

**Oracle® Communications
Subscriber Data Management**

Installing LTE HSS & HLR 9.1 on HP C-Class G8

Release 9.1

E63814-01

January 2012

ORACLE®

Oracle Communications Subscriber Data Management, Installing LTE HSS & HLR 9.1 on HP C-Class G8, Release 9.1
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Installing LTE HSS & HLR on HP C-Class G8

1.0 PURPOSE AND SCOPE

The purpose of this document is to document the installation of SDM/LTE HSS & HLR 9.1.0 software on the TPD 5.2.1 Linux environment, on HP C-CLASS G8 hardware.

This document describes only methods utilized and procedures executed to configure the 9.1 SDM/LTE HSS & HLR applications.

It is assumed that:

- The hardware installation and network cabling were executed beforehand.

This document is intended for Oracle field personnel who need to install SDM software on C-CLASS hardware running TPD. This document may be used in discussions with the customer to determine if this product satisfies their expectations. The reader is assumed to be familiar with TPD and C-CLASS servers, and this document focuses on the specifics of the installation unique to an SDM/LTE HSS & HLR installation in a TPD environment.

1.1 ACRONYMS

Acronym	Description
ILO	Integrated Lights Out manager
SDM	Subscriber Data Management
TPD	Oracle Platform Distribution
SDM1	SDM C-CLASS Servers located on site 1
SDM2	SDM C-CLASS Servers located on site 2
OA	HP Onboard Administrator
IPM	Initial Product Manufacture – the process of installing TPD on a hardware platform

Table 1: Acronyms

1.2 REFERENCES

Ref ID	Part Number	Title	Version
[TK1]	909-1620-001	Platform 4.x HP G8 Configuration Procedure Reference	Rev F 2012
[TK2]	910-6611-001	“HP Solutions Firmware Upgrade Pack, Upgrade Procedures 2.3”, Section 4.8	
[TK3]	910-6611-001	HP Solutions Firmware Upgrade Pack 2.2.3, Release Notes”	
[TK4]	PD001866	Formal Peer Review Process	Rev 16.0
[TK5]	TR006928	SDM Advanced Routing for Virtual IP addresses (VIPs)	
[TK6]	TR007093	SDM NetBackup configuration	

Table 2: References

Installing LTE HSS & HLR on HP C-Class G8

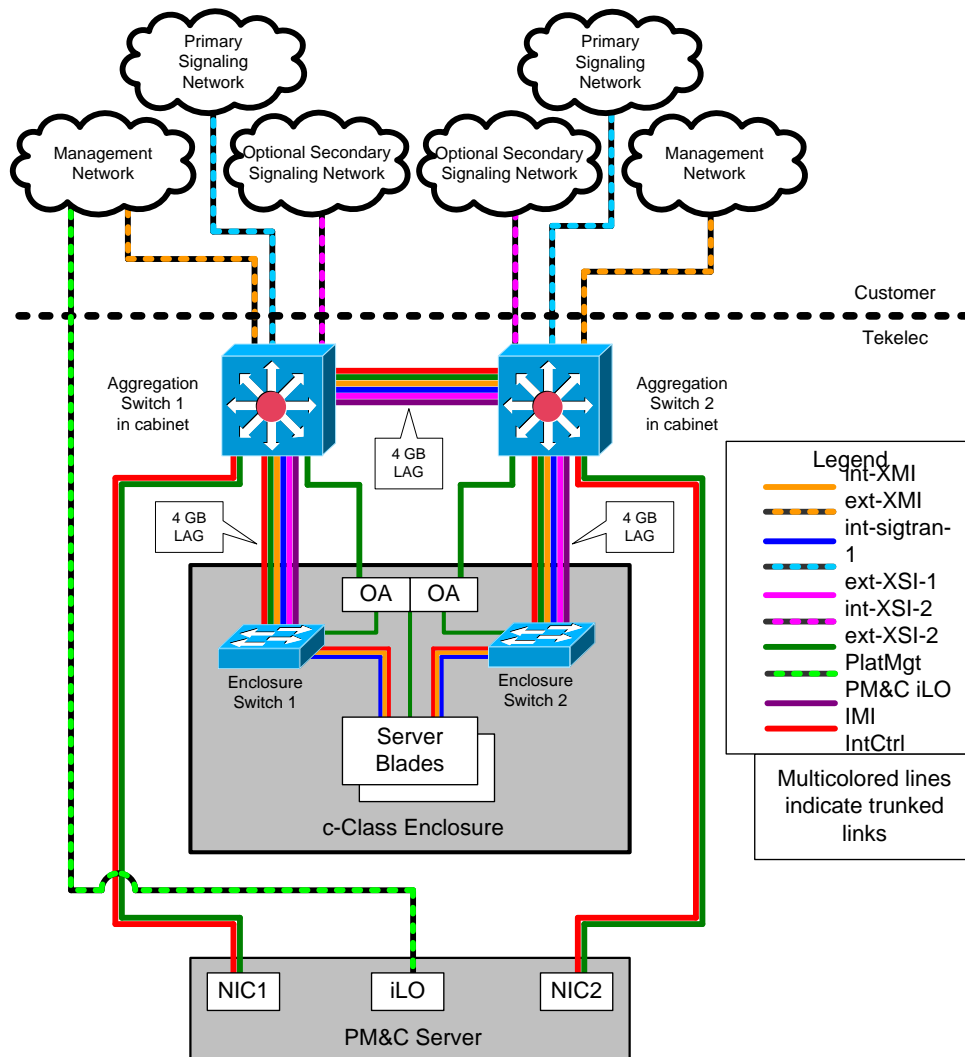
1.3 HIGH LEVEL NETWORKING DESCRIPTION

There are three IP networking options for a C-class system:

1. With Cisco 4948 Aggregation (top-of-rack) switch, and Layer 3 uplinks (preferred)
2. With Cisco 4948 Aggregation (top-of-rack) switch, and Layer 2 uplinks
3. Layer 2 uplinks direct from c-Class Enclosure switches (HP Proliant 6120XG) to customer network, with 10G uplinks.4 GB uplinkgs (Cisco 3020)

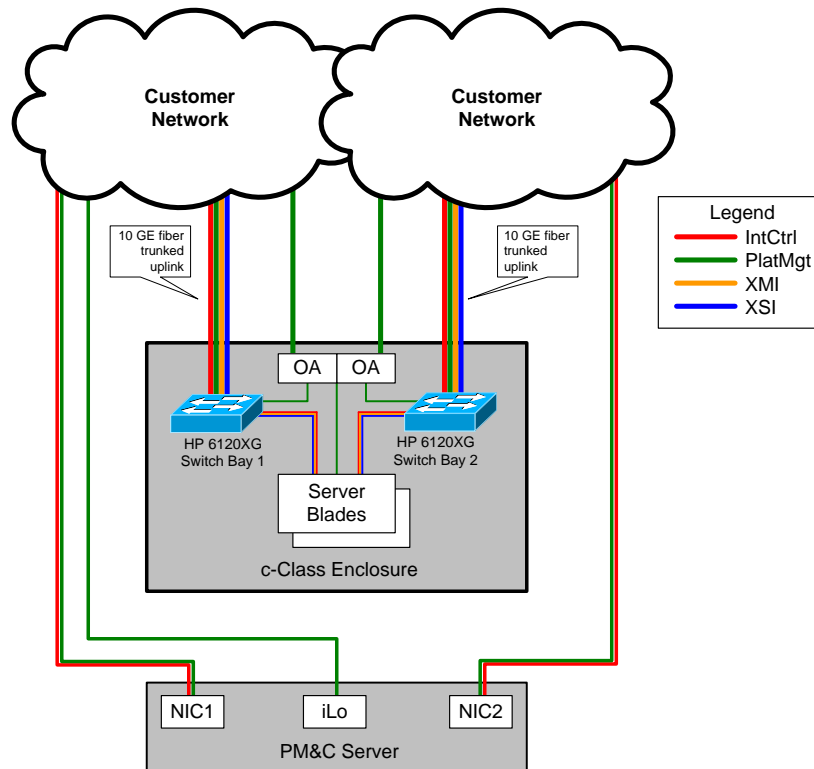
The decision of what interconnect method will be used is typically made even before equipment order is placed.

Figure 1: SDM on C-CLASS Connectivity figure with aggregation switches



Installing LTE HSS & HLR on HP C-Class G8

Figure 2: SDM on C-CLASS Connectivity figure without aggregation switches



1.4 INSTALLATION RESTRICTIONS

The TPD software version combination for which this installation procedure applies:

- TPD 5.0.1-73.3.0 x64 + SDM 9.1.0

1.5 INSTALLATION PREREQUISITES

In order to complete this installation, you should have the following:

- C-CLASS environment setup ready and Network configuration performed on enclosure and aggregation switches. PM&C server application installed.
- A valid recent **TPD 5.0.1-73.3.0 x64** release of TPD 64-bit must be on. This must be available either in CD/DVD format or on a Windows PC that has network access to the OA of the C-CLASS
- The TPD ISO file available on a Windows PC, connecting to the ILO in HTTP with Internet Explorer from the PC will allow using the Virtual Media feature to make the file appear as a CD mounted in the CD/DVD drive.
- A valid recent 9.1.0 release of LTE HSS & HLR software must be on hand. This should be an iso image format with a filename 872-2409-101-9.1.0_5.0.0-SDM-x86_64.iso
- The script named "create_SDMdiskconfig.pl" (included in SDM iso media)
- The HP Diameter license and SDM license codewords are needed
- The SDM LTE HSS & HLR 9.1 Subscriber license file is needed:
 - sdm-ssh.conf file and sdm-ssh-tool script (included in SDM iso media)
 - TVOE 2.0 iso image 872-2442-106-2.0.0_80.28.0-TVOE-x86_64
 - PMAC image 872-2441-107-5.0.0_50.14.0-PMAC-x86_64

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1.5.1 Networks List in C-CLASS server

The table below shows a list of the internal networks used in the SDM configuration on C-CLASS servers (SDM Server A and Server B):

Network Name	Identifier	Default VLAN ID	Subnet Size, Mask	Routable	Usage
Control	IntCtrl	1	/24	No	PM&C and server internal control and maintenance
Management	PlatMgt ¹	2010	/26	Yes	Management and ILO
OAM	XMI	2072	/27	Yes	External management access and Geo redundancy replication
Internal Messaging	IMI	2071	/16	No	Internal Communication Network - Requires 2 static IPs (fixed to 169.254.0.0/16)
Sigtran – 1	sigtran-1	2073	/28	Yes	HLR Sigtran Network 1
Sigtran – 2	sigtran-2	2074	/28	Yes	HLR Sigtran Network 2
Geo – 1	geo-1	2075	/28	Yes	sctp Geo redundancy network 1
Geo - 2	geo-2	2076	/28	Yes	sctp Geo redundancy network 2
Diameter - 1	diameter-1	2077	/28	Yes	LTE-HSS Diameter 1
Diameter - 2	diameter-2	2078	/28	Yes	LTE-HSS Diameter 2

Table 3: Network List in C-CLASS server

1.5.2 XMI configuration

Description	IP
OAM VLAN ID	XMI_Subnet_ID (default 3)
OAM NETWORK	OAM_NET
OAM Subnet mask	XMI_MASK
OAM Default gateway	XMI_GATEWAY
OAM VIPs for SDM	XMI_SDM_VIP
PROVISIONING VIPs for SDM	PROV_SDM_VIP
OAM Planned IP addresses of SDM servers:	
OAM IP Address for SDM 1	XMI_SDM_1
OAM IP Address for SDM 2	XMI_SDM_2
OAM IP Address for SDM n	XMI_SDM_N
Planned host name of SDM servers:	
Host Name for SDM 1	XMI_SDM_Hostname_1
Host Name for SDM 2	XMI_SDM_Hostname_2
Host Name for SDM n	XMI_SDM_Hostname_N

Table 4: XMI configuration

¹ Note that choosing the minimum required subnet size might minimize the option of co-mingling with other applications in the same frame.

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1.5.3 Traffic or sigtran-1 configuration

The network configuration needed for the traffic connection to the customer network SIGTRAN-1 :

Description	IP
SIGTRAN-1 VLAN ID	SIGTRAN-1_Subnet_ID (default 5)
SIGTRAN-1 NETWORK	SIGTRAN-1_NET
SIGTRAN-1 Subnet mask	SIGTRAN-1_MASK
SIGTRAN-1 VIP1	SIGTRAN-1_SDM_VIP1
SIGTRAN-1 VIP2	SIGTRAN-1_SDM_VIP2

Table 5: SIGTRAN-1 configuration

1.5.4 Traffic or sigtran-2 configuration

Eventually the network configuration needed for the second traffic connection to the customer network SIGTRAN-2 should be known:

Description	IP
SIGTRAN-2 VLAN ID	SIGTRAN-2_Subnet_ID (default 6)
SIGTRAN-2 NETWORK	SIGTRAN-2_NET
SIGTRAN-2 Subnet mask	SIGTRAN-2_MASK
SIGTRAN-2 VIP1	SIGTRAN-2_SDM_VIP1
SIGTRAN-2 VIP2	SIGTRAN-2_SDM_VIP2

Table 6: SIGTRAN-2 configuration

1.5.5 Traffic or diameter-1 configuration

The network configuration needed for the traffic connection to the customer network diameter-1 :

Description	IP
DIAMETER-1 VLAN ID	DIAMETER-1_Subnet_ID (default 5)
DIAMETER-1 NETWORK	DIAMETER-1_NET
DIAMETER-1 Subnet mask	DIAMETER-1_MASK
DIAMETER-1 VIP1	DIAMETER-1_SDM_VIP1
DIAMETER-1 VIP2	DIAMETER-1_SDM_VIP2

Table 7: DIAMETER-1 configuration

1.5.6 Traffic or diameter-2 configuration

Eventually the network configuration needed for the second traffic connection to the customer network diameter-2 should be known:

Description	IP
DIAMETER-2 VLAN ID	DIAMETER-2_Subnet_ID (default 6)
DIAMETER-2 NETWORK	DIAMETER-2_NET
DIAMETER-2 Subnet mask	DIAMETER-2_MASK
DIAMETER-2 VIP1	DIAMETER-2_SDM_VIP1
DIAMETER-2 VIP2	DIAMETER-2_SDM_VIP2

Table 8: DIAMETER-2 configuration

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1.5.7 geo-1 configuration

The network configuration needed for the traffic connection to the customer network GEO-1 :

Description	IP
GEO-1 VLAN ID	GEO-1_Subnet_ID (default 5)
GEO-1 NETWORK	GEO-1_NET
GEO-1 Subnet mask	GEO-1_MASK
GEO-1 VIP1	GEO-1_SDM_VIP1
GEO-1 VIP2	GEO-1_SDM_VIP2

Table 9: GEO-1 configuration

1.5.8 Traffic or geo-2 configuration

Eventually the network configuration needed for the second traffic connection to the customer network GEO-2 should be known:

Description	IP
GEO-2 VLAN ID	GEO-2_Subnet_ID (default 6)
GEO-2 NETWORK	GEO-2_NET
GEO-2 Subnet mask	GEO-2_MASK
GEO-2 VIP1	GEO-2_SDM_VIP1
GEO-2 VIP2	GEO-2_SDM_VIP2

Table 10: GEO-2 configuration

1.5.9 NTP

At least one time synchronization NTP server IP address which is accessible through the XMI network should be known: NTP_IP

1.5.10 Adding Private Network

The TPD/SDM servers need to communicate together on an IP subnet that is private (169.254.0.0/16). Such a small subnet that does not conflict with the customer network must have been selected:

Description	IP
IMI VLAN ID	IMI_Subnet_ID(default 4)
IMI Subnet mask	255.255.0.0
IMI IP Address for SDM 1	169.254.1.1
IMI IP Address for SDM 2	169.254.1.2
IMI IP Address for SDM n	169.254.1.N

Table 11 IMI configuration

1.5.11 Adding Additional Parameters

SDM software requires additional networking parameters for its operation. All these parameters must be specified in file **/etc/sysconfig/blue** on each SDM/TPD server:

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Description	Information
SDM site Name	SDM_CUSTOMER_SITE_NAME
SDM SRP communication Domain	SDM_CUSTOMER_SRP_DOMAIN
For each SDM/TDP server, a slot ID (a unique integer in the range 1-16)	SDM_UNIQUE_SLOT_ID

1.6 AUTHENTICATION

1. The usernames and passwords that can login to the ILO in full privilege mode should be known. On an C-CLASS server coming straight from the factory, the initial ILO username/password is of the server is written on a little pull-out tab located left of the left-most hard-drive bay of the unit.
2. The default password of the “root” account of the Oracle TPD installation must be known to the installer.
3. The default password of the “admin” account of the Oracle SDM installation must be known to the installer.

1.7 BASIC INSTALLATION OF TPD

This installation should be repeated for C-CLASS on all blades on both sites (SDM1 and SDM2) planned to be part of the SDM/TPD configuration. The TPD and SDM application is performed via PM&C server.

1.8 ACQUIRING FIRMWARE

Procedure 15 in this document pertains to the upgrading of firmware on SDM blades and hardware devices. The required firmware media and binaries are managed and distributed as part of the *HP Solutions Firmware Upgrade Pack 2.2.3*, released under Oracle Part Number 795-0000-2yy². The current minimum firmware release required for this product is *HP Solutions Firmware Upgrade Pack 2.2.1*.

The *HP Solutions Firmware Upgrade Pack* contains multiple BOM items including media and documentation. This document only requires access to the media (CD/DVD or ISOs) as well as the *Release Notes [1]* document.

The two pieces of required firmware media provided in the *HP Solutions Firmware Upgrade Kit 2.2.3* release are:

Media		
Part #	ISO File	ISO Checksum
HP Service Pack for ProLiant DVD/ISO 2.2.3		
875-1124-103	872-2488-103-2.2.3-10.29.0.iso	6714a3b9e66812ee760237db56b85d28
HP Misc Firmware DVD/ISO 2.2.2		
875-0903-213	872-2161-115-2.2.2_10.28.0.iso	4734d37669a54f7097e041b4ab964ee0

Refer to the Release Notes of the target release of the *HP Solutions Firmware Upgrade Pack* used to determine specific media part numbers to use and the specific firmware versions provided.

Policy/SDM 9.x Servers and devices that may require firmware updates are:

- HP c7000 Blade System Enclosure Components:
 - Onboard Administrator (**Rev 3.50 or greater is REQUIRED to support GEN 8**)

² Where yy is a 2-digit number which increases with every new release.

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- HP 6120XG Network Switches
- BL460c Blade Servers
- HP Rack Mount Servers (DL360 / DL380)
- Cisco 4948E-F Rack Mount Network Switch

1.9 C-CLASS CONFIGURATION WITH ADDITIONAL DRIVES

Hardware Configuration		Servers/site	RAM /server	HD /server (BE)
6352	2 x BL460c (64GB) + 2 x Storage Arrays	2	48GB	2x 600GB in RAID1
6552	2 x BL460c (128GB) + 2 x Storage Arrays	2	64GB	4x (2x 600GB in RAID1)
6654	2 x BL460c (192GB) + 2 x Storage Arrays	2	128GB	4x (2x 600GB in RAID1)
6754	2 x BL460c (64GB)+ 2 x BL460c (256GB)+ 2 x Storage Arrays	4		

Table 12 C-CLASS HW configuration types

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2.0 INSTALLATION (AND NETWORKING) IN A –CLASS ENVIRONMENT

The C-Class environment installation procedures are not within the scope of this document.

[TK8] WI006855 SDM 9.1 Software Installation Guide covers the procedures to setup the Policy C-Class environment and must be followed from procedure 1 to 15.

2.1 PM&C INSTALLATION

This section provides the procedures to install the PM&C server.

The PM&C server is a rack mount server (DL360/DL380) with an Oracle Application that provides tools to manage multiple c-class enclosures and blade software, as well as networking equipment (Aggregation and Enclosure switches) for the c-class environment.

IMPORTANT: The correct time setting in the PM&C server CMOS BIOS (step 4 below) must be performed to ensure later procedure steps will be successful. **DO NOT CONTINUE** to the next steps unless the time has been correctly set. [This time setting will be pushed to the blades during IPM of the blade servers, and will cause various issues during installation if not set correctly.]

Even if PM&C was previously installed, it is necessary to re-install the PM&C server, in order to assure a correct installation for this customer site.

PMAC 5.0 is deployed on a Virtual OS (TVOE) environment. The TVOE OS must be installed first, and then the PMAC application iso is installed. PMAC install is not service affecting for the Policy system.

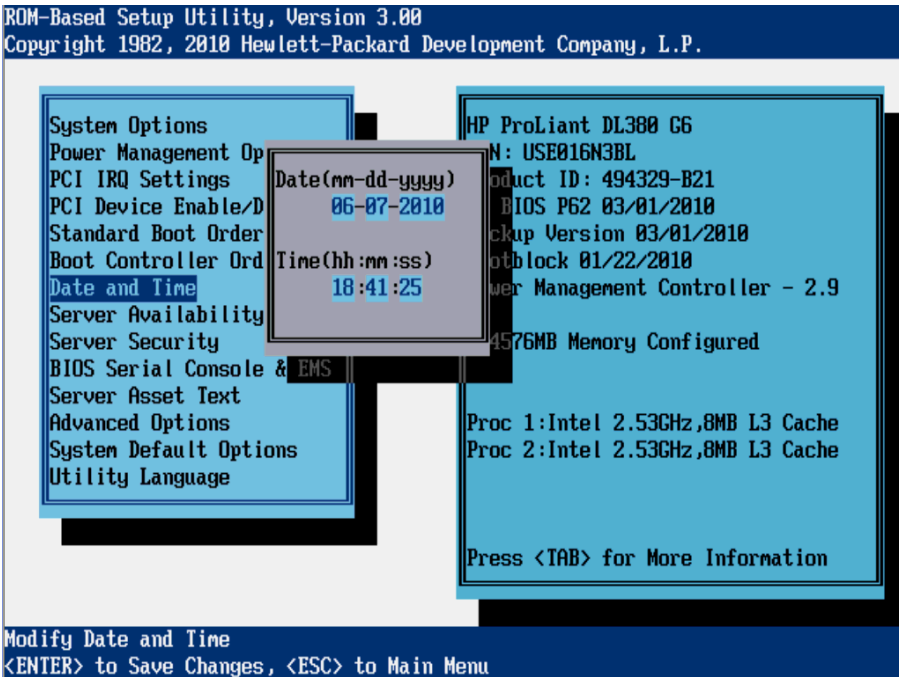
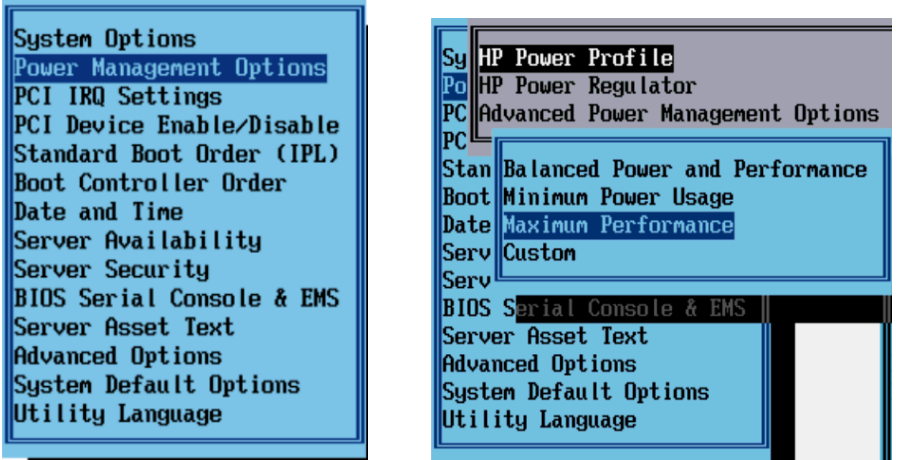
Note that in Policy Rel 9.x, PMAC is used for Installation activities, growth of new servers and Field repair activities. It is also used for deploying Firmware upgrades.

Procedure 1. Install TVOE 2.0 on Management Server (DL360/DL380)

S T E P #	This procedure will install TVOE 2.0 on the Management Server	
	Needed material: - TVOE 2.0 Media Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
1 <input type="checkbox"/>	Connect to the Server	Connect to the Server using a VGA Display and USB Keyboard, or via the iLO interface using IE. Appendix C though F explains how to access the PM&C iLO and change the address if necessary.
2 <input type="checkbox"/>	Insert TVOE Media into Server	Insert TVOE media in the optical drive. (You can also attach the TVOE ISO to the iLO) .
3 <input type="checkbox"/>	Access the Server BIOS	Reboot the server and after the server is powered on, as soon as you see <F9=Setup> in the lower left corner of the screen, press F9 to access the BIOS setup screen.

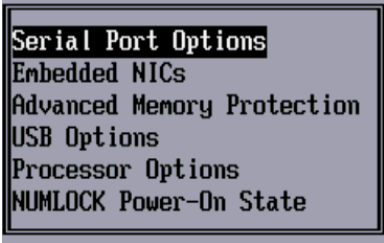
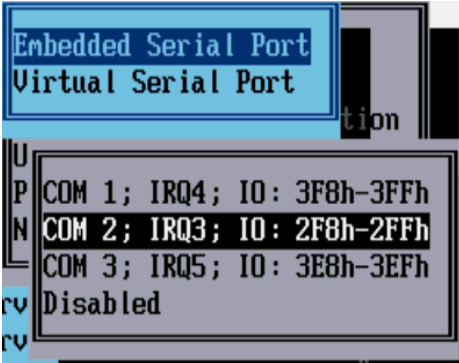
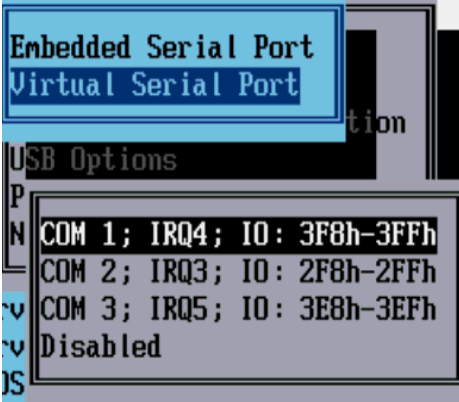
Installing LTE HSS & HLR on HP C-Class G8

Procedure 1. Install TVOE 2.0 on Management Server (DL360/DL380)

<p>4</p> <p><input type="checkbox"/></p>	<p>Set CMOS Clock</p>	<p>Scroll to <i>Date and Time</i> and press Enter Set the date and time and press Enter, the time zone to be used is UTC.</p>  <p>ROM-Based Setup Utility, Version 3.00 Copyright 1982, 2010 Hewlett-Packard Development Company, L.P.</p> <p>System Options Power Management Op PCI IRQ Settings PCI Device Enable/D Standard Boot Order Boot Controller Ord Date and Time Server Availability Server Security BIOS Serial Console & EMS Server Asset Text Advanced Options System Default Options Utility Language</p> <p>Date(mn-dd-yyyy) 06-07-2010</p> <p>Time(hh:mm:ss) 18:41:25</p> <p>HP ProLiant DL380 G6 N: USE016N3BL Product ID: 494329-B21 BIOS P62 03/01/2010 Backup Version 03/01/2010 Hotblock 01/22/2010 Power Management Controller - 2.9 4576MB Memory Configured Proc 1: Intel 2.53GHz, 8MB L3 Cache Proc 2: Intel 2.53GHz, 8MB L3 Cache Press <TAB> for More Information</p> <p>Modify Date and Time <ENTER> to Save Changes, <ESC> to Main Menu</p> <p>Go back to the main menu by pressing <Esc> and scroll down to <i>Power Management Options</i> and press Enter Select <i>HP Power Profile</i> and press Enter Scroll down to <i>Maximum Performance</i> and press Enter</p>  <p>System Options Power Management Options PCI IRQ Settings PCI Device Enable/Disable Standard Boot Order (IPL) Boot Controller Order Date and Time Server Availability Server Security BIOS Serial Console & EMS Server Asset Text Advanced Options System Default Options Utility Language</p> <p>Sy HP Power Profile Po HP Power Regulator PC Advanced Power Management Options PC Stan Balanced Power and Performance Boot Minimum Power Usage Date Maximum Performance Serv Custom Serv BIOS Serial Console & EMS Server Asset Text Advanced Options System Default Options Utility Language</p> <p>Press <Esc> to return to the main menu</p>
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Procedure 1. Install TVOE 2.0 on Management Server (DL360/DL380)

5 <input type="checkbox"/>	Configure iLO Serial Port	<p>Scroll to <i>System Options</i> and press Enter Change power profile (same as blades)</p> <p>Select <i>Serial Port Options</i> and press Enter</p>  <pre>Serial Port Options Embedded NICs Advanced Memory Protection USB Options Processor Options NUMLOCK Power-On State</pre> <p>Press Enter to select <i>Embedded Serial Port</i> and change it to <i>COM2</i> and press Enter</p>  <pre>Embedded Serial Port Virtual Serial Port COM 1; IRQ4; IO: 3F8h-3FFh COM 2; IRQ3; IO: 2F8h-2FFh COM 3; IRQ5; IO: 3E8h-3EFh Disabled</pre> <p>Press Enter to select <i>Virtual Serial Port</i> and change it to <i>COM1</i> and press Enter</p>  <pre>Embedded Serial Port Virtual Serial Port USB Options COM 1; IRQ4; IO: 3F8h-3FFh COM 2; IRQ3; IO: 2F8h-2FFh COM 3; IRQ5; IO: 3E8h-3EFh Disabled</pre> <p>Press <ESC> 2 times to return to the main menu</p>
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Installing LTE HSS & HLR on HP C-Class G8

Procedure 1. Install TVOE 2.0 on Management Server (DL360/DL380)

6 <input type="checkbox"/>	Double Check boot Order.	<p>Scroll to <i>Standard Boot Order</i> and press Enter</p> <p>Verify that the first boot device is set to <i>CD-ROM</i>, if not, set CD-ROM to be the first boot device and press Enter</p> <p>Press <ESC> to return to the main menu.</p>
7 <input type="checkbox"/>	Save Configuration and Exit	<p>Press <ESC> then press F10 to save the configuration and exit. The server will reboot</p>
8 <input type="checkbox"/>	Begin IPM Process	<p>Once the Server reboots, it will reboot from the TVOE media and a boot prompt shall be displayed.</p> <p>IPM the server using the following command:</p> <p>For a DL360/G5 server: TPDnoraid console=tty0</p> <p>For a DL360/G6/G7/Gen8 or DL380 G6 server: TPDnoraid diskconfig=HPHW,force console=tty0</p>
9 <input type="checkbox"/>	IPM Complete	<p>The IPM process takes about 30 minutes, you will see several messages and screens in the process.</p> <p>Once the IPM is complete, you will be prompted to press Enter as shown below. Remove the disk from the drive or unmount the TPD image from the iLO and press Enter to reboot the server. Note that the CD may eject automatically.</p> 

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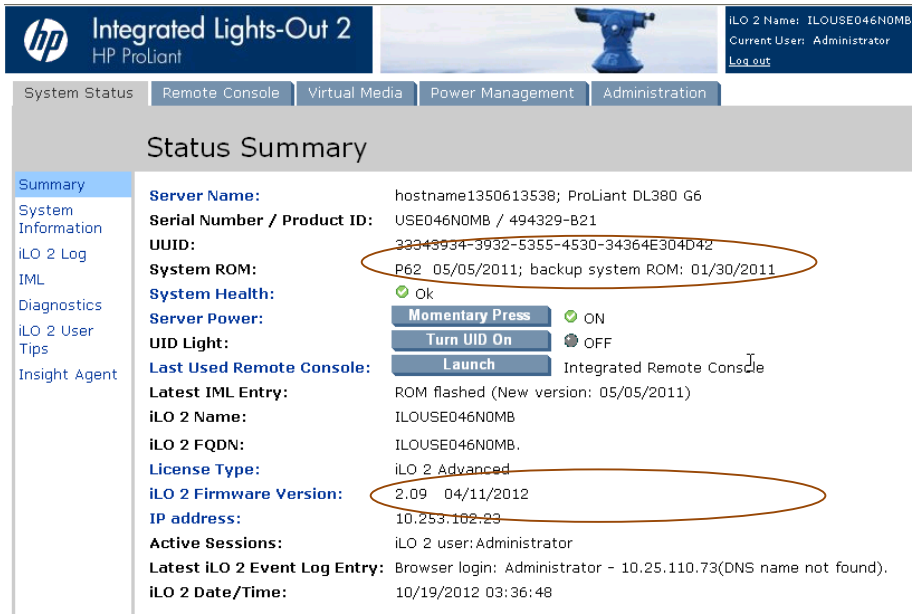
Procedure 1. Install TVOE 2.0 on Management Server (DL360/DL380)

10 <input type="checkbox"/>	Server Reboot	<p>Once the Server Reboots, you should see a login prompt. Note that during the first system boot, swap files may be initialized and activated. Each swap file will take about 2 minutes.</p> <p>If no login prompt is displayed after waiting 15 minutes, contact Oracle Customer Support for Assistance.</p>
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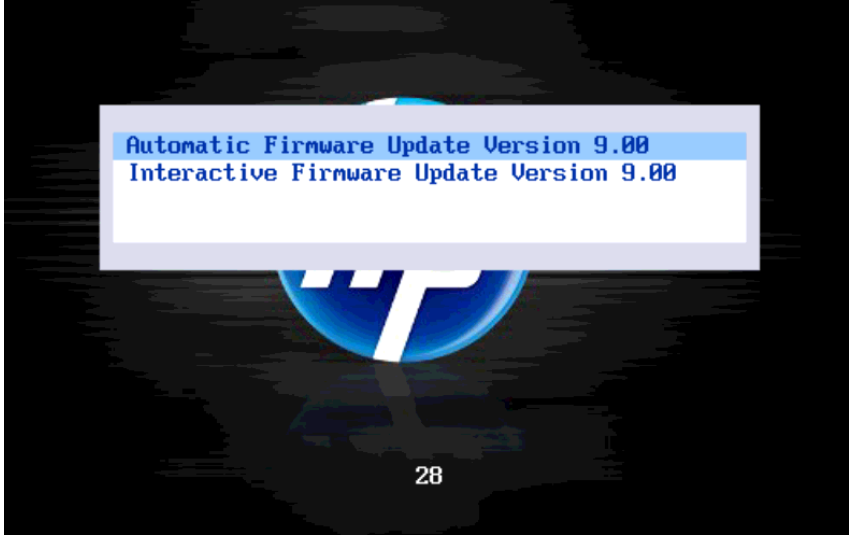
2.2 UPGRADE DL360/380 SERVER FIRMWARE

Procedure 2. Upgrade DL360/380 Server Firmware

S T E P #	<p>This procedure will upgrade the DL360 or DL380 server firmware</p> <p>Needed material:</p> <ul style="list-style-type: none"> - HP Firmware Maintenance CD/DVD - HP Solutions Firmware Upgrade Pack Release Notes [1] <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.</p>	
1. <input type="checkbox"/>	<p>Connect to the Management Server Console</p>	<p>Connect to the Server Console:</p> <ul style="list-style-type: none"> - using a VGA Display and USB Keyboard, or - using the Server iLO port and iLo Web Interface (to access Remote Console) <p>(Note: default IP address on the iLo port is _192.168.100.5_)</p> <p>Appendix B explains how to access the PM&C iLO and set iLo IP address if necessary.</p>
2. <input type="checkbox"/>	<p>Optional: Determine current Firmware Revs</p>	<p>From the iLo, determine the current Firmware rev of the Server ROM and iLo. (Optional – since the Smart Update can be applied even if the firmware is already up-to-date.) Compare to latest Firmware Release notes.</p> <p>If firmware is up-to-date, the remainder of this procedure can be skipped. [Note: you still need to determine if any Errata (Firmware Patches) need to be applied. See Firmware Release notes.]</p>  <p>The screenshot shows the HP iLO 2 web interface. The 'Status Summary' page is displayed, showing the following information:</p> <ul style="list-style-type: none"> Server Name: hostname1350613538; ProLiant DL380 G6 Serial Number / Product ID: USE046N0MB / 494329-B21 UUID: 33345934-3932-5355-4530-34364E304D42 System ROM: P62 05/05/2011; backup system ROM: 01/30/2011 System Health: Ok Server Power: Momentary Press ON UID Light: Turn UID On OFF Last Used Remote Console: Launch Integrated Remote Console Latest IML Entry: ROM flashed (New version: 05/05/2011) iLO 2 Name: ILOUSE046N0MB iLO 2 FQDN: ILOUSE046N0MB. License Type: iLO 2 Advanced iLO 2 Firmware Version: 2.09 04/11/2012 IP address: 10.253.102.23 Active Sessions: iLO 2 user: Administrator Latest iLO 2 Event Log Entry: Browser login: Administrator - 10.25.110.73(DNS name not found). iLO 2 Date/Time: 10/19/2012 03:36:48

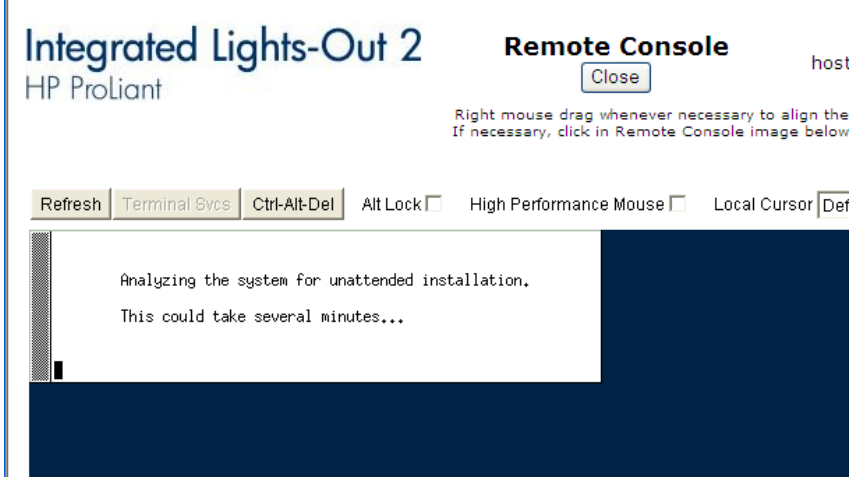
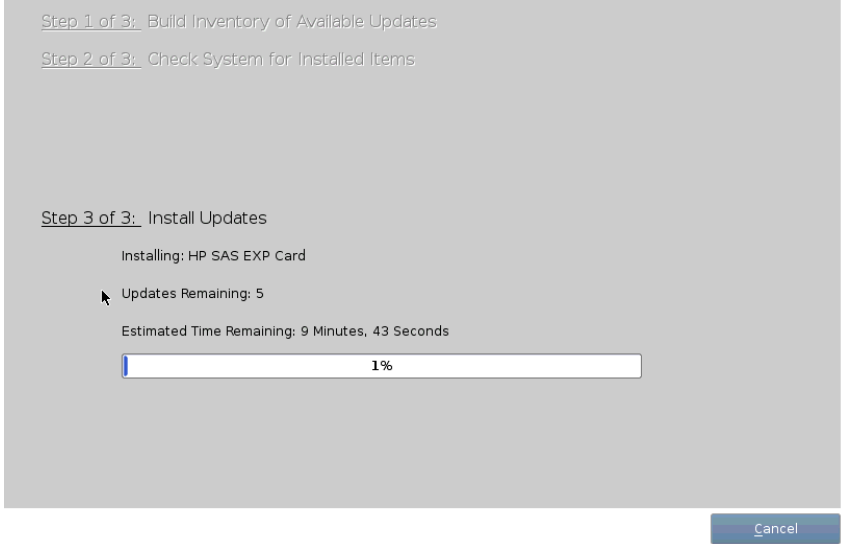
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Procedure 2. Upgrade DL360/380 Server Firmware

3. <input type="checkbox"/>	Management server iLO: Prepare to upgrade DL360 or DL380 server firmware	Insert HP Smart Update Firmware DVD into the removable media drive of the DL360 or DL380 server. <i>Note: HP Smart Update Firmware may also be applied using a Virtual Mount on the iLo Web Interface.</i>
4. <input type="checkbox"/>	Management server iLO: Boot the server	In the integrated remote console, log into the server as root if needed, and run: # shutdown -r now
5. <input type="checkbox"/>	Management server Console: Perform firmware upgrade	The server will reboot into the <i>HP Smart Update Firmware</i> ISO and present the following boot prompt on the Console: Press [Enter] to select the Automatic Firmware Update procedure.  If no key is pressed in 30 seconds the system will automatically perform an Automatic Firmware Update.

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Procedure 2. Upgrade DL360/380 Server Firmware

<p>6. <input type="checkbox"/></p>	<p>Management server Console: System analysis</p>	<p>The firmware install will perform a system scan of the server in which it will identify all of the firmware components that are eligible for upgrade. This process may take up to 10 minutes and during that time the following screen is displayed on the console.</p>  <p>Note: No progress indication is displayed during the system scan and analysis stage. In about 10 minutes the installation will automatically proceed to the next step.</p>
<p>7. <input type="checkbox"/></p>	<p>Management server Console: Monitor installation</p>	<p>Once analysis is complete the installer will begin to upgrade the eligible firmware components. A progress indicator is displayed at this time as shown below.</p>  <p>Note: If the iLO2 firmware is to be upgraded it will be upgraded last. At this point the iLO2 session will be terminated and you will lose the remote console, virtual media and Web GUI connections to the server. This is expected and will not impact the firmware upgrade process.</p>

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Procedure 2. Upgrade DL360/380 Server Firmware

8. <input type="checkbox"/>	Local Workstation: Clean up	Once the firmware updates have been completed the server will automatically be rebooted. At this time you may close the remote console and the iLO2 Web GUI browser session.
9. <input type="checkbox"/>	Local Workstation: Verify server availability	Wait 3 to 5 minutes and verify the server has rebooted and is available by gaining access to the login prompt.
10. <input type="checkbox"/>	Management server iLO: Remove the firmware CD	Remove the HP Smart Update Firmware DVD from the removable media drive. Exit from the Integrated Remote Console.

IMPORTANT: It may also be necessary to “patch” the firmware, using a HP Provided “Firmware Errata”. HP provides these patches for specific problems.

See the HP Firmware Release notes for a list of available and required Errata, and the procedure to install these. The Errata are packaged as small executables that can be copied to the server, and executed. The errata are also easily installed remotely, if needed.

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2.3 TVOE/MANAGEMENT SERVER NETWORK CONFIGURATION

Procedure 3. TVOE/Management Server Network Configuration

S T E P #	This procedure will configure the Network on the TVOE/Management Server																																		
	Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.																																		
	IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.																																		
	Refer to the table below to determine the Ethernet port names to use throughout this procedure based on the hardware type and configuration.																																		
	<table border="1"><thead><tr><th>Network Interface</th><th>DL360 (w/o HP NC364T 4pt Gigabit)</th><th>DL360 (with HP NC364T 4pt Gigabit in PCI Slot 2)</th><th>DL380</th><th>DL380 (with HP NC364T 4pt Gigabit in PCI Slot 3)</th></tr></thead><tbody><tr><td><ethernet_interface_1></td><td>eth01</td><td>eth01</td><td>eth01</td><td>eth01</td></tr><tr><td><ethernet_interface_2></td><td>eth02</td><td>eth02</td><td>eth02</td><td>eth02</td></tr><tr><td><ethernet_interface_3></td><td></td><td>eth21</td><td>eth03</td><td>eth03</td></tr><tr><td><ethernet_interface_4></td><td></td><td>eth22</td><td>eth04</td><td>eth04</td></tr><tr><td><ethernet_interface_5></td><td></td><td>eth23</td><td></td><td>eth31</td></tr></tbody></table>					Network Interface	DL360 (w/o HP NC364T 4pt Gigabit)	DL360 (with HP NC364T 4pt Gigabit in PCI Slot 2)	DL380	DL380 (with HP NC364T 4pt Gigabit in PCI Slot 3)	<ethernet_interface_1>	eth01	eth01	eth01	eth01	<ethernet_interface_2>	eth02	eth02	eth02	eth02	<ethernet_interface_3>		eth21	eth03	eth03	<ethernet_interface_4>		eth22	eth04	eth04	<ethernet_interface_5>		eth23		eth31
	Network Interface	DL360 (w/o HP NC364T 4pt Gigabit)	DL360 (with HP NC364T 4pt Gigabit in PCI Slot 2)	DL380	DL380 (with HP NC364T 4pt Gigabit in PCI Slot 3)																														
<ethernet_interface_1>	eth01	eth01	eth01	eth01																															
<ethernet_interface_2>	eth02	eth02	eth02	eth02																															
<ethernet_interface_3>		eth21	eth03	eth03																															
<ethernet_interface_4>		eth22	eth04	eth04																															
<ethernet_interface_5>		eth23		eth31																															

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<p>1.</p> <input type="checkbox"/>	<p>Determine Bridge names and interfaces</p>	<p>Determine the bridge name to be used on the TVOE management server for the management network and fill in the <TVOE_Management_Bridge> and <TVOE_Management_Bridge_Interface> values in the table below.</p> <p>If netbackup is to be used, determine the bridge name to be used for the netbackup network and fill in the <TVOE_NetBackup_Bridge> and <TVOE_NetBackup_Bridge_Interface> values in the table below:</p> <table border="1"> <thead> <tr> <th>PM&C Interface Alias</th> <th>TVOE Bridge Name</th> <th>TVOE Bridge Interface</th> </tr> </thead> <tbody> <tr> <td>control</td> <td>control</td> <td> Fill in the appropriate value (default is bond0): <input type="text"/> <TVOE_Control_Bridge_Interface> </td> </tr> <tr> <td>management</td> <td> Fill in the appropriate value: (default is management) <input type="text"/> <TVOE_Management_Bridge> </td> <td> Fill in the appropriate value: (example: bond0.2) <input type="text"/> <TVOE_Management_Bridge_Interface> </td> </tr> <tr> <td>Netbackup (if applicable)</td> <td> Fill in the appropriate value: (default is netbackup) <input type="text"/> <TVOE_NetBackup_Bridge> </td> <td> Fill in the appropriate value: (example: bond2) <input type="text"/> <TVOE_NetBackup_Bridge_Interface> </td> </tr> </tbody> </table>	PM&C Interface Alias	TVOE Bridge Name	TVOE Bridge Interface	control	control	Fill in the appropriate value (default is bond0): <input type="text"/> <TVOE_Control_Bridge_Interface>	management	Fill in the appropriate value: (default is management) <input type="text"/> <TVOE_Management_Bridge>	Fill in the appropriate value: (example: bond0.2) <input type="text"/> <TVOE_Management_Bridge_Interface>	Netbackup (if applicable)	Fill in the appropriate value: (default is netbackup) <input type="text"/> <TVOE_NetBackup_Bridge>	Fill in the appropriate value: (example: bond2) <input type="text"/> <TVOE_NetBackup_Bridge_Interface>
PM&C Interface Alias	TVOE Bridge Name	TVOE Bridge Interface												
control	control	Fill in the appropriate value (default is bond0): <input type="text"/> <TVOE_Control_Bridge_Interface>												
management	Fill in the appropriate value: (default is management) <input type="text"/> <TVOE_Management_Bridge>	Fill in the appropriate value: (example: bond0.2) <input type="text"/> <TVOE_Management_Bridge_Interface>												
Netbackup (if applicable)	Fill in the appropriate value: (default is netbackup) <input type="text"/> <TVOE_NetBackup_Bridge>	Fill in the appropriate value: (example: bond2) <input type="text"/> <TVOE_NetBackup_Bridge_Interface>												
<p>2.</p> <input type="checkbox"/>	<p>Management server iLO: Login and launch the integrated remote console</p>	<p>Log in to iLO in IE using password provided by application: <a href="http://<management_server_iLO_ip>">http://<management_server_iLO_ip></p> <p>Click in the Remote Console tab and launch the Integrated Remote Console on the server.</p> <p>Click Yes if the Security Alert pops up.</p>												

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	<p>Management server iLO: Verify the Control Network</p>	<p>Verify the control network by running the following command Note: The output below is for illustrative purposes only. The example output below shows the control bridge configured.</p> <pre># netAdm query --type=Bridge --name=control Bridge Name: control On Boot: yes Protocol: dhcp Persistent: yes Promiscuous: no Hwaddr: 00:24:81:fb:29:52 MTU: Bridge Interface: bond0</pre> <p>If the bridge has been configured, skip to the next step. If not, add and configure the bridge. Note: The output below is for illustrative purposes only. The site information for this system will determine the network interfaces, (network devices, bonds, and bond enslaved devices), to configure.</p> <p>Add control bridge (<TVOE_Control_Bridge>). <pre># netAdm add --device=bond0 --onboot=yes --type=Bonding --mode=active-backup --miimon=100 Interface <TVOE_Control_Bridge_Interface> added</pre> <pre># netAdm set --device=eth01 --type=Ethernet --master=<TVOE_Control_Bridge_Interface> --slave=yes --onboot=yes Interface <ethernet_interface_1> updated</pre> <pre># netAdm set --device=eth02 --type=Ethernet --master=<TVOE_Control_Bridge_Interface> --slave=yes --onboot=yes Interface <ethernet_interface_2> updated</pre> <pre># netAdm add --type=Bridge --name=control --bootproto=dhcp -- onboot=yes --bridgeInterfaces=<TVOE_Control_Bridge_Interface></pre> </p>
<p>3. <input type="checkbox"/></p>	<p>Management server iLO: Create tagged control interface and bridge (optional)</p>	<p>If you are using a tagged control network interface on this PMAC, then complete this step. Otherwise, skip on to the next step.</p> <pre># netAdm set --type=Bridge --name=control --delBridgeInt=bond0 Interface bond0 updated Bridge control updated</pre> <pre># netAdm add --device=<TVOE_Control_Bridge_Interface> --onboot=yes Interface <TVOE_Control_Bridge_Interface> created</pre> <pre># netAdm set --type=Bridge --name=control --bridgeInterfaces=<TVOE_Control_Bridge_Interface> --bootproto=none -- address=192.168.1.2 --netmask=255.255.255.0</pre>

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4. <input type="checkbox"/>	Management server iLO: Verify the Management Network	<p>Verify if the management network has been configured, by running the following command Note: The output below is for illustrative purposes only. The example output below shows the management bridge configured.</p> <pre># netAdm query --type=Bridge --name=management Bridge Name: management On Boot: yes Protocol: none IP Address: 10.240.4.86 Netmask: 255.255.255.0 Promiscuous: no Hwaddr: 00:24:81:fb:29:52 MTU: Bridge Interface: bond0.2</pre> <p>If the bridge has been configured as needed, skip to the next step.</p> <p>Note: The output below is for illustrative purposes only. The site information for this system will determine the network interfaces, (network devices, bonds, and bond enslaved devices), to configure.</p> <p><u>EXAMPLE 1:</u> Create Management bridge using tagged interface on bond0.</p> <pre># netAdm add --device=<TVOE_Management_Bridge_Interface> --onboot=yes # netAdm add --type=Bridge --name=<TVOE_Management_Bridge> --address=<Management_Server_TVOE_IP> --netmask=<Management_Server_TVOE_Netmask> --onboot=yes --bridgeInterfaces=<TVOE_Management_Bridge_Interface></pre> <p><u>EXAMPLE 2:</u> Create Management bridge using untagged interfaces (eth03 and eth04) with bonding (<TVOE_Management_Bridge>).</p> <pre># netAdm add --device=<TVOE_Management_Bridge_Interface> --onboot=yes --type=Bonding --mode=active-backup --miimon=100 Interface <TVOE_Management_Bridge_Interface> added # netAdm set --device=<ethernet_interface_3> --type=Ethernet --master=<TVOE_Management_Bridge_Interface> --slave=yes --onboot=yes Interface <ethernet_interface_3> updated # netAdm set --device=<ethernet_interface_4> --type=Ethernet --master=<TVOE_Management_Bridge_Interface> --slave=yes --onboot=yes Interface <ethernet_interface_4> updated # netAdm add --type=Bridge --name=<TVOE_Management_Bridge> --bootproto=none --onboot=yes --address=<Management_Server_TVOE_IP> --netmask=<Management_Server_TVOE_Netmask> --bridgeInterfaces=<TVOE_Management_Bridge_Interface></pre>
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5. <input type="checkbox"/>	Management server iLO: Verify the NetBackup Network (Optional)	<p>Verify the netbackup network. If the NetBackup feature is not needed, skip to the next step.</p> <p>Note: The output below is for illustrative purposes only. The example output below shows the control bridge configured.</p> <pre># netAdm query --type=Bridge --name=netbackup Bridge Name: netbackup On Boot: yes Protocol: none IP Address: 10.240.6.2 Netmask: 255.255.255.0 Promiscuous: no Hwaddr: 00:24:81:fb:29:58 MTU: Bridge Interface: bond2</pre> <p>If the bridge has been configured as needed, skip to the next step.</p> <p>Note: The output below is for illustrative purposes only. The site information for this system will determine the network interfaces, (network devices, bonds, and bond enslaved devices), to configure.</p> <p>Note: The example below illustrates a TVOE management server configuration with the NetBackup feature enabled. The NetBackup network is configured with a non-default MTU size.</p> <p>Note: The MTU size must be consistent between a network bridge, device, or bond, and associated VLANs.</p> <p><u>EXAMPLE 1:</u> Create NetBackup bridge using tagged interface on bond0.</p> <pre># netAdm add --device=<TVOE_NetBackup_Bridge_Interface> # netAdm add --type=Bridge --name=<TVOE_NetBackup_Bridge> --onboot=yes --MTU=<NetBackup_MTU_size> --bridgeInterfaces=<TVOE_NetBackup_Bridge_Interface></pre> <p><u>EXAMPLE 2:</u> For this example, create NetBackup bridge using untagged interfaces (eth05 and eth06) and bonding. (<TVOE_NetBackup_Bridge>).</p> <pre># netAdm add --device=<TVOE_NetBackup_Bridge_Interface> --onboot=yes --type=Bonding --mode=active-backup --miimon=100 --MTU=<NetBackup_MTU_size> Interface <TVOE_NetBackup_Bridge_Interface> added # netAdm set --device=<ethernet_interface_5> --type=Ethernet --master=<TVOE_NetBackup_Bridge_Interface> --slave=yes --onboot=yes Interface <ethernet_interface_5> updated # netAdm set --device=<ethernet_interface_6> --type=Ethernet --master-<TVOE_NetBackup_Bridge_Interface> --slave=yes --onboot=yes Interface <ethernet_interface_6> updated # netAdm add --type=Bridge --name=<TVOE_NetBackup_Bridge> --onboot=yes --MTU=<NetBackup_MTU_size> --bridgeInterfaces=<TVOE_NetBackup_Bridge_Interface></pre>
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6.	Management server iLO: Verify the Default Route	<p>Note: The output below is for illustrative purposes only. The example output below shows the control bridge configured.</p> <pre># netAdm query --route=default --device=management Routes for TABLE: main and DEVICE: management * NETWORK: default GATEWAY: 10.240.4.1</pre> <p>If the route has been configured, skip to the next step. Note: The output below is for illustrative purposes only. The site information for this system will determine the network interfaces, (network devices, bonds, and bond enslaved devices), to configure.</p> <p>For this example add default route on management network. # netAdm add --route=default --device=<TVOE_Management_Bridge> --gateway=<mgmt_gateway_address> Route to <TVOE_Management_Bridge> added</p>
7.	Management server iLO: Restart the network interfaces	<p>Restart the network interfaces</p> <pre># service network restart</pre>
8.	Management server iLO: Set Hostname	<p>Set the server hostname by running the following:</p> <pre># su - platcfg</pre> <ol style="list-style-type: none"> 1. Navigate to Server Configuration > Hostname > Edit. 2. Set TVOE Management Server hostname 3. Press OK. 4. Navigate out of Hostname
9.	Management server iLO: Set the time zone and/or hardware clock	<ol style="list-style-type: none"> 1. Navigate to Server Configuration > Time Zone. 2. Select Edit. 3. Set the time zone and/or hardware clock. 4. Press OK. 5. Navigate out of Server Configuration
10.	Management server iLO: Set NTP	<ol style="list-style-type: none"> 1. Navigate to Network Configuration > NTP. 2. Set NTP server IP address to point to the customer provided NTP server. 3. Press OK. 4. exit platcfg.

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2.4 INSTALL PM&C APPLICATION

Procedure 4. Install PM&C Application

S T E P #	<p>This procedure will deploy PM&C on the TVOE Host</p> <p>Prerequisite: Procedure 3. TVOE/Management Server Network Configuration has been completed.</p> <p>Note: Use the following command to delete a TOVE guest (in the example below, the guest name is "pmac"):</p> <pre># guestMgr --remove pmac</pre> <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.</p>	
1. <input type="checkbox"/>	<p>Management server iLO: Login and launch the integrated remote console</p>	<p>Log in to iLO in IE using password provided by application: <a href="http://<management_server_iLO_ip>">http://<management_server_iLO_ip></p> <p>Click in the Remote Console tab and launch the Integrated Remote Console on the server.</p> <p>Click Yes if the Security Alert pops up.</p>
2. <input type="checkbox"/>	<p>Management server iLO: Mount the PM&C media to the TVOE Management server</p>	<p>If using a DVD media, insert the pmac DVD into the optical drive and execute the following to get the Optical Drive letter and mount it:</p> <pre># getCDROM DV-W28E-RW sr0 /dev/sr0</pre> <pre># mount -t iso9660 /dev/sr0 /mnt/upgrade/</pre> <p>If using an ISO image, run the following to mount it:</p> <pre># mount -o loop <ISO_FILENAME>.iso /mnt/upgrade</pre>

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3. <input type="checkbox"/>	Management server iLO: deploy PM&C	<p>Using the pmac-deploy script, deploy the PM&C instance using the configuration captured during the site survey.</p> <pre># cd /mnt/upgrade/upgrade</pre> <p>If deploying PM&C without netbackup feature, run the following command:</p> <pre># ./pmac-deploy --guest=<PMAC_Name> --hostname=<PMAC_Name> --controlBridge=<TVOE_Control_Bridge> --controlIP=<PMAC_Control_ip_address> --controlNM=<PMAC_Control_netmask> --managementBridge=<PMAC_Management_Bridge> --managementIP=<PMAC_Management_ip_address> --managementNM=<PMAC_Management_netmask> --routeGW=<PMAC_Management_gateway_address> --ntpserver=<TVOE_Management_server_ip_address></pre> <p>If deploying PM&C with netbackup feature, run the following command:</p> <pre># ./pmac-deploy --guest=<PMAC_Name> --hostname=<PMAC_Name> --controlBridge=<TVOE_Control_Bridge> --controlIP=<PMAC_Control_ip_address> --controlNM=<PMAC_Control_netmask> --managementBridge=<PMAC_Management_Bridge> --managementIP=<PMAC_Management_ip_address> --managementNM=<PMAC_Management_netmask> --routeGW=<PMAC_Management_gateway_address> --ntpserver=<TVOE_Management_server_ip_address> --bridge=<TVOE_NetBackup_Bridge> --nic=netbackup</pre> <p>The PM&C will deploy and boot. The management and control network will come up based on the settings that were provided to the pmac-deploy script.</p>
4. <input type="checkbox"/>	Management server iLO: Unmount the media	<p>The media should auto-unmount, if it does not, unmount the media using the following command:</p> <pre># cd / # umount /mnt/upgrade</pre> <p>If using a DVD media, remove it from the optical drive.</p>

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<p>5.</p> <input type="checkbox"/>	<p>Management server iLO: SSH into the Management Server</p>	<p>Using an SSH client such as putty, ssh to the TVOE host using root credentials.</p> <p>Login using virsh, and wait until you see the login prompt :</p> <pre># virsh Welcome to virsh, the virtualization interactive terminal. Type: 'help' for help with commands 'quit' to quit virsh # list Id Name State ----- 2 <pmac_name> running virsh # console <pmac_name> Connected to Domain <pmac_name> Escape character is ^] CentOS release 6.2 (Final) Kernel 2.6.32-220.17.1.el6prere16.0.0_80.14.0.x86_64 on an x86_64 <pmac_name> login:</pre>
<p>6.</p> <input type="checkbox"/>	<p>Management server iLO: Set the PM&C timezone</p>	<p>Determine the TimeZone to be used for the PM&C</p> <p>Note: Valid time zones can be found in Appendix J</p> <p>Run</p> <pre># set_pmac_tz.pl <timezone></pre> <p>For example</p> <pre># set_pmac_tz.pl America/New_York</pre> <p>Verify that the timezone has been updated:</p> <pre># date</pre>
<p>7.</p> <input type="checkbox"/>	<p>Management server iLO: Install NetBackup (Optional)</p>	<p>Refer to [4] <i>Platform 6.x Configuration Procedure Reference</i>, procedure 3.8.14 for instructions on installing the NetBackup client on the Management Server.</p>
<p>8.</p> <input type="checkbox"/>	<p>Management server iLO: Reboot the server</p>	<p>Reboot the server by running:</p> <pre># init 6</pre>

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2.5 CONFIGURE PM&C ACCESS TO CISCO 4948 (ONLY IF AGGREGATION SWITCHES ARE USED)

The following procedure applies to installations that include the Cisco 4948E Aggregation switch configuration.

PM&C typically has a pre-installed serial console interface to the Aggregation Switches in the cabinet, as well as a tftp access to these switches over the network. PM&C uses these interfaces to upgrade and configure the switches, using the provided PM&C netConfig tool.

Xml configuration files are used as input to the netConfig tool. These must be prepared before starting the Installation, as it may take some time to prepare these. See Appendix for instructions to prepare these files.

The following procedure uses the netConfig tool, with the Xml configuration files, to configure the aggregation switches.

This procedure will configure PM&C services to access/configure the Aggregation Switches. After this procedure, PM&C will be ready to manage the Aggregation Switches.

Procedure 5. Configure PM&C Access to Cisco 4948 Aggregation switch

S T E P #	<p>This procedure will configure 4948E-F switches with an appropriate IOS and configuration specified by Platform Engineering and Application requirements.</p> <p>Prerequisite: This procedure assumes a recently IPM'ed management server with the PM&C application installed.</p> <p>Note: Uplinks must be disconnected from the customer network prior to executing this procedure. One of the steps in this procedure will instruct when to reconnect these uplink cables. Refer to References for more details.</p> <p>Needed material:</p> <ul style="list-style-type: none">- NetConfig files for the installation (prepared from templates and NAPD surveys) on USB- HP Misc. Firmware DVD- HP Solutions Firmware Upgrade Pack Release Notes References. <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.</p>
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Procedure 5. Configure PM&C Access to Cisco 4948 Aggregation switch

<p>1. <input type="checkbox"/></p>	<p>Management server: Copy Prepared netConfig files to PM&C</p>	<p>These steps assume that the user has brought the NetConfig files to the site using a USB key, correctly formatted to mount on a TPD Server.</p> <p>Insert USB Key to PM&C server.</p> <p>Mount the USB Key to the /mnt/upgrade directory</p> <pre># mount /dev/sda1 /mnt/upgrade</pre> <p>Copy the NetConfig xml files needed for your configuration to the appropriate location:</p> <pre># cp /mnt/upgrade/<NetConfig Files> /usr/TKLC/smac/etc/</pre> <pre># ls /usr/TKLC/smac/etc/</pre> <p>Un-Mount the /mnt/upgrades directory, and remove USB Key</p> <pre># umount /mnt/upgrade</pre>
<p>2. <input type="checkbox"/></p>	<p>Management server: setup conserver serial access to the switches</p>	<p>Configure the conserver service to enable serial access to the switches:</p> <p>For switch1A:</p> <pre># conserverAdm --addConsole --name=switch1A_console --device=/dev/ttyS4</pre> <p>For switch1B:</p> <pre># conserverAdm --addConsole --name=switch1B_console --device=/dev/ttyS5</pre> <p>You should be returned to the command line prompt. If so, continue to the next step; if not, contact Customer Care Center for assistance.</p>
<p>3. <input type="checkbox"/></p>	<p>Management server: Setup netConfig repository with necessary console information</p>	<p>Use netConfig to create a repository entry that will use the conserver service that was configured in the previous steps. This command will give the user several prompts. The prompts with <variables> as the answers are site specific that the user MUST modify. Other prompts that don't have a <variable> as an answer must be entered EXACTLY as they are shown here.</p> <pre># netConfig --repo addService name=console_service</pre> <p>Service type? (tftp, ssh, conserver, oa) conserver</p> <p>Service host? <management_server_mgmtVLAN_ip_address></p> <p>Enter an option name (q to cancel): user</p> <p>Enter a value for user: platcfg</p> <p>Enter an option name(q to cancel): password</p> <p>Enter a value for password: <platcfg_password></p> <p>Enter an option name(q to cancel): q</p> <p>Add service for console_service successful</p> <p>To check that you entered the information correctly, use the following command:</p> <pre># netConfig --repo showService name=console_service</pre> <p>and check the output, which will be similar to the one shown below:</p> <pre>[root@pmac5000101 ~]# netConfig --repo showServices --name=console_service</pre>

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Procedure 5. Configure PM&C Access to Cisco 4948 Aggregation switch

		<pre>Services: Service Name: console_service Type: conserver Host: 10.240.8.4 Options: password: D8396824B3B2B9EE user: platcfg [root@pmac5000101 ~]#</pre>
4. <input type="checkbox"/>	Management server: Setup netConfig repository with necessary tftp information	<p>Use netConfig to create a repository entry that will use the tftp service. This command will give the user several prompts. The prompts with <variables> as the answers are site specific that the user MUST modify. Other prompts that don't have a <variable> as an answer must be entered EXACTLY as they are shown here.</p> <pre># netConfig --repo addService name=tftp_service Service type? (tftp, ssh, conserver, oa) tftp Service host? <management_server_mgmtVLAN_ip_address> Enter an option name (q to cancel): dir Enter a value for user: /var/TKLC/smac/image Enter an option name(q to cancel): q Add service for tftp_service successful</pre> <p>To check that you entered the information correctly, use the following command:</p> <pre># netConfig --repo showService name=tftp_service</pre> <p>and check the output, which will be similar to the one shown below:</p> <pre>[root@pmac5000101 ~]# netConfig --repo showServices -- name=tftp_service</pre> <pre>Services: Service Name: tftp_service Type: tftpr Host: 10.240.8.4 Options: dir: /var/TKLC/smac/image [root@pmac5000101 ~]#</pre>

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Procedure 5. Configure PM&C Access to Cisco 4948 Aggregation switch

5. <input type="checkbox"/>	Management server: Setup netConfig repository with necessary ssh information.	<p>Use netConfig to create a repository entry that will use the ssh service. This command will the user several prompts. The prompts with <variables> as the answers are site specific that the user MUST modify. Other prompts that don't have a <variable> as answer must be entered EXACTLY as they are shown here.</p> <pre># netConfig --repo addService name=ssh_service Service type? (tftp, ssh, conserver, oa) ssh Service host? <management_server_mgmtVLAN_ip_address> Enter an option name (q to cancel): user Enter a value for user: root Enter an option name(q to cancel): password Enter a value for password: < switch_backup_user_password> Enter an option name(q to cancel): q Add service for console_service successful</pre> <p>To check that you entered the information correctly, use the following command:</p> <pre># netConfig --repo showService name=ssh_service</pre> <p>and check the output, which will be similar to the one shown below:</p> <pre>[root@pmac5000101 ~]# netConfig --repo showServices -- name=ssh_service</pre> <p>Services:</p> <pre>Service Name: tftp_service Type: tftpr Host: 10.240.8.4 Options: password: D8396824B3B2B9EE user: root</pre> <pre>[root@pmac5000101 ~]#</pre>
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Procedure 5. Configure PM&C Access to Cisco 4948 Aggregation switch

6. <input type="checkbox"/>	Management server: Setup netConfig repository with switch1A information	<p>Use netConfig to create a repository entry for switch1A. This command will give the user several prompts. The prompts with <variables> as the answers are site specific that the user MUST modify. Other prompts that don't have a <variable> as an answer must be entered EXACTLY as they are shown here.</p> <pre># netConfig --repo addDevice name=switch1A --reuseCredentials Device Vendor? Cisco Device Model? 4948E-F Should the init oob adapter be added (y/n)? y Adding consoleInit protocol for switch1A using oob... What is the name of the service used for OOB access? console_service What is the name of the console for OOB access? switch1A_console What is the device console password? <switch_console_password> Verify Password <switch_console_password> What is the platform access username? <switch_platform_username> What is the platform user password? <switch_platform_password> Verify Password <switch_platform_password> What is the device privileged mode password? <switch_enable_password> Verify Password <switch_enable_password> Should the live network adapter be added (y/n)? y Adding cli protocol for switch1A using network... What is the address used for network device access? <switch1A_mgmtVLAN_ip_address> Should the live oob adapter be added (y/n)? y Adding cli protocol for switch1A using oob... OOB device access already set: console_service Device named switch1A successfully added.</pre> <p>To check that you entered the information correctly, use the following command:</p> <pre># netConfig --repo listDevices</pre> <p>and check the output, which will be similar to the one shown below.</p> <p>Note: Only switch 1A info has been shown in this example.</p> <pre>[root@pmac5000101 ~]# netConfig --repo listDevices Devices: Device: switch1A Vendor: Cisco Model: 4948 Access: Network: 10.240.8.2 Access: OOB: Service: console_service Console: switch1A_console Init Protocol Configured Live Protocol Configured [root@pmac5000101 ~]#</pre>
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Procedure 5. Configure PM&C Access to Cisco 4948 Aggregation switch

<p>7. <input type="checkbox"/></p>	<p>Management server: Setup netConfig repository with switch1B information</p>	<p>Use netConfig to create a repository entry for switch1B. This command will give the user several prompts. The prompts with <variables> as the answers are site specific that the user MUST modify. Other prompts that don't have a <variable> as an answer must be entered EXACTLY as they are shown here.</p> <pre># netConfig --repo addDevice name=switch1B --reuseCredentials Device Vendor? Cisco Device Model? 4948E-F Should the init oob adapter be added (y/n)? y Adding consoleInit protocol for switch1B using oob... What is the name of the service used for OOB access? console_service What is the name of the console for OOB access? switch1B_console What is the device console password? <switch_console_password> Verify Password <switch_console_password> What is the platform access username? <switch_platform_username> What is the platform user password? <switch_platform_password> Verify Password <switch_platform_password> What is the device privileged mode password? <switch_enable_password> Verify Password <switch_enable_password> Should the live network adapter be added (y/n)? y Adding cli protocol for switch1A using network... What is the address used for network device access? <switch1B_mgmtVLAN_ip_address> Should the live oob adapter be added (y/n)? y Adding cli protocol for switch1B using oob... OOB device access already set: console_service Device named switch1B successfully added. To check that you entered the information correctly, use the following command: # netConfig --repo listDevices and check the output, which will be similar to the one shown below. Note: Only the switch1B info has been shown in this example. If the previous step and this step were done correctly, both switch1A and switch1B entries would show up. [root@pmac5000101 ~]# netConfig --repo listDevices Devices: Device: switch1B Vendor: Cisco Model: 4948 Access: Network: 10.240.8.3 Access: OOB: Service: console_service Console: switch1B_console Init Protocol Configured Live Protocol Configured [root@pmac5000101 ~]#</pre>
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Procedure 5. Configure PM&C Access to Cisco 4948 Aggregation switch

8. <input type="checkbox"/>	Management server: Modify switch xml files with site specific networking information	<p>Update the /usr/TKLC/smac/etc/switch1A_4948_4948E-F_init.xml and /usr/TKLC/smac/etc/switch1B_4948_4948E-F_init.xml for site specific information. Values to be edited in those files are preceded with a dollar sign, an example is \$some_variable_name.</p> <p>Note that the platmgmt vlan ID needs to be modified in four places for a layer 2 demarcation. Also a combinations of , and - can be used when specifying vlan IDs, (, for enumeration, - for range). Spaces aren't allowed. Note also that device name needs to match procedure, not be a variable</p> <p>When done editing the file, save and quit.</p> <p>Next update the 4948_4948E-F_configure.xml file for the values noted below. Values to be modified by the user will be notated in this step by a preceding dollar sign. So a value that has \$some_variable_name will need to be modified, removing the dollar sign.</p> <p>When done editing the file, save and quit.</p>
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2.6 VERIFY AND UPDATE SWITCH IOS (IF NEEDED)

This procedure will update the Switch IOS, if the rev is not current.

Procedure 6: Verify and Update Switch IOS

<p>S T E P #</p>	<p>This procedure will configure 4948E-F switches with an appropriate IOS specified by Platform Engineering and Application requirements.</p> <p>Prerequisite: This procedure assumes a recently IPM'ed management server with the PM&C application installed.</p> <p>Needed material:</p> <ul style="list-style-type: none"> - HP Misc. Firmware DVD - HP Solutions Firmware Upgrade Pack Release Notes References. <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.</p>	
<p>1. <input type="checkbox"/></p>	<p>Management server: Confirm PM&C connectivity to Aggregation Switches</p>	<p>Steps from the prior procedure must be performed, to setup connectivity from PM&C to the Aggregation switches.</p>
<p>2. <input type="checkbox"/></p>	<p>Management server: Get IOS image information on the switches</p>	<p>Connect to switch1A, check the IOS version. Connect serially to switch1A by issuing the following command</p> <pre># /usr/bin/console -M <management_server_mgmtVLAN_ip_address> -l platcfg switch1A_console</pre> <p>Enter platcfg@pmac5000101's password: <platcfg_password> [Enter `^Ec?' for help] Press Enter Switch> show version include image System image file is "bootflash:cat4500-ipbasek9-mz.122-53.SG2.bin" Note the image version for comparison in a following step.</p> <p>To exit from the console, enter CTRL+E+c+. and you will be returned to the server prompt.</p> <p>Connect serially to switch1A by issuing the following command</p> <pre># /usr/bin/console -M <management_server_mgmtVLAN_ip_address> -l platcfg switch1B_console</pre> <p>Enter platcfg@pmac5000101's password: <platcfg_password> [Enter `^Ec?' for help] Press Enter Switch> show version include image System image file is "bootflash:cat4500-ipbasek9-mz.122-53.SG2.bin" Note the image version for comparison in a following step.</p> <p>To exit from the console, enter CTRL+E+c+. and you will be returned to the server prompt.</p>

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<p>3.</p> <p><input type="checkbox"/></p>	<p>Management server: Determine if switch IOS upgrade is required</p>	<p>For each switch, compare the IOS version from previous step with the IOS version specified in the Firmware Upgrade Pack Release Notes [1] for the switch model being used.</p> <p>If the version from previous step is equal or greater than the version from the release notes and it has "k9" in the name, denoting it has crypto support, then skip to step 18, there is no upgrade necessary for this switch.</p> <p>Otherwise, continue with the next step.</p>
<p>4.</p> <p><input type="checkbox"/></p>	<p>Management server: Verify IOS images on the system. If the appropriate image does not exist, copy the image to the management server and upload to the switch.</p>	<p>Verify the IOS upgrade file presence on the system</p> <p># <code>ls /var/TKLC/smac/image/<IOS_Upgrade_File></code></p> <p>If the file exists, then skip the rest of this step and continue with the next step in the procedure. Otherwise, complete this step and then continue to the next step.</p> <p>Insert the <i>Misc. Firmware CD</i> media into drive of the management server, login as root and execute the following steps:</p> <p>Determine the cdrom of the server by issuing the following command as root on the management server: # <code>getCDROM</code></p> <p>The expected output should be similar to the following: Optiarc DVD RW AD-7590A hda</p> <p>The cdrom device is /dev/hda for this example. Follow the logic to determine cd device name for the server you are using.</p> <p>Mount the cdrom and copy the appropriate file over by doing the following as commands as root on the management server.</p> <p># <code>mkdir /media/cdrom</code> # <code>mount /dev/hda /media/cdrom</code> # <code>cp /media/cdrom/files/<IOS_Upgrade_File> /var/TKLC/smac/image</code> # <code>chmod 644 /var/TKLC/smac/image/<IOS_Upgrade_File></code> # <code>umount /media/cdrom</code></p>
<p>5.</p> <p><input type="checkbox"/></p>	<p>Management server: Prepare the system for tftp transfer of IOS file</p>	<p>Execute the following commands:</p> <p># <code>tpdProvd --client --noxml --ns=Xinetd startXinetdService service smac-tftp</code></p> <p>Login on Remote: <code>platcfg</code> Password of platcfg: <code><platcfg_password></code></p>

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6. <input type="checkbox"/>	Management server: Configure network interface and route	ensure that the interface of the server connected to the switch is the only interface up and obtain the IP address of the management server management interface by performing the following commands: For switch1A: <code># ifdown <ethernet_interface_2></code> <code># ifup <ethernet_interface_1></code> <code># ifconfig <management_server_mgmtInterface></code> For switch1B: <code># ifdown <ethernet_interface_1></code> <code># ifup <ethernet_interface_2></code> <code># ifconfig <management_server_mgmtInterface></code> The command output should contain the IP address of the variable <management_server_mgmtVLAN_ip_address>
7. <input type="checkbox"/>	Management server: Attach to switch console	If configuring switch1A, connect serially to switch1A by issuing the following command as root on the management server: <code># /usr/bin/console -M <management_server_mgmtVLAN_ip_address> -l platcfg switch1A_console</code> Enter platcfg@pmac5000101's password: <platcfg_password> [Enter ^Ec? for help] Press Enter If the switch is not already in enable mode ("switch#" prompt) then issue the "enable" command, otherwise continue with the next step. Switch> enable Switch# If configuring switch1B, connect serially to switch1B by issuing the following command as root on the management server: <code># /usr/bin/console -M <management_server_mgmtVLAN_ip_address> -l platcfg switch1B_console</code> Enter platcfg@pmac5000101's password: <platcfg_password> [Enter ^Ec? for help] Press Enter If the switch is not already in enable mode ("switch#" prompt) then issue the "enable" command, otherwise continue with the next step. Switch> enable Switch#

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<p>8. <input type="checkbox"/></p>	<p>Management server: Configure port on 4948E-F on switch1A</p>	<p>To ensure connectivity, ping the management server's management vlan ip address from the switch. Platform version specific to be on the management vlan.</p> <p>Switch# conf t</p> <p>If configuring switch1A, use this command:</p> <pre>Switch(config)# vlan <switch_mgmtVLAN_id> Switch(config-vlan)# int vlan <switch_mgmtVLAN_id> Switch(config-if)# ip address <switch1A_mgmtVLAN_ip_address> <netmask> Switch(config-if)# no shut Switch(config-if)# int gi1/40 Switch(config-if)# switchport mode trunk Switch(config-if)# spanning-tree portfast trunk Switch(config-if)# end</pre> <p>If configuring switch1B, use this command:</p> <pre>Switch(config)# vlan <switch_mgmtVLAN_id> Switch(config-vlan)# int vlan <switch_mgmtVLAN_id> Switch(config-if)# ip address <switch1B_mgmtVLAN_ip_address> <netmask> Switch(config-if)# no shut Switch(config-if)# int gi1/40 Switch(config-if)# switchport mode trunk Switch(config-if)# spanning-tree portfast trunk Switch(config-if)# end</pre> <p>Now issue ping command:</p> <pre>Switch# ping <management_server_mgmtVLAN_ip_address> Type escape sequence to abort. Sending 5, 100-byte ICMP Echos to <management_server_mgmtVLAN_ip_address>, timeout is 2 seconds: !!!! Success rate is 100 percent (5/5), round trip min/avg/max = 1/1/4 ms</pre> <p>If ping is not successful , double check that the procedure was completed correctly by repeating all steps up to this point. If after repeating those steps, ping is still unsuccessful, contact Customer Care Center.</p>
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<p>9. <input type="checkbox"/> Upload the IOS to the switch</p>	<p>Management server:</p>	<p>Upload the IOS to the switch and set it to be the active IOS and delete the previous IOS version. On the switch, copy the IOS file over to the switch by issuing the following command sequence: Switch# copy tftp: bootflash: Address or name of remote host []? <management_server_mgmtVLAN_ip_address> Source filename []? <IOS_image_file> Destination filename [<IOS_image_file>]? Press Enter here, you do NOT want to change the filename</p> <p>Accessing tftp://<management_server_mgmtVLAN_ip_address>/<IOS_image_file>... Loading <IOS_image_file> from <management_server_mgmtVLAN_ip_address> (via Vlan2): !!!!! [OK – 45606 bytes] 45606 bytes copied in 3.240 secs (140759 bytes/sec)</p> <p>Switch# dir bootflash: Directory of bootflash:/ 1 -rwx 17779888 May 11 2011 02:25:23 -05:00 cat4500-entservicesk9-mz.122-53.SG.bin 2 -rwx 17779888 May 11 2011 02:25:23 -05:00 cat4500-ipbasek9-mz.122-53.SG2.bin 60817408 bytes total (43037392 bytes free)</p> <p>Here, you should note which IOS you uploaded, and which one was already on the switch. Note the one that was already on the switch, this will be the one to delete, as notated by the variable <OLD_IOS_image></p> <p>Switch# delete /force /recursive bootflash:<OLD_IOS_image> Switch#</p> <p>Switch# reload Proceed with reload? [confirm]</p> <p>Wait until the switch reloads, then issue the following command to ensure the switch is at the appropriate IOS version:</p> <p>Switch> show version include image System image file is "bootflash:cat4500-ipbasek9-mz.122-53.SG2.bin" Switch></p> <p>If the switch is not at the appropriate version, stop here and contact Customer Care Center. If it is, exit from console, enter CTRL+E+c+. and you will be returned to the server prompt.</p>
<p>10. <input type="checkbox"/> Restore the server interface</p>	<p>Management server:</p>	<p>Restore the connection to switch1B and ensure the interface is the only interface up</p> <p># ifup <ethernet_interface_2></p> <p># ifdown <ethernet_interface_1></p>
<p>11. <input type="checkbox"/> Repeat for Switch1B</p>	<p>Management server:</p>	<p>Repeat steps 12-16 for switch1B, then continue to the next step</p>

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12.	Management server: <input type="checkbox"/> Restore the server interface	Restore the server Ethernet interfaces. # service network restart
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2.7 CONFIGURE AGGREGATION SWITCHES (ONLY IF AGGREGATION SWITCHES ARE USED)

This procedure will apply the switch configuration to the Aggregation switches, based on the IP networking plan for the customer site. At the end of this procedure, the Aggregation Switches will be ready to connect to the customer network.

Procedure 7: Configure Aggregation Switches with netConfig

<p>S T E P #</p>	<p>This procedure will configure 4948E-F switches with a configuration specified by Platform Engineering and Application requirements.</p> <p>Prerequisite: This procedure assumes a recently IPM'ed management server with the PM&C application installed.</p> <p>Note: Uplinks must be disconnected from the customer network prior to executing this procedure. One of the steps in this procedure will instruct when to reconnect these uplink cables. Refer to [2] <i>SDM 9.1 on HP c-Class Networking Interconnect Technical Reference</i>, for more details.</p> <p>Required materials:</p> <ul style="list-style-type: none"> - NetConfig files for the installation (prepared from templates and NAPD surveys) on USB <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  Jasper_switch1A_4948_4948E-F_init.xml </div> <div style="text-align: center;">  Jasper_4948_4948E-F_configure_Switch1B.xml </div> </div> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  Jasper_4948_4948E-F_configure_Switch1A.xml </div> <div style="text-align: center;">  Jasper_switch1B_4948_4948E-F_init.xml </div> </div> <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.</p>
<p>1. <input type="checkbox"/> Management server: Verify connectivity from PM&C to Aggregation switches</p>	<p>Prior Procedures to establish connectivity from PM&C to Aggregation switches must have been performed.</p> <p>Access switch console from PM&C:</p> <pre># /usr/bin/console -M <management_server_mgmtVLAN_ip_address> -l platcfg switch1A_console</pre> <p>Verify that access is successful.</p> <p>Exit from console</p>

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2.	Management server: <input type="checkbox"/> Load netConfig files from USB key	Mount USB key, and transfer files to: /usr/TKLC/smac/etc/switch
3.	Management server: <input type="checkbox"/> Modify configure xml file with information needed to initialize the switch.	If needed: Update the 4948E-F init and configure xml files to match your network parameters. Values to be modified by the user will be notated in this step by a preceding dollar sign. So a value that has \$<some_variable_name> will need to be modified, removing the dollar sign and the less than, greater than sign. <pre># vi /usr/TKLC/smac/etc/switch/switch1A_4948_4948E-F_init.xml # vi /usr/TKLC/smac/etc/switch/switch1B_4948_4948E-F_init.xml # vi /usr/TKLC/smac/etc/switch/4948_4948E-F_configure.xml</pre> Instructions to edit these files are included in an Appendix: Preparing netConfig files.
4.	Management server: <input type="checkbox"/> Initialize switch1A	Initialize switch1A by issuing the following command: <pre># netConfig --file=/usr/TKLC/smac/etc/switch/switch1A_4948_4948E-F_init.xml</pre> Processing file: /usr/TKLC/smac/etc/switch/switch1A_4948_4948E-F_init.xml # Note: This step takes about 2-3 minutes to complete. Check the output of this command for any errors. If this fails for any reason, stop this procedure and contact Customer Care Center. A successful completion of netConfig will return the user to the prompt.
5.	Management server: <input type="checkbox"/> Initialize switch1B	Initialize switch1B by issuing the following command: <pre># netConfig --file=/usr/TKLC/smac/etc/switch/switch1B_4948_4948E-F_init.xml</pre> Processing file: /usr/TKLC/smac/etc/switch/switch1B_4948_4948E-F_init.xml # Note: This step takes about 2-3 minutes to complete. Check the output of this command for any errors. If this fails for any reason, stop this procedure and contact Customer Care Center. A successful completion of netConfig will return the user to the prompt.
6.	Management server: <input type="checkbox"/> Configure the switches	Configure both switches by issuing the following command: <pre># netConfig --file=/usr/TKLC/smac/etc/switch/4948_4948E-F_configure.xml</pre> Processing file: /usr/TKLC/smac/etc/switch/4948_4948E-F_configure.xml Note: This step takes about 2-3 minutes to complete. Check the output of this command for any errors. If this fails for any reason, stop this procedure and contact Customer Care Center.
7.	Management server: <input type="checkbox"/> Verify switch configuration	Enable the uplinks on the Aggregation switches, and ping each of the switches router interface addresses to verify switch configuration <pre># ping <customer_supplied_ntp_server_address></pre>

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8. <input type="checkbox"/>	Management server: Verify access to customer network	Verify connectivity to the customer network by issuing the following command # ping <switch1A_mgmtVLAN_IP>
9. <input type="checkbox"/>	Management server: Show run on Switches	Access Switch1A from console from PM&C # /usr/bin/console -M <management_server_mgmtVLAN_ip_address> -l platcfg switch1A_console Password: > enable > show run → Review switch Configs Repeat for switch1B
10. <input type="checkbox"/>	Management server: Undo temporary changes	After all previous steps of this procedure have been completed successfully, issue the following command to remove temporary services: # tpdProvd --client --noxml --ns=Xinetd stopXinetdService service smac-tftp Login on Remote: platcfg Password of platcfg: <platcfg_password> # service network restart

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Complete the PM&C Installation

2.8 CONFIGURE PM&C SERVER NETWORKING (WEB INTERFACE)

Procedure 8. Configure the PM&C Application

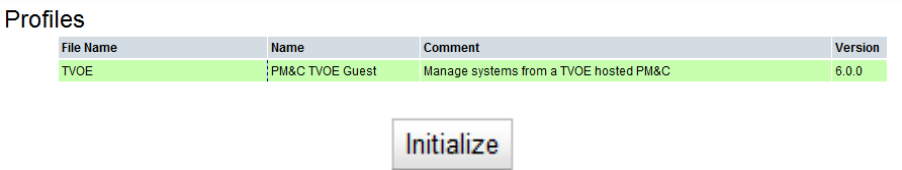
S T E P #	<p>This procedure will provide PM&C configuration using the web interface.</p> <p>Prerequisite: Procedure 4. PM&C Deployment Procedure has been completed.</p> <p>Note: The installer must be knowledgeable of the network. If you make mistake, click Cancel and try again. The finish step may take longer time because it reconfigures the network and attempts to connect may fail.</p> <p>Note: After you have completed an initialization, the network parameters can no longer be changed through the GUI. If you need to reset any of the network information, you must run the pmacadm resetProfileConfig command in the PM&C shell. This will delete the existing configuration and allow you to run through the initialization wizard again. Keep in mind that the reset will not run until all provisioned enclosures and cabinets are deleted</p> <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.</p>
1. <input type="checkbox"/>	<p>PM&C GUI: Load GUI initialization wizard</p> <p>Open web browser and enter: <a href="http://<management_network_ip>/gui">http://<management_network_ip>/gui Login as pmacadmin user.</p> <div><p>Platform Management & Configuration Login</p><p style="text-align: right;">Thu May 21 12:52:18 2009</p><div><p>Existing Users Enter your ID and password to log in</p><p>Username: <input type="text" value="pmacadmin"/></p><p>Password: <input type="password" value="●●●●●●"/></p><p><input type="button" value="Log In"/></p></div></div>

Installing LTE HSS & HLR on HP C-Class G8

Procedure 8. Configure the PM&C Application

2. **PM&C GUI:** Select a profile

The first screen will be similar to the following image:

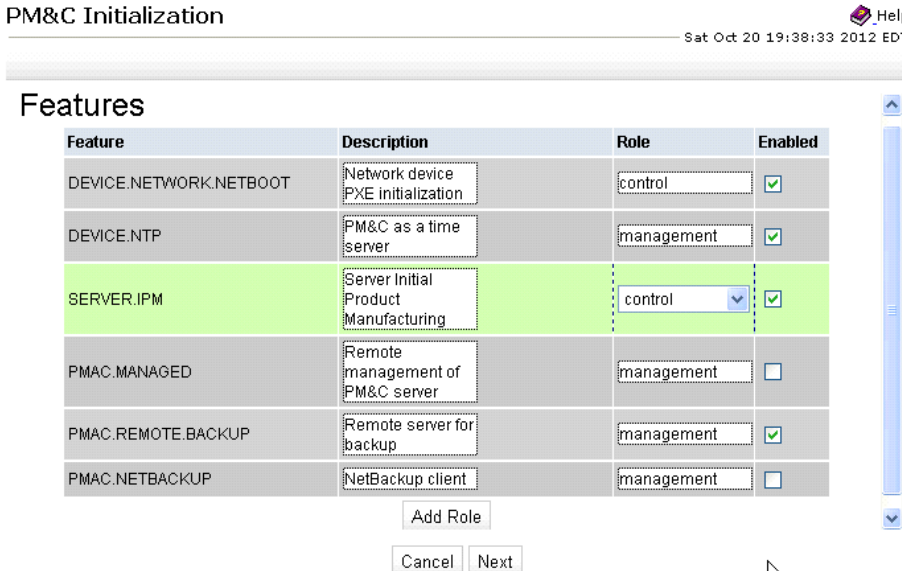


The screenshot shows a table with the following data:

File Name	Name	Comment	Version
TVOE	PM&C TVOE Guest	Manage systems from a TVOE hosted PM&C	6.0.0

Below the table is an **Initialize** button.

Select the TVOE profile and click on **Initialize**, the following features screen will display



The screenshot shows the PM&C Initialization screen with the following features table:

Feature	Description	Role	Enabled
DEVICE.NETWORK.NETBOOT	Network device PXE initialization	control	<input checked="" type="checkbox"/>
DEVICE.NTP	PM&C as a time server	management	<input checked="" type="checkbox"/>
SERVER.IPM	Server Initial Product Manufacturing	control	<input checked="" type="checkbox"/>
PMAC.MANAGED	Remote management of PM&C server	management	<input type="checkbox"/>
PMAC.REMOTE.BACKUP	Remote server for backup	management	<input checked="" type="checkbox"/>
PMAC.NETBACKUP	NetBackup client	management	<input type="checkbox"/>

Buttons: Add Role, Cancel, Next

Make sure that the role for DEVICE.NETWORK.NETBOOT and SERVER.IPM are set to **Control** while the roles for all other features are set to **Management**. Also make sure that the enabled checkbox is checked for the following:

- DEVICE.NETWORK.NETBOOT
- DEVICE.NTP
- SERVER.IPM
- PMAC.REMOTE.BACKUP
- PMAC.NETBACK (only if NetBackup is used)

And click on **Next**.

Installing LTE HSS & HLR on HP C-Class G8

Procedure 8. Configure the PM&C Application

<p>3. <input type="checkbox"/></p>	<p>PM&C GUI: Network Description</p>	<p>You will see this default screen similar to:</p> <p>Networks</p> <table border="1"> <thead> <tr> <th>Network IP</th> <th>Network Mask</th> </tr> </thead> <tbody> <tr> <td>192.168.1.0</td> <td>255.255.255.0</td> </tr> <tr> <td>10.240.238.0</td> <td>255.255.255.192</td> </tr> </tbody> </table> <p style="text-align: center;">Add Delete</p> <p>Enter the Network IPs and Netmasks for the control and Management Networks.</p> <p>Click Next.</p>	Network IP	Network Mask	192.168.1.0	255.255.255.0	10.240.238.0	255.255.255.192			
Network IP	Network Mask										
192.168.1.0	255.255.255.0										
10.240.238.0	255.255.255.192										
<p>4. <input type="checkbox"/></p>	<p>PM&C GUI: Network Roles</p>	<p>You will see this default screen similar to:</p> <p>Network Roles</p> <table border="1"> <thead> <tr> <th>Network IP</th> <th>Network Mask</th> <th>Role</th> </tr> </thead> <tbody> <tr> <td>192.168.1.0</td> <td>255.255.255.0</td> <td>control</td> </tr> <tr> <td>10.240.238.0</td> <td>255.255.255.192</td> <td>management</td> </tr> </tbody> </table> <p style="text-align: center;">Add Delete</p> <p>Verify the Roles and update if necessary. Click Next.</p>	Network IP	Network Mask	Role	192.168.1.0	255.255.255.0	control	10.240.238.0	255.255.255.192	management
Network IP	Network Mask	Role									
192.168.1.0	255.255.255.0	control									
10.240.238.0	255.255.255.192	management									
<p>5. <input type="checkbox"/></p>	<p>PM&C GUI: Network Interface</p>	<p>You will see this default screen similar to:</p> <p>Network Interfaces</p> <table border="1"> <thead> <tr> <th>Device</th> <th>IP Address</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>control</td> <td>192.168.1.1</td> <td>Control network for managed servers</td> </tr> <tr> <td>management</td> <td>10.240.238.4</td> <td>Management of system devices</td> </tr> </tbody> </table> <p style="text-align: center;">Add Delete</p> <p>Verify the IP addresses for each Device and update if necessary. Click Next.</p>	Device	IP Address	Description	control	192.168.1.1	Control network for managed servers	management	10.240.238.4	Management of system devices
Device	IP Address	Description									
control	192.168.1.1	Control network for managed servers									
management	10.240.238.4	Management of system devices									

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Procedure 8. Configure the PM&C Application

<p>6</p> <p><input type="checkbox"/></p>	<p>PM&C GUI: Network Route</p>	<p>You will see this default screen similar to:</p> <table border="1"> <thead> <tr> <th>Device</th> <th>Destination IP</th> <th>Network Mask</th> <th>Gateway IP</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p style="text-align: right;">Add Delete</p> <p>Click Add to create new routes. At a minimum a default route should be defined. The following screen will be displayed. For the default route, select the “management” Device, enter “0.0.0.0” for both Destination Address and Destination Mask, and enter the gateway IP under Gateway as shown below</p> <p>Add Route</p> <p style="text-align: right;">Sat Oct 20</p> <hr/> <p>Device: <input type="text" value="management"/> ▼</p> <p>Destination Address: <input type="text" value="0.0.0.0"/></p> <p>Destination Mask: <input type="text" value="0.0.0.0"/></p> <p>Gateway: <input type="text" value="10.240.238.1"/></p> <p>For default routes, use the unspecified address (0.0.0.0) for both destination address and mask</p> <p style="text-align: center;">Cancel Add Route</p> <p>Click Add Route. Repeat to define more route. Click Next when done.</p>	Device	Destination IP	Network Mask	Gateway IP				
Device	Destination IP	Network Mask	Gateway IP							
<p>7</p> <p><input type="checkbox"/></p>	<p>PM&C GUI: DHCP Ranges</p>	<p>You will see this default screen similar to below.</p> <p>Set the starting DHCP address for the control network to 192.168.1.5.</p> <p>[Note: 192.168.1.1 is allocated to the pmac application, 192.168.1.2 is allocated to the TVOE, and 192.168.1.3/4 are reserved for redundant PMAC. Addresses in the allowed range will be allocated to the Enclosure blades for use by PMAC.]</p> <p>PM&C Initialization</p> <p style="text-align: right;">Sat Oct 20 20:</p> <hr/> <p>DHCP Ranges</p> <table border="1"> <thead> <tr> <th>Start DHCP</th> <th>End DHCP</th> </tr> </thead> <tbody> <tr> <td><input type="text" value="192.168.1.5"/></td> <td><input type="text" value="192.168.1.254"/></td> </tr> </tbody> </table> <p style="text-align: center;">Add Delete</p> <p>If you need to define additional DHCP ranges, press Add (most deployments DO NOT require additional DHCP Ranges, Otherwise, click Next).</p>	Start DHCP	End DHCP	<input type="text" value="192.168.1.5"/>	<input type="text" value="192.168.1.254"/>				
Start DHCP	End DHCP									
<input type="text" value="192.168.1.5"/>	<input type="text" value="192.168.1.254"/>									

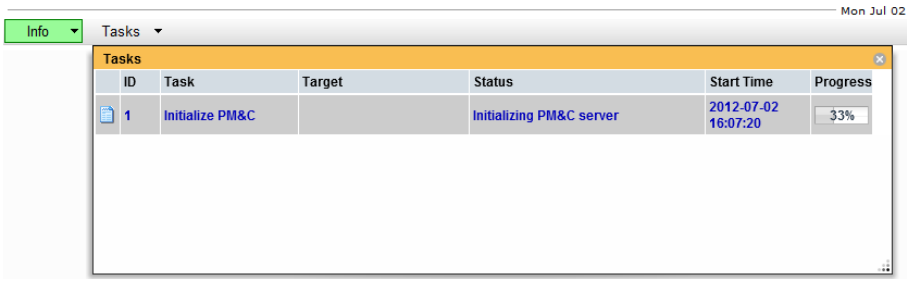
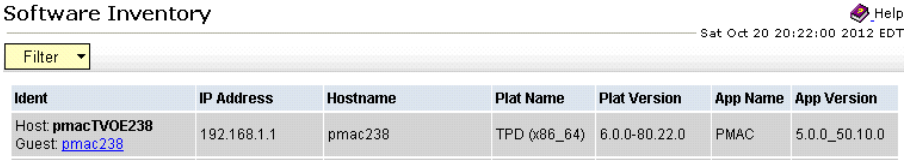
Installing LTE HSS & HLR on HP C-Class G8

Procedure 8. Configure the PM&C Application

8 <input type="checkbox"/>	PM&C GUI: Settings summary	<p>The following summary screen will be displayed.</p> <p>Configuration Summary Sat Oct 20 20:10:30 2012</p> <p>▼ Network Description</p> <table border="1"><thead><tr><th>Network IP</th><th>Network Mask</th></tr></thead><tbody><tr><td>192.168.1.0</td><td>255.255.255.0</td></tr><tr><td>10.240.238.0</td><td>255.255.255.192</td></tr></tbody></table> <p>▼ Network and Roles Description</p> <table border="1"><thead><tr><th>Network IP</th><th>Network Mask</th><th>Role</th></tr></thead><tbody><tr><td>192.168.1.0</td><td>255.255.255.0</td><td>control</td></tr><tr><td>10.240.238.0</td><td>255.255.255.192</td><td>management</td></tr></tbody></table> <p>▼ Network Interface Description</p> <table border="1"><thead><tr><th>Device</th><th>IP Address</th><th>Description</th></tr></thead><tbody><tr><td>control</td><td>192.168.1.1</td><td>Control network for managed servers</td></tr><tr><td>management</td><td>10.240.238.4</td><td>Management of system devices</td></tr></tbody></table> <p>▼ Route Configuration</p> <table border="1"><thead><tr><th>Device</th><th>Destination IP</th><th>Network Mask</th><th>Gateway IP</th></tr></thead><tbody><tr><td>management</td><td>0.0.0.0</td><td>0.0.0.0</td><td>10.240.238.1</td></tr></tbody></table> <p>▼ DHCP Configuration</p> <table border="1"><thead><tr><th>Start DHCP</th><th>End DHCP</th></tr></thead><tbody><tr><td>192.168.1.5</td><td>192.168.1.254</td></tr></tbody></table> <p style="text-align: right;"><input type="button" value="Cancel"/> <input type="button" value="Finish"/></p> <p>Verify the values and click Finish.</p>	Network IP	Network Mask	192.168.1.0	255.255.255.0	10.240.238.0	255.255.255.192	Network IP	Network Mask	Role	192.168.1.0	255.255.255.0	control	10.240.238.0	255.255.255.192	management	Device	IP Address	Description	control	192.168.1.1	Control network for managed servers	management	10.240.238.4	Management of system devices	Device	Destination IP	Network Mask	Gateway IP	management	0.0.0.0	0.0.0.0	10.240.238.1	Start DHCP	End DHCP	192.168.1.5	192.168.1.254
Network IP	Network Mask																																					
192.168.1.0	255.255.255.0																																					
10.240.238.0	255.255.255.192																																					
Network IP	Network Mask	Role																																				
192.168.1.0	255.255.255.0	control																																				
10.240.238.0	255.255.255.192	management																																				
Device	IP Address	Description																																				
control	192.168.1.1	Control network for managed servers																																				
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Device	Destination IP	Network Mask	Gateway IP																																			
management	0.0.0.0	0.0.0.0	10.240.238.1																																			
Start DHCP	End DHCP																																					
192.168.1.5	192.168.1.254																																					

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Procedure 8. Configure the PM&C Application

<p>9 <input type="checkbox"/></p>	<p>PM&C GUI: Complete the configuration</p>	<p>The following summary screen will be displayed, click on Tasks to view the Initialization Progress.</p> <p>PM&C Initialization</p>  <p>Click Task Monitoring for status of this task.</p> <table border="1"> <thead> <tr> <th>ID</th> <th>Task</th> <th>Target</th> <th>Status</th> <th>Running Time</th> <th>Start Time</th> <th>Progress</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>Initialize PM&C</td> <td></td> <td>PM&C initialized</td> <td>0:00:39</td> <td>2011-09-19 14:19:30</td> <td>100%</td> </tr> </tbody> </table> <p>Wait till the Progress bar turns green, which signifies that the PMAC Initialization was successful.</p>	ID	Task	Target	Status	Running Time	Start Time	Progress	2	Initialize PM&C		PM&C initialized	0:00:39	2011-09-19 14:19:30	100%
ID	Task	Target	Status	Running Time	Start Time	Progress										
2	Initialize PM&C		PM&C initialized	0:00:39	2011-09-19 14:19:30	100%										
<p><input type="checkbox"/></p>	<p>PM&C GUI: Verify Control Network</p>	<p>Software → Software Inventory</p> <p>The Software Inventory shows a summary of the servers discovered by DHCP on the control network. At a minimum, the pmac application will be shown. If there are blade servers in the Enclosures that have TPD installed, then a list of these may also appear. However, the information in this form will not be fully complete until: a) the Enclosure OA(s) are configured (next Procedure), b) the blades all have TPD installed, and c) the PMAC Hardware → Add Cabinet, Add Enclosure are completed.</p> <p>Software Inventory</p>  <p>If some blade servers are also shown, it is an indication that the control network is properly configured and networked. However, if there are no blades servers with TPD installed, then this view may still be empty except for the pmac. It is ok to proceed in either case.</p> <p>NOTE: once a blade server has a control address assigned, it is possible to ssh to PMAC, and then ssh to the blade using the blade control address. This provides an alternative command line access to the blade servers, and can be used instead of iLo Remote Access for many maintenance activities.</p>														

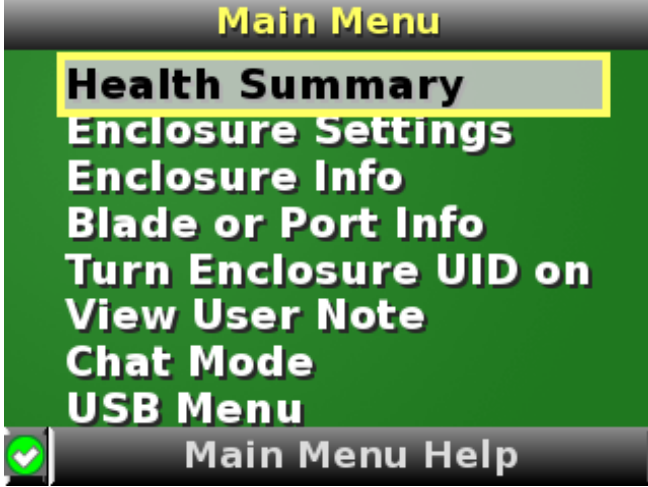
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3.0 HP C-7000 ENCLOSURE CONFIGURATION

The following procedures are applied for each enclosure. (PM&C may manage multiple enclosures.)

Note: during the following OA configuration steps, the IP addresses of the Enclosure switches are set. These IP addresses are then used to configure the Enclosure switches. Procedure 9: Configure OA IP Address (via Enclosure front panel display)


Procedure 9. Configure OA IP Address (via front panel display)

S T E P #	This procedure will set initial OA IP address using the front panel display. Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
1. <input type="checkbox"/>	Configure OA's IP	Configure OA's IP address using insight display on the front side of the enclosure. You will see following:  Navigate to Enclosure Settings , press OK . 1. Go to the OA1 IP v4 and press OK . 2. Go to OA1 IP v4 and press OK . On the OA1 Network Mode screen choose static and press Accept . On the OA1 IP address screen fill in IP , mask and gateway . Press Accept , then press Accept All , and finally press Accept All . Note that the OA IP address should belong to the Plat Management Network

Installing LTE HSS & HLR on HP C-Class G8

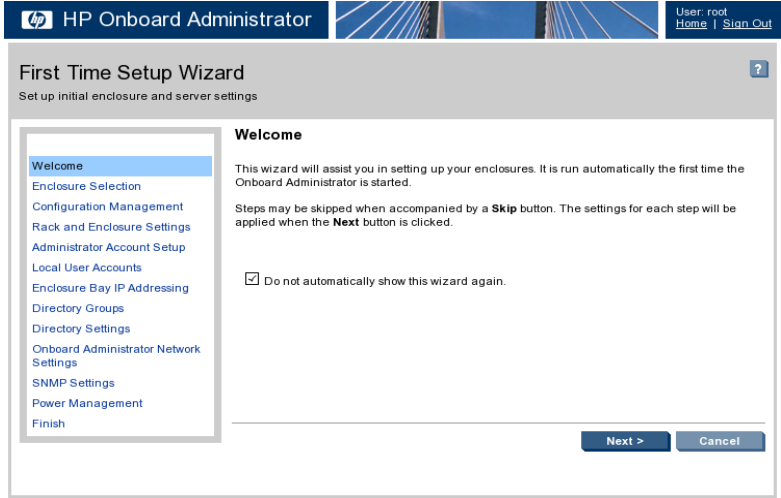
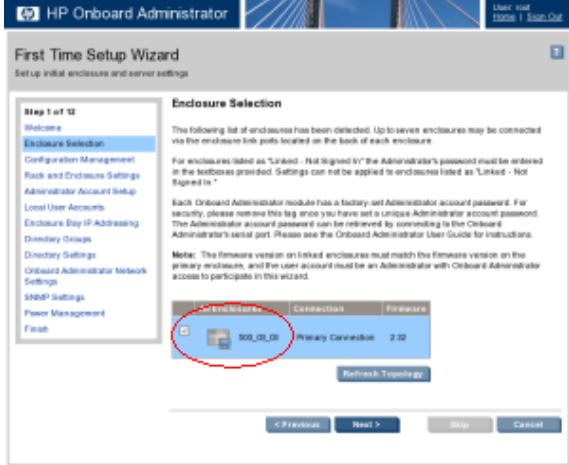
3.1 PERFORMING THE INITIAL OA CONFIGURATION (OA CONFIGURATION WIZARD)

Procedure 10. Performing the Initial OA Configuration (OA Configuration Wizard)

S T E P #	<p>This procedure will configure initial OA settings. Configuration wizard will be used.</p> <p>Prerequisite: <i>Configure OA IP Address</i> has been completed.</p> <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.</p>	
1. <input type="checkbox"/>	OA GUI: Login	<p>Open your web browser and navigate to the OA IP address You will see following:</p>  <p>Login to HP OA as Administrator. The password is either Oracle Manufacturing default, or HP provided on plastic pull-out tag at the front of the OA.</p>

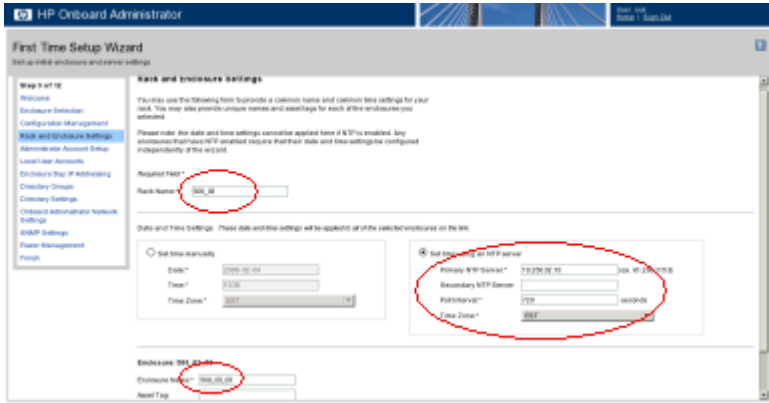
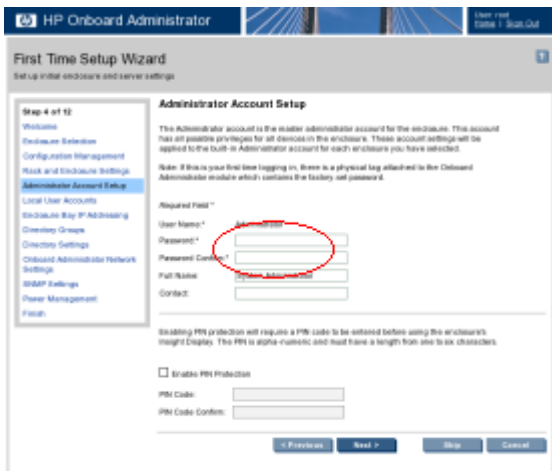
Installing LTE HSS & HLR on HP C-Class G8

Procedure 10. Performing the Initial OA Configuration (OA Configuration Wizard)

<p>2. <input type="checkbox"/></p>	<p>OA GUI: Run First Time Setup wizard</p>	<p>NOTE: If the OA was configured from Oracle Manufacturing, this wizard will not appear.</p> <p>You will see the main wizard window:</p>  <p>Click on Next to choose enclosure you want to configure.</p>
<p>3. <input type="checkbox"/></p>	<p>OA GUI: Select enclosure</p>	<p>Choose enclosure:</p>  <p>Click on Next.</p>
<p>4. <input type="checkbox"/></p>	<p>OA GUI: Skip Configuration Management</p>	<p>You will see Configuration Management. Skip this step. Click Next.</p>

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Procedure 10. Performing the Initial OA Configuration (OA Configuration Wizard)

<p>5. <input type="checkbox"/></p>	<p>OA GUI: Rack and Enclosure Settings</p>	<p>You should see this screen:</p>  <p>Fill in Rack Name in format xxx_xx. Fill in Enclosure name in format <rack name>_<position> Example: Rack Name: 500_03 Enclosure Name: 500_03_03</p> <p>Note: Enclosure positions are numbered from 1 at the bottom of the rack to 4 at the top.</p> <p>Check Set time using an NTP server item and fill in Primary NTP server (Should be the NTP Server provided by the customer).</p> <p>Set Poll interval to 720.</p> <p>Set Time Zone to UTC.</p> <p>Click on Next.</p>
<p>6. <input type="checkbox"/></p>	<p>OA GUI: Change administrator password</p>	<p>You can see Administrator Account Setup:</p>  <p>Change Administrator's password and click on Next.</p>

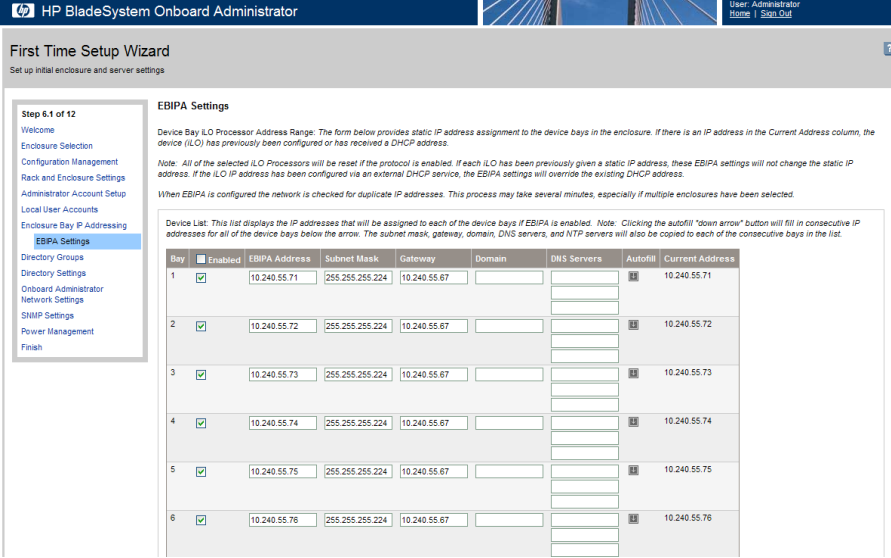
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Procedure 10. Performing the Initial OA Configuration (OA Configuration Wizard)

7. <input type="checkbox"/>	OA GUI: Create pmacadmin and root user	<p>On the Local User Accounts screen click on New to add pmacadmin user. You will see User Settings screen. Fill in User Name and Password. Privilege Level set to Administrator. You will need to create the user: pmacadmin.</p> <p>Check the checkbox for Onboard Administrator Bays under the User Permissions section.</p> <p>Then click on Add User.</p> <p>In the same way create root user.</p> <p>Then click on Next.</p>
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Procedure 10. Performing the Initial OA Configuration (OA Configuration Wizard)

<p>8. <input type="checkbox"/></p>	<p>OA GUI: EBIPA settings</p>	<p>On the EBIPA Settings (Enclosure Bay IP Addressing) screen click on Next to continue or Skip if you have already did it. If you pressed Skip go to the Step 9 of this procedure.</p> <p>Note: Setting up the EBIPA addresses is required.</p>  <p>Fill in ILO's IPs, Subnet Masks and Gateways in the Device list. Note that those IPs need to belong to the Plat Mgmt Network. You can use autofill button which will sequentially fill in IP addresses below the current entry. Click Enabled to enable all servers. Also note that for full height blades (which each takes 2 slots in the enclosure eg slot 1 and slot 9), provision the IP for the upper slot and leave the bottom slot blank.</p> <p>Do not fill ILO IPs for the Bays 1A-16A and 1B-16B. We do not use them.</p> <p>Note: bays 1A-16A and 1B-16B are used for double-density blades (f.e. BL2x220c) which are not supported in this release.</p> <p>Click on the Interconnect Bays tab and fill in the IP addresses, Subnet Masks, and Gateways that will be assigned to the interconnect bays in the rear of the enclosure switches and enable them.</p> <p>By clicking Next you will apply those settings. System will restart devices such as interconnect devices or iLOs to apply new addresses. After finishing press Previous and then Next to check the IP addresses and ensure that apply was successful, if they were successfully applied, press Skip.</p>
<p>9. <input type="checkbox"/></p>	<p>OA GUI: Skip Directory Groups step</p>	<p>To skip Directory Groups step, click Next.</p>
<p>10. <input type="checkbox"/></p>	<p>OA GUI: Skip Directory Settings step</p>	<p>To skip Directory Settings step, click Next.</p>

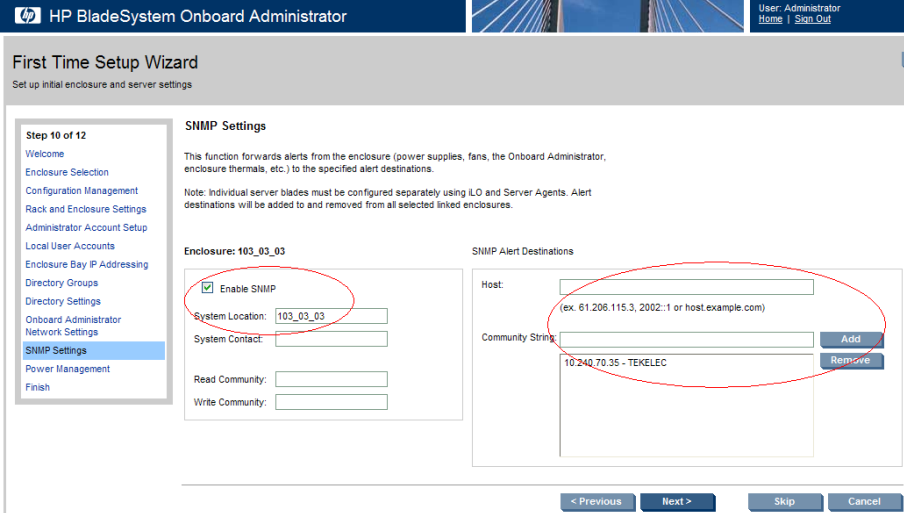
Installing LTE HSS & HLR on HP C-Class G8

Procedure 10. Performing the Initial OA Configuration (OA Configuration Wizard)

11. <input type="checkbox"/>	OA GUI: OA network settings	<p>On the Onboard Administrator Network Settings tab, change the IP address and the network settings of the second OA.</p> <div><p>Active Onboard Administrator Network Settings</p><p><input type="radio"/> Use DHCP for all Active Onboard Administrators</p><p><input type="checkbox"/> Enable Dynamic DNS</p><hr/><p><input checked="" type="radio"/> Use static IP settings for each Active Onboard Administrator</p><p><i>Required Field *</i></p><p>Enclosure: 500_05_01</p><p>DNS Host Name:* <input type="text" value="OA-0026551C1E7B"/></p><p>IP Address:* <input type="text" value="10.240.17.51"/></p><p>Subnet Mask:* <input type="text" value="255.255.255.0"/></p><p>Gateway: <input type="text" value="10.240.17.1"/></p><p>DNS Server 1: <input type="text"/></p><p>DNS Server 2: <input type="text"/></p></div> <div><p>Standby Onboard Administrator Network Settings</p><p><input type="radio"/> Use DHCP for all Standby Onboard Administrators</p><p><input type="checkbox"/> Enable Dynamic DNS</p><hr/><p><input checked="" type="radio"/> Use static IP settings for each Standby Onboard Administrator</p><p><i>Required Field *</i></p><p>Enclosure: 500_05_01</p><p>DNS Host Name:* <input type="text" value="OA-D8D385DD6E4F"/></p><p>IP Address:* <input type="text" value="10.240.17.56"/></p><p>Subnet Mask:* <input type="text" value="255.255.255.0"/></p><p>Gateway: <input type="text" value="10.240.17.1"/></p><p>DNS Server 1: <input type="text"/></p><p>DNS Server 2: <input type="text"/></p></div> <p style="text-align: right;"><input style="background-color: #4a7c9c; color: white; border: none; padding: 2px 10px; margin-right: 5px;" type="button" value=" < Previous "/><input style="background-color: #4a7c9c; color: white; border: none; padding: 2px 10px; margin-right: 5px;" type="button" value=" Next > "/><input style="background-color: #4a7c9c; color: white; border: none; padding: 2px 10px; margin-right: 5px;" type="button" value=" Skip "/><input style="background-color: #4a7c9c; color: white; border: none; padding: 2px 10px;" type="button" value=" Cancel "/></p>
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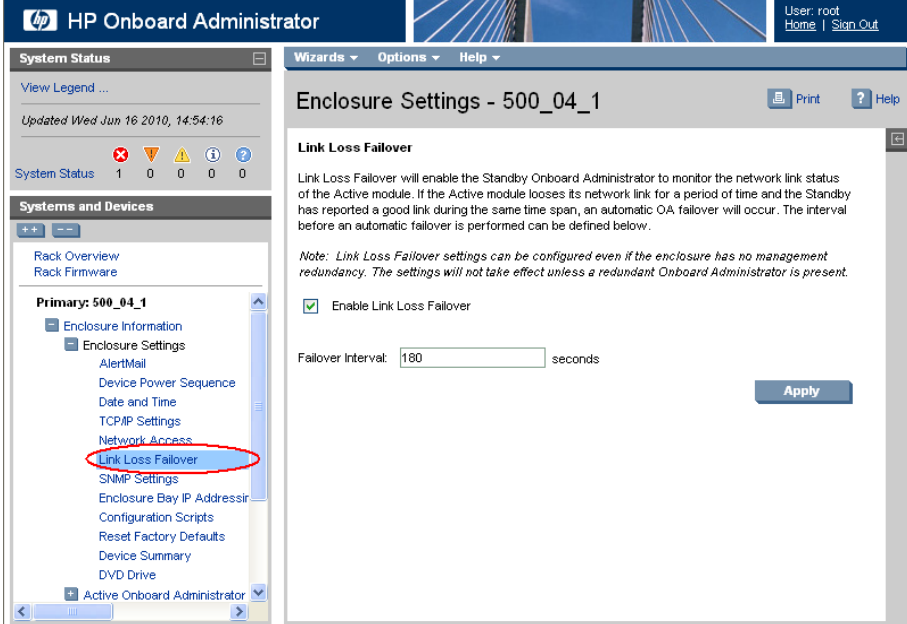
Installing LTE HSS & HLR on HP C-Class G8

Procedure 10. Performing the Initial OA Configuration (OA Configuration Wizard)

12. <input type="checkbox"/>	OA GUI: SNMP Settings	<p>Mark Enable SNMP.</p>  <p>Fill in System Location that is equal to Enclosure name you have filled in Step 5.</p> <p>Do not set Read Community and Write Community.</p> <p>Set Community string and SNMP Alert Destination to the values collected from the IP network planning document.</p> <p>Click on Next.</p>
13. <input type="checkbox"/>	OA GUI: Power Management	<p>Use default settings displayed on Power Management screen. Do not change anything.</p> <p>Click on Next.</p>
14. <input type="checkbox"/>	OA GUI: Finish First Time Setup Wizard	<p>Click on Finish.</p>

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Procedure 10. Performing the Initial OA Configuration (OA Configuration Wizard)

15. <input type="checkbox"/>	OA GUI: Set Link Loss Failover	<p>Navigate to Enclosure Information -> Enclosure Settings -> Link Loss Failover</p>  <p>Check the Enable Link Loss Failover and specify Failover Interval to be 180 seconds.</p> <p>Click Apply.</p>
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Installing LTE HSS & HLR on HP C-Class G8

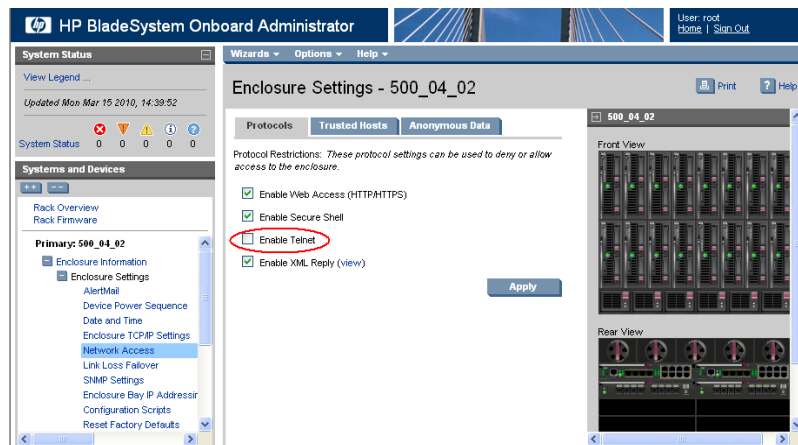
Procedure 10. Performing the Initial OA Configuration (OA Configuration Wizard)

16. OA GUI: Disable telnet

Navigate to **Enclosure Information** -> **Enclosure Settings** -> **Network Access**



Then uncheck the Enable Telnet

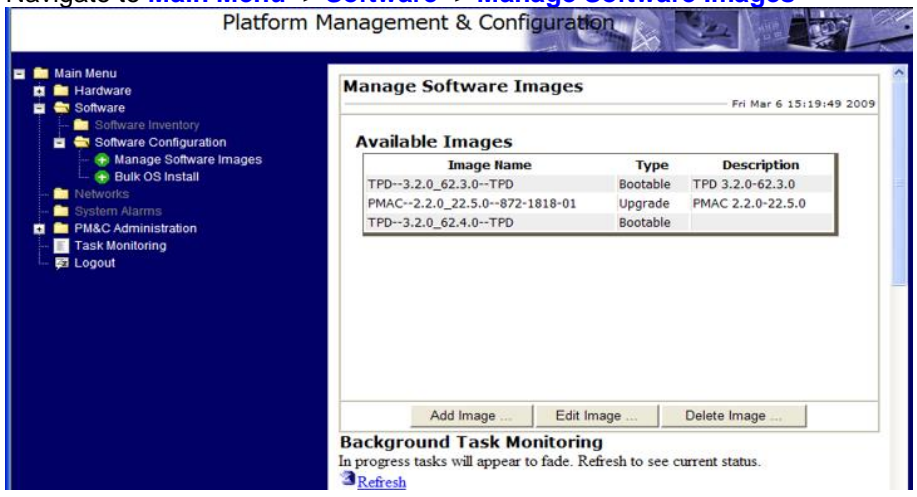


Click on **Apply**.

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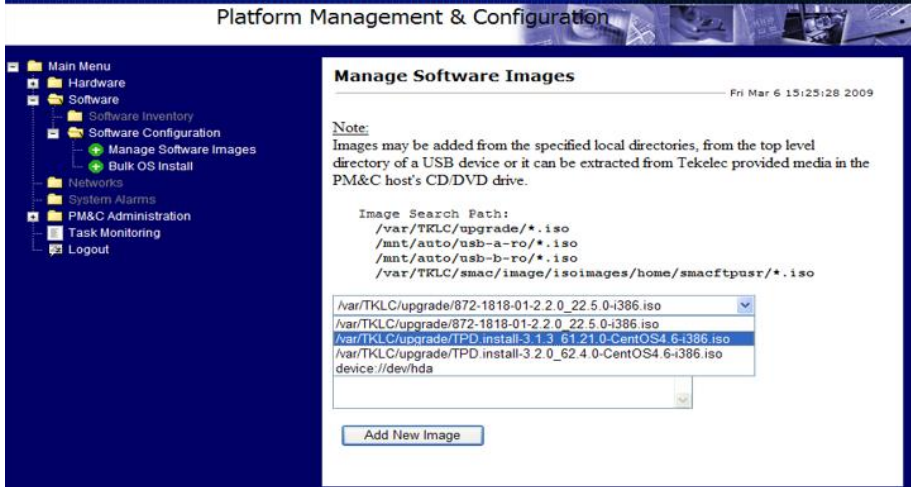
3.2 UPGRADE OA FIRMWARE

Procedure 11. Upgrade OA Firmware

S T E P #	<p>This procedure will upgrade the firmware on the OA.</p> <p>Needed material:</p> <ul style="list-style-type: none"> - HP Misc. Firmware DVD - HP Solutions Firmware Upgrade Pack Release Notes [1]. <p>Note: This procedure should be used to upgrade firmware to 3.60 or to ensure both OA's have same firmware in a system with redundant OA. When the firmware update is initiated, the standby OA is automatically flashed first.</p> <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.</p>													
1 <input type="checkbox"/>	OA GUI: Login	Login to HP OA as Administrator. Original password is on paper card attached to each OA.												
2 <input type="checkbox"/>	OA GUI: Determine if firmware upgrade is required	In the left navigation area, click on Active Onboard Administrator Examine the Firmware Version shown in the Firmware Information table. Verify the version meets the minimum requirement specified by Release Notes [1] and that the firmware versions match for both OA's. If it is so the firmware does not need to be upgraded. Skip the rest of this procedure.												
3 <input type="checkbox"/>	Make the image available to PM&C	Insert the OA firmware disc as specified in HP Solutions firmware upgrade pack [1] into the removable media drive of the management server.												
4 <input type="checkbox"/>	PM&C GUI: Login	Open a new web browser window and enter: <a href="http://<management_network_ip>/gui">http://<management_network_ip>/gui Login as pmacadmin user.												
5 <input type="checkbox"/>	PM&C GUI: Navigate to Manage Software Images	<p>Navigate to Main Menu -> Software -> Manage Software Images</p>  <table border="1"> <thead> <tr> <th>Image Name</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>TPD--3.2.0_62.3.0--TPD</td> <td>Bootable</td> <td>TPD 3.2.0-62.3.0</td> </tr> <tr> <td>PMAC--2.2.0_22.5.0--872-1818-01</td> <td>Upgrade</td> <td>PMAC 2.2.0-22.5.0</td> </tr> <tr> <td>TPD--3.2.0_62.4.0--TPD</td> <td>Bootable</td> <td></td> </tr> </tbody> </table> <p>Buttons: Add Image ..., Edit Image ..., Delete Image ...</p> <p>Background Task Monitoring In progress tasks will appear to fade. Refresh to see current status. Refresh</p>	Image Name	Type	Description	TPD--3.2.0_62.3.0--TPD	Bootable	TPD 3.2.0-62.3.0	PMAC--2.2.0_22.5.0--872-1818-01	Upgrade	PMAC 2.2.0-22.5.0	TPD--3.2.0_62.4.0--TPD	Bootable	
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TPD--3.2.0_62.4.0--TPD	Bootable													

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Procedure 11. Upgrade OA Firmware

<p>6</p> <p><input type="checkbox"/></p>	<p>PM&C GUI: Add image</p>	<p>Press Add Image button. Use the dropdown to select the image you just transferred.</p> <p>Note: optical media device appears as device://dev/scd0</p> <p>Add appropriate image description and press Add New Image button.</p>  <p>You may check the progress using the Task Monitoring link. Observe the green bar indicating success.</p> <p>Once the green bar is displayed, remove the Misc. Firmware CD from the optical drive of the management server.</p>
<p>7</p> <p><input type="checkbox"/></p>	<p>OA GUI: Upgrade OA firmware</p>	<p>Switch back to the OA, click on Firmware Update in the left navigation area.</p> <p>Enter the appropriate URL in the bottom text box labeled "Image URL". The syntax is: <code>http://<PM&C_Management_Network_IP>/TPD/<HPFW_mount_point>/files/<OA_firmware_version>.bin</code></p> <p>For example: <code>http://10.240.4.198/TPD/HPFW--2.1.1-10.1.0--872-2161-101--i386/files/hpoa300.bin</code></p> <p>Click Apply</p> <p>Click OK</p> <p>Note: The upgrade may take few minutes in a system with one OA and about 25 minutes on a system with redundant OA present.</p>

Installing LTE HSS & HLR on HP C-Class G8

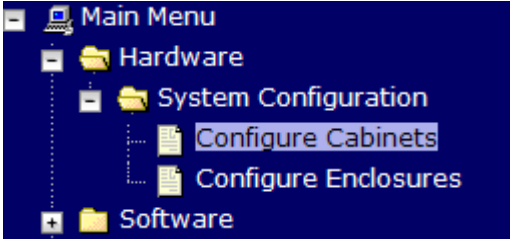
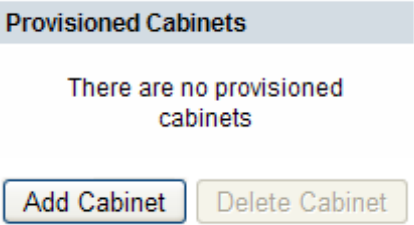
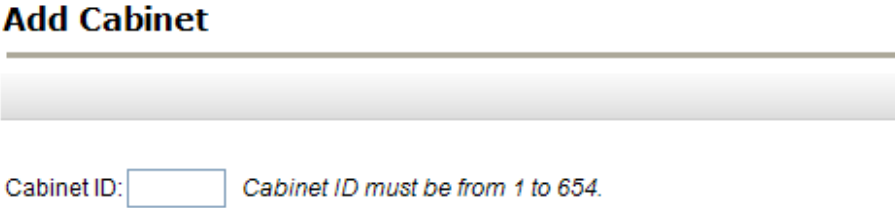
Procedure 11. Upgrade OA Firmware

<p>8</p> <p><input type="checkbox"/></p>	<p>OA GUI: Observe OA firmware upgrade progress</p>	<p>You should observe the following updates during the upgrade.</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>Flashing the Standby Onboard Administrator ...</p> <div style="background-color: #ccc; width: 100%; height: 10px; position: relative;"> <div style="background-color: #333; width: 2%; height: 10px; position: absolute; left: 0;"></div> </div> <p>2% complete</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px; text-align: center;"> <p>Please wait while the Active Onboard Administrator flash is initialized ...</p> <div style="background: repeating-linear-gradient(45deg, transparent, transparent 2px, #ccc 2px, #ccc 4px); width: 100%; height: 15px; margin: 5px 0;"></div> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>Flashing the Active Onboard Administrator ...</p> <div style="background-color: #ccc; width: 100%; height: 10px; position: relative;"> <div style="background-color: #333; width: 2%; height: 10px; position: absolute; left: 0;"></div> </div> <p>2% complete</p> </div> <div style="border: 1px solid black; padding: 5px;"> <p>The firmware update has completed, and the Active Onboard Administrator is being reset. The application will be reloaded in 81 seconds</p> </div>															
<p>9</p> <p><input type="checkbox"/></p>	<p>OA GUI: Reload the HP OA application</p>	<p>The upgrade is complete when the following is displayed:</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>It is recommended that you clear your browser's cache before continuing to use this application. If the browser's cache is not cleared after a firmware update, the application may not function properly.</p> <p style="text-align: center;">Click here to reload the application.</p> </div> <p>Clear your browser's cache and click to reload the application . The login page should appear momentarily.</p>															
<p>10</p> <p><input type="checkbox"/></p>	<p>OA GUI: Verify the firmware upgrade</p>	<p>Login to the OA again. It may take few minutes before the OA is fully functional and accepts the credentials.</p> <p>In the left navigation area, navigate to Enclosure Information -> Active Onboard Administrator -> Firmware Update</p> <p>Examine the Firmware Version shown in the Firmware Information table. Verify the firmware version information 3.60 :</p> <p>Firmware Information</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #d3d3d3;"> <th>Bay</th> <th>Role</th> <th>Firmware Status</th> <th>Firmware Version</th> <th>Hardware Version</th> </tr> </thead> <tbody> <tr> <td>OA Bay 1</td> <td>Active</td> <td style="text-align: center;">✔ OK</td> <td>3.60 Jul 02 2012</td> <td>B1</td> </tr> <tr> <td>OA Bay 2</td> <td>Standby</td> <td style="text-align: center;">✔ OK</td> <td>3.60 Jul 02 2012</td> <td>B1</td> </tr> </tbody> </table>	Bay	Role	Firmware Status	Firmware Version	Hardware Version	OA Bay 1	Active	✔ OK	3.60 Jul 02 2012	B1	OA Bay 2	Standby	✔ OK	3.60 Jul 02 2012	B1
Bay	Role	Firmware Status	Firmware Version	Hardware Version													
OA Bay 1	Active	✔ OK	3.60 Jul 02 2012	B1													
OA Bay 2	Standby	✔ OK	3.60 Jul 02 2012	B1													

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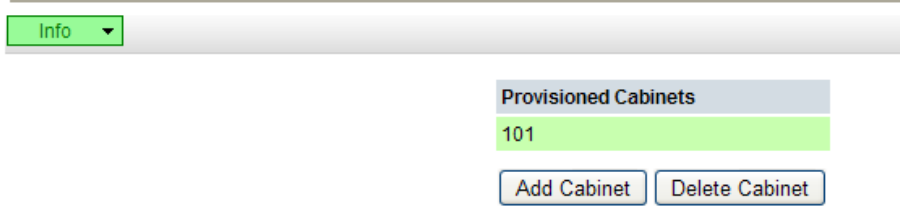
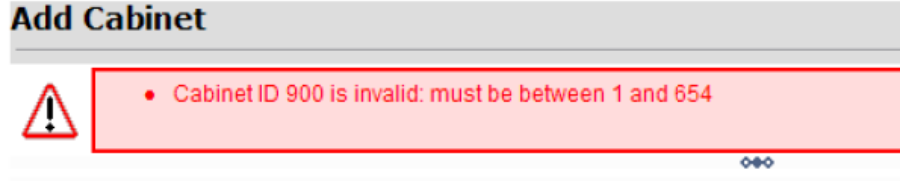
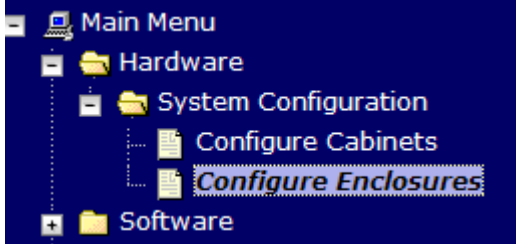
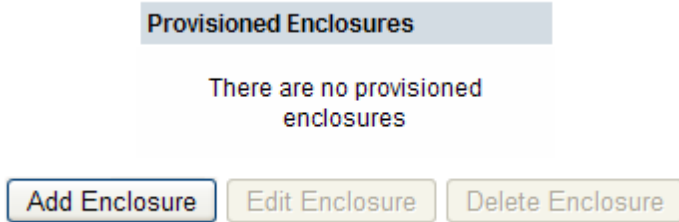
3.3 ADDING THE CABINET AND ENCLOSURE TO PM&C

Procedure 12. Adding the Cabinet and Enclosure to PM&C

<p>S T E P #</p>	<p>This procedure provides instructions to add a cabinet and an enclosure to the PM&C system inventory.</p> <p><i>Prerequisite: Prior procedure has been completed.</i></p> <p>Note: The installer must be knowledgeable of the network. If you make mistake, hit cancel and try again. The finish step may take longer time because it reconfigures the network and attempts to connect may fail.</p> <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.</p>	
<p>1. <input type="checkbox"/></p>	<p>PM&C GUI: Login</p>	<p>Open web browser and enter: <a href="http://<management_network_ip>/gui">http://<management_network_ip>/gui Login as pmacadmin user.</p>
<p>2. <input type="checkbox"/></p>	<p>PM&C GUI: Configure Cabinets</p>	<p>Navigate to Main Menu -> Hardware -> System Configuration -> Configure Cabinets.</p> 
<p>3. <input type="checkbox"/></p>	<p>PM&C GUI: Add Cabinet</p>	<p>On the Configure Cabinets panel click on Add Cabinet...</p> 
<p>4. <input type="checkbox"/></p>	<p>PM&C GUI: Enter Cabinet ID</p>	<p>Enter CabinetID and press Add Cabinet.</p> 

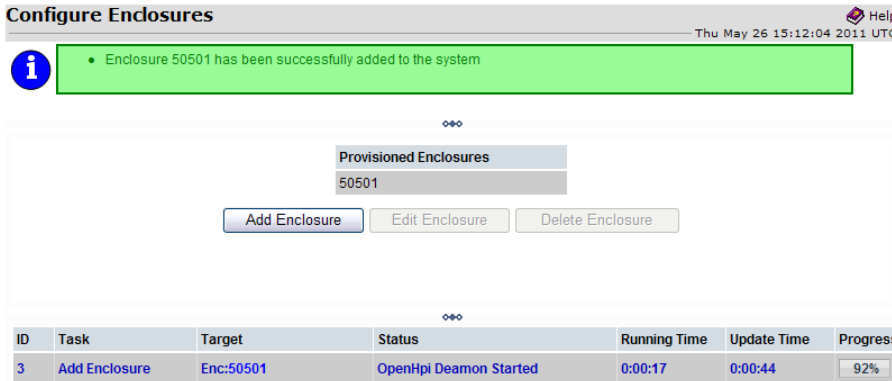
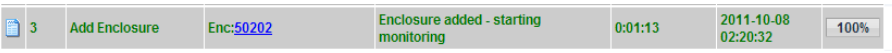
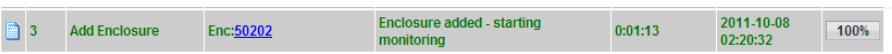
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Procedure 12. Adding the Cabinet and Enclosure to PM&C

<p>5. <input type="checkbox"/> PM&C GUI: Check errors</p>		<p>If no error is reported to the user you will see the following:</p>  <p>Or you will see an error message:</p> 
<p>6. <input type="checkbox"/> PM&C GUI: Go to Configure HPC Enclosures</p>		<p>Navigate to Main Menu -> Hardware -> System Configuration -> Configure Enclosures.</p> 
<p>7. <input type="checkbox"/> PM&C GUI: Go to Add Enclosure</p>		<p>On the Configure Enclosures panel click on Add Enclosure...</p> 

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Procedure 12. Adding the Cabinet and Enclosure to PM&C

<p>8. <input type="checkbox"/></p>	<p>PM&C GUI: Add Enclosure</p>	<p>In the Add Enclosure panel enter Cabinet ID, Location ID and Bay 1 OA IP and Bay 2 OA IP. Then click on Add Enclosure.</p> <p>Cabinet ID: <input type="text" value="101"/></p> <p>Location ID: <input type="text" value="1"/> <i>Location ID must be from 1 to 4.</i></p> <p>Bay 1 OA IP: <input type="text" value="10.240.237.134"/></p> <p>Bay 2 OA IP: <input type="text" value="10.240.237.135"/></p> <p><input type="button" value="Add Enclosure"/></p> <p>Notes: Location ID is used to uniquely identify the enclosure within the cabinet. It can have a value of 1, 2, 3 or 4. The cabinet id and location id will be combined to create a globally unique id for the enclosure (for example, an enclosure in cabinet 502 at location 1, will have an enclosure id of 50201). Enclosures are typically numbered from the bottom. i.e. Enclosure in the bottom of the cabinet is location = 1.</p>														
<p>9. <input type="checkbox"/></p>	<p>PM&C GUI: Monitor the Enclosure discovery status</p>	<p>When the task is complete, the text will change to green and the Progress bar will indicate "100%".</p>  <table border="1"> <thead> <tr> <th>ID</th> <th>Task</th> <th>Target</th> <th>Status</th> <th>Running Time</th> <th>Update Time</th> <th>Progress</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>Add Enclosure</td> <td>Enc:50501</td> <td>OpenHpi Deamon Started</td> <td>0:00:17</td> <td>0:00:44</td> <td>92%</td> </tr> </tbody> </table>	ID	Task	Target	Status	Running Time	Update Time	Progress	3	Add Enclosure	Enc:50501	OpenHpi Deamon Started	0:00:17	0:00:44	92%
ID	Task	Target	Status	Running Time	Update Time	Progress										
3	Add Enclosure	Enc:50501	OpenHpi Deamon Started	0:00:17	0:00:44	92%										
<p>10. <input type="checkbox"/></p>	<p>PM&C GUI: Background Task monitoring</p>	<p>This page allows the user to monitor status updates:</p>  <p>NOTE: DO NOT click the <input type="button" value="X"/> button as this will delete the selected task from the Background Task Monitoring status screen.</p>														
<p>11. <input type="checkbox"/></p>	<p>PM&C GUI: Wait until the Add Enclosure task finishes</p>	<p>The color of the progress bar will change to green when complete:</p>  <p>If the Add Enclosure task fails the Status will display information concerning the failed step and the color of the Progress bar will change to red.</p>														

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Procedure 12. Adding the Cabinet and Enclosure to PM&C

<p>12. PM&C GUI: <input type="checkbox"/> Verify Software Inventory</p>	<p>Software → Software Inventory</p> <p>If the control network is properly configured, the blades have TPD installed (at minimum), and the Enclosure switches have a control network configured, the Software Inventory form will show blade server information. Example below:</p> <p>Software Inventory Sat Oct 20 20:54:08 2012</p> <p>Filter ▾</p> <table border="1"> <thead> <tr> <th>Ident</th> <th>IP Address</th> <th>Hostname</th> <th>Plat Name</th> <th>Plat Version</th> <th>App Name</th> <th>App Version</th> </tr> </thead> <tbody> <tr> <td>Enc:23801 Bay:1F</td> <td>...99fffeb3:4248</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Enc:23801 Bay:3F</td> <td>192.168.1.8</td> <td>cs-tb31-cmp-a</td> <td>TPD (x86_64)</td> <td>5.0.1-72.45.0</td> <td>CMP</td> <td>8.0.0_29.1.0</td> </tr> <tr> <td>Enc:23801 Bay:4F</td> <td>192.168.1.16</td> <td>hostname1346527660</td> <td>TPD (x86_64)</td> <td>4.2.4-70.90.0</td> <td>MRA</td> <td>7.5.1_16.1.0</td> </tr> <tr> <td>Enc:23801 Bay:5F</td> <td>192.168.1.10</td> <td>cs-tb31-mpe2-a</td> <td>TPD (x86_64)</td> <td>5.0.1-72.45.0</td> <td>MPE</td> <td>8.0.0_29.1.0</td> </tr> <tr> <td>Enc:23801 Bay:7F</td> <td>192.168.1.13</td> <td>cslab-cmp3-a</td> <td>TPD (x86_64)</td> <td>5.0.1-72.45.0</td> <td>CMP</td> <td>8.0.0_29.1.0</td> </tr> <tr> <td>Enc:23801 Bay:8F</td> <td>192.168.1.7</td> <td>cs-tb31-mpe1-a</td> <td>TPD (x86_64)</td> <td>5.0.1-72.45.0</td> <td>MPE</td> <td>8.0.0_29.1.0</td> </tr> <tr> <td>Enc:23801 Bay:9F</td> <td>192.168.1.11</td> <td>cslab-spr-b</td> <td>TPD (x86_64)</td> <td>4.2.4-70.90.0</td> <td></td> <td></td> </tr> <tr> <td>Enc:23801 Bay:11F</td> <td>192.168.1.6</td> <td>cs-tb31-cmp-b</td> <td>TPD (x86_64)</td> <td>5.0.1-72.45.0</td> <td>CMP</td> <td>8.0.0_29.1.0</td> </tr> <tr> <td>Enc:23801 Bay:12F</td> <td>192.168.1.12</td> <td>hostname1346527788</td> <td>TPD (x86_64)</td> <td>4.2.4-70.90.0</td> <td>MRA</td> <td>7.5.1_16.1.0</td> </tr> <tr> <td>Enc:23801 Bay:13F</td> <td>192.168.1.5</td> <td>cs-tb31-mpe2-b</td> <td>TPD (x86_64)</td> <td>5.0.1-72.45.0</td> <td>MPE</td> <td>8.0.0_29.1.0</td> </tr> <tr> <td>Enc:23801 Bay:15F</td> <td>192.168.1.14</td> <td>cslab-cmp3-b</td> <td>TPD (x86_64)</td> <td>5.0.1-72.45.0</td> <td>CMP</td> <td>8.0.0_29.1.0</td> </tr> <tr> <td>Enc:23801 Bay:16F</td> <td>192.168.1.15</td> <td>cs-tb31-mpe1-b</td> <td>TPD (x86_64)</td> <td>5.0.1-72.45.0</td> <td>MPE</td> <td>8.0.0_29.1.0</td> </tr> <tr> <td>Host: pmacTVOE238 Guest: pmac238</td> <td>192.168.1.1</td> <td>pmac238</td> <td>TPD (x86_64)</td> <td>6.0.0-80.22.0</td> <td>PMAC</td> <td>5.0.0_50.1.0</td> </tr> </tbody> </table> <p>NOTE: The procedure to configure the Enclosure switches, if they have not been previously configured, is yet to be performed.</p>	Ident	IP Address	Hostname	Plat Name	Plat Version	App Name	App Version	Enc:23801 Bay:1F	...99fffeb3:4248						Enc:23801 Bay:3F	192.168.1.8	cs-tb31-cmp-a	TPD (x86_64)	5.0.1-72.45.0	CMP	8.0.0_29.1.0	Enc:23801 Bay:4F	192.168.1.16	hostname1346527660	TPD (x86_64)	4.2.4-70.90.0	MRA	7.5.1_16.1.0	Enc:23801 Bay:5F	192.168.1.10	cs-tb31-mpe2-a	TPD (x86_64)	5.0.1-72.45.0	MPE	8.0.0_29.1.0	Enc:23801 Bay:7F	192.168.1.13	cslab-cmp3-a	TPD (x86_64)	5.0.1-72.45.0	CMP	8.0.0_29.1.0	Enc:23801 Bay:8F	192.168.1.7	cs-tb31-mpe1-a	TPD (x86_64)	5.0.1-72.45.0	MPE	8.0.0_29.1.0	Enc:23801 Bay:9F	192.168.1.11	cslab-spr-b	TPD (x86_64)	4.2.4-70.90.0			Enc:23801 Bay:11F	192.168.1.6	cs-tb31-cmp-b	TPD (x86_64)	5.0.1-72.45.0	CMP	8.0.0_29.1.0	Enc:23801 Bay:12F	192.168.1.12	hostname1346527788	TPD (x86_64)	4.2.4-70.90.0	MRA	7.5.1_16.1.0	Enc:23801 Bay:13F	192.168.1.5	cs-tb31-mpe2-b	TPD (x86_64)	5.0.1-72.45.0	MPE	8.0.0_29.1.0	Enc:23801 Bay:15F	192.168.1.14	cslab-cmp3-b	TPD (x86_64)	5.0.1-72.45.0	CMP	8.0.0_29.1.0	Enc:23801 Bay:16F	192.168.1.15	cs-tb31-mpe1-b	TPD (x86_64)	5.0.1-72.45.0	MPE	8.0.0_29.1.0	Host: pmacTVOE238 Guest: pmac238	192.168.1.1	pmac238	TPD (x86_64)	6.0.0-80.22.0	PMAC	5.0.0_50.1.0
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Procedure 13: Configuring Enclosure Bay iLO Passwords

S T E P #	<p>This procedure will set iLO passwords for Administrator and root accounts, on all blades.</p> <p><i>Prerequisite: Procedure 9. Configure OA IP has been completed.</i></p> <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.</p>	
1. <input type="checkbox"/>	Management server: Edit xml file	<p>Edit the following file by running:</p> <pre># mkdir /usr/TKLC/smac/html/ilo_passwd # cp /usr/TKLC/plat/etc/change_ilo_admin_passwd.xml /usr/TKLC/smac/html/ilo_passwd # cd /usr/TKLC/smac/html/ilo_passwd # chmod 664 change_ilo_admin_passwd.xml # vi change_ilo_admin_passwd.xml</pre> <p>Update the <code><root password></code>, <code><iLo root password></code> and <code><iLo Administrator password></code> fields.</p> <p>Now copy the xml file to <code>/usr/TKLC/smac/html/ilo_passwd/</code> by running the following command:</p> <pre># cp change_ilo_admin_passwd.xml /usr/TKLC/smac/html/public-configs/</pre>
2. <input type="checkbox"/>	OA shell: Run hponcfg	<p>Connect to the active OA via ssh as root.</p> <p>Run the following command:</p> <pre>> hponcfg all http://<management_server_ip>/public-configs/change_ilo_admin_passwd.xml</pre>
3. <input type="checkbox"/>	OA shell: Check for error	<p>After the command is done executing, Scroll up and check for any errors that might've occurred</p>
4. <input type="checkbox"/>	OA shell: Logout	<p>After the command is done executing, Logout from the OA</p> <pre>> exit</pre>
5. <input type="checkbox"/>	GUI: Verify iLo Access	<p>In web browser, enter the IP address of a blade server iLo.</p> <p>Verify login as Administrator and <code><iLo Administrator password></code> set above.</p>
6. <input type="checkbox"/>	SSH: Verify iLo Access	<p>In a ssh session. Login to iLo of a blade server using root login:</p> <pre># ssh root@<BladeServer_iLo_address> password: <iLo root password></pre>

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3.4 CONFIGURE ENCLOSURE SWITCHES (IF HP 6120XG)

If the enclosure switches used are HP 6120XG, execute procedure 13.

Procedure 14. Configure HP 6120XG Switch Pair(s) using NetConfig

<p>S T E P #</p>	<p>This procedure will configure up to 3 HP 6120XG switch pairs with an appropriate IOS and configuration specified by Platform Engineering and Application requirements.</p> <p>Needed material:</p> <ul style="list-style-type: none"> - NetConfig xml files for 6120XG switches (6120XG_init.xml, 6120XG_[Single,LAG]Uplink_configure.xml), on a USB key <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.</p>																																									
<p>1.</p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p>OA: Confirm Enclosure Switch IP addresses are assigned</p> <p>(this assignment was done during prior Enclosure configuration)</p>	<p>Web Browser: access OA GUI.</p> <p>Enclosure Information → Enclosure Settings → Enclosure Bay IP address : Interconnect Bays</p> <table border="1"> <thead> <tr> <th>Bay</th> <th>Enabled</th> <th>EBIPA Address</th> <th>Subnet Mask</th> <th>Gateway</th> <th>Domain</th> <th>DNS Servers</th> <th>NTP Server</th> <th>Autofill</th> <th>Current Address</th> </tr> </thead> <tbody> <tr> <td>1</td> <td><input checked="" type="checkbox"/></td> <td>10.250.85.106</td> <td>255.255.255.192</td> <td>10.250.85.65</td> <td></td> <td></td> <td>10.250.32.10</td> <td><input type="checkbox"/></td> <td>0.0.0.0</td> </tr> <tr> <td>2</td> <td><input checked="" type="checkbox"/></td> <td>10.250.85.107</td> <td>255.255.255.192</td> <td>10.250.85.65</td> <td></td> <td></td> <td>10.250.32.10</td> <td><input type="checkbox"/></td> <td>0.0.0.0</td> </tr> <tr> <td>3</td> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input type="checkbox"/></td> <td>N/A</td> </tr> </tbody> </table> <p>Current Address should be same as assigned EBIPA address, to indicate that the switch has taken it's assigned address.</p>	Bay	Enabled	EBIPA Address	Subnet Mask	Gateway	Domain	DNS Servers	NTP Server	Autofill	Current Address	1	<input checked="" type="checkbox"/>	10.250.85.106	255.255.255.192	10.250.85.65			10.250.32.10	<input type="checkbox"/>	0.0.0.0	2	<input checked="" type="checkbox"/>	10.250.85.107	255.255.255.192	10.250.85.65			10.250.32.10	<input type="checkbox"/>	0.0.0.0	3	<input type="checkbox"/>							<input type="checkbox"/>	N/A
Bay	Enabled	EBIPA Address	Subnet Mask	Gateway	Domain	DNS Servers	NTP Server	Autofill	Current Address																																	
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2	<input checked="" type="checkbox"/>	10.250.85.107	255.255.255.192	10.250.85.65			10.250.32.10	<input type="checkbox"/>	0.0.0.0																																	
3	<input type="checkbox"/>							<input type="checkbox"/>	N/A																																	
<p>2.</p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p>Management server: Verify connectivity to network of the Enclosure switches</p>	<p>IF the aggregation switches are provided by Oracle, login to the management server, confirm connectivity from Management Server to Management Network addresses at Aggregation switch.</p> <pre># ping -w3 <switch1A_mgmtVLAN_address> # ping -w3 <switch1B_mgmtVLAN_address> # ping -w3 <switch_mgmtVLAN_VIP></pre>																																								
<p>3.</p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p>Management server: Verify connectivity to network of the Enclosure switches</p>	<p>IF the aggregation switches are provided by the customer, login to the management server, confirm connectivity from Management Server to the customer Management Network gateway:</p> <pre># ping -w3 <mgmtVLAN_gateway_address></pre>																																								

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Procedure 14. Configure HP 6120XG Switch Pair(s) using NetConfig

<p>4.</p> <input type="checkbox"/> <input type="checkbox"/>	<p>Management server: Verify current netConfig setup</p>	<p>To check that you entered the information correctly, use the following command:</p> <pre># netConfig --repo listServices</pre> <p>None are required, some may be configured from Aggregation switch install</p> <pre># netConfig --repo listDevices</pre> <p>None are required, devices may be configured for Aggregation switches</p>
<p>5.</p> <input type="checkbox"/> <input type="checkbox"/>	<p>Management server: Transfer the prepared netConfig files to PM&C</p>	<p>netConfig files (6120XG_init.xml , 6120XG_[Single,LAG]Uplink_configure.xml) are needed on the Management Server to configure the switches. This files are provided as templates, and then edited to make them site/enclosure specific. This is a pre-installation step that should have been previously completed.</p> <p>These steps assume that the user has brought the NetConfig files to the site using a USB key, correctly formatted to mount on a TPD Server.</p> <p>Insert USB Key to PM&C server.</p> <p>Mount the USB Key to the /mnt/upgrade directory</p> <pre># mount /dev/sda1 /mnt/upgrade</pre> <p>Copy the NetConfig xml files needed for your configuration to the appropriate location:</p> <pre># cp /mnt/upgrade/<NetConfig Files> /usr/TKLC/smac/etc/switch</pre> <pre># ls /usr/TKLC/smac/etc/switch</pre> <p>Un-Mount the /mnt/upgrades directory, and remove USB Key</p> <pre># umount /mnt/upgrade</pre>
<p>6.</p> <input type="checkbox"/> <input type="checkbox"/>	<p>Management server: Review the netConfig files for site specific information</p>	<p>Verify (Edit if needed) the initialization file and switch configuration files for site specific addresses, VLAN IDs, and other site specific content. Values to be modified by the user will be indicated by a preceding dollar sign.</p> <p>Confirm that all values with form of \$<some_variable_name> are modified to the correct site specific value (removing the dollar sign and the less than, greater than sign).</p> <pre># vi /usr/TKLC/smac/etc/switch/<device_name>_init.xml</pre> <pre># vi /usr/TKLC/smac/etc/switch/<device_name>_configure.xml</pre> <p>See Appendix – “Preparing netConfig Files” for more information.</p>

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Procedure 14. Configure HP 6120XG Switch Pair(s) using NetConfig

7. <input type="checkbox"/> <input type="checkbox"/>	Management server: Restore switch to factory defaults (ssh)	If the 6120XG switch has been configured prior to this procedure, clear out the configuration using the following command: # ssh manager@<enclosure_switch_IP> Switch# config Switch(config)# no password all Password protection for all will be deleted, continue [y/n]? y Switch(config)# end Switch# erase startup-config Configuration will be deleted and device rebooted, continue [y/n]? y (switch will automatically reboot, reboot takes about 120-180 seconds)
8. <input type="checkbox"/> <input type="checkbox"/>	Management server: Restore switch to factory defaults (telnet)	If the ssh login fails, login via telnet and reset the switch to manufacturing defaults. # telnet <enclosure_switch_IP> Switch# config Switch(config)# no password all (answer yes to question) Password protection for all will be deleted, continue [y/n]? y Switch(config)# end Switch# erase startup-config (switch will automatically reboot, reboot takes about 120-180 seconds)

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Procedure 14. Configure HP 6120XG Switch Pair(s) using NetConfig

9. <input type="checkbox"/> <input type="checkbox"/>	Management server: setup netConfig repository	<p>Use netConfig to create a repository entry for each 6120XG. This command will give the user several prompts. The prompts with <variables> as the answers are site specific that the user MUST modify. Other prompts that don't have a <variable> as an answer must be entered EXACTLY as they are shown here. If you do not know, stop now and contact Customer Care Center.</p> <p>Note: <device_name> needs to match device name used in the prepared xml files. Eg: sw-<site>-<enc>-iobay<#> Example: sw-brbg-enc1-iobay1</p> <p># netConfig --repo addDevice name=<device_name> --reuseCredentials</p> <p>Device Vendor? HP Device Model? 6120 Should the init network adapter be added (y/n)? y Adding cli protocol for <device_name> using network... What is the address used for network device access? <enclosure_switch_IP> What is the platform access username? <switch_platform_username> What is the platform user password? <switch_platform_password> Verify password <switch_platform_password> What is the device privileged mode password? <switch_enable_password> Verify password <switch_enable_password> Should the live oob adapter be added (y/n)? n Should the live network adapter be added (y/n)? y Adding sshInit protocol for <device_name> using network... Network device access already set: 10.240.8.7 Device named <device_name> successfully added.</p> <p>To check that you entered the information correctly, use the following command</p> <p># netConfig --repo listDevices</p> <p>and check the output, which will be similar to the one shown below</p> <p>Device: <device_name> Vendor: HP Model: 6120 Access: Network: 10.240.8.10 Init Protocol Configured Live Protocol Configured</p> <p>#</p>
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Procedure 14. Configure HP 6120XG Switch Pair(s) using NetConfig

<p>10.</p> <input type="checkbox"/> <input type="checkbox"/>	<p>Management server: Initialize the switch</p>	<p>Apply include-credentials command to the switch</p> <p>Login to the switch using SSH # ssh manager@<enclosure_switch_IP> Switch# config Switch(config)# include-credentials</p> <p>If prompted, answer yes to both questions. Log out of the switch and continue to the next step.</p>
<p>11.</p> <input type="checkbox"/> <input type="checkbox"/>	<p>Management server: Init the switch</p>	<p>Run the following command to init the switch</p> <p># netConfig --file=/usr/TKLC/smac/etc/switch/<device_name>_init.xml</p> <p>This should take about 2-3 minutes.</p>
<p>12.</p> <input type="checkbox"/> <input type="checkbox"/>	<p>Management server: Configure the switch</p>	<p>Run the following command to configure the switch</p> <p># netConfig --file=/usr/TKLC/smac/etc/switch/<device_name>_configure.xml</p> <p>This should take about 2-3 minutes.</p>
<p>13.</p> <input type="checkbox"/> <input type="checkbox"/>	<p>Management server: Repeat for remaining 6120XG switches</p>	<p>For each HP 6120XG, repeat steps 7-12</p>
<p>14.</p> <input type="checkbox"/> <input type="checkbox"/>	<p>Management server: Disable Flow Control and apply QOS settings.</p>	<p>For each HP 6120XG, login and apply the QOS settings and disable flow control.</p> <p># ssh <switch_platform_username>@<enclosure_switch_IP> manager@10.240.8.10's password: <switch_platform_password> switch# config switch(config)# interface 1-16 switch(eth-1-16)# no flow-control switch(eth-1-16)# exit</p> <p>switch(config)# qos traffic-template "EgressDrop" switch (cfg-tcgt-EgressDrop)# map-traffic-group 2 egress-discard-threshold medium switch (cfg-tcgt-EgressDrop)# exit</p> <p>switch(config)# interface all switch(eth-1-24)# policy traffic-template EgressDrop This command will modify the current running configuration, will execute 'write memory' to replace the startup configuration and then reboot. Continue? [y/n] y</p>

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Procedure 14. Configure HP 6120XG Switch Pair(s) using NetConfig

15. <input type="checkbox"/> <input type="checkbox"/>	Management server: Verify proper configuration of HP 6120XG switches	For each HP 6120XG, verify network reachability and configuration. # ping -w3 <enclosure_switch_IP> # ssh manager@<enclosure_switch_IP> manager@10.240.8.10's password: <manager_password> Switch# show run Inspect the output of "show run", and ensure that it is configured as per site requirements.
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Note: additional steps may be required to setup a Tagged Control Network.

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3.5 CONFIGURE ENCLOSURE SWITCHES (IF CISCO 3020)

If the enclosure switches used are Cisco 3020, execute procedure 16.

Procedure 15. Configure Cisco 3020 Switch Pair(s) using NetConfig

<p>S T E P #</p>	<p>This procedure will configure up to 3 Cisco 3020 switch pairs with an appropriate IOS and configuration specified by Platform Engineering and Application requirements.</p> <p>Needed material:</p> <ul style="list-style-type: none"> - Switch Configuration files in an application ISO on an application CD <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>3020_en2_MV_init_no_aggr_switches.xml</p> </div> <div style="text-align: center;">  <p>3020_en2_MV_no_aggr_switches.xml</p> </div> </div> <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.</p>	
<p>1</p> <p><input type="checkbox"/></p>	<p>Virtual PM&C: Prepare for switch configuration</p>	<p>login to the management server, then run:</p> <pre># ping <switch_mgmtVLAN_VIP></pre> <p>If aggregation switches are present</p> <pre># ping <switch1A_mgmtVLAN_address></pre> <pre># ping <switch1B_mgmtVLAN_address></pre> <p>Repeat for other expected application VLANs. If all IP addresses respond positively, then the aggregation switches have been configured.</p> <p>For each 3020 switch, verify network reachability</p> <pre># ping <enclosure_switch_IP></pre>

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2 <input type="checkbox"/>	Virtual PM&C: Check TFTP Service Configuration	Check the TFTP configuration file to verify it is configured properly. If the /etc/xinetd.d/tftp file matches the output below, skip to step 4. Otherwise move on to step 3. # cat /etc/xinetd.d/tftp service tftp { socket_type = dgram protocol = udp wait = yes user = root server = /usr/sbin/in.tftpd server_args = -s /var/TKLC/smac/image disable = no per_source = 11 cps = 100 2 flags = IPv4 }
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Procedure 15. Configure Cisco 3020 Switch Pair(s) using NetConfig

<p>3</p> <p><input type="checkbox"/></p>	<p>Virtual PM&C: Configure tftp service</p>	<p>Ensure that the tftp service is not running. A zero is expected.</p> <pre># tpdProvd --client --noxml --ns=Xinetd getXinetdService service tftp</pre> <p>Login on Remote: platcfg Password of platcfg: 0 #</p> <p>If 1 is returned, need to stop it first by executing the following command.</p> <pre># tpdProvd --client --noxml --ns=Xinetd stopXinetdService service tftp force yes</pre> <p>Login on Remote: platcfg Password of platcfg: 0 #</p> <p>This should return a 0. Edit the /etc/xinetd.d/tftp file for the values in bold so that tftp will work appropriately:</p> <pre># vi /etc/xinetd.d/tftp</pre> <pre>service tftp { socket_type = dgram protocol = udp wait = yes user = root server = /usr/sbin/in.ftpd server_args = -s /var/TKLC/smac/image disable = no per_source = 11 cps = 100 2 flags = IPv4 }</pre>
<p>4</p> <p><input type="checkbox"/></p>	<p>Virtual PM&C: Modify PM&C Feature to allow TFTP</p>	<p>Enable the DEVICE.NETWORK.NETBOOT feature with the management role to allow tftp traffic by running the following commands:</p> <pre># pmacadm editFeature --featureName=DEVICE.NETWORK.NETBOOT --enable=1 --role=management</pre> <pre># pmacadm resetFeatures</pre>

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5 <input type="checkbox"/>	Virtual PM&C: Verify netConfig Services	Verify that the netConfig tftp_service has been configured. If the service is configured the output will look similar to below: # netConfig --repo showService name=tftp_service and check the output, which will be similar to the one shown below Services: Service Name: tftp_service Type: tftp Host: 10.240.8.4 Options: dir: /var/TKLC/smac/image [root@pmac5000101 ~]# If tftp_service is already configured, skip to step 7. Otherwise, continue on to step 7.
6 <input type="checkbox"/>	Virtual PM&C: Setup netConfig repository with necessary tftp information	Use netConfig to create a repository entry that will use the tftp service. This command will give the user several prompts. The prompts with <variables> as the answers are site specific that the user MUST modify. Other prompts that don't have a <variable> as an answer must be entered EXACTLY as they are shown here. # netConfig --repo addService name=tftp_service Service type? (tftp, ssh, conserver, oa) tftp Service host? <management_server_mgmtVLAN_ip_address> Enter an option name (q to cancel): dir Enter a value for user: /var/TKLC/smac/image Enter an option name(q to cancel): q Add service for tftp_service successful To check that you entered the information correctly, use the following command: # netConfig --repo showService name=tftp_service and check the output, which will be similar to the one shown below: Services: Service Name: tftp_service Type: tftp Host: 10.240.8.4 Options: dir: /var/TKLC/smac/image [root@pmac5000101 ~]#

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7 <input type="checkbox"/>	Virtual PM&C: Setup netConfig repository with necessary ssh information	<p>check that the ssh_service is present by running the following command:</p> <pre># netConfig --repo showService name=ssh_service</pre> <p>and check the output, which will be similar to the one shown below:</p> <pre>[root@pmac5000101 ~]# netConfig --repo showServices --name=ssh_service</pre> <p>Services: Service Name: ssh_service Type: ssh Host: 10.240.8.4 Options: password: D8396824B3B2B9EE user: root<pre>[root@pmac5000101 ~]#</pre><p>If the output returns that the service isn't present. Run the following command to add it. Note that prompts with <variables> as the answers are site specific that the user MUST modify. Other prompts that don't have a <variable> as answer must be entered EXACTLY as they are shown here.</p><pre># netConfig --repo addService name=ssh_service</pre><p>Service type? (tftp, ssh, conserver, oa) ssh Service host? <management_server_mgmtVLAN_ip_address> Enter an option name (q to cancel): user Enter a value for user: root Enter an option name(q to cancel): password Enter a value for password: <switch_backup_user_password> Enter an option name(q to cancel): q Add service for console_service successful</p><p>Run the following command again to check that the service was added successfully</p><pre># netConfig --repo showService name=ssh_service</pre></p>
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Procedure 15. Configure Cisco 3020 Switch Pair(s) using NetConfig

8 <input type="checkbox"/>	Virtual PM&C: Setup NetConfig repository with switch information	<p>Use netConfig to create a repository entry for each 3020. This command will give the user several prompts. The prompts with <variables> as the answers are site specific that the user MUST modify. Other prompts that don't have a <variable> as an answer must be entered EXACTLY as they are shown here. If you do not know, stop now and contact Customer Care Center.</p> <p>NOTE: Switch Name must not exceed 20 characters.</p> <pre># netConfig --repo addDevice name=C3020_IOBAY1 --reuseCredentials</pre> <p>Device Vendor? Cisco Device Model? 3020</p> <p>Should the init network adapter be added (y/n)? y Adding netBootInit protocol for C3020_IOBAY1 using network...</p> <p>What is the address used for network device access? <enclosure_switch_IP></p> <p>What is the platform access username? <switch_platform_username> What is the platform user password? <switch_platform_password> Verify password <switch_platform_password></p> <p>What is the device privileged mode password? <switch_enable_password> Verify password <switch_enable_password></p> <p>Should the init file adapter be added (y/n)? y Adding netBootInit protocol for C3020_IOBAY1 using file...</p> <p>What is the name of the service used for TFTP access? tftp_service Should the live network adapter be added (y/n)? y</p> <p>Adding cli protocol for C3020_IOBAY1 using network... Network device access already set: 10.240.8.7 Device named C3020_IOBAY1 successfully added."</p> <p>To check that you entered the information correctly, use the following command</p> <pre># netConfig --repo listDevices</pre> <p>and check the output, which will be similar to the one shown below</p> <pre>Device: C3020_IOBAY1 Vendor: Cisco Model: 3020 Access: Network: 10.240.8.7 Init Protocol Configured Live Protocol Configured [root@pmac5000101 ~]#</pre> <p>Repeat for each 3020, using appropriate values for those 3020s.</p>
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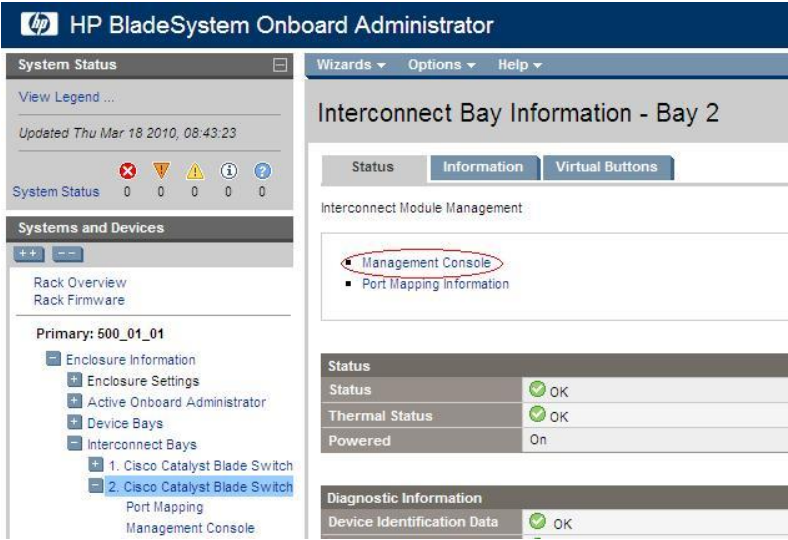

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Procedure 15. Configure Cisco 3020 Switch Pair(s) using NetConfig

<p>9</p> <p><input type="checkbox"/></p>	<p>Virtual PM&C: Prepare the system for tftp</p>	<p>Execute the following command to turn on tftp:</p> <pre># tpdProvd --client --noxml --ns=Xinetd startXinetdService service tftp</pre> <p>Login on Remote: platcfg Password of platcfg: <platcfg_password></p> <p>Ensure the firewall on the virtual pmac allows for tftp access.</p> <pre># service iptables status grep 69</pre> <pre>1 ACCEPT udp -- 10.240.8.0/26 0.0.0.0/0 udp dpt:69</pre> <pre>#</pre> <p>If the output is not similar to the one shown above, with site specific network information in it, then issue the following commands:</p> <pre># iptables -I INPUT -s <management_network_subnet_id>/<netmask> -p udp --dport 69 -j ACCEPT</pre> <pre># service iptables save</pre> <p>Otherwise, continue to the next step.</p>
<p>10</p> <p><input type="checkbox"/></p>	<p>Virtual PM&C: Modify 3020_configure.xml file for information needed to configure the switch</p>	<p>Update the 3020_init.xml and 3020_configure.xml files for the values noted in the next sentence. Values to be modified by the user will be notated in this step by a preceding dollar sign. So a value that has \$<some_variable_name> will need to be modified, removing the dollar sign and the less than, greater than sign.</p> <pre># vi /usr/TKLC/smac/etc/3020_init.xml</pre> <pre># vi /usr/TKLC/smac/etc/3020_configure.xml</pre>

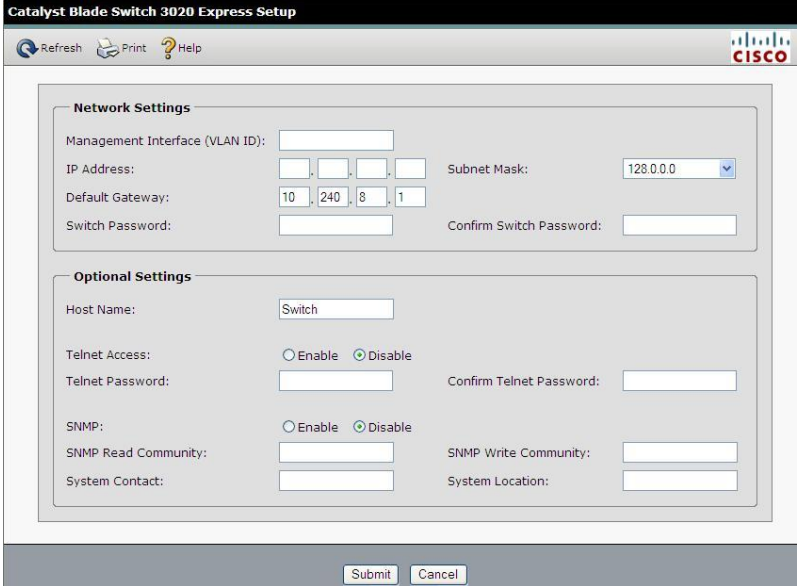
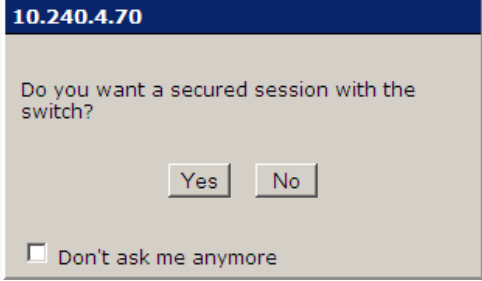
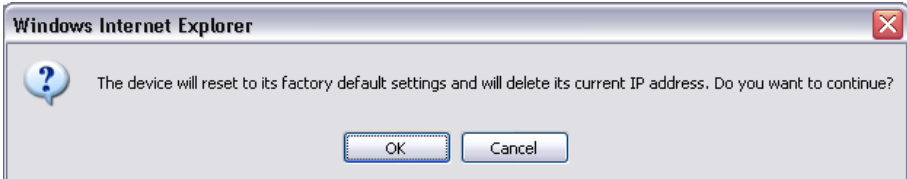
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Procedure 15. Configure Cisco 3020 Switch Pair(s) using NetConfig

11 <input type="checkbox"/>	Virtual PM&C/OA GUI: Reset Switch to factory defaults	<p>If the 3020 switch has been previously configured, it needs to be reset to manufacturer default to enable GUI access using the following command, otherwise skip to the next step.</p> <p># netConfig --device=<switchname> setFactoryDefault</p> <p>Otherwise continue.</p> <p>Log onto the OA GUI and click on interconnect bay 1 on the Rear View image of the middle pane. Alternatively, on the left pane, one could expand Interconnect Bays, then click 1. Cisco Catalyst Blade Switch. Then click on Management Console as shown below.</p>  <p>A new page will be opened. If you are asked for a username and password, leave the username blank and use the appropriate password provided by the application documentation. Then click OK.</p> 
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Procedure 15. Configure Cisco 3020 Switch Pair(s) using NetConfig

		<p>If you are prompted with the "Express Setup" screen, click Refresh.</p>  <p>If you are prompted with "Do you want a secured session with the switch?", click on No.</p>  <p>Then a new Catalyst Blade Switch 3020 Device Manager will be opened.</p>
12	<input type="checkbox"/> OA GUI: Restore switch to factory defaults	<p>Navigate to Configure > Restart/Reset:</p> <p>Click the circle that says "Reset the switch to factory defaults, and then restart the switch". Then click the "Submit" button.</p> <p>A pop-up window will appear that looks like this:</p>  <p>Click OK and the switch will be reset to factory defaults and reloaded.</p>

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Procedure 15. Configure Cisco 3020 Switch Pair(s) using NetConfig

<p>13</p> <input type="checkbox"/>	<p>Virtual PM&C: Initialize the Switch</p>	<p>Note: This command must be entered at most 5 minutes after step 8 is completed. If it is not, repeat step 8.</p> <p>Execute the following commands:</p> <pre># netConfig --file=/usr/TKLC/smac/etc/3020_init.xml</pre> <p>Processing file: /usr/TKLC/smac/etc/3020_init.xml</p> <p>Note: This step takes about 4-5 minutes to complete, it is imperative that you wait until returned to the command prompt. DO NOT PROCEED UNLESS RETURNED TO THE COMMAND PROMPT</p> <p>PROMPT</p> <p>Check the output of this command for any errors. If this fails for any reason, stop this procedure and contact Customer Care Center. A successful completion of netConfig will return the user to the prompt.</p> <p>Go back to Step 9 and repeat steps 10 through 13 for the remaining 3020 switches.</p>
<p>14</p> <input type="checkbox"/>	<p>Virtual PM&C: After Initialisation run "vtp mode transparent » command</p>	<p>At Post-initialization run this command from the PM&C:</p> <pre># netConfig -device=<device name> userConfigureCommand command="vtp mode transparent"</pre>
<p>15</p> <input type="checkbox"/>	<p>Virtual PM&C: Configure the switches</p>	<p>Configure both switches by issuing the following command.</p> <pre># netConfig --file=/usr/TKLC/smac/etc/3020_configure.xml</pre> <p>Processing file: /usr/TKLC/smac/etc/3020_configure.xml</p> <p>Note: This step takes about 2-3 minutes to complete</p> <p>Check the output of this command for any errors. If this fails for any reason, stop this procedure and contact Customer Care Center.</p> <p>A successful completion of netConfig will return the user to the prompt.</p>
<p>16</p> <input type="checkbox"/>	<p>Virtual PM&C: Verify switch Configuration</p>	<p>To verify the configuration was completed successfully, ssh to each switch and attempt to log in. If log in is successful, configuration was successful.</p>
<p>17</p> <input type="checkbox"/>	<p>Virtual PM&C: Turn off tftp</p>	<p>Execute the commands that disable tftp transfer.</p> <pre># tpdProvd --client --noxml --ns=Xinetd stopXinetdService service tftp</pre> <p>Login on Remote: platcfg Password of platcfg: <platcfg_password></p>

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Procedure 15. Configure Cisco 3020 Switch Pair(s) using NetConfig

18 <input type="checkbox"/>	Management server: Backup Switch Configuration	<p>Ensure the directory where the backups will be stored exists using the following command:</p> <pre># ls /usr/TKLC/smac/etc/switch/backup</pre> <p>If an error is returned saying “No such file or directory”, then create the directory using the following command</p> <pre># mkdir /usr/TKLC/smac/etc/switch/backup</pre> <p>Change the current path to the newly created directory using the following command</p> <pre># cd /usr/TKLC/smac/etc/switch/backup</pre> <p>Execute the backup command to backup switch 1A</p> <pre># netConfig device--device=<switch_name> backupConfigurationservice=ssh_service filename=<switch_name>-backup</pre> <p>Repeat the command above for the remaining switches.</p> <p>Verify switch configuration was backed up by cat <switch_name>-backup and inspect its contents to ensure it reflects the latest known good switch configurations.</p>
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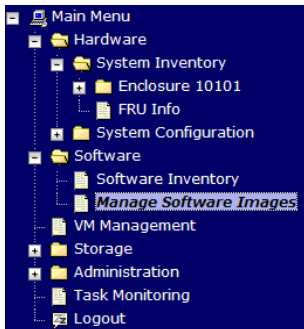
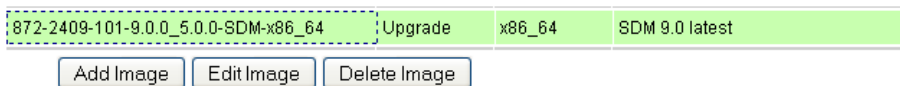
4.0 LOADING SDM AND TPD SOFTWARE IMAGES ONTO THE PM&C

Procedure 16. Loading Software Images onto the PM&C

S T E P #	<p>This procedure will load the Software Images needed for the SDM/LTE HSS & HLR Application onto the PM&C.</p> <p>Needed material:</p> <ul style="list-style-type: none"> - SDM release 9.1 software image 872-2409-101-9.1.0_5.0.0-SDM-x86_64.iso - TPD Image (64 bit) 872-2462-101-7.7.1_1.11.0-SDM-x86_64.iso <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.</p>	
1. <input type="checkbox"/> <input type="checkbox"/>	Load SDM 9.1 ISO	Insert USB Key containing Software Images into PM&C USB port. Mount the usb to /mnt/upgrade # mount /dev/sda1 /mnt/upgrade Verify that there is space in the /var/TKLC/upgrade directory. # ls /var/TKLC/upgrade Select Image to transfer: # ls /mnt/upgrade Copy a Application Image file to /var/TKLC/upgrade: # cp /mnt/upgrade/<TPD or Application.iso> /var/TKLC/upgrade <ul style="list-style-type: none"> - Alternative: Burn image to DVD, and Insert the Application Image DVD into the removable media drive of the management server. - Alternative: Scp an Application iso file to the management server and place it under /var/TKLC/upgrade (if networking is available) # scp <ISO_filename> root@<pmac_management_network_ip>:/var/TKLC/upgrade
2. <input type="checkbox"/> <input type="checkbox"/>	PM&C GUI: Login	Open web browser and enter: <a href="http://<management_network_ip>">http://<management_network_ip> Login as pmacadmin user.

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Procedure 16. Loading Software Images onto the PM&C

<p>3.</p> <input type="checkbox"/> <input type="checkbox"/>	<p>Navigate to Manage Software Images</p>	<p>Navigate to Main Menu -> Software -> Manage Software Images</p> 
<p>4.</p> <input type="checkbox"/> <input type="checkbox"/>	<p>PM&C GUI: Add image</p>	<p>Press Add Image button. Use the dropdown to select the image. If the optical media was used in step 1, the device will appear as <code>device://dev/scd0</code>, If the ISO image was copied over in step 1, the device will appear as <code>/var/TKLC/upgrade/872-2409-101-9.1.0_5.0.0-SDM-x86_64.iso</code></p>  <p>Select the appropriate path and Press Add New Image button.</p> <p>You may check the progress using the Task Monitoring link. Observe the green bar indicating success.</p>
<p>5.</p> <input type="checkbox"/> <input type="checkbox"/>	<p>Verify Image Loaded</p>	<p>Navigate to Main Menu -> Software -> Manage Software Images</p> <p>Just loaded image will be shown.</p>
<p>6.</p> <input type="checkbox"/> <input type="checkbox"/>	<p>Remove image file or Media</p>	<p>Remove the image file from <code>/var/TKLC/upgrade</code> directory.</p> <pre># ls /var/TKLC/upgrade # rm /var/TKLC/upgrade/<image>.iso</pre> <p>If DVD Media was used, remove this from the drive.</p>
<p>7.</p> <input type="checkbox"/> <input type="checkbox"/>	<p>Add additional images</p>	<p>Repeat above steps to add other images.</p> <p>- Or -</p> <pre># unmount /mnt/upgrade</pre>

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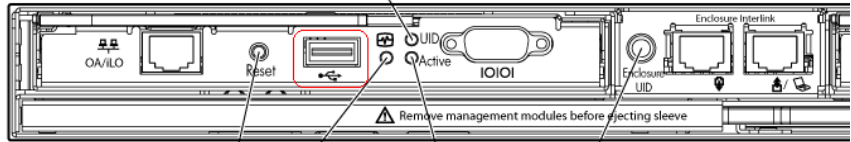
5.0 UPDATE APPLICATION BLADE FIRMWARE

Procedure 17. Update Application Blade Firmware

S T E P #	<p>This procedure will provide the steps to upgrade the firmware on the SDM Blade servers.</p> <p>The Firmware Update ISO (on a USB key) will be inserted into the Active OA, and then the OA GUI used to apply the update to the blade servers in the Enclosure.</p> <p>At the end of this procedure, some or all the servers in the Enclosure will have the correct Firmware version.</p> <p>NOTE: A Firmware patch (Errata) may also need to be installed on the servers. This can be done after the servers are fully networked (using scp to copy the patch to each server, and execute it). See the HP Solutions Firmware Upgrade Pack Release notes for more information on required Errata.</p> <p>Prerequisite: <i>Procedure 13: Configure Enclosure switches</i> has been completed.</p> <p>Needed material:</p> <ul style="list-style-type: none"> - HP Smart Update Firmware DVD, or ISO file on USB Key - HP Solutions Firmware Upgrade Pack Release Notes References. <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.</p>																																					
<p>1.</p> <input type="checkbox"/> <input type="checkbox"/>	<p>Check if Firmware upgrade is needed</p>	<p>Log onto the OA iLO using IE and navigate to Rack Firmware, you should be presented with the overview of all components in the enclosure as shown below. Scroll down the view the blades firmware. Check the ROM Version for all the blades in the enclosure.</p> <p>Device Firmware Information</p> <table border="1"> <thead> <tr> <th>Bay</th> <th>Device Model</th> <th>Firmware Component</th> <th>Current Version</th> </tr> </thead> <tbody> <tr> <td rowspan="3">1</td> <td rowspan="3">ProLiant BL460c G6</td> <td>System ROM</td> <td>24 05/20/2010</td> </tr> <tr> <td>iLO2</td> <td>iLO2 2.00 Jun 21 2010</td> </tr> <tr> <td>Power Management Controller</td> <td>3.4</td> </tr> <tr> <td rowspan="3">2</td> <td rowspan="3">ProLiant BL460c G6</td> <td>System ROM</td> <td>24 05/20/2010</td> </tr> <tr> <td>iLO2</td> <td>iLO2 2.00 Jun 21 2010</td> </tr> <tr> <td>Power Management Controller</td> <td>3.4</td> </tr> <tr> <td rowspan="3">3</td> <td rowspan="3">ProLiant BL460c G6</td> <td>System ROM</td> <td>24 05/20/2010</td> </tr> <tr> <td>iLO2</td> <td>iLO2 2.00 Jun 21 2010</td> </tr> <tr> <td>Power Management Controller</td> <td>3.4</td> </tr> <tr> <td rowspan="3">4</td> <td rowspan="3">ProLiant BL460c G6</td> <td>System ROM</td> <td>24 05/20/2010</td> </tr> <tr> <td>iLO2</td> <td>iLO2 2.00 Jun 21 2010</td> </tr> <tr> <td>Power Management Controller</td> <td>3.4</td> </tr> </tbody> </table> <p>If the current verion is at or greater than the minimum supported version, skip this procedure, no upgrade is necessary.</p>	Bay	Device Model	Firmware Component	Current Version	1	ProLiant BL460c G6	System ROM	24 05/20/2010	iLO2	iLO2 2.00 Jun 21 2010	Power Management Controller	3.4	2	ProLiant BL460c G6	System ROM	24 05/20/2010	iLO2	iLO2 2.00 Jun 21 2010	Power Management Controller	3.4	3	ProLiant BL460c G6	System ROM	24 05/20/2010	iLO2	iLO2 2.00 Jun 21 2010	Power Management Controller	3.4	4	ProLiant BL460c G6	System ROM	24 05/20/2010	iLO2	iLO2 2.00 Jun 21 2010	Power Management Controller	3.4
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		iLO2	iLO2 2.00 Jun 21 2010																																			
		Power Management Controller	3.4																																			
<p>2.</p> <input type="checkbox"/> <input type="checkbox"/>	<p>Is ISO available USB?</p>	<p>If you have the HP Smart Update Firmware ISO image on a USB key, then skip to Step 7. Otherwise continue with the next steps to extract the ISO from the DVD.</p>																																				

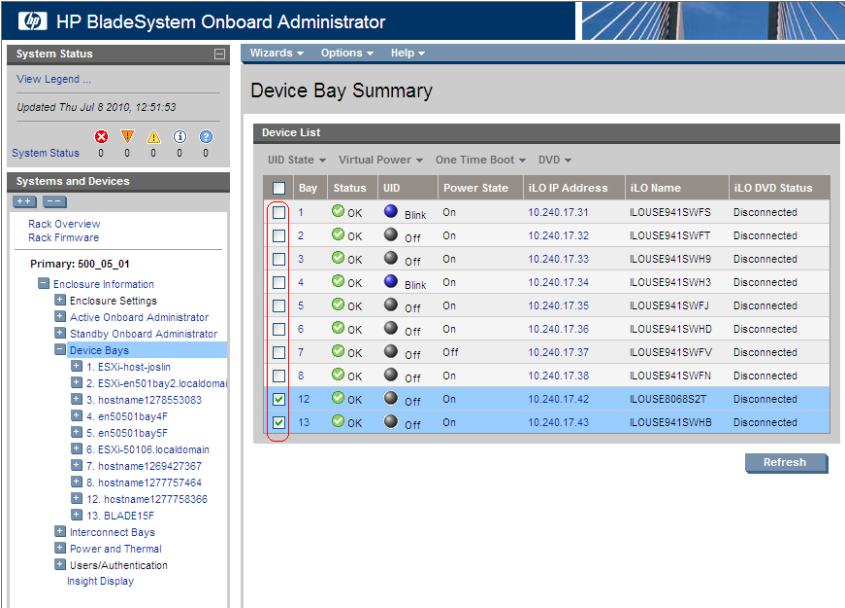
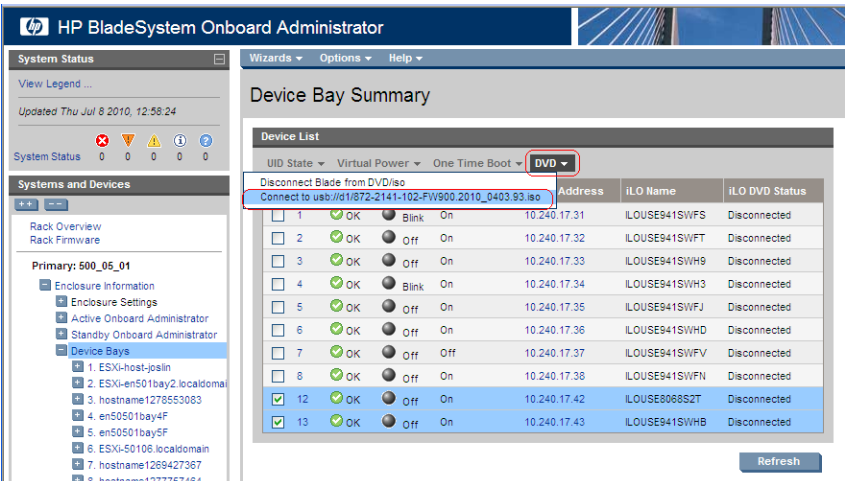
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Procedure 17. Update Application Blade Firmware

<p>3.</p> <input type="checkbox"/> <input type="checkbox"/>	<p>Import HP Firmware Maintenance CD</p>	<p>Insert the HP Smart Update Firmware DVD into the removable media drive of the management server.</p> <p>Log into the management server shell as the user "root" using ssh.</p> <p>Execute the following command to extract the iso image onto the /var/TKLC/smac/image directory of the PM&C server. (Use the correct iso image part number from HP Solutions Firmware Upgrade Pack Release Notes References).</p> <p># getCDROM</p> <p># dd if=/dev/scd0 of=/var/TKLC/smac/image/<image_part_number>.iso</p> <p>Verify image extraction completes without error.</p>
<p>4.</p> <input type="checkbox"/> <input type="checkbox"/>	<p>Verify extracted image</p>	<p>Verify checksum of the extracted ISO with the value listed in HP Solutions Firmware Upgrade Pack Release Notes References.</p> <p># md5sum /var/TKLC/smac/image/<image_part_number>.iso 422275a25353030fb5338876761ee1ca /var/TKLC/smac/image/872-XXXX-XXX-firmware.iso</p> <p>Note: The actual iso image in the output is for illustrative purposes only</p>
<p>5.</p> <input type="checkbox"/> <input type="checkbox"/>	<p>Copy HP Firmware Maintenance iso image to laptop</p>	<p>Copy the image from the management server to your laptop using an scp client:</p> <p>/var/TKLC/smac/image/<image_part_number>.iso</p>
<p>6.</p> <input type="checkbox"/> <input type="checkbox"/>	<p>Copy ISO to USB Media</p>	<p>Take the ISO you just copied to your laptop and copy it to USB media.</p>
<p>7.</p> <input type="checkbox"/> <input type="checkbox"/>	<p>Insert USB Flash Drive</p>	<p>Insert the USB Flash Drive with the <i>HP Smart Update Firmware</i> ISO into the USB port of the Active OA Module on Enclosure. (Active OA is indicated by the Active LED)</p> 
<p>8.</p> <input type="checkbox"/> <input type="checkbox"/>	<p>Access the Active OA</p>	<p>Access the Active OA Login Page from an Internet Explorer® session using the following URL:</p> <p>https://<OA_IP>/</p>
<p>9.</p> <input type="checkbox"/> <input type="checkbox"/>	<p>Log in to the Active OALog in as an administrator user.</p>	<p>User Name = <OA_admin_user> Password = <OA_admin_password></p>

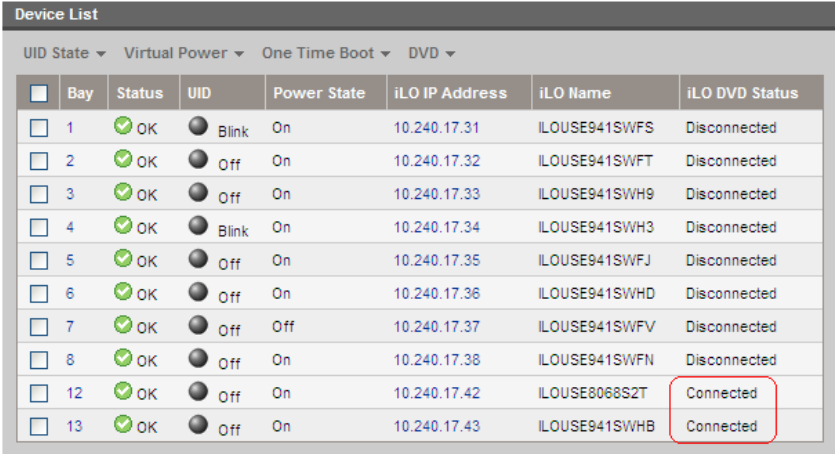
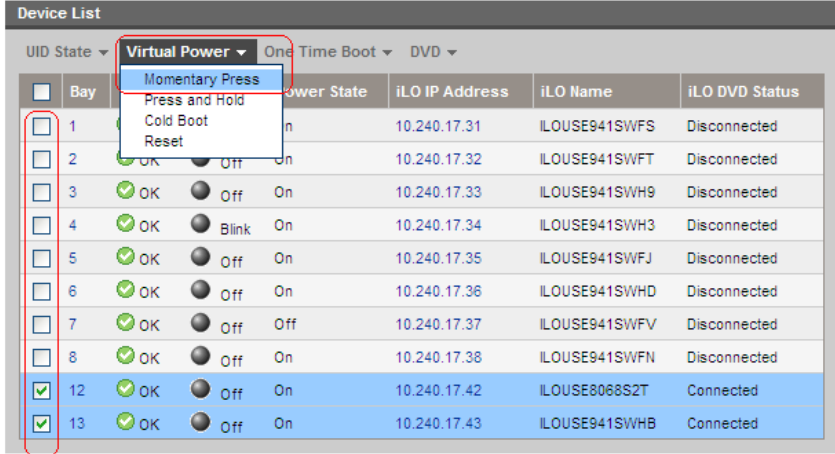
Installing LTE HSS & HLR on HP C-Class G8

Procedure 17. Update Application Blade Firmware

<p>10</p> <p><input type="checkbox"/></p> <p>Access the Device Summary page On the left pane, expand the Device Bays node to display the Device Bay Summary window. Select the individual blades to be upgraded by clicking and enabling the corresponding UID checkbox.</p>	 <p>Note: A maximum of 8 blades should be upgraded concurrently at one time. If the c7000 enclosure has more than 8 blades they will need to be upgraded in multiple sessions.</p>
<p>11</p> <p><input type="checkbox"/></p> <p>Connect to USB Drive</p>	

Installing LTE HSS & HLR on HP C-Class G8

Procedure 17. Update Application Blade Firmware

<p>12</p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p>Verify Drive Connection</p>	<p>Once each blade has mounted the ISO media the Device List table should indicate an iLO DVD Status as <i>Connected</i> for each blade that was previously selected.</p>  <p style="text-align: right;"><input type="button" value="Refresh"/></p> <p>Note: The Refresh button may need to be clicked in order to see the current status of all blades.</p>
<p>13</p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p>Power Down Blades</p>	<p>If needed, reselect the UID checkbox for each blade to be upgraded and then select the Momentary Press option under the Virtual Power menu.</p>  <p style="text-align: right;"><input type="button" value="Refresh"/></p> <p>When prompted click the OK button to confirm the action.</p>

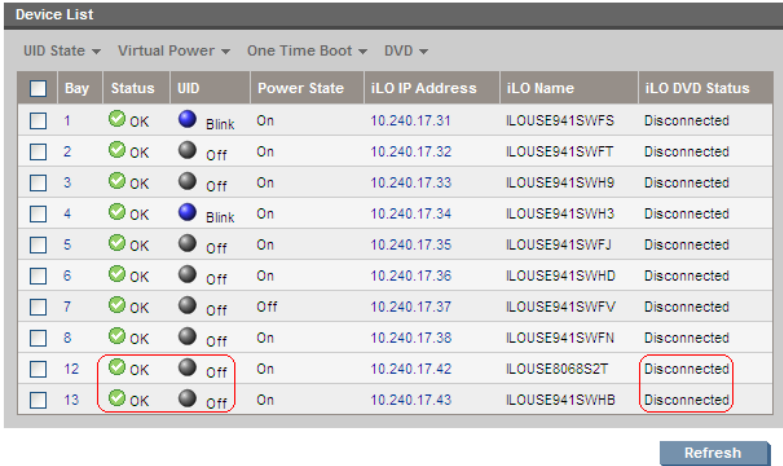
Installing LTE HSS & HLR on HP C-Class G8

Procedure 17. Update Application Blade Firmware

<p>14</p> <input type="checkbox"/> <input type="checkbox"/>	<p>Verify Power Down</p>	<p>The power down sequence can take several minutes to complete. When it completes the Device List table will indicate the Power State of each select blade to be Off.</p> <div style="border: 1px solid gray; padding: 5px;"> <p>Device List</p> <p>UID State ▾ Virtual Power ▾ One Time Boot ▾ DVD ▾</p> <table border="1"> <thead> <tr> <th><input type="checkbox"/></th> <th>Bay</th> <th>Status</th> <th>UID</th> <th>Power State</th> <th>iLO IP Address</th> <th>iLO Name</th> <th>iLO DVD Status</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td>1</td> <td>OK</td> <td>Blink</td> <td>On</td> <td>10.240.17.31</td> <td>ILOUSE941SWFS</td> <td>Disconnected</td> </tr> <tr> <td><input type="checkbox"/></td> <td>2</td> <td>OK</td> <td>Off</td> <td>On</td> <td>10.240.17.32</td> <td>ILOUSE941SWFT</td> <td>Disconnected</td> </tr> <tr> <td><input type="checkbox"/></td> <td>3</td> <td>OK</td> <td>Off</td> <td>On</td> <td>10.240.17.33</td> <td>ILOUSE941SWH9</td> <td>Disconnected</td> </tr> <tr> <td><input type="checkbox"/></td> <td>4</td> <td>OK</td> <td>Blink</td> <td>On</td> <td>10.240.17.34</td> <td>ILOUSE941SWH3</td> <td>Disconnected</td> </tr> <tr> <td><input type="checkbox"/></td> <td>5</td> <td>OK</td> <td>Off</td> <td>On</td> <td>10.240.17.35</td> <td>ILOUSE941SWFJ</td> <td>Disconnected</td> </tr> <tr> <td><input type="checkbox"/></td> <td>6</td> <td>OK</td> <td>Off</td> <td>On</td> <td>10.240.17.36</td> <td>ILOUSE941SWHD</td> <td>Disconnected</td> </tr> <tr> <td><input type="checkbox"/></td> <td>7</td> <td>OK</td> <td>Off</td> <td>Off</td> <td>10.240.17.37</td> <td>ILOUSE941SWFV</td> <td>Disconnected</td> </tr> <tr> <td><input type="checkbox"/></td> <td>8</td> <td>OK</td> <td>Off</td> <td>On</td> <td>10.240.17.38</td> <td>ILOUSE941SWFN</td> <td>Disconnected</td> </tr> <tr> <td><input type="checkbox"/></td> <td>12</td> <td>OK</td> <td>Off</td> <td>Off</td> <td>10.240.17.42</td> <td>ILOUSE8068S2T</td> <td>Connected</td> </tr> <tr> <td><input type="checkbox"/></td> <td>13</td> <td>OK</td> <td>Off</td> <td>Off</td> <td>10.240.17.43</td> <td>ILOUSE941SWHB</td> <td>Connected</td> </tr> </tbody> </table> <p style="text-align: right;">Refresh</p> </div> <p>Note: The Refresh button may need to be clicked in order to see the current status of all blades.</p>	<input type="checkbox"/>	Bay	Status	UID	Power State	iLO IP Address	iLO Name	iLO DVD Status	<input type="checkbox"/>	1	OK	Blink	On	10.240.17.31	ILOUSE941SWFS	Disconnected	<input type="checkbox"/>	2	OK	Off	On	10.240.17.32	ILOUSE941SWFT	Disconnected	<input type="checkbox"/>	3	OK	Off	On	10.240.17.33	ILOUSE941SWH9	Disconnected	<input type="checkbox"/>	4	OK	Blink	On	10.240.17.34	ILOUSE941SWH3	Disconnected	<input type="checkbox"/>	5	OK	Off	On	10.240.17.35	ILOUSE941SWFJ	Disconnected	<input type="checkbox"/>	6	OK	Off	On	10.240.17.36	ILOUSE941SWHD	Disconnected	<input type="checkbox"/>	7	OK	Off	Off	10.240.17.37	ILOUSE941SWFV	Disconnected	<input type="checkbox"/>	8	OK	Off	On	10.240.17.38	ILOUSE941SWFN	Disconnected	<input type="checkbox"/>	12	OK	Off	Off	10.240.17.42	ILOUSE8068S2T	Connected	<input type="checkbox"/>	13	OK	Off	Off	10.240.17.43	ILOUSE941SWHB	Connected
<input type="checkbox"/>	Bay	Status	UID	Power State	iLO IP Address	iLO Name	iLO DVD Status																																																																																			
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<p>15</p> <input type="checkbox"/> <input type="checkbox"/>	<p>Initiate Firmware Upgrade</p>	<p>To power the blades back on and begin the automated firmware upgrade process, repeat Steps 18 and 19 this time being sure the Power State indicates On for each selected blade.</p>																																																																																								

Installing LTE HSS & HLR on HP C-Class G8


Procedure 17. Update Application Blade Firmware

<p>16</p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p>Monitor Firmware Upgrade</p>	<p>From this point on each blade will boot into an automated firmware upgrade process that will last between <i>20 to 25 minutes</i>.</p>  <p>Upon a successful firmware upgrade, the Device List table will list each blade with a Status of <i>OK</i>, UID of <i>Off</i> and the iLO DVD Status as <i>Disconnected</i>. At this time the blades will automatically be rebooted. If the status does not update to disconnected, you can verify completion by opening an iLo window (via the OA) for each blade and watching the console for indication of firmware upgrade progress and successful completion</p> <p>If necessary, repeat Steps 15 through 21 for the remaining blades in the enclosure to be upgraded. Proceed to the next step.</p>
<p>17</p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p>Remove USB Flash Drive</p>	<p>The USB flash drive may now safely be removed from the Active OA module.</p>
<p>18</p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p>Remove temporary file</p>	<p>After all blade servers have been upgraded, the file copied to laptop in Step 3 may be removed.</p>
<p>19</p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p>Check for Additional Updates</p>	<p>Before proceeding, it is necessary to determine if additional firmware upgrades have been included in the HP Smart Update Firmware DVD/ISO [1] to determine which (if any) HP Errata Firmware Component upgrades must be installed manually</p>
<p>20</p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p>Update Mezzanine Cards Firmware (Optional)</p>	<p>If the blades have mezzanine cards installed, please refer to [1], section 4.10 on how to upgrade the mezzanine cards firmwares.</p>

Installing LTE HSS & HLR on HP C-Class G8

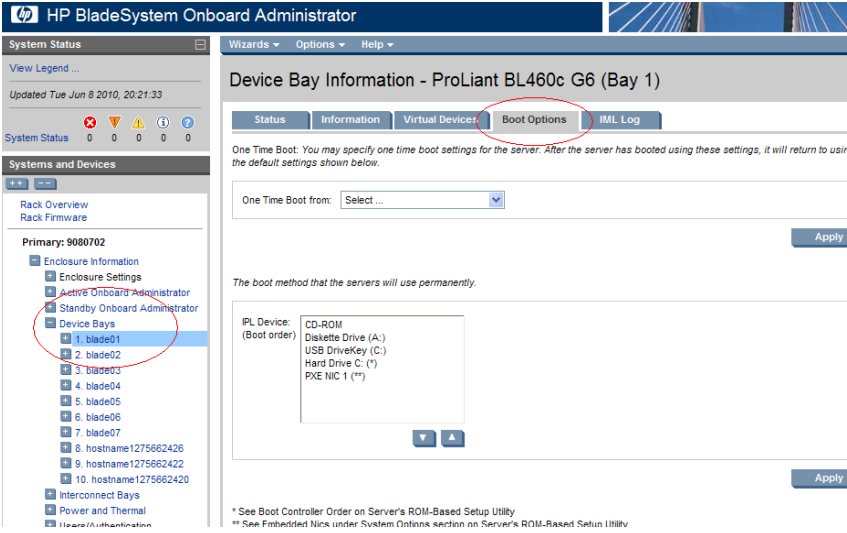
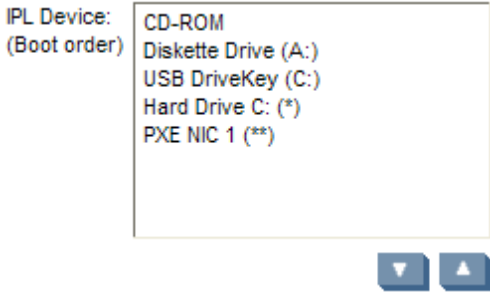
6.0 ADJUST POWER MANAGEMENT AND INSTALL TPD VIA PM&C

Procedure 18. This procedure install TPD on C-CLASS via PM&C

S T E P #	<p>This procedure will install TPD on C-CLASS server and update BIOS settings.</p> <p>Needed material:</p> <ul style="list-style-type: none">- TPD iso Media <p>Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.</p>	
1. <input type="checkbox"/> <input type="checkbox"/>	Connect to OA	<p>Open your web browser and navigate to the OA IP address You will see following:</p>  <p>Login to HP OA as Administrator. Original password is on paper card attached to each OA.</p>

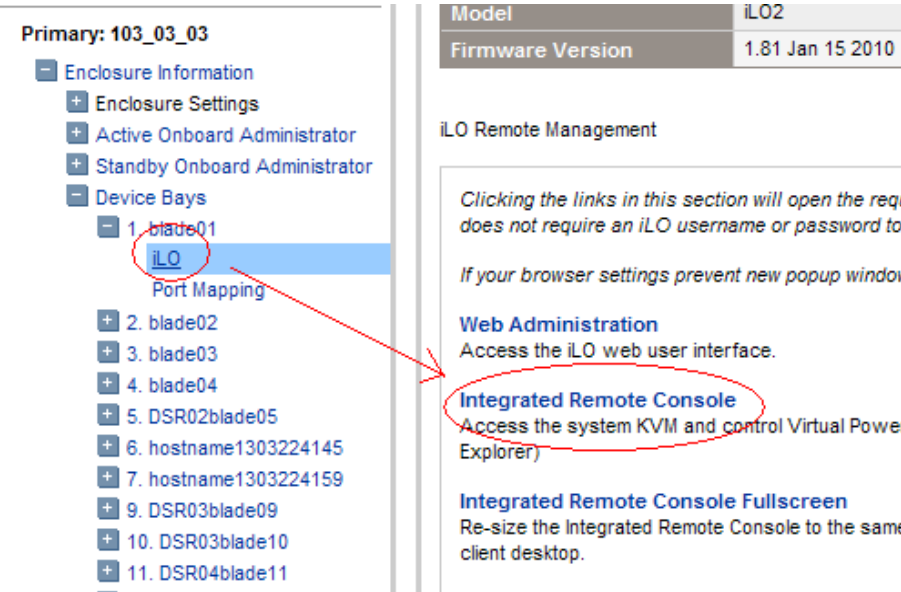
Installing LTE HSS & HLR on HP C-Class G8

Procedure 18. This procedure install TPD on C-CLASS via PM&C

<p>2. Navigate to device Bay Settings</p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p>Navigate to Enclosure Information -> Device Bays -> <Blade 1></p> <p>Click on Boot Options Tab</p> 
<p>3. Verify/update Boot device Order</p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p>Verify that the Boot order is as follows. If it is not, use the up and down arrows to adjust the order to match the picture below, then click on Apply</p> 

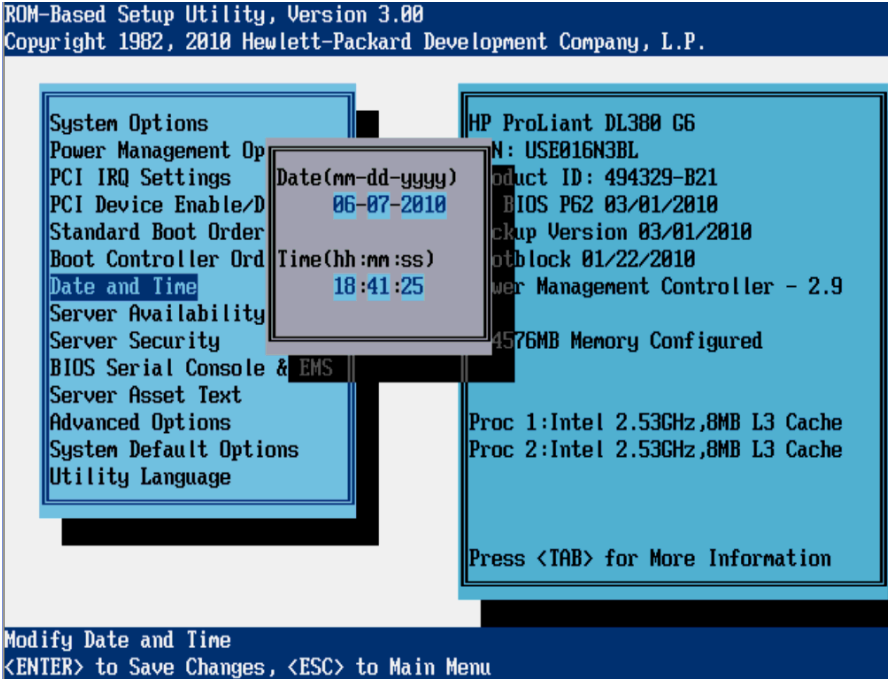
Installing LTE HSS & HLR on HP C-Class G8

Procedure 18. This procedure install TPD on C-CLASS via PM&C

<p>4.</p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p>Access the Blade iLO</p>	<p>Navigate to Enclosure Information -> Device Bays -> <Blade 1> -> iLO</p> <p>Click on Integrated Remote Console</p>  <p>This will launch the iLO interface for that blade. If this is the first time the iLO is being accessed, you will be prompted to install an addon to your web browser, follow the on screen instructions to do so.</p>
	<p>restart the blade and access the bios</p>	<p>You might be prompted with a certificate security warning, just press continue.</p> <p>Once a prompt is displayed, login onto the blade using the “root” username.</p> <p>Once logged in, Reboot the server (using the “reboot” command) and after the server is powered on, as soon as you see <F9=Setup> in the lower left corner of the screen, press F9 to access the BIOS setup screen.</p>

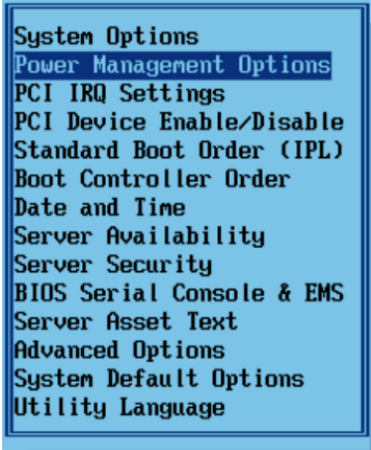
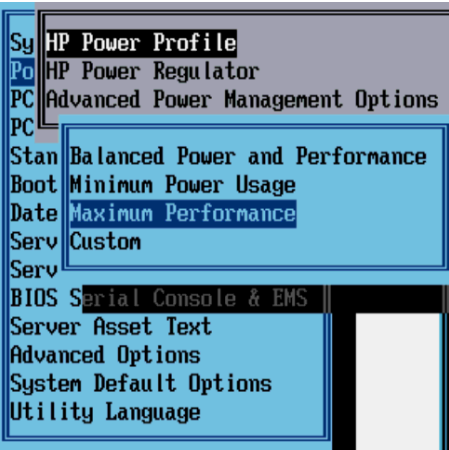
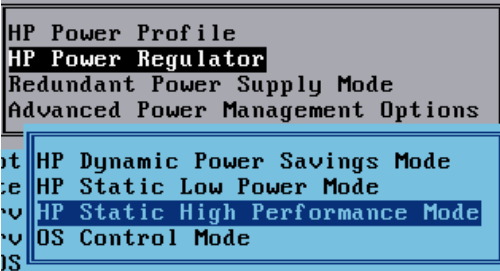
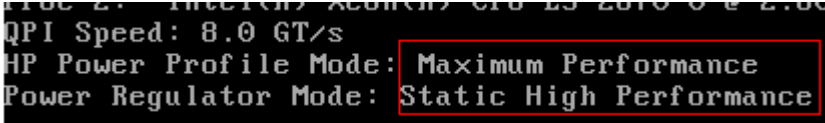
Installing LTE HSS & HLR on HP C-Class G8

Procedure 18. This procedure install TPD on C-CLASS via PM&C

<p>5. Set CMOS Clock</p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>		<p>Scroll to <i>Date and Time</i> and press Enter Set the date and time and press Enter, the time zone to be used is UTC.</p>  <p>ROM-Based Setup Utility, Version 3.00 Copyright 1982, 2010 Hewlett-Packard Development Company, L.P.</p> <p>System Options Power Management Op PCI IRQ Settings PCI Device Enable/D Standard Boot Order Boot Controller Ord Date and Time Server Availability Server Security BIOS Serial Console & EMS Server Asset Text Advanced Options System Default Options Utility Language</p> <p>HP ProLiant DL380 G6 N: USE016N3BL Product ID: 494329-B21 BIOS P62 03/01/2010 Backup Version 03/01/2010 Firmware Version 01/22/2010 Power Management Controller - 2.9 4576MB Memory Configured Proc 1: Intel 2.53GHz, 8MB L3 Cache Proc 2: Intel 2.53GHz, 8MB L3 Cache Press <TAB> for More Information</p> <p>Modify Date and Time <ENTER> to Save Changes, <ESC> to Main Menu</p>
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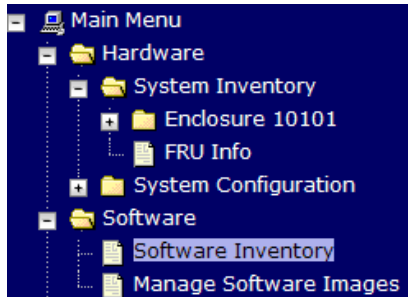
Installing LTE HSS & HLR on HP C-Class G8

Procedure 18. This procedure install TPD on C-CLASS via PM&C

<p>6. <input type="checkbox"/> Adjust Power Management Options</p>	<p>Go back to the main menu by pressing <Esc> and scroll down to <i>Power Management Options</i> and press Enter Select <i>HP Power Profile</i> and press Enter Scroll down to <i>Maximum Performance</i> and press Enter</p>	  <p>Press <Esc> to return to the main menu Under <i>Management Options</i> press Enter Select <i>HP Power Regulator</i> and press Enter Scroll down to <i>HP Static High Performance Mode</i> and press Enter</p>  <p>theses parameters can be checked At server boot :</p> 
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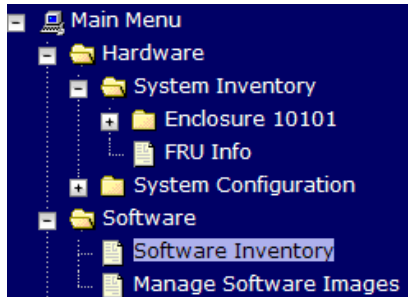
Installing LTE HSS & HLR on HP C-Class G8

Procedure 18. This procedure install TPD on C-CLASS via PM&C

<p>7. Verify if PM&C Control Network is established to the blades.</p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p>Navigate to Software -> Software Inventory.</p>  <table border="1"> <thead> <tr> <th>Ident</th> <th>IP Address</th> <th>Hostname</th> <th>Plat Name</th> <th>Plat Version</th> <th>App Name</th> <th>App Version</th> <th>Design</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>Enc-10101 Bay:1F</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Enc-10101 Bay:2F</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Enc-10101 Bay:7F</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Enc-10101 Bay:8E</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Enc-10101 Bay:13F</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Enc-10101 Bay:15F</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>192.168.1.1</td> <td>pmac-mrsvnc-1</td> <td>TPD (i686)</td> <td>5.0.0-72.20.0</td> <td>PMAC</td> <td>4.0.0_40.11.0</td> <td>1A</td> <td>PMAC</td> </tr> </tbody> </table> <p>If the PM&C Control network is correctly configured, the PM&C will act as a DHCP server and provide control network addresses in the range of 192.168.1.2 – 255 to the blade servers in the managed cabinets/enclosures. PM&C always takes the address of 192.168.1.1. If the server has requested a IP address from PM&C, the IP address will appear in the “IP Address” column”. TPD will always do this when a server blade is booted, and also periodically after this.</p> <p>If there are no IP Addresses in this view, then either:</p> <ul style="list-style-type: none"> • PM&C Control Network is not correctly configured (probably a switch config issue) • The Blades do not have a OS installed. <p>If there are IP addresses in this view, then the Contol network is OK.</p> <p>Proceed to next step if there are no IP addresses in the view.</p> <p>Proceed to the next-next step if there are IP addresses in the view.</p>	Ident	IP Address	Hostname	Plat Name	Plat Version	App Name	App Version	Design	Function	Enc-10101 Bay:1F									Enc-10101 Bay:2F									Enc-10101 Bay:7F									Enc-10101 Bay:8E									Enc-10101 Bay:13F									Enc-10101 Bay:15F										192.168.1.1	pmac-mrsvnc-1	TPD (i686)	5.0.0-72.20.0	PMAC	4.0.0_40.11.0	1A	PMAC
Ident	IP Address	Hostname	Plat Name	Plat Version	App Name	App Version	Design	Function																																																																	
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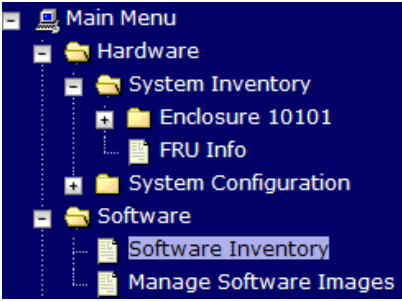
Installing LTE HSS & HLR on HP C-Class G8

Procedure 18. This procedure install TPD on C-CLASS via PM&C

<p>8. Determine if Blades need to be IPM'ed - case: Display is "blank"</p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p>Navigate to Software -> Software Inventory.</p>  <table border="1"> <thead> <tr> <th>Ident</th> <th>IP Address</th> <th>Hostname</th> <th>Plat Name</th> <th>Plat Version</th> <th>App Name</th> <th>App Version</th> <th>Design</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>Enc:10101 Bay:1E</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Enc:10101 Bay:2E</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Enc:10101 Bay:7E</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Enc:10101 Bay:8E</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Enc:10101 Bay:13E</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Enc:10101 Bay:15E</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>192.168.1.1</td> <td>pmac-mrsvnc-1</td> <td>TPD (i686)</td> <td>5.0.0-72.20.0</td> <td>PMAC</td> <td>4.0.0_40.11.0</td> <td>1A</td> <td>PMAC</td> </tr> </tbody> </table> <p>If the display is blank, as shown above, then it may be that the blades do not have a OS installed, and it is necessary to IPM the blades.</p> <p>Move to the step (following) to attempt the OS install for one or more blades.</p> <p>NOTE: if the OS Install step fails, then it may be that the Control Network is not correctly established, and trouble shooting will be required.</p>	Ident	IP Address	Hostname	Plat Name	Plat Version	App Name	App Version	Design	Function	Enc:10101 Bay:1E									Enc:10101 Bay:2E									Enc:10101 Bay:7E									Enc:10101 Bay:8E									Enc:10101 Bay:13E									Enc:10101 Bay:15E										192.168.1.1	pmac-mrsvnc-1	TPD (i686)	5.0.0-72.20.0	PMAC	4.0.0_40.11.0	1A	PMAC
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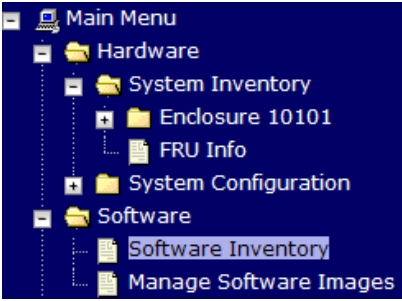
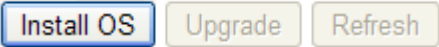
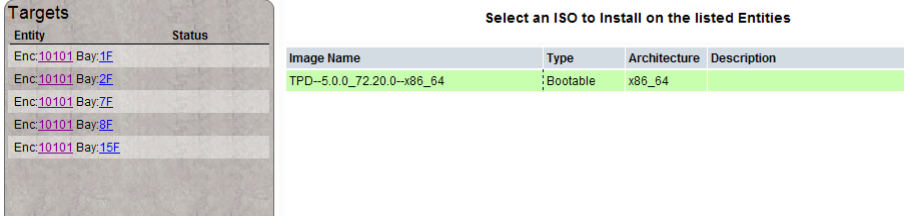
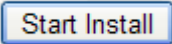
Installing LTE HSS & HLR on HP C-Class G8

Procedure 18. This procedure install TPD on C-CLASS via PM&C

<p>9. Determine if Blades must be IPM'ed - case: IP Addresses and other information is shown.</p>	<p>Navigate to Software -> Software Inventory.</p>  <table border="1"> <thead> <tr> <th>Ident</th> <th>IP Address</th> <th>Hostname</th> <th>Plat Name</th> <th>Plat Version</th> <th>App Name</th> <th>App Version</th> <th>Design</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>Enc-10101 Bay:1F</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Enc-10101 Bay:2F</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Enc-10101 Bay:7F</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Enc-10101 Bay:8E</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Enc-10101 Bay:13F</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Enc-10101 Bay:15F</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>192.168.1.1</td> <td>pmac-mrsvnc-1</td> <td>TPD (i686)</td> <td>5.0.0-72.20.0</td> <td>PMAC</td> <td>4.0.0_40.11.0</td> <td>1A</td> <td>PMAC</td> </tr> </tbody> </table> <p>If the Control network is established, and the blades have a OS installed (TPD), then PM&C gathers the current software information from the blades, and displays it in this list.</p> <ul style="list-style-type: none"> • If the display shows an IP address (192.168.1.x), and PlatName = TPD, and Plat Version= xxxxx, then the blade is already installed with a version of the TPD OS. <p>The version of TPD installed on the blades is usually not so important, as long as it is a 64 bit version and not newer than the required version for the Application.. The SDM Application Install (Upgrade action on the PM&C GUI), to be performed in the next procedures, will automatically upgrade the TPD version on the blade to the correct version for the Application.</p> <p>i.e. the 872-2409-101-9.1.0_5.0.0-SDM-x86_64.iso iso includes the TPD version that the Application needs, and the Application install will automatically upgrade the blade TPD (if needed) before it installed the Application. If the version of OS installed on the blade is the same as what is required by the application, then the install will proceed more quickly because it does not need to upgrade TPD.</p> <p>If the Inventory form does not not show a OK version of the TPD on the server, then the OS Install action is needed to install a appropriate version of TPD.</p>	Ident	IP Address	Hostname	Plat Name	Plat Version	App Name	App Version	Design	Function	Enc-10101 Bay:1F									Enc-10101 Bay:2F									Enc-10101 Bay:7F									Enc-10101 Bay:8E									Enc-10101 Bay:13F									Enc-10101 Bay:15F										192.168.1.1	pmac-mrsvnc-1	TPD (i686)	5.0.0-72.20.0	PMAC	4.0.0_40.11.0	1A	PMAC
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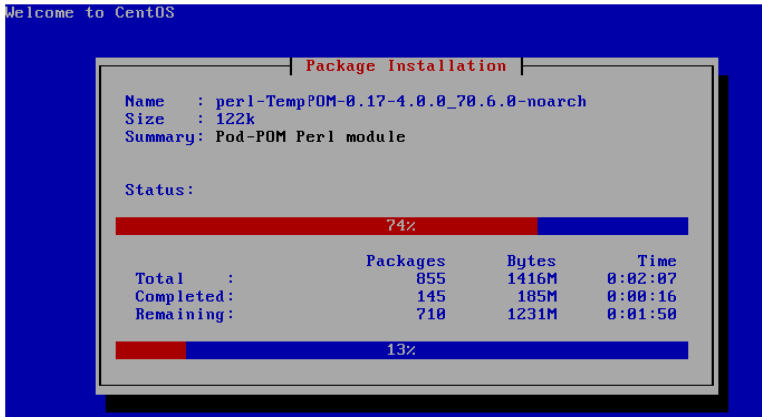
Installing LTE HSS & HLR on HP C-Class G8

Procedure 18. This procedure install TPD on C-CLASS via PM&C

<p>10</p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p>Select Servers for OS install</p>	<p>Navigate to Software -> Software Inventory.</p>  <p>Select the SDM blades to IPM (Back-end and Front-end blades if any). Selected rows will be highlighted in green.</p> <p>Note: IPM is also a useful recovery procedure if a server is in a bad or unknown condition, or was configured with a different application, since the IPM will clean all the existing software and disk configurations off of the server, and bring the server to a clean state.</p> <table border="1"> <thead> <tr> <th>Ident</th> <th>IP Address</th> <th>Hostname</th> <th>Plat Name</th> <th>Plat Version</th> <th>App Name</th> <th>App Version</th> <th>Design</th> <th>Function</th> </tr> </thead> <tbody> <tr><td>Enc:10101 Bay:1E</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Enc:10101 Bay:2E</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Enc:10101 Bay:7E</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Enc:10101 Bay:8E</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Enc:10101 Bay:13E</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Enc:10101 Bay:15E</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td>192.168.1.1</td><td>pmac-mrsvnc-1</td><td>TPD (i686)</td><td>5.0.0-72.20.0</td><td>PMAC</td><td>4.0.0_40.11.0</td><td>1A</td><td>PMAC</td></tr> </tbody> </table> <p>Click on Install OS</p> 	Ident	IP Address	Hostname	Plat Name	Plat Version	App Name	App Version	Design	Function	Enc:10101 Bay:1E									Enc:10101 Bay:2E									Enc:10101 Bay:7E									Enc:10101 Bay:8E									Enc:10101 Bay:13E									Enc:10101 Bay:15E										192.168.1.1	pmac-mrsvnc-1	TPD (i686)	5.0.0-72.20.0	PMAC	4.0.0_40.11.0	1A	PMAC
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<p>11</p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p>Initiate OS Install</p>	<p>The left side of this screen shows the servers to be affected by this OS installation. From the list of available bootable images on the right side of the screen, select one OS image to install to all of the selected servers.</p>  <p>Click on Start Install, a confirmation window will pop up, click on Ok to proceed with the install.</p> 																																																																								

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Procedure 18. This procedure install TPD on C-CLASS via PM&C

<p>12</p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p>Monitor OS Install</p>	<p>Navigate to Main Menu > Task Monitoring to monitor the progress of the OS Installation background task. A separate task will appear for each blade affected.</p> <table border="1"> <thead> <tr> <th>ID</th> <th>Task</th> <th>Target</th> <th>Status</th> <th>Running Time</th> <th>Start Time</th> <th>Progress</th> </tr> </thead> <tbody> <tr> <td>14</td> <td>Install OS</td> <td>Enc:10101 Bay:15F</td> <td>Boot install image</td> <td>0:00:01</td> <td>2011-09-20 11:12:02</td> <td>50%</td> </tr> <tr> <td>13</td> <td>Install OS</td> <td>Enc:10101 Bay:8E</td> <td>Boot install image</td> <td>0:00:01</td> <td>2011-09-20 11:12:02</td> <td>50%</td> </tr> <tr> <td>12</td> <td>Install OS</td> <td>Enc:10101 Bay:7E</td> <td>Boot install image</td> <td>0:00:01</td> <td>2011-09-20 11:12:02</td> <td>50%</td> </tr> <tr> <td>11</td> <td>Install OS</td> <td>Enc:10101 Bay:2E</td> <td>Boot install image</td> <td>0:00:01</td> <td>2011-09-20 11:12:02</td> <td>50%</td> </tr> <tr> <td>10</td> <td>Install OS</td> <td>Enc:10101 Bay:1E</td> <td>Boot install image</td> <td>0:00:02</td> <td>2011-09-20 11:12:01</td> <td>50%</td> </tr> <tr> <td>9</td> <td>Add Image</td> <td></td> <td>Done: TPD.install-5.0.0_72.20.0-CentOS5.6-x86_64</td> <td>0:00:09</td> <td>2011-09-20 11:01:50</td> <td>100%</td> </tr> </tbody> </table> <p>You can also monitor the install from the blade iLo :</p>  <p>When the installation is complete, the task will change to green and the Progress bar will indicate "100%".</p>	ID	Task	Target	Status	Running Time	Start Time	Progress	14	Install OS	Enc:10101 Bay:15F	Boot install image	0:00:01	2011-09-20 11:12:02	50%	13	Install OS	Enc:10101 Bay:8E	Boot install image	0:00:01	2011-09-20 11:12:02	50%	12	Install OS	Enc:10101 Bay:7E	Boot install image	0:00:01	2011-09-20 11:12:02	50%	11	Install OS	Enc:10101 Bay:2E	Boot install image	0:00:01	2011-09-20 11:12:02	50%	10	Install OS	Enc:10101 Bay:1E	Boot install image	0:00:02	2011-09-20 11:12:01	50%	9	Add Image		Done: TPD.install-5.0.0_72.20.0-CentOS5.6-x86_64	0:00:09	2011-09-20 11:01:50	100%
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	<p>IF OS Install fails</p>	<p>If the OS Install Fails, the Task status will show failed.</p> <p>Note the step where the Installed failed.</p> <p>It is also useful to login the server console (either via the iLo port, or using a local Key Board and Monitor), and try the OS Install again. Note where the console is reporting a boot problem.</p> <p>If the boot hangs when trying to get a DHCP address, and execute PXE boot, then the Control Network is a problem.</p> <p>Trouble shoot the IP networking before proceeding.</p>																																																	

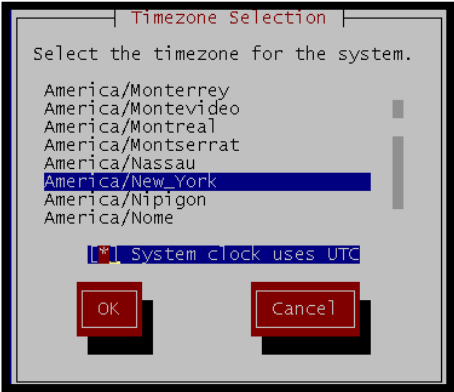
Installing LTE HSS & HLR on HP C-Class G8

7.0 BASIC POST INSTALL CONFIGURATION OF TPD ON EACH C-CLASS SERVER

Procedure 19. SDM pre-installation specific steps.

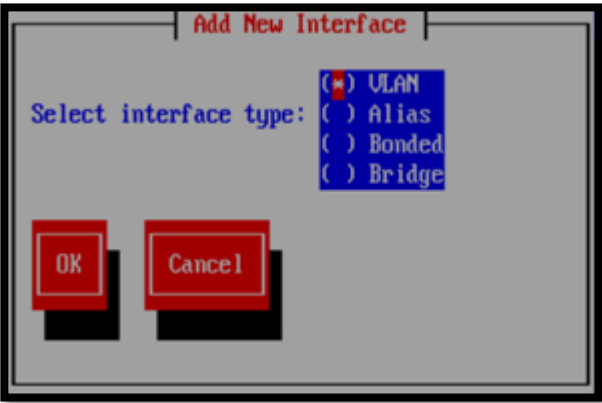
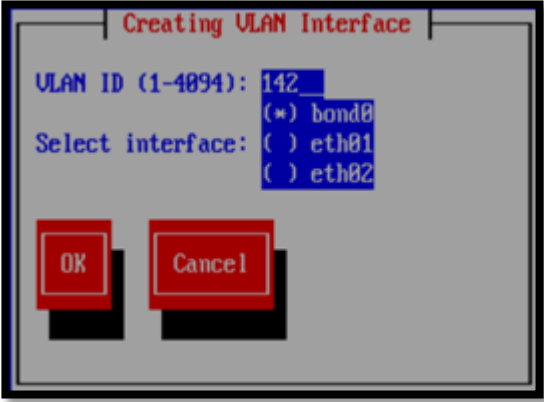
S T E P #	Steps to be completed.	<p>This installation must be repeated for each C-CLASS blade planned to be part of the SDM/TPD configuration. It describes how to configure the network interfaces, NTP, RAID1 used by SDM LTE HSS & HLR system. The disk configuration has to be performed only on Back-End blades.</p> <p>Needed material:</p> <ul style="list-style-type: none"> - 2 D2200sb storage blades with 12 Additional 600GB Physical Drives for C-CLASS configurations with Storage arrays. <p>Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.</p>
1 <input type="checkbox"/> <input type="checkbox"/>	Edit network file on SDM On all blades	<p>Using SSH or the Console of each C-CLASS server, login to the root account, and edit the file /etc/sysconfig/network to add the following line at the end of file:</p> <p>NOZEROCONF=yes</p> <p>The file content should look like:</p> <pre> NETWORKING=yes NETWORKING_IPV6=yes HOSTNAME=hostnameNNNNN IPV6INIT=yes NOZEROCONF=yes </pre> <p>Note: failing to do this step is going to trigger non immediate and difficult to identify problems that might prevent proper switchover, etc, because the blade won't be able to reach each other on the private network.</p>
2 <input type="checkbox"/> <input type="checkbox"/>	Change C-CLASS server hostname on On all SDM blades	<p>Use the TPD menu front-end to set the server's hostname to "XMI_SDM_Hostname":</p> <p># su - platcfg</p> <p>navigate through Main Menu -> Server Configuration -> Hostname</p> <p>use the "Edit" button to change the Hostname from "hostnameNNNNNNNNNN" to "XMI_SDM_HOSTNAME"</p> <p>exit the menus, and verify that /etc/hosts is updated:</p> <p># grep 127 /etc/hosts</p> <pre> 127.0.0.1 localhost XMI_SDM_Hostname </pre> <p># su - platcfg</p> <p>navigate through Main Menu -> Server Configuration -> Hostname</p>

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		<p>use the "Edit" button to change the Hostname from "hostnameNNNNNNNNNN" to "XMI_SDM_HOSTNAME"</p> <p>Run the following command to reload the shell :</p> <pre># exec bash</pre> <p>exit the menus, and verify that /etc/hosts file has been updated updated:</p> <pre># grep 127 /etc/hosts</pre> <pre>127.0.0.1 localhost XMI_SDM_Hostname</pre>																		
<p>3</p> <p><input type="checkbox"/></p>	<p>Change server Time Zone on On all SDM blades.</p>	<p>Use the TPD menu front-end to set the server's Time Zone:</p> <pre># su - platcfg</pre> <p>navigate through Main Menu -> Server Configuration -> Time Zone use the "Edit" button to change the Time Zone</p> <p>navigate the menus back to the main menu and Exit</p>  <p style="text-align: center;">The System Clock uses UTC, MUST BE SELECTED</p> <p>- Verify the date :</p> <pre># date</pre>																		
<p>4</p> <p><input type="checkbox"/></p>	<p>Create the vlan interfaces from platcfg menu on all SDM blades.</p>	<p>navigate through the main menu and create the following vlan interfaces.</p> <table border="1"> <thead> <tr> <th>Network Name</th> <th>Identifier</th> <th>VLAN ID</th> </tr> </thead> <tbody> <tr> <td>Management</td> <td>PlatMgt³</td> <td>bond0.2</td> </tr> <tr> <td>OAM/Geo</td> <td>XMI</td> <td>bond0.3</td> </tr> <tr> <td>Internal Messaging</td> <td>IMI</td> <td>bond0.4</td> </tr> <tr> <td>Signaling – A</td> <td>SIGRAN-1</td> <td>bond0.5</td> </tr> <tr> <td>Signaling – B</td> <td>SIGRAN-2</td> <td>bond0.6</td> </tr> </tbody> </table>	Network Name	Identifier	VLAN ID	Management	PlatMgt ³	bond0.2	OAM/Geo	XMI	bond0.3	Internal Messaging	IMI	bond0.4	Signaling – A	SIGRAN-1	bond0.5	Signaling – B	SIGRAN-2	bond0.6
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³ Note that choosing the minimum required subnet size might minimize the option of co-mingling with other applications in the same frame.

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		<p>Main Menu -> Network Configuration -> Network Interfaces -> IPv4 -> Add an Interface -> VLAN</p> <p>XMI_Subnet_ID</p> <p><u>VLAN ID:</u></p> <p><u>Select Interface Type:</u> VLAN</p> <p>bond0</p> <p><u>Select interface:</u></p>   <ul style="list-style-type: none"> - Navigate the menus back to the main menu and Exit - Set in Bond0 MII Monitor Interval to 30 <pre># netAdm set --device=bond0 --miimon=30 Interface bond0 was updated Interface bond0 updated</pre> <ul style="list-style-type: none"> - Verify <pre># more /proc/net/bonding/bond0</pre>
<p>5</p> <p><input type="checkbox"/></p>	<p>Configure IMI interface on each SDM blade.</p>	<p>Assign an IP address to bond0.4 interface.</p> <pre># netAdm set --device=bond0.4 --address= IMI_SDM_TPD_IP_X --netmask= IMI_MASK --onboot=yes</pre>

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		 The IMI_SDM_IP address must be 169.254.1.1 and 169.254.1.2 has to match exactly the SDM_UNIQUE_SLOT_ID value in /etc/sysconfig/blue file (in section 4.3 of the document)
6 <input type="checkbox"/>	Configure XMI interface on each SDM blade.	<p>Assign an IP address to bond0.3 interface.</p> <pre># netAdm set --device=bond0.3 --address= XMI_SDM_TPD_IP_X --netmask= XMI_MASK --onboot=yes</pre>
7 <input type="checkbox"/>	Configure XMI gateway as the default route on each SDM blade.	<p>Configure the default route to gateway XMI_GATEWAY:</p> <pre>#netAdm add --route=default --device=bond0.3 --gateway=XMI_GATEWAY</pre> <p>From this point, the TPD server should be reachable from the customer network XMI, so it is possible (if more convenient) to log out from the ILO virtual console and connect to the system with SSH to resume the installation.</p> <p># ping XMI_GATEWAY</p> <pre>[root@CSLAB-LTE HSS & HLR1-BLADE2 ~]# ping 10.15.26.1 PING 10.15.26.1 (10.15.26.1) 56(84) bytes of data. 64 bytes from 10.15.26.1: icmp_seq=1 ttl=255 time=0.733 ms --- 10.15.26.1 ping statistics --- 1 packets transmitted, 1 received, 0% packet loss, time 0ms</pre>
8 <input type="checkbox"/>	Configure NTP server address on SDM On all back-end blades	<ul style="list-style-type: none"> - Use the TPD menu front-end to configure server clock synchronization with NTP: <pre># su - platcfg</pre> <p>navigate through Main Menu -> Network Configuration -> NTP -> Edit :</p> <p style="text-align: center;"><u>ntpserver1</u>: NTP_IP</p> 

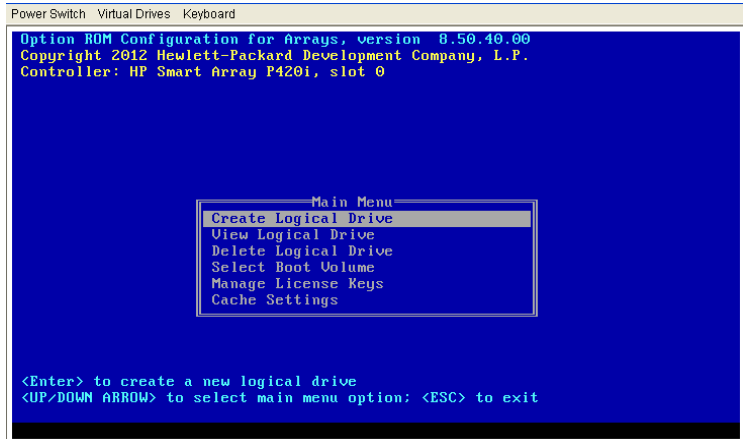
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		<ul style="list-style-type: none"> - Navigate the menus back to the main menu and Exit - Force the system to synchronize now: <ul style="list-style-type: none"> #service ntpd stop #service ntpdate start #service ntpd start - Force the system to update immediately the real-time clock managed by the BIOS <ul style="list-style-type: none"> # hwclock --systohc - Verify system time is now good, and the NTP "offset" value is now small <ul style="list-style-type: none"> # ntpq -c lpeers <p>Example output:</p> <pre> remote refid st t when poll reach delay offset jitter ===== *ntpserver1 .GPS. 1 u 66 128 377 0.203 0.006 0.005 ntpserver2 .INIT. 16 u 783 1024 0 0.000 0.000 0.000 </pre> <ul style="list-style-type: none"> - The offset with the reference clock should be close to 0.000.
<p>9 <input type="checkbox"/></p>	<p>Create the required SDM RAID1+0 setup on SDM on all back-end blades</p>	<p>Create the RAID configuration from Raid controller menu (only for configuration with additional hard drives/storage blades).</p> <p>The RAID 1+0 configuration can be performed by following steps below :</p> <ul style="list-style-type: none"> - using the iLO, connect to the virtual console of the system - use the "CAD" icon on the virtual console to generate a Ctrl-Alt-Del sequence, or the power button to generate a power-down/power-up sequence - when the message "Press any key to see Option ROM messages", press any key - when the message "Press F8 for Slot 3 controller" appears, press F8 - Select "View Logical Drive" to confirm a drive is configured, then Escape to return to the main menu - You have to use the raid controller menu to configure the hardware RAID the following way: <ul style="list-style-type: none"> • Disk Bay 1&2&3&4 : RAID1+0 • Disk Bay 5&6&7&8 : RAID1+0

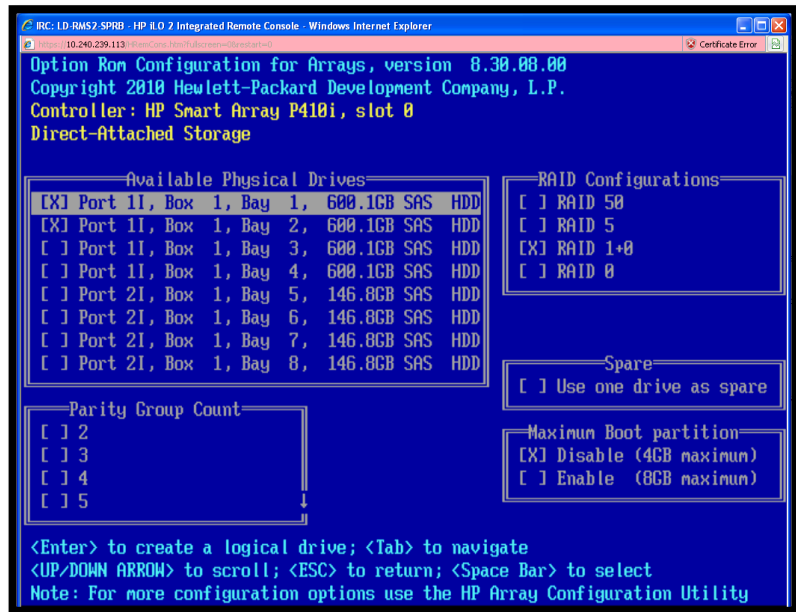
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- **Disk Bay 9&10&11&12 : RAID1+0**

- Select the "Create Logical Drive" entry and use the TAB key and the space bar to deselect all the disks except the four first one:



Press enter to confirm you choice, the display should look like :

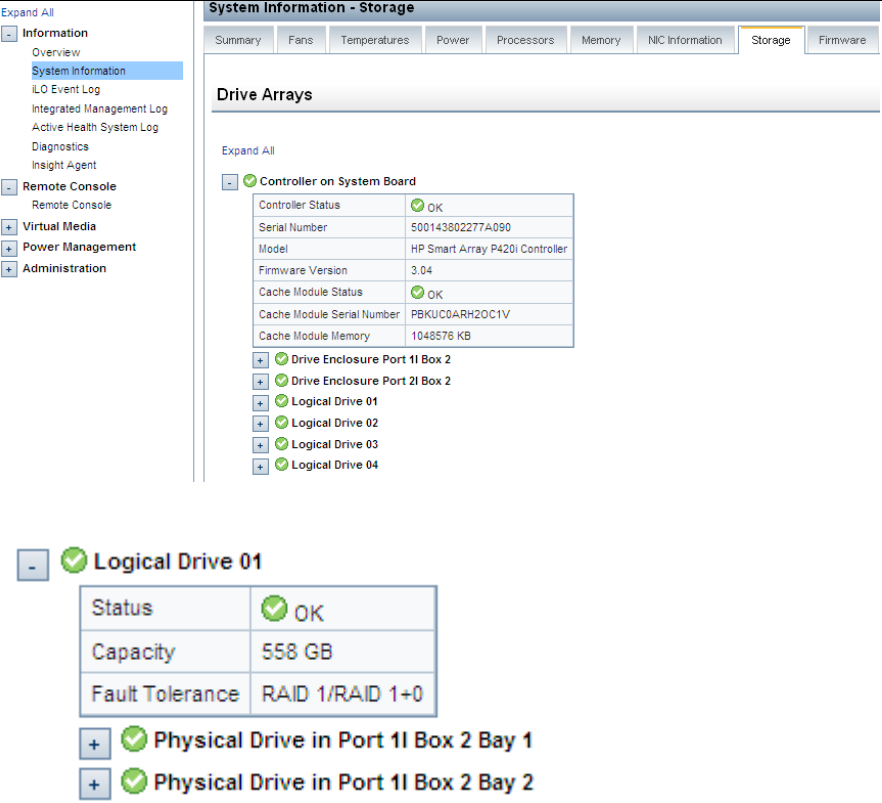
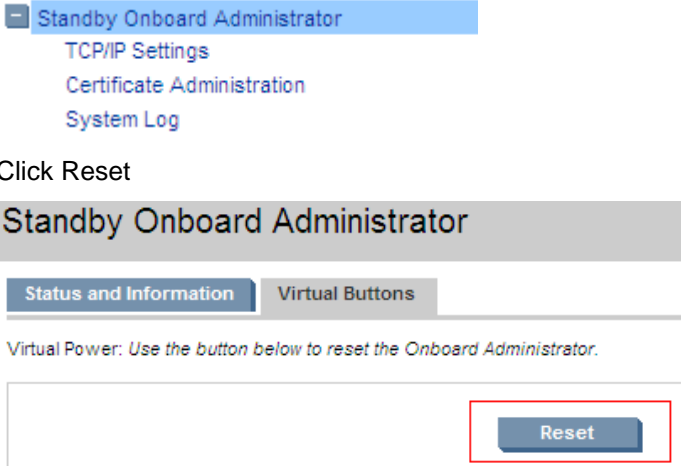


Press F8 to save the configuration:

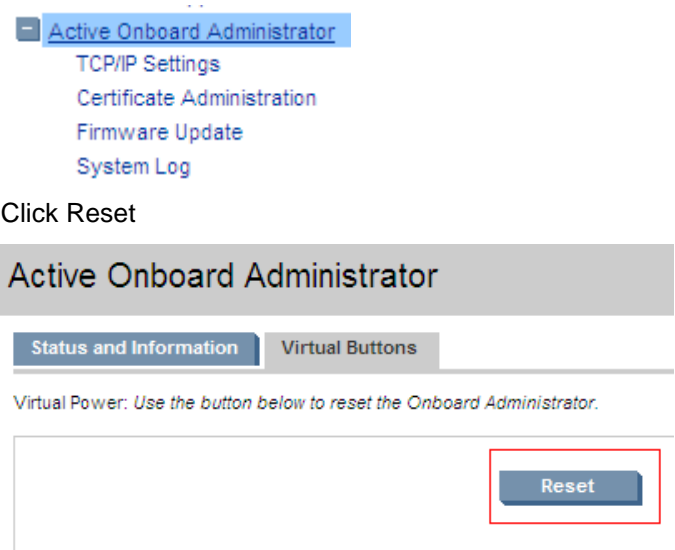
- Repeat the process for the other 8 drives:
- Once the RAID1+0 configuration is completed, press <ESC> to exit and let the blade boot normally..

10 <input type="checkbox"/>	Verify the Drive Array configuration from the iLO4.	Check the 4 logical drives From the iLO4 menu <i>Information => System Information</i> under storage :
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		 <p>The screenshot shows the HP iLO System Information - Storage page. The left sidebar contains navigation options: Information (expanded), System Information, ILO Event Log, Integrated Management Log, Active Health System Log, Diagnostics, Insight Agent, Remote Console, Remote Console, Virtual Media, Power Management, and Administration. The main content area shows 'Drive Arrays' with a table for 'Controller on System Board' and a list of drive enclosures and logical drives. Below this, 'Logical Drive 01' is expanded to show its status (OK), capacity (558 GB), and fault tolerance (RAID 1/RAID 1+0). Two physical drives are listed as part of this logical drive.</p>
11	<p>If an alarm appear on OA : reset the OA from its web interface.</p>	<p>After the D2200sb blade installation, if the following alarm is raised on OA, perform an OA reset :</p> <p><i>“Missing Svr Bay 9 Mezz 15 prevents partnering”</i></p> <p><i>In order to partner with the storage blade next to this server blade, you must install a passthrough mezzanine card in the slot Indicated.</i></p> <p>From the OA web interface click on “Standby Onboard Administration” :</p>  <p>The screenshot shows the 'Standby Onboard Administrator' web interface. It has a navigation menu with 'Standby Onboard Administrator' selected, and sub-items for 'TCP/IP Settings', 'Certificate Administration', and 'System Log'. Below the menu, there is a 'Click Reset' instruction and a 'Standby Onboard Administrator' header. Underneath, there are two tabs: 'Status and Information' and 'Virtual Buttons'. A note says 'Virtual Power: Use the button below to reset the Onboard Administrator.' A 'Reset' button is highlighted with a red box.</p>

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		<p>From the OA web interface click on "Active Onboard Administration" :</p>  <p>Click Reset</p> <p>Verify that the Alarm has been cleared.</p>
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Installing LTE HSS & HLR on HP C-Class G8

8.0 BASIC INSTALLATION AND CONFIGURATION OF SDM SOFTWARE

Procedure 20. SDM Installation

S T E P #	Steps to be completed.	<p>This installation must be repeated for each C-CLASS server planned to be part of the SDM/TPD configuration. It describes how to install edit the configuration files required by SDM platform and how to install the SDM iso.</p> <p>Needed material:</p> <ul style="list-style-type: none"> - SDM release 9.1 software image 872-2409-101-9.1.0_5.0.0-SDM-x86_64.iso <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.</p>
1 <input type="checkbox"/>	Edit blue file on all SDM blades.	<p>Using SSH or the virtual console of each C-CLASS server, login to the root account, and create the file /etc/sysconfig/blue with the following contents:</p> <p>Example of Blue File in SDM Server A</p> <pre style="border: 1px solid black; padding: 5px;"> SYSTEMTYPE=RACKMOUNT SITENAME=CSLAB_CC1 SHELFID=1 SLOTID=1 PRIVATEINTERFACE=bond0 PUBLICINTERFACE=bond0 SINGLEFRAGMENTDB=1 INNODDBUFFERPOOL=0.7 </pre> <p>Example of Blue File in SDM Server B</p> <pre style="border: 1px solid black; padding: 5px;"> SYSTEMTYPE=RACKMOUNT SITENAME=CSLAB_CC1 SHELFID=1 SLOTID=2 PRIVATEINTERFACE=bond0 PUBLICINTERFACE=bond0 SINGLEFRAGMENTDB=1 INNODDBUFFERPOOL=0.7 </pre> <p>For Geo-Redundancy Only</p> <p>Note: If geo-redundancy is used, file /etc/sysconfig/blue must contain two extra lines:</p> <p>For C-CLASS servers in SDM1 (site 1), the two extra lines in file /etc/sysconfig/blue should be:</p> <pre style="border: 1px solid black; padding: 5px;"> SITESUFFIX=_1 SITESUFFIXREMOTE=_2 </pre>


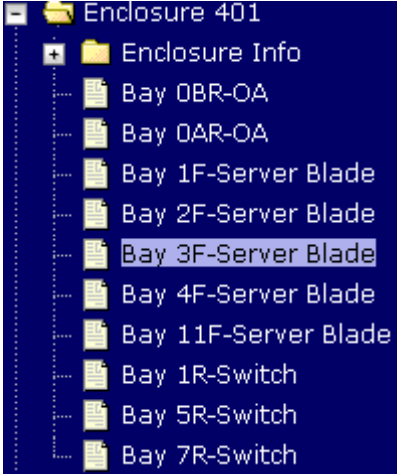
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		<p>For C-CLASS servers in SDM2 (site 2), the two extra lines in file <code>/etc/sysconfig/blue</code> should be:</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"><pre>SITESUFFIX=_2 SITESUFFIXREMOTE=_1</pre></div> <p> Make sure that there are no space characters left in the <code>/etc/sysconfig/blue</code> file and that SRPDOMAIN value is the same in all servers that belong to a same SDM system.</p>
2 <input type="checkbox"/>	Add the <code>sdmvlans.conf</code> file on active system controller.	<ul style="list-style-type: none">- Prepare a <code>sdm-vlans.conf</code> file for the SDM installation.- Using SSH or the virtual console of each C-CLASS server, login to the root account.- Copy the prepared <code>sdm-vlans.conf</code> file to: <code>/etc/sysconfig/sdm-vlans.conf</code>- For Geo Redundancy with sctp multi homing add lines with lo , tun0 and geo1 and geo2 interfaces. <p>Example of <code>sdm-vlans.conf</code> file:</p>

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		<pre> # IMI subnet 169.254.0.0 16 255.255.0.0 0.0.0.0 bond0 1 main 10.223.65.128 27 255.255.255.224 10.223.65.129 bond0 5 diameter1 # GeoRed Multihome subnet placed on the "lo" interface 172.24.40.248 30 255.255.255.252 0.0.0.0 lo 1 main # # GeoRed tunneling subnet placed on "tun0", # with route to remote GeoRed Multihome subnet 172.24.50.248/30. 172.24.60.248 30 255.255.255.252 172.24.60.250 tun0 1 geotun1 172.24.50.248/30 172.24.60.248 30 255.255.255.252 172.24.60.250 tun0 1 main 172.24.50.248/30 # SDM Geored SCTP transport subnets with Preferred Source routes # to remote SCTP transport VIPs. 10.15.61.192 28 255.255.255.240 10.15.61.193 bond0 104 main 10.15.63.208/28 PREFSRC 10.15.61.197 10.15.61.192 28 255.255.255.240 10.15.61.193 bond0 104 geosctp1 10.15.63.208/28 PREFSRC 10.15.61.197 10.15.61.192 28 255.255.255.240 10.15.61.193 bond0 104 geosctp1 # 10.15.61.208 28 255.255.255.240 10.15.61.209 bond0 105 main 10.15.63.192/28 PREFSRC 10.15.61.213 10.15.61.208 28 255.255.255.240 10.15.61.209 bond0 105 geosctp2 10.15.63.192/28 PREFSRC 10.15.61.213 10.15.61.208 28 255.255.255.240 10.15.61.209 bond0 105 geosctp2 # diameter 1 network for Site1 10.223.65.128 27 255.255.255.224 10.223.65.129 bond0 5 main 10.223.64.128/27 # diameter 2 network for Site2 10.223.65.128 27 255.255.255.224 10.223.65.129 bond0 5 main 10.192.211.128/27 10.223.65.64 26 255.255.255.192 10.223.65.65 bond0 3 xmi 10.223.65.64 26 255.255.255.192 10.223.65.65 bond0 3 xmi 10.192.212.38/32 PREFSRC 10.223.65.102 10.223.65.64 26 255.255.255.192 10.223.65.65 bond0 3 main 10.192.212.38/32 PREFSRC 10.223.65.102 </pre> <p> Column 1: Network address Column 2: subnet size Column 3: subnet mask Column 4: Gateway address Column 5: Interface </p>
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Installing LTE HSS & HLR on HP C-Class G8

		<p>Column 6: Vlan Id Column 7: Network name [one of main, SDMxmi, SDMxsi1, SDMxsi2]</p> <p>Note : A sample of sdm-vlans.conf can be found under /blue/etc/sdm-vlans.conf.sample and used for preparing the sdm-vlans.conf file for this installation.</p> <p>Note: For installations that do not use VLANs, this file is still REQUIRED. The value 1 is used in column 6 (... 1 main).</p> <p>Note : You may need to add extra lines in the sdm-vlans.conf file depending on the remote subnets connected to the LTE HSS & HLR node (eg . MPEs in different site),please refer to [TK5] TR006928</p> <p> The instructions commented in sdm-vlans.conf.sample file must be followed .Special characters such as underscore “_” are not supported in Column 7.</p>
<p>3 <input type="checkbox"/></p>	<p>Transfer the SDM software to the servers SDM1 and SDM2 On all back-end blades</p>	<p>- Using the network or some media (ex. A USB key), transport the SDM software to directory /var/TKLC/upgrade on the Blade Server, then verify the results (the exact file name shown here may vary depending on version):</p> <p># ls /var/TKLC/upgrade/</p>
<p>4 <input type="checkbox"/></p>	<p>Select Blade for SDM Application install</p>	<p>Navigate to Cabinet->Enclosure -> Bay xx – Server Blade</p>  <p>Select Software Tab</p>

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		<p>Enclosure 401 - Bay 3F</p> <p>Tasks ▾</p> <p>Hardware Software Network</p> <div style="border: 1px solid gray; padding: 5px;"> <p>Operating System Details</p> <table border="1"> <tr><td>Operating System</td><td>CentOS</td></tr> <tr><td>OS Version</td><td>5.8</td></tr> <tr><td>Hostname</td><td>SPR-G8-01</td></tr> <tr><td>Platform Software</td><td>TPD (x86_64)</td></tr> <tr><td>Platform Version</td><td>5.1.0-73.3.0</td></tr> </table> </div> <div style="border: 1px solid gray; padding: 5px; margin-top: 10px;"> <p>Application Details</p> <table border="1"> <tr><td>Application</td><td></td></tr> <tr><td>Version</td><td></td></tr> <tr><td>Function</td><td></td></tr> <tr><td>Designation</td><td></td></tr> </table> </div> <p>Click Upgrade</p> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid gray; padding: 5px; width: 150px; text-align: center;">Install OS</div> <div style="border: 1px solid gray; padding: 5px; width: 150px; text-align: center;">Cold Reset</div> <div style="border: 1px solid gray; padding: 5px; width: 150px; text-align: center;">Warm Reset</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid gray; padding: 5px; width: 150px; text-align: center;">Upgrade</div> <div style="border: 1px solid gray; padding: 5px; width: 150px; text-align: center; background-color: #f0f0f0;">Accept Upgrade</div> <div style="border: 1px solid gray; padding: 5px; width: 150px; text-align: center; background-color: #f0f0f0;">Reject Upgrade</div> </div> <p>Select the SDM iso 872-2409-101-9.1.0_5.0.0-SDM-x86_64.iso :</p> <p>Software Upgrade - Select Image Tue Nov 13 21:39:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Targets</th> <th>Image Name</th> <th>Type</th> <th>Architecture</th> <th>Description</th> </tr> <tr> <th>Entity</th> <th>Status</th> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>Enc:401 Bay:3F</td> <td></td> <td>872-2409-101-9.0.0_3.0.0-SDM-x86_64</td> <td>Upgrade</td> <td>x86_64</td> <td>SDM last build (Bruno SDM on G8)</td> </tr> <tr style="background-color: #e0ffe0;"> <td></td> <td></td> <td>872-2409-101-9.0.0_5.0.0-SDM-x86_64</td> <td>Upgrade</td> <td>x86_64</td> <td>SDM 9.0 latest</td> </tr> </tbody> </table> <p>Click Start Upgrade</p> <div style="border: 1px solid gray; padding: 5px; width: 150px; text-align: center; margin: 10px auto;">Start Upgrade</div>	Operating System	CentOS	OS Version	5.8	Hostname	SPR-G8-01	Platform Software	TPD (x86_64)	Platform Version	5.1.0-73.3.0	Application		Version		Function		Designation		Targets		Image Name	Type	Architecture	Description	Entity	Status					Enc:401 Bay:3F		872-2409-101-9.0.0_3.0.0-SDM-x86_64	Upgrade	x86_64	SDM last build (Bruno SDM on G8)			872-2409-101-9.0.0_5.0.0-SDM-x86_64	Upgrade	x86_64	SDM 9.0 latest							
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Enc:401 Bay:3F		872-2409-101-9.0.0_3.0.0-SDM-x86_64	Upgrade	x86_64	SDM last build (Bruno SDM on G8)																																														
		872-2409-101-9.0.0_5.0.0-SDM-x86_64	Upgrade	x86_64	SDM 9.0 latest																																														
<p>5</p> <p><input type="checkbox"/></p>	<p>Monitor the SDM installation status</p>	<p>Navigate to Main Menu > Task Monitoring to monitor the progress of the SDM/LTE HSS & HLR Installation.</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>ID</th> <th>Task</th> <th>Target</th> <th>Status</th> <th>Running Time</th> <th>Start Time</th> <th>Progress</th> </tr> </thead> <tbody> <tr> <td>25</td> <td>Upgrade</td> <td>Enc:10101 Bay:15F</td> <td>Task ID assigned</td> <td>0:00:00</td> <td>2011-09-20 14:36:08</td> <td>40%</td> </tr> <tr> <td>24</td> <td>Upgrade</td> <td>Enc:10101 Bay:8F</td> <td>Task ID assigned</td> <td>0:00:00</td> <td>2011-09-20 14:36:08</td> <td>40%</td> </tr> <tr> <td>23</td> <td>Upgrade</td> <td>Enc:10101 Bay:7F</td> <td>Task ID assigned</td> <td>0:00:01</td> <td>2011-09-20 14:36:07</td> <td>40%</td> </tr> <tr> <td>22</td> <td>Upgrade</td> <td>Enc:10101 Bay:2F</td> <td>Task ID assigned</td> <td>0:00:00</td> <td>2011-09-20 14:36:07</td> <td>40%</td> </tr> <tr> <td>21</td> <td>Upgrade</td> <td>Enc:10101 Bay:1F</td> <td>Task ID assigned</td> <td>0:00:00</td> <td>2011-09-20 14:36:07</td> <td>40%</td> </tr> <tr style="background-color: #e0ffe0;"> <td>20</td> <td>Add Image</td> <td></td> <td>Done: 872-2329-101-3.0.0_30.8.0-DSR-x86_64</td> <td>0:00:06</td> <td>2011-09-20 14:24:41</td> <td>100%</td> </tr> </tbody> </table> <p>When the installation is complete, the task will change to green and the Progress bar will indicate "100%".</p>	ID	Task	Target	Status	Running Time	Start Time	Progress	25	Upgrade	Enc:10101 Bay:15F	Task ID assigned	0:00:00	2011-09-20 14:36:08	40%	24	Upgrade	Enc:10101 Bay:8F	Task ID assigned	0:00:00	2011-09-20 14:36:08	40%	23	Upgrade	Enc:10101 Bay:7F	Task ID assigned	0:00:01	2011-09-20 14:36:07	40%	22	Upgrade	Enc:10101 Bay:2F	Task ID assigned	0:00:00	2011-09-20 14:36:07	40%	21	Upgrade	Enc:10101 Bay:1F	Task ID assigned	0:00:00	2011-09-20 14:36:07	40%	20	Add Image		Done: 872-2329-101-3.0.0_30.8.0-DSR-x86_64	0:00:06	2011-09-20 14:24:41	100%
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ID	Task	Target	Status	Running Time	Start Time	Progress
1096	Upgrade	Enc:101 Bay:3E	Success	0:09:45	2012-11-13 16:38:37	100%
6	<input type="checkbox"/> Verify the Software version and the platform version	<p>Once the reboot and installation are completed,run the following command on the SDM blade.</p> <p>Verify TPD version</p> <pre># getPlatRev</pre> <p>5.1.0-73.3.0</p> <ul style="list-style-type: none"> - Verify the software version <pre># BlueVersion</pre> <p>** Blueslice version: 9.1.0_5.0.0</p>				
7	<input type="checkbox"/> Execute the system controller command (only on SDM1 and SDM2 active system controller blade)	<p> Only do the steps if this C-CLASS server is the very first member of a new SDM installation, and no SDM-specific database exists yet (otherwise, this step may cause SDM data loss!). For all other C-CLASS servers in the SDM installation, skip to the next page:</p> <p>Run the configurecontroller command on the first server of each cluster</p> <pre># configurecontroller.sh -blue</pre> <p>and watch output messages for eventual errors.</p> <ul style="list-style-type: none"> - > Processing Parameters <pre>configurecontroller.sh: Creating /blue/etc/SystemModel_Loaded.xml... configurecontroller.sh: /blue/etc/SystemModel.xml configurecontroller.sh: /blue/etc/default/BnGlobalAudit.xml configurecontroller.sh: /blue/etc/default/DrmDefaultConfig.xml configurecontroller.sh: /blue/etc/default/PMJobDefs.xml configurecontroller.sh: /blue/etc/default/PMThresholdDefs.xml configurecontroller.sh: /blue/etc/SystemModel_RACKMOUNT.xml configurecontroller.sh: /blue/etc/appcfg/SystemModel_hss.xml configurecontroller.sh: /blue/etc/appcfg/SystemModel_ite.xml configurecontroller.sh: /blue/etc/appcfg/SystemModel_ras.xml configurecontroller.sh: /blue/etc/appcfg/SystemModel_sip.xml configurecontroller.sh: /blue/etc/SystemModelNoFragment.xml configurecontroller.sh: Loading the system model... configurecontroller.sh: /blue/etc/SystemModel_Loaded.xml > Blueslice Information Schema provisioned successfully Shutting down SelfReliant 7500stopped mysqlblued: Stopping MySQL..... stopped.</pre>				

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9.0 PERFORM SSH KEYS EXCHANGE

Procedure 21. SDM ssh configuration.

S T E P #	Steps to be completed.	<p>This procedure is aimed at performing the ssh keys exchanges between all the SDM blades belonging to the system. It has to be executed on active system controller blade on each site.</p> <p>Needed material:</p> <ul style="list-style-type: none"> - SDM release 9.1 software installed on each Server. <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.</p>
1 <input type="checkbox"/>	Edit the sdm-ssh.conf files:	<p>the files to be edited are called sdm-ssh.conf and must be placed in /etc/sysconfig/ on Active system controller blades in each site</p> <p>An example of this file is located under /etc/sysconfig sdm-ssh.conf.sample</p> <ul style="list-style-type: none"> - Prepare two sdm-ssh.conf files for each SDM site. - sdm-ssh-tool script should be under /blue/bin directory <p># vim /etc/sysconfig/sdm-ssh.conf</p> <div style="text-align: center;">  sdm-ssh.conf.sample </div> <p>EXAMPLE FOR SITE 1 :</p> <div style="border: 1px solid black; padding: 5px;"> <pre> LOCAL-GROUP CSLAB-SPR1 # list below all the blades used in SDM SPR site 1 (private IPs and public IPs) MEMBER CSLAB-SPR1-BLADE1 IP-LIST 169.254.1.1 10.15.63.141 MEMBER CSLAB-SPR1-BLADE2 IP-LIST 169.254.1.2 10.15.63.142 # list below all local VIPs in cluster in site 1 that require ssh functions (private VIP is always 169.254.1.20 and GEO VIP1,OAMP VIP,PROVISIONNING VIP) LOCAL-VIPS 169.254.1.20 172.24.40.249 10.15.63.134 10.15.63.135 # list below the remote site name and the local and remote Geo VIPS REMOTE-GROUP CSLAB-SPR2 VIPS 172.24.50.250 USE-LOCAL-VIPS 172.24.40.249 </pre> </div> <p>EXAMPLE FOR SITE 2 :</p>

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		<pre> LOCAL-GROUP CSLAB-SPR2 # list below all the blades used in SDM SPR site 2 (private IPs and public IPs) MEMBER CSLAB-SPR2-BLADE1 IP-LIST 169.254.1.1 10.15.63.143 MEMBER CSLAB-SPR2-BLADE2 IP-LIST 169.254.1.2 10.15.63.144 # list below all local VIPs in cluster in site 2 that require ssh functions (private VIP 169.254.1.20 and GEO VIP, OAMP VIP,PROVSIONNING VIP) LOCAL-VIPS 169.254.1.20 172.24.50.250 10.15.63.136 10.15.63.137 # list below the remote site name and the loal and remote Geo VIPS REMOTE-GROUP CSLAB-SPR1 VIPS 172.24.40.249 USE-LOCAL-VIPS 172.24.50.250 </pre>
<p>2 <input type="checkbox"/></p>	<p>Generate brand new ssh keys on both sites:</p>	<p>Run the following command on each Active system controller (blade where the configurecontroller command has been executed in step 19) on both sites SDM1 and SDM2 to generate ssh keys for all the blades of the SDM system :</p> <p># /blue/bin/sdm-ssh-tool --reset</p> <pre> SDM SSH tool version 1.09 82810 Erasing all key-related files in /etc/ssh ... Erasing all key-related files in /root/.ssh ... Restarting SSH server (causes host key regeneration) ... Stopping sshd: [OK] Generating SSH1 RSA host key: [OK] Generating SSH2 RSA host key: [OK] Generating SSH2 DSA host key: [OK] Starting sshd: [OK] Generating new SSH user key ... </pre>
<p>3 <input type="checkbox"/></p>	<p>Mount manually the Geo VIPs on each site:</p>	<p><u>On SDM1 site :</u></p> <p># setvip.sh lo Geo_VIP1 Netmask</p> <pre> /blue/bin/setvip.sh: VIP is for multi-homed geo-redundancy /blue/bin/sdm-geored-multihome.sh: SDM geo-red multihome monit start /blue/bin/sdm-geored-multihome.sh: SDM geo-red multihome start main(tid=10382): Conf file is "/etc/sysconfig/sdm-geored-multihome.conf" main(tid=10382): Configured with 2 local IPs, 2 remote IPs tun_net_down_alarm(tid=10382): Executing command 'processAlarm.py --set --alarmid=2300 --alarmcontext="geored_tun_d" --param1="Normal exit #1 for daemon transition" &' tun_net_down_alarm(tid=10383): Executing command 'processAlarm.py --set --alarmid=2300 --alarmcontext="geored_tun_d" --param1="Normal exit #2 for daemon transition" &' [root@en10001b13 ~]# Connecting to 169.254.1.20:62001 request string = [<tx nbreq="1"><req name="operation" ver="7.0.10" state="undefined"><oper name="RequestUserAuc" ent="UserAuthentication" ns="bn"><expr><param name="UserName" </pre>

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		<pre> /><op value="/" /><value val="admin"/></expr><expr><param name="UserPasswd" /><op value="/" /><value val="" isnull="y"/></expr><expr><param name="InterfaceModuleId" /><op value="/" /><value val="22"/></expr></oper></req></tx>] </pre> <p>On SDM2 site:</p> <p># setvip.sh lo Geo_VIP2 Netmask</p> <p>Verify that the Geo VIPs are properly mounted to the active system controller blades on each site :</p> <p>Note: The Geo VIP has to be mounted on the Geo interface lo (could be OAM or XSI).</p> <p>#ip -f inet addr</p> <p>1: lo: <LOOPBACK,UP,LOWER_UP> mtu 16436 qdisc noqueue inet 127.0.0.1/8 scope host lo inet 172.24.50.250/32 brd 172.24.50.250 scope global lo</p> <p>11: bond0: <BROADCAST,MULTICAST,MASTER,UP,LOWER_UP> mtu 1500 qdisc noqueue inet 192.168.1.6/24 brd 192.168.1.255 scope global bond0</p> <p>15: bond0.102@bond0: <BROADCAST,MULTICAST,MASTER,UP,LOWER_UP> mtu 1500 qdisc noqueue inet 10.15.61.153/27 brd 10.15.61.159 scope global bond0.102</p> <p>16: bond0.114@bond0: <BROADCAST,MULTICAST,MASTER,UP,LOWER_UP> mtu 1500 qdisc noqueue inet 169.254.1.13/16 brd 169.254.255.255 scope global bond0.114 inet 169.254.1.20/32 brd 169.254.1.20 scope global bond0.114 inet 169.254.254.2/32 brd 169.254.254.2 scope global bond0.114</p> <p>17: bond0.144@bond0: <BROADCAST,MULTICAST,MASTER,UP,LOWER_UP> mtu 1500 qdisc noqueue inet 10.15.63.197/32 brd 10.15.63.197 scope global bond0.144</p> <p>18: bond0.145@bond0: <BROADCAST,MULTICAST,MASTER,UP,LOWER_UP> mtu 1500 qdisc noqueue inet 10.15.63.213/32 brd 10.15.63.213 scope global bond0.145</p> <p>19: tun0: <POINTOPOINT,MULTICAST,NOARP,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast qlen 500 inet 172.24.60.250/32 brd 172.24.60.250 scope global tun0</p>
4 <input type="checkbox"/>	Exchange the ssh keys	<p>Run the following command on each Active system controller on both sites SDM1 and SDM2 to perform automatically the ssh key exchanges :</p> <p># /blue/bin/sdm-ssh-tool -fix --wizard-override</p> <pre> SDM SSH tool version 1.09 82810 WARNING *** Emergency wizard override requested *** Starting SDM SSH local fixes... NOTICE: Cannot read file /root/.ssh/authorized_keys Cannot read /root/.ssh/authorized_keys, re-creating the file NOTICE: File /root/.ssh/known_hosts not readable, re-creating it NOTICE: Resetting correct line for host 127.0.0.1 in /root/.ssh/known_hosts NOTICE: Resetting correct line for host localhost in /root/.ssh/known_hosts NOTICE: Resetting correct line for host 169.254.1.1 in /root/.ssh/known_hosts </pre>

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		<p>NOTICE: Resetting correct line for host 10.15.63.143 in /root/.ssh/known_hosts NOTICE: Resetting correct line for host 169.254.1.2 in /root/.ssh/known_hosts NOTICE: Resetting correct line for host 10.15.63.144 in /root/.ssh/known_hosts NOTICE: Resetting correct line for host 169.254.1.20 in /root/.ssh/known_hosts NOTICE: Resetting correct line for host 10.15.63.140 in /root/.ssh/known_hosts</p> <p>Generating temporary SSH user key...OK REMOTE group SLAB-LTE HSS & HLR1 may be reachable through 1 VIP(s) Starting fix attempt for REMOTE group SLAB-LTE HSS & HLR1... Trying to ping remote grp at 10.15.63.139 ... Successful at 100% Do you wish to attempt connecting to REMOTE grp SLAB-LTE HSS & HLR1? (Y/n): Y</p> <p>Do you wish to attempt connecting to REMOTE grp CSLAB-LTE HSS & HLR1? (Y/n):</p> <p>- Enter "Y" when the script requests confirmation to connect to remote SDM site.</p> <p>*** Will attempt to reach REMOTE group CSLAB-SDM2 at 10.15.63.139</p> <p>Type the root password shared by all nodes in REMOTE grp CSLAB-SDM:</p> <p>- Enter root password when the script requests it to connect to the remote site</p> <p>Type the root password shared by all nodes in REMOTE grp SLAB-LTE HSS & HLR1: Testing basic SSH to REMOTE group CSLAB-SDM1... Setting up SSH connection... Connection OK</p> <p>NOTICE: Resetting correct line for host 10.15.63.139 in /root/.ssh/known_hosts Trying to get root user pub key from REMOTE SLAB-SDM1 ... OK ERROR: Actual REMOTE group name in public key does not match our configuration Building SDM SSH fix network drop...</p> <p>Type the root password shared by all nodes in system CSLAB-ASDM2:</p> <p>- Enter root password when the script requests it to connect to the local blades</p> <p>NOTICE: Resetting correct line for host 127.0.0.1 in /root/.ssh/known_hosts</p>
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		<p>NOTICE: Resetting correct line for host localhost in /root/.ssh/known_hosts NOTICE: Resetting correct line for host 169.254.1.1 in /root/.ssh/known_hosts NOTICE: Resetting correct line for host 10.15.63.143 in /root/.ssh/known_hosts NOTICE: Resetting correct line for host 169.254.1.2 in /root/.ssh/known_hosts NOTICE: Resetting correct line for host 10.15.63.144 in /root/.ssh/known_hosts NOTICE: Resetting correct line for host 169.254.1.20 in /root/.ssh/known_hosts NOTICE: Resetting correct line for host 10.15.63.140 in /root/.ssh/known_hosts</p> <p>NOTICE: Resetting correct line for host 10.15.63.139 in /root/.ssh/known_hosts</p> <p>- Verify that ssh works properly between all blades private IPs,localhost hand between Geo VIPs</p>
<p>5 <input type="checkbox"/></p>	<p>Verify that ssh keys are properly exchanged</p>	<p>Run the following command on each Active system controller on both sites to perform automatically the ssh key verification step :</p> <p># /blue/bin/sdm-ssh-tool --check</p> <p>DM SSH tool version 1.09 82810 Starting SDM SSH check... Starting SDM SSH local checks... NOTICE: No line in /root/.ssh/authorized_keys for REMOTE group SLAB-LTE HSS & HLR1 1 notice/warning(s) found during local check.</p> <p>Starting SDM SSH local network checks...</p> <p>Type the root password shared by all nodes in system CSLAB-SDM2:</p> <p>- Enter root password when the script requests it to connect to the local blades</p> <p>If all the verification steps are passed the following lines should be observed :</p> <p><u>For Active system controller :</u></p> <p>0 notice/warning(s) found during <u>local</u> network check. 0 notice/warning(s) found during local network check 0 notice/warning(s) checking <u>remote</u> group</p>

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		<p><u>For each local blades :</u></p> <p>0 notice/warning(s) found during <u>local</u> check.</p> <p>0 notice/warning(s) found during signature and <u>REMOTE</u> group check.</p>
6 <input type="checkbox"/>	Clear the GEO VIPs on both sites:	<p>On each LTE HSS & HLR cluster on the Active system controller clear the local Geo VIP manually :</p> <p><u>On SDM1 site :</u></p> <p># clearvip.sh Geo_VIP1</p> <p><i>clearvip.sh</i></p> <p><i>/blue/bin/clearvip.sh: VIP is for multi-homed geo-redundancy</i></p> <p><i>/blue/bin/sdm-geored-multihome.sh: SDM geo-red multihome monit stop</i></p> <p><i>/blue/bin/sdm-geored-multihome.sh: SDM geo-red multihome stop</i></p> <p><u>On SDM2 site :</u></p> <p># clearvip.sh Geo_VIP2</p> <p><i>/blue/bin/clearvip.sh: VIP is for multi-homed geo-redundancy</i></p> <p><i>/blue/bin/sdm-geored-multihome.sh: SDM geo-red multihome monit stop</i></p> <p><i>/blue/bin/sdm-geored-multihome.sh: SDM geo-red multihome stop</i></p> <p>Verify that the Geo VIPs are properly cleared from the active system controller blades on each site :</p> <p>#ip -f inet addr</p>

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10.0 CONFIGURE SDM DISKS AND HLR APPLICATION

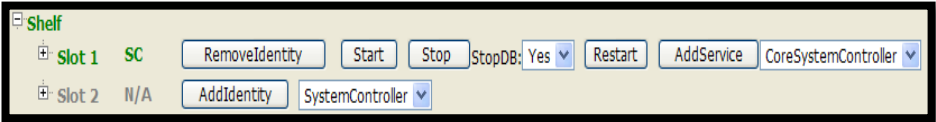
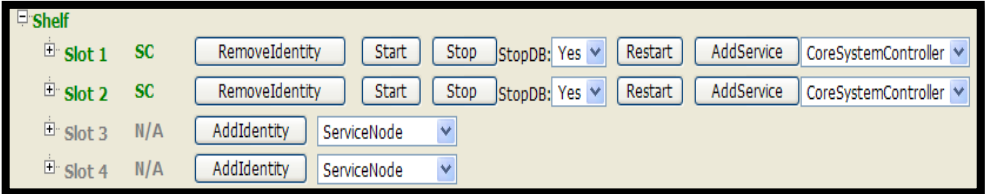
Procedure 22. SDM disks configuration and HLR application installation

S T E P #	Steps to be completed.	<p>This procedure must be repeated for each C-CLASS blade planned to be part of the SDM/TPD configuration. It describes how to configure the SDM partitions and the SDM HLR application</p> <p>Needed material:</p> <ul style="list-style-type: none"> - SDM subscribers license (.lkey file) <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>If this procedure fails, contact Oracle Technical Services and ask for ASSISTANCE.</p>
1 <input type="checkbox"/>	<p>Create SDM Partitions <i>(only if additional disks are used)</i></p>	<p>If the C-CLASS server where you are installing SDM has additional 8 hard drives, launch the automated disk configuration script. Otherwise, skip to next step.</p> <p># perl /blue/etc/create_SDMdiskconfig.pl</p> <p>Successful completion should report:</p> <pre>Fri Jun 17 15:10:05 2011 successfully created and mounted SDM volumes: SDMBin, SDMDb, SDMLog. Fri Jun 17 15:10:05 2011 system is ready to run SDM. Fri Jun 17 15:10:05 2011 /root/create_SDMdiskconfig.pl Done OK</pre> <ul style="list-style-type: none"> - Check the Physical and logical volumes : <p>#lvsdisplay --map grep -e "Physical volume" -e "LV Name"</p> <pre> LV Name /dev/vgroot/plat_root Physical volume /dev/cciss/c0d0p2 LV Name /dev/vgroot/plat_tmp Physical volume /dev/cciss/c0d0p2 LV Name /dev/vgroot/plat_var Physical volume /dev/cciss/c0d0p2 LV Name /dev/vgroot/plat_var_tklc Physical volume /dev/cciss/c0d0p2 LV Name /dev/vgroot/plat_usr Physical volume /dev/cciss/c0d0p2 LV Name /dev/vgroot/SDM Physical volume /dev/cciss/c0d0p2 LV Name /dev/vgroot/SDMBin Physical volume /dev/cciss/c1d0p1 LV Name /dev/vgroot/SDMDb Physical volume /dev/cciss/c1d1p1 LV Name /dev/vgroot/SDMLog Physical volume /dev/cciss/c1d2p1 </pre>

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		<ul style="list-style-type: none"> - Check that the SDM partitions have been created <pre>Filesystem Size Used Avail Use% Mounted on /dev/mapper/vgroot-plat_root 992M 293M 649M 32% / /dev/mapper/vgroot-plat_tmp 992M 34M 908M 4% /tmp /tmp/dev/mapper/vgroot-plat_var 992M 101M 841M 11% /var /var /dev/mapper/vgroot-plat_var_tklc 3.9G 1.1G 2.7G 29% /var/TKLCL /var/TKLCL/dev/mapper/vgroot-plat_usr 3.9G 1.7G 2.1G 44% /usr /usr /dev/cciss/c1d0p1 251M 22M 217M 9% /boot tmpfs 48G 0 48G 0% /dev/shm /dev/mapper/vgroot-SDM 540G 40G 472G 8% /var/TKLCL/SDM /dev/mapper/vgroot-SDMBin 270G 188M 256G 1% /var/TKLCL/SDMBin /dev/mapper/vgroot-SDMdb 270G 260M 256G 1% /var/TKLCL/SDMdb /dev/mapper/vgroot-SDMLog 270G 2.2G 254G 1% /var/TKLCL/SDMLog</pre> <table border="1"> <thead> <tr> <th>Filesystem</th> <th>Size</th> <th>Physical volume</th> <th>LV name</th> <th>partition</th> <th></th> <th>So</th> </tr> </thead> <tbody> <tr> <td>/dev/mapper/vgroot-SDM</td> <td>540GB</td> <td>c0d0p2</td> <td>/dev/vgroot/SDM</td> <td>/var/TKLCL/SDM</td> <td></td> <td></td> </tr> <tr> <td>/dev/mapper/vgroot-SDMBin</td> <td>270GB</td> <td>c1d0p1</td> <td>/dev/vgroot/SDMBin</td> <td>/var/TKLCL/SDMBin</td> <td></td> <td>/bl</td> </tr> <tr> <td>/dev/mapper/vgroot-SDMdb</td> <td>270GB</td> <td>c1d1p1</td> <td>/dev/vgroot/SDMdb</td> <td>/var/TKLCL/SDMdb</td> <td></td> <td>/b</td> </tr> <tr> <td>/dev/mapper/vgroot-SDMLog</td> <td>270GB</td> <td>c1d2p1</td> <td>/dev/vgroot/SDMBinLog</td> <td>/var/TKLCL/SDMBinLog</td> <td></td> <td>/bl</td> </tr> </tbody> </table>	Filesystem	Size	Physical volume	LV name	partition		So	/dev/mapper/vgroot-SDM	540GB	c0d0p2	/dev/vgroot/SDM	/var/TKLCL/SDM			/dev/mapper/vgroot-SDMBin	270GB	c1d0p1	/dev/vgroot/SDMBin	/var/TKLCL/SDMBin		/bl	/dev/mapper/vgroot-SDMdb	270GB	c1d1p1	/dev/vgroot/SDMdb	/var/TKLCL/SDMdb		/b	/dev/mapper/vgroot-SDMLog	270GB	c1d2p1	/dev/vgroot/SDMBinLog	/var/TKLCL/SDMBinLog		/bl
Filesystem	Size	Physical volume	LV name	partition		So																															
/dev/mapper/vgroot-SDM	540GB	c0d0p2	/dev/vgroot/SDM	/var/TKLCL/SDM																																	
/dev/mapper/vgroot-SDMBin	270GB	c1d0p1	/dev/vgroot/SDMBin	/var/TKLCL/SDMBin		/bl																															
/dev/mapper/vgroot-SDMdb	270GB	c1d1p1	/dev/vgroot/SDMdb	/var/TKLCL/SDMdb		/b																															
/dev/mapper/vgroot-SDMLog	270GB	c1d2p1	/dev/vgroot/SDMBinLog	/var/TKLCL/SDMBinLog		/bl																															
2 <input type="checkbox"/>	Start the blue Services on SDM server A on SDM1 site	<p>Run the 1st start the first SDM blade :</p> <p># service blue start</p> <ul style="list-style-type: none"> - Starting backend database - mysqlblue: Starting MySQL..... started. - Starting tungsten replicator - No active SC found - blue: Starting..... - OampManager: Started (3237) - OampEventManager: Started (3457) - OampPerformanceManager: Started (3553) - WebCI: Started (3654) - Snmp: Port 161 has been used by other application. Bluesnmpd start up failed! - CoreSystemController: Started - Database: Started - blue: Waiting for system to initialize... Done - blue: Waiting local database activation... Done - DataAccessServer: Started (6759) - XmlDataServer: Started (6922) - blue: Started <p>Verify that the SDM web management interface (WebCI) is now active, by connecting from a web browser located on some other system on the customer XMI to URL</p> <p>http://XMI_SDM_VIP_IP:8080</p>																																			


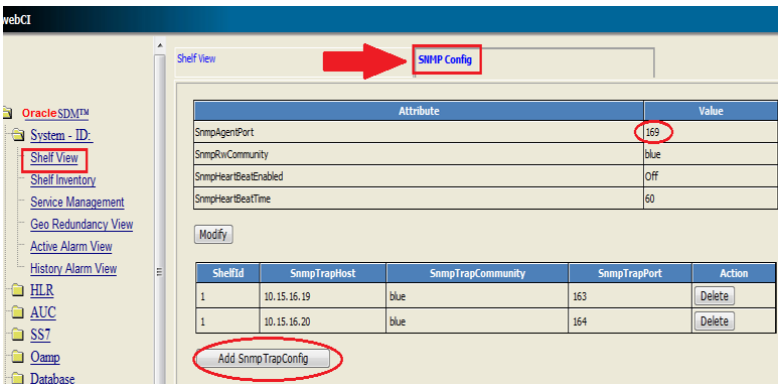
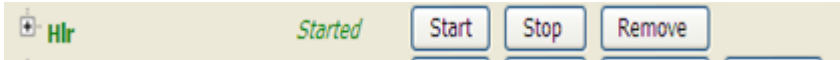
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		<p>using the IP address of the 1st C-CLASS server on which SDM is installed.</p> <ul style="list-style-type: none"> - Verify the value of SDM_TPD_UNIQUE_SLOT_ID_X that is configured in file /etc/sysconfig/blue on that system. - In the WebCI interface, define the Slot ID of that system as a System Controller <p>Oracle SDM™ → System - ID:→ Shelf View</p> 
<p>3 <input type="checkbox"/></p>	<p>Add the System Controller Identity to others SDM Blade Server</p>	<p>For each additional server in this cluster:</p> <ul style="list-style-type: none"> - verify the value of SDM_UNIQUE_SLOT_ID that will be configured in file /etc/sysconfig/blue on that system in the WebCI interface, - define the Slot ID of that system as a core system controller. 
<p>4 <input type="checkbox"/></p>	<p>Start the Application on the Standby SDM Blade Server</p>	<p>For all subsequent blade servers manually do the first start of the SDM services:</p> <p># service blue start</p> <p>CoreSystemController: Started</p> <p>Database: Started</p> <p>blue: Waiting for system to initialize... Done</p> <p>blue: Waiting local database activation... Done</p> <p>On HLR2 standby and execute the following command :</p> <pre>#blue/usr/local/tungsten-replicator/tungsten-replicator/bin/trepctl services</pre> <pre>Processing services command... NAME VALUE appliedLastSeqno: 3362878736 appliedLatency : 1.013 role : slave serviceName : blue__1_1</pre>

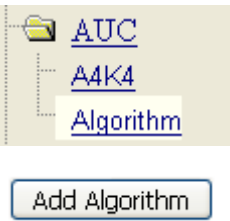
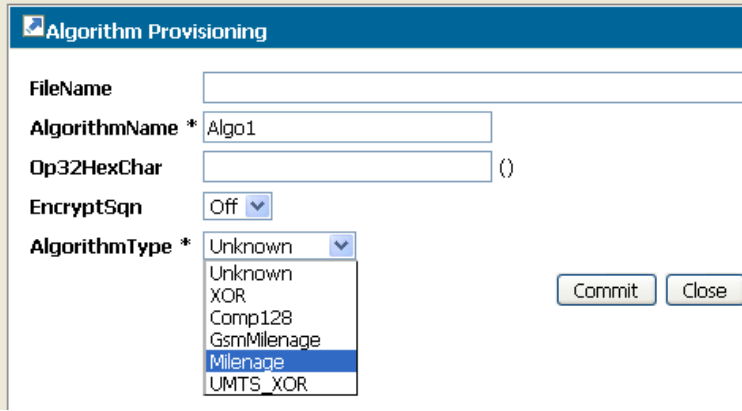
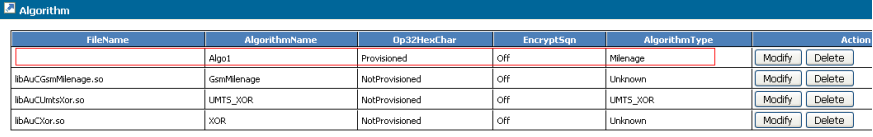
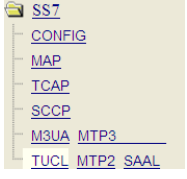
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		<pre> serviceType : local started : true state : ONLINE NAME VALUE ----- ----- appliedLastSeqno: 107355 appliedLatency : 0.794 role : master serviceName : blue__1_2 serviceType : local started : true state : ONLINE Finished services command... </pre> <p>The output result should give * :</p> <ul style="list-style-type: none"> - “local Master” service blue__x_y with an acceptable latency less than1 second. - Verify that there is a “local Slave” service blue__x_z with an acceptable latency less than1 second. <p>* “x” refers to the site_suffix of LTE HSS & HLR2 site installed, “y” refers to the slotId of active system controller ... “z” refers to the slotId of standby system controller</p>
<p>5 <input type="checkbox"/></p>	<p>Add the OAM and provisioning VIPs</p>	<ul style="list-style-type: none"> - Connect to the BlueCli # BlueCli –u admin - Execute the following commands to add the OAM Virtual IP: :System[:Shelf[ShelfId = 1] AddVip() Netmask = XMI_MASK; Vip = XMI_SDM_VIP ; VipType = 1 <p>Now you can connect to the Webci using the OAM Vip : http:// XMI_SDM_VIP:8080 Note: WebCi is listening on port 8080</p> <ul style="list-style-type: none"> - Execute the following commands to add the Provisioning Virtual IP: AddVip() Netmask = XMI_MASK; Vip = PROV_SDM_VIP ; VipType = 3
<p>6 <input type="checkbox"/></p>	<p>Install SDM License on 1st SDM blade.</p>	<ul style="list-style-type: none"> - Transfer the license file to 1st SDM blade Server under /export - Execute the following commands : <pre> # LicenseInsataller –f /var/TKLC/upgrade/license-file.lkey > Installing the license... ***** *** The license key was successfully installed. *** ***** </pre>

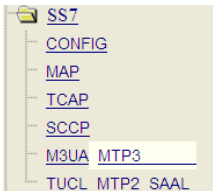
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		<ul style="list-style-type: none"> - Verify that the command is successfully executed and and connect to the Webci to check the system name and License :  <p>License Info</p> <table border="1"> <tr><td>Issuer Name : Copyright 2009, Blueslice Networks, Inc. All Rights Reserved</td></tr> <tr><td>Issued Date : January/14/2013</td></tr> <tr><td>Customer Name : TEKELEC-01</td></tr> <tr><td>Total Subscribers HLR : 20000000</td></tr> <tr><td>Active Subscribers HLR : 20000000</td></tr> <tr><td>Total Subscribers SIP (AOR) : 20000000</td></tr> <tr><td>Registration Bindings SIP : 20000000</td></tr> <tr><td>Total Subscribers HSS : 20000000</td></tr> <tr><td>Total Subscribers SLF : 20000000</td></tr> <tr><td>Total Subscribers AAA : 20000000</td></tr> <tr><td>AAA Max TPS (per blade) : 500</td></tr> <tr><td>Total Subscribers SPR : 20000000</td></tr> </table>	Issuer Name : Copyright 2009, Blueslice Networks, Inc. All Rights Reserved	Issued Date : January/14/2013	Customer Name : TEKELEC-01	Total Subscribers HLR : 20000000	Active Subscribers HLR : 20000000	Total Subscribers SIP (AOR) : 20000000	Registration Bindings SIP : 20000000	Total Subscribers HSS : 20000000	Total Subscribers SLF : 20000000	Total Subscribers AAA : 20000000	AAA Max TPS (per blade) : 500	Total Subscribers SPR : 20000000
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7	Configure the SNMP on 1 st and 2 nd SDM cluster	<p>Oracle SDM™ → System - ID: → Shelf View → SNMP Config</p>  <ul style="list-style-type: none"> - Change SnmpAgentPort to 163 												
8	<input type="checkbox"/> Add the FrontEnd Identity to any SDM Blade that will run HLR or LTE-HSS applications (if Front-End are used)													
9	<input type="checkbox"/> Add the HLR service manually to any blade that will run HLR application (Hubert)	<ul style="list-style-type: none"> - Add the HLR service.(For configuration without Front-End blades) 												

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<p>10</p> <p><input type="checkbox"/></p>	<p>Configure AUC Algorithm</p>	<ul style="list-style-type: none"> - Start at least 1 HLR service - From Webci under AUC => Algorithm  <p>Choose an Algorithm type and enter Op32 :</p>  <p>Verify that the Algorithm has been added properly :</p>  <table border="1"> <thead> <tr> <th>FileName</th> <th>AlgorithmName</th> <th>Op32HexChar</th> <th>EncryptSqn</th> <th>AlgorithmType</th> <th>Action</th> </tr> </thead> <tbody> <tr> <td>libAUCGsmMilenage.so</td> <td>Algo1</td> <td>Provisioned</td> <td>Off</td> <td>Milenage</td> <td>Modify Delete</td> </tr> <tr> <td>libAUCUmtsXor.so</td> <td>UMTS_XOR</td> <td>NotProvisioned</td> <td>Off</td> <td>UMTS_XOR</td> <td>Modify Delete</td> </tr> <tr> <td>libAUCXor.so</td> <td>XOR</td> <td>NotProvisioned</td> <td>Off</td> <td>Unknown</td> <td>Modify Delete</td> </tr> </tbody> </table>	FileName	AlgorithmName	Op32HexChar	EncryptSqn	AlgorithmType	Action	libAUCGsmMilenage.so	Algo1	Provisioned	Off	Milenage	Modify Delete	libAUCUmtsXor.so	UMTS_XOR	NotProvisioned	Off	UMTS_XOR	Modify Delete	libAUCXor.so	XOR	NotProvisioned	Off	Unknown	Modify Delete
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libAUCXor.so	XOR	NotProvisioned	Off	Unknown	Modify Delete																					
<p>11</p> <p><input type="checkbox"/></p>	<p>SIGTRAN Configuration: Create TCUL SAP</p>	<ul style="list-style-type: none"> - From Webci under SS7 tab => TUCL  <ul style="list-style-type: none"> - Create TUCL SAP <p>Interval 1 s Heatbeatflag on RtoMax : 800 RtoMin : 200 Initial : 300 MaxSACKDelay : 60 ms SACK bundling</p>																								

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		<p>TUCL Service Access Points :</p> <table border="1"> <thead> <tr> <th>SlotId</th> <th>TSapId</th> <th>StateInfo</th> <th>HeartbeatFlag</th> <th>HeartbeatInterval</th> <th>RtoMin</th> <th>RtoMax</th> <th>TxBufferSize</th> <th>M</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>0</td> <td>bound</td> <td>Off</td> <td>30</td> <td>1</td> <td>60</td> <td>1747600</td> <td></td> </tr> </tbody> </table> <p>TCUL General :</p> <p>MAXaSSOCrEtX</p> <p>Max initretry</p>	SlotId	TSapId	StateInfo	HeartbeatFlag	HeartbeatInterval	RtoMin	RtoMax	TxBufferSize	M	2	0	bound	Off	30	1	60	1747600	
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<p>12</p> <p><input type="checkbox"/></p>	<p>SIGTRAN Configuration: Define Own Signaling Point and DPC</p>	<ul style="list-style-type: none"> - From Webci under SS7 tab => MTP3 and => SCCP  <ul style="list-style-type: none"> - Delete the default SCCP configuration - Delete the default MTP3 configuration (Note: the OPC can't be deleted from WebCI) - Modify the own Signalling point code using mysql : <ul style="list-style-type: none"> >use bluehr_1; (where _1 is the site suffix) >update ss7signallingpoint set SignallingPointCode = "x.x.x" where SignallingPointId = 1; >select * from ss7signallingpoint \G; - Restart the HLR services to make the OPC change effective - Define the Signalling point codes of the adjacent nodes STP: 																		


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		<table border="1"> <thead> <tr> <th>Name</th> <th>ProtocolVariant</th> <th>MultiCongestionPriority</th> <th>NetworkIndicator</th> <th>PcLength</th> <th>PcType</th> <th>RestartReqProcedure</th> <th>RouteSetCongestion</th> <th>SignallingPointCode</th> <th>SignallingPo</th> </tr> </thead> <tbody> <tr> <td>BluesiceHLR</td> <td>ITU</td> <td>Off</td> <td>INTERNATIONAL_00</td> <td>14_BITS</td> <td>OPC</td> <td>NO</td> <td>Off</td> <td>1.244.0</td> <td>1</td> </tr> <tr> <td>Catapult</td> <td>ITU</td> <td>Off</td> <td>INTERNATIONAL_00</td> <td>14_BITS</td> <td>DPC</td> <td>NO</td> <td>Off</td> <td>1.119.0</td> <td>2</td> </tr> <tr> <td>Catapult_pc2000</td> <td>ITU</td> <td>Off</td> <td>INTERNATIONAL_00</td> <td>14_BITS</td> <td>DPC</td> <td>NO</td> <td>Off</td> <td>0.250.0</td> <td>3</td> </tr> </tbody> </table> <div> <p>New MTP3 Signalling Point Configuration : (Fields flagged with * are required)</p> <p>Name: STP22</p> <p>SignallingPointCode *: 1.119.0</p> <p>Mtp3ProtocoVariant: ANS</p> <p>MultiCongestionPriority: Off</p> <p>NetworkIndicator: NATIONAL_10</p> <p>PcLength: 14_BITS</p> <p>PcType: OPC</p> <p>RestartReqProcedure: NO</p> <p>RouteSetCongestion: Off</p> <p>SignallingType: SEP</p> <p>SlsRange: ITU</p> <p>TransferRestrict: Off</p> <p>Commit Close</p> </div>	Name	ProtocolVariant	MultiCongestionPriority	NetworkIndicator	PcLength	PcType	RestartReqProcedure	RouteSetCongestion	SignallingPointCode	SignallingPo	BluesiceHLR	ITU	Off	INTERNATIONAL_00	14_BITS	OPC	NO	Off	1.244.0	1	Catapult	ITU	Off	INTERNATIONAL_00	14_BITS	DPC	NO	Off	1.119.0	2	Catapult_pc2000	ITU	Off	INTERNATIONAL_00	14_BITS	DPC	NO	Off	0.250.0	3
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<p>13</p> <p><input type="checkbox"/></p>	<p>Define M3UA Layer : Create SCTP SAP</p>	<ul style="list-style-type: none"> - Add a M3UA SCT Service Access Point with 2 local IPs <div> <p>M3UA SCT Service Access Points :</p> <table border="1"> <thead> <tr> <th>Port</th> <th>StateInfo</th> <th>ProviderId</th> <th>SapId</th> </tr> </thead> <tbody> <tr> <td>2905</td> <td>end-point-open</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>SS7SigtranLocalIpId</th> <th>IPAddress</th> <th>Description</th> <th>Netmask</th> <th>StateInfo</th> <th>Sct</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>10.15.56.222</td> <td>slot2-sigtran1</td> <td>255.255.0.0</td> <td>bound</td> <td></td> </tr> </tbody> </table> <p>Add Sigtran Local IP</p> </div> <ul style="list-style-type: none"> - Add a new M3UA SCT Service Access Point. - Define in the M3UA SCT SAP the ProviderId configured in step 8.1 - Define 2 Local IPs each one belong to SIGTRAN-1 (SIGTRAN-1) and SIGTRAN-2 (SIGTRAN-2) for multihoming - Bound the SCTP SAP by clicking on the "bound" icon (Note: to bound and to open the end-point, the hlr service of the slot has to be started) <div> </div> <ul style="list-style-type: none"> - Check that the SCT Service Access Point StateInfo becomes bound - Check that the SIGRTAN ips are properly created : <code>#ip f inet addr grep /32</code> - Check that the policy based routing tables are also created: <code>#ip rule</code> 	Port	StateInfo	ProviderId	SapId	2905	end-point-open	0	0	SS7SigtranLocalIpId	IPAddress	Description	Netmask	StateInfo	Sct	0	10.15.56.222	slot2-sigtran1	255.255.0.0	bound																					
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		#ip route list table sigtran1															
14 <input type="checkbox"/>	Define M3UA Layer : Create as many M3UA PS	<div> <p>M3UA PS :</p> <table border="1"> <thead> <tr> <th>NetworkId</th> <th>M3uaPsId</th> <th>M3uaPsType</th> <th>StateInfo</th> <th>RoutingContext</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1</td> <td>Local</td> <td>offline</td> <td>1</td> </tr> <tr> <td>1</td> <td>2</td> <td>Remote</td> <td>offline</td> <td>1</td> </tr> </tbody> </table> <p>Add M3UA Ps</p> </div> <ul style="list-style-type: none"> - The routing context should match the STP definition - Defined PS for STPs - Define a PS for local 	NetworkId	M3uaPsId	M3uaPsType	StateInfo	RoutingContext	1	1	Local	offline	1	1	2	Remote	offline	1
NetworkId	M3uaPsId	M3uaPsType	StateInfo	RoutingContext													
1	1	Local	offline	1													
1	2	Remote	offline	1													
15 <input type="checkbox"/>	Define M3UA Layer : Create M3UA routes	<ul style="list-style-type: none"> - Add a new M3UA Route to link a DPC with a PsId . <div> <div> <p>Referenced SS7M3uaPs :</p> <p>NetworkId : 1 M3uaPsId : 2 M3uaPsType : Remote StateInfo : offline RoutingContext : 1</p> </div> <div> <p>M3UA Route :</p> <table border="1"> <thead> <tr> <th>DpcSignallingPoint</th> <th>M3uaPsId</th> <th>M3uaRouteId</th> <th>NSapId</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <td>3</td> <td>2</td> <td>2</td> <td>1</td> </tr> </tbody> </table> </div> <div> <p>Referenced SignallingPoint :</p> <p>Name : Catapult_pc2000 ProtocolVariant : ITU MultiCongestionPriority : Off NetworkIndicator : INTERNATIONAL_00 PCLength : 14_BITS PCType : DPC RestartReqProcedure : NO RouteSetCongestion : Off SignallingPointCode : 0.250.0 SignallingPointId : 3 SignallingType : STP SlsRange : ITU TransferRestrict : Off</p> </div> </div>	DpcSignallingPoint	M3uaPsId	M3uaRouteId	NSapId	1	1	1	1	3	2	2	1			
DpcSignallingPoint	M3uaPsId	M3uaRouteId	NSapId														
1	1	1	1														
3	2	2	1														
16 <input type="checkbox"/>	Define M3UA Layer : Create M3UA PSP	<ul style="list-style-type: none"> - Add a new M3UA PSP with 2 Remote IPs and the PsId. 															

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		<p>M3UA PSP:</p> <table border="1"> <thead> <tr> <th>Port</th> <th>NetworkId</th> <th>PspId</th> <th>PspType</th> <th>AssocType</th> <th>NetworkAppIncl</th> <th>PsId</th> </tr> </thead> <tbody> <tr> <td>2905</td> <td>1</td> <td>2</td> <td>IPSP</td> <td>Client</td> <td>On</td> <td>2</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>IPAddress</th> <th>Description</th> <th>SS7SigtranRemoteIpId</th> <th>M3uaPrimaryIpAddress</th> </tr> </thead> <tbody> <tr> <td>192.168.60.194</td> <td>catapult_slot8</td> <td>0</td> <td>On</td> </tr> </tbody> </table> <p>Add Sigtran Remote IP</p> <p>Referenced SS7M3uaPs :</p> <pre> NetworkId : 1 M3uaPsId : 2 M3uaPsType : Remote StateInfo : offline RoutingContext : 1 </pre> <ul style="list-style-type: none"> - NetworkAppIncl is for ASP ACK message where the parameter is contained in the message sent to the STP (Has to match the STP CONFIG) - Use SGP mode for PspType - AssocType SDM as a Client - Establish the Association and Select the correct SctSapId <table border="1"> <thead> <tr> <th>SctSapId</th> <th>StateInfo</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>asp-active</td> </tr> </tbody> </table> <ul style="list-style-type: none"> - Establish the Association by clicking on the following icon :  - Check that the ASP becomes Active : <table border="1"> <thead> <tr> <th>SctSapId</th> <th>StateInfo</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>asp-active</td> </tr> </tbody> </table>	Port	NetworkId	PspId	PspType	AssocType	NetworkAppIncl	PsId	2905	1	2	IPSP	Client	On	2	IPAddress	Description	SS7SigtranRemoteIpId	M3uaPrimaryIpAddress	192.168.60.194	catapult_slot8	0	On	SctSapId	StateInfo	0	asp-active	SctSapId	StateInfo	0	asp-active
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17	<input type="checkbox"/> Define SCCP Layer : Create SCCP addresses	<ul style="list-style-type: none"> - From Webci under SS7 tab => SCCP <table border="1"> <tr> <td>SS7</td> </tr> <tr> <td>CONFIG</td> </tr> <tr> <td>MAP</td> </tr> <tr> <td>TCAP</td> </tr> <tr> <td>SCCP</td> </tr> </table>	SS7	CONFIG	MAP	TCAP	SCCP																									
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		<ul style="list-style-type: none"> - Define a SCCP address for each PC (OPC and DPC) <div style="border: 1px solid black; padding: 5px;"> <p>SCCP Addresses:</p> <table border="1"> <thead> <tr> <th>AddressPres</th> <th>DPC</th> <th>HdrOpt</th> <th>PCInd</th> <th>RtgInd</th> <th>SCCPAddressId</th> <th>SsfPres</th> <th>SSN</th> <th>SSNInd</th> <th></th> </tr> </thead> <tbody> <tr> <td>On</td> <td>1</td> <td>NO_PC</td> <td>On</td> <td>Off</td> <td>1</td> <td>Off</td> <td>0</td> <td>Off</td> <td>✘</td> </tr> <tr> <td>On</td> <td>2</td> <td>NO_PC</td> <td>On</td> <td>Off</td> <td>2</td> <td>Off</td> <td>0</td> <td>Off</td> <td>✘</td> </tr> <tr> <td>On</td> <td>2</td> <td>NO_PC</td> <td>On</td> <td>Off</td> <td>3</td> <td>Off</td> <td>0</td> <td>Off</td> <td>✘</td> </tr> <tr> <td>On</td> <td>2</td> <td>NO_PC</td> <td>On</td> <td>Off</td> <td>4</td> <td>Off</td> <td>0</td> <td>Off</td> <td>✘</td> </tr> <tr> <td>On</td> <td>2</td> <td>NO_PC</td> <td>On</td> <td>Off</td> <td>5</td> <td>Off</td> <td>0</td> <td>Off</td> <td>✘</td> </tr> <tr> <td>On</td> <td>3</td> <td>NO_PC</td> <td>On</td> <td>Off</td> <td>6</td> <td>Off</td> <td>0</td> <td>Off</td> <td>✘</td> </tr> </tbody> </table> </div>	AddressPres	DPC	HdrOpt	PCInd	RtgInd	SCCPAddressId	SsfPres	SSN	SSNInd		On	1	NO_PC	On	Off	1	Off	0	Off	✘	On	2	NO_PC	On	Off	2	Off	0	Off	✘	On	2	NO_PC	On	Off	3	Off	0	Off	✘	On	2	NO_PC	On	Off	4	Off	0	Off	✘	On	2	NO_PC	On	Off	5	Off	0	Off	✘	On	3	NO_PC	On	Off	6	Off	0	Off	✘																																																																																																																																																																								
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On	3	NO_PC	On	Off	6	Off	0	Off	✘																																																																																																																																																																																																																																							
<p>18</p> <input type="checkbox"/>	<p>Define the SCCP Layer: Define Global title entries</p>	<div style="border: 1px solid black; padding: 5px;"> <p>Global Title Entries:</p> <table border="1"> <thead> <tr> <th>ActionType</th> <th>Digits</th> <th>NT</th> <th>ExecSeq</th> <th>Format</th> <th>GlobalTitleEntryId</th> <th>Mode</th> <th>NatAdd</th> <th>NoCoupling</th> <th>NumEntry</th> <th>NumPlan</th> <th>EvdtEven</th> <th>ReplaceGT</th> <th>SCCPAdd</th> </tr> </thead> <tbody> <tr> <td>FIX</td> <td>15634210100</td> <td>NATIONAL</td> <td>ODD</td> <td>FORMAT_4</td> <td>1</td> <td>DOMINANT</td> <td>INTERNATIONAL</td> <td>Off</td> <td>1</td> <td>ISDN_TEL</td> <td>EVEN</td> <td>Off</td> <td>1</td> </tr> <tr> <td>FIX</td> <td>156340</td> <td>NATIONAL</td> <td>EVEN</td> <td>FORMAT_4</td> <td>2</td> <td>DOMINANT</td> <td>INTERNATIONAL</td> <td>Off</td> <td>1</td> <td>ISDN_TEL</td> <td>EVEN</td> <td>On</td> <td>2</td> </tr> <tr> <td>FIX</td> <td>1</td> <td>NATIONAL</td> <td>EVEN</td> <td>FORMAT_4</td> <td>3</td> <td>DOMINANT</td> <td>INTERNATIONAL</td> <td>Off</td> <td>1</td> <td>ISDN_TEL</td> <td>EVEN</td> <td>On</td> <td>3</td> </tr> <tr> <td>FIX</td> <td>8</td> <td>NATIONAL</td> <td>EVEN</td> <td>FORMAT_4</td> <td>4</td> <td>DOMINANT</td> <td>INTERNATIONAL</td> <td>Off</td> <td>1</td> <td>ISDN_TEL</td> <td>EVEN</td> <td>On</td> <td>4</td> </tr> <tr> <td>FIX</td> <td>156343</td> <td>NATIONAL</td> <td>EVEN</td> <td>FORMAT_4</td> <td>5</td> <td>DOMINANT</td> <td>INTERNATIONAL</td> <td>Off</td> <td>1</td> <td>ISDN_TEL</td> <td>EVEN</td> <td>On</td> <td>5</td> </tr> <tr> <td>FIX</td> <td>1</td> <td>INTERNATIONAL</td> <td>ODD</td> <td>FORMAT_4</td> <td>6</td> <td>DOMINANT</td> <td>INTERNATIONAL</td> <td>Off</td> <td>1</td> <td>ISDN_TEL</td> <td>EVEN</td> <td>On</td> <td>6</td> </tr> <tr> <td>FIX</td> <td>1</td> <td>NATIONAL</td> <td>ODD</td> <td>FORMAT_4</td> <td>7</td> <td>DOMINANT</td> <td>INTERNATIONAL</td> <td>Off</td> <td>1</td> <td>ISDN_MOBILE</td> <td>EVEN</td> <td>On</td> <td>1</td> </tr> <tr> <td>FIX</td> <td>156342</td> <td>NATIONAL</td> <td>ODD</td> <td>FORMAT_4</td> <td>8</td> <td>DOMINANT</td> <td>INTERNATIONAL</td> <td>Off</td> <td>1</td> <td>ISDN_TEL</td> <td>EVEN</td> <td>On</td> <td>1</td> </tr> <tr> <td>FIX</td> <td>156343</td> <td>NATIONAL</td> <td>ODD</td> <td>FORMAT_4</td> <td>9</td> <td>DOMINANT</td> <td>INTERNATIONAL</td> <td>Off</td> <td>1</td> <td>ISDN_TEL</td> <td>EVEN</td> <td>On</td> <td>1</td> </tr> <tr> <td>FIX</td> <td>156344</td> <td>NATIONAL</td> <td>ODD</td> <td>FORMAT_4</td> <td>10</td> <td>DOMINANT</td> <td>INTERNATIONAL</td> <td>Off</td> <td>1</td> <td>ISDN_TEL</td> <td>EVEN</td> <td>On</td> <td>1</td> </tr> <tr> <td>FIX</td> <td>156345</td> <td>NATIONAL</td> <td>ODD</td> <td>FORMAT_4</td> <td>11</td> <td>DOMINANT</td> <td>INTERNATIONAL</td> <td>Off</td> <td>1</td> <td>ISDN_TEL</td> <td>EVEN</td> <td>On</td> <td>1</td> </tr> <tr> <td>FIX</td> <td>156346</td> <td>NATIONAL</td> <td>ODD</td> <td>FORMAT_4</td> <td>12</td> <td>DOMINANT</td> <td>INTERNATIONAL</td> <td>Off</td> <td>1</td> <td>ISDN_TEL</td> <td>EVEN</td> <td>On</td> <td>1</td> </tr> <tr> <td>FIX</td> <td>156347</td> <td>NATIONAL</td> <td>ODD</td> <td>FORMAT_4</td> <td>13</td> <td>DOMINANT</td> <td>INTERNATIONAL</td> <td>Off</td> <td>1</td> <td>ISDN_TEL</td> <td>EVEN</td> <td>On</td> <td>1</td> </tr> <tr> <td>FIX</td> <td>15634110002</td> <td>NATIONAL</td> <td>ODD</td> <td>FORMAT_4</td> <td>14</td> <td>DOMINANT</td> <td>INTERNATIONAL</td> <td>Off</td> <td>1</td> <td>ISDN_TEL</td> <td>EVEN</td> <td>Off</td> <td>6</td> </tr> <tr> <td>FIX</td> <td>15634110101</td> <td>NATIONAL</td> <td>ODD</td> <td>FORMAT_4</td> <td>15</td> <td>DOMINANT</td> <td>INTERNATIONAL</td> <td>Off</td> <td>1</td> <td>ISDN_TEL</td> <td>EVEN</td> <td>Off</td> <td>6</td> </tr> <tr> <td>FIX</td> <td>15634110025</td> <td>INTERNATIONAL</td> <td>ODD</td> <td>FORMAT_4</td> <td>16</td> <td>DOMINANT</td> <td>INTERNATIONAL</td> <td>Off</td> <td>1</td> <td>ISDN_TEL</td> <td>EVEN</td> <td>Off</td> <td>6</td> </tr> </tbody> </table> <p style="text-align: center; color: red; font-weight: bold;">Own GT entry</p> <p style="text-align: center; color: purple; font-weight: bold;">Mobile GT entries</p> </div> <ul style="list-style-type: none"> - The First entry corresponds to the local GT. - Each MSISDN range must have an entry defined in Global Title entries to route incoming SRI to MAP layer. - Load sharing on SCCP level towards STPs - Replace GT must be on 	ActionType	Digits	NT	ExecSeq	Format	GlobalTitleEntryId	Mode	NatAdd	NoCoupling	NumEntry	NumPlan	EvdtEven	ReplaceGT	SCCPAdd	FIX	15634210100	NATIONAL	ODD	FORMAT_4	1	DOMINANT	INTERNATIONAL	Off	1	ISDN_TEL	EVEN	Off	1	FIX	156340	NATIONAL	EVEN	FORMAT_4	2	DOMINANT	INTERNATIONAL	Off	1	ISDN_TEL	EVEN	On	2	FIX	1	NATIONAL	EVEN	FORMAT_4	3	DOMINANT	INTERNATIONAL	Off	1	ISDN_TEL	EVEN	On	3	FIX	8	NATIONAL	EVEN	FORMAT_4	4	DOMINANT	INTERNATIONAL	Off	1	ISDN_TEL	EVEN	On	4	FIX	156343	NATIONAL	EVEN	FORMAT_4	5	DOMINANT	INTERNATIONAL	Off	1	ISDN_TEL	EVEN	On	5	FIX	1	INTERNATIONAL	ODD	FORMAT_4	6	DOMINANT	INTERNATIONAL	Off	1	ISDN_TEL	EVEN	On	6	FIX	1	NATIONAL	ODD	FORMAT_4	7	DOMINANT	INTERNATIONAL	Off	1	ISDN_MOBILE	EVEN	On	1	FIX	156342	NATIONAL	ODD	FORMAT_4	8	DOMINANT	INTERNATIONAL	Off	1	ISDN_TEL	EVEN	On	1	FIX	156343	NATIONAL	ODD	FORMAT_4	9	DOMINANT	INTERNATIONAL	Off	1	ISDN_TEL	EVEN	On	1	FIX	156344	NATIONAL	ODD	FORMAT_4	10	DOMINANT	INTERNATIONAL	Off	1	ISDN_TEL	EVEN	On	1	FIX	156345	NATIONAL	ODD	FORMAT_4	11	DOMINANT	INTERNATIONAL	Off	1	ISDN_TEL	EVEN	On	1	FIX	156346	NATIONAL	ODD	FORMAT_4	12	DOMINANT	INTERNATIONAL	Off	1	ISDN_TEL	EVEN	On	1	FIX	156347	NATIONAL	ODD	FORMAT_4	13	DOMINANT	INTERNATIONAL	Off	1	ISDN_TEL	EVEN	On	1	FIX	15634110002	NATIONAL	ODD	FORMAT_4	14	DOMINANT	INTERNATIONAL	Off	1	ISDN_TEL	EVEN	Off	6	FIX	15634110101	NATIONAL	ODD	FORMAT_4	15	DOMINANT	INTERNATIONAL	Off	1	ISDN_TEL	EVEN	Off	6	FIX	15634110025	INTERNATIONAL	ODD	FORMAT_4	16	DOMINANT	INTERNATIONAL	Off	1	ISDN_TEL	EVEN	Off	6
ActionType	Digits	NT	ExecSeq	Format	GlobalTitleEntryId	Mode	NatAdd	NoCoupling	NumEntry	NumPlan	EvdtEven	ReplaceGT	SCCPAdd																																																																																																																																																																																																																																			
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<p>19</p>	<p>Define SCCP Layer : Create SCCP routes</p>	<ul style="list-style-type: none"> - Define a SCCP route for each SCCP address, make sure the SCCPNsap id is using 2 so route in M3UA not MTP3. 																																																																																																																																																																																																																																														


Installing LTE HSS & HLR on HP C-Class G8

11.0 CONFIGURE LTE HSS APPLICATION

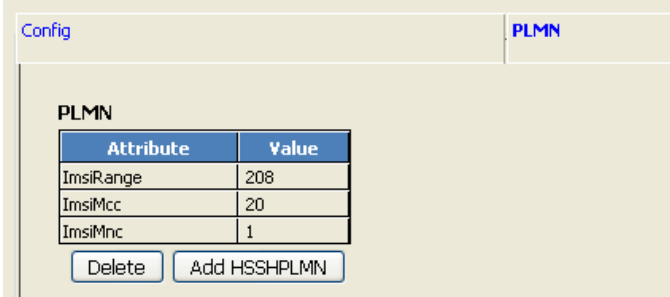

Procedure 23. SDM disks configuration and LTE HSS & HLR application installation

S T E P #	Steps to be completed.	<p>This procedure must be repeated for each C-CLASS blade planned to be part of the SDM/TPD configuration. It describes how to configure the SDM LTE HSS application (LTE HSS configuration, licenses, SNMP)</p> <p>Needed material:</p> <ul style="list-style-type: none"> - LTE HSS diameter licenses for each HSS <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>If this procedure fails, contact Oracle Technical Services and ask for ASSISTANCE.</p>																														
1 <input type="checkbox"/>	Add LTE- HSS services manually	<ul style="list-style-type: none"> - If Front-End Back-End configuration are used, add the front-end identity - Add LTE-HSS service manually to front-End blades and leave it stopped: <div style="border: 1px solid #ccc; padding: 5px; margin: 10px 0;"> </div> <ul style="list-style-type: none"> - Configure the LteHss Configuration parameters such as LocalFQDN, localTCPPort, OriginatingRealm, etc <p>Oracle SDM™ → LTEHSS → LTEHSS Configuration</p> <ul style="list-style-type: none"> - Modify LteHSS Config and enable SCTP <div style="border: 1px solid #0070c0; padding: 5px; margin: 10px 0;"> <p>LteHssConfig Provisioning</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td>LocalFQDN</td><td><input type="text" value="fqdn_in_CIQ"/></td></tr> <tr><td>LocalTCPPort</td><td><input type="text" value="3868"/></td></tr> <tr><td>LocalSCTPPort</td><td><input type="text" value="3869"/></td></tr> <tr><td>OriginatingRealm</td><td><input type="text" value="Realm_in_CIQ"/></td></tr> <tr><td>AutomaticPeerReconnect</td><td><input type="button" value="Off"/></td></tr> <tr style="border: 2px solid red;"><td>SCTPTransport</td><td><input type="button" value="On"/></td></tr> <tr><td>TCPTransport</td><td><input type="button" value="On"/></td></tr> <tr><td>FeatureEnabled</td><td><input type="button" value="On"/></td></tr> <tr><td>OdbNotSupportedAcceptMessage</td><td><input type="button" value="On"/></td></tr> <tr><td>FeatureNotSupportedAcceptMessage</td><td><input type="button" value="Off"/></td></tr> <tr><td>ExtraAIRQueryForEPSSubscription</td><td><input type="button" value="On"/></td></tr> <tr><td>SuperChargedEnabled</td><td><input type="button" value="Off"/></td></tr> <tr><td>CLREnabled</td><td><input type="button" value="On"/></td></tr> <tr><td>AMFAdaptationEnabled</td><td><input type="button" value="Off"/></td></tr> <tr><td>HlrProxySynchronMode</td><td><input type="button" value="Off"/></td></tr> </table> <p style="text-align: right;"> <input type="button" value="Commit"/> <input type="button" value="Close"/> </p> </div>	LocalFQDN	<input type="text" value="fqdn_in_CIQ"/>	LocalTCPPort	<input type="text" value="3868"/>	LocalSCTPPort	<input type="text" value="3869"/>	OriginatingRealm	<input type="text" value="Realm_in_CIQ"/>	AutomaticPeerReconnect	<input type="button" value="Off"/>	SCTPTransport	<input type="button" value="On"/>	TCPTransport	<input type="button" value="On"/>	FeatureEnabled	<input type="button" value="On"/>	OdbNotSupportedAcceptMessage	<input type="button" value="On"/>	FeatureNotSupportedAcceptMessage	<input type="button" value="Off"/>	ExtraAIRQueryForEPSSubscription	<input type="button" value="On"/>	SuperChargedEnabled	<input type="button" value="Off"/>	CLREnabled	<input type="button" value="On"/>	AMFAdaptationEnabled	<input type="button" value="Off"/>	HlrProxySynchronMode	<input type="button" value="Off"/>
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		<ul style="list-style-type: none"> - Modify LteHssConfigTCPListenAddress add LteHssConfigTCPListenAddress 2 local ip addresses (1 sigtran1 and 1 sigtran2). <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;">LteHssConfigTCPListenAddress</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #4a7ebb; color: white;"> <th style="padding: 5px;">Attribute</th> <th style="padding: 5px;">Value</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Netmask</td> <td style="padding: 5px;">255.255.254.0</td> </tr> <tr> <td style="padding: 5px;">SlotId</td> <td style="padding: 5px;">1</td> </tr> <tr> <td style="padding: 5px;">Address</td> <td style="padding: 5px;">10.15.37.24</td> </tr> </tbody> </table> <p style="text-align: center; margin-top: 5px;"> <input type="button" value="Delete"/> <input type="button" value="Add LteHssConfigTCPListenAddress"/> </p> </div> <ul style="list-style-type: none"> - Start Lte HSS service <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Slot 1 SC <input type="button" value="RemoveIdentity"/> <input type="button" value="Start"/> <input type="button" value="Stop"/> <input type="button" value="Restart"/> <input type="button" value="AddService"/> Core</p> <p>Services</p> <ul style="list-style-type: none"> CoreSystemController Started <input type="button" value="Start"/> <input type="button" value="Stop"/> <input type="button" value="Remove"/> <input type="button" value="SWO"/> Hlr Started <input type="button" value="Start"/> <input type="button" value="Stop"/> <input type="button" value="Remove"/> Database Started <input type="button" value="Start"/> <input type="button" value="Stop"/> <input type="button" value="Remove"/> <input type="button" value="SWO"/> DataAccess Started <input type="button" value="Start"/> <input type="button" value="Stop"/> <input type="button" value="Remove"/> <li style="border: 2px solid red; padding: 2px;">LteHss Started <input type="button" value="Start"/> <input type="button" value="Stop"/> <input type="button" value="Remove"/> </div> <ul style="list-style-type: none"> - Verify that LTE HSS ip addresses are mounted on the appropriate interfaces <p># ip -4 addr</p>	Attribute	Value	Netmask	255.255.254.0	SlotId	1	Address	10.15.37.24
Attribute	Value									
Netmask	255.255.254.0									
SlotId	1									
Address	10.15.37.24									
<p>2</p> <p><input type="checkbox"/></p>	<p>Add HP Diameter License on each server running LTEHSS service</p>	<p>Edit the script Add_codewords.sh by adding the codewords provided by the Project Manager at the end of the file after "add":</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <pre>restart_hpoc sleep 5 \$OCLICOAM add codeword#0_to_be_added_here \$OCLICOAM add codeword#1_to_be_added_here \$OCLICOAM save</pre> </div> <ul style="list-style-type: none"> - Transfer Add_codewords.sh under /export to the SDM blades running Hss service - Execute the script on SDM blades running Hss service: <div style="text-align: center; margin: 10px 0;">  <p>Add_codewords.sh</p> </div> <p># bash /export/Add_codewords.sh</p>								

Installing LTE HSS & HLR on HP C-Class G8

		<p>*** Stopping HPOC licenses infrastructure. Shutting down HP OpenCall License Server daemon: [OK] Shutting down gmfprovd: [OK *** Starting HPOC licenses infrastructure. Starting gmfprovd: [OK] Starting HP OpenCall License Server daemon: [OK] OCLICOAM-S-ADDCODEWORD, Codeword successfully added OCLICOAM-S-ADDCODEWORD, Codeword successfully added OCLICOAM-S-SAVE, Codeword successfully saved *** Installed HPOC codewords: 0 codeword#0 1 codeword#1</p> <p>- Verify the HSS capacity on SDM on all back-end blades # /opt/OC/bin/oclicoam show max all</p> <p>Expected output :</p> <table border="1"> <thead> <tr> <th>Feature ate</th> <th>Amount</th> <th>Version</th> <th>ExpiryD</th> </tr> </thead> <tbody> <tr> <td>OcDiamAuth</td> <td>1</td> <td>1.3</td> <td>Unlimited</td> </tr> <tr> <td>OcDiamTps</td> <td>800</td> <td>1.3</td> <td>Unlimited</td> </tr> </tbody> </table>	Feature ate	Amount	Version	ExpiryD	OcDiamAuth	1	1.3	Unlimited	OcDiamTps	800	1.3	Unlimited
Feature ate	Amount	Version	ExpiryD											
OcDiamAuth	1	1.3	Unlimited											
OcDiamTps	800	1.3	Unlimited											
<p>3 <input type="checkbox"/></p>	<p>Configure PLMN</p>	<p>Configure the LTEHss PLMN</p> <p>Oracle SDM™ → LTEHSS→ LTEHSS Configuration →PLMN</p>  <p>In HLR Configure the Intra PLMN IMSI range :</p>  <p>- Add HPLMN Country instance</p>												

Installing LTE HSS & HLR on HP C-Class G8

- Add **HPLMN** instance
- Configure **IntraPlmnImsiRange**

Oracle SDM™ → HLR Configuration → PLMN

IntraPlmnImsiRange

Imsi Range	Hlr Number Config Id	Hplmn	Hplmn Country	Action
2082001	1	1	1	<input type="button" value="Modify"/> <input type="button" value="Delete"/>


Installing LTE HSS & HLR on HP C-Class G8

12.0 GEO REDUNDANCY CONFIGURATION

Procedure 24. GEO Redundancy configuration

STEP #	Steps to be completed.	<p>This procedure describes the steps to configure and enable the Geographical redundancy for SDM/LTE HSS & HLR 9.1 system</p> <p>Needed material:</p> <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.</p>																						
1 <input type="checkbox"/>	Exchange the SSH keys for GEO VIP SDM1 (SITE1)	<p>Note: ICMP flow needed between sites for GEO-redundancy</p> <p>Note: The VIP used for Geo redundancy must be different from OAM and Provisioning VIP</p> <ul style="list-style-type: none"> - This part has been executed in procedure 19 - If ssh keys were not exchanged perform procedure 4 now 																						
2 <input type="checkbox"/>	Configure Geo Redundancy parameters on SDM1 (site 1):	<p>Configure the GEO Redundancy From Webci</p> <p>On the 1st SDM Blade Server:</p> <p style="text-align: center;">Oracle SDM™ → System - ID:→ Geo Redundancy View</p> <p>Local Site VIP= Local Site Netmask= Remote Site VIP=</p> <div style="border: 2px solid black; padding: 10px;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="background-color: #005596; color: white;">Geo Redundancy View</th> </tr> </thead> <tbody> <tr><td>ClusterId</td><td>0</td></tr> <tr><td>Local Site VIP</td><td></td></tr> <tr><td>Local Site Netmask</td><td></td></tr> <tr><td>Local Port</td><td>62002</td></tr> <tr><td>Remote Site VIP</td><td></td></tr> <tr><td>Remote Port</td><td>62002</td></tr> <tr><td>Redundancy Enabled</td><td>Disabled</td></tr> <tr><td>DbGeoState</td><td>Stopped</td></tr> <tr><td colspan="2" style="text-align: center;"> <input type="button" value="Modify"/> </td></tr> <tr><td colspan="2" style="text-align: center;"> <input type="button" value="Enable Geo Redundancy"/> </td></tr> </tbody> </table> </div>	Geo Redundancy View		ClusterId	0	Local Site VIP		Local Site Netmask		Local Port	62002	Remote Site VIP		Remote Port	62002	Redundancy Enabled	Disabled	DbGeoState	Stopped	<input type="button" value="Modify"/>		<input type="button" value="Enable Geo Redundancy"/>	
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3 <input type="checkbox"/>	Enable Geo Redundancy	<p>At this step the Redundancy Enabled should be <i>Enabled</i></p> <p>At this step the DbGeoState should be <i>Stopped</i></p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tbody> <tr> <td style="padding: 2px;">Redundancy Enabled</td> <td style="padding: 2px;">Enabled</td> </tr> <tr> <td style="padding: 2px;">DbGeoState</td> <td style="padding: 2px;">Stopped</td> </tr> </tbody> </table>	Redundancy Enabled	Enabled	DbGeoState	Stopped																		
Redundancy Enabled	Enabled																							
DbGeoState	Stopped																							

Installing LTE HSS & HLR on HP C-Class G8

<p>4 <input type="checkbox"/></p>	<p>Restart SDM1 (site 1) services to enable Geo Redundancy</p>	<p>The service must be restarted to Take effect:</p> <p>Stop Services on 2nd SDM Blade Server (standby System Controller): # service blue stop</p> <p>- Restart Services on 1st SDM Blade Server (Active System Controller): # service blue restart</p> <p><u>Note</u> : When the first system controller blade on SDM site#1 is restarted with geo-redundancy enabled, the server will first try to connect to the SDM2 to determine if it should go reference or replica. The system will try for 5 minutes to connect to the peer site#2, as site 2 is not started, it will go to the reference State</p> <p>The System will be in this State during approximately 5 minutes : <i>blue: Waiting for system to initialize....</i></p> <p>Then the active system controller starts as a reference database.</p> <p> At this point Geo Redundancy is enabled only on SDM1 alarm 2207 should be raised by DpController due to remote site unreachable.</p> <p>293 2207 Critical Geographic reference site running unprotected Mon Jun 6 18:26:03 2011</p> <p>- On the WebCl in SDM1, Verify the current Geo Redundancy configuration : Under System ID => Geo Redundancy View :</p> <table border="1"> <tr> <td>ClusterId</td> <td>0</td> </tr> <tr> <td>Local Site VIP</td> <td>10.240.230.46</td> </tr> <tr> <td>Local Site Netmask</td> <td>255.255.255.0</td> </tr> <tr> <td>Local Port</td> <td>62002</td> </tr> <tr> <td>Remote Site VIP</td> <td>10.240.241.10</td> </tr> <tr> <td>Remote Port</td> <td>62002</td> </tr> <tr> <td>Redundancy Enabled</td> <td>Enabled</td> </tr> <tr> <td>DbGeoState</td> <td>Reference</td> </tr> </table> <p>The DbGeoState should be “reference” , “Enabled”</p> <p>- If SDM2 is planned to be configured later, the procedure is completed for SDM1</p>	ClusterId	0	Local Site VIP	10.240.230.46	Local Site Netmask	255.255.255.0	Local Port	62002	Remote Site VIP	10.240.241.10	Remote Port	62002	Redundancy Enabled	Enabled	DbGeoState	Reference
ClusterId	0																	
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Local Port	62002																	
Remote Site VIP	10.240.241.10																	
Remote Port	62002																	
Redundancy Enabled	Enabled																	
DbGeoState	Reference																	
<p>5 <input type="checkbox"/></p>	<p>Configure Geo Redundancy parameters on SDM2 (site 2)</p>	<p>Configure the GEO Redundancy from the WebCl</p> <p>On the 1st SDM Blade Server: Oracle SDM™ → System - ID:→ Geo Redundancy View</p>																

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		<p>Local Site VIP= Local Site Netmask= Remote Site VIP=</p> <div style="border: 2px solid black; padding: 5px;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Geo Redundancy View</th> </tr> </thead> <tbody> <tr><td>ClusterId</td><td>0</td></tr> <tr><td>Local Site VIP</td><td></td></tr> <tr><td>Local Site Netmask</td><td></td></tr> <tr><td>Local Port</td><td>62002</td></tr> <tr><td>Remote Site VIP</td><td></td></tr> <tr><td>Remote Port</td><td>62002</td></tr> <tr><td>Redundancy Enabled</td><td>Disabled</td></tr> <tr><td>DbGeoState</td><td>Stopped</td></tr> </tbody> </table> <p style="text-align: center;">- Enable Geo Redundancy</p> <p>At this step the Redundancy Enabled should be <i>Enabled</i> At this step the DbGeoState should be <i>Stopped</i></p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tbody> <tr><td>Redundancy Enabled</td><td>Enabled</td></tr> <tr><td>DbGeoState</td><td>Stopped</td></tr> </tbody> </table> </div>	Geo Redundancy View		ClusterId	0	Local Site VIP		Local Site Netmask		Local Port	62002	Remote Site VIP		Remote Port	62002	Redundancy Enabled	Disabled	DbGeoState	Stopped	Redundancy Enabled	Enabled	DbGeoState	Stopped
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DbGeoState	Stopped																							
<p>6 <input type="checkbox"/></p>	<p>Restart SDM services to enable Geo Redundancy</p>	<p>Stop Services on 2nd SDM Blade Server (standby System Controller): # service blue stop</p> <p>- Restart Services on 1st SDM Blade Server (Active System Controller): # service blue restart</p> <p>The System will be synchronize with SDM1 : <i>blue: Waiting for system to initialize....</i></p> <p>Then server A SDM2 (active system controller) starts as a replica database</p> <p>- On Webci in SDM2, Verify the current Geo Redundancy configuration :</p> <p>Under System – ID => Geo Redundancy View :</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tbody> <tr><td>ClusterId</td><td>0</td></tr> <tr><td>Local Site VIP</td><td>10.240.241.10</td></tr> <tr><td>Local Site Netmask</td><td>255.255.255.0</td></tr> <tr><td>Local Port</td><td>62002</td></tr> <tr><td>Remote Site VIP</td><td>10.240.230.46</td></tr> <tr><td>Remote Port</td><td>62002</td></tr> <tr><td>Redundancy Enabled</td><td>Enabled</td></tr> <tr><td>DbGeoState</td><td>Replica</td></tr> </tbody> </table>	ClusterId	0	Local Site VIP	10.240.241.10	Local Site Netmask	255.255.255.0	Local Port	62002	Remote Site VIP	10.240.230.46	Remote Port	62002	Redundancy Enabled	Enabled	DbGeoState	Replica						
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Remote Port	62002																							
Redundancy Enabled	Enabled																							
DbGeoState	Replica																							

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		<p>The DbGeoState should be “Replica”, ”Enabled”</p> <ul style="list-style-type: none"> - On the WebCl in SDM1, verify the current Geo Redundancy configuration : Under System – ID => Geo Redundancy View : <table border="1"> <tr> <td>ClusterId</td> <td>0</td> </tr> <tr> <td>Local Site VIP</td> <td>10.240.230.46</td> </tr> <tr> <td>Local Site Netmask</td> <td>255.255.255.0</td> </tr> <tr> <td>Local Port</td> <td>62002</td> </tr> <tr> <td>Remote Site VIP</td> <td>10.240.241.10</td> </tr> <tr> <td>Remote Port</td> <td>62002</td> </tr> <tr> <td>Redundancy Enabled</td> <td>Enabled</td> </tr> <tr> <td>DbGeoState</td> <td>ReferenceProtected</td> </tr> </table> <p>The DbGeoState should be changed to “referenceProtected”</p>	ClusterId	0	Local Site VIP	10.240.230.46	Local Site Netmask	255.255.255.0	Local Port	62002	Remote Site VIP	10.240.241.10	Remote Port	62002	Redundancy Enabled	Enabled	DbGeoState	ReferenceProtected
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Remote Site VIP	10.240.241.10																	
Remote Port	62002																	
Redundancy Enabled	Enabled																	
DbGeoState	ReferenceProtected																	
<p>7 <input type="checkbox"/></p>	<p>Start Services standby System Controller servers on SDM1 and SDM2 sites</p>	<ul style="list-style-type: none"> - Start Services on 1st and 2nd SDM Blade Server (active and standby System Controller): # service blue start - At this point the Geo Redundancy configuration is completed - Verify the Database replication status for Geo redundancy: # /blue/usr/local/tungsten-replicator/tungsten-replicator/bin/trepctl services <p>Processing services command...</p> <pre> NAME VALUE ----- appliedLastSeqno: 1126485905 appliedLatency : 0.169 role : master serviceName : blue__2_1 serviceType : local started : true state : ONLINE NAME VALUE ----- appliedLastSeqno: 3217536761 appliedLatency : 0.868 role : slave serviceName : blue__1_1 serviceType : remote started : true state : ONLINE NAME VALUE ----- </pre> <ul style="list-style-type: none"> - Verify that there is a “local Master” service blue__x_y with an acceptable latency less than1 second. - Verify that there is a “local slave” service blue__t_y with an acceptable latency less than1 second. 																

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		<p>* "x" refers to the site_suffix of the first LTE HSS & HLR site installed, "t" refers to the site_suffix of second LTE HSS & HLR site installed, "y" refers to the slotId of active system controller ... "z" refers to the slotId of standby system controller</p>
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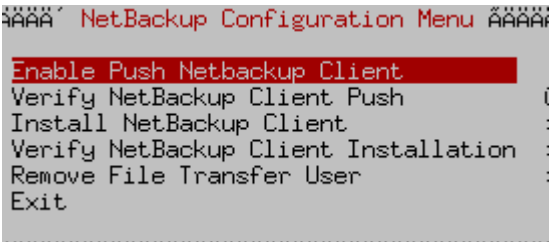
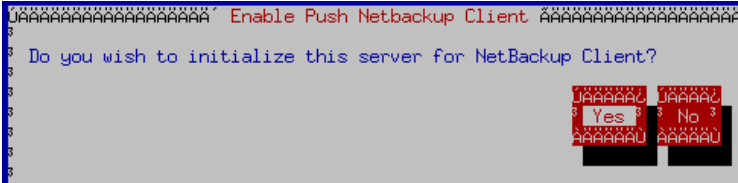
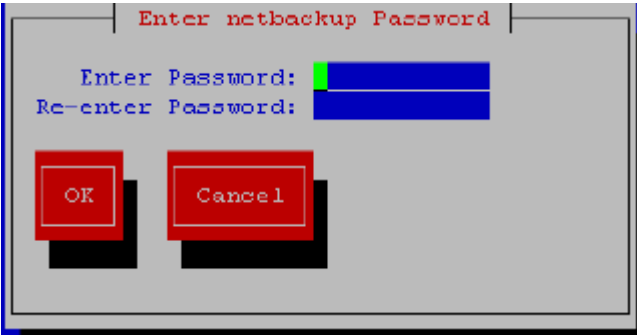
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13.0 DATABASE BACKUP SCHEDULE AND NETBACKUP CLIENT CONFIGURATION

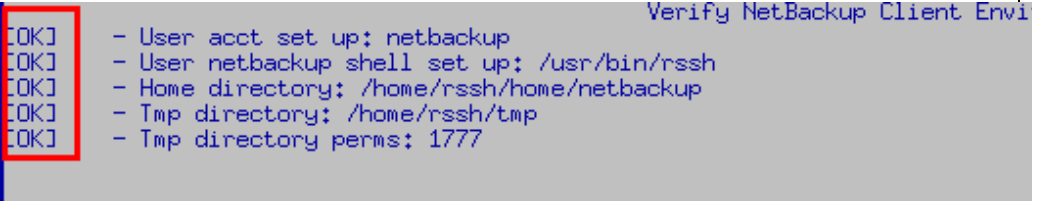
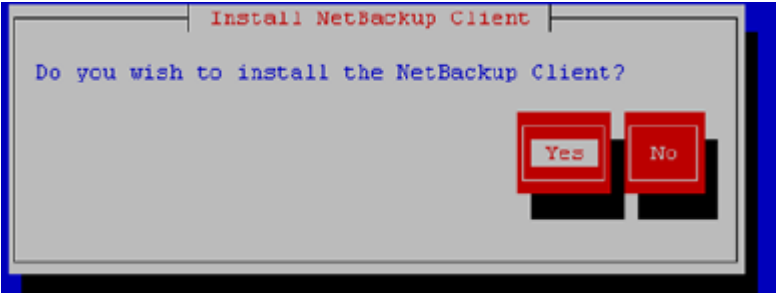
Procedure 25. LTE HSS & HLR Database Backup schedule and NetBackup Client configuration

<p style="text-align: center;">S T E P #</p>	<p style="text-align: center;">Steps to be completed.</p>	<p>This procedure describes the steps to configure the database backup schedule on SDM/LTE HSS & HLR system and a NetBackup client.</p> <p>Needed material:</p> <ul style="list-style-type: none"> - Site survey has been performed to determine the network requirements for the application server, and interfaces have been configured. - NetBackup server is available to copy, sftp, the appropriate NetBackup Client software to the application server. - For Network requirements refer to [TK6] TR007093 <p>Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.</p>
<p>1 <input type="checkbox"/></p>	<p>Activate the backup schedule on SDM</p>	<p>Connect to the WebCi under Database => Backup/Restore/DRM : Select 'Add DatabaseBackupSchedule' under DatabaseBackupSchedule menu :</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>DatabaseBackupSchedule Provisioning</p> <p>Hour * <input type="text" value="4"/></p> <p>Minute * <input type="text" value="15"/></p> <p>BackupDirectory * <input type="text" value="/export/backup"/></p> <p>FileRotation * <input type="text" value="5"/></p> <p>IncludeConfiguration <input type="text" value="On"/></p> <p><input type="button" value="Commit"/> <input type="button" value="Close"/></p> </div> <p>Hour : Hour of day for scheduled backups Minute: Minute of day for scheduled backups BackupDirectory : Directory for scheduled backup FileRotation : Number of backups to keep on the system</p> <p>Activate the Database backup schedule by clicking on Activate button :</p> <p style="text-align: center;"><input type="button" value="Activate"/></p> <p>Verify that the DatabaseBackupSchedule is properly configured and activated in WebCi :</p>

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		<p>DatabaseBackupSchedule</p> <table border="1"> <thead> <tr> <th>Attribute</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Hour</td> <td>4</td> </tr> <tr> <td>Minute</td> <td>15</td> </tr> <tr> <td>DatabaseId</td> <td>Subscriber Database</td> </tr> <tr> <td>BackupDirectory</td> <td>/export</td> </tr> <tr> <td>IncludeConfiguration</td> <td>On</td> </tr> <tr> <td>FileRotation</td> <td>5</td> </tr> <tr> <td>IsActivated</td> <td>On</td> </tr> </tbody> </table> <p>Disable Modify Delete</p>	Attribute	Value	Hour	4	Minute	15	DatabaseId	Subscriber Database	BackupDirectory	/export	IncludeConfiguration	On	FileRotation	5	IsActivated	On
Attribute	Value																	
Hour	4																	
Minute	15																	
DatabaseId	Subscriber Database																	
BackupDirectory	/export																	
IncludeConfiguration	On																	
FileRotation	5																	
IsActivated	On																	
<p>2 <input type="checkbox"/></p>	<p>Enable the push NETBACKUP Client from platcfg</p>	<p>For more details on how to configure NetBackup client refer to [TK7] section 3.14.5 Application NetBackup Client Procedures.</p> <p>! Depending on the Interconnect strategy ,additionnal lines might be added to sdm-vlans.conf file.Refer to Appendix C for interconnect strategy methods with Netbackup server on C-CLASS.Dedicated bandwidth is recommended.</p> <p>Connect to platcfg menu :</p> <p># su – platcfg</p> <p>NetBackup Configuration → Enable Push Netbackup Client → Yes</p>   <p>- Enter NetBackup password and select OK :</p> 																

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<p>3 <input type="checkbox"/></p>	<p>Verify NetBackup Client software push is enabled and update LTE HSS & HLR hosts file</p>	<p>NetBackup Configuration → Verify NetBackup Client Push</p>  <pre> [OK] - User acct set up: netbackup [OK] - User netbackup shell set up: /usr/bin/rssh [OK] - Home directory: /home/rssh/home/netbackup [OK] - Tmp directory: /home/rssh/tmp [OK] - Tmp directory perms: 1777 </pre> <ul style="list-style-type: none"> - Update the application hosts file with NetBackup server infos <pre> # cd /etc # rcstool co hosts # echo "NetBackup_server_IP Netbackup_server_hostname" >> hosts # rcstool ci hosts </pre>
<p>4 <input type="checkbox"/></p>	<p>Install the Netbackup Client Application</p>	<p>Note: The NetBackup server is not an application asset. Access to the NetBackup server, and location path of the NetBackup Client software is under the control of the customer. The steps to configure the NetBackup server to push the NetBackup Client software to the application server can be found in [TK1]. These steps are not within the scope of this document</p> <p>Note: The backup server is supported by the customer, and the backup utility software provider. If this procedural STEP, executed at the backup utility server, fails to execute successfully, STOP and contact the Customer Care Center of the backup and restore utility software provider that is being used at this site.</p> <ul style="list-style-type: none"> - Once the client software has been pushed by sftp from the Server do the following steps : <pre> # su - platcfg </pre> <p>NetBackup Configuration → Install Netbackup Client</p>  <p>The screenshot shows a dialog box titled "Install NetBackup Client" with the question "Do you wish to install the NetBackup Client?". There are two buttons: "Yes" and "No".</p> <ul style="list-style-type: none"> - Verify the NetBackup Client Installation from platcfg menu: <p>NetBackup Configuration → Verify Netbackup Client Installation</p>

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		<pre>Verify NetBackup Client Ins [OK] - Looks like a 7.1 Client is installed [OK] - RC script: netbackup [OK] - rpm: SYMCpddea [OK] - pkgKeep: SYMCpddea [OK] - rpm: SYMCnbjre [OK] - pkgKeep: SYMCnbjre [OK] - rpm: SYMCnbjava [OK] - pkgKeep: SYMCnbjava [OK] - rpm: SYMCnbc1t [OK] - pkgKeep: SYMCnbc1t [OK] - rpm: VRTSpbx [OK] - pkgKeep: VRTSpbx</pre> <p>- Verify that the NetBackup server hostname has been added to /usr/opensv/netbackup/bp.conf file</p> <pre># cat /usr/opensv/netbackup/bp.conf SERVER = Netbackup_server_hostname CLIENT_NAME = 10.15.58.210 CONNECT_OPTIONS = localhost 1 0 2</pre>
<p>5 <input type="checkbox"/></p>	<p>Activate the client on the server side from bpadm</p>	<p>- Activate the client on the server side from bpadm:</p> <ul style="list-style-type: none"> Select the desired Policy : <pre>Policy: TKLCDaily Clients: vmback1 en20001b07 ... Schedules: Daily Output Destination: SCREEN Policy Management ----- a) Add Policy... m) Modify Policy Attributes... d) Delete Policy s) Schedule Management... c) Client List Management... f) File List Management... t) Catalog Backup Disaster Recovery... b) Browse Policies Forward r) Browse Policies Reverse e) Enter Policy l) List/Display Policies o) Output Destination (SCREEN or FILE) h) Help q) Quit Menu ENTER CHOICE: b</pre> <ul style="list-style-type: none"> Add The LTE HSS & HLR OAMP VIP to the client List by selecting <p>Client List management → Add Clients → Linux-IA64, RedHat2.6</p>


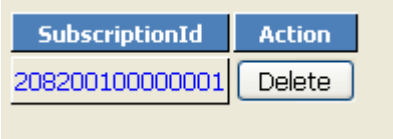
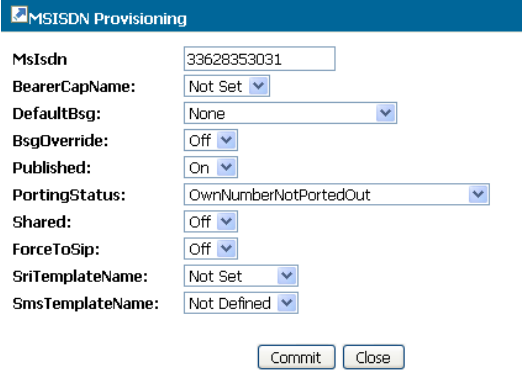
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		<p>Enter clients of Linux-IA64, RedHat2.6 type: (blank line to end)</p> <p>Enter Client Name: LTE HSS & HLR_hostname</p> <ul style="list-style-type: none">• Display the Policy to verify the clients List/Display Policy : <pre>Linux-IA64 RedHat2.6 LTE HSS & HLR1_hostname Linux-IA64 RedHat2.6 LTE HSS & HLR2_hostname</pre> <p>- Verify NetBackup connectivity from the server</p> <pre># get_remote_host_version XMI_SDM_VIP 7.1</pre> <p>Note: The important directories/files from LTE HSS & HLR that should be included in the Backup are :</p> <pre>Include: /export/backup /etc/sysconfig /boot/grub /var/log /blue/var/log /var/TKLC/log</pre>
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14.0 SDM SUBSCRIBER DEFINITION

Procedure 26. LTE HSS & HLR Subscriber definition

<p>S T E P #</p>	<p>Steps to be completed.</p>	<p>This procedure describes an example of HLR / LTE HSS subscriber creation</p> <p>Needed material:</p> <ul style="list-style-type: none"> - Site survey has been performed to determine the network requirements for the application server, and interfaces have been configured. <p>Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</p> <p>IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.</p>
<p>1 <input type="checkbox"/></p>	<p>Create a subscriptionId</p>	<p>Under subscription Management => Subscriber provisionnig</p>  <p>SubscriptionID: = [208200100000001] Search Add Display The First 25 Subscriptions</p> <p>SimId: = [] Search Add Assign Unassign Swap DisplayDeferredSwap</p> <p>MsIsdn: = [] Search</p> <p>Search for the subscriptionId and click on it :</p> 
<p>2 <input type="checkbox"/></p>	<p>Create Subscriber MSISDN,IMSI and Mapping</p>	<p>Add MSISDN :</p>  <p>Add SIM with Ki and the Algorithm name created in previous steps :</p> <p>Create USIM</p>

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Sim Provisioning

SimId:
 Algorithm Name *: Algo1
 Manufacturer Id:
 Ki32HexChar *:
 PUK *:
 SimType *: USIM
 AlgoId:
 Op32HexChar:

Create the SIM ⇔ IMSI mapping

SimImsiMap Provisioning

Imsi *:
 SimId *:
PrimaryImsi

3 Create MSISDN Profile Association

Click on Add MsIsdnImsiProfileAssociation :

MsIsdnImsiProfileAssociation

Attribute	Value
SubscriptionID	2082001000000001
Imsi	2082001000000001
MsIsdn	33628353031
HlrServiceProfileID	1
Displayed	On
Deferred	Off
Priority	1
Reachable	On

Make sure that the Intra PLMN IMSI range has been properly created before in HLR configuration :

IntraPlmnImsiRange

Imsi Range	Hlr Number Config Id	Hplmn	Hplmn Country	Action
3109104	1	1	1	<input type="button" value="Modify"/> <input type="button" value="Delete"/>
2082001	1	1	1	<input type="button" value="Modify"/> <input type="button" value="Delete"/>

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		<p>ServiceProfileID: <input type="text" value="1"/> <input type="button" value="Add"/></p> <p>Add ServiceProfileID:</p> <div style="border: 1px solid gray; padding: 5px;"> <p>Service Profile</p> <table border="1"> <thead> <tr> <th>ServiceProfileId</th> <th>Action</th> </tr> </thead> <tbody> <tr> <td>1</td> <td> <input type="button" value="Modify"/> <input type="button" value="Delete"/> </td> </tr> </tbody> </table> </div>	ServiceProfileId	Action	1	<input type="button" value="Modify"/> <input type="button" value="Delete"/>
ServiceProfileId	Action					
1	<input type="button" value="Modify"/> <input type="button" value="Delete"/>					
<p>4</p> <p><input type="checkbox"/></p>	<p>Create a PDN context template in HLR</p>	<p>Under HLR => TemplatePDNContext create a Template PDN Context</p> <div style="border: 1px solid gray; padding: 5px;"> <p>TemplatePDNContext Provisioning</p> <p>AccessPointName: <input type="text" value="apn.test"/></p> <p>AMBRUL: <input type="text" value="2000"/></p> <p>AMBRDL: <input type="text" value="3000"/></p> <p>QosAllocationRetentionPriorityLevel: <input type="text" value="1"/></p> <p>PdnGWIdentity: <input type="text" value="pdngateway1.com"/></p> <p>VplmnAddressAllowed: <input type="text" value="NOTALLOWED"/></p> <p>EPSQoSClassId: <input type="text" value="ConversationalSpeech"/></p> <p>QosAllocationRetentionPreEmptionCapability: <input type="text" value="PRE_EMPTION_CAPABILITY_ENABLED"/></p> <p>QosAllocationRetentionPreEmptionVulnerability: <input type="text" value="PRE_EMPTION_VULNERABILITY_ENABLED"/></p> <p>PdnGWAllocationType: <input type="text" value="STATIC"/></p> <p>PdnChargingCharacteristics: <input type="text" value="HotBilling"/></p> <p><input type="button" value="Commit"/> <input type="button" value="Close"/></p> <p>- PDN gateway id must be set (fqdn)</p> </div>				
<p>5</p> <p><input type="checkbox"/></p>	<p>Create an EPS subscription for the user</p>	<p>Modify Service Profile for the subscriber:</p> <div style="border: 1px solid gray; padding: 5px;"> <p>Service Profile</p> <table border="1"> <thead> <tr> <th>ServiceProfileId</th> <th>Action</th> </tr> </thead> <tbody> <tr> <td>1</td> <td> <input type="button" value="Modify"/> <input type="button" value="Delete"/> </td> </tr> </tbody> </table> </div> <p>Add a DefaultPdnContextId and eventually additional PDN contexts.</p>	ServiceProfileId	Action	1	<input type="button" value="Modify"/> <input type="button" value="Delete"/>
ServiceProfileId	Action					
1	<input type="button" value="Modify"/> <input type="button" value="Delete"/>					

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APPENDIX A: SDM-VLANS.CONF.SAMPLE

```
# File /etc/sysconfig/sdm-vlans.conf.sample
# -----
# Sample config file for "SDM Advanced Routing for Virtual IPs"
#
# File /etc/sysconfig/sdm-vlans.conf is used by SDM to modify
# IP routing to support Virtual IPs (VIPs). IP routing is modified
# when a VIP is activated and when it is deactivated. This also applies
# when a VIP moves from a blade to another (i.e. VIP deactivation
# on blade X, VIP activation on blade Y).
#
# Note that this file has no involvement with IPs declared
# statically (activated by Linux during normal system startup).
# This means that basic IP routing (static default routes, etc.)
# must STILL be configured sufficiently for SDM blades to communicate
# correctly when a blade has no virtual IPs active.
#
#
# IMPORTANT: In order to use SDM Advanced Routing for Virtual IPs,
# copy this file to /etc/sysconfig/sdm-vlans.conf on
# the Active System Controller, and configure the subnets
# according to the customer's network requirements.
#
# If the file /etc/sysconfig/sdm-vlans.conf is very large,
# activation/deactivation time for Virtual IPs may increase.
# You may want to remove most of these comments from
# the actual running file /etc/sysconfig/sdm-vlans.conf ,
# and leave these comments in /etc/sysconfig/sdm-vlans.conf.sample
#
# IMPORTANT: In the following description, a "prefix" is
# an IP subnet base followed by a subnet size,
# for example 10.1.2.0/24
#
# IMPORTANT: The old Linux commands "netstat -rn" and "ifconfig -a"
# are often misleading.
#
# Use the command "ip -f inet addr" to see the list of
# IPv4 addresses on the system.
# Use the command "ip rule list" to see the list
# of policy-routing rules, and the command
# "ip route list table <name>" to see the routing
# entries associated with each table referenced
# by the policy-routing rules.
#
#
# This file is accessed by SDM software on a blade in three scenarios:
# -----
# 1. When SDM software starts (i.e. "service blue start"),
# if a blade is NOT the Active System Controller,
# the file is copied FROM the Active System Controller
# into our local /etc/sysconfig/sdm-vlans.conf.
#
# 2. When a Virtual IP is activated on the blade.
#
```

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```
# 3. When a Virtual IP is deactivated on the blade.
#
#
# How to safely modify the VIP routing environment while SDM is running:
# -----
#
# 1. Use SDM software (WebCl, BlueCLI, etc.) to deactivate the Virtual IPs
# that are in subnets for which you need to change the routing
# configuration.
#
# 2. On all SDM blades in the SDM group, verify with "ip -f inet addr"
# that the Virtual IPs for the subnets to be modified are no longer active.
#
# 3. Modify /etc/sysconfig/sdm-vlans.conf for the appropriate subnets.
# Make sure the resulting file is identical on all SDM blades
# in the SDM group.
#
# 4. Reactivate the affected Virtual IPs in SDM software.
#
#
# Syntax of this file:
# -----
# a) Each line that begins with "#" is a comment.
#
# b) Blank lines are ignored.
#
# c) Any other line should contain the following fields
# separated by white space:
#
# <subnet_base> <subnet_size> <subnet_mask> <gateway_ip> <nw_intf> <vlan_id> <table_name>
# [<options>]
#
# where <options>, if present, may take one of the following forms:
#
# <prefix>
# PREFSRC <src_ip>
# <prefix> PREFSRC <src_ip>
#
# d) Rules on configuration lines:
#
# i. If a VIP matches more than one variant of <subnet_base>/<subnet_size>,
# only the most-specific matches are used (the matches with the
# largest size. In other words, if you have lines like this:
#
# 10.1.0.0 16 255.255.0.0 <rest of line 1 config>
# 10.1.0.0 16 255.255.0.0 <rest of line 2 config>
# 10.1.2.0 24 255.255.255.0 <rest of line 3 config>
# 10.1.2.0 24 255.255.255.0 <rest of line 4 config>
#
# when VIP 10.1.1.3 activates or deactivates, only lines 1 and 2 apply
# when VIP 10.1.2.3 activates or deactivates, only liens 3 and 4 apply
#
# ii. a config line is only accepted by SDM is <subnet_size> has the
# exact same meaning as <subnet_mask>, i.e.
#
# a line that begins with "172.30.1.0 24 255.255.255.0 ..." is OK
```

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```
# a line that begins with "172.30.1.0 25 255.255.255.128 ..." is OK
# but
# a line that begins with "172.30.1.0 25 255.255.255.0 ..." is rejected
#
# iii. if a subnet is private and non-routable,
# specify <gateway_ip> to be 0.0.0.0 and leave <options> blank
#
# iv. if a subnet must be placed on an interface which has no VLANs,
# or on the "untagged" VLAN of an interface, specify <vlan_id> to be 1
#
# v. If <table_name> is "main", this route is chosen based on the
# destination IP address of a packet emitted by the SDM blade,
# regardless of what the source IP address is.
#
# If <table_name> is not "main", this route is chosen FIRST based
# on the source IP address of a packet emitted by the SDM blade.
# Then, <dest_prefix> needs to be matched for the route to be chosen.
#
# vi. <options> can be one of the following variants:
#
# "" this is a default route,
# i.e. <dest_prefix> = 0.0.0.0/0
#
# <dest_prefix> route applies only to this destination prefix
#
# PREFSRC <src_ip> this is a default route, and use <src_ip>
# as the source IP address in this case
#
# <dest_prefix> PREFSRC <src_ip> route applies only to thi destination prefix, and use <src_ip> as
the source IP address
#
#
# Sample lines that show what can be configured:
# -----
#
# a) When the SDM internal OAM VIP activates
# (SDM requires that the internal OAM subnet must be
# 169.254.0.0/16), SDM configures it on bond0 Vlan 24 ,
# and this subnet is non-routable.
#
# 169.254.0.0 16 255.255.0.0 0.0.0.0 bond0 24 main
#
# b) When a VIP in subnet 10.1.2.0/26 (util1) activates,
# configure it on eth01 (no VLAN). Any packets
# emitted with a source IP address in 10.1.2.0/26
# is sent to gateway 10.1.2.1 regardless of the destination IP.
#
# 10.1.2.0 26 255.255.255.192 10.1.2.1 eth01 1 util1
#
# c) When a VIP in subnet 10.12.13.0/24 (sigtran1) activates,
# configure it on bond0 Vlan 103. Route packets based
# on the destination IP. Packets to 192.168.10.0/24 go to
# 10.12.13.1, packets to 192.168.20.0/24 go to 10.12.13.2.
# Nothing is specified for other subnets (default static routing
# will be used)
#
```

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```
# 10.12.13.0 24 255.255.255.0 10.12.13.1 bond0 103 sigtran1 192.168.10.0/24
# 10.12.13.0 24 255.255.255.0 10.12.13.2 bond0 103 sigtran1 192.168.20.0/24
#
# d) Geo-Redundancy and COS provisioning example:
#
# Subnet 10.35.47.0/24 (sdmadm1) is on interface bond0 Vlan 114,
# the subnet can contain two local VIPs:
#   local Geo-Redundancy VIP is 10.35.47.10,
#   and COS provisioning VIP is 10.35.47.11.
# The remote Geo-redundancy VIP is 172.30.24.113.
#
# Any packets using a source IP in 10.35.47.0/24 are sent to
# gateway 10.35.47.1. If they are sent to the distant Geo-redundancy VIP,
# the preferred source IP is the local Geo-redundancy VIP.
#
# For packets where the source IP does not match any other
# source-based routing rules (we reach routing table "main"),
# if the destination IP is the distant geo-redundant VIP,
# set the preferred source IP to the local Geo-redundancy VIP.
```

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APPENDIX B: SDM-SSH.CONF SAMPLE

```
# File /etc/sysconfig/sdm-ssh.conf.sample
# "$Id: sdm-ssh.conf.sample 82563 2011-08-22 14:57:55Z mchatel $"
#
# To be able to use "sdm-ssh-tool", you must make a MODIFIED
# copy of this file in /etc/sysconfig/sdm-ssh.conf ,
# adapted to the specific SDM network configuration being used.
#
# Terminology: SDM member - a single running installation of Linux with SDM
#                (usually on a multi-CPU, multi-core machine)
#
#                SDM group - a collection of SDM members intended to run
#                synchronized with the same Active System Controller
#
#                SDM remote group - a distant SDM group with which we need
#                to run Geo-Redundancy traffic
#
#
# 1- Define the local SDM "group with its logical name.
# This logical name is to be used in the identifier part of the root
# account DSA key pair and is shared by all members in the group.
#
# In this lab example, the name is intended to convey the meaning
# "C-class #1, this SDM group contains blades 1,3,5,6"
#
LOCAL-GROUP CSLAB-LTE HSS & HLR1
#
# Define all members of the group. The member logical names
# are only used in SDM-SSH-TOOL diagnostic messages
# and do not need to match the Linux host names.
#
# For each member, list the static IP addresses that may be
# destination IPs for SSH connections initiated by other members.
#
# Typically, for each member, the static private IP and the
# static public IP on the SDM OAM network should be listed.
#
MEMBER CSLAB-LTE HSS & HLR1-BLADE1 IP-LIST 169.254.1.1 10.15.63.141
MEMBER CSLAB-LTE HSS & HLR1-BLADE2 IP-LIST 169.254.1.2 10.15.63.142
#MEMBER CSLAB-LTE HSS & HLR2-BLADE1 IP-LIST 169.254.1.1 10.15.63.145
#MEMBER CSLAB-LTE HSS & HLR2-BLADE2 IP-LIST 169.254.1.2 10.15.63.146
#
# Define the list of virtual IPs of the group that may be
# destination IPs for SSH connections initiated by any member.
#
# Virtual IPs that will NEVER be used as destination IPs
# in SSH connections do not need to be listed here.
#
LOCAL-VIPS 169.254.1.20 10.15.63.139
#
#
# There may be zero or more SDM remote groups with which we need
# to run Geo-Redundancy traffic. If SDM-SSH-TOOL is also installed
# and used on the remote group, the remote-group name defined here
```

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```
# should match the LOCAL-GROUP name used on the remote group.
#
# One or more remote VIPs may be associated with the remote group.
# These are VIPs that must be reachable as SSH destinations from any
# member in our local group.
#
# Typically, because of firewall or routing restrictions, there may
# be only one local SDM member that is able to reach the remote group,
# usually the member that has the local geo-redundancy Virtual IP active.
# So the remote group specification allows configuring one or more
# Virtual IP for the remote group, and one or more local VIPs.
# SDM-SSH-TOOL can only attempt to check & fix remote group keys if it
# is started on a member that has one or more of these local VIPs active !
#
REMOTE-GROUP CSLAB-LTE HSS & HLR2 VIPS 10.15.63.140 USE-LOCAL-VIPS 10.15.63.139
```

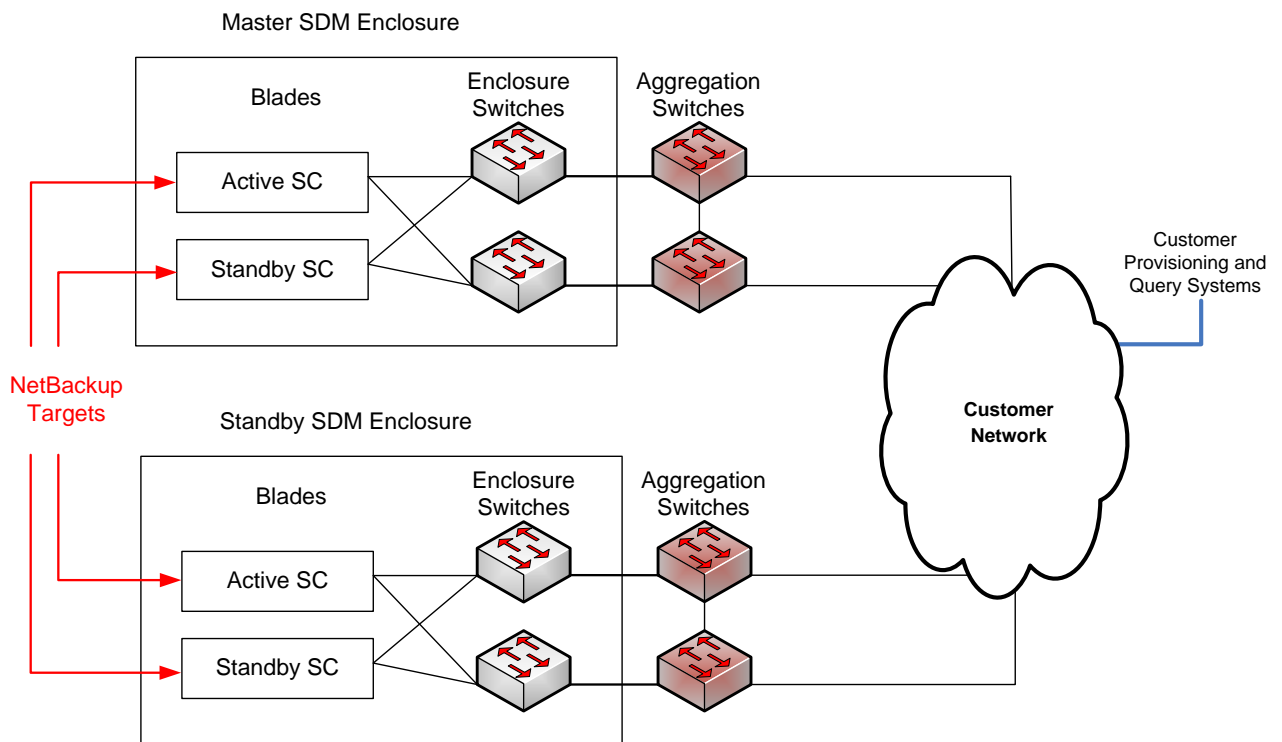

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APPENDIX C: NETBACKUP INTERCONNECT STRATEGY

By default, backup activities would share the same bandwidth as XMI and XSI activities (method 1). This can lead to serious performance degradation during the backup time windows, while transfer of backups take place over the network.

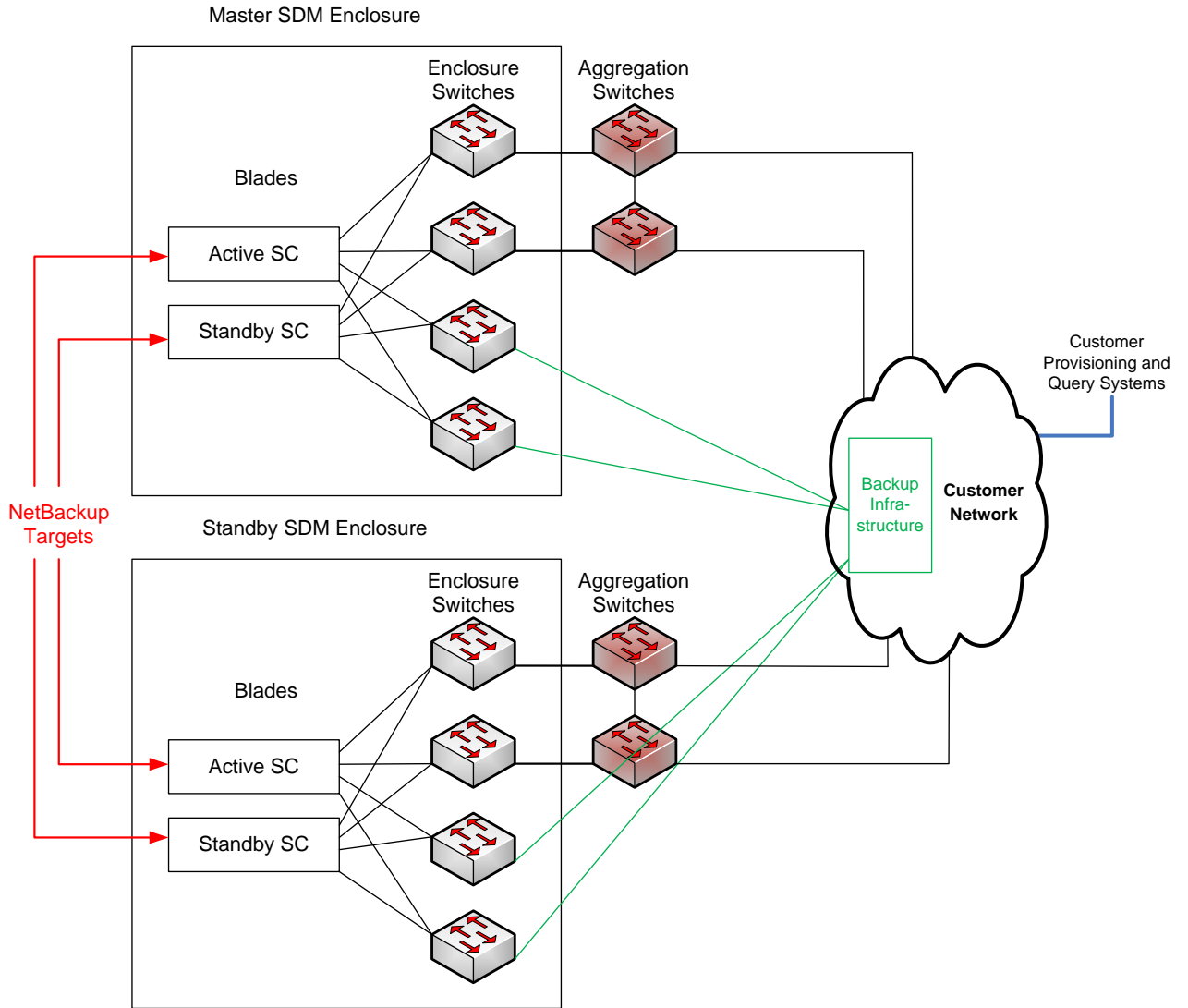
As a result, it is recommended to guarantee bandwidth separation between applications and backups by setting up distinct network paths for them.

For standard HP c-Class SDM deployments, CPU blades only have two Ethernet ports which are placed in an Ethernet bond active/standby configuration. This hardware configuration does not allow the allocation of dedicated network ports to backup activities. Consequently, for c-Class SDM configuration with NetBackup support, it is strongly recommended to install extra network enclosure switches and Ethernet mezzanine cards in the CPU blades, as shown The additional Ethernet ports and switches make it possible to allocate dedicated network ports to backup activities (method 2).



Method 1 Example Deployment - SDM uses XMI for NetBackup in C-Class configuration

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Method 2 Example Deployment - SDM utilizes dedicated uplink for NetBackup in C-Class configuration