

**FOR INTERNAL USE**

**CIS MANUAL - CONFIGURING SAN BOOT ON HP  
SERVERS**

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## List of changes

Version	Date	Description	Author(s)
1.0	24-Sep-2012	Created new document from NLW-OC7-0029	Nicholas Thornhill
2.0	11 April 2013	Updated BIOS settings section	Piet Mollen
3.0	12-Feb-2014	Updated BIOS settings section with Date and Time setting	Tymen Abels
4.0	06-Feb-2015	Reviewed document, no changes	Guido Steeghs
5.0	01-Mar-2016	Added BL460c Gen9 blade settings	Guido Steeghs
6.0	14-Jun-2016	Added BL460c Gen9 firmware upgrade	Guido Steeghs
7.0	28-Jun-2016	Updated BIOS settings Gen9	Guido Steeghs
8.0	25-Jul-2016	Updated with Server Profile Issue and Solution	Jacco Oosterwijk
9.0	10-Aug-2016	Updated Boot from SAN for Gen9	Guido Steeghs
10.0	16-Jan-2017	Added BIOS settings for correct Boot from SAN for Gen9	Patrick van Lierop
11.0	07-May-2018	Reviewed document, minor changes	Guido Steeghs
12.0	16-July-2018	Changed Time Format to Local Time	Marco Martens

## 1 Introduction

This document describes the configuration of SAN boot on HP Servers. This is necessary for deploying physical Windows and Linux Servers.

ESXi servers do not boot from SAN and should not be configured with this manual.

### 1.1 Prerequisites

The following prerequisites apply:

- A server profile should be configured via Virtual connect in case a HP BL460c Gen8 or HP BL460c Gen9 blade is used
- A boot LUN must be present on the server

### 1.2 Target audience

- CIS system engineers
- CIS SME design team
- All Atos colleagues who require information on configuring an HP blade server for SAN boot

### 1.3 Related documents

#### Related documents

[MSW-S01-0005 How to connect to the ILO of an HP Blade Server](#)

[MSW-S01-0024 CIS - Create-Modify-Delete VLAN configuration Physical blades](#)

[HPE Advisory about this issue \(Internet\)](#)

[MSW-S01-0027 CIS Virtual Reseat Dell-HP Server](#)

## 2 Server profile issues

### 2.1 Prevent / Solve Server Profile issues (must read!)

If the power is suddenly removed, the momentary power button pressed, or the iLO virtual power button pressed on an HP ProLiant c-Class server blade while the server is busy writing to the Non-Volatile RAM (NVRAM) store, then information may be incorrectly reported and become unusable for assigned settings, such as Virtual Connect (VC) profile operations or serial numbers. The NVRAM store is used to preserve environmental information between subsequent server boots and is used exclusively by Integrated Lights-Out 4 (iLO 4), BIOS and Virtual Connect Manager (VCM) to store environmental information such as Boot Order, Virtual Serial Number, Virtual UUID, Boot configuration, IPL devices, etc.

**Whenever this issue occurs, ALL server profile actions to assign, re-assign or un-assign will fail on every attempt !!**

The incorrect NVRAM store information will be detected in different ways for different server blades (see the following chapters)

The Complete HPE advisory can be found here:

[Non-Volatile RAM Storage May Contain Unusable Information and VC Profile Operations May Fail Due to Sudden Power Interruption](#)

#### 2.1.1 Recommendations to avoid this issue

Never use any of the following “forced” methods to power off the server:

- Using the “**Press and Hold**” option in iLO 4, Onboard Administrator and Virtual Connect web interfaces
- Specifying the “**force**” option when using iLO 4, Onboard Administrator and Virtual Connect CLI (Command Line Interface) to power off the server. The “**force**” option is equivalent to “**Press and Hold**”
- Continuously pressing the (physical) power button on the front of the server.

**ALWAYS** use the “**Momentary Press**” option to power off the server when using iLO 4, Onboard Administrator or Virtual Connect web interfaces.

The “**Momentary Press**” is safer for powering off the server, because it holds the server power until the (server profile) operation is complete.

*\*\*\* Note: The “**Momentary Press**” may fail if it occurs very early in the boot process or the server has stopped responding. The server will remain powered on if the “**Momentary Press**” fails. In this case, retry the “**Momentary Press**” option until the server is actually powered off \*\*\**

*\*\*\* Note2: “**Momentary Press**” can also cause a NVRAM store corruption on ProLiant Gen8 servers but the probability is much lower than using a “**Press and Hold**” option. The “**Momentary Press**” will NOT cause a NVRAM store corruption issue on ProLiant Gen9 server blades \*\*\**

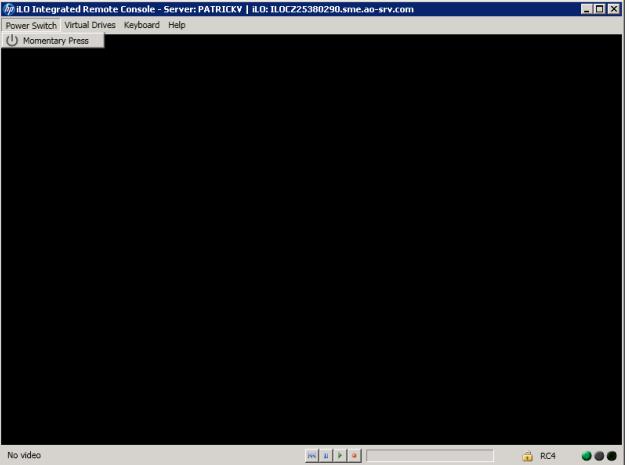
## 2.1.2 How to solve NVRAM store corruption on Gen8 blades

Reseat by performing a virtual reseat using the following Work Instruction (HP server):  
[MSW-S01-0027 CIS Virtual Reseat Dell-HP Server](#)

Check the System Log to make sure the following 2 messages are not reported anymore for the latest operations:

- Profile state failed, because VCM could not configure environment settings on the server.*
- To correct this issue, reseat the server physically or issue the OA CLI command reset server #. Then, re-apply the profile. If issue still persists, clear the server BIOS settings, and re-apply the profile*

The following steps are only necessary if the reseat of the server was not successful:

Un-assign the server profile if there still is a profile assigned to the server bay.	<b>When there is no profile assigned, create/assign a new profile to the empty bay and un-assign it again.</b>
Make a connection to the correct iLO through HP SIM server <b>NLSMEMS041</b> or directly to the iLO IP of the blade.	See " <a href="#">MSW-S01-0005 How to connect to the ILO of an HP Blade Server</a> "
Use the virtual power button to turn on the blade.  Press " <b>Momentary Press</b> "	
Press " <b>F9 Setup</b> " to enter the BIOS	

<p>Select “<b>System Default Options</b>” and press enter</p> <p>Select “<b>Restore Default System Settings</b>”</p>	<p>ROM-Based Setup Utility, Version 3.00 Copyright 1982, 2013 Hewlett-Packard Development Company, L.P.</p> <p>Sy Po PC Sta Boot Date and Time Server Security BIOS Serial Console &amp; EMS Server Asset Text Advanced Options System Default Options Utility Language</p> <p>HP ProLiant BL460c Gen8 S/N: UCX0001POE Product ID: 670658-S01 IP BIOS I31 12/20/2013 Backup Version 01/29/2014 Bootblock 03/05/2013 Power Management Controller - 3.3 32768MB Memory Configured Proc 1:Intel 2.00GHz,15MB L3 Cache Proc 2:Intel 2.00GHz,15MB L3 Cache</p>
<p>Press enter on the Warning screen</p>	<p>ROM-Based Setup Utility, Version 3.00 Copyright 1982, 2014 Hewlett-Packard Development Company, L.P.</p> <p>Sy Po PC Sta Boot Date and Time Server Security</p> <p>Warning: Restoring Default System Settings will reset all configuration settings to their default values. (Yes, Select to Restore) will immediately reboot.</p> <p>HP ProLiant BL460c Gen8 S/N: CZJ219030C Product ID: 641016-B21 IP BIOS I31 11/02/2014 Backup Version 08/02/2014 Bootblock 08/30/2011 Power Management Controller - 3.3 98304MB Memory Configured</p>
<p>Select “<b>Yes, Select to Restore</b>” and press Enter</p> <p>The server will restart automatically.</p>	<p>ROM-Based Setup Utility, Version 3.00 Copyright 1982, 2014 Hewlett-Packard Development Company, L.P.</p> <p>Sy Po PC Sta Boot Date and Time Server Security</p> <p>No, Abort Restore Yes, Select to Restore</p> <p>HP ProLiant BL460c Gen8 S/N: CZJ219030C Product ID: 641016-B21 IP BIOS I31 11/02/2014 Backup Version 08/02/2014 Bootblock 08/30/2011 Power Management Controller - 3.3 98304MB Memory Configured</p>
<p>After the server is booting again – Power it down using the “<b>Momentary Press</b>” option</p>	<p>iLO Integrated Remote Console - iLO:IL0CZJ219030C.smt.ao-srv.com</p> <p>Power Switch Virtual Drives Keyboard Help</p> <p>Momentary Press</p> <p>Press and Hold</p> <p>Cold Boot</p> <p>Reset</p> <p>Initialization, please wait... Progress: 40%</p> <p>Early Processor Initialization Processing Log Information Memory and QPI Link Initialization Start Memory and QPI Link Initialization Complete Early Processor Cache Initialization Early PCI Initialization Start Early PCI Initialization Complete</p>
<p>(Re)-assign the profile to the server bay. This will clear out the profile configuration on the server</p>	<p><a href="#">MSW-S01-0024 CIS - Create-Modify-Delete VLAN configuration Physical blades</a></p>

### 2.1.3 How to solve NVRAM store corruption on Gen9 blades

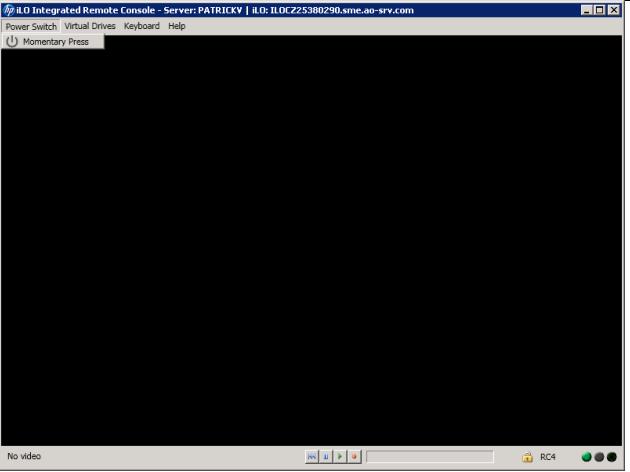
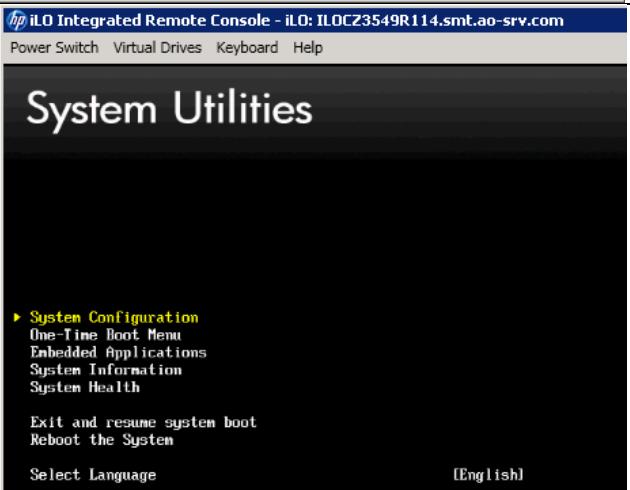
Reseat the server by performing a virtual reseat using the following Work Instruction (HP server):  
[MSW-S01-0027 CIS Virtual Reseat Dell-HP Server](#)

Check the System Log to make sure the following 2 messages are not reported anymore for the latest operations:

- *Profile state failed, because VCM could not configure environment settings on the server.*
- *To correct this issue, reseat the server physically or issue the OA CLI command reset server #. Then, re-apply the profile. If issue still persists, clear the server BIOS settings, and re-apply the profile.*

The following steps are only necessary if the reseat of the server was not successful:

<p>Un-assign the server profile if there still is a profile assigned to the server bay.</p>	<p><b>When there is no profile assigned, create/assign a new profile to the empty bay and un-assign it again.</b></p>
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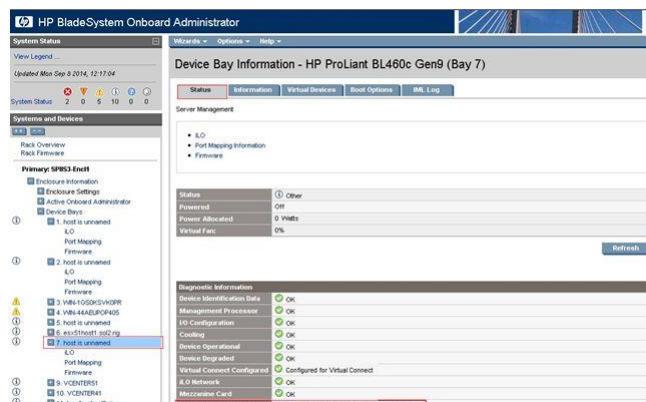
<p>Make a connection to the correct iLO through HP SIM server <b>NLSMEMS041</b> or directly to the iLO IP of the blade.</p>	<p>See "<a href="#">MSW-S01-0005 How to connect to the ILO of an HP Blade Server</a>"</p>
<p>Use the virtual power button to turn on the blade.</p> <p>Press "<b>Momentary Press</b>"</p>	
<p>Press "<b>F9 Setup</b>" to enter the BIOS</p>	
<p>Select "<b>System Configuration</b>" and press enter</p>	

<p>Select <b>"BIOS/Platform Configuration (RBSU)"</b></p>	
<p>Select "<b>System Default Options</b>"</p>	
<p>Select "<b>Restore Default System Settings</b>" and press Enter  The server will restart automatically.</p>	
<p>Press enter when the warning message appears</p>	<div style="background-color: red; color: white; padding: 5px; text-align: center;"> <b>Restoring default system settings resets all configuration settings to their default values.</b> </div>
<p>Select "<b>Yes, restore the default settings.</b>" And press enter</p>	<div style="background-color: black; color: yellow; padding: 5px; text-align: center;"> <b>No, cancel the restore procedure. Yes, restore the default settings.</b> </div>
<p>press <b>Enter (Yes)</b>  The server will restart automatically.</p>	<div style="background-color: blue; color: white; padding: 5px; text-align: center;"> <b>Do you want to reboot the system? Enter (Yes) / ESC (No)</b> </div>

<p>After the server is booting again – Power it down using the <b>"Momentary Press"</b> option</p>	<p>iLO Integrated Remote Console - iLO: il0c23549R114.smt.ao-srv.com</p> <p>Power Switch   Virtual Drives   Keyboard   Help</p> <p><input type="button" value="Momentary Press"/> System BIOS 136 v1.52 (09/24/2015)  <input type="button" value="Press and Hold"/> 1982 - 2015 Hewlett-Packard Development Company, L.P.  <input type="button" value="Cold Boot"/> initialization, please wait...  <input type="button" value="Reset"/></p> <p>Progress: 27%</p> <p>System Chipset Initialization  QPI Link Initialization - Start  QPI Link Initialization - Complete  Early Processor Initialization  Memory Initialization - Start  Memory Initialization - Complete</p> <p>iLO 4 IPv4: 0.0.0.0  iLO 4 IPv6: 0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0</p>
<p>(Re)-assign the profile to the server bay. This will clear out the profile configuration on the server</p>	<p><a href="#">MSW-S01-0024 CIS - Create-Modify-Delete VLAN configuration Physical blades</a></p>

## 2.1.4 Blade Server unable to power on (SOLUTION)

There are some cases in which power on will be denied due to the previous failure of the profile assignment operation. This can be verified by referring to the Status tab of the device bay in the Onboard Administrator interface:



In the **Diagnostics Information** behind **Power Denied VC Profile** there will be a message saying:  
**"Device power delayed until VC profile is applied"**

The power on denial can be released by any of the following methods:

- Physically remove the server (using a request to Datacenter Management)
- Un-assign the profile if there is a profile currently assigned to the server bay. Otherwise, assign a new profile to the empty bay and un-assign it back
- Insert the server blade into the bay and power the server on (Datacenter Management)

After the server is powered on again – follow the procedure in [chapter 2.1.3](#)



### 3 Upgrade firmware

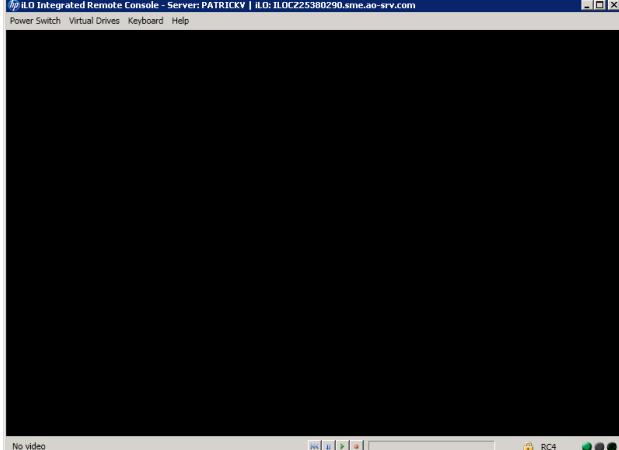
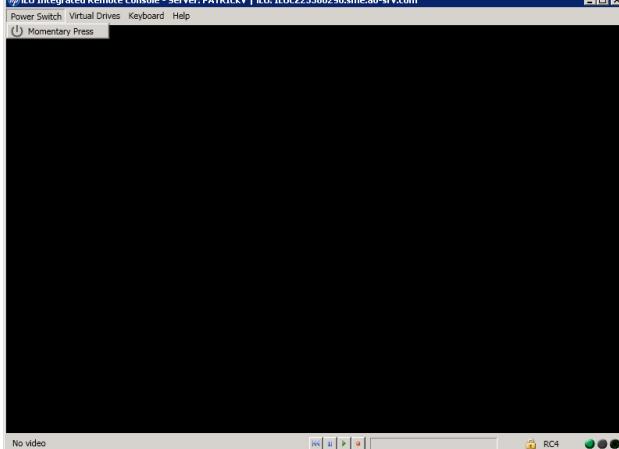
This chapter can be skipped, if the server is updated to the most recent PLM version, with regard to BIOS and NIC Firmware, if you are not sure, please update the firmware

<p>Make a connection to the correct iLO through HP SIM server <b>NLSMEMS041</b> or directly to the iLO IP of the blade.</p> <p>See "<a href="#">MSW-S01-0005 How to connect to the ILO of an HP Blade Server</a>"</p>																																																									
<p>Open the iLO Integrated Remote Console to the correct blade</p>																																																									
<p>Once the Remote Console is started, select <b>Virtual Drives</b> and select the checkbox <b>Image File CD-ROM/DVD</b></p>																																																									
<p>Browse to the FW image directory within the Sources folder, as follows:      \\nlsmems050\CAF-FirmwareISO</p>	<table border="1"> <thead> <tr> <th>Name</th> <th>Date modified</th> <th>Type</th> <th>Size</th> </tr> </thead> <tbody> <tr> <td>_Archive</td> <td>6/8/2016 9:29 AM</td> <td>File folder</td> <td></td> </tr> <tr> <td>aspnet_client</td> <td>12/12/2014 4:06 PM</td> <td>File folder</td> <td></td> </tr> <tr> <td>Tmp</td> <td>2/17/2016 10:46 AM</td> <td>File folder</td> <td></td> </tr> <tr> <td>ESXi-FWUpgrade-PLM2.9.7.5-Dell.iso</td> <td>2/5/2015 3:12 PM</td> <td>ISO File</td> <td>253,824 KB</td> </tr> <tr> <td>ESXi-FWUpgrade-PLM2.9.7.5-HP.iso</td> <td>6/16/2016 9:12 AM</td> <td>ISO File</td> <td>526,038 KB</td> </tr> <tr> <td>hpoa422.bin</td> <td>7/2/2014 1:48 PM</td> <td>BIN File</td> <td>14,545 KB</td> </tr> <tr> <td>hpoa430.bin</td> <td>12/1/2014 2:59 PM</td> <td>BIN File</td> <td>14,657 KB</td> </tr> <tr> <td>hpoa450.bin</td> <td>10/20/2015 11:13 AM</td> <td>BIN File</td> <td>14,676 KB</td> </tr> <tr> <td>ilo4_200.bin</td> <td>11/7/2014 8:08 PM</td> <td>BIN File</td> <td>16,391 KB</td> </tr> <tr> <td>Linux-FWUpgrade-PLM2.9.7.5-HP.iso</td> <td>6/16/2016 9:12 AM</td> <td>ISO File</td> <td>526,038 KB</td> </tr> <tr> <td>linuxIso.iso</td> <td>2/5/2015 3:12 PM</td> <td>ISO File</td> <td>253,824 KB</td> </tr> <tr> <td>Network_Firmware_23R03_WN64_7.8.53.EXE</td> <td>1/15/2015 1:52 PM</td> <td>Application</td> <td>21,101 KB</td> </tr> <tr> <td>Network_Firmware_P32M4_WN32_7.6.15.EXE</td> <td>1/15/2015 3:04 PM</td> <td>Application</td> <td>14,785 KB</td> </tr> </tbody> </table>	Name	Date modified	Type	Size	_Archive	6/8/2016 9:29 AM	File folder		aspnet_client	12/12/2014 4:06 PM	File folder		Tmp	2/17/2016 10:46 AM	File folder		ESXi-FWUpgrade-PLM2.9.7.5-Dell.iso	2/5/2015 3:12 PM	ISO File	253,824 KB	ESXi-FWUpgrade-PLM2.9.7.5-HP.iso	6/16/2016 9:12 AM	ISO File	526,038 KB	hpoa422.bin	7/2/2014 1:48 PM	BIN File	14,545 KB	hpoa430.bin	12/1/2014 2:59 PM	BIN File	14,657 KB	hpoa450.bin	10/20/2015 11:13 AM	BIN File	14,676 KB	ilo4_200.bin	11/7/2014 8:08 PM	BIN File	16,391 KB	Linux-FWUpgrade-PLM2.9.7.5-HP.iso	6/16/2016 9:12 AM	ISO File	526,038 KB	linuxIso.iso	2/5/2015 3:12 PM	ISO File	253,824 KB	Network_Firmware_23R03_WN64_7.8.53.EXE	1/15/2015 1:52 PM	Application	21,101 KB	Network_Firmware_P32M4_WN32_7.6.15.EXE	1/15/2015 3:04 PM	Application	14,785 KB
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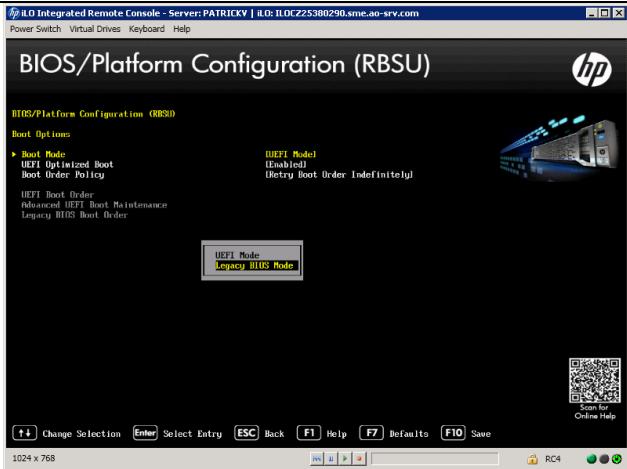
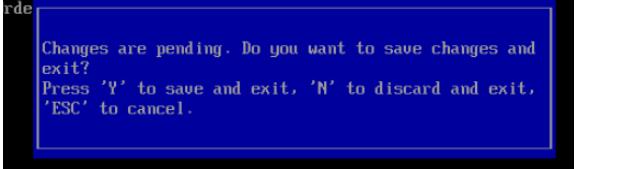
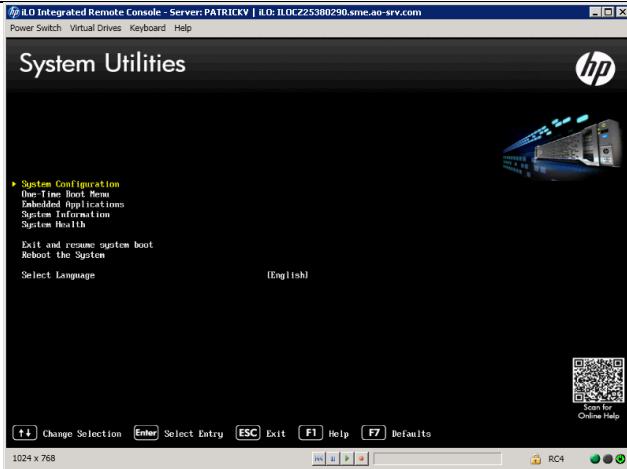
## 4 Configure SAN Boot on HP BL 460c Gen9 Servers

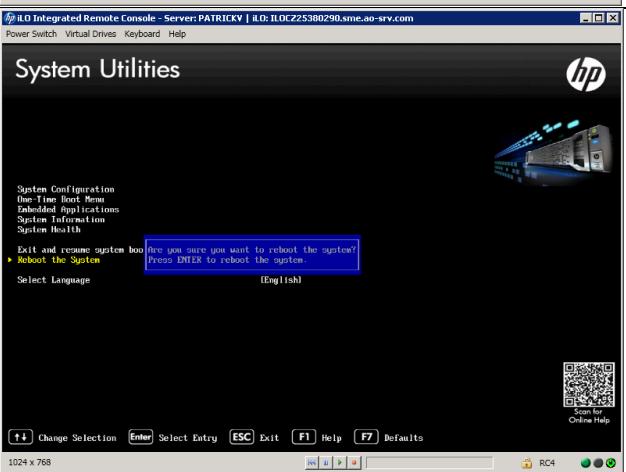
### 4.1 Change BIOS to Legacy mode

Make a connection to the correct iLO through HP SIM server <b>NLSMEMS041</b> or directly to the iLO IP of the blade.  See " <a href="#">MSW-S01-0005 How to connect to the ILO of an HP Blade Server</a> "	
Open the iLO Integrated Remote Console to the correct blade	
Use the virtual power button to turn on the blade.  Press " <b>Momentary Press</b> "	

<p>The blade starts to boot, Press “<b>F9</b> System Utilities”</p>	
<p>Select “<b>System Configuration</b>” and press Enter</p>	
<p>Select “<b>BIOS/Platform Configuration (RBSU)</b>” and press Enter</p>	

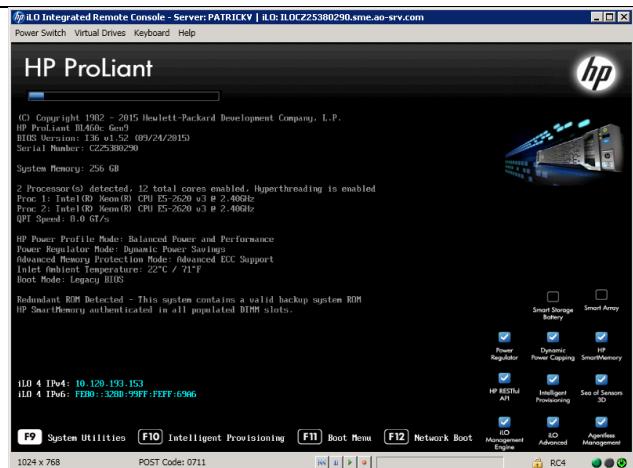
<p>Go to "<b>Boot Options</b>" and press Enter</p>	
<p>Select "<b>Boot mode</b>" and press Enter</p>	
<p>Press Enter when the pop-up message screen appears</p>	

Select “ <b>Legacy BIOS Mode</b> ” and press Enter	
Press Enter when another pop-up message appears	
Press <b>F10</b> and press <b>Y</b> followed by Enter	
Press “ <b>Esc</b> ” 3x, until the “ <b>System Utilities</b> ” menu is visible again	

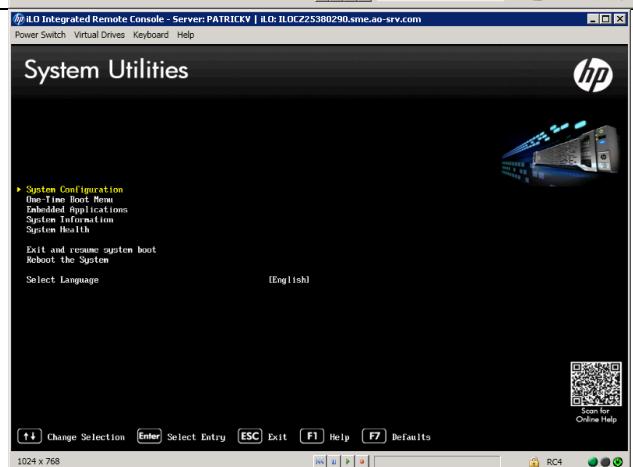
<b>Select "Reboot the System"</b>	
Press <b>Enter</b> to reboot the server when the pop-up message appears	

## 4.2 BIOS options

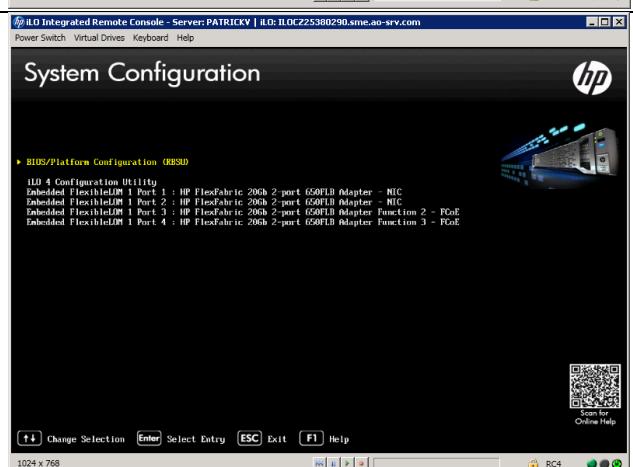
The blade restarts,  
Press "F9 System Utilities"

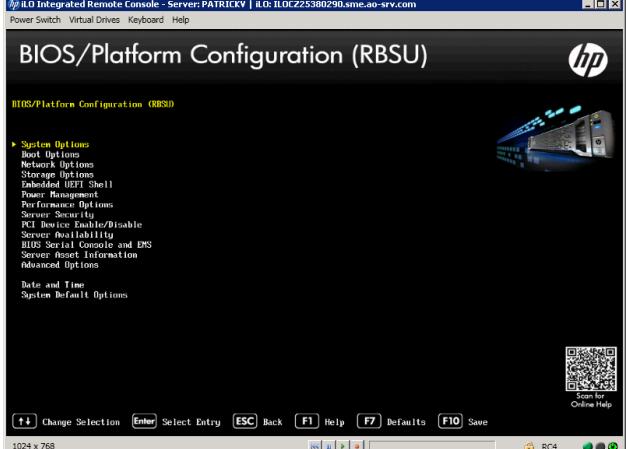
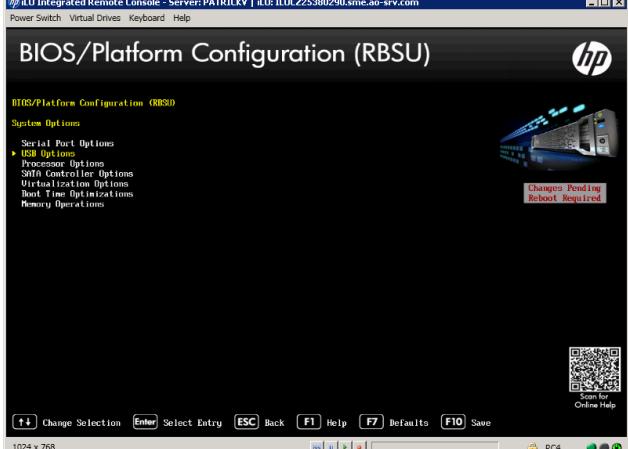
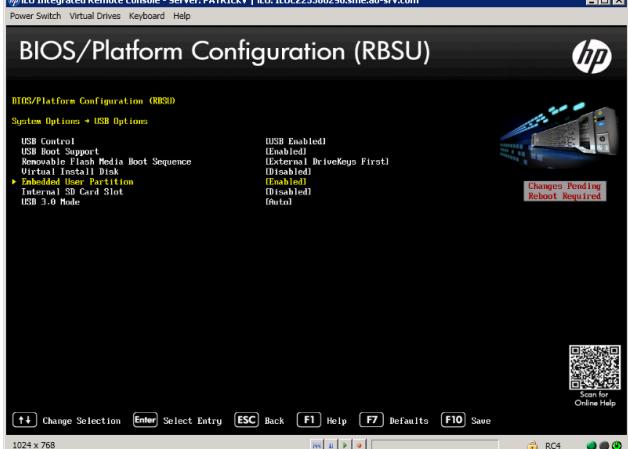


Select "System Configuration" and  
press Enter



Select  
"BIOS/Platform Configuration  
(RBSU)" and press Enter



Select "System Options" and press Enter	
Goto "USB Options" and press Enter	
Goto "Embedded User Partition" and press Enter	

<p>Select “<b>Disabled</b>” and press Enter</p>	<p><b>BIOS/Platform Configuration (RBSU)</b></p> <p>System Options + USB Options</p> <table border="0"> <tr> <td>USB Control</td> <td>USB Enabled</td> </tr> <tr> <td>USB Boot Support</td> <td>(Enabled)</td> </tr> <tr> <td>Removable Flash Media Boot Sequence</td> <td>(External DriveKeys First)</td> </tr> <tr> <td>Virtual Install Disk</td> <td>(Enabled)</td> </tr> <tr> <td>► Embedded User Partition</td> <td>(Enabled)</td> </tr> <tr> <td><b>Internal SD Card Slot</b></td> <td><b>Disabled</b></td> </tr> <tr> <td>USB 3.0 Mode</td> <td>(Enabled)</td> </tr> </table> <p>Changes Pending Reboot Required</p>	USB Control	USB Enabled	USB Boot Support	(Enabled)	Removable Flash Media Boot Sequence	(External DriveKeys First)	Virtual Install Disk	(Enabled)	► Embedded User Partition	(Enabled)	<b>Internal SD Card Slot</b>	<b>Disabled</b>	USB 3.0 Mode	(Enabled)
USB Control	USB Enabled														
USB Boot Support	(Enabled)														
Removable Flash Media Boot Sequence	(External DriveKeys First)														
Virtual Install Disk	(Enabled)														
► Embedded User Partition	(Enabled)														
<b>Internal SD Card Slot</b>	<b>Disabled</b>														
USB 3.0 Mode	(Enabled)														
<p>Go to “<b>Internal SD Card Slot</b>” and press Enter</p>	<p><b>BIOS/Platform Configuration (RBSU)</b></p> <p>System Options + USB Options</p> <table border="0"> <tr> <td>USB Control</td> <td>USB Enabled</td> </tr> <tr> <td>USB Boot Support</td> <td>(Enabled)</td> </tr> <tr> <td>Removable Flash Media Boot Sequence</td> <td>(External DriveKeys First)</td> </tr> <tr> <td>Virtual Install Disk</td> <td>(Enabled)</td> </tr> <tr> <td>► Embedded User Partition</td> <td>(Enabled)</td> </tr> <tr> <td><b>Internal SD Card Slot</b></td> <td><b>Enabled</b></td> </tr> <tr> <td>USB 3.0 Mode</td> <td>(Enabled)</td> </tr> </table>	USB Control	USB Enabled	USB Boot Support	(Enabled)	Removable Flash Media Boot Sequence	(External DriveKeys First)	Virtual Install Disk	(Enabled)	► Embedded User Partition	(Enabled)	<b>Internal SD Card Slot</b>	<b>Enabled</b>	USB 3.0 Mode	(Enabled)
USB Control	USB Enabled														
USB Boot Support	(Enabled)														
Removable Flash Media Boot Sequence	(External DriveKeys First)														
Virtual Install Disk	(Enabled)														
► Embedded User Partition	(Enabled)														
<b>Internal SD Card Slot</b>	<b>Enabled</b>														
USB 3.0 Mode	(Enabled)														
<p>Select “<b>Disabled</b>” and press Enter Press “<b>Esc</b>” 1x</p>	<p><b>BIOS/Platform Configuration (RBSU)</b></p> <p>System Options + USB Options</p> <table border="0"> <tr> <td>USB Control</td> <td>USB Enabled</td> </tr> <tr> <td>USB Boot Support</td> <td>(Enabled)</td> </tr> <tr> <td>Removable Flash Media Boot Sequence</td> <td>(External DriveKeys First)</td> </tr> <tr> <td>Virtual Install Disk</td> <td>(Enabled)</td> </tr> <tr> <td>► Embedded User Partition</td> <td>(Enabled)</td> </tr> <tr> <td><b>Internal SD Card Slot</b></td> <td><b>Disabled</b></td> </tr> <tr> <td>USB 3.0 Mode</td> <td>(Enabled)</td> </tr> </table>	USB Control	USB Enabled	USB Boot Support	(Enabled)	Removable Flash Media Boot Sequence	(External DriveKeys First)	Virtual Install Disk	(Enabled)	► Embedded User Partition	(Enabled)	<b>Internal SD Card Slot</b>	<b>Disabled</b>	USB 3.0 Mode	(Enabled)
USB Control	USB Enabled														
USB Boot Support	(Enabled)														
Removable Flash Media Boot Sequence	(External DriveKeys First)														
Virtual Install Disk	(Enabled)														
► Embedded User Partition	(Enabled)														
<b>Internal SD Card Slot</b>	<b>Disabled</b>														
USB 3.0 Mode	(Enabled)														

<p>Select “<b>SATA Controller Options</b>” and press Enter</p>	
<p>Configure “<b>Embedded SATA Configuration</b>” from “<b>Enable Dynamic Smart Array RAID Support</b>” to “<b>Enable SATA AHCI Support</b>”. <i>When this option is not available to change, no RAID controller is installed.</i></p>	
<p>Press “<b>Esc</b>” 1x</p> <p>Go to “<b>Virtualization Options</b>” and press Enter</p>	

<p><b>Disable:</b>  <b>"Virtualization Technology"</b>  <b>"Intel® VT-d"</b>  <b>"SRV-IOV"</b></p> <p>Press "<b>F10</b>" to save the configuration</p>	
<p>Press "<b>Y</b>" and enter</p>	
<p>Press "<b>Esc</b>" 3 times</p>	

<p>Select “<b>Boot Options</b>” and press Enter</p>	
<p>Select “<b>Legacy BIOS Boot Order</b>” and press Enter</p>	
<p>Move “<b>Hard Drive C:</b>” to the top using the ‘+’ key Press “<b>Esc</b>” 2x</p>	

<p>Select “<b>Network Options</b>”, “<b>Network Boot Options</b>”.</p> <p>For every “<b>Embedded FlexibleLOM x Port x</b>” configure it as “<b>Network Boot</b>”</p> <p>Press “<b>F10</b>” to save the configuration</p>	
<p>Select “<b>Date and Time</b>” and press Enter</p>	
<p>Set the correct “<b>Date</b>”, “<b>Time</b>”,  And change “<b>Time Format</b>” to <b>Local Time</b>  Press “<b>Esc</b>” to go to back to the previous menu</p>	

<p>Go to "<b>Power Management</b>" and press Enter</p>	
<p>Select "<b>Power Profile</b>" and press Enter</p>	
<p>Select "<b>Maximum Performance</b>" and press Enter</p>	
<p>Press "<b>Esc</b>" and press "<b>F10</b>" to save the configuration</p>	

Press "Y" and enter



## 4.3 Configure boot from SAN

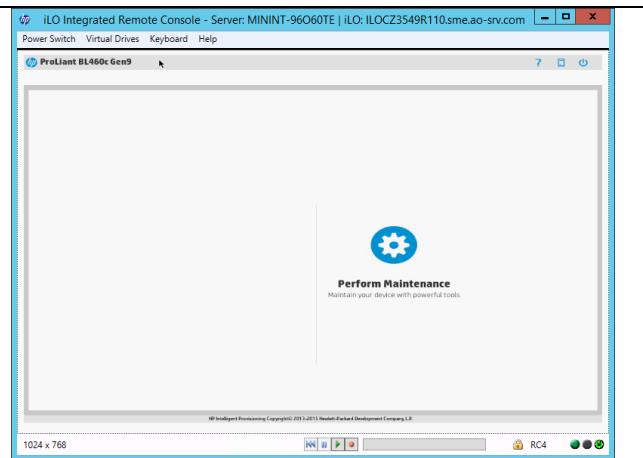
The FLB650 CNA adapter logs out of the fabric when entering the BIOS. This is a known issue and a temporary workaround is used to overcome this issue. Paragraphs 2.5.1, 2.5.2 and 2.5.3 contain this workaround.

To be able to log into the fabric, the blade needs to boot in Intelligent Provisioning.

### 4.3.1 Boot the server into intelligent provisioning

<p>Press F10 to enter Intelligent Provisioning</p>	
<p>The server will boot into Intelligent provisioning</p>	

Wait until next screen is shown. Leave the server in this state until storage provisioning is ready.

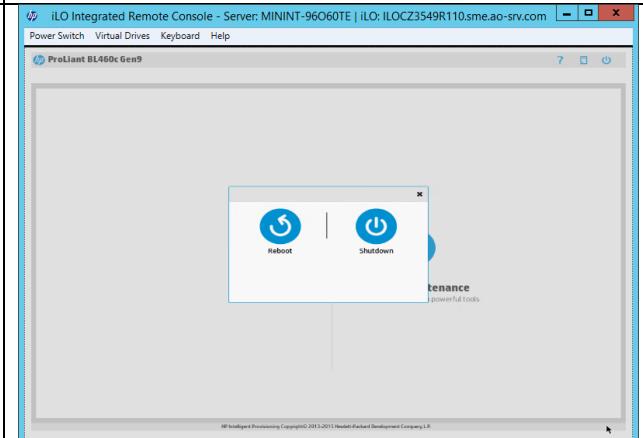


#### 4.3.2 Configuring boot from SAN

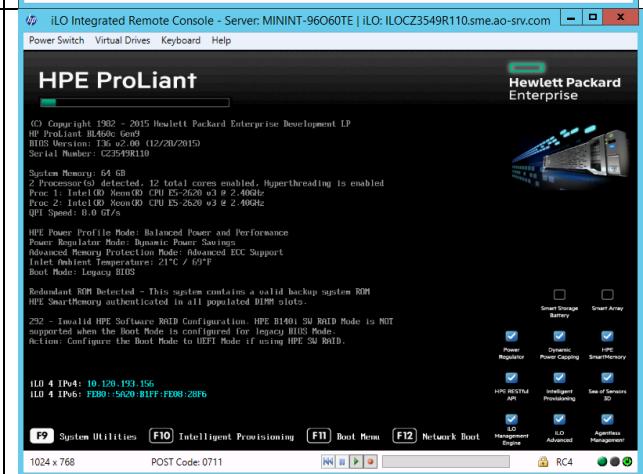
When storage is provisioned press the Power button in the Intelligent Provisioning screen



Reboot the system

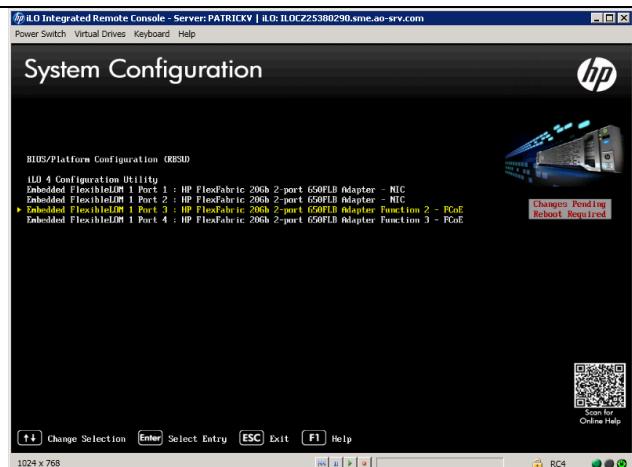


The blade starts to boot,  
Press "F9" System Utilities



<p>Press "System Configuration"</p>	
<p>Select "BIOS/Platform Configuration (RBSU)"</p>	
<p>Press "System Configuration" and press Enter</p>	

Goto to the first FCoE adapter and press Enter



Select "Add Boot Device" and press Enter



Select the first entry and press Enter



<p>Select the first entry "<b>LUN:0000 Mode: Peripheral dev</b>" and press Enter</p>	
<p>Select "<b>Commit Changes</b>" and press Enter</p>	
<p>Press 3 times "Esc". Select the second FCoE adapter</p>	

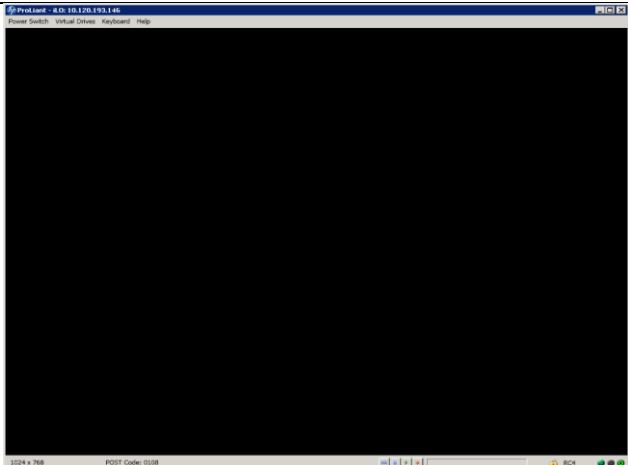
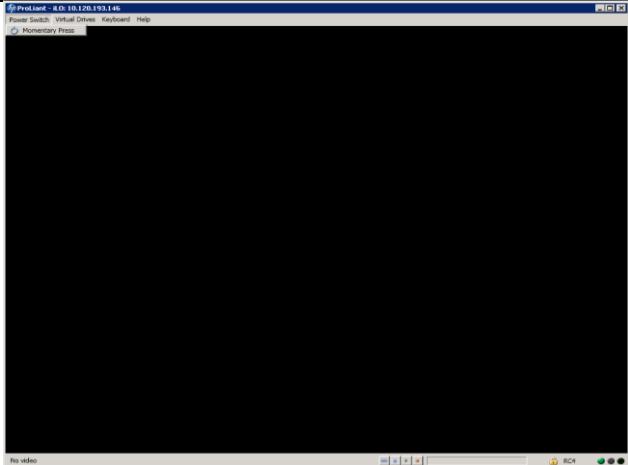
Select "Add Boot Device" and press Enter	<p>The screenshot shows the 'System Configuration' menu for an HP FlexFabric 20Gb 2-port 650FLB Adapter Function 3 - iSCoE. The 'Add Boot Device' option is highlighted in yellow.</p>
Select the first entry and press Enter	<p>The screenshot shows the 'System Configuration' menu for an HP FlexFabric 20Gb 2-port 650FLB Adapter Function 3 - iSCoE. The 'SRM Discovery Target List' section is displayed, showing two entries: '0001: EMC SYMETRIX 5074' and '0002: EMC SYMETRIX 5074'. The first entry is highlighted in yellow.</p>
Select the first entry " <b>LUN:0000 Mode: Peripheral dev</b> " and press Enter	<p>The screenshot shows the 'System Configuration' menu for an HP FlexFabric 20Gb 2-port 650FLB Adapter Function 2 - iSCoE. The 'SRM Discovery Target List' section is displayed, showing one entry: '0000: 0000:00:00:00:00:00:00'. Below it, the 'LUN:0000 Mode: Peripheral dev' option is highlighted in yellow.</p>

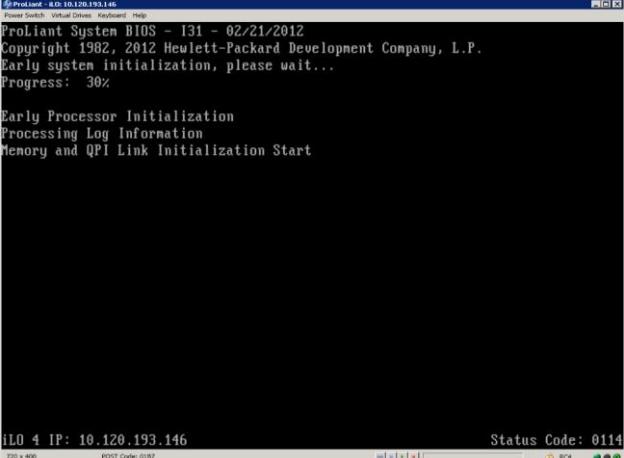
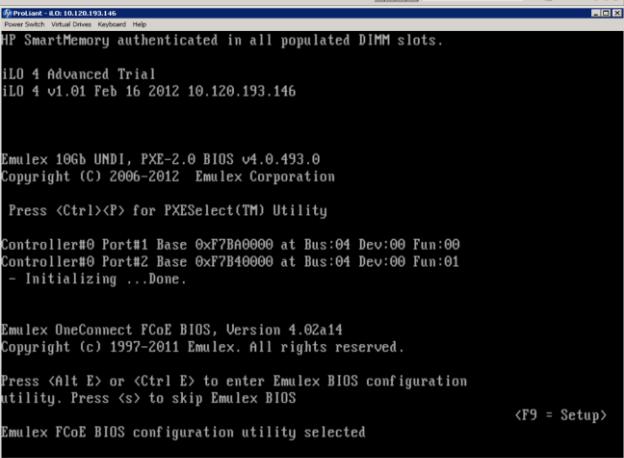
Select “**Commit Changes**” and press Enter

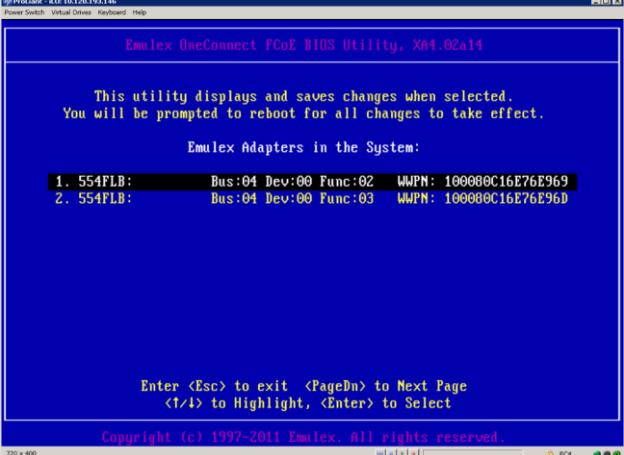
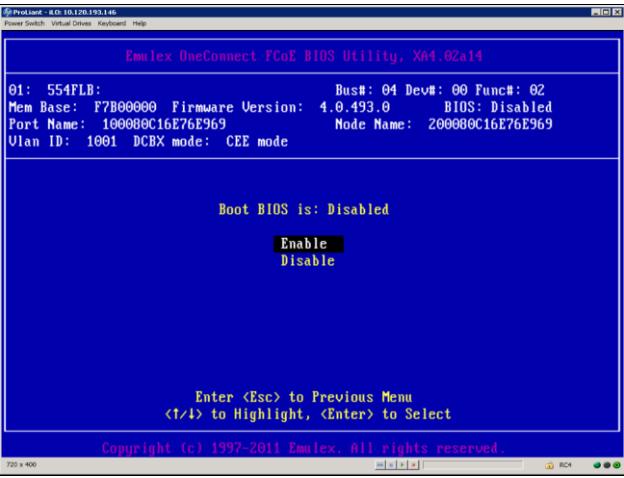


Press 3 times “Esc”

## 5 Configuring SAN Boot on HP BL460c Gen8 Servers

Make a connection to the correct iLO through HP SIM NLSMEMS041.  See "MSW-S01-0005 How to connect to the ILO of an HP Blade Server"	
Open the iLO Integrated Remote Console to the correct blade	
Use the virtual power button to turn on the blade. Press "Momentary Press"	

The blade starts to boot:	
When you see the Emulex OneConnect configuration text, press "Ctrl-E" to enter the Emulex BIOS	
This screen confirms that you have selected the BIOS configuration utility	
Wait for the Emulex utility to start.	

This screen is the basic Emulex OneConnect FCoE BIOS configuration Utility	
Configure the primary HBA, by selecting 1 and press "Enter".	
The following screen appears	
The first step is to enable Boot from SAN. Press "Enter" on "Enable/Disable Boot from SAN"	
Select "Enable" and press "Enter"	

<p>The BIOS is now enabled.</p> <p>Press "Esc" to return to the Previous Menu</p>	<p>Emulex OneConnect FCoE BIOS Utility, X04.02a14</p> <p>01: 554FLB: Mem Base: F7B00000 Firmware Version: 4.0.493.0 BIOS: Enabled Port Name: 100000C16E76E969 Node Name: 200000C16E76E969 Vlan ID: 1001 DCBX mode: CEE mode</p> <p>Boot BIOS is: Enabled</p> <p><b>Enable</b> <b>Disable</b></p> <p>Enter &lt;Esc&gt; to Previous Menu &lt;f/4&gt; to Highlight, &lt;Enter&gt; to Select</p> <p>Copyright (c) 1997-2011 Emulex. All rights reserved.</p>
<p>Press "Esc" again to return to the previous menu</p>	<p>Emulex OneConnect FCoE BIOS Utility, X04.02a14</p> <p>This utility displays and saves changes when selected. You will be prompted to reboot for all changes to take effect.</p> <p>Emulex Adapters in the System:</p> <p>1. 554FLB: Bus:04 Dev:00 Func:02 WWPN: 100000C16E76E969 2. 554FLB: Bus:04 Dev:00 Func:03 WWPN: 100000C16E76E96D</p> <p>Enter &lt;Esc&gt; to exit, &lt;PageDn&gt; to Next Page &lt;f/4&gt; to Highlight, &lt;Enter&gt; to Select</p> <p>Copyright (c) 1997-2011 Emulex. All rights reserved.</p>
<p>Select Adapter 2 from the list and press "Enter"</p>	<p>Emulex OneConnect FCoE BIOS Utility, X04.02a14</p> <p>This utility displays and saves changes when selected. You will be prompted to reboot for all changes to take effect.</p> <p>Emulex Adapters in the System:</p> <p>1. 554FLB: Bus:04 Dev:00 Func:02 WWPN: 100000C16E76E969 2. 554FLB: Bus:04 Dev:00 Func:03 WWPN: 100000C16E76E96D</p> <p>Enter &lt;Esc&gt; to exit, &lt;PageDn&gt; to Next Page &lt;f/4&gt; to Highlight, &lt;Enter&gt; to Select</p> <p>Copyright (c) 1997-2011 Emulex. All rights reserved.</p>

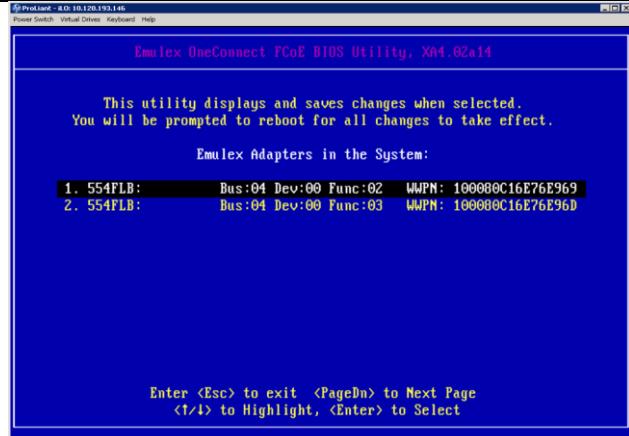
<p>Press "Enter" on "Enable/Disable Boot from SAN"</p>	
<p>Select "Enable" and press "Enter"</p>	
<p>The BIOS is now enabled.</p>	

Press "Esc" to return to the previous Menu	
Press "Esc" again	
Press "Y" to reboot the server	

When you see the Emulex OneConnect configuration text, press "Ctrl-E" to enter Emulex BIOS



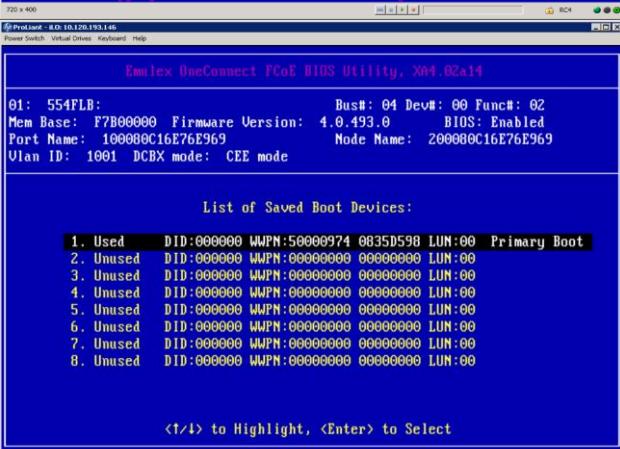
Press "Enter" on adapter 1.



Select "Configure Boot Devices" and press "Enter"



<p>Select "1. Unused Primary Boot" and press "Enter"</p>	<p>Emulex OneConnect FCoE BIOS Utility, X04.02a14</p> <p>01: 554FLB: Bus#: 04 Dev#: 00 Func#: 02 Mem Base: F7B00000 Firmware Version: 4.0.493.0 BIOS: Enabled Port Name: 100000C16E76E969 Node Name: 200000C16E76E969 Vlan ID: 1001 DCBX mode: CEE mode</p> <p>List of Saved Boot Devices:</p> <ul style="list-style-type: none"> <li>1. Unused DID:000000 WWPN:00000000 00000000 LUN:00 Primary Boot</li> <li>2. Unused DID:000000 WWPN:00000000 00000000 LUN:00</li> <li>3. Unused DID:000000 WWPN:00000000 00000000 LUN:00</li> <li>4. Unused DID:000000 WWPN:00000000 00000000 LUN:00</li> <li>5. Unused DID:000000 WWPN:00000000 00000000 LUN:00</li> <li>6. Unused DID:000000 WWPN:00000000 00000000 LUN:00</li> <li>7. Unused DID:000000 WWPN:00000000 00000000 LUN:00</li> <li>8. Unused DID:000000 WWPN:00000000 00000000 LUN:00</li> </ul> <p>&lt;f/4&gt; to Highlight, &lt;Enter&gt; to Select</p> <p>Copyright (c) 1997-2011 Emulex. All rights reserved.</p>
<p>Select "01." and press "Enter"</p>	<p>Emulex OneConnect FCoE BIOS Utility, X04.02a14</p> <p>01: 554FLB: Bus#: 04 Dev#: 00 Func#: 02 Mem Base: F7B00000 Firmware Version: 4.0.493.0 BIOS: Enabled Port Name: 100000C16E76E969 Node Name: 200000C16E76E969 Vlan ID: 1001 DCBX mode: CEE mode</p> <p>00. Clear selected boot entry!!</p> <p>01. DID:010500 WWPN:500000974 0835D598 LUN:00 EMC SYMMETRIX 5874 02. DID:011500 WWPN:500000974 0835D5A0 LUN:00 EMC SYMMETRIX 5874</p> <p>&lt;f/4&gt; to Highlight, &lt;Enter&gt; to Select</p> <p>Copyright (c) 1997-2011 Emulex. All rights reserved.</p>
<p>Make sure starting LUN "00" is entered and press "Enter"</p>	<p>Emulex OneConnect FCoE BIOS Utility, X04.02a14</p> <p>01: 554FLB: Bus#: 04 Dev#: 00 Func#: 02 Mem Base: F7B00000 Firmware Version: 4.0.493.0 BIOS: Enabled Port Name: 100000C16E76E969 Node Name: 200000C16E76E969 Vlan ID: 1001 DCBX mode: CEE mode</p> <p>DID:010500 WWPN:500000974 0835D598</p> <p>Use &lt;f/4&gt; to select starting LUN (Hex): 00</p> <p>&lt;ESC&gt; to Previous Menu</p> <p>&lt;f/4&gt; to Highlight, &lt;Enter&gt; to Select</p> <p>Copyright (c) 1997-2011 Emulex. All rights reserved.</p>

Select "01. LUN:00" and press "Enter"	
Select "Boot this device via WWPN" and press "Enter"	
Press "Esc" to return to the previous menu	

Press "Esc" to return to the previous menu	
Repeat above instruction to configure the Boot LUN on adapter 2.	
Once you are done, return once more to the main HBA BIOS menu, and press "Esc" to exit.	
Press "Y" to reboot the system	

During boot, you should see the following confirming that both HBAs have LUN 00 selected as boot LUN



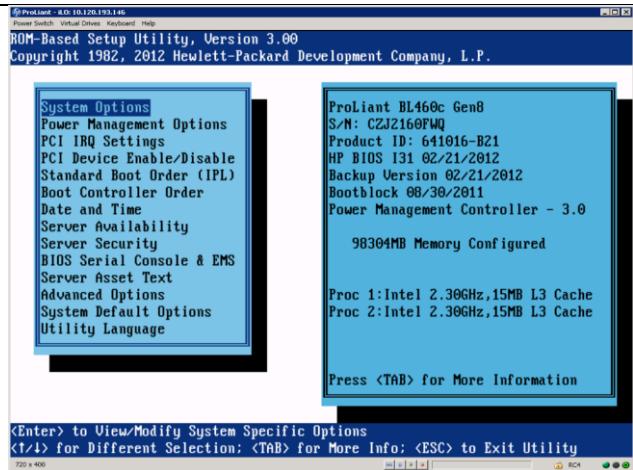
The next step is to enter the Server BIOS screen, and set the boot device.

After the Emulex and Network adapter BIOS screens, a HP Server brings up the following list of options.



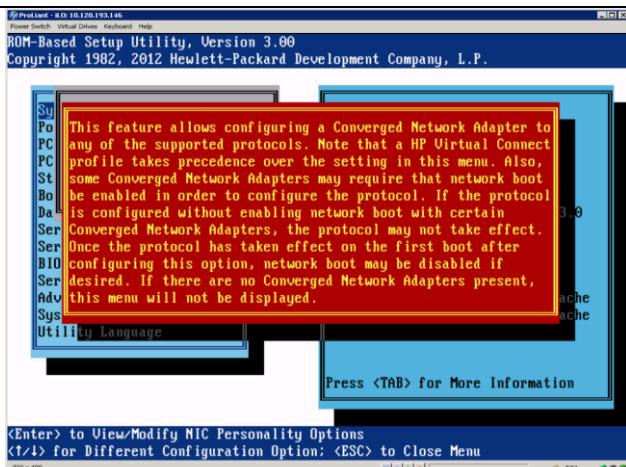
Press "F9" to enter Setup Menu

The ROM-Based Setup Utility opens

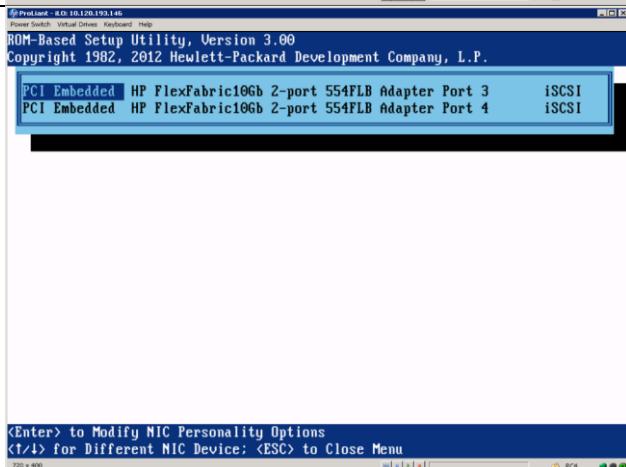


<p>Press "Enter" on "System Options" and press "Enter" on "Processor Options"</p>	<p>ROM-Based Setup Utility, Version 3.00 Copyright 1982, 2012 Hewlett-Packard Development Company, L.P.</p> <p>Processor Options</p> <ul style="list-style-type: none"> <li>Serial Port Options</li> <li>Embedded NICs</li> <li><b>NIC Personality Options</b></li> <li>Advanced Memory Protection</li> <li>USB Options</li> <li>Processor Options</li> <li>Server Availability</li> <li>Server Security</li> <li>BIOS Serial Console &amp; EMS</li> <li>Server Asset Text</li> <li>Advanced Options</li> <li>System Default Options</li> <li>Utility Language</li> </ul> <p>HP ProLiant BL460c Gen8 S/M: CZ324412PP Product ID: 641016-B21 HP BIOS I31 12/14/2012 Backup Version 08/20/2012 Bootblock 03/11/2012 Power Management Controller - 3.0 98304MB Memory Configured Proc 1:Intel 2.30GHz,15MB L3 Cache Proc 2:Intel 2.30GHz,15MB L3 Cache</p> <p>Press &lt;TAB&gt; for More Information</p>
<p>Press "Enter" on Intel® Virtualization Technology and select "Disable" and press "Enter"</p>	<p>ROM-Based Setup Utility, Version 3.00 Copyright 1982, 2012 Hewlett-Packard Development Company, L.P.</p> <p>Intel® Virtualization Technology</p> <ul style="list-style-type: none"> <li>No-Execute Memory Protection</li> <li><b>Intel® Virtualization Technology</b></li> <li>Hyperthreading Options</li> <li>Processor Core Disable (Intel Core Select)</li> <li>Intel Turbo Boost Technology</li> <li><b>Enabled</b></li> <li><b>Disabled</b></li> <li>Server Security</li> <li>BIOS Serial Console &amp; EMS</li> <li>Server Asset Text</li> <li>Advanced Options</li> <li>System Default Options</li> <li>Utility Language</li> </ul> <p>BL460c Gen8 412PP 641016-B21 12/14/2012 08/20/2012 03/11/2012 Power Management Controller - 3.0 98304MB Memory Configured Proc 1:Intel 2.30GHz,15MB L3 Cache Proc 2:Intel 2.30GHz,15MB L3 Cache</p> <p>Enabled</p> <p>Press &lt;TAB&gt; for More Information</p>
<p>Press Escape to return to the System Options menu.</p>	
<p>Press "Enter" on "NIC Personality Options"</p>	<p>ROM-Based Setup Utility, Version 3.00 Copyright 1982, 2012 Hewlett-Packard Development Company, L.P.</p> <p>NIC Personality Options</p> <ul style="list-style-type: none"> <li>Serial Port Options</li> <li>Embedded NICs</li> <li><b>NIC Personality Options</b></li> <li>Advanced Memory Protection</li> <li>USB Options</li> <li>Processor Options</li> <li>Server Availability</li> <li>Server Security</li> <li>BIOS Serial Console &amp; EMS</li> <li>Server Asset Text</li> <li>Advanced Options</li> <li>System Default Options</li> <li>Utility Language</li> </ul> <p>ProLiant BL460c Gen8 S/M: CZ32160FMQ Product ID: 641016-B21 HP BIOS I31 02/21/2012 Backup Version 02/21/2012 Bootblock 08/30/2011 Power Management Controller - 3.0 98304MB Memory Configured Proc 1:Intel 2.30GHz,15MB L3 Cache Proc 2:Intel 2.30GHz,15MB L3 Cache</p> <p>Press &lt;TAB&gt; for More Information</p> <p>&lt;Enter&gt; to View/Modify NIC Personality Options &lt;↑↓&gt; for Different Configuration Option: &lt;ESC&gt; to Close Menu</p>

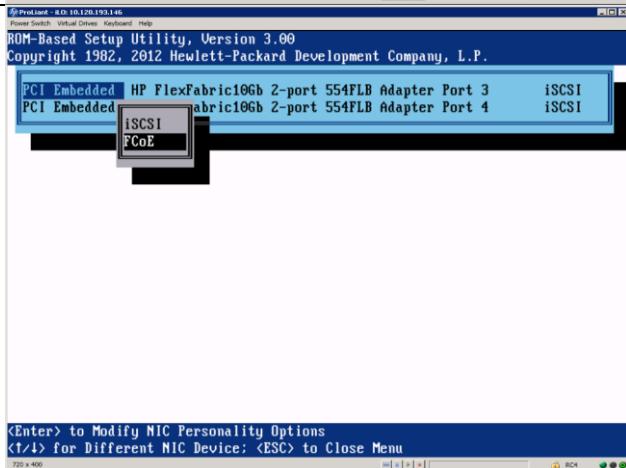
Press "Enter" to continue

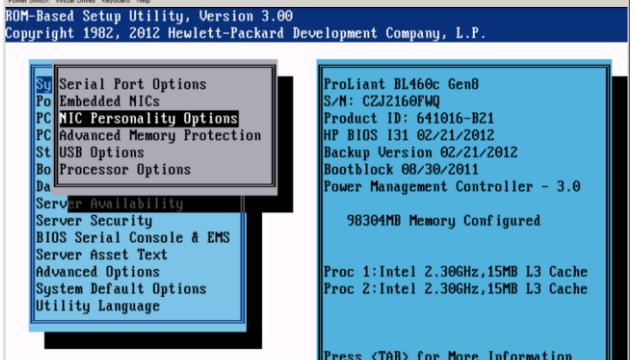
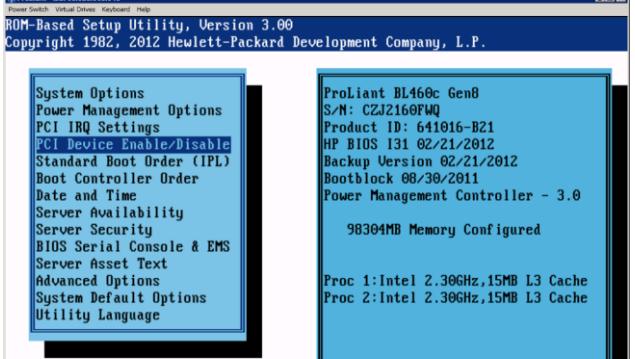


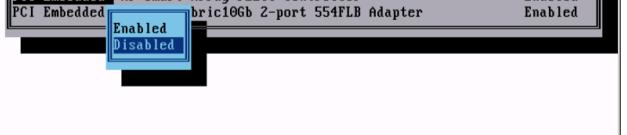
Press "Enter" on the "PCI Embedded FlexFabric adapter"



Select "FCoE" and press "Enter"



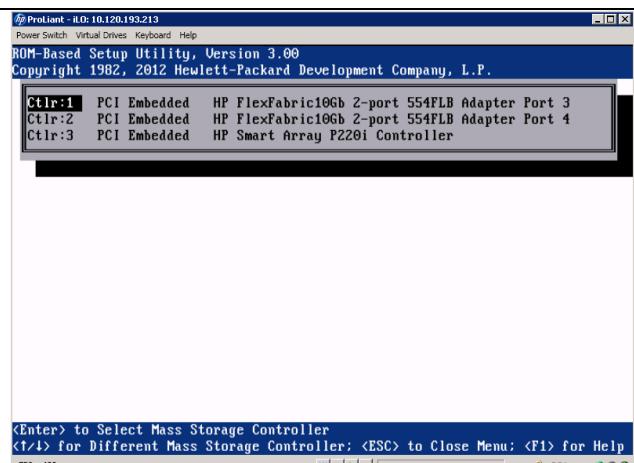
<p>Press "Esc" to return to the previous menu</p>	 <p>ROM-Based Setup Utility, Version 3.00 Copyright 1982, 2012 Hewlett-Packard Development Company, L.P.</p> <table border="1"> <tr> <td>PCI Embedded</td> <td>HP FlexFabric10Gb 2-port 554FLB Adapter Port 3</td> <td>FCoE</td> </tr> <tr> <td>PCI Embedded</td> <td>HP FlexFabric10Gb 2-port 554FLB Adapter Port 4</td> <td>FCoE</td> </tr> </table>	PCI Embedded	HP FlexFabric10Gb 2-port 554FLB Adapter Port 3	FCoE	PCI Embedded	HP FlexFabric10Gb 2-port 554FLB Adapter Port 4	FCoE
PCI Embedded	HP FlexFabric10Gb 2-port 554FLB Adapter Port 3	FCoE					
PCI Embedded	HP FlexFabric10Gb 2-port 554FLB Adapter Port 4	FCoE					
<p>Press "Esc" to return to the previous menu</p>	 <p>ROM-Based Setup Utility, Version 3.00 Copyright 1982, 2012 Hewlett-Packard Development Company, L.P.</p> <ul style="list-style-type: none"> <li>Serial Port Options</li> <li>PCI Embedded NICs</li> <li><b>NIC Personality Options</b></li> <li>Advanced Memory Protection</li> <li>USB Options</li> <li>Processor Options</li> <li>Da</li> <li>Server Availability</li> <li>Server Security</li> <li>BIOS Serial Console &amp; EMS</li> <li>Server Asset Text</li> <li>Advanced Options</li> <li>System Default Options</li> <li>Utility Language</li> </ul> <p>ProLiant BL460c Gen8 S/N: CZJZ160FWMQ Product ID: 641016-B21 HP BIOS I31 02/21/2012 Backup Version 02/21/2012 Bootblock 08/30/2011 Power Management Controller - 3.0 98304MB Memory Configured Proc 1:Intel 2.30GHz,15MB L3 Cache Proc 2:Intel 2.30GHz,15MB L3 Cache</p> <p>Press &lt;TAB&gt; for More Information</p>						
<p>Select "PCI Device Enable/Disable" and press "Enter"</p>	 <p>ROM-Based Setup Utility, Version 3.00 Copyright 1982, 2012 Hewlett-Packard Development Company, L.P.</p> <ul style="list-style-type: none"> <li>System Options</li> <li>Power Management Options</li> <li>PCI IRQ Settings</li> <li><b>PCI Device Enable/Disable</b></li> <li>Standard Boot Order (IPL)</li> <li>Boot Controller Order</li> <li>Date and Time</li> <li>Server Availability</li> <li>Server Security</li> <li>BIOS Serial Console &amp; EMS</li> <li>Server Asset Text</li> <li>Advanced Options</li> <li>System Default Options</li> <li>Utility Language</li> </ul> <p>ProLiant BL460c Gen8 S/N: CZJZ160FWMQ Product ID: 641016-B21 HP BIOS I31 02/21/2012 Backup Version 02/21/2012 Bootblock 08/30/2011 Power Management Controller - 3.0 98304MB Memory Configured Proc 1:Intel 2.30GHz,15MB L3 Cache Proc 2:Intel 2.30GHz,15MB L3 Cache</p> <p>Press &lt;TAB&gt; for More Information</p>						

Select the "HP Smart Array P220i Controller" and press "Enter"	  
Select "Disable" and press "Enter"	  
The device is now disabled.	  

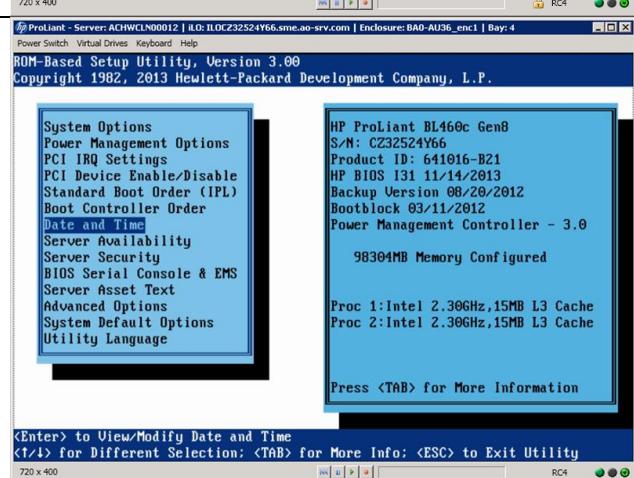
<p>Press "Esc" to return to the previous menu</p>	
<p>Select "Standard Boot Order (IPL)" and press "Enter"</p> <p>Set the order as the screenshot shows.</p> <p>Press "Esc" to return to the previous menu</p>	
<p>Select "Boot Controller Order" and press "Enter"</p>	

Set the Boot Controller Order as shown.

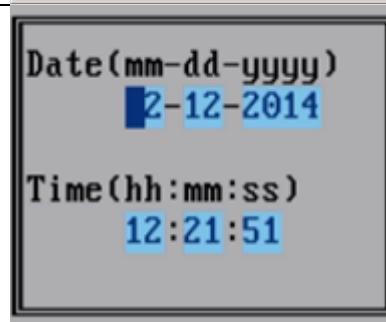
Press "Esc" to return to the previous menu

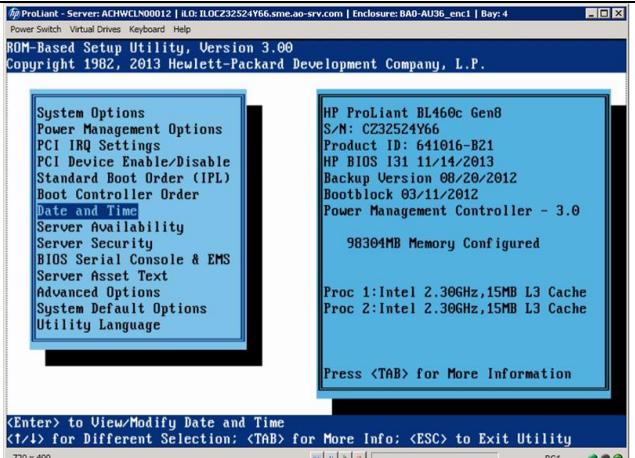
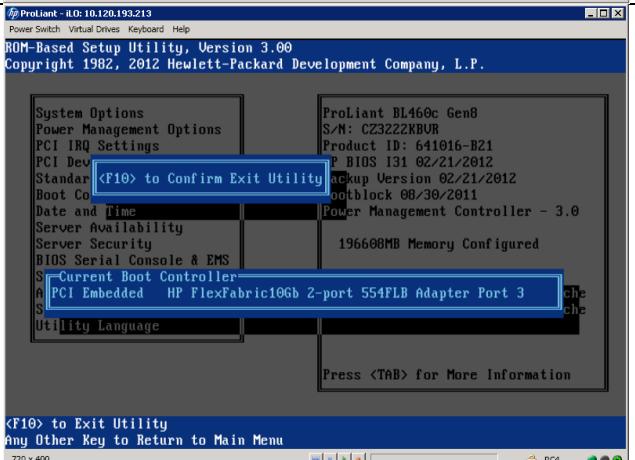


Select Date and Time



Set Date and Time to current date and time.

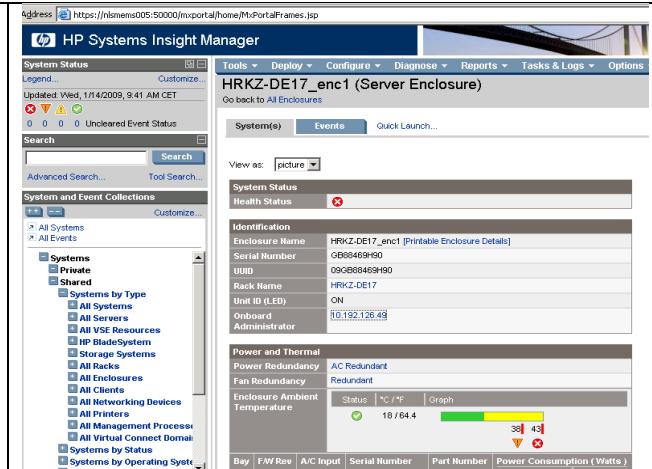


Press "Esc" to reboot the server	
Press "F10" to save changes and reboot the server	
The server can be booted via PXE boot now.	

## 6 Configuring SAN boot on HP BL460c G1 Servers

Make a connection to the correct iLO through HP SIM NLSMEMS005

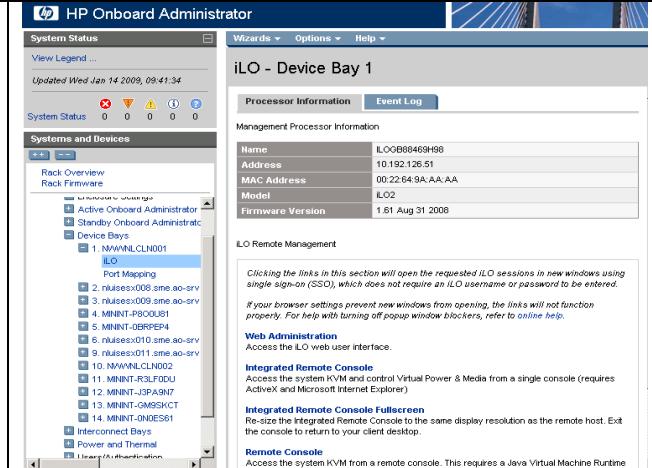
(in this screenshot, connection is made to enclosure 17 onboard administrator, to access a blade within enclosure 17)



Select "All Enclosures" view, click on the correct enclosure, then on the onboard administrator link.

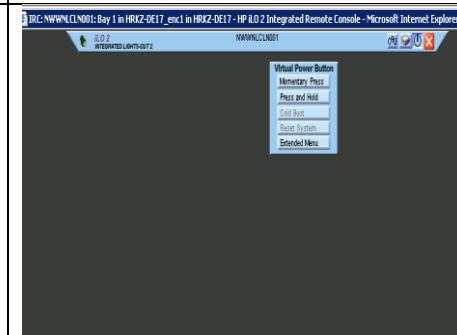
Within the onboard administrator screen, select the correct blade from the "Device Bays" overview.

(in this screenshot, blade in slot 1 has been selected)



Click on the iLO button to start a connection to the blade iLO.

Click on "Integrated Remote Console" to start a remote console connection to the chosen blade. This brings up the following screen:



Use the virtual power button to turn on the blade

The blade starts to boot:	<p>ProLiant System BIOS - I15 (09/29/2008) Copyright 1982, 2008 Hewlett-Packard Development Company, L.P.</p> <p>Proc 1: Quad-Core Intel(R) Xeon(TM) Processor (3.00 GHz/1333 MHz, 2x6MB L2) Power Regulator Mode: Dynamic Power Savings</p> <p>Advanced Memory Protection Mode: Advanced ECC Support Redundant ROM Detected - This system contains a valid backup system ROM.</p> <p>Integrated Lights-Out 2 Standard Blade Edition iLO 2 v1.61 Aug 31 2008 10.192.126.51</p> <p>!!! Emulex LightPulse x86 BIOS !!!, Version 3.00a4 Copyright (c) 1997-2006 Emulex. All rights reserved.</p> <p>Press &lt;Alt E&gt; or &lt;Ctrl E&gt; to enter Emulex BIOS configuration utility. Press &lt;s&gt; to skip Emulex BIOS</p>
When you see the Emulex configuration text, press Ctrl-E to enter Emulex BIOS	
This screen confirms that you have selected the BIOS configuration utility	<p>!!! Emulex LightPulse x86 BIOS !!!, Version 3.00a4 Copyright (c) 1997-2006 Emulex. All rights reserved.</p> <p>Press &lt;Alt E&gt; or &lt;Ctrl E&gt; to enter Emulex BIOS configuration utility. Press &lt;s&gt; to skip Emulex BIOS</p> <p>Emulex BIOS configuration utility selected</p>
Wait for the Emulex utility to start.	
This screen is the basic Emulex configuration Utility:	<p>Copyright (c) 1997-2006 Emulex. All rights reserved.</p> <p>Emulex Adapters in the System:</p> <p>1. LPe1105-HP : PCI Bus, Device, Function (10,00,00) 2. LPe1105-HP : PCI Bus, Device, Function (10,00,01)</p> <p>Enter a Selection: _</p> <p>Enter &lt;x&gt; to Exit</p>
Configure the primary HBA, by pressing 1 and Enter.	

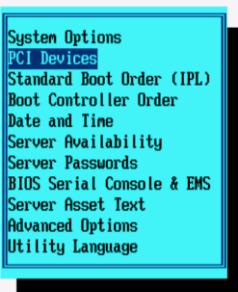
The following screen appears:	<pre> Adapter 01: PCI Bus, Device, Function (10,00,00)  LPe1105-HP: I/O Base: 4000 Firmware Version: ZS2.72A2 Port Name: 10000000 C980C05E Node Name: 20000000 C980C05E Topology: Auto Topology: Loop First (Default) The BIOS for this adapter is Enabled  1. Configure Boot Devices 2. Configure This Adapter's Parameters </pre>
The first step is to enable HBA adapter BIOS. Press 2	<pre> Enter a Selection: Enter &lt;x&gt; to Exit &lt;d&gt; to Default Values &lt;Esc&gt; to Previous Menu </pre>
To enter the BIOS enabling screen, press 1	<pre> Adapter 01: PCI Bus, Device, Function (10,00,00)  LPe1105-HP: I/O Base: 4000 Firmware Version: ZS2.72A2 Port Name: 10000000 C980C05E Node Name: 20000000 C980C05E Topology: Auto Topology: Loop First (Default) The BIOS for this adapter is Enabled  1. Enable or Disable BIOS 2. Change Default ALPA of this Adapter 3. Change PLOGI Retry Timer (+Advanced Option+) 4. Topology Selection (+Advanced Option+) 5. Enable or Disable Spinup Delay (+Advanced Option+) 6. Auto Scan Setting (+Advanced Option+) 7. Enable or Disable EDD 3.0 (+Advanced Option+) 8. Enable or Disable Start Unit Command (+Advanced Option+) 9. Enable or Disable Environment Variable (+Advanced Option+) 10. Auto Sector Format Select (+Advanced Option+)  Enter a Selection: Enter &lt;x&gt; to Exit &lt;Esc&gt; to Previous Menu </pre>
The following screen appears:	<pre> Adapter 01: PCI Bus, Device, Function (10,00,00)  The BIOS is Disabled!!  Enable Press 1, Disable Press 2:  Enter &lt;x&gt; to Exit &lt;Esc&gt; to Previous Menu </pre>
Enable the BIOS by pressing 1	

This screen confirms BIOS is enabled	<pre>Adapter 01: PCI Bus, Device, Function (10,00,00)  The BIOS is Enabled!!   Enable Press 1, Disable Press 2:_</pre> <p>Enter &lt;x&gt; to Exit &lt;Esc&gt; to Previous Menu</p>
When you have enabled the BIOS, press Esc twice to return to the top menu	
This menu should now be visible again:	<pre>Adapter 01: PCI Bus, Device, Function (10,00,00)  LPe1105-HP: I/O Base: 4000 Firmware Version: ZS2.72A2 Port Name: 10000000 C980C85E Node Name: 20000000 C980C85E Topology: Auto Topology: Loop First (Default) The BIOS for this adapter is Enabled  1. Configure Boot Devices 2. Configure This Adapter's Parameters</pre> <p>Enter a Selection:</p> <p>Enter &lt;x&gt; to Exit &lt;d&gt; to Default Values &lt;Esc&gt; to Pre</p>
Press 1 to configure boot devices	
The following screen appears, showing a list of saved boot devices.  It is empty showing that no boot devices have yet been configured.	<p>List of Saved Boot Devices:</p> <pre>1. Unused DID:000000 WWPN:00000000 00000000 LUN:00 Primary Boot 2. Unused DID:000000 WWPN:00000000 00000000 LUN:00 3. Unused DID:000000 WWPN:00000000 00000000 LUN:00 4. Unused DID:000000 WWPN:00000000 00000000 LUN:00 5. Unused DID:000000 WWPN:00000000 00000000 LUN:00 6. Unused DID:000000 WWPN:00000000 00000000 LUN:00 7. Unused DID:000000 WWPN:00000000 00000000 LUN:00 8. Unused DID:000000 WWPN:00000000 00000000 LUN:00</pre> <p>Select a Boot Entry:</p> <p>Enter &lt;x&gt; to Exit &lt;Esc&gt; to Previous Menu</p>
Press 1 to edit the primary boot device slot	

	<pre>00. Clear selected boot entry!! 01. DID:DA0200 WWPN:50060484 52A8CC46 LUN:00    EMC    SYMMETRIX      5772</pre> <p>Select The Two Digit Number of The Desired Boot Device:_  Enter &lt;x&gt; to Exit &lt;Esc&gt; to Previous Menu &lt;PageDn&gt; to Next Page</p>
Check that LUN = 00 If not contact Storage Team	<pre>00. Clear selected boot entry!! 01. DID:DA0200 WWPN:50060484 52A8CC46 LUN:00    EMC    SYMMETRIX</pre>
Select the visible boot LUN, by typing 01	
The blue pop-up screen appears:	<pre>00. Clear selected boot entry!! 01. DID:DA0200 WWPN:50060484 52A8CC46 LUN:00    EMC    SYMMETRIX      5772</pre> <div style="border: 1px solid black; padding: 5px; background-color: #0070C0; color: white; text-align: center;"> DID:DA0200 WWPN:50060484 52A8CC46  Enter two digits of starting LUN (Hex):  &lt;Esc&gt; to Previous Menu </div> <p>Select The Two Digit Number of The Desired Boot Device:01  Enter &lt;x&gt; to Exit &lt;Esc&gt; to Previous Menu &lt;PageDn&gt; to Next Page</p>
Type the two digit LUN number shown above, which in this case is 00	<div style="border: 1px solid black; padding: 5px; background-color: #0070C0; color: white; text-align: center;"> DID:DA0200 WWPN:50060484 52A8CC46  Enter two digits of starting LUN (Hex):00  &lt;Esc&gt; to Previous Menu </div>
Press Enter	

<p>This next screen gives a list of all visible LUNs on the same path as the boot LUN.</p> <p>The agreement with the storage team is that the boot LUN always has an id of 00, so ensure that there is a boot LUN with id 00, and confirm this selection.</p>	<pre>DID:DA0200 WWPN:50060484 52A8CC46 01.      LUN:00          EMC      SYMMETRIX      5772  Enter a Selection: B#W: Boot number via WWPN. B#D: Boot number via DID Enter &lt;x&gt; to Exit      &lt;Esc&gt; to Previous Menu</pre>
<p>Type 01 to select LUN id 00.</p> <p>The following popup screen appears</p>	<pre>DID:DA0200 WWPN:50060484 52A8CC46 LUN:00  1. Boot this device via WWPN 2. Boot this device via DID  &lt;Esc&gt; to Previous Menu Enter a Selection:</pre>
<p>Type 1 to select boot via WWPN, and press enter.</p>	
<p>The following screen confirms that you have successfully selected LUN id 00 as boot LUN</p>	<pre>List of Saved Boot Devices: 1. Used      DID:000000 WWPN:50060484 52A8CC46 LUN:00 Primary Boot 2. Unused    DID:000000 WWPN:00000000 00000000 LUN:00 3. Unused    DID:000000 WWPN:00000000 00000000 LUN:00 4. Unused    DID:000000 WWPN:00000000 00000000 LUN:00 5. Unused    DID:000000 WWPN:00000000 00000000 LUN:00 6. Unused    DID:000000 WWPN:00000000 00000000 LUN:00 7. Unused    DID:000000 WWPN:00000000 00000000 LUN:00 8. Unused    DID:000000 WWPN:00000000 00000000 LUN:00  Select a Boot Entry: Enter &lt;x&gt; to Exit      &lt;Esc&gt; to Previous Menu</pre>
<p>Press Esc twice to return to the main menu</p>	

	<pre>Copyright (c) 1997-2006 Emulex. All rights reserved. Emulex Adapters in the System: 1. LPe1105-HP:      PCI Bus, Device, Function (10,00,00) 2. LPe1105-HP:      PCI Bus, Device, Function (10,00,01)  Enter a Selection: _ Enter &lt;x&gt; to Exit</pre>
Repeat the entire process for HBA 2, enabling the BIOS and setting LUN 00 as boot device.	<b>Repeat the entire process for HBA 2</b>
Once you are done, return once more to the main HBA BIOS menu, and press x to exit.	<pre>Reboot the System to Make All the Changes to Take Effect!  REBOOT THE SYSTEM (Y/N):_</pre>
<b>Press Y to reboot the system</b>	
During boot, you should see the following confirming that both HBAs have LUN 00 selected as boot LUN	<pre>Press &lt;Alt E&gt; or &lt;Ctrl E&gt; to enter Emulex BIOS configuration utility. Press &lt;s&gt; to skip Emulex BIOS  Installing Emulex BIOS ..... Bring the Link up, Please wait... Bring the Link up, Please wait... D_ID: DA0200 LUN: 00 EMC      SYMMETRIX      5772 D_ID: DB0200 LUN: 00 EMC      SYMMETRIX      5772  Emulex BIOS is installed successfully!!!</pre>
The next step is to enter the Server BIOS screen, and set boot device.	

<p>After the Emulex and Network adapter BIOS screens, a HP Server brings up the following list of options.</p>	<p>Press "F9" key for ROM-Based Setup Utility      Press "F10" key for System Maintenance Menu      Press "F12" key for PXE boot</p>
<p>Press F10 to enter the System Maintenance Menu</p>	
<p>The system maintenance menu:</p>	<p>System Maintenance Menu      Copyright 1982, 2008 Hewlett-Packard Development Company, L.P.</p> 
<p>Select "Setup Utility"</p>	<p>ROM-Based Setup Utility, Version 2.10      Copyright 1982, 2008 Hewlett-Packard Development Company, L.P.</p>
<p>Select "PCI Devices"</p>	 <p>HP ProLiant BL460c G1      S/N: GB88469H98      Product ID: 447707-B21      HP BIOS I15 09/29/2008      Backup Version 09/29/2008      Bootblock 01/09/2008      16384MB Memory Configured      Proc 1:Intel 3.00GHz,12MB L2 Cache      Proc 2:Not Installed      MAC address for NIC 1: 002264A13972      iSCSI MAC address: 002264A13973      MAC address for NIC 2: 002264A1396A      iSCSI MAC address: 002264A1396B</p>

Scroll down to the Smart Array Controller, and choose "Disabled" instead of an IRQ. (Smart Array Controller is not always there. Skip this task if Smart Array Controller is not there)

ROM-Based Setup Utility, Version 2.10 Copyright 1982, 2008 Hewlett-Packard Development Company, L.P.		
PCI Embedded	USB 1.1 Controller 1	IRQ: 5
PCI Embedded	1 Controller 2	IRQ: 7
PCI Embedded	IRQ: 5 Controller 3	IRQ: 10
PCI Embedded	IRQ: 7 Controller 4	IRQ: 10
PCI Embedded	IRQ: 10 Controller	IRQ: 5
PCI Embedded	IRQ: 11 1000 Video Controller	IRQ: 7
PCI Embedded	Disabled Integrated Lights-Out 2 Controller	IRQ: 5
PCI Embedded	Integrated Lights-Out 2 Processor	IRQ: 10
PCI Embedded	HP Integrated Lights-Out 2 UHCI Virtual Media	IRQ: 10
PCI Embedded	HP Integrated Lights-Out 2 Health Interface	IRQ: 5
PCI Embedded	HP NC373i Multifunction Gigabit Adapter Port 1	IRQ: 5
PCI Embedded	HP NC373i Multifunction Gigabit Adapter Port 2	IRQ: 5
PCI Embedded	HP Smart Array E200i Controller	Disabled
PCI Slot 1	Emulex LPe1105-HP 4Gb FC HBA Port 1	IRQ: 10
PCI Slot 1	Emulex LPe1105-HP 4Gb FC HBA Port 2	IRQ: 10
PCI Slot 2	HP NC326n PCIe Dual Port 1Gb Adapter Port 1	IRQ: 10
PCI Slot 2	HP NC326n PCIe Dual Port 1Gb Adapter Port 2	IRQ: 5

Press Esc to return to the previous menu

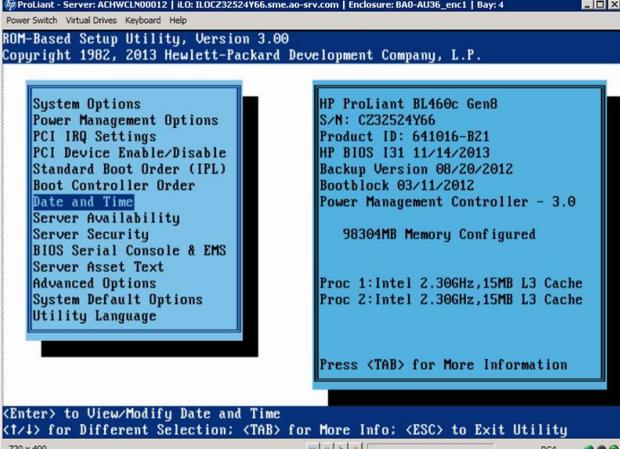
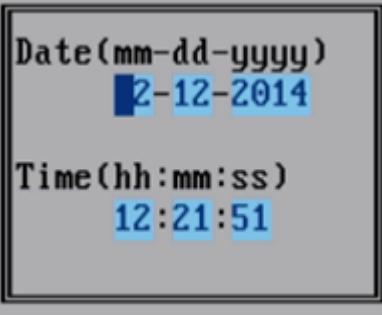
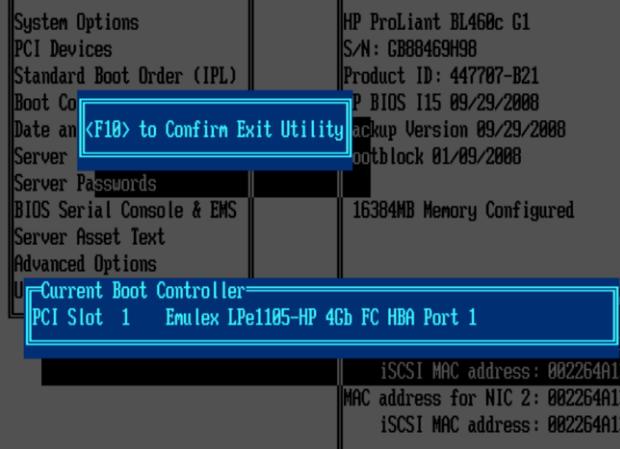
ROM-Based Setup Utility, Version 2.10 Copyright 1982, 2008 Hewlett-Packard Development Company, L.P.	
System Options PCI Devices Standard Boot Order (IPL) Boot Controller Order: Date and Time Server Availability Server Passwords BIOS Serial Console & EMS Server Asset Text Advanced Options Utility Language	HP ProLiant BL460c G1 S/N: GB88469H98 Product ID: 447787-B21 HP BIOS I15 09/29/2008 Backup Version 09/29/2008 Bootblock 01/09/2008  16384MB Memory Configured  Proc 1:Intel 3.00GHz,12MB L2 Cache Proc 2:Not Installed MAC address for NIC 1: 002264A13972 iSCSI MAC address: 002264A13973 MAC address for NIC 2: 002264A1396A iSCSI MAC address: 002264A1396B

Select "Boot Controller Order"

Alter the order of the Smart controller to be last on the list.  
(HP Smart Array is not always there)

ROM-Based Setup Utility, Version 2.10 Copyright 1982, 2008 Hewlett-Packard Development Company, L.P.		
Ctlr:1	PCI Slot 1	Emulex LPe1105-HP 4Gb FC HBA Port 1
Ctlr:2	PCI Slot 1	Emulex LPe1105-HP 4Gb FC HBA Port 2
Ctlr:3	PCI Embedded	HP Smart Array E200i Controller

Press Esc to return to the main menu, and Esc again to bring up the following screen

Select Date and Time	
Set Date and Time to current date and time.	
	
Press F10 to exit the utility and reboot the server.	
The server is now configured for SAN boot.  Reboot the server, and start the PXE installation process	