

4th year- 2nd Semester

ESBP11-2016

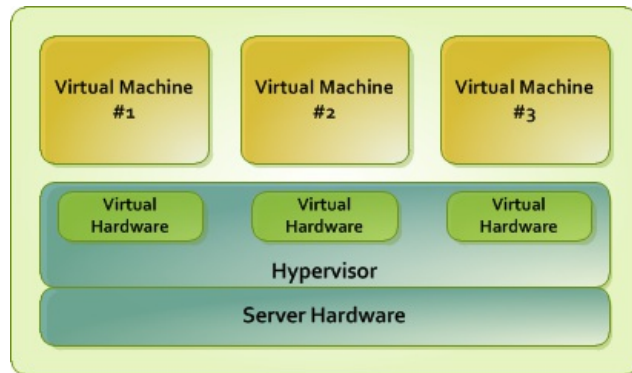
BARE METAL INSTALLATION

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IT13009182
Weekend

What is Virtualization?

Virtualization is the process of creating a software-based (or virtual) representation of something rather than a physical one. Virtualization can apply to applications, servers, storage, and networks and is the single most effective way to reduce IT expenses while boosting efficiency and agility for all size businesses.

What is hardware 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.

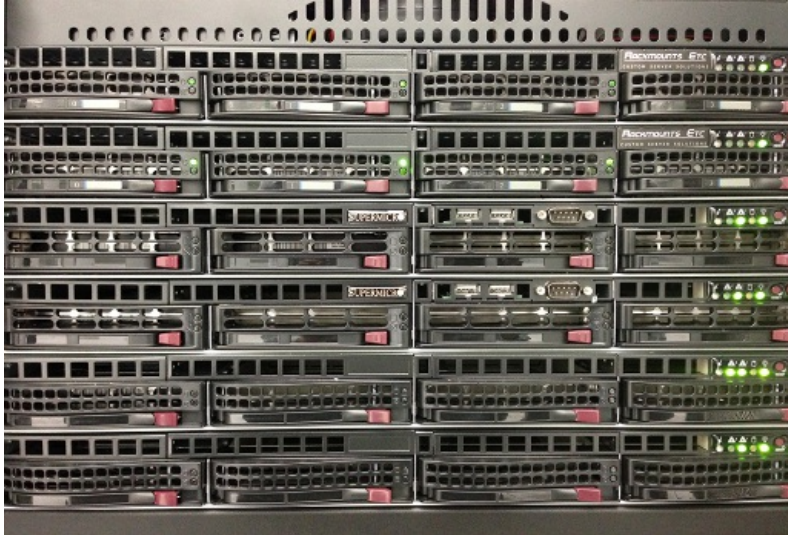
In hardware virtualization, the host machine is the actual machine on which the virtualization takes place, and the guest machine is the virtual machine. The software that creates a virtual machine on the host hardware is called a hypervisor or Virtual Machine Manager.

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 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.

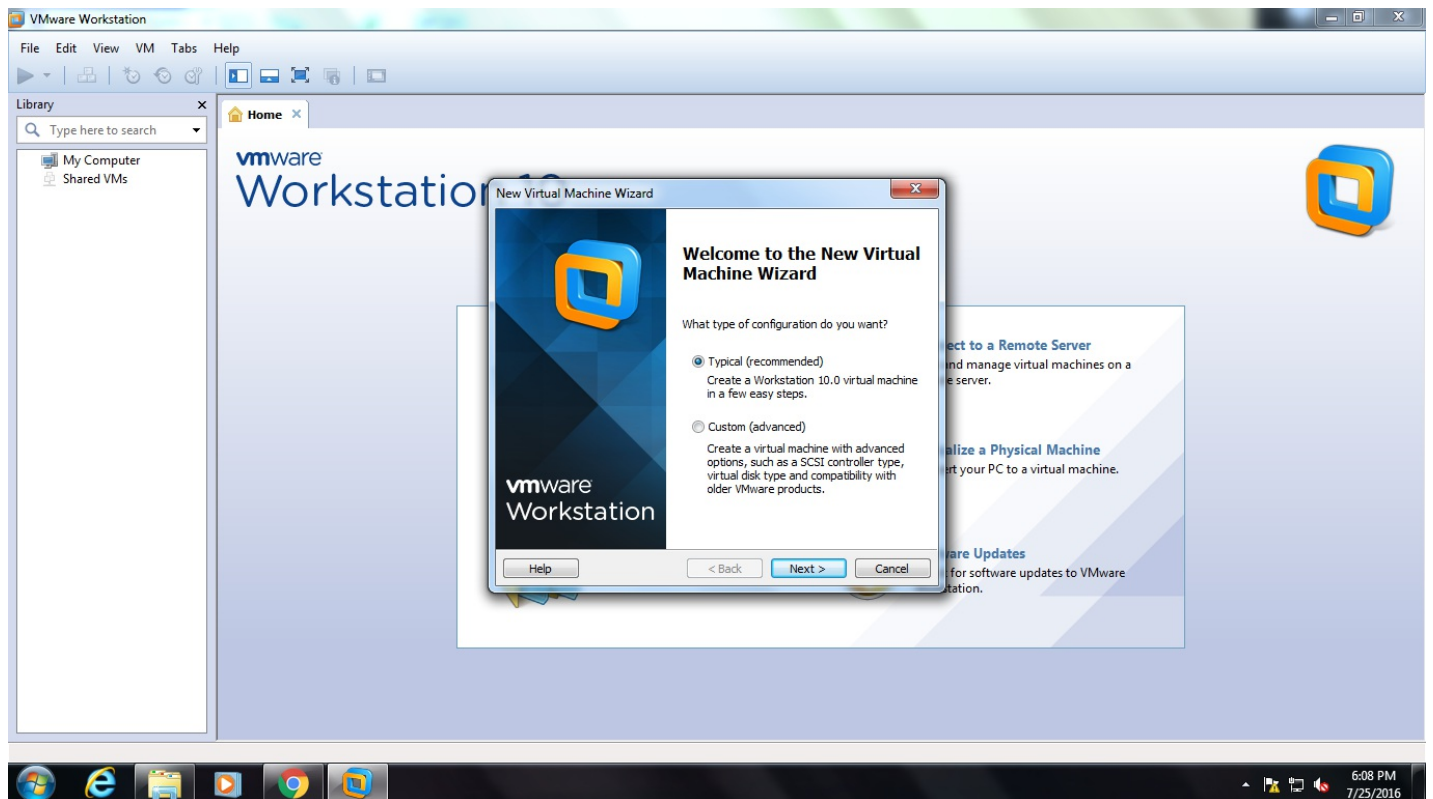
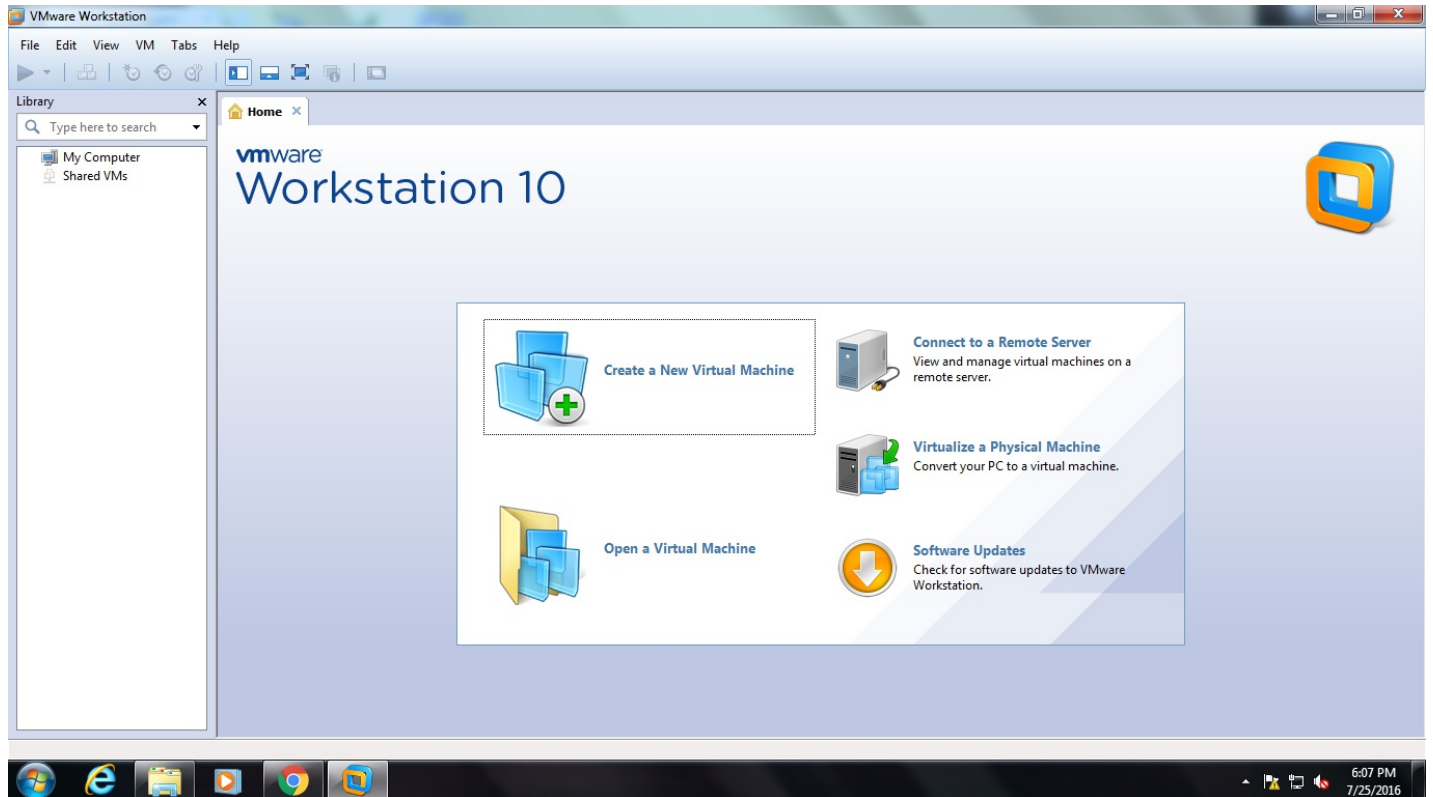
Bare-metal servers have a single 'tenant'. They are not shared between customers. Each server may run any amount of work for the customer, or may have multiple simultaneous users, but they are dedicated entirely to the customer who is renting them. Unlike many servers in a data center, they are not being shared between multiple customers.

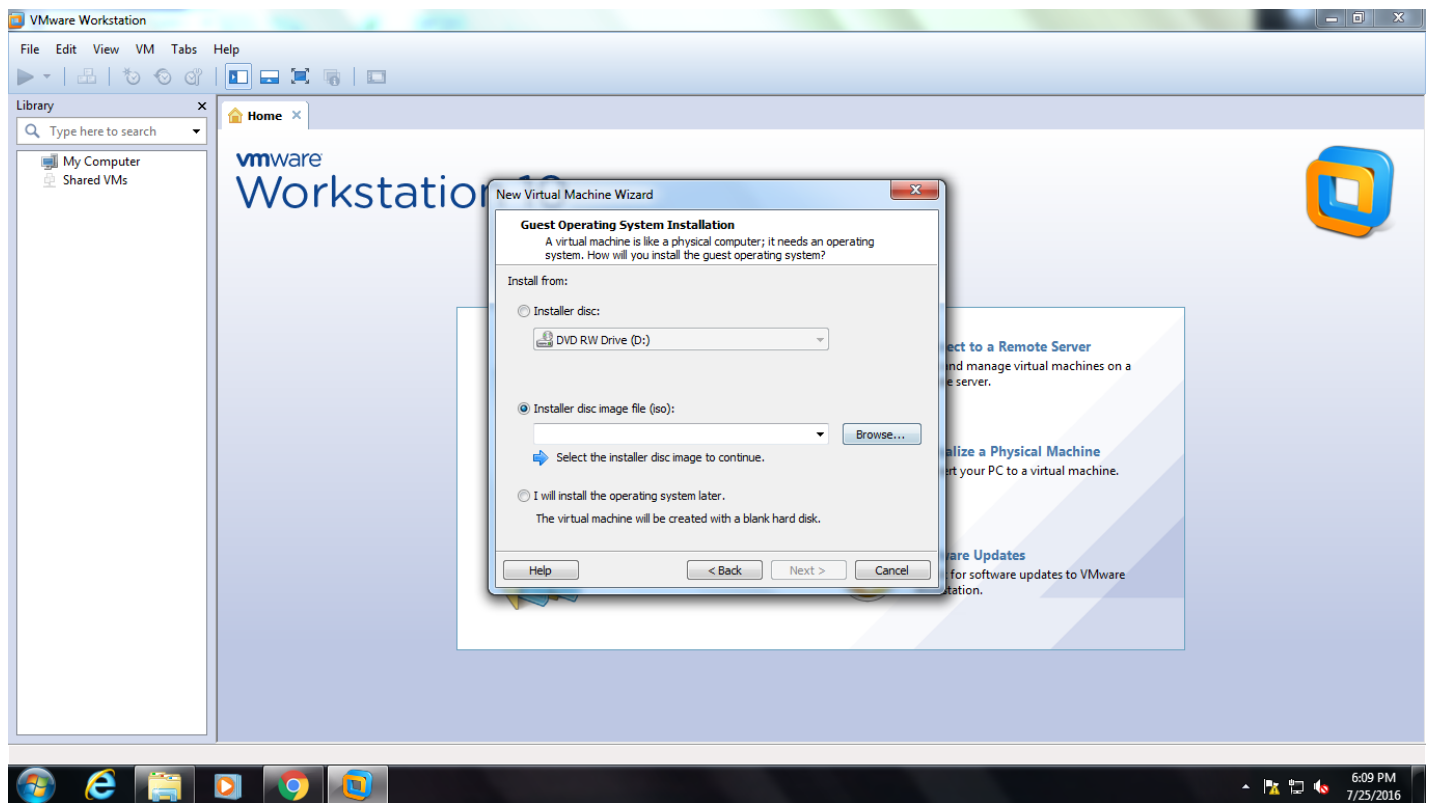
Bare-metal servers are 'physical' servers. Each logical server offered for rental is a distinct physical piece of hardware that is a functional server on its own. They are not virtual servers running in multiple on shared hardware.

Bare Metal Installation

Step 01:

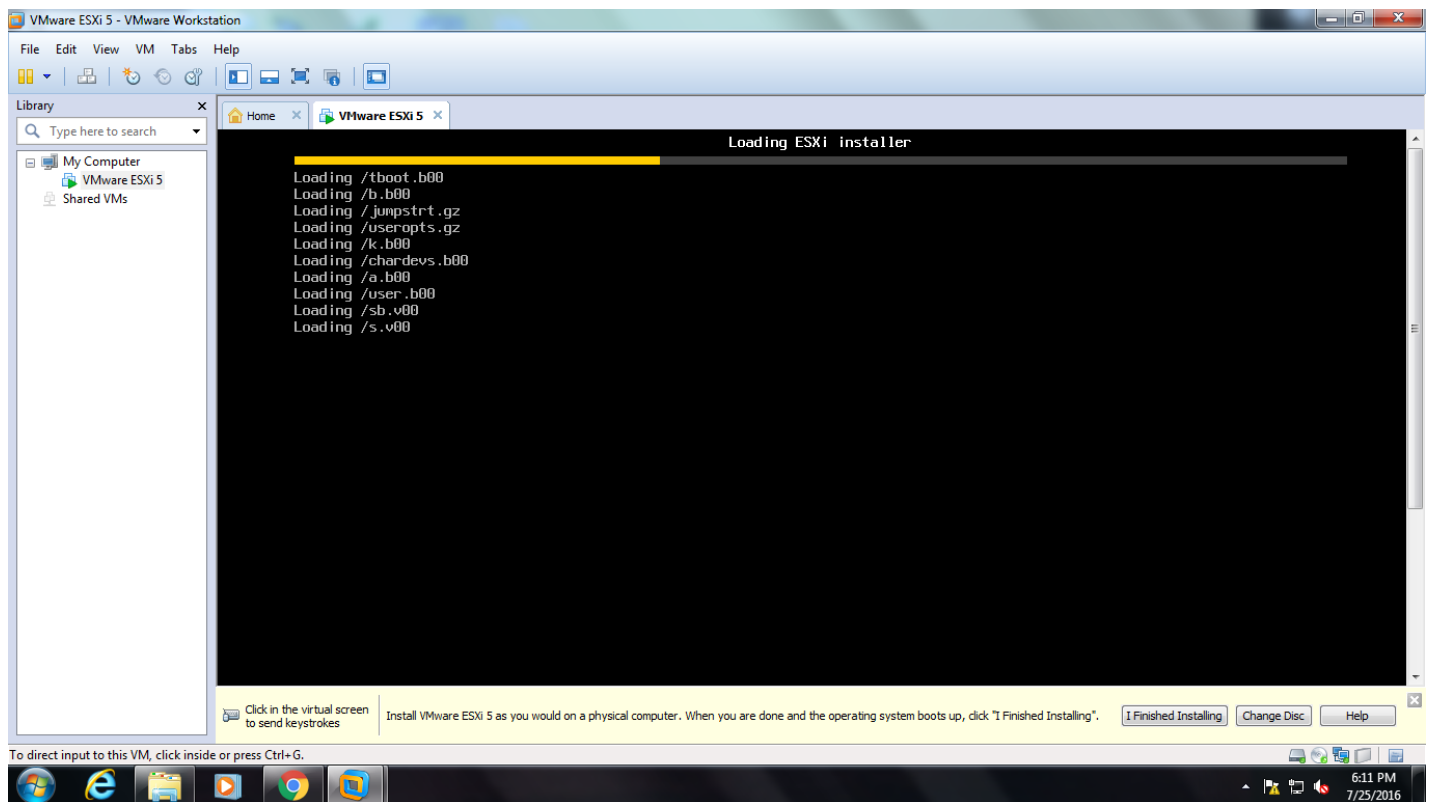
As the first thing we have to create a new virtual machine using VMWare workstation and install the ISO image of VMvisor.

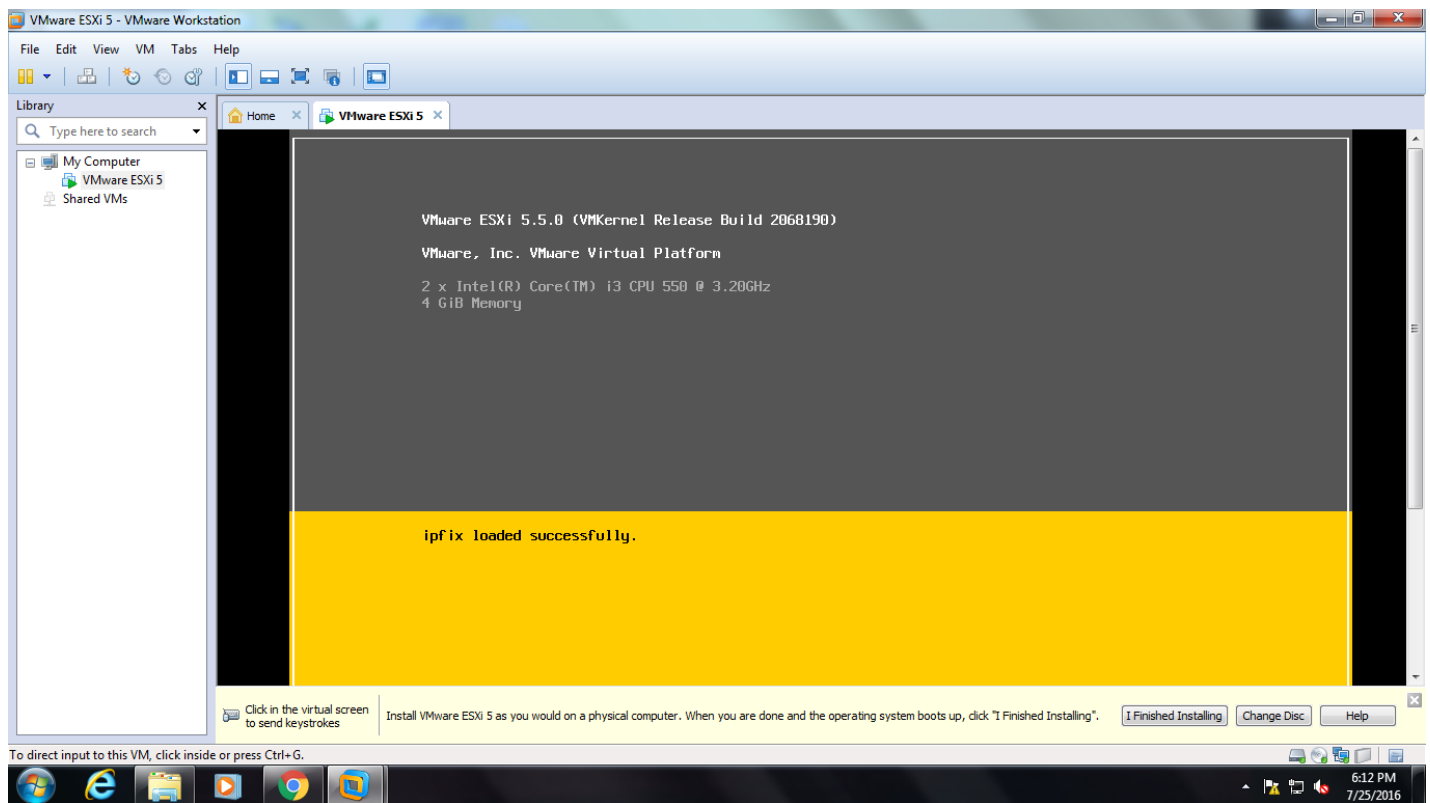




Step 02:

Installation of VMWare ESXi 5





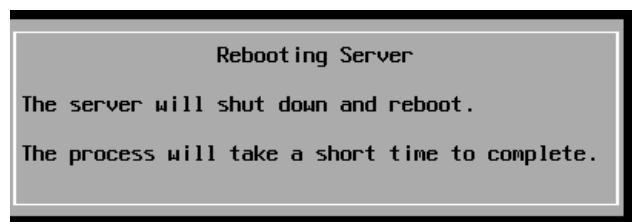
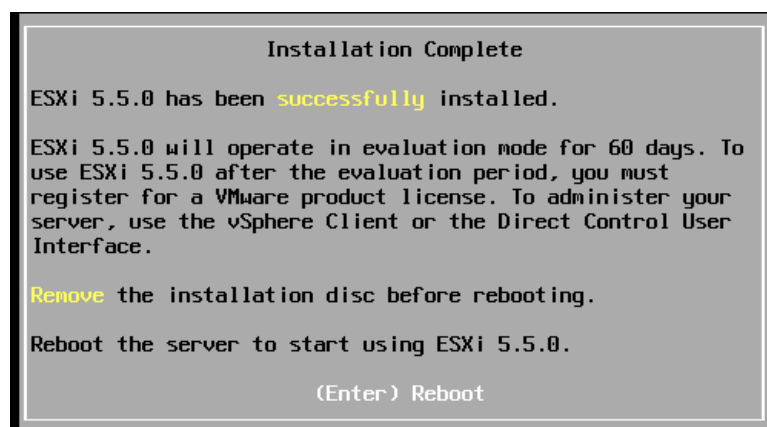
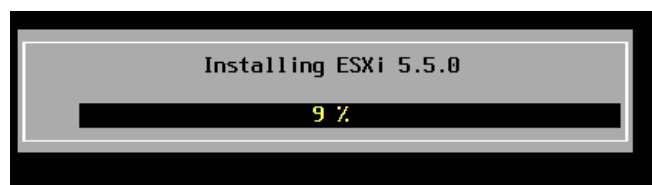
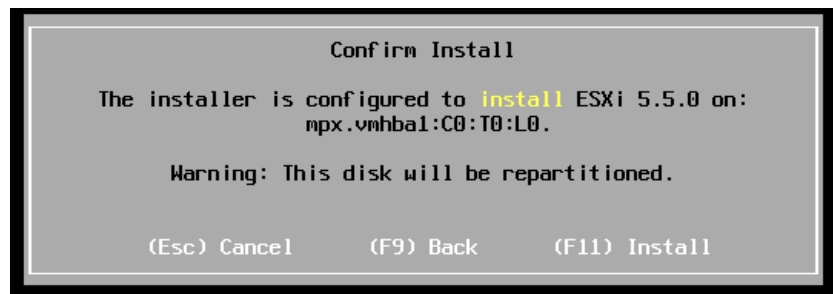
Step 3:

Give a Root Password



Step 4:

Confirming the installation of ESXi 5



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

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

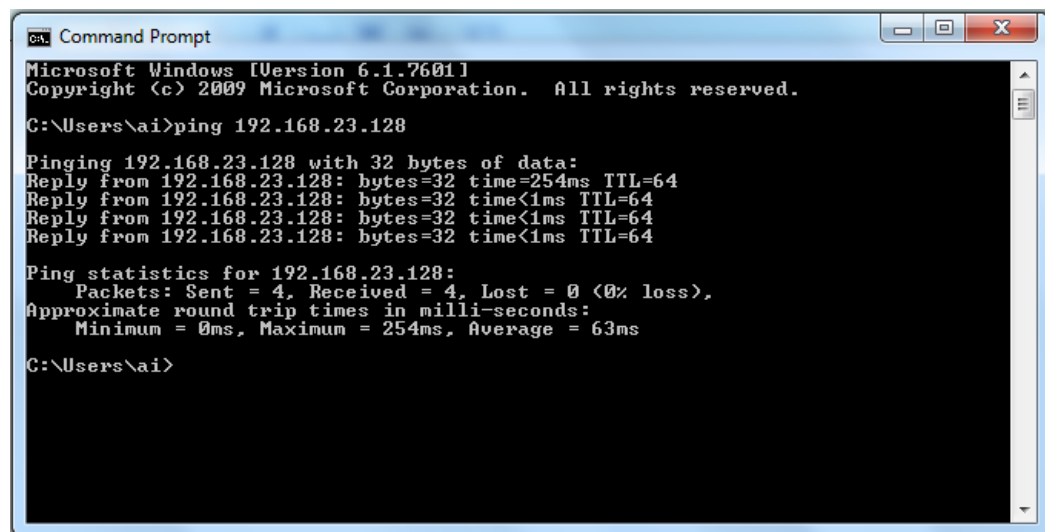
Download tools to manage this host from:

<http://192.168.23.128/> (DHCP)

<http://1fe80::20c:29ff:fea2:23231/> (STATIC)

Step 5:

Checking whether the host is alive by ping to the ip address.



```
ca: Command Prompt
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\ai>ping 192.168.23.128

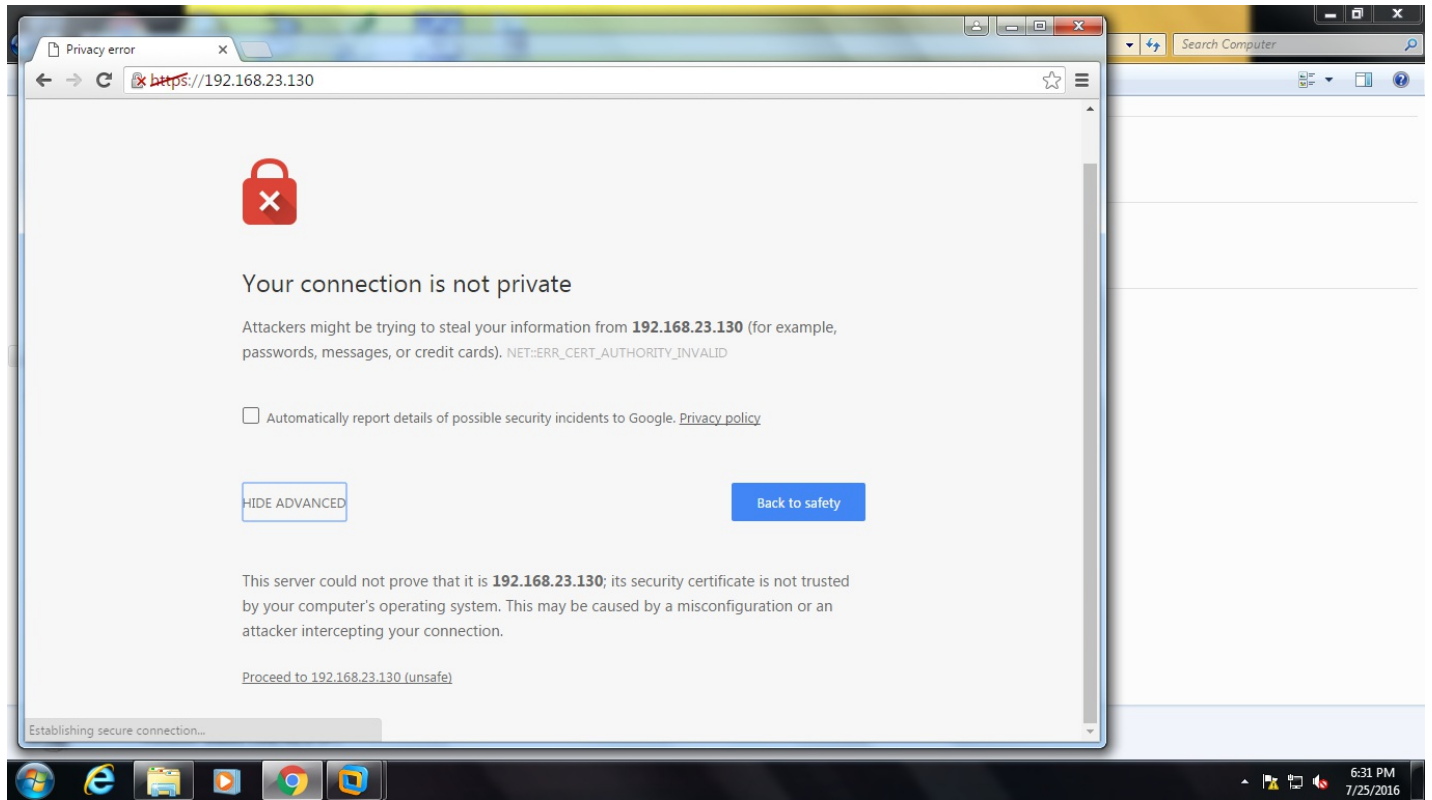
Pinging 192.168.23.128 with 32 bytes of data:
Reply from 192.168.23.128: bytes=32 time=254ms TTL=64
Reply from 192.168.23.128: bytes=32 time<1ms TTL=64
Reply from 192.168.23.128: bytes=32 time<1ms TTL=64
Reply from 192.168.23.128: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.23.128:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 254ms, Average = 63ms

C:\Users\ai>
```


Step 6:

Access the client using the DHCP address



VMware ESXi Welcome

Getting Started

If you need to access this host remotely, use the following program to install vSphere Client software. After running the installer, start the client and log in to this host.

Please note that the traditional vSphere Client does not support features added to vSphere in the 5.1 and 5.5 releases. The traditional vSphere Client is intended for use if you need to connect directly to an ESXi host, are performing certain vSphere Update Manager operations, or are running vCenter Plug-ins that support only the vSphere Client such as vCenter Site Recovery Manager or vCenter Multi-Hypervisor Manager.

You can take advantage of the fullest range of functionality introduced or updated in this release by using the vSphere Web Client.

- [Download vSphere Client](#)

To streamline your IT operations with vSphere, use the following program to install vCenter. vCenter will help you consolidate and optimize workload distribution across ESX hosts, reduce new system deployment time from weeks to seconds, monitor your virtual computing environment around the clock, avoid service disruptions due to planned hardware maintenance or unexpected failure, centralize access control, and automate system administration tasks.

- [Download VMware vCenter](#)

If you need more help, please refer to our documentation library:

- [vSphere Documentation](#)

For Administrators

vSphere Remote Command Line

The Remote Command Line allows you to use command line tools to manage vSphere from a client machine. These tools can be used in shell scripts to automate day-to-day operations.

- [Download the Virtual Appliance](#)
- [Download the Windows Installer \(exe\)](#)
- [Download the Linux Installer \(tar.gz\)](#)

Web-Based Datastore Browser

Use your web browser to find and download files (for example, virtual machine and virtual disk files).

- [Browse datastores in this host's inventory](#)

For Developers

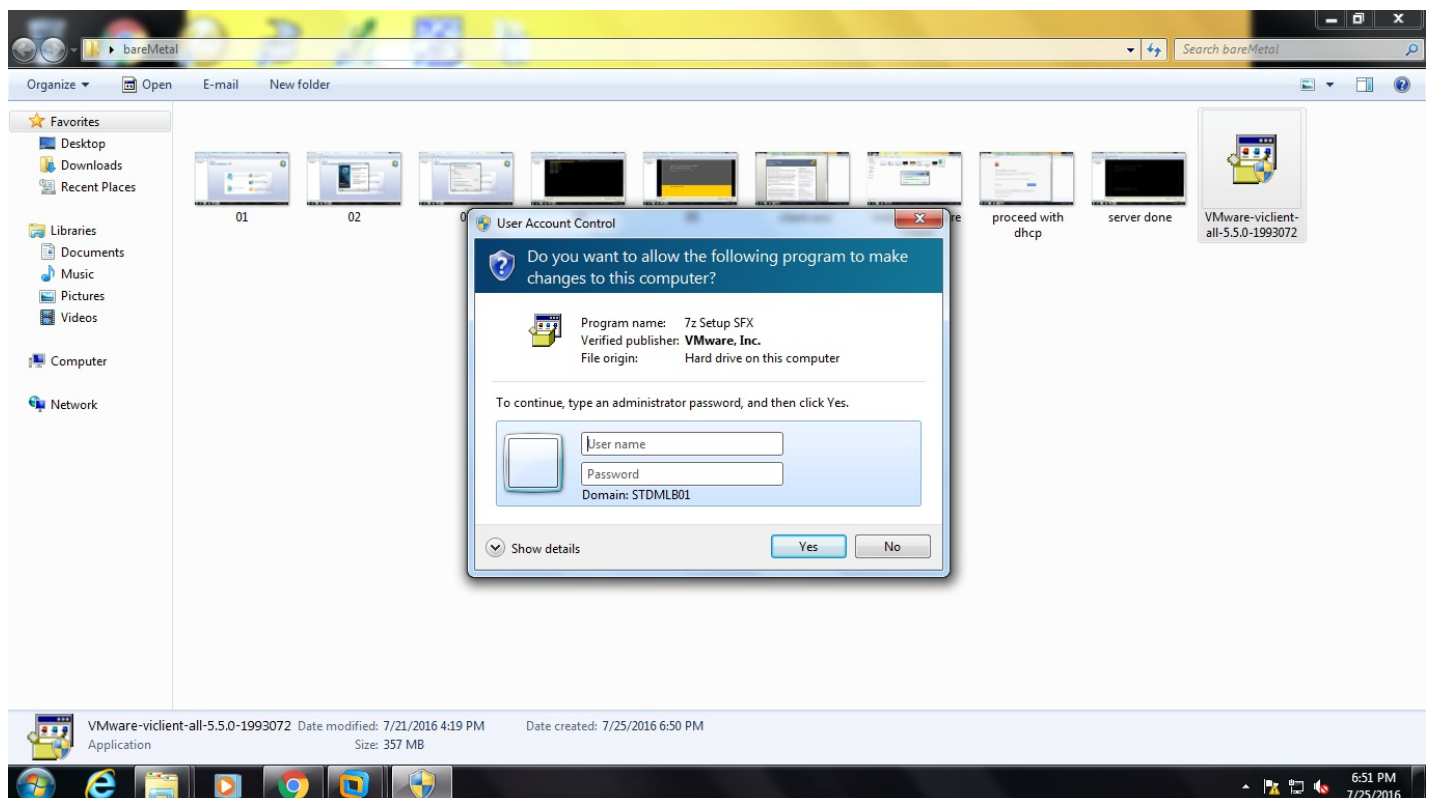
vSphere Web Services SDK

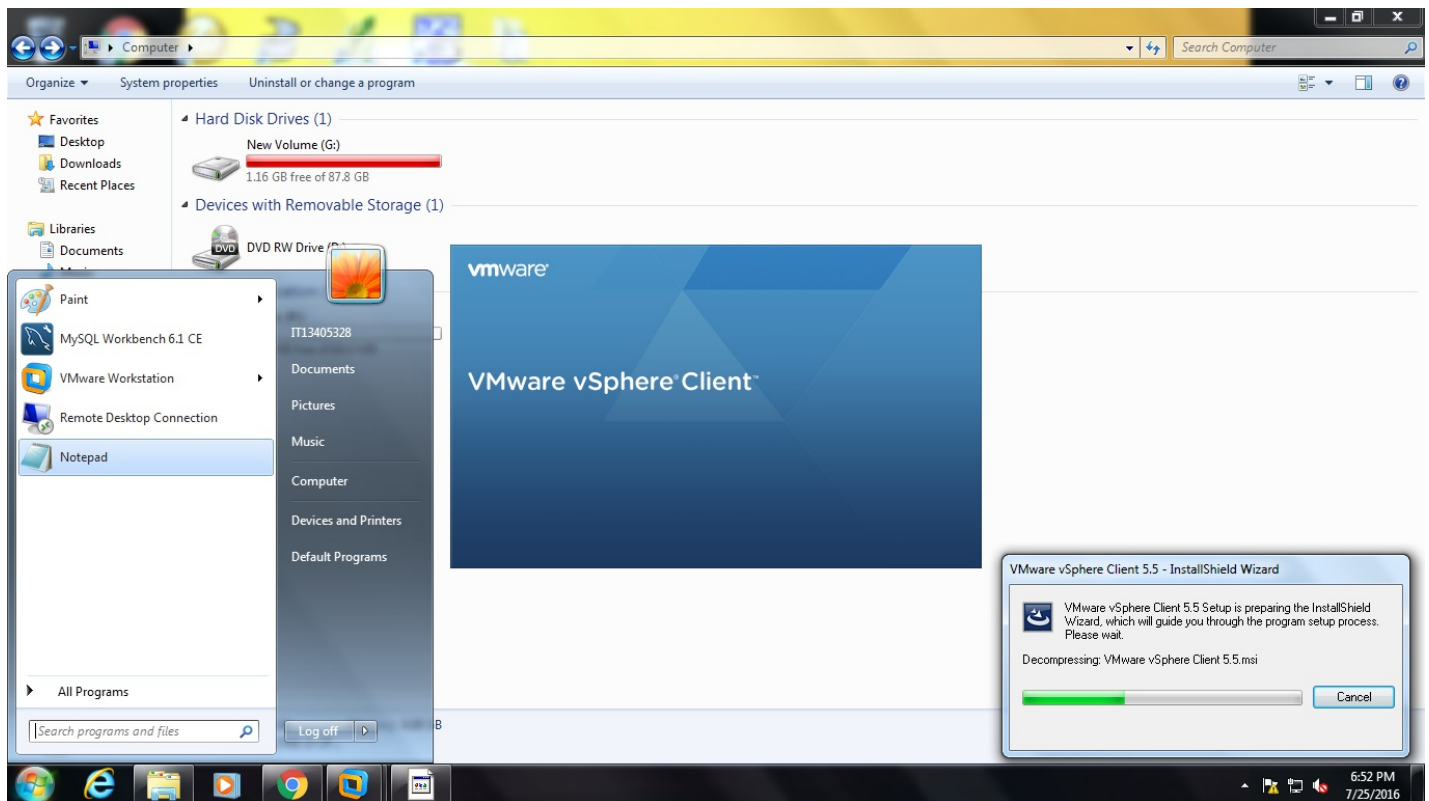
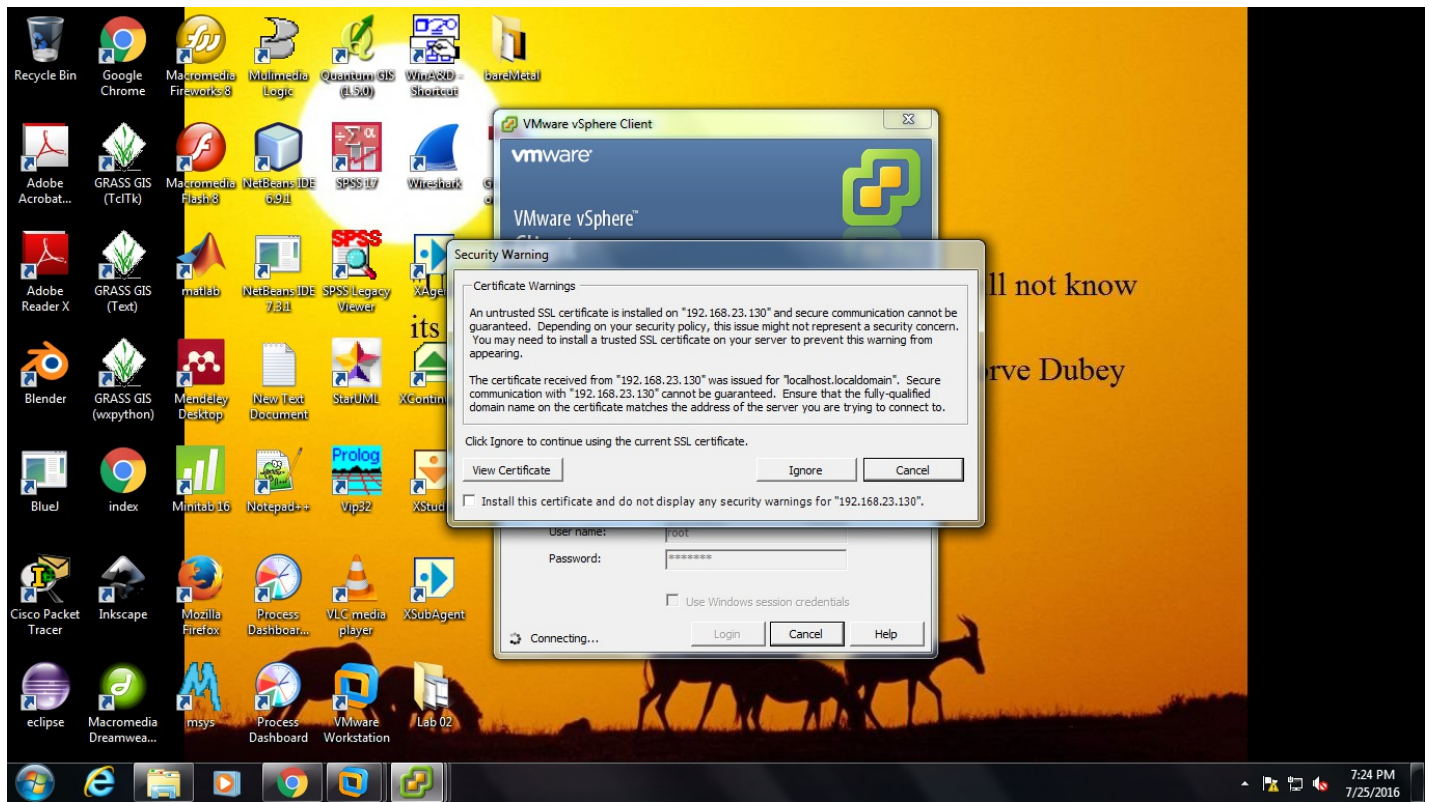
Learn about our latest SDKs, Toolkits, and APIs for managing VMware ESX, ESXi, and VMware vCenter. Get sample code, reference documentation, participate in our Forum Discussions, and view our latest Sessions and Webinars.

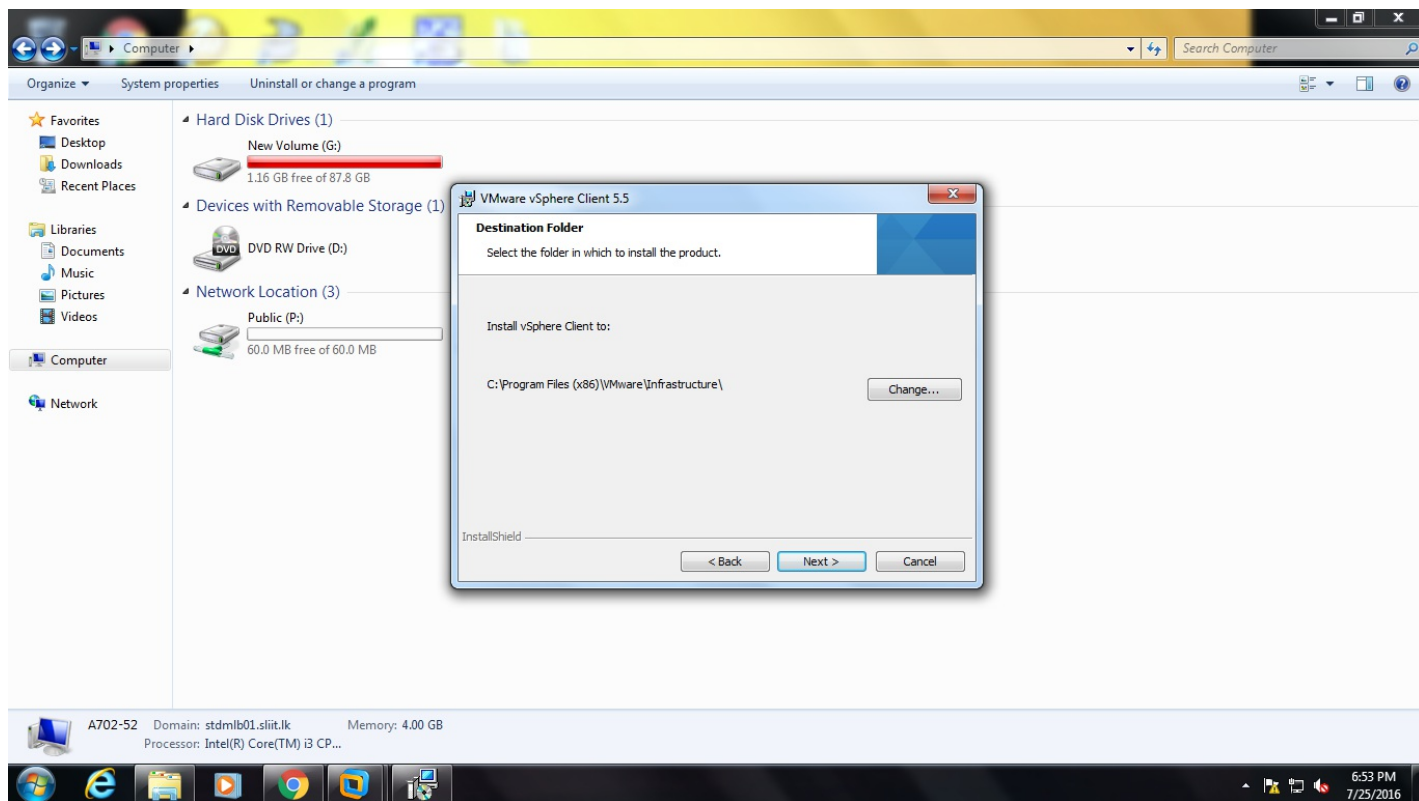
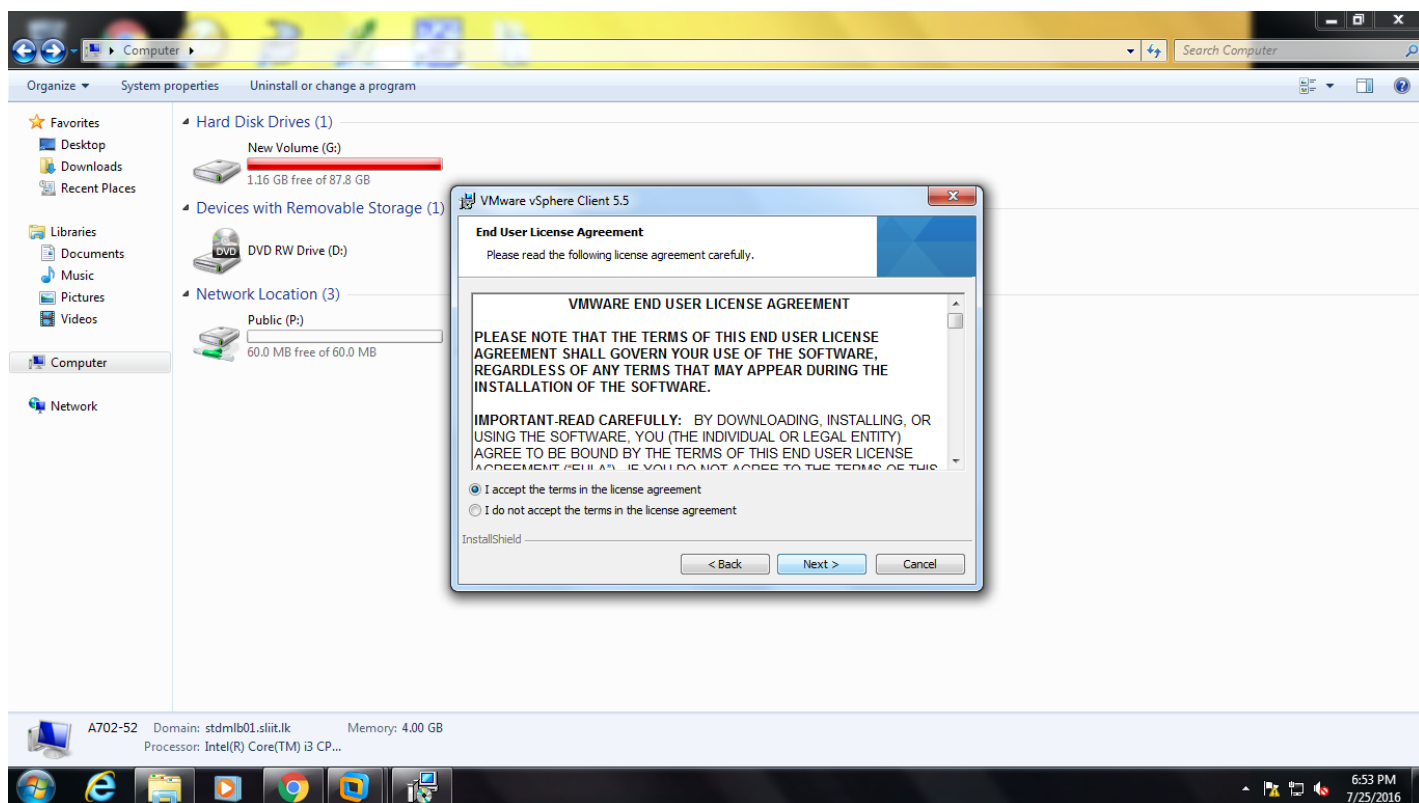
- [Learn more about the Web Services SDK](#)
- [Browse objects managed by this host](#)

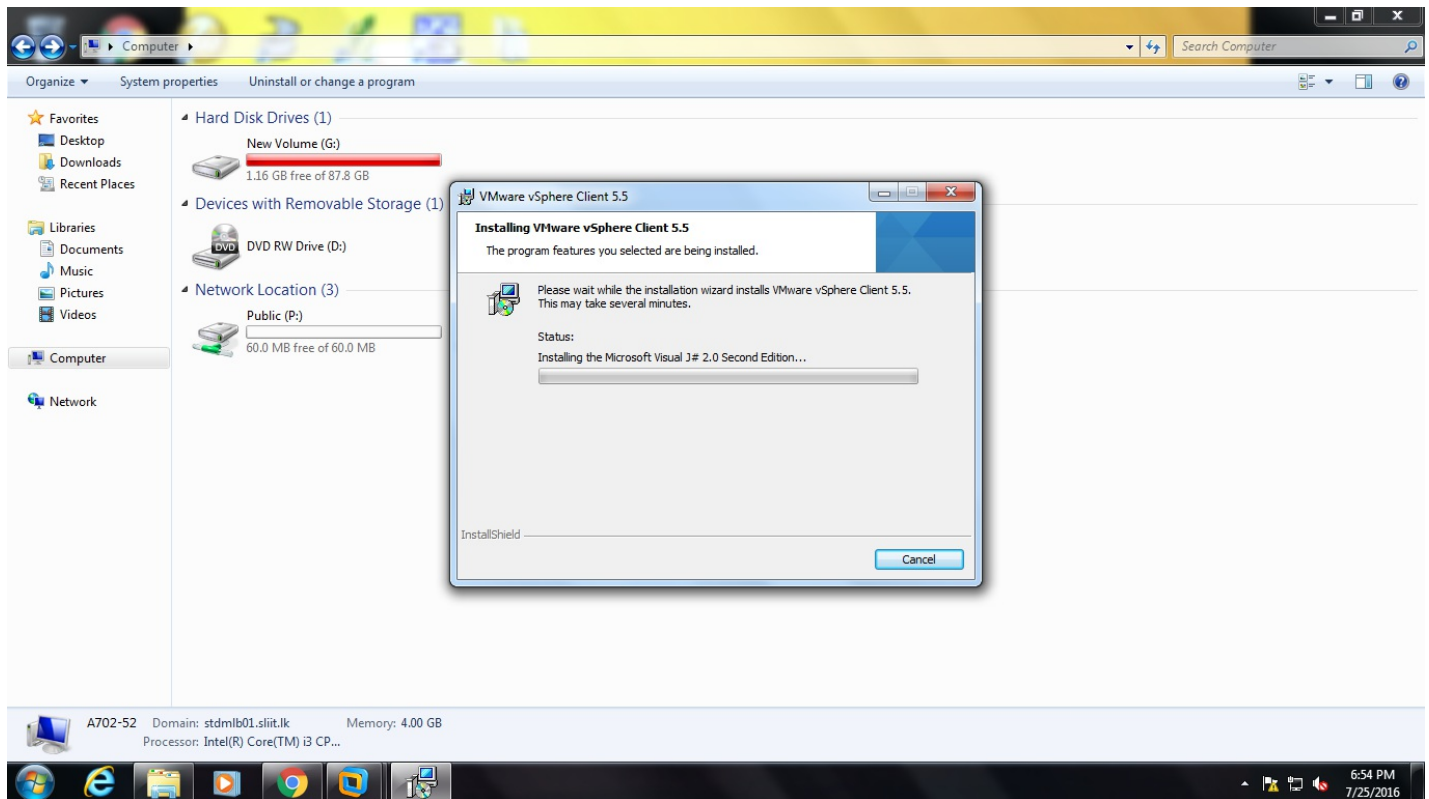
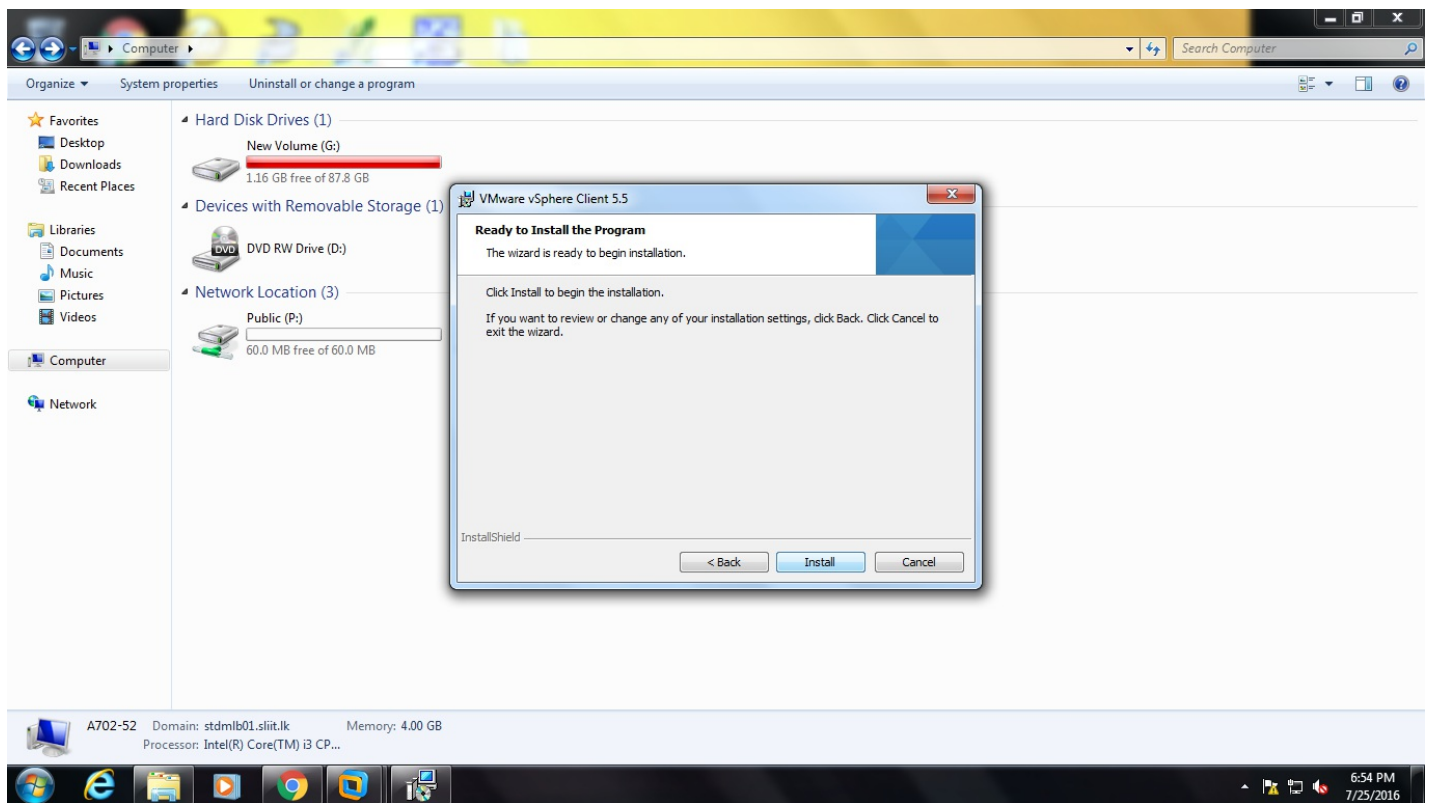
Step 7

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



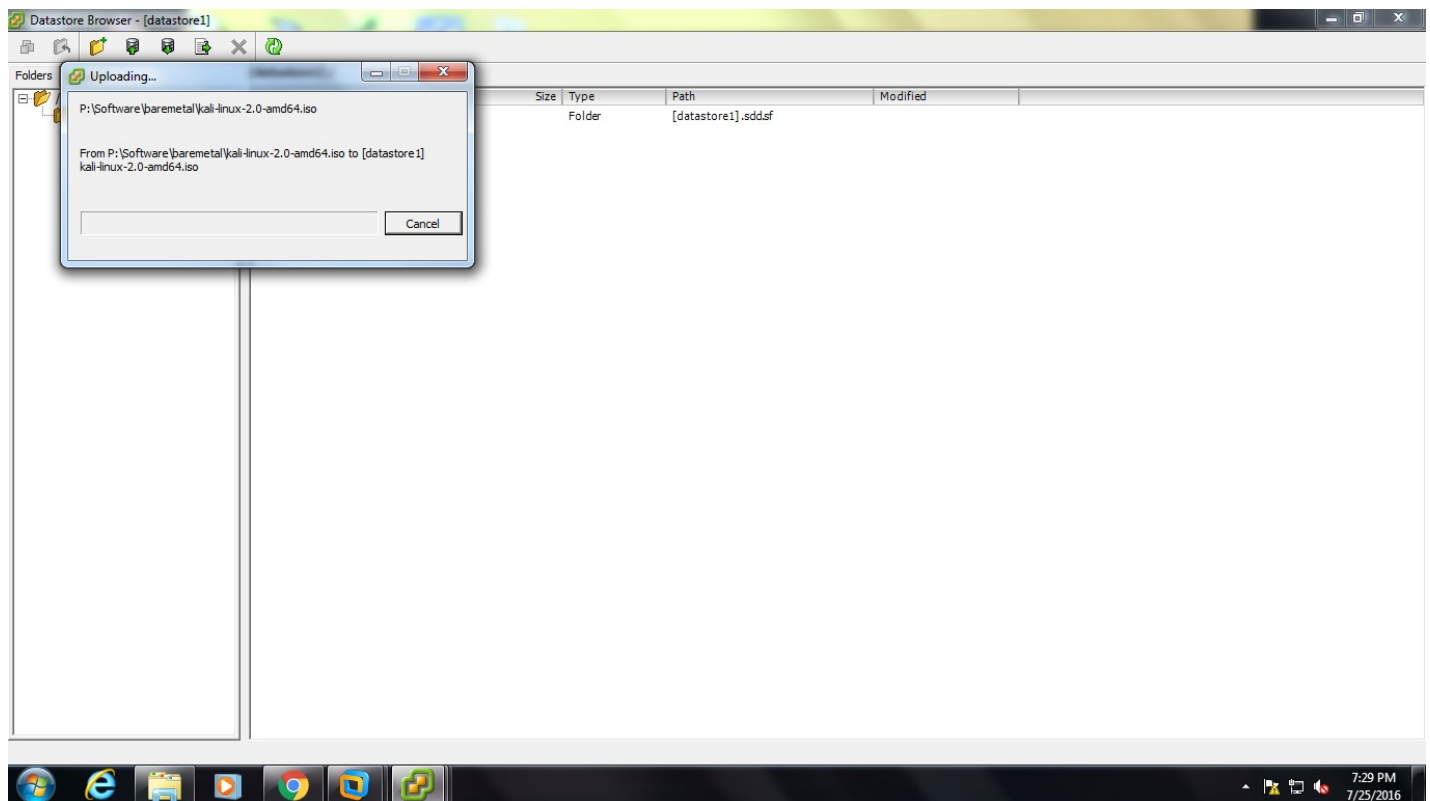
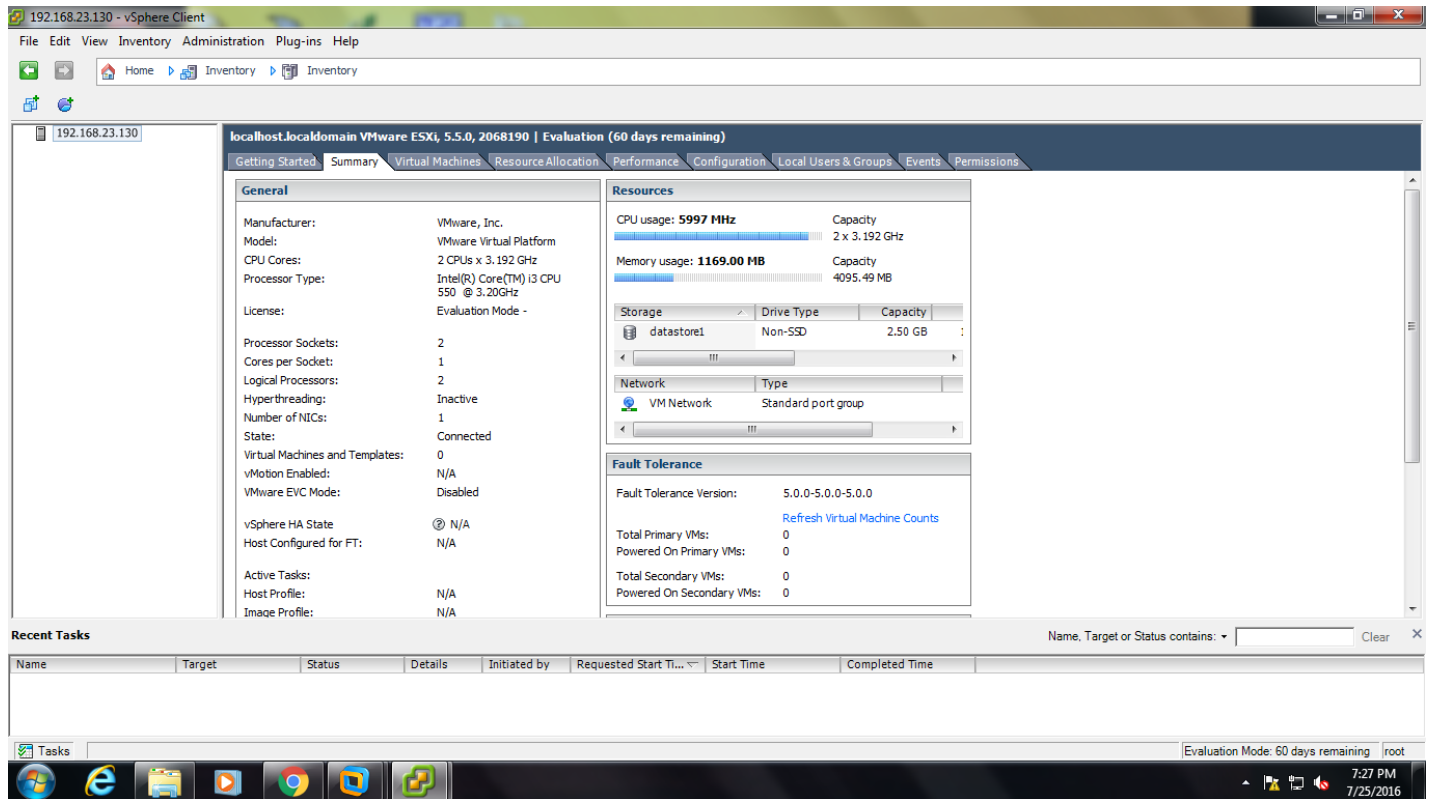


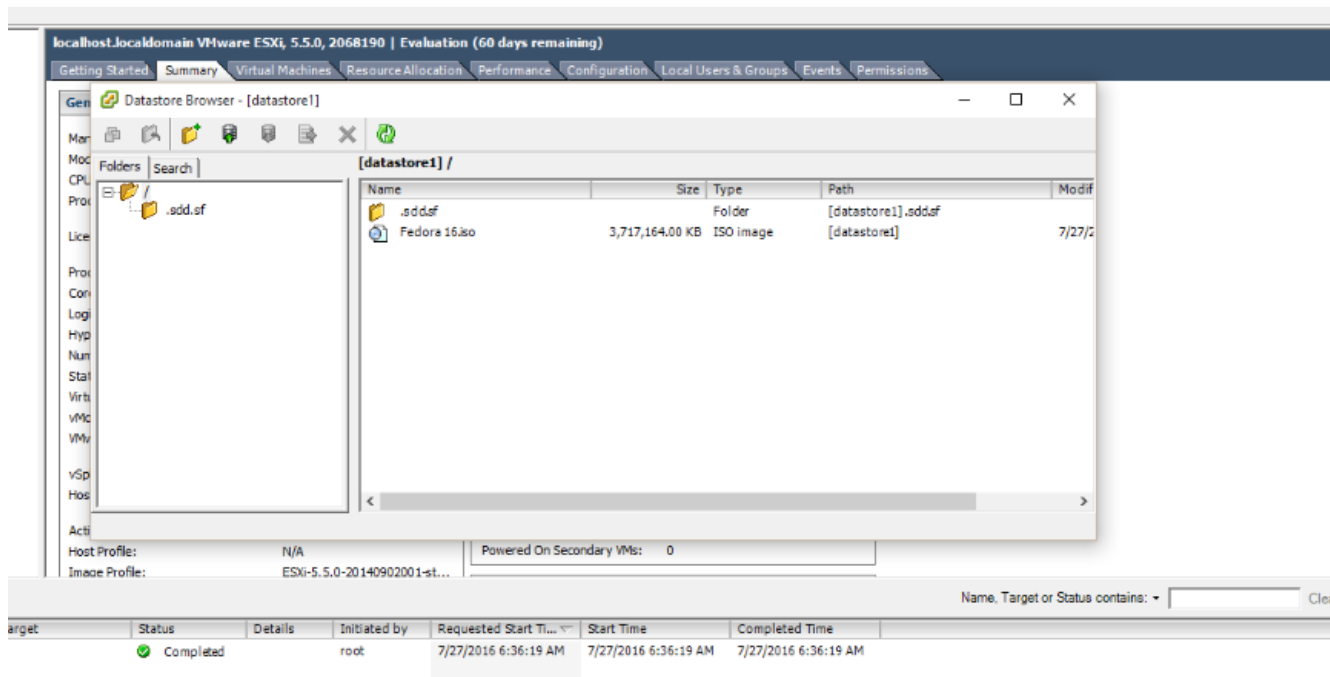




Step 8

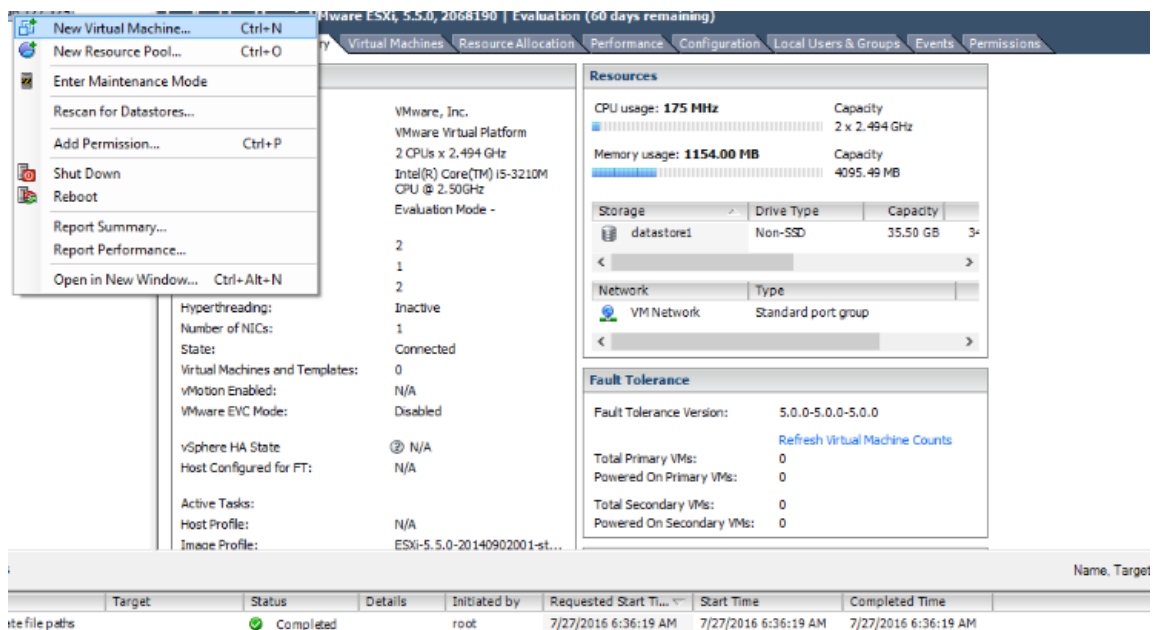
After successfully installing the VMWare vSphere Client we have to go to the data store and upload kali Linux. Go to Storage and browse for data store.





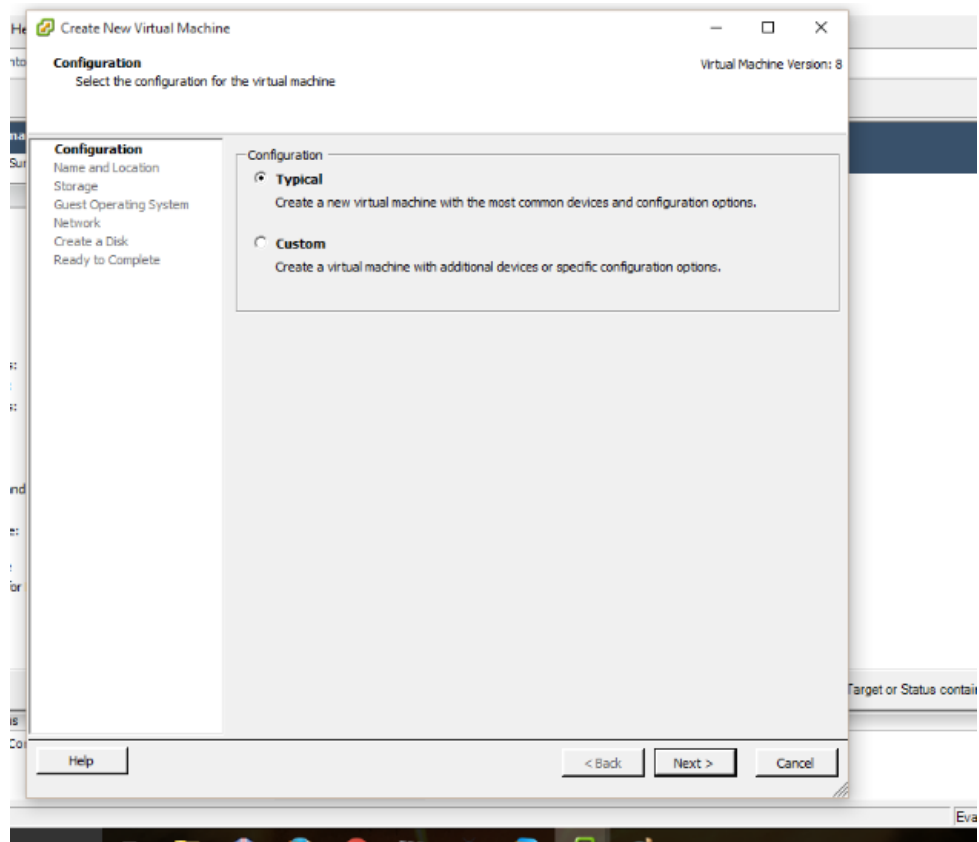
Step 9

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.

The screenshot shows the 'Create New Virtual Machine' wizard window. The title bar reads 'Create New Virtual Machine'. The main heading is 'Name and Location' with the instruction 'Specify a name and location for this virtual machine'. In the top right corner, it says 'Virtual Machine Version: 8'. On the left, a 'Configuration' sidebar lists steps: 'Name and Location' (selected), 'Storage', 'Guest Operating System', 'Network', 'Create a Disk', and 'Ready to Complete'. The main area has a 'Name:' label above a text box containing 'Fedora_VM'. Below the text box, there is explanatory text: 'Virtual machine (VM) names may contain up to 80 characters and they must be unique within each vCenter Server VM folder.' and 'VM folders are not viewable when connected directly to a host. To view VM folders and specify a location for this VM, connect to the vCenter Server.' At the bottom, there are three buttons: 'Help', '< Back', and 'Next >', followed by a 'Cancel' button.

Create New Virtual Machine

Virtual Machine Version: 8

Name and Location
Specify a name and location for this virtual machine

Configuration

Name and Location
Storage
Guest Operating System
Network
Create a Disk
Ready to Complete

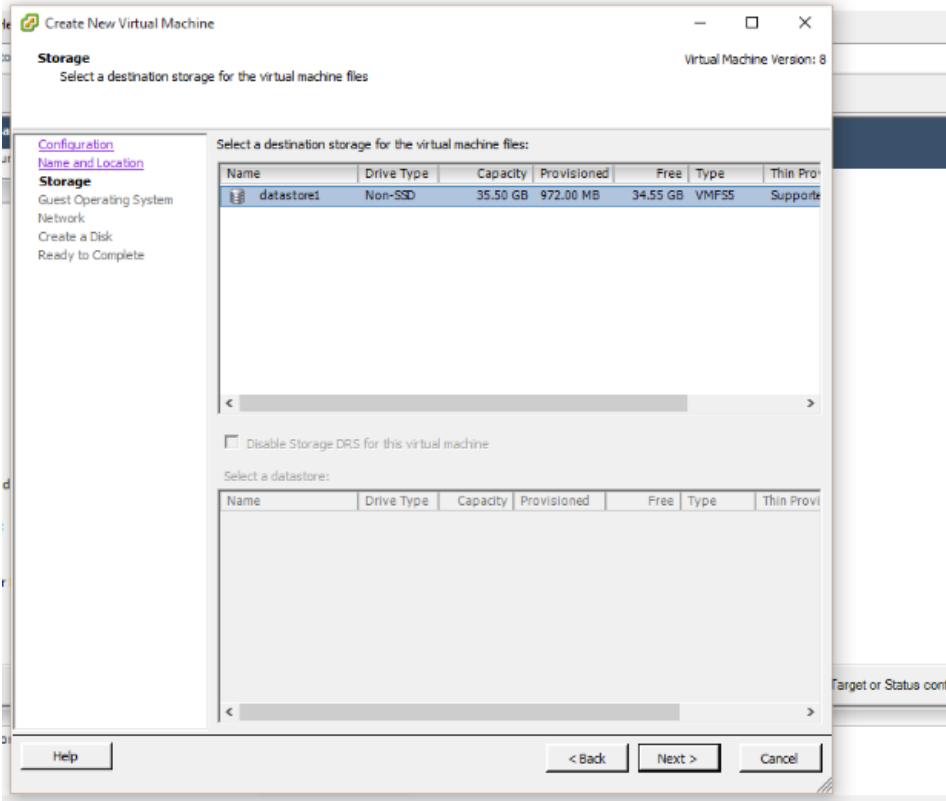
Name:
Fedora_VM

Virtual machine (VM) names may contain up to 80 characters and they must be unique within each vCenter Server VM folder .
VM folders are not viewable when connected directly to a host. To view VM folders and specify a location for this VM, connect to the vCenter Server .

Help < Back Next > Cancel

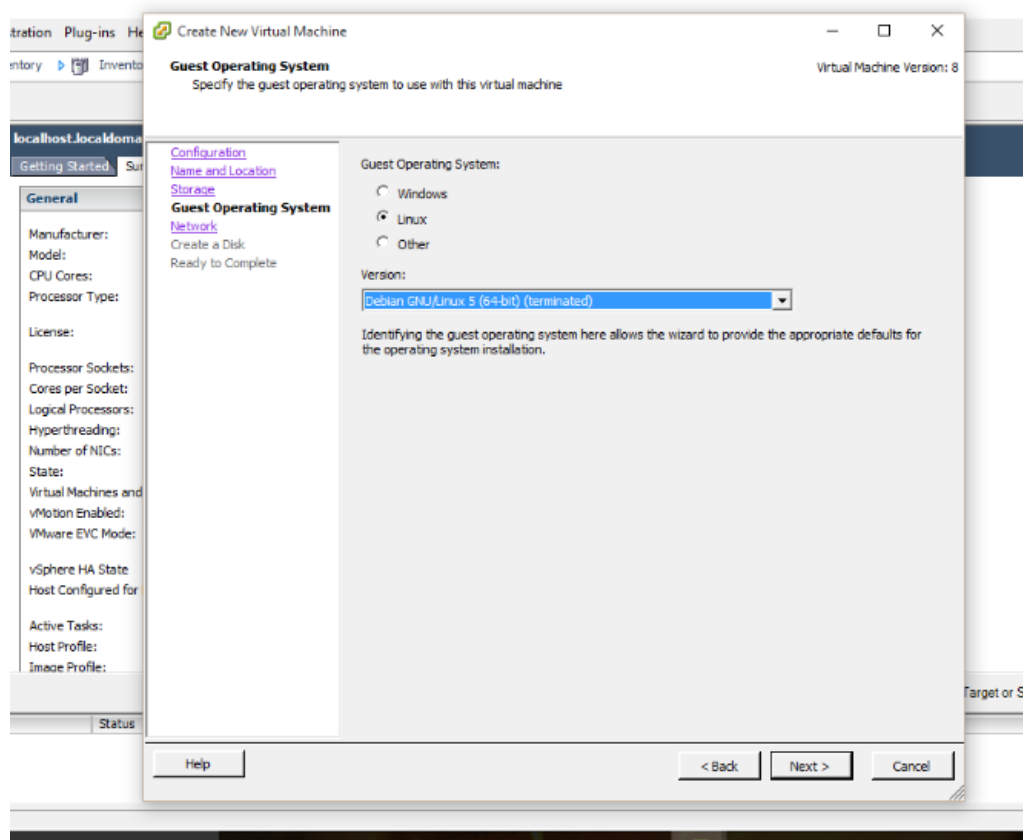
Step 12

Selecting the storage of the location.



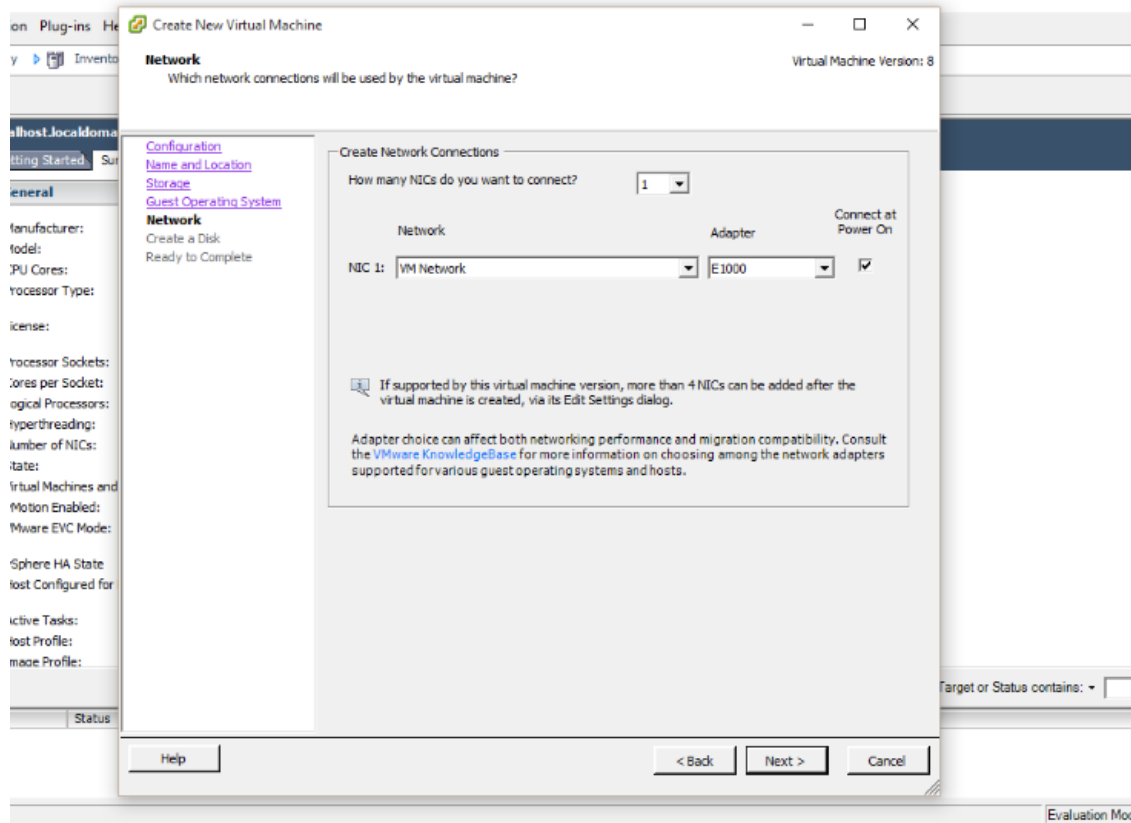
Step 13

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



Step 14

Network connections used by virtual machines

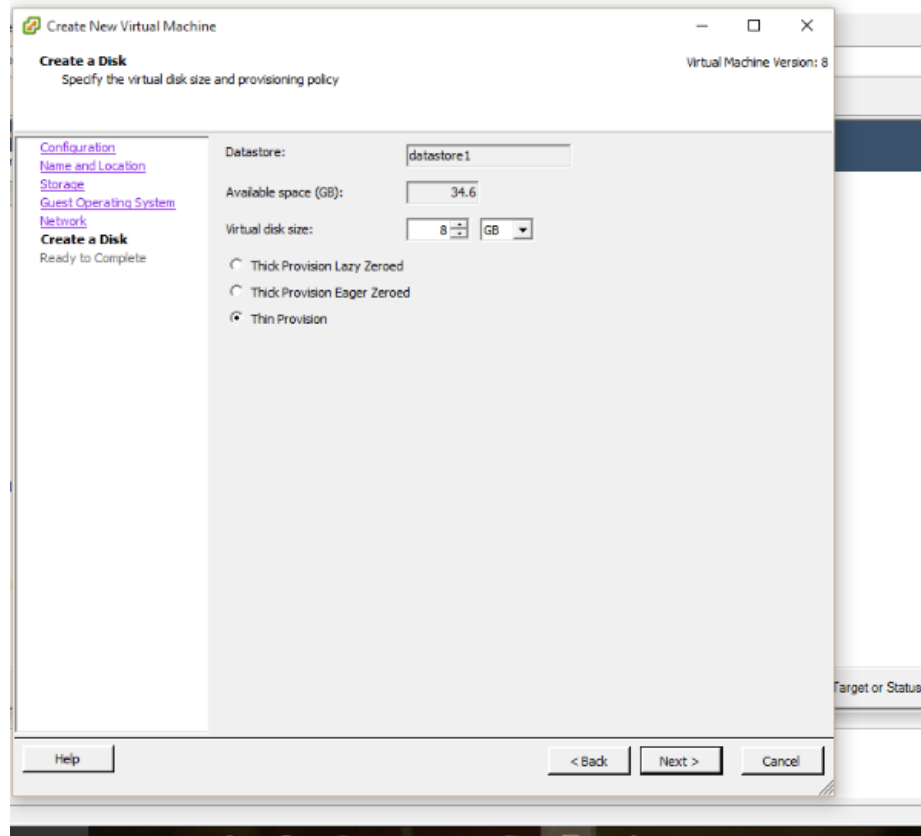


Step 15

Specify the virtual disk size and provisioning disk

Configure the following settings:

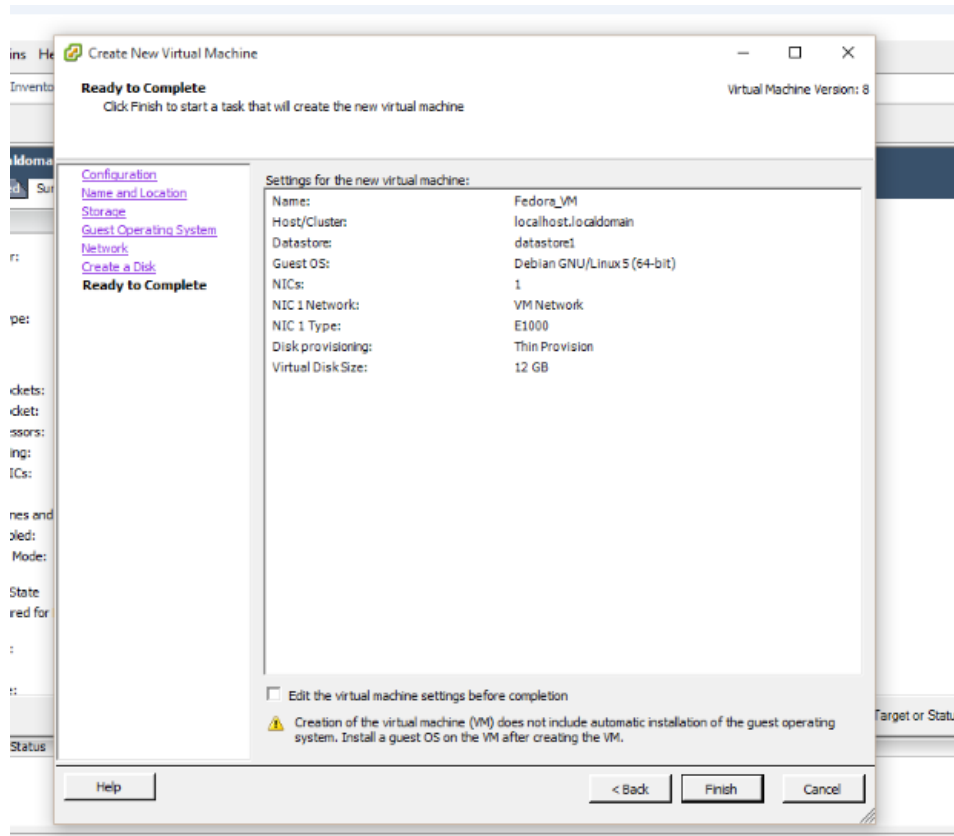
- Capacity: 40GB
- Disk Provisioning: Thin Provision



Step 16

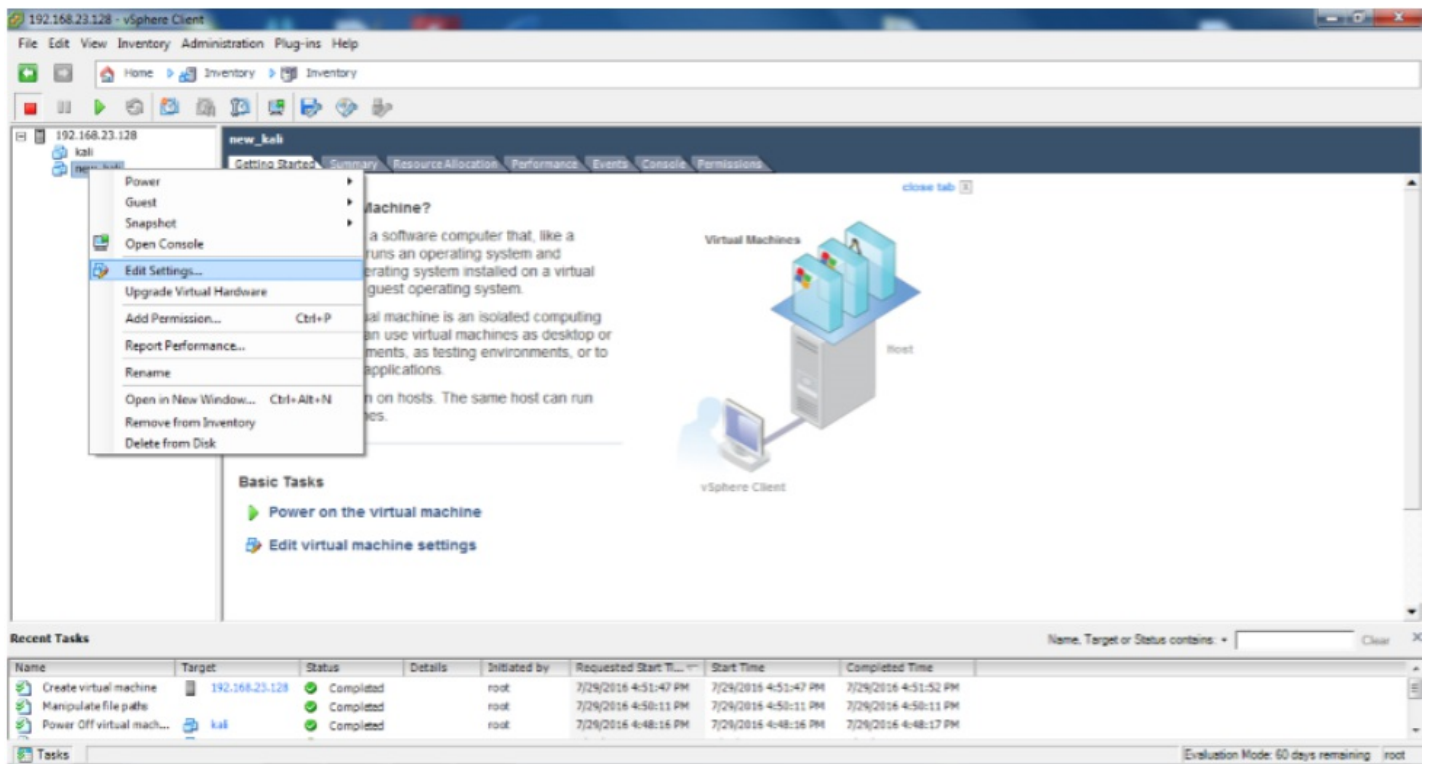
Review your settings and then click Finish.

The VMware ESXi server starts to create the virtual machine.



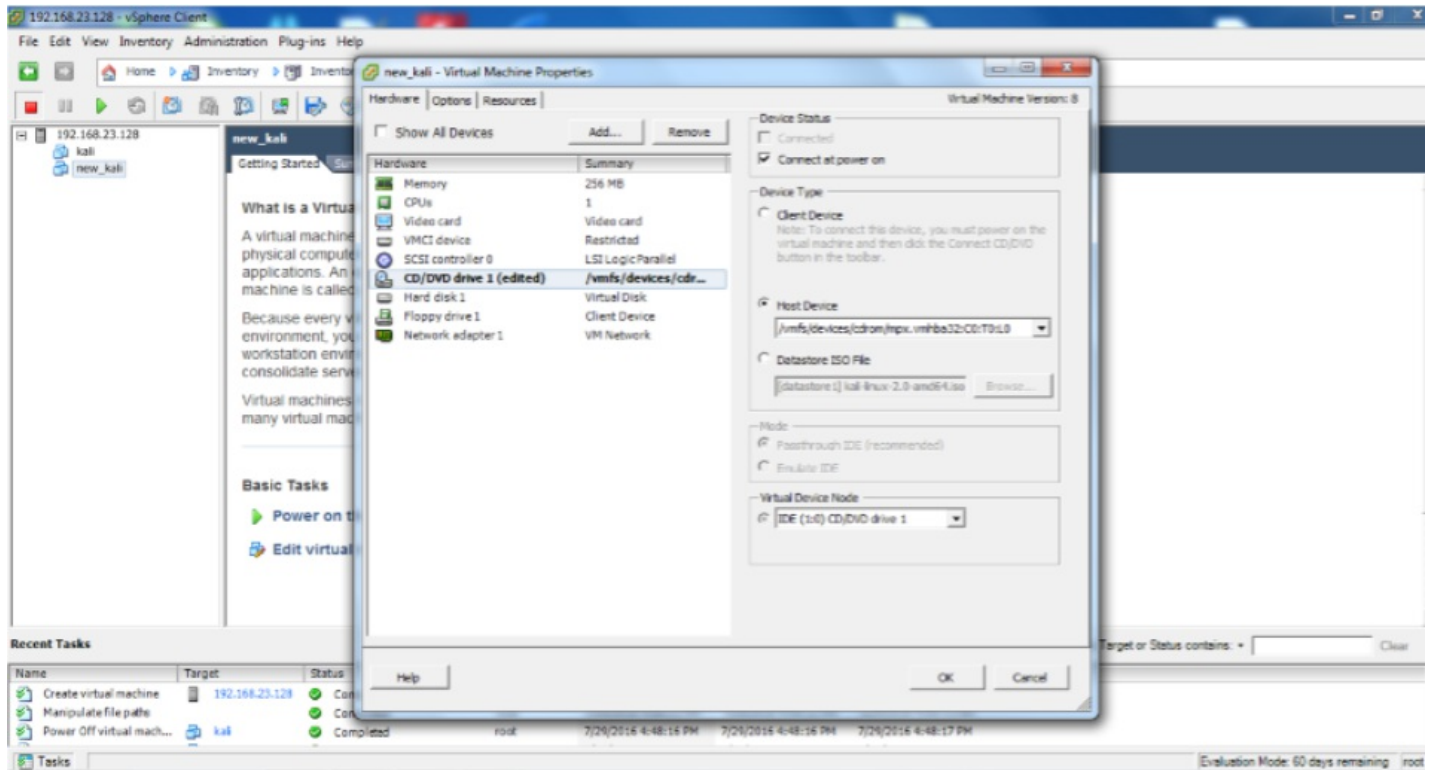
Step 17

Right click on new kali linux->Edit settings.



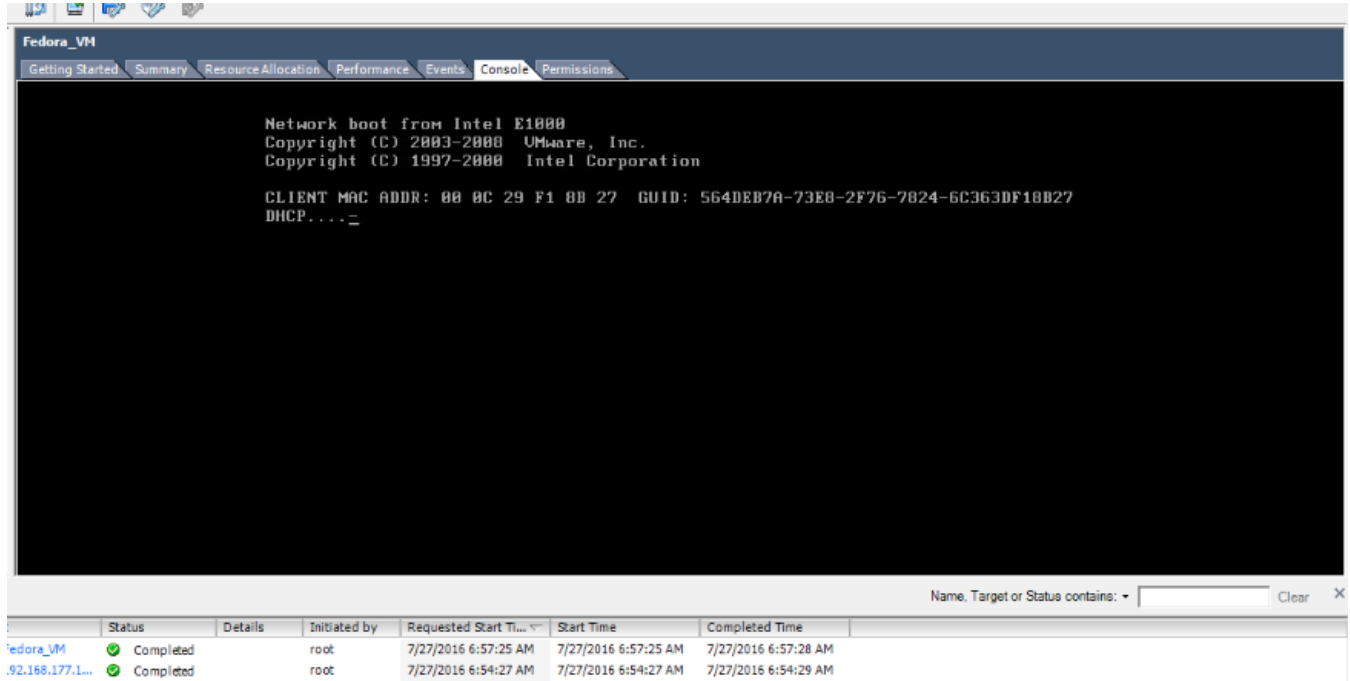
Step 18

Select CD/DVD drive 1 in virtual Machine properties windows. then click ok button.



Step 19

Power on the virtual machine



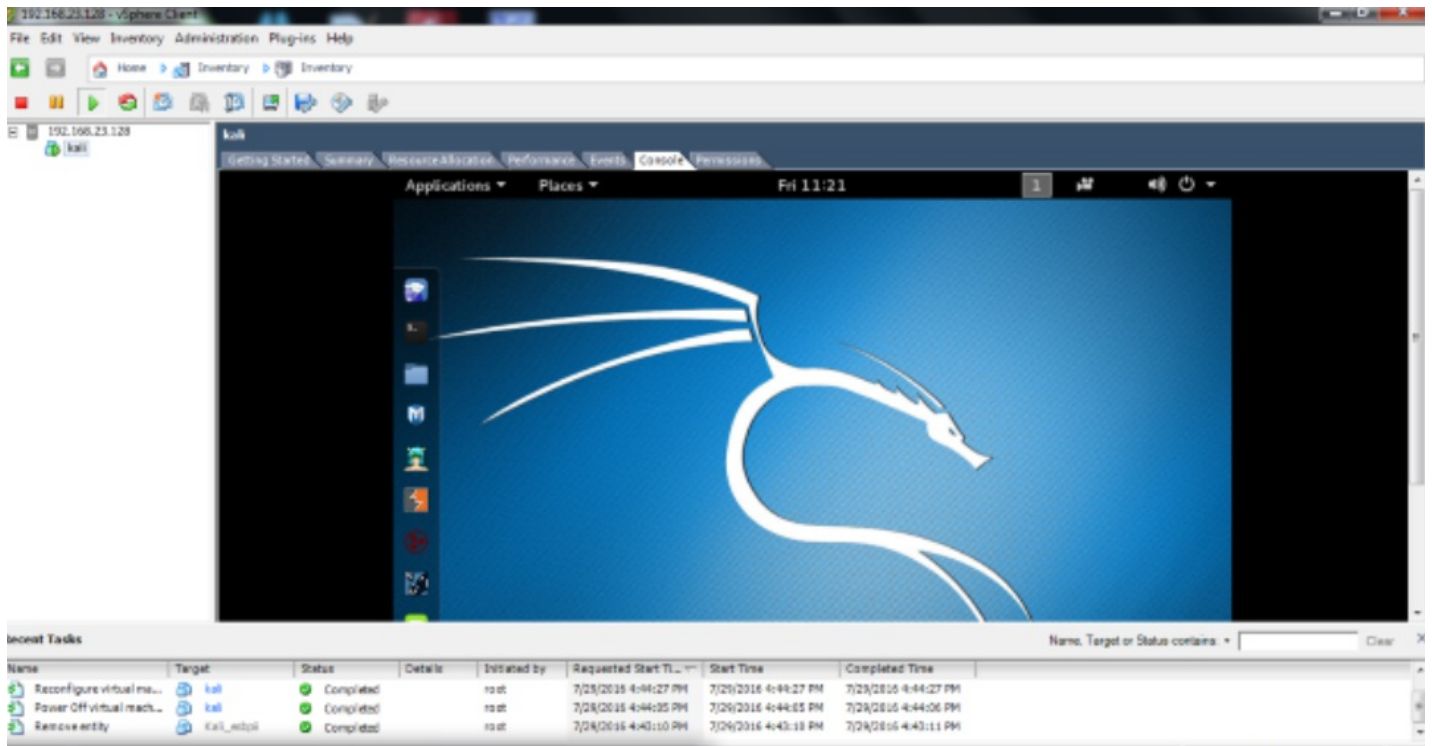
The screenshot shows the VMware Workstation interface with the 'Fedora_VM' selected. The 'Console' tab is active, displaying the following text:

```
Network boot from Intel E1000
Copyright (C) 2003-2008 VMware, Inc.
Copyright (C) 1997-2008 Intel Corporation

CLIENT MAC ADDR: 00 0C 29 F1 0B 27  GUID: 564DEB7A-73E8-2F76-7024-6C363DF10B27
DHCP.....
```

Below the console, a table lists the status of the virtual machines:

Name	Status	Details	Initiated by	Requested Start Time	Start Time	Completed Time
Fedora_VM	Completed		root	7/27/2016 6:57:25 AM	7/27/2016 6:57:25 AM	7/27/2016 6:57:28 AM
.92.168.177.L...	Completed		root	7/27/2016 6:54:27 AM	7/27/2016 6:54:27 AM	7/27/2016 6:54:29 AM



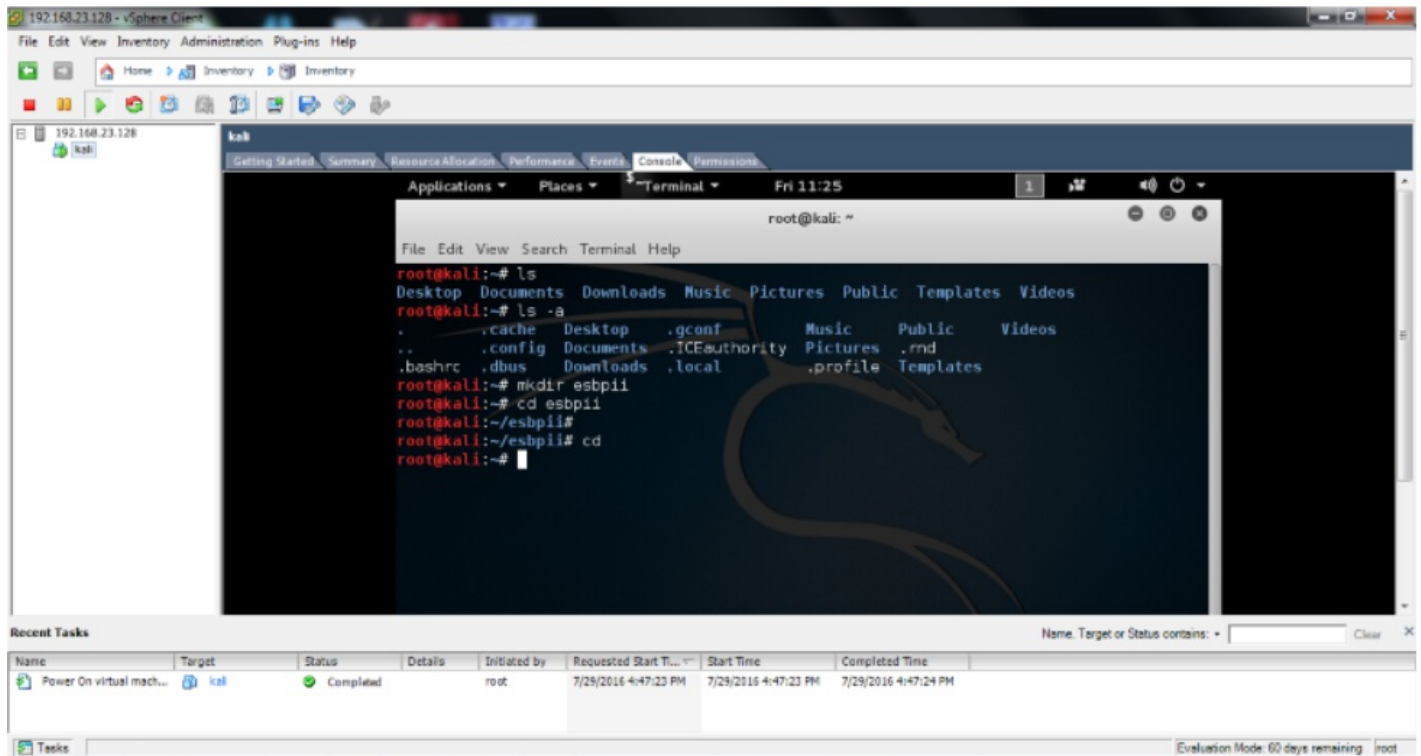
The screenshot shows the VMware Workstation interface with the 'Kali' virtual machine selected. The 'Console' tab is active, displaying the Kali Linux desktop environment. The desktop background is blue with a white dragon logo. The taskbar at the bottom shows several applications, including a terminal, a file manager, and a web browser. The system clock in the top right corner indicates 'Fri 11:21'.

Below the console, a table lists the status of the virtual machines:

Name	Target	Status	Details	Initiated by	Requested Start Time	Start Time	Completed Time
Reconfigure virtual ma...	kali	Completed		root	7/28/2016 4:44:27 PM	7/28/2016 4:44:27 PM	7/28/2016 4:44:27 PM
Power Off virtual mach...	kali	Completed		root	7/28/2016 4:44:05 PM	7/28/2016 4:44:05 PM	7/28/2016 4:44:06 PM
Remove entity	Kali_redpill	Completed		root	7/24/2016 4:43:10 PM	7/24/2016 4:43:10 PM	7/24/2016 4:43:11 PM

Step 20

Try some commands



192.168.23.128 - vSphere Client

File Edit View Inventory Administration Plug-ins Help

Home Inventory Inventory

192.168.23.128

kali

Getting Started Summary Resource Allocation Performance Events Console Permissions

Applications Places Terminal Fri 11:25

root@kali: ~

File Edit View Search Terminal Help

```
root@kali:~# ls
Desktop Documents Downloads Music Pictures Public Templates Videos
root@kali:~# ls -la
.      .cache Desktop  .gconf  Music  Public  Videos
..     .config Documents .ICEauthority Pictures .rnm
.bashrc .dbus  Downloads .local  .profile Templates
root@kali:~# mkdir esbpii
root@kali:~# cd esbpii
root@kali:~/esbpii#
root@kali:~/esbpii# cd
root@kali:~#
```

Recent Tasks

Name	Target	Status	Details	Initiated by	Requested Start Time	Start Time	Completed Time
Power On virtual mach...	kali	Completed		root	7/29/2016 4:47:23 PM	7/29/2016 4:47:23 PM	7/29/2016 4:47:24 PM

Tasks

Evaluation Mode: 60 days remaining root