Sri Lanka Institute of Information Technology

4th Year – 2nd Semester

ESBII – 2016

Hypervisor Session

Submitted By: IT13405328

Perera K.D.R.S

What is Virtualization?

Hardware virtualization or platform virtualization refers to the creation of a virtual machine that acts like a real computer with an operating system. Software executed on these virtual machines is separated from the underlying hardware resources. For example, a computer that is running Microsoft Windows may host a virtual machine that looks like a computer with the Ubuntu Linux operating system; Ubuntu-based software can be run on the virtual machine.

In hardware virtualization, the host machine is the actual machine on which the virtualization takes place, and the guest machine is the virtual machine. The software that creates a virtual machine on the host hardware is called a hypervisor or Virtual Machine Manager.

Different types of hardware virtualization include:

- Full virtualization – almost complete simulation of the actual hardware to allow software, which typically consists of a guest operating system, to run unmodified.
- Partial virtualization – some but not all of the target environment attributes are simulated. As a result, some guest programs may need modifications to run in such virtual environments.
- Para virtualization – a hardware environment is not simulated; however, the guest programs are executed in their own isolated domains, as if they are running on a separate system. Guest programs need to be specifically modified to run in this environment.

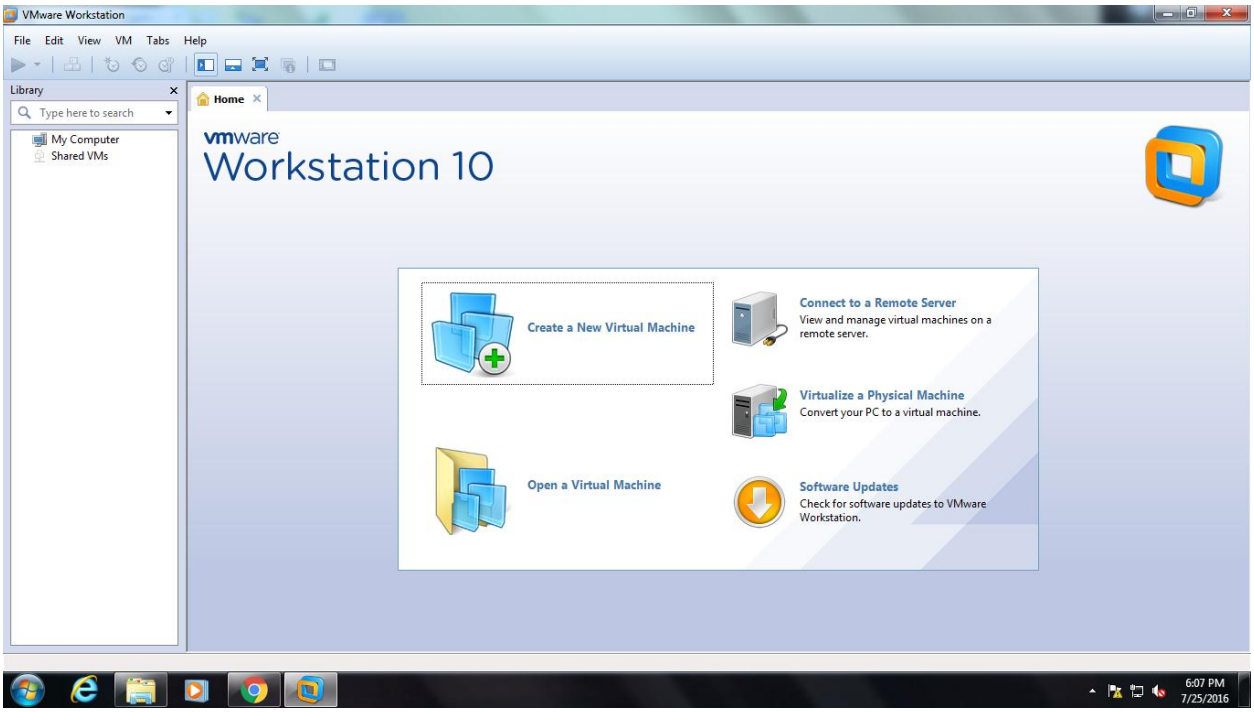
Hardware-assisted virtualization is a way of improving overall efficiency of virtualization. It involves CPUs that provide support for virtualization in hardware, and other hardware components that help improve the performance of a guest environment.

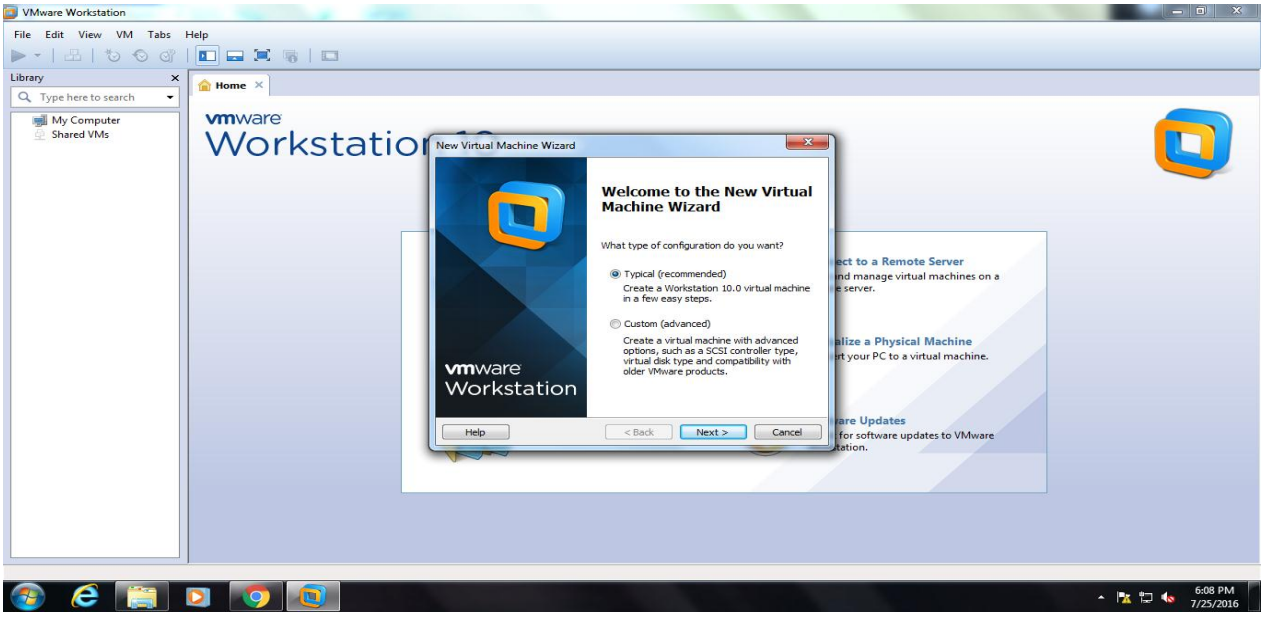
What is a Bare Metal Server?

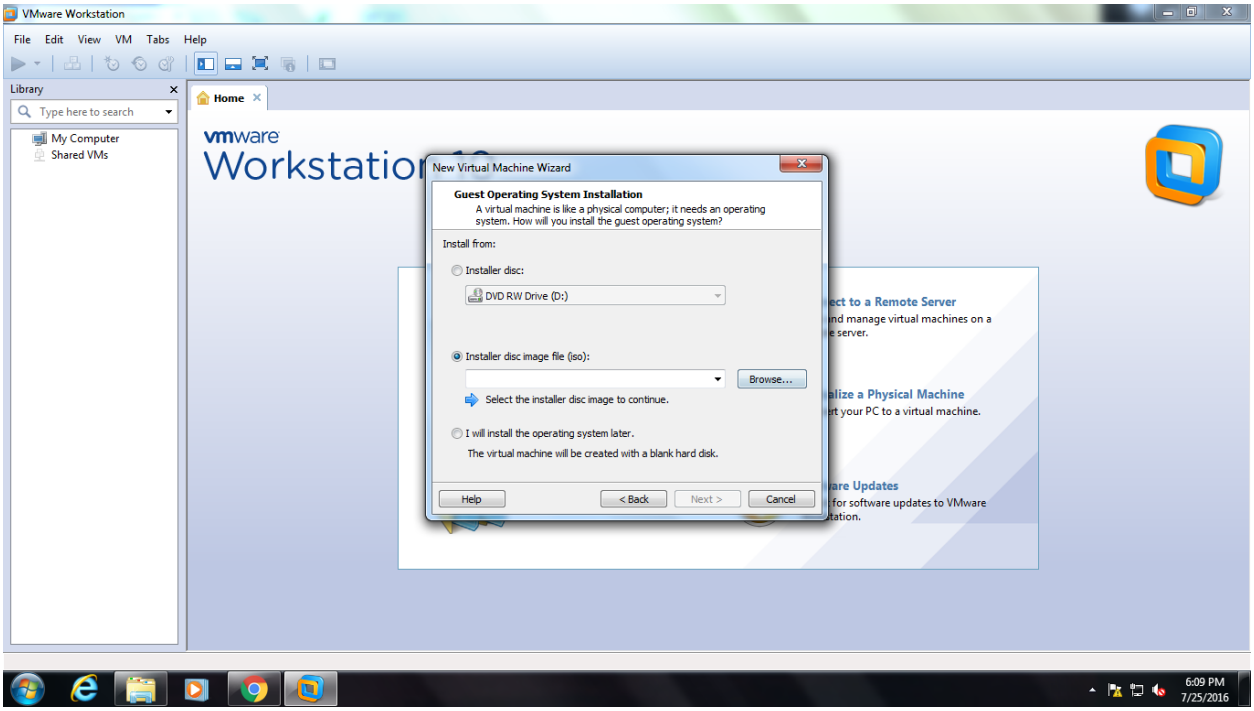
A **'bare-metal server'** is a descriptive term for a computer server to distinguish it from modern forms of virtualization and cloud hosting. It is defined as a 'single-tenant physical server'.

Bare-metal servers are 'physical' servers. Each logical server offered for rental is a distinct physical piece of hardware that is a functional server on its own. They are not virtual servers running in multiple on shared hardware.

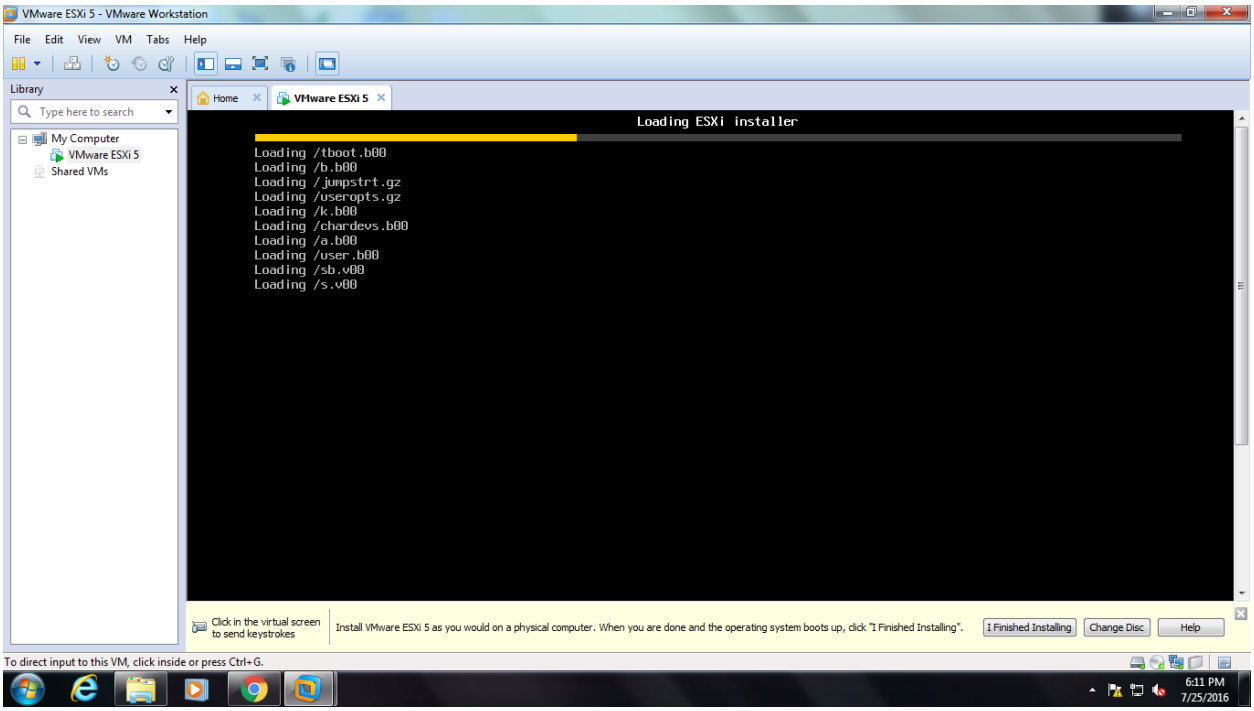
Step 01: As the first thing we have to create a new virtual machine using VMWare workstation and install the ISO image of VMvisor.

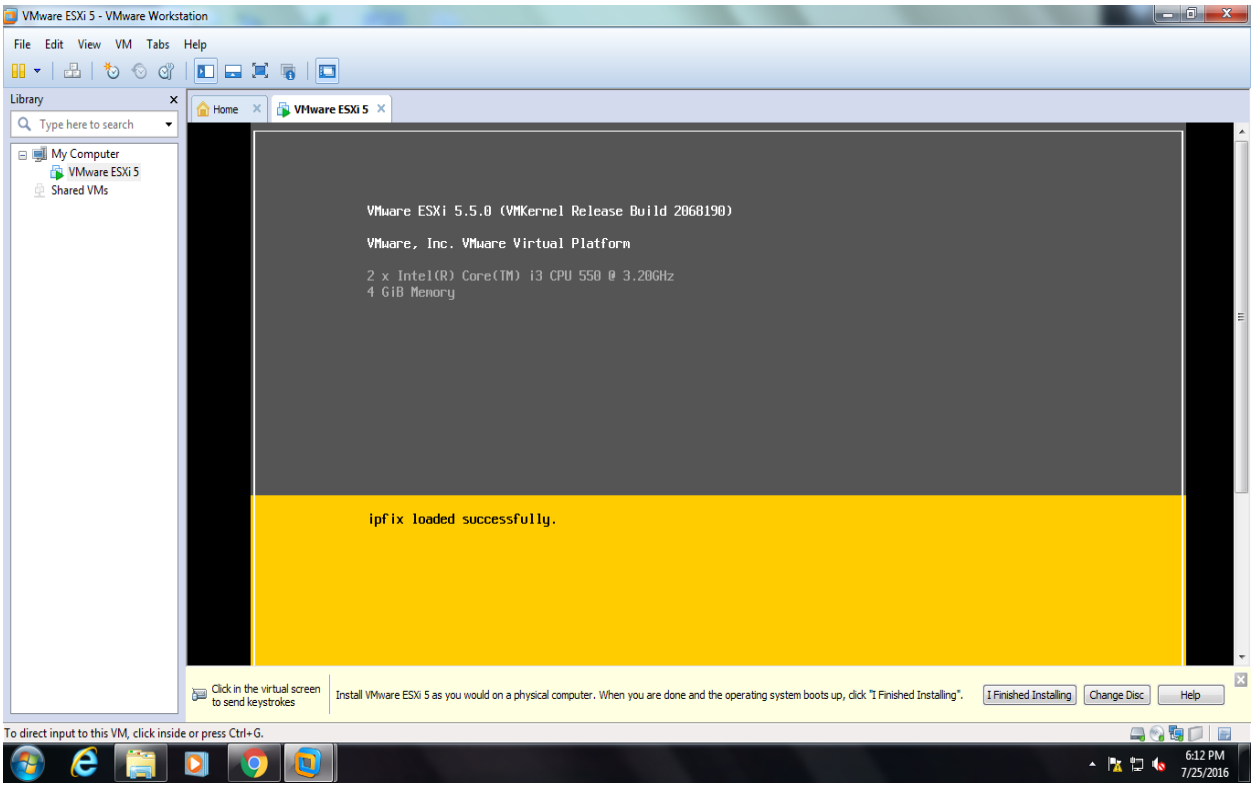


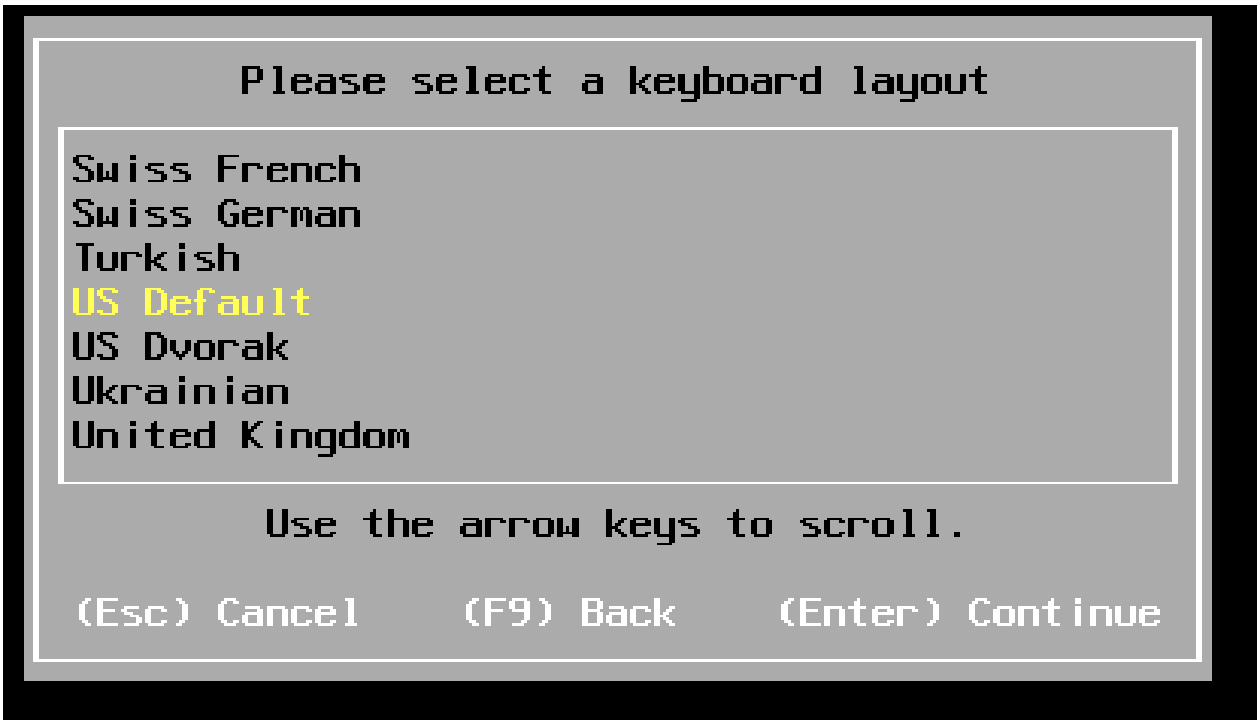




Step 02: Installation of VMWare ESXI 5

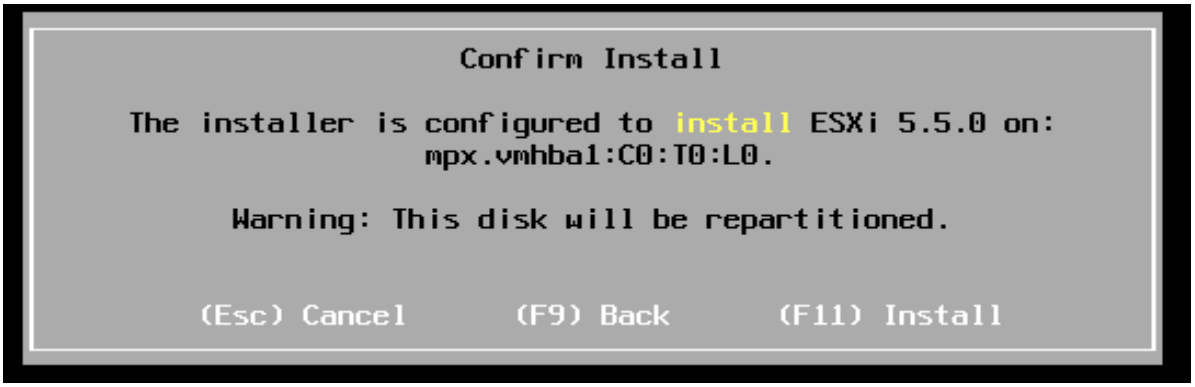


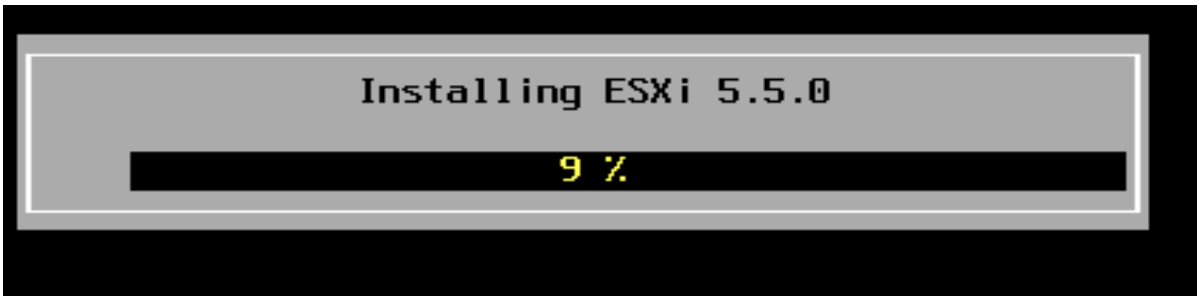

VMware ESXi 5 - VMware Workstation
File Edit View VM Tabs Help
Library
Type here to search
My Computer
VMware ESXi 5
Shared VMs
Home
VMware ESXi 5
VMware ESXi 5.5.0 (VMKernel Release Build 2068190)
VMware, Inc. VMware Virtual Platform
2 x Intel(R) Core(TM) i3 CPU 550 @ 3.20GHz
4 GiB Memory
ipfix loaded successfully.
Click in the virtual screen to send keystrokes
Install VMware ESXi 5 as you would on a physical computer. When you are done and the operating system boots up, click "I Finished Installing".
I Finished Installing
Change Disc
Help
To direct input to this VM, click inside or press Ctrl+G.
6:12 PM
7/25/2016

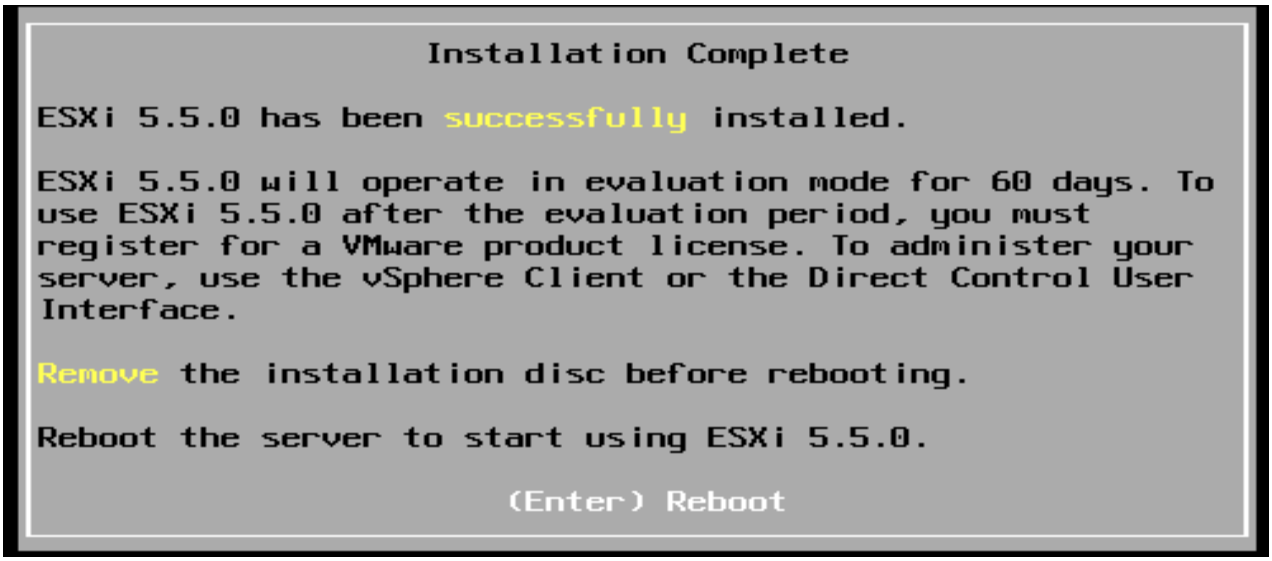

Please select a keyboard layout
Swiss French
Swiss German
Turkish
US Default
US Dvorak
Ukrainian
United Kingdom
Use the arrow keys to scroll.
(Esc) Cancel
(F9) Back
(Enter) Continue

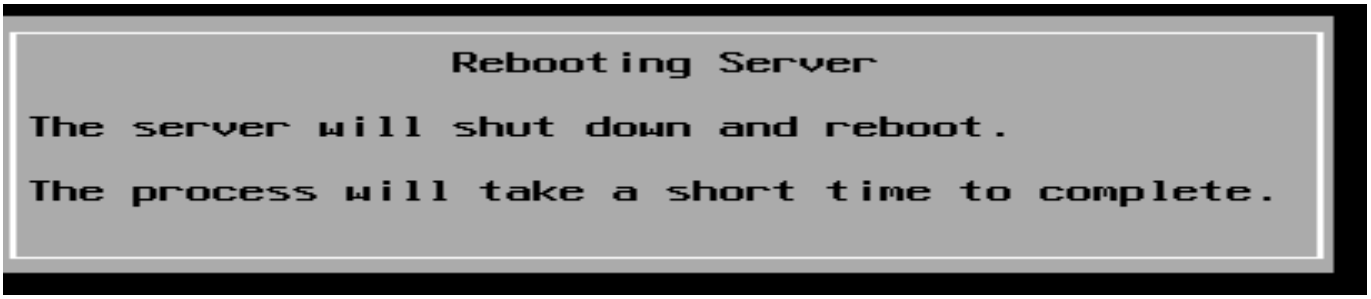
Step 03: Giving a root password

Step 04: Confirming the installation of ESXI 5

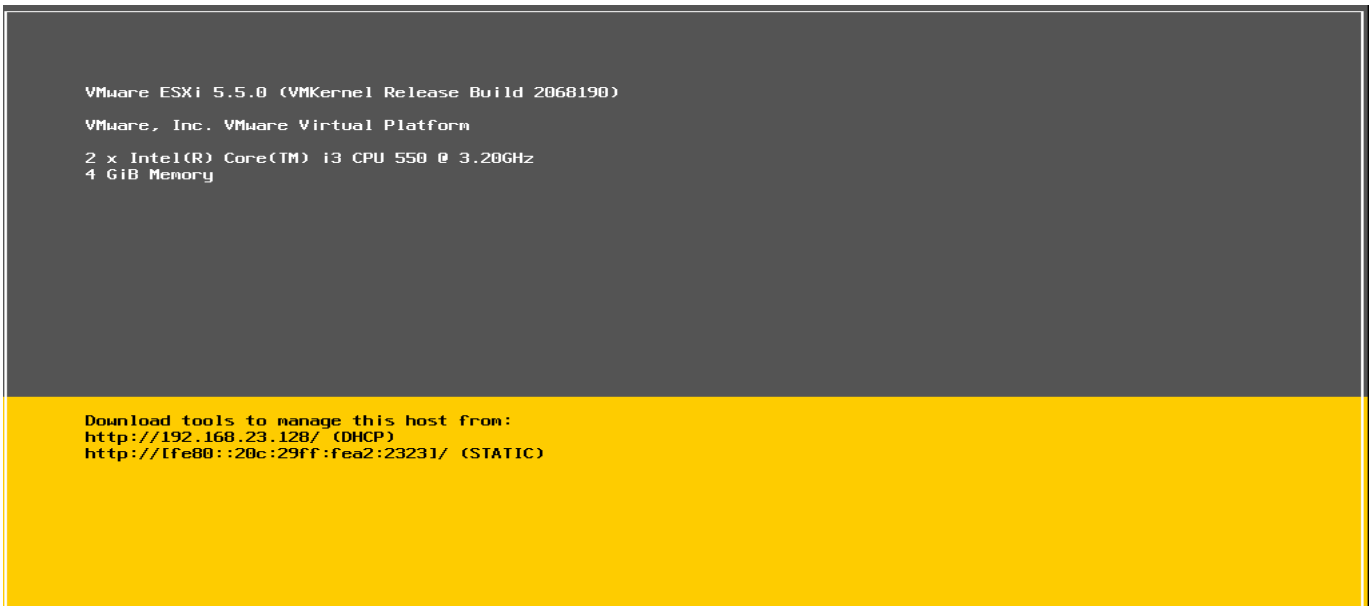




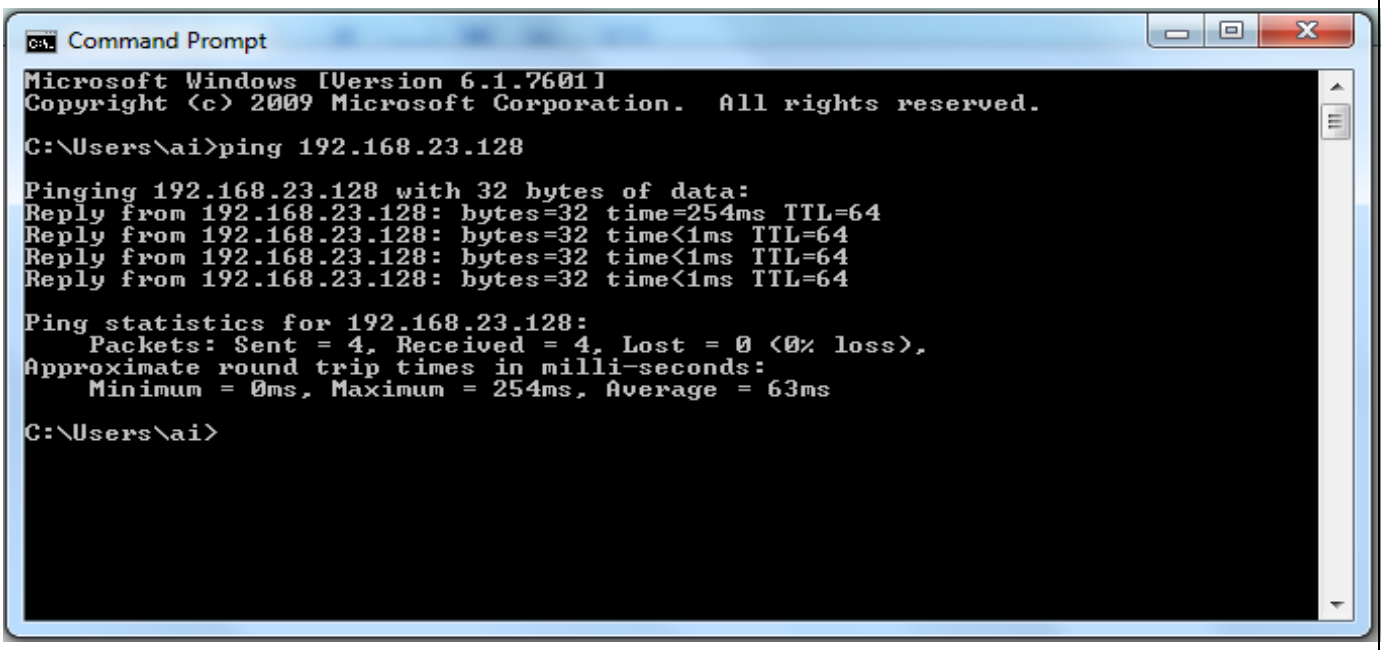




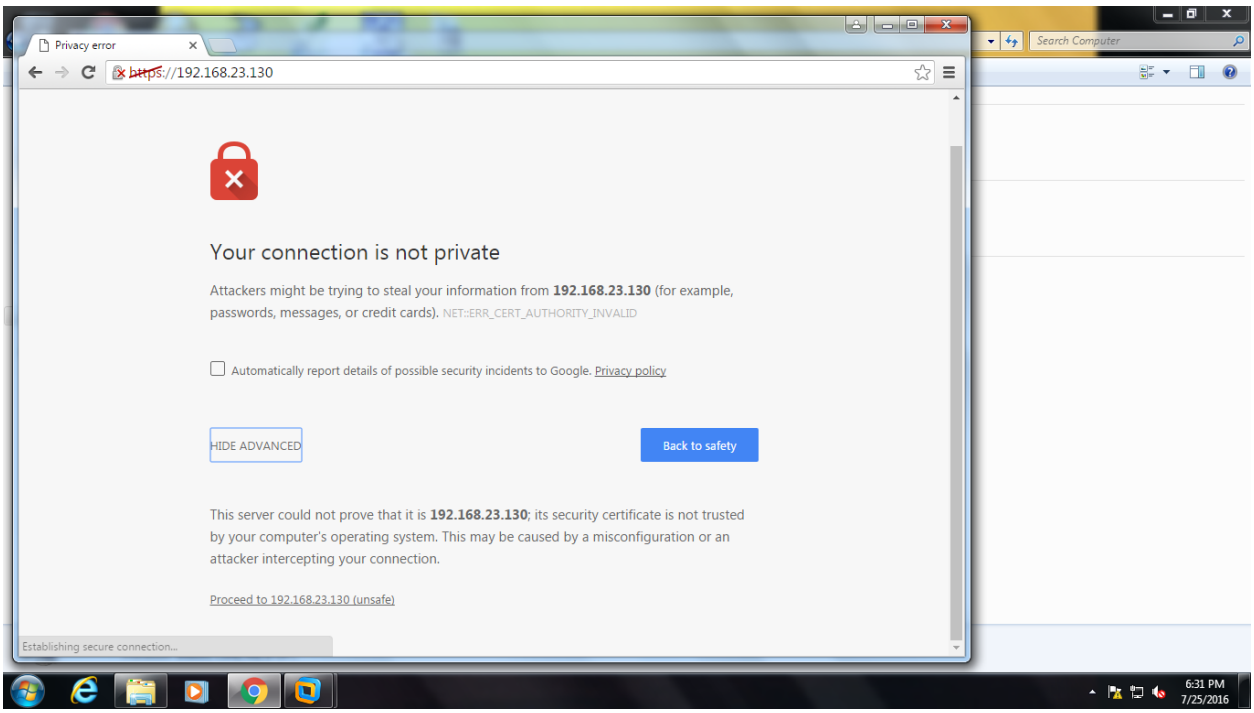
After the successful installation of ESXI 5, the DHCP address will appear.

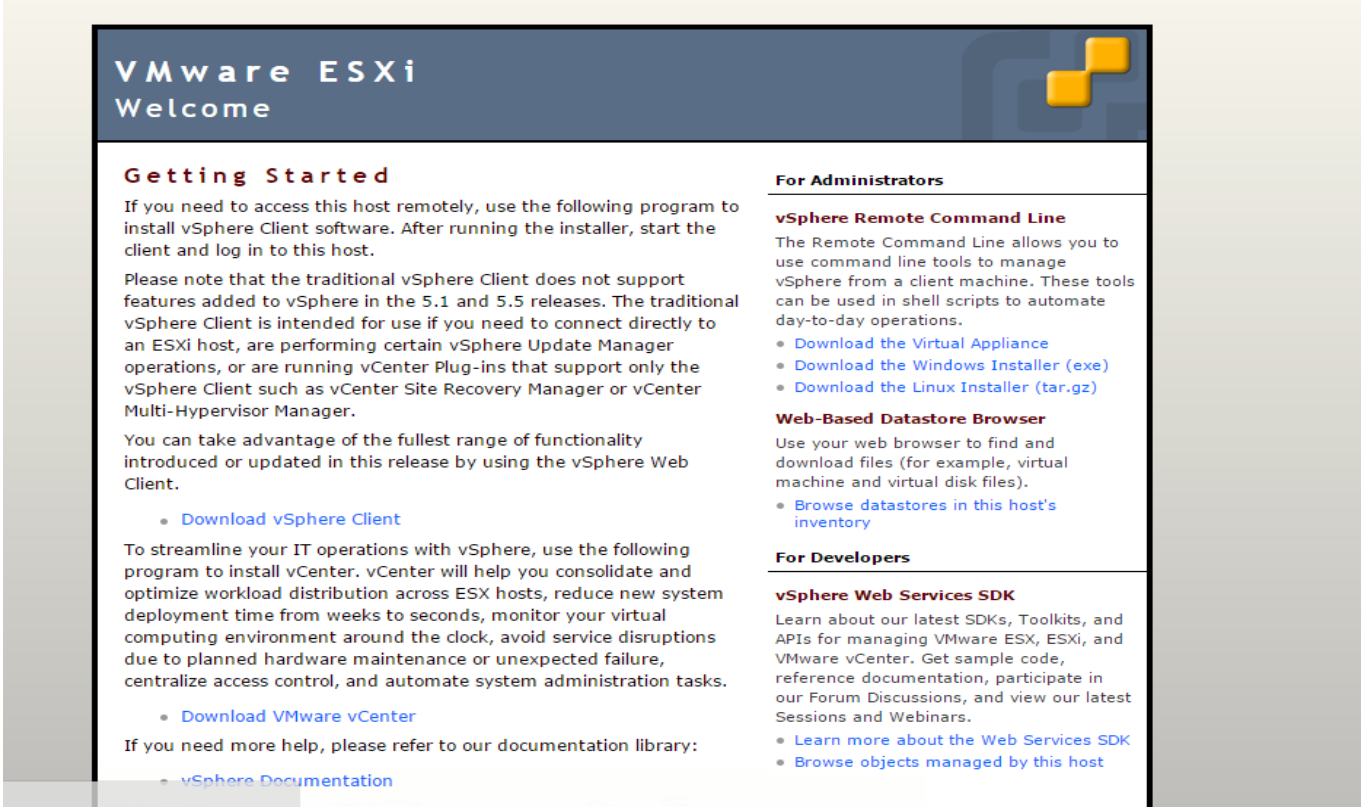


Step 05: Checking whether the host is alive by ping to the ip address

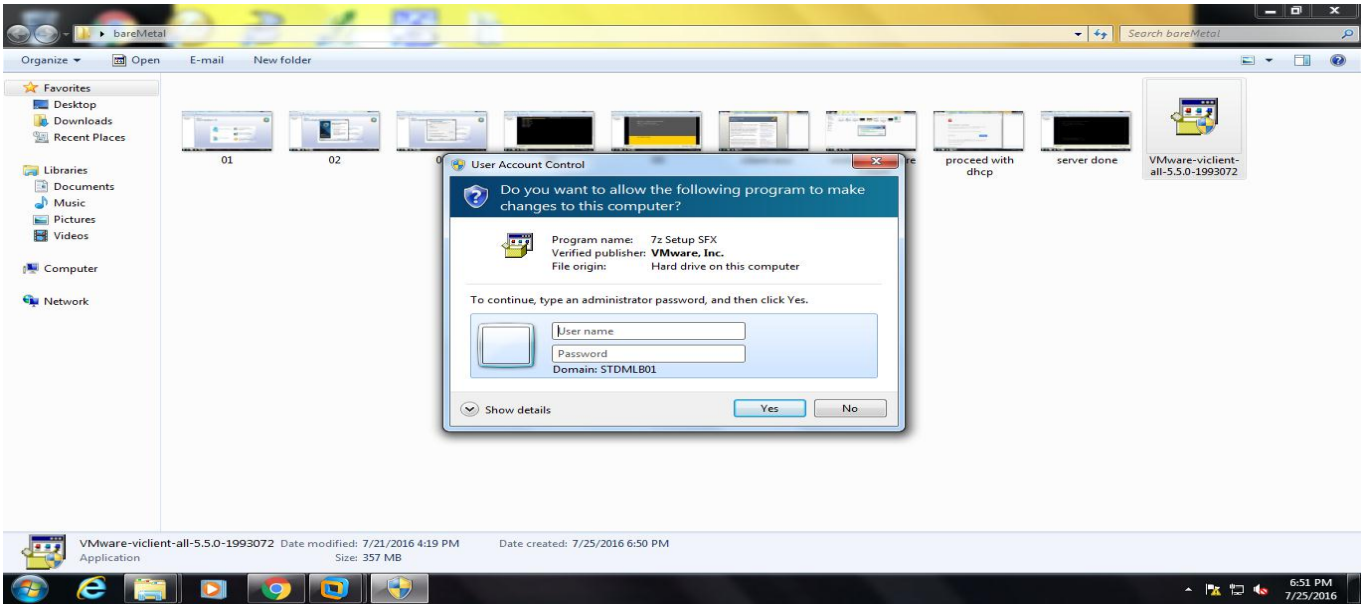


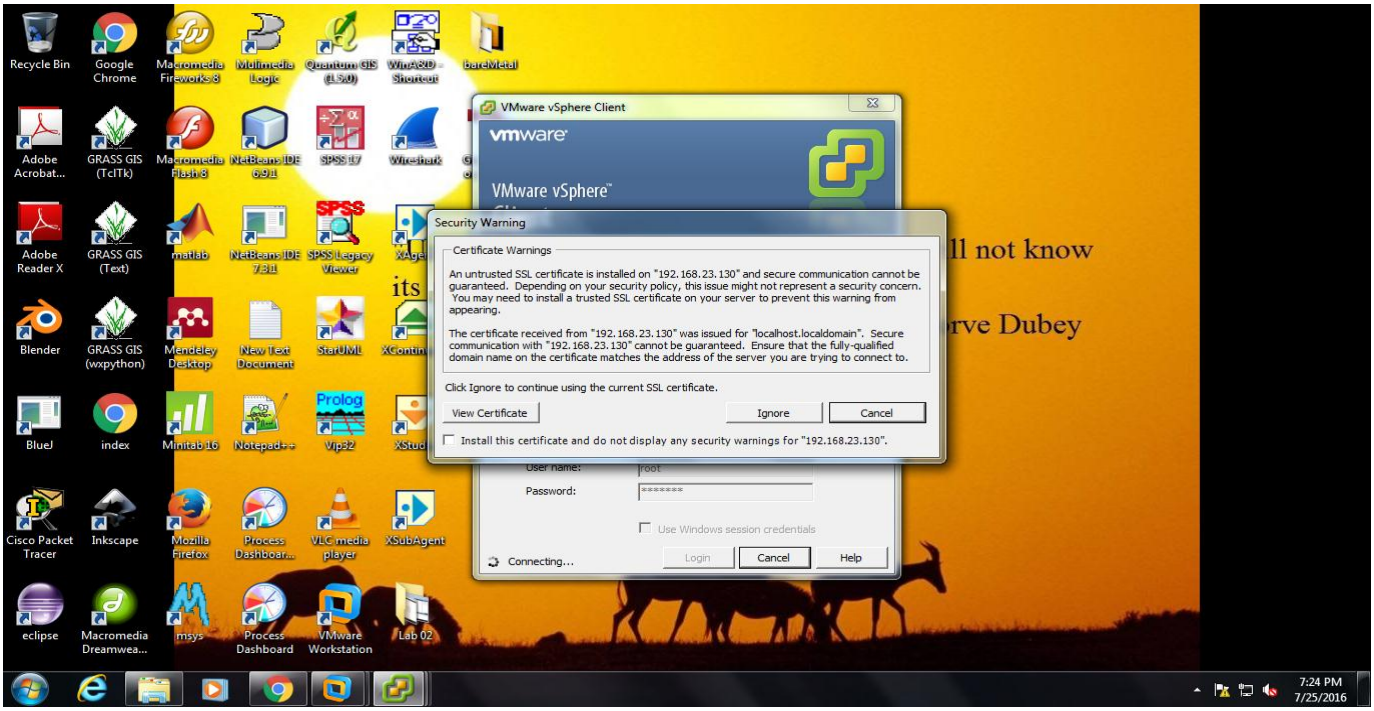
Step 06: Using the DHCP address, access the client

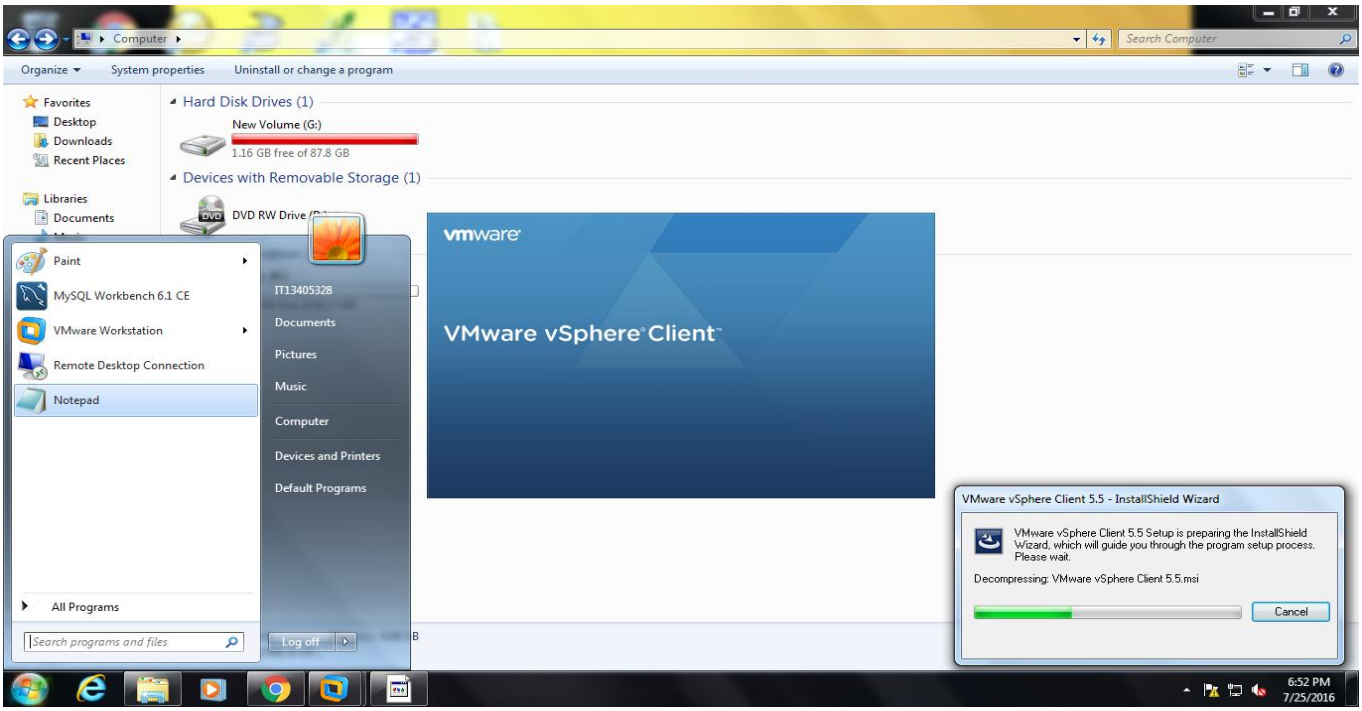


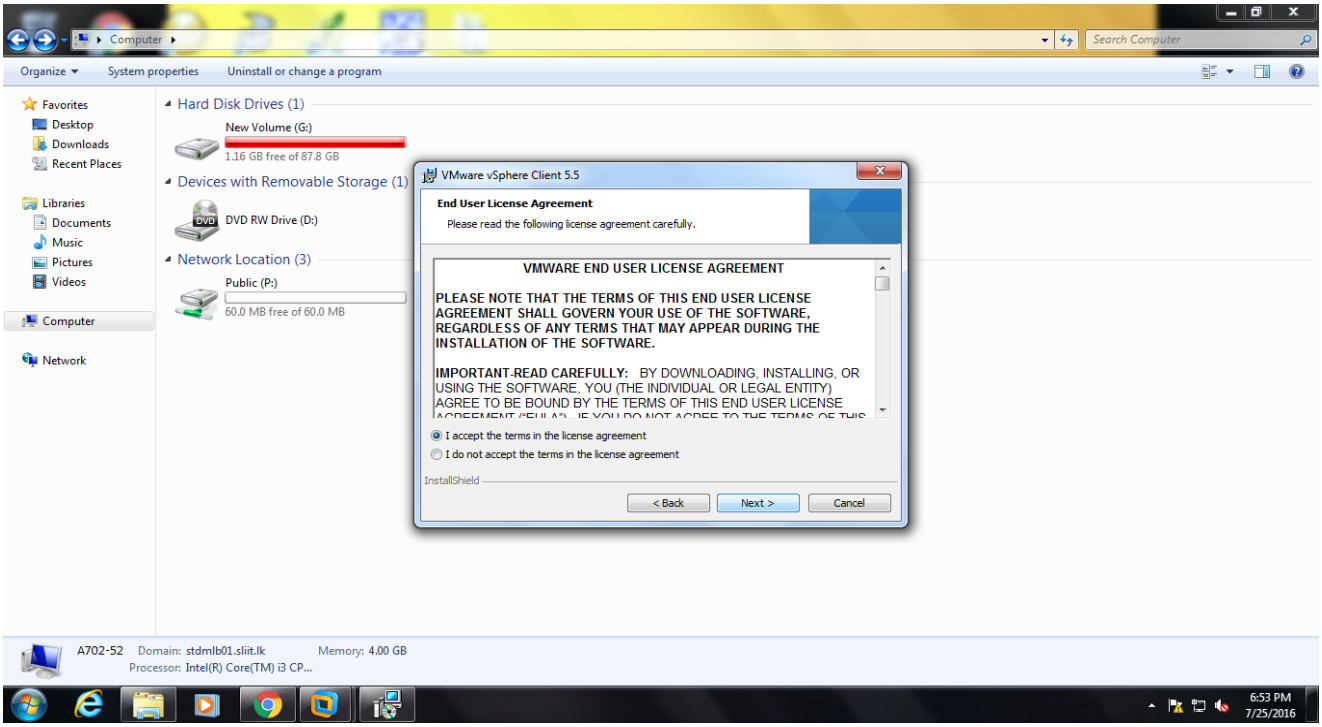


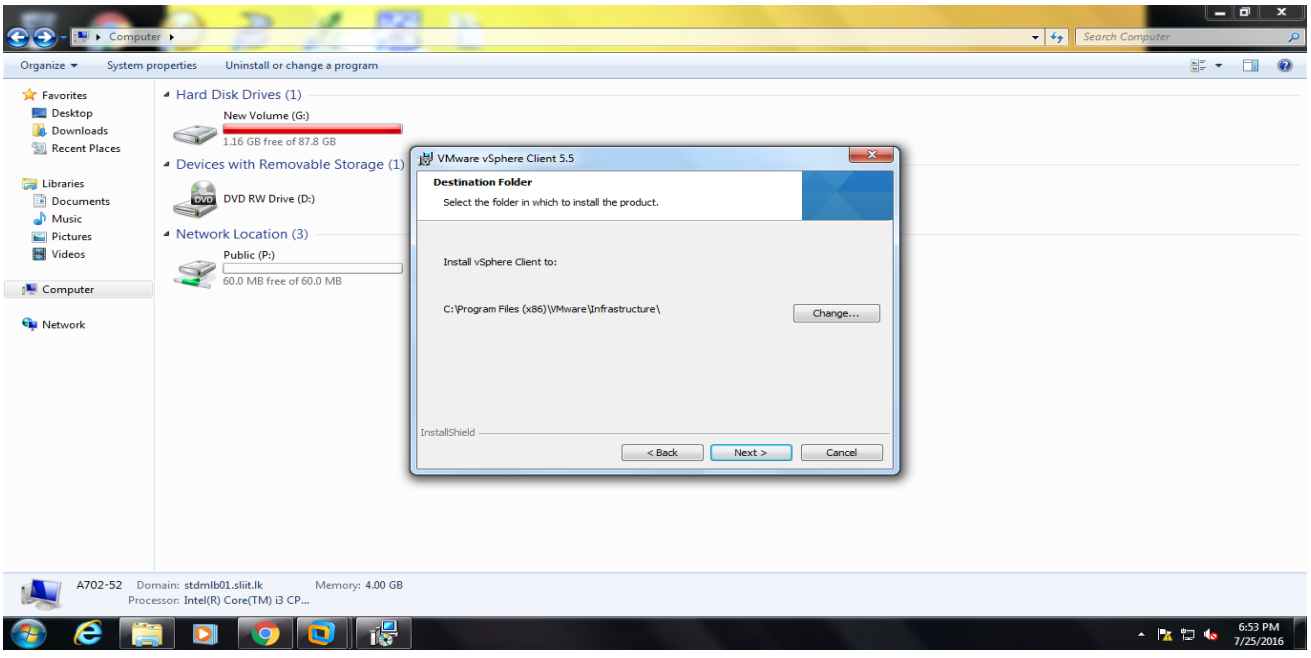
Step 07: Then, installing the VMWare vSphere Client to the machine. In order to run that we have to give the administrative username and password.

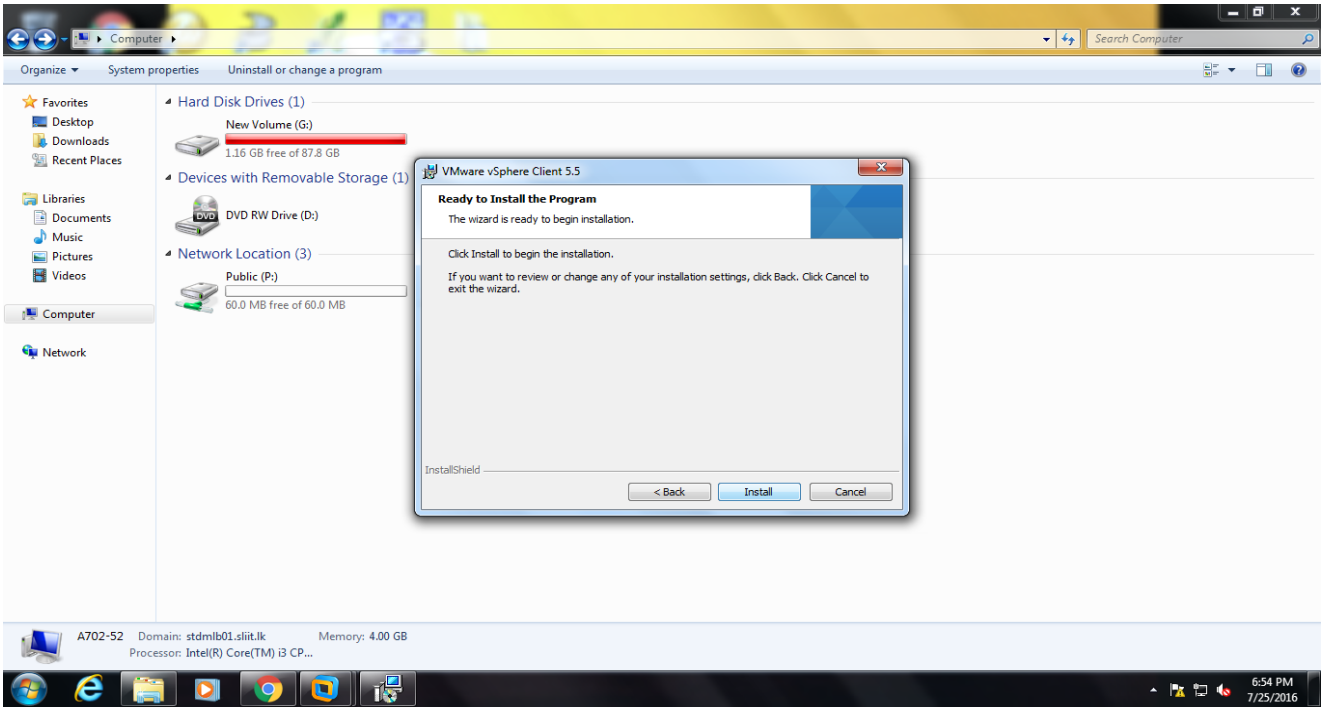


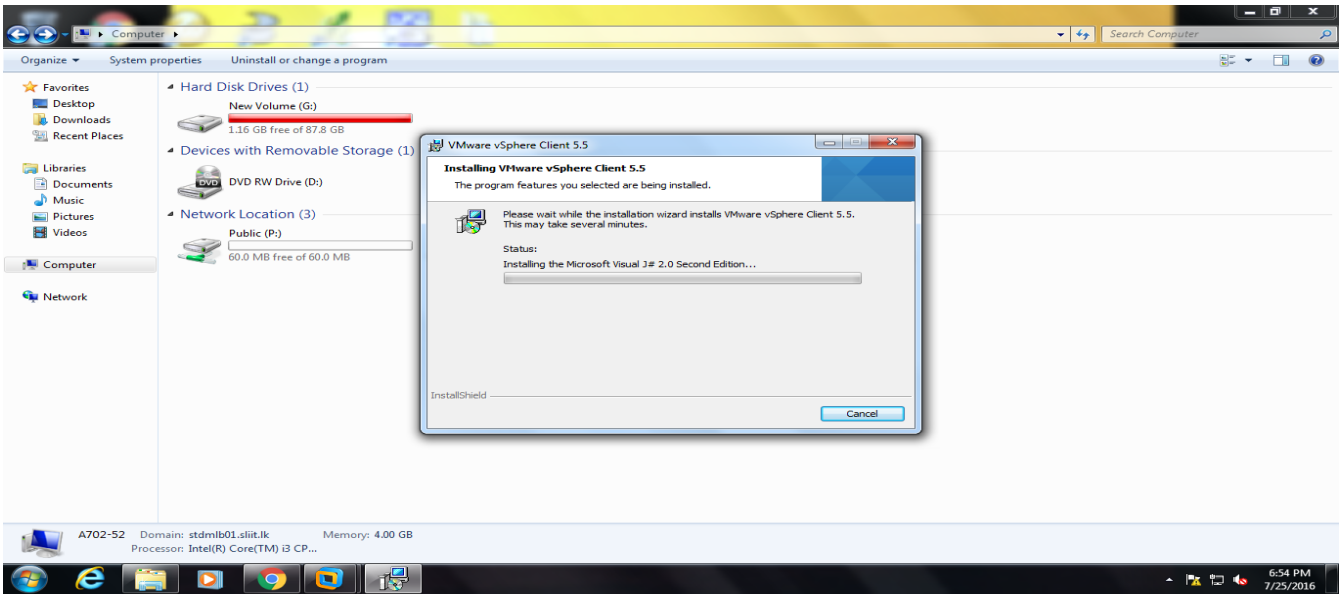

VMware vSphere Client
vmware
VMware vSphere
Security Warning
Certificate Warnings
An untrusted SSL certificate is installed on "192.168.23.130" and secure communication cannot be guaranteed. Depending on your security policy, this issue might not represent a security concern. You may need to install a trusted SSL certificate on your server to prevent this warning from appearing.
The certificate received from "192.168.23.130" was issued for "localhost.localdomain". Secure communication with "192.168.23.130" cannot be guaranteed. Ensure that the fully-qualified domain name on the certificate matches the address of the server you are trying to connect to.
Click Ignore to continue using the current SSL certificate.
View Certificate
Ignore
Cancel
Install this certificate and do not display any security warnings for "192.168.23.130".
User name:
root
Password:
Use Windows session credentials
Connecting...
Login
Cancel
Help
Recycle Bin
Google Chrome
Adobe Acrobat...
GRASS GIS (TclTk)
Adobe Reader X
GRASS GIS (Text)
Blender
GRASS GIS (wxpython)
BlueJ
index
Cisco Packet Tracer
Inkscape
eclipse
Macromedia Dreamwea...
Macromedia Fireworks 8
Multimedia Logic
Quantum GIS (1.5.0)
Win32D - Shortcut
bareMetal
Macromedia Flash 8
NetBeans IDE 6.9.1
SPSS 17
Wireshark
matlab
NetBeans IDE 7.3.1
SPSS Legacy Viewer
Mendeley Desktop
New Text Document
StarUML
Minitab 16
Notepad++
Vip32
Mozilla Firefox
Process Dashboar...
VLC media player
XSubAgent
msys
Process Dashboard
VMware Workstation
Lab 02
7:24 PM
7/25/2016


Computer
Search Computer
Organize
System properties
Uninstall or change a program
Favorites
Desktop
Downloads
Recent Places
Libraries
Documents
Hard Disk Drives (1)
New Volume (G:)
1.16 GB free of 87.8 GB
Devices with Removable Storage (1)
DVD RW Drive
Paint
MySQL Workbench 6.1 CE
VMware Workstation
Remote Desktop Connection
Notepad
All Programs
Search programs and files
Log off
IT13405328
Documents
Pictures
Music
Computer
Devices and Printers
Default Programs
vmware
VMware vSphere Client
VMware vSphere Client 5.5 - InstallShield Wizard
VMware vSphere Client 5.5 Setup is preparing the InstallShield Wizard, which will guide you through the program setup process. Please wait.
Decompressing: VMware vSphere Client 5.5.msi
Cancel
6:52 PM
7/25/2016

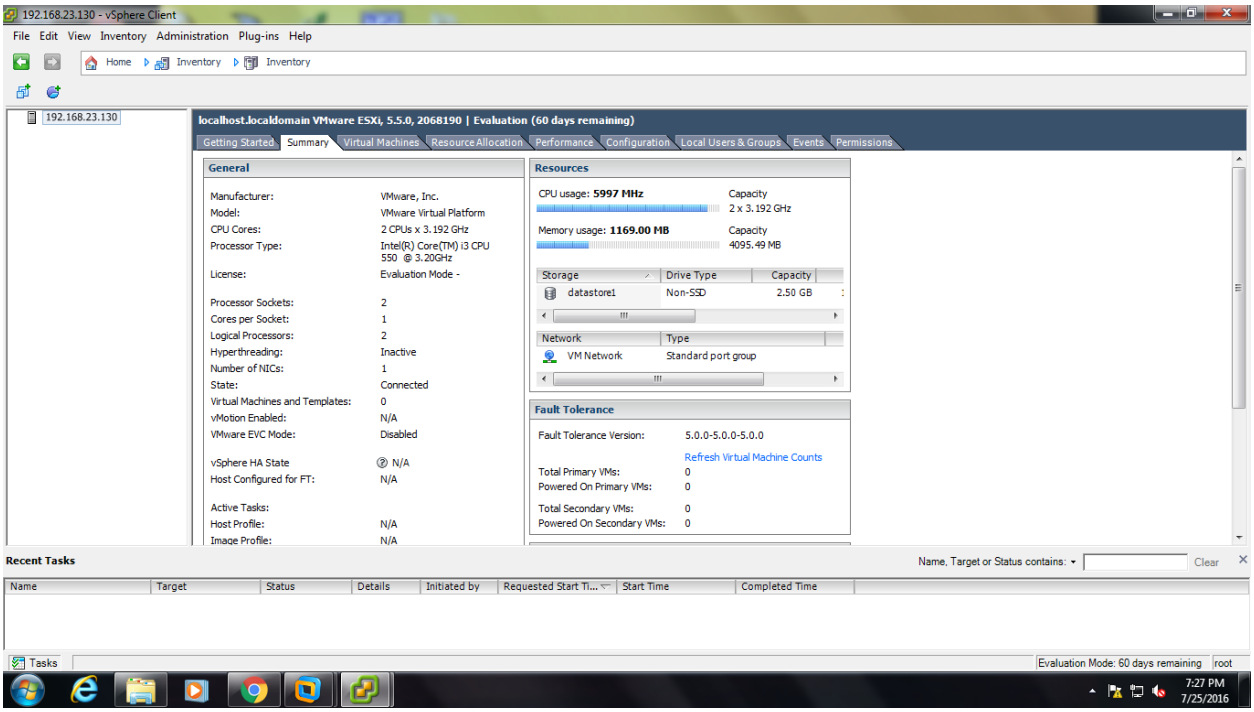

Computer
Search Computer
Organize
System properties
Uninstall or change a program
Favorites
Desktop
Downloads
Recent Places
Libraries
Documents
Music
Pictures
Videos
Computer
Network
Hard Disk Drives (1)
New Volume (G:)
1.16 GB free of 87.8 GB
Devices with Removable Storage (1)
DVD RW Drive (D:)
Network Location (3)
Public (P:)
60.0 MB free of 60.0 MB
VMware vSphere Client 5.5
End User License Agreement
Please read the following license agreement carefully.
VMWARE END USER LICENSE AGREEMENT
PLEASE NOTE THAT THE TERMS OF THIS END USER LICENSE AGREEMENT SHALL GOVERN YOUR USE OF THE SOFTWARE, REGARDLESS OF ANY TERMS THAT MAY APPEAR DURING THE INSTALLATION OF THE SOFTWARE.
IMPORTANT-READ CAREFULLY: BY DOWNLOADING, INSTALLING, OR USING THE SOFTWARE, YOU (THE INDIVIDUAL OR LEGAL ENTITY)
I accept the terms in the license agreement
I do not accept the terms in the license agreement
InstallShield
< Back
Next >
Cancel
A702-52
Domain: stdmlb01.sliit.lk
Memory: 4.00 GB
Processor: Intel(R) Core(TM) i3 CP...
6:53 PM
7/25/2016

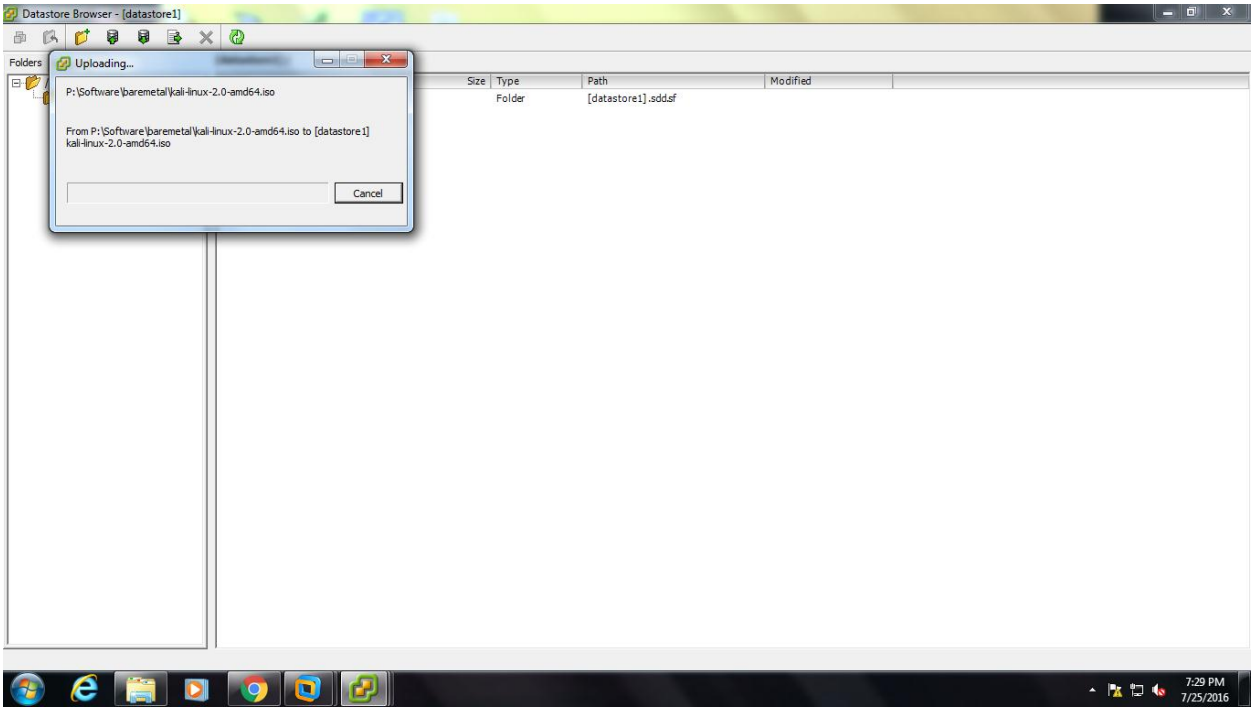

Computer
Search Computer
Organize
System properties
Uninstall or change a program
Favorites
Desktop
Downloads
Recent Places
Libraries
Documents
Music
Pictures
Videos
Computer
Network
Hard Disk Drives (1)
New Volume (G:)
1.16 GB free of 87.8 GB
Devices with Removable Storage (1)
DVD RW Drive (D:)
Network Location (3)
Public (P:)
60.0 MB free of 60.0 MB
VMware vSphere Client 5.5
Destination Folder
Select the folder in which to install the product.
Install vSphere Client to:
C:\Program Files (x86)\VMware\Infrastructure\
Change...
InstallShield
< Back
Next >
Cancel
A702-52
Domain: stdmlb01.sliit.lk
Memory: 4.00 GB
Processor: Intel(R) Core(TM) i3 CP...
6:53 PM
7/25/2016

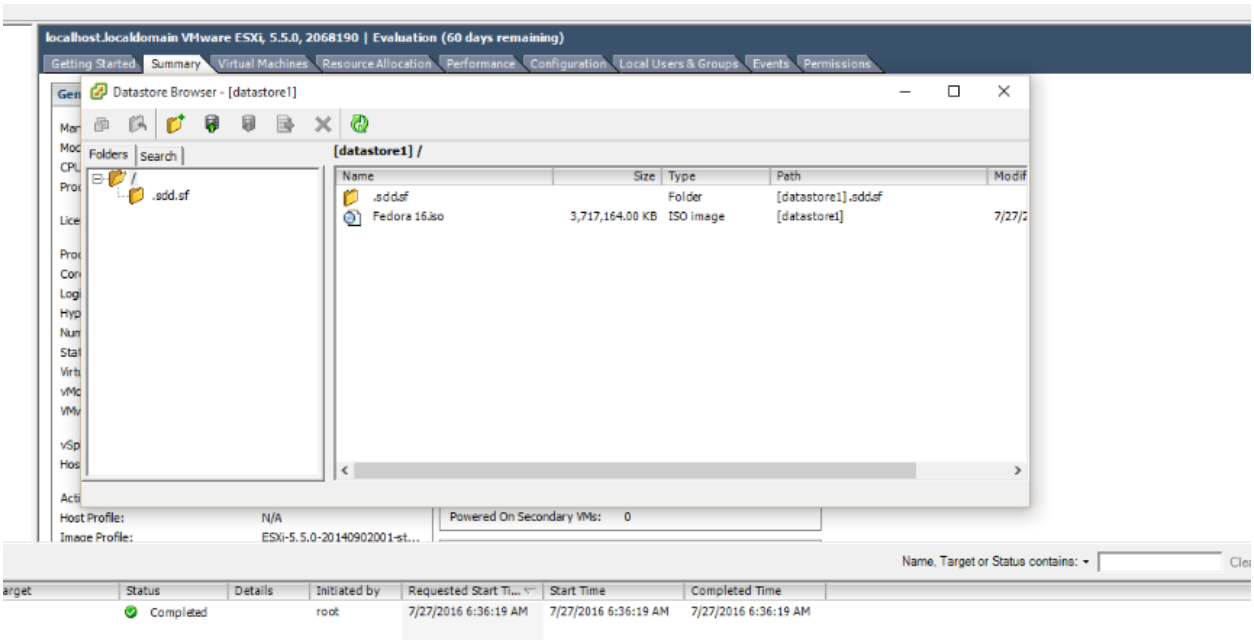

Computer
Search Computer
Organize
System properties
Uninstall or change a program
Favorites
Desktop
Downloads
Recent Places
Libraries
Documents
Music
Pictures
Videos
Computer
Network
Hard Disk Drives (1)
New Volume (G:)
1.16 GB free of 87.8 GB
Devices with Removable Storage (1)
DVD RW Drive (D:)
Network Location (3)
Public (P:)
60.0 MB free of 60.0 MB
VMware vSphere Client 5.5
Ready to Install the Program
The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel
A702-52
Domain: stdmlb01.sliit.lk
Memory: 4.00 GB
Processor: Intel(R) Core(TM) i3 CP...
6:54 PM
7/25/2016


Computer
Search Computer
Organize
System properties
Uninstall or change a program
Favorites
Desktop
Downloads
Recent Places
Libraries
Documents
Music
Pictures
Videos
Computer
Network
Hard Disk Drives (1)
New Volume (G:)
1.16 GB free of 87.8 GB
Devices with Removable Storage (1)
DVD RW Drive (D:)
Network Location (3)
Public (P:)
60.0 MB free of 60.0 MB
VMware vSphere Client 5.5
Installing VMware vSphere Client 5.5
The program features you selected are being installed.
Please wait while the installation wizard installs VMware vSphere Client 5.5. This may take several minutes.
Status:
Installing the Microsoft Visual J# 2.0 Second Edition...
InstallShield
Cancel
A702-52
Domain: stdmlb01.sliit.lk
Memory: 4.00 GB
Processor: Intel(R) Core(TM) i3 CP...
6:54 PM
7/25/2016

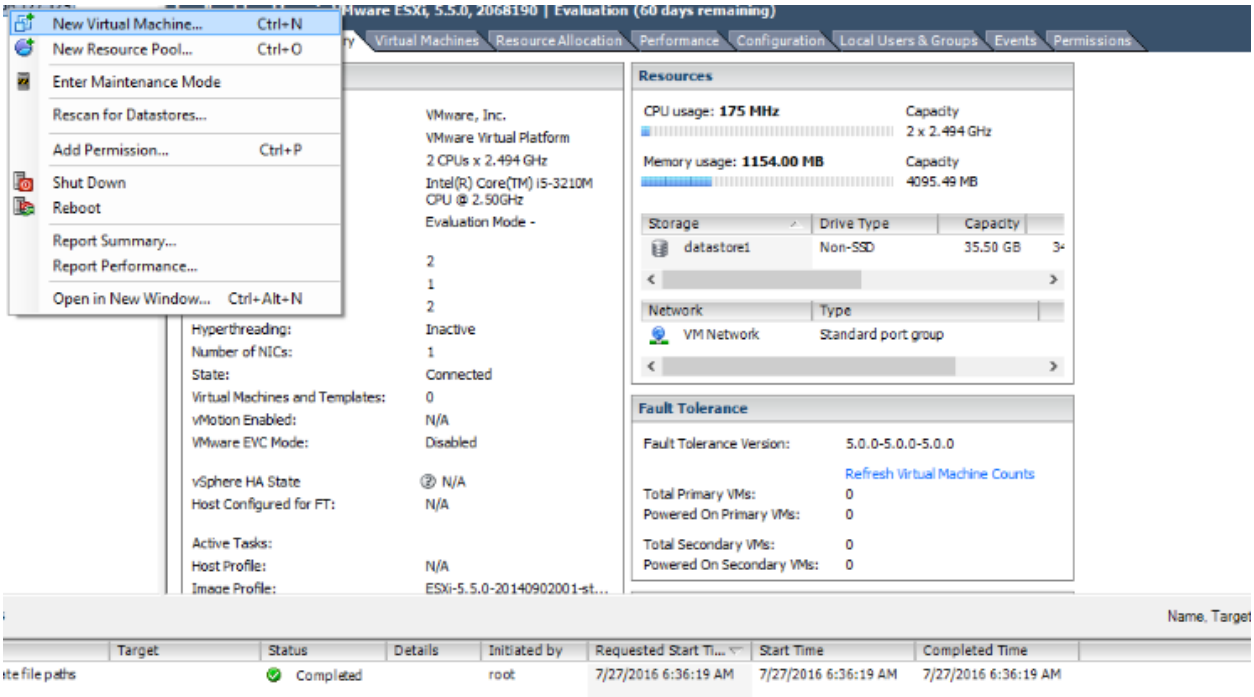
Step 08: After successfully installing the VMWare vSphere Client we have to go to the data store and upload kali Linux. Go to Storage and browse for data store.



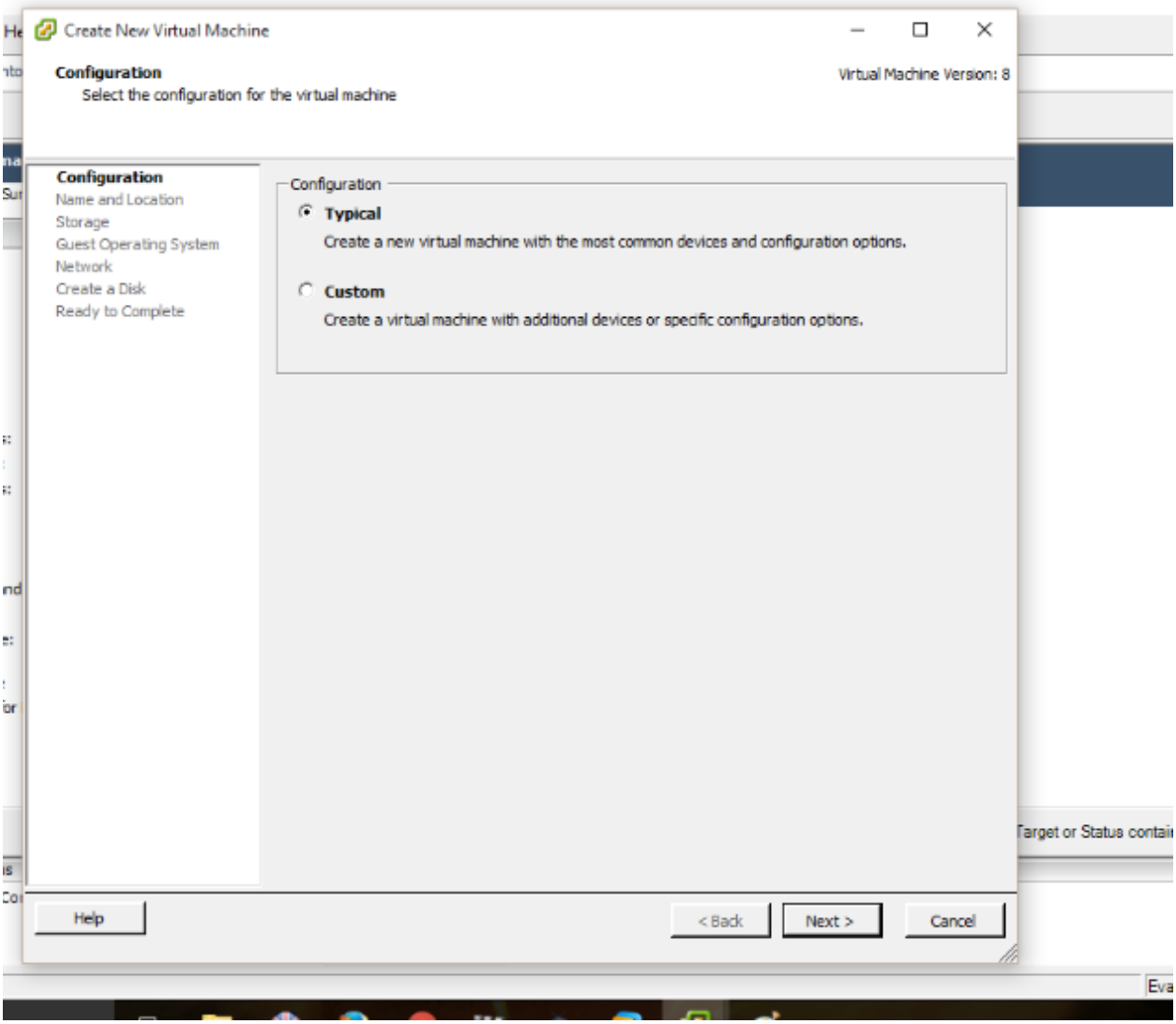




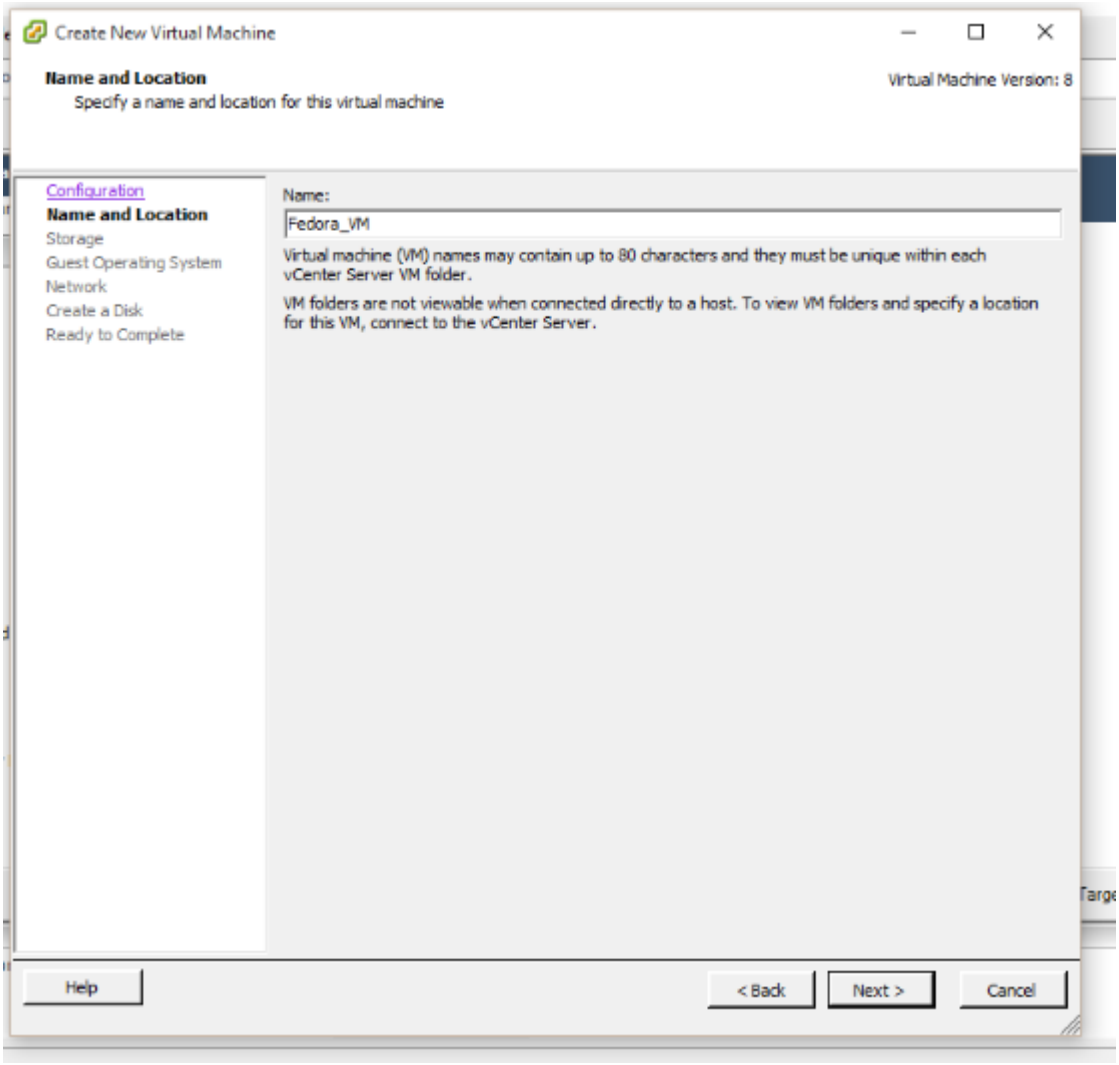
Step 09: After successful uploading we have to create a new virtual machine.



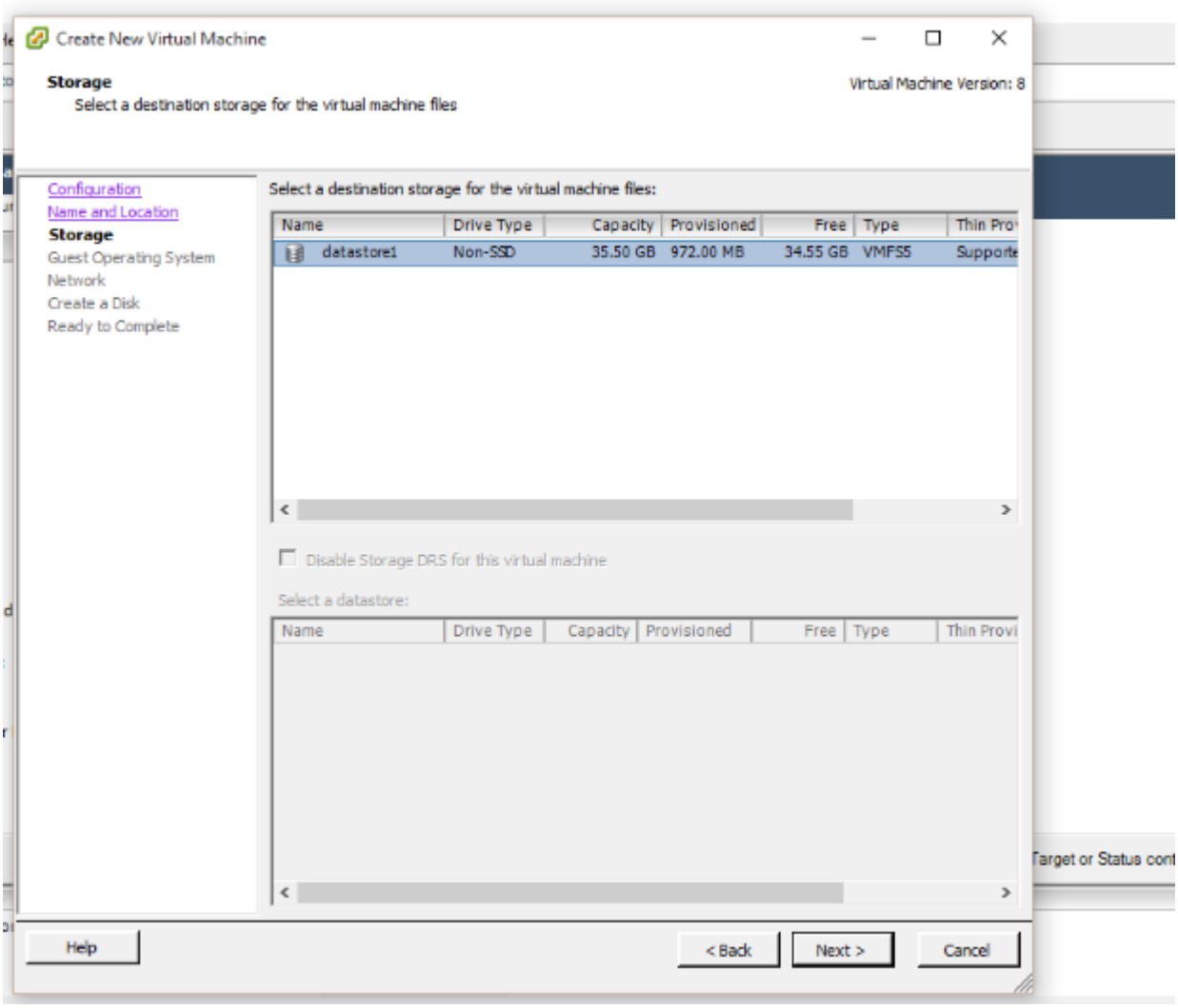
Step 10: Select the Typical configuration



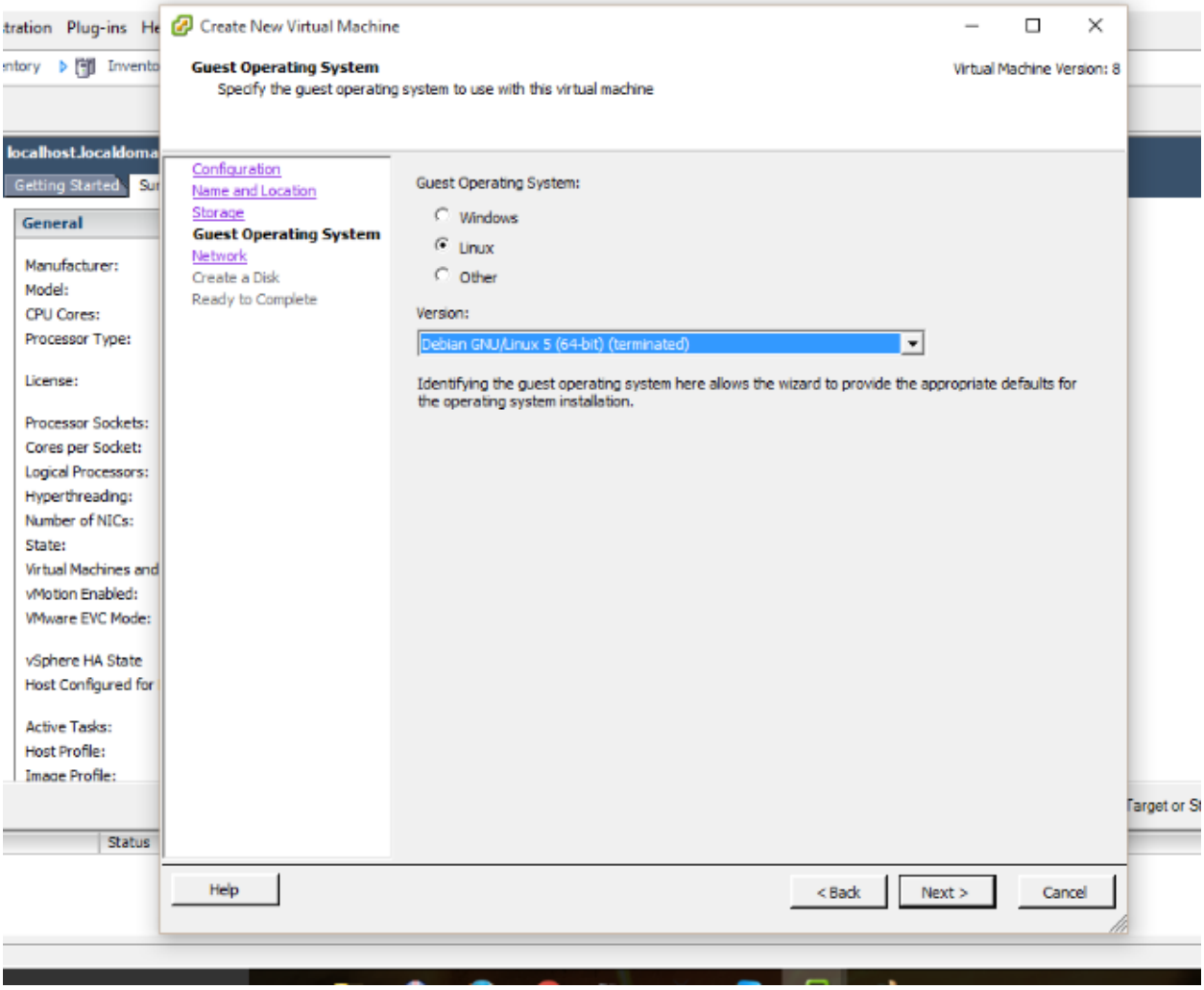
Step 11: Give a name for the virtual machine.



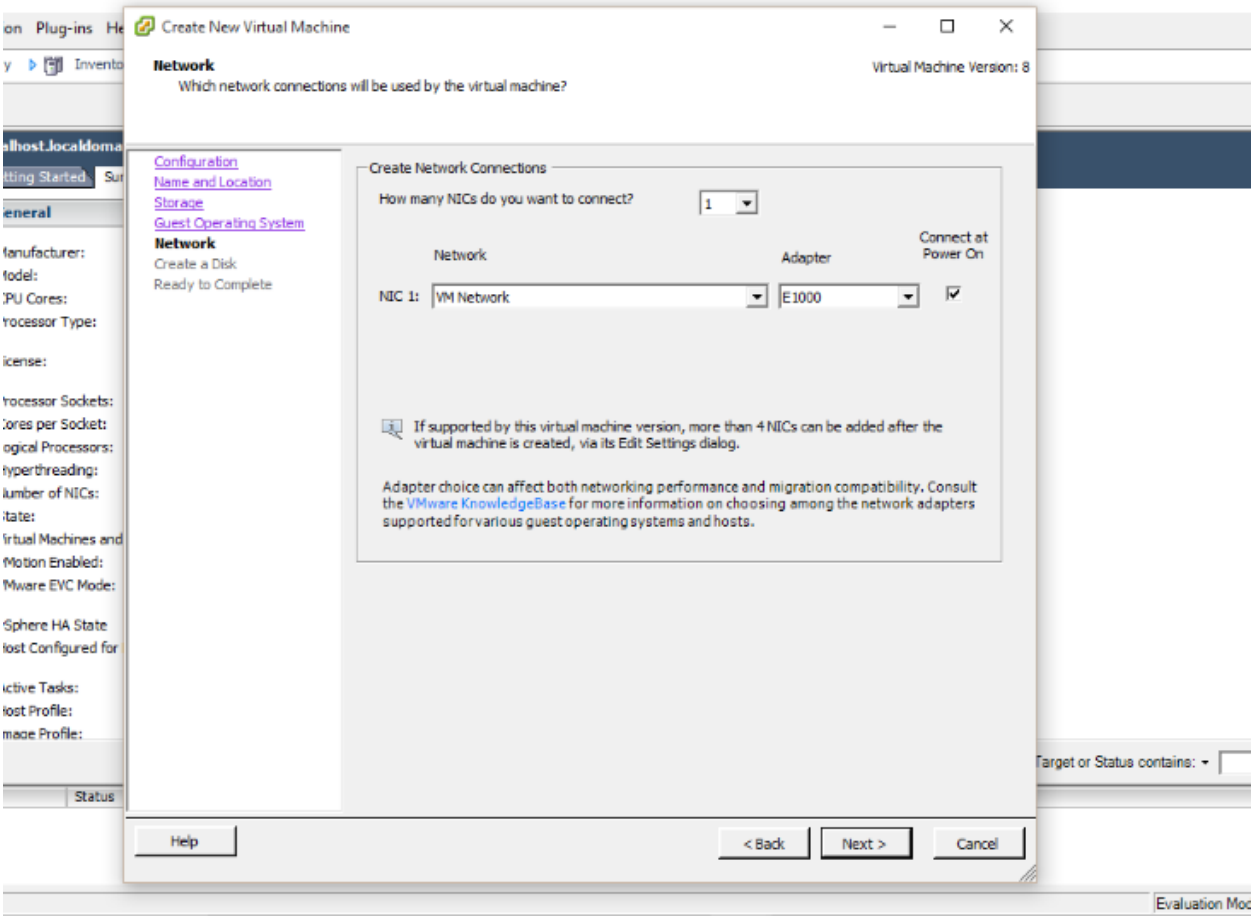
Step 12: Selecting the storage of the location.



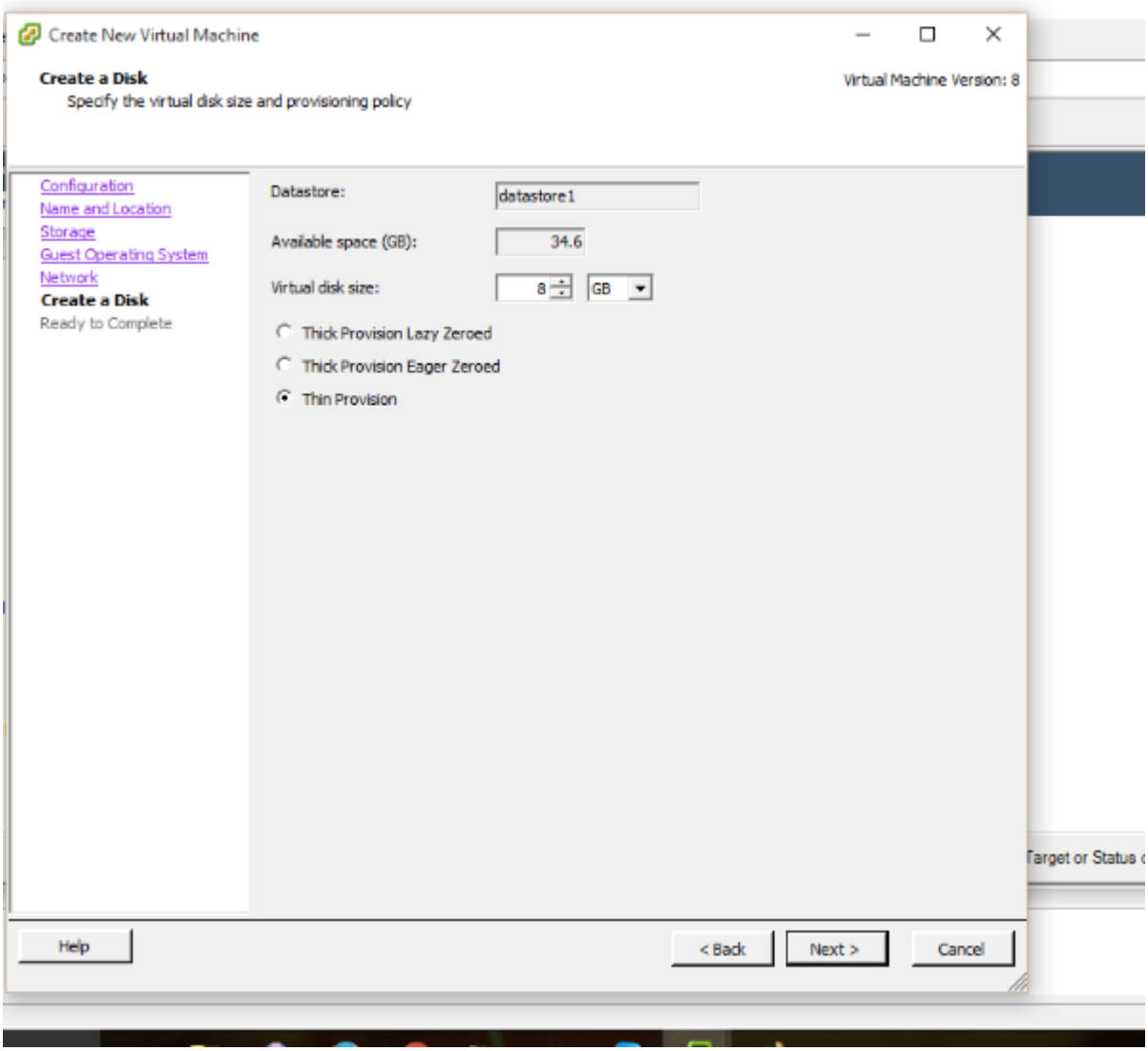
Step 13: Specify the guest operating system to use with this virtual machine.



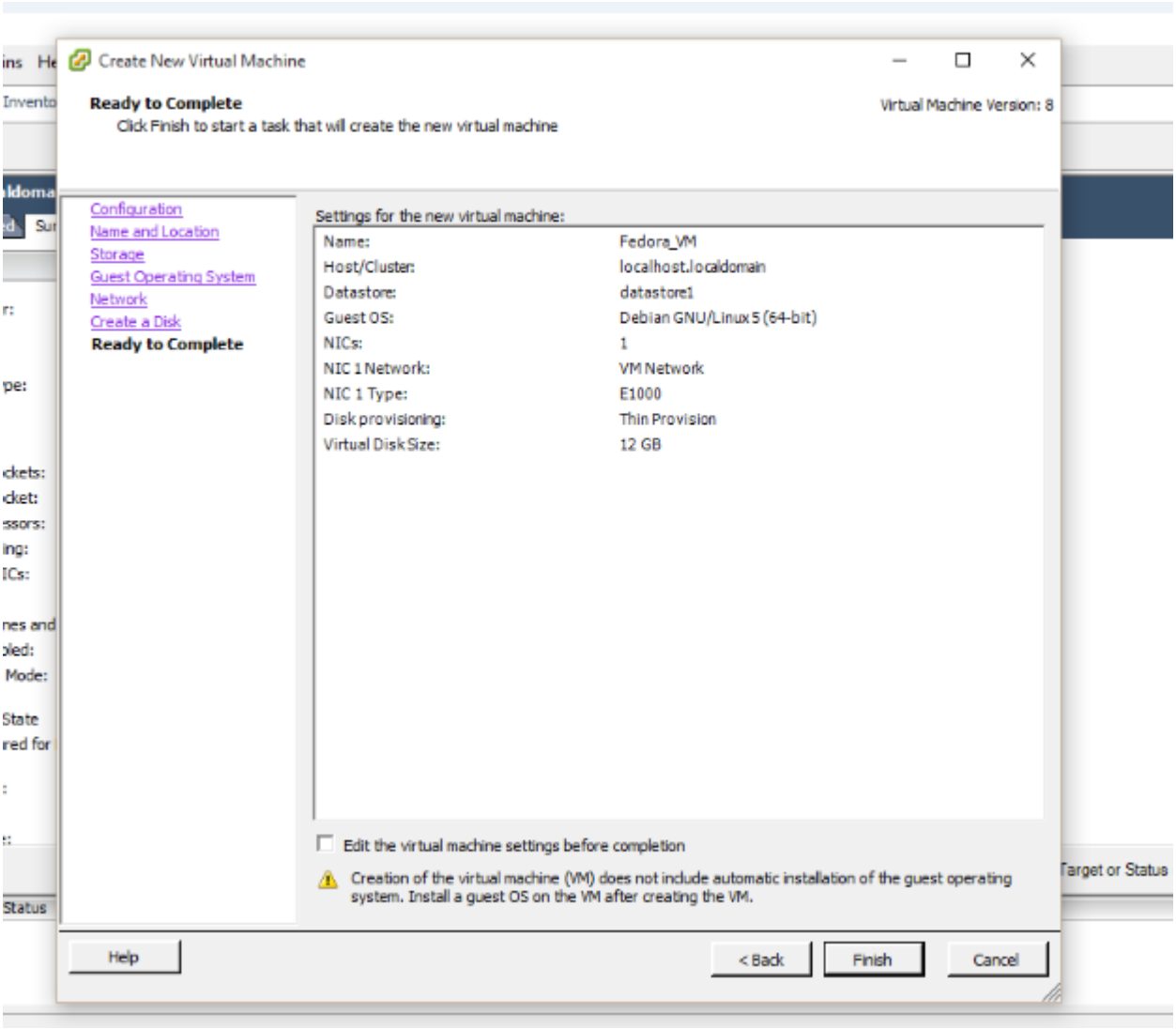
Step 14: Network connections used by virtual machines



Step 15: Specify the virtual disk size and provisioning disk



Step 16: Starting a task that creates a virtual machine.



Step 17: Power on the virtual machine