



ATS Power Systems Accelerator Clinic

Lab 1 Power Systems BladeCenter Basics

***Navigating the Advanced Management Module
Menus and Installing the POWER7 Blade Servers***

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Blade Hardware Configuration

The blades used for this lab (Power7 blades) will have a team number assigned to them in the charts below. Each blade has four IPs assigned allowing them to be installed as a stand-alone server or as an LPARed server. If you have chosen to work on the Basic Lab then your blade will be installed as a stand-a-lone server with the exception of IBM I which has to be installed on an LPAR in IVM. Since IBM i installs may take the full 90 minute lab period we ask you to start the installation first then go back to the Navigating the Advanced Management Module Menus section of the lab (Section 1).

If you have chosen the Advanced Lab you will be creating LPARs and will have the choice of loading either AIX or Linux on your LPAR. All of the blades have VIO already installed on them. Your team number will be assigned prior to starting the lab.

Power_BladeCenter H Chassis 1

AMM – 172.25.254.40 (Login: PSTRAIN2/PSTRAIN2)

Bay #	Server Name	Private IP Address / Purpose	LPAR Name / Hostname	LPAR IP Address / SMP	Team Number
1	BCH1_JS12_1	172.25.254.21 NIM SERVER	N/A	N/A	
2/3	BCH1_JS43_2	172.25.254.22 - IVM	BCH1_2_LP1 BCH1_2_LP2 BCH1_2_LP3 BCH1_2_LP4	172.25.254.50 - AIX 172.25.254.51 - RedHat 172.25.254.52 - SUSE 172.25.254.53 - IBM i	
4	BCH1_PS701_4	172.25.254.23 - IVM	BCH1_4_LP1 BCH1_4_LP2 BCH1_4_LP3 BCH1_4_LP4	172.25.254.54 - AIX 172.25.254.55 - RedHat 172.25.254.56 - SUSE 172.25.254.57 - IBM i	1
5	BCH1_PS700_5	172.25.254.24 - IVM	BCH1_5_LP1 BCH1_5_LP2 BCH1_5_LP3 BCH1_5_LP4	172.25.254.58 - AIX 172.25.254.59 - RedHat 172.25.254.60 - SUSE 172.25.254.61 - IBM I	2
6	BCH1_PS701_6	172.25.254.25 - IVM	BCH1_6_LP1 BCH1_6_LP2 BCH1_6_LP3 BCH1_6_LP4	172.25.254.62 - AIX 172.25.254.63 - RedHat 172.25.254.64 - SUSE 172.25.254.65 - IBM i	3
7	BCH1_PS701_7	172.25.254.26 - IVM	BCH1_7_LP1 BCH1_7_LP2 BCH1_7_LP3 BCH1_7_LP4	172.25.254.66 - AIX 172.25.254.67 - RedHat 172.23.254.68 - SUSE 172.25.254.69 - IBM i	4
8	BCH1_PS701_8	172.25.254.27 - IVM	BCH1_8_LP1 BCH1_8_LP2 BCH1_8_LP3 BCH1_8_LP4	172.25.254.70 - AIX 172.25.254.71 - RedHat 172.25.254.72 - SUSE 172.25.254.73 - IBM i	5
9/10	BCH1_PS702_9	172.25.254.28 - IVM	BCH1_9_LP1 BCH1_9_LP2 BCH1_9_LP3 BCH1_9_LP4	172.25.254.74 - AIX 172.25.254.75 - RedHat 172.25.254.76 - SUSE 172.25.254.77 - IBM i	6
11	BCH1_JS22_11	172.25.254.29 - IVM	BCH1_11_LP1 BCH1_11_LP2 BCH1_11_LP3 BCH1_11_LP4	172.25.254.78 - AIX 172.25.254.79 - RedHat 172.25.254.80 - SUSE 172.25.254.81 - IBM i	
12	BCH1_JS22_12	172.25.254.30 - IVM	BCH1_12_LP1	172.25.254.82 - AIX	

Bay #	Server Name	Private IP Address / Purpose	LPAR Name / Hostname	LPAR IP Address / SMP	Team Number
			BCH1_12_LP2 BCH1_12_LP3 BCH1_12_LP4	172.25.254.83 - RedHat 172.25.254.84 - SUSE 172.25.254.85 - IBM i	
13	BCH1_JS22_13	172.25.254.31 - IVM DEMO	BCH1_13_LP1 BCH1_13_LP2 BCH1_13_LP3 BCH1_13_LP4	172.25.254.86 - AIX 172.25.254.87 - RedHat 172.25.254.88 - SUSE 172.25.254.89 - IBM i	
14	BCH1_JS22_14	172.25.254.32 - IVM DEMO	BCH1_14_LP1 BCH1_14_LP2 BCH1_14_LP3 BCH1_14_LP4	172.25.254.90 - AIX 172.25.254.91 - RedHat 172.25.254.92 - SUSE 172.25.254.93 - IBM i	

Power BladeCenter H Chassis 2 AMM - 172.25.254.101 (Login: PSTRAIN2/PSTRAIN2)

Bay #	Server Name	Private IP Address / Purpose	LPAR Name	LPAR IP Address / Purpose	Team Number
1	BCH2_PS700_1	172.25.254.33 - IVM	BCH2_1_LP1 BCH2_1_LP2 BCH2_1_LP3 BCH2_1_LP4	172.25.254.94 - AIX 172.25.254.95 - RedHat 172.25.254.96 - SUSE 172.25.254.97 - IBM i	7
2	BCH2_PS700_2	172.25.254.34 - IVM	BCH2_2_LP1 BCH2_2_LP2 BCH2_2_LP3 BCH2_2_LP4	172.25.254.98 - AIX 172.25.254.99 - RedHat 172.25.254.100 - SUSE 172.25.254.120 - IBM i	8
3	BCH2_PS700_3	172.25.254.35 - IVM	BCH2_3_LP1 BCH2_3_LP2 BCH2_3_LP3 BCH2_3_LP4	172.25.254.121 - AIX 172.25.254.122 - RedHat 172.25.254.123 - SUSE 172.25.254.124 - IBM i	9
4	BCH2_PS700_4	172.25.254.36 - IVM	BCH2_4_LP1 BCH2_4_LP2 BCH2_4_LP3 BCH2_4_LP4	172.25.254.125 - AIX 172.25.254.126 - RedHat 172.25.254.127 - SUSE 172.25.254.128 - IBM i	10
5	BCH2_PS701_5	172.25.254.37 - IVM	BCH2_5_LP1 BCH2_5_LP2 BCH2_5_LP3 BCH2_5_LP4	172.25.254.129 - AIX 172.25.254.130 - RedHat 172.25.254.131 - SUSE 172.25.254.132 - IBM i	11
6	BCH2_PS701_6	172.25.254.38 - IVM	BCH2_6_LP1 BCH2_6_LP2 BCH2_6_LP3 BCH2_6_LP4	172.25.254.133 - AIX 172.25.254.134 - RedHat 172.25.254.135 - SUSE 172.25.254.136 - IBM i	12

Additional Network Information

Description	Private IP Address
Gateway	172.25.254.6
Subnet Mask	255.255.255.0
DNS Servers	172.16.0.1 & 172.16.0.2
Domain	training.sc.ibm.com

Lab 1 - Navigating the Advanced Management Module Menus and installing the Power7 Blade Servers

Introduction

In this lab, you learn how to navigate through the Advanced Management Module Menus, how to configure a new BladeCenter Chassis and how to install an operating system on the blade. You also have the option of choosing which operating system you want to install on the blade (VIOS, AIX or Linux). For more information on the Advanced Management Module refer to the User's Guide at <http://www-947.ibm.com/systems/support/supportsite.wss/docdisplay?Indocid=MIGR-5073887&brandind=5000020>.

Note: IBM i installs are covered in the Advanced Lab since a Logical Partition must be created as part of the install and Logical Partitions are covered in the Advanced Lab.

Objectives

At the completion of this lab exercise, you will be able to do the following:

- Connect to Advanced Management Module and navigate its menus
- Assign the Media Tray to the Blade
- Setting the Boot Sequence
- Serial Over LAN Console
- Configuring a new BladeCenter Chassis
- Install VIO, AIX or LINUX on the blade

Prerequisites

- IBM Intranet connection and standard web browser with Java to properly access the equipment over the network
- A BladeCenter Chassis and one Blade
- IP address, userid and password of the Management Module (refer to the Blade Network Configuration on page 3)
- IP address of the Blade (refer to the Blade Network Configuration on page 3)
- Telnet Client – DOS or PuTTY (<http://www.putty.org/>)

Time Required for Lab

The time required to complete this lab exercise is 90 minutes.

I. Overview of the Advanced Management Module Menu System


When you login to the Advanced Management Module, a menu appears in the left-hand frame of your browser. From this menu you can manage all the components of the BladeCenter (i.e., blade, switch modules, switches, etc.). The Advanced Management Module will pop-up windows so make sure pop-up blocker is disabled. In this section we explore the options available on the Advanced Management Module as well as learn how to configure a new BladeCenter Chassis.

A. Login to the Advanced Management Module GUI

To login to the Advanced Management Module, use the IP Addresses provided and follow these steps:

1. Start a web browser and enter the “**IP address**” of the Advanced Management Module web server in the address bar and press “**Enter**”. The logon screen will display.
2. Enter the userid (**PSTRAIN2**) and password (**PSTRAIN2**) and select “**OK**”. A welcome window displays where you can set the duration that your connection can be idle before being automatically disconnected. Select “**Continue**”.

B. AMM Menu Options

The AMM menu is divided into five main sections for easy navigation. These sections are: System Status, Blade Tasks, I/O Module Tasks, MM Control and Service Tools. From this menu you can select the BladeCenter components you want to view or change. The question mark  seen throughout the menu can be selected to get a description of the task.

1. Monitors

The Monitors section allows you to view the status, settings and other information about components in the chassis. Whereas all of the features in this section are important, only some can be reviewed in the allotted time. It is important that you familiarize yourself with all of the features in the Monitors Section if time permits.

1. From the **System Status Summary**, select the “**Blades**” link on the System Status Summary screen. This will advance the screen to the Blade Servers section. This section displays a table which shows the status of all the blades in the chassis. The table has 14 rows for the 14 blades. The empty slots are marked as such.

F2 - Toggle this help

Click the icon in the Status column to view detailed information about each blade.

Bay	Status	Name	Pwr	Owner**			I/O Compatibility	WOL*	Local Control			BEM*
				KVM	MT*	cKVM*			Pwr	KVM	MT*	
1		BCH2_PS700_1	On				OK	N/A	✓	✓	✓	---
2		BCH2_PS700_2	On				OK	N/A	✓	✓	✓	---
3		BCH2_PS700_3	On				OK	N/A	✓	✓	✓	---
4		BCH2_PS700_4	On				OK	N/A	✓	✓	✓	---
5		BCH2_PS700_5	On				OK	N/A	✓	✓	✓	---
6		BCH2_PS700_6	On		✓		OK	N/A	✓	✓	✓	---
7	<i>No blade present</i>											
8	<i>No blade present</i>											
9	<i>No blade present</i>											
10	<i>No blade present</i>											
11	<i>No blade present</i>											
12	<i>No blade present</i>											
13	<i>No blade present</i>											
14	<i>No blade present</i>											

* MT = Media Tray (CD/ USB) , WOL = Wake on LAN , BEM = Blade Expansion Module
 BSE1 (BSE2,BSE3) = Blade Storage Expansion 1st Generation (2nd Generation, 3rd Generation)
 PEU1 = PCI Expansion Unit 1st Generation PEU2 = PCI Expansion Unit II BPE3/BPE4 = PCI Express Expansion Unit
 cKVM = Concurrent KVM Expansion BIE = Blade I/O Expansion BPR = Blade Processor Expansion

** You can change the KVM and Media Tray ownership on the Remote Control panel (under Blade Tasks).

Note: The BCS and the BCHT Chassis' are the only two chassis' that do not hold 14 blades. The BCS can have 6 blades and the BCHT can only have 12 blades.

2. Click the **green status** indicator light for the blade you were assigned. This screen shows the Blade status, environmental and compatibility information for the blade.
3. Press the back arrow twice to return to the system status screen. Select the “**I/O Modules**” link. This will advance to the I/O Modules section. This section displays a table which shows the status of all the switch modules in the chassis. The table has 4 rows for the 4 switch module bays. The empty bays are marked as such.
4. Scroll down to the **Management Module** section. This section displays a table which shows the status of the Management Modules in the chassis. The table has 2 rows for the 2 Management Module bays. The empty bays are marked as such.





Management Modules ?

Click the icon in the Status column for details about the primary management module.



Bay	Status	IP Address (external n/w interface)	Primary
1		View	✓
2		n/a	


5. Scroll down to the **Power Modules** section. This section displays a table which shows the status of all the power modules in the chassis. The table has 4 rows for the 4 power module bays. The empty bays are marked as such.
6. Scroll down to the **Power Module Cooling Devices** section. This section displays a table which shows the status of the power module cooling devices in the chassis.

Each power module cooling device is attached to a power module. The table has 4 rows for the 4 power module cooling bays. The empty bays are marked as such.

Power Module Cooling Devices ?					
Bay	Status	Fan Count	Average Speed (% of max)	Average Speed (RPM)	Controller State
1		3	63%	6314	Operational
2		3	64%	6442	Operational
3		3	63%	6378	Operational
4		3	64%	6400	Operational

7. Scroll down to the **Chassis Cooling Devices** section. This section displays a table which shows the status of the chassis cooling devices in the chassis. The table has 2 rows for the 2 blower bays. The empty bays are marked as such.

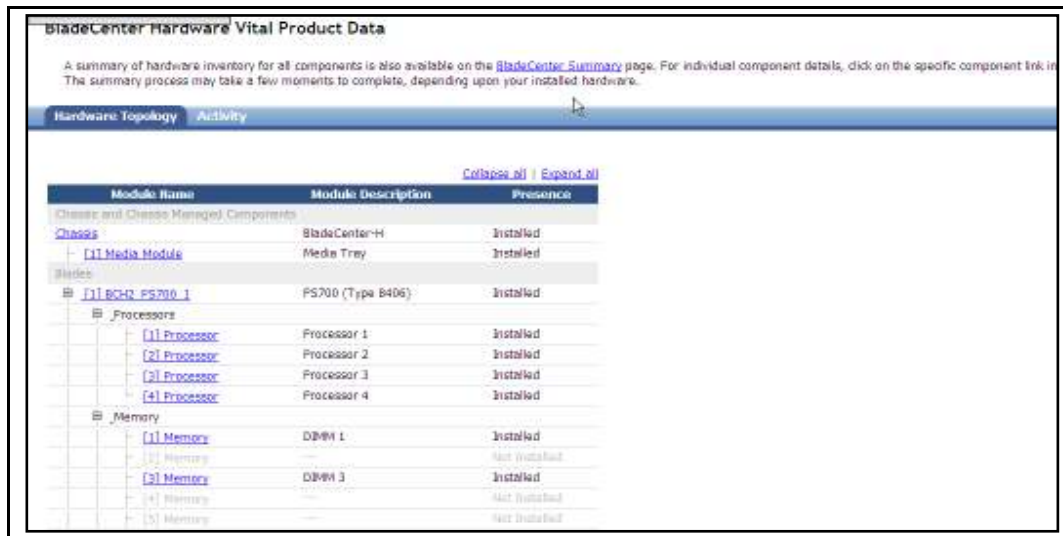
Chassis Cooling Devices ?				
Bay	Status	Speed (% of max)	Speed (RPM)	Controller State
1		56%	1920	Operational
2		55%	1904	Operational

8. Scroll down to the **Media Tray** section. This section displays the ambient temperature reading for the media tray along with the warning and warning reset thresholds. If the temperature reaches the warning threshold, a warning event is generated. If the temperature was above the warning threshold and then drops below the warning reset threshold, any active temperature events are cleared.
9. Go back to the **Advanced Management Module** main menu and select each of the other five sections and review the tasks associated with those sections. Select the question mark  to get a description of the task. Some of the **Blade Tasks** options will be covered in this lab.

Hardware VPD

From this task you can see an inventory of all the hardware components installed in the chassis.

1. To view the hardware inventory under Monitor Task select “**Hardware VPD**”. Scroll down the list to see all the components installed. To view more detailed information about one of the components, select one of the links.



2. To view the Port information for your blade (i.e., World Wide Name), select the link for your blade then select the **Ports** tab. Depending on the type of adapters you have installed on your blade, you will see more than one WWN.



Firmware VPD

It is very important to ensure the latest level of firmware is installed on your BladeCenter components (i.e., Blades, Advanced Management Module and I/O Modules).

1. To view the firmware levels, select “**Firmware VPD**” under **System Status**. Verify the latest level of firmware is installed on the blades by looking at the Build ID.

Questions:

1. *What firmware level is installed on your assigned blade?* _____
 2. *What firmware level is installed on the AMM?* _____
-

Bay(s)	Name	Firmware Type	Build ID	Released	Revision	Level
1	BCH2_PS700_1	FW/BIOS	AA710_083	05/17/2010	1018	✓
		Blade Sys Mgmt Processor	BOBT001		7.12	✓
2	BCH2_PS700_2	FW/BIOS	AA710_083	05/17/2010	1018	✓
		Blade Sys Mgmt Processor	BOBT001		7.12	✓
3	BCH2_PS700_3	FW/BIOS	AA710_083	05/17/2010	1018	✓
		Blade Sys Mgmt Processor	BOBT001		7.12	✓
4	BCH2_PS700_4	FW/BIOS	AA710_083	05/17/2010	1018	✓
		Blade Sys Mgmt Processor	BOBT001		7.12	✓
5	BCH2_PS700_5	FW/BIOS	AA710_083	05/17/2010	1018	✓
		Blade Sys Mgmt Processor	BOBT001		7.12	✓
6	BCH2_PS700_6	FW/BIOS	AA710_083	05/17/2010	1018	✓
		Blade Sys Mgmt Processor	BOBT001		7.12	✓

To reread firmware Vital Product Data for a blade, select the blade, and click "Reload VPD". This process may take a while.

Target:

2. Next, scroll down to the I/O Module Firmware and the Management Module Firmware sections and verify the level of firmware installed.

I/O Module Firmware Vital Product Data					
Bay	Type	Firmware Type	Build ID	Released	Revision
1	Ethernet SM	Boot ROM	WMZ04000	10/20/2008	0105
		Main Application 1	WMZ04000	10/20/2008	0105
		Main Application 2	WMZ04000	10/20/2008	0105
2	Ethernet SM	Boot ROM	WMZ04000	10/20/2008	0105
		Main Application 1	WMZ04000	10/20/2008	0105
		Main Application 2	WMZ04000	10/20/2008	0105
3	Fibre Channel SM	Main Application 1	BRFSM	07/10/2009	7a14
4	Fibre Channel SM	Main Application 1	BRFSM	07/10/2009	7a14
5	CEE-Fibre Channel BM	Main Application 1	BRFSM	10/22/2009	902e
7	Ethernet HSS	Boot ROM	WMJ02000	11/17/2009	0601
		Main Application 1	WMJ02000	11/17/2009	0601
		Main Application 2	WMJ02000	11/17/2009	0601
9	Ethernet HSS	Boot ROM	WMJ02000	11/17/2009	0601
		Main Application 1	WMJ02000	11/17/2009	0601
		Main Application 2	WMJ02000	11/17/2009	0601

Management Module Firmware Vital Product Data						
Bay	Name	Firmware Type	Build ID	File Name	Released	Revision
1	POWERSYSBCH2	AMM firmware	BPET54G	CNETCMUS.PKT	05/27/2010	54
2	Standby MM	AMM firmware	BPET54G	CNETCMUS.PKT	05/27/2010	54

2. Blade Tasks

The Blade Tasks section allows you to view and change the settings or configurations of the blade servers in the chassis. Whereas all of the features in this section are important, only some can be reviewed in the allotted time. It is important that you familiarize yourself with all of the features in the Blade Task Section if time permits.

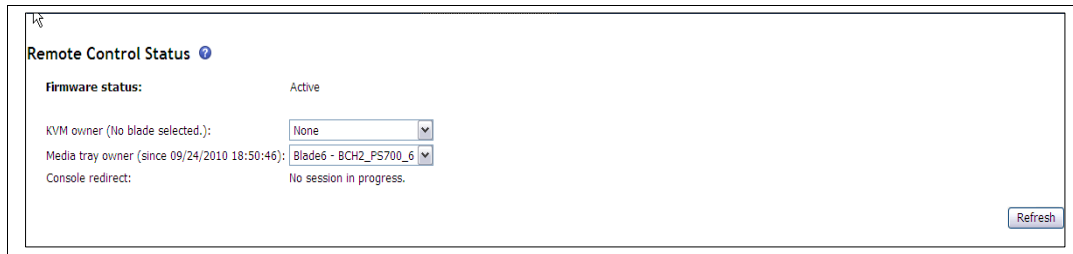
Note: Firmware on the Power Processor-based Blades can not be updated from the AMM.

Assigning the Media Tray

1. The Media Tray can be assigned by pressing the CD button on the top/front of the blade or it can be assigned from the Advanced Management Module. To remotely assign the Media Tray from the Advanced Management Module under **Blade Tasks**, select “**Remote Control**”. Select “**Start Remote Control**” (if you receive any security warning, select yes).

Note: If you have disabled pop-ups or have a pop-up blocker on your web browser, be sure and disable it to allow the Advanced Management Module to pop-up the Remote Control Window.

2. Select the blade you want to assign the media tray to from the Media tray owner drop down menu then select “**Refresh**”. The blade you selected should be listed.



Setting the Boot Sequence

The Boot sequence can be set from the Advanced Management Module as well as from the SMS Menu.

1. To set the boot sequence on the blade from the Advanced Management Module: under **Blade Tasks**, select “**Configuration**”, select the “**Boot Sequence**” then **select your blade (by name)**. To boot from CD-ROM, the sequence should be set as follows:
 - 1st Device = CD-ROM
 - 2nd Device = Hard Drive 0
 - 3rd Device = No device
 - 4th Device = No device

Bay	Item	1 st Device	2 nd Device	3 rd Device	4 th Device
1	BCH2_PS700_1	Hard Drive 0	Network	Hard Drive 1	Hard Drive 2
2	BCH2_PS700_2	Hard Drive 0	No device	No device	No device
3	BCH2_PS700_3	Hard Drive 0	No device	No device	No device
4	BCH2_PS700_4	Hard Drive 0	Hard Drive 1	Hard Drive 2	Network
5	BCH2_PS700_5	Hard Drive 0	Hard Drive 1	Hard Drive 2	Network
6	BCH2_PS700_6	Hard Drive 0	No device	No device	No device
7	No blade present				
8	No blade present				
9	No blade present				
10	No blade present				
11	No blade present				
12	No blade present				
13	No blade present				
14	No blade present				

2. Set the boot sequence back to “**Hard Disk 0**” for the 1st Device and press “**Save**”.



Firmware Update

The firmware on the Power Processor-based Blades is not updated from the **Blade Tasks** section of the AMM Menu and is only updated on the blade as follows:

- If the blade has an Operating System installed then the firmware can be updated from smitty diag or by using the update_flash command.
- If the blade does not have an Operating System installed then the firmware has to be updated using Diagnostic CDs.

For more information on updating the firmware, refer to the Addendum section of the lab.

Note: Firmware updates are not a part of this lab!

Serial Over LAN Console

Serial Over LAN is the console option supported for the POWER7 processor-based blades. For Serial Over LAN support, an Ethernet Switch Module or the Intelligent Copper Pass-thru Module should be in Bays 1 and 2 of the Chassis. **Note:** The Intelligent Copper Pass-Thru Module is the only pass-thru module that supports Serial Over LAN.

NOTE: SERIAL OVER LAN HAS ALREADY BEEN CONFIGURED ON YOUR BLADE, SO PLEASE DO NOT MAKE ANY CANGES TO THE CONFIGURATION. THIS INORMATION IS PROVIDED FOR YOUR REFERENCE ONLY!

1. Serial Over LAN is automatically configured and enabled on the AMM. The default configuration provides the best performance in most cases and should not be changed. To view the default configuration under **Blade Tasks**, select “**Serial Over LAN**”. Select the “**Serial Over LAN Configuration**” link to display the configuration.

Serial Over LAN Configuration ?

The SOL VLAN ID field can be configured on the [Blade Configuration](#) page.

Serial over LAN:

SOL VLAN ID: 4095

Transport Parameters

Accumulate timeout (in msec):

Send threshold (in bytes):

Retry count:

Retry interval (in msec):

User Defined Keystroke Sequences

'Enter CLI' key sequence:

'Reset blade' key sequence:

2. Before you can open a Serial Over LAN session on the blade, the blade must be powered on and the status must be enabled. To view the status of Serial Over LAN on your Blade from the **Advanced Management Module**, under **Blade Tasks**, select “**Serial Over LAN**”.

Serial Over LAN Status ?

Click the checkboxes in the first column to select one or more blades; then, choose an action below the table and click Perform Action to perform that action on the selected blades. Also, the icon under the SOL Status column is a clickable link that will present a page of advanced status for the blade SOL connection.

Note: You have to enable the global "Serial over LAN" flag below in the Configuration section before enabling SOL on individual blades.

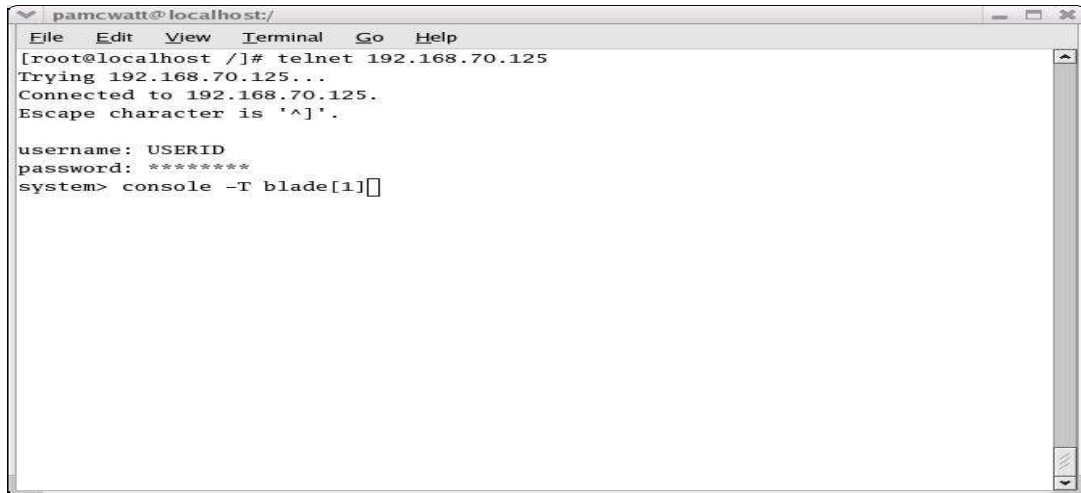
<input type="checkbox"/>	Bay	Name	SOL Status
<input type="checkbox"/>	1	BCH2_PS700_1	<input checked="" type="checkbox"/>
<input type="checkbox"/>	2	BCH2_PS700_2	<input checked="" type="checkbox"/>
<input type="checkbox"/>	3	BCH2_PS700_3	<input checked="" type="checkbox"/>
<input type="checkbox"/>	4	BCH2_PS700_4	<input checked="" type="checkbox"/>
<input type="checkbox"/>	5	BCH2_PS700_5	<input checked="" type="checkbox"/>
<input type="checkbox"/>	6	BCH2_PS700_6	<input checked="" type="checkbox"/>
	7	No blade present	
	8	No blade present	
	9	No blade present	
	10	No blade present	
	11	No blade present	
	12	No blade present	
	13	No blade present	
	14	No blade present	

Note: The green symbol under SOL Status indicates SOL is ready. If SOL were not ready the box would be gray. If SOL is active on a blade, an arrow is displayed on

top of the green box. You can also click on the green box and the SOL Summary Status is displayed for that blade.

3. Telnet (using windows Telnet client or PuTTY [Windows SSH Client Program]) to the Advanced Management Module and type the following to open a SOL session: “**console -o -T blade[#]**” (where # is the Bay number of the blade) and press “**Enter**”.

Note: To exit the SOL session, “hit **Esc key shift + 9**” (a left parenthesis). If you're using PuTTY, this sequence may not work if your keyboard is not defined.



```
pamcwatt@localhost:/
File Edit View Terminal Go Help
[root@localhost ~]# telnet 192.168.70.125
Trying 192.168.70.125...
Connected to 192.168.70.125.
Escape character is '^]'.

username: USERID
password: *****
system> console -T blade[1]
```

You have now established a remote connection to the blade. The SOL session buffers up to 8KB of data, so when the session is started, any buffered data will scroll past. For more information on Serial Over LAN, refer to the *Serial over LAN Setup Guide* at <http://www-304.ibm.com/jct01004c/systems/support/supportsite.wss/docdisplay?lnocid=MIGR-54666&brandind=5000020>.

Questions:

1. *What is the VLAN ID for SOL support?* _____
 2. *Which Pass-Thru Module supports SOL and what Switch Module bays should they be installed in?* _____
 3. *Is Keyboard Video Mouse (KVM) supported as a console option on the Power7 blade servers?* _____
-

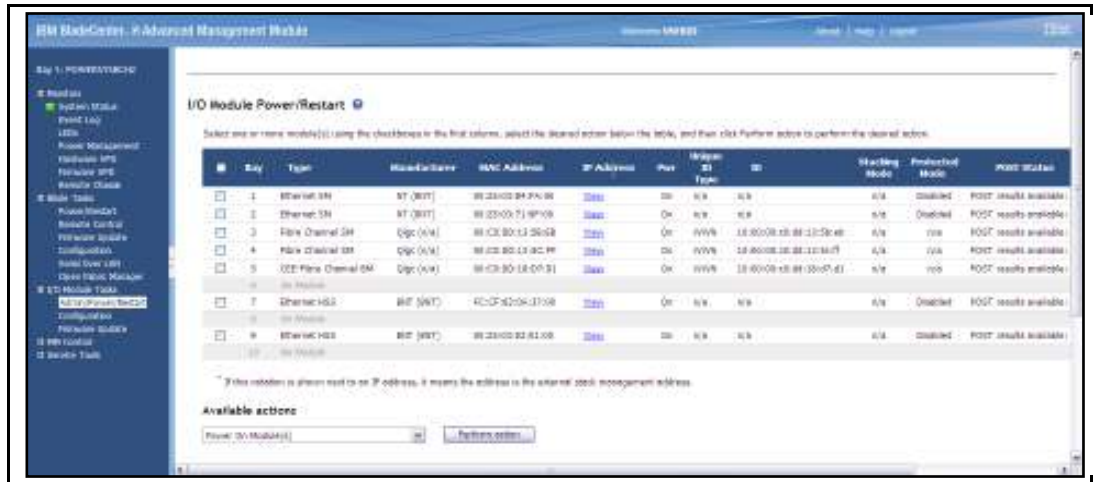
3. I/O Module Tasks

The tasks in this section allow you to work directly with the I/O Modules in the chassis. When configuring the I/O Modules it is important to enable the ports on all of the modules otherwise you will not have connectivity. Whereas all of the features in this section are important, only some can be reviewed in the allotted time. It is important that you familiarize yourself with all of the features in the I/O Module Task Section if time permits.

Power/Restart

NOTE: DO NOT RESTART THE I/O MODULES. THE INFORMATION IN THIS SECTION IS FOR YOUR REVIEW ONLY!

1. To view and select the power options for the I/O Modules installed in the Chassis, go to **I/O Module Tasks** then select “**Power Restart**”. The I/O Modules installed in the chassis are displayed as well as the power status of each of these modules.



2. Take a look at the options available from the drop down box next to **Perform actions**. Each of these actions can be performed on the I/O Modules by selecting the I/O Bay as well as the action you want to perform.

4. MM Control

The MM Control section allows you to view and change the settings or configuration on the management module that you are logged in to through the management-module Web interface session. Whereas all of the features in this section are important, only some can be reviewed in the allotted time. It is important that you familiarize yourself with all of the features in the MM Control Section if time permits. The AMM firmware can be downloaded from <http://www-947.ibm.com/support/entry/portal/docdisplay?brand=5000020&lnidocid=SERV-AMM>.

Firmware Update

NOTE: DO NOT ATTEMPT TO UPDATE THE FIRMWARE ON THE AMM. THE INFORMATION IN THIS SECTION IS FOR YOUR REVIEW ONLY!

1. The screen below is simply for your reference. If you were to update the firmware on the AMM, go to MM Control and select “**Firmware Update**”. Select the “**Browse**” button to find the firmware file you downloaded for the AMM. Select “**Update**” if you are not able to reboot the AMM or select “**Update & Reboot**” to complete the firmware update.



Question: When the firmware is updated on the AMM does it have to be rebooted to make the firmware effective? _____

5. Service Tools

The tasks in this section will help you troubleshoot problems with BladeCenter components as well as allow you to configure Service Agent on the Chassis. If you are working with support, they may request information that can be obtained from this section. Whereas all of the features in this section are important, only some can be reviewed in the allotted time. It is important that you familiarize yourself with all of the features in the Service Tools Section if time permits.

Blade Service Data

1. To view the service data for a specific blade, select “**Blade Service Data**” then select the blade you want to view. From this menu you can initiate a Blade Dump by selecting the pull-down menu and selecting the type of dump you want to initiate.
2. The most recent System Reference Codes (SRC) codes are also displayed for the blade you just selected. To show the details of a SRC select on the SRC link.



C. How to Configure a New BladeCenter Chassis

The default IP address of the external port of the Advanced Management Module is **192.168.70.125**, the default subnet address is **255.255.255.0**, and the default hostname is **MMxxxxxxxxxxx** where **xxxxxxxxxxx** is the burned-in MAC address. If this were a new installation your laptop must be on the same subnet as the Advanced Management Module before you can connect to the Advanced Management Module.

The BladeCenter hardware used in this lab has already been configured, so PLEASE DO NOT PERFORM THESE STEPS. These steps are simply provided for your reference!

The first time you configure a new BladeCenter Chassis, follow these steps:

1. The first step is to assign an IP address to the Primary Management Module. From the AMM under MM Control, select “**Network Interfaces**” and enter the IP Address, Subnet Mask and Gateway or enable DHCP under IPv4 or IPv6 and select “**Save**”.

▼ IPv4

DHCP

**** Currently the static IP configuration is active for this interface. **** This static configuration is shown below.

IPv4 Static IP Configuration

IP address

Subnet mask

Gateway address

▼ IPv6

Link local address: fe80::211:25ff:fec3:ad30

IPv6 static IP configuration

DHCPv6

Stateless Auto-configuration

[View Automatic Configuration](#)

2. The Advanced failover option can be used if you have two AMMs in the chassis. If you want to ensure the AMMs failover properly, select the “**Use Advanced Failover**” box. The “**Swap management Module IP Address**” option is automatically selected.

Advanced Failover

Normally, when a primary management module fails, the standby module assumes control automatically, takes the IP address of the primary module, and causes no downtime.

In some situations, however, control might not fail over to the standby management module when it in fact should. This includes, for example, situations in which the primary module is running but not reliably responding. To protect against these situations, you can configure additional network settings for failovers that will allow you to manually access the standby module when automatic failover does not happen. Specifically, this means you will assign a distinct IP address to the standby module, instead of just specifying a single IP address to be used for both.

Indicate below whether or not you wish to use advanced failover.

Use Advanced Failover

Failover method:

Do not swap Management Module IP addresses - In a failover situation, you will need to log on to the management module using the IP address that you have specified below for the standby module.

Swap Management Module IP addresses - In a failover situation, the IP address that you use for the management module will remain the same. The IP address of the failed management module will be transferred to the standby module, and back from the standby module to the primary module.

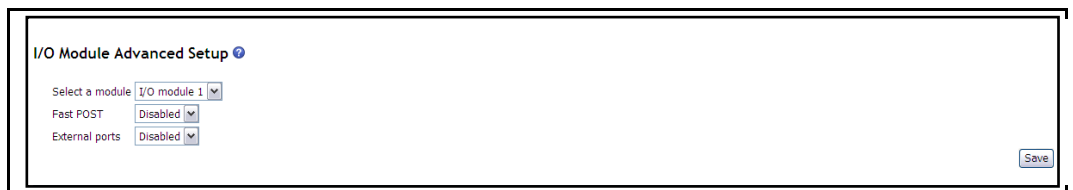
3. Scroll down to the “**Standby Management Module**” section and enter the IP Address, Subnet Mask and Gateway Address of the second AMM then select “**Save**”.
4. The next step is to configure the IP Address on the I/O Modules. From the I/O Module Task section, select “**Configuration**”. Select the appropriate slot number and enter the IP Address, Subnet Mask and Gateway Address for that module.



- Next select the “**Advanced Options**”. The **External management over all ports** should be set to disabled so only the management module ports can be used to change the configuration on the I/O Module. The **Preserve new IP address configuration on all resets** should be “**Enabled**” and press “**Save**”. These steps must be repeated for each of the I/O Modules in the chassis.



- The next step is to enable the ports on the I/O Modules. Under **I/O Module Tasks** select “**Admin/Power/Restart**”. Scroll down to the **I/O Module Advanced Setup** section and select “**Enabled**” for **Fast POST** and **External ports** for each of the I/O Modules in the Chassis.



- Next you need to make sure SOL is enabled! Under **Blade Task**, select “**Serial Over LAN**”. Scroll down to “**Serial Over LAN Configuration**” section and


```

PowerPC Firmware
Version AA710_083
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
Main Menu
1.  Select Language
2.  Setup Remote IPL (Initial Program Load)
3.  Change SCSI Settings
4.  Select Console
5.  Select Boot Options
6.  Firmware Boot Side Options
-----

Navigation Keys:
                                     X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key:

```

5. From the NIC Adapters Device menu, select 1 for “Port – 1 IBM Host Ethernet Ada” and press “Enter”.

```

PowerPC Firmware
Version AA710_083
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
NIC Adapters
Device                               Location Code                       Hardware
Address
1.  PORT - 1 IBM Host Ethernet Ada    U78A5.001.WIH9769-P1-T4            e41f13204e0e
2.  PORT - 2 IBM Host Ethernet Ada    U78A5.001.WIH9769-P1-T5            e41f13204e0f
3.  Port 1 - IBM 10G Ethernet PCI-    U78A5.001.WIH9769-P1-C12-T1       00c0dd14fea8
4.  Port 2 - IBM 10G Ethernet PCI-    U78A5.001.WIH9769-P1-C12-T2       00c0dd14feaa
-----

Navigation keys:
M = return to Main Menu
ESC key = return to previous screen    X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key:

```

Note: If Port 2 is used, an Ethernet Switch Module or an Intelligent Copper Pass-thru Module must be in Bay 2 of the chassis.

6. From the Internet Protocol Version menu, select 1 for “IPv4 – Address Format 123.231.111.222” and press “Enter”.
7. From the Network Service menu, select 1 for “BOOTP” and press “Enter”.

```
PowerPC Firmware
Version AA710_083
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
Select Network Service.
1.  BOOTP
2.  ISCSI

-----
Navigation keys:
M = return to Main Menu
ESC key = return to previous screen          X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key:
```

- ___ 8. From the Network Parameters menu, select 1 for “IP Parameters” and press “Enter”.

```
PowerPC Firmware
Version AA710_083
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
Network Parameters
PORT - 1 IBM Host Ethernet Adapter: U78A5.001.WIH9769-P1-T4
1.  IP Parameters
2.  Adapter Configuration
3.  Ping Test
4.  Advanced Setup: BOOTP

-----
Navigation keys:
M = return to Main Menu
ESC key = return to previous screen          X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key:
```

- ___ 9. At the IP Parameters menu, select the appropriate number to configure the “Client IP, Server IP, Gateway IP, and subnet mask”.


```

PowerPC Firmware
Version AA710_083
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
IP Parameters
PORT - 1 IBM Host Ethernet Adapter: U78A5.001.WIH9769-P1-T4
1. Client IP Address [000.000.000.000]
2. Server IP Address [000.000.000.000]
3. Gateway IP Address [000.000.000.000]
4. Subnet Mask [000.000.000.000]
-----
Navigation keys:
M = return to Main Menu
ESC key = return to previous screen X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key:

```

- ___ 10. Press the “ESC” key to return to the Network Parameters menu and select 3 for “Ping Test” and press “Enter”. Now select 1 to “Execute Ping Test” and press “Enter”.
- ___ 11. Select any key to exit from this menu. Type “M” to return to the Main Menu. From the Main menu, select 5 “Select Boot Options” and press “Enter”.
- ___ 12. From the Multiboot menu, select 1 for “Select Install/Boot Device” and press “Enter”.

```

PowerPC Firmware
Version AA710_083
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
Multiboot
1. Select Install/Boot Device
2. Configure Boot Device Order
3. Multiboot Startup <OFF>
-----
Navigation keys:
M = return to Main Menu
ESC key = return to previous screen X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key:

```

- ___ 13. From the Select Device Type menu, select 6 for “Network” and press “Enter”.
- ___ 14. From the Select Network Services menu, select 1 for “BOOTP” and press “Enter”.
- ___ 15. From the Select Device menu, select 1 for “Ethernet <loc=U78A5.001.WIH9769-P1-T4>” and press “Enter”.

```

PowerPC Firmware
Version AA710_083
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
Select Device
Device Current Device
Number Position Name
1. 3 PORT - 1 IBM Host Ethernet Adapter
   < loc=U78A5.001.WIH9769-P1-T4 >
2. 2 PORT - 2 IBM Host Ethernet Adapter
   < loc=U78A5.001.WIH9769-P1-T5 >
3. - Port 1 - IBM 10G Ethernet PCI-E Adapter
   < loc=U78A5.001.WIH9769-P1-C12-T1 >
4. - Port 2 - IBM 10G Ethernet PCI-E Adapter
   < loc=U78A5.001.WIH9769-P1-C12-T2 >
-----
Navigation keys:
M = return to Main Menu
ESC key = return to previous screen X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key:

```

Note: If the second port on the adapter is used (option 2), an Ethernet Switch Module must be in Bay 2 of this chassis.

- ___ 16. From the Select Task menu, select 2 for “**Normal Mode Boot**” and press “**Enter**”.
- ___ 17. At the next menu select 1 for “**Yes**” to exit the SMS menu and install your blade. A series of LEDs and other information will be displayed then the installation process will begin.
- ___ 18. Type “**2**” to define the system console and press “**Enter**”.

```

to,172.25.254.21,,172.25.254.25,172.25.254.6,5,5,255.255.255.0,512
-----
***** Please define the System Console. *****
Type a 1 and press Enter to use this terminal as the
system console.
Pour definir ce terminal comme console systeme, appuyez
sur 1 puis sur Entree.
Taste 1 und anschliessend die Eingabetaste druecken, um
diese Datenstation als Systemkonsole zu verwenden.
Premere il tasto 1 ed Invio per usare questo terminal
come console.
Escriba 1 y pulse Intro para utilizar esta terminal como
consola del sistema.
Escriuiu 1 i premeu Intro per utilitzar aquest
terminal com a consola del sistema.
Digite um 1 e pressione Enter para utilizar este terminal
como console do sistema.

```

- ___ 19. Type “**1**” and press “**Enter**” to have English during the Install.

```
>>> 1 Type 1 and press Enter to have English during install.
```

```
88 Help ?
```

```
>>> Choice [1]:
```

- ____ 20. Typically **hdisk0** is the default disk used for the installation of AIX. If you want to change the installation settings select 2 for “**Change/Show Installation Settings and Install**“, and press “**Enter**”. Otherwise, to start the installation with the default settings type “**1**” and press “**Enter**”.

```
                Welcome to Base Operating System
                Installation and Maintenance
```

```
Type the number of your choice and press Enter. Choice is indicated by >>>.
```

```
>>> 1 Start Install Now with Default Settings
    2 Change/Show Installation Settings and Install
    3 Start Maintenance Mode for System Recovery
    4 Configure Network Disks <iSCSI>
    5 Select Storage Adapters
```

```
88 Help ?
99 Previous Menu
```

```
>>> Choice [1]:
```

- ____ 21. Verify the correct hdisk is selected for your install and type “**1**” to continue.

```
System Backup Installation Summary

Disks: hdisk0
Use Physical Location Maps: no
Shrink File Systems: no
Import User Volume Groups: yes
Recover Devices: no

>>> 1 Continue with Install
      88 Help ?          :-----+-----
      99 Previous Menu  : | WARNING: Base Operating System Installation will
                        : | destroy or impair recovery of ALL data on the
                        : | destination disk hdisk0.
>>> Choice [1]:
```

The IVM installation process begins. When the installation is complete, the system will reboot and a login prompt will be displayed.

- ___ 22. Login to IVM's CLI (using windows Telnet client or PuTTY [Windows SSH Client Program]) as user "**padmin**". The first time you login to IVM you will be prompted to change the password which should be set to "**padmin**".
- ___ 23. Next you will be prompted to accept the VIO license. Press "**Enter**" to get to a prompt then type "**license -accept**".
- ___ 24. You can exit the CLI and login to the IVM GUI from a web-browser.

The IVM installation is complete.

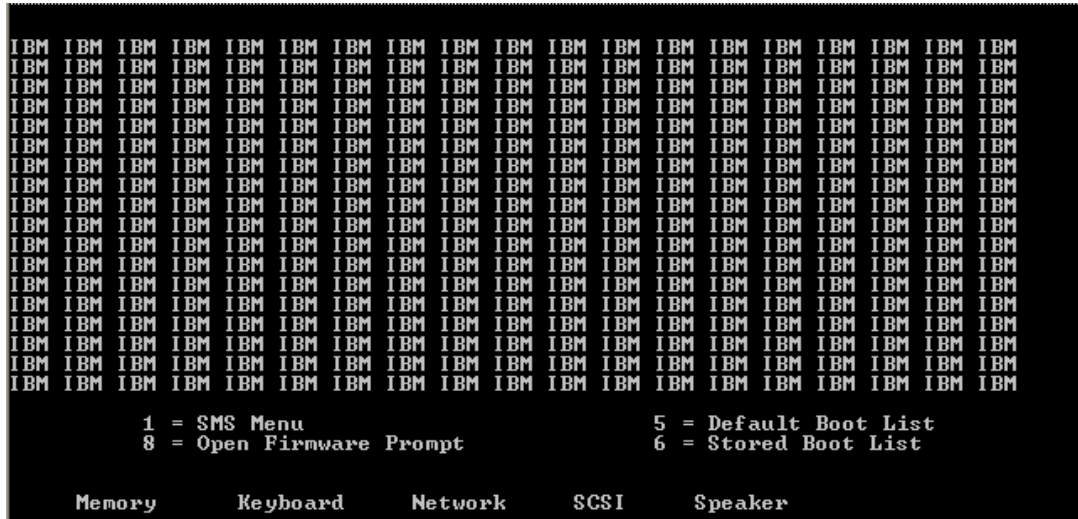
III. AIX Installation

In this section of the lab we walk you through installing AIX on a blade using a NIM Server. For more information on installing and maintaining AIX6, refer to <http://publib.boulder.ibm.com/infocenter/systems/scope/aix/index.jsp?topic=/com.ibm.aix.ins tall/doc/insgdrf/insgdrf-kickoff.htm>.

Starting the AIX6 Install Process

Complete the following steps to install AIX on the blade:

1. Telnet (using windows Telnet client or PUTTY [Windows SSH Client Program]) to the Advanced Management Module. Enter the userid and password provided before the lab.
2. To reboot the blade and open a SOL session, type “**boot -c -T system:blade[#]**” (where # is the Bay number of the blade) and press “**Enter**”.
3. Press “**1**” on the keyboard when you see the word “**Keyboard**” and before the word “**Speaker**” to go to the SMS Menu.



5. From the Main Menu, select 2 for “**Setup Remote IPL <Initial Program Load>**” and press “**Enter**”.

```

PowerPC Firmware
Version EA320_030
SMS 1.7 (c) Copyright IBM Corp. 2000,2007 All rights reserved.
-----
Main Menu
1.  Select Language
2.  Setup Remote IPL (Initial Program Load)
3.  Change SCSI Settings
4.  Select Console
5.  Select Boot Options
6.  Firmware Boot Side Options
-----

Navigation Keys:
                                     X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key:

```

6. From the NIC Adapters Device menu, select 1 for “**Port – 1 IBM Host Ethernet Ada**” and press “**Enter**”.

```

PowerPC Firmware
Version EA320_030
SMS 1.7 (c) Copyright IBM Corp. 2000,2007 All rights reserved.
-----
NIC Adapters
Device                               Location Code                       Hardware
Address
1.  PORT - 1 IBM Host Ethernet Ada   U78A5.001.WIH00E1-P1-T6           001a64441466
2.  PORT - 2 IBM Host Ethernet Ada   U78A5.001.WIH00E1-P1-T7           001a64441467
-----

Navigation keys:
M = return to Main Menu
ESC key = return to previous screen
                                     X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key:

```

Note: If you select port 2 then you must have an Ethernet Switch Module in Bay 2 of the chassis.

7. From the Internet Protocol menu, select 1 for “**IPv4 – Address format 123.231.111.222**” and press “**Enter**”.

```
PowerPC Firmware
Version FA330_006
SMS 1.7 (c) Copyright IBM Corp. 2000,2007 All rights reserved.
-----
Select Internet Protocol Version.

1. IPv4 - Address Format 123.231.111.222
2. IPv6 - Address Format 1234:5678:90ab:cdef:1234:5678:90ab:cdef

-----
Navigation keys:
M = return to Main Menu
ESC key = return to previous screen          X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key:
```

- ___ 8. From the Network Service menu, select 1 for “BOOTP” and press “Enter”.

```
PowerPC Firmware
Version EA320_030
SMS 1.7 (c) Copyright IBM Corp. 2000,2007 All rights reserved.
-----
Select Network Service.
No alias : PORT - 1 IBM Host Ethernet Adapter: U78A5.001.WIH00E1-P1-T6
1. BOOTP
2. ISCSI

-----
Navigation keys:
M = return to Main Menu
ESC key = return to previous screen          X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key:
```

- ___ 9. From the Network Parameters menu, select 1 for “IP Parameters” and press “Enter”.

```
PowerPC Firmware
Version EA320_030
SMS 1.7 (c) Copyright IBM Corp. 2000,2007 All rights reserved.
-----
Network Parameters
PORT - 1 IBM Host Ethernet Adapter: U78A5.001.WIH00E1-P1-T6
1. IP Parameters
2. Adapter Configuration
3. Ping Test
4. Advanced Setup: BOOTP
-----
Navigation keys:
M = return to Main Menu
ESC key = return to previous screen      X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key: _
```

- ____ 10. At the IP Parameters menu, select the appropriate number to enter the Client IP Address, Server IP Address, Gateway IP Address, and the Subnet Mask.

```
PowerPC Firmware
Version EA320_030
SMS 1.7 (c) Copyright IBM Corp. 2000,2007 All rights reserved.
-----
IP Parameters
PORT - 1 IBM Host Ethernet Adapter: U78A5.001.WIH00E1-P1-T6
1. Client IP Address [000.000.000.000]
2. Server IP Address [000.000.000.000]
3. Gateway IP Address [000.000.000.000]
4. Subnet Mask [255.255.255.000]
-----
Navigation keys:
M = return to Main Menu
ESC key = return to previous screen      X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key: _
```

- ____ 11. Press the “ESC” key to go back to the Network Parameters menu and select 3 for “Ping Test” and press “Enter”. Now, select 1 to “Execute Ping Test” and press “Enter”.
- ____ 12. Select any key to exit from this menu. Type “M” to return to the Main Menu. From the Main menu, select 5 “Select Boot Options” and press “Enter”.
- ____ 13. From the Multiboot menu, select 1 “Select Install/Boot Device” and press “Enter”.


```

PowerPC Firmware
Version EA320_030
SMS 1.7 (c) Copyright IBM Corp. 2000,2007 All rights reserved.
-----
Multiboot
1.  Select Install/Boot Device
2.  Configure Boot Device Order
3.  Multiboot Startup <OFF>

-----

Navigation keys:
M = return to Main Menu
ESC key = return to previous screen           X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key:

```

- ___ 14. From the Select Device Type menu, select 6 “**Network**” and press “**Enter**”.
- ___ 15. From the Network Service menu, select 1 “**BOOTP**” and press “**Enter**”.
- ___ 16. From the Select Device menu, select 1 “**Port – 1 IBM Host Ethernet Adapter <loc=U78A5.001.WIH00E1-P1-T6>**” and press “**Enter**”.

```

PowerPC Firmware
Version EA320_030
SMS 1.7 (c) Copyright IBM Corp. 2000,2007 All rights reserved.
-----
Select Device
Device Current Device
Number Position Name
1.      3      PORT - 1 IBM Host Ethernet Adapter
          < loc=U78A5.001.WIH00E1-P1-T6 >
2.      2      PORT - 2 IBM Host Ethernet Adapter
          < loc=U78A5.001.WIH00E1-P1-T7 >

-----

Navigation keys:
M = return to Main Menu
ESC key = return to previous screen           X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key:

```

- ___ 17. From the Select Task menu, select 2 for “**Normal Mode Boot**” and press “**Enter**”.
- ___ 18. At the next menu, select 1 for “**Yes**” to exit the SMS menu and install your blade. The installation process will begin.
- ___ 19. Next type “**2**” and press “**Enter**” to define the system console.

```
.,,9.19.50.144,9.19.51.6,5,5,255.255.255.000,512
-----
***** Please define the System Console. *****
Type a 2 and press Enter to use this terminal as the
system console.
Pour definir ce terminal comme console systeme, appuyez
sur 2 puis sur Entree.
Taste 2 und anschliessend die Eingabetaste druecken, um
diese Datenstation als Systemkonsole zu verwenden.
Premere il tasto 2 ed Invio per usare questo terminal
come console.
Escriba 2 y pulse Intro para utilizar esta terminal como
consola del sistema.
Escriviu 1 2 i premeu Intro per utilitzar aquest
terminal com a consola del sistema.
Digite um 2 e pressione Enter para utilizar este terminal
como console do sistema.
```

___ 20. Type “1” and press “Enter” to have English during Install.

```
>>> 1 Type 1 and press Enter to have English during install.

88 Help ?

>>> Choice [1]:
```

___ 21. Type “1” and press “Enter” to install now with the default setting.

```
                Welcome to Base Operating System
                Installation and Maintenance

Type the number of your choice and press Enter. Choice is indicated by >>>.
>>> 1 Start Install Now with Default Settings
      2 Change/Show Installation Settings and Install
      3 Start Maintenance Mode for System Recovery
      4 Configure Network Disks (iSCSI)

      88 Help ?
      99 Previous Menu

>>> Choice [1]:
```

____ 22. Type “1” and press “**Enter**” to continue with the installation.

The installation process will begin and AIX6 will be installed.

This completes the AIX Install Lab.

IV. Linux Installation

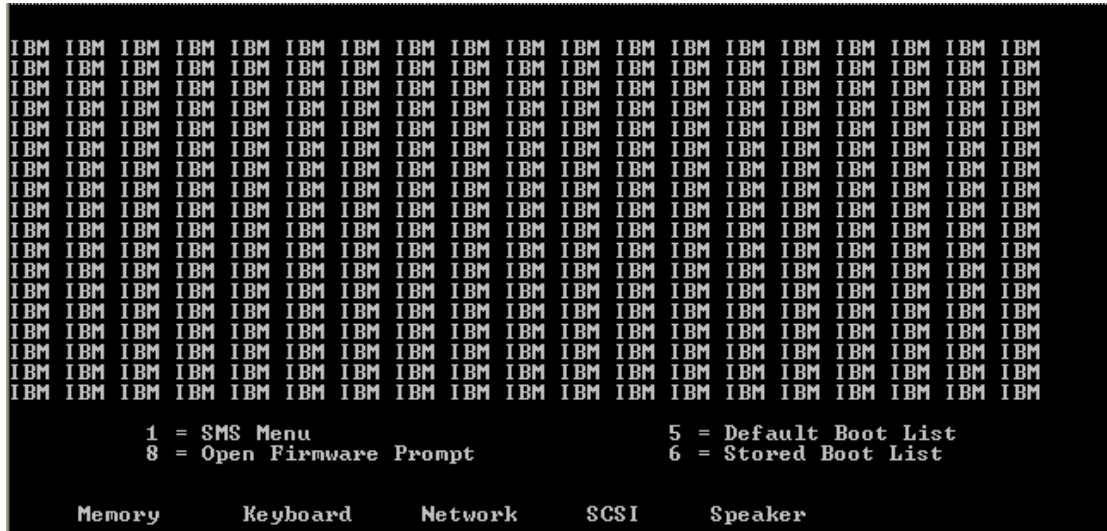
In this section of the lab we walk you through installing Red Hat and SUSE Linux on a blade using a NIM Server.

A. Installing Red Hat on the Blade

Complete the following steps to install Red Hat on the blade:

Starting the Red Hat Install Process

- ___ 1. Telnet using PUTTY (do not use Windows' telnet client) to the Advanced Management Module. Enter the userid and password provided before the lab.
- ___ 2. To reboot the blade and open a SOL session, type “**boot -c -T system:blade[#]**” (where # is the Bay number of the blade) and press “**Enter**”.
- ___ 3. Several lines will scroll up the screen. Press “**1**” on the keyboard when you see the word “**Keyboard**” and before the word “**Speaker**” to go to the SMS Menu.



- ___ 4. From the Main Menu, select 2 for “**Setup Remote IPL <Initial Program Load>**” and press “**Enter**”.

```

Version EA350_053
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
Main Menu
1.  Select Language
2.  Setup Remote IPL (Initial Program Load)
3.  Change SCSI Settings
4.  Select Console
5.  Select Boot Options
6.  Firmware Boot Side Options
-----

Navigation Keys:
-----
X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key: █

```

- ___ 5. From the NIC Adapters menu, select 1 for “**Port – 1 IBM Host Ethernet Ada**” and press “**Enter**”.

```

Version EA350_053
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
NIC Adapters
Device                               Location Code                       Hardware Address
1.  PORT - 1 IBM Host Ethernet Ada   U78A5.001.WIH0182-P1-T6           001a64441ade
2.  PORT - 2 IBM Host Ethernet Ada   U78A5.001.WIH0182-P1-T7           001a64441adf
-----

Navigation keys:
M = return to Main Menu
ESC key = return to previous screen   X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key: █

```

Note: If you select port 2 then you must have an Ethernet Switch Module in Bay 2 of the chassis.

- ___ 6. From the Select Internet Protocol menu, select 1 for “**IPv4**” and press “**Enter**”.

```
Version EA350_053
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
Select Internet Protocol Version.

1.   IPv4 - Address Format 123.231.111.222
2.   IPv6 - Address Format 1234:5678:90ab:cdef:1234:5678:90ab:cdef

-----
Navigation keys:
M = return to Main Menu
ESC key = return to previous screen           X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key: █
```

- ___ 7. From the Select Network Service menu, select 1 for “**BOOTP**” and press “**Enter**”.

```
Version EA350_053
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
Select Network Service.
PORT - 1 IBM Host Ethernet Adapter: U78A5.001.WIH0182-P1-T6
1.   BOOTP
2.   ISCSI

-----
Navigation keys:
M = return to Main Menu
ESC key = return to previous screen           X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key: █
```

- ___ 8. From the Network Parameters menu, select 1 for “**IP Parameters**” and press “**Enter**”.

```
Version EA350_053
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
Network Parameters
PORT - 1 IBM Host Ethernet Adapter: U78A5.001.WIH0182-P1-T6
1. IP Parameters
2. Adapter Configuration
3. Ping Test
4. Advanced Setup: BOOTP
-----

Navigation keys:
M = return to Main Menu
ESC key = return to previous screen          X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key: █
```

9. At the IP Parameters menu, enter the Client IP Address, Server IP Address, Gateway IP Address, and the Subnet Mask.

```
Version EA350_053
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
IP Parameters
PORT - 1 IBM Host Ethernet Adapter: U78A5.001.WIH0182-P1-T6
1. Client IP Address          [172.25.254.91]
2. Server IP Address         [172.25.254.21]
3. Gateway IP Address        [172.25.254.21]
4. Subnet Mask                [255.255.255.0]
-----

Navigation keys:
M = return to Main Menu
ESC key = return to previous screen          X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key: █
```

10. Press the “ESC” key to go back to the Network Parameters menu and select 3 for “**Ping Test**” and press “**Enter**”. Now, select 1 to “**Execute Ping Test**” and press “**Enter**”.
11. Press any key to exit from this menu. Type “**M**” to return to the Main Menu. From the Main menu, select 5 “**Select Boot Options**” and press “**Enter**”.
12. From the Multiboot menu, select 1 “**Select Install/Boot Device**” and press “**Enter**”.

```

Version EA350_053
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
Multiboot
1.  Select Install/Boot Device
2.  Configure Boot Device Order
3.  Multiboot Startup <OFF>

-----

Navigation keys:
M = return to Main Menu
ESC key = return to previous screen          X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key: █

```

- ___ 13. From the Select Device Type menu, select 6 “**Network**” and press “**Enter**”.
- ___ 14. From the Select Network Service menu, select 1 “**BOOTP**” and press “**Enter**”.
- ___ 15. From the Select Device menu, select 1 “**Port – 1 IBM Host Ethernet Adapter <loc=U78A5.001.WIH0182-P1-T6>**” and press “**Enter**”.

```

Version EA350_053
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
Select Device
Device Current Device
Number Position Name
1.      -      PORT - 1 IBM Host Ethernet Adapter
        ( loc=U78A5.001.WIH0182-P1-T6 )
2.      -      PORT - 2 IBM Host Ethernet Adapter
        ( loc=U78A5.001.WIH0182-P1-T7 )

-----

Navigation keys:
M = return to Main Menu
ESC key = return to previous screen          X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key: █

```

- ___ 16. From the Select Task menu, select 2 for “**Normal Mode Boot**” and press “**Enter**”.
- ___ 17. At the next menu, select 1 for “**Yes**” to exit the SMS menu and install the OS on your blade.

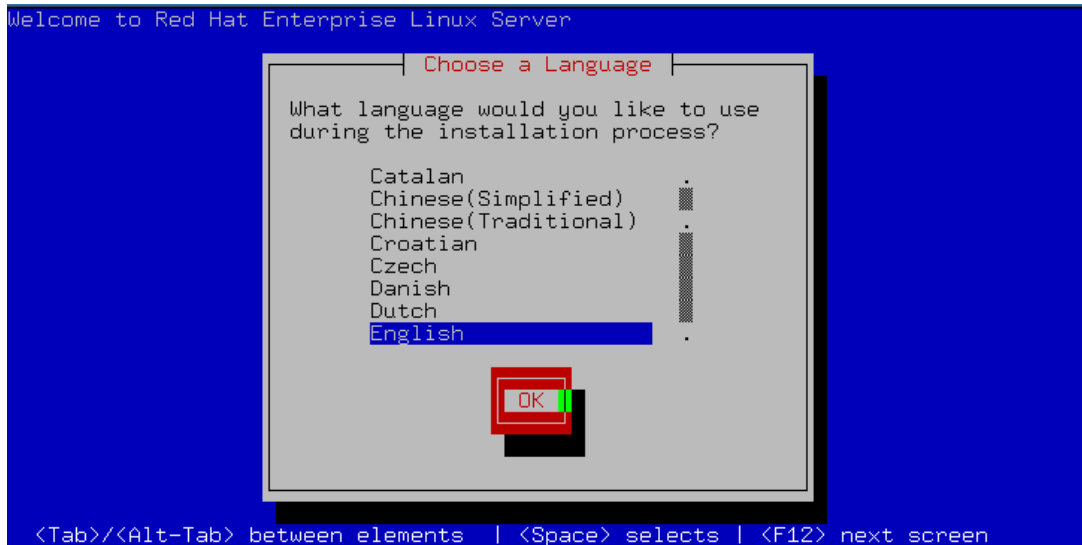
The bootp process begins and the boot image is downloaded to the blade.


```
IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM
IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM
IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM
IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM IBM
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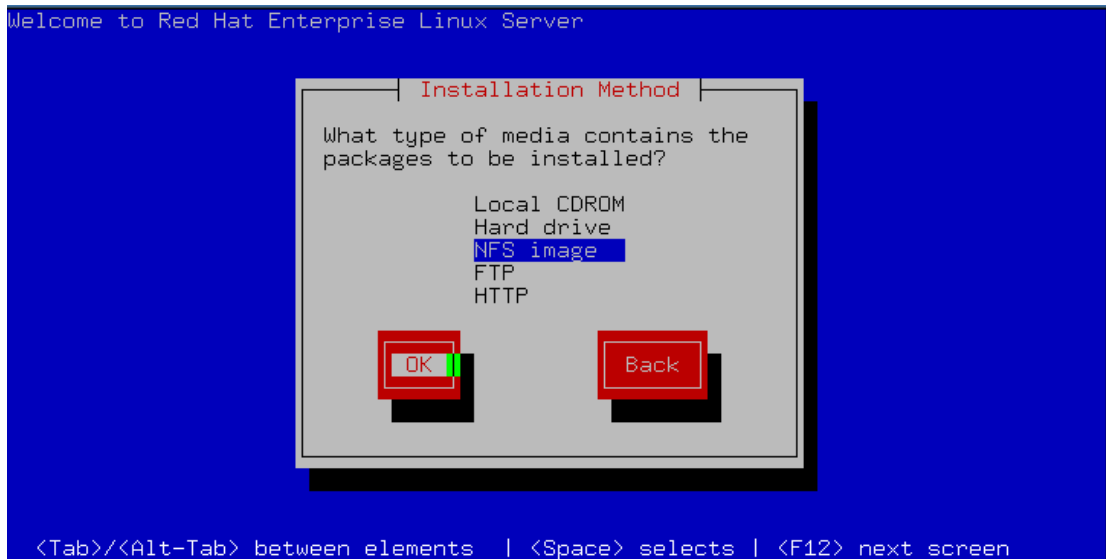
TFTP BOOT -----
Server IP.....172.25.254.21
Client IP.....172.25.254.91
Gateway IP.....172.25.254.21
Subnet Mask.....255.255.255.0
( 1 ) Filename...../export/rhel/images/netboot/ppc64.img
TFTP Retries.....5
Block Size.....512
PACKET COUNT = 7300
```

You will be presented with configuration screens from the anaconda installer. You can use the directional arrows or the Page Up or Page Down keys to scroll through lists. Use the Tab key or Alt-Tab key combination to navigate through the fields on the screen. Use the Spacebar to make your selection and the Enter key to process it.

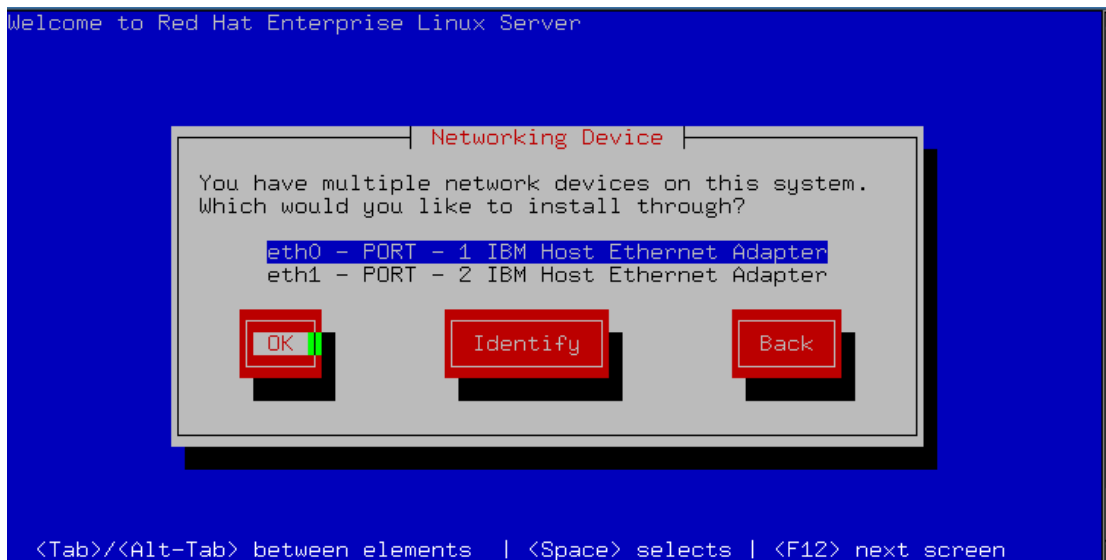
- ___ 18. Scroll to the language of your choice and press “**Enter**”.



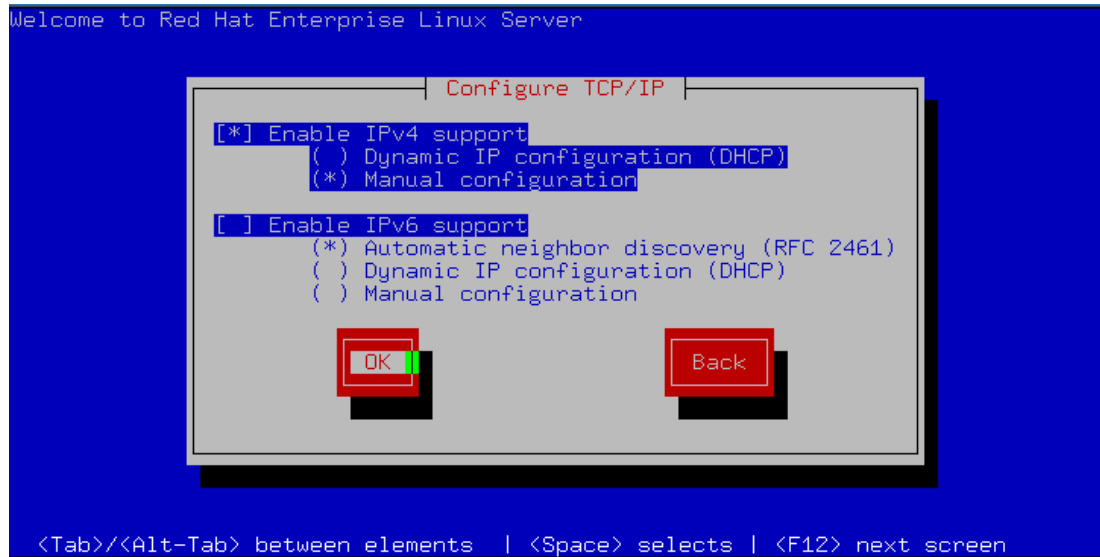
- ___ 19. Select “**NFS Image**” and press “**Enter**” to install from the NIM server.



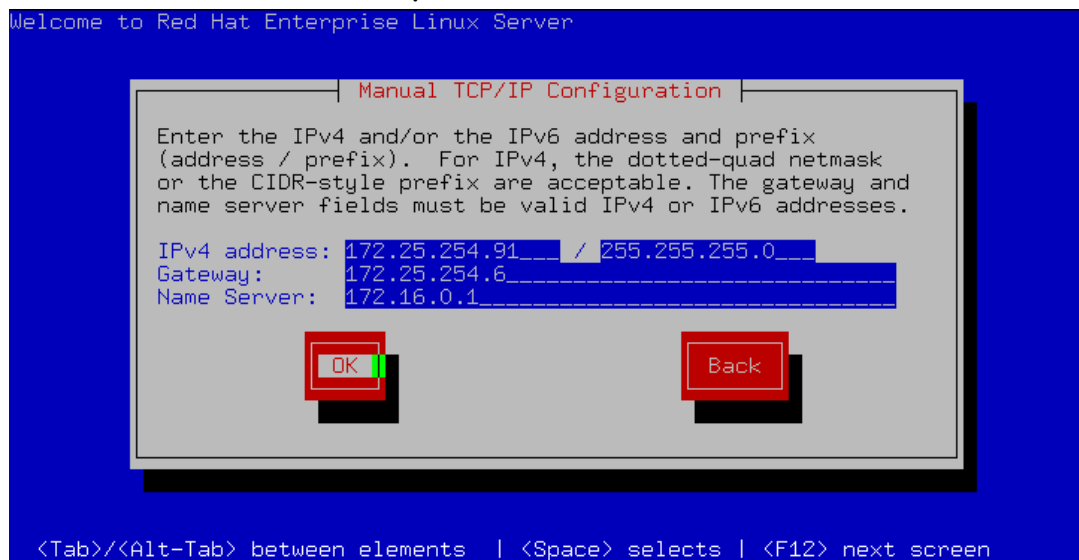
- ___ 20. Choose “eth0” and press “Enter” to setup the Ethernet port used in this lab.



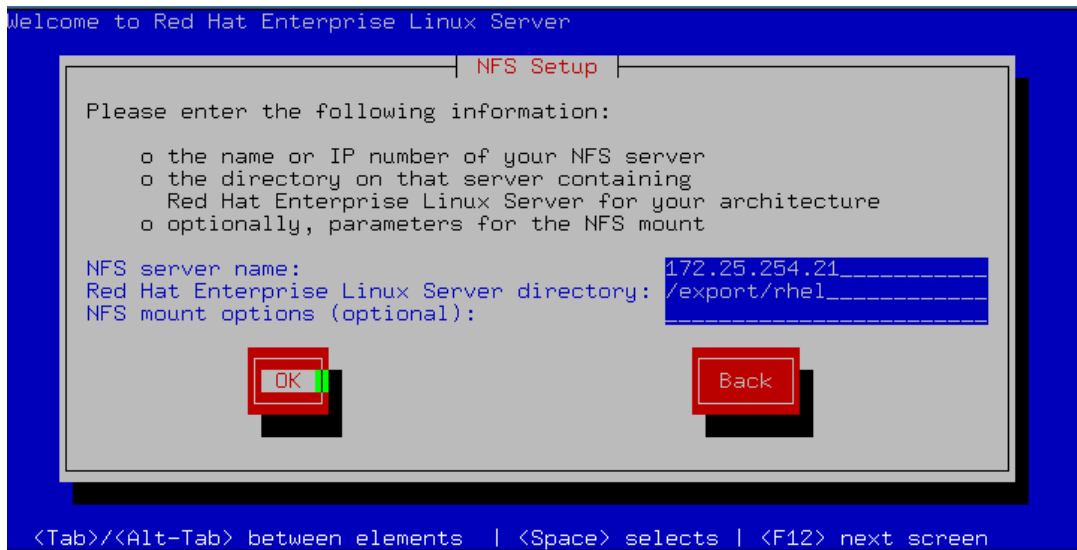
- ___ 21. Tab to the “Manual configuration” option and use the Spacebar to select it. Tab to the “Enable IPv6 support” option and use the Spacebar to deselect it. Select “OK” to continue.



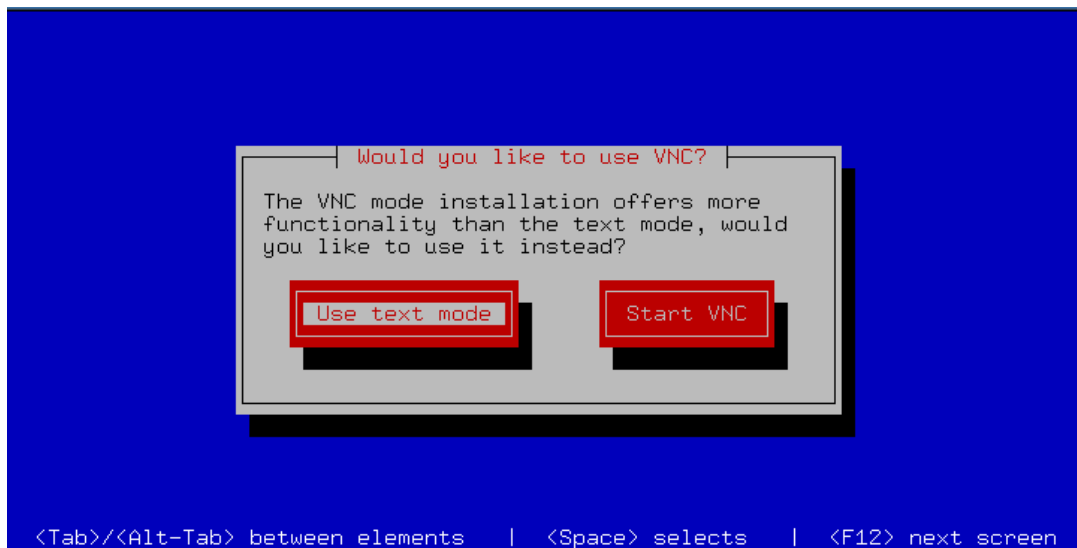
22. Tab to the appropriate fields and input the TCP/IP information provided to you for this lab. Select “OK” when complete



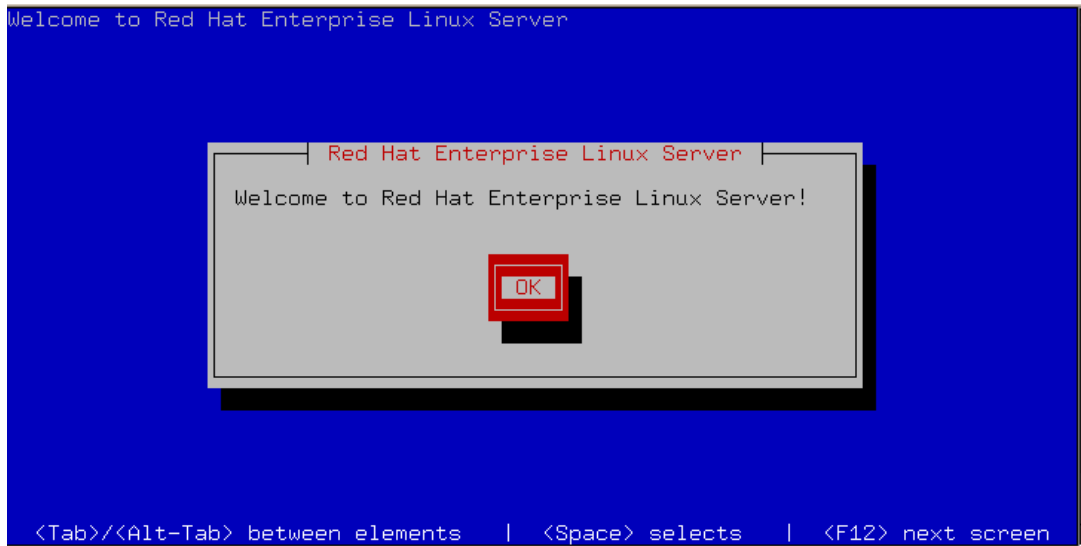
23. Enter the NFS server’s **IP address** or **name** and the **directory** where the install packages are stored on that server.



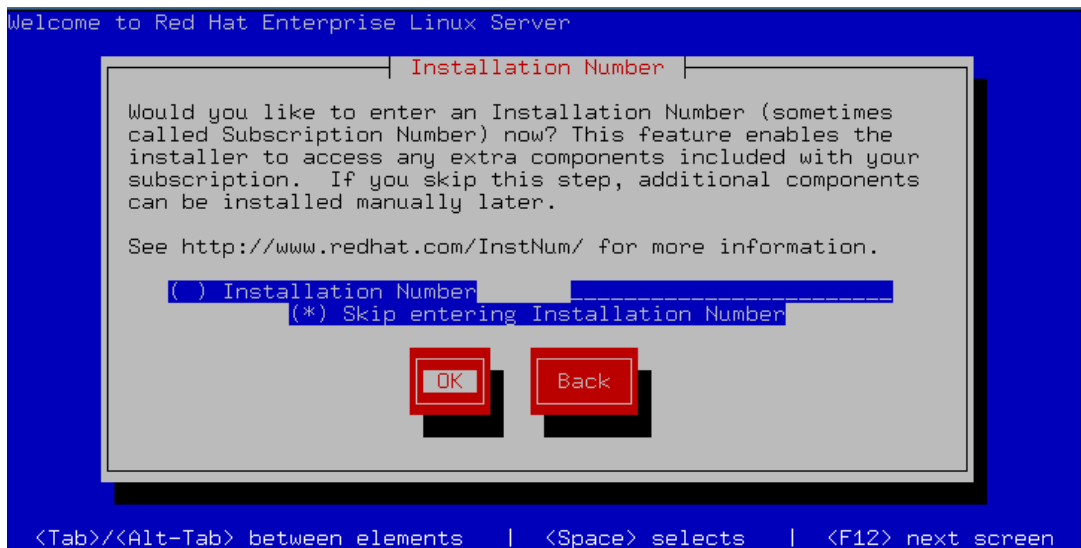
___24. Use text mode for this lab.



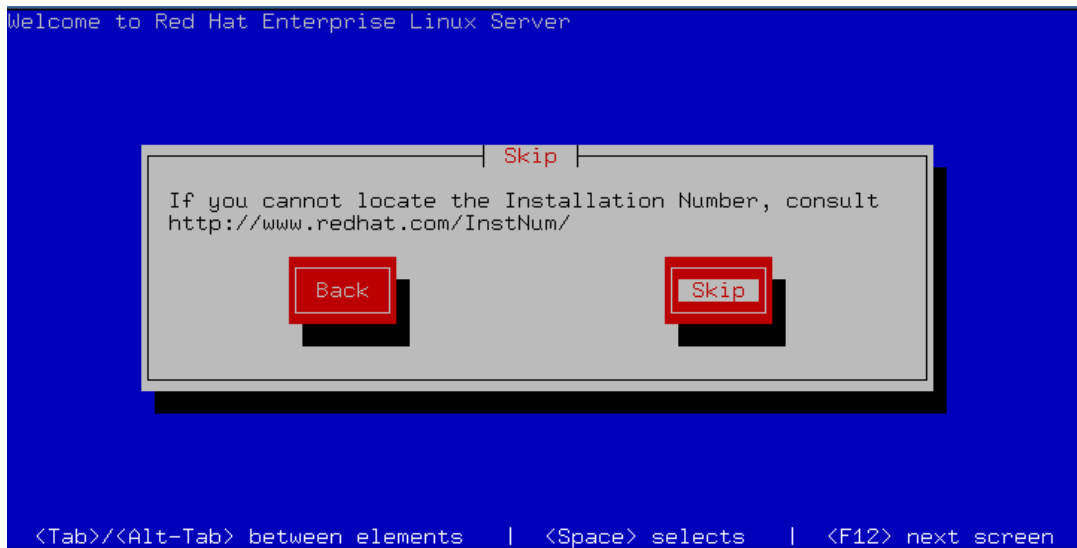
___25. Welcome to Red Hat Enterprise Linux Server! Select “OK” to continue the install.



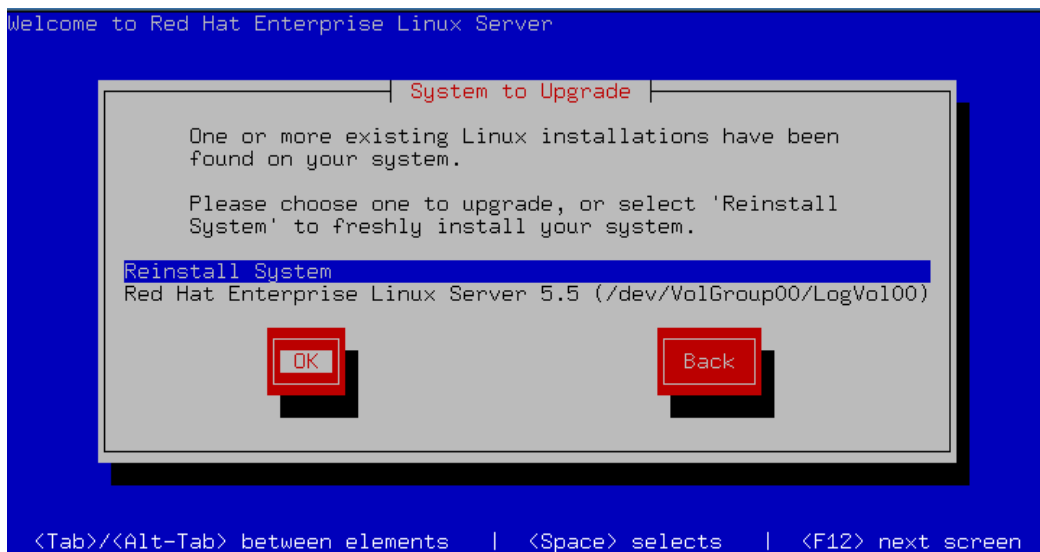
- ___ 26. As this is not a permanent install, select to “**Skip entering Installation Number**” and press “**Enter**”.



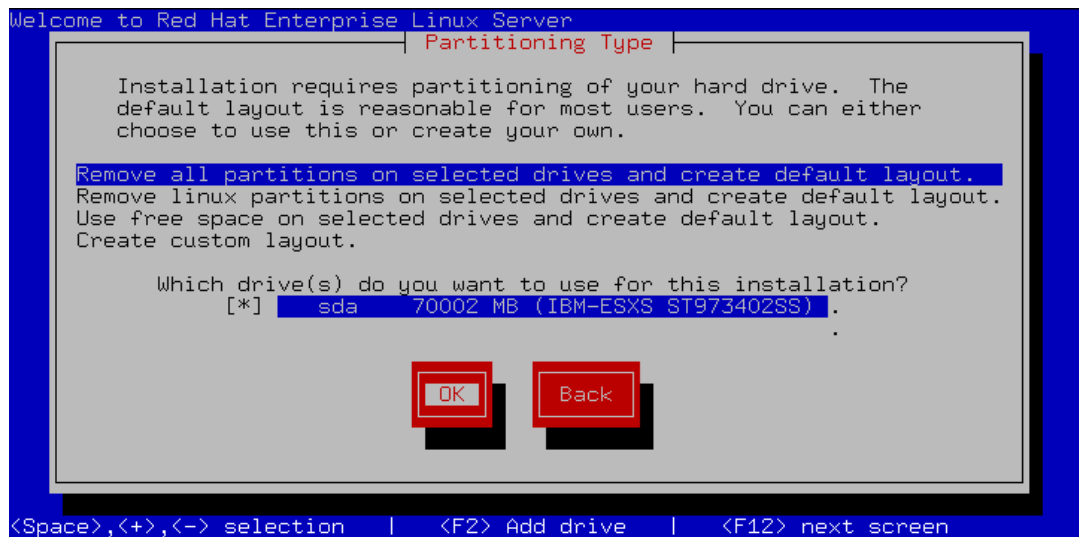
- ___ 27. Select “**Skip**” and press “**Enter**” to continue the installation.



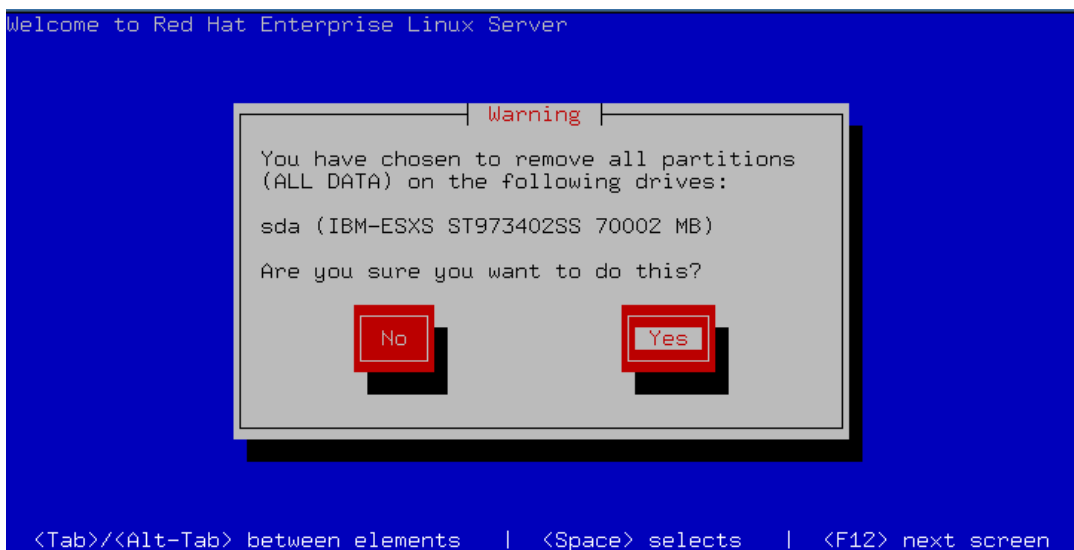
28. You may see a screen for Initializing your disk or Upgrading an existing installation. Select to initialize the disk or to reinstall the system, **OK** and press enter to continue.



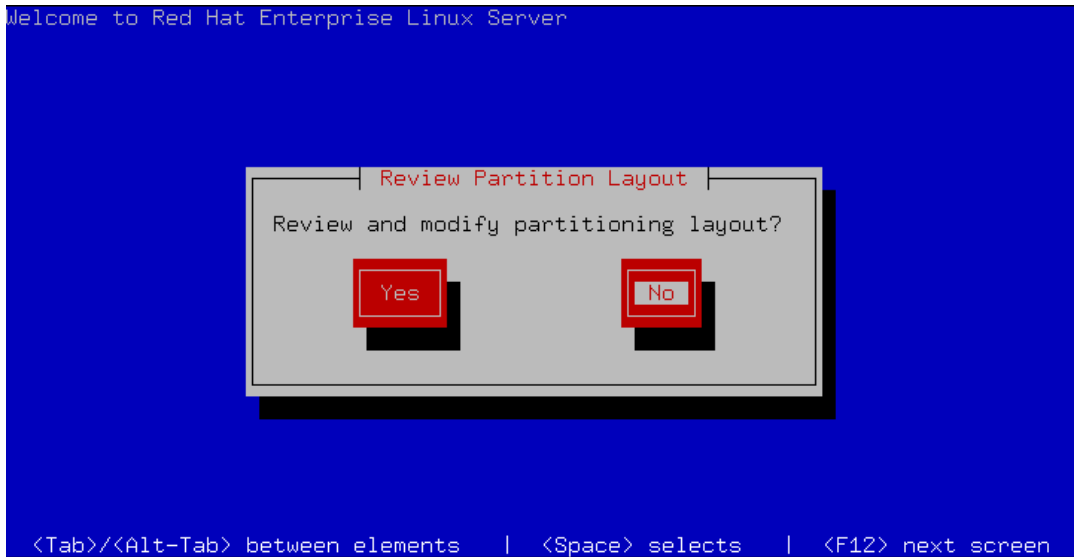
29. Select to "Remove all partitions on selected drives and create default layout" on drive "sda" for this installation.



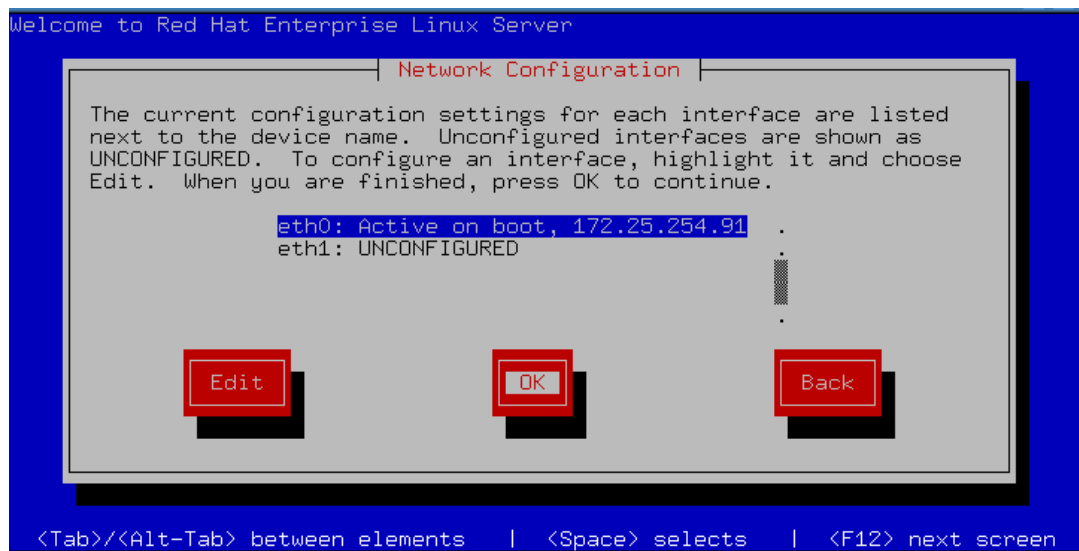
___ 29. Select “Yes” to acknowledge the warning and press “Enter”.



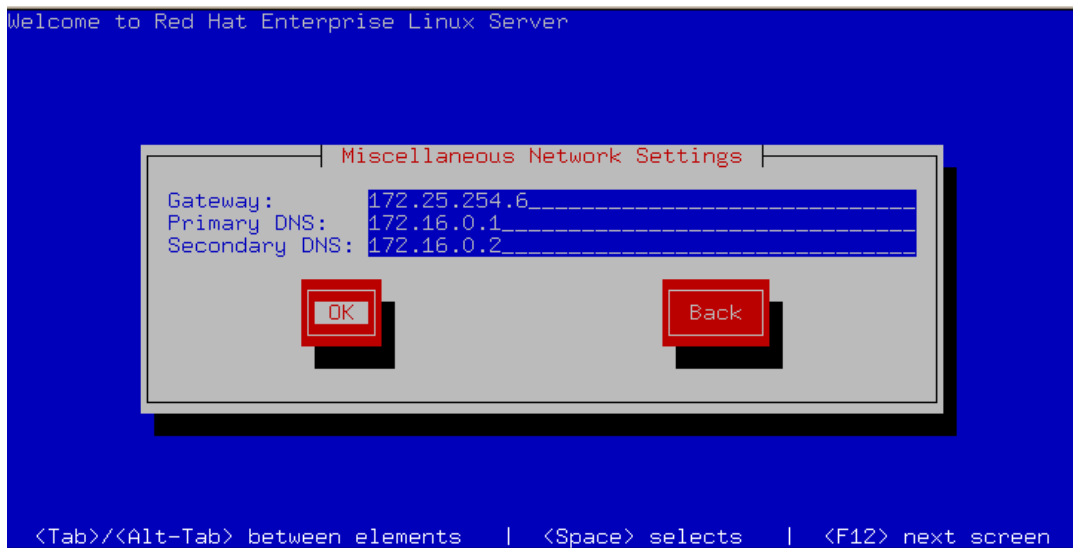
___ 30. Select “No” and press “Enter” to continue. Tuning the partition layout is not part of this course.



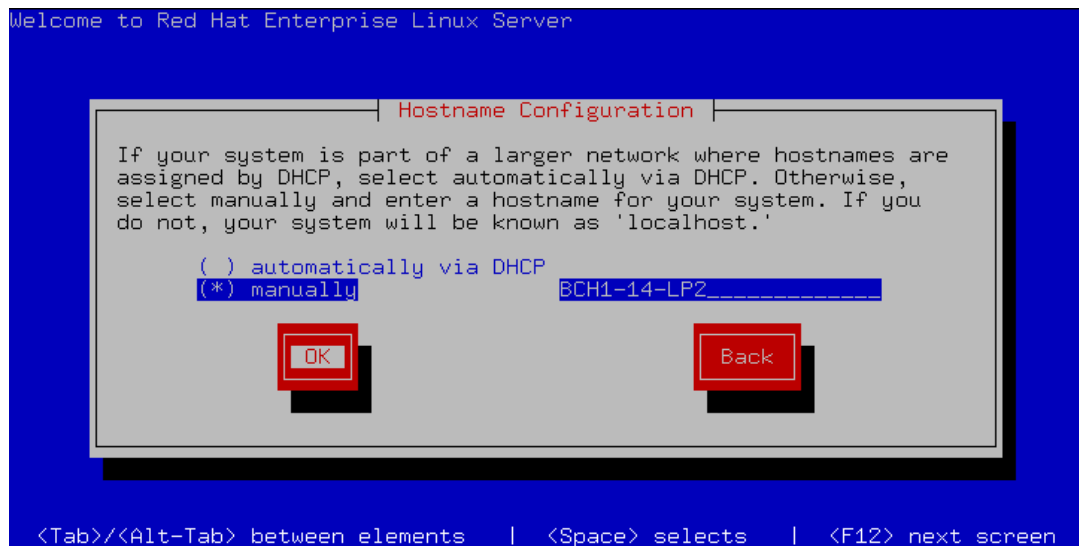
- ___ 31. Select “**eth0**” and “**OK**” and press “**Enter**” to continue.



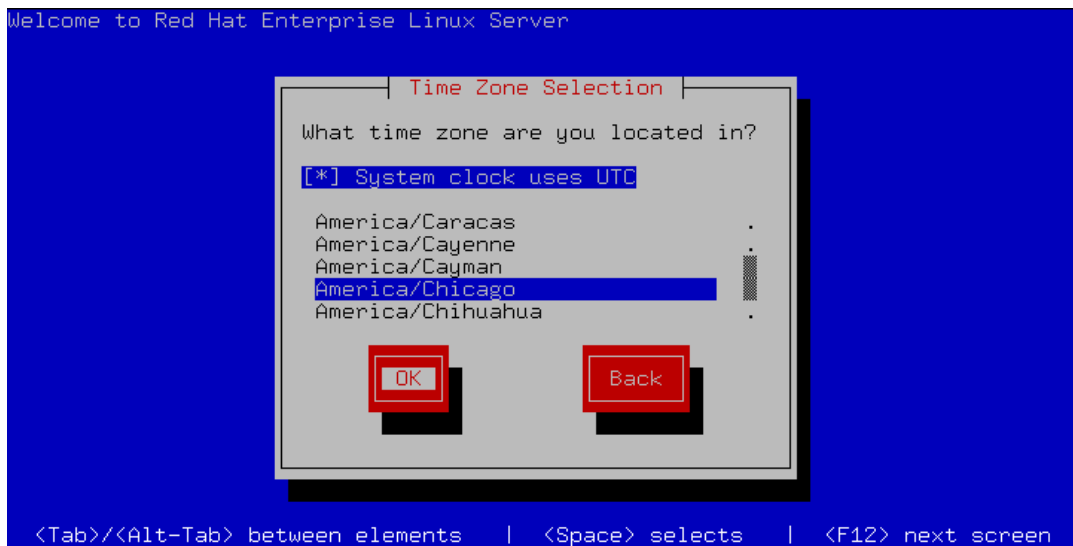
- ___ 32. Enter the **Gateway** and **DNS** IP addresses as provided in the class material and press “**Enter**” to continue.



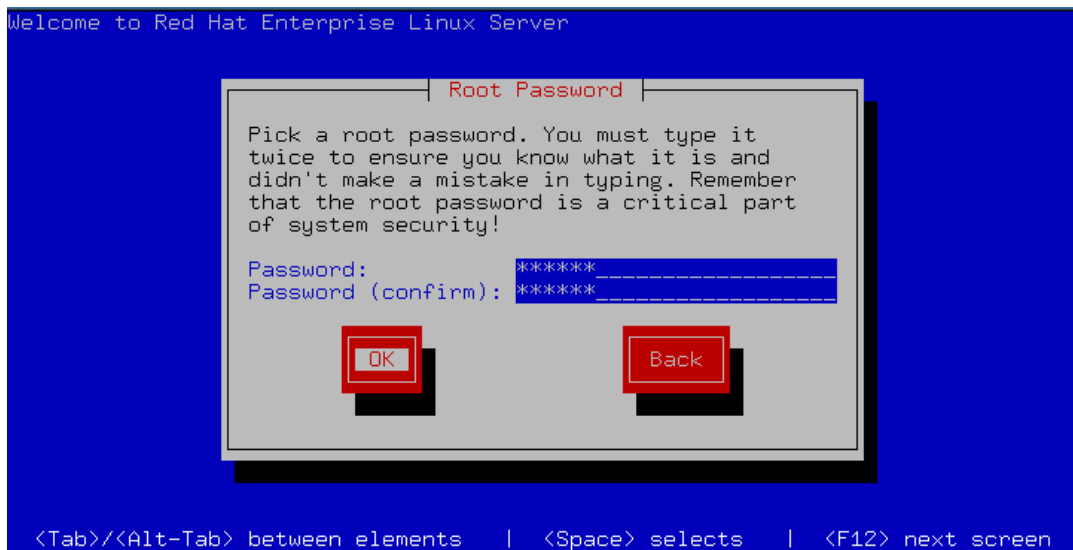
- ___ 33. Select “**manually**” and enter the **hostname** you were provided and press “**Enter**”.
Note: Linux will not allow the use of “_” in the lab's hostname.



- ___ 34. Choose the **time zone** for your location and press “**Enter**”.



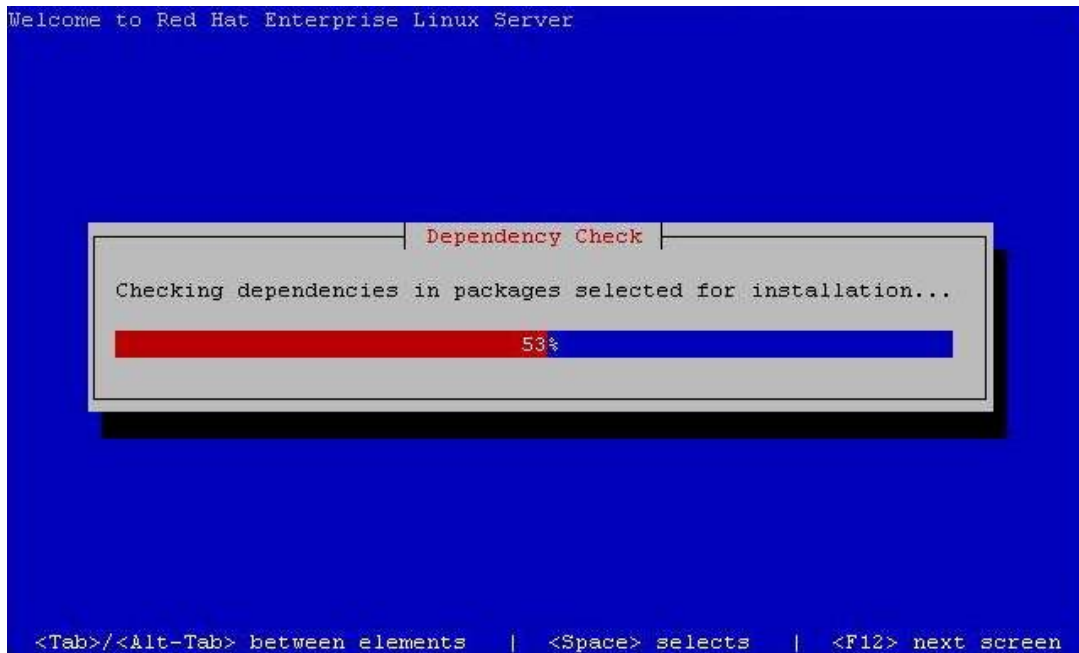
___ 35. Enter a root password. For this lab, please use “PSTRAIN2”.



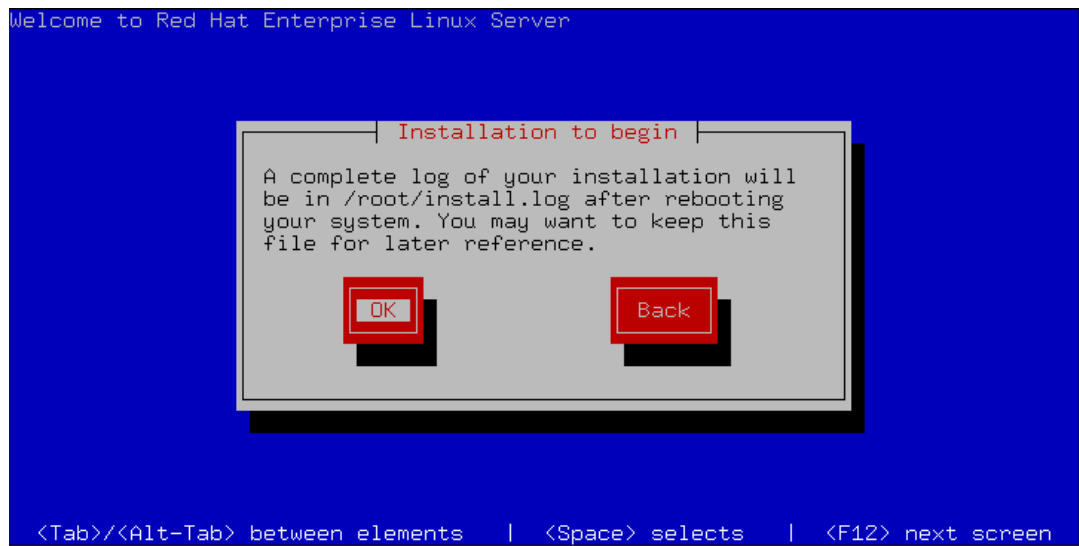
___ 36. For this lab, just leave the default installation, select “OK” and press “Enter” to continue.



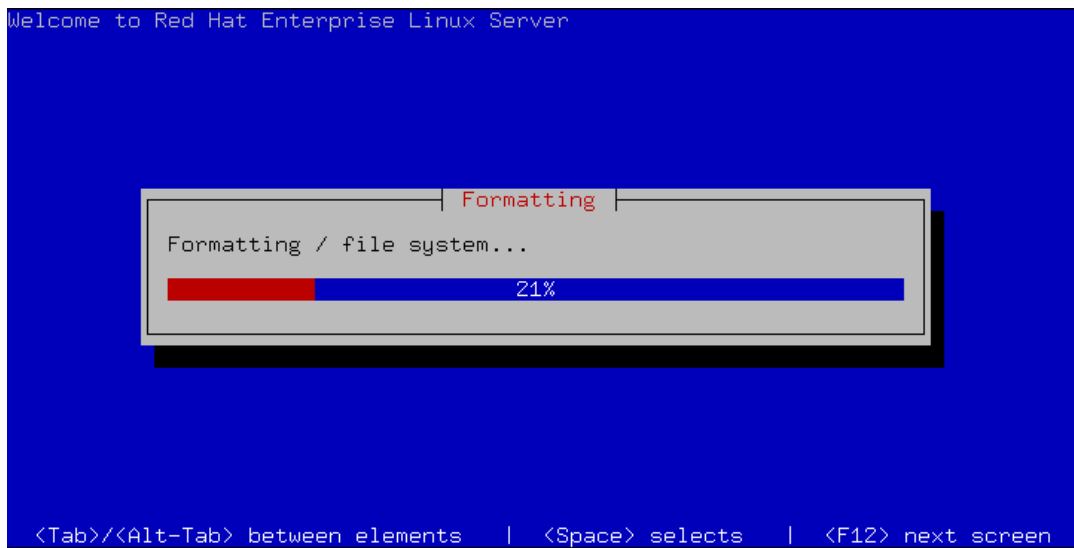
___37. An install package dependency check is run.



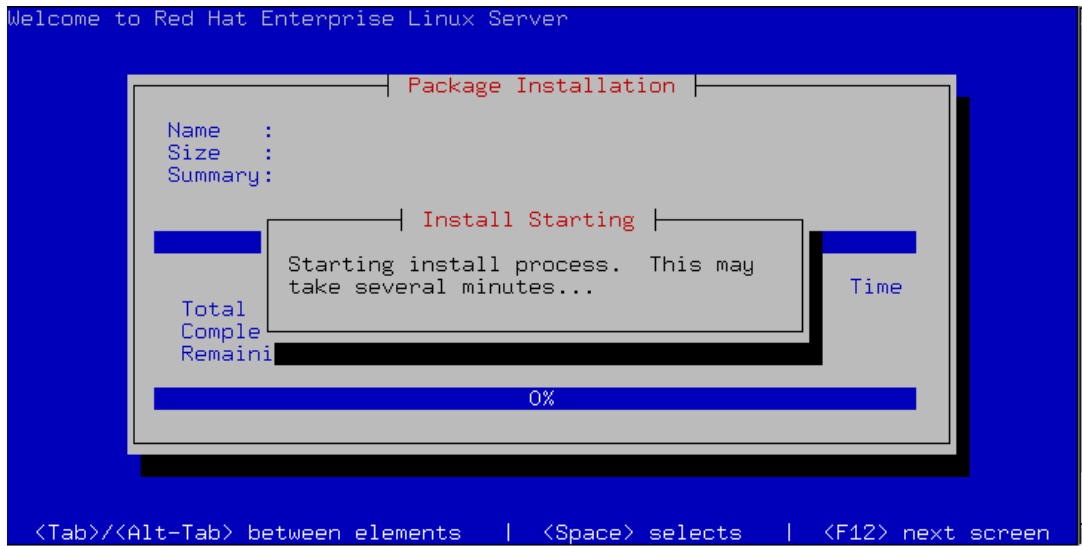
___38. Note the log location and press “**Enter**” to continue.



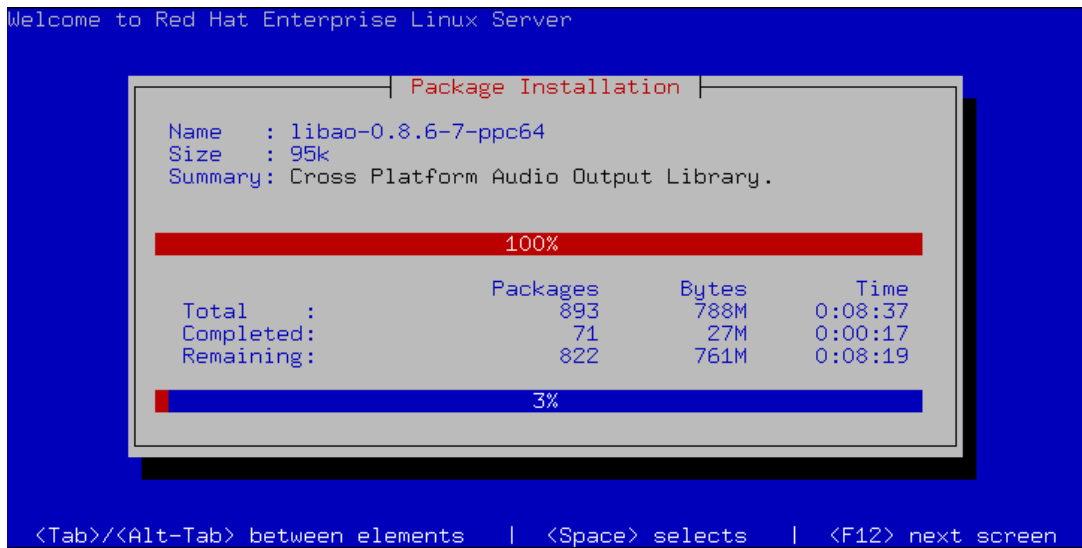
___ 39. The filesystems will now be formatted.



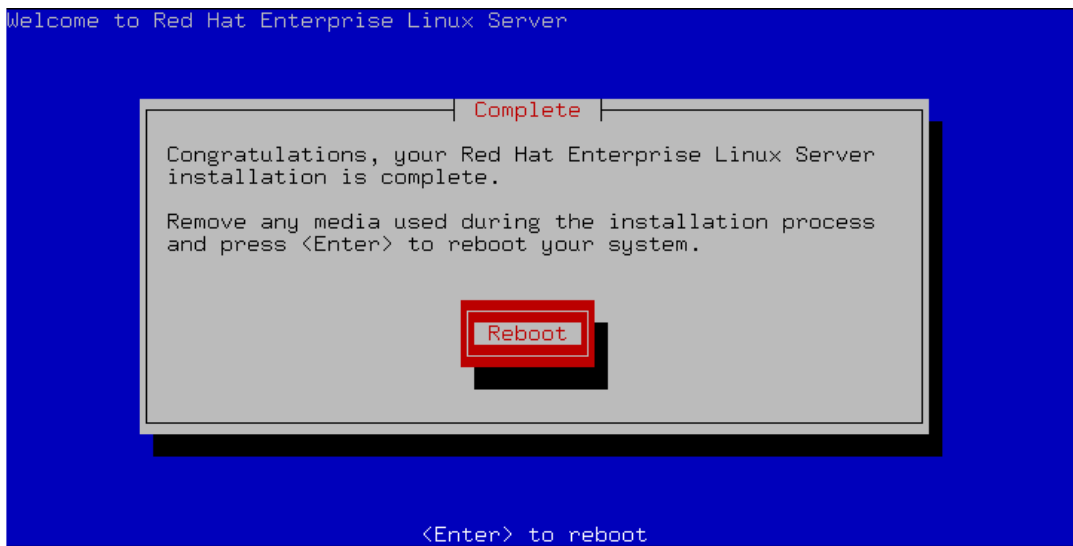
___ 40. The installation begins.



___41. You can watch the progress of the individual package installations.



___42. Once the installation completes, press “**Enter**” to reboot the server.



- ___ 43. You will need to press “1” and enter the SMS menus to select to boot from the disk.

```
Version EA350_053
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
Main Menu
1.  Select Language
2.  Setup Remote IPL (Initial Program Load)
3.  Change SCSI Settings
4.  Select Console
5.  Select Boot Options
6.  Firmware Boot Side Options

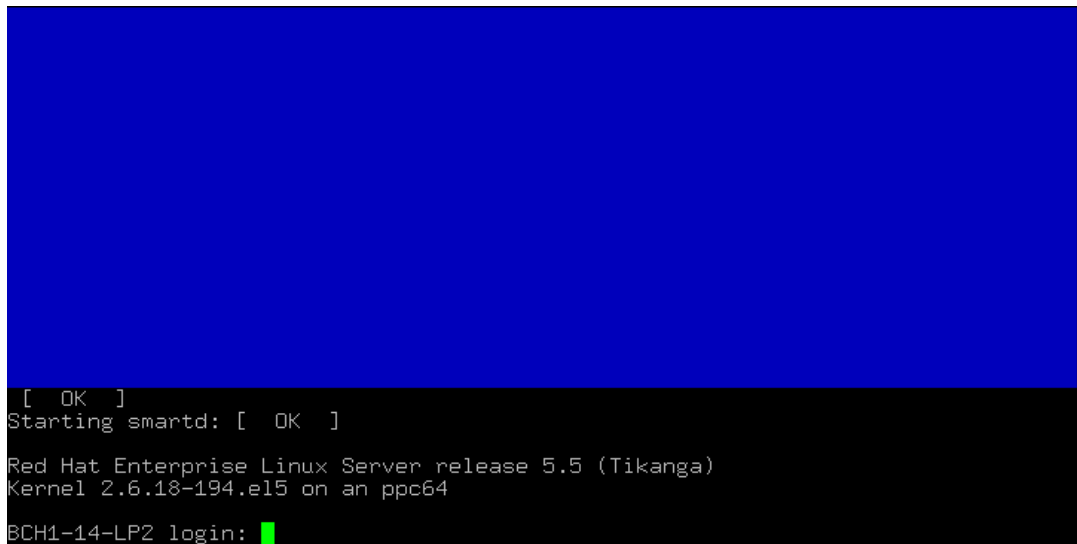
-----
Navigation Keys:

X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key: █
```

- ___ 44. For this lab, just select “Exit” and press “Enter”.



45. This completes the Red Hat Install Lab. You may log in as root and your password should be “PSTRAIN2”.



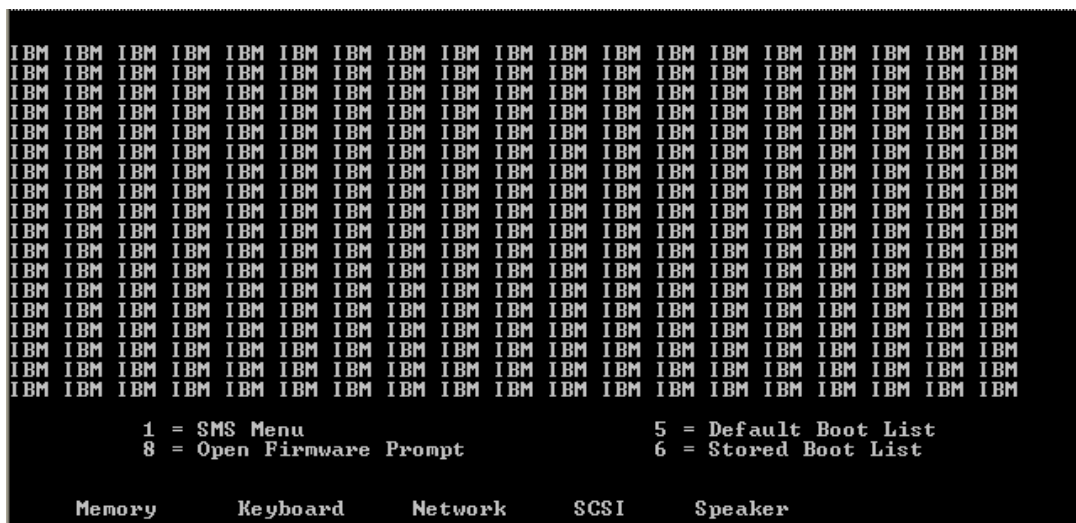
The Red Hat installation is complete.

B. SUSE Installation

Starting the SUSE Install Process

Complete the following steps to install SUSE on the blade:

- ___ 1. Telnet using PUTTY (do not use Windows' telnet client) to the Advanced Management Module. Enter the userid and password provided before the lab.
- ___ 2. To reboot the blade and open a SOL session type “**boot -c -T system:blade[#]**” (where # is the Bay number of the blade) and press “**Enter**”.
- ___ 3. Several lines will scroll up the screen. Press “**1**” on the keyboard when you see the word “**Keyboard**” and before the word “**Speaker**” to go to the SMS Menu.

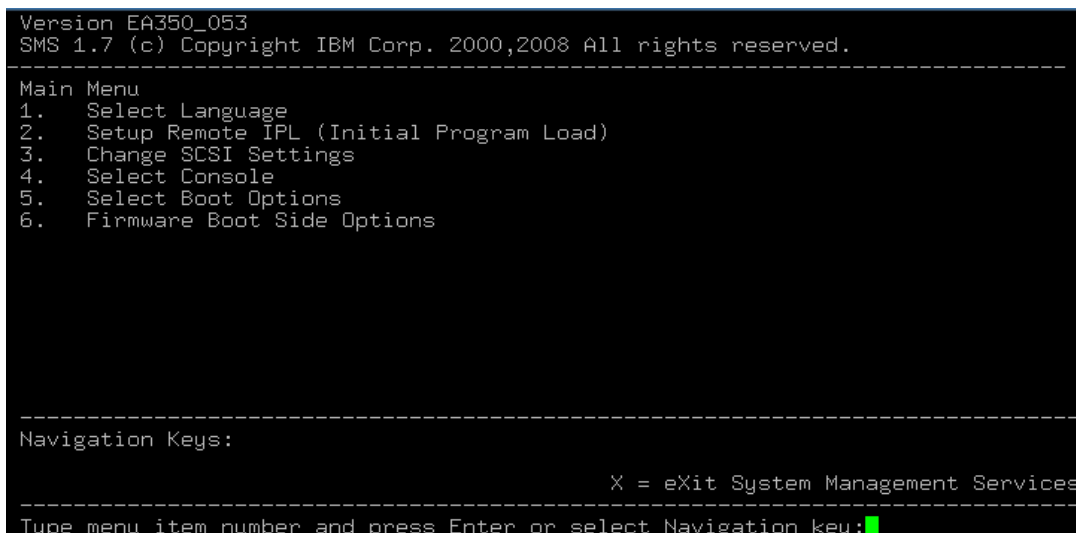


A screenshot of the IBM blade firmware boot menu. The screen is filled with a repeating pattern of 'IBM' text. At the bottom, there are several options and labels:

```
1 = SMS Menu                    5 = Default Boot List
8 = Open Firmware Prompt        6 = Stored Boot List

Memory      Keyboard      Network      SCSI      Speaker
```

- ___ 4. From the Main Menu, select 2 for “**Setup Remote IPL <Initial Program Load>**” and press “**Enter**”.



A screenshot of the SMS Main Menu. The text is as follows:

```
Version EA350_053
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
Main Menu
1.  Select Language
2.  Setup Remote IPL (Initial Program Load)
3.  Change SCSI Settings
4.  Select Console
5.  Select Boot Options
6.  Firmware Boot Side Options

-----
Navigation Keys:

                                          X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key: █
```


- ___ 5. From the NIC Adapters menu, select 1 for “**Port – 1 IBM Host Ethernet Ada**” and press “**Enter**”.

```
Version EA350_053
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
NIC Adapters
Device                               Location Code                         Hardware
Address
1.  PORT - 1 IBM Host Ethernet Ada    U78A5.001.WIH0182-P1-T6              001a64441ade
2.  PORT - 2 IBM Host Ethernet Ada    U78A5.001.WIH0182-P1-T7              001a64441adf
-----
Navigation keys:
M = return to Main Menu
ESC key = return to previous screen      X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key:█
```

Note: If you select port 2 then you must have an Ethernet Switch Module in Bay 2 of the chassis.

- ___ 6. From the Select Internet Protocol menu, select 1 for “**IPv4**” and press “**Enter**”.

```
Version EA350_053
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
Select Internet Protocol Version.
1.  IPv4 - Address Format 123.231.111.222
2.  IPv6 - Address Format 1234:5678:90ab:cdef:1234:5678:90ab:cdef
-----
Navigation keys:
M = return to Main Menu
ESC key = return to previous screen      X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key:█
```

- ___ 7. From the Select Network Service menu, select 1 for “**BOOTP**” and press “**Enter**”.

```
Version EA350_053
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
Select Network Service.
PORT - 1 IBM Host Ethernet Adapter: U78A5.001.WIH0182-P1-T6
1.  BOOTP
2.  ISCSI

-----
Navigation keys:
M = return to Main Menu
ESC key = return to previous screen          X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key: █
```

- ___ 8. From the Network Parameters menu, select 1 for “**IP Parameters**” and press “**Enter**”.

```
Version EA350_053
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
Network Parameters
PORT - 1 IBM Host Ethernet Adapter: U78A5.001.WIH0182-P1-T6
1.  IP Parameters
2.  Adapter Configuration
3.  Ping Test
4.  Advanced Setup: BOOTP

-----
Navigation keys:
M = return to Main Menu
ESC key = return to previous screen          X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key: █
```

- ___ 9. At the IP Parameters menu, enter the Client IP Address, Server IP Address, Gateway IP Address, and the Subnet Mask.

```

Version EA350_053
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
IP Parameters
PORT - 1 IBM Host Ethernet Adapter: U78A5.001.WIH0182-P1-T6
1. Client IP Address [172.25.254.91]
2. Server IP Address [172.25.254.21]
3. Gateway IP Address [172.25.254.21]
4. Subnet Mask [255.255.255.0]

-----
Navigation keys:
M = return to Main Menu
ESC key = return to previous screen X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key: █

```

- ___ 10. Press the “ESC” key to go back to the Network Parameters menu and select 3 for “**Ping Test**” and press “**Enter**”. Now, select 1 to “**Execute Ping Test**” and press “**Enter**”.
- ___ 11. Press any key to exit from this menu. Type “**M**” to return to the Main Menu. From the Main menu, select 5 “**Select Boot Options**” and press “**Enter**”.
- ___ 12. From the Multiboot menu, select 1 “**Select Install/Boot Device**” and press “**Enter**”.

```

Version EA350_053
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
Multiboot
1. Select Install/Boot Device
2. Configure Boot Device Order
3. Multiboot Startup <OFF>

-----
Navigation keys:
M = return to Main Menu
ESC key = return to previous screen X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key: █

```

- ___ 13. From the Select Device Type menu, select 6 “**Network**” and press “**Enter**”.
- ___ 14. From the Select Network Service menu, select 1 “**BOOTP**” and press “**Enter**”.
- ___ 15. From the Select Device menu, select 1 “**Port – 1 IBM Host Ethernet Adapter <loc=U78A5.001.WIH0182-P1-T6>**” and press “**Enter**”.

```
Version EA350_053
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
Select Device
Device Current Device
Number Position Name
1. - PORT - 1 IBM Host Ethernet Adapter
   ( loc=U78A5.001.WIH0182-P1-T6 )
2. - PORT - 2 IBM Host Ethernet Adapter
   ( loc=U78A5.001.WIH0182-P1-T7 )
-----
Navigation keys:
M = return to Main Menu
ESC key = return to previous screen          X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key: █
```

- ___ 16. From the Select Task menu, select 2 for “**Normal Mode Boot**” and press “**Enter**”.

```
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
Select Task
PORT - 1 IBM Host Ethernet Adapter
( loc=U78A5.001.WIH0182-P1-T6 )
1. Information
2. Normal Mode Boot
3. Service Mode Boot
-----
Navigation keys:
M = return to Main Menu
ESC key = return to previous screen          X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key: █
```

- ___ 17. At the next menu, select 1 for “**Yes**” to exit the SMS menu and install the OS on your blade.


```

Loading basic drivers... ok
Starting hardware detection... ok
(If a driver is not working for you, try booting with brokenmodules=driver_name.
)

IBM PCI-X DDR 3Gb SAS Adapter (572A/572C)
  drivers: ipr*
QLLogic ISP2422-based 4Gb Fibre Channel to PCI-X HBA
  drivers: qla2400, qla2xxx*
QLLogic ISP2422-based 4Gb Fibre Channel to PCI-X HBA
  drivers: qla2400, qla2xxx*
Activating usb devices... ok
IBM Host Ethernet Adapter Port 0
  drivers: ehea*
IBM Host Ethernet Adapter Port 1
  drivers: ehea*
Reading driver update: disk:/?device=*usb*

Make sure that CD number 1 is in your drive.

1) OK
2) Back

> █

```

___ 20. Select “**1) Start Installation**” and press “**Enter**”.

```

  drivers: qla2400, qla2xxx*
Activating usb devices... ok
IBM Host Ethernet Adapter Port 0
  drivers: ehea*
IBM Host Ethernet Adapter Port 1
  drivers: ehea*
Reading driver update: disk:/?device=*usb*

Make sure that CD number 1 is in your drive.

1) OK
2) Back

> 2
>>> Linuxrc v3.3.59 (Kernel 2.6.32.12-0.7-ppc64) <<<

Main Menu

1) Start Installation
2) Settings
3) Expert
4) Exit or Reboot

> 1 █

```

___ 21. Select “**1) Start Installation or Update**” and press “**Enter**”.

```
Make sure that CD number 1 is in your drive.
1) OK
2) Back
> 2
>>> Linuxrc v3.3.59 (Kernel 2.6.32.12-0.7-ppc64) <<<
Main Menu
1) Start Installation
2) Settings
3) Expert
4) Exit or Reboot
> 1
Start Installation
1) Start Installation or Update
2) Boot Installed System
3) Start Rescue System
> 1
```

___ 22. Select “**2) Network**” as your source and press “**Enter**”.

```
Main Menu
1) Start Installation
2) Settings
3) Expert
4) Exit or Reboot
> 1
Start Installation
1) Start Installation or Update
2) Boot Installed System
3) Start Rescue System
> 1
Choose the source medium.
1) DVD / CD-ROM
2) Network
3) Hard Disk
> 2
```

___ 23. Select “**3) NFS**” for the network protocol and press “**Enter**”.

```
1) Start Installation or Update
2) Boot Installed System
3) Start Rescue System

> 1

Choose the source medium.

1) DVD / CD-ROM
2) Network
3) Hard Disk

> 2

Choose the network protocol.

1) FTP
2) HTTP
3) NFS
4) SMB / CIFS (Windows Share)
5) TFTP

> 3
```

____ 24. Select “**1) eth0**” as the network device and press “**Enter**”.

```
1) DVD / CD-ROM
2) Network
3) Hard Disk

> 2

Choose the network protocol.

1) FTP
2) HTTP
3) NFS
4) SMB / CIFS (Windows Share)
5) TFTP

> 3
Detecting and loading network drivers

Choose the network device.

1) eth0 : IBM Host Ethernet Adapter Port 0
2) eth1 : IBM Host Ethernet Adapter Port 1

> 1
```

____ 25. Select “**2) No**” to hard-code the IP address and press “**Enter**”.


```
Choose the network protocol.
1) FTP
2) HTTP
3) NFS
4) SMB / CIFS (Windows Share)
5) TFTP

> 3
Detecting and loading network drivers

Choose the network device.
1) eth0 : IBM Host Ethernet Adapter Port 0
2) eth1 : IBM Host Ethernet Adapter Port 1

> 1

Automatic configuration via DHCP?
1) Yes
2) No

> 2
```

___26. Enter the IP address provided for this lab and press “**Enter**”.

```
3) NFS
4) SMB / CIFS (Windows Share)
5) TFTP

> 3
Detecting and loading network drivers

Choose the network device.
1) eth0 : IBM Host Ethernet Adapter Port 0
2) eth1 : IBM Host Ethernet Adapter Port 1

> 1

Automatic configuration via DHCP?
1) Yes
2) No

> 2

Enter your IPv4 address.
Example: 192.168.5.77/24
> 172.25.254.92
```

___27. Press “**Enter**” to use the default netmask.

```

> 3
Detecting and loading network drivers

Choose the network device.

1) eth0 : IBM Host Ethernet Adapter Port 0
2) eth1 : IBM Host Ethernet Adapter Port 1

> 1

Automatic configuration via DHCP?

1) Yes
2) No

> 2

Enter your IPv4 address.
Example: 192.168.5.77/24
> 172.25.254.92

Enter your netmask. For a normal class C network, this is usually
255.255.255.0
[255.255.255.0]> █

```

___ 28. Enter the Gateway IP address provided for this lab and press “**Enter**”.

```

Choose the network device.

1) eth0 : IBM Host Ethernet Adapter Port 0
2) eth1 : IBM Host Ethernet Adapter Port 1

> 1

Automatic configuration via DHCP?

1) Yes
2) No

> 2

Enter your IPv4 address.
Example: 192.168.5.77/24
> 172.25.254.92

Enter your netmask. For a normal class C network, this is usually
255.255.255.0
[255.255.255.0]>

Enter the IP address of the gateway. Leave empty if you don't need one
> 172.25.254.6 █

```

___ 29. Press “**Enter**” to leave the search domain empty.

```
2) eth1 : IBM Host Ethernet Adapter Port 1
> 1
Automatic configuration via DHCP?
1) Yes
2) No
> 2
Enter your IPv4 address.
Example: 192.168.5.77/24
> 172.25.254.92
Enter your netmask. For a normal class C network, this is usually
255.255.255.0
[255.255.255.0]>
Enter the IP address of the gateway. Leave empty if you don't need one
> 172.25.254.6
Enter your search domains, separated by a space:
> █
```

___30. Input the IP address provided for your name server and press “**Enter**”.

```
Automatic configuration via DHCP?
1) Yes
2) No
> 2
Enter your IPv4 address.
Example: 192.168.5.77/24
> 172.25.254.92
Enter your netmask. For a normal class C network, this is usually
255.255.255.0
[255.255.255.0]>
Enter the IP address of the gateway. Leave empty if you don't need one
> 172.25.254.6
Enter your search domains, separated by a space:
>
Enter the IP address of your name server. Leave empty or enter "+++" if you
don't need one
> 172.16.0.1█
```

___31. Input the NFS server's IP address and press “**Enter**”.

```

2) No
> 2
Enter your IPv4 address.
Example: 192.168.5.77/24
> 172.25.254.92

Enter your netmask. For a normal class C network, this is usually
255.255.255.0
[255.255.255.0]>

Enter the IP address of the gateway. Leave empty if you don't need one
> 172.25.254.6

Enter your search domains, separated by a space:
>

Enter the IP address of your name server. Leave empty or enter "+++" if you
don't need one
> 172.16.0.1

Enter the IP address of the NFS server
> 172.25.254.21

```

___32. Input the /export/linux directory used to serve the install files and press “**Enter**”.

```

Enter your IPv4 address.
Example: 192.168.5.77/24
> 172.25.254.92

Enter your netmask. For a normal class C network, this is usually
255.255.255.0
[255.255.255.0]>

Enter the IP address of the gateway. Leave empty if you don't need one
> 172.25.254.6

Enter your search domains, separated by a space:
>

Enter the IP address of your name server. Leave empty or enter "+++" if you
don't need one
> 172.16.0.1

Enter the IP address of the NFS server
> 172.25.254.21

Enter the directory on the server
[/]> /export/linux

```

___33. The YaST installer code is loaded.

```
Enter the IP address of the NFS server
> 172.25.254.21

Enter the directory on the server
[/]> /export/linux
Loading Installation System (1/6) (22220 kB) - 100%
Loading Installation System (2/6) (39932 kB) - 100%
Loading Installation System (3/6) (3677 kB) - 100%
Loading Installation System (4/6) (1320 kB) - 100%
Loading Installation System (5/6) (2644 kB) - 100%
Loading Installation System (6/6) (27 kB) - 100%
Reading Driver Update...

No new Driver Updates found

starting hald... ok
starting syslogd (logging to /dev/tty4)... ok
starting klogd... ok
starting yast...
Probing connected terminal...

Initializing virtual console...
```

- ___ 34. Tab to the **I agree to the License Terms** box, use the space bar to select it, then tab to the **Next** option and press “**Enter**”.

```
YaST2 - installation @ 172.25.254.92

Welcome
Language
English (US)aaaaaaaaaaaaaaaaaaaaaaaaaaaaaa

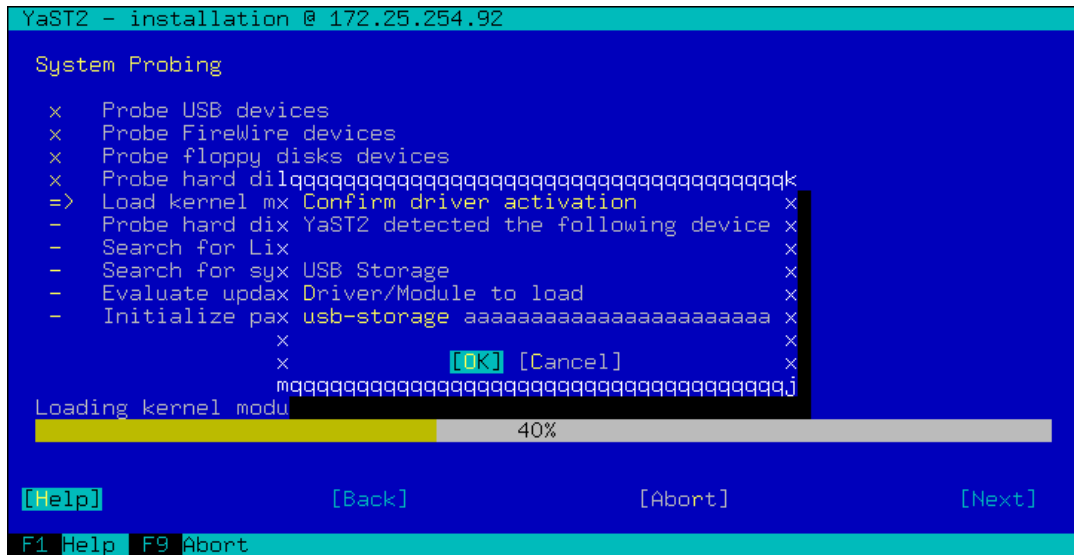
Keyboard Layout
English (US)aaaaaaaaaaaaaaaaaaaaaaaaaaaaaa.

License Agreement
lcccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccq
xSUSE(R) Linux Enterprise Server ("SLES (tm)")11 SP1      x
xNovell(R) Software License Agreement                    x
x                                                         x
xPLEASE READ THIS AGREEMENT CAREFULLY. BY INSTALLING OR OTHERWISE USING  x
xTHE SOFTWARE (INCLUDING ITS COMPONENTS), YOU AGREE TO THE TERMS OF     x
xTHIS AGREEMENT. IF YOU DO NOT AGREE WITH THESE TERMS, DO NOT DOWNLOAD,  x
mtccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccj
[ ] I Agree to the License Terms.                                [License Translations...]

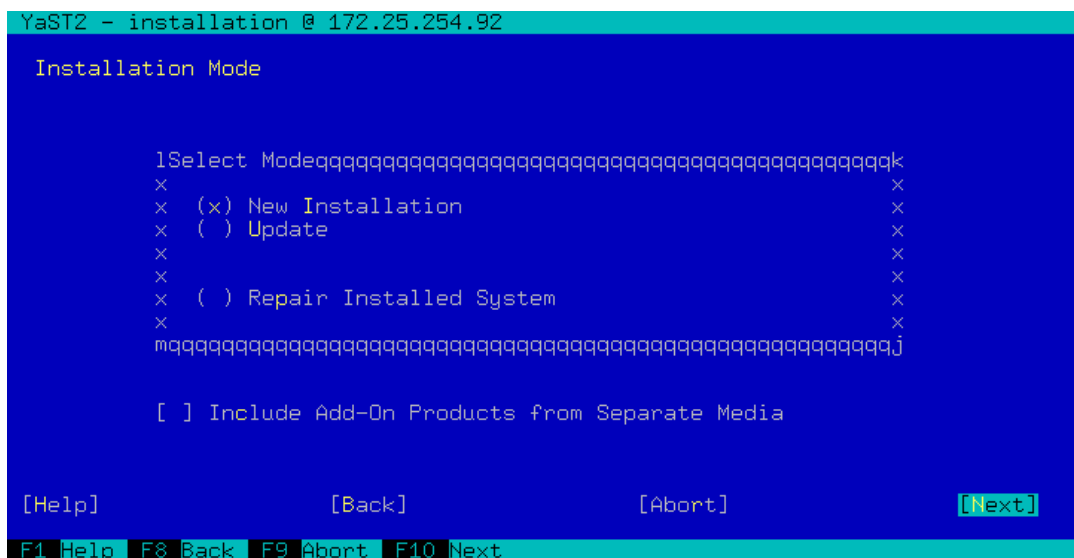
[Help]                  [Back]                  [Abort]                  [Next]

F1 Help F9 Abort F10 Next
```

- ___ 35. Select “**OK**” and press “**Enter**” to activate any device drivers installed on the system.



36. Select “**New Installation**” and **Next**, then press “**Enter**”.



37. Select your **Region** and **Time Zone** by tabbing between fields and using the arrow keys to scroll the lists. Change the **Date and Time** if necessary and tab to **Next**. Press “**Enter**” to input your options.

```

YaST2 - installation @ 172.25.254.92

Clock and Time Zone
lRegionqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqk lTime Zoneqqqqqqqqqqqqqqqqqqqqqqqqqqk
xAustralia x xAlaska (Anchorage) w
xBrazil x xAleutian (Adak) x
xCanada x xArizona (Phoenix) x
xCentral and South America x xBoise x
xEtc w xCentral (Chicago) v
xEurope x xEastern (New York) x
xGlobal x xEast Indiana (Indianapolis) x
xIndian Ocean x xHawaii (Honolulu) x
xMexico x xIndiana (Marengo) x
xPacific x xIndiana (Petersburg) x
xRussia x xIndiana Starke (Knox) x
xUSA v xIndiana (Tell City) x
mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqj lDate and Timeqqqqqqqqqqqqqqqqqqqqqqk
x 2010-10-08 - 15:04:29 x
x [Change...] x
mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqj
[Help] [Back] [Abort] [Next]

F1 Help F8 Back F9 Abort F10 Next

```

___ 38. Accept the default partitioning scheme, press “**Enter**” with the **Install** option selected.

```

YaST2 - installation @ 172.25.254.92

Installation Settings
Click any headline to make changes or use the "Change..." menu below.
lOverviewqqExpertqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqk
xlqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqkx
xxKeyboard Layout wx
xx * English (US) xx
xx vx
xxPartitioning xx
xx * Delete logical volume /dev/VolGroup00/LogVol100 (62.69 GB) xx
xx * Delete logical volume /dev/VolGroup00/LogVol101 (5.56 GB) xx
xx * Remove volume group VolGroup00 xx
xx * Delete partition /dev/sda1 (7.81 MB) xx
xx * Delete partition /dev/sda2 (101.97 MB) xx
xx * Delete partition /dev/sda3 (68.25 GB) xx
xmqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqjx
mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqj [Change....]
[ Help ] [ Back ] [Abort] [Install]

F1 Help F8 Back F9 Abort F10 Install

```

___ 39. Agree to the **License Agreement** for the Agfa font package and press “**Enter**”.

```

YaST2 - installation @ 172.25.254.92

Installtilqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqk
Click any x Confirm Package License: agfa-fonts x w.
lOverviewxlgqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqkx
xlqqqqqqqqqxAGFA MONOTYPE CORPORATION END USER LICENSE AGREEMENTqx
xxKeyboardxx
xxWe recommend that you print this End User Agreement xx
xx * Englxxfor further reference. xx
xx xx xx
xxPartitiox
xxThis Agfa Monotype Corporation End User Agreement xx
xx * Delexx(the "Agreement") becomes a binding contract betweenxx
xx * Delexxyou and Agfa Monotype Corporation (a) when you clickxx
xx * Remoxxon the area marked "ACCEPT LICENSE AGREEMENT", or, xx
xx * Delexx(b) if you are acquiring Font Software on a floppy xx
xx * Delexxdisk, when you open the package in which the font isxx
xx * Delexxcontained. If you do not wish to be bound by the xx
xmqqqqqqqqxmqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqjx
mqqqqqqqqqqx [Help] [I Agree][I Disagree]x
[ Help ] mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqj Install]
F1 Help F8 Back F9 Abort F10 Install

```

___40. Confirm you're ready to begin the **Install** and press “**Enter**”.

```

YaST2 - installation @ 172.25.254.92

Installtilqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqk
Click any x lqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqk x w.
lOverviewqx Confirm Installation x
xlqqqqqqqqqx
xxKeyboardxx All information required for the base installation xx
xx * Englxx is now complete. xx
xx xx xx
xxPartitiox If you continue now, existing partitions on your xx
xx * Delexx hard disk will be deleted or formatted (erasing xx
xx * Delexx any existing data in those partitions) according xx
xx * Remoxx to the installation settings in the previous xx
xx * Delexx dialogs. xx
xx * Delexx Go back and check the settings if you are unsure. xx
xx * Delexx
xmqqqqqqqqxmqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqjx
mqqqqqqqqqqx [Install] [Back] x
[ Help ] mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqj Install]
F1 Help F8 Back F9 Abort F10 Install

```

___41. The disks will be partitioned and formatted.


```

YaST2 - installation @ 172.25.254.92

Perform Installation
lActions performed:qqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqk
xDeleting logical volume /dev/VolGroup00/LogVol100             x
xRemoving volume group VolGroup00                            x
xDeleting partition /dev/sda3                                 x
xDeleting partition /dev/sda2                                 x
xDeleting partition /dev/sda1                                 x
xCreating partition /dev/sda1                                 x
xSetting type of partition /dev/sda1 to 41                    x
xCreating partition /dev/sda2                                 x
xSetting type of partition /dev/sda2 to 82                    x
xCreating partition /dev/sda3                                 x
xFormatting partition /dev/sda2 (2.01 GB) with swap            x
xFormatting partition /dev/sda3 (66.16 GB) with ext3          v
mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqj
Formatting partition /dev/sda3 (66.16 GB) with ext3
99%
Preparing disks...
8%
[Help] [Back] [Abort] [Next]

F1 Help F8 Back F9 Abort F10 Next
  
```

42. The selected packages will then be installed.

```

YaST2 - installation @ 172.25.254.92

Perform Installation
lqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqk
xMedia             x   SizexPackagexTime x
xTotal              x2.33 GBx   1125x   x
xSUSE-Linux-Enterprise-Server-11-SP1 11.1.1-1.152x   x   x
xMedium 1           x2.33 GBx   1125x   x
x                   x
mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqj
lActions performed:qqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqk
xInstalling gvfs-lang-1.4.3-0.3.13.ppc64.rpm (installed size 2.10 MB)  x
xInstalling gtksourceview-lang-2.8.2-0.1.195.ppc64.rpm (installed size 1.x
x^87 MB)                                x
xInstalling gtk2-lang-2.18.9-0.4.1.ppc64.rpm (installed size 19.07 MB)  x
xInstalling gstreamer-0_10-plugins-base-lang-0.10.25-1.1.133.ppc64.rpm (iq
mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqj
Installing gstreamer-0_10-plugins-base-lang-0.10.25-1.1.133.ppc64.rpm (ins
51%
Installing Packages... (Remaining: 2.33 GB)
15%

F1 Help F9 Abort
  
```

43. Once the installation is complete, the system will automatically reboot.

```

[/]> /export/linux
Loading Installation System (1/6) (22220 kB) - 100%
Loading Installation System (2/6) (39932 kB) - 100%
Loading Installation System (3/6) (3677 kB) - 100%
Loading Installation System (4/6) (1320 kB) - 100%
Loading Installation System (5/6) (2644 kB) - 100%
Loading Installation System (6/6) (27 kB) - 100%
Reading Driver Update...

No new Driver Updates found

starting hald... ok
starting syslogd (logging to /dev/tty4)... ok
starting klogd... ok
starting yast...
Probing connected terminal...

Initializing virtual console...

Found a PuTTY terminal on /dev/console (80 columns x 24 lines).
*** Starting YaST2 ***
Restarting system.

```

44. At the SMS menu, select the disk as the boot device.

```

Version EA350_053
SMS 1.7 (c) Copyright IBM Corp. 2000,2008 All rights reserved.
-----
Multiboot
1.  Select Install/Boot Device
2.  Configure Boot Device Order
3.  Multiboot Startup <ON>

-----
Navigation Keys:
                                     X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key:

```

45. Enter and confirm a **password (PSTRAIN2)** for the root user, tab to **Next** and press **“Enter”**.

```
YaST2 - installation @ linux

Password for the System Administrator "root"

Do not forget what you enter here.

Password for root User
*****aaaaaaaaaaaaaaaaaaaaaaaaaaaaa

Confirm Password
*****aaaaaaaaaaaaaaaaaaaaaaaaaaaaa

Test Keyboard Layout
aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa

[Expert Options...]

[Help] [Back] [Abort] [Next]
F1 Help F7 Expert Options... F9 Abort F10 Next
```

46. Press “Enter” to Continue with the Network Card detection.

```
YaST2 - installation @ linux

Initializing

lqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqk
x Confirm Hardware Detection x
x YaST will detect the following hardware: x
Px Network Cards x
x [Continue] [Skip] x
mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqj

[Help] [Back] [Abort] [Next]
F1 Help F8 Back F9 Abort F10 Next
```

47. Set the **hostname** to be used for your installation, uncheck the **Change Hostname via DHCP** box since it isn't used in the lab environment, tab to **Next** and press “Enter”.

```
YaST2 - installation @ linux

Hostname and Domain Name

lHostname and Domain Nameqqqqqqqqqqk
xHostname      Domain Name      x
xBCH1-14-LP3aaa siteaaaaaaaaaaaaax
x[ ] Change Hostname via DHCP    x
x[ ] Assign Hostname to Loopback IPx
mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqj

[Help]          [Back]          [Abort]          [Next]

F1 Help F8 Back F9 Abort F10 Next
```

___48. Press “**Enter**” to use the default configuration for the remainder of the network settings.

```
YaST2 - installation @ linux

Network Configuration
( ) Skip Configuration
(x) Use Following Configuration

lqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqk
xFirewallww
x
x * Firewall is enabled (disable)
x * SSH port is blocked (open)
x
xNetwork Interfaces
x
x * Ethernet Network Card
x   Configured with address 172.25.254.92
x
xVNC Remote Administration
mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqj
[Change....]

[Help]          [Back]          [Change....]    [Abort]          [Next]

F1 Help F8 Back F9 Abort
```

___49. Select “**No**” to skip the Internet connection test, tab to **Next** and press “**Enter**”.

```
YaST2 - installation @ linux

Test Internet Connection
  To validate your Internet access,
  activate the test procedure.

  The following steps will be performed:

  - Download latest release notes
  - Check for latest updates

lSelect:qqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqk
x ( ) Yes, Test Connection to the Internet Via                               x
x                                                                           x
x   Ethernet Network Card           [Change Device]                       x
x   Network Card - 172.25.254.92                                         x
x                                                                           x
x (x) No, Skip This Test                                                 x
mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqj

[Help]                [Back]                [Abort]                [Next]

F1 Help F8 Back F9 Abort F10 Next
```

___50. Select **Next** and press “**Enter**” to configure the Certificate Authority.

```
YaST2 - installation @ linux

Network Services Configuration

( ) Skip Configuration
(x) Use Following Configuration

lqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqk
xCA Management                                                             w
x                                                                           x
xCreating default CA and certificate.                                       x
xWith higher security requirements, you should change the password.       x
x                                                                           x
x * CA Name: YaST_Default_CA                                               x
x * Common Name: YaST Default CA (BCH1-14-LP3)                             x
x * Server Name: BCH1-14-LP3.site                                         x
x * Country: US                                                            x
x * Password: [root password]                                             x
x * E-Mail: postmaster@site                                              x
mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqj
[Change....]

[Help]                [Back]                [Abort]                [Next]

F1 Help F8 Back F9 Abort
```

___51. Select **Local** authentication, tab to **Next** and press “**Enter**”.

```

YaST2 - installation @ linux

User Authentication Method

      |Authentication Method|
      x
      x(x) Local (/etc/passwd)
      x [ ] Read User Data from a Previous Installation
      x [Choose]
      x( ) LDAP
      x( ) NIS
      x( ) Windows Domain
      x
      |m|
      [ ] Set Up Kerberos Authentication

[Help]          [Back]          [Abort]          [Next]

F1 Help F8 Back F9 Abort F10 Next

```

- ___ 52. Create a local **user ID (PSTRAIN2)** and **password (PSTRAIN2)**, tab to **Next** and press “**Enter**”.

```

YaST2 - installation @ linux

New Local User

      User's Full Name
      mikeaaaaaaaaaaaaa
      Username
      mikeaaaaaaaaaaaaa

      Password
      *****aaaaaaaaa
      Confirm Password
      *****aaaaaaaaa

      [ ] Receive System Mail
      [ ] Automatic Login

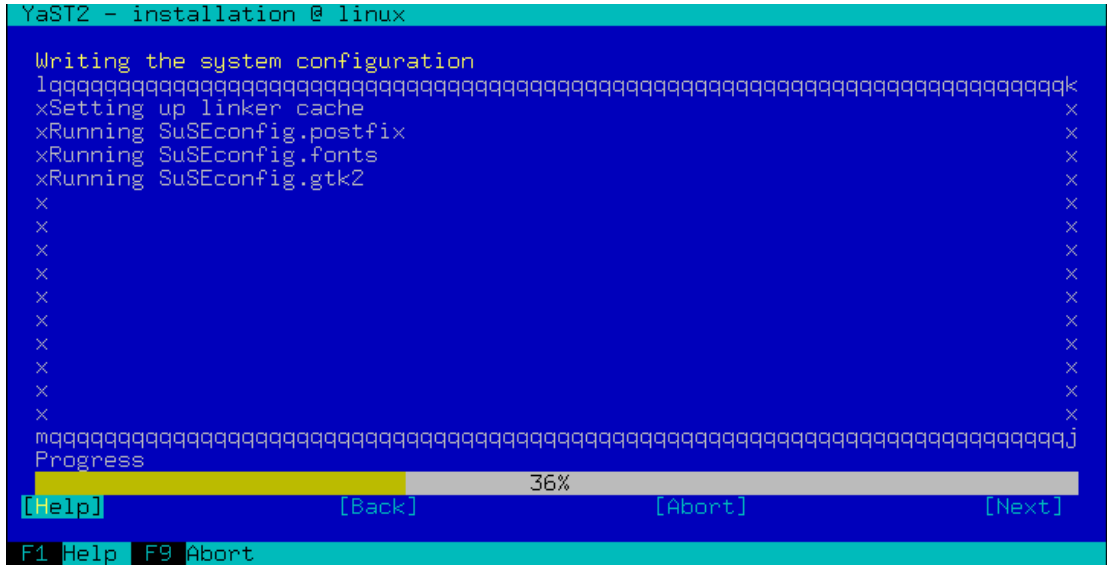
      [User Management]

[Help]          [Back]          [Abort]          [Next]

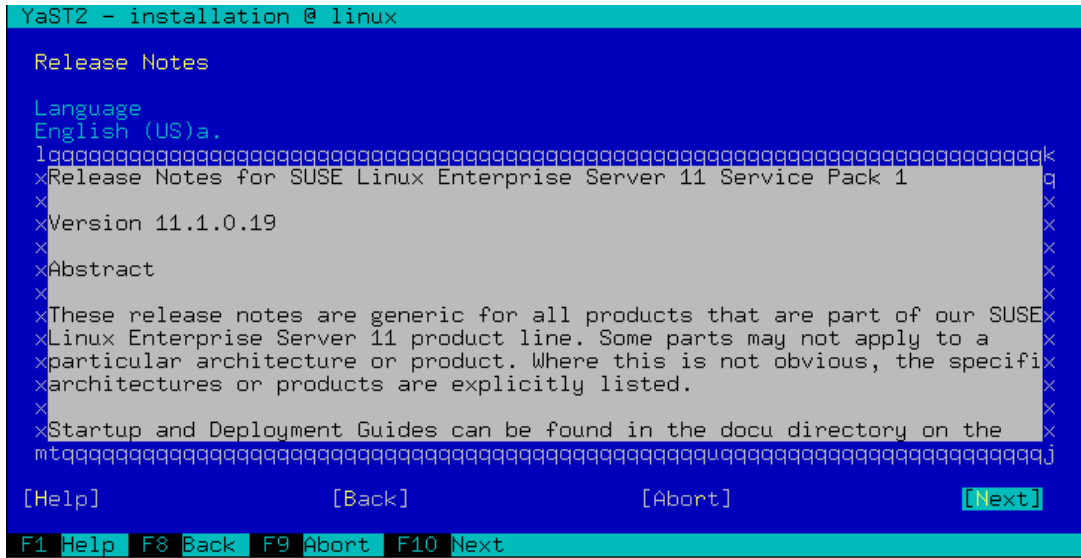
F1 Help F3 User Management F8 Back F9 Abort F10 Next

```

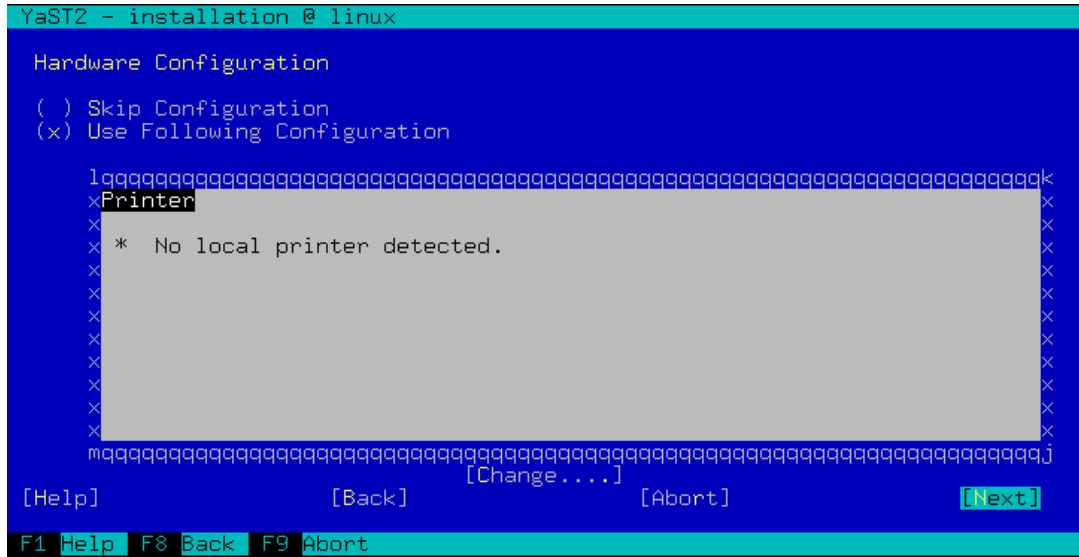
- ___ 53. Your configuration choices will then be written to disk and appropriate processes and daemons started.



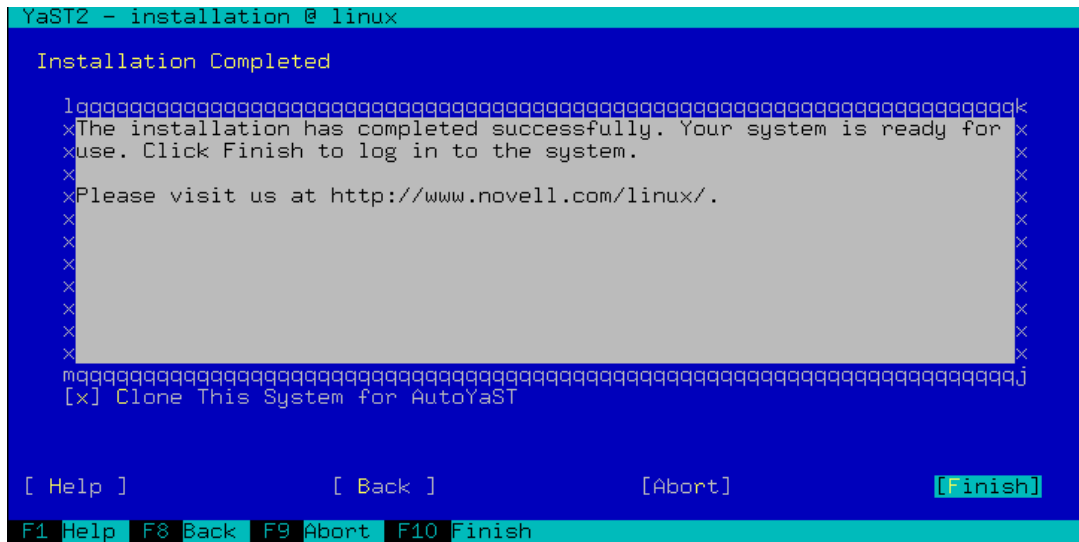
- ____ 54. You may review the Release Notes, then tab to **Next** and press “**Enter**” to continue.



- ____ 55. Peripheral hardware is then detected and configured. Tab to **Next** and press “**Enter**” when complete.



- ___56. Uncheck the **Clone This System for AutoYaST** box as you won't need it here. Tab to **Finish** and press “**Enter**”.



- ___57. The system will complete the boot process and you will be able to login. This completes the SUSE installation lab.


```
ServiceLog ID:      4
Log Timestamp:     Fri Oct  8 20:40:56 2010
Update Timestamp:  Fri Oct  8 19:40:56 2010
Notify:           0 (EVENT)
Command:          /etc/ppc64-diag/ppc64_diag_migrate
Method:           3 (Parameter/Value Pairs via stdin)
Match:            reftype="#MIGRATE" and serviceable=0

Starting rtas_errd (platform error handling) daemon:      done
Starting mail service (Postfix)                          done
Starting CRON daemon                                     done
Starting smartd                                          done
Starting Firewall Initialization (phase 2 of 2)          done
Master Resource Control: runlevel 3 has been              reached
Skipped services in runlevel 3:                          nfs smbfs splash

Welcome to SUSE Linux Enterprise Server 11 SP1 (ppc64) - Kernel 2.6.32.12-0.7-p
pc64 (console).

BCH1-14-LP3 login: █
```

The SUSE installation is complete.

Addendum – Brad/Bob

How to Tips

The Addendum contains “How to Tips” which will be instrumental in working with the POWER processor-based Blades and the BladeCenter.

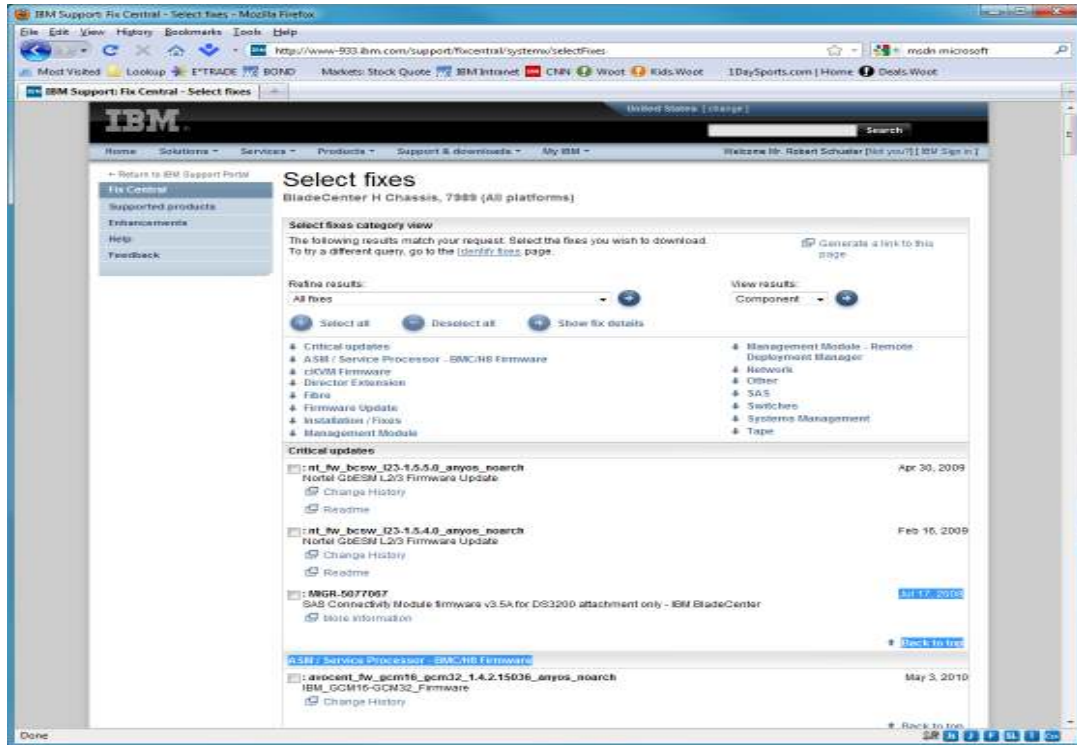
A. Support and Downloads

Below are screen shots of the IBM Support Portal that is used for updating various BladeCenter Chassis, Blades, and Options installed in the Chassis.

www.ibm.com/support



- Select BladeCenter



- Select from the list of available BladeCenter Chassis and Select OS if desired.

B. Firmware Updates - Adapter

Download the firmware for the adapter you are using and copy it to the /etc/microcode directory. Complete the following steps to update the adapter firmware:

- ___ 1. To update the firmware on your adapter, type “diag” and select “Enter”.
- ___ 2. Select “Task Selection” and press “Enter”.

```
172.25.254.25 - PuTTY
FUNCTION SELECTION 801002

Move cursor to selection, then press Enter.

Diagnostic Routines
  This selection will test the machine hardware. Wrap plugs and
  other advanced functions will not be used.
Advanced Diagnostics Routines
  This selection will test the machine hardware. Wrap plugs and
  other advanced functions will be used.
Task Selection (Diagnostics, Advanced Diagnostics, Service Aids, etc.)
  This selection will list the tasks supported by these procedures.
  Once a task is selected, a resource menu may be presented showing
  all resources supported by the task.
Resource Selection
  This selection will list the resources in the system that are supported
  by these procedures. Once a resource is selected, a task menu will
  be presented showing all tasks that can be run on the resource(s).

F1=Help          F10=Exit        F3=Previous Menu
```

3. Select “**Microcode Tasks**” and press “**Enter**”.

```
172.25.254.25 - PuTTY
TASKS SELECTION LIST 801004

From the list below, select a task by moving the cursor to
the task and pressing 'Enter'.
To list the resources for the task highlighted, press 'List'.

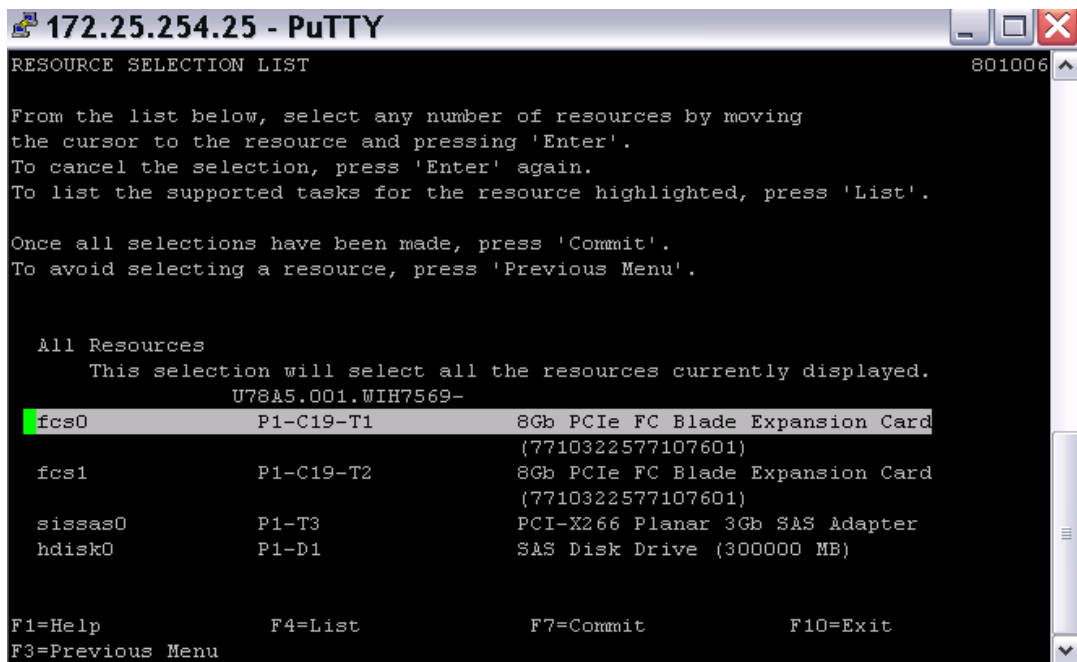
[MORE...23]
  Display USB Devices
  Display or Change Bootlist
  Format Media
  Gather System Information
  Hot Plug Task
  Identify and Attention Indicators
  Load ISO Image to USB Mass Storage Device
  Log Repair Action
  Microcode Tasks
  RAID Array Manager
  Update Disk Based Diagnostics
  Update and Manage System Flash
[BOTTOM]

F1=Help          F4=List          F10=Exit        Enter
F3=Previous Menu
```

4. Select “**Download Microcode**” and press “**Enter**”.



5. Select “**Download Microcode**” and press “**Enter**”. Select the appropriate resources and press “**p7=commit**”.



6. Select the appropriate firmware level and press “**Enter**” to update the firmware.

```
172.25.254.25 - PuTTY
INSTALL MICROCODE 802116
fcs0      8Gb PCIe FC Blade Expansion Card (7710322577107601)

The current microcode level for fcs0
is 0314050306.

Available levels to install are listed below.
Select the microcode level to be installed.

Use Help for explanations of "M", "L", "C"
and "P".

Make selection, use Enter to continue.

[P] 0309050201

F1=Help      F10=Exit    F3=Previous Menu
```

7. A message will appear when the update is complete.

```
172.25.254.25 - PuTTY
INSTALL MICROCODE 802118
fcs0      8Gb PCIe FC Blade Expansion Card (7710322577107601)

Installation of the microcode has completed successfully
on fcs0 and fcs1.
The current microcode level is 0309050201.
Please run diagnostics on the resources fcs0 and fcs1 to
ensure that the adapter is functioning properly.

Use Enter to continue.

F3=Cancel      F10=Exit    Enter
```

C. Troubleshooting SOL

If SOL is *not Ready*, carry out the following steps to troubleshoot SOL:

1. Verify the Blade is powered on first then disable and then enable SOL. Under **Blade Tasks**, select “**Serial Over LAN**”, then the “**Serial Over LAN Status**”

link, then select the correct blade. Now, select “**Disable Serial Over LAN**” and press “**Save**”. Then select the correct blade, then “**Enable Serial Over LAN**” and press “**Save**”.

- ____ 2. Verify SOL status. If it is still not *Ready*, restart the Blade System Management Processor (BSMP) and restart the blade server. Under **Blade Tasks** select **Power/Restart**, select the correct blade, then “**Restart Blade Systems Management Processor**”. Select the same blade then “**Restart Blade**”.
- ____ 3. Verify SOL status. If it is still not *Ready*, restart the Management Module. Under **MM Control**, select “**Restart MM**”. Open a new browser interface and connect to the Management Module.
- ____ 4. Verify SOL Status. If it is still not *Ready*, verify the blade port is active on the Switch Module.

Note: SOL will never be *Ready* if there is not a supported I/O Module (i.e., Ethernet Switch module or an Intelligent Copper Pass-thru Module) in slot 1 of the BladeCenter chassis.