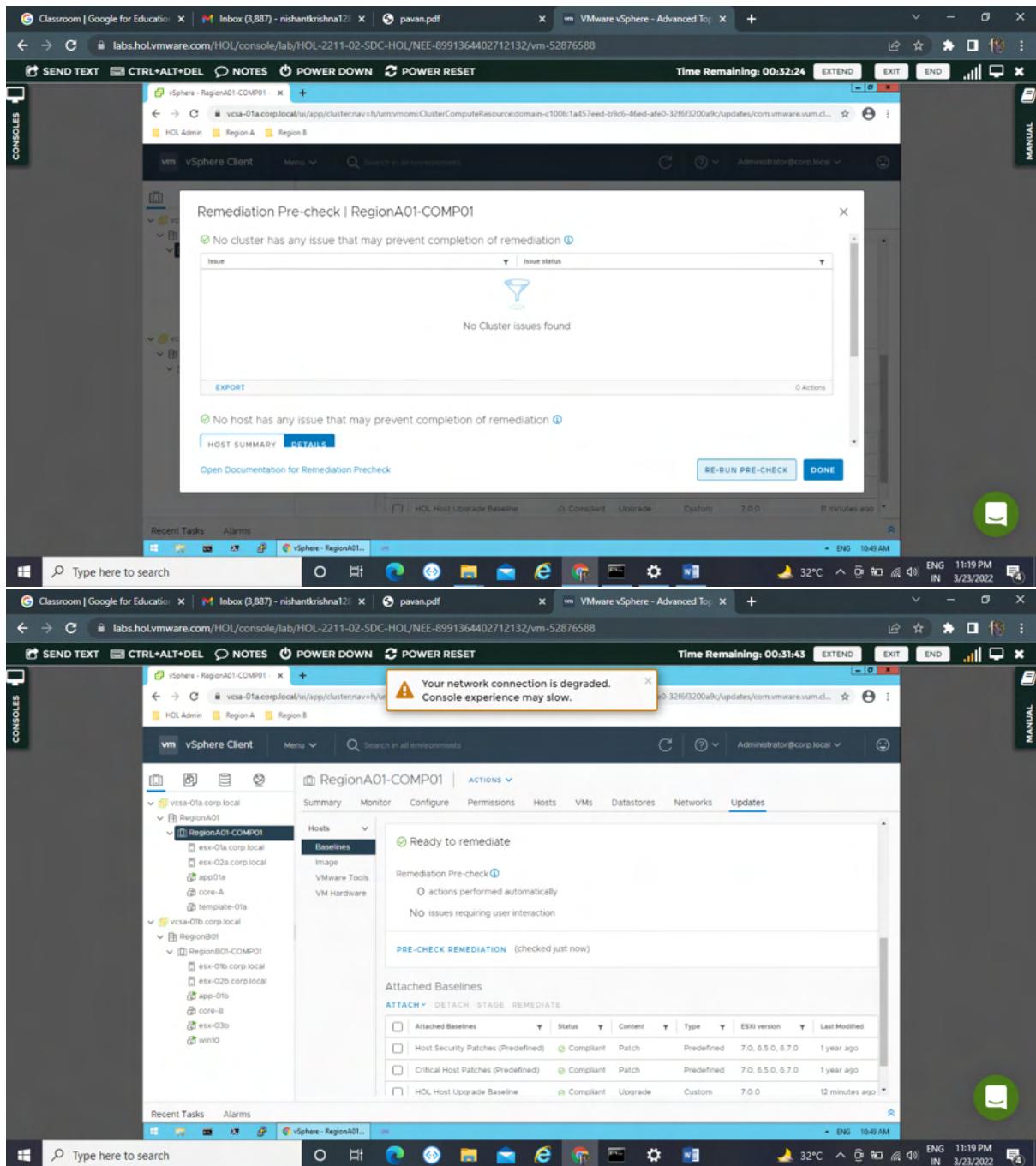




Now again go to the RegionA01-COMP01. Tab on the Update Tab and Click on the Baselines option. Inside the Ready to remediate section click on the Pre-Check Remediation button



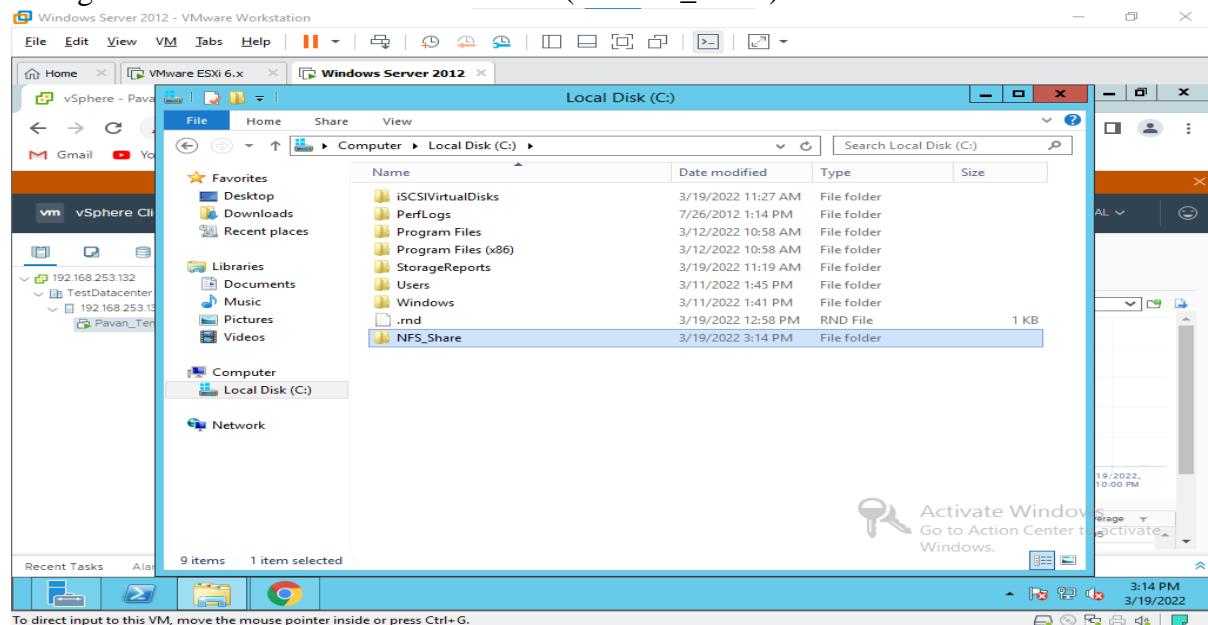
First click on the Re-Run Pre-Check button and after that click on the Done button



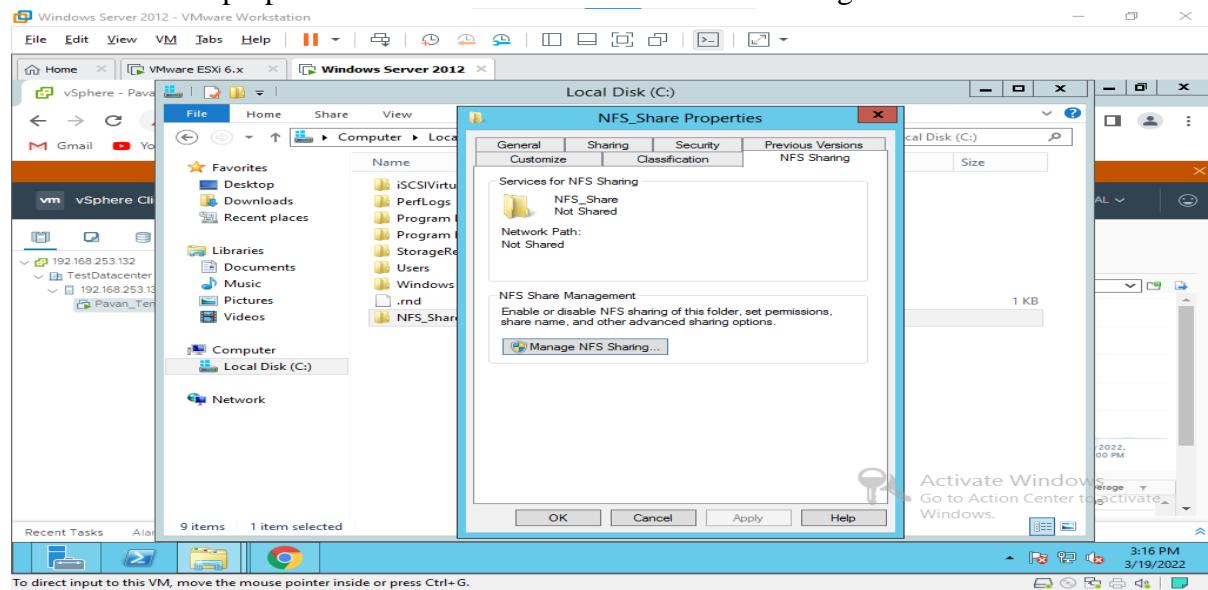
PRACTICAL 6

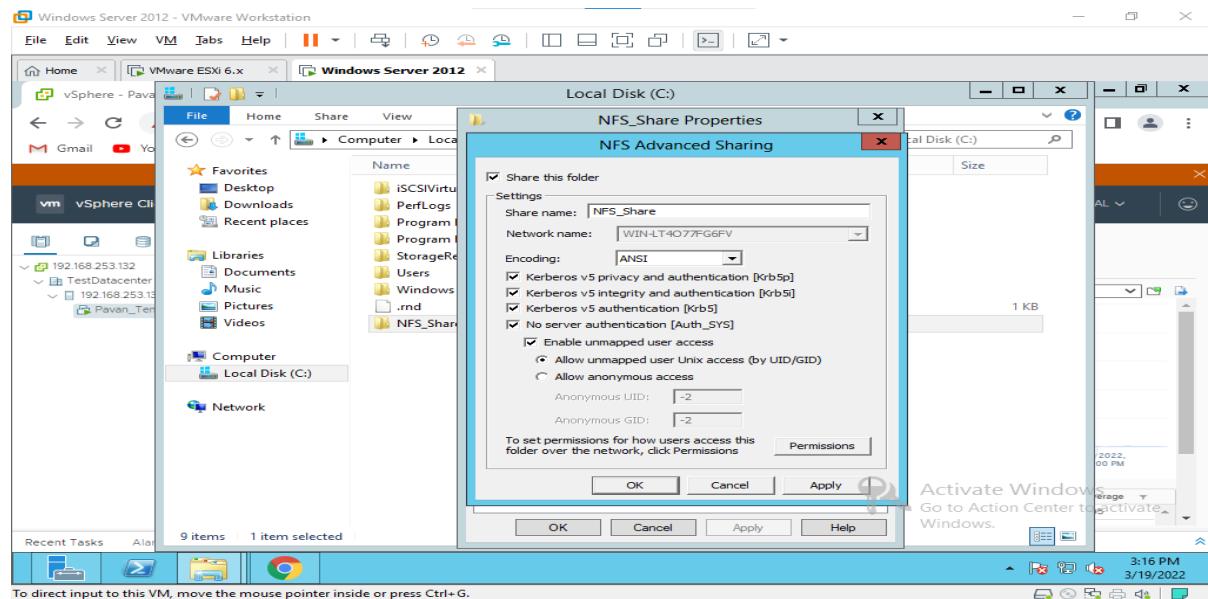
Implement the NFS with the vCenter Server.

First go to the Disk C then Create a Folder (i.e. NFS_Share)

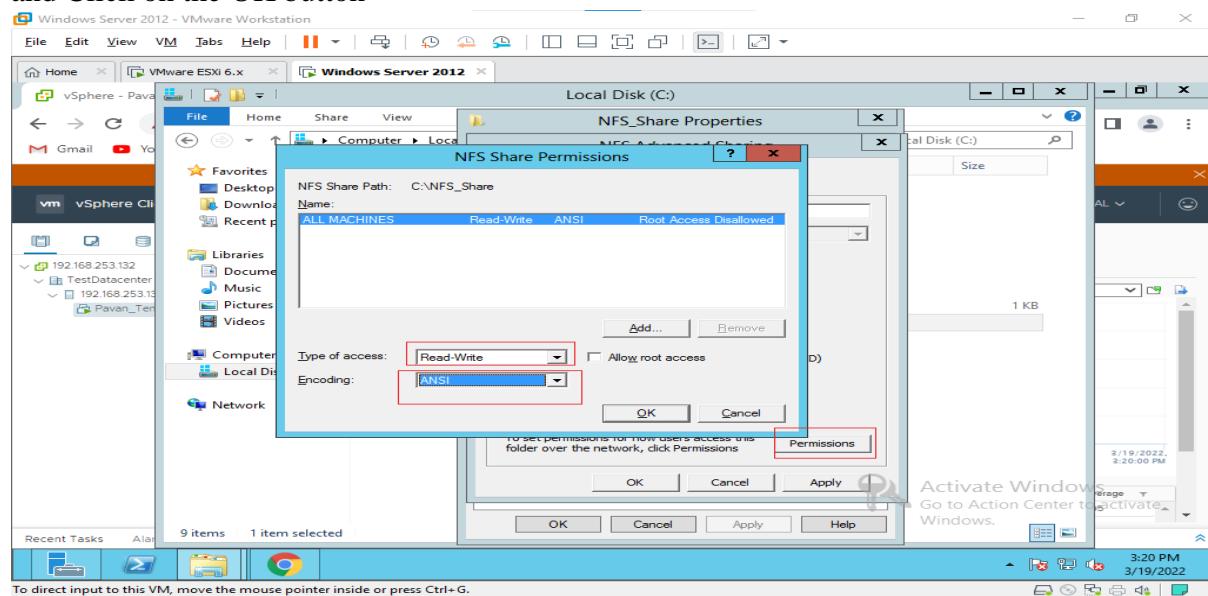


Go to the folder properties and after that click on the NFS sharing tab

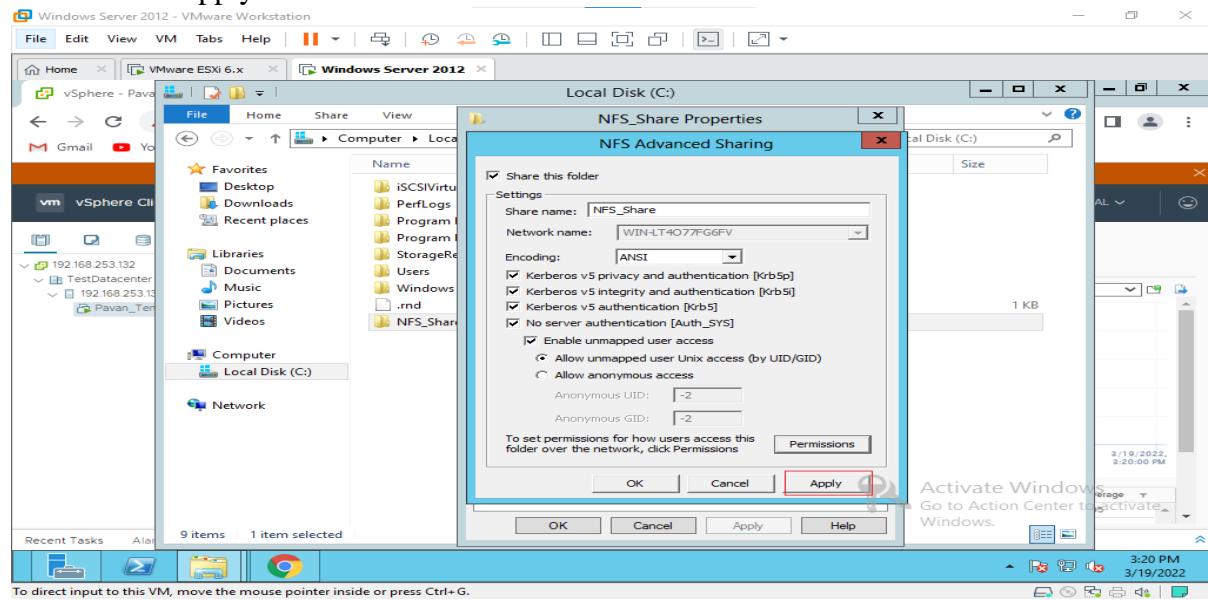




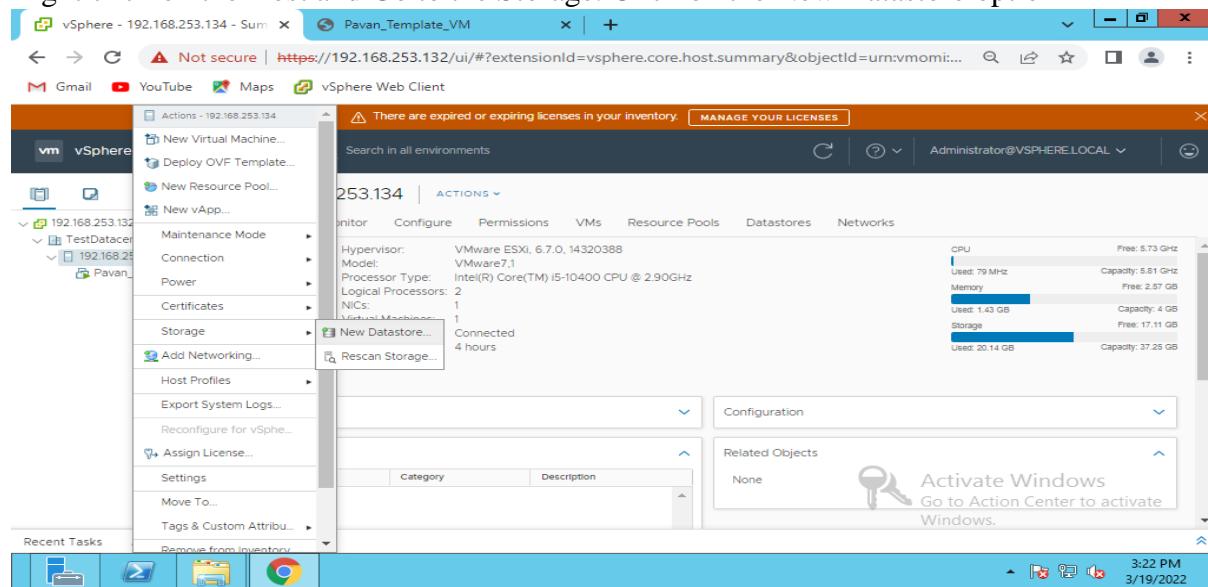
And select the Read-Write option into the Type of access and ANSI option into the Encoding and Click on the OK button



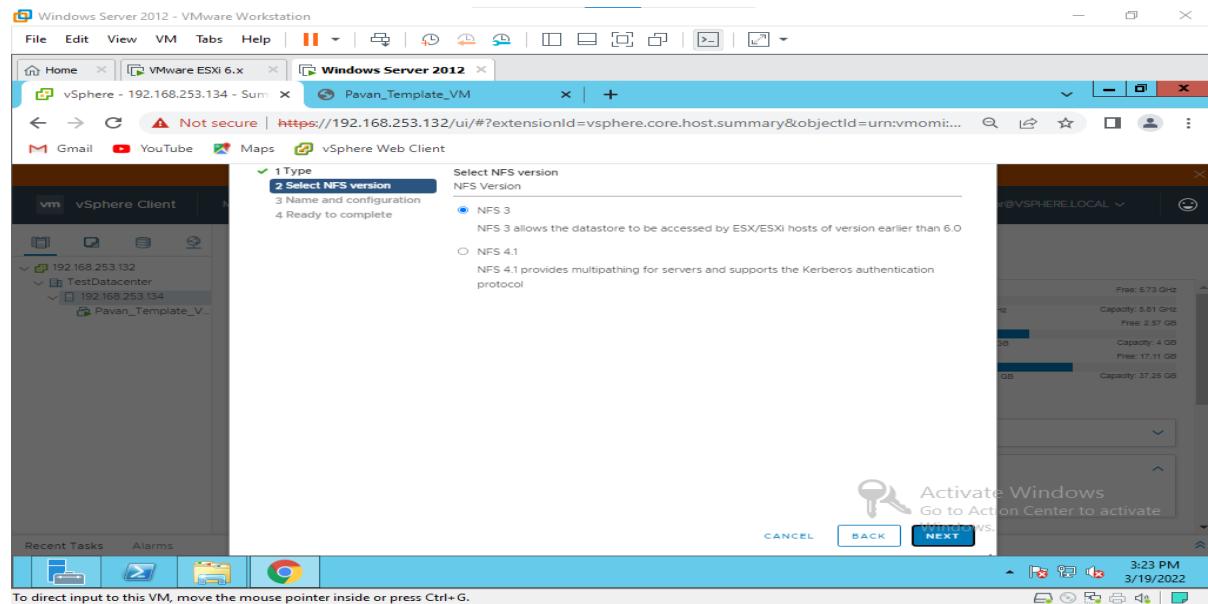
Click on the Apply button



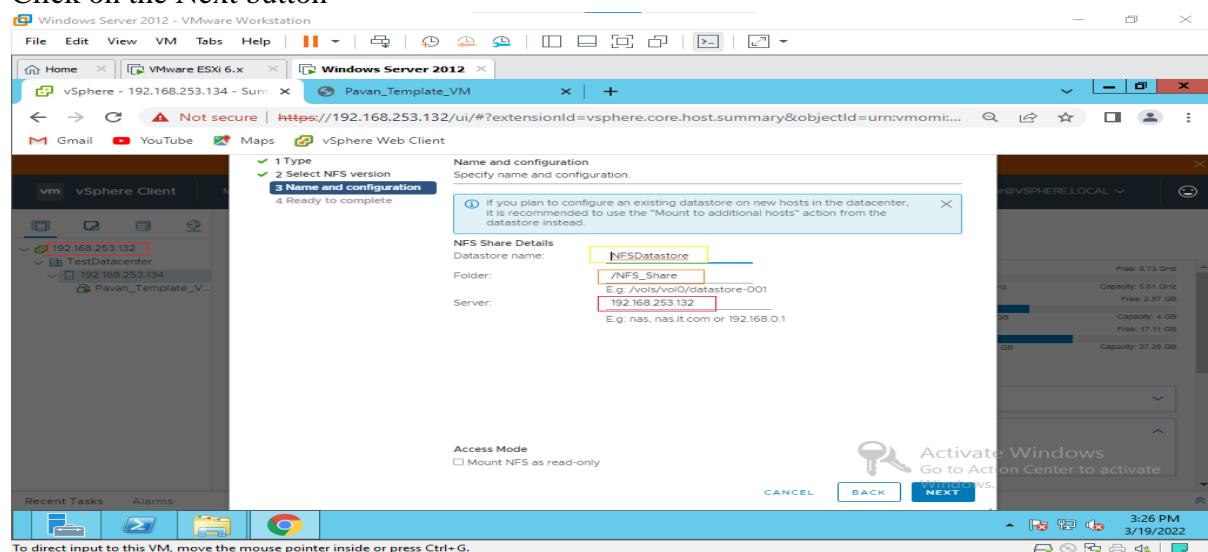
Right click on the Host and Go to the Storage. Click on the New Datastore option



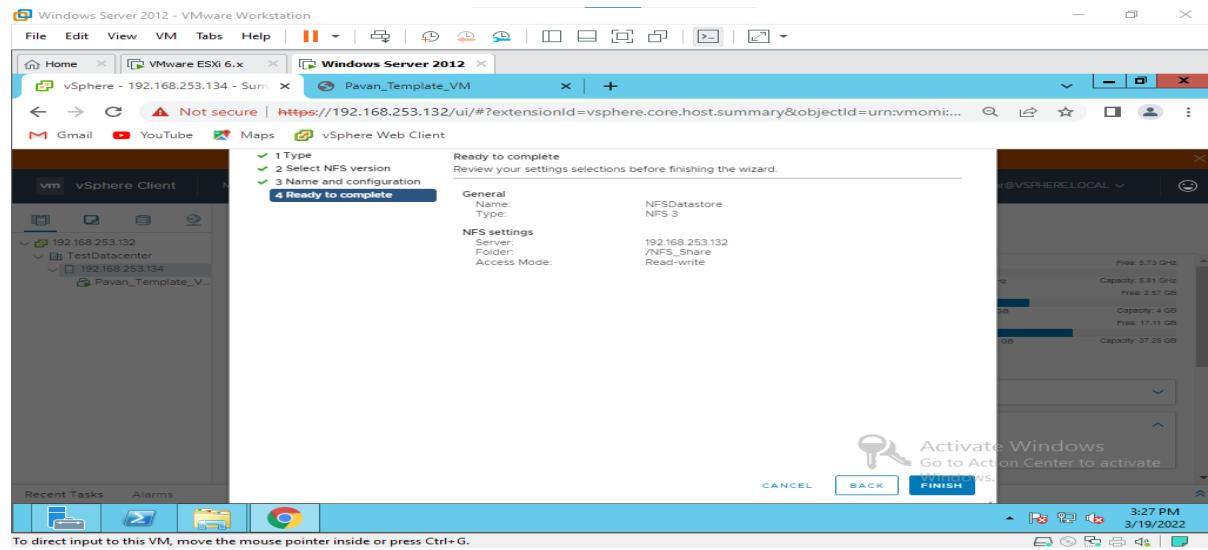
Select the NFS version and click on the Next button



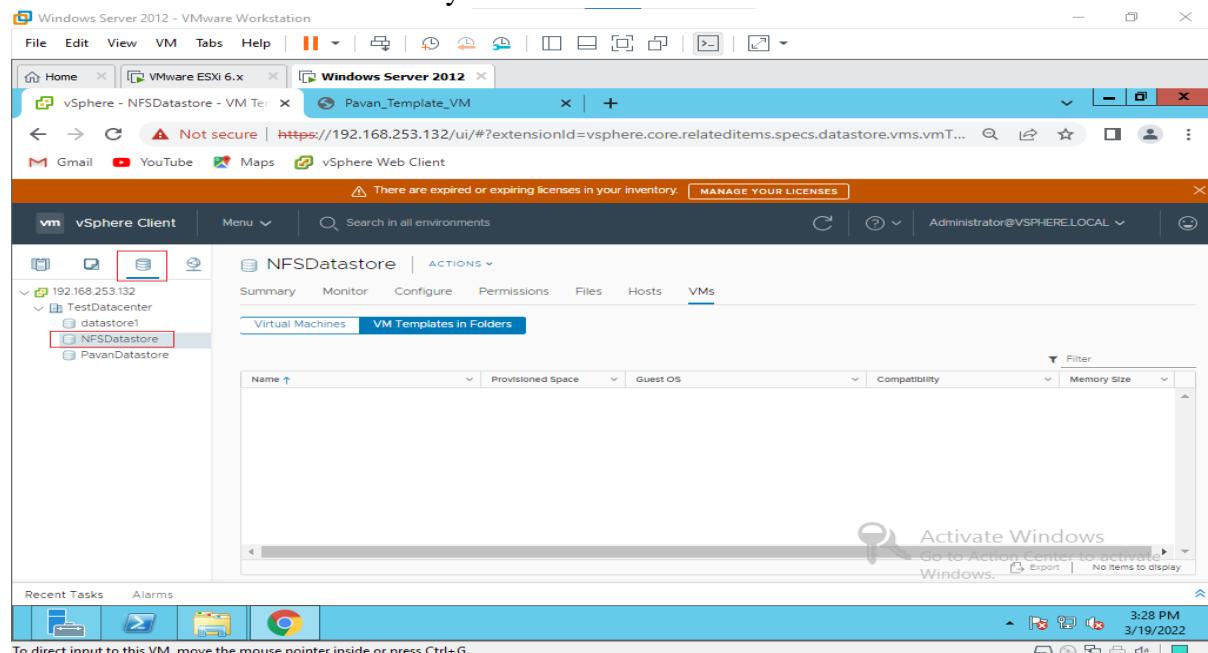
Enter the Datastore Name, Server IP address and Folder (Created folder into Disk C) and Click on the Next button



Click on finish button



Here datastore created successfully



PRACTICAL 7

Implement and manage the network of VMware ESXi server

A. Create vSphere Standard switch

Steps:

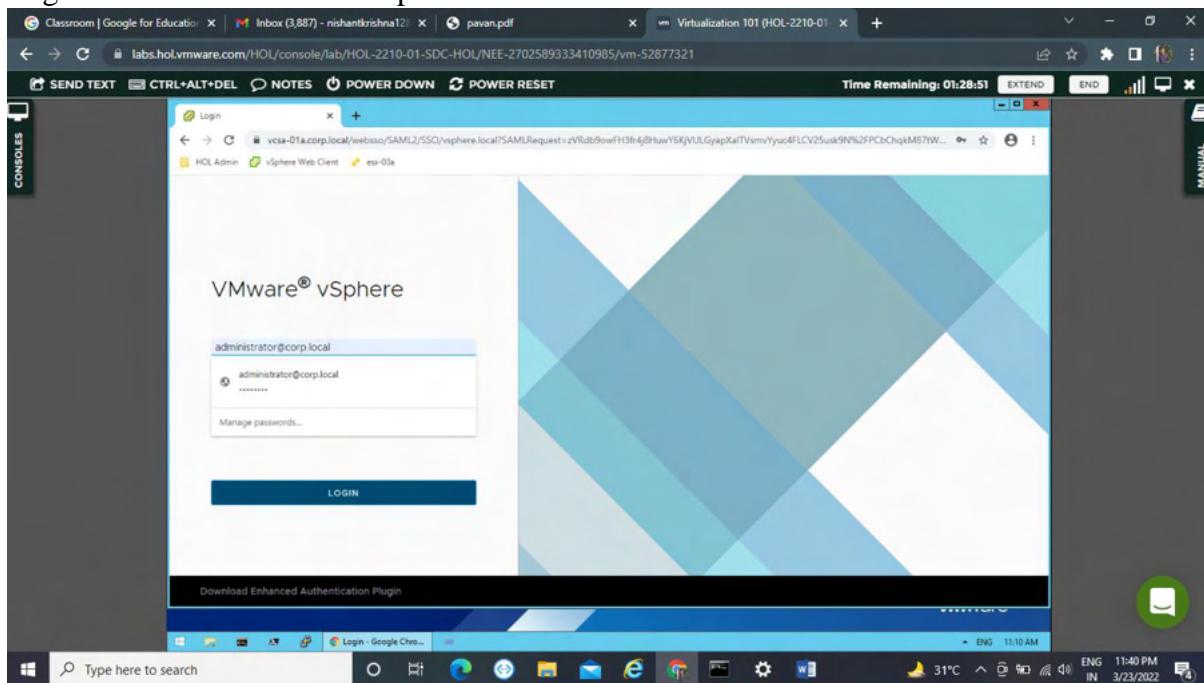
Enroll the Virtualization 101(HOL-2210-01-SDC)

The hands on lab will open

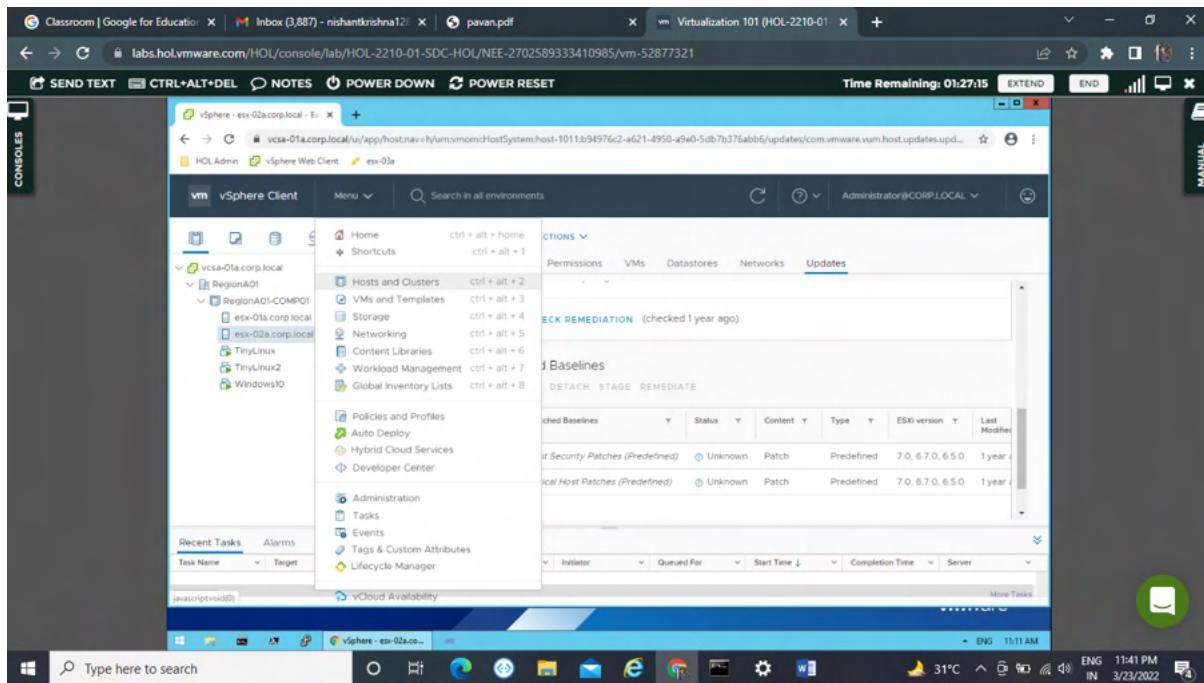
Open google chrome



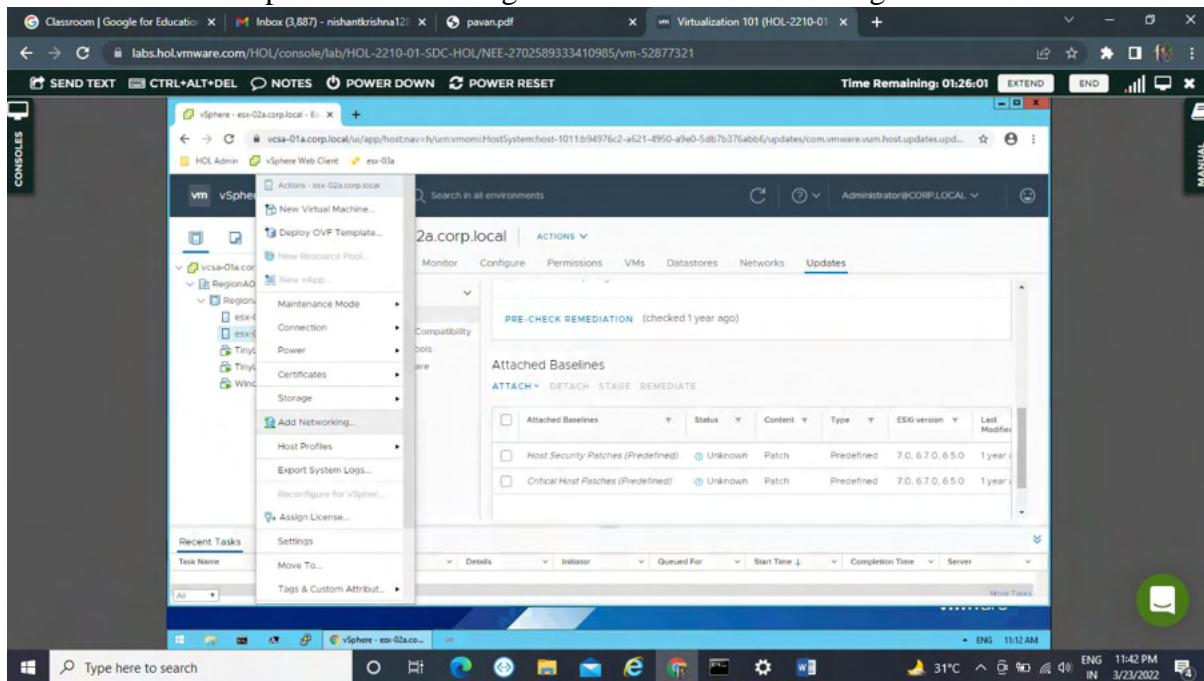
Login with administrator@corp.local



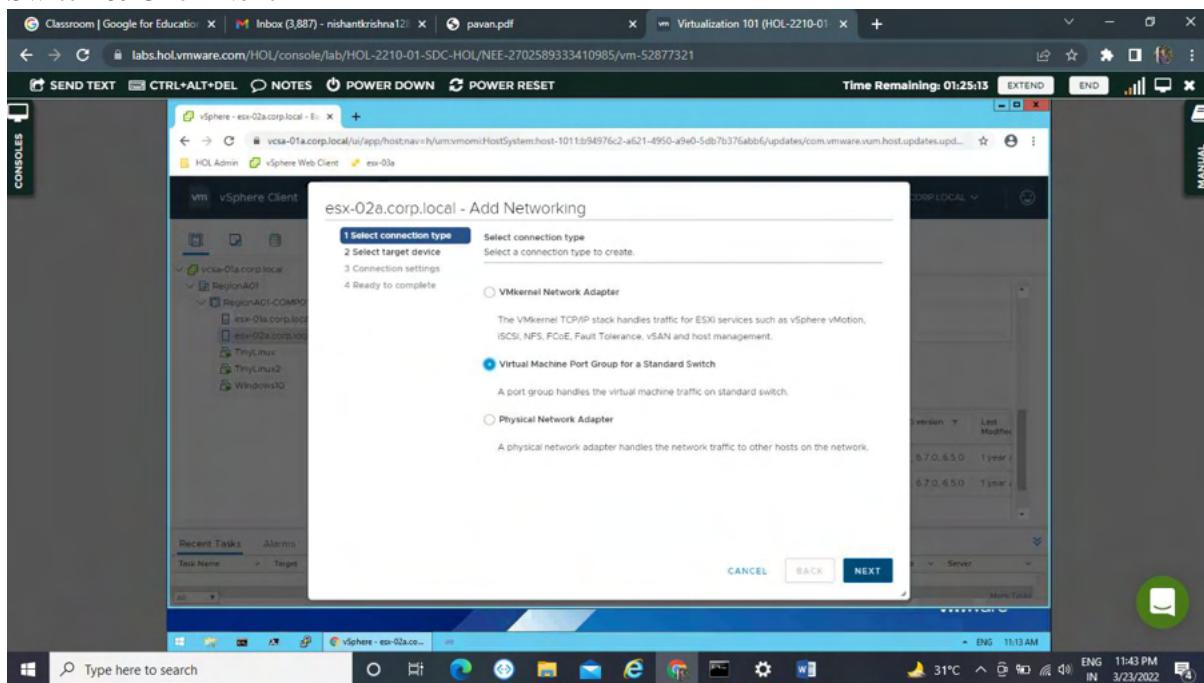
Select host and clusters.



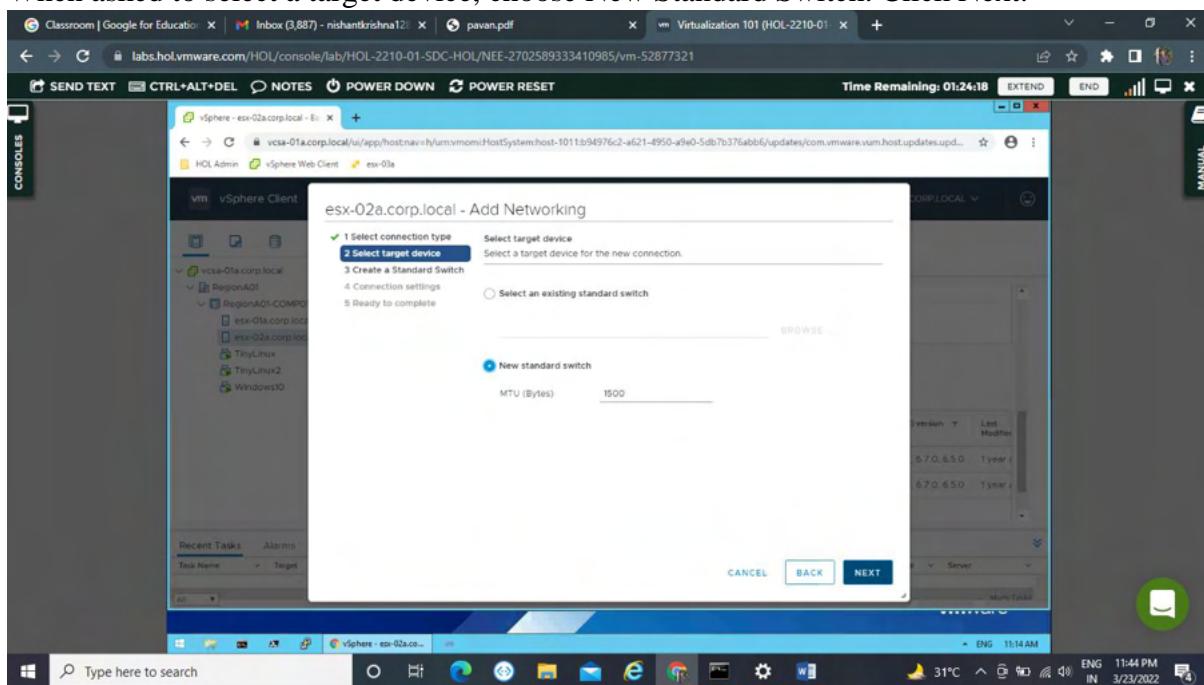
Under vcsa-01a.corp.local, expand RegionA01 and then RegionA01-COMP01. Next, right-click on esx-02a.corp.local in the Navigator. Select Add Networking



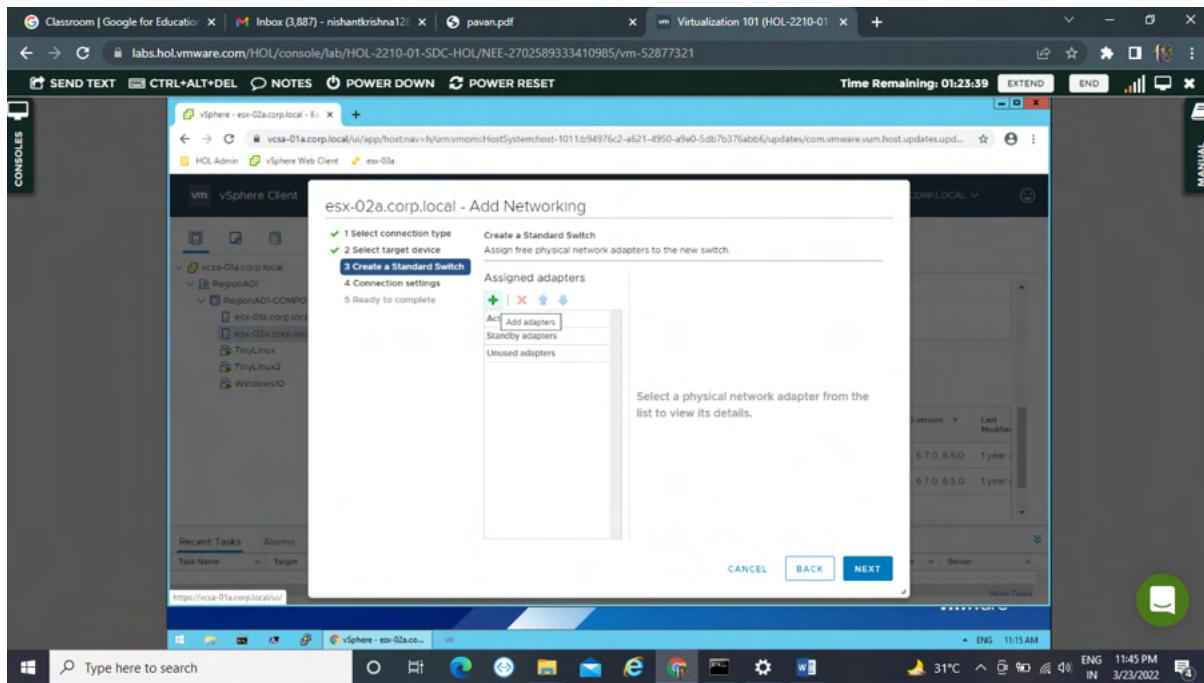
When asked to select the connection type, choose Virtual Machine Port Group for a Standard Switch & Click Next



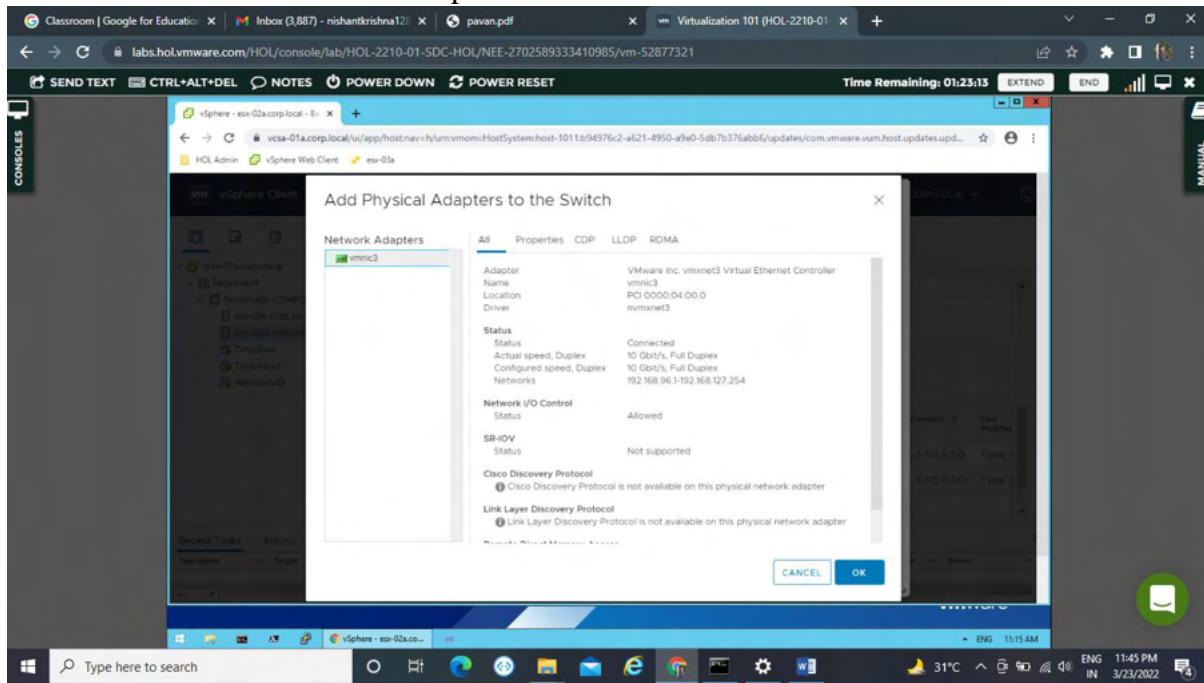
When asked to select a target device, choose New Standard Switch. Click Next.



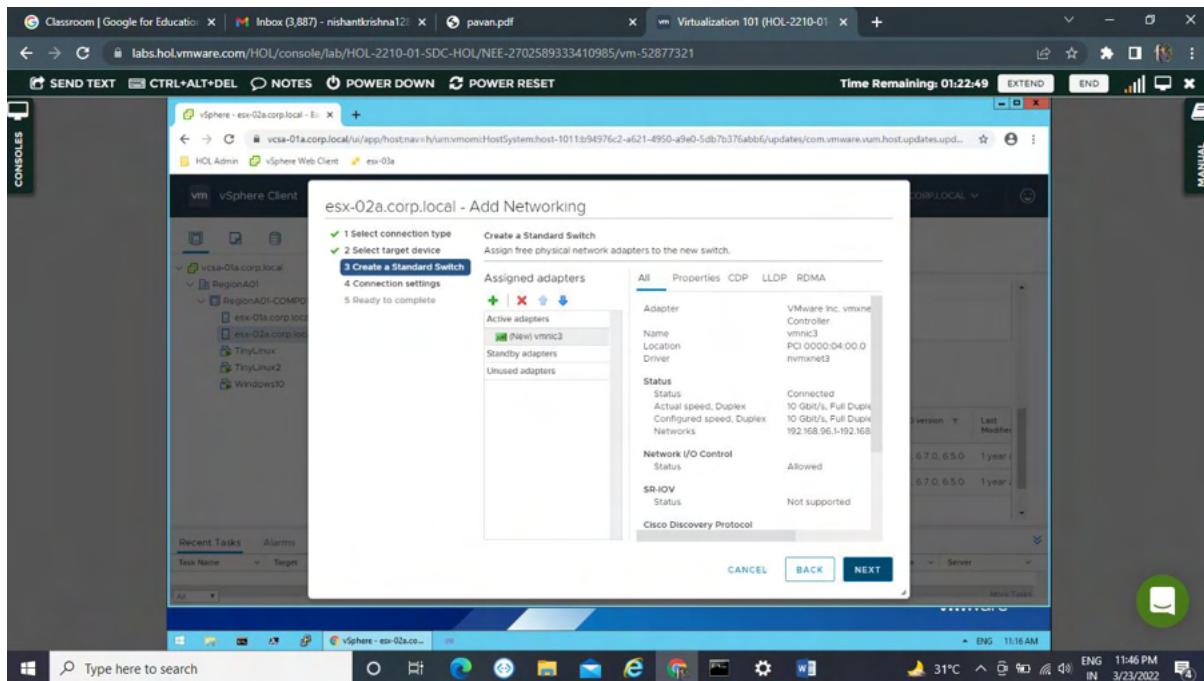
Click the '+' button.



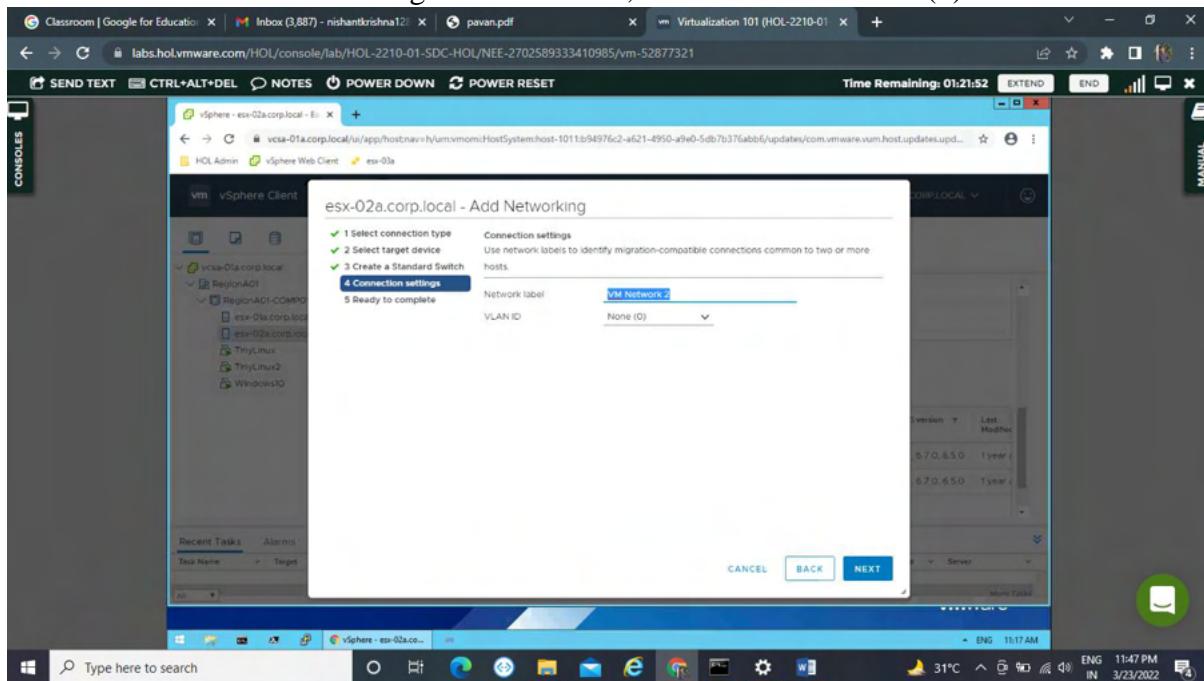
Select vmnic3 under Network Adapters & Click OK. After Click Next to continue.



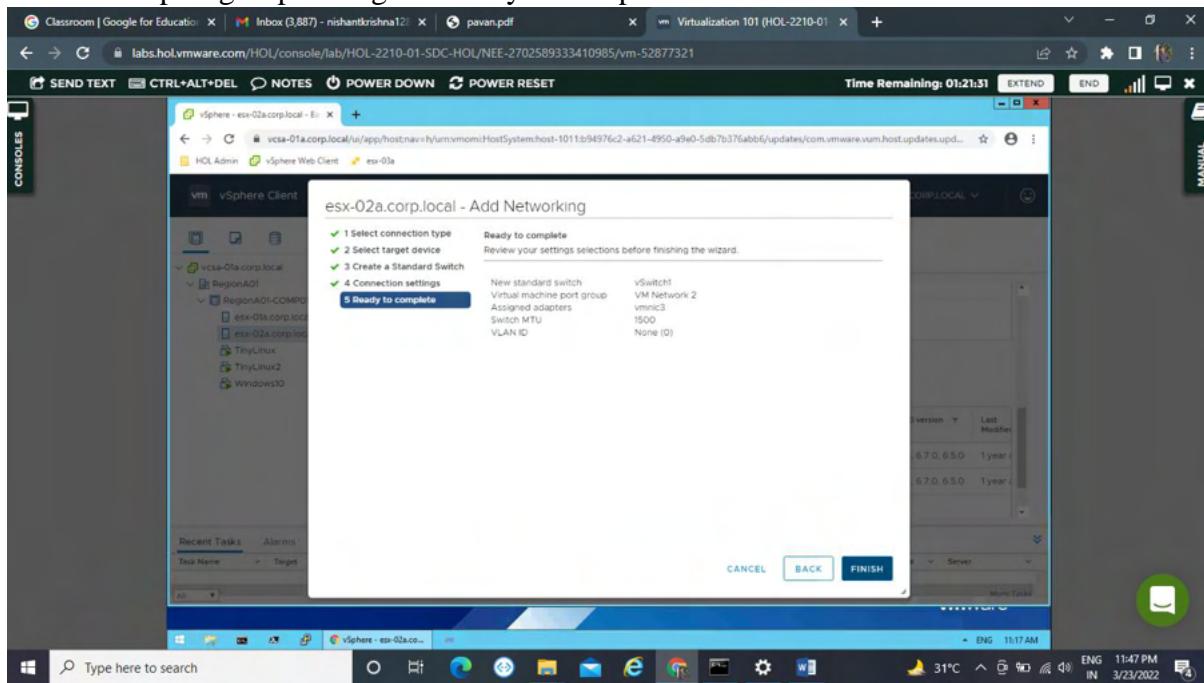
Click next



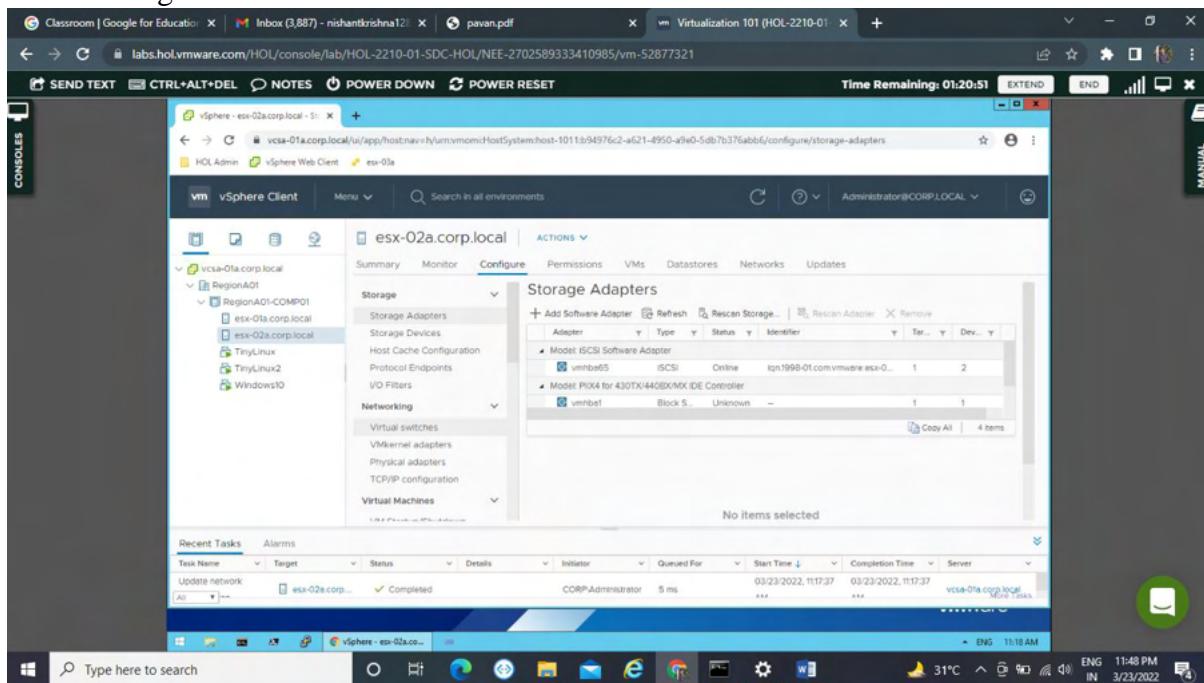
At the Connection settings step of the wizard, for the Network label, leave the default name of VM Network 2. Do not change the VLAN ID; leave this set to None (0)



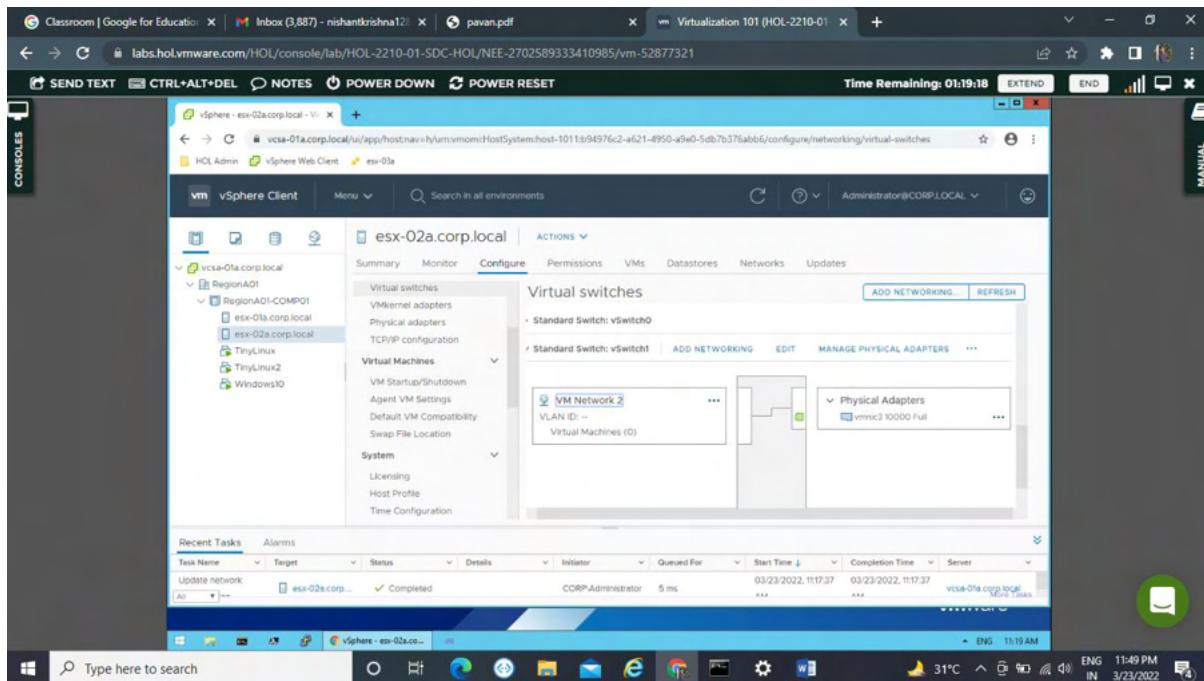
Review the port group settings in Ready to complete and click Finish.



Click Configure. Click on Virtual Switches.

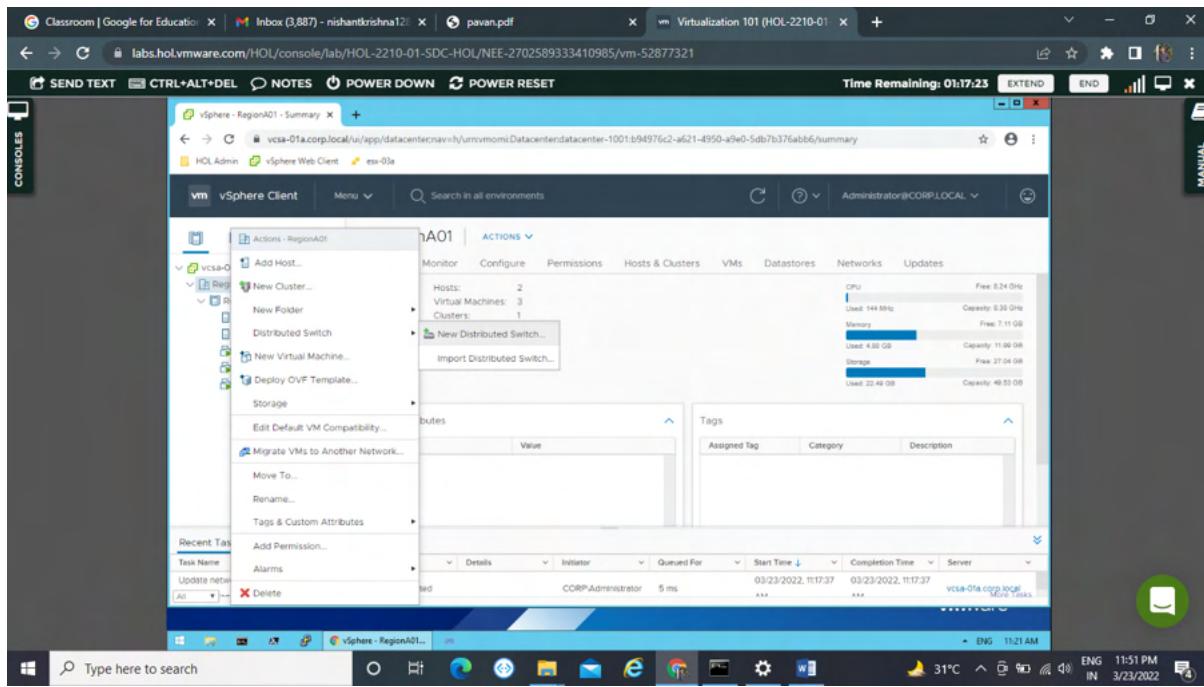


Here the standard switch can be seen

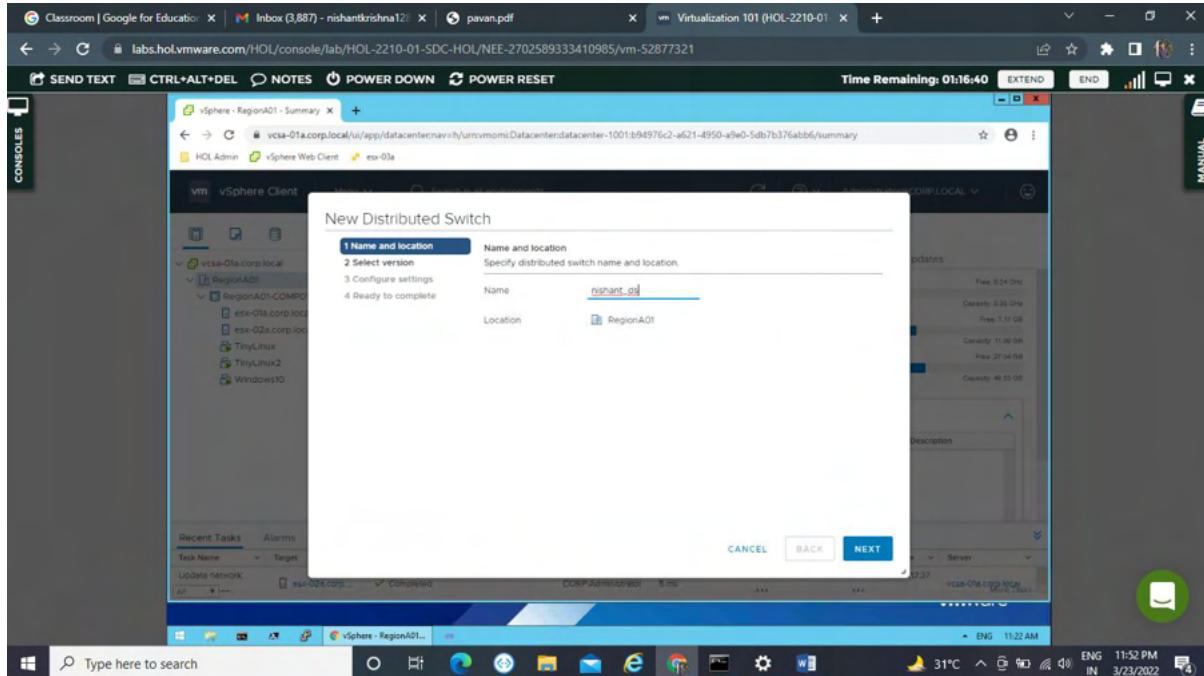


B. Create vSphere Distributed switch

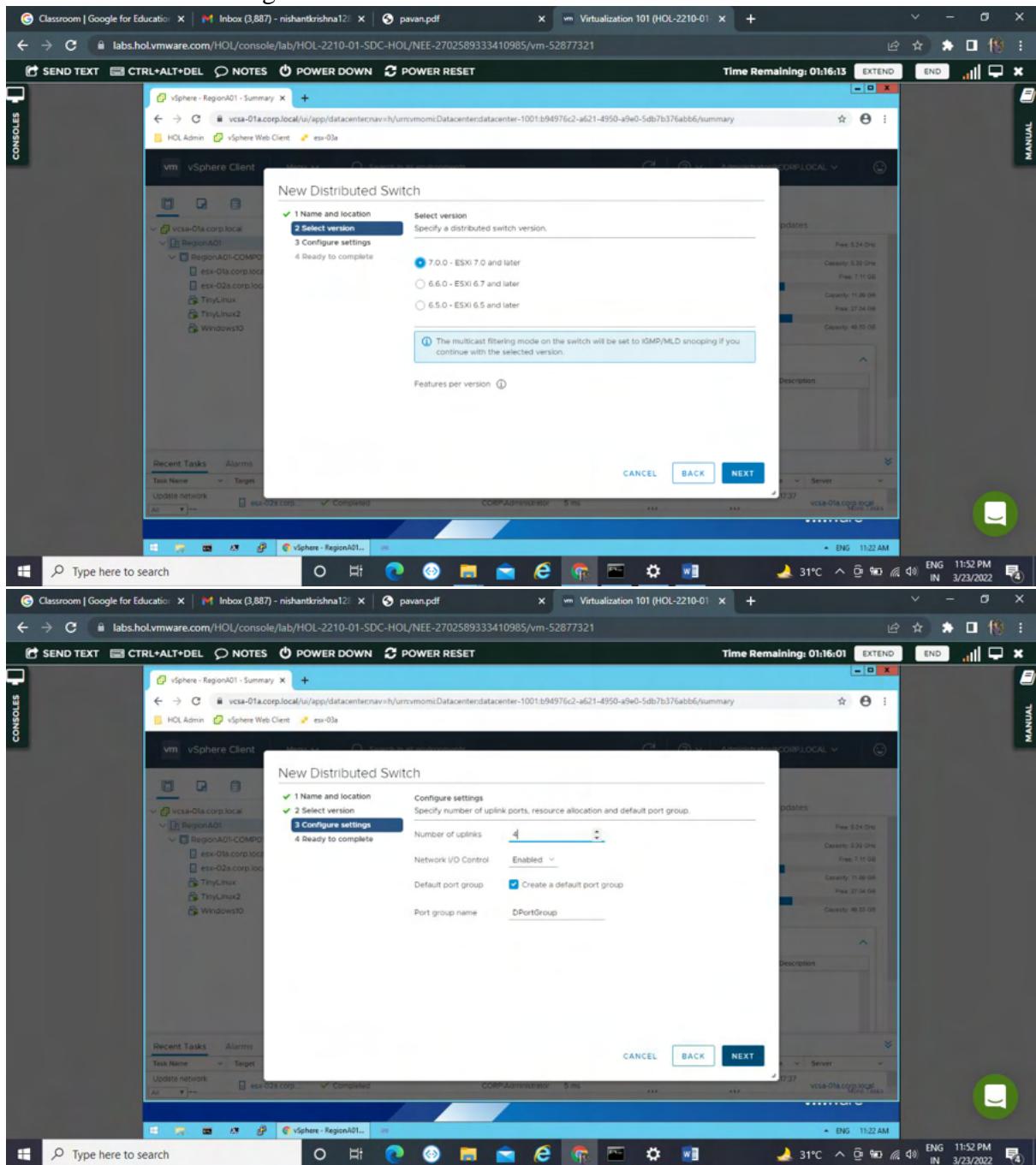
In the vSphere Web Client, click on RegionA01. And the navigator, right-click the RegionA01. Select Distributed Switch and then New Distributed Switch, This will open the New Distributed Switch wizard

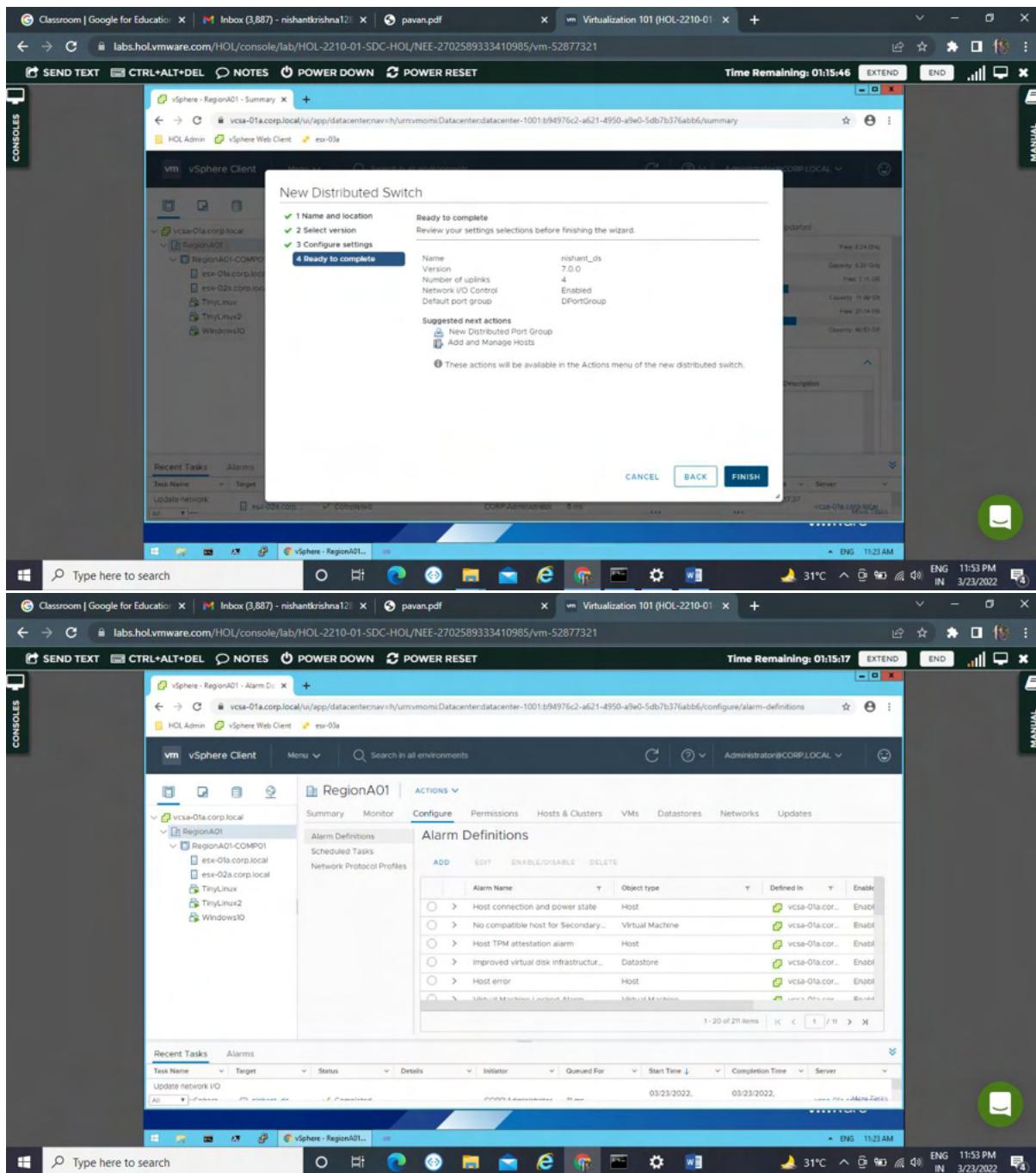


Type Name in the Name field & Click Next.

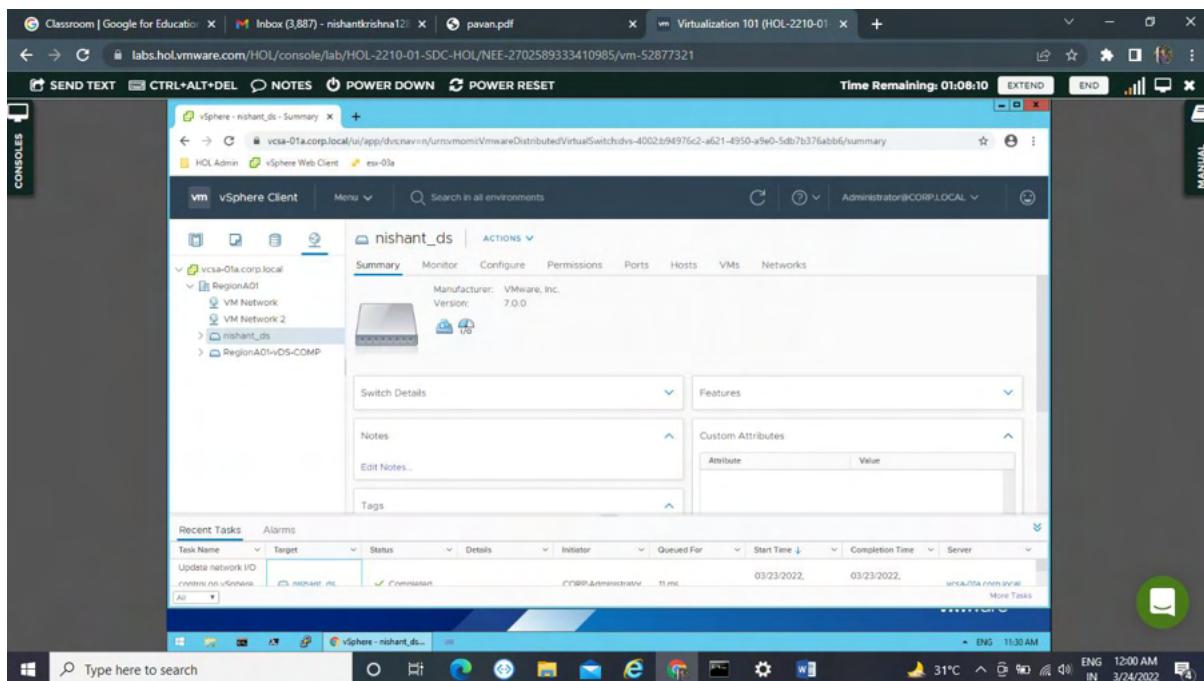


Leave the default setting of 7.0.0 - ESXi 7.0 and later & Click Next.

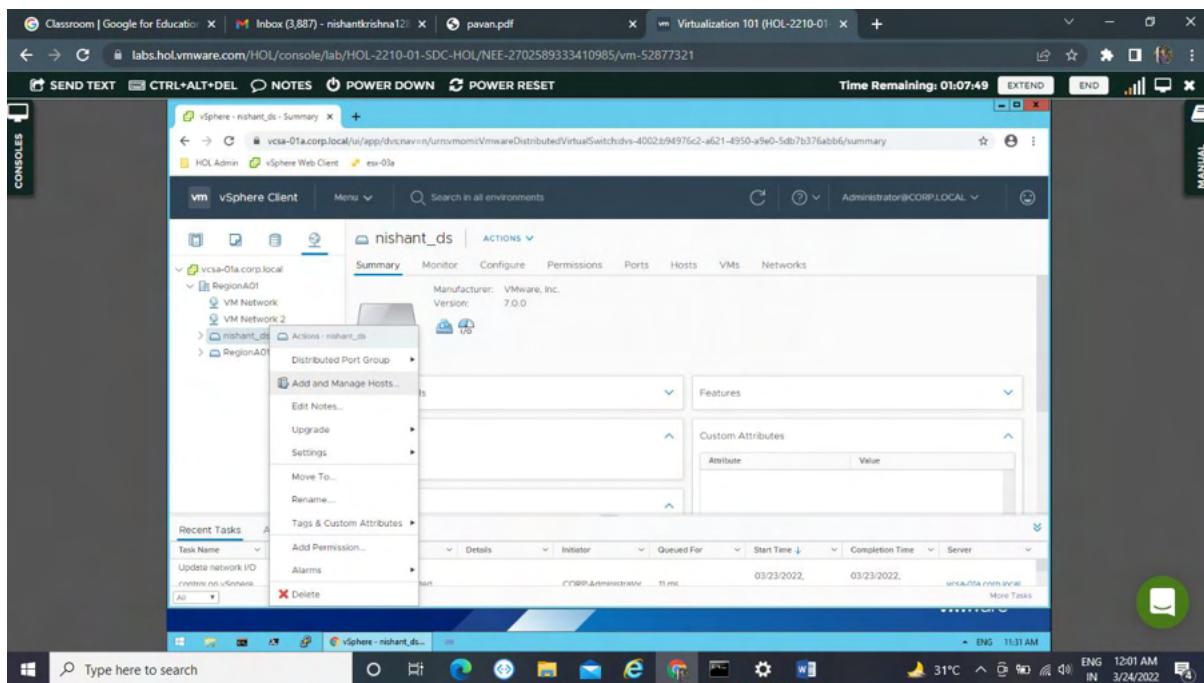




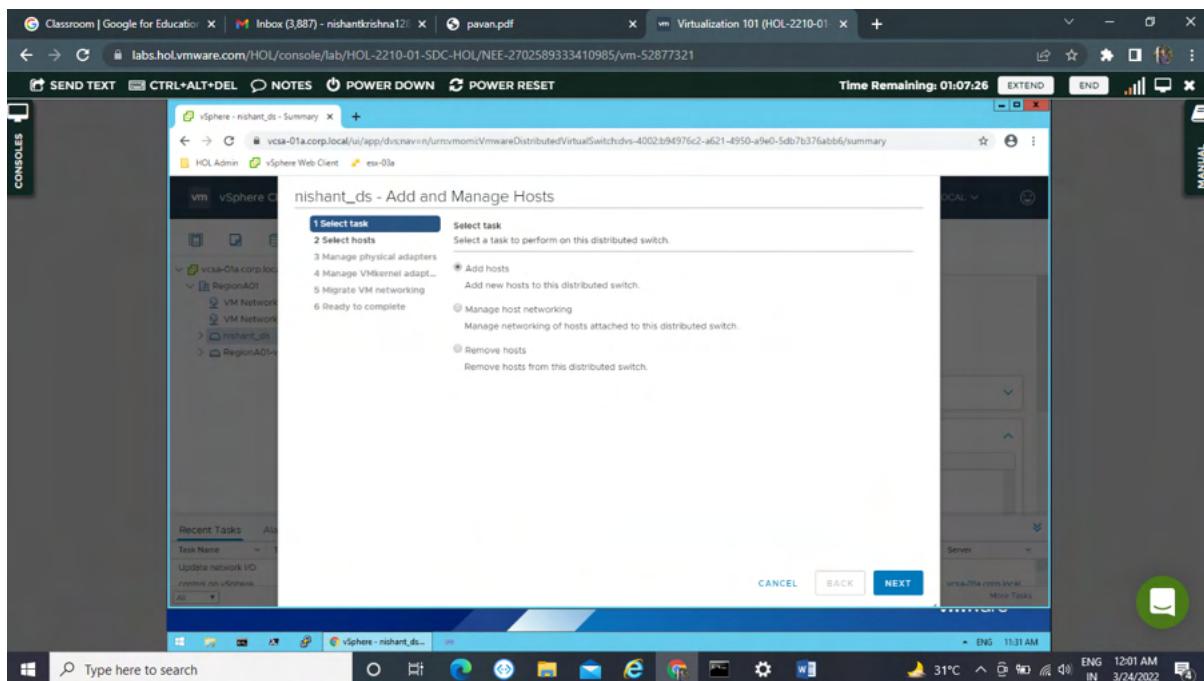
The newly created distributed switch can be seen here



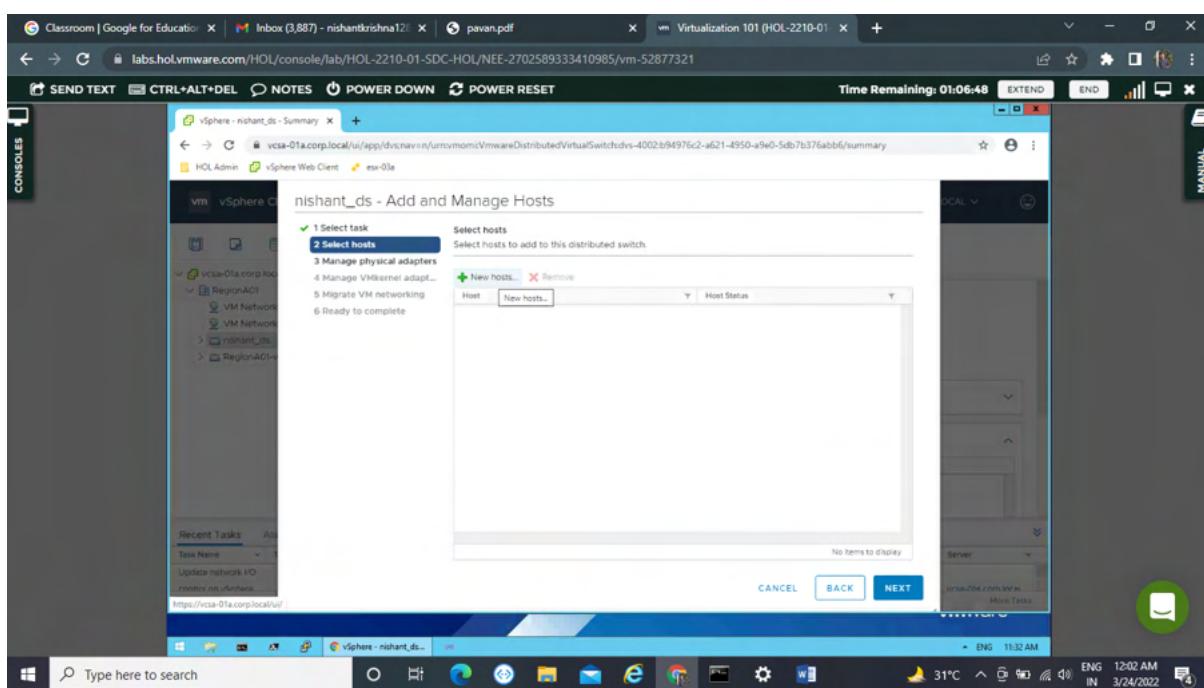
Add Hosts to a new distributed switch. Right-click on the newly created switch, Name_DS & Select Add and Manage Hosts.



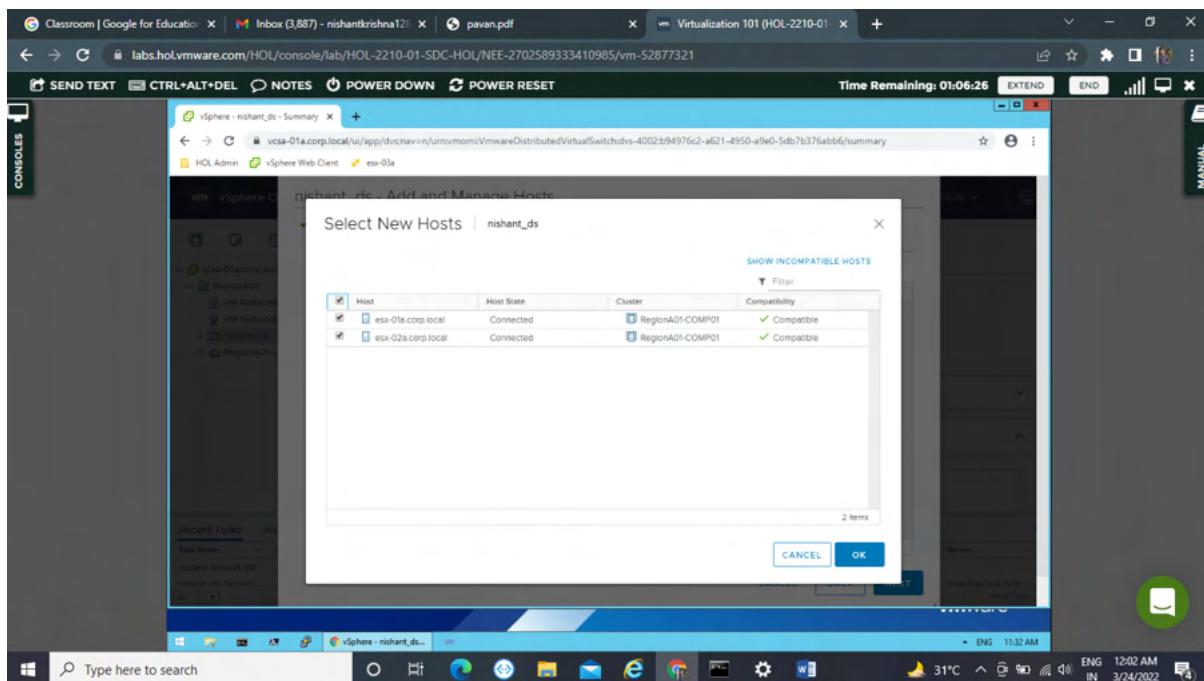
On the Select Task page, select Add hosts & Click Next



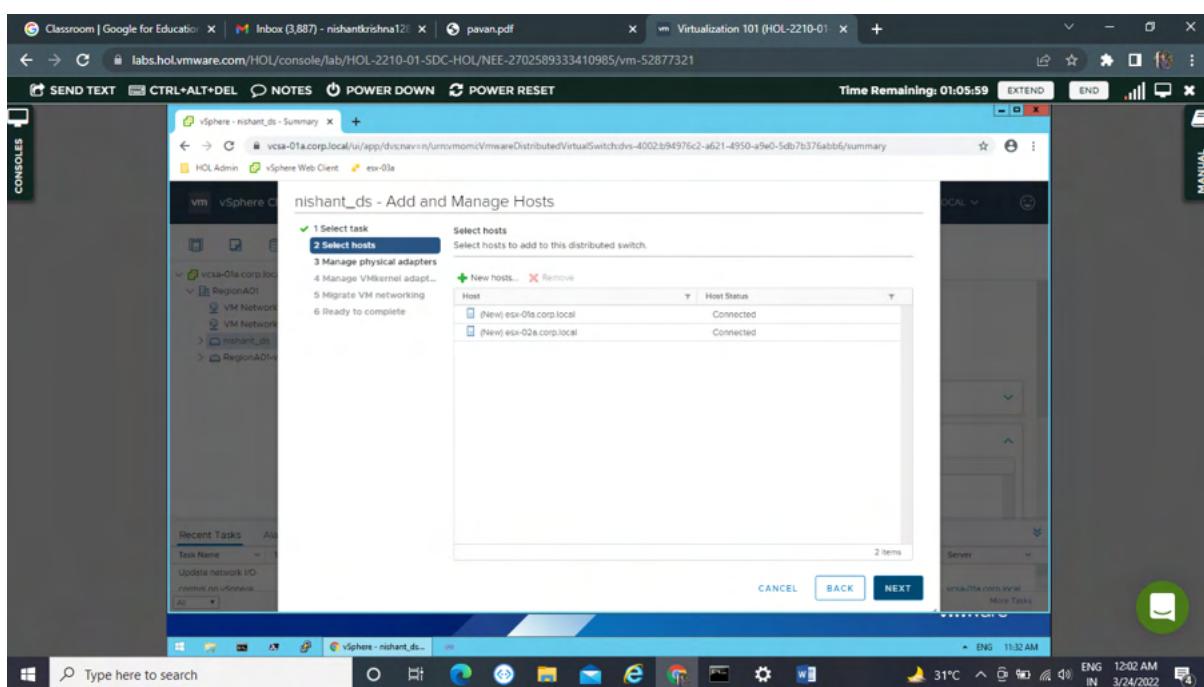
On the Select host's page, click New hosts



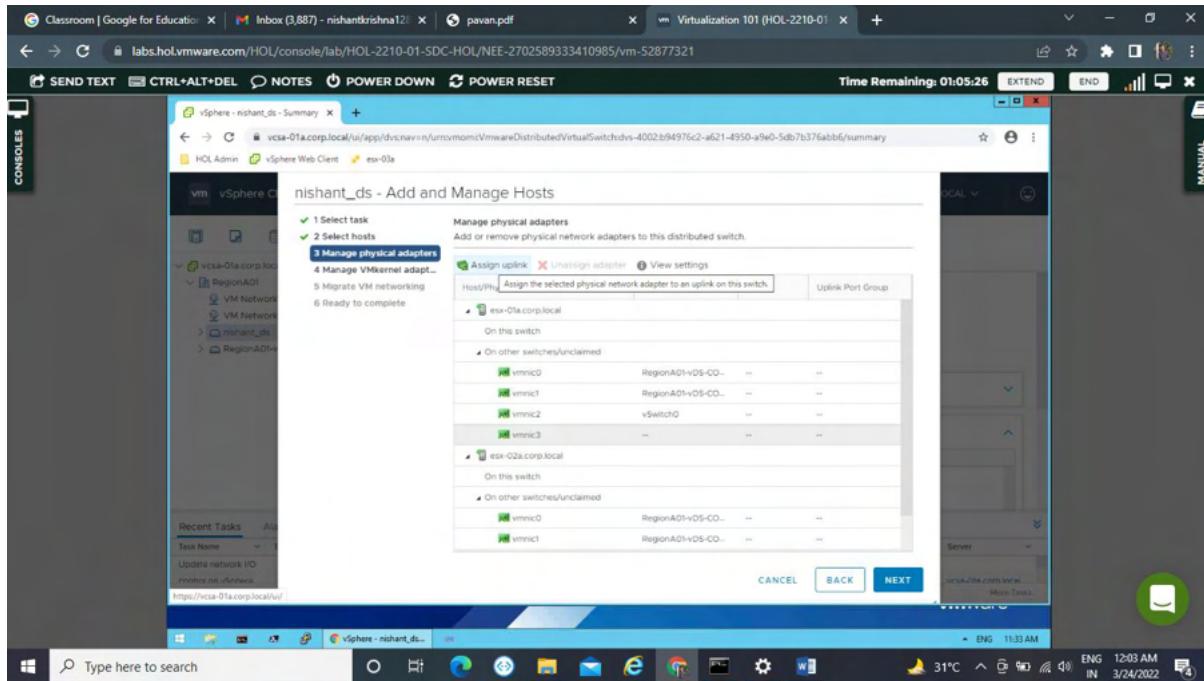
Click the check box on the left to select both hosts in the datacenter & Click OK.



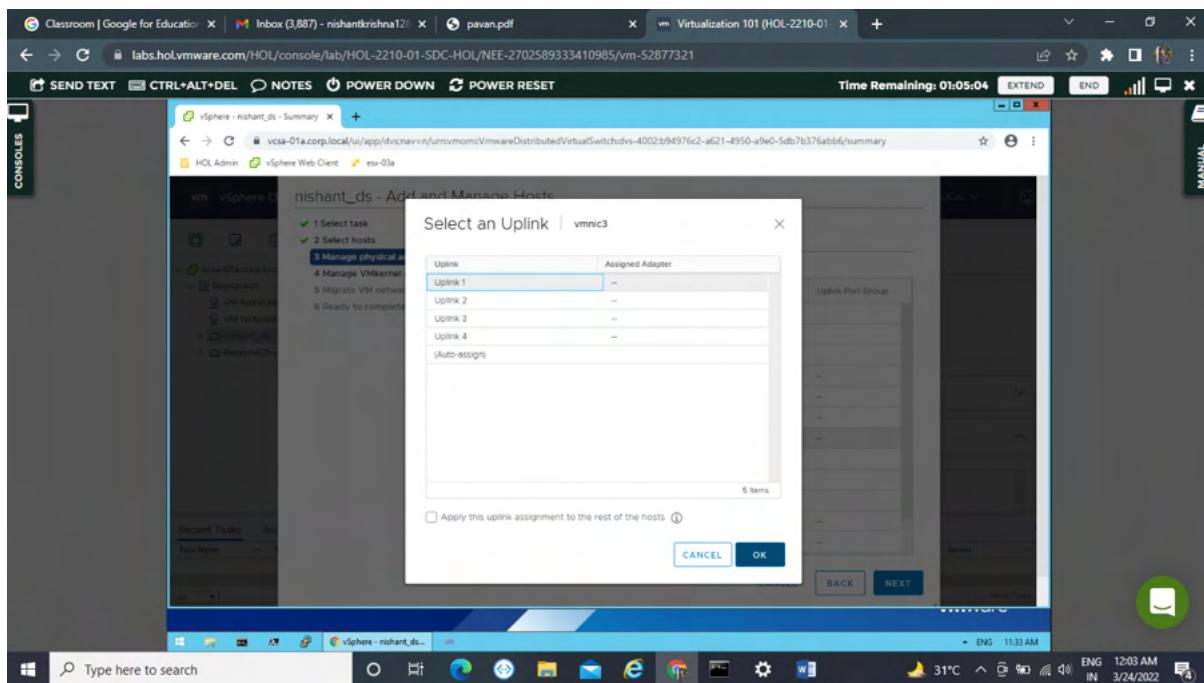
Verify the two hosts are listed, then click Next



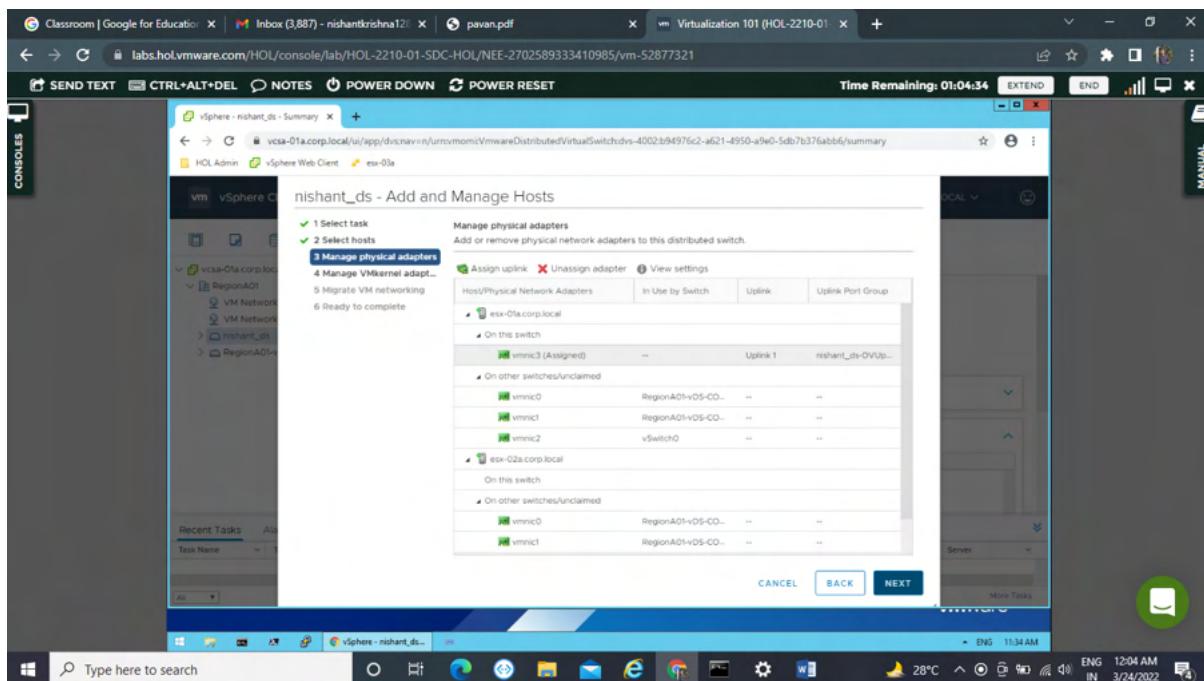
On the Manage physical network adapter's page, we want to configure which physical NICs will be used on the distributed switch. From the On other switches/unclaimed list, highlight vmnic3 & Click Assign uplink



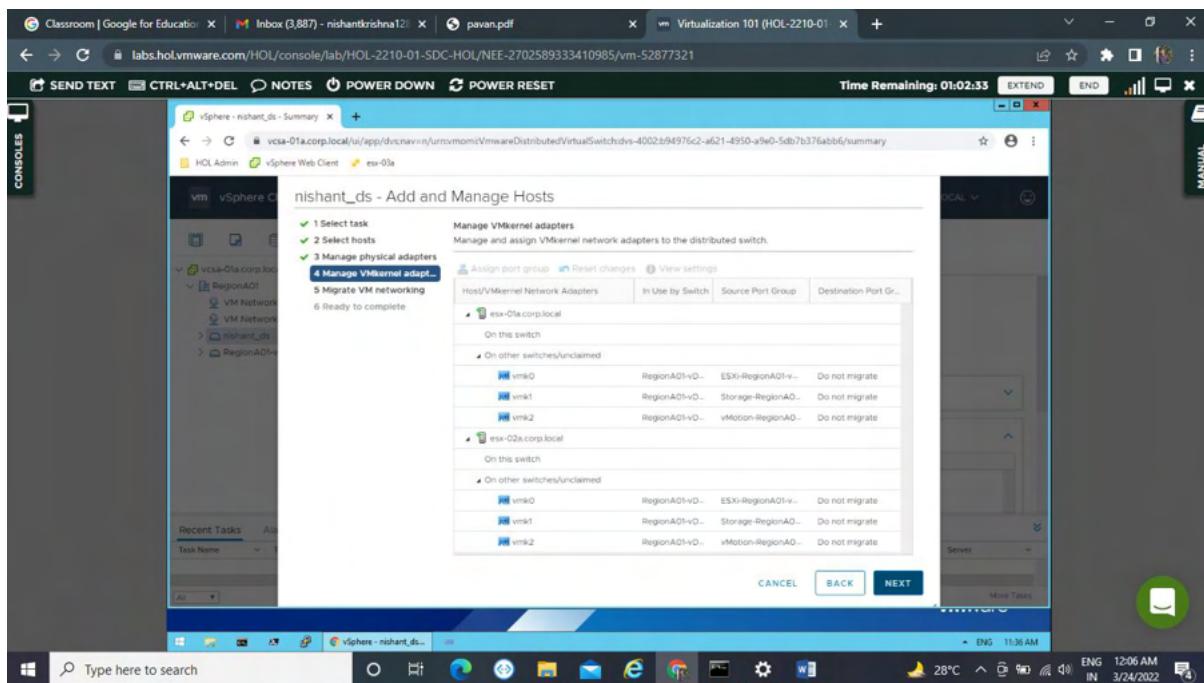
From the Select an Uplink page, select Uplink 1. Check the box next to Apply this uplink assignment to the rest of the hosts & click OK.



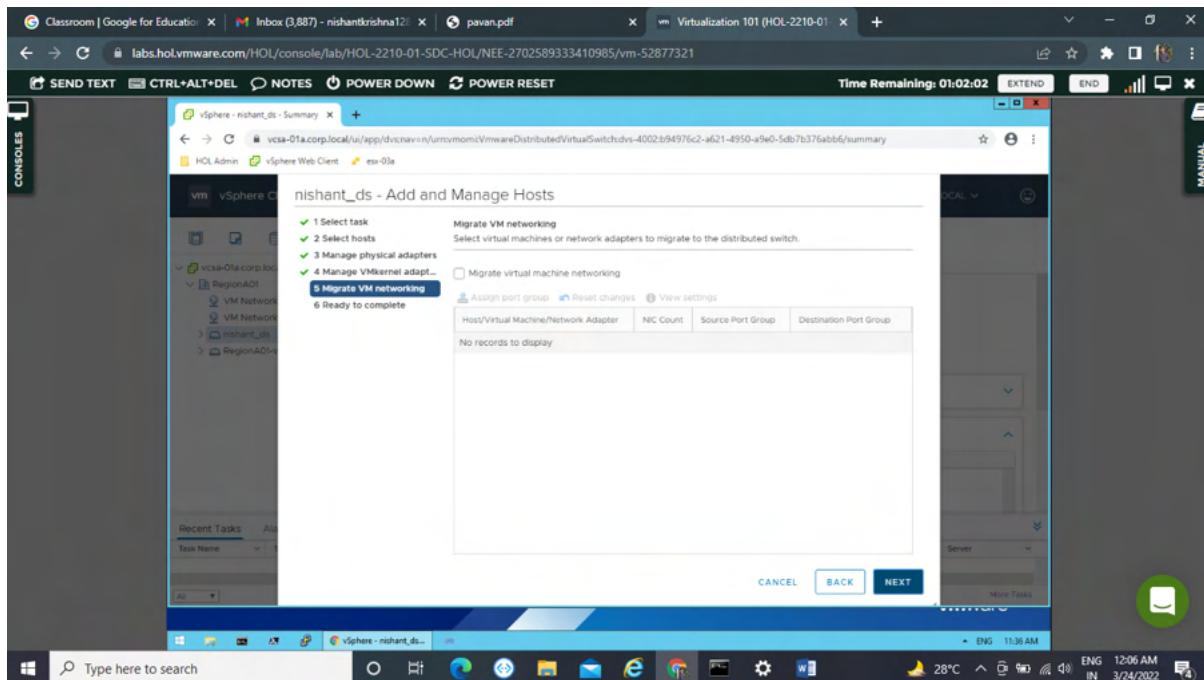
Review vmnic and uplink settings for the hosts you are adding and click Next



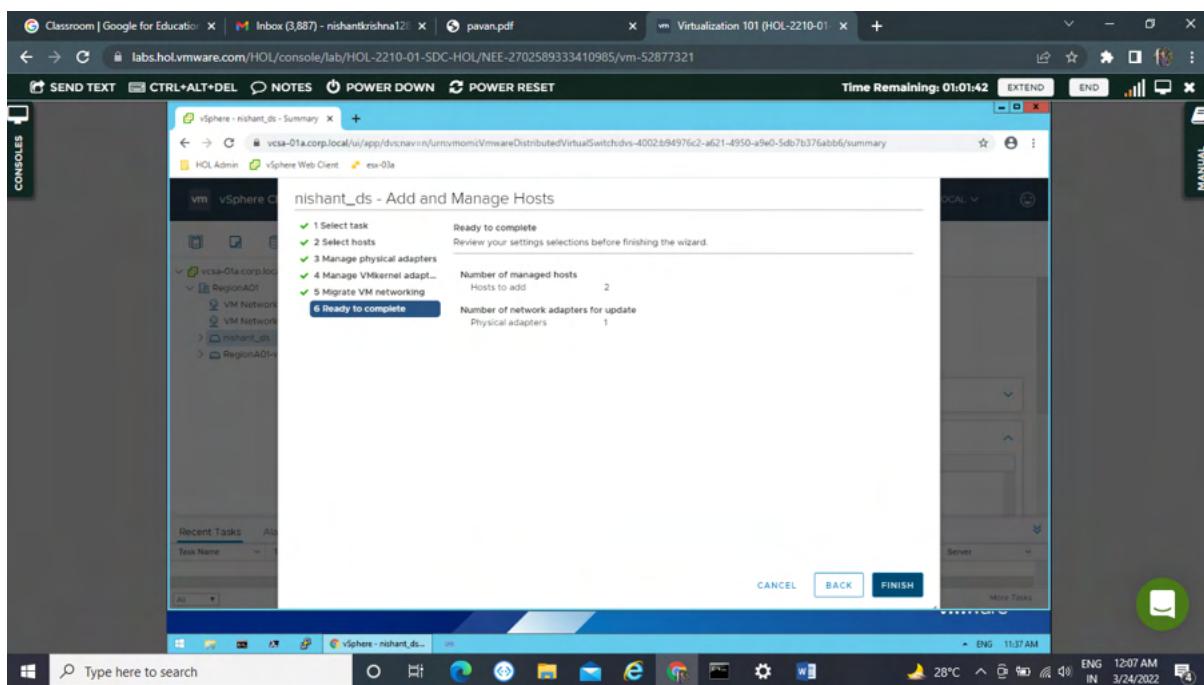
Manage VMKernel Adapters. Since we will not be using this distributed switch for any VMKernel functions, click Next.



The add hosts wizard also gives us the ability to migrate VMs from one distributed switch to another on this page. While this action can be done here. Click Next



On the Ready to complete page, click Finish



Click on the Hosts tab to see the newly connected hosts

The screenshot shows the vSphere Client interface with the 'Hosts' tab selected. The left sidebar shows the vCenter inventory tree with 'vcsa-01a.corp.local' expanded, revealing 'RegionA01' and 'nishant_ds'. The main pane displays a table of hosts:

Name	State	Status	Cluster	Consumed CPU %	Consumed Mem %
esxi-01a.corp.local	Connected	Normal	RegionA01-CO...	0%	23%
esxi-02a.corp.local	Connected	Normal	RegionA01-CO...	2%	58%

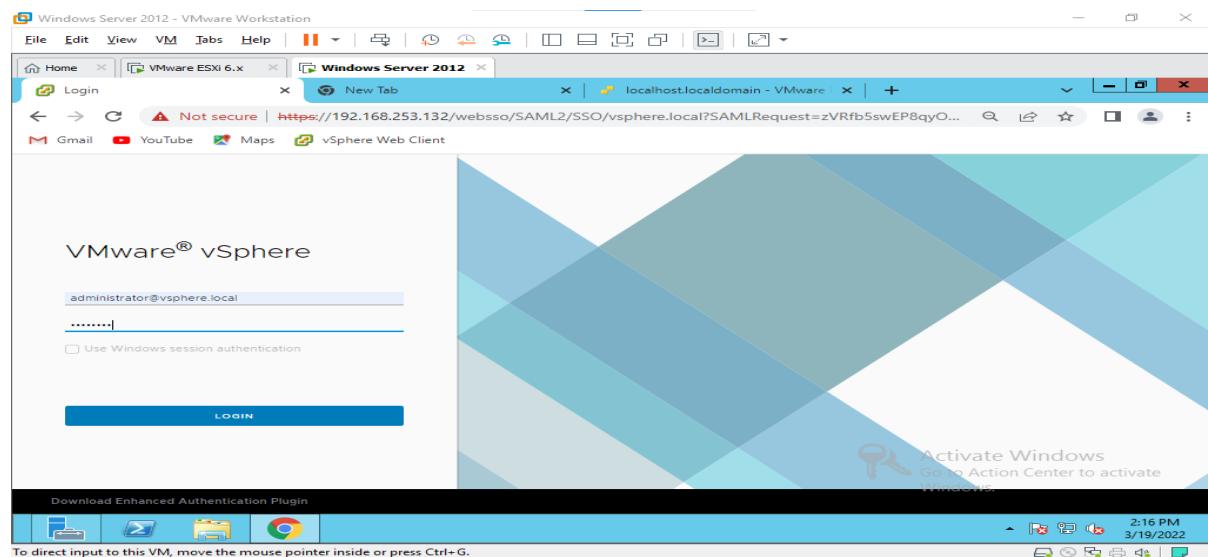
Below the table, the 'Recent Tasks' and 'Alarms' sections are visible. The task bar at the bottom shows various icons and system status.

PRACTICAL 8

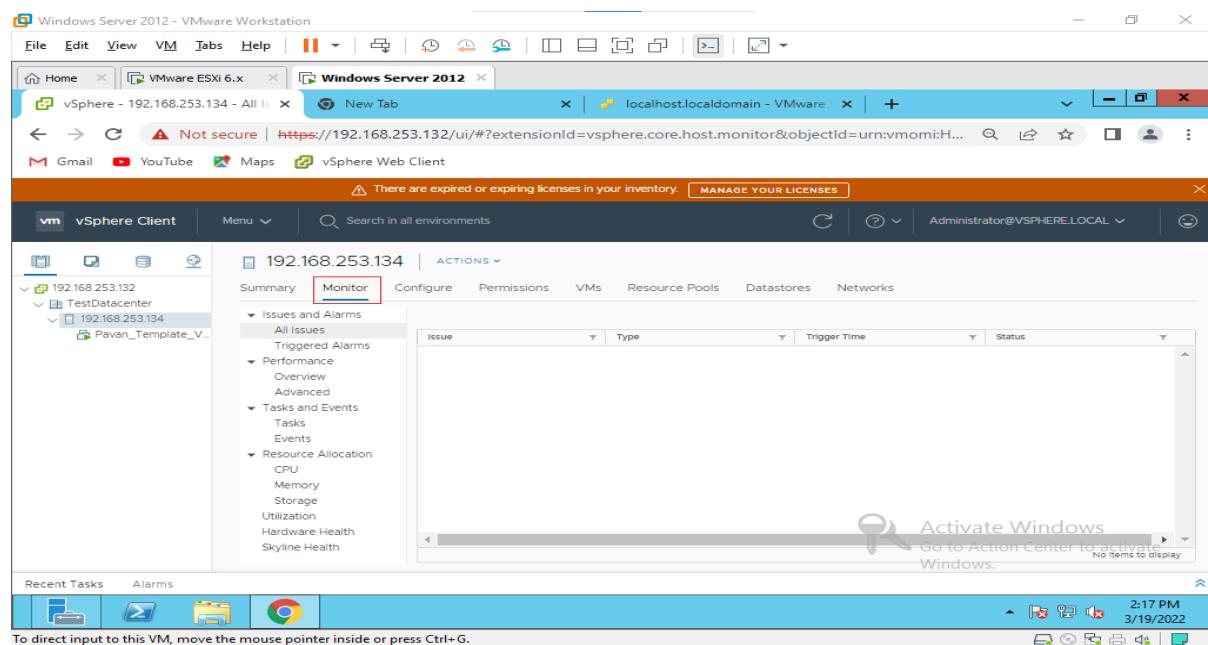
Perform vSphere Monitoring and Performance

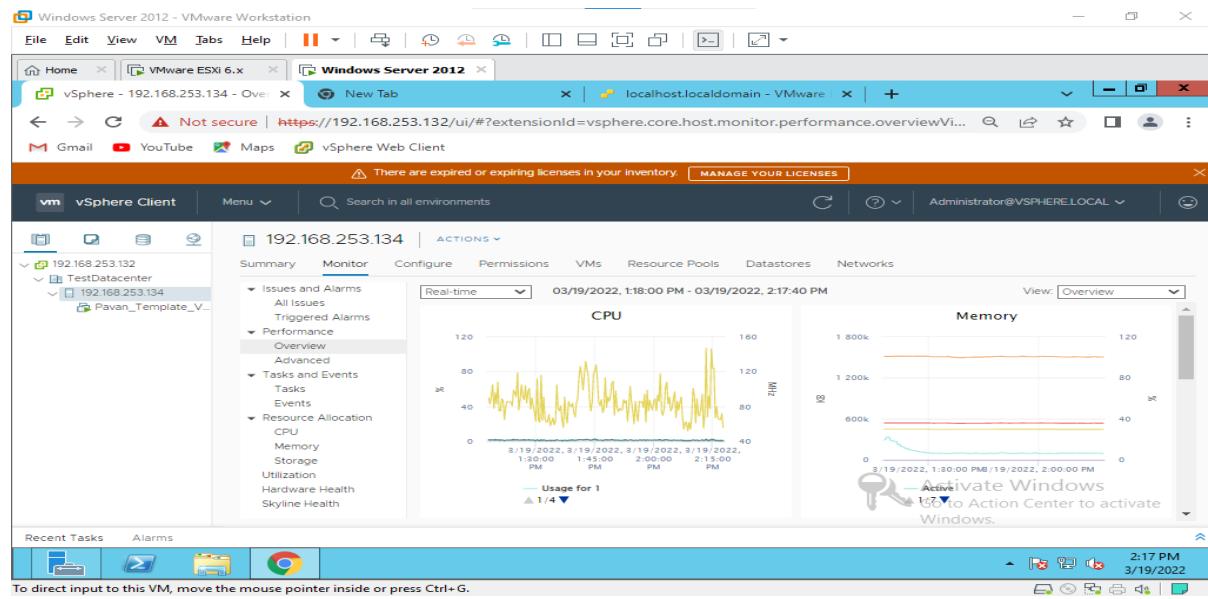
A. Monitoring Guest Operating System Performance

Login the VMWare vSphere

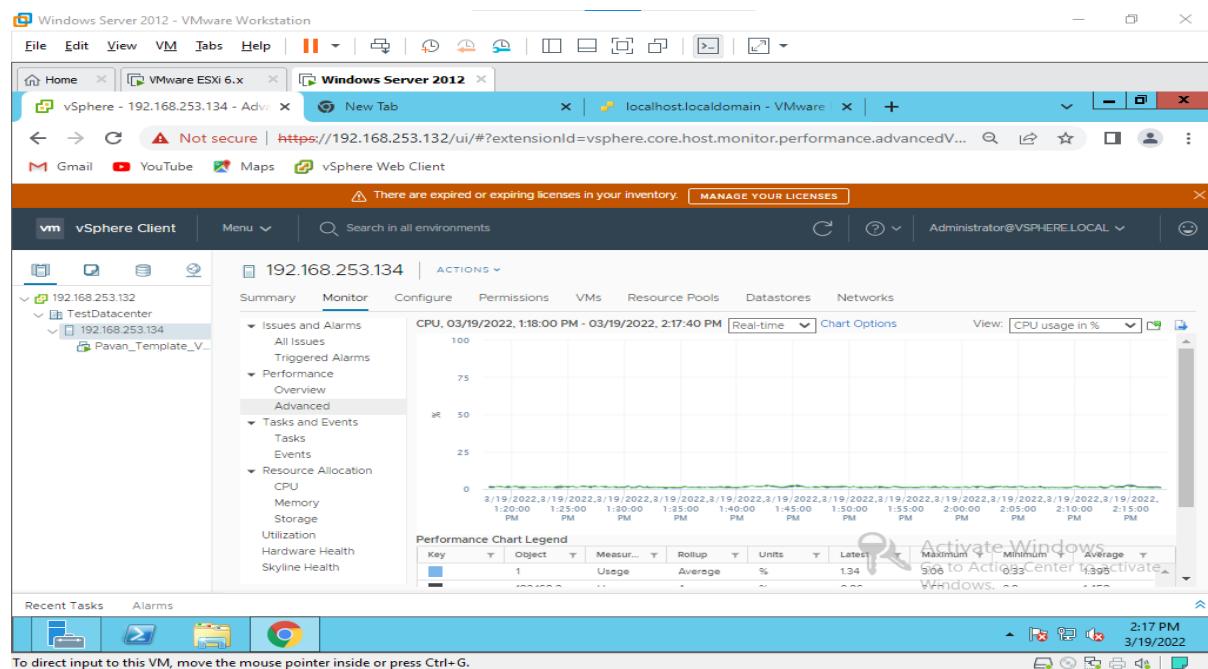


Select Host IP address then Click the Monitor tab & Click Overview under the Performance section.



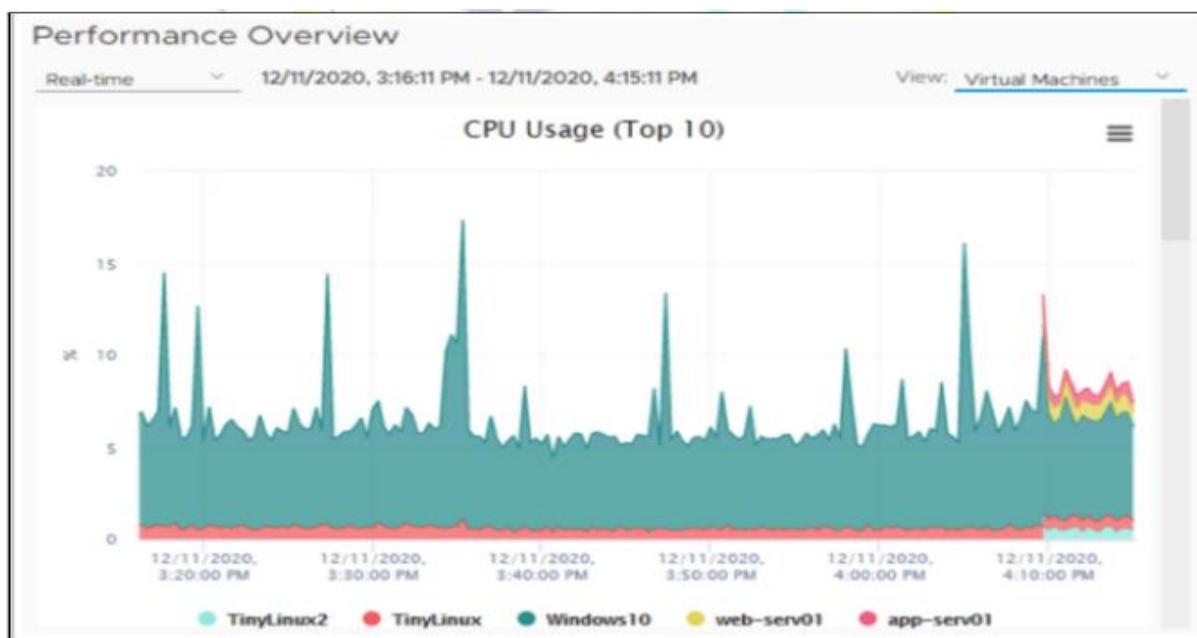
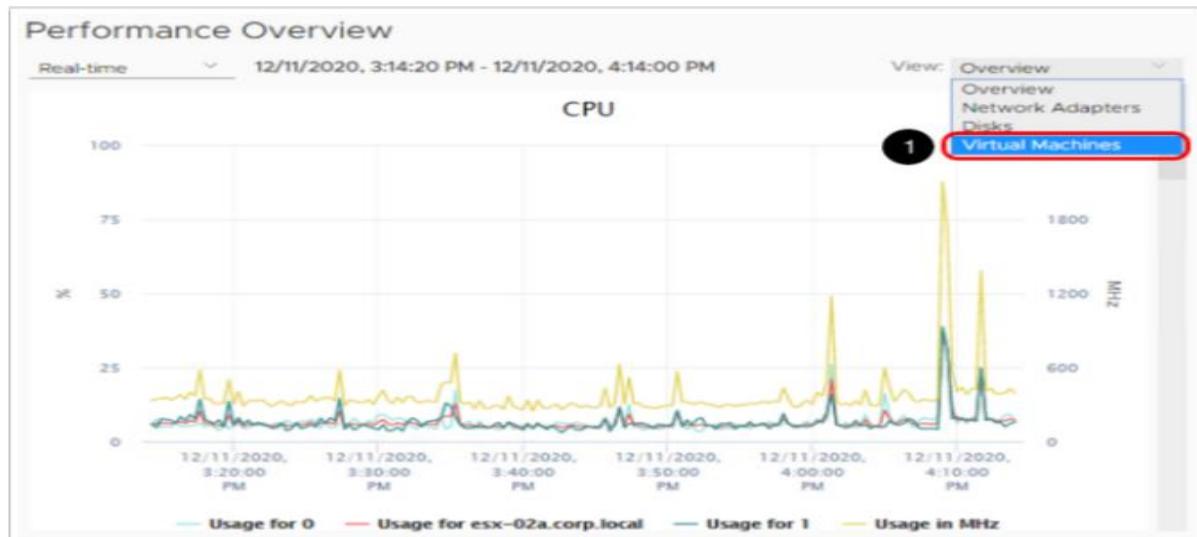


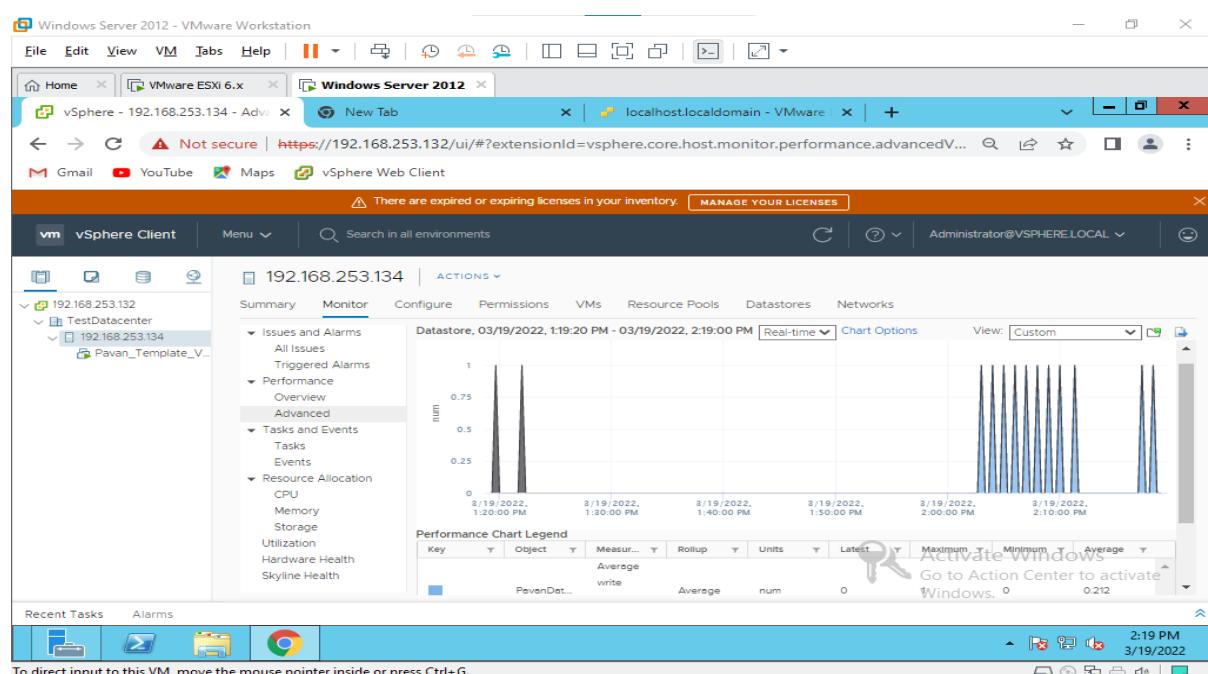
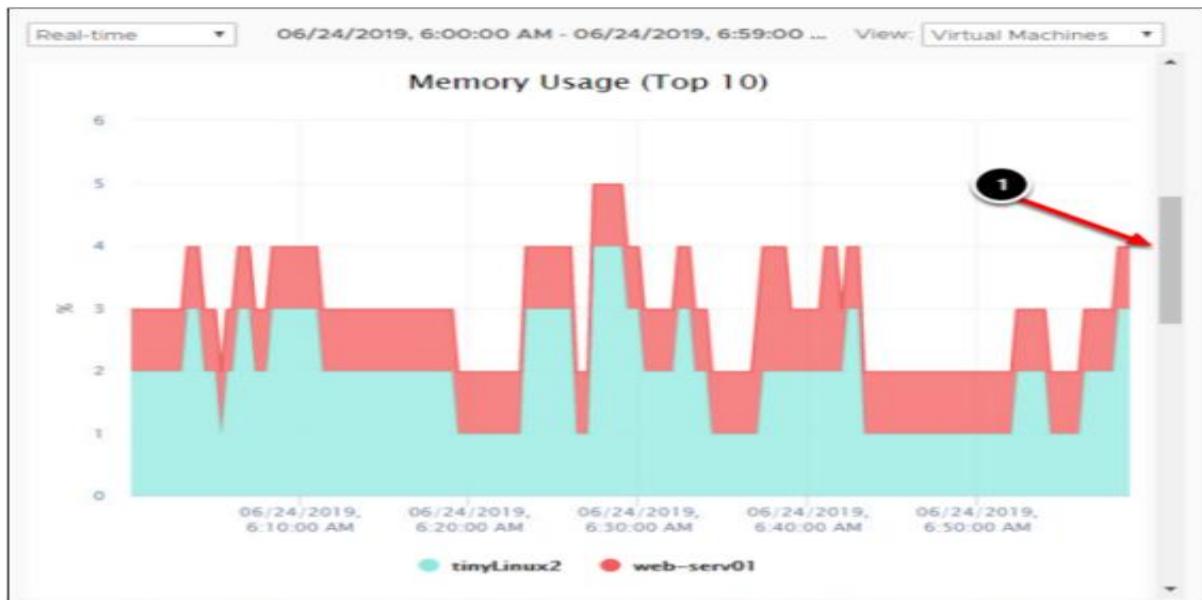
Make sure that Real-time has been selected from the Time Range drop-down menu. Here we can see in real-time the CPU usage in percent for HOST IP address.



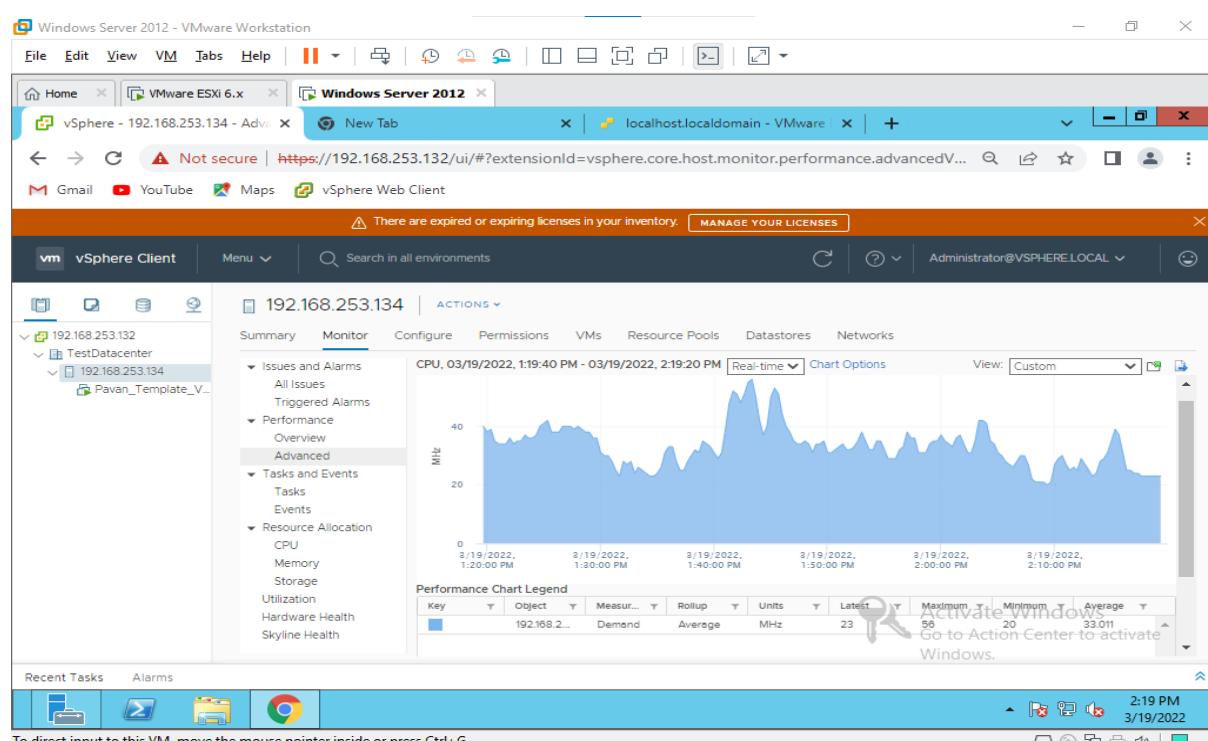
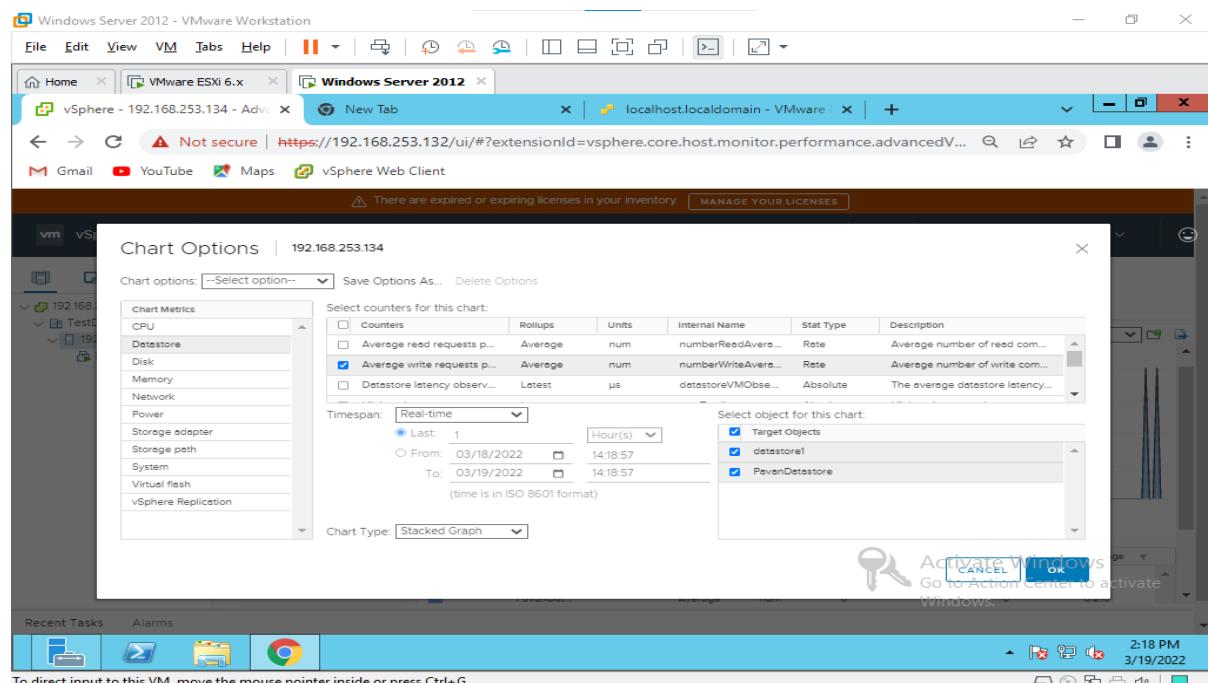
Click the View drop-down box. Select Virtual Machines.

The chart shows the real-time CPU usage of each virtual machine. Each VM is represented by a different color in the graph and you can see at the bottom, which VM is represented by what color. Combined, they give you an idea of overall CPU usage on the host. There are other graphs available to show host and virtual machine memory usage, network (Mbps), and disk (KBps).





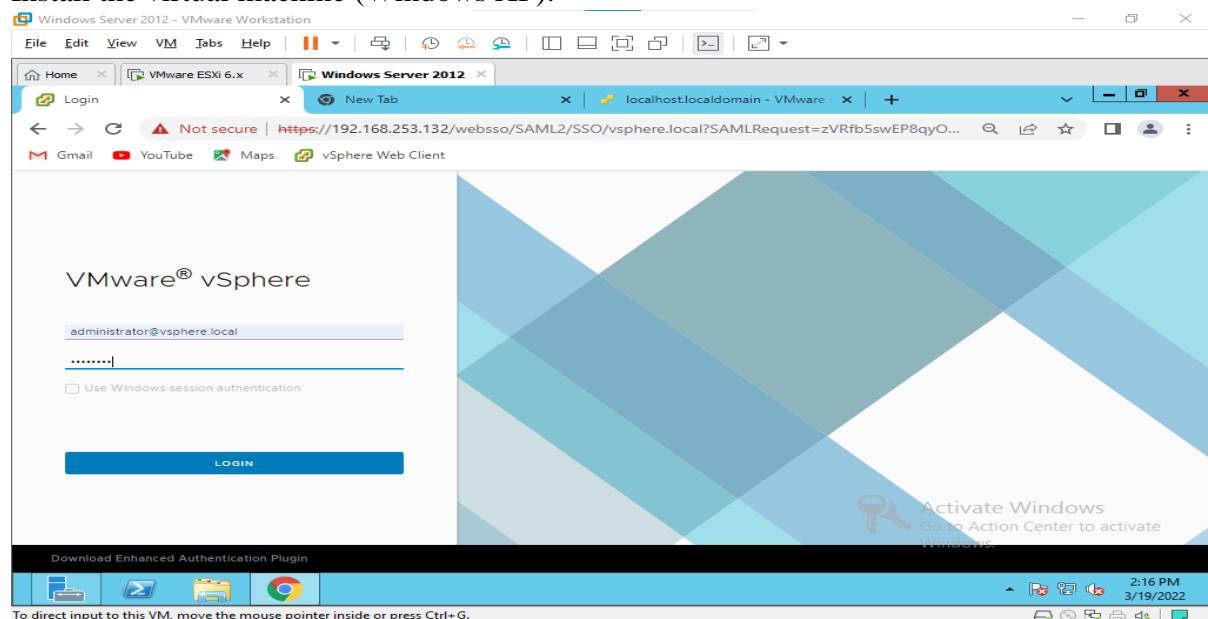
Under the Select objects for this chart box, verify all the virtual machines are selected. Click the OK button to see the newly customized chart



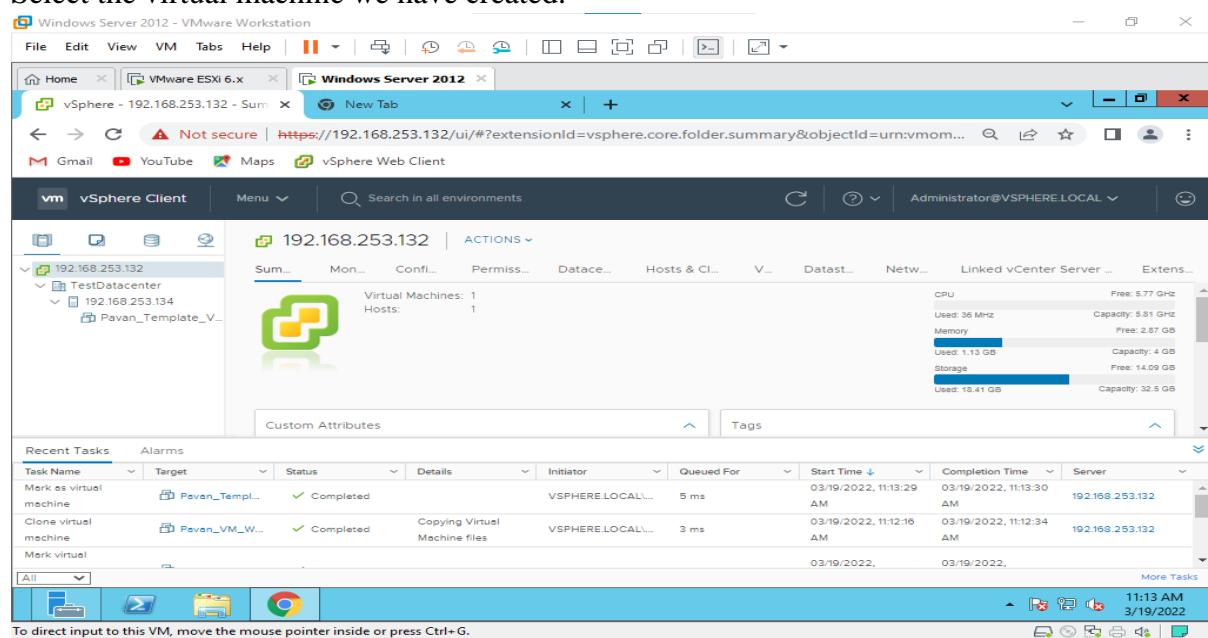
B. Monitoring Guest Operating System Performance & View Performance Statistics for Windows Guest Operating Systems.

Steps:

Install the virtual machine (Windows XP).



Select the virtual machine we have created.



Monitor the Usages of VM

