Oracle Communications Diameter Signaling Router

Software Installation and Configuration Procedure Part 2/2

Release 5.X,6.X

E52510-01

July 2014

Oracle Communications Diameter Signaling Router Software Installation Procedure, Release 5.X/6.X

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See more information on MOS in the Appendix section.

Note: This document represents the 2nd part of the DSR 5.X/6.X Installation Process. Prior to executing this document, make sure that the 1st part was fully executed..

DSR 5.X Installs: Use document ***909-2282-001*** as Part I
DSR 6.X Installs: Use document ***ES 4118-01 TKDSR*** as Part I

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1.0 INTRODUCTION

1.1 Purpose and Scope

This document describes the application-related installation procedures for an HP C-class Diameter Signaling Router 5.X/6.X system.

***This document assumes that platform-related configuration has already been done*. Before executing this document, please ensure that all procedures [10] or [12] have already been performed successfully.**

The audience for this document includes Tekelec customers as well as these groups: Software System, Product Verification, Documentation, and Customer Service including Software Operations and First Office Application.

1.2 References

1.2.1 External

[1] *HP Solutions Firmware Upgrade Pack Release Notes,* 910-6611-001 Rev A, July 2012

[2] *Diameter Signaling Router 5.0 Networking Interconnect Technical References*, TR007133/4/5/6/7/8/9, v. 1.0 or greater, P. Mouallem, 2013

[3] *Diameter Signaling Router 5.0 Release Notes*, 910-6829-001, Latest Revision

[4] *TPD Initial Product Manufacture*, 909-2130-001, v. 1.0 or greater, D. Knierim, Latest Revision.

[5] *Platform 6.x Configuration Procedure Reference*, 909-2297-001, Tekelec, 2014

[6] *DSR 4.0 Communication Agent*, 910-6575-001, Latest Revision, Tekelec, 2012

[7] *DSR 4.0 Full Address Based Resolution (FABR)*, 910-6578-001, Latest Revision, Tekelec, 2012

[8] *DSR 41 Full Address Based Resolution (FABR)*, 910-6634-001, Latest Revision, Tekelec, 2012

[9] HP Solutions Firmware Upgrade Pack Upgrade Procedures 2.2, 909-2234-001, Latest Revision.

[10] Policy DRA Activation, WI006835, Latest Revision, Tekelec 2012

[11] *DSR 5.0 Base Hardware and Software Installation*, 909-2282-001, Latest Revision, Tekelec 2012

[12] *DSR 6.0 Base Hardware and Software Installation*, ES4118-01 TKDSR, Latest Revision, Oracle 2014

[13] *IPFE Installation and Configuration*, WI006931, latest version, Mahoney

[14] *CPA Activation Feature Work Instruction*, WI006780, latest version, Moore

[15] *CPA User Guide*, 910-6635-001,Rev A (4.1)

[16] *DSR Meta Administration Feature Activation*, WI006761, latest version, Fisher

[17] *DSR FABR Feature Activation*, WI006771, latest version, Karmarkar

[18] *FABR User Guide*, 910-6634-001,Rev B (4.1.5)

[19] *DSR RBAR Feature Activation*, WI006763, latest version, Fisher

[20] *RBAR User Guide*, 910-6634-001,Rev B

[21] *DSR 4.0 – Per connection ingress message control* . WI006764

[22] *SDS SW Installation and Configuration Guide*, UG006385, Tekelec

1.2.2 Internal (Tekelec)

The following are references internal to Tekelec. They are provided here to capture the source material used to create this document. Internal references are only available to Tekelec personnel.

[1] *Formal Peer Review Process*, PD001866, v6.21, Nov 2008

1.3 Acronyms

An alphabetized list of acronyms used in the document:

Table 1. Acronyms

Acronym	Definition
BIOS	Basic Input Output System
CD	Compact Disk
DVD	Digital Versatile Disc
EBIPA	Enclosure Bay IP Addressing
FRU	Field Replaceable Unit
HP c-Class	HP blade server offering
iLO	Integrated Lights Out manager
IPM	Initial Product Manufacture – the process of installing TPD on a hardware platform
MSA	Modular Smart Array
NB	NetBackup
OA	HP Onboard Administrator
OS	Operating System (e.g. TPD)
RMS	Rack Mounted Server
PM&C	Platform Management & Configuration
SAN	Storage Area Network
SFTP	Secure File Transfer Protocol
SNMP	Simple Network Management Protocol
TPD	Tekelec Platform Distribution
TVOE	Tekelec Virtual Operating Environment
VM	Virtual Machine
VSP	Virtual Serial Port

1.4 Terminology

Multiple server types may be involved with the procedures in this manual. Therefore, most steps in the written procedures begin with the name or type of server to which the step applies. For example:

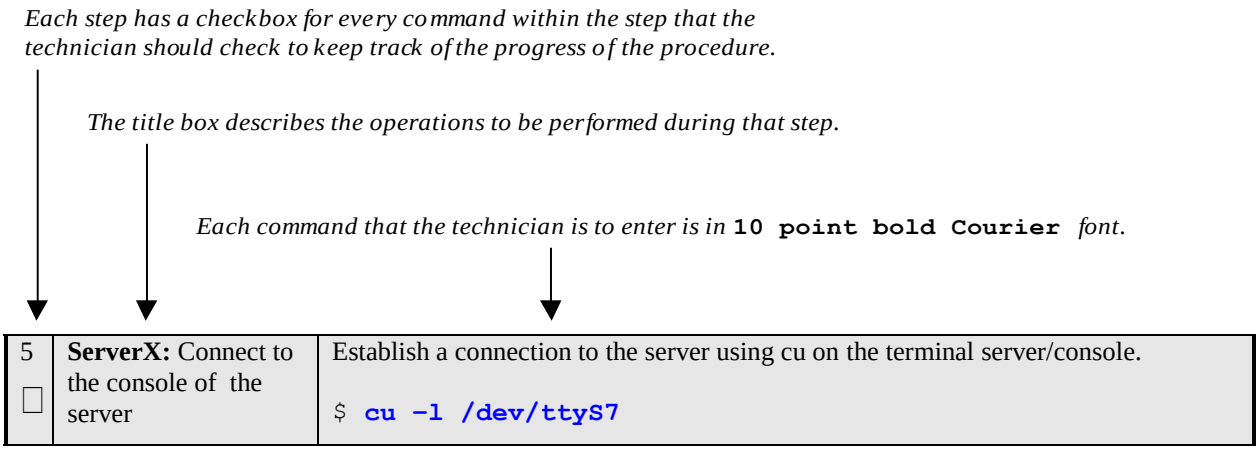


Figure 1. Example of an instruction that indicates the server to which it applies

Management Server	HP ProLiant DL360/ DL380 or Sun Netra Rack Mount Seerver deployed to run TVOE and host a virtualized PM&C application. Can also host a virtualized NOAMP. It is also used to configure the Aggregation switches (via the PM&C) and to serve other configuration purposes.
PM&C Application	PM&C is an application that provides platform-level management functionality for HP G6 system, such as the capability to manage and provision platform components of the system so it can host applications.

2.0 GENERAL DESCRIPTION

This document defines the steps to execute the initial installation of the Diameter Signaling Router (DSR) 5.X/6.X application on new HP C-Class Hardware.

DSR 5.0 and DSR 6.0 installation paths are shown in the figures below. The general timeline for all processes to perform a software installation/configuration and upgrade is also included below.

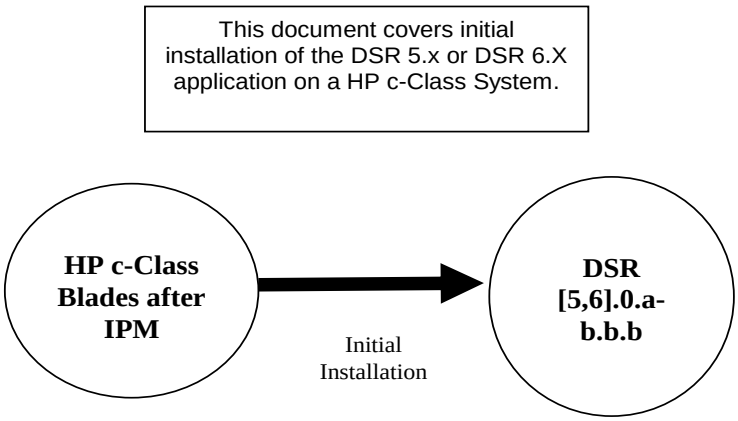


Figure 2. Initial Application Installation Path – Example shown

3.0 INSTALL OVERVIEW

This section provides a brief overview of the recommended method for installing the source release software that is installed and running on an HP c-Class system to the Target Release software. The basic install process and approximate time required is outlined in Table 2.

3.1 Required Materials

1. One (1) target release Application Media, or a target-release ISO
2. **5.X Installs** - One (1) ISO of TPD release 6.5.0-80.25.0 64 bits, or later shipping baseline as per Tekelec ECO
3. **6.X Installs** - One (1) ISO of TPD release 6.7.0-84.8.0 64 bits, or later shipping baseline as per Tekelec ECO

3.2 Installation Overview

This section describes the overal strategy to be employed for a single or multi-site DSR 5.X/6.X installation. It also lists the procedures required for installation with estimated times. Section 3.2.1 discusses the overall install strategy and includes an installation flow chart that can be used to determine exactly which procedures should be run for an installation. Section 3.2.2 lists the steps required to install a DSR 5.X/6.X system. These latter sections expand on the information from the matrix and provide a general timeline for the installation. DSR 6.X introduces some new features not in 5.X, however the application installation process is very similar with the few exceptions noted at certain places in the install procedure.

3.2.1 Installation Strategy

A successful installation of DSR requires careful planning and assessment of all configuration materials and installation variables. Once a site survey has been conducted with the customer, the installer should use this section to map out the exact procedure list that will executed at each site.

Figure 3 Illustrates the overall process that each DSR installation will involve. In summary:

1. An overall installation requirement is decided upon. Among the data that should be collected:
   - The total number of sites
   - The number of servers at each site and their role(s)
   - Does DSR's networking interface terminate on a Layer 2 or Layer 3 boundary?
   - Number of enclosures at each site -- if any at all.
   - Will NOAMPs use rack-mount servers or serever blades?
   - (Per Site) Will MP's be in N+0 configuration or in active/standby?
   - What timezone should be used across the entire collection of DSR sites?
   - Will SNMP traps be viewed at the NOAM, or will an external NMS be used? (Or both?)
2. A site survey (NAPD) is conducted with the customer to determine exact networking and site details. NOTE: XMI and IMI addresses are difficult to change once configured. It is **very important that these addresses are well planned and not expected to change after a site is installed.**
3. For each SOAM /MP/DR-NOAM only site (i.e. sites **NOT containing the main NOAMP server)** , the installer will execute the procedures in document [11] /[12] to set up the PMAC, HP enclosures, and switches. Then, using the procedures in *this* document, all servers will be IPM-ed with the proper TPD and DSR application ISO image. (Figure 4 details the exact procedures that are to be executed for the 2nd part of this install) When this is complete, all non-NOAMP sites will be reachable through the network and ready for further installation when the primary NOAMP site is brought up.
4. The installer will then move to the "main" site that will contain the primary NOAMP. Again, [11] / [12] will be executed for this site. Then, moving on to the procedures in *this document*, Figure 4 is consulted to determine the procedure list. During this install, he will "bring up" the other sub-sites (if they exist) that were

configured in step 3. For single sites where the NOAMP/SOAM/MPs are all located together, then step 3 is skipped and the entire install is covered by this step.

5. Once the primary NOAMP site has been installed according to [11] / [12] and this document, then full DSR installation is complete.

Note: An alternative install strategy will swap steps 3 & 4. The main NOAMP site is installed *first*, then the sub-sites (DR-NOAM, SOAM/MP only) are installed and brought up on the NOAMP as they are configured. This approach is perfectly valid, but is not reflected in the flow-charts/diagrams shown here.

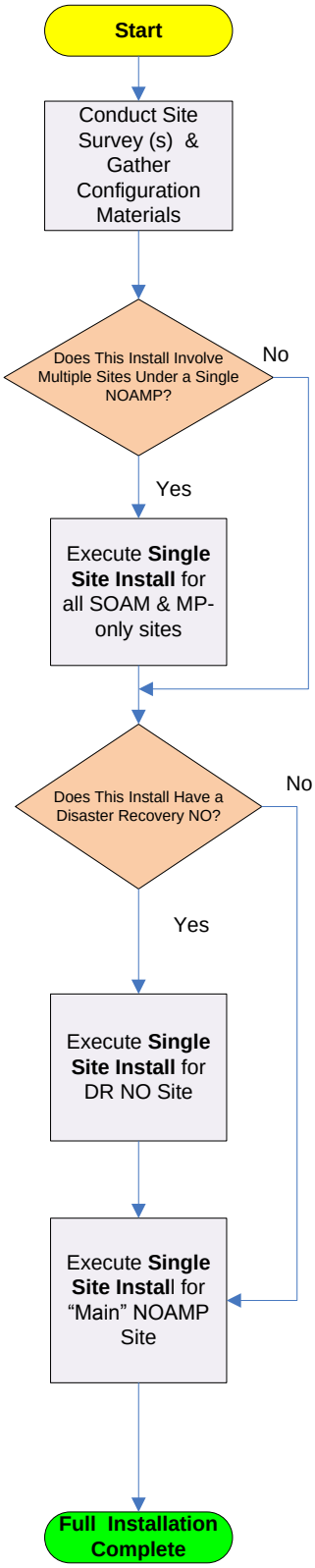


Figure 3 - DSR Installation - High Level Sequence

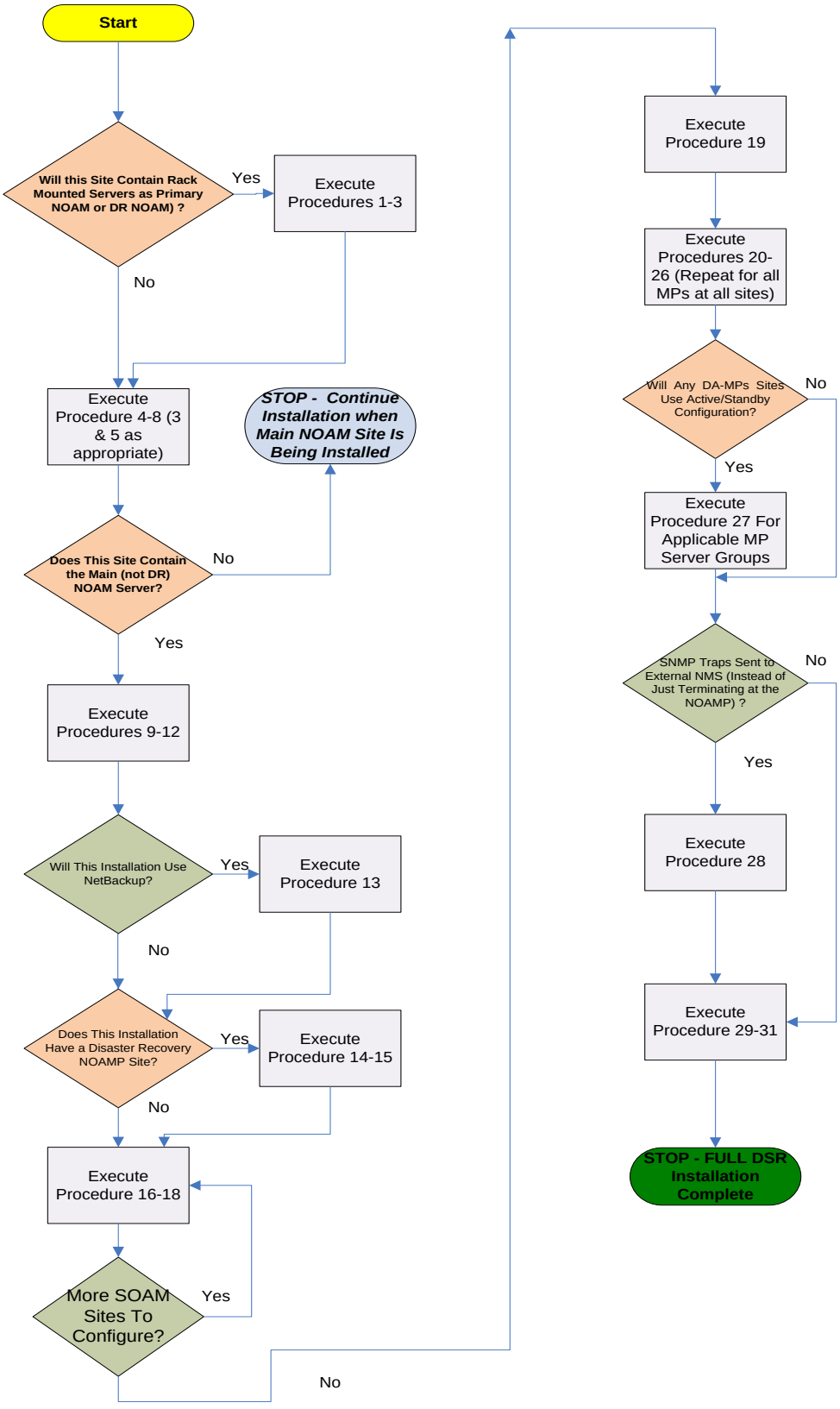


Figure 4: DSR Single Site Installation Procedure Map

3.2.2 SNMP Configuration

The network-wide plan for SNMP configuration should be decided upon before DSR installation proceeds. This section provides some recommendations for these decisions.

SNMP traps can originate from the following entities in a DSR installation:

- DSR Application Servers (NOAMP, SOAM, MPs of all types)
- DSR Auxillary Components (OA, Switches, TVOE hosts, PMAC)

DSR application servers can be configured to:

1. Send all their SNMP traps to the NOAMP via merging from their local SOAM. All traps will terminate at the NOAMP and be viewable from the NOAMP GUI (entire network) and the SOAM GUI (site specific). Traps are displayed on the GUI both as alarms and logged in trap history. **This is the default configuration option and no changes are required for this to take effect.**
2. Send all their SNMP traps to an external Network Management Station (NMS). The traps will be seen at the SOAM AND/OR NOAM as alarms **AND** they will be viewable at the configured NMS(s) as traps.

Application server SNMP configuration is done from the NOAMP GUI, near the end of DSR installation. See the procedure list for details.

DSR auxillary components must have their SNMP trap destinations set explicitly. Trap destinations can be the NOAMP VIP, the SOAMP VIP, or an external (customer) NMS. The *recommended* configuration is as follows:

The following components:

- **PMAC (TVOE)**
- **PMAC (App)**
- **OAs**
- **All Switch types (4948, 3020, 6120.6125G)**
- **TVOE for DSR Servers**

Should have their SNMP trap destinations set to:

1. **The local SOAM VIP**
2. **The customer NMS, if available**

3.2.3 Installation Procedures

The following table illustrates the progression of the installation process by procedure with estimated times. The estimated times and the phases that must be completed may vary due to differences in typing ability and system configuration. The phases outlined in are to be executed in the order they are listed.

Table 2. Installation Overview

Procedure	Phase	Elapsed Time (Minutes)	
		This Step	Cum.
Procedure 1	Continue TVOE Configuration on First RMS Server	15	15
Procedure 2	Configure TVOE on Additional RMS Server(s)	20	35
Procedure 3	Configure TVOE on Server Blades	20	55

Table 2. Installation Overview

Procedure	Phase	Elapsed Time (Minutes)	
		This Step	Cum.
Procedure 4	Load Application and TPD ISO onto PM&C Server	5	60
Procedure 5	Create NOAMP Guest VMs	5	65
Procedure 6	Create SOAMP Guest VMs	5	70
Procedure 7	IPM blades	20	90
Procedure 8	Install the application software on the blades	20	110
Procedure 9	Configure the First NO Server	25	135
Procedure 10	Configure the NO Server Group	15	150
Procedure 11	Configure the Second NO Server	15	165
Procedure 12	Complete Configuring the NOAMP Server Group	10	175
Procedure 13	Install NetBackup Client on NOAMP Servers (Optional)	10	185
Procedure 14	NO Configuration for DR Site (Optional)	10	195
Procedure 15	NO Pairing for DSR NO DR Site (Optional)	10	205
Procedure 16	Configure the SOAM NE	15	220
Procedure 17	Configure the SOAM Servers	10	230
Procedure 18	Configure the SOAM Server Group	10	240
Procedure 19	Post NOAM&SOAM Setup Opertaions	5	245
Procedure 20	Configure the MP Blade Servers	10	255
Procedure 21	Configure Places and Assign MP Servers to Places (PDRA Only)	10	265
Procedure 22	Configure the MP Server Groups	10	275
Procedure 23	Configure the Signaling Network	30	305
Procedure 24	Configure the Signaling Devices	10	315
Procedure 25 (Optional)	Configure DSCP Values for Outgoing Traffic	10	325
Procedure 26	Configure the Signaling Network Routes	15	340
Procedure 27	Add VIP for Signaling Networks	5	345
Procedure 28 (Optional)	Configure SNMP for Traps Receivers	5	350
Procedure 29	PDRA Resource Domain Configuration (PDRA Only)	15	365
Procedure 30 (Optional)	Activate Optional Features	15	380
Procedure 31 (Optional)	Configure ComAgent Connections	15	395

3.3 Optional Features

When DSR installation is complete, further configuration and/or installation steps will need to be taken for optional features that may be present in this deployment. Please refer to these documents for the post-DSR install configuration steps needed for their components.

Feature	Document
IP Front End (IPFE)	*IPFE Installation and Configuration*, WI006931, latest version, Mahoney
Charging Proxy Application (CPA) **Session Binding Repository** (SBR)	*CPA Activation Feature Work Instruction*, WI006780, latest version, Moore *CPA User Guide*, 910-6635-001,Rev A (4.1)
Policy DRA (PDRA)	*Policy DRA Activation*, WI006835, Latest Revision, Tekelec 2012
Diameter Mediation	*DSR Meta Administration Feature Activation*, WI006761, latest version, Fisher
Full Address Based Resolution (FABR**)**	*DSR FABR Feature Activation*, WI006771, latest version, Karmarkar *FABR User Guide*, 910-6634-001,Rev A (4.1.0) *FABR User Guide*, 910-6634-001,Rev B (4.1.5)
Range Based Address Resolution (RBAR**)**	*DSR RBAR Feature Activation*, WI006763, latest version, Fisher *RBAR User Guide*, 910-6633-001,Rev A
MAP-Diameter Interworking (MAP-IWF)	*MAP-Diameter IWF Feature Activation*,, WI006965, latest version

4.0 SOFTWARE INSTALLATION PROCEDURE

As mentioned earlier, the hardware installation and network cabling should be done before executing the procedures in this document. It is assumed that at this point, the user has access to:

- ILO consoles of all server blades at all sites
- ssh access to the PMAC servers at all sites
- GUI access to PMAC servers at all sites
- A configuration station with a web browser , ssh client, and scp client.

NOTE: Prior to executing the procedures below, please review the DSR release notes, and be aware of any workaround that should be executed.

4.1 Configure RMS TVOE Hosts

Procedure 1. Continue TVOE Configuration on First RMS Server

S T E P #	This procedure will extend the TVOE networking configuration on the First RMS server in preparation for the installation of the NOAMP VM on that RMS. **NOTE: If a NOAMP VM will NOT be co-located with the PMAC VM on the First RMS (for instance, this server will only run PMAC, but there are 2 additional RMS which will not), then skip this procedure and continue with the next procedure.** **Prerequisite**: TVOE and PMAC (virtualized) have been installed on the First RMS Server as described in [11] / [12] Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.

Procedure 1. Continue TVOE Configuration on First RMS Server

<table>
<tr>
<td>1
☐</td>
<td>Determine Bridge names and interfaces for XMI and IMI, and Netbackup (if used) networks.</td>
<td>Determine the bridge names and physical bridge interfaces to be used on the TVOE server for the NOAMP XMI and IMI networks. Based on the site survey, you will need to determine if you are using vlan tagging or not, what bonds will be used, and also the actual Ethernet interfaces that will make up those bonds.

If the netbackup bridge and interface were not previously configured on this server when PMAC was installed, determine those values as well.

Fill in the appropriate values in the table below:
<table>
<tr><th>NOAM&P Guest Interface Name</th><th>TVOE Bridge Name</th><th>TVOE Bridge Interface</th></tr>
<tr><td>xmi</td><td>xmi</td><td>Interface Bond (e.g- bond0, bond1, etc)

_____

<TVOE_XMI_Bridge_Interface_Bond>

Interface Name (e.g. - bond0.3, bond1, bond0.100):

_____

<TVOE_XMI_Bridge_Interface></td></tr>
<tr><td>imi</td><td>imi</td><td>Interface Bond:(e.g. - bond0, bond1, etc)

_____

<TVOE_IMI_Bridge_Interface_Bond>

Interface Name: (e.g. - bond0.4, bond1, bond0.100)

_____

<TVOE_IMI_Bridge_Interface></td></tr>
<tr><td>netbackup</td><td>netbackup</td><td>: Interface Name (e.g. - eth11, eth04, eth03, etc)

_____

<TVOE_NetBackup_Bridge_Interface></td></tr>
</table>
</td>
</tr>
</table>

Procedure 1. Continue TVOE Configuration on First RMS Server

2 ☐	**First RMS Server:** Login and Become SuperUser	Log in to the TVOE prompt of the first RMS server as the **admusr** user (the one running the PMAC). Use either the iLO facility, or the TVOE's IP address on the management network.
		
		Become the super user by using the command:
		
		`$ sudo su`
		
		You should see the prompt change to the hash mark:
		
		`#`

3 ☐	**First RMS Server:** Configure XMI Bridge Interface Bond	Verify the xmi bridge interface bond by running the following command:
		
		Note: The output below is for illustrative purposes only. The example output below shows the control bridge configured.
		
		`# netAdm query --device=<TVOE_XMI_Bridge_Bond>`
		
		`Protocol: none`
		`On Boot: yes`
		`Persistent: yes`
		`Bonded Mode: active-backup`
		`Enslaving: eth01 eth02`
		
		If the bond has already been configured you will see output similar to what you see above. If this is so, **skip to the next step**. Otherwise, continue with this step.
		
		Create bonding interface and associate subordinate interfaces with bond:
		
		`# netAdm add --device=<TVOE_XMI_Bridge_Bond>`
		`--onboot=yes --type=Bonding --mode=active-backup --miimon=100`
		`Interface <TVOE_XMI_Bridge_Bond> added`
		
		`# netAdm set --device=<TVOE_XMI_Bridge_Bond_Ethernet1> --`
		`type=Ethernet`
		`--master=<TVOE_XMI_Bridge_Bond> --slave=yes --onboot=yes`
		`Interface <TVOE_XMI_Bridge_Bond_Ethernet1> updated`
		
		`# netAdm set --device=<TVOE_XMI_Bridge_Bond_Ethernet2> --`
		`type=Ethernet`
		`--master=<TVOE_XMI_Bridge_Bond> --slave=yes --onboot=yes`
		`Interface <TVOE_XMI_Bridge_Bond_Ethernet2> updated`
		
		`# syscheckAdm net ipbond --set --var=DEVICES --`
		`val=<TVOE_XMI_Bridge_Bond>,[bondX,bondX+1, … ,bondN]`
		
		`Note: All other existing bonds should be included in the 'val='`
		`statement. E.g.if TVOE_XMI_Bridge_Bond = bond1, val=bond0,bond1`
		
		`# syscheckAdm net ipbond -enable`

Procedure 1. Continue TVOE Configuration on First RMS Server

4 ☐	**First RMS Server:** Create XMI Bridge Interface, If needed. (Only for VLAN tagging interfaces)	If you are using VLAN tagging for the XMI bridge interface, then you must create the VLAN interface first. Execute the following command:
		
		`# netAdm add --device=<TVOE_XMI_Bridge_Interface> --onboot=yes`
		`Interface <TVOE_XMI_Bridge_Interface> created.`

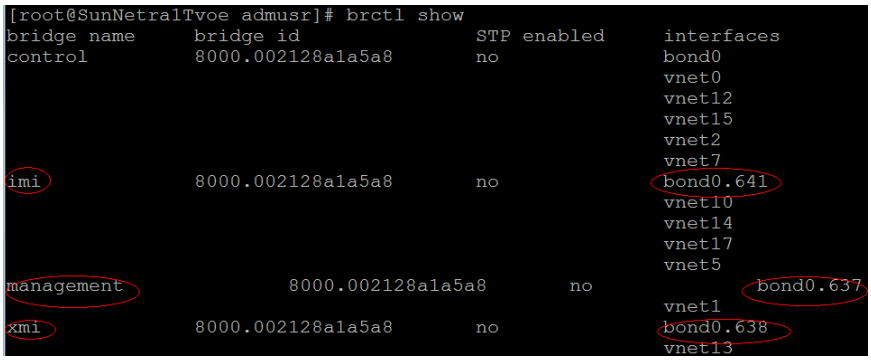
5 ☐	**First RMS Server:** Create XMI Bridge	`Now , create the XMI bridge:`
		
		`# netAdm add --type=Bridge --name=xmi--onboot=yes --bridgeInterfaces=<TVOE_XMI_Bridge_Interface>`
		
		`Interface <TVOE_XMI_Bridge_Interface> updated.`
		`Bridge xmi created.`

6 ☐	**First RMS Server:** Configure IMI Bridge Interface Bond	Verify the imi bridge interface bond by running the following command:
		
		Note: The output below is for illustrative purposes only. The example output below shows the control bridge configured.
		
		`# netAdm query --device=<TVOE_IMI_Bridge_Bond>`
		
		`Protocol: none`
		`On Boot: yes`
		`Persistent: yes`
		`Bonded Mode: active-backup`
		`Enslaving: eth01 eth02`
		
		If the bond has already been configured you will see output similar to what you see above. If this is so, **skip to the next step**. Otherwise, continue with this step.
		
		Create bonding interface and associate subordinate interfaces with bond:
		
		`# netAdm add --device=<TVOE_IMI_Bridge_Bond> --onboot=yes --type=Bonding --mode=active-backup --miimon=100`
		`Interface <TVOE_IMI_Bridge_Bond> added`
		
		`# netAdm set --device=<TVOE_IMI_Bridge_Bond_Ethernet1> --type=Ethernet --master=<TVOE_IMI_Bridge_Bond> --slave=yes --onboot=yes`
		`Interface <TVOE_IMI_Bridge_Bond_Ethernet1> updated`
		
		`# netAdm set --device=<TVOE_IMI_Bridge_Bond_Ethernet2> --type=Ethernet --master=<TVOE_IMI_Bridge_Bond> --slave=yes --onboot=yes`
		`Interface <TVOE_IMI_Bridge_Bond_Ethernet2> updated`
		
		Execute the following 2 commands ONLY IF <TVOE_XMI_Bridge_Bond> is ***different*** from <TVOE_IMI_Bridge_Bond>
		
		`# syscheckAdm net ipbond --set --var=DEVICES --val=<TVOE_XMI_Bridge_Bond>,<TVOE_IMI_Bridge_Bond>,[other bonds…]`
		
		`# syscheckAdm net ipbond -enable`

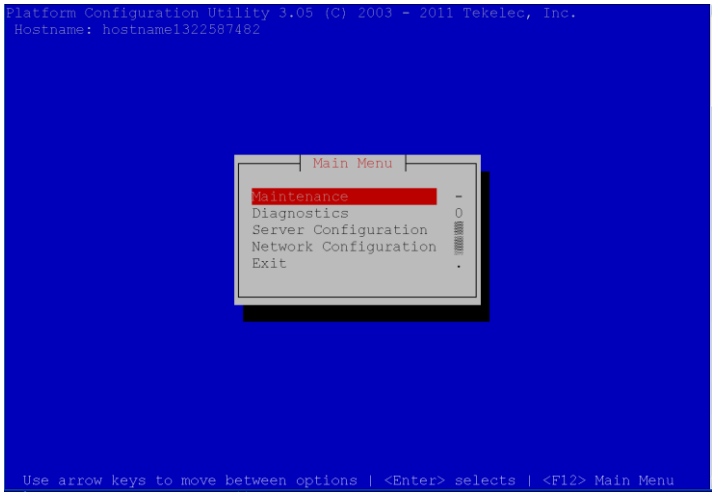
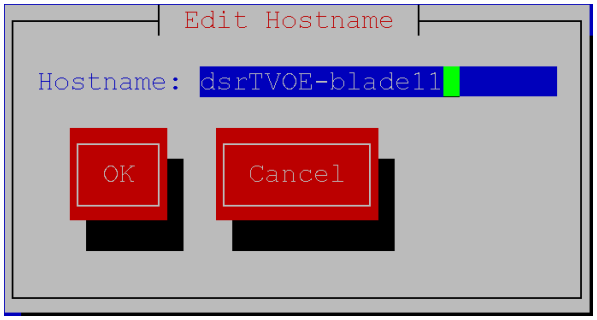
Procedure 1. Continue TVOE Configuration on First RMS Server

7 ☐	**First RMS Server:** Create IMI Bridge Interface, If needed. (Only for VLAN tagging interfaces)	If you are using VLAN tagging for the IMI bridge interface, then you must create the VLAN interface first. Execute the following command:
		
		`# netAdm add --device=<TVOE_IMI_Bridge_Interface> --onboot=yes`
		`Interface <TVOE_IMI_Bridge_Interface> created.`

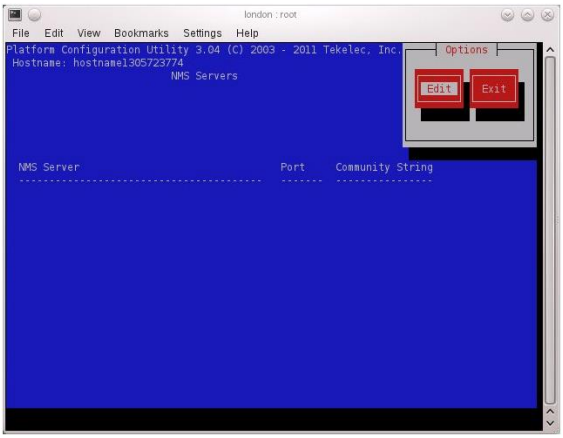
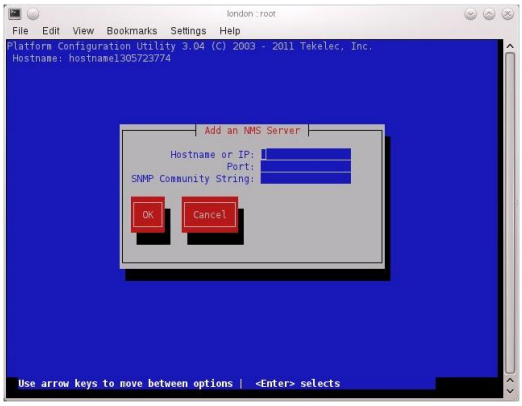
8 ☐	**First RMS Server:** Create IMI Bridge	`Now , create the XMI bridge:`
		
		`# netAdm add --type=Bridge --name=imi--onboot=yes --bridgeInterfaces=<TVOE_IMI_Bridge_Interface>`
		
		`Interface <TVOE_IMI_Bridge_Interface> updated.`
		`Bridge imi created.`

9 ☐	**First RMS Server:** Verify bridge creation status	Verify that the XMI and IMI bridges have been created successfully (Example output for illustrative purposes only): `# brctl show`  • Verify that "imi" and "xmi" are listed under the bridge name column. • Verify that <TVOE_XMI_Bridge_Interface> is listed under the interfaces column for xmi. • Verify that <TVOE_IMI_Bridge_Interface> is listed under the interfaces column for imi. • Verify that the <TVOE_Mgmt_Bridge_Interface> is listed under the interface column for <TVOE_Mgmt_Bridge> (NOTE: For this server, <TVOE_Mgmt_Bridge> was created in part #1 of the install procedure -- documents [11] or [12] depending on your DSR version.)

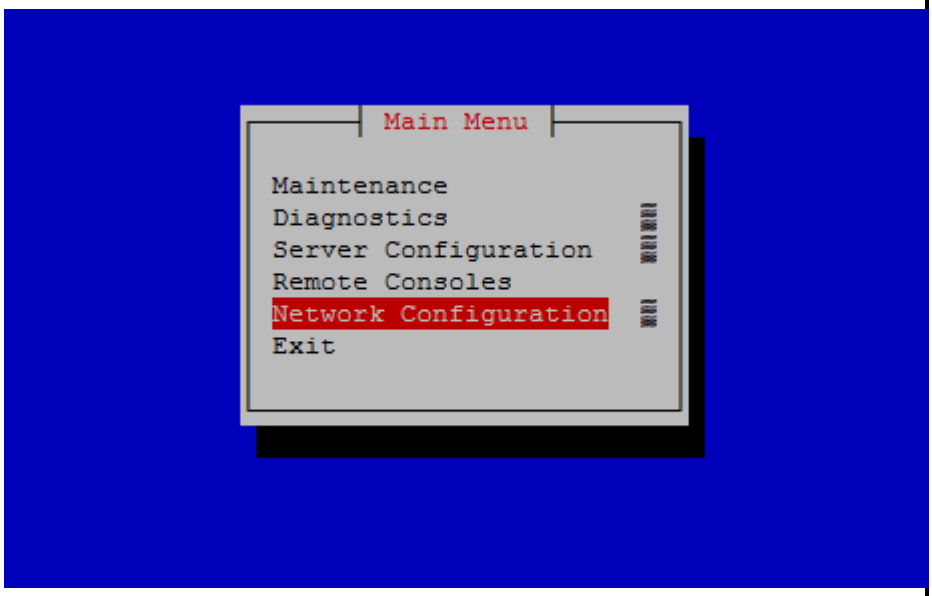
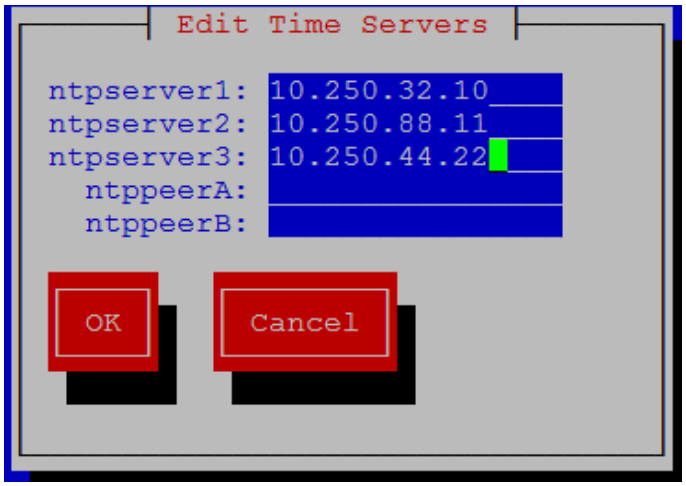
Procedure 1. Continue TVOE Configuration on First RMS Server

10 ☐	**RMS Server iLO:** Set Hostname	**NOTE: If hostname for the RMS server is already set, then you can skip this step.** `# su - platcfg`  Navigate to **`Sever Configuration->Hostname-> Edit`** and enter a new hostname for your server.  Press **OK** and select and continue to press Exit until you are at the platcfg main menu again. NOTE: Although the new hostname has been properly configured and committed at this point, it will not appear on your command prompt unless you log out and log back in again

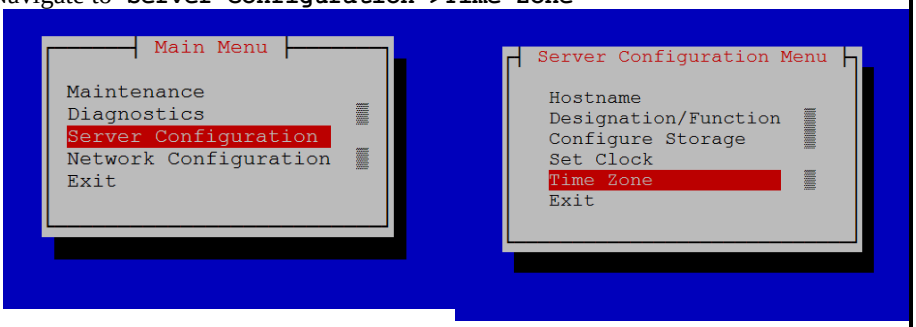
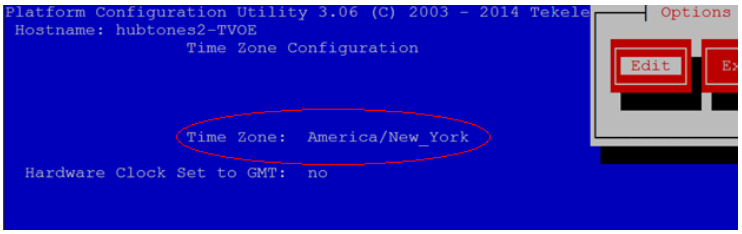
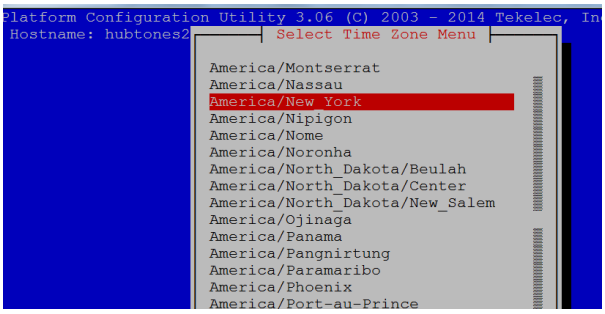
Procedure 1. Continue TVOE Configuration on First RMS Server

11 ☐	**RMS Server iLO:** Configure SNMP	From the platcfg main menu, navigate to **Network Configuration -> SNMP Configuration -> NMS Configuration**  Press **Edit**. Choose **Add a New NMS Server**  Enter the following NMS servers, pressing **OK** after each one and then selecting the **Add NMS** option again: 1. Enter the Hostname/IP of the Customer NMS Server, for port enter 162, and for Community String enter the community string provided in the customer NAPD Document. 2. Enter the IP of the NOAM VIP, for port enter 162, and for Community String enter the community string provided in the customer NAPD Document Press **Exit**. Select Yes when prompted to restart the Alarm Routing Service. Once Done, press **Exit** to quit to the platcfg main menu.

Procedure 1. Continue TVOE Configuration on First RMS Server

12 ☐	**RMS Server iLO:** Configure NTP	Navigate to **Network Configuration**  Navigate **to Configuration->NTP** Click **Edit**  • ntpserver1: Enter customer provided NTP server #1 IP address. • ntpserver2: Enter customer provided NTP server #2 IP address. • ntpserver3: Enter customer provided NTP server #3 IP address. Press **OK** **P**ress **Exit** to return to the platcfg menu.

Procedure 1. Continue TVOE Configuration on First RMS Server

13 ☐	**RMS Server iLO:** Configure Time Zone	**# su - platcfg** Navigate to **Server Configuration->Time Zone**   If the timezone displayed matches the timezone you desire, then you can continue to hit **Exit** until you are out of the platcfg program. If you want a different timezone, then proceed with this instruction. Click **Edit**  Select the desired time zone from the list and press **Enter** Select **NO** for the question, "Set hardware clock to GMT?" Continue pressing **Exit** until you are out of the platcfg program.

Procedure 1. Continue TVOE Configuration on First RMS Server

14 ☐	**First RMS Server:** Create Netbackup bridge (Optional)	Perform the following command if you will have a dedicated Netbackup interface within your NOAMP guests (and if the Netbackup bridge was NOT configured when setting up the PMAC earlier) `# netAdm add --type=Bridge --name=<TVOE_NetBackup_Bridge> --onboot=yes --MTU=<NetBackup_MTU_size> --bridgeInterfaces=<TVOE_NetBackup_Bridge_Interface>`

15 ☐	**First RMS Server and Customer provided Backup Server:** Backup TVOE files	This step backs up the TVOE files to a customer provided backup server.
		
		If NetBackup is being used, then this step should be skipped. Select 'Exit' to exit out of platcfg.
		
		If Netback isn't used, execute the following:
		
		1. Select the following menu options sequentially:
		Maintenance ➢ Backup and Restore ➢ Backup Platform (CD/DVD).
		The 'Backup TekServer Menu' page will now be shown.
		
		2. Build the backup ISO image by selecting:
		Build ISO file only
		
		Note: Creating the ISO image may happen so quickly that this screen may only appear for an instant.
		
		After the ISO is created, platcfg will return to the Backup TekServer Menu. The ISO has now been created and is located in the /var/TKLC/bkp/ directory. An example filename of a backup file that was created is: "hostname1307466752-plat-app-201104171705.iso"
		
		3. Exit out of platcfg by selecting '**Exit'.**
		
		4. Login to the customer server and copy backup image to the customer server where it can be safely stored. If the customer system is a Linux system, please execute the following command to copy the backup image to the customer system.
		
		`# scp tvoexfer@<TVOE IP Address>:backup/* /path/to/destination/`
		
		5. When prompted, enter the tvoexfer user password and press **Enter**.
		
		An example of the output looks like:
		`# scp tvoexfer@<TVOE IP Address>:backup/* /path/to/destination/`
		`tvoexfer@10.24.34.73's password:`
		`hostname1301859532-plat-app-301104171705.iso 100% 134MB 26.9MB/s 00:05`
		
		If the Customer System is a Windows system please refer to reference [4] *Platform 6.x Configuration Procedure Reference*, Appendix A Using WinSCP to copy the backup image to the customer system.
		
		The TVOE backup file has now been successfully placed on the Customer System.

Procedure 2. Configure TVOE on Additional RMS Server(s)

S T E P #	This procedure will configure TVOE networking on RMS Servers *other* than the first one which has already been installed and is running PMAC. NOTE: You will repeat this procedure for each additional RMS you wish to configure TVOE for. **Prerequisite**: RMS Server has been IPM'ed with TVOE OS as described in [11] Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.

Procedure 2. Configure TVOE on Additional RMS Server(s)

<table>
<tr>
<td>1
☐</td>
<td>Determine Bridge names and interfaces for XMI and IMI, and Netbackup (if used) n`etworks.</td>
<td>Determine the bridge names and physical bridge interfaces to be used on the TVOE server for the Management, XMI and IMI networks. Based on the site survey, you will need to determine if you are using vlan tagging or not, what bonds will be used, and also the actual Ethernet interfaces that will make up those bonds.

Fill in the appropriate values in the table below:

<table>
<tr><th>NOAM&P Guest Interface Name</th><th>TVOE Bridge Name</th><th>TVOE Bridge Interface</th></tr>
<tr><td>xmi</td><td>xmi</td><td>Interface Bond: (e.g. - bond0, bond1, etc)

_____

<TVOE_XMI_Bridge_Interface_Bond>

Interface Name (e.g. - bond0.3, bond1, bond0.100):

_____

<TVOE_XMI_Bridge_Interface></td></tr>
<tr><td>imi</td><td>imi</td><td>Interface Bond: (e.g. - bond0, bond1, etc)

_____

<TVOE_IMI_Bridge_Interface_Bond>

Interface Name (e.g. - bond0.4, bond1, bond0.100):

_____

<TVOE_IMI_Bridge_Interface></td></tr>
<tr><td>netbackup</td><td>netbackup</td><td>: Interface Name (e.g. - eth11, eth04, eth03, etc)

_____

<TVOE_NetBackup_Bridge_Interface></td></tr>
<tr><td>management</td><td>management</td><td>Interface Name (e.g. bond0.2, bond0.37, etc)

_____

<TVOE_Management_Bridge_Interface></td></tr>
</table>
</td>
</tr>
</table>

Procedure 2. Configure TVOE on Additional RMS Server(s)

2 ☐	**RMS Server iLO:** Login as **admusr**	Log in to the TVOE prompt of the RMS Server as **admusr** using the iLO facility.
		
		Become the super user by using the command:
		
		`$ sudo su`
		
		You should see the prompt change to the hash mark:
		
		`#`

3 ☐	**RMS Server iLO:** Modify control bridge if using tagged control interface (Optional)	**If you are using VLAN tagging for your control interface, you must reconfigure the default control bridge configuration. Otherwise, skip this step and proceed to the next step.**
		
		`# netAdm set --type=Bridge --name=control --delBridgeInt=bond0`
		`Bridge control updated.`
		
		`# netAdm add --device=bond0.<control_VLAN_ID> --onboot=yes`
		`Interface bond0.X added`
		
		`# netAdm set --type=Bridge –name=control --addBridgeInt=bond0.<control_VLAN_ID>`
		`Bridge control updated.`

Procedure 2. Configure TVOE on Additional RMS Server(s)

4 ☐	**RMS Server iLO:** Configure XMI Bridge Interface Bond	Verify the xmi bridge interface bond by running the following command:
		
		Note: The output below is for illustrative purposes only. The example output below shows the control bridge configured.
		
		`# netAdm query --device=<TVOE_XMI_Bridge_Bond>`
		
		`Protocol: none`
		`On Boot: yes`
		`Persistent: yes`
		`Bonded Mode: active-backup`
		`Enslaving: eth01 eth02`
		
		If the bond has already been configured you will see output similar to what you see above. If this is so, **skip to the next step**. Otherwise, continue with this step.
		
		Create bonding interface and associate subordinate interfaces with bond:
		
		`# netAdm add --device=<TVOE_XMI_Bridge_Bond>`
		`--onboot=yes --type=Bonding --mode=active-backup --miimon=100`
		`Interface <TVOE_XMI_Bridge_Bond> added`
		
		`# netAdm set --device=<TVOE_XMI_Bridge_Bond_Ethernet1> --type=Ethernet`
		`--master=<TVOE_XMI_Bridge_Bond> --slave=yes --onboot=yes`
		`Interface <TVOE_XMI_Bridge_Bond_Ethernet1> updated`
		
		`# netAdm set --device=<TVOE_XMI_Bridge_Bond_Ethernet2> --type=Ethernet`
		`--master=<TVOE_XMI_Bridge_Bond> --slave=yes --onboot=yes`
		`Interface <TVOE_XMI_Bridge_Bond_Ethernet2> updated`

5 ☐	**RMS Server iLO:** Create XMI Bridge Interface, If needed. (Only for VLAN tagging interfaces)	If you are using VLAN tagging for the XMI bridge interface, then you must create the VLAN interface first. Execute the following command:
		
		`# netAdm add --device=<TVOE_XMI_Bridge_Interface> --onboot=yes`
		`Interface <TVOE_XMI_Bridge_Interface> created.`

6 ☐	**RMS Server iLO:** Create XMI Bridge	`Now , create the XMI bridge:`
		
		`# netAdm add --type=Bridge --name=xmi--onboot=yes`
		`--bridgeInterfaces=<TVOE_XMI_Bridge_Interface>`
		
		`Interface <TVOE_XMI_Bridge_Interface> updated.`
		`Bridge xmi created.`

Procedure 2. Configure TVOE on Additional RMS Server(s)

7 ☐	**RMS Server iLO:** Configure IMI Bridge Interface Bond	Verify the imi bridge interface bond by running the following command:
		
		Note: The output below is for illustrative purposes only. The example output below shows the control bridge configured.
		
		`# netAdm query --device=<TVOE_IMI_Bridge_Bond>`
		
		`Protocol: dhcp`
		`On Boot: yes`
		`Persistent: yes`
		`Bonded Mode: active-backup`
		`Enslaving: eth01 eth02`
		
		If the bond has already been configured you will see output similar to what you see above. If this is so, **skip to the next step**. Otherwise, continue with this step.
		
		Create bonding interface and associate subordinate interfaces with bond:
		
		`# netAdm add --device=<TVOE_IMI_Bridge_Bond>`
		`--onboot=yes --type=Bonding --mode=active-backup --miimon=100`
		`Interface <TVOE_IMI_Bridge_Bond> added`
		
		`# netAdm set --device=<TVOE_IMI_Bridge_Bond_Ethernet1> --type=Ethernet`
		`--master=<TVOE_IMI_Bridge_Bond> --slave=yes --onboot=yes`
		`Interface <TVOE_IMI_Bridge_Bond_Ethernet1> updated`
		
		`# netAdm set --device=<TVOE_IMI_Bridge_Bond_Ethernet2> --type=Ethernet`
		`--master=<TVOE_IMI_Bridge_Bond> --slave=yes --onboot=yes`
		`Interface <TVOE_IMI_Bridge_Bond_Ethernet2> updated`

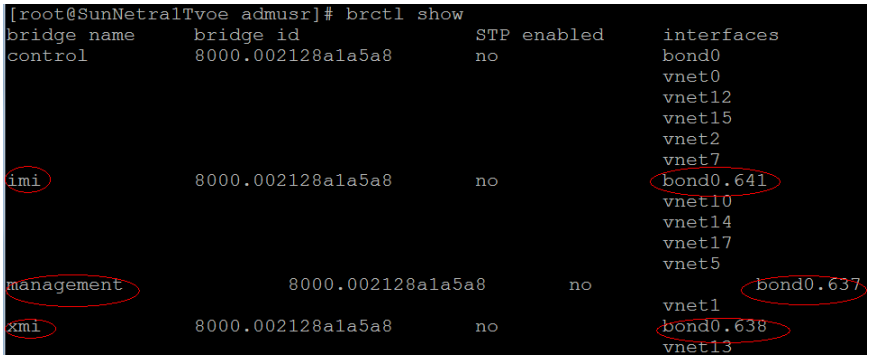
8 ☐	**RMS Server iLO:** Create IMI Bridge Interface, If needed. (Only for VLAN tagging interfaces)	If you are using VLAN tagging for the IMI bridge interface, then you must create the VLAN interface first. Execute the following command:
		
		`# netAdm add --device=<TVOE_IMI_Bridge_Interface> --onboot=yes`
		`Interface <TVOE_IMI_Bridge_Interface> created.`

7 ☐	**RMS Server iLO:** Create IMI Bridge	`# netAdm add --type=Bridge --name=imi--onboot=yes`
		`--bridgeInterfaces=<TVOE_IMI_Bridge_Interface>`
		
		`Interface <TVOE_IMI_Bridge_Interface> updated.`
		`Bridge imi created.`

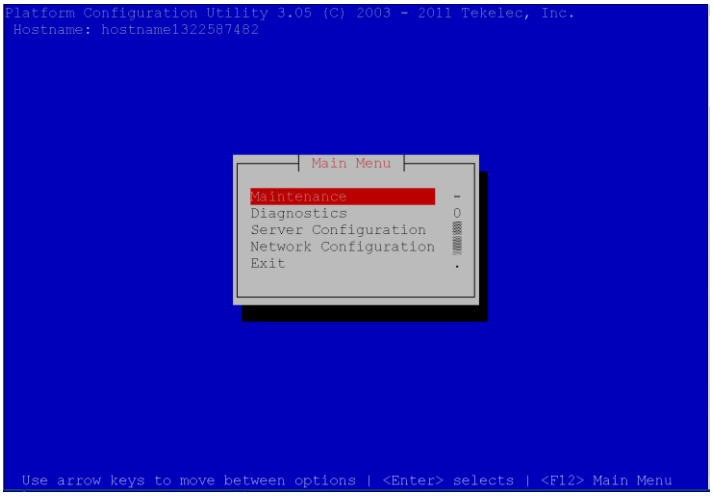
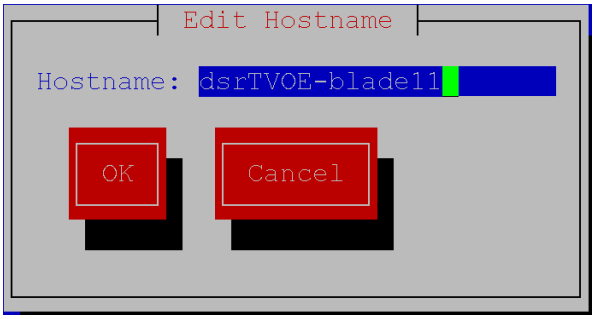
Procedure 2. Configure TVOE on Additional RMS Server(s)

8 ☐	**RMS server iLO:** Create management bridge and assign TVOE Management IP and default route	**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. If <TVOE_Management_Bridge_Interface> or the bond it is based on (if using tagged interface) has not yet been created, then execute the next 3 commands. Otherwise, skip to the "EXAMPLE…" section: **# netAdm add --device=<TVOE_Management_Bridge_Interface_Bond> --onboot=yes --type=Bonding --mode=active-backup --miimon=100** Interface <TVOE_Management_Bridge_Interface> added **# netAdm set --device=<mgmt_ethernet_interface1> --type=Ethernet --master=<TVOE_Management_Bridge_Interface_Bond> --slave=yes --onboot=yes** Interface <mgmt_ethernet_interface1> updated **# netAdm set --device=<mgmt_ethernet_interface2> --type=Ethernet --master-<TVOE_Management_Bridge_Interface_Bond> --slave=yes --onboot=yes** Interface <mgmt_ethernet_interface2> updated EXAMPLE 1: Create Management bridge using untagged interfaces (<TVOE_Management_Bridge>). **# netAdm add --type=Bridge --name=management --bootproto=none --onboot=yes --address=<TVOE_RMSX_Mgmt_IP_Address> --netmask=<TVOE_RMS_Mgmt_Netmask> --bridgeInterfaces=<TVOE_Management_Bridge_Interface>** EXAMPLE 2: Create Management bridge using tagged interfaces **# netAdm add --device=<TVOE_Management_Bridge_Interface>** **# netAdm add --type=Bridge --name=management --address=<TVOE_RMSX_Mgmt_IP_Address > --netmask=<TVOE_RMS_Mgmt_Netmask> --onboot=yes --bridgeInterfaces=<TVOE_Management_Bridge_Interface>** Cretate default route (execute regardless of which example is chosen): **# netAdm add --route=default --gateway=<mgmt_gateway_address> --device=management** Route to management created.

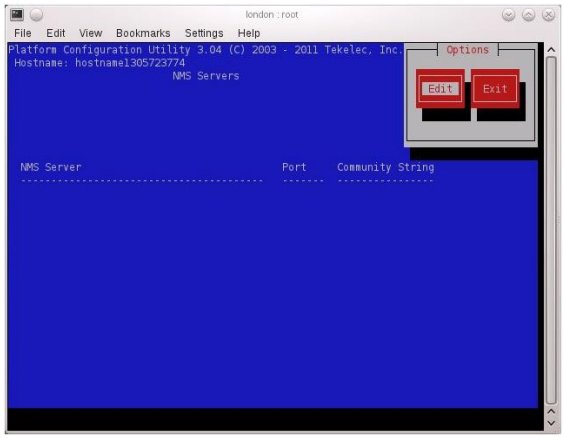
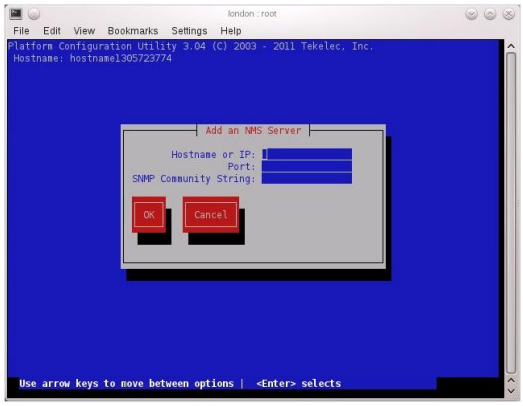
Procedure 2. Configure TVOE on Additional RMS Server(s)

9 ☐	**RMS Server iLO:** Verify bridge creation status	Verify that the XMI, IMI, and Management bridges have been created successfully (Example output for illustrative purposes only): `# brctl show`  • Verify that "imi" and "xmi" are listed under the bridge name column. • Verify that <TVOE_XMI_Bridge_Interface> is listed under the interfaces column for xmi. • Verify that <TVOE_IMI_Bridge_Interface> is listed under the interfaces column for imi. • Verify that the <TVOE_Mgmt_Bridge_Interface> is listed under the interface column for <TVOE_Mgmt_Bridge_Name>
10 ☐	**RMS Server iLO:** Create Netbackup bridge (Optional)	**Perform the following command if you will have a dedicated Netbackup interface within your NOAMP guests (and if the Netbackup bridge was NOT configured when setting up the PMAC earlier)** `# netAdm add --type=Bridge --name=<TVOE_NetBackup_Bridge> --onboot=yes --MTU=<NetBackup_MTU_size> --bridgeInterfaces=<TVOE_NetBackup_Bridge_Interface>`

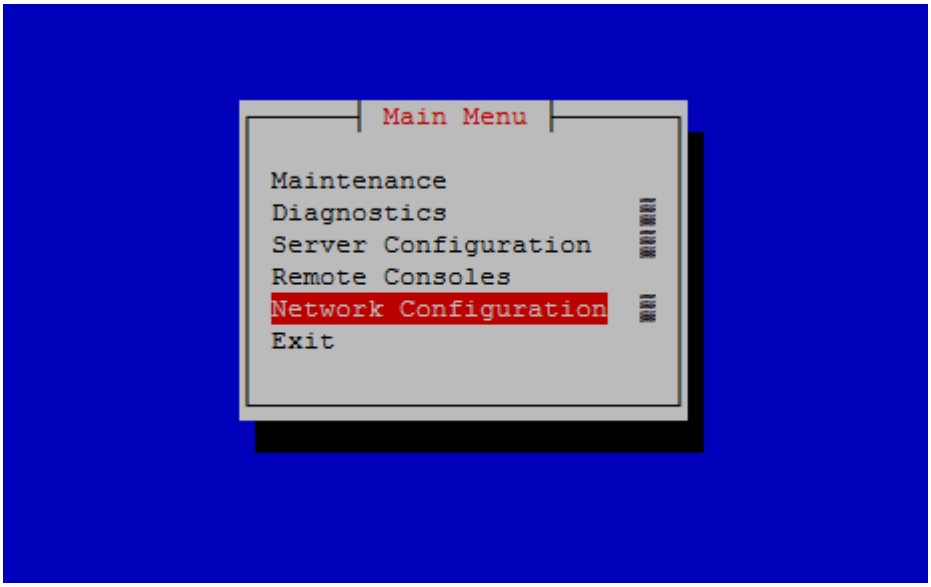
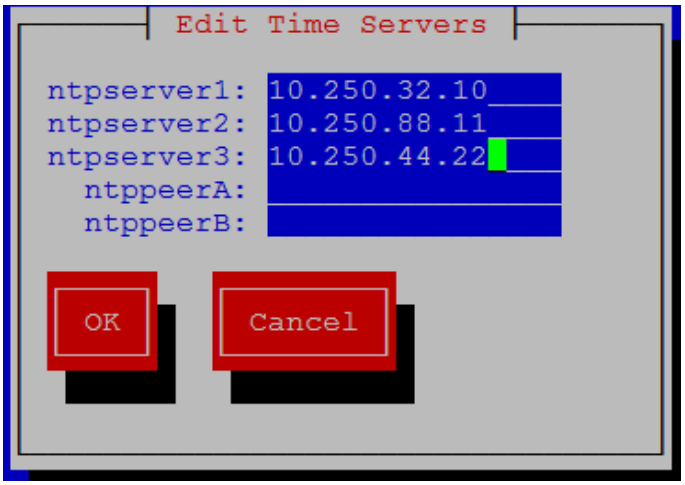
Procedure 2. Configure TVOE on Additional RMS Server(s)

11 ☐	**RMS Server iLO:** Set Hostname	# **su - platcfg**  Navigate to **Sever Configuration->Hostname-> Edit** and enter a new hostname for your server.  Press **OK** and select and continue to press **Exit** until you are at the platcfg main menu again. Continue To Press **Exit** until you are back at the platcfg main menu **NOTE:** Although the new hostname has been properly configured and committed at this point, it will not appear on your command prompt unless you log out and log back in again

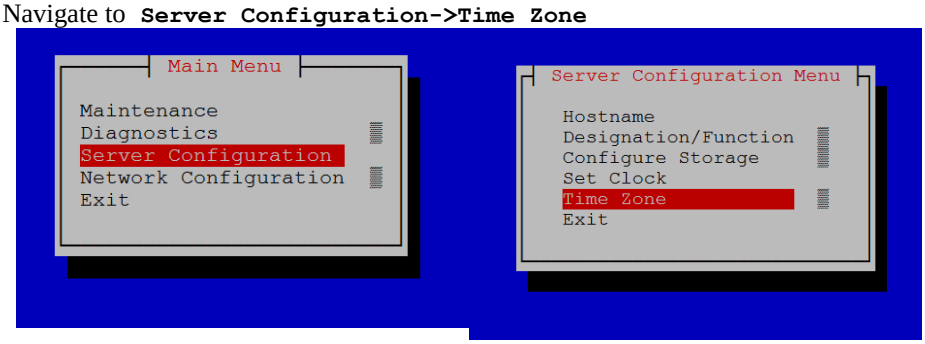
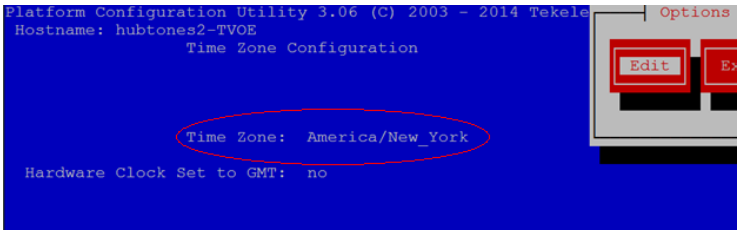
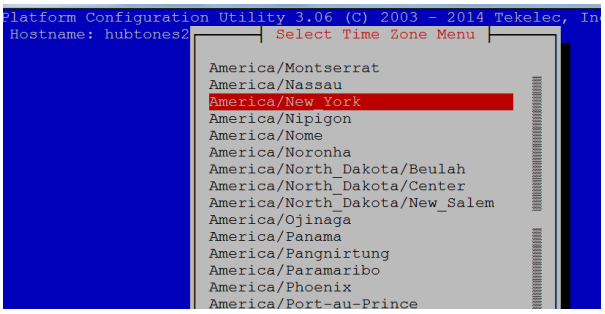
Procedure 2. Configure TVOE on Additional RMS Server(s)

12 ☐	**RMS Server iLO:** Configure SNMP	From the platcfg main menu, navigate to **Network Configuration -> SNMP Configuration -> NMS Configuration**  Press **Edit**. Choose **Add a New NMS Server**  Enter the following NMS servers, pressing **OK** after each one and then selecting the **Add NMS** option again: 1. Enter the Hostname/IP of the Customer NMS Server, for port enter 162, and for Community String enter the community string provided in the customer NAPD Document. 2. Enter the IP of the NOAM VIP, for port enter 162, and for Community String enter the community string provided in the customer NAPD Document Press **Exit**. Select Yes when prompted to restart the Alarm Routing Service. Once Done, press **Exit** to quit to the platcfg main menu.

Procedure 2. Configure TVOE on Additional RMS Server(s)

13 ☐	**RMS Server iLO:** Configure NTP	Navigate to Network Configuration  Navigate to **Configuration->NTP** Click **Edit**  • ntpserver1: Enter customer provided NTP server #1 IP address. • ntpserver2: Enter customer provided NTP server #2 IP address. • ntpserver3: Enter customer provided NTP server #3 IP address. Press **OK** Continue to press Exit until you are out of the platcfg menu.

Procedure 2. Configure TVOE on Additional RMS Server(s)

14 ☐	**RMS Server iLO:** Configure Time Zone	**# su - platcfg** Navigate to **Server Configuration->Time Zone**   If the timezone displayed matches the timezone you desire, then you can continue to hit **Exit** until you are out of the platcfg program. If you want a different timezone, then proceed with this instruction. Click **Edit**  Select the desired time zone from the list and press **Enter** Select **NO** for the question, "Set hardware clock to GMT?" Continue pressing **Exit** until you are out of the platcfg program.

4.2 Configure Blade TVOE Hosts

Procedure 3. Configure TVOE on Server Blades

S T E P #		
	This procedure will configure TVOE on the server blades that will host DSR NOAMP VMs. It details the configuration for a single server blade and should be repeated for every TVOE blade that was IPM-ed for this installed. **NOTE:** TVOE should only be installed on Blade servers that will run either as DSR SOAMs or DSR NOAMPs. They should NOT be installed on Blade servers intended to run as DSR MPs. **Prerequisite**: TVOE OS has been installed on the target server blades as per instructions in [11]. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
1 ☐	**PMAC Server:** Exchange SSH keys between PMAC and TVOE server	Use the PMAC GUI to determine the Control Network IP address of TVOE server. From the PMAC GUI, navigate to `Main Menu` → `Software` →`Software Inventory`. Note the IP address TVOE server. From a terminal window connection on the PMAC, login as the admusr user. Exchange SSH keys between the PMAC and the TVOE server using the keyexchange utility, using the Control network IP address for the TVOE blade server. When prompted for the password, enter the password for the TVOE server. `$ keyexchange admusr@<TVOE blade Control Net IP addr>`

2
☐
	TVOE Server:
	Login and Copy Configuration Scripts from PMAC
		Login as **admusr** on the TVOE server using the ILO facility.
		
		Become the super user by using the command:
		
		`$ sudo su`
		
		You should see the prompt change to the hash mark:
		
		`#`
		
		Execute the following commands:
		
		`# scp admusr@<Management_Server Control_IP_ addr>:/usr/TKLC/smac/etc/TVOE* /root/`
		
		`# chmod 777 /root/TVOE*`
		
		(If no TVOE configuration scripts are found here, then please re-execute section 4.2.2, Step #10 of [11]/[12].)

Procedure 3. Configure TVOE on Server Blades

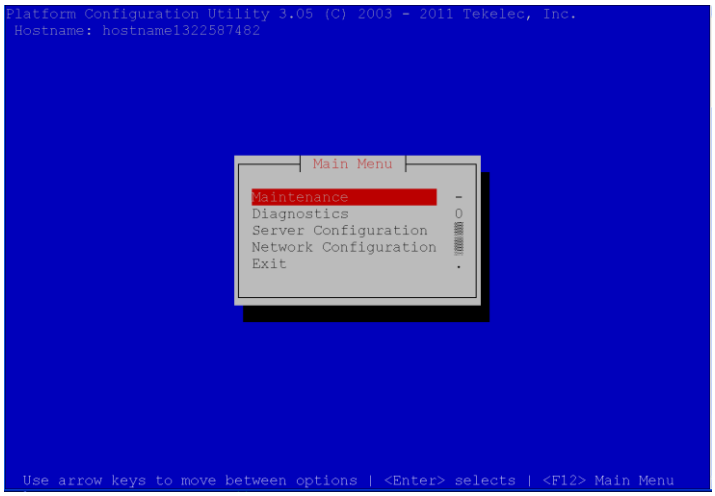
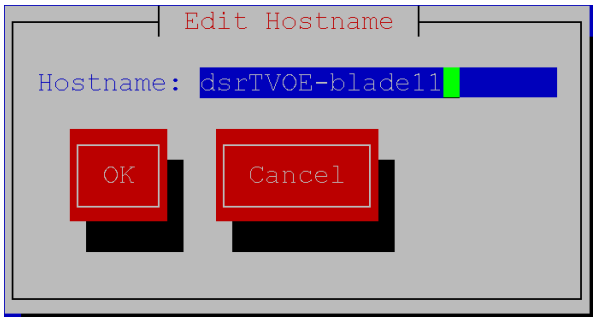
3 ☐	**TVOE Server:** Run Configuration Script Based on Server Blade NIC Configuration	**Next, you will execute ONLY ONE of the following commands. Read carefully to determine which command you should run.**
		
		If your TVOE server blade DOES have mezzanine cards AND you will be running OAM/XMI traffic on a separate physical network, execute the following command:
		
		# **/root/TVOEcfg.sh --xmivlan=<XMI_VLAN_ID> --imivlan=<IMI_VLAN_ID> mezz**
		
		If your TVOE server blade DOES NOT have mezzanine cards AND/OR you will NOT be running OAM/XMI traffic over a separate physical network, execute the following command :
		
		# **/root/TVOEcfg.sh --xmivlan=<XMI_VLAN_ID> --imivlan=<IMI_VLAN_ID>**
		
		In both cases: *XMI_VLAN_ID* is the VLAN ID for the XMI network in this installation, and *IMI_VLAN_ID* is the VLAN ID for the IMI network in this installation. For deployments with aggregation switches, the IMI and XMI VLAN IDs will be the values of the "INTERNAL-IMI" and "INTERNAL-XMI" vlan ids, respectively. For layer-2 only deployments, the IMI and XMI vlan ids will be obtained from the customer.
		
		Upon executing the proper version of the TVOEcfg.sh script, you should see an output similar to the following (example shows output without the "mezz" parameter):
		
		`Using onboard NICs ...`
		`Interface bond0.3 added`
		`Interface bond0.4 added`
		`Setting up the bridge and unsetting network info`
		`Interface bond0.3 was updated.`
		`Bridge xmi added!`
		`Setting up the bridge and unsetting network info`
		`Interface bond0.4 was updated.`
		`Bridge imi added!`
		
		The prompt will return.
		
		NOTE: If for any reason, you ran the wrong version of the TVOEcfg.sh command, you can execute: **/root/TVOEclean.sh** to reset the networking configuration so you can repeat this step.

Procedure 3. Configure TVOE on Server Blades

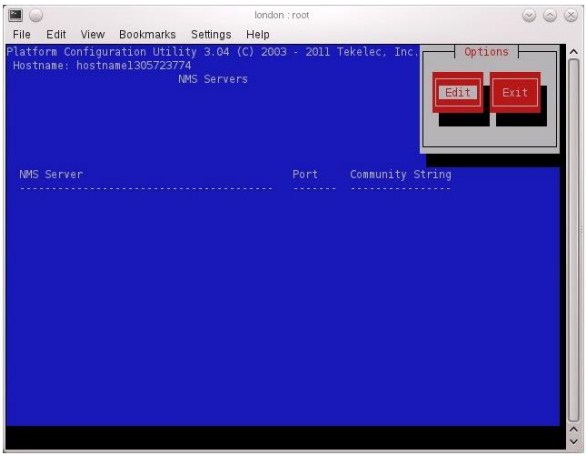
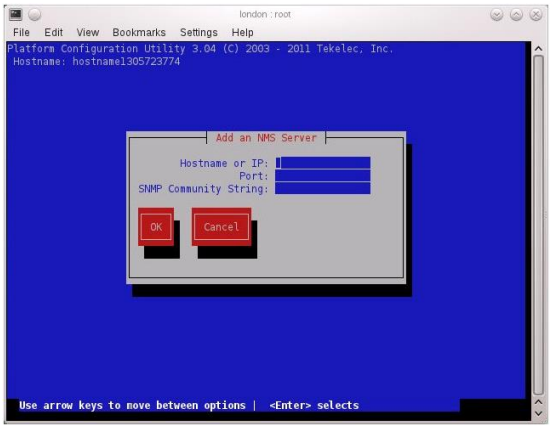
4 ☐	**TVOE Server:** Configure XMI IP and Default Route	**Configure IP address on the XMI network.:**
		
		`# netAdm set --type=Bridge --name=xmi --address=<TVOE_XMI_IP_ADDRESS> --netmask=<XMI_NETMASK>`
		
		`Interface xmi was updated.`
		
		Restart network services:
		`# service network restart`
		
		`[wait for the prompt to return]`
		
		Set the default route:
		`# netAdm add --route=default --device=xmi --gateway=<XMI_NETWORK_GATEWAY>`
		
		`Route to xmi added.`
		
		If this installation does not require NetBackup to use a dedicated ethernet interface, then skip the next step and proceed to step 6.

5 ☐	**(Optional)**
	
	TVOE Server: Configure NetBackup Dedicated Interface and Bridge
		In these examples, <*interface*> should be replaced with the actual ethernet interface that will be used as the dedicated NetBackup port. For instance, "eth01", or "eth22".
		
		Unbond Ethernet Interface:
		
		`# netAdm set --device=<interface> --slave=no --onboot=yes`
		
		[OPTIONAL] If this installation is using jumbo frames, set the ethernet interface MTU to the desired jumbo frame size:
		
		`# netAdm set --device=<interface> --MTU=<NetBackup_MTU_size>`
		
		Create NetBackup VM Bridge Interface:
		
		`# netAdm add --type=Bridge --name=netbackup --bridgeInterfaces=<interface> --onboot=yes`

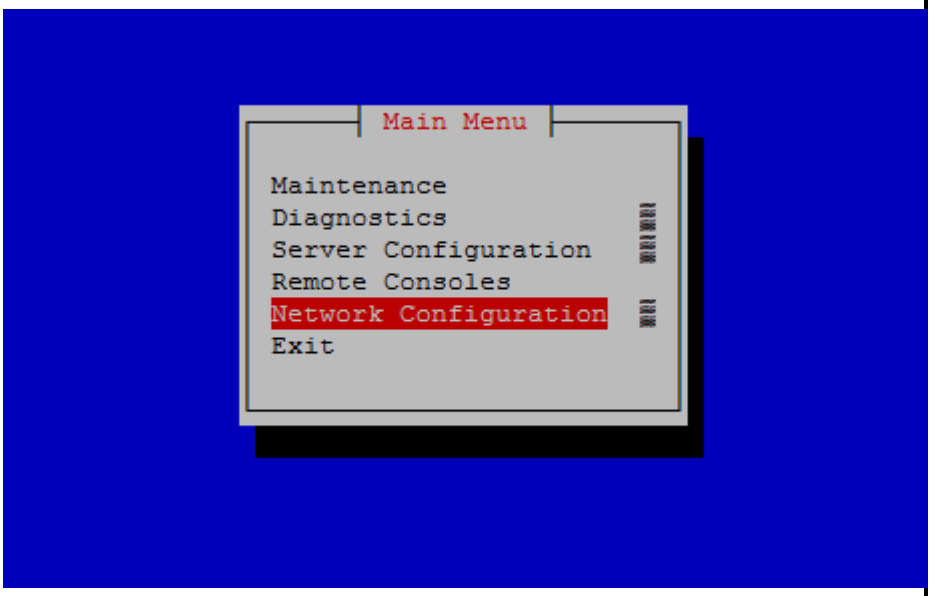
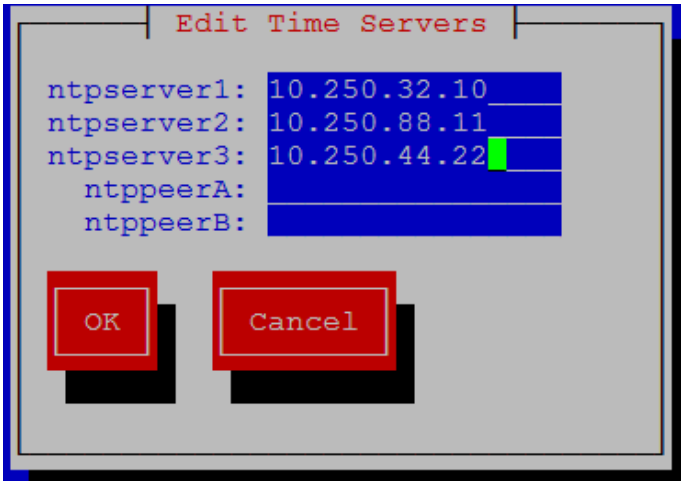
Procedure 3. Configure TVOE on Server Blades

6 ☐	**TVOE Server:** Set Hostname	# **su - platcfg**  Navigate to **Sever Configuration->Hostname-> Edit** and enter a new hostname for your server.  Press **OK** and select and continue to press **Exit** until you are at the platcfg main menu again. Continue To Press **Exit** until you are back at the platcfg main menu **NOTE:** Although the new hostname has been properly configured and committed at this point, it will not appear on your command prompt unless you log out and log back in again

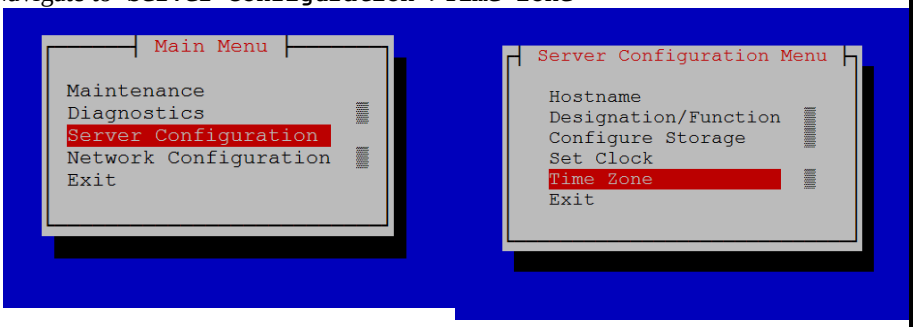
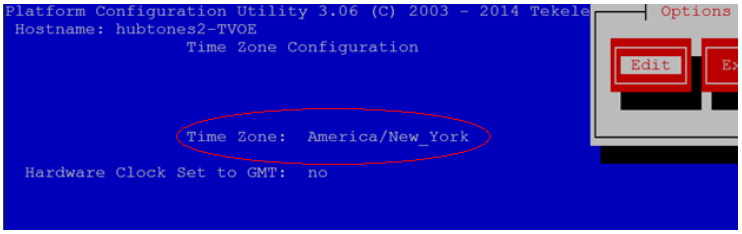
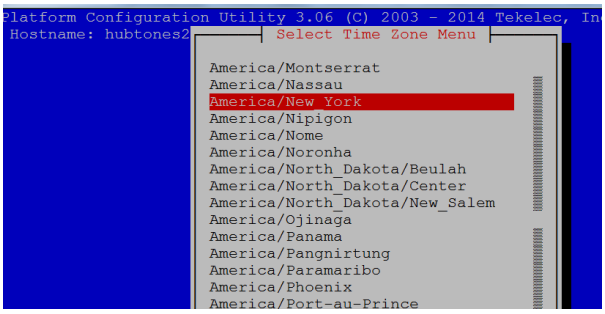
Procedure 3. Configure TVOE on Server Blades

7 ☐	**TVOE server:** Configure SNMP	From the platcfg main menu, navigate to **`Network Configuration -> SNMP Configuration -> NMS Configuration`**  Press **`Edit.`** Choose **`Add a New NMS Server`**  Enter the following NMS servers, pressing **OK** after each one and then selecting the **Add NMS** option again: 1. Enter the Hostname/IP of the Customer NMS Server, for port enter 162, and for Community String enter the community string provided in the customer NAPD Document. 2. Enter the IP of the SOAM VIP, for port enter 162, and for Community String enter the community string provided in the customer NAPD Document Press **Exit**. Select **Yes** when prompted to restart the Alarm Routing Service. Once Done, press **Exit** to quit to the platcfg main menu.

Procedure 3. Configure TVOE on Server Blades

8 ☐	**TVOE server:** Configure NTP	Navigate to Network Configuration  Navigate to **`Configuration->NTP`** Click **`Edit`**  • ntpserver1: Enter customer provided NTP server #1 IP address. • ntpserver2: Enter customer provided NTP server #2 IP address. • ntpserver3: Enter customer provided NTP server #3 IP address. Press **`OK`** Continue to press Exit until you are out of the platcfg menu.

Procedure 3. Configure TVOE on Server Blades

9 ☐	**RMS Server iLO:** Configure Time Zone	**# su - platcfg** Navigate to **Server Configuration->Time Zone**   If the timezone displayed matches the timezone you desire, then you can continue to hit **Exit** until you are out of the platcfg program. If you want a different timezone, then proceed with this instruction. Click **Edit**  Select the desired time zone from the list and press **Enter** Select **NO** for the question, "Set hardware clock to GMT?" Continue pressing **Exit** until you are out of the platcfg program.
10 ☐	**TVOE server:** Repeate Procedure for other TVOE blades.	**Configuration of this TVOE server blade is complete. Repeat this procedure from the beginning for other TVOE hosts that need to be configured.**

4.3 Create Virtual Machines for Applications

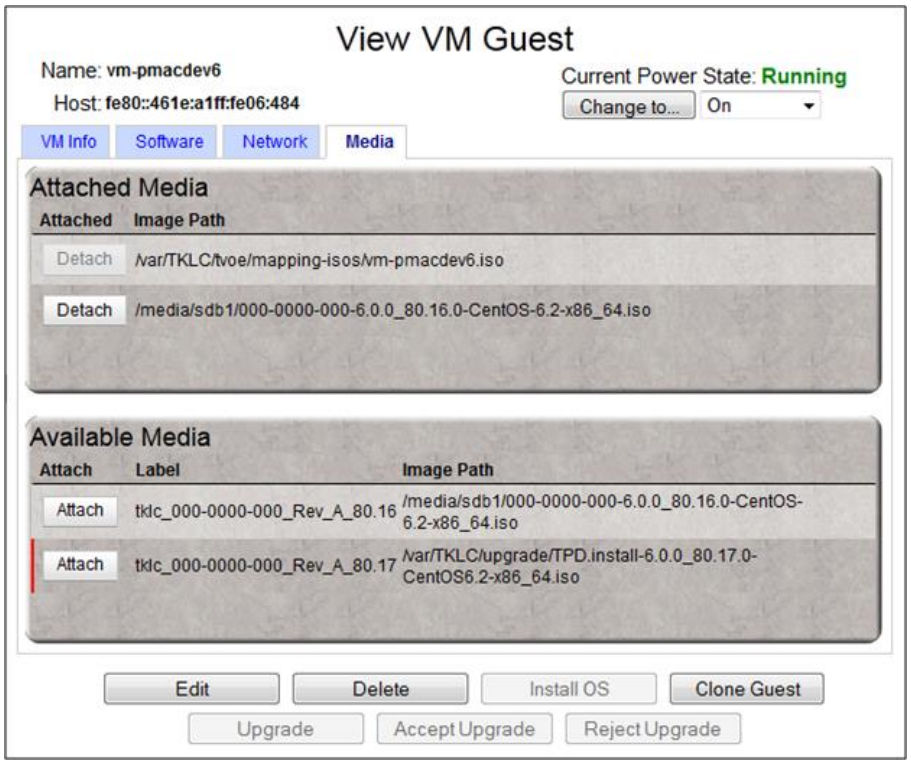
Procedure 4. Load Application and TPD ISO onto PM&C Server

S T E P #	This procedure will load the DSR Application ISO into the PM&C Server **Needed material:** - Application 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 TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	

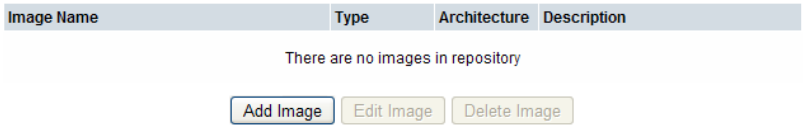
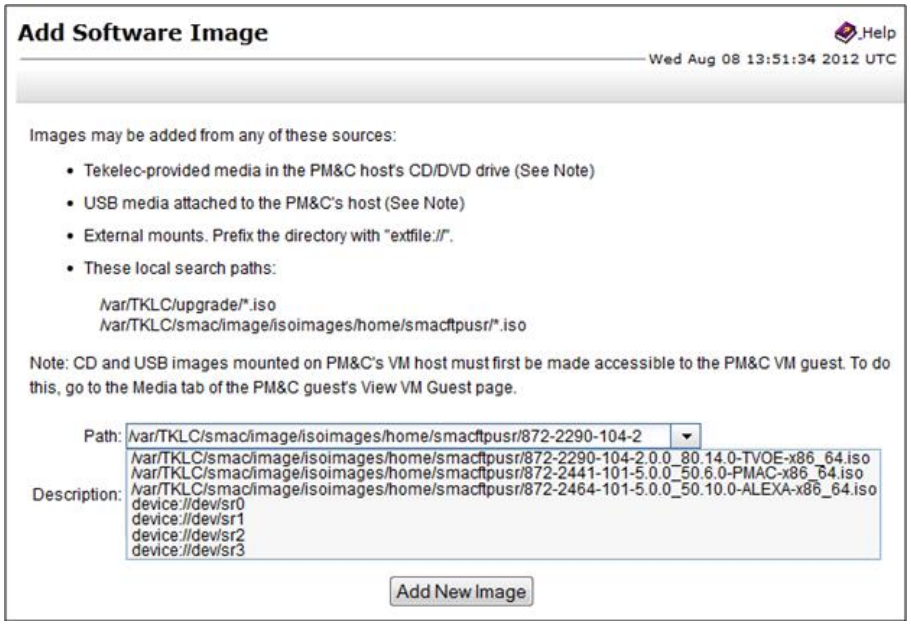
1 ☐	**TVOE Host:** Load Application ISO	Add the Application ISO image to the PM&C, this can be done in one of three ways:
		1. Insert the Application CD required by the application into the removable media drive.
		2. Attach the USB device containing the ISO image to a USB port.
		3. Copy the Application iso file to the PM&C server into the "/var/TKLC/smac/image/isoimages/home/smacftpusr/" directory as pmacftpusr user:
		
		cd into the directory where your ISO image is located on the **TVOE Host** (not on the PM&C server)
		
		Using sftp, connect to the PM&C server
		
		`# sftp pmacftpusr@<pmac_management_network_ip>`
		`# put <image>.iso`
		
		After the image transfer is 100% complete, close the connection
		`# quit`

2 ☐	**PM&C GUI:** Login	Open web browser and enter: `http://<pmac_management_network_ip>` Login as pmacadmin user.

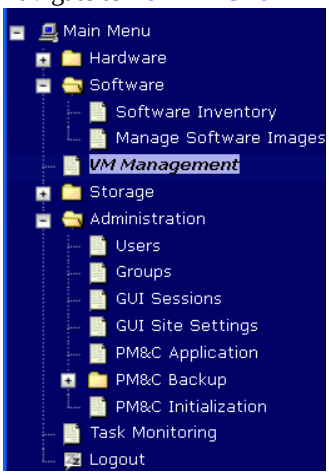
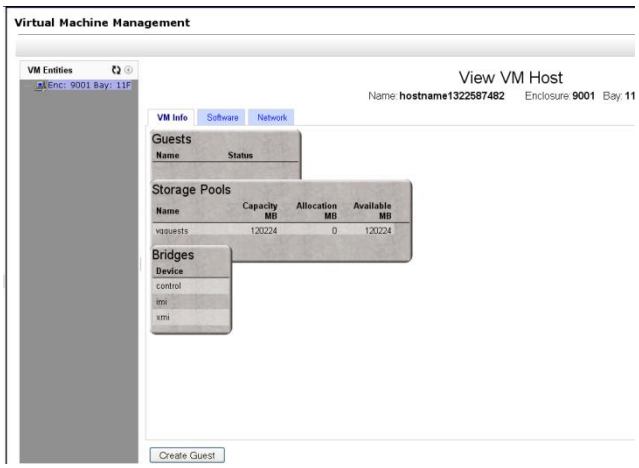
Procedure 4. Load Application and TPD ISO onto PM&C Server

3 ☐	**PM&C GUI:** Attach the software Image to the PM&C Guest	If in Step 1 the ISO image was transferred directly to the PM&C guest via sftp, skip the rest of this step and continue with step 4. If the image is on a CD or USB device, continue with this step. In the PM&C GUI, nevigate to **Main Menu ➢ VM Managmenet.**. In the "**VM Entities**" list, select the PM&C guest. On the resulting "**View VM Guest**" page, select the "**Media**" tab. Under the **Media** tab, find the ISO image in the "**Available Media**" list, and click its "**Attach**" button. After a pause, the image will appear in the "**Attached Media**" list. 

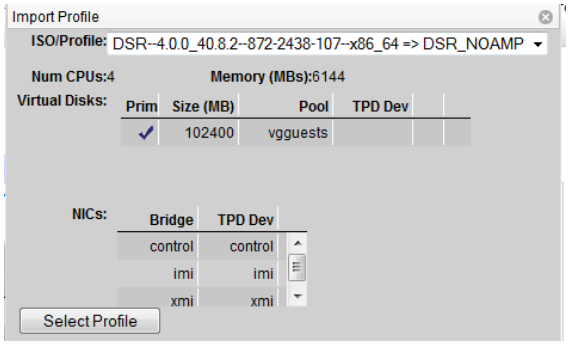
Procedure 4. Load Application and TPD ISO onto PM&C Server

4 ☐	**PM&C GUI:** Add Application image	Navigate to **Main Menu -> Software -> Manage Software Images** Press **Add Image** button. Use the drop down to select the image.  If the image was supplied on a CD or a USB drive, it will appear as a virtual device ("device://…"). These devices are assigned in numerical order as CD and USB images become available on the Management Server. The first virtual device is reserved for internal use by TVOE and PM&C; therefore, the iso image of interest is normally present on the second device, "device://dev/sr1". If one or more CD or USB-based images were already present on the Management Server before you started this procedure, choose a correspondingly higher device number. If in Step 1 the image was transferred to PM&C via sftp it will appear in the list as a local file "/var/TKLC/...".  Select the appropriate path and Press **Add New Image** button. You may check the progress using the `Task Monitoring` link. Observe the green bar indicating success. Once the green bar is displayed, remove the TVOE 2.0 Media from the optical drive of the management server.
5 ☐	**PM&C GUI:** Load TPD ISO	If the TPD ISO hasn't been loaded onto the pmac already, repeat steps 1 through 4 to load it using the TPD media or ISO.

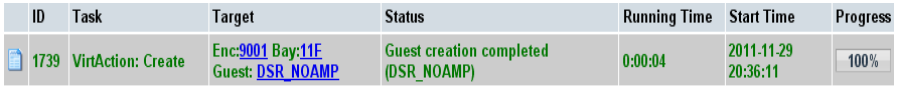
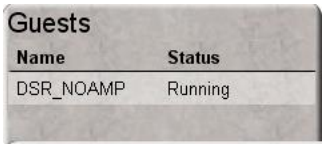
Procedure 5. Create NOAMP Guest VMs

STEP #		
	This procedure will provide the steps needed to create a DSR NOAMP virtual machine (refered to as a "guest") on a TVOE server blade or TVOE RMS. It must be repeated for every NOAMP server you wish to install. **Prerequisite**: TVOE has been installed and configured on the target blade server or RMS Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
1 ☐	**PM&C GUI:** Login	Open web browser and enter: **`http://<pmac_management_netowrk_ip>`** Login as pmacadmin user.
2 ☐	**PM&C GUI:** Navigate to VM Management of the Target Server Blade	Navigate to **`Main Menu -> VM Management`**  Select the TVOE server blade or rack mounted server from the "VM Entities" listing on the left side of the screen. The selected server's guest machine configuration will then be displayed in the remaining area of the window.   Click **`Create Guest`**

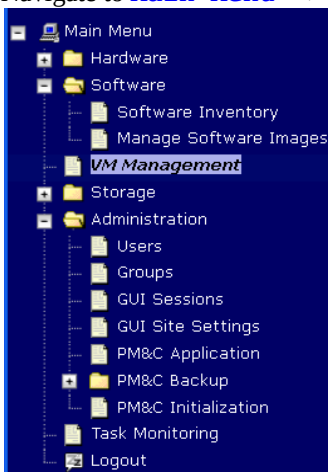
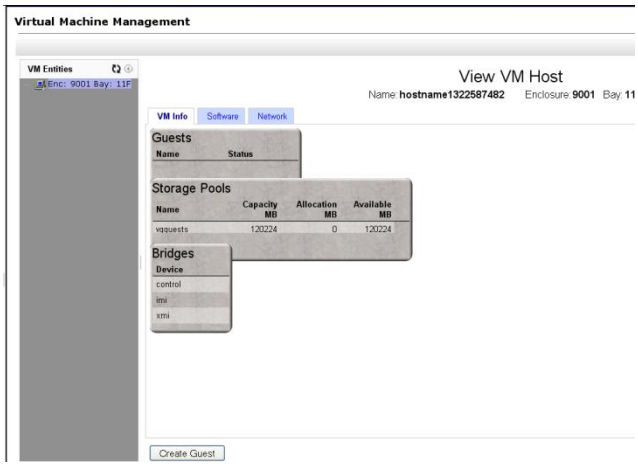
Procedure 5. Create NOAMP Guest VMs

3 ☐	**PM&C GUI:** Configure VM Guest Parameters	Press **Import Profile**  From the "ISO/Profile" drop-down box, select the entry that matches depending on the hardware that your NOAMP VM TVOE server is running on and your preference for NetBackup interfaces: **NOAM VM TVOE Hardware Type(s)** / **Dedicated Netbackup Interface?** / **Choose Profile (<Application ISO NAME>)➔** HP DL360 RMS , HP BL460 Gen 6 Blade / No / **DSR_NOAMP** HP DL360 RMS , HP BL460 Gen 6 Blade / Yes / **DSR_NOAMP_NBD** HP DL380 Gen 8 RMS, HP BL460 Gen 8 Blade, Sun Netra RMS / No / **DSR_NOAMP_LARGE** HP DL380 Gen 8 RMS, HP BL460 Gen 8 Blade, Sun Netra RMS / Yes / **DSR_NOAMP_LARGE_NBD** (NOTE: Application_ISO_NAME is the name of the DSR Appilcation ISO to be installed on this NOAMP) Press **Select Profile**. Values from the profile should now populate the VM configuration screen Disk Size, Number of CPUs, Memory, and NICs: should all change fom their default values to the profile values You can edit the name, if you wish. For instance: "DSRNOAMP-A," or DSRNOAMP-B". (**This will not become the ultimate hostname. It is just an internal tag for the VM host manager.)** Press **Create**

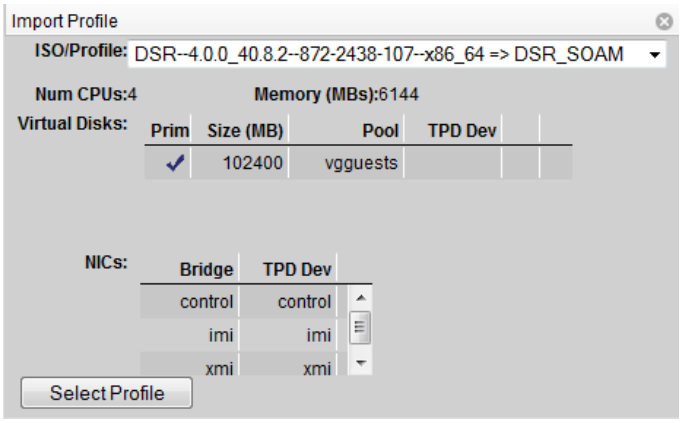
Procedure 5. Create NOAMP Guest VMs

4 ☐	**PM&C GUI:** Wait for Guest Creation to Complete	Navigate to **Main Menu** > **Task Monitoring** to monitor the progress of the guest creation task.. A separate task will appear for each guest creation that you have launched. Wait or referesh the screen until you see that the guest creation task has completed successfully. 
5 ☐	**PM&C GUI:** Verify Guest Machine is Running	Navigate to **Main Menu -> VM Management** Select the TVOE server blade on which the guest machine was just created. Look at the list of guests present on the blade and verify that you see a guest that mataches the name you configured and that its status is “Running”.  **VM Creation for this guest is complete. Repeat from Step 2 for any remaining NOAMP VMs (for instance, the standby NOAMP) that must be created.**

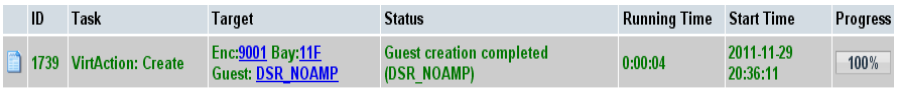
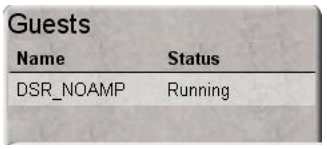
Procedure 6. Create SOAMP Guest VMs

S T E P #	This procedure will provide the steps needed to create a DSR SOAMP virtual machine (refered to as a "guest") on a TVOE server blade. It must be repeated for every SOAMP server you wish to install. **Prerequisite**: TVOE has been installed and configured on the target blade 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 TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
1 ☐	**PM&C GUI:** Login	Open web browser and enter: **`http://<pmac_management_network_ip>`** Login as pmacadmin user.
2 ☐	**PM&C GUI:** Navigate to VM Management of the Target Server Blade	Navigate to **`Main Menu -> VM Management`**  Select the TVOE server blade from the "VM Entities" listing on the left side of the screen. This blade's guest machine configuration will then be displayed in the remaining area of the window.   Click **`Create Guest`**

Procedure 6. Create SOAMP Guest VMs

3 ☐	**PM&C GUI:** Configure VM Guest Parameters	Press **Import Profile**   From the "ISO/Profile" drop-down box, select the entry that matches depending on the hardware that your SOAM VM TVOE server is running on and your preference for NetBackup interfaces: **SOAM VM TVOE Hardware Type(s)** / **Dedicated Netbackup Interface?** / **Choose Profile (<Application ISO NAME>)➔** HP BL460 Gen 8 Blade, HP BL460 Gen 6 Blade / No / **DSR_SOAM** HP BL460 Gen 8 Blade, HP BL460 Gen 6 Blade / Yes / **DSR_SOAM_NBD** (NOTE: Application_ISO_NAME is the name of the DSR Appilcation ISO to be installed on this NOAMP) Press **Select Profile**. Values from the profile should now populate the VM configuration screen Disk Size, Number of CPUs, Memory, and NICs: should all change fom their default values to the profile values You can edit the name, if you wish. For instance: "DSR_SOAM_A," or DSR_SOAM_B". (**This will not become the ultimate hostname. It is just an internal tag for the VM host manager.)** Press **Create** 

Procedure 6. Create SOAMP Guest VMs

4 ☐	**PM&C GUI:** Wait for Guest Creation to Complete	Navigate to **Main Menu** > **Task Monitoring** to monitor the progress of the guest creation task.. A separate task will appear for each guest creation that you have launched. Wait or referesh the screen until you see that the guest creation task has completed successfully. 
5 ☐	**PM&C GUI:** Verify Guest Machine is Running	Navigate to **Main Menu -> VM Management** Select the TVOE server blade on which the guest machine was just created. Look at the list of guests present on the blade and verify that you see a guest that mataches the name you configured and that its status is “Running”.  **VM Creation for this guest is complete. Repeat from Step 2 for any remaining SOAMP VMs (for instance, the standby SOAMP) that must be created.**

4.4 Install Application Software on Servers

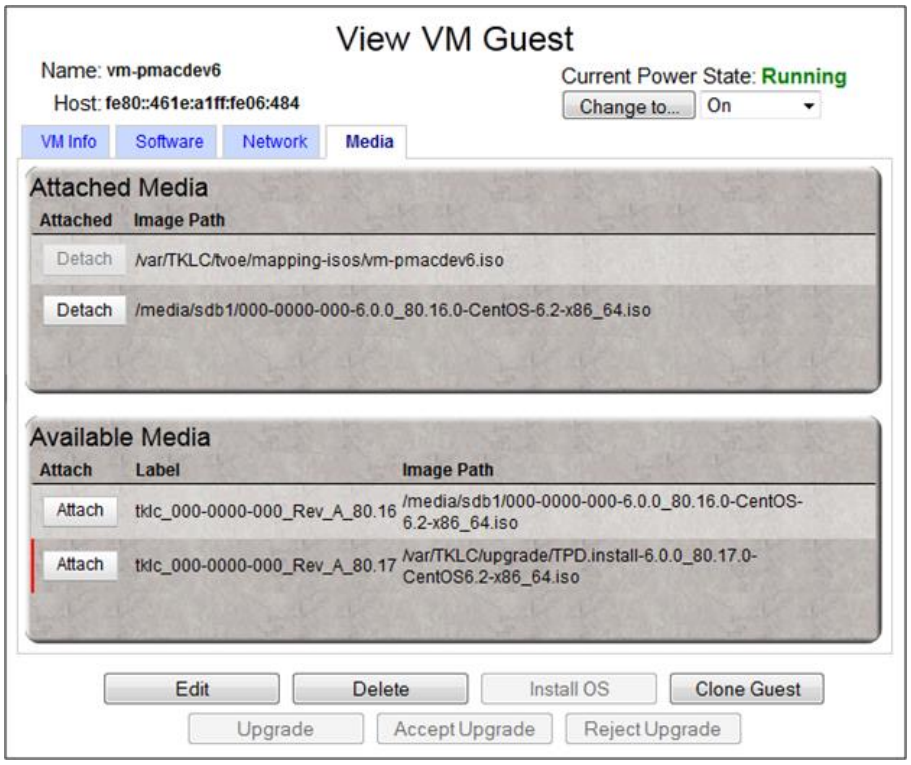
Procedure 7. IPM Blades and VMs

S T E P #	This procedure will provide the steps to install TPD on Blade servers and Blade server guest VMs **Prerequisite**: Enclosures containing the blade servers targeted for IPM that have been configured. **Prerequisite**: TVOE has been installed and configured on Blade servers that will host DSR NOAMP VMs. **Prerequisite**: DSR NOAMP and SOAM Guest VMs have been created successfully. **Needed material:** - TPD Media (64-bits) Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	

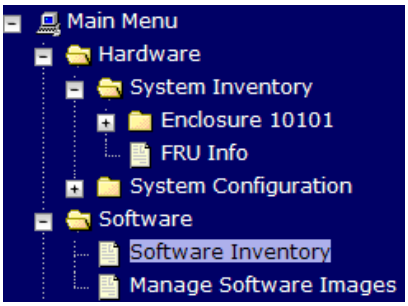
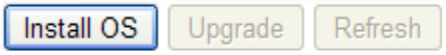
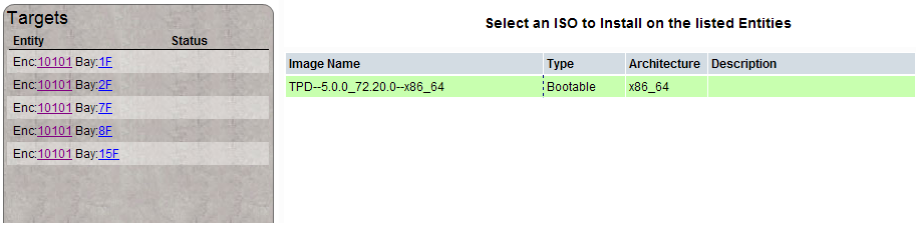
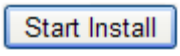
1 ☐	**TVOE Host:** Load Application ISO	Add the TPD ISO image to the PM&C, this can be done in one of three ways:
		1. Insert the TPD CD required by the application into the removable media drive.
		2. Attach the USB device containing the ISO image to a USB port.
		3. Copy the TPD iso file to the management server into the "/var/TKLC/smac/image/isoimages/home/smacftpusr/" directory as pmacftpusr user:
		cd into the directory where your ISO image is located on the **TVOE Host** (not on the PM&C server)
		Using sftp, connect to the PM&C management server
		`# sftp pmacftpusr@<pmac_management_network_ip>`
		`# put <image>.iso`
		After the image transfer is 100% complete, close the connection
		`# quit`

2 ☐	**PM&C GUI:** Login	Open web browser and enter: `http://<pmac_management_network_ip>` Login as pmacadmin user.

Procedure 7. IPM Blades and VMs

3 ☐	**PM&C GUI:** Attach the software Image to the PM&C Guest	If in Step 1 the ISO image was transferred directly to the PM&C guest via sftp, skip the rest of this step and continue with step 4. If the image is on a CD or USB device, continue with this step. In the PM&C GUI, nevigate to **Main Menu ➢ VM Managmenet.**. In the "**VM Entities**" list, select the PM&C guest. On the resulting "**View VM Guest**" page, select the "**Media**" tab. Under the **Media** tab, find the ISO image in the "**Available Media**" list, and click its "**Attach**" button. After a pause, the image will appear in the "**Attached Media**" list. 

Procedure 7. IPM Blades and VMs

4 ☐	**PM&C GUI:** Select Servers for OS install	Navigate to **Software -> Software Inventory**.  Select the servers you want to IPM. If you want to install the same OS image to more than one server, you may select multiple servers by clicking multiple rows individually. Selected rows will be highlighted in green. Note: VM's will have the text "Guest: <VM_GUEST_NAME>" underneath the physical blade or RMS that hosts them. 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:8F 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 Click on **Install OS** 
5 ☐	**PM&C GUI:** Initiate OS Install	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.  Click on **Start Install**, a confirmation window will pop up, click on **Ok** to proceed with the install. 

Procedure 7. IPM Blades and VMs

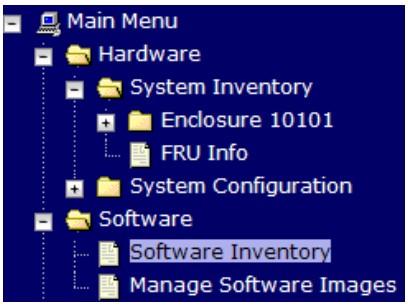
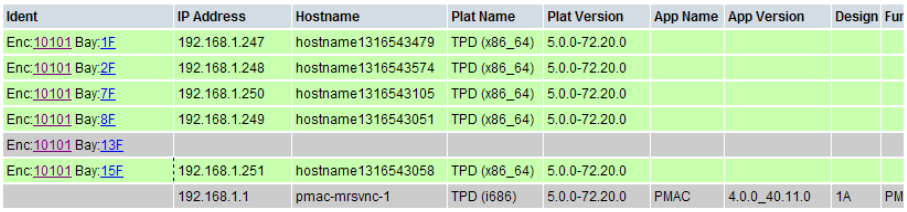
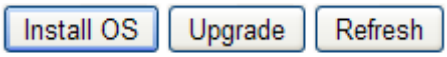
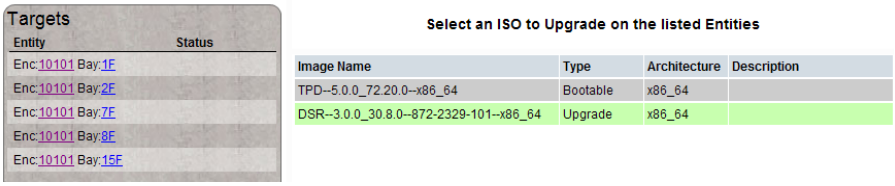
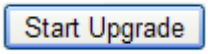
6 ☐	**PM&C GUI:** Monitor OS Install	Navigate to **Main Menu** > **Task Monitoring** to monitor the progress of the OS Installation background task. A separate task will appear for each blade affected.  When the installation is complete, the task will change to green and the Progress bar will indicate "100%".

	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:8F	Boot install image	0:00:01	2011-09-20 11:12:02	50%
	12	Install OS	Enc:10101 Bay:7F	Boot install image	0:00:01	2011-09-20 11:12:02	50%
	11	Install OS	Enc:10101 Bay:2F	Boot install image	0:00:01	2011-09-20 11:12:02	50%
	10	Install OS	Enc:10101 Bay:1F	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%

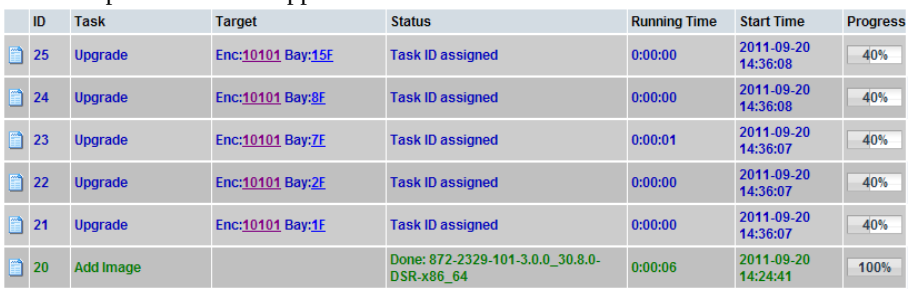
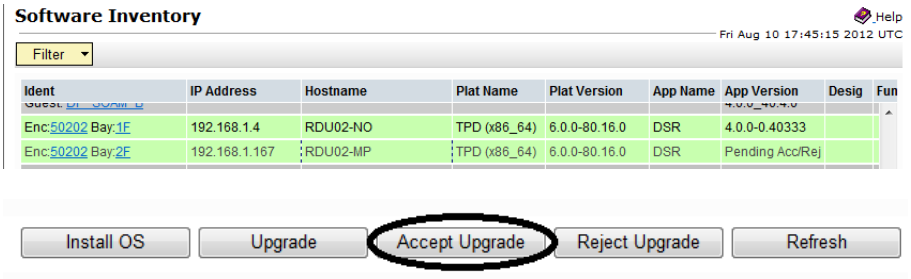
Procedure 8. Install the Application Software on Blades

STEP #	This procedure will provide the steps to install Diameter Signaling Router 4.0 on the Blade servers. **Prerequisite**: *Procedure 7. IPM Blades* has been completed. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
1 ☐	**PM&C GUI:** Login	Open web browser and enter: **http://<pmac_management_network_ip>** Login as pmacadmin user.

Procedure 8. Install the Application Software on Blades

2 ☐	**PM&C GUI:** Select Servers for Application install	Navigate to **Software -> Software Inventory**.  Select the servers on which the application is to be installed. If you want to install the same application image to more than one server, you may select multiple servers by clicking multiple rows individually. Selected rows will be highlighted in green. Note: VM's will have the text "Guest: <VM_GUEST_NAME>" underneath the physical blade that hosts them.  Click on **Upgrade** 
3 ☐	**PM&C GUI:** Initiate Application Install	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.  Click on **Start Upgrade**, a confirmation window will pop up, click on **Ok** to proceed with the install. 

Procedure 8. Install the Application Software on Blades

4 ☐	**PM&C GUI:** Monitor the installation status	Navigate to **Main Menu** > **Task Monitoring** to monitor the progress of the Application Installation. task. A separate task will appear for each blade affected.  When the installation is complete, the task will change to green and the Progress bar will indicate "100%".
5 ☐	**PM&C GUI:** Accpet Upgrade	Navigate to **Software** > **Software Inventory** to accept the software installation. Select all the servers on which the application has been installed in the previous steps and click on "**Accept Upgrade**" as shown below. Note that on some RMS and Blade servers, the GUI may not provide the option to accept/reject upgrade. So first verify in task monitoring that the upgrade is not in progress, then manually accept or reject the upgrade by ssh'ing into the server and execute: 1. To accept: */var/TKLC/backout/accept* 2. To reject: */var/TKLC/backout/reject*  Note that once the upgrade has been accepted, the App version will change from "Pending Acc/Rej" to the version number of the application.

4.5 Application Configuration

Procedure 9. Configure the First NOAMP NE and Server

S T E P	This procedure will provide the steps to configure the First NOAMP blade 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 TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
1 ☐	**Save the NOAMP Network Data to an XML file**	Using a text editor, create a NOAMP Network Element file that describes the networking of the target install environment of your first NOAMP server. Select an appropriate file name and save the file to a known location on your computer. A suggested filename format is "Appname_NEname_NetworkElement.XML", so for example an DSR2 NOAMP network element XML file would have a filename "DSR2_NOAMP_NetworkElement.xml". Alternatively, you can update the sample DSR 5.X/6.X Network Element file be found on the management server at: **`/usr/TKLC/smac/etc/SAMPLE-NetworkElement.xml`** A sample XML file can also be found in Appendix A. Note that the following limitations apply when specifying a Network Element name: "A 1-32-character string. Valid characters are alphanumeric and underscore. Must contain at least one alpha and must not start with a digit".
2 ☐	**Exchange SSH keys between PMAC and first NOAMP server**	Use the PMAC GUI to determine the Control Network IP address of the blade server that is to be the first NOAMP server. From the PMAC GUI, navigate to **`Main Menu → Software →Software Inventory`**. Note the IP address for the first NOAMP server. Login to the PMAC terminal as the ***admusr*** **.** From a terminal window connection on the PMAC as the ***admusr*** user, exchange SSH keys for ***admusr*** between the PMAC and the 1st NOAMP blade server using the keyexchange utility, using the Control network IP address for the NOAMP blade server. When prompted for the password, enter the password for the *admusr* user of the NOAMP server. `$ keyexchange admusr@<NOAMP blade Control Net IP addr>`
3 ☐	**Connect a Web Browser to the NOAMP GUI**	Plug a laptop ethernet cable onto an unused, unconfigured port on the 4948 switch (if available in your installation) or use SSH Tunneling through the PMAC to connect the laptop to the NOAMP server blade. **If you are using tunneling, then you can skip the rest of this step and instead complete the instructions in 4.7Appendix G. (for using Putty) or 4.7Appendix I (for using OpenSSH). Openssh is recommended if you are using a Windows 7 PC.** From the PMAC, enable the switch port that the laptop is plugged into. Enable that laptop Ethernet port to acquire a DHCP address and then access the NOAMP-"A" GUI via its control IP address.
4 ☐	**NOAMP GUI:** Login	Login to the NOAMP GUI as the guiadmin user.

Procedure 9. Configure the First NOAMP NE and Server

<table>
<tr>
<td>5
☐</td>
<td>Create the NOAMP Network Element using the XML File</td>
<td>Navigate to Main Menu->Configuration->Network Elements

Select the “Browse” button, and enter the pathname of the NOAMP network XML file.

Select the “Upload File” button to upload the XML file and configure the NOAMP Network Element.

Once the data has been uploaded, you should see a folder appear with the name of your network element. Click on this folder and you will get a drop-down which describes the individual networks that are now configured:

<table>
<tr><th colspan="5">Network Element</th></tr>
<tr><td colspan="5">NO_9006005</td></tr>
<tr><th>Network Name</th><th>Network Address</th><th>Netmask</th><th>VLAN ID</th><th>Gateway IP Address</th></tr>
<tr><td>INTERNALXMI</td><td>10.240.10.32</td><td>255.255.255.224</td><td>3</td><td>10.240.10.35</td></tr>
<tr><td>INTERNALIMI</td><td>10.240.10.0</td><td>255.255.255.224</td><td>4</td><td>10.240.10.3</td></tr>
</table>
</td>
</tr>
<tr>
<td>6
☐</td>
<td>Map Services to Networks</td>
<td>Navigate to Main Menu → Configuration → Services.

Select the “Edit” button and set the Services as shown in the table below:

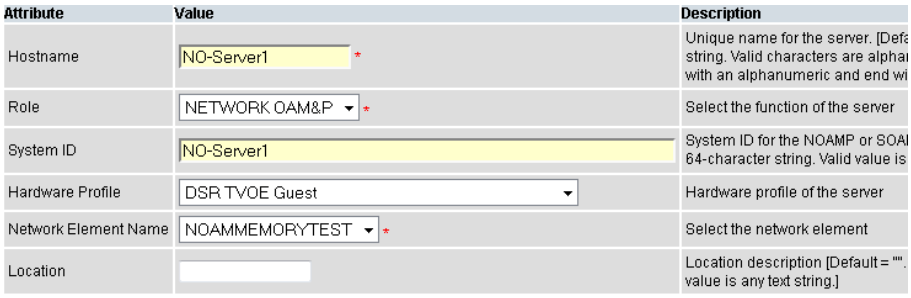
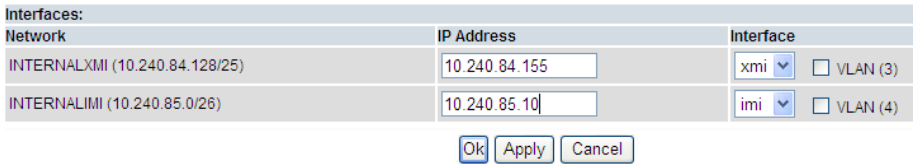
<table>
<tr><th>Name</th><th>Intra-NE Network</th><th>Inter-NE Network</th></tr>
<tr><td>OAM</td><td><IMI Network></td><td><XMI Network></td></tr>
<tr><td>Replication</td><td><IMI Network></td><td><XMI Network></td></tr>
<tr><td>Signaling</td><td>Unspecified</td><td>Unspecified</td></tr>
<tr><td>HA_Secondary</td><td>Unspecified</td><td>Unspecified</td></tr>
<tr><td>HA_MP_Secondary</td><td>Unspecified</td><td>Unspecified</td></tr>
<tr><td>Replication_MP</td><td><IMI Network></td><td>Unspecified</td></tr>
<tr><td>ComAgent</td><td><IMI Network></td><td>Unspecified</td></tr>
</table>

For example, if your IMI network is named "IMI“ and your XMI network is named "XMI“, then your services should config should look like the following:

.
<table>
<tr><th>Name</th><th>Intra-NE Network</th><th>Inter-NE Network</th></tr>
<tr><td>OAM</td><td>IMI</td><td>XMI</td></tr>
<tr><td>Replication</td><td>IMI</td><td>XMI</td></tr>
<tr><td>Signaling</td><td>Unspecified</td><td>Unspecified</td></tr>
<tr><td>HA_Secondary</td><td>Unspecified</td><td>Unspecified</td></tr>
<tr><td>HA_MP_Secondary</td><td>Unspecified</td><td>Unspecified</td></tr>
<tr><td>Replication_MP</td><td>IMI</td><td>Unspecified</td></tr>
<tr><td>ComAgent</td><td>IMI</td><td>Unspecified</td></tr>
</table>

Select the “Ok” button to apply the Service-to-Network selections.</td>
</tr>
</table>

Procedure 9. Configure the First NOAMP NE and Server

7 ☐	**Insert the 1st NOAMP server**	Navigate to **Main Menu → Configuration → Servers**. Select the "Insert" button to insert the new NOAMP server into servers table (the first or "A" server).  Fill in the fields as follows: **Hostname:** **<Hostname>** **Role:** **NETWORK OAM&P** **System ID:** **<Site System ID>** **Hardware Profile:** **DSR TVOE Guest** **Network Element Name:** **[Choose NE from Drop Down Box]** The network interface fields will now become available with selection choices based on the chosen hardware profile and network element  Fill in the server IP addresses for the XMI network. Select "xmi" for the interface. **Leave the "VLAN" checkbox unchecked**. Fill in the server IP addresses for the IMI network. Select "imi" for the interface. **Leave the "VLAN" checkbox unchecked**. Next, add the following NTP servers: **NTP Server** | **Preferred?** ***<NO1-TVOE-XMI/Platmgmt-IP-Address>*** | Yes Select the "Ok" button when you have completed entering all the server data.
8 ☐	**Export the Initial Configuration**	Navigate to **Main Menu → Configuration → Servers.** From the GUI screen, select the NOAMP server and then select "Export" action button to generate the initial configuration data for that server.

Procedure 9. Configure the First NOAMP NE and Server

9 ☐	**Copy Configuration File to 1st NOAMP Server**	Obtain a terminal window to the 1st NOAMP server, logging in as the **admusr** user.
		(see 4.7Appendix F for instructions on how to access the NOAMP from iLO)
		Become the super user by using the command:
		`$ sudo su`
		You should see the prompt change to the hash mark:
		`#`
		Copy the configuration file created in the previous step from the `/var/TKLC/db/filemgmt` directory on the 1st NOAMP to the /var/tmp directory. The configuration file will have a filename like `TKLCConfigData.<hostname>.sh`. The following is an example:
		`# cp /var/TKLC/db/filemgmt/TKLCConfigData.blade01.sh /var/tmp/TKLCConfigData.sh`

10 ☐	**Wait for Configuration to Complete**	The automatic configuration daemon will look for the file named "TKLCConfigData.sh" in the /var/tmp directory, implement the configuration in the file, and then prompt the user to reboot the server. Wait to be prompted to reboot the server, but **DO NOT** reboot the server, it will be rebooted later on in this procedure. **NOTE**: Ignore the warning about removing the USB key, since no USB key is present. .
11 ☐	**Configure Time Zone**	From the command line prompt, execute *set_ini_tz.pl*. This will set the system time zone The following command example uses the America/New_York time zone. Replace as appropriate with the time zone you have selected for this installation. For UTC, use "Etc/UTC", for a full list of valid timezones, see 4.7Appendix L. `# /usr/TKLC/appworks/bin/set_ini_tz.pl "Etc/UTC" >/dev/null 2>&1`
12 ☐	**Reboot the Server**	`# init 6`

Procedure 9. Configure the First NOAMP NE and Server

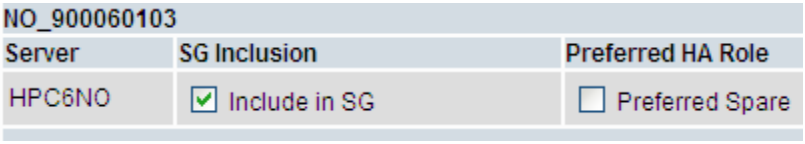
13 ☐	**(Optional)** **Configure Networking for Dedicated NetBackup Interface**	**NOTE: You will only execute this step if your NO is using a dedicated Ethernet interface for NetBackup.**
		
		From a root login session (login as admusr, then become superuser) on the first NO, execute the following commands:
		`# netAdm set --device=netbackup --type=Ethernet --onboot=yes --address=<NO1_NetBackup_IP> --netmask=<NetBackup_NetMask>`
		
		`# netAdm add --route=net --device=netbackup --address=<NetBackup_Network_ID> --netmask=<NetBackup_Network_NetMask> --gateway=<NetBackup_Network_Gateway_IP>`

14 ☐	**1st NO Server:** Verify Server Health	Execute the following command as super-user on the 1st NO server and make sure that no errors are returned:
		`# syscheck`
		`Running modules in class hardware... OK`
		`Running modules in class disk... OK`
		`Running modules in class net... OK`
		`Running modules in class system... OK`
		`Running modules in class proc... OK`
		`LOG LOCATION: /var/TKLC/log/syscheck/fail_log`

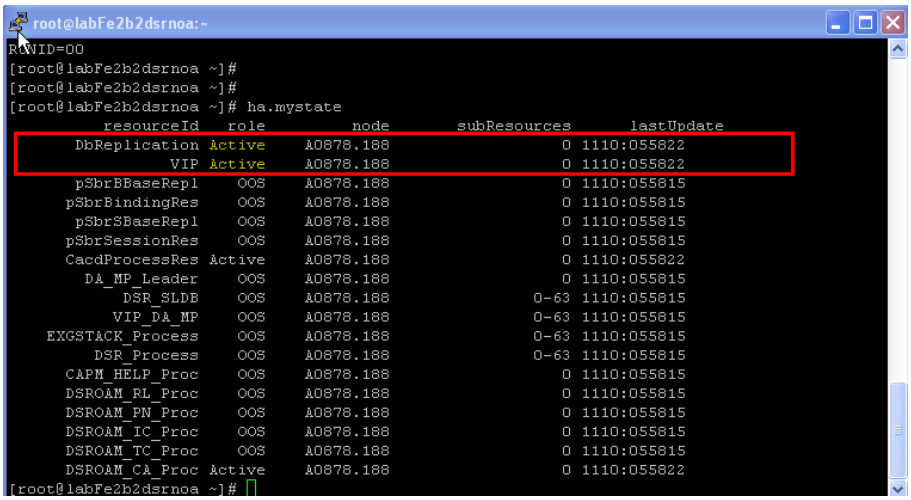
Procedure 10. Configure the NOAMP Server Group

STEP	This procedure will provide the steps to configure the NOAMP server group. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
1 ☐	**NOAMP GUI:** Login	Establish a GUI session on the first NOAMP server by using the XMI IP address of the first NOAMP server. Open the web browser and enter a URL of: `http://<first noamp XMI IP address>` Login as the guiadmin user. If prompted by a security warming, select "Continue to this Website" to proceed.

Procedure 10. Configure the NOAMP Server Group

2 ☐	**Enter NOAMP Server Group Data**	Using the GUI session on the first NOAMP server, go to the GUI **Main Menu→Configuration→Server Groups**, select Insert and fill the following fields: • Server Group Name → **[Enter Server Group Name]** • Level → **A** • Parent : **None** • Function: **DSR (Active/Standby Pair)** • WAN Replication Connection Count: **Use Default Value** Select "OK" when all fields are filled in.
3 ☐	**Edit the NOAMP Server Group**	From the GUI Main Menu→Configuration→Server Groups, select the new server group, and then select "Edit". Select the Network Element that represents the NOAMP.  In the portion of the screen that lists the servers for the server group, find the NOAMP server being configured. Click the "Include in SG" checkbox. Leave other boxes blank. Press OK

Procedure 10. Configure the NOAMP Server Group

4 ☐	**Verify NOAMP blade server role**	From terminal window to the iLO of the first NOAMP blade server, execute the **`ha.mystate`** command to verify that the "DbReplication" and VIP item under the "resourceId" column has a value of "Active" under the "role" column. You might have to wait a few minutes for it to become in that state. Press Ctrl+C to exit Example: 
5 ☐	**Restart 1st NOAMP blade server**	From the NOAMP GUI, select the **Main menu→Status & Manage→Server** menu. Select the first NOAMP server. Select the **`Restart`** button. Answer OK to the confirmation popup. Wait for restart to complete.

Procedure 11. Configure the Second NOAMP Server

S T E P	This procedure will provide the steps to configure the Second NOAMP 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 TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
1 ☐	**Exchange SSH keys between PMAC and second NOAMP server**	Use the PMAC GUI to determine the Control Network IP address of the blade server that is to be the second NOAMP server. From the PMAC GUI, navigate to **Main Menu → Software-→Software Inventory**. Note the IP address for the second NOAMP server, usually the second blade in the first enclosure. Login to the PMAC terminal as the ***admusr* .** From a terminal window connection on the PMAC as the ***admusr*** user, exchange SSH keys for ***admusr*** between the PMAC and the 2nd NOAMP blade server using the keyexchange utility, using the Control network IP address for the NOAMP blade server. When prompted for the password, enter the password for the *admusr* user of the NOAMP server. `$ keyexchange admusr@<2ndNOAMP blade Control Net IP addr>` Note: if keyexchange fails, edit "/home/admusr/.ssh/known_hosts" and remove blank lines, and retry the keyexchange commands.
2 ☐	**NOAMP GUI:** Login	If not already done, establish a GUI session on the first NOAMP server by using the XMI IP address of the first NOAMP server. Open the web browser and enter a URL of: `http://<first noamp XMI IP address>` Login as the guiadmin user.
3 ☐	**Insert the 2nd NOAMP server**	Navigate to **Main Menu → Configuration → Servers**. Click on **`Insert`** to insert the new second NOAMP server into servers table ("B" server). This server role should be the "NETWORK OAM&P". Select the Network Element Name (should be the same used when configuring the first NOAMP). Choose "DSR TVOE Guest" for the hardware profile. Fill in the server IP addresses for the XMI network. Select "xmi" for the interface. **Leave the "VLAN" checkbox unchecked**. Fill in the server IP addresses for the IMI network. Select "imi" for the interface. **Leave the "VLAN" checkbox unchecked**. Next, add the following NTP servers: **NTP Server** / **Preferred?** ***<NO2-TVOE-XMI/PlatMgmt-IP-Address>*** / Yes Select the **`Ok`** button when you have completed entering the server data.

Procedure 11. Configure the Second NOAMP Server

4 ☐	**Export the initial configuration**	From the GUI screen, select the second server and then select **Export** action button to generate the initial configuration data for that server.
5 ☐	**Copy Configuration File to 2nd NOAMP Server**	Obtain a terminal session to the 1st NOAMP as the **admusr** user. Use the `awpushcfg` utility to copy the configuration file created in the previous step from the `/var/TKLC/db/filemgmt` directory on the 1st NOAMP to the 2nd NOAMP blade server, using the Control network IP address for the 2nd NOAMP blade server. The configuration file will have a filename like `TKLCConfigData.<hostname>.sh`. `$ awpushcfg` The awpushcfg utility is interactive, so the user will be - prompted for the IP address of the local PMAC server. Use the local control network address from the PMAC. - the blade inventory will be presented, - prompted for the Control network IP address for the target server (In this case, the standby NOAMP server). - prompted for the hostname of the target server - Note: If prompted for a username, please use **admusr**

6 ☐	**Set the timezone and Reboot the Server**	Obtain a terminal window connection on the 2nd NOAMP iLO from the OA. Login as the **admusr** user.
		
		(Use the procedure in 4.7Appendix F).
		
		Become the super user by using the command:
		
		`$ sudo su`
		
		You should see the prompt change to the hash mark:
		
		#
		
		The automatic configuration daemon will look for the file named "TKLCConfigData.sh" in the /var/tmp directory, implement the configuration in the file, and then prompt the user to reboot the server.
		
		Verify awpushcfg was called by checking the following file
		
		`# cat /var/TKLC/appw/logs/Process/install.log`
		
		Set the timezone using the following command. The following command example uses the America/New_York time zone. Replace as appropriate with the time zone you have selected for this installation. For UTC, use "Etc/UTC", for a full list of valid timezones, see 4.7Appendix L.
		
		`# /usr/TKLC/appworks/bin/set_ini_tz.pl "Etc/UTC" >/dev/null 2>&1`
		
		Now Reboot the Server:
		
		`# sudo init 6`
		
		Wait for the server to reboot

Procedure 11. Configure the Second NOAMP Server

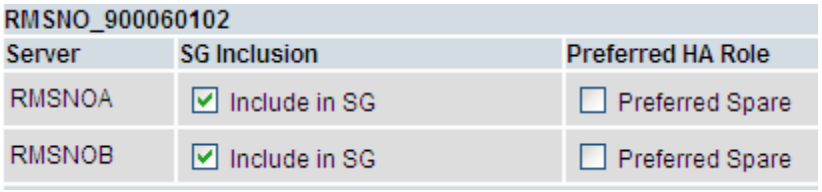
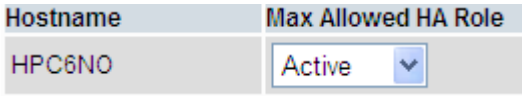
7 ☐	**(Optional)** **Configure Networking for Dedicated NetBackup Interface**	**NOTE: You will only execute this step if your NO is using a dedicated Ethernet interface for NetBackup.**
		
		As the super user on the 2nd NO, execute the following commands:
		`# netAdm set --device=netbackup --type=Ethernet --onboot=yes --address=<NO2_NetBackup_IP> --netmask=<NetBackup_NetMask>`
		
		`# netAdm add --route=net --device=netbackup --address=<NetBackup_Network_ID> --netmask=<NetBackup_Network_NetMask> --gateway=<NetBackup_Network_Gateway_IP>`

8 ☐	**2nd NO Server:** Verify Server Health	Execute the following command as super-user on the 2ndt NO server and make sure that no errors are returned:
		
		`# syscheck`
		`Running modules in class hardware... OK`
		`Running modules in class disk... OK`
		`Running modules in class net... OK`
		`Running modules in class system... OK`
		`Running modules in class proc... OK`
		`LOG LOCATION: /var/TKLC/log/syscheck/fail_log`

Procedure 12. Complete Configuring the NOAMP Server Group

S T E P #	This procedure will provide the steps to finish configuring th NOAMP Server Group. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.

Procedure 12. Complete Configuring the NOAMP Server Group

1 ☐	**Edit the NOAMP Server Group Data**	From the GUI session on the first NOAMP server, go to the GUI **Main Menu->Configuration->Server Groups.** Select the NOAMP Server group and click on **Edit** and add the second NOAMP server to the Server Group by clicking the "Include in SG" checkbox for the second NOAMP server. Click **Apply.**  Add a NOAMP VIP by click on **Add**. Fill in the VIP Address and press **Ok** as shown below 
2 ☐	**Wait for Replication**	After replication, which will initially take up to 5 minutes, the HA status should be active (**Main menu->Status & Manage->HA**). Note: This may take up to 5 minutes while the NOAMP servers figure out master/slave relationship. Log out of GUI from the first NOAMP XMI address.
3 ☐	**Establish GUI Session on the NOAMP VIP**	Establish a GUI session on the NOAMP by using the XMI VIP address. Login as user "guiadmin".
4 ☐	**Wait for Remote Database Alarm to Clear**	Wait for the alarm "Remote Database re-initialization in progress" to be cleared before proceeding. (**Main menu->Alarms & Events->View Active**)
5 ☐	**Verify HA Role for 2nd NOAMP server**	In the **Main menu->Status & Manage->HA** menu, verify that the "Max Allowed HA Role" for the 2nd NOAMP server is "Active". If it is **not**, press the **Edit** button and in the resulting screen, change the 2nd NOAMPs server's "Max Allowed HA Role" to "Active" using the dropdown box.  Press **OK**.

Procedure 12. Complete Configuring the NOAMP Server Group

6 ☐	**Restart 2nd NOAMP blade server**	In the **Main menu->Status & Manage->Server** menu, select the second NOAMP server. Select the "Restart" button. Answer OK to the confirmation popup. Wait approximately 3-5 minutes before proceeding to allow the system to stabilize indicated by having the "Appl State" as "Enabled".
7 ☐	**SDS can now be installed (Optional)**	If this deployement contains SDS, SDS can now be installed. Refer to document referenced in [21].

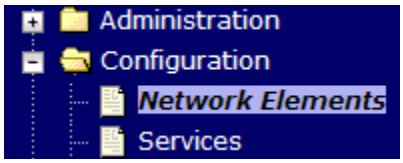
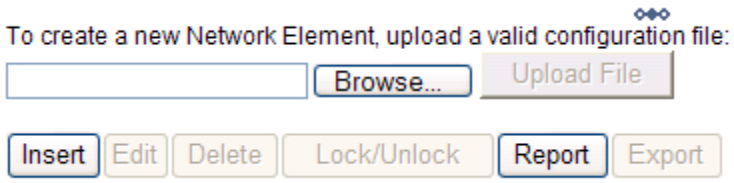
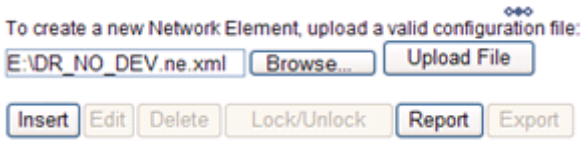
Procedure 13. Install NetBackup Client (Optional)

STEP #	This procedure will download and install NetBackup Client software on the server. Location of the bpstart_notify and bpend_notify scripts is required for the execution of this procedure. For Appworks based applications the scripts are located as follows: /usr/TKLC/appworks/sbin/bpstart_notify /usr/TKLC/appworks/sbin/bpend_notify Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
1 ☐	**Install Netbackup Client Software**	If a customer has a way of transferring and installing the netbackup client without the aid of TPD tools (push configuration) then use *Appendix L.2 Netbackup Client Install with nbAutoInstall*. **This is not common. If the answer to the previous question is not known** then use *Appendix L.1 Netbackup Client Install with platcfg*.
2 ☐	**Install Netbackup Client Software**	Choose the same method used in step 1 to install NetBackup on the 2nd NO.

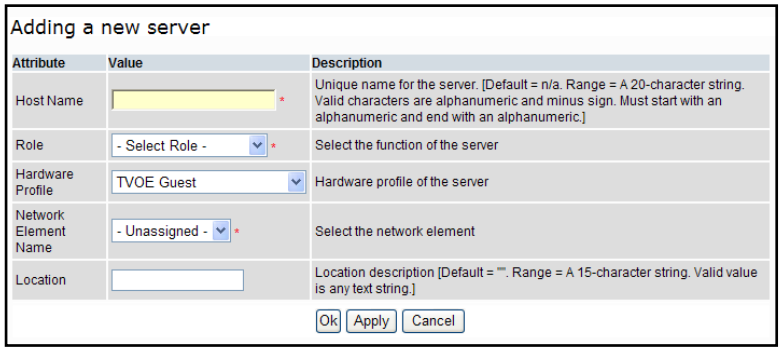
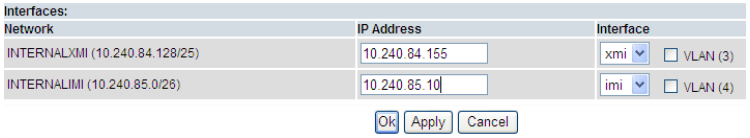
Procedure 14. NO Configuration for DR Site (Optional)

STEP #	This procedure will provide the steps to configure the First DR NOAMP blade server. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. **Prerequisite**: Application software already installed. **Needed material:** - DR Site installed with its PM&C Configured - DSR NO DR Site Network Element File IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
1 ☐	**Primary NOAMP VIP GUI :** Login	Using a web browser, navigate to the **XMI Virtual IP Address (VIP)** of the **Primary NO Site.** Login using the guiadmin user.

Procedure 14. NO Configuration for DR Site (Optional)

2 ☐	**Primary NOAMP VIP GUI:** Insert Network Element for DR Site	Refer to appendix A for a sample network element xml file. Using the GUI menu, Navigate to **Configuration -> Network Elements** as shown below  The "**Network** Elements" screen will display, select the **"Browse"** dialogue button (scroll to bottom left corner of screen).  A dialogue will pop up, browse to the location of the DSR DR NO Site Element XML File and click the **"Open"** button. Then click "**Upload File**" as shown below  If the values in the .xml file pass validation rules, the user will receive a banner information message showing that the data has been successfully validated and committed to the DB.

Procedure 14. NO Configuration for DR Site (Optional)

3 ☐	**Primary NOAMP VIP GUI:** Insert Servers	Using the GUI menu, Navigate to **Configuration -> Servers** Click the "**Insert**" button (bottom left corner of screen). An "**Adding a new server**" screen will be displayed up as shown below  Fill in the following Values: Host Name: Name of **DSR DR NO Server A** Role: Select the **NETWORK OAM&P** System ID: Enter value for <Site System ID> Hardware Profile: Select **DSR TVOE Guest** Network element Name: Select the network Element Name for the **DSR DR** Site (the one inserted in step 2 above). Location: Fill in the server geographical location (optional). The network interface fields will now become available with selection choices based on the chosen hardware profile and network element  Fill in the server IP addresses for the XMI network. Select "xmi" for the interface. **Leave the "VLAN" checkbox unchecked**. Fill in the server IP addresses for the IMI network. Select "imi" for the interface. **Leave the "VLAN" checkbox unchecked**. Next, add the following NTP servers: **NTP Server** / **Preferred?** ***<DR-NO1-TVOE-XMI/Platmgmt-IP-Address>*** / Yes Select the "Ok" button when you have completed entering the server data.

Procedure 14. NO Configuration for DR Site (Optional)

4 ☐	**Primary NOAMP VIP GUI:** Export the Initial Configuration	Navigate to **`Main Menu -> Configuration -> Servers`** From the GUI screen, select the DR NO server added in the previous step and click the "**Export**" button to generate the initial configuration data for that server. The user will receive a banner information message as shown below. 
5 ☐	**Exchange SSH keys between PMAC and first DR-NOAMP server**	Use the DR-NOAM site PMAC GUI to determine the Control Network IP address of the blade server that is to be the first DR NOAMP server. From the PMAC GUI, navigate to **`Main Menu → Software →Software Inventory`**. Note the IP address for the first DR NOAMP server. Login to the DR NOAM site PMAC terminal as the ***admusr* .** From a terminal window connection on the PMAC as the ***admusr*** user, exchange SSH keys for ***admusr*** between the PMAC and the 1st DR NOAMP blade server using the keyexchange utility, using the Control network IP address for theDR-NOAMP blade server. When prompted for the password, enter the password for the *admusr* user of the DR NOAMP server. `$ keyexchange admusr@<DR_NOAMP blade Control Net IP addr>`
6 ☐	**Exchange SSH keys between NOAMP and PMAC at the DR site**	From a terminal window connection on the NOAMP VIP as the **admusr**, exchange SSH keys for admusr between the NOAMP and the DR NO's PMAC using the keyexchange utility. When prompted for the password, enter the appropriate password for **admusr** on the PMAC server. `$ keyexchange admusr@<DR_NO_SITE_PMAC_Management_IP>`

Procedure 14. NO Configuration for DR Site (Optional)

7 ☐	**Copy Configuration File to 1st DR NO Server**	SSH to the NOAMP VIP as admusr and use the `awpushcfg` utility to copy the configuration file created in the previous step from the `/var/TKLC/db/filemgmt` directory on the Primary Active to the first DR NOAMP server, using the Control network IP address for the first DR NOAMP serrver. The configuration file will have a filename like `TKLCConfigData.<hostname>.sh`. `$ awpushcfg` The awpushcfg utility is interactive, so the user will be - prompted for the IP address of the PMAC server (make sure you enter the Management IP address of the PM&C on the DR Site), - the blade inventory will be presented, - prompted for the Control network IP address for the target server (in this case, the first DR NOAMP server). - prompted for the hostname of the target server, - Note: If prompted for a username, please use **admusr**

8 ☐	**DR NO Server A:** Verify awpushcfg was successful	• Access the TVOE machine hosting the **DR NO Server A** using the **iLO** Connection and log in as root.
		• Access the **DR NO Server A VM** console by running the following commands
		`# virsh list --all`
		`Id Name State`
		`----------`
		`6 vm-pmac running`
		`7 DSR-NO running`
		The connect to **DR NO Server A VM** using the following command, and login as root.
		`# virsh console DSR-NO`
		`Connected to domain vm-DSR-NO`
		`Escape character is ^]`
		`<Press ENTER key>`
		`CentOS release 6.2 (Final)`
		`Kernel 2.6.32-220.7.1.el6prerel6.0.0_80.13.0.x86_64 on an x86_64`
		`DSR-NO login: root`
		`Password:`
		`Last login: Fri May 25 16:39:04 on ttyS4`
		• Verify awpushcfg was called by checking the following file
		`# cat /var/TKLC/appw/logs/Process/install.log`

Procedure 14. NO Configuration for DR Site (Optional)

9 ☐	**DR NO Server A VM:** Wait for Configuration to Complete	The automatic configuration daemon will look for the file named "TKLCConfigData.sh" in the /var/tmp directory, implement the configuration in the file, and then prompt the user to reboot the server. Wait to be prompted to reboot the server, but **DO NOT** reboot the server, it will be rebooted later on in this procedure. **NOTE**: Ignore the warning about removing the USB key, since no USB key is present. .
10 ☐	**DR NO Server A VM:** Configure Time Zone	Continuing from the command line prompt, execute *set_ini_tz.pl*. This will set the system time zone The following command example uses the America/New_York time zone. Replace as appropriate with the time zone you have selected for this installation. For UTC, use "Etc/UTC", for a full list of valid timezones, see 4.7Appendix L. `# /usr/TKLC/appworks/bin/set_ini_tz.pl "Etc/UTC" >/dev/null 2>&1`
11 ☐	**DR NO Server A VM:** Reboot the VM	Reboot the server using the following command: `# init 6` Then wait for the server to reboot (takes between 5 and 10 minutes)

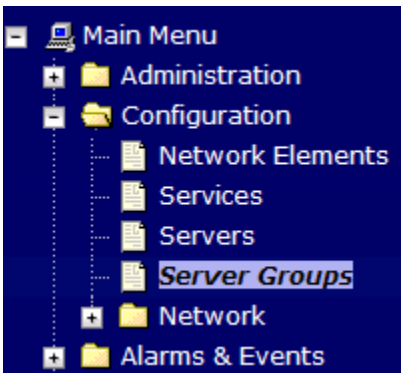
12 ☐	**DR NO Server A VM:** Configure Networking for Dedicated NetBackup Interface (Optional)	**NOTE: You will only execute this step if your NO is using a dedicated Ethernet interface for NetBackup.**
		
		From a super user session on the first DR NO, execute the following commands:
		
		`# netAdm set --device=netbackup --type=Ethernet --onboot=yes --address=<NO1_NetBackup_IP> --netmask=<NetBackup_NetMask>`
		
		`# netAdm add --route=net --device=netbackup --address=<NetBackup_Network_ID> --netmask=<NetBackup_Network_NetMask> --gateway=<NetBackup_Network_Gateway_IP>`

Procedure 14. NO Configuration for DR Site (Optional)

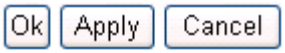
13 ☐	**DR NO Server A VM:** Verify Server Health	Execute the following command as super-user and make sure that no errors are returned:
		`# syscheck`
		`Running modules in class hardware...`
		`OK`
		`Running modules in class disk...`
		`OK`
		`Running modules in class net...`
		`OK`
		`Running modules in class system...`
		`OK`
		`Running modules in class proc...`
		`OK`
		`LOG LOCATION: /var/TKLC/log/syscheck/fail_log`

14 ☐	**Repeat for DR NO Server B**	Repeat Steps 3 through 12 to configure DR NO Server B. When inserting the 2nd server, change the NTP server address to the following: **NTP Server**: ***<DR-NO2-TVOE-XMI/Platmgmt-IP-Address>*** — **Preferred?**: Yes

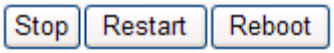
Procedure 15. NO Pairing for DSR NO DR Site (Optional)

STEP #	This procedure will provide the steps to configure the First DR NOAMP blade server. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. **Prerequisite**: Procedure 36. NO Installation for DR Site complete IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
1 ☐	**Primary NOAMP VIP GUI:** Login	Using a web browser, navigate to the **XMI Virtual IP Address (VIP)** of the **Primary NO Site.** Login using the guiadmin user.
2 ☐	**Primary NOAMP GUI:** Navigate to Server Group	Using the GUI menu, Navigate to **Configuration -> Server Groups** as shown below 

Procedure 15. NO Pairing for DSR NO DR Site (Optional)

3 ☐	**Primary NOAMP GUI:** Insert Server Group	The **Server Groups** screen will display, click on **Insert** to add a new Server Group Fill in the following values: Server Group Name: Enter Server Group Name of **DSR DR NO** Site Level: Select **A** Parent: Select **None** Function: Select **DSR Active/Standby Pair** WAN Replication Connection Count**: Use Default Value** Then press "**Apply**", make sure the validation is successful
4 ☐	**Primary NOAMP GUI:** Update Server Group	Select the **Server Group** that was created in the previous step, and click on "**Edit**".  The user will be presented with the **"Server Groups [Edit]"** screen Check the checkbox labeled "**Include in SG**" for the "**A**" and "**B**" DR Servers as shown below and click on "**Apply**" 
5 ☐	**Primary NOAMP GUI:** Add VIP	Click the "**Add**" dialogue button for the VIP Address and enter an IP Address for the VIP as shown below  Then click the "**Apply**" dialogue button. Verify that the banner information message states **"Data committed"**. 
6 ☐	**Wait for Remote Database Alarm to Clear**	Wait for the alarm "Remote Database re-initialization in progress" to be cleared before proceeding. (**Main menu->Alarms & Events->View Active**)
7 ☐	**Primary NOAMP GUI:** Wait for 5 minutes	Now that the server(s) have been paired within a Server Group they must establish their proper roles for High Availability (HA). It may take several minutes for this process to be completed. Allow a minimum of **5 minutes** before continuing to the next Step.

Procedure 15. NO Pairing for DSR NO DR Site (Optional)

8 ☐	**Primary NOAMP GUI:** Verify/Change HA Status	Using the GUI main menu, Navigate to **Status & Manage -> HA** Verify that the "**Max Allowed HA Role"** for **DR NO Servers A** and **B** shows **"Active"**. If the "**Max Allowed HA Role**" is set to standby for **Server A** or **Server B**, then click on "**Edit**" and set the "**Max Allowed HA Role**" to be "**Active**" for both DR Servers then press "**OK**". You will be returned to the previous screen, verify that the "**Max Allowed HA Role"** for **DR NO Servers A** and **B** now shows **"Active"**.
9 ☐	**Primary NOAMP GUI:** Verify Server Status	Using the GUI main menu, Navigate to **Status & Manage** -> **Server** The **"A"** and **"B"** DR NO servers should now appear in the right panel. Verify that the **"DB"** status shows **"Norm"** and the **"Proc"** status shows **"Man"** for both servers before proceeding to the next Step. 
10 ☐	**Primary NOAMP GUI:** Restart Application on DR NO A	Using the mouse, select **DR NO Server A**. The line entry should now be highlighted in **GREEN**. Click the **"Restart"** button from the bottom left corner of the screen.  Click the **"OK"** button on the confirmation dialogue box. The user should be presented with a confirmation message (in the banner area) for **DR NO Server A** stating: **"Successfully restarted application"**.
11 ☐	**Primary NOAMP GUI:** Verify Application State on DR NO Server A	Using the GUI main menu, Navigate to **Status & Manage** -> **Server** Verify that the **"Appl State"** now shows **"Enabled"** and that the **"Alm, Repl, Coll, DB, HA & Proc"** status columns all show **"Norm"** for **DR NO Server A** before proceeding to the next Step.  **NOTE:** *If user chooses to refresh the Server status screen in advance of the default setting (15-30 sec.). This may be done by simply reselecting the* ***"Status & Manage → Server"*** *option from the Main menu on the left.*
12 ☐	**Primary NOAMP GUI:** Restart the application on DR NO Server B	Repeat Steps 8 – 10, but this time selecting DR NO Server B instead of A

Procedure 16. Configure the SOAM NE

S T E P #	This procedure will provide the steps to configure the SOAM Network Element Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
1 ☐	**Establish GUI Session on the NOAMP VIP**	If needed, establish a GUI session on the NOAMP by using the OAM VIP address. Login as user "guiadmin".
2 ☐	**Create the SOAM Network Element using an XML File**	Make sure to have an SOAM Network Element XML file available on the PC that is running the web browser. The SOAM Network Element XML file is similar to what was created and used in Procedure 9 , but defines the SOAM "Network Element". Refer to Appendix A for a sample Network Element xml file (and instructions on what NTP server to choose) Navigate to **Main Menu->Configuration->Network Elements** Select the "Browse" button, and enter the path and name of the SOAM network XML file. Select the "Upload File" button to upload the XML file and configure the SOAM Network Element.

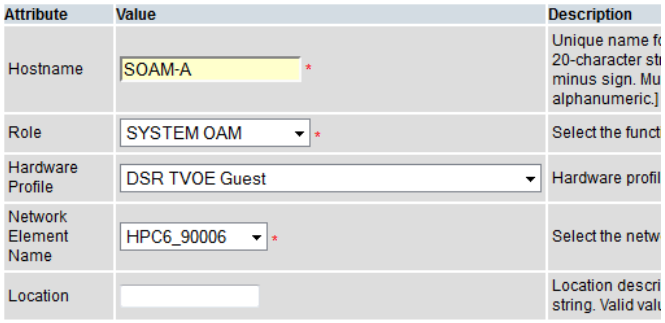
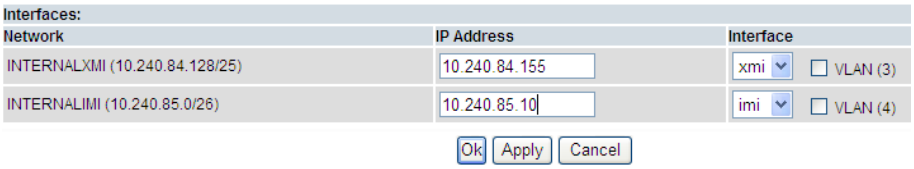
Procedure 17. Configure the SOAM Servers

S T E P #	This procedure will provide the steps to configure the SOAM Servers Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
1 ☐	**Exchange SSH keys between SOAM site's local PMAC and the SOAM server**	Use the **SOAM site's** PMAC GUI to determine the Control Network IP address of the server that is to be the SOAM server. From that site's PMAC GUI, navigate to **Main Menu → Software→Software Inventory**. Note the IP address for the SOAM server. Login to the SOAM site's PMAC terminal as the ***admusr* .** From a terminal window connection on the **SOAM site's** PMAC as the ***admusr*** user, exchange SSH keys for ***admusr*** between the PMAC and the SOAM server using the keyexchange utility, using the Control network IP address for the SOAM server. When prompted for the password, enter the password for the *admusrt* user SOAM server. `$ keyexchange admusr@<SOAM blade Control Net IP addr>`

Procedure 17. Configure the SOAM Servers

2 ☐	**Exchange SSH keys between NOAMP and PMAC at the SOAM site (If necessary)**	**NOTE: If this SOAM shares the same PMAC as the NOAM, then you can skip this step.** From a terminal window connection on the **NOAMP VIP**, as the admusr, exchange SSH keys for admusr between the NOAMP and the PMAC for this SOAM site using the keyexchange utility. When prompted for the password, enter the admusr password for the PMAC server. `$ keyexchange admusr@<SOAM_SITE_PMAC_Management_IP>` **Repeat this step for the standby NOAM Server**
3 ☐	**Establish GUI Session on the NOAMP VIP**	If needed, establish a GUI session on the NOAMP by using the OAM VIP address. Login as user "guiadmin".

Procedure 17. Configure the SOAM Servers

4 ☐	**Insert the SOAM "A" server**	Navigate to **Main Menu->Configuration->Servers** Select the "Insert" button to insert the new SOAM "A" server into servers table.  Fill in the fields as follows: **Hostname:** **<Hostname>** **Role:** **SYSTEM OAM** **System ID:** **<Site System ID>** **Hardware Profile:** **DSR TVOE Guest** **Network Element Name:** **[Choose NE from Drop Down Box]** The network interface fields will now become available with selection choices based on the chosen hardware profile and network element  Fill in the server IP addresses for the XMI network. Select "xmi" for the interface. **Leave the "VLAN" checkbox unchecked**. Fill in the server IP addresses for the IMI network. Select "imi" for the interface. **Leave the "VLAN" checkbox unchecked**. Next, add the following NTP servers: **NTP Server** | **Preferred?** ***<SO1-TVOE-XMI-IP-Address>*** | Yes Select the "Ok" button when you have completed entering the server data.
5 ☐	**Export the initial configuration**	From the GUI screen, select the desired server and then select "Export" action button to generate the initial configuration data for that server.

Procedure 17. Configure the SOAM Servers

6 ☐	**Copy Configuration File to SOAM "A" server**	From a terminal window connection on the Active NOAMP as the **admusr**, use the `awpushcfg` utility to copy the configuration file created in the previous step from the `/var/TKLC/db/filemgmt` directory on the 1st NOAMP to the SOAM server, using the Control network IP address for the SOAM server. The configuration file will have a filename like `TKLCConfigData.<hostname>.sh`. Verify that the server is in the "ProvideSvc" role and the availability is "Available", then proceed with... `$ awpushcfg` The awpushcfg utility is interactive, so the user will be - prompted for the management IP address of the PMAC server at the site where the target blade is located. - prompted for the hostname of the target server, - prompted for the Control network IP address for the target server (in this case, the SOAM server). - (Note: If you are prompted for a username, use **admusr**) Use the SOAM IP address from step 1. The configuration success message can also be found in the /var/log/messages file.

7 ☐	**Wait for the reboot prompt and boot the Configured Server**	Obtain a terminal window connection on the SOAM "A" server console as the **admusr.**
		
		Become the super user by using the command:
		
		`$ sudo su`
		
		You should see the prompt change to the hash mark:
		
		#
		
		The automatic configuration daemon will look for the file named "TKLCConfigData.sh" in the /var/tmp directory, implement the configuration in the file, and then prompt the user to reboot the server.
		
		Wait to be prompted to reboot the server.
		
		NOTE: Ignore the warning about removing the USB key, since no USB key is present. Use "init 6" in the terminal window to reboot the server as shown below.
		
		Verify awpushcfg was called by checking the following file
		
		`# cat /var/TKLC/appw/logs/Process/install.log`
		
		Set the timezone using the following command. The following command example uses the America/New_York time zone. Replace as appropriate with the time zone you have selected for this installation. For UTC, use "Etc/UTC", for a full list of valid timezones, see 4.7Appendix L.
		
		`# /usr/TKLC/appworks/bin/set_ini_tz.pl "Etc/UTC" >/dev/null 2>&1`
		
		Now reboot the server using the following command:
		
		`# init 6`

Procedure 17. Configure the SOAM Servers

<table>
<tr><td>8
☐</td><td>SOAM Server:
Verify Server Health</td><td>After the system reboots, login again as admusr and become the superuser.

Execute the following command as super-user on the server and make sure that no errors are returned:

<pre># syscheck
Running modules in class hardware...
                                    OK
Running modules in class disk...
                                    OK
Running modules in class net...
                                    OK
Running modules in class system...
                                    OK
Running modules in class proc...
                                    OK
LOG LOCATION: /var/TKLC/log/syscheck/fail_log</pre></td></tr>
<tr><td>9
☐</td><td>Insert and Configure the SOAM “B” server</td><td>Repeat this procedure to insert and configure the SOAM “B” server, with the exception of the NTP server, which should be configured as so:

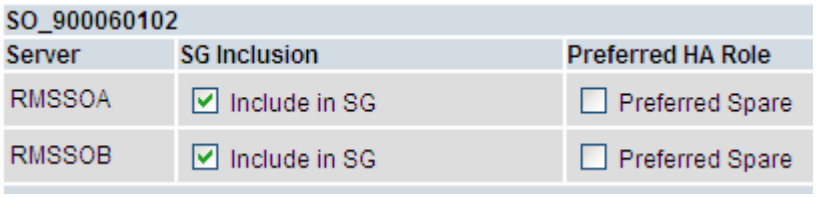
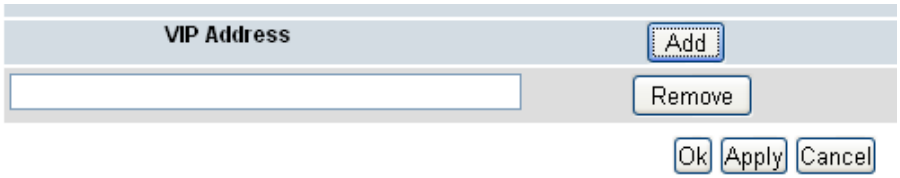
<table><tr><th>NTP Server</th><th>Preferred?</th></tr><tr><td><SO2-TVOE-XMI-IP-Address></td><td>Yes</td></tr></table>
Instead of data for the “A” Server, insert the network data for the “B” server, transfer the TKLCConfigData file to the “B” server, and reboot the “B” server when prompted at a terminal window. Make sure to set the timezone as well.</td></tr>
<tr><td>10
☐</td><td>(OPTIONAL) Insert and Configure the SOAM Spare Server</td><td>If your site has SOs in Active/Standby/Spare configuration such as PDRA, then repeat this procedure to insert and configure the SOAM spare server for this site.

Instead of data for the “A” Server, insert the network data for the spare server, use a preferred NTP server of SO-SPARE-XMI-IP-Address, transfer the TKLCConfigData file to the spare server, and reboot the spare server when prompted at a terminal window. Make sure to set the timezone as well.</td></tr>
<tr><td>11
☐</td><td>(OPTIONAL) Install Netbackup Client Software on SOAMs</td><td>If you are using Netbackup at this site, then execute Procedure 13 again to install the Netbackup Client on all SOAM servers.</td></tr>
</table>

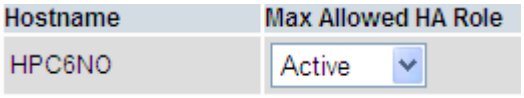
Procedure 18. Configure the SOAM Server Group

S T E P #	This procedure will provide the steps to configure the SOAM Server Group Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.

Procedure 18. Configure the SOAM Server Group

1 ☐	**Enter SOAM Server Group Data**	After a approximately 5 minutes for the SOAM "B" server to reboot, from the GUI session on the NOAMP VIP address, go to the GUI Main Menu->Configuration->Server Groups, select Insert and add the SOAM Server Group name along with the values for the following fields: • Name → **[Enter Server Group Name]** • Level → **B** • Parent **[Select the NOAMP Server Group]** • Function: **DSR (Active/Standby Pair)** • WAN Replication Connection Count: **Use Default Value** Select "OK" when all fields are filled.
2 ☐	**Edit the SOAM Server Group and add VIP**	From the GUI **`Main Menu->Configuration->Server Groups`**, select the new SOAM server group, and then select "Edit".  Select the SOAM Server group and click on **`Edit`** Add both SOAM servers to the Server Group by clicking the "Include in SG" checkbox If you are adding a SOAM spare sever to this server group, then click the "Include in SG" checkbox next to the spare server and also check the "Preferred Spare" checkbox.  Click **`Apply.`** Add a SOAM VIP by click on **`Add`**. Fill in the `VIP Address` and press **`Ok`** as shown below 
3 ☐	**Wait for Replication**	After replication, which will initially take up to 5 minutes, the server status should be active (Main menu->Status & Manage->Replication). Note: This may take up to 5 minutes while the servers figure out master/slave relationship. Look for the alarm "Remote Database re-initialization in progress" to be cleared before proceeding. (Main menu->Alarms->View Active)

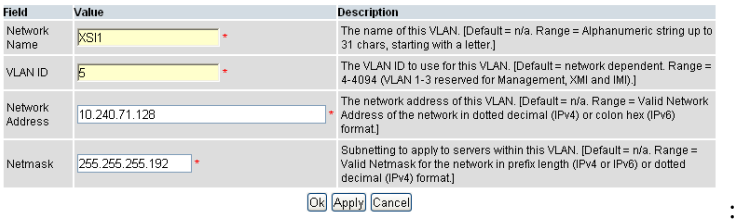
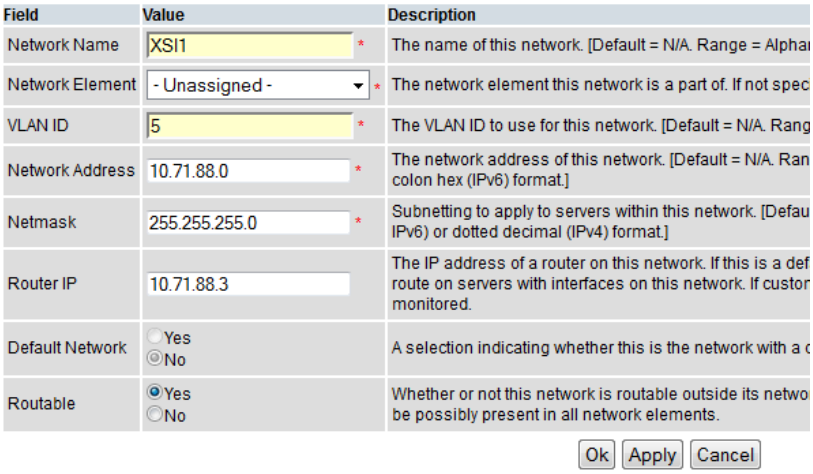
Procedure 18. Configure the SOAM Server Group

4 ☐	**Verify HA Role for 2nd SOAMP server**	In the **Main menu->Status & Manage->HA** menu, verify that the "Max Allowed HA Role" for the 2nd SOAMP server is "Active". If it is **not**, press the **Edit** button and in the resulting screen, change the 2nd NOAMPs server's "Max Allowed HA Role" to "Active" using the dropdown box.  Press **OK**.
5 ☐	**Restart 1st SOAM server**	From the NOAMP GUI, select the Main menu->Status & Manage->Server menu. Select the "A" SOAM server. Select the "Restart" button. Answer OK to the confirmation popup. Wait for restart to complete.
6 ☐	**Restart 2nd SOAM server**	Continuing in the Main menu->Status & Manage->Server menu, now select the "B" SOAM server. Select the "Restart" button. Answer OK to the confirmation popup.
7 ☐	**Restart Spare SOAM server if Present**	Continuing in the Main menu->Status & Manage->Server menu, now select the Spare SOAM server. Select the "Restart" button. Answer OK to the confirmation popup.

Procedure 19. Post NOAMP & SOAM Setup Operations

STEP #	This procedure details other operations that should happen once the NOAMP and all SOAM sites have been configured. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
1 ☐	**(PDRA Only) Activate PDRA Feature**	If you are installing PDRA, execute Procedure 4 of [10] to activate PDRA. **NOTE: If not all SOAM sites are ready at this point, then you should repeat activation for each *new* SOAM site that comes online.**

Procedure 19. Post NOAMP & SOAM Setup Operations

2 ☐	***(PDRA Only), Optional** **Define PSBR DB Replication Network**	**(*) NOTE: Execute this step only if you are defining a separate, dedicated network for PSBR Replication.** Navigate to **Main Menu -> Configuration -> Network** Click on **Insert** in the lower left corner. You will see the following screen, depending on your software version: **DSR 5.X:** Insert Network  Field / Value / Description Network Name: XSI1 * — The name of this VLAN. [Default = n/a. Range = Alphanumeric string up to 31 chars, starting with a letter.] VLAN ID: 5 * — The VLAN ID to use for this VLAN. [Default = network dependent. Range = 4-4094 (VLAN 1-3 reserved for Management, XMI and IMI).] Network Address: 10.240.71.128 * — The network address of this VLAN. [Default = n/a. Range = Valid Network Address of the network in dotted decimal (IPv4) or colon hex (IPv6) format.] Netmask: 255.255.255.192 * — Subnetting to apply to servers within this VLAN. [Default = n/a. Range = Valid Netmask for the network in prefix length (IPv4 or IPv6) or dotted decimal (IPv4) format.] Ok Apply Cancel : **DSR 6.X** Insert Network  Field / Value / Description Network Name: XSI1 * — The name of this network. [Default = N/A. Range = Alpha… Network Element: - Unassigned - * — The network element this network is a part of. If not spec… VLAN ID: 5 * — The VLAN ID to use for this network. [Default = N/A. Rang… Network Address: 10.71.88.0 * — The network address of this network. [Default = N/A. Ran… colon hex (IPv6) format.] Netmask: 255.255.255.0 * — Subnetting to apply to servers within this network. [Defau… IPv6) or dotted decimal (IPv4) format.] Router IP: 10.71.88.3 — The IP address of a router on this network. If this is a def… route on servers with interfaces on this network. If custor… monitored. Default Network: Yes / No — A selection indicating whether this is the network with a … Routable: Yes / No — Whether or not this network is routable outside its netwo… be possibly present in all network elements. Ok Apply Cancel Enter the `Network Name, VLAN ID, Network Address, Netmask,` and `Router IP (6.X only)` that matches the PSBR DB Replication network (note: Even if the network does not use VLAN Tagging, you should enter the correct VLAN ID here as indicated by the NAPD) **DSR 6.X** only fields: • **IMPORTANT:** Leave the Network Element field as **Unassigned**. • Select **No** for Default Network • Select **Yes** for Routable. Press **Ok**. if you are finished adding signaling networks **-OR-** Press **Apply** to save this signaling network and repeat this step to enter additional signaling networks.

Procedure 19. Post NOAMP & SOAM Setup Operations

<table>
<tr>
<td>3
☐</td>
<td>(PDRA Only) Perform Additional Services to Networks Mapping</td>
<td>
Log Into Active NO GUI.

Navigate to Main Menu → Configuration → Services.

Select the “Edit” button and set the Services as shown in the table below:

<table>
<tr><th>Name</th><th>Intra-NE Network</th><th>Inter-NE Network</th></tr>
<tr><td>Replication_MP</td><td><IMI Network></td><td><PSBR DB Replication Network>*</td></tr>
<tr><td>ComAgent</td><td><IMI Network></td><td><PSBR DB Replication Network>*</td></tr>
</table>

(*) It is recommended that dual-path HA heartbeats be enabled in support of geo-diverse PSBRs. This requires participating servers to be attached to at least two routable networks.

.

Select the “Ok” button to apply the Service-to-Network selections.
</td>
</tr>
</table>

Procedure 20. Configure the MP Blade Servers

S T E P #	This procedure will provide the steps to configure an MP Blade 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 TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
1 ☐	**Exchange SSH keys between MP site's local PMAC and the MP server**	Use the MP site's PMAC GUI to determine the Control Network IP address of the blade server that is to be an MP server. From the MP site's PMAC GUI, navigate to **Main Menu → Software-→Software Inventory**. Note the IP address for an MP server. Login to the MP site's PMAC terminal as the ***admusr* .** From a terminal window connection on the MP site's PMAC as the **admusr**, exchange SSH keys for ***admusr*** between the PMAC and the MP blade server using the keyexchange utility, using the Control network IP address for the MP blade server. When prompted for the password, enter the password for the *admusr* user of the MP server. `$ keyexchange admusr@<MP blade Control Net IP addr>`
2 ☐	**Establish GUI Session on the NOAMP VIP**	If needed, establish a GUI session on the NOAMP by using the XMI VIP address. Login as user "guiadmin".

Procedure 20. Configure the MP Blade Servers

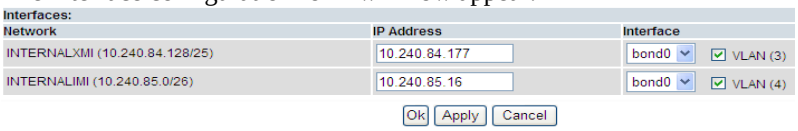
3 ☐	**Insert the MP server - Part 1**	Navigate to **Main Menu->Configuration->Servers** Select the "Insert" button to insert the new MP server into servers table. Fill out the following values: **Hostname**: `<Hostname of the MP>` **Role**: `MP` **Network Element**: `[Choose Network Element]` **Hardware Profile**: Select the profile that matches your MP physical hardware and enclosure networking environment. Note that you must go through the process of identifying the enclosure switches, mezzanine cards and Ethernet interfaces of the network prior and blade(s) used before selecting the profile.

Profile Name	*Blade Size*	*Multiple Pairs of Enc. Switches?*	*Bonded Signaling Interfaces?*
BL460 HP c-Class Blade	Half	No	Yes
BL620 HP c-Class Blade	Full	No	Yes
L2D3 BL460 HP c-Class Blade	Half	Yes	Yes
L2D3 BL620 HP c-Class Blade	Full	Yes	Yes
L2D3 BL620 HP c-Class blade (Unbonded Sig)	Full	Yes	No
DSR TVOE Guest	N/A (Virtual)	N/A	N/A

NOTE: If none of the above profiles properly describe your MP server blade, then you will have to create your own in a text editor (See 4.7Appendix A) and copy it into the *<u>/var/TKLC/appworks/profiles/</u>* directory of the active NOAMP server, the standby NOAMP server, and both the DR NOAM servers (if applicable). Then come back and repeat this step.

Location: <enter an optional location description>

The interface configuration form will now appear.



For the XMI network, enter the MP's XMI IP address. Select the correct bond or interface. If your XMI network uses VLAN tagging, then select the VLAN checkbox. If your XMI network does **NOT** use VLAN tagging, then do **NOT** select the vlan checkbox.

For the IMI network, enter the MP's IMI IP address. Select the proper bond or interface, and **select the VLAN checkbox.**

Procedure 20. Configure the MP Blade Servers

<table>
<tr><td>4
☐</td><td>Insert the MP server - Part 2</td><td>.
Next, add the following NTP servers:
<table><tr><th>NTP Server</th><th>Preferred?</th></tr><tr><td><SO1-TVOE-XMI-IP-Address></td><td>Yes</td></tr><tr><td><SO2-TVOE-XMI-IP-Address></td><td>No</td></tr><tr><td><Site-PM&C-TVOE-Server-Mgmt-IP-Address></td><td>No</td></tr></table>
Select “OK” when all fields are filled in to finish MP server insertion.</td></tr>
<tr><td>5
☐</td><td>Export the initial configuration</td><td>From the GUI screen, select the server that was just inserted and then select “Export” action button to generate the initial configuration data for that server.</td></tr>
<tr><td>6
☐</td><td>Log onto the MP iLO</td><td>Obtain a terminal window connection on the MP server iLO from the OA.</td></tr>
<tr><td>7
☐</td><td>Copy Configuration File to MP server</td><td>From a terminal window connection on the active NOAMP as the admusr, use the <tt>awpushcfg</tt> utility to copy the configuration file created in the previous step from the <tt>/var/TKLC/db/filemgmt</tt> directory on the active NOAMP to the MP blade server, using the Control network IP address for the MP blade server. The configuration file will have a filename like <tt>TKLCConfigData.<<i>hostname</i>>.sh</tt>.

<tt>$ awpushcfg</tt>

The awpushcfg utility is interactive, so the user will be
- prompted for the management IP address of the PMAC server at the site where the target blade is located.
- the blade inventory will be presented,
- prompted for the Control network IP address for the target server (in this case, the MP server).
- prompted for the hostname of the target server,
- Note: If prompted for a username, please use admusr

The automatic configuration daemon will look for the file named “TKLCConfigData.sh” in the /var/tmp directory, implement the configuration in the file, and then prompt the user to reboot the server.</td></tr>
</table>

Procedure 20. Configure the MP Blade Servers

8 ☐	**Set the Timezone and Reboot the Configured Server**	From the MP server iLO terminal login as **admusr.**
		
		Become the super user by using the command:
		
		`$ sudo su`
		
		You should see the prompt change to the hash mark:
		
		`#`
		
		Wait for the message ro reboot the server.
		
		Verify awpushcfg was called by checking the following file
		
		`# cat /var/TKLC/appw/logs/Process/install.log`
		
		Set the timezone using the following command. The following command example uses the America/New_York time zone. Replace as appropriate with the time zone you have selected for this installation. For UTC, use "Etc/UTC", for a full list of valid timezones, see 4.7Appendix L.
		
		`# /usr/TKLC/appworks/bin/set_ini_tz.pl "Etc/UTC" >/dev/null 2>&1`
		
		Use "init 6" in the terminal window to reboot the server.
		
		`# init 6`
		
		Proceed to the next step once the Server finished rebooting, The server is done rebooting once the login prompt is displayed.

9 ☐	**MP Server:** Verify Server Health	After the reboot, login as admusr again and become the superuser.
		
		Execute the following command as super-user on the server and make sure that no errors are returned:
		
		`# syscheck`
		`Running modules in class hardware...`
		`OK`
		`Running modules in class disk...`
		`OK`
		`Running modules in class net...`
		`OK`
		`Running modules in class system...`
		`OK`
		`Running modules in class proc...`
		`OK`
		`LOG LOCATION: /var/TKLC/log/syscheck/fail_log`

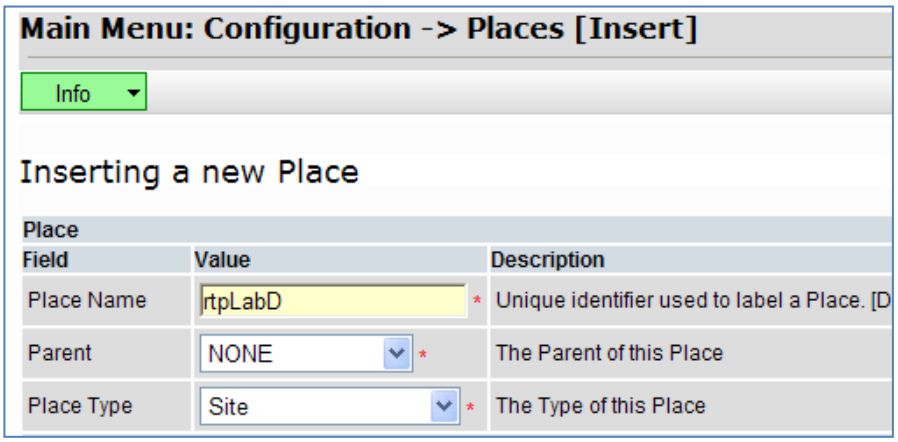
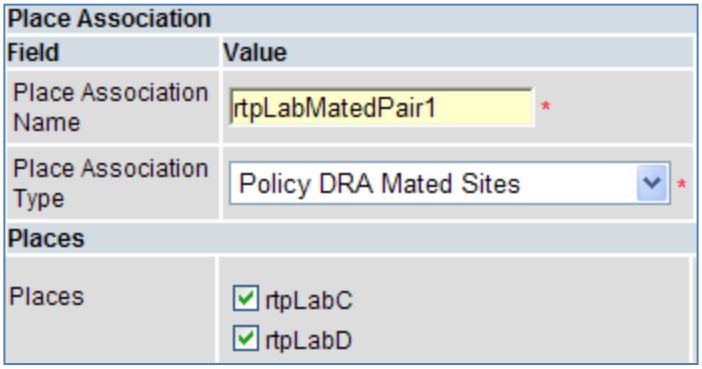
Procedure 20. Configure the MP Blade Servers

10 ☐	**(OPTIONAL) Delete Auto-Configured Default Route on MP and Replace it with a Network Route via the XMI Network**	*****NOTE: THIS STEP IS OPTIONAL AND SHOULD ONLY BE EXECTUED IF YOU PLAN TO CONFIGURE A DEFAULT ROUTE ON YOUR MP THAT USES A SIGNALING (XSI) NETWORK INSTEAD OF THE XMI NETWORK. (Not executing this step will mean that a default route will not be configurable on this MP and you will have to create separate network routes for each signaling network destination.) *****
		
		Using the iLO facility, **log into the MP** as the **admusr** user. (Alternatively, you can log into the site's PMAC then SSH to the MP's control address.)
		
		Become the super user by using the command:
		
		`$ sudo su`
		
		Determine <XMI_Gateway_IP> from your SO site network element info. Gather <NO_XMI_Network_Address>,<NO_XMI_Network_Netmask> ; <DR_NO_XMI_Network_Addres>,<DR_NO_XMI_Network_Netmask> from your NO and DR NO site network element info. You can either consult the XML files you imported earlier, or go to the NO GUI and view these values from the *Main Menu>Configuration>Network Elements* screen.
		
		Note: If your NO XMI network is exactly the same as your MP XMI network, then you should skip this command and only configure the DR NO route.
		
		[MP console] Create network routes to the NO's XMI(OAM) network:
		
		`# netAdm add --route=net --address=<NO_XMI_Network_Address> --netmask=<NO_XMI_Network_Netmask> --gateway=<XMI_Gateway_IP> --device=<MP_XMI_Interface>`
		
		`Route to <MP_XMI_Interface> added.`
		
		[MP console] Create network routes to the DR NO's XMI(OAM) network:
		
		`# netAdm add --route=net --address=<DR_NO_XMI_Network_Address> --netmask=<DR_NO_XMI_Network_Netmask> --gateway=<XMI_Gateway_IP> --device=<MP_XMI_Interface>`
		
		`Route to <MP_XMI_Interface> added.`
		
		(Optional) [MP console] If Sending SNMP traps from individual servers, create host routes to customer SNMP trap destinations on the XMI network:
		
		`# netAdm add --route=host --address=<Customer_NMS_IP> --gateway=<XMI_Gateway_IP> --device=<MP_XMI_Interface>`
		
		`Route to <MP_XMI_Interface> added.`
		(Repeat for any existing cusomter NMS stations)
		
		Delete the existing default route:
		
		`# netAdm delete --route=default --gateway=<MP_XMI_Gateway_IP> --device=<MP_XMI_Interface>`
		
		`Route to <MP_XMI_Interface> removed.`

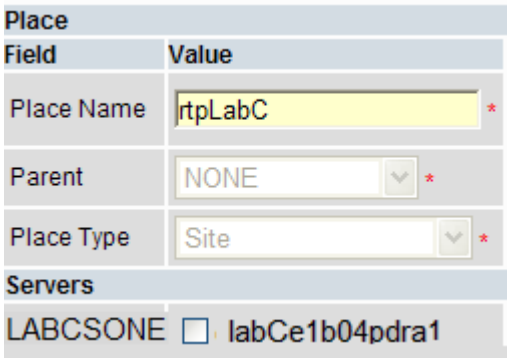
Procedure 20. Configure the MP Blade Servers

11 ☐	**(OPTIONAL, Continued from Previous Step) Delete Auto-Configured Default Route on MP and Replace it with a Network Route via the XMI Network**	**[MP Console] Ping active NO XMI IP address to verify connectivity:** # **ping <ACTIVE_NO_XMI_IP_Address>** PING 10.240.108.6 (10.240.108.6) 56(84) bytes of data. 64 bytes from 10.240.108.6: icmp seq=1 ttl=64 time=0.342 ms 64 bytes from 10.240.108.6: icmp seq=2 ttl=64 time=0.247 ms **(Optional) [MP Console] Ping Customer NMS Station(s):** # **ping <Customer_NMS_IP>** PING 172.4.116.8 (172.4.118.8) 56(84) bytes of data. 64 bytes from 172.4.116.8: icmp_seq=1 ttl=64 time=0.342 ms 64 bytes from 172.4.116.8: icmp seq=2 ttl=64 time=0.247 ms If you do not get a response, then verify your network configuration. If you continue to get failures then halt the installation and contact Oracle customer support.
12 ☐	**Repeat for remaining MP at all sites**	Repeat this entire procedure for all remaining MP blades at all sites.

Procedure 21. Configure Places and Assign MP Servers to Places (PDRA Installations ONLY)

S T E P #	This procedure will provide the steps/reference to add "Places" in the PDRA Network. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
1 ☐	**(PDRA Only)** **NOAMP VIP:** **Configure Places**	Establish a GUI session on the NOAMP by using the XMI VIP address. Login as user "guiadmin". Navigate to **`Main Menu -> Configuration -> Places`** Screen.  Place Name: Choose the site NAME Parent: Choose "NONE" Place Type: Choose "Site" **Repeat this step for all Places you wish to define.**
2 ☐	**(PDRA Only)** **NOAMP VIP:** **Configure Place Associations**	Click on **`Insert`** in the lower left corner and enter the information to create the place association for mated pairs, click Ok.  NOTE: . Place Association Name: .**Enter Association Name** Place Association Type: . **Policy DRA Mated Sites** Places: .Click on the list of Places you wish to define under this Place Association. **Repeat this step for all place associations you wish to define.**

Procedure 21. Configure Places and Assign MP Servers to Places (PDRA Installations ONLY)

3 ☐	**(PDRA Only) NOAMP VIP:** **Assign MP Servers To Places**	For each place you have defined, choose the set of MP servers that will be assigned to those places.  Check all the check boxes for PDRA and pSBR servers that will be assigned to this place. **Repeat this step for all other PDRA or pSBR servers you wish to assign to places.**

Procedure 22. Configure the MP Server Group(s) and Profiles

S T E P #	This procedure will provide the steps to configure MP Server Groups Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.

Procedure 22. Configure the MP Server Group(s) and Profiles

<table>
<tr><td>1
☐</td><td>Enter MP Server Group Data</td><td>From the GUI session on the NOAMP VIP address, go to the GUI Main Menu→Configuration→Server Groups, select Insert and fill out the following fields:

Server Group Name: [Server Group Name]

Level: C

Parent: [Select the SOAMP Server Group That is Parent To this MP]

Function: Select the Proper Function for this MP Server Group:

<table>
<tr><th>Server Group Function</th><th>MPs Will Run</th><th>Redundancy Model</th></tr>
<tr><td>DSR (multi-active cluster)</td><td>Diameter Relay and Application Services</td><td>Multiple MPs active Per SG</td></tr>
<tr><td>DSR (active-standby pair)</td><td>Diameter Relay and Application Services</td><td>1 Active MP and 1 Standby MP / Per SG</td></tr>
<tr><td>Session Binding Repository</td><td>Session Binding Repository Function</td><td>1 Active MP and 1 Standby MP / Per SG</td></tr>
<tr><td>IP Load Balancer</td><td>IPFE application</td><td>1 Active MP Per SG</td></tr>
<tr><td>Policy SBR</td><td>Policy Session and/or Policy Binding Function</td><td>1 Active MP Per SG</td></tr>
<tr><td>SS7-IWF</td><td>MAP IWF Application</td><td>1 Active MP Per SG</td></tr>
</table>

WAN Replication Connection Count:

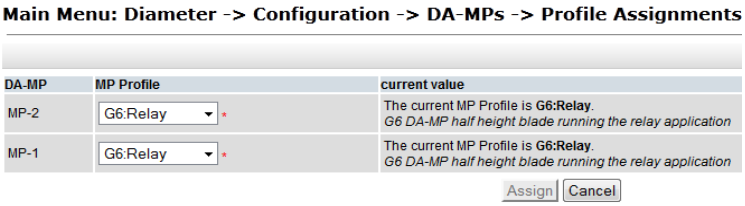
• For non-Policy SBR Server Groups: Use Default Value.
• For Policy SBR Server Groups: 8.

Select OK when all fields are filled in.</td></tr>
<tr><td>2
☐</td><td>Repeat For Addional Server Groups</td><td>Repeat Step 1 for any remaining MP server groups you wish to create. For instance,if you are installing IPFE, you will need to create an IP Load Balancer server group. If you are installing the CPA, you will need a Session Binding Repository server group. For PDRA, you will need at least one Policy SBR server group.</td></tr>
</table>

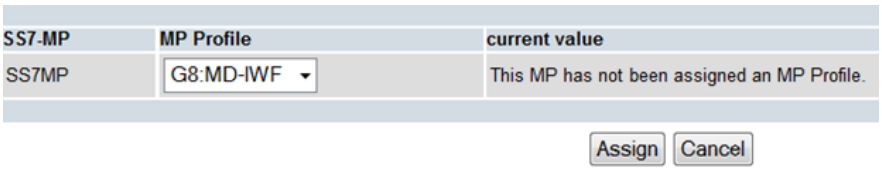
Procedure 22. Configure the MP Server Group(s) and Profiles

3 ☐	**Edit the MP Server Groups to include MP blades.**	From the GUI **Main Menu->Configuration->Server Groups**, select a server group that you just created and then select **Edit**. Select the Network Element that represents the MP server group you wish to edit. Click the "Include in SG" box for every MP server that you wish to include in *this* server group. Leave other checkboxes blank. **HPC6_90006** Server | SG Inclusion | Preferred HA Role MP-1 | ☑ Include in SG | ☐ Preferred Spare MP-2 | ☑ Include in SG | ☐ Preferred Spare Select **Ok**. **Repeat for any remaining MP server groups untili all MPs have been assigned to a server group.**
4 ☐	**Wait for Replication to complete on all MP blades**	Browse to **Main menu->Status&Manage->Server.** Identify all the MP servers in the *Server Hostname* column . Now, wait for the corresponding *DB* and *Reporting Status* columns of those MPs to say "Norm". This may take up to 5 or 10 minutes. Server Hostname | Appl State | Alm | DB | Reporting Status HPC6-NO | Enabled | Norm | Norm | Norm HPC6-SO | Enabled | Warn | Norm | Norm HPC6-MP2 | Enabled | Warn | Norm | Norm HPC6-MP1 | Enabled | Warn | Norm | Norm
5 ☐	**Wait for Remote Database Alarm to Clear**	Wait for the alarm "10200: Remote Database re-initialization in progress" to be cleared. (**Main menu->Alarms & Events->Active Alarms**) This should happen shortly after you have verified the "Norm" DB status in the previous step.

Procedure 22. Configure the MP Server Group(s) and Profiles

6 ☐	**Assign Profiles to DA-MPs from SOAM GUI.**	Log onto the GUI of the active SOAM server. From the SO GUI, select **MainMenu->Diameter->Configuration->DA-MPs->Profiles Assignments** Refer to the **DA-MP** section. (If the site has both DSR and MAP-IWF server groups, you will see both a DA-MP section and an SS7-MP section)  **Main Menu: Diameter -> Configuration -> DA-MPs -> Profile Assignments** DA-MP / MP Profile / current value MP-2 — G6:Relay — The current MP Profile is **G6:Relay**. *G6 DA-MP half height blade running the relay application* MP-1 — G6:Relay — The current MP Profile is **G6:Relay**. *G6 DA-MP half height blade running the relay application* Assign Cancel For each MP, select the proper profile assignment based on the MP's hardware type and the function it will serve: **Profile Name** / **Description** **G6:Relay** — G6 DA-MP half height blade running relay application **G6:Database** — G6 DA-MP half height blade running a database application (e.g. - FABR, RBAR) **G6:Session** — G6 DA-MP half height blade running a session application (e.g. - CPA, PDRA) **G8:Relay** — G8 DA-MP half height blade running the relay application **G8:Database** — G8 DA-MP half height blade running a database application (e.g. FABR, RBAR) **G8:Session** — G8 DA-MP half height blade running a session application (e.g. CPA, PDRA) **G7:Relay** — G7 DA-MP Full height blade running the relay application **G7:Database** — G7 DA-MP Full height blade running a database application (e.g. FABR, RBAR) **G7:Session** — G7 DA-MP Full height blade running a session application (e.g. CPA, PDRA) Note: If the DA-MPs at this site are configured for Active/Standby then there will be a single selection box visible that assigns profiles for all MPs. When finished, press the **`Assign`** button

Procedure 22. Configure the MP Server Group(s) and Profiles

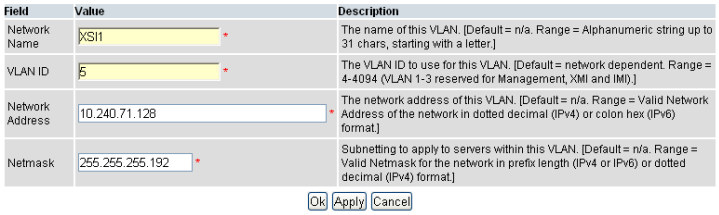
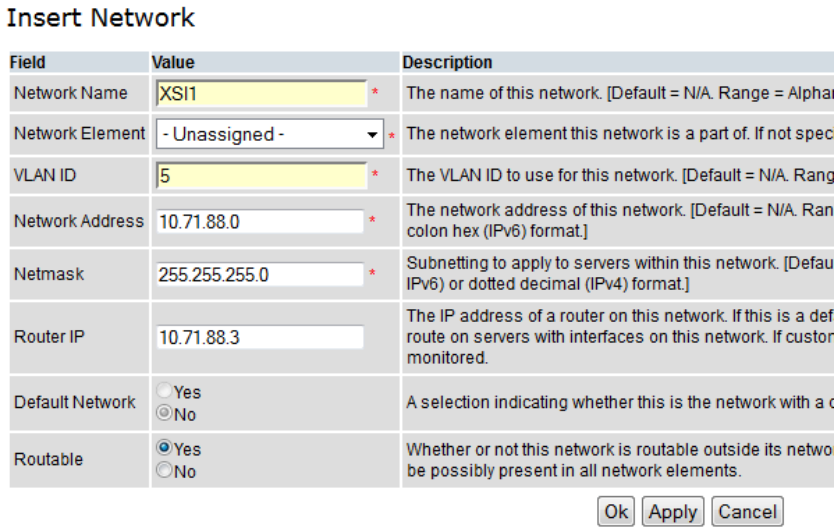
7 ☐	**Assign Profiles to SS7-MPs from SOAM GUI.**	Log onto the GUI of the active SOAM server. From the SO GUI, select **MainMenu->Diameter->Configuration->DA-MPs->Profiles Assignments** Refer to the **SS7-MP** section. (If the site has both DSR and MAP-IWF server groups, you will see both a DA-MP section and an SS7-MP section)  For each SS7 MP, select the proper profile assignment based on the SS7 MP's hardware type and the function it will serve: **Profile Name** / **Description** **G8:MD-IWF** — HP BL460 Gen8 Running MAP-IWF fucntions When finished, press the **Assign** button
8 ☐	**Update DpiOption table from the active SOAM**	Log on to the active SOAM console as admusr via the XMI address or iLO. Execute the following command (advise cut and paste to prevent errors): `$ sudo iset -fvalue="50" DpiOption where "name='MpEngIngressMpsPercentile'"` **=== changed 1 records ===**
9 ☐	**Restart MP blade servers**	From the NOAMP GUI, select the **Main menu->Status & Manage->Server menu** *For each MP server:* • Select the MP server. • Select the **Restart** button. • Answer **OK** to the confirmation popup. Wait for the message which tells you that the restart was successful. **PDRA INSTALLATIONS**: You may continue to see alarms related to ComAgent until you complete PDRA installation by finishing **Procedure 29**.

4.6 Signaling Network Configuration

Procedure 23. Configure the Signaling Networks

S T E P	This procedure will provide the steps to configure the Signaling Networks. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE. **NOTE: SCREENSHOTS DISPLAYED ARE FOR EXAMPLE PURPOSES ONLY. ACTUAL DATA IN YOUR INSTALLATION MAY VARY**	
1 ☐	**Establish GUI Session on the NOAMP VIP**	Establish a GUI session on the NOAMP by using the XMI VIP address. Login as user "guiadmin".
2 ☐	**NOAMP VIP:** Navigate to Signaling Network Configuration Screen	Navigate to **`Main Menu -> Configuration -> Network`** Click on **`Insert`** in the lower left corner.

Procedure 23. Configure the Signaling Networks

3 ☐	**NOAMP VIP:** Add Signaling Networks	You will see the following screen, depending on your software version: **DSR 5.X:**  Insert Network Field / Value / Description Network Name: XSI1 * — The name of this VLAN. [Default = n/a. Range = Alphanumeric string up to 31 chars, starting with a letter.] VLAN ID: 5 * — The VLAN ID to use for this VLAN. [Default = network dependent. Range = 4-4094 (VLAN 1-3 reserved for Management, XMI and IMI).] Network Address: 10.240.71.128 * — The network address of this VLAN. [Default = n/a. Range = Valid Network Address of the network in dotted decimal (IPv4) or colon hex (IPv6) format.] Netmask: 255.255.255.192 * — Subnetting to apply to servers within this VLAN. [Default = n/a. Range = Valid Netmask for the network in prefix length (IPv4 or IPv6) or dotted decimal (IPv4) format.] Ok Apply Cancel **DSR 6.X:**  Insert Network Field / Value / Description Network Name: XSI1 * — The name of this network. [Default = N/A. Range = Alpha Network Element: - Unassigned - * — The network element this network is a part of. If not spec VLAN ID: 5 * — The VLAN ID to use for this network. [Default = N/A. Rang Network Address: 10.71.88.0 * — The network address of this network. [Default = N/A. Ran colon hex (IPv6) format.] Netmask: 255.255.255.0 * — Subnetting to apply to servers within this network. [Defau IPv6) or dotted decimal (IPv4) format.] Router IP: 10.71.88.3 — The IP address of a router on this network. If this is a def route on servers with interfaces on this network. If custor monitored. Default Network: Yes / No — A selection indicating whether this is the network with a Routable: Yes / No — Whether or not this network is routable outside its netwo be possibly present in all network elements. Ok Apply Cancel . Enter the `Network Name, VLAN ID, Network Address, Netmask,` and `Router IP (6.X only)` that matches the Signaling network (note: Even if the network does not use VLAN Tagging, you should enter the correct VLAN ID here as indicated by the NAPD) **DSR 6.X** only fileds: • **IMPORTANT:** Leave the Network Element field as **Unassigned**. • Select **No** for Default Network • Select **Yes** for Routable. Press **`Ok`**. if you are finished adding signaling networks **-OR-** Press **`Apply`** to save this signaling network and repeat this step to enter additional signaling networks.

Procedure 24. Configure the Signaling Devices

S T E P

This procedure will provide the steps to configure the Signaling Devices.

Note: The site specific HW configuration will affect which steps need to be executed

Questions:	How many pairs of switches are in the enclosure?	Will the MP use a bonded interface?
Possible Execution Scenarios:	Single	N/A
	Multiple	Yes
	Multiple	No

Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number.

IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.

1 ☐

NOAMP VIP: Make Signaling Devices Configurable (**Unbonded, non-VLAN signaling interfaces only**)

NOTE: You will only execute this step if you are using unbonded, non-VLAN tagged ethernet interfaces for signaling traffic.

NOTE: If this MP will be an IPFE server, then ensure *ipfeNetUpdate.sh* from [13] has been executed before proceeding with this step.

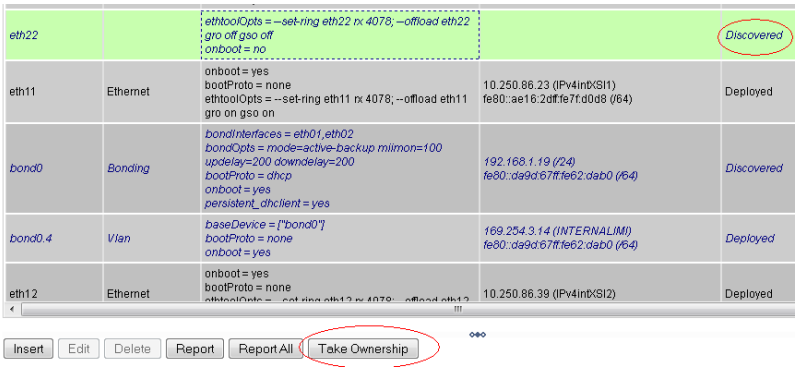
Login as root to the NOAMP VIP console.

Navigate to **`Main Menu -> Configuration -> Network -> Devices`**

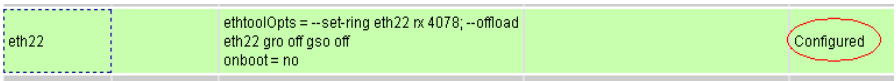
You should see several tabs each representing a blade in the system. Click on the tab representing the first MP Blade.

You should see a list of network devices installed on the MP.

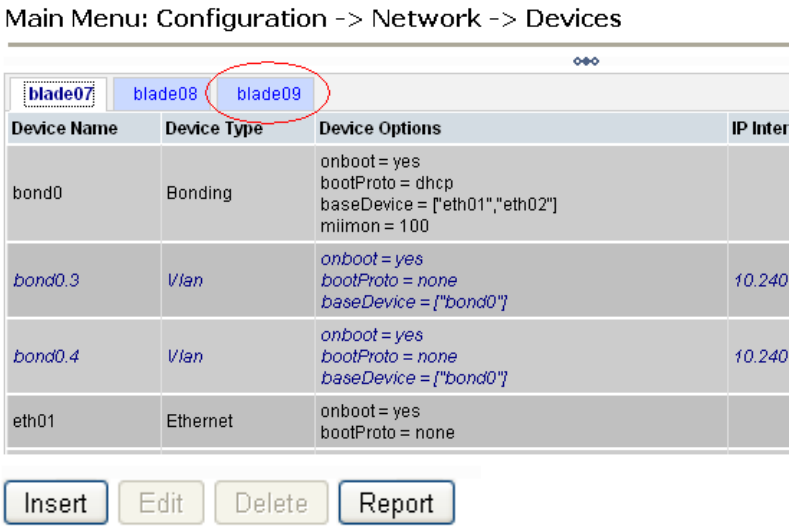
Select all ethernet devices that will be used as unbonded signaling interfacs *and* have "Discovered" as their Configuration Status. Next, press the **`Take Ownership`** button.



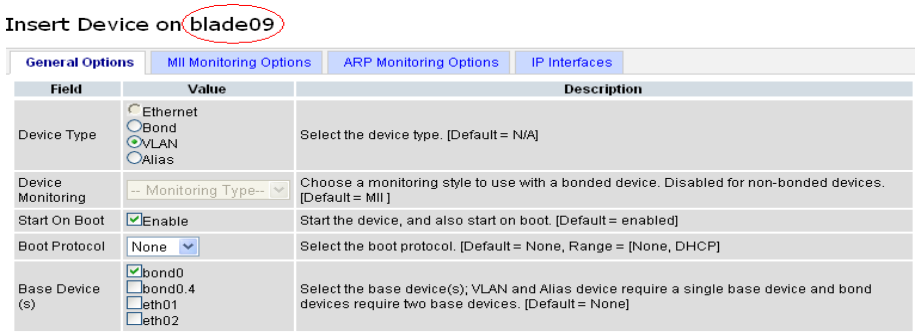
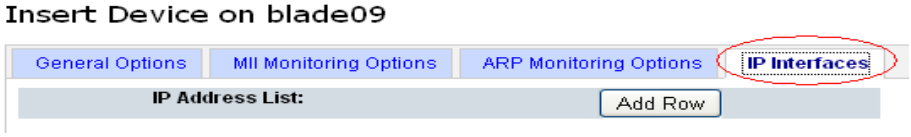
After a brief moment, the selected devices should now show a Configuration Status of "Configured".



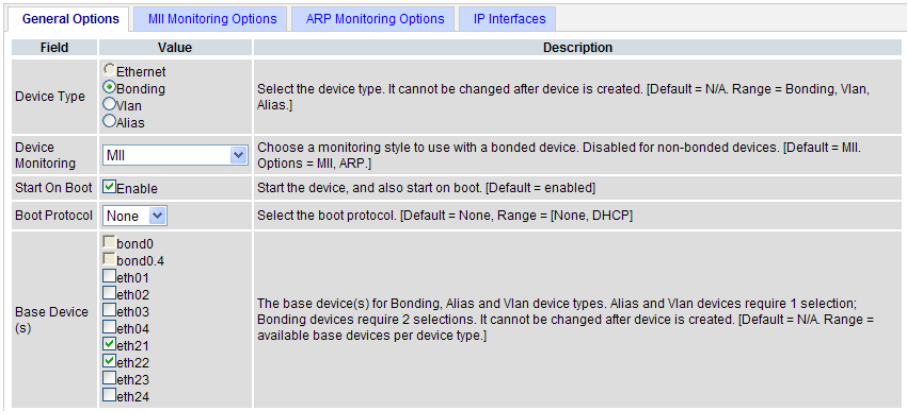
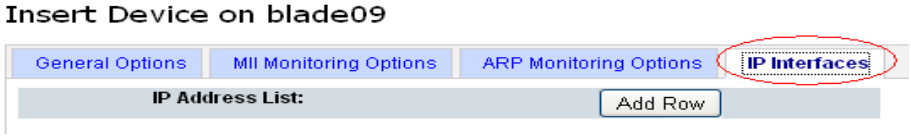
Procedure 24. Configure the Signaling Devices

2 ☐	**NOAMP VIP:** Configure the Signaling Interfaces of the first MP	Navigate to **Main Menu -> Configuration -> Network -> Devices** You should see several tabs each representing a blade in the system. Click on the tab representing the first MP Blade.  Refer to the following table to determine which steps to execute next based on the number of enclosure switch pairs and whether Bonded Interfaces are used **Nb of Enclosure Switch Pairs** / **Bonded Interface** / **Steps to Execute** 1 / N/A / 3 and 6 2 or 3 / Yes / 4 and 6 2 or 3 / No / 5 and 6

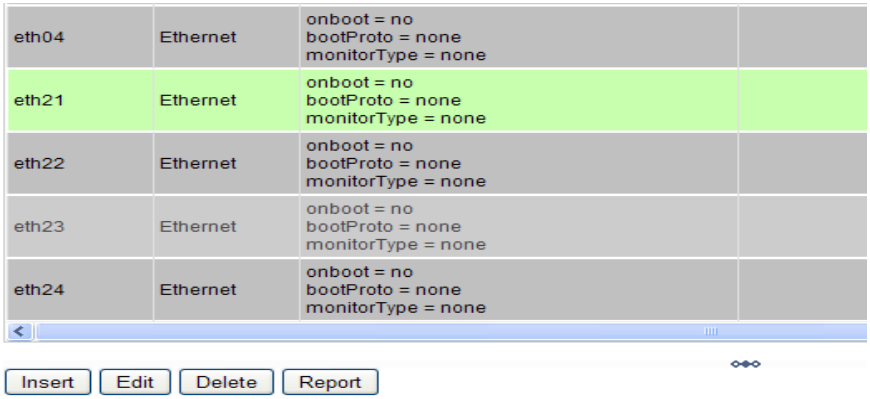
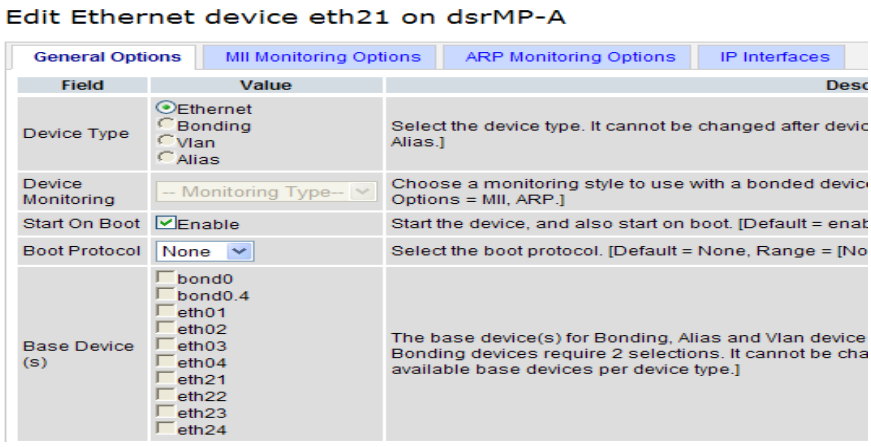
Procedure 24. Configure the Signaling Devices

3 ☐	**NOAMP VIP:** Configure the Signaling Interfaces of the MP (1 pair of enclosure switches)	Click on **Insert**. The following screen should be displayed. Verify that the blade name on the top corresponds to the MP.  For `Device Type`, select `VLAN`. For `Start on Boot`, verify that the checkbox is selected. For `Boot Protocol`, verify that it is set to None For `Base Device`, select `bond0`. Now Click on the **IP Interfaces** tab as shown below.  Now Click on **Add Row**, the following will be displayed  Select the first Signaling Network from the drop down menu. If configuring an IPv4, then enter the IPv4 address. If configuring an IPv6 address and IPv6 auto-configuration is enabled on your signaling network, and the MPs are in active/standby configuration, then there's no need to enter an IP address, it will be assigned automatically. If configuring an IPv6 address and IPv6 auto-configured is disabled, or the MPs are in multi-active mode: • If an IPv4 already exists, click on "Add Row" and enter the IPv6 address. • If an IPv4 doesn't exist, simply enter the IPv6 address. Click on **Ok** at the bottom of the screen.  To add additional Signaling Interfaces, click on Insert again and repeat this step, otherwise continue with the next step. Skip the next 2 steps and continue to step 6

Procedure 24. Configure the Signaling Devices

4 ☐	**NOAMP VIP:** Configure the Signaling Interfaces of the MP (multiple pairs of enclosure switches with bonded interfaces)	Click on **Insert**. The following screen should be displayed. Verify that the blade name on the top corresponds to the MP.  For `Device Type`, select Bonding. For `Device Monitoring`, select `MII`. For `Start on Boot`, verify that the checkbox is selected. For `Boot Protocol`, verify that it is set to None For `Base Device`, select the ports that correspond to the signaling enclosure switches. (e.g. if the signaling switches are in Slots 3 and 4, you would select eth11 and eth12) Click on **Ok** at the bottom of the screen.  Next click **Insert** again. The same screen as above with appear, select the following: For `Device Type`, select `VLAN`. For `Start on Boot`, verify that the checkbox is selected. For `Boot Protocol`, verify that it is set to None For `Base Device`, select `bond1`. Now Click on the **IP Interfaces** tab as shown below.  Now Click on **Add Row**, the following will be displayed  Select the first Signaling Network from the drop down menu. Enter the IP address that corresponds to the IPv4 or IPv6 interface.

Procedure 24. Configure the Signaling Devices

		Click on **Ok** at the bottom of the screen.  To add additional Signaling Interfaces, click on Insert again and repeat this step, otherwise continue with the next step. Skip the next step and continue to step 5
5 ☐	**NOAMP VIP:** Configure the Signaling Interfaces of the MP (multiple pairs of enclosure switches without bonded interfaces)	Select the appropriate ethernet interface and click on **Edit**.  The following screen should be displayed. Verify that the blade name on the top corresponds to the MP. 

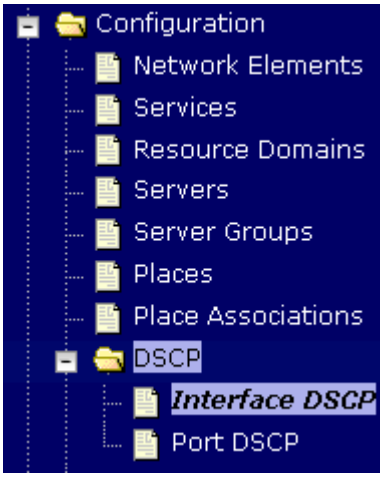
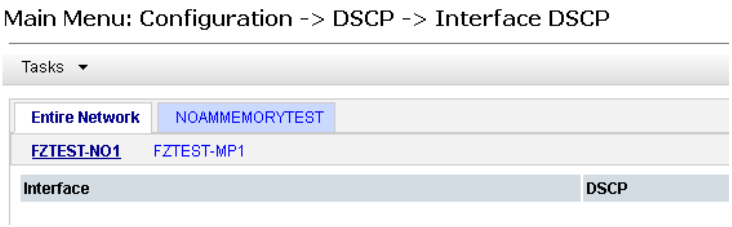
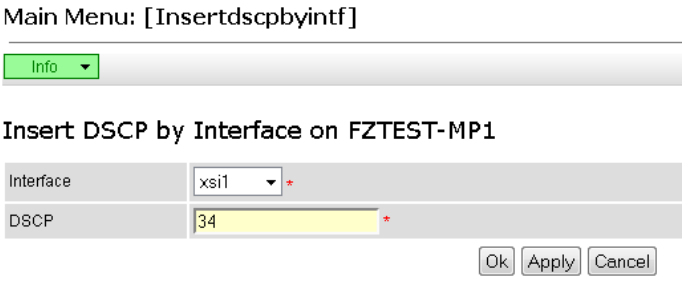
Procedure 24. Configure the Signaling Devices

		For "Start on Boot", verify that the checkbox is selected. For "Boot Protocol", verify that "None" is selected Now Click on the **IP Interfaces** tab as shown below.  Now Click on **Add Row**, the following will be displayed  Select the first Signaling Network from the drop down menu. Enter the IP address that corresponds to the IPv4 or IPv6 interface. Click on Ok at the bottom of the screen.  Now repeat this step to configure the second signaling interface (eth22). Skip the next step and continue to step 6
6 ☐	**NOAMP VIP:** Configure the Interfaces of the other MPs.	**Repeat this procedure to configure the signaling devices of all other MPs.**

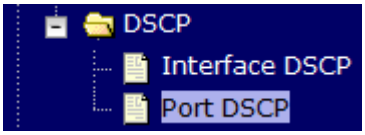
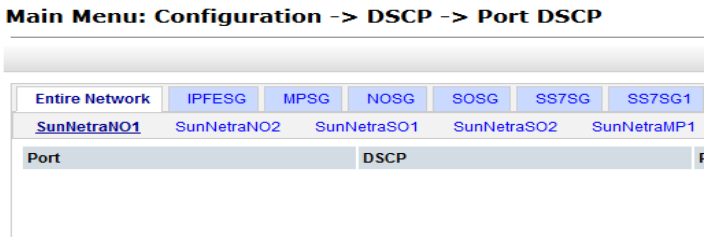
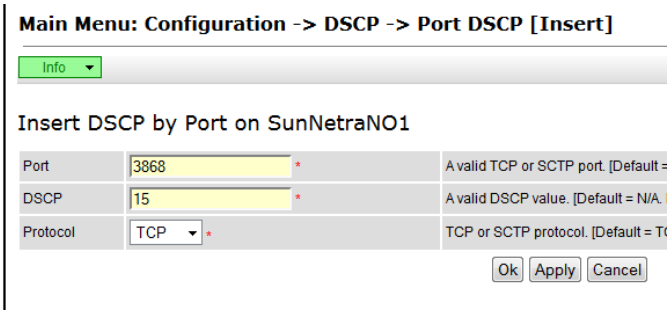
Procedure 25. Configure DSCP Values for Outgoing Traffic (Optional)

S T E P		
	This procedure will provide the steps to configure the DSCP values for outgoing packets on servers. DSCP values can be applied to an outbound interface as a whole, or to all outbound traffic using a specific TCP or SCTP source port. This step is optional and should only be executed if has been decided that your network will utitlize packet DSCP markings for Quality-of-Service purposes. **IF YOUR ENCLOSURE SWITCHES ALREADY HAVE DSCP CONFIGURATION FOR THE SIGNALING VLANs, THEN THE SWITCH CONFIGURATION WILL OVERRIDE THE SETTINGS IN THIS PROCEDURE.** It is strongly recommended, however, that you configure DSCP here at the application level where you have the most knowledge about outging traffic patterns and qualities. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
1 ☐	**Establish GUI Session on the NOAMP VIP**	Establish a GUI session on the NOAMP by using the XMI VIP address. Login as user "guiadmin".

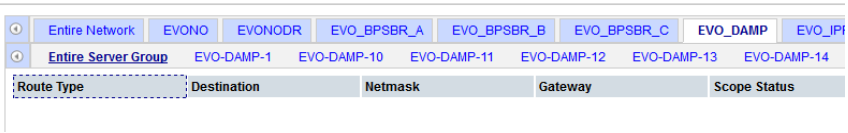
Procedure 25. Configure DSCP Values for Outgoing Traffic (Optional)

2 ☐	**NOAMP VIP:** Option 1: Configure Interface DSCP	**Note: The values displayed in the screenshots are for demonstration purposes only. The exact DSCP values for your site will vary.** Navigate to **Main Menu -> Configuration -> DSCP** -> **Interface DSCP**  Select the server you wish to configure from the list of servers on the 2nd line. (You can view all servers with "Entire Network" selected; or limit yourself to a particular server group by clicking on that server group name's tab). Click **Insert**  Select the network interface from the drop down box, then enter the DSCP value you wish to have applied to packets leaving this interface.  Click **OK** if there are no more interfaces on this server to configure, or **Apply** to finish this interface and continue on with more interfaces by selecting them from the drop down and entering their DSCP values.

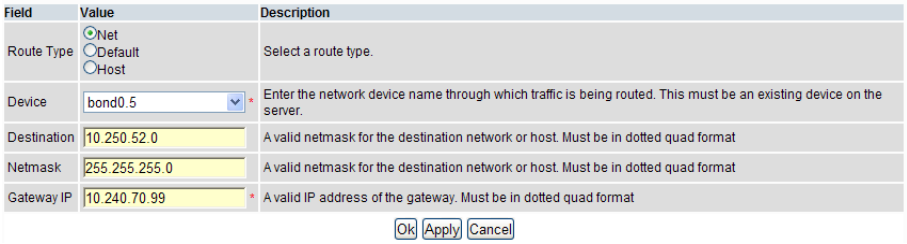
Procedure 25. Configure DSCP Values for Outgoing Traffic (Optional)

3 ☐	**NOAMP VIP:** Option 2: Configure Port DSCP	**Note: The values displayed in the screenshots are for demonstration purposes only. The exact DSCP values for your site will vary.** Navigate to **Main Menu -> Configuration -> DSCP** -> **Port DSCP**  Select the server you wish to configure from the list of servers on the 2nd line. (You can view all servers with "Entire Network" selected; or limit yourself to a particular server group by clicking on that server group name's tab). Click **Insert**  Enter the source port, DSCP value, and select the transport protocol.  Click **OK** if there are no more port DSCPs on this server to configure, or **Apply** to finish this port entry and continue entering more port DSCP mappings.
4 ☐	Repeat for additional servers.	Repeat Step 2-3for all remaining servers.

Procedure 26. Configure the Signaling Network Routes

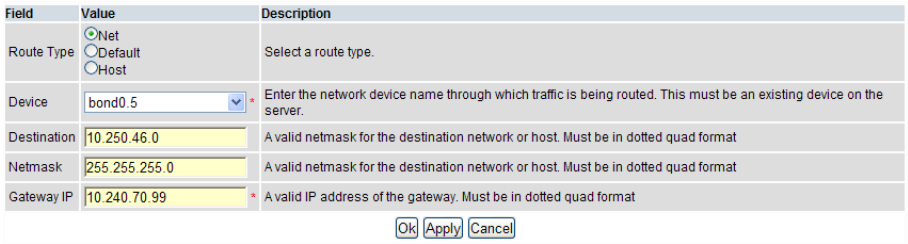
S T E P		
	This procedure will provide the steps to configure Signaling Network Routes on MP-type servers (DA-MP, IPFE, SS7-MP, etc) Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
1 ☐	**Establish GUI Session on the NOAMP VIP**	Establish a GUI session on the NOAMP by using the XMI VIP address. Login as user "guiadmin".
2 ☐	**NOAMP VIP:** Navigate to Routes Configuration Screen	Navigate to **Main Menu -> Configuration -> Network -> Routes** Select the first MP Server you see listed on the first row of tabs as shown, then click the **"Entire Server Group"** link. Initially, no routes should be displayed. 
3 ☐	**NOAMP VIP:** Add Route	Click on **Insert** at the bottom of the screen to add additional routes. 

Procedure 26. Configure the Signaling Network Routes

4 ☐	**NOAMP VIP:** **(Optional)** Add Default Route for MPs Going Through Signaling Network Gateway	***OPTIONAL - Only execute this step if you performed Procedure 20, Step #10 -- which removed the XMI gateway default route on MPs *** If your MP servers no longer have a default route, then you can now insert a default route here which uses one of the signaling network gateways.  For `Route Type` Select `Default`, for `Device` select the signaling device that is directly attached to the network where the XSI default gateway resides. For `Gateway IP` enter the XSI gateway you wish to use for default signaling network access. Press **`Ok.`**

Procedure 26. Configure the Signaling Network Routes

5 ☐	**NOAMP VIP:** Add Network Routes for Diameter Peers	Use this step to add IP and/or IPv6 routes to diameter peer destination networks. The goal here is to ensure that diameter traffic uses the gateway(s) on the signaling networks.



For `Route Type` Select `Net`,
for `Device` select the appropriate signaling interface that will be used to connect to that network,
For `Destination` enter the Network ID of Network to which the peer node is connected to.
For `Netmask` enter the corresponding Netmask.
For `Gateway IP` enter the Int-XSI switch VIP of the chosen Network for L3 deployments (either of int-XSI-1 or of int-XSI2). or the IP of the customer gateway for L2 deployments.

If you have more routes to enter, Press **`Apply`** to save the current route entry and repeat this step to enter more routes

If you are finished entering routes, Press **`OK`** to save the latest route and leave this screen.

If aggregation switches are used, routes should be configured on the aggregation switches so that the destination networks configured in this step are reachable. This can be done by running the following netconfig commands from the site's local PMAC (examples shown -- actual values will vary) :

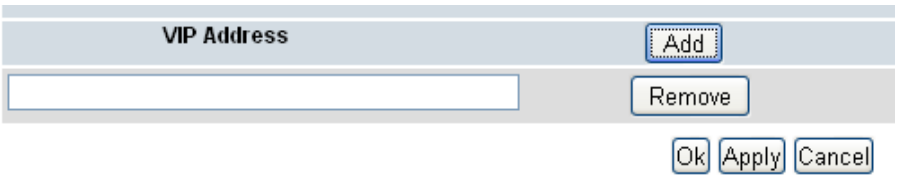
```
Add Routes (IPv4 & IPv6):
$ sudo netConfig --device=switch1A addRoute network=10.10.10.0
mask=255.255.255.0 nexthop=10.250.76.81

$ sudo netConfig --device=switch1A addRoute network6=2001::/64
nexthop=fd0f::1

Delete Routes (IPv4 & IPv6):
$ sudo netConfig --device=switch1A deleteRoute
network=10.10.10.0 mask=255.255.255.0 nexthop=10.250.76.81

$ sudo netConfig --device=switch1A deleteRoute
network6=2001::/64  nexthop=fd0f::1
```

After the routes are added via netconfig, a netconfig backup should be taken so that the new routes are retained in the backup.

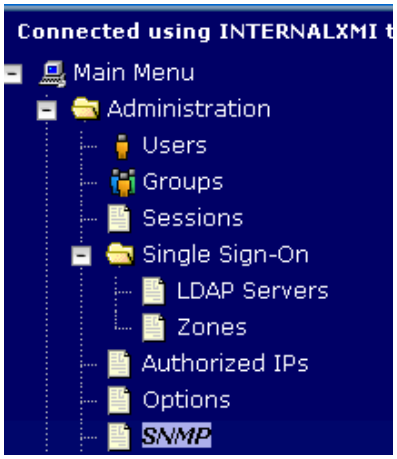
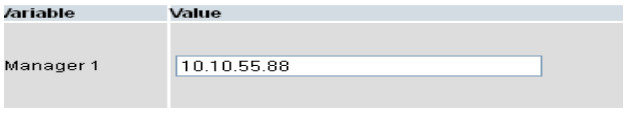
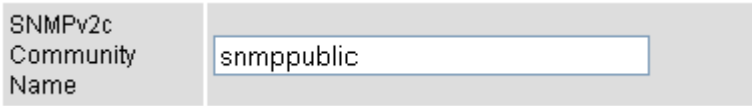
Procedure 26. Configure the Signaling Network Routes

6 ☐	Repeat steps 2-5 for all other MP server groups.	The routes entered in this procedure should now be configured on *all* MPs in the server group for the first MP you selected. If you have additional MP server groups, repeat from 2, but this time, select an MP from the next MP server group. Continue until you have covered all MP server groups.

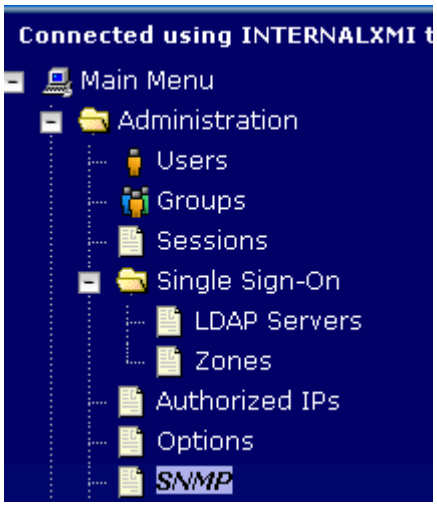
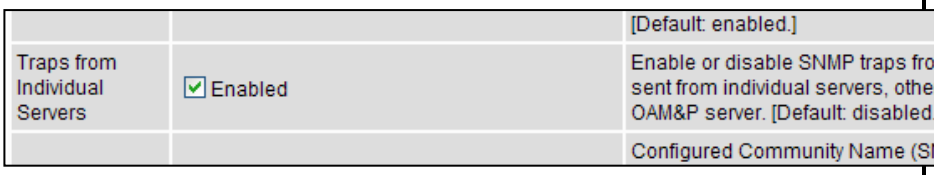
Procedure 27. Add VIP for Signaling Networks (Active/Standby Configurations ONLY)

STEP #	This procedure will provide the steps to configure the VIPs for the signaling networks on the MPs. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
1 ☐	**Edit the MP Server Group and add VIPs** **(ONLY FOR 1+1)**	**IF YOUR MPs ARE IN A DSR MULTI-ACTIVE CLUSTER SERVER GROUP CONFIGURATION (N+0), THEN SKIP THIS STEP** From the GUI **Main Menu**->**Configuration**->**Server Groups**, select the MP server group, and then select **Edit**. Click on **Add** to add the VIP for XSI1 Enter the VIP of int-XSI-1 and click on **Apply.** Click on **Add** again to add the VIP for XSI2 Enter the VIP of int-XSI-2 and click on **Apply.** If more Signaling networks exists, add their corresponding VIP addresses . Finally Click on **Ok**. 

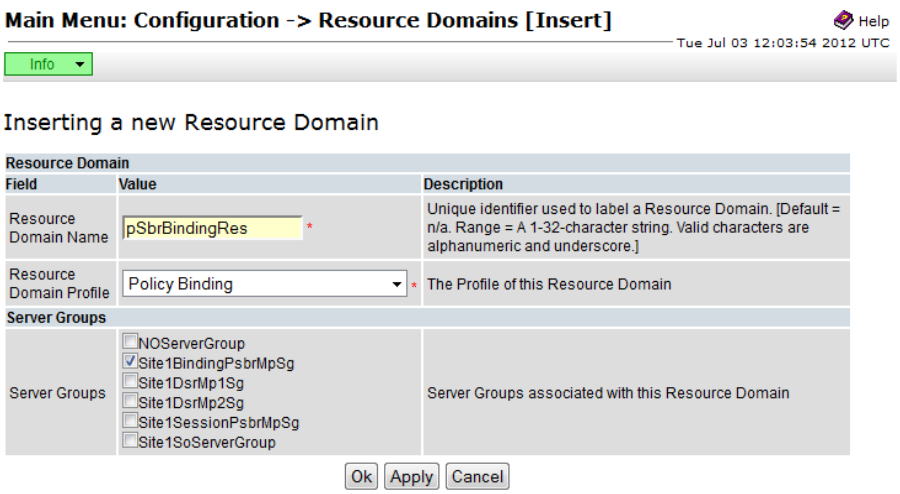
Procedure 28. Configure SNMP Trap Receiver(s) (OPTIONAL)

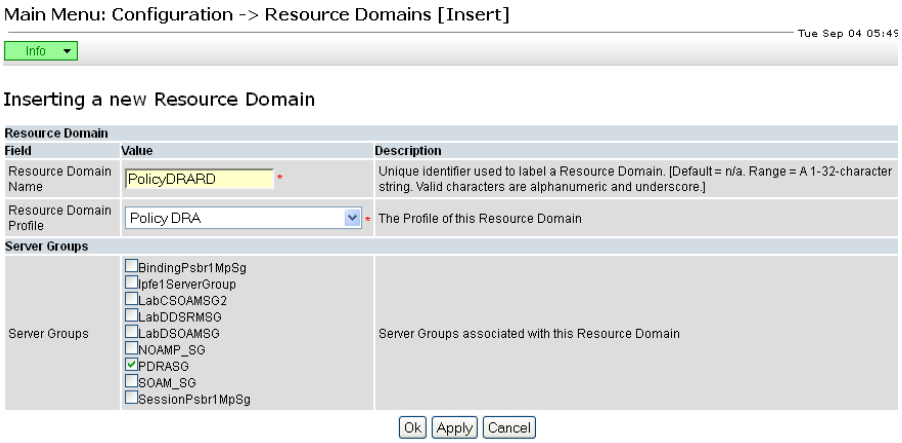
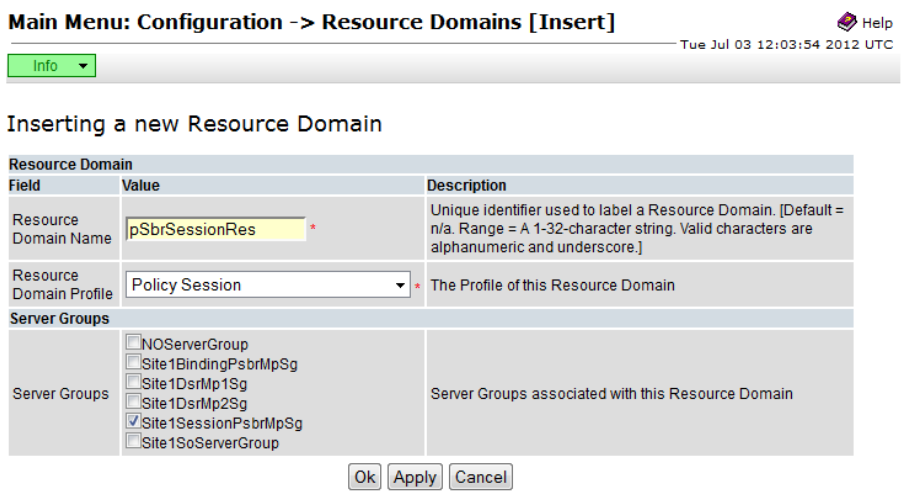
S T E P #	This procedure will provide the steps to configure forwarding of SNMP Traps from each individual server. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
1 ☐	**NOAMP VIP:** Configure System-Wide SNMP Trap Receiver(s)	Using a web browser, log onto the NOAMP VIP and navigate to **Main Menu** -> **Administration** -> **SNMP**, as shown below  Verify that "Traps Enabled" is checked:  Fill in the IP address or hostname of the Network Management Station (NMS) you wish to forward traps to. This IP should be reachable from the the NOAMP's "XMI" network. Continue to fill in additional secondary, tertiary, etc.. manager IPs in the corresponding slots if desired.  Enter the SNMP community name:  Leave all other fields at their default values. Press **OK**

Procedure 28. Configure SNMP Trap Receiver(s) (OPTIONAL)

2 ☐	**NOAMP VIP:** Enable Traps from Individual Servers (OPTIONAL)	**NOTE:** By default snmp traps from MPs are aggregated and then displayed at the active NOAMP. If instead, you wish for every server to send its own traps directly to the NMS, then execute this procedure. **This procedure requires that all servers, including MPs, have an XMI interface on which the customer SNMP Target server (NMS) is reachable**. ---------- Using a web browser, log onto the NOAMP VIP and navigate to **Main Menu** -> **Administration** -> **SNMP**, as shown below  Make sure the checkbox next to "Enabled" is checked, if not, check it as shown below  Then click on **Apply** and verify that the data is committed.

Procedure 29:PDRA Resource Domain Configuration (PDRA Only)

S T E P #	This procedure configures the Resource Domain**. It should be executed for PDRA Installations ONLY.** Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. SHOULD THIS PROCEDURE FAIL, CONTACT TEKELEC TECHNICAL SERVICES AND **ASK FOR EAGLE XG TAC.** **ASSUMPTION: POLICY DRA FEATURE IS ALREADY ACTIVATED USING WI006835.**
1 ☐	Establish GUI Session on the NOAMP VIP	Establish a GUI session on the NOAMP by using the XMI VIP address. Login as user "guiadmin".
2 ☐	**NOAMP VIP:** Navigate to Resource Domain Screen	Navigate to **Main Menu -> Configuration -> Resource Domains** Screen.
4 ☐	**NOAMP VIP:** Add Binding Resource Domain	Click on **Insert** in the lower left corner. You will see a screen similar to:  Enter the Binding Resource Domain Name, select "Policy Binding" as the Resource Domain Profile and select the Server Groups associated with the Resource Domain and Press **Ok**.

5	**NOAMP VIP:** Add Policy DRA Resource Domain	Click on **Insert** in the lower left corner. You will see a screen similar to:  Enter the Resource Domain Name, select “Policy DRA” as the Resource Domain Profile and select the Server Groups associated with the Resource Domain and Press **Ok**. NOTE: **For Mated Pair DSR, create only one PDRA Resource Domain and add the DA-MP Server Groups from both sites into this PDRA Resource Domain.** **For non-mated pair DSRs and standalone DSR: Create a PDRA Resource Domain per Site.**
6	**NOAMP VIP:** Add Session Resource Domain	Click on **Insert** in the lower left corner. You will see a screen similar to:  Enter the Session Resource Domain Name, select “Policy Session” as the Resource Domain Profile and select the Server Groups associated with the Resource Domain and Press **Ok**.

7 ☐	**NOAMP VIP:** Add other Session Resource Domains.	Repeat Step 6 for all other Session Resource Domains that are to be added.
8 ☐	**NOAMP VIP:** Restart PDRA MP servers	From the NOAMP GUI, select the **Main menu**->**Status & Manage**->**Server menu** *For each PDRA MP server:* • Select the MP server. • Select the **Restart** button. • Answer **OK** to the confirmation popup. Wait for the message which tells you that the restart was successful.

4.7 Post-Install Activities

Procedure 30. Activate Optional Features

S T E P #	This procedure will provide instruction on how to install DSR optional components once regular installation is complete. **Prerequisite:** All previous DSR installation steps have been completed. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
1 ☐	**Refer to Activation Guides for Optional Features**	Refer to 3.3 **Optional Features** for a list of feature activation documents whose procedures are to be executed at this moment.

Procedure 31. Configure ComAgent Connections

S T E P #	This procedure will provide instruction on how to configure ComAgent connections on DSR for use in the FABR application. **Prerequisite:** FABR application is activated. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT TEKELEC TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
1 ☐	**Configure ComAgent**	Refer to [5] for the steps required to configure ComAgent

Appendix A. **SAMPLE NETWORK ELEMENT AND HARDWARE PROFILES**

In order to enter all the network information for a network element into an Appworks-based system, a specially formatted XML file needs to be filled out with the required network information. The network information is needed to configure both the NOAMP and any SOAM Network Elements.

It is expected that the maintainer/creator of this file has networking knowledge of this product and the customer site at which it is being installed. This network element XML file is used for DSR deployments using Cisco 4948 switches and HP c-Class blade servers. The following is an example of a Network Element XML file.

The SOAM Network Element XML file needs to have same network names for the networks as the NOAMP Network Element XML file has. It is easy to accidentally create different network names for NOAMP and SOAM Network Element, and then the mapping of services to networks will not be possible.

Example Network Element XML file:

```
<?xml version="1.0"?>
<networkelement>
    <name>NE</name>
    <networks>
        <network>
            <name>INTERNALXMI</name>
            <vlanId>3</vlanId>
            <ip>10.2.0.0</ip>
            <mask>255.255.255.0</mask>
            <gateway>10.2.0.1</gateway>
            <isDefault>true</isDefault>
        </network>
        <network>
            <name>INTERNALIMI</name>
            <vlanId>4</vlanId>
            <ip>10.3.0.0</ip>
            <mask>255.255.255.0</mask>
            <gateway>10.3.0.1</gateway>
            <isDefault>false</isDefault>
        </network>
    </networks>
</networkelement>
```

The server hardware information is needed to configure the Ethernet interfaces on the servers. This server hardware profile data XML file is used for Appworks deployments using HP c-Class blade servers and HP c-Class rack-mount servers. It is supplied to the NOAMP server so that the information can be pulled in by Appworks and presented to the user in the GUI during server configuration. The following is an example of a Server Hardware Profile XML file.

Example Server Hardware Profile XML file – HP c-Class blade:

```
<profile>
    <serverType>HP c-Class Blade</serverType>
    <available>
         <device>bond0</device>
    </available>
    <devices>
        <device>
            <name>bond0</name>
            <type>BONDING</type>
            <createBond>true</createBond>
            <slaves>
                <slave>eth01</slave>
                <slave>eth02</slave>
            </slaves>
          <option>
                <monitoring>mii</monitoring>
                <primary>eth03</primary>
                <interval>100</interval>
                <upstream_delay>200</upstream_delay>
                <downstream_delay>200</downstream_delay>
          </option>
        </device>
    </devices>
</profile>
```

Example Server Hardware Profile XML file – HP c-Class rack-mount server:

```
<profile>
    <serverType>HP Rack Mount</serverType>
    <available>
        <device>bond0</device>
        <device>bond1</device>
    </available>
    <devices>
        <device>
            <name>bond0</name>
            <type>BONDING</type>
            <createBond>true</createBond>
            <slaves>
                <slave>eth01</slave>
                <slave>eth03</slave>
            </slaves>
            <option>
                <monitoring>mii</monitoring>
                <primary>eth01</primary>
                <interval>100</interval>
                <upstream_delay>200</upstream_delay>
                <downstream_delay>200</downstream_delay>
            </option>
        </device>
        <device>
            <name>bond1</name>
            <type>BONDING</type>
            <createBond>true</createBond>
            <slaves>
                <slave>eth11</slave>
                <slave>eth12</slave>
```

```
            </slaves>
            <option>
                <monitoring>mii</monitoring>
                <primary>eth11</primary>
                <interval>100</interval>
                <upstream_delay>200</upstream_delay>
                <downstream_delay>200</downstream_delay>
            </option>
        </device>
    </devices>
</profile>
```

Example Server Hardware Profile XML file – Virtual Guest on TVOE:

```
<profile>
    <serverType>TVOE Guest</serverType>
    <available>
        <device>eth0</device>
        <device>eth1</device>
        <device>eth2</device>
        <device>eth3</device>
        <device>eth4</device>
    </available>
    <devices>
        <device>
            <name>eth0</name>
            <type>ETHERNET</type>
        </device>
        <device>
            <name>eth1</name>
            <type>ETHERNET</type>
        </device>
        <device>
            <name>eth2</name>
            <type>ETHERNET</type>
        </device>
        <device>
            <name>eth3</name>
            <type>ETHERNET</type>
        </device>
        <device>
            <name>eth4</name>
            <type>ETHERNET</type>
        </device>
    </devices>
</profile>
```

Appendix B. **CONFIGURING FOR EAGLE XG TVOEILO ACCESS**

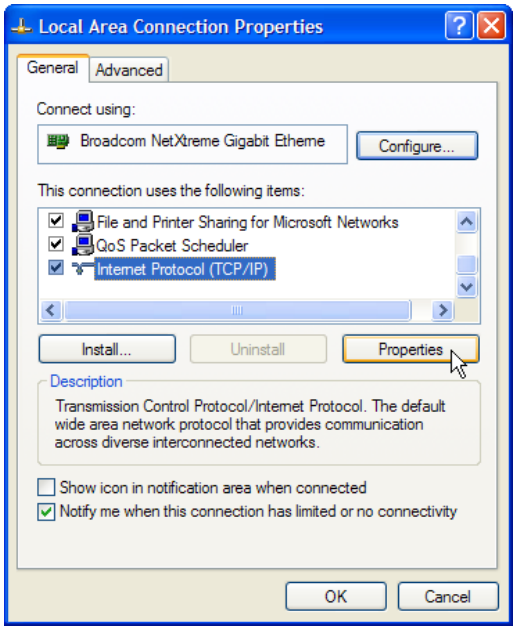
This procedure contains the steps to connect a laptop to the TVOEiLO via a directly cabled Ethernet connection. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number.

Procedure B.1 Connecting to the EAGLE XG TVOE iLO

<table>
<tr><th>Step</th><th>Procedure</th><th colspan="2">Result</th></tr>
<tr><td rowspan="2">1.
☐</td><td rowspan="2">Access the laptop network interface card's TCP/IP "Properties" screen.

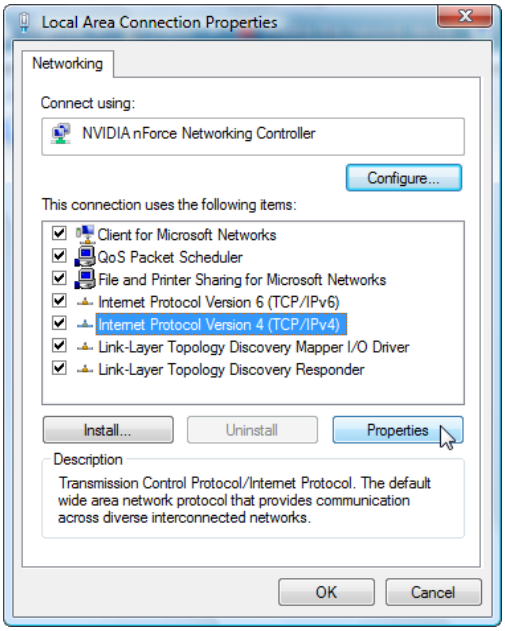
NOTE: For this step follow the instruction specific to the laptop's OS (XP or Vista).</td><td>Windows XP</td><td>Windows Vista</td></tr>
<tr><td>

Go to Control Panel
Double-click on Network Connections
Right-click the wired Ethernet Interface icon and select "Properties"
Select "Internet Protocol (TCP/IP)" and select "Properties"



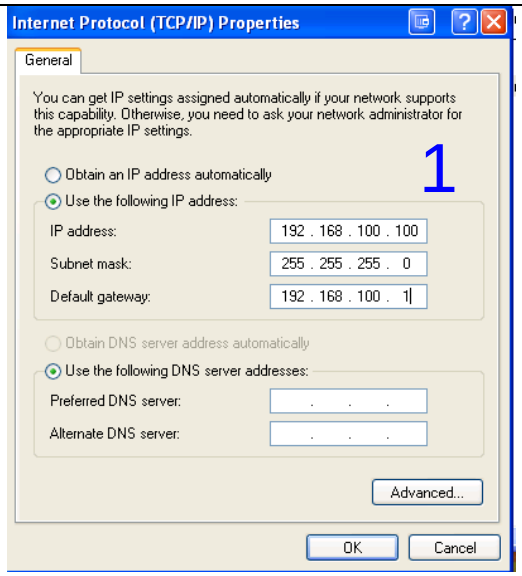
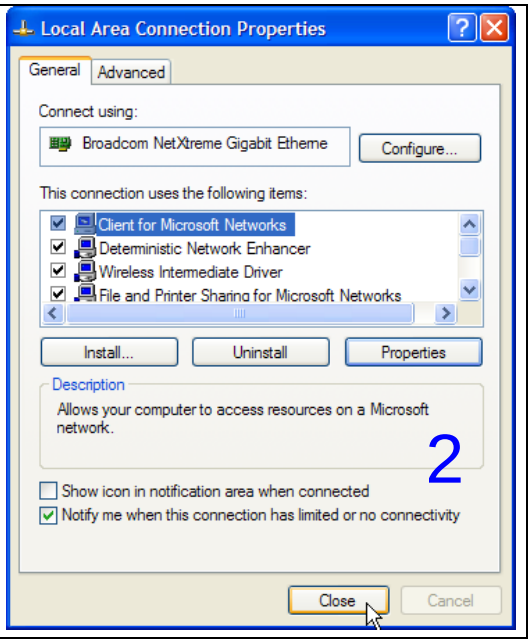
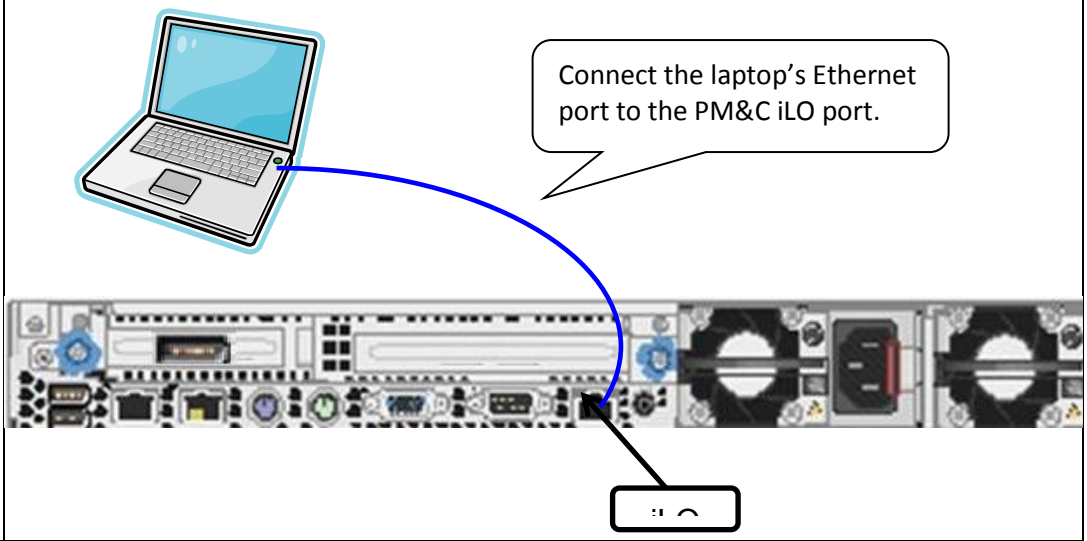
</td><td>

Go to Control Panel.
Double-click on Network and Sharing Center
Select Manage Network Connections (left menu)
Right-click the wired Ethernet Interface icon and select "Properties"
Select "Internet Protocol Version 4 (TCP/IPv4)"



</td></tr>
</table>

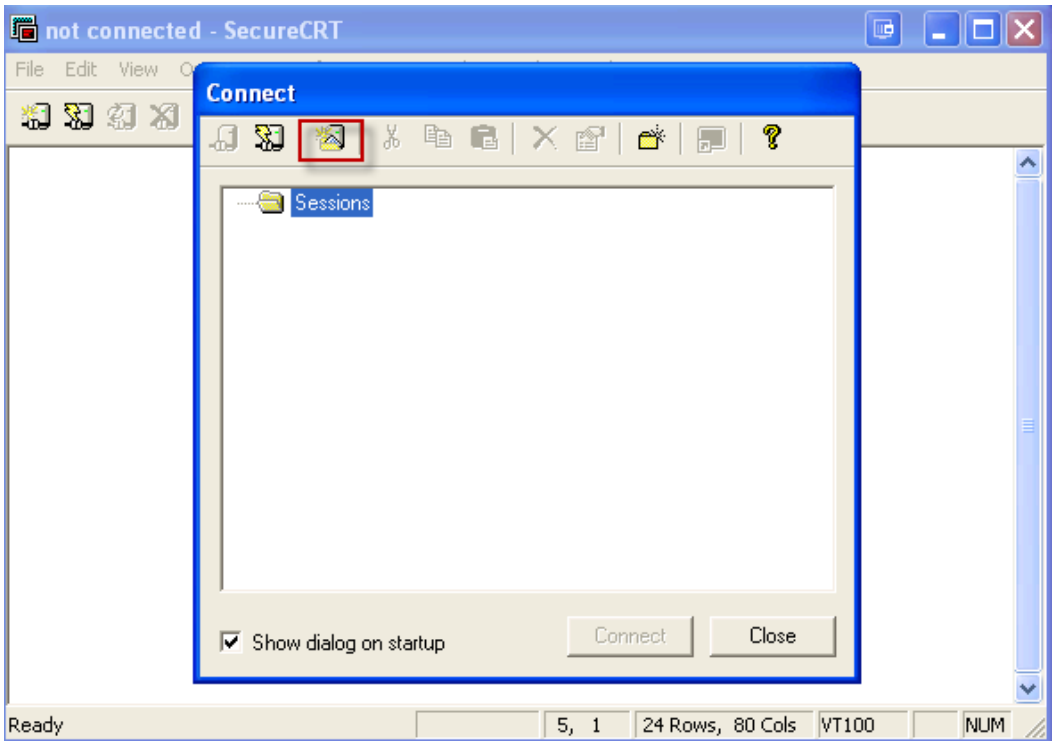
Procedure B.1 Connecting to the EAGLE XG TVOE iLO

2. ☐	**1)** Clock "**use the following IP address**", set the **IP address** to "192.168.100.100", the **Subnet mask** to "255.255.255.0" and th **Default gateway** to "192.168.100.1", click **"OK"**. 2) Click **"Close"** from the network interface card's main "Properties" screen.	 
3. ☐	Connect the laptop's Ethernet port directly to the TVOE iLO port using a standard Cat-5 cross-over cable.	
THIS PROCEDURE HAS BEEN COMPLETED		

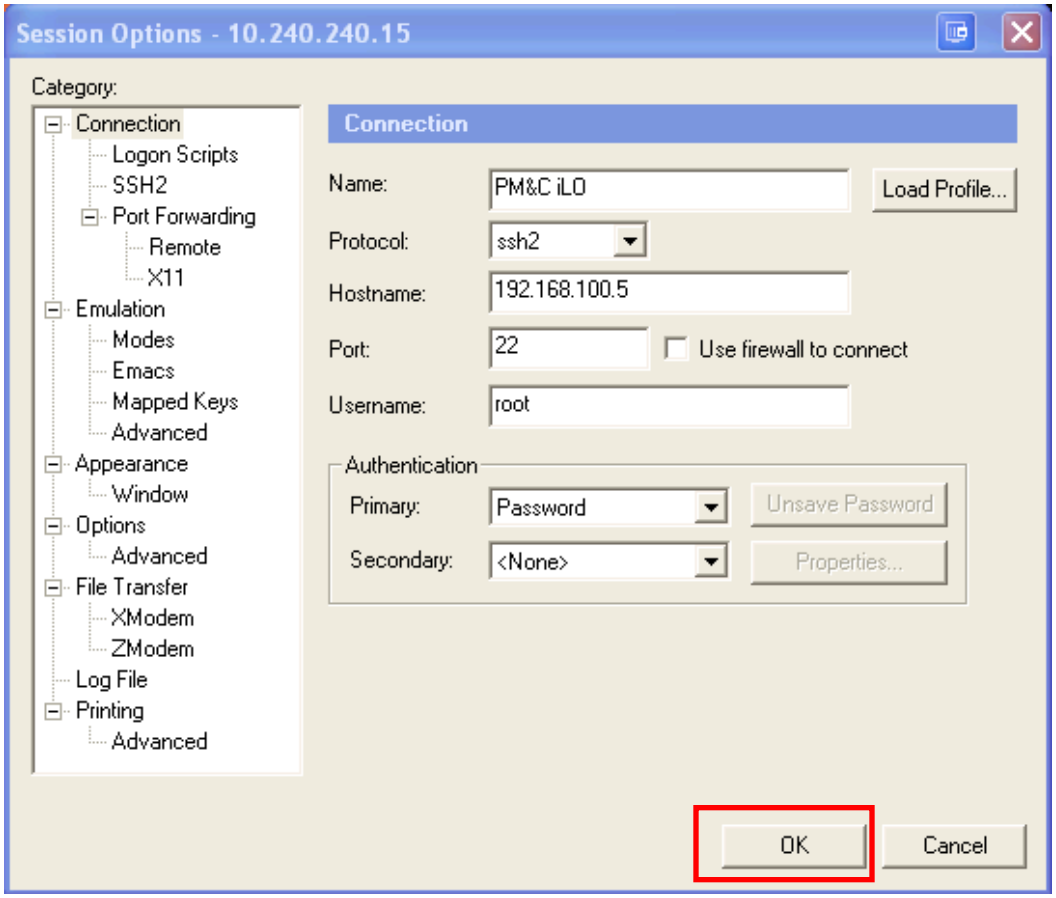
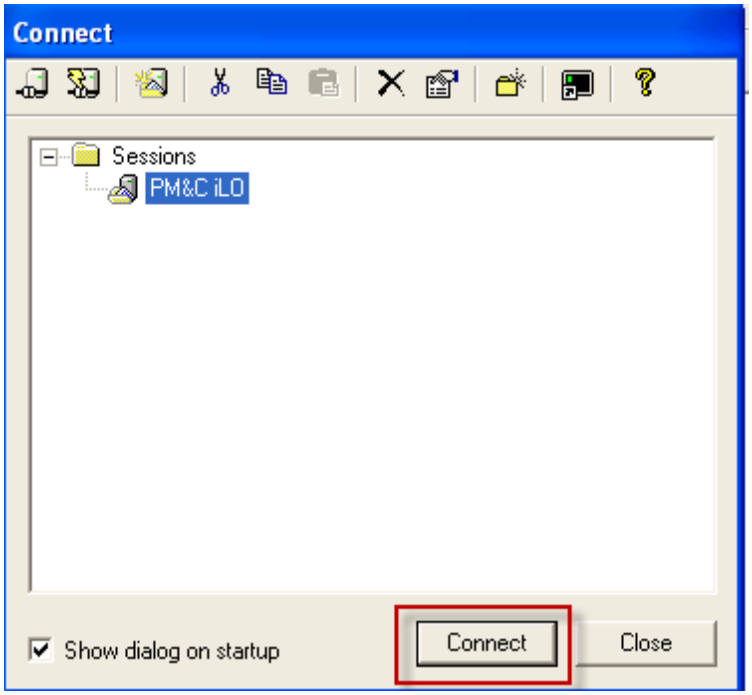
Appendix C. **TVOE ILO ACCESS**

This procedure contains the steps to access the TVOE iLO. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number.

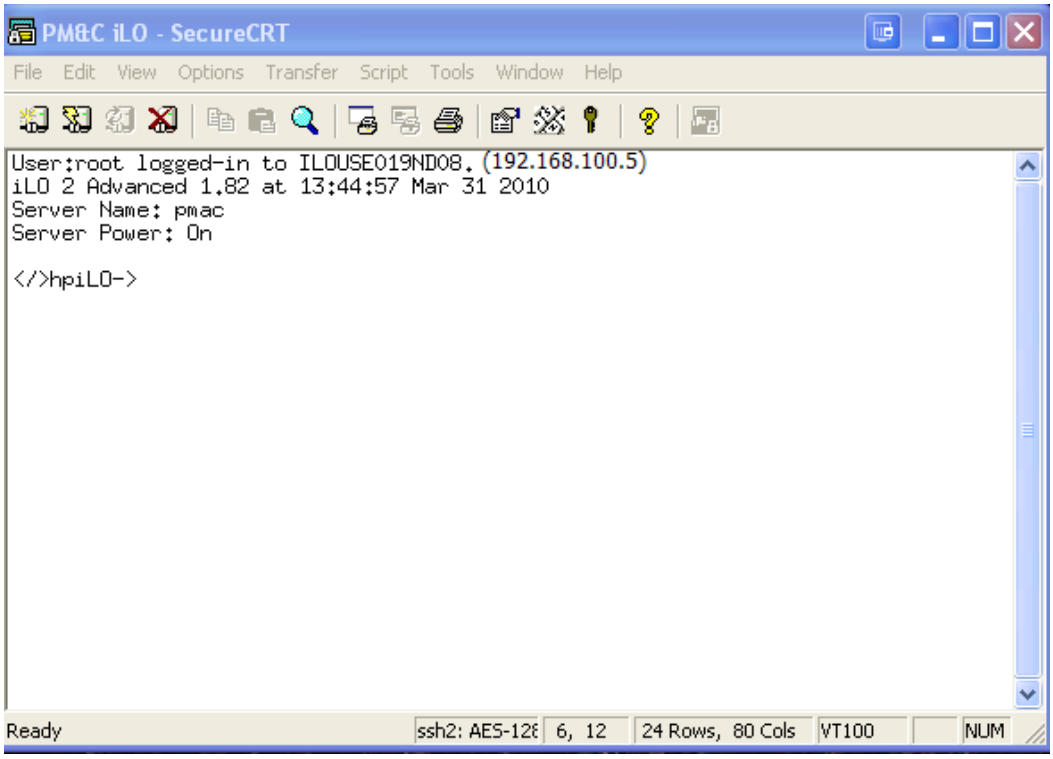
Procedure C.1 Accessing the TVOE iLO

Step	Procedure	Result
1. ☐	Launch a terminal emulator, e.g. Putty, Secure CRT. Navigate to **File=> Connect** Click on the "**New Session**" icon. Note: This example demonstrates Secure CRT.	

Procedure C.1 Accessing the TVOE iLO

2. ☐	Enter **TVOE iLO** for 'Name' and **192.168.100.5**(manufacturing default) or customer IP set during installation for 'Hostname'. Enter **root** for Username. Click **OK** **NOTE 1** *See **Appendix B** to configure your system network to access the EAGLE XG.* .	
3. ☐	Navigate **FILE => Connect** to open the Connect window. Highlight the session you created and click **Connect.**	

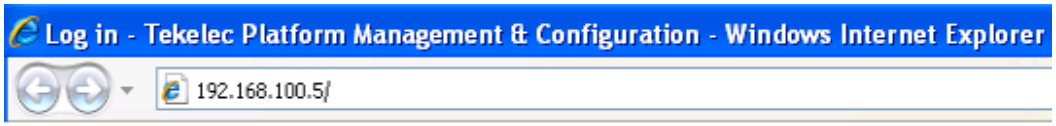
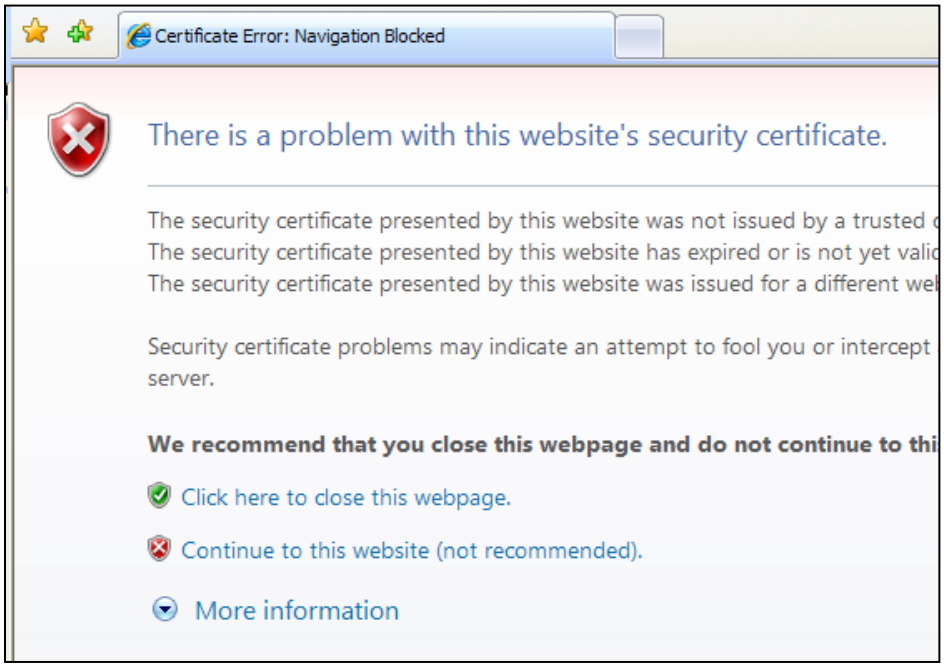
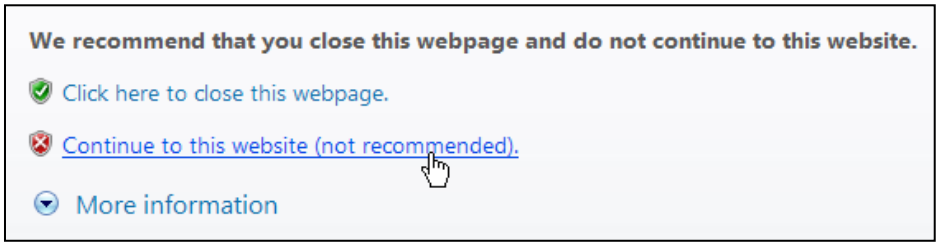
Procedure C.1 Accessing the TVOE iLO

4. ☐	Login to the TVOE iLO using the appropriate password.	
5. ☐	The TVOE iLO is displayed.	
THIS PROCEDURE HAS BEEN COMPLETED		

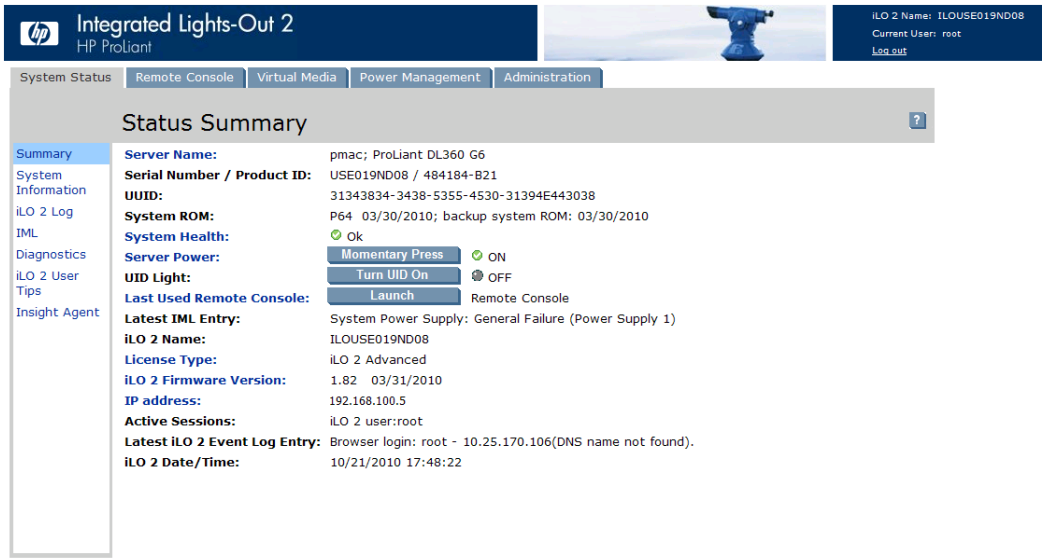
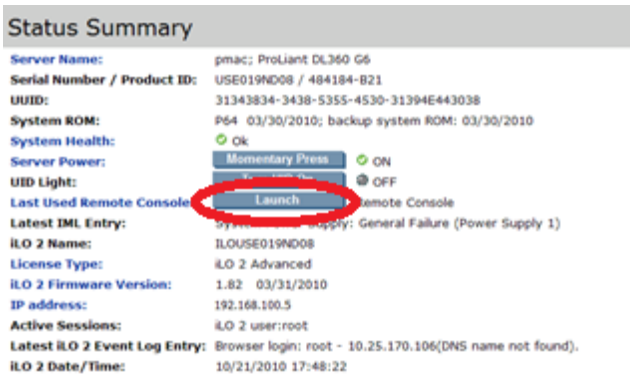
Appendix D. **TVOE ILO GUI ACCESS**

This procedure contains the steps to access the TVOE iLO GUI. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number.

Procedure D.1 Accessing the TVOE iLO GUI

Step	Procedure	Result
1. ☐	Launch Internet Explorer and "Go To" 192.168.100.5 (manufacturing default) or customer IP set during installation.	
2. ☐	Internet Explorer may display a warning message regarding the Security Certificate.	
3. ☐	Select the option to "Continue to the website (not recommended)"	

Procedure D.1 Accessing the TVOE iLO GUI

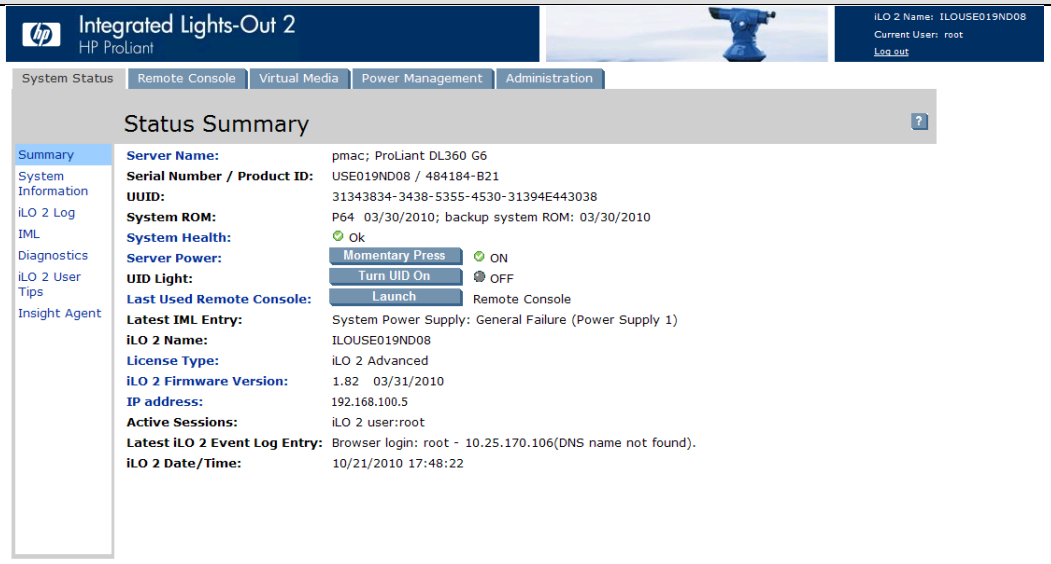
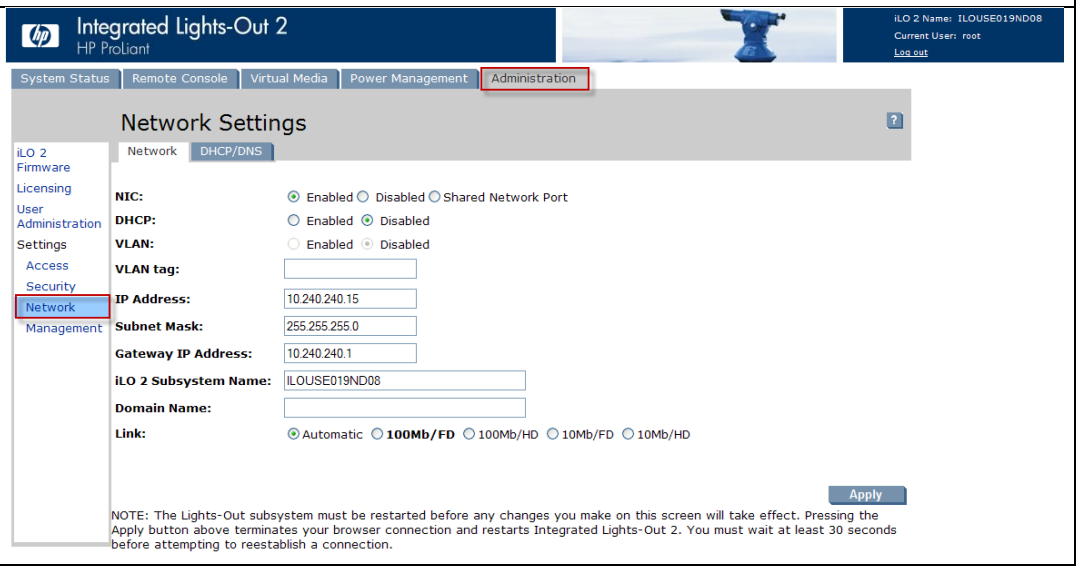
4. ☐	Log in as user "**root**".	
5. ☐	The TVOE iLO Home page is displayed.	
6. ☐	Click on Launch to start the pmac iLO CLI	

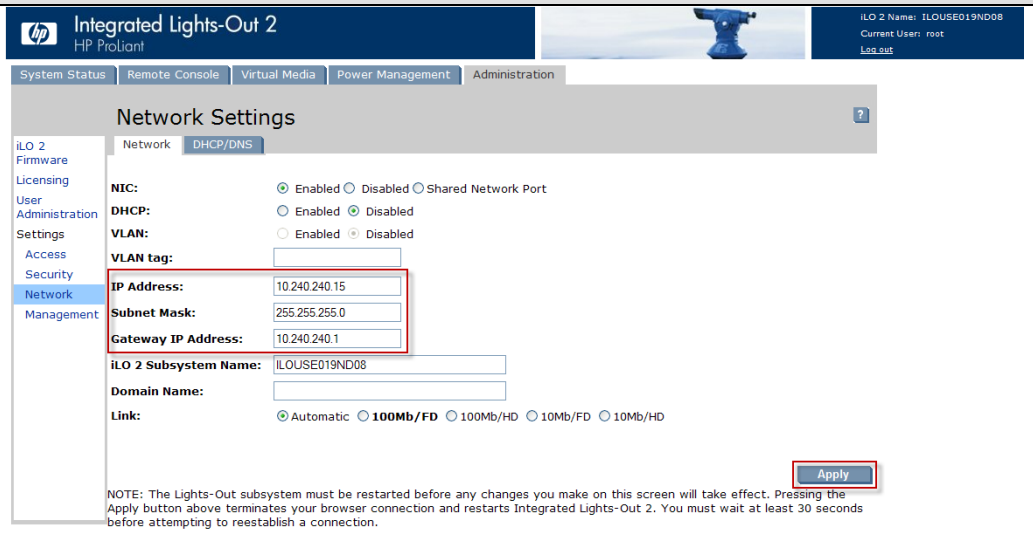
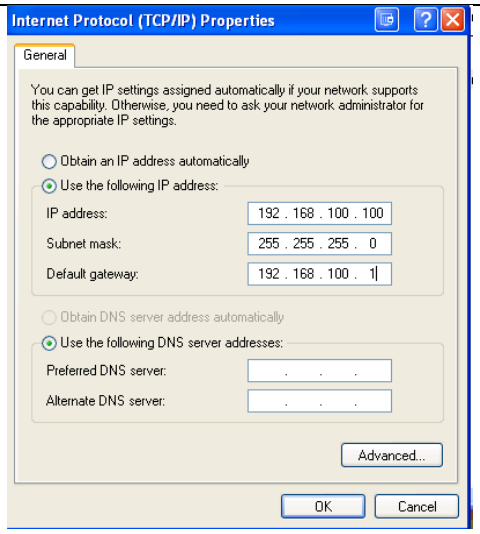
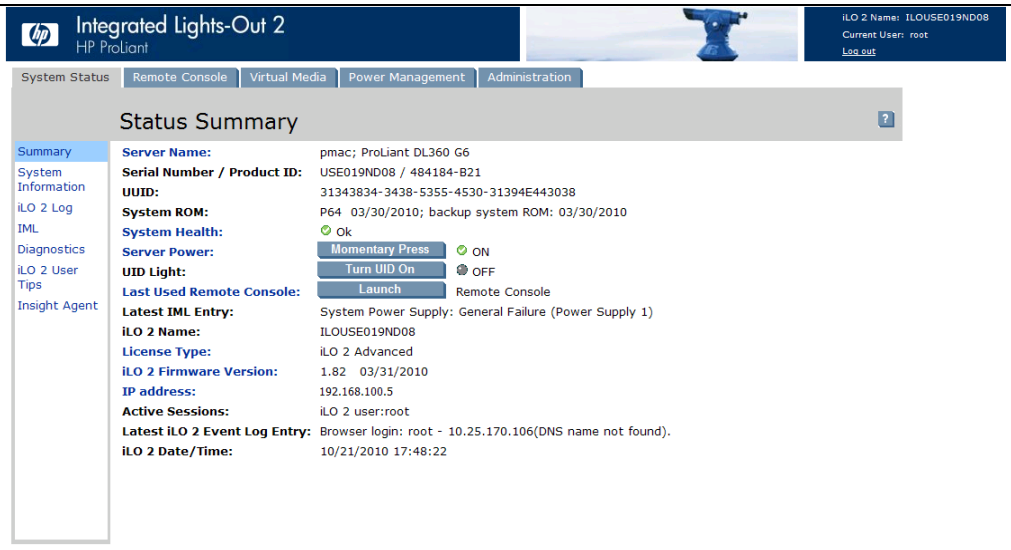
THIS PROCEDURE HAS BEEN COMPLETED

Appendix E. **CHANGING TVOE ILO ADDRESS**

This procedure will set the IP address of the TVOE iLO to the customers network so that it can be accessed by Tekelec support.

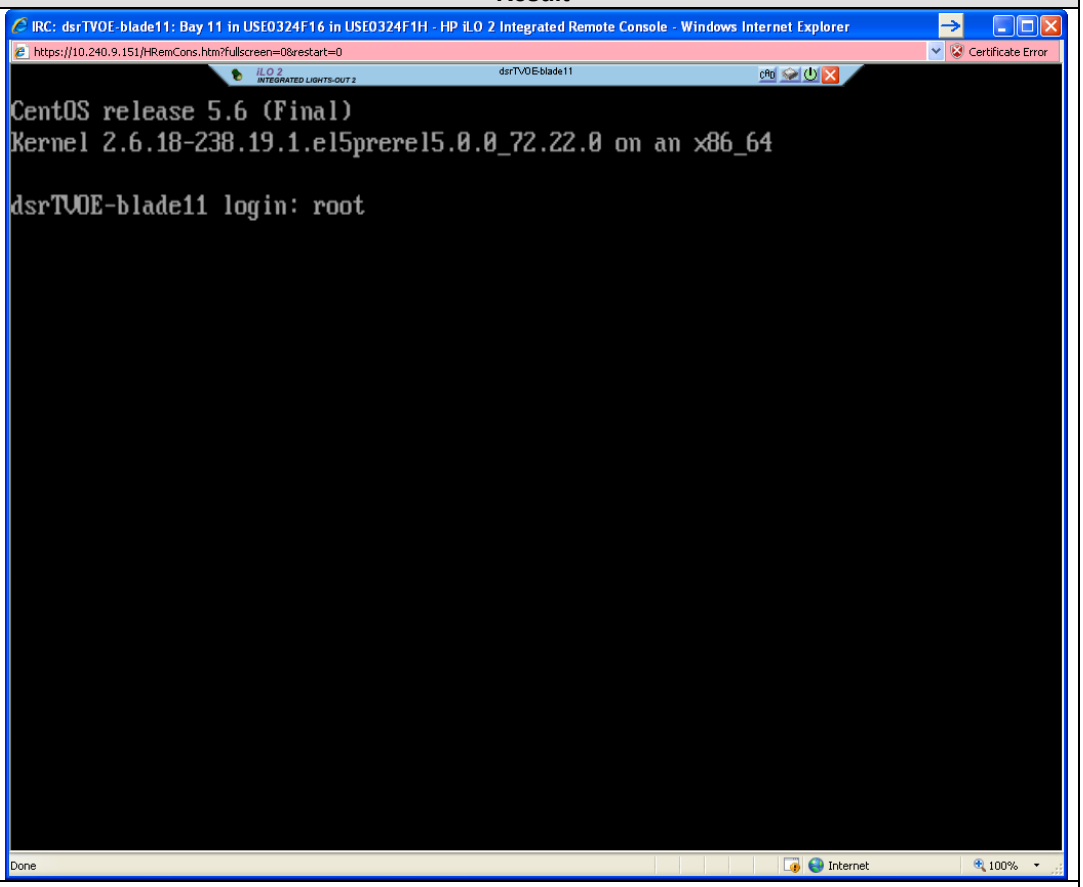
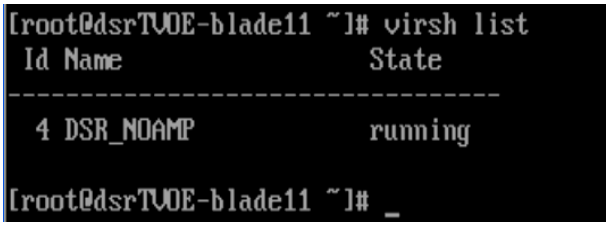
Procedure E.1 Accessing the TVOE iLO GUI

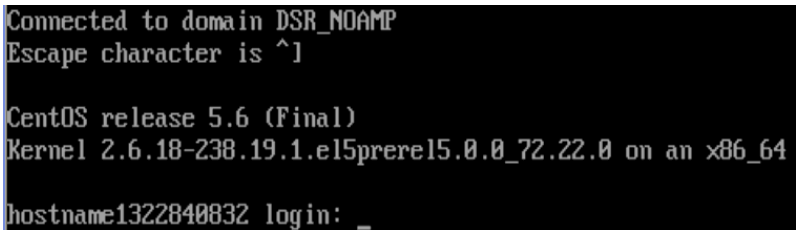
Step	Instruction	Result
1. ☐	Connect to the TVOE iLO GUI using the instructions in **Appendix D**	
2. ☐	Click the "**Administration**" tab. Under "**Settings**" in the left column click on "**Network**".	

Step	Instruction	Result
3. ☐	Change the **IP Address**, **Subnet Mask** and **Gateway IP Address** to the values supplied in the IP Site Survey for the TVOE iLO. Hit **Apply**. NOTE: You will lose access after you hit the Apply button.	
4. ☐	Using the instructions found in **Appendix B, reset** the PC's network connection replacing the **Subnet Mask** and **Gateway** with those just used for the TVOE iLO. Use an appropriate **IP address** for this subnet. Call Customer Support if needed.	
5. ☐	Connect to the TVOE iLO GUI using the instructions in **Appendix D** **Note**: Use the IP address entered in Step 3 and not the 192.168.100.5.	
THIS PROCEDURE HAS BEEN COMPLETED		

Appendix F. **PM&C/NOAMP/SOAM CONSOLE ILO ACCESS**

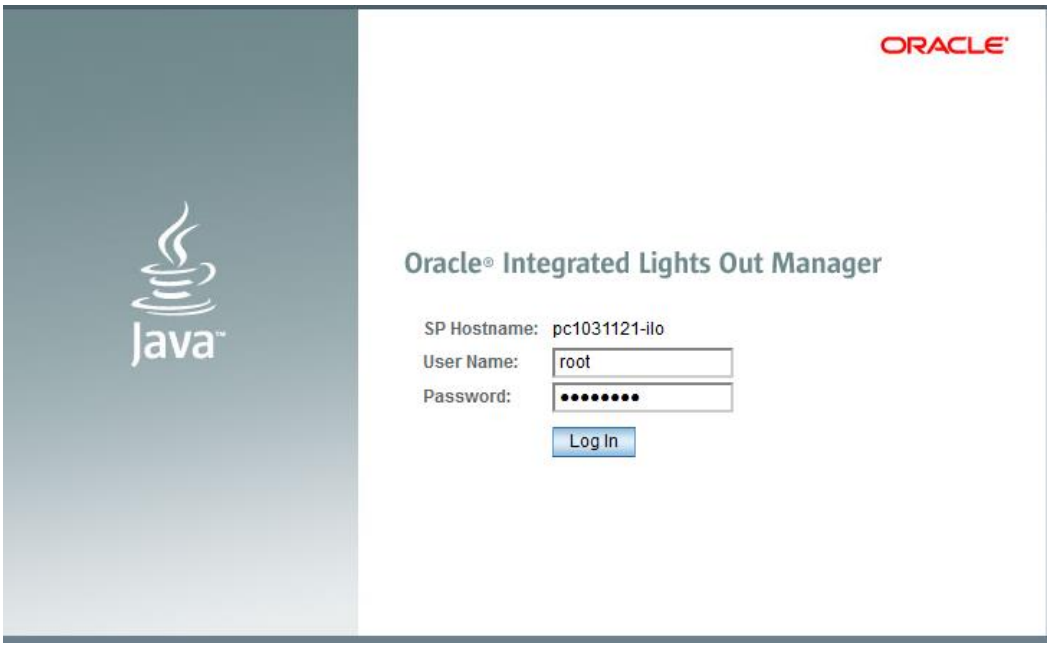
This procedure describes how to log into the PM&C/NOAMP/SOAMP console from ILO.

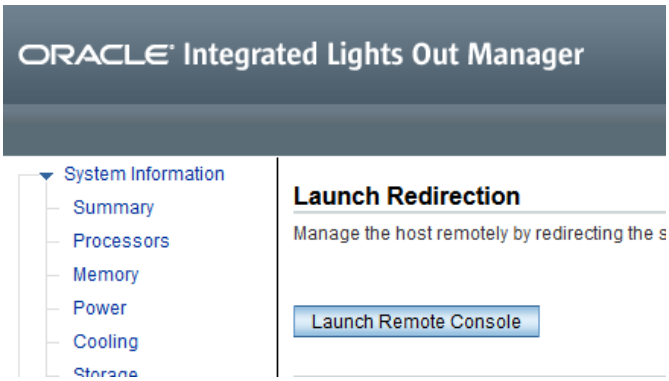
Step	Instruction	Result
1. ☐	Log In as **root** on the TVOE server hosting the NOAMP using either ILO or SSH to the TVOE server's XMI address	
2. ☐	Find the NOAMP's current VM number	On the TVOE host, execute:. #**virsh list** This will produce a listing of currently running virtual machines.  Find the VM name for your DSR NOAMP and note it's ID number in the first column. **NOTE**: If the VM state is not listed as "running" or you do not find a VM you configured for your NOAMP at all, then halt this procedure and contact Tekelec Customer Support.

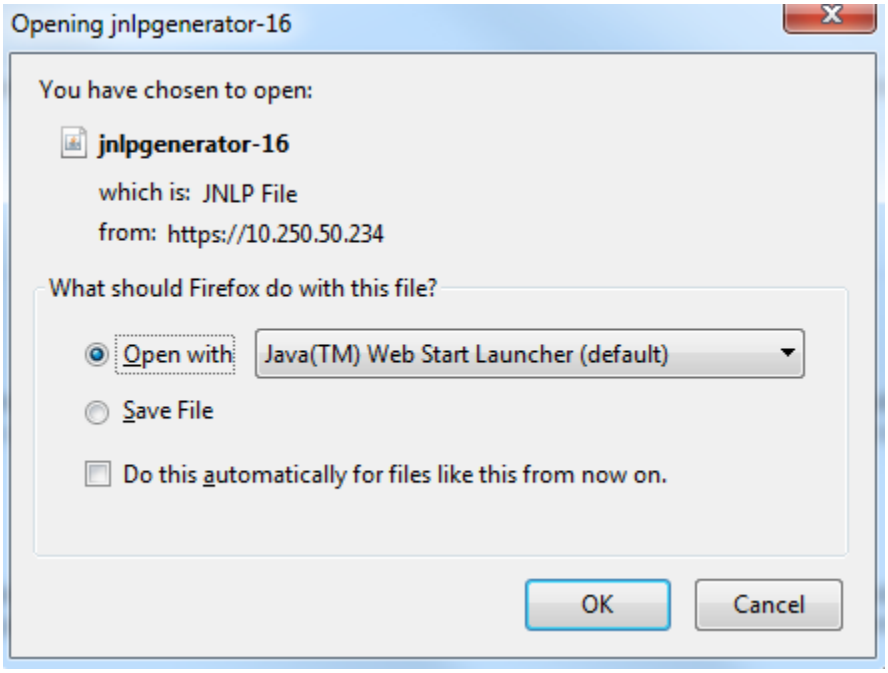
Step	Instruction	Result
3. ☐	Connect to console of the VM using the VM number obtained in Step 2.	On the TVOE host, execute:. #**virsh console <DSRNOAMP-VMID>** Where **DSRNOAMP-VMID** is the VM ID you obtained in Step 2:  You are now connected to the DSR NOAMPs console. If you wish to return to the TVOE host, you can exit the session by pressing **CTRL +]**

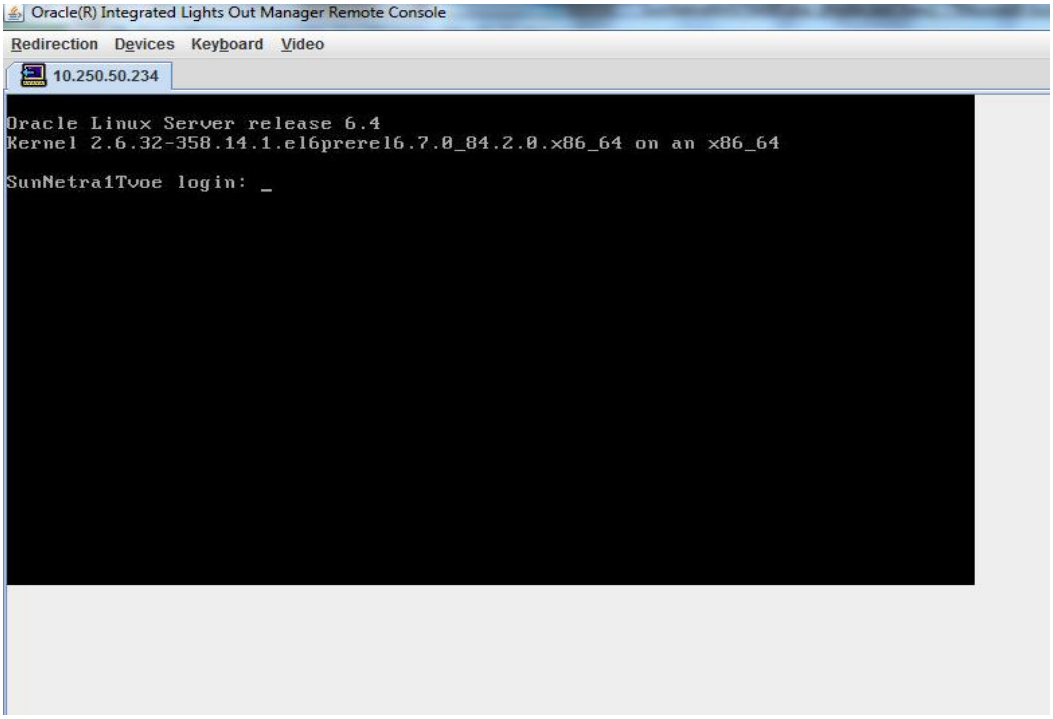
Appendix G. **ACCESSING THE SUN NETRA RMS CONSOLE USING ORACLE ILOM**

This procedure explains how to reach the console of a Sun Netra rack moutned server using the Oracle Lights Out Manager (ILOM)

Step	Instruction	Result
1. ☐	Log In to the ILOM web interface using your proper credentials.	Open your web browser to the ILOM web address.  Use the credentials you've been provided to log into the system. If this is a new system, then the default Oracle ILOM username/password may be used.

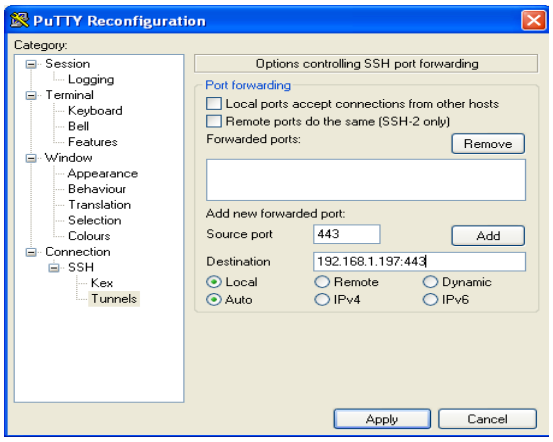
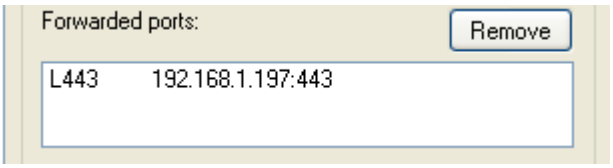
Step	Instruction	Result
2. ☐	Start Redirection	Navigate to **Remote Control->Redirection.**  Press **Launch Remote Console** 

Step	Instruction	Result
3. ☐	Accept Java Application Download .	You will be prompted to download and run a small Java application. Press **OK** to accept and run the download. 

Step	Instruction	Result
4. ☐	Log into RMS console and proceed	You will now be presented with an RMS console window. Log in and proceed.  *******END OF PROCEDURE*******

Appendix H. **ACCESSING THE NOAMP GUI USING SSH TUNNELING WITH PUTTY**

S T E P		
	NOTE: This procedure assumes that the NOAMP server you wish to create a tunnel to has been IPM'ed with the DSR application ISO **NOTE**: This procedure assumes that you have exchanged SSH keys between the PMAC and the first NOAMP server. **NOTE:** This procedure assumes that you have obtained the control network IP address for the first NOAMP server. You can get this from the PMAC GUI's *Software Inventory* screen. That variable will be refered to as *NOAMP-Control-IP* in thiese instructions. **NOTE:** It is recommended that you only use this procedure if you are using Windows XP. There are known issues with putty and Windows 7 that may cause unpredictable results when viewing GUI screens through SSH tunnels.	
1 ☐	**Logon to PMAC Server using PuTTY**	Launch the PuTTY application from your station and open a session to the PMAC's management address, logging in as "root".

2 ☐	**Create SSH Tunnel through the PMAC in PuTTY**	 Click the icon in the upper left hand corner of the PuTTY window to bring down the main menu. Select ***Change Settings*** Select ***Connections -> SSH -> Tunnels***  1. Verify that the **Local** and **Auto** radio buttons are selected. Leave other fields blank **2.** In *Source Port*, enter **443** 3. In *Destination*, enter ***<NOAMP-Control-IP>*:443** 4. **Click Add**  You should now see a display similar to the following in the text box at the center of this dialog. 5. **Click Apply**

3 ☐	**Use Local Web Browser to Connect to GUI**	Using your web browser, navigate to the URL: **`https://localhost/`**  You should arrive at the login screen for the NOAMP GUI. Note that if using windows 7 and a blank screen is displayed, enable “Comptability Mode” in IE, or use a different browser (Firefox or Chrome) **This procedure is now complete**

Appendix I. ACCESSING THE NOAMP GUI USING SSH TUNNELING WITH OPENSSH FOR WINDOWS

S T E P		
	NOTE: This procedure assumes that the NOAMP server you wish to create a tunnel to has been IPM'ed with the DSR application ISO **NOTE**: This procedure assumes that you have exchanged SSH keys between the PMAC and the first NOAMP server. **NOTE:** This procedure assumes that you have obtained the control network IP address for the first NOAMP server. You can get this from the PMAC GUI's *Software Inventory* screen. That variable will be refered to as *NOAMP-Control-IP* in thiese instructions. **NOTE**: **This is the recommended tunneling method if you are using Windows 7.**	
1 ☐	**If Needed, Download and Install *openssh* for Windows**	• Dowload ***oppenssh* for Windows** from here. • Extract the installer from the ZIP file, then run the installer. *openssh* is now installed on your PC.
2 ☐	**Create SSH Tunnel Through the PMAC**	• Open up a Command Prompt shell • Within the command shell, enter the following to create the SSH tunnel to the 1st NO, through the PMAC: > **`ssh -L 443:<1st_NO_Control_IP_Address>:443 root@<PMAC_Management_IP_Address>`** (Answer "yes" if it asks if you want to continue connecting) .  The tunnel to the first NOAMP is now established.
3 ☐	**Use Local Web Browser to Connect to GUI**	Using your web browser, navigate to the URL: **`https://localhost/`**  You should arrive at the login screen for the NOAMP GUI. **This procedure is now complete**

Appendix J. MANUAL TIMEZONE SETTING PROCEDURE

Procedure 1 Timezome Setting

S T E P		
	NOTE: This procedure assumes that the first NO-AMP server has been initially configured and rebooted. **NOTE:** This procedure assumes that one system-wide time zone has been selected.	
1 ☐	**Access Active NOAMP Console**	Login as "root" to the Active NO-AMP console.
2 ☐	**Active NOAMP Console:** Execute time zone configuration script and verify successful result	From the command line prompt, execute *set_ini_tz.pl*. This will set the system time zone The following command example uses the America/New_York time zone. Replace as appropriate with the time zone you have selected for this installation. See Appendix L for a list of valid time zones. **# /usr/TKLC/appworks/bin/set_ini_tz.pl "America/New_York" >/dev/null 2>&1**
3 ☐	**Verify Success of Time Zone Script**	**# echo $?** **If this returns anything other than "0", then halt this procedure and contact Tekelec Customer Support.**

Appendix K. CONFIGURING A DSR SERVER FOR 2-TIER OAM

STEP #		
	This procedure configures a single server to operate in 2-tier OAM mode *****WARNING: 2-TIER CONFIGURATION IS NOT SUPPORTED BY DSR 6.X***** Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. Should this procedure fail, contact the Tekelec Customer Care Center and ask for assistance.	
1 ☐	IPM the server with the proper TPD image.	Execute **Procedure 4 ("IPM Blades and VMs")** of *909-2278-001* for the server. Use the TPD image that corresponds to the DSR release you are using. When done, only the TPD image will be installed on the server.
2 ☐	Login to server using iLO or the control IP address as root and check for existence of 2-tier flag.	1. Login as root to the server using either ○ iLO facility ○ -OR- SSH to the server control IP address . You can get this IP from the PMAC' GUI's "Software Inventory" screen. You will then need to log into the PMAC as root and ssh into this IP address. 2. Execute the following command on the server: `touch /usr/TKLC/DsrDataAsourced` (if the command is successful, there will be no output)
3 ☐	Proceed with normal install starting with the Applicaion ISO IPM.	The server is now configured for 2-tier OAM. Proceed with installing the Application ISO (**Procedure 5** of *909-2278-001*) and further tasks.

Appendix L. **DISABLING ACCESS TO A DSR NODE**

S T E P #	This procedure disables access of a specific IP to the DSR node at the aggregation switch level in case of DoS-resulting activities Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. Should this procedure fail, contact the Oracle Customer Care Center and ask for assistance.	

1 ☐	Log onto the PMAC	Log in to the PMAC as the **admusr** user .
		
		Become the super user by using the command:
		
		`$ sudo su`
		
		You should see the prompt change to the hash mark:
		
		`#`

2 ☐	Configure the first switch	Log onto the first aggregation switch using your credentials, once logged in, go into enable mode using the following command:
		
		`Switch> enable`
		`Switch#`
		
		Once in enable mode, enter configuration mode and block the offending IP
		
		`Switch# config t`
		`(config)# access-list 99 deny host <IP Address of offending host>`
		
		Exit out of config mode mby pressing Ctrl + Z
		
		`(config)# Ctrl + Z`
		
		Now write the configuration to memor and exit the the switch configuration
		
		`Switch# copy run start`
		`Switch# exit`

3 ☐	Configure the 2nd switch	Repeat step 2 for the 2nd switch.

Appendix M. LIST OF FREQUENTLY USED TIME ZONES

This table lists several valid timezone strings that can be used for the time zone setting in a CSV file, or as the time zone parameter when manually setting a DSR blade timezone. For an exhaustive list of **ALL** timezones, log onto the PMAC server console and view the text file: `/usr/share/zoneinfo/zone.tab`

Table 3. List of Selected Time Zone Values

Time Zone Value	Description	Universal Time Code (UTC) Offset
America/New_York	Eastern Time	UTC-05
America/Chicago	Central Time	UTC-06
America/Denver	Mountain Time	UTC-07
America/Phoenix	Mountain Standard Time - Arizona	UTC-07
America/Los_Angeles	Pacific Time	UTC-08
America/Anchorage	Alaska Time	UTC-09
Pacific/Honolulu	Hawaii	UTC-10
Africa/Johannesburg		UTC+02
America/Mexico_City	Central Time - most locations	UTC-06
Africa/Monrovia		UTC+00
Asia/Tokyo		UTC+09
America/Jamaica		UTC-05
Europe/Rome		UTC+01

Asia/Hong_Kong		UTC+08
Pacific/Guam		UTC+10
Europe/Athens		UTC+02
Europe/London		UTC+00
Europe/Paris		UTC+01
Europe/Madrid	mainland	UTC+01
Africa/Cairo		UTC+02
Europe/Copenhagen		UTC+01
Europe/Berlin		UTC+01
Europe/Prague		UTC+01
America/Vancouver	Pacific Time - west British Columbia	UTC-08
America/Edmonton	Mountain Time - Alberta, east British Columbia & westSaskatchewan	UTC-07
America/Toronto	Eastern Time - Ontario - most locations	UTC-05
America/Montreal	Eastern Time - Quebec - most locations	UTC-05
America/Sao_Paulo	South & Southeast Brazil	UTC-03
Europe/Brussels		UTC+01
Australia/Perth	Western Australia - most locations	UTC+08

Australia/Sydney	New South Wales - most locations	UTC+10
Asia/Seoul		UTC+09
Africa/Lagos		UTC+01
Europe/Warsaw		UTC+01
America/Puerto_Rico		UTC-04
Europe/Moscow	Moscow+00 - west Russia	UTC+04
Asia/Manila		UTC+08
Atlantic/Reykjavik		UTC+00
Asia/Jerusalem		UTC+02

Appendix N. APPLICATION NETBACKUP CLIENT INSTALLATION PROCEDURES

NetBackup is a utility that allows for management of backups and recovery of remote systems. The NetBackup suite is for the purpose of supporting Disaster Recovery at the customer site. The following procedures provides instructions for installing and configuring the NetBackup client software on an application server in two different ways, first using platcfg and second using nbAutoInstall (push Configuration)

Please not that at the writing of this document, the supported versions of Netbackup in DSR are 7.1 and 7.5.

1) NETBACKUP CLIENT INSTALL USING PLATCFG

NOTE: Execute the following procedure to switch/migrate to having netBackup installed via platcfg instead of using NBAutoInstall (Push Configuration)

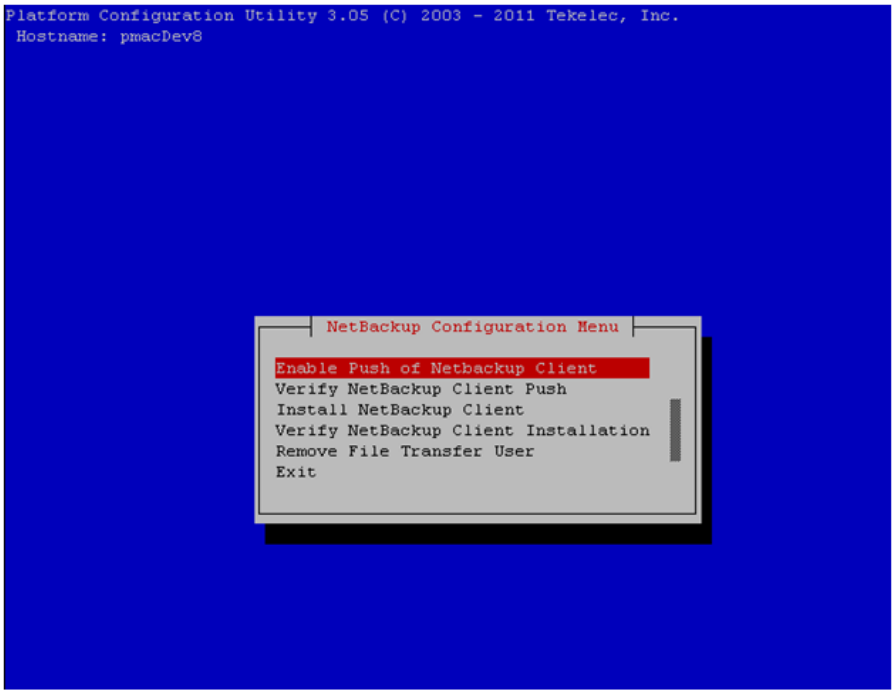
Prerequisites:
• Application server platform installation has been completed.
• Site survey has been performed to determine the network requirements for the application server, and interfaces have been configured.
• NetBackup server is available to copy, sftp, the appropriate NetBackup Client software to the application server.
Note: If a procedural STEP fails to execute successfully, STOP and contact the Customer Care Center.

1. Application server iLO: Login and launch the integrated remote console
- SSH to the application Server (PM&C or NOAMP) as admusr using the management network for the PM&C or XMI network for the NOAMP.

2. Application server iLO: Configure NetBackup Client on application server

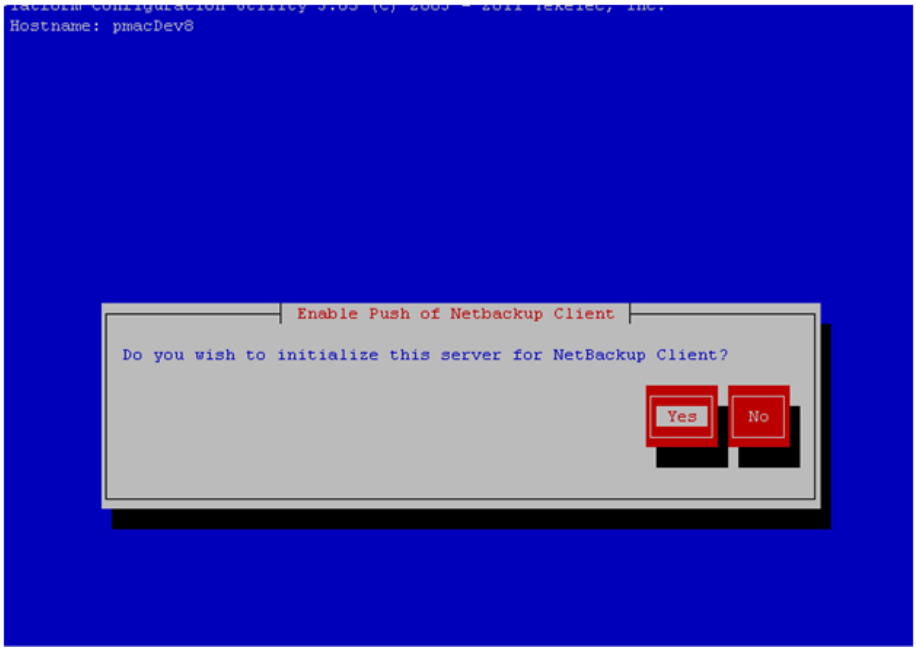
```
$ sudo su - platcfg
```

- Navigate to **NetBackup Configuration**



3. Application server iLO: Enable Push of NetBackup Client

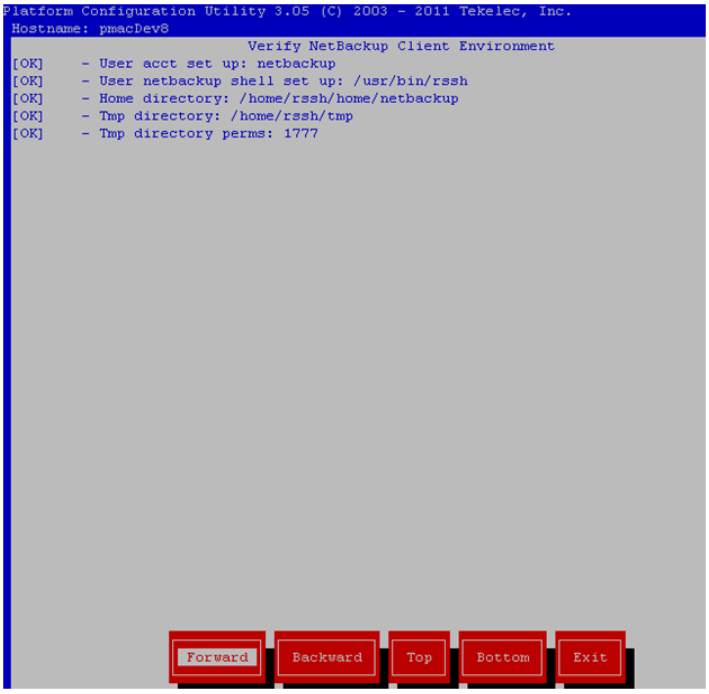
- Navigate to **NetBackup Configuration ➢ Enable Push of NetBackup Client**



- Select **Yes** to initialize the server and enable the NetBackup client software push.

4. Application server iLO: Verify NetBackup Client software push is enabled.

- Navigate to **NetBackup Configuration ➢ Verify NetBackup Client Push**



- Verify list entries indicate "**OK**" for NetBackup client software environment.
- Select "**Exit**" to return to NetBackup Configuration menu.

5. NetBackup server: Push appropriate NetBackup Client software to application server

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. Below are the steps that are required on the NetBackup server to push the NetBackup Client software to the application server. These example steps assume the NetBackup server is executing in a Linux environment.
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.

- Log in to the NetBackup server using password provided by customer:
- Navigate to the appropriate NetBackup Client software path:
  Note: The input below is only used as an example. (7.5 in the path below refers to the NetBackup version. If installed a different version (e.g. 7.1), replace 7.5 with 7.1)

  ```
  # cd /usr/openv/netbackup/client/Linux/7.5
  ```

- Execute the sftp_to client NetBackup utility using the application IP address and application netbackup user;
  ```
  # ./sftp_to_client <application IP> netbackup
  ```
  Connecting to 192.168.176.31
  netbackup@192.168.176.31's password:
- Enter application server netbackup user password; the following NetBackup software output is expected, observe the sftp completed successfully:
  File "/usr/openv/netbackup/client/Linux/6.5/.sizes" not found.
  Couldn't rename file "/tmp/bp.6211/sizes" to "/tmp/bp.6211/.sizes": No such file or directory
  File "/usr/openv/NB-Java.tar.Z" not found.
  ./sftp_to_client: line 793: [: : integer expression expected
  ./sftp_to_client: line 793: [: : integer expression expected
  ./sftp_to_client: line 793: [: : integer expression expected
  ./sftp_to_client: line 793: [: : integer expression expected
  ./sftp_to_client: line 793: [: : integer expression expected
  ./sftp_to_client: line 793: [: : integer expression expected
  ./sftp_to_client: line 793: [: : integer expression expected
  ./sftp_to_client: line 793: [: : integer expression expected
  ./sftp_to_client: line 793: [: : integer expression expected
  ./sftp_to_client: line 793: [: : integer expression expected
  sftp completed successfully.
  The root user on 192.168.176.31 must now execute the command "sh /tmp/bp.6211/client_config [-L]". The optional argument, "-L",
  is used to avoid modification of the client's current bp.conf file.
  #

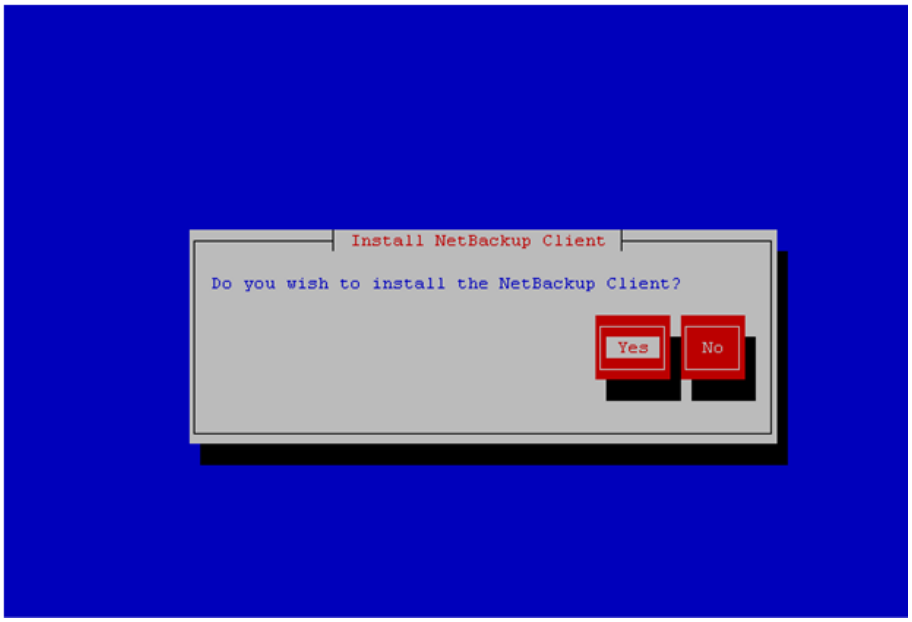
  Note: Although the command executed above instructs you to execute the client_config command, DO NOT execute that command, as it shall be executed by platcfg in the next step.

6. Application server iLO: Install NetBackup Client software on application server.

- Log into application server as *admusr.*
- Execute the command:
  ```
  $ sudo chmod 555 ${NETBACKUP_BIN}\client_config
  ```

  Where **NETBACKUP_BIN** is the temporary directory where the netbackup client install programs were copied in step 5. The directory should look similar to the following: "*/tmp/bp.XXXX/*"

- Navigate to **NetBackup Configuration ➢ Install NetBackup Client**



- Verify list entries indicate "**OK**" for NetBackup client software installation
- Select "**Exit**" to return to NetBackup Configuration menu

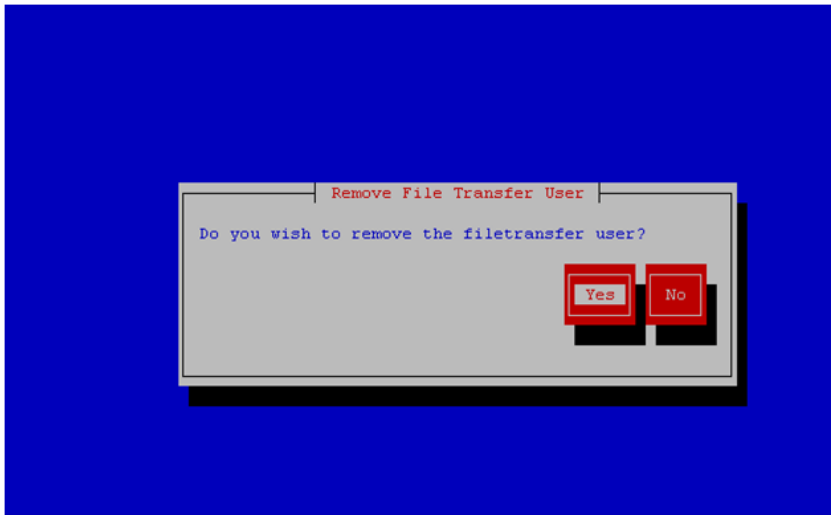
7. Application server iLO: Verify NetBackup CLient software installation on the application server.

- Navigate to **NetBackup Configuration ➢ Verify NetBackup Client Installation**.

- Verify list entries indicate "OK" for NetBackup Client software installation.
- Select "Exit" to return to NetBackup Configuration menu.

8. Application server iLO: Disable NetBackup Client software transfer to the application server.

- Navigate to **NetBackup Configuration ➢ Remove File Transfer User**



- Select "Yes" to remove the NetBackup file transfer user from the application server

9. Application server iLO: Exit platform configuration utility (platcfg)

10. Application server iLO: Use platform configuration utility (platcfg) to modify hosts file with NetBackup server alias.
Note: After the successful transfer and installation of the NetBackup client software the NetBackup servers hostname can be found in the NetBackup "/usr/openv/netbackup/bp.conf" file, identified by the "SERVER" configuration parameter. The NetBackup server hostname and IP address must be added to the application server's hosts file.

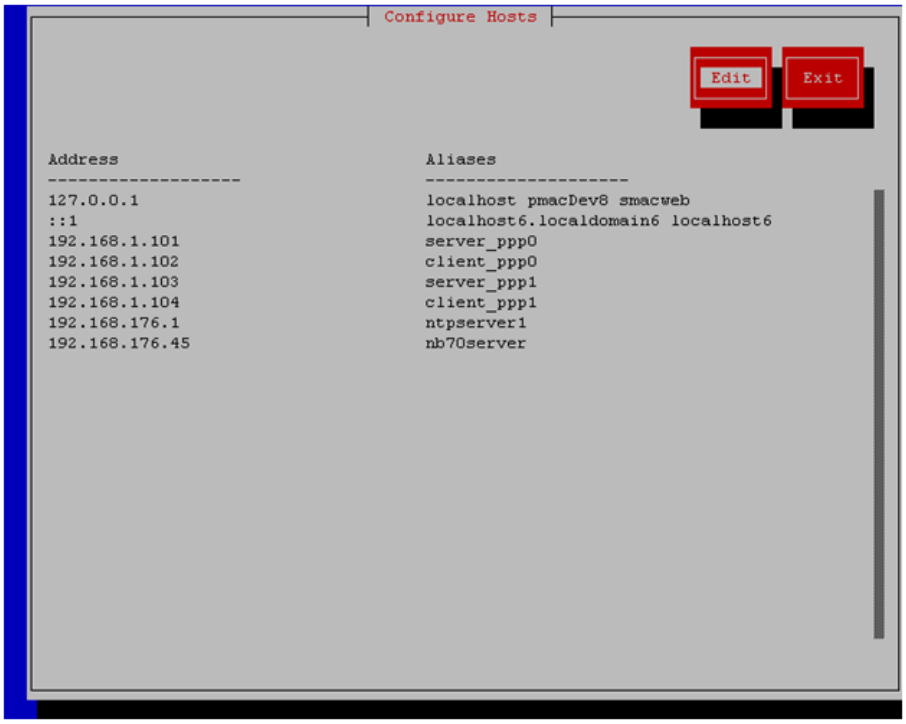
- List NetBackup servers hostname:

```
# cat /usr/openv/netbackup/bp.conf
SERVER = nb70server
CLIENT_NAME = pmacDev8
```

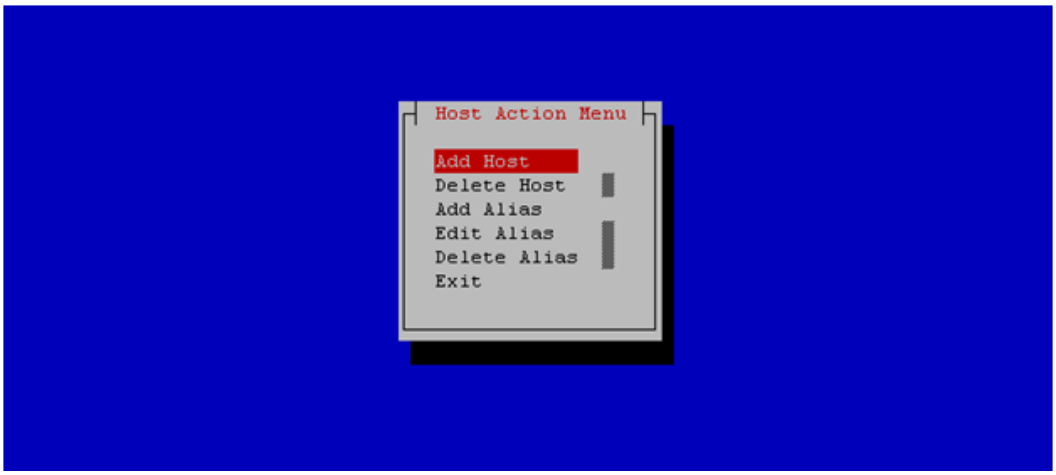
- Use platform configuration utility (platcfg) to update application hosts file with NetBackup Server alias.

```
# su - platcfg
```

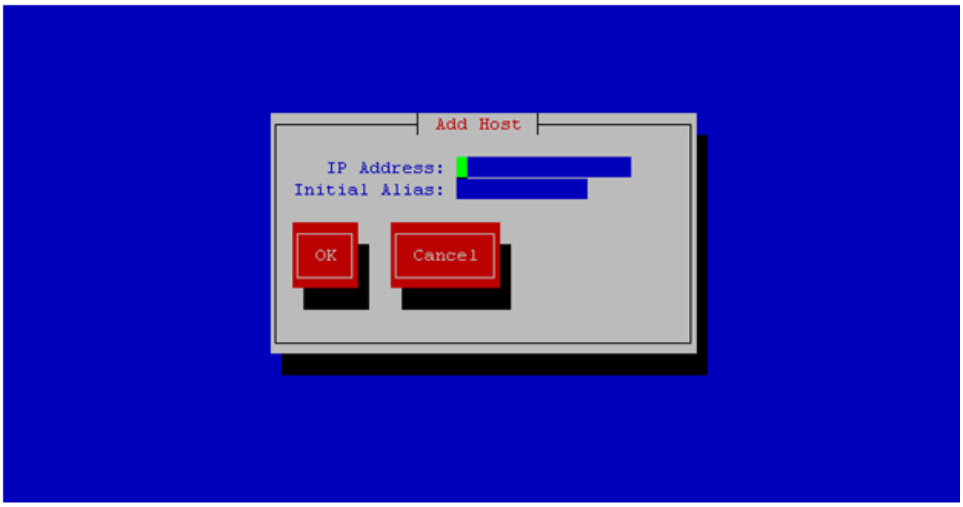
- Navigate to **Network Configuration ➢ Modify Hosts File**



- Select **Edit**, the Host Action Menu will be displayed.



- Select "**Add Host**", and enter the appropriate data



- Select "OK", confirm the host alias add, and exit Platform Configuration Utility

11. Application server iLO: Create links to NetBackup client notify scripts on application server where NetBackup expects to find them.

Note: Copy notify scripts from appropriate path on application server for given application.

```
# ln -s <path>/bpstart_notify /usr/openv/netbackup/bin/bpstart_notify
# ln -s <path>/bpend_notify /usr/openv/netbackup/bin/bpend_notify
```

An example of <path> is **`/usr/TKLC/appworks/sbin`**

12. Application server iLO: NetBackup Client software installation complete.

2) NETBACKUP CLIENT INSTALL/UPGRADE WITH NBAUTOINSTALL

NOTE: Execute the following procedure to switch/migrate to having netBackup installed via NBAutoInstall (Push Configuration) instead of manual installation using platcfg

Executing this procedure will enable TPD to automatically detect when a Netbackup Client is installed and then complete TPD related tasks that are needed for effective Netbackup Client operation. With this procedure, the Netbackup Client install (pushing the client and performing the install) is the responsibility of the customer and is not covered in this procedure.

Note: If the customer does not have a way to push and install Netbackup Client, then use *Netbackup Client Install/Upgrade with platcfg*.
Note: It is required that this procedure is executed before the customer does the Netbackup Client install.

Prerequisites:
• Application server platform installation has been completed.
• 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.

1. Application server iLO: Login and launch the integrated remote console

- SSH to the application Server (PM&C or NOAMP) as root using the management network for the PM&C or XMI network for the NOAMP.

2. Application server iLO: Enable nbAutoInstall

```
# /usr/TKLC/plat/bin/nbAutoInstall --enable
```

3. Application server iLO: Create links to NetBackup client notify scripts on application server where NetBackup expects to find them.

```
# mkdir -p /usr/openv/netbackup/bin/
# ln -s <path>/bpstart_notify /usr/openv/netbackup/bin/bpstart_notify
# ln -s <path>/bpend_notify /usr/openv/netbackup/bin/bpend_notify
```

An example of <path> is **/usr/TKLC/plat/sbin**

4. Application server iLO: Verify NetBackup configuration file

- Open */usr/openv/netbackup/bp.conf* and make sure it points to the NetBackup Server using the following command:

  ```
  # vi /usr/openv/netbackup/bp.conf
  ```

  Verify that the highlighted Server name matches the NetBackup Server, and verify that the CLIENT_NAME matches the hostname or IP of the local client machine, if they do not, update them as necessary.

  ```
  SERVER = nb75server
  CLIENT_NAME = 10.240.10.185
  CONNECT_OPTIONS = localhost 1 0 2
  ```

- Edit */etc/hosts* using the following command and add the NetBackup server

  ```
  # vi /etc/hosts
  ```

  ```
  e.g.: 192.168.176.45    nb75server
  ```

The server will now periodically check to see if a new version of Netbackup Client has been installed and will perform necessary TPD configuration accordingly.

At any time, the customer may now push and install a new version of Netbackup Client.

Appendix O. **CUSTOMER SIGN OFF**

Sign-Off Record

*** **Please review this entire document**. ***
This is to certify that all steps required for the upgrade successfully completed without failure.

Sign your name, showing approval of this procedure, and fax this page and the above completed matrix to Tekelec, FAX # 919-460-3669.

Customer: Company Name:_____ Date: _____

Site: Location:_____

Customer:(Print)_____ Phone:_____

Fax: _____

Start Date: _____ Completion Date: _____

This procedure has been approved by the undersigned. Any deviations from this procedure must be approved by both Oracle and the customer representative. A copy of this page should be given to the customer for their records. The SWOPS supervisor will also maintain a signed copy of this completion for future reference.

Tekelec Signature: _____ Date: _____

Customer Signature: _____ Date: _____

Appendix P. **MY ORACLE SUPPORT (MOS)**

MOS (*https://support.oracle.com*) is your initial point of contact for all product support and training needs. A representative at Customer Access Support (CAS) can assist you with MOS registration.

Call the CAS main number at **1-800-223-1711** (toll-free in the US), or call the Oracle Support hotline for your local country from the list at *http://www.oracle.com/us/support/contact/index.html*.

When calling, there are multiple layers of menus selections. Make the selections in the sequence shown below on the Support telephone menu:

1. For the first set of menu options, select 2, "New Service Request". You will hear another set of menu options.
2. In this set of menu options, select 3, "Hardware, Networking and Solaris Operating System Support". A third set of menu options begins.
3. In the third set of options, select 2, " Non-technical issue". Then you will be connected to a live agent who can assist you with MOS registration and provide Support. Identifiers. Simply mention you are a Tekelec Customer new to MOS.