SRI LANKA INSTITUTE OF INFORMATION TECHNOLOGY

Enterprise Standards and Best Practices for IT Infrastructure

4th Year 2nd Semester 2014

Name: Mahimani P.T

SLIIT ID: IT13025854

Group Number: Week Day Group

Practical Session: WD Friday session

Practical Number : VM Ware Lab session

Date of Submission: 17.08.2016

Date of Evaluation : _____

Evaluators Signature : _____

What Is Virtualization?

Virtualization is a technique of abstracting physical resources and
making them appear as logical resources Virtualization may be implemented at compute, storage, network, and/or application layers.

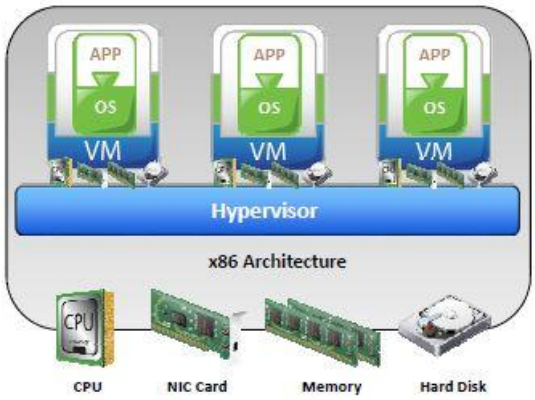
What is Hypervisor?

It is software that allows multiple operating systems to run on concurrently on a physical machine and to interact directly wit the physical hardware.

There are two types of hypervisors

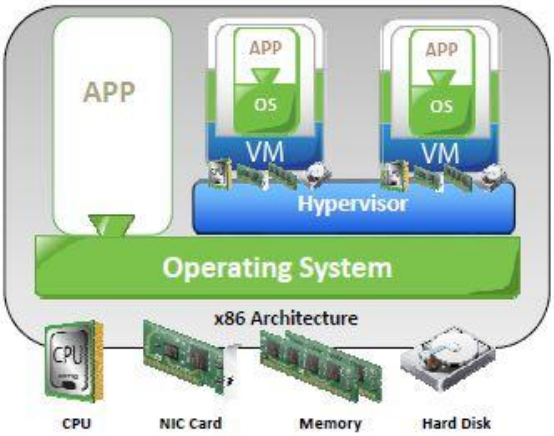
1. Bare-Metal hypervisor
2. Host Hypervisor

Bare-Metal Hypervisor



Type 1: Bare-Metal Hypervisor

Host Hypervisor



Type 2: Hosted Hypervisor

Bare-Metal hypervisor works as operating system it directly connect with hardware and hosted hypervisor like application which is installed on top of operating system.

It use three techniques for the compute virtualization

1. Full virtualization
2. Para virtualization
3. Hardware virtualization

In this lab session mainly it focus on compute virtualization. with Bare –Metal hypervisor

What is Compute virtualization?
It is a technique of masking or abstracting the physical compute hardware and enabling multiple operating systems (OSs) to run concurrently on a single or clustered physical machine(s).

Enables creation of multiple virtual machines (VMs), each running an OS and application VM is a logical entity that looks and behaves like physical machine Virtualization layer resides between hardware and VMs Also known as hypervisor

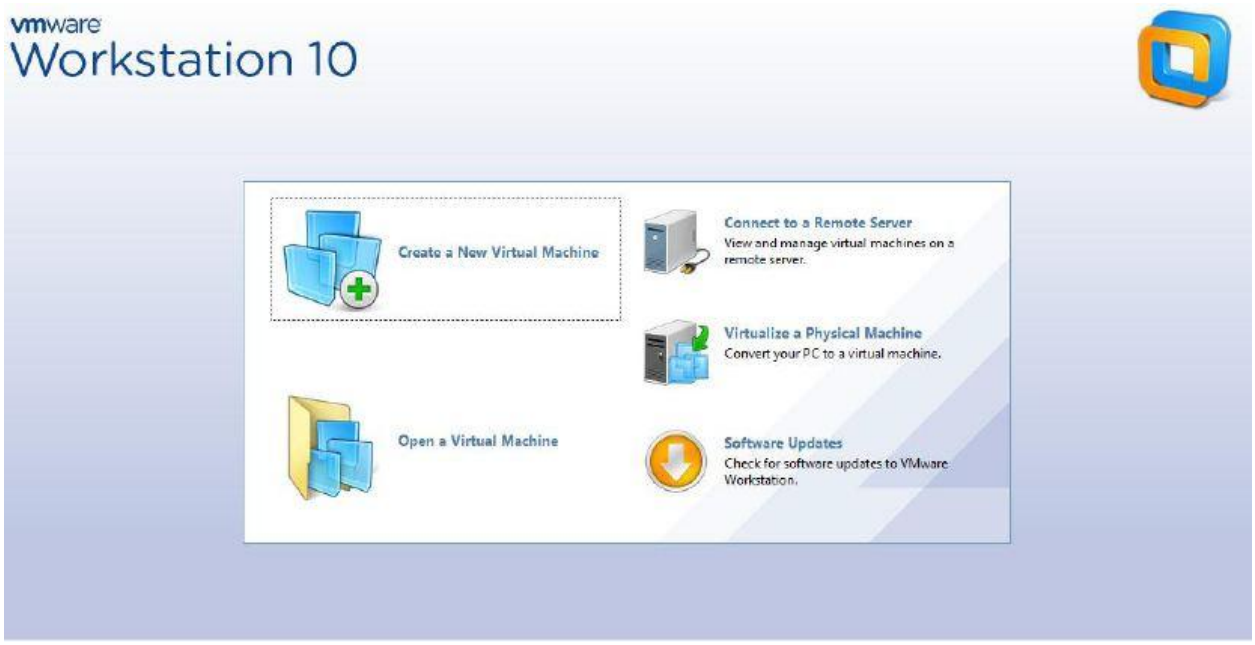
Benefits of Compute virtualization

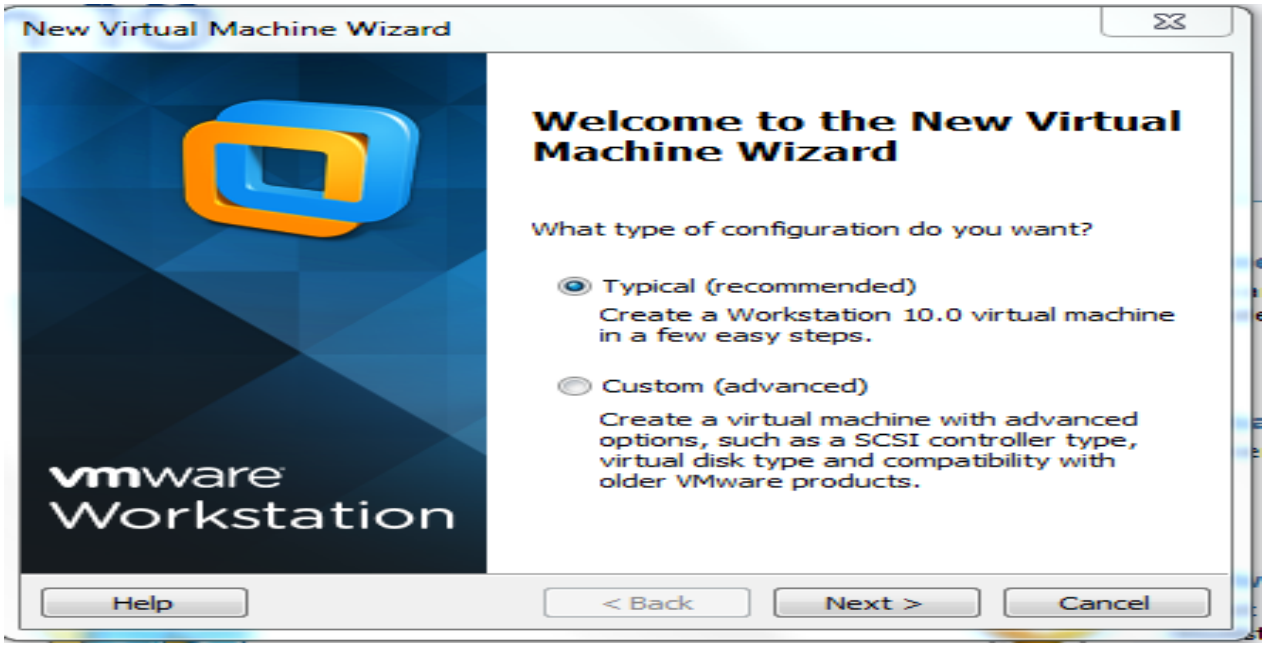
- Server consolidation
- Isolation
- Encapsulation
- Hardware independence
- Reduced cost

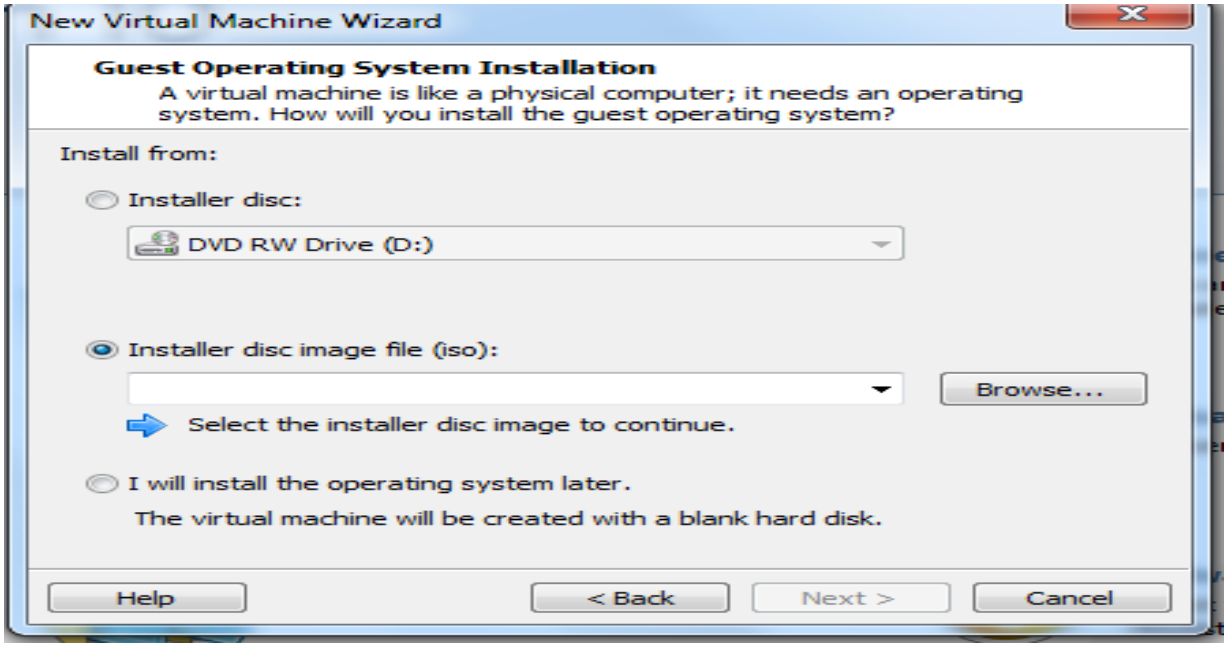
What is a Bare Metal Server?

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.

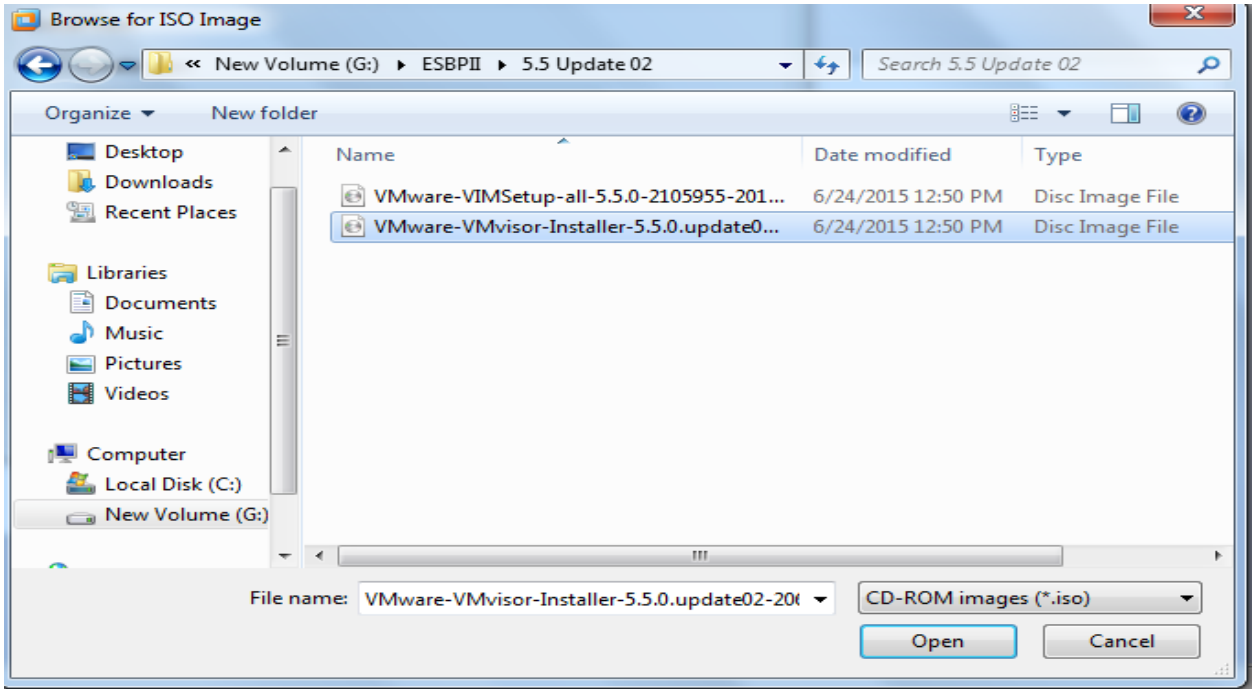
Step 01: As the first thing we have to create a new virtual machine using VMWare workstation and install the ISO image of VM visor.



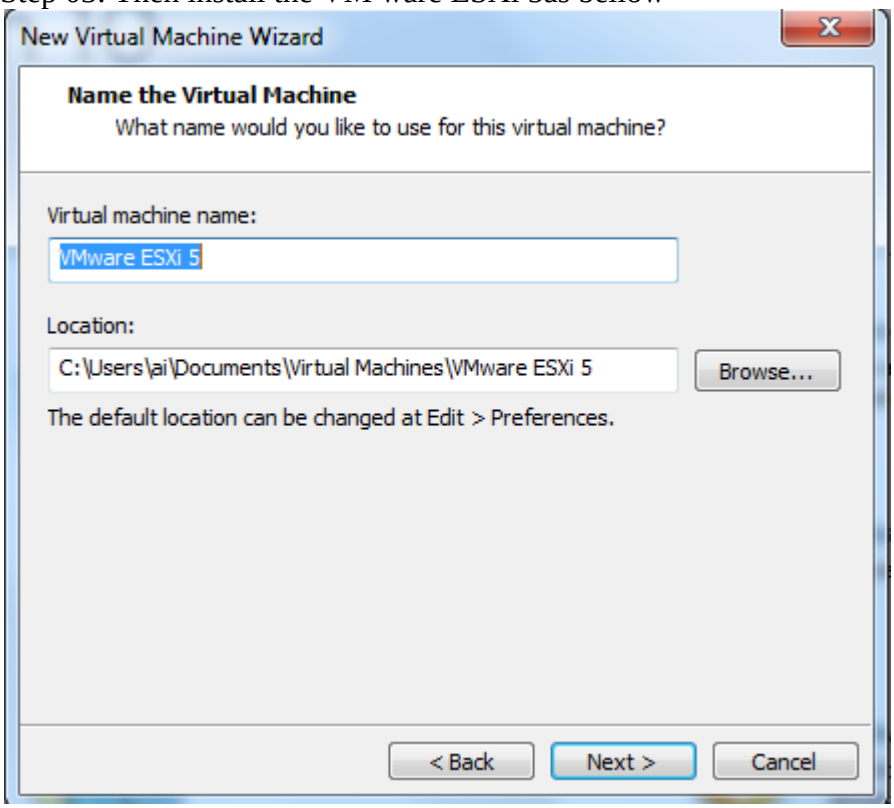




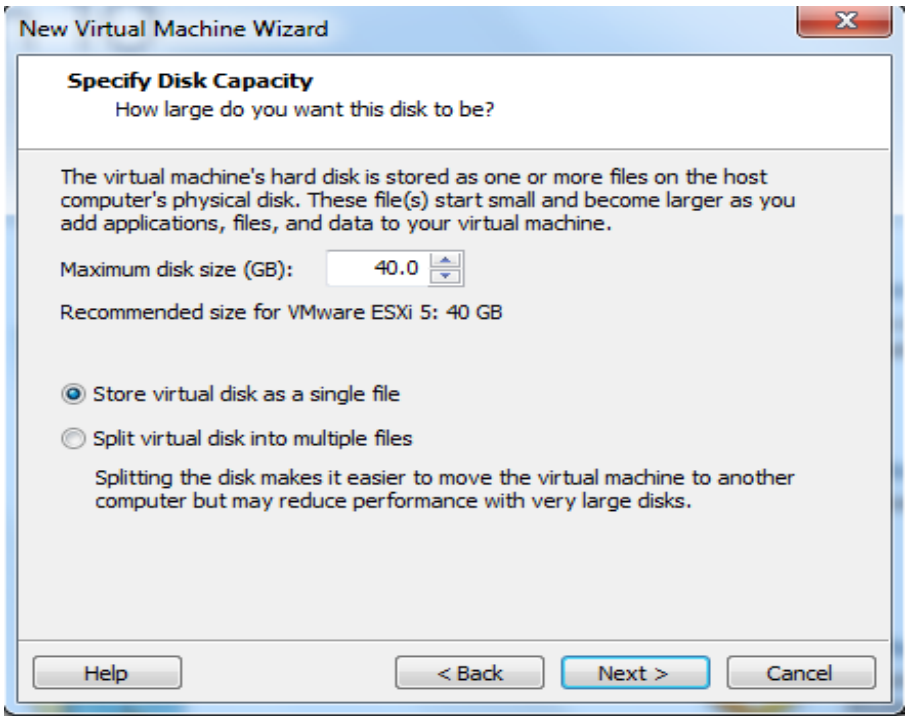
Step 02
Then Download the Bare-Metal file and must be select the excitable file VM visor installer 5.5 As follows

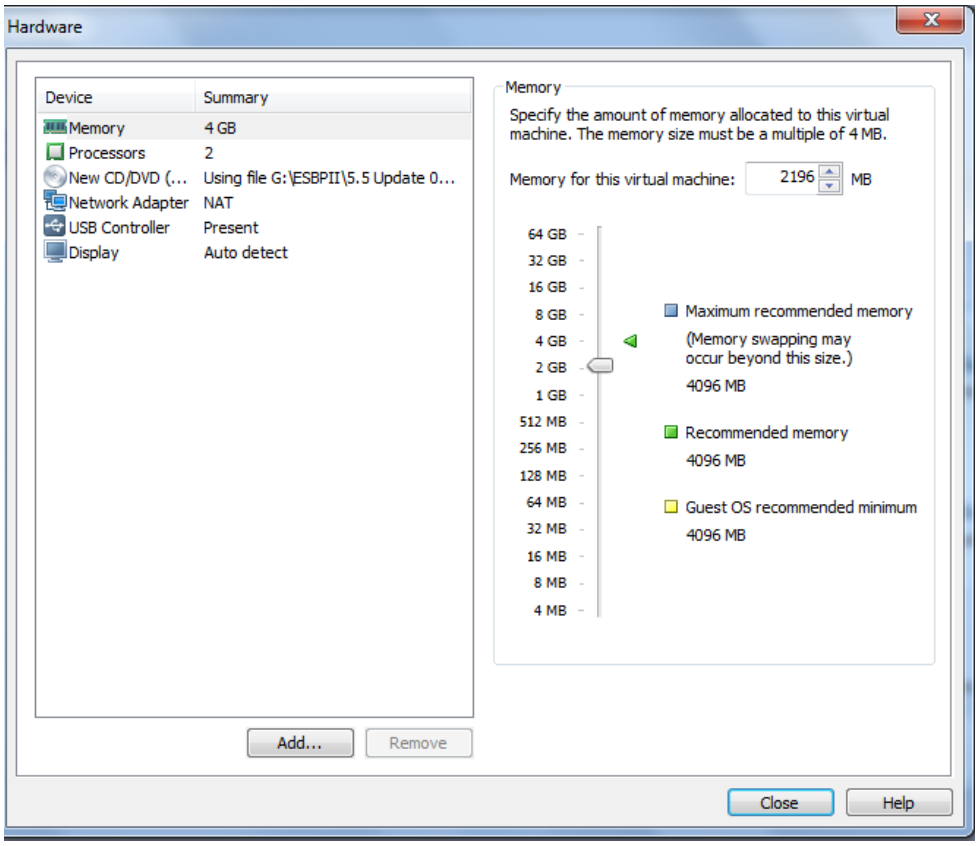


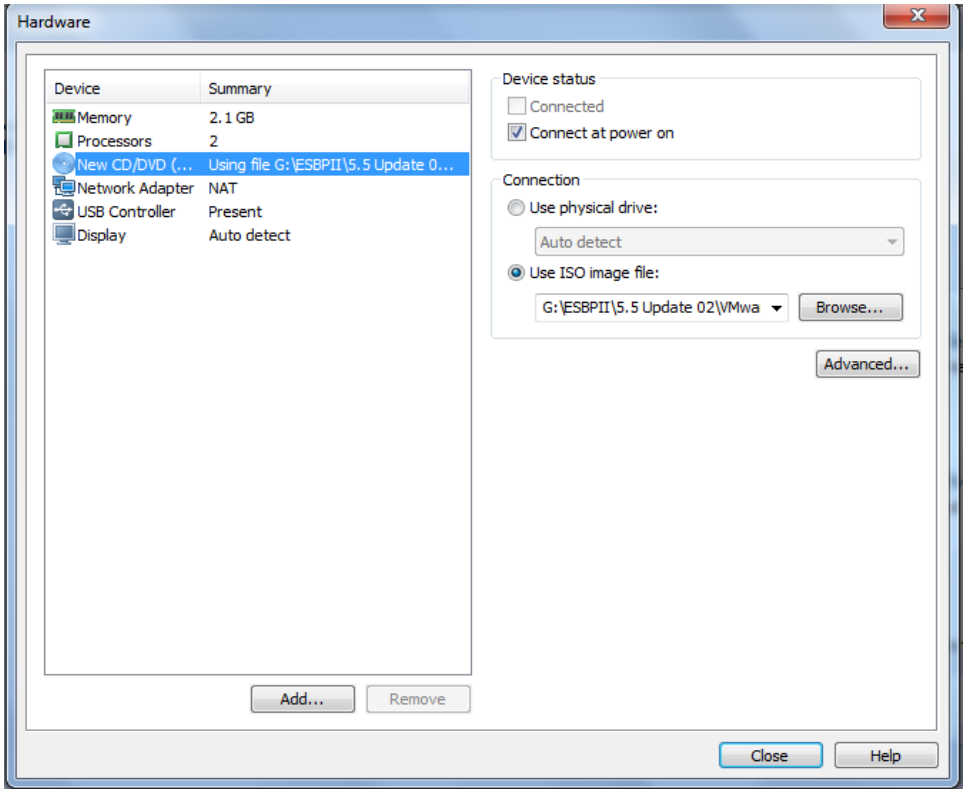
Step 03: Then install the VM ware ESXi 5as bellow

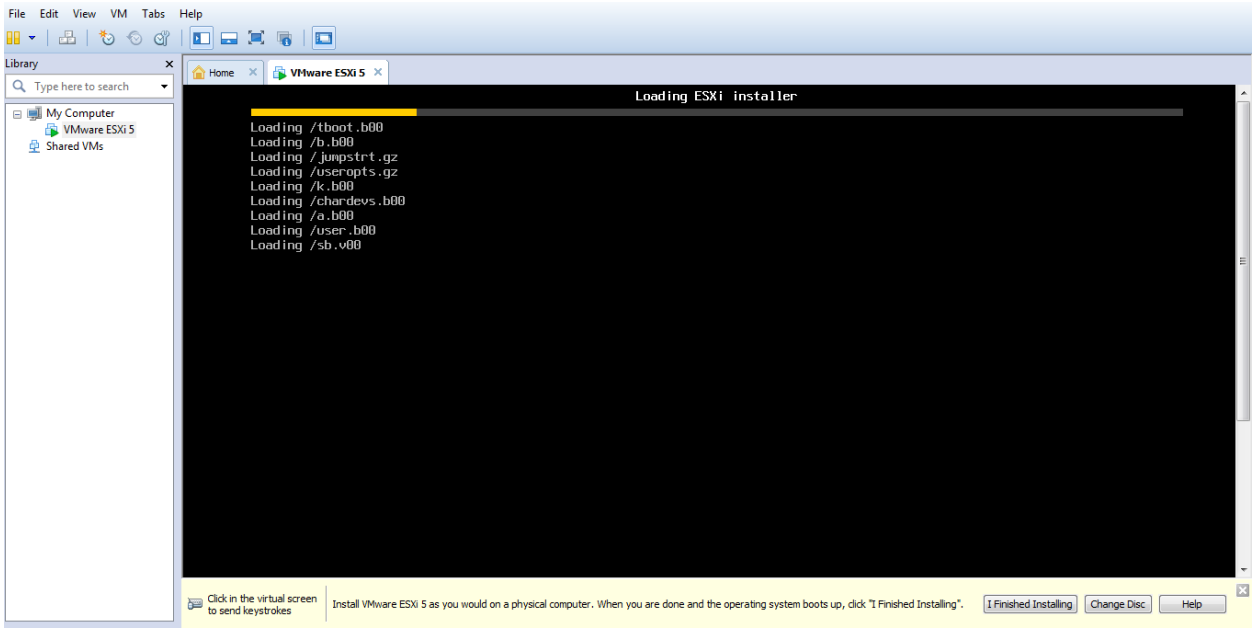


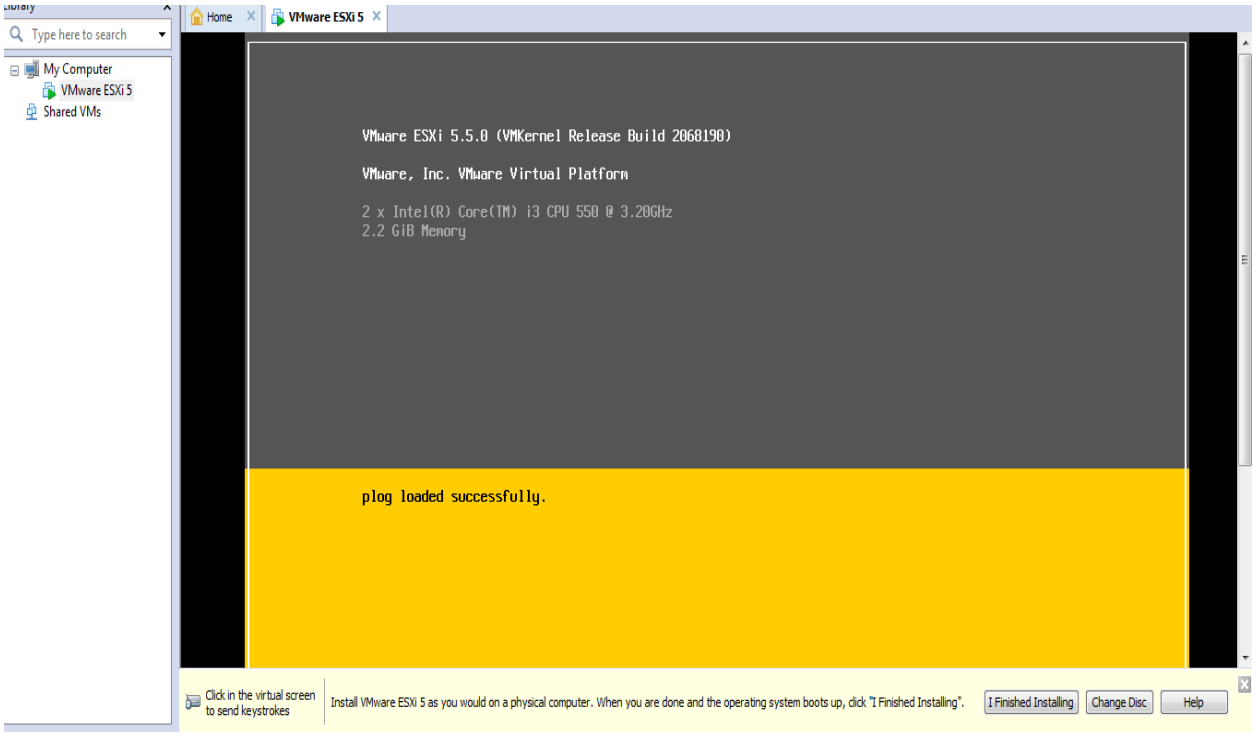
And it can configure the Virtual machine as below it can fix memory size, RAM size etc…

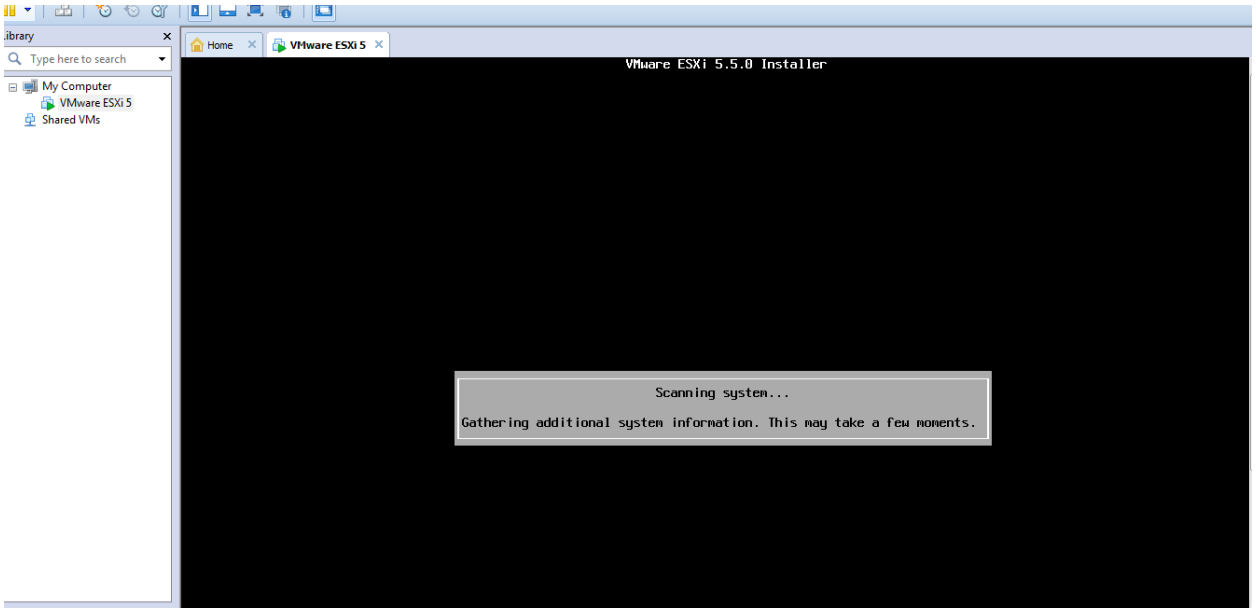


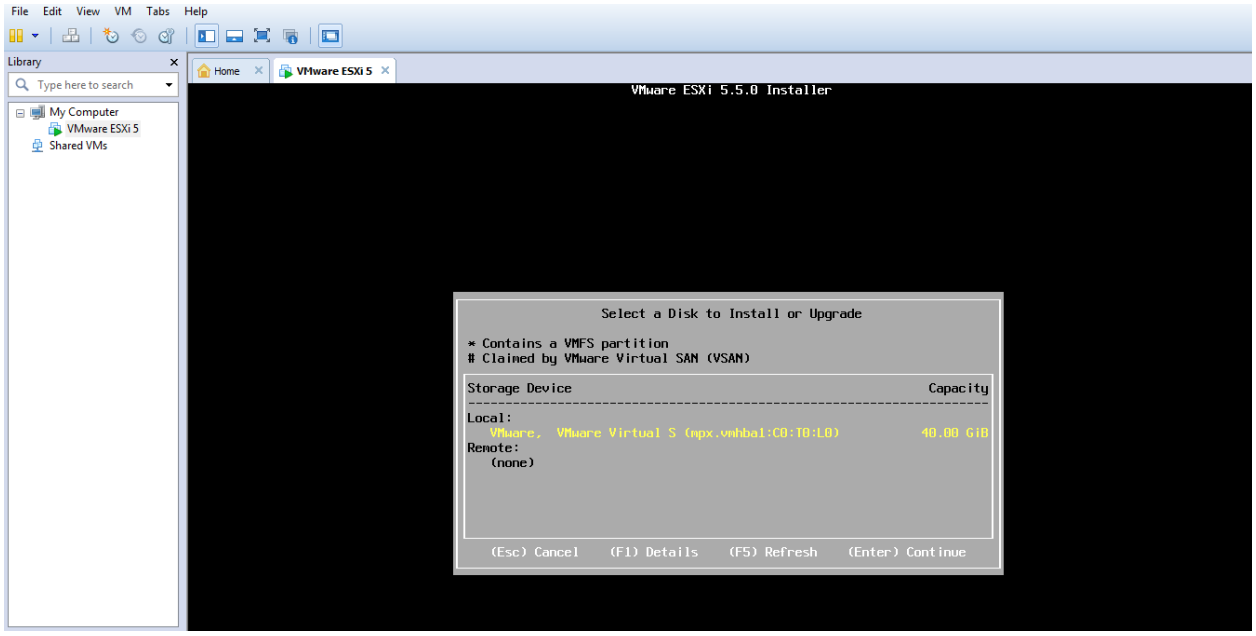

Hardware
Device
Summary
Memory
4 GB
Processors
2
New CD/DVD (...
Using file G:\ESBPII\5.5 Update 0...
Network Adapter
NAT
USB Controller
Present
Display
Auto detect
Add...
Remove
Memory
Specify the amount of memory allocated to this virtual machine. The memory size must be a multiple of 4 MB.
Memory for this virtual machine:
2196
MB
64 GB
32 GB
16 GB
8 GB
4 GB
2 GB
1 GB
512 MB
256 MB
128 MB
64 MB
32 MB
16 MB
8 MB
4 MB
Maximum recommended memory
(Memory swapping may occur beyond this size.)
4096 MB
Recommended memory
4096 MB
Guest OS recommended minimum
4096 MB
Close
Help

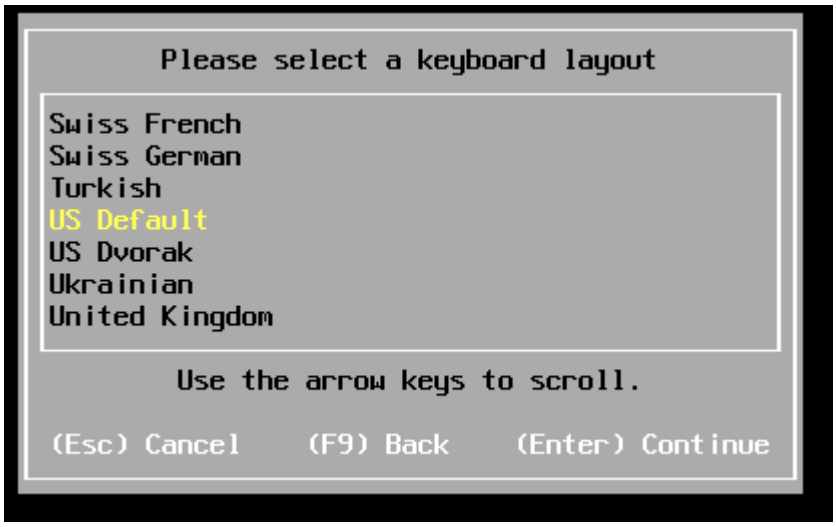

Hardware
Device
Summary
Memory
2.1 GB
Processors
2
New CD/DVD (...
Using file G:\ESBPII\5.5 Update 0...
Network Adapter
NAT
USB Controller
Present
Display
Auto detect
Add...
Remove
Device status
Connected
Connect at power on
Connection
Use physical drive:
Auto detect
Use ISO image file:
G:\ESBPII\5.5 Update 02\VMwa
Browse...
Advanced...
Close
Help


File Edit View VM Tabs Help
Library
Type here to search
My Computer
VMware ESXi 5
Shared VMs
Home
VMware ESXi 5
Loading ESXi installer
Loading /tboot.b00
Loading /b.b00
Loading /jumpstrt.gz
Loading /useropts.gz
Loading /k.b00
Loading /chardevs.b00
Loading /a.b00
Loading /user.b00
Loading /sb.v00
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


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
2.2 GiB Memory
plog 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

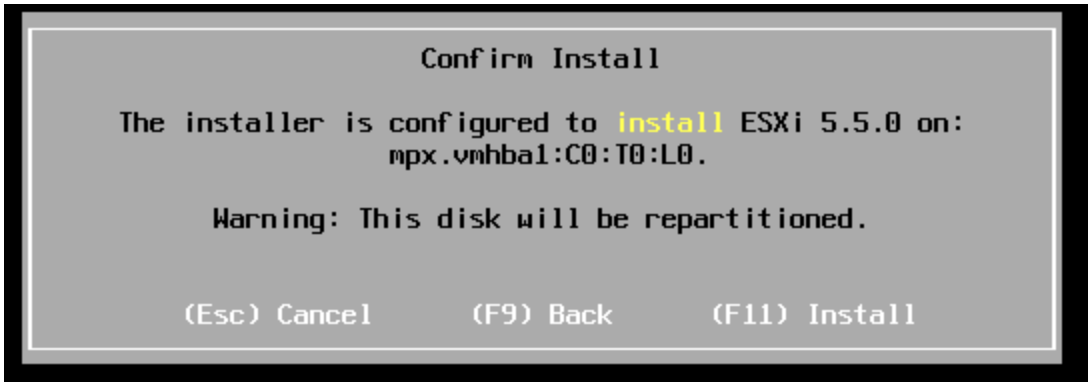

Library
Type here to search
My Computer
VMware ESXi 5
Shared VMs
Home
VMware ESXi 5
VMware ESXi 5.5.0 Installer
Scanning system...
Gathering additional system information. This may take a few moments.

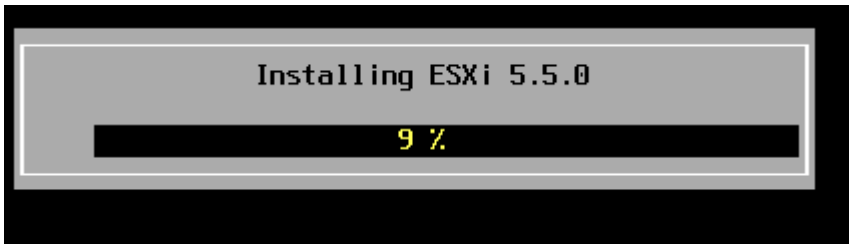

File Edit View VM Tabs Help
Library
Type here to search
My Computer
VMware ESXi 5
Shared VMs
Home
VMware ESXi 5
VMware ESXi 5.5.0 Installer
Select a Disk to Install or Upgrade
* Contains a VMFS partition
# Claimed by VMware Virtual SAN (VSAN)
Storage Device
Capacity
Local:
VMware, VMware Virtual S (mpx.vmhba1:C0:T0:L0)
40.00 GiB
Remote:
(none)
(Esc) Cancel
(F1) Details
(F5) Refresh
(Enter) Continue

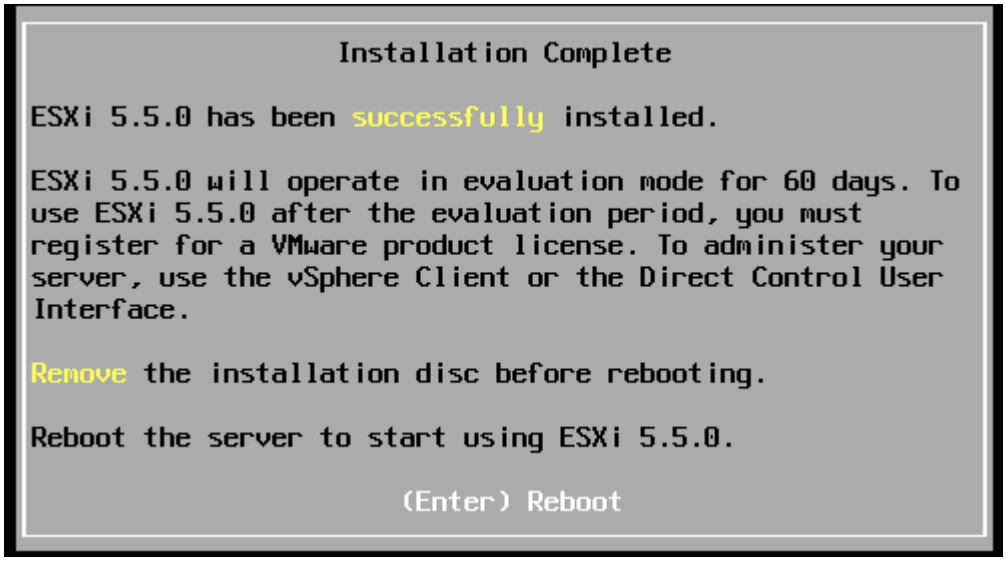


In here It must provide “Root ” as password

After it display confirmation message like below

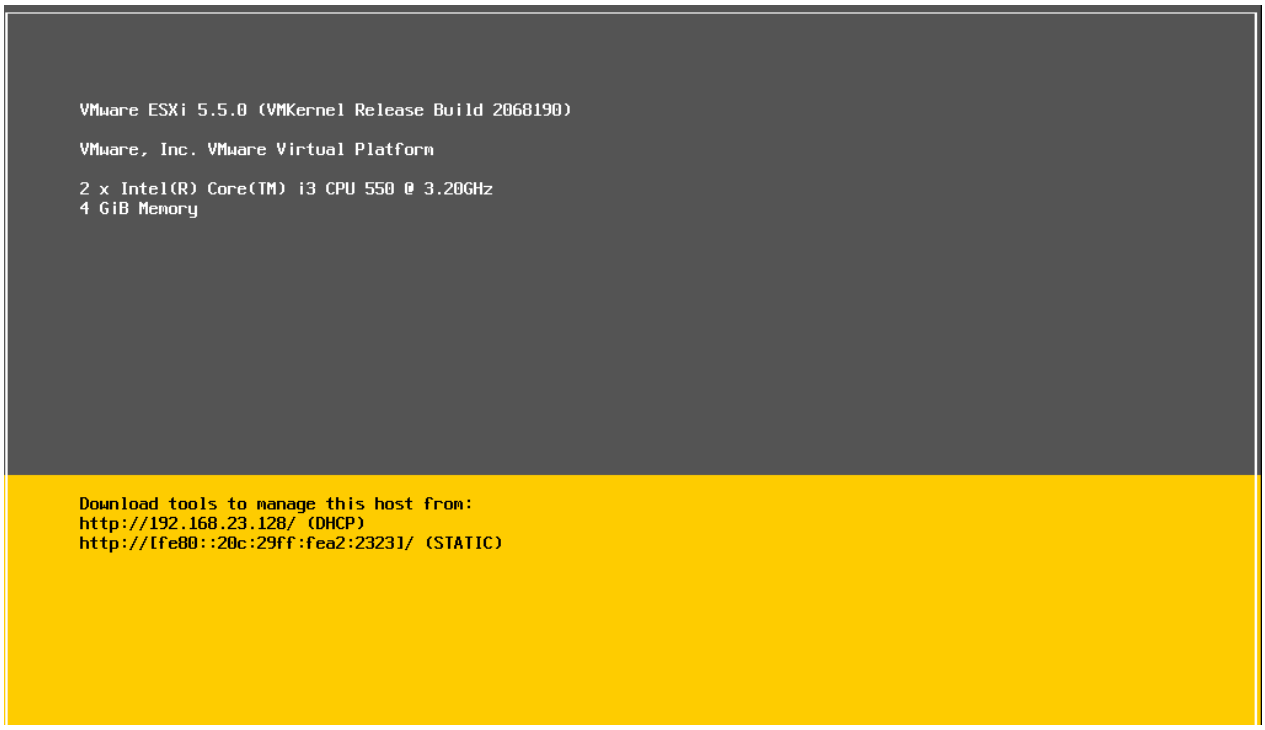




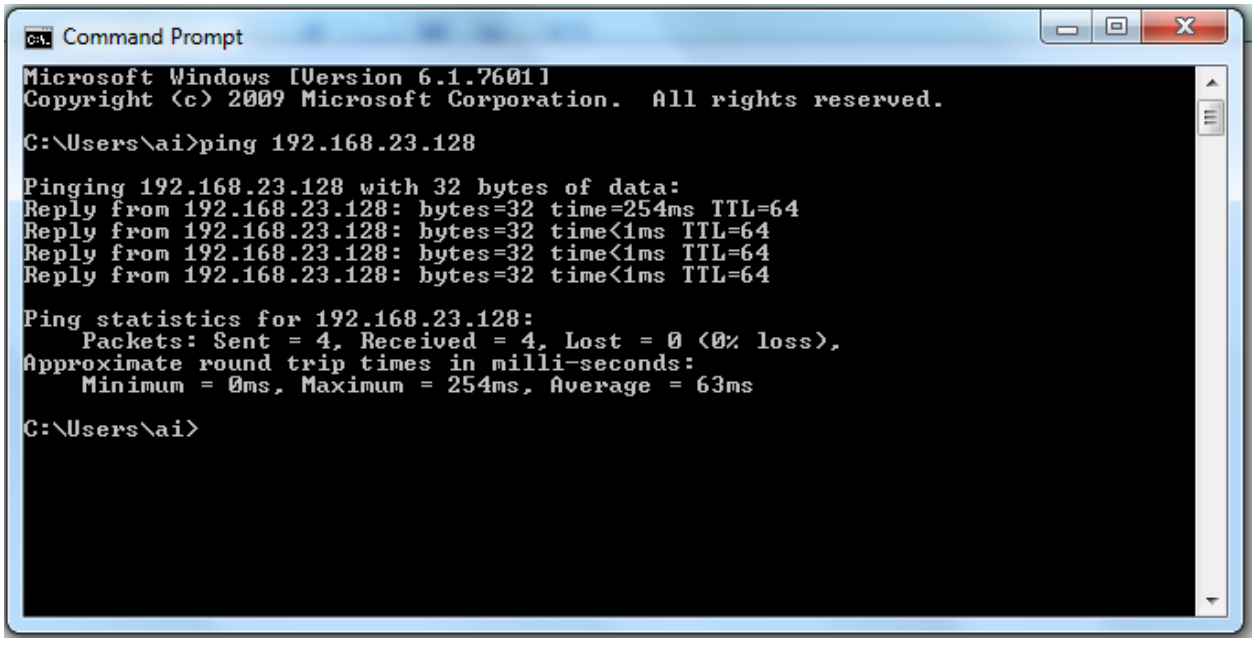


After the Complete installation successfully it must reboot.

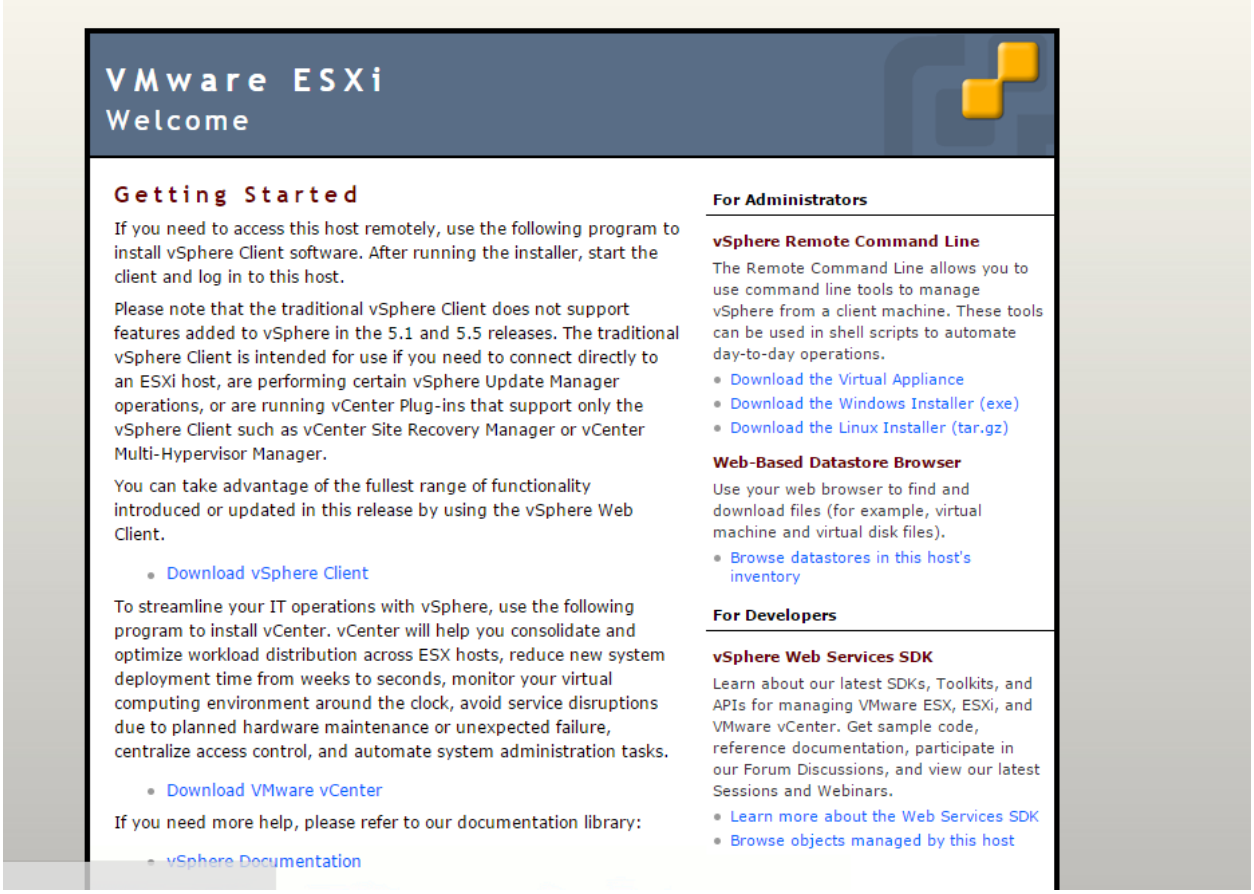
After the rebooted it will display window like below it will provide IP address form the DHCP server



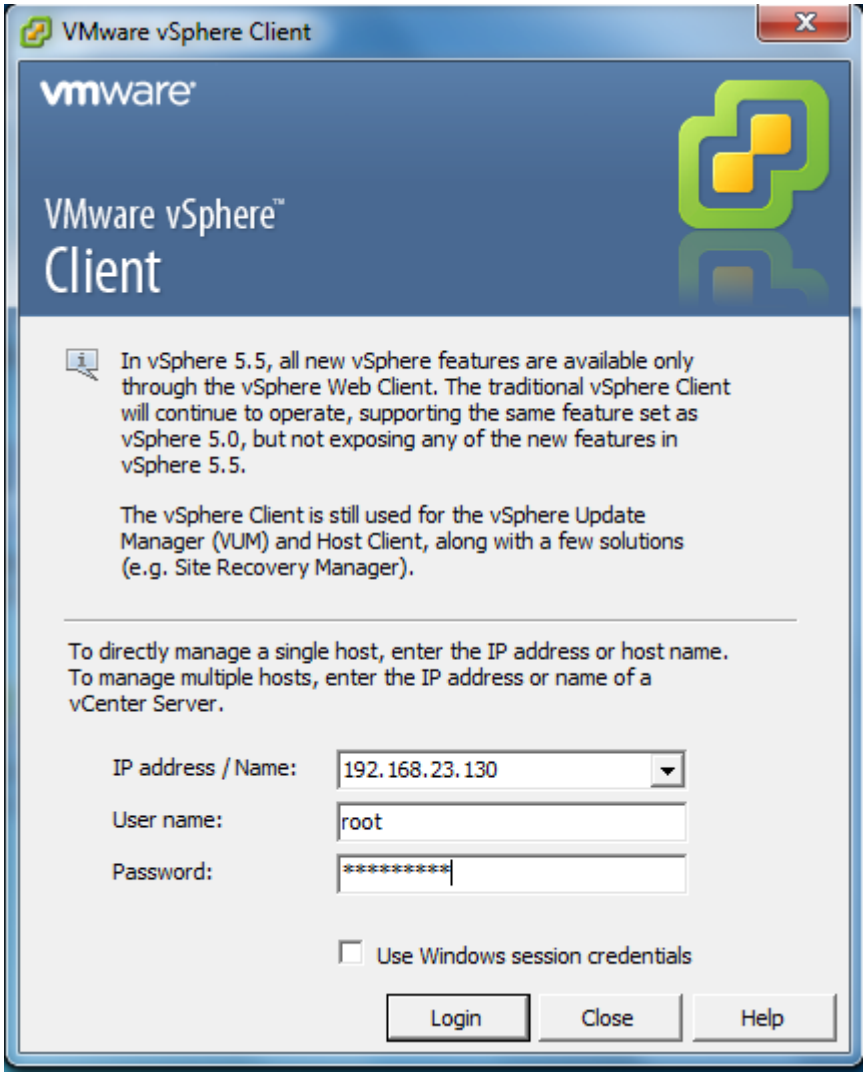
After getting this IP address in command prompt by using ping command it must ping IP.



Then Copy that URL on Web Browser and must download the vSphere client form page like below mention

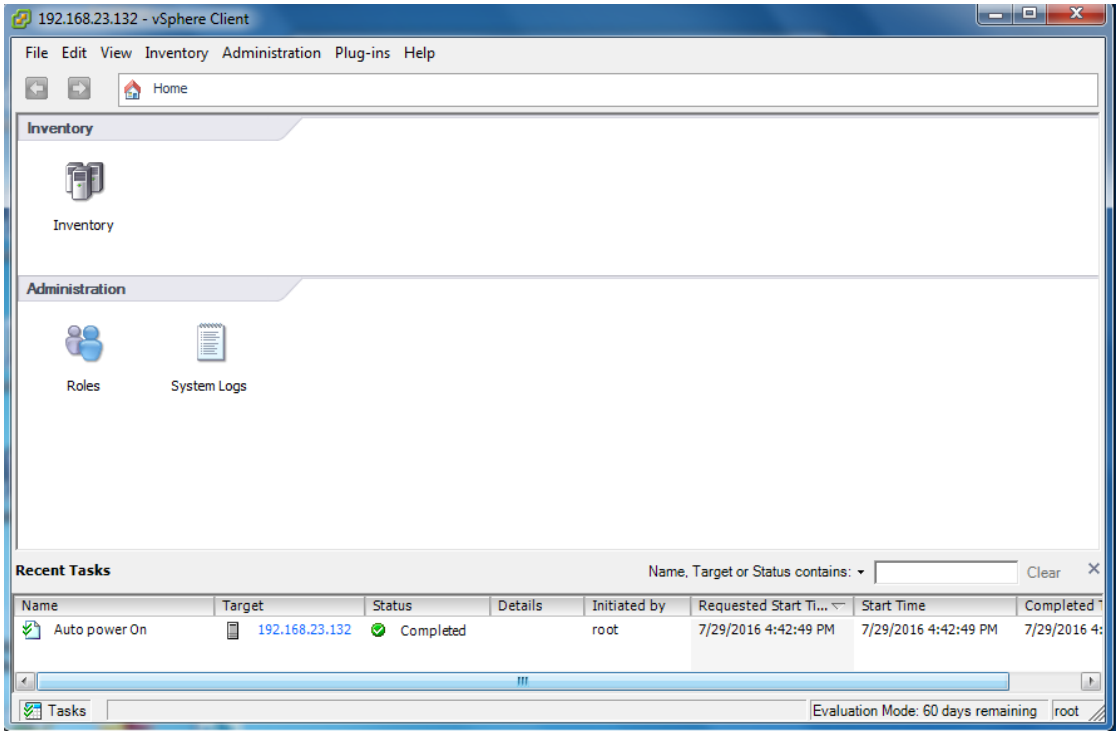


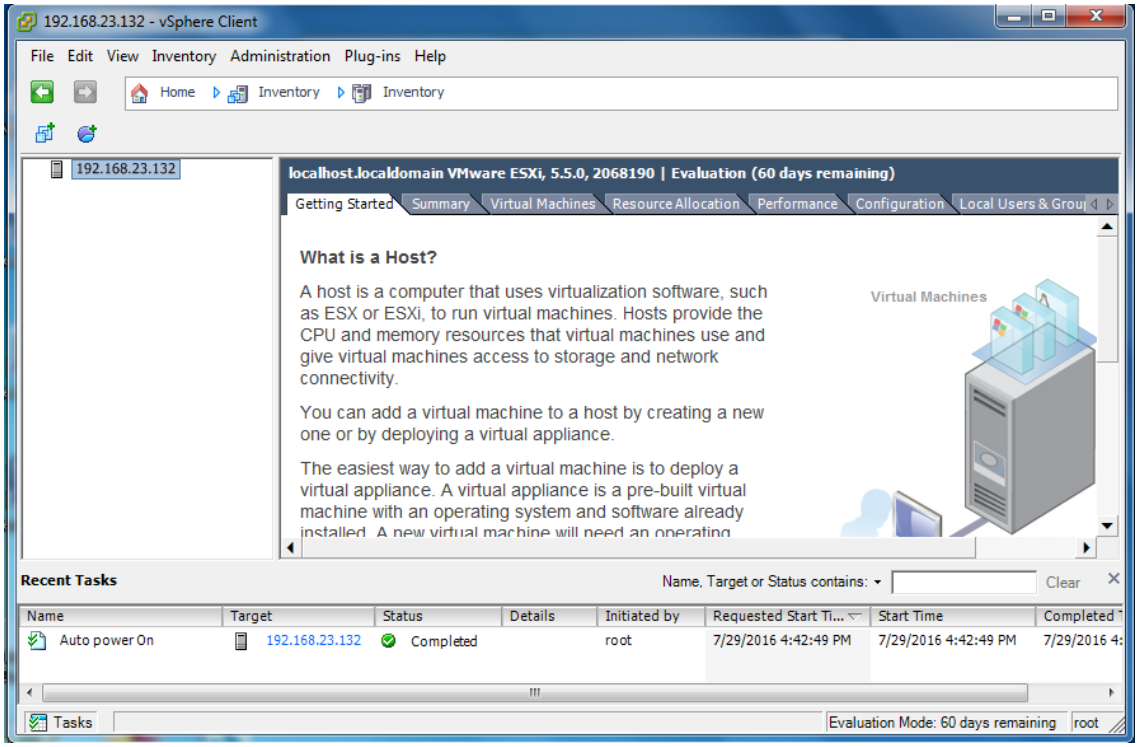
Step 04: Install and run VShepre Client



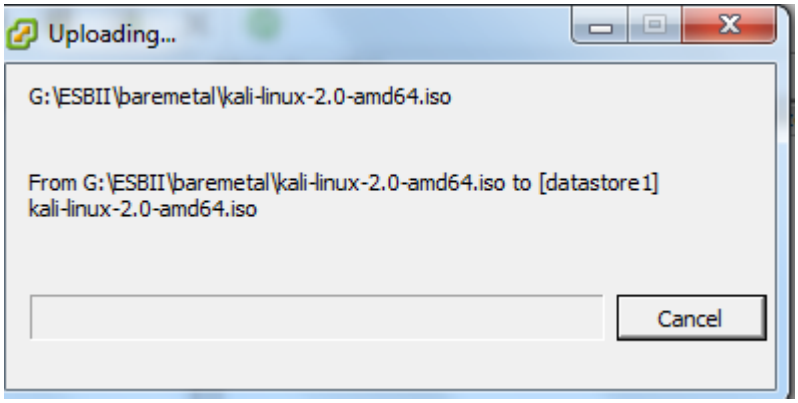
After this window it will display some other message box it must have ignore

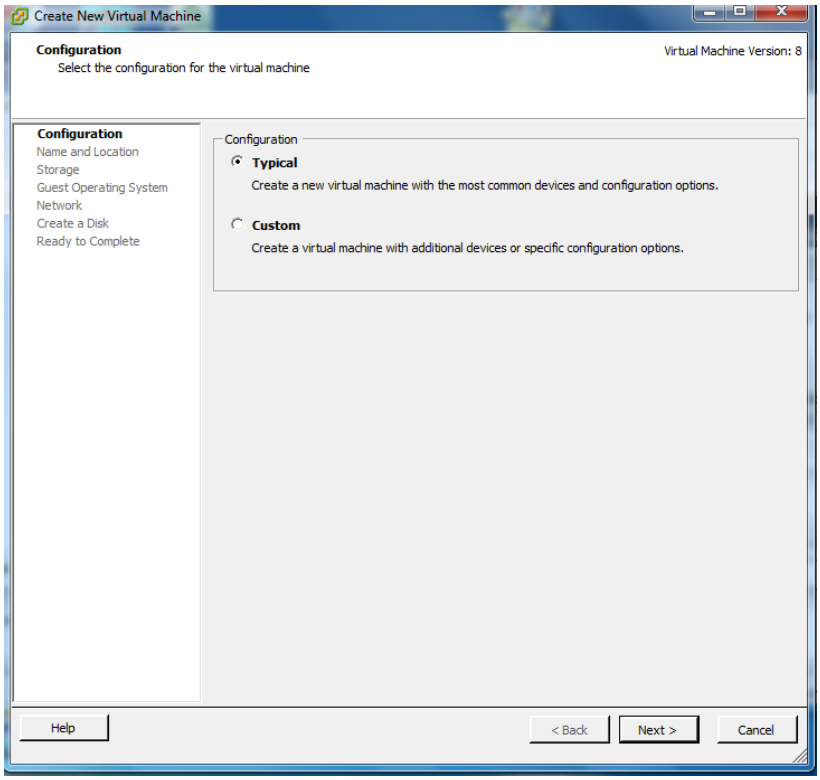
After successfully installed client it will look like below

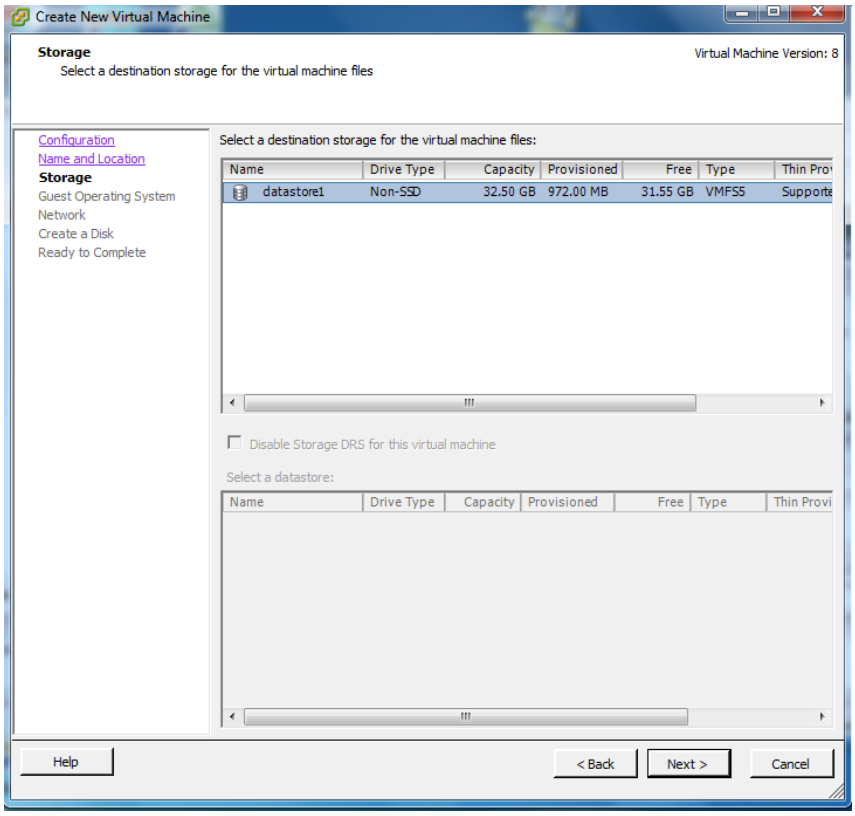


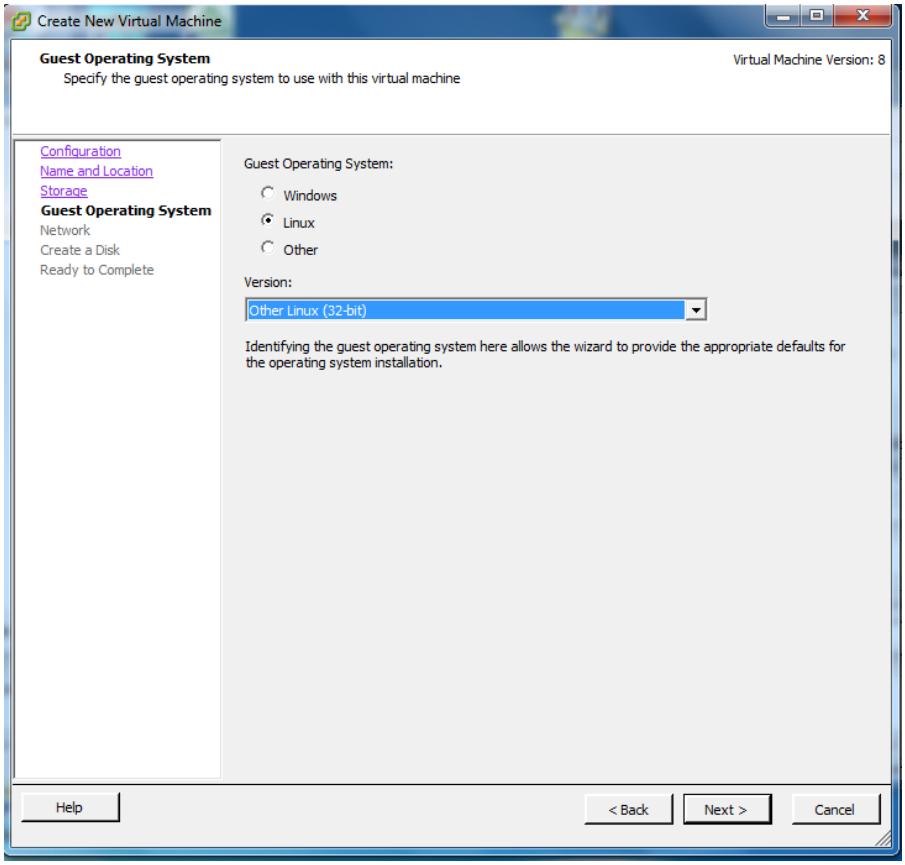


In there it has been successfully created the server by viewing it can know about the serve details. After that it must have upload data store to the server and it can install kali Linux or any other OS and configure normally as usualway.

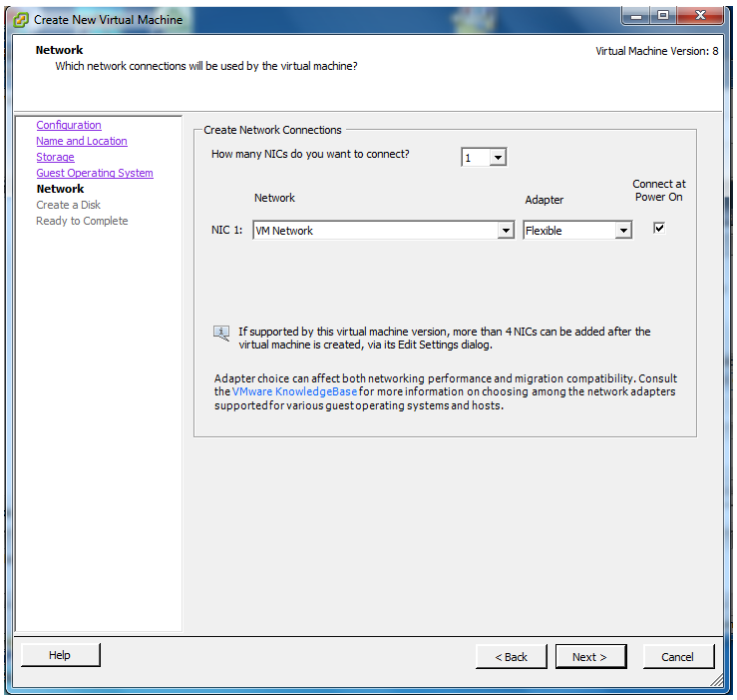


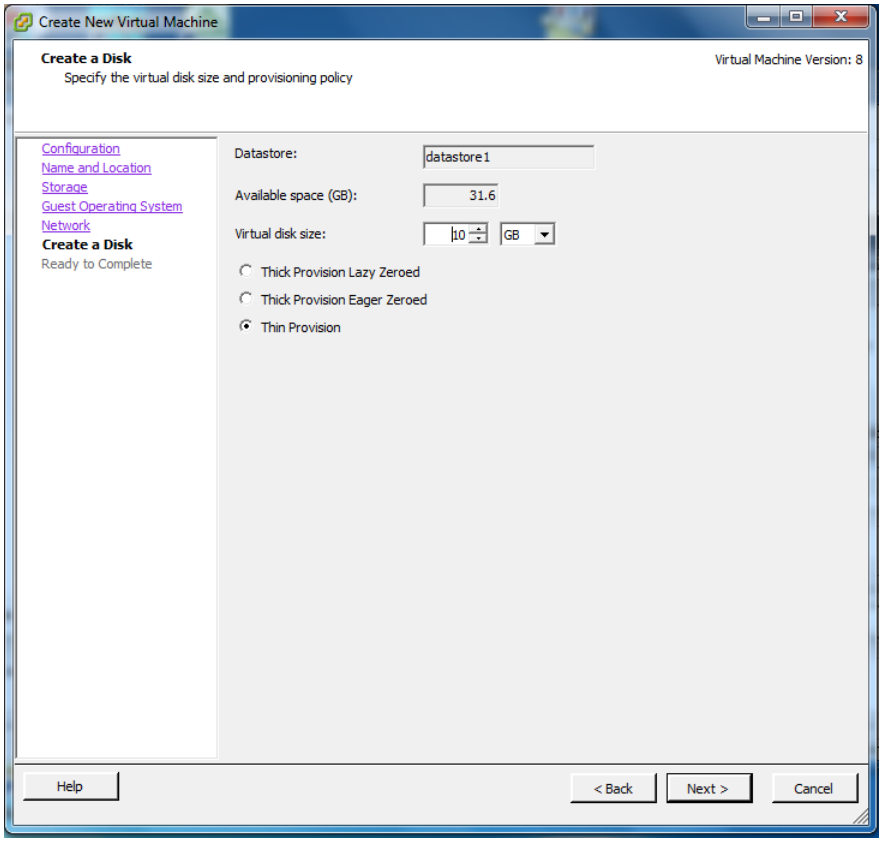


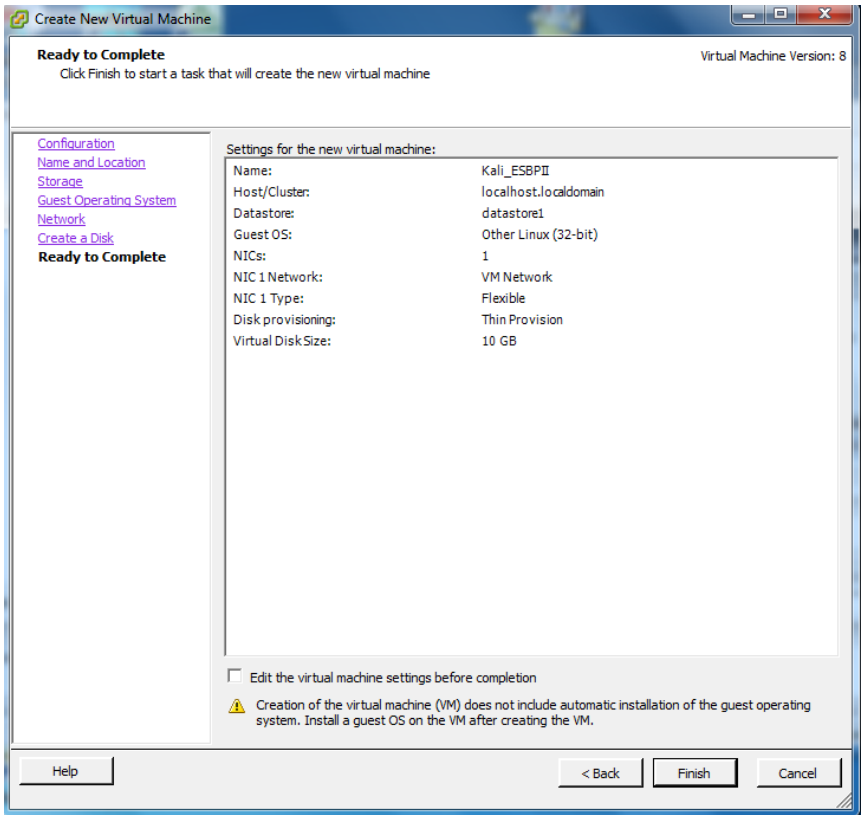

Create New Virtual Machine
Storage
Select a destination storage for the virtual machine files
Virtual Machine Version: 8
Configuration
Name and Location
Storage
Guest Operating System
Network
Create a Disk
Ready to Complete
Select a destination storage for the virtual machine files:
Name
Drive Type
Capacity
Provisioned
Free
Type
Thin Pro
datastore1
Non-SSD
32.50 GB
972.00 MB
31.55 GB
VMFS5
Supporte
Disable Storage DRS for this virtual machine
Select a datastore:
Name
Drive Type
Capacity
Provisioned
Free
Type
Thin Provi
Help
< Back
Next >
Cancel

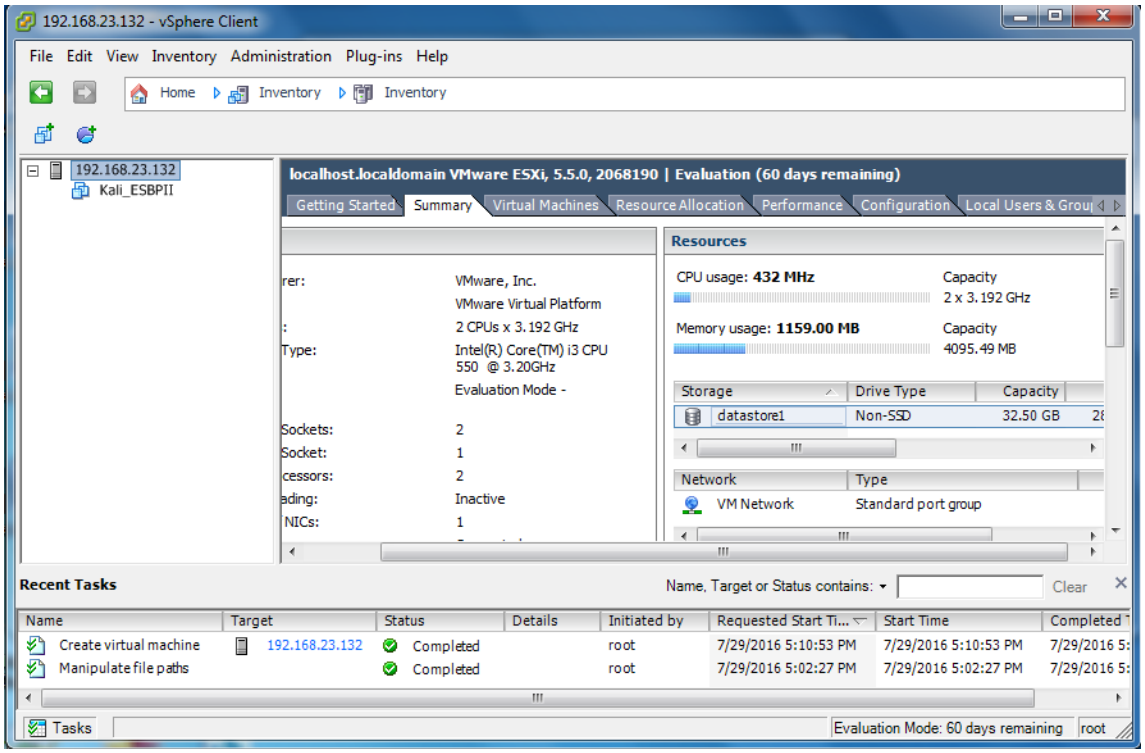

Create New Virtual Machine
Guest Operating System
Specify the guest operating system to use with this virtual machine
Virtual Machine Version: 8
Configuration
Name and Location
Storage
Guest Operating System
Network
Create a Disk
Ready to Complete
Guest Operating System:
Windows
Linux
Other
Version:
Other Linux (32-bit)
Identifying the guest operating system here allows the wizard to provide the appropriate defaults for the operating system installation.
Help
< Back
Next >
Cancel

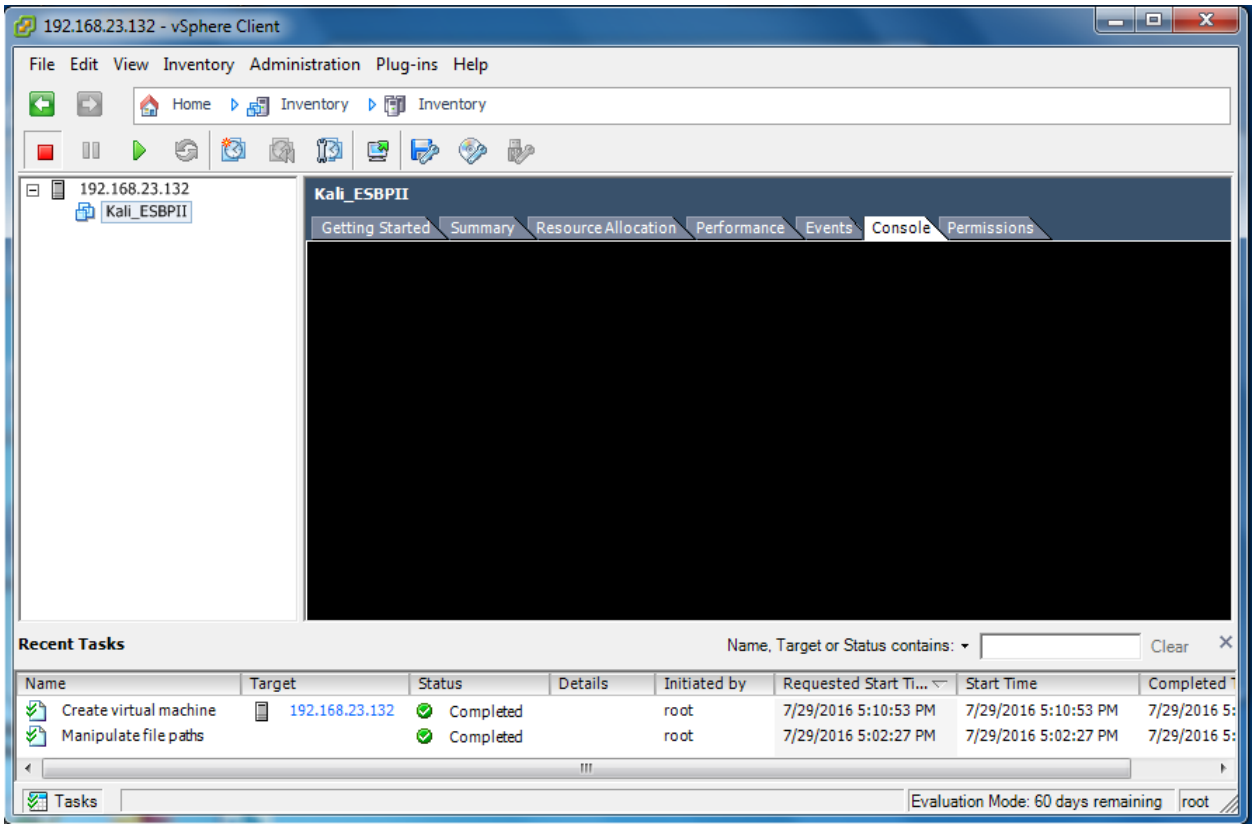
In here We selected OS As Linux and version as “other Linux (32-bit)”.






Create New Virtual Machine
Ready to Complete
Click Finish to start a task that will create the new virtual machine
Virtual Machine Version: 8
Configuration
Name and Location
Storage
Guest Operating System
Network
Create a Disk
Ready to Complete
Settings for the new virtual machine:
Name: Kali_ESBPII
Host/Cluster: localhost.localdomain
Datastore: datastore1
Guest OS: Other Linux (32-bit)
NICs: 1
NIC 1 Network: VM Network
NIC 1 Type: Flexible
Disk provisioning: Thin Provision
Virtual Disk Size: 10 GB
Edit the virtual machine settings before completion
Creation of the virtual machine (VM) does not include automatic installation of the guest operating system. Install a guest OS on the VM after creating the VM.
Help
< Back
Finish
Cancel


192.168.23.132 - vSphere Client
File Edit View Inventory Administration Plug-ins Help
Home Inventory Inventory
192.168.23.132
Kali_ESBPII
localhost.localdomain VMware ESXi, 5.5.0, 2068190 | Evaluation (60 days remaining)
Getting Started Summary Virtual Machines Resource Allocation Performance Configuration Local Users & Grou
rer: VMware, Inc.
VMware Virtual Platform
2 CPUs x 3.192 GHz
Type: Intel(R) Core(TM) i3 CPU 550 @ 3.20GHz
Evaluation Mode -
Sockets: 2
Socket: 1
cessors: 2
ading: Inactive
NICs: 1
Resources
CPU usage: 432 MHz
Capacity
2 x 3.192 GHz
Memory usage: 1159.00 MB
Capacity
4095.49 MB
Storage
Drive Type
Capacity
datastore1
Non-SSD
32.50 GB
Network
Type
VM Network
Standard port group
Recent Tasks
Name, Target or Status contains:
Clear
Name
Target
Status
Details
Initiated by
Requested Start Ti...
Start Time
Completed
Create virtual machine
192.168.23.132
Completed
root
7/29/2016 5:10:53 PM
7/29/2016 5:10:53 PM
7/29/2016 5:
Manipulate file paths
Completed
root
7/29/2016 5:02:27 PM
7/29/2016 5:02:27 PM
7/29/2016 5:
Tasks
Evaluation Mode: 60 days remaining
root



After getting some time after this step it will able to work on Linux environment in the created Virtual Machine using Bare-Metel.