

VMWare ESXi 4.0 Installation on UCS Blade Server with UCS Manager KVM

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Introduction

Although not required but readers are highly encouraged to get familiar with the concepts discussed in the following document first

[Deploying UCS Blade Server with UCS Manager for Virtualization](#)

Once the blade server is provisioned using the UCS manager and necessary configurations like service profile creation etc. is done. The next step is to configure and deploy blade server for various applications. Since the blade server is very attractive for virtualization based applications, in this document the VMWare ESXi installation is discussed. The concepts discussed here are also applicable to non-vmware based hypervisor and any other vendor's software application installation as well.

During this setup no physical keyboard, mouse or monitor was attached to the physical KVM port on the blade server. It should be noted that this document only discusses the installation using the UCS manager built-in software KVM switch. Although there could be various other ways to install the software on the blade server (for instance USB DVD based installation on the blade server).

Terminologies

BMC - Baseboard Management Controller

Baseboard Management Controller (BMC), also called as Service processor, resides on each blade for OS independent/pre-OS management. The BMC's focus is to monitor/ manage a single blade in the UCS chassis. BMC should be assigned an IP address so that the UCS Manager's software KVM can connect to it using the IP. The UCS manager talks to the BMC and configures the blade. BMC controls things like BIOS (upgrade/downgrade), assigning MAC addresses, assigning WWNs, etc.

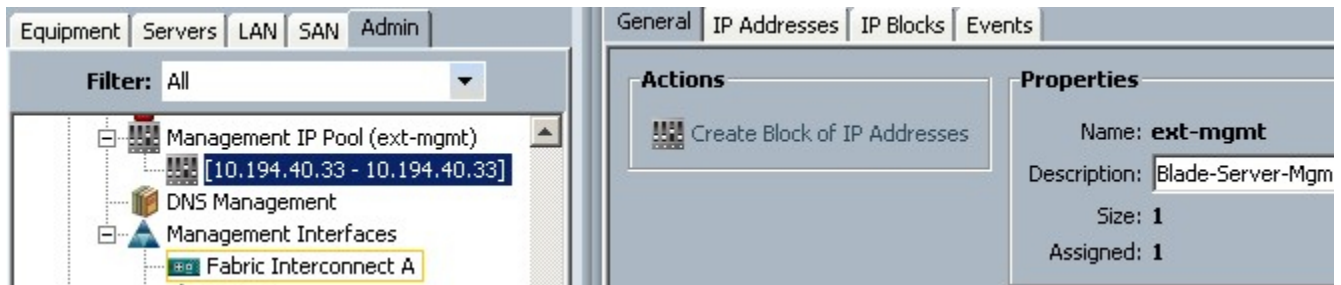
Using KVM Connection to Setup the Blade Server

Each physical blade is capable of supporting remote KVM and remote media access. This is made possible by associating IP addresses for the cut-through interfaces that correspond to each blade's BMC. Typically, these addresses are configured on the same subnet as the management IP address of the UCSM. This pool is created from the Admin tab, by selecting "Management IP Pool".

In our example, the ip address 10.194.40.208 is used to connect to the UCS Manager. And 10.194.40.33 is assigned to the " BMC Management IP Pool" so that UCSM can connect to blade server using KVM and will also be used for remote media access.

Notice that in our example we have only one IP address because we are configuring only one blade right now. So one ip address is required per blade server.

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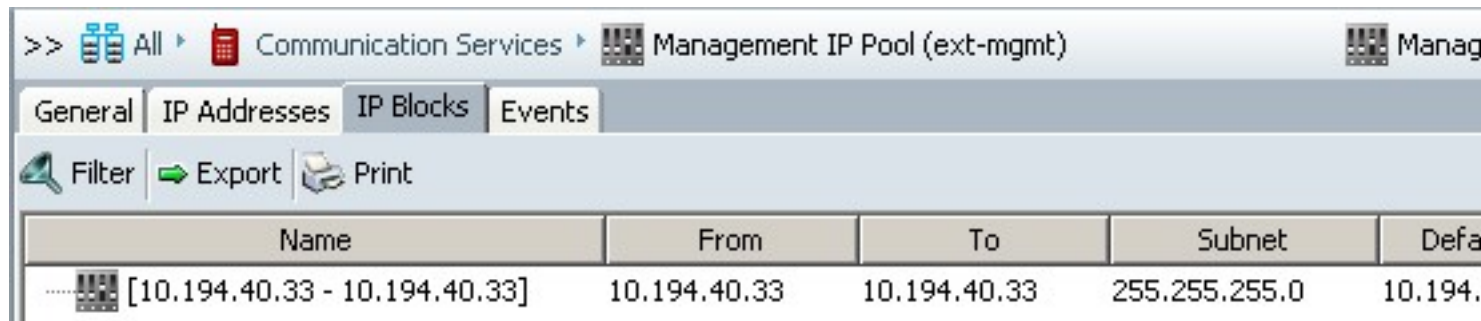


In the following screen it is shown that chassis-1/blade-1 is assigned the 10.194.40.33 IP address for remote KVM and virtual media access.

The screenshot shows the 'IP Addresses' tab of the Management IP Pool configuration. It features a table with the following data:

MAC Address	Subnet	Default Gateway	Assigned	Assigned To
10.194.40.33	255.255.255.0	10.194.40.1	yes	sys/chassis-1/blade-1/mgmt/ipv4-pooled-add

Following screen shows the IP address block that is allocated for BMC.



The screenshot shows the UCS Manager interface for a Management IP Pool. The breadcrumb path is: All > Communication Services > Management IP Pool (ext-mgmt). The 'IP Blocks' tab is selected. Below the tabs are 'Filter', 'Export', and 'Print' options. A table lists IP blocks with columns: Name, From, To, Subnet, and Default. One entry is visible: [10.194.40.33 - 10.194.40.33] with From: 10.194.40.33, To: 10.194.40.33, Subnet: 255.255.255.0, and Default: 10.194.

Name	From	To	Subnet	Default
[10.194.40.33 - 10.194.40.33]	10.194.40.33	10.194.40.33	255.255.255.0	10.194.

Now connect to blade server's software based KVM Console



This should open a new dialog box that will show the console screen of the blade server.

```
■ KVM Console for vse-ucs-6120-1 / Chassis 1 - Server 1
File View Macros Tools Help
PXE-MOF: Exiting Intel Boot Agent.

Reboot and Select proper Boot device
or Insert Boot Media in selected Boot device and press a key

Intel(R) Boot Agent XG v2.1.11
Copyright (C) 1997-2008, Intel Corporation

CLIENT MAC ADDR: 00 26 51 08 87 B6  GUID: 7BE25AA1 85AA 11DE AC6A 000BA
PXE-E51: No DHCP or proxyDHCP offers were received.

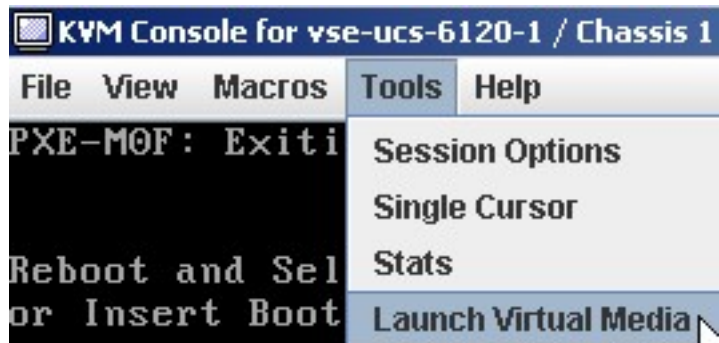
PXE-MOF: Exiting Intel Boot Agent.

Intel(R) Boot Agent XG v2.1.11
Copyright (C) 1997-2008, Intel Corporation

PXE-E61: Media test failure, check cable
PXE-MOF: Exiting Intel Boot Agent.

Reboot and Select proper Boot device
or Insert Boot Media in selected Boot device and press a key
```

Now you can launch the virtual media from within the UCS Manager windows and can map vmvisor (ESXi4.0) iso image as virtual CD/DVD.



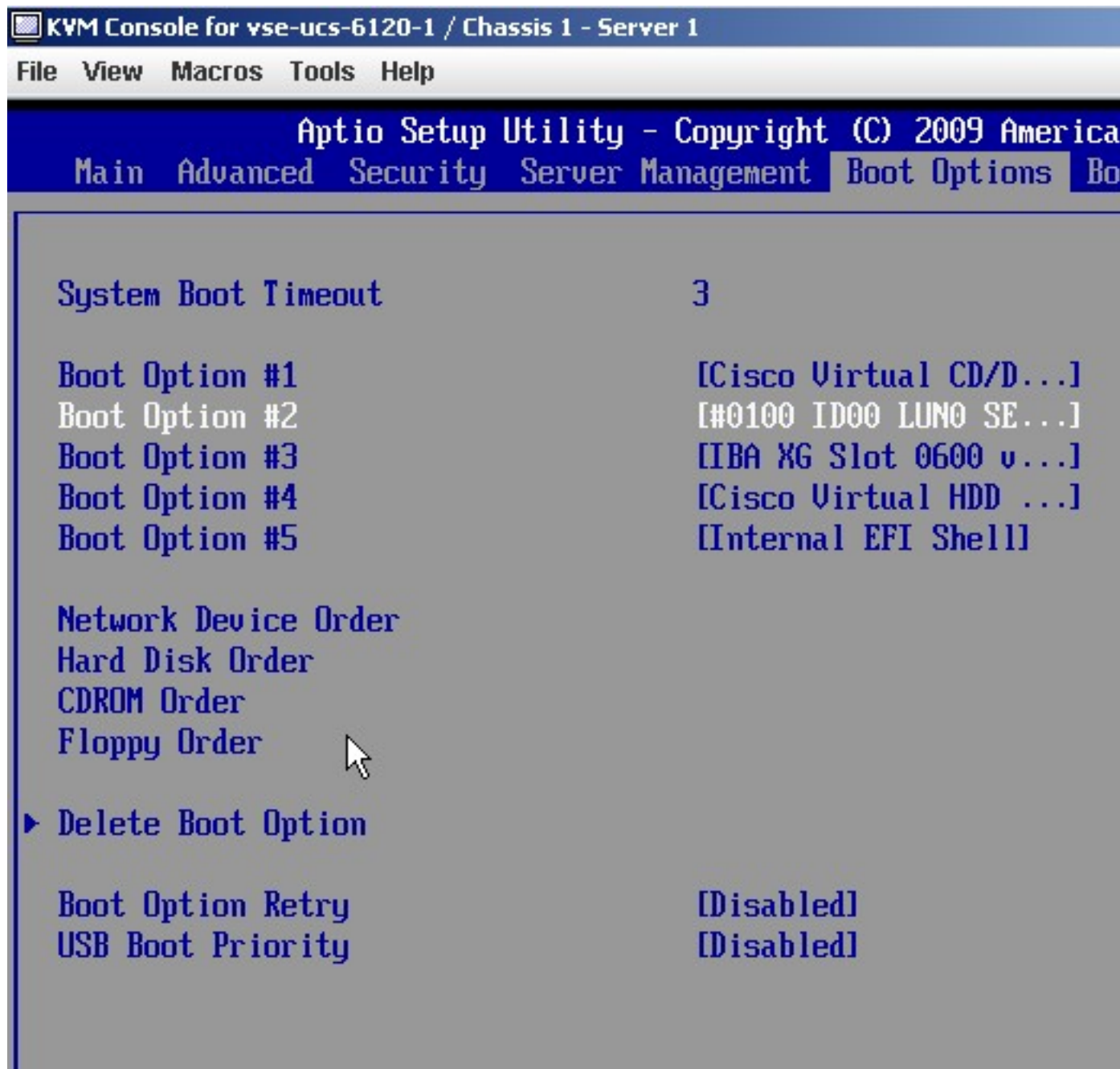
The image shows a "Client View" window with a table of mapped drives. The table has columns for "Mapped", "Read Only", and "Drive".

Mapped	Read Only	Drive
<input type="checkbox"/>	<input type="checkbox"/>	A: - Floppy
<input type="checkbox"/>	<input checked="" type="checkbox"/>	E: - CD/DVD
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	C: Documents and Settings\Administrat

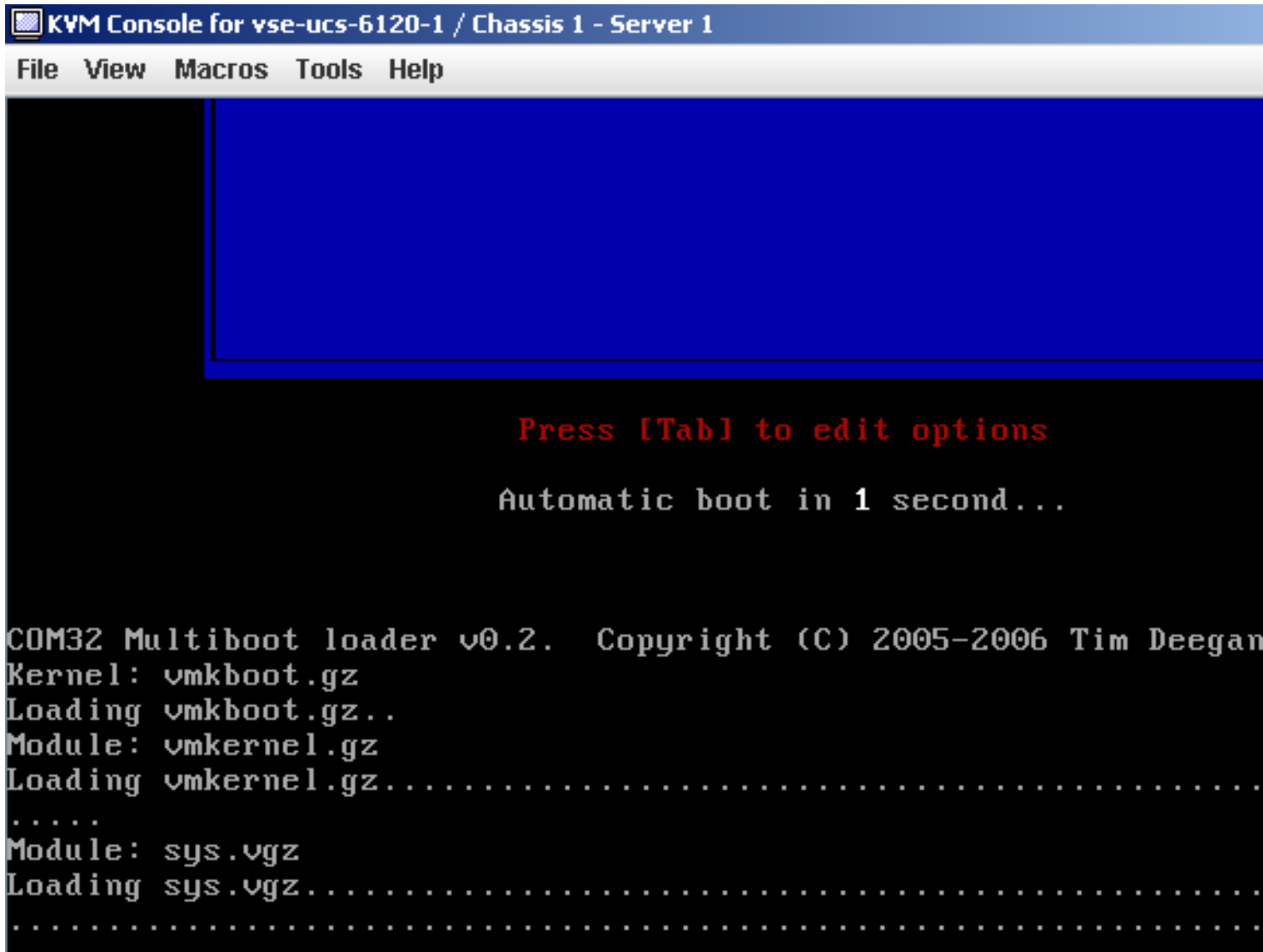
The macros are available to perform basic tasks as follows



You may also setup the boot order on the blade server's BIOS



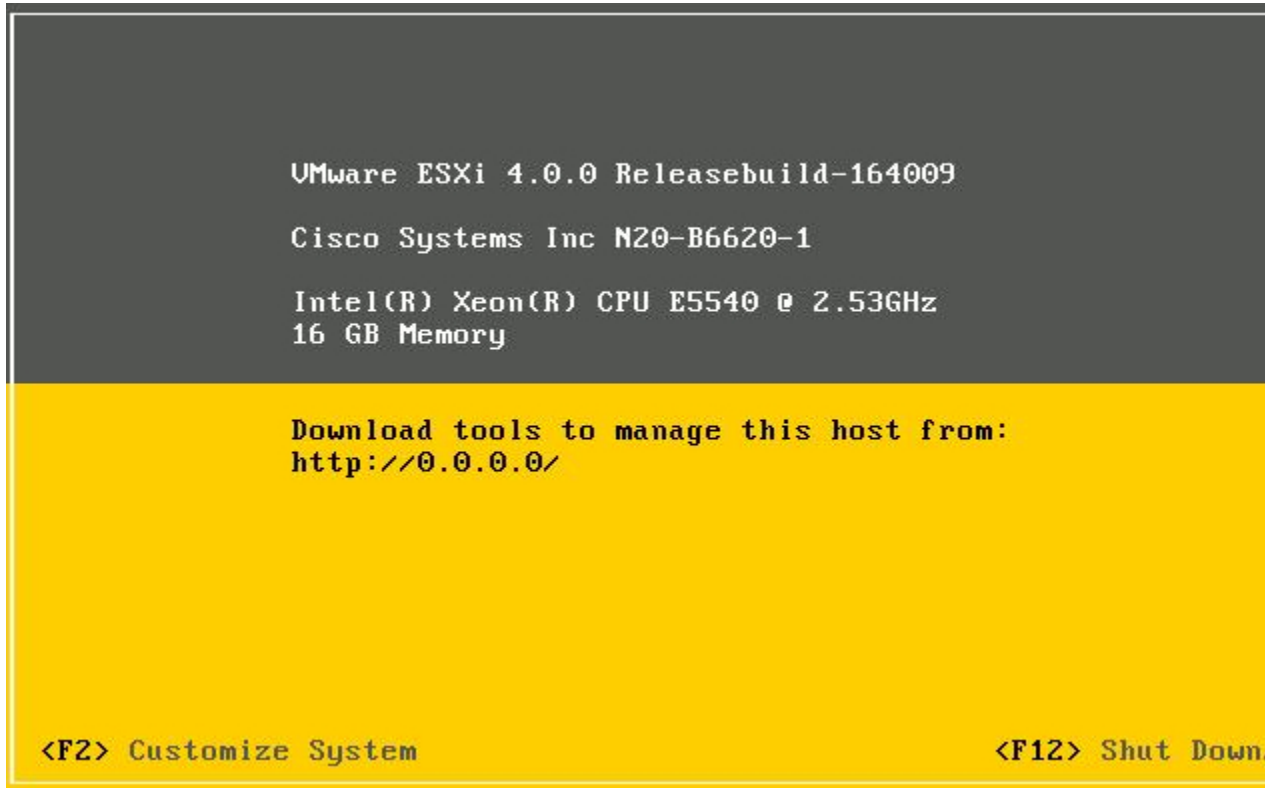
Now the blade should detect the virtual CD/DVD and will start booting from it.



ESXi 4.0 installation will continue



The installation is done. Now the next step should be to assign a management ip address to the ESXi server itself so that you can access it individually or can add it to your vCenter Setup.



At this point, the VMWare EXSi 4.0 hypervisor (VMware-VMvisor-Installer-4i.0.0-164009.x86_64.iso) is installed on the UCS blade server and you can customize the vmware hypervisor with the IP address related information so you can connect to it using the vCenter and manage it from the vmwar vCenter client. Also right now no DataStore is created. So once you login to ESXi server, you can create data store either using iSCSI or SAN based data store or NAS.

```
VMware ESXi 4.0.0 Releasebuild-164009
```

```
Cisco Systems Inc N20-B6620-1
```

```
Intel(R) Xeon(R) CPU E5540 @ 2.53GHz  
16 GB Memory
```

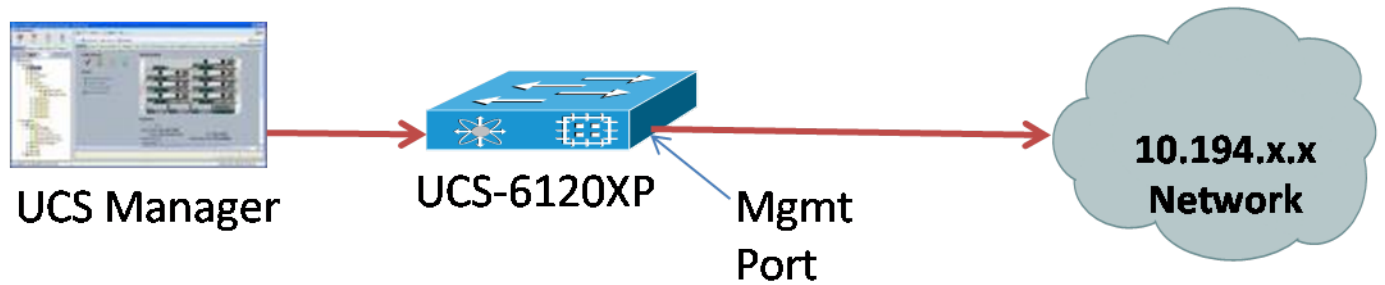
```
Download tools to manage this host from:  
http://172.19.246.187/ (STATIC)
```

So after that part is done, if your VLAN and network connectivity is in place, you should be able to connect/ping the 172.19.246.187.

Notice that there are two different ethernet networks here.

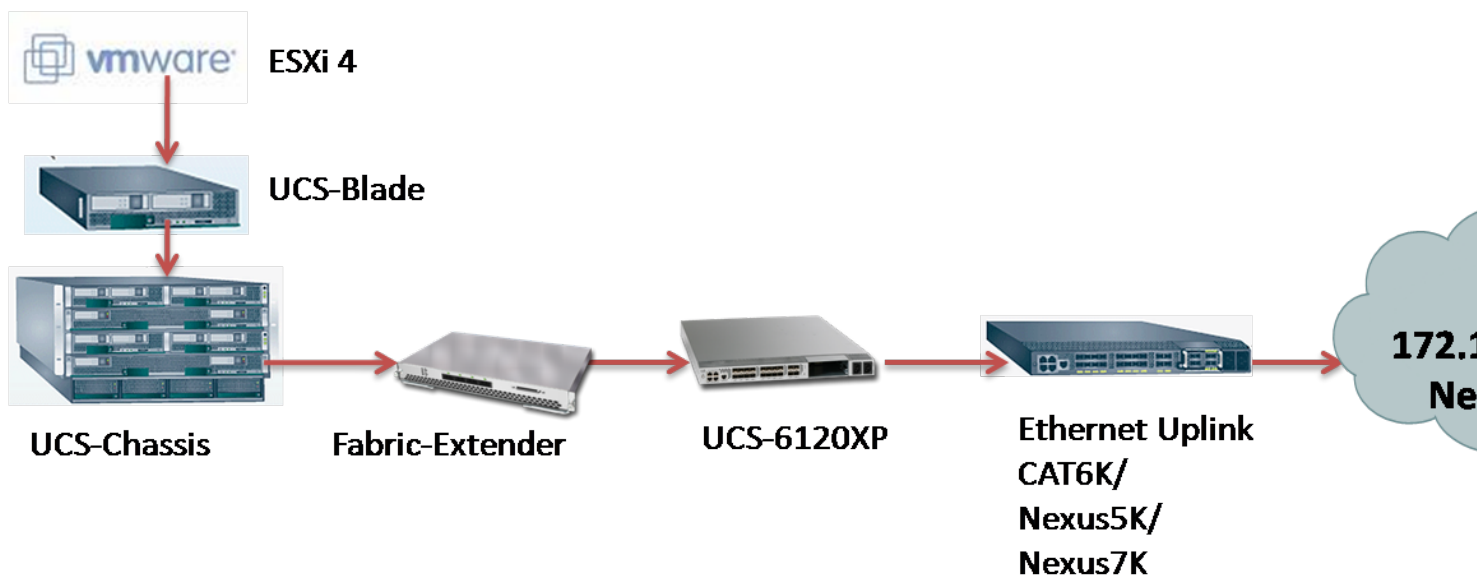
UCS Management Network:

10.194.x.x network (is used here in this setup to connect to UCS Manager and for KVM over IP purposes for the blade. This is out of band network and connect to the management port on the UCS fabric interconnect UCS-6120XP). The UCS Manager is the management application that is embedded inside the UCS-6120XP fabric interconnect switch.



VMWare Management Network:

172.19.246.x network (this is used to connect the vmware hypervisor using the in-band network so that it can be managed by the vCenter. This same network can be used for iSCSI traffic if needed but it is not recommended). So in our setup, the ESXi4 is running on the local hard drive on the blade server (ESXi 4 can also boot from the SAN itself but it is not covered in this document). Logically the vmware management traffic will be going through the UCS Chassis fabric extender to UCS fabric interconnect 6120XP switch. The 6120XP is connected to CAT6K 10GE port in this setup. Although the ethernet uplink could be Nexus 5K or Nexus 7K switch as well.



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Next Step: [Understanding and Deploying UCS B-Series LAN Networking](#)