

HLR Router 4.1 Software Upgrade

(T1200 / HP)

E74583-02

July 2016



Errors made during these procedures may critically impact product operational readiness! These procedures should only be executed by highly skilled personnel who are very familiar with HLR Router Administration and Maintenance.

It is also recommended that My Oracle Support (MOS) be notified in advance of executing these procedures on a Production network. Refer to Appendix J - Accessing My Oracle Support (MOS), for more information on contacting Oracle Customer Service.

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CAUTION: Before installing any system, please access My Oracle Support (MOS) and review any Technical Service Bulletins (TSBs) that relate to these procedures.

My Oracle Support (MOS) 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.

Refer to **Appendix J - Accessing My Oracle Support (MOS)**, for more information on contacting Oracle Customer Service.

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1. INTRODUCTION

1.1 Purpose and Scope

This document describes methods and procedures to perform an application software upgrade on in-service servers of a Tekelec HLR Router network from software release 4.0.0-40.x.0 to a 4.1.0-41.y.0 or release 4.1.0-41.x.0 to 4.1.0-41.y.0. The audience for this document includes Oracle's customers as well as the Tekelec HLR Router personnel and Global Software Delivery. This document provides step-by-step instructions to execute any Release 4.1.x software upgrade.

The Tekelec HLR Router software includes Oracle's Tekelec Platform Distribution (TPD) software. Any TPD upgrade that is necessary is automatically performed as part of the Tekelec HLR Router software upgrade. The execution of this procedure assumes that all Firmware, TVOE and PM&C upgrade have been completed as required prior to upgrading the HLR Router Application. This procedure also assumes that the Tekelec HLR Router Application software ISO file has been previously downloaded from Oracle Software Delivery Cloud (OSDC).

The new HLRR 4.1 release introduces the following new upgrade features:

- **Server Group-Based automated upgrade (19114416)**

This feature allows the user to perform the auto-upgrade of all servers within the same Server Group. If the "serial" mode is chosen during the auto-upgrade, then the standby server will be upgraded first, and the active server will be upgraded last.

1.2 References

- [1] HLRR 4.1 Initial Installation and Configuration Guide for HP, E56461
- [2] HLRR 4.1 Initial Installation and Configuration Guide for T1200, E56462
- [3] T1200 Solutions Firmware Upgrade Pack, Release Notes, 909-6084-001 or latest approved
- [4] T1200 Solutions Firmware Upgrade Pack, Upgrade Procedures, 909-1618-001 or latest approved
- [5] HP Solutions Firmware Upgrade Pack, Release Notes, E64919 or latest approved
- [6] HP Solutions Firmware Upgrade Pack, Upgrade Procedures, E64920 or latest approved
- [7] Platform 7.0 Configuration Guide, E53486
- [8] PMAC Incremental Upgrade Procedure, E54387
- [9] TVOE 3.0.0.0.0 Software Upgrade Procedure, E53018

1.3 Acroynms

Acronym	Meaning
CGBU	Communications Global Business unit
CSV	Comma-separated Values
DB	Database
DP	Database Processor
DR	Disaster Recovery
EXHR	Tekelec HLR Router
GA	General Availability
GUI	Graphical User Interface
HA	High Availability
IMI	Internal Management Interface
IPM	Initial Product Manufacture
ISO	ISO 9660 file system (when used in the context of this document)
LA	Limited Availability
MOP	Method of Procedure
MP	Message Processing or Message Processor
NE	Network Element
NO	Network OAM&P
NOAM	Network OAM&P
OAM	Operations, Administration and Maintenance
OAM&P	Operations, Administration, Maintenance and Provisioning
SO	System OAM
SOAM	System OAM
TPD	Tekelec Platform Distribution
UI	User Interface
VIP	Virtual IP
VPN	Virtual Private Network
XMI	External Management Interface
XSI	External Signaling Interface

Table 1 - Acronyms

1.4 Terminology

This section describes terminology as it is used within this document.

Term	Meaning
Upgrade	The process of converting an application from its current release on a System to a newer release.
Major Upgrade	An upgrade from a current major release to a newer major release. An example of a major upgrade is: SOME_APPLICATION 4.0.0_40.1.0 to 4.1.0_41.1.0
Incremental Upgrade	An upgrade from a current build to a newer build within the same major release. An example of an incremental upgrade is: SOME_APPLICATION 4.1.0_41.1.0 to 4.1.0_41.2.0.
Software Only Upgrade	An upgrade that does not require a Database Schema change, only the software is changed.
Single Server Upgrade	The process of converting an HLRR server from its current release on a single server to a newer release.
Backout	The process of converting a single HLRR server to a prior version. This could be performed due to failure in Single Server Upgrade.
Rollback	Automatic recovery procedure that puts a server into its pre-upgrade status. This procedure occurs automatically during upgrade if there is a failure.
Source Release	Software release to upgrade from.
Target Release	Software release to upgrade to.
Health Check	Procedure used to determine the health and status of the network. This includes statuses displayed from the GUI. This can be observed Pre-Server Upgrade, In-Progress Server Upgrade, and Post-Server Upgrade.
Upgrade Ready	State that allows for graceful upgrade of a server without degradation of service. It is a state that a server is required to be in before it can be upgraded. The state is defined by the following attributes: <ul style="list-style-type: none"> • Server is Forced Standby • Server is Application Disabled (Signaling servers will not process any traffic)
UI	User interface. "Platcfg UI" refers specifically to the Platform Configuration Utility User Interface, which is a text-based user interface.

Table 2 - Terminology

1.5 How to use this Document

When executing this document, there are a few key points which help to ensure that the user understands the author's intent. These points are as follows;

- 1) Before beginning a procedure, completely read the instructional text (it will appear immediately after the Section heading for each procedure) and all associated procedural WARNINGS or NOTES.
- 2) Before execution of a STEP within a procedure, completely read the left and right columns including any STEP specific WARNINGS or NOTES.
- 3) If a procedural STEP fails to execute successfully or fails to receive the desired output, **STOP** and refer to **Appendix J: Accessing My Oracle Support (MOS)** for assistance before attempting to continue.

1.6 Executing Procedures

The user should be familiar with the structure and conventions used within these procedures before attempting execution. **Table 3** and the details below provide an example of how procedural steps might be displayed within this document.

Column 1: Step

- **Table 3**, Column 1, contains the Step number and also a checkbox if the step requires action by the user.
- Sub-steps within a given Step X are referred to as Step X.Y. (See example: Step 1 has sub-steps Steps 1.1 to 1.2).
- Each checkbox should be checked-off in order to keep track of the progress during execution of the procedure.

Column 2: Procedure

- **Table 3**, column 2, contains a heading which indicates the server/IP being accessed as well as text instructions and/or notes to the user. This column may also describe the operations to be performed or observed during the step.

Column 3: Result

- **Table 3**, column 3, generally displays the results of executing the instructions (shown in column 2) to the user.
- The Result column may also display any of the following:
 - Inputs (commands or responses) required by the user.
 - Outputs which should be displayed on the terminal.
 - Illustrations or graphic figures related to the step instruction.
 - Screen captures from the product GUI related to the step instruction.

Procedure X: Verifying the Time in GMT

Step	Procedure	Result
1. <input type="checkbox"/>	Active Provisioning Site VIP: Log into the server as the "admusr" user.	login: admusr Password: <admusr_password>
2. <input type="checkbox"/>	Active Provisioning Site VIP: Output similar to that shown on the right will appear as the server returns to a command prompt.	*** TRUNCATED OUTPUT *** VPATH=/var/TKLC/rundb:/usr/TKLC/appworks:/usr/TKLC/awpcom mon:/usr/TKLC/comagent-gui:/usr/TKLC/comagent- gui:/usr/TKLC/comagent:/usr/TKLC/sds PROMPATH=/opt/comcol/prod RUNID=00 \$
3. <input type="checkbox"/>	Active Provisioning Site VIP: Verify that the correct Date & Time are displayed in GMT (+/- 4 min.).	\$ date -u Mon Jan 26 16:34:38 UTC 2015
THIS PROCEDURE HAS BEEN COMPLETED		

Table 3 - Sample Procedure

1.7 Activity Logging

All activity while connected to the system should be logged using a convention which notates the **Customer Name**, **Site/Node** location, **Server Hostname** and the **Date**. All logs should be provided to “My Oracle Support” (MOS) for archiving post upgrade.

1.8 Use of Health Checks

The user may execute the **Perform Health Check** or **View Logs** steps freely or repeat as many times as desired in between procedures during the upgrade process. It is not recommended to do this in between steps within a procedure, unless there is a failure to troubleshoot.

1.9 Large Installation Support

For large systems containing multiple Signaling Network Elements, it may not be feasible to apply the software upgrade to every Network Element within a single maintenance window. However, the Primary HLRR site and DR HLRR site network elements are always required to be upgraded within the same maintenance window.

2. GENERAL DESCRIPTION

This document defines the step-by-step actions performed to execute a software upgrade of an in-service HLR Router from the “source” release to the “target” release.

2.1 Supported Upgrade Paths

The supported HLR Router upgrade paths are shown below in **Figure 1**.

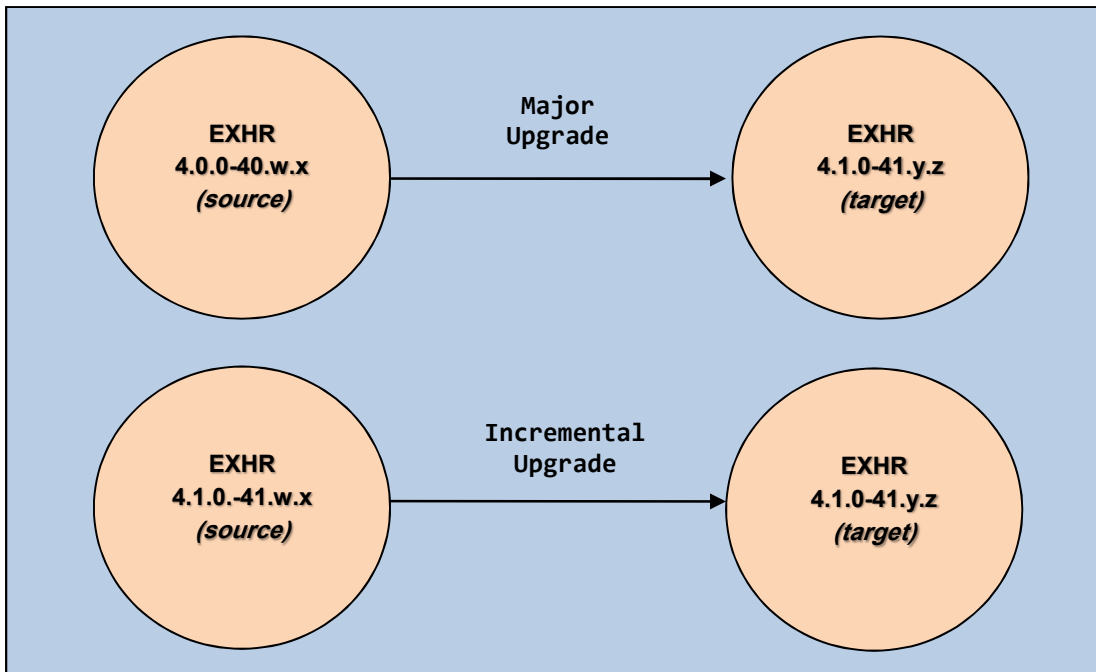


Figure 1: Supported Upgrade Paths

NOTE: Initial Installation is not within the scope of this upgrade document. For more information about Initial Installation refer to reference [1].

3. UPGRADE OVERVIEW

This section lists the required materials and information needed to execute an upgrade. It also provides a brief timing overview of the activities needed to upgrade the source release software that is installed and running on an HLR Router server to the Target Release software. The approximate time required is outlined in **Sections 3.3- 3.7**. These tables are used to plan and estimate the time necessary to complete your upgrade.

Timing values are estimates only. They estimate the completion time of a step or group of steps for an experienced user. These tables are not to be used to execute procedures. Detailed steps for each procedure begin are provided in **Section 5**.

3.1 Upgrade Requirements

The following levels of access, materials and information are needed to execute an HLRR upgrade:

- Target-release ISO image file (example: 872-2696-101-4.1.0_41.4.0-EXHR-x86_64.iso)
- Firmware for T1200 servers (*T1200 only*)
- Target-release TVOE ISO image file (*HP only*)
- Target-release PM&C ISO image file (*HP only*)
- Firmware HP Rack-Mount Servers (*HP only*)
- Cisco Firmware for 4848E-F Switches (*HP only*)
- VPN access to the customer's network.
- GUI access to the HLR Router NOAM VIP with Administrator privileges.
- SSH/SFTP access to the HLR Router NOAM VIP (XMI) as the "admusr" user.

NOTE: All logins into the HLRR Active and DR NOAM site servers are made via the External Management Interface VIP (XMI) unless otherwise stated.

- User logins, passwords, IP addresses and other administration information. See **Section 3.1.2**.
- Direct access to server IMI IP addresses from the user's local workstation is allowable in the case of T1200 MP servers.

NOTE: If direct access to the IMI IP addresses isn't available, then access to target server can be made via a tandem connection through the Active OAM server (i.e. an SSH connection is made to the Active SOAM server's XMI IP address first, then a 2nd SSH connection can be made from that server to the target server's IMI IP address).

3.1.1 ISO Image File

You must obtain a copy of the target release ISO image file. This file is necessary to perform the upgrade.

The HLRR ISO image filename will be in the following format:

Example: 872-2696-101-4.1.0_41.4.0-EXHR-x86_64.iso

NOTE: Actual number values may vary between releases.

Prior to the execution of this upgrade procedure it is assumed that the HLRR ISO image file has already been delivered to the customer's system. The delivery of the ISO image requires that the file be placed on the disk of a local workstation with GUI access to the HLRR Primary NOAM VIP address. It is assumed that the ISO file has already been transferred to the Active Primary HLRR NOAM server prior to starting this upgrade procedure.

3.1.2 Logins, Passwords and Site Information

Obtain all the information requested in the following table. This ensures that the necessary administration information is available prior to an upgrade. Consider the confidential nature of the information recorded in this table. While all of the information in the table is required to complete the upgrade, there may be security policies in place that require secure disposal once the upgrade has been completed.

NE Type	NE Name ^T
Primary HLRR NOAM Site	
DR HLRR NOAM Site	
Software	Values
Source Release Level	
Target Release Level	
Target Release ISO file name	
Access Information	Values
Primary NOAM Site XMI VIP (GUI)	
DR NOAM Site XMI VIP	
HLRR GUI Admin Username and Password	
HLRR "root" user Password	
HLRR "admusr" user Password	
HLRR "platcfg" user Password	
Server iLO Admin Username and Password (<i>HP only</i>)	
PM&C GUI Admin Username and Password (<i>HP only</i>)	
PM&C user "root" Password (<i>HP only</i>)	
PM&C user "admusr" Password (<i>HP only</i>)	
PM&C user "PM&Cftpusr" Password (<i>HP only</i>)	
RMM Admin Username and Password (<i>T1200 only</i>)	

Table 4 - Logins, Passwords and Site Information

3.2 Upgrade Maintenance Windows



!! WARNING !!

It is recommended that SOAM NE sites containing mated Message Processors (MP) be upgraded in separate maintenance windows if at all possible.

Table 5 - Upgrade Maintenance Windows

<p>Maintenance Window: 1</p> <p>Date: _____</p> <p>Record the names of the Primary HLRR NE site, DR HLRR NE site, and server's hostnames to be upgraded during Maintenance Window 1 in the space provided on the right:</p>	<p>Primary HLRR NOAM NE site name: _____</p> <p><input type="checkbox"/> Primary NOAM Active Server: _____</p> <p><input type="checkbox"/> Primary NOAM Standby Server: _____</p> <p><input type="checkbox"/> Primary NOAM NE Query Server (if equipped): _____</p> <p>DR HLRR NOAM NE site name: _____</p> <p><input type="checkbox"/> DR NOAM Active Server: _____</p> <p><input type="checkbox"/> DR NOAM Standby Server: _____</p> <p><input type="checkbox"/> DR NOAM NE Query Server (if equipped): _____</p> <ul style="list-style-type: none"> • Check-off <input checked="" type="checkbox"/> the associated check box as the upgrade is completed for each server
<p>Maintenance Window: _____</p> <p>Date: _____</p> <p>Record the name of SOAM NE site and its server's hostnames to be upgraded during the Maintenance Window 2 in the spaces provided on the right.</p>	<p>SOAM NE site name: _____</p> <p><input type="checkbox"/> Active SOAM Server: _____</p> <p><input type="checkbox"/> Standby SOAM Server: _____</p> <p><input type="checkbox"/> MP 1 Server: _____ <input type="checkbox"/> MP 6 Server: _____</p> <p><input type="checkbox"/> MP 2 Server: _____ <input type="checkbox"/> MP 7 Server: _____</p> <p><input type="checkbox"/> MP 3 Server: _____ <input type="checkbox"/> MP 8 Server: _____</p> <p><input type="checkbox"/> MP 4 Server: _____ <input type="checkbox"/> MP 9 Server: _____</p> <p><input type="checkbox"/> MP 5 Server: _____ <input type="checkbox"/> MP 10 Server: _____</p> <ul style="list-style-type: none"> • Check-off <input checked="" type="checkbox"/> the associated check box as the upgrade is completed for each server

<p>Maintenance Window: _____</p> <p>Date: _____</p> <p>Record the name of SOAM NE site and its server's hostnames to be upgraded during the Maintenance Window 2 in the spaces provided on the right.</p>	<p>SOAM NE site name: _____</p> <p><input type="checkbox"/> Active SOAM Server: _____</p> <p><input type="checkbox"/> Standby SOAM Server: _____</p> <p><input type="checkbox"/> MP 1 Server: _____ <input type="checkbox"/> MP 6 Server: _____</p> <p><input type="checkbox"/> MP 2 Server: _____ <input type="checkbox"/> MP 7 Server: _____</p> <p><input type="checkbox"/> MP 3 Server: _____ <input type="checkbox"/> MP 8 Server: _____</p> <p><input type="checkbox"/> MP 4 Server: _____ <input type="checkbox"/> MP 9 Server: _____</p> <p><input type="checkbox"/> MP 5 Server: _____ <input type="checkbox"/> MP 10 Server: _____</p> <p>• Check-off <input checked="" type="checkbox"/> the associated check box as the upgrade is completed for each server</p>
<p>Maintenance Window: _____</p> <p>Date: _____</p> <p>Record the name of SOAM NE site and its server's hostnames to be upgraded during the Maintenance Window 2 in the spaces provided on the right.</p>	<p>SOAM NE site name: _____</p> <p><input type="checkbox"/> Active SOAM Server: _____</p> <p><input type="checkbox"/> Standby SOAM Server: _____</p> <p><input type="checkbox"/> MP 1 Server: _____ <input type="checkbox"/> MP 6 Server: _____</p> <p><input type="checkbox"/> MP 2 Server: _____ <input type="checkbox"/> MP 7 Server: _____</p> <p><input type="checkbox"/> MP 3 Server: _____ <input type="checkbox"/> MP 8 Server: _____</p> <p><input type="checkbox"/> MP 4 Server: _____ <input type="checkbox"/> MP 9 Server: _____</p> <p><input type="checkbox"/> MP 5 Server: _____ <input type="checkbox"/> MP 10 Server: _____</p> <p>• Check-off <input checked="" type="checkbox"/> the associated check box as the upgrade is completed for each server</p>
<p>Maintenance Window: _____</p> <p>Date: _____</p> <p>Record the name of SOAM NE site and its server's hostnames to be upgraded during the Maintenance Window 2 in the spaces provided on the right.</p>	<p>SOAM NE site name: _____</p> <p><input type="checkbox"/> Active SOAM Server: _____</p> <p><input type="checkbox"/> Standby SOAM Server: _____</p> <p><input type="checkbox"/> MP 1 Server: _____ <input type="checkbox"/> MP 6 Server: _____</p> <p><input type="checkbox"/> MP 2 Server: _____ <input type="checkbox"/> MP 7 Server: _____</p> <p><input type="checkbox"/> MP 3 Server: _____ <input type="checkbox"/> MP 8 Server: _____</p> <p><input type="checkbox"/> MP 4 Server: _____ <input type="checkbox"/> MP 9 Server: _____</p> <p><input type="checkbox"/> MP 5 Server: _____ <input type="checkbox"/> MP 10 Server: _____</p> <p>• Check-off <input checked="" type="checkbox"/> the associated check box as the upgrade is completed for each server</p>

NOTE: Make copies of this sheet as needed for more additional **SOAM NE** sites

3.3 Upgrade Preparation Overview

The pre-upgrade procedures shown in the following table should be executed prior to the upgrade maintenance window and may be executed outside a maintenance window if desired.

Procedure Number	Procedure Title	Elapsed Time (Hrs:Min)	
		This Step	Cumulative
1	<i>Requirements Check</i>	00:15	00:15
2	<i>ISO Administration</i>	*	*
3	<i>Full Database Backup (PROV & COMCOL ENV for All Servers)</i>	01:15 [†]	†

Table 6 - Upgrade Preparation Procedures

***NOTE:** ISO transfers to the target systems cannot be estimated since times will vary significantly depending on the number of systems and the speed of the network. The ISO transfers to the target systems should be performed prior to the scheduled maintenance window. The user should schedule the required maintenance windows accordingly.

†NOTE: The length of time required to complete the backup of the HLRR Provisioning Database will vary based on the size of the customer database. The user should allow up to 45 minutes for this step to complete.

3.4 Primary HLRR NOAM / DR HLRR NOAM Upgrade Execution Overview

The procedures shown in the following table are executed inside a maintenance window.

Procedure Number	Procedure Title	Elapsed Time (Hrs:Min)	
		This Step	Cumulative
4	<i>Upgrade Primary NOAM NE</i>	02:20 (Major Upgr.)	02:20 (Major Upgr.)
		01:10 (Incremental Upgr.)	01:10 (Incremental Upgr.)
5	<i>Upgrade DR NOAM NE</i>	02:20 (Major Upgr.)	04:40 (Major Upgr.)
		01:10 (Incremental Upgr.)	02:20 (Incremental Upgr.)

Table 7 - Primary HLRR / DR HLRR Upgrade Procedures

3.5 SOAM Upgrade Execution Overview

The procedures shown in the following table should be executed inside a separate maintenance window.

Procedure Number	Procedure Title	Elapsed Time (Hrs:Min)	
		This Step	Cumulative
6	<i>Upgrade SOAM NE</i>	04:40 (Major Upgr.)	04:40 (Major Upgr.)
		02:20 (Incremental Upgr.)	02:20 (Incremental Upgr.)

Table 8 - SOAM Upgrade Procedures

3.6 Post Upgrade Execution Overview

These procedures are performed only after all sites on network have been upgraded.

Procedure Number	Procedure Title	Elapsed Time (Hrs:Min)	
		This Step	Cumulative
7	<i>Upgrade Acceptance</i>	00:30	00:30

Table 9 - Post Upgrade Procedures

3.7 Recovery Procedures Overview

These procedures are customized to the specific situation encountered and therefore do not have well established timeframes.

The best time estimates are shown below:

- Backout of NOAM NE \approx (Upgrade NOAM NE estimate + 20 minutes)
- Backout of SOAM NE \approx (Upgrade SOAM NE estimate + 40 minutes)

Procedure Number	Procedure Title	Elapsed Time (Hrs:Min)	
		This Step	Cumulative
8	<i>Backout of a SOAM NE</i>	05:20 (<i>Major Upgr.</i>) 03:00 (<i>Incremental Upgr.</i>)	05:20 (<i>Major Upgr.</i>) 03:00 (<i>Incremental Upgr.</i>)
9	<i>Backout of the DR NOAM NE</i>	02:40 (<i>Major Upgr.</i>) 01:30 (<i>Incremental Upgr.</i>)	02:40 (<i>Major Upgr.</i>) 01:30 (<i>Incremental Upgr.</i>)
10	<i>Backout of the Primary NOAM NE</i>	02:40 (<i>Major Upgr.</i>) 01:30 (<i>Incremental Upgr.</i>)	05:20 (<i>Major Upgr.</i>) [‡] 03:00 (<i>Incremental Upgr.</i>) [‡]

Table 10 - Backout Procedures

[‡] **NOTE:** This cumulative value includes on the Primary & DR NOAM sites as SOAM activity is typically handled in a separate Maintenance Window.

4. HLR ROUTER UPGRADE MATRIX

Upgrading the HLR Router product in the customer network is a task which requires multiple procedures of varying types. The matrix shown below provides a guide to the user as to which procedures are to be performed on which site types. As always, the user should contact Oracle's Tekelec Customer Care Center for the assistance if experiencing difficulties with the interpretation or execution of any of the procedures listed.

NOTE: Primary HLRR and DR HLRR sites must be upgraded in the same maintenance window.

HLR Router Upgrade Matrix

Network Element Type		Procedure						
		1	2*†	3	4*	5†	6*†	7
<input type="checkbox"/>	Primary NOAM NE DR NOAM NE (NOAM / Query Server)	✓	✓	✓	✓	✓	✗	✓
<input type="checkbox"/>	SOAM NE (SOAM / MP)	✓	✗	✗	✗	✗	✓	✓

Table 11 - HLRR Upgrade Matrix

* Appendix B (Health Check Procedures) is executed before starting this procedure.

† Appendix B (Health Check Procedures) is executed after completing this procedure.

HLR Router Upgrade: List of Procedures

Procedure	Title	Page
1	Requirements Check	19
2	ISO Administration	21
3	Full Database Backup (PROV & COMCOL ENV for All Servers)	27
4	Upgrade Primary NOAM NE	36
5	Upgrade DR NOAM NE	52
6	Upgrade SOAM NE	57
7	Upgrade Acceptance	60

Table 12 - HLR Router Upgrade: List of Procedures

5. UPGRADE PREPARATION

This section provides detailed procedures to prepare a system for upgrade execution. These procedures may be executed outside of a maintenance window.

5.1 Requirements Check

This procedure verifies that all required materials needed to perform an upgrade have been collected and recorded.

Procedure 1: Requirements Check

Step	Procedure	Result
1. <input type="checkbox"/>	Verify that all Upgrade requirements have been met.	<ul style="list-style-type: none"> Requirements are listed in Section 3.1: (Upgrade Requirements). Verify that all Upgrade requirements have been met.
2. <input type="checkbox"/>	Verify all administration data needed during upgrade.	<ul style="list-style-type: none"> Verify that all information in Section 3.1.2 (Logins, Passwords and Site Information) has been entered and is accurate.

5.2 Review Release Notes

Before starting the upgrade, you must review the Release Notes for the new HLRR target release to understand the functional differences (if any) and possible impacts to the upgrade. When upgrading HLR Router to the target release, the list of alarms that may be reported on the GUI during the period of time when the Primary HLRR NOAM NE is at the new software level and the DR NOAM HLRR NE is at the old software level may include but are not limited to the following:

- 31124: A DB replication audit command detected errors
- 31105: The DB merge process (inetmerge) is impaired by a s/w fault

These alarms are only seen in transition and should cease to be raised once the DR NOAM NE is upgraded to the same software level as the Primary NOAM NE.

5.3 Prerequisite Procedures for HLRR Application Upgrade

5.3.1 Perform Firmware Verification (T1200 / HP)

This procedure is part of Software Upgrade Preparation and is used to determine the whether a firmware update is required. If a new Firmware revision has been approved for release, follow its instructions to verify that the firmware on the HLRR servers has been upgraded to the target release. The user is instructed to execute Firmware upgrade procedures to target release as required prior to starting the HLR Router Application Upgrade.

- HP only:** 1) Verify target Firmware release in accordance with reference [5].
2) Execute Firmware upgrade as required in accordance with reference [6].
- T1200 only:** 1) Verify target Firmware release in accordance with reference [3].
2) Execute Firmware upgrade as required in accordance with reference [4].

5.3.2 Perform TVOE Upgrades (HP only)

- Execute **TVOE** upgrades for all HLRR Rack-Mount Servers in accordance with reference [9] prior to starting the HLR Router Application Upgrade.

5.3.3 Perform PMAC Upgrades (HP only)

- Execute **PMAC** upgrades for all HLRR NOAM-A Rack-Mount Servers in accordance with reference [8] prior to starting the HLR Router Application Upgrade.

5.4 Perform Health Check (Upgrade Preparation)

This procedure is part of Software Upgrade Preparation and is used to determine the health and status of the HLR Router network and servers. This may be executed multiple times but must also be executed at least once within the timeframe of 24-36 hours prior to the start of a maintenance window.

- Execute Health Check procedures as specified in **Appendix B**.

5.5 ISO Administration

ISO transfers to the target servers may require a significant amount of time depending on the number of systems and the speed of the network. Therefore, it is highly recommended that the ISO transfers to the target servers be completed prior to the first scheduled maintenance window.

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

SHOULD ANY STEP IN THIS PROCEDURE FAIL, STOP AND CONTACT “MY ORACLE SUPPORT” (MOS) FOR ASSISTANCE BEFORE CONTINUING!

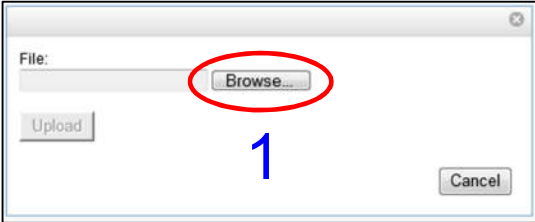
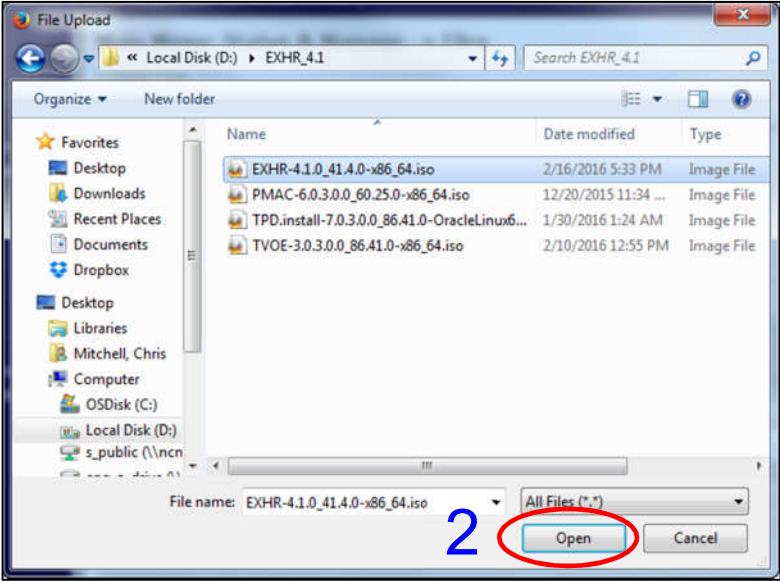
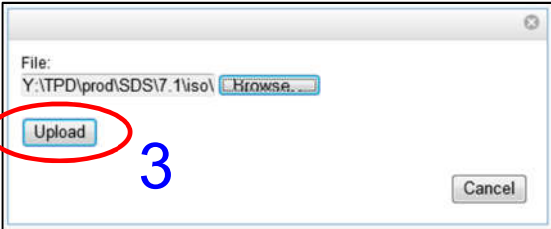
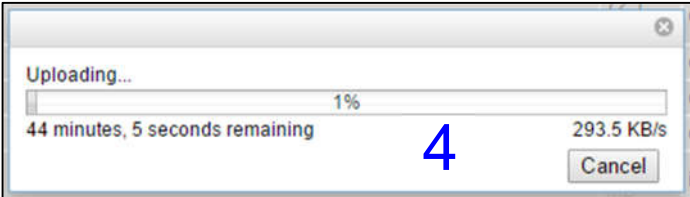


- **Appendix H: Adding the HLRR ISO to the PM&C SW Repository (HP only)** may be executed at anytime after **Procedure 2: (ISO Administration)** has been completed.

Procedure 2: ISO Administration

Step	Procedure	Result
1. <input type="checkbox"/>	Using the VIP address, access the Primary HLRR NOAM GUI .	<ul style="list-style-type: none"> Using the VIP address, access the Primary HLRR NOAM GUI as described in Appendix A.
2. <input type="checkbox"/>	<p>Primary NOAM VIP (GUI):</p> <p>1) Select...</p> <p>Main Menu → Status & Manage → Files</p> <p>2) If necessary, select the hostname of the Active Primary NOAM server from the tabs list.</p> <p>3) Click on the “Upload” button.</p> <p>NOTE: The Active Primary NOAM server will be displayed in the GUI banner as being connected to the VIP with a state of ACTIVE NETWORK OAM&P.</p>	

Procedure 2: ISO Administration

Step	Procedure	Result
3. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <ol style="list-style-type: none">1) Click on the “Browse...” dialogue button2) Select the Drive and directory location of the ISO file for the target release. Select the ISO file and click on the “Open” dialogue button.3) Click on the “Upload a File” dialogue button.4) Monitor the upload until the file transfer completes reaches with 100%. <p>NOTE: <i>If transferring the ISO file to the server manually (scp), the iso must be placed in the /var/TKLC/db/filemgmt/ directory with 664 permissions and awadmin:awadm ownership.</i></p>	   

Procedure 2: ISO Administration

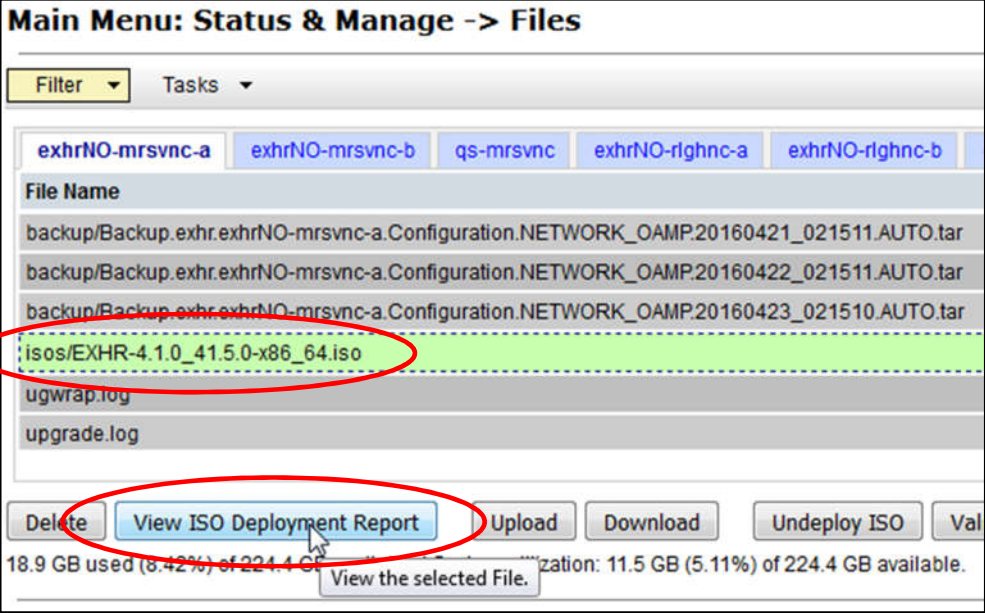
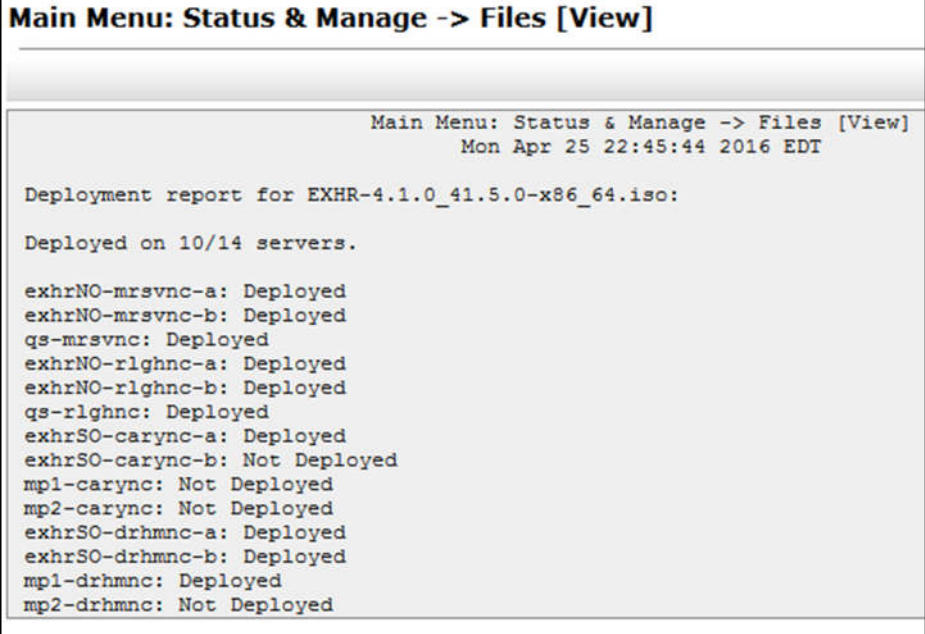
Step	Procedure	Result
4.	<p>Primary NOAM VIP:</p> <p>In the top right side of the right panel, click the “Timestamp” heading twice so that the arrow to the right points down (<i>this will bring the most recent files the top of the screen</i>).</p> <p>The ISO file uploaded in Step 3 of this procedure should now appear at the top most position in the “File Name” column.</p>	

- If source release is **HLRR 4.0**, then **SKIP** to **Step 9** of this procedure.
- If source release is **HLRR 4.1**, then continue with **Step 5** of this procedure.

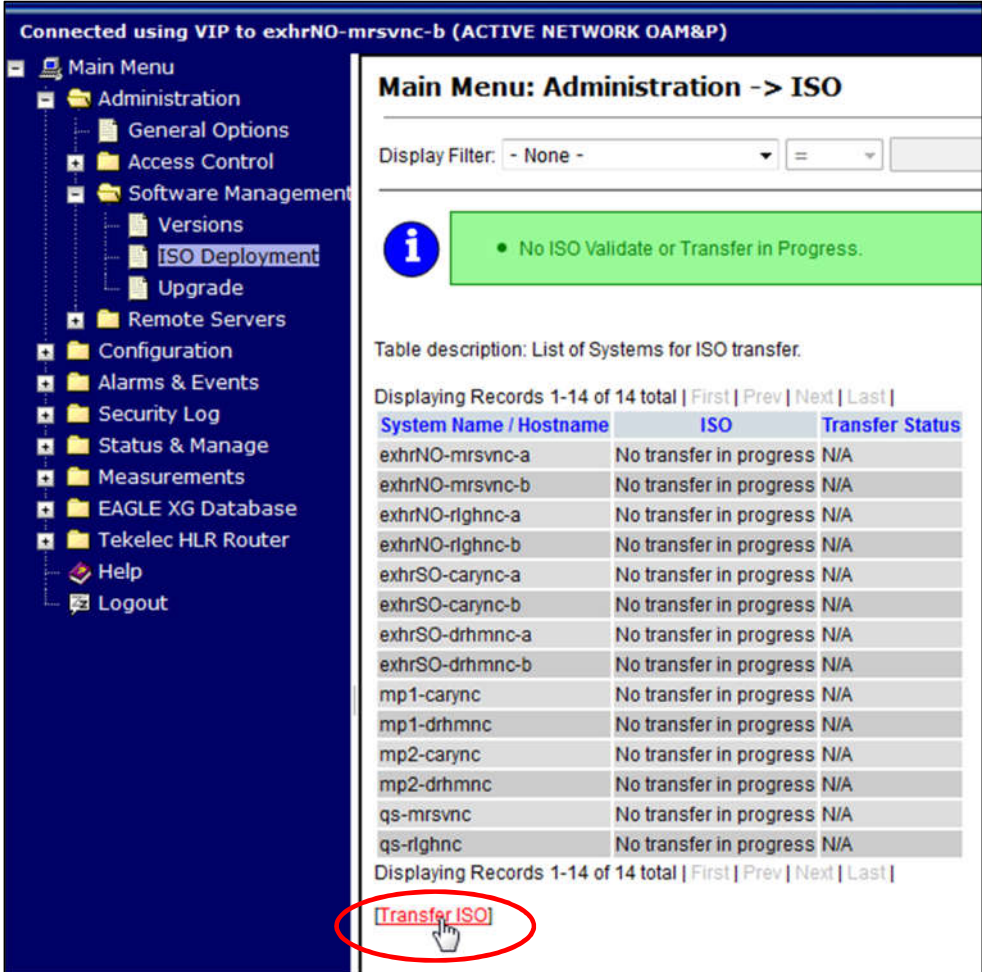
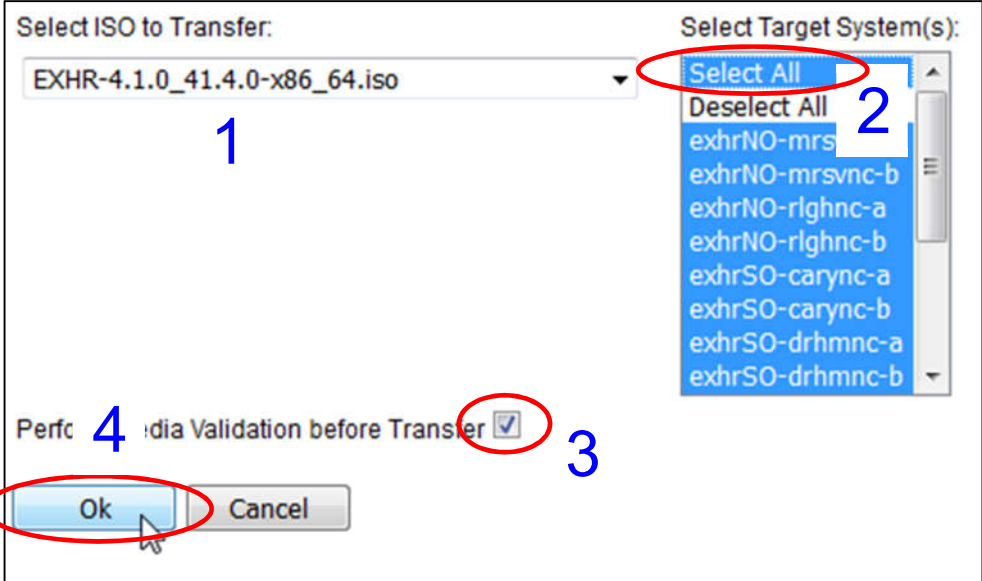
5.	<p>HLRR 4.1 only</p> <p>Primary NOAM VIP:</p> <p>Deploy ISO file to all HLRR servers in the entire topology.</p> <ol style="list-style-type: none"> 1) Using the cursor, select the ISO file uploaded in Step 3 of this procedure. 2) Click ‘Deploy ISO’ dialogue button. 3) Click ‘OK’ to confirm the ISO deployment. 	
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6.	<p>Primary NOAM VIP:</p> <p>The user should be presented with a Status banner message indicating that the ISO deployment has started.</p>	
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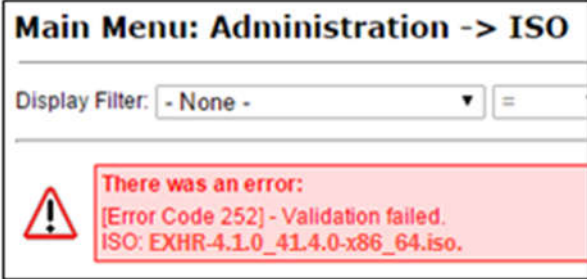
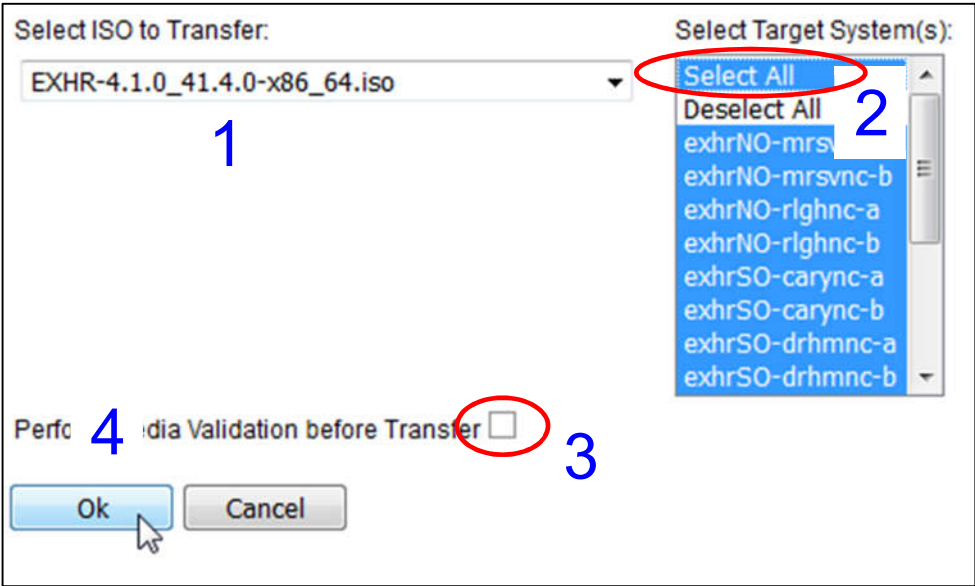
Procedure 2: ISO Administration

Step	Procedure	Result
<p>7.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>Monitor the ISO deployment status.</p> <p>1) Using the cursor, select the ISO file uploaded in Step 3 of this procedure.</p> <p>2) Click the “View ISO Deployment Report” dialogue button.</p>	
<p>8.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>The user is presented with the ISO Deployment Report indicating the current status of deployment to all servers in the topology.</p> <p>Refresh the report by clicking the “Back” dialogue button and repeating Step 7 of this procedure until the ISO has been “Deployed” to all servers in the topology.</p> <p>NOTE: This completes the ISO Administration procedures for source release 4.1, SKIP the remaining steps of this procedure and exit at this time.</p>	
<p>THIS PROCEDURE HAS BEEN COMPLETED (for Upgrade from HLRR 4.1 Source)</p>		
<p>9.</p> <p><input type="checkbox"/></p>	<p>Upgrade from HLRR 4.0 Source only:</p> <p>Primary NOAM VIP:</p> <p>Upload ISO file to the Standby HLRR server.</p>	<ul style="list-style-type: none"> Repeat Steps 2 - 4 of this procedure to upload ISO file to the “Standby” Primary NOAM server.

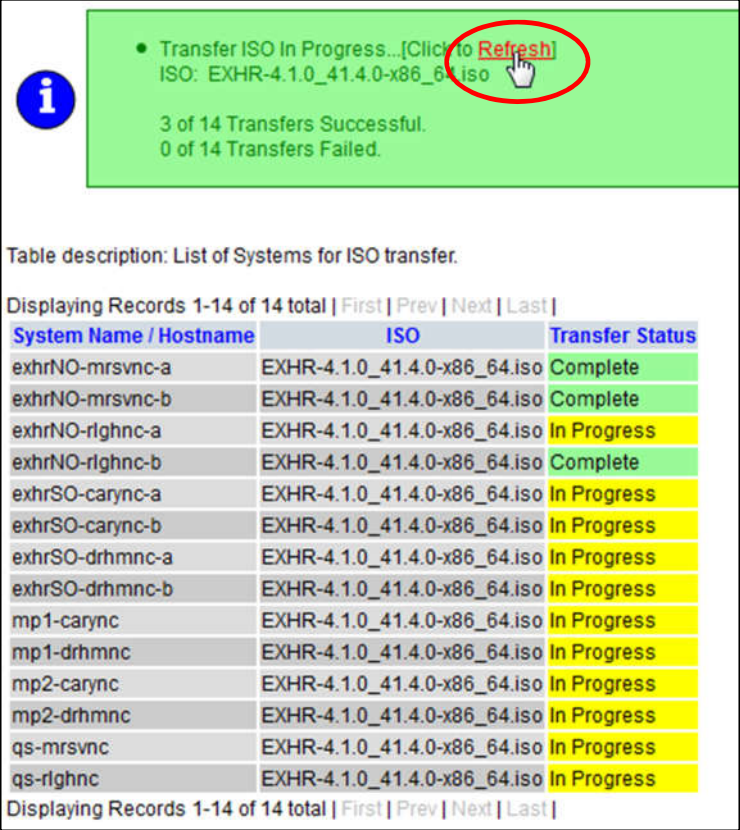
Procedure 2: ISO Administration

Step	Procedure	Result																																													
<p>10.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) Select...</p> <p>Main Menu → Administration → Software Management → ISO Deployment</p> <p>2) Click on the [Transfer ISO] link located in the bottom left quadrant of the right panel.</p>	 <p>Connected using VIP to exhrNO-mrsvnc-b (ACTIVE NETWORK OAM&P)</p> <p>Main Menu: Administration -> ISO</p> <p>Display Filter: - None -</p> <p>No ISO Validate or Transfer in Progress.</p> <p>Table description: List of Systems for ISO transfer.</p> <p>Displaying Records 1-14 of 14 total First Prev Next Last </p> <table border="1"> <thead> <tr> <th>System Name / Hostname</th> <th>ISO</th> <th>Transfer Status</th> </tr> </thead> <tbody> <tr><td>exhrNO-mrsvnc-a</td><td>No transfer in progress</td><td>N/A</td></tr> <tr><td>exhrNO-mrsvnc-b</td><td>No transfer in progress</td><td>N/A</td></tr> <tr><td>exhrNO-rhghnc-a</td><td>No transfer in progress</td><td>N/A</td></tr> <tr><td>exhrNO-rhghnc-b</td><td>No transfer in progress</td><td>N/A</td></tr> <tr><td>exhrSO-carync-a</td><td>No transfer in progress</td><td>N/A</td></tr> <tr><td>exhrSO-carync-b</td><td>No transfer in progress</td><td>N/A</td></tr> <tr><td>exhrSO-drhmnc-a</td><td>No transfer in progress</td><td>N/A</td></tr> <tr><td>exhrSO-drhmnc-b</td><td>No transfer in progress</td><td>N/A</td></tr> <tr><td>mp1-carync</td><td>No transfer in progress</td><td>N/A</td></tr> <tr><td>mp1-drhmnc</td><td>No transfer in progress</td><td>N/A</td></tr> <tr><td>mp2-carync</td><td>No transfer in progress</td><td>N/A</td></tr> <tr><td>mp2-drhmnc</td><td>No transfer in progress</td><td>N/A</td></tr> <tr><td>qs-mrsvnc</td><td>No transfer in progress</td><td>N/A</td></tr> <tr><td>qs-rhghnc</td><td>No transfer in progress</td><td>N/A</td></tr> </tbody> </table> <p>Displaying Records 1-14 of 14 total First Prev Next Last </p> <p>Transfer ISO</p>	System Name / Hostname	ISO	Transfer Status	exhrNO-mrsvnc-a	No transfer in progress	N/A	exhrNO-mrsvnc-b	No transfer in progress	N/A	exhrNO-rhghnc-a	No transfer in progress	N/A	exhrNO-rhghnc-b	No transfer in progress	N/A	exhrSO-carync-a	No transfer in progress	N/A	exhrSO-carync-b	No transfer in progress	N/A	exhrSO-drhmnc-a	No transfer in progress	N/A	exhrSO-drhmnc-b	No transfer in progress	N/A	mp1-carync	No transfer in progress	N/A	mp1-drhmnc	No transfer in progress	N/A	mp2-carync	No transfer in progress	N/A	mp2-drhmnc	No transfer in progress	N/A	qs-mrsvnc	No transfer in progress	N/A	qs-rhghnc	No transfer in progress	N/A
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qs-rhghnc	No transfer in progress	N/A																																													
<p>11.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>The user is presented with the [Transfer ISO] screen.</p> <p>1) Using the pull-down menu, select the ISO file uploaded in Step 3 of this procedure.</p> <p>2) Click “Select All” or hold the [CTRL] key to multi-select individual servers to be upgraded.</p> <p>3) Click on the “Perform Media Validation before transfer” check box.</p> <p>4) Click on the “Ok” dialogue button.</p>	 <p>Select ISO to Transfer:</p> <p>EXHR-4.1.0_41.4.0-x86_64.iso</p> <p>Select Target System(s):</p> <ul style="list-style-type: none"> Select All Deselect All exhrNO-mrs exhrNO-mrsvnc-b exhrNO-rhghnc-a exhrNO-rhghnc-b exhrSO-carync-a exhrSO-carync-b exhrSO-drhmnc-a exhrSO-drhmnc-b <p>Perform Media Validation before Transfer <input checked="" type="checkbox"/></p> <p>Ok Cancel</p>																																													

Procedure 2: ISO Administration

Step	Procedure	Result
<p>12.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>If “[Error Code 252] - Validation failed.” was received, then execute Appendix F (Manually Performing ISO Validation) and then continue with Step 13.</p> <p>If no error was received, SKIP to Step 14.</p>	
<p>13.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>The user is presented with the [Transfer ISO] screen.</p> <p>1) Using the pull-down menu, select the ISO file uploaded in Step 3 of this procedure.</p> <p>2) Click “Select All” or hold the [CTRL] key to multi-select individual servers to be upgraded.</p> <p>3) DO NOT click on the “Perform Media Validation before transfer” check box.</p> <p>4) Click on the “Ok” dialogue button.</p>	

Procedure 2: ISO Administration

Step	Procedure	Result																																													
<p>14.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) The user is presented with the ISO Administration screen.</p> <p>2) The progress of the individual file transfers may be monitored by periodically clicking on the [Click to Refresh] link in the information banner message.</p> <p>3) Continue to monitor the file transfer progress until a “Transfer Status” of “Complete” is received for all selected servers.</p>	 <p>The screenshot shows a green information banner with a blue 'i' icon. The banner text reads: "Transfer ISO In Progress... [Click to Refresh] ISO: EXHR-4.1.0_41.4.0-x86_64.iso". A red circle highlights the "Refresh" link. Below the banner, it says "3 of 14 Transfers Successful. 0 of 14 Transfers Failed." Below this is a table description: "List of Systems for ISO transfer." and a table with 3 columns: "System Name / Hostname", "ISO", and "Transfer Status". The table lists 14 systems with their respective ISO files and transfer statuses (Complete or In Progress). Navigation links "First Prev Next Last" are present above and below the table.</p> <table border="1"> <thead> <tr> <th>System Name / Hostname</th> <th>ISO</th> <th>Transfer Status</th> </tr> </thead> <tbody> <tr><td>exhrNO-mrsvnc-a</td><td>EXHR-4.1.0_41.4.0-x86_64.iso</td><td>Complete</td></tr> <tr><td>exhrNO-mrsvnc-b</td><td>EXHR-4.1.0_41.4.0-x86_64.iso</td><td>Complete</td></tr> <tr><td>exhrNO-rlghnc-a</td><td>EXHR-4.1.0_41.4.0-x86_64.iso</td><td>In Progress</td></tr> <tr><td>exhrNO-rlghnc-b</td><td>EXHR-4.1.0_41.4.0-x86_64.iso</td><td>Complete</td></tr> <tr><td>exhrSO-carync-a</td><td>EXHR-4.1.0_41.4.0-x86_64.iso</td><td>In Progress</td></tr> <tr><td>exhrSO-carync-b</td><td>EXHR-4.1.0_41.4.0-x86_64.iso</td><td>In Progress</td></tr> <tr><td>exhrSO-drhmcn-a</td><td>EXHR-4.1.0_41.4.0-x86_64.iso</td><td>In Progress</td></tr> <tr><td>exhrSO-drhmcn-b</td><td>EXHR-4.1.0_41.4.0-x86_64.iso</td><td>In Progress</td></tr> <tr><td>mp1-carync</td><td>EXHR-4.1.0_41.4.0-x86_64.iso</td><td>In Progress</td></tr> <tr><td>mp1-drhmcn</td><td>EXHR-4.1.0_41.4.0-x86_64.iso</td><td>In Progress</td></tr> <tr><td>mp2-carync</td><td>EXHR-4.1.0_41.4.0-x86_64.iso</td><td>In Progress</td></tr> <tr><td>mp2-drhmcn</td><td>EXHR-4.1.0_41.4.0-x86_64.iso</td><td>In Progress</td></tr> <tr><td>qs-mrsvnc</td><td>EXHR-4.1.0_41.4.0-x86_64.iso</td><td>In Progress</td></tr> <tr><td>qs-rlghnc</td><td>EXHR-4.1.0_41.4.0-x86_64.iso</td><td>In Progress</td></tr> </tbody> </table>	System Name / Hostname	ISO	Transfer Status	exhrNO-mrsvnc-a	EXHR-4.1.0_41.4.0-x86_64.iso	Complete	exhrNO-mrsvnc-b	EXHR-4.1.0_41.4.0-x86_64.iso	Complete	exhrNO-rlghnc-a	EXHR-4.1.0_41.4.0-x86_64.iso	In Progress	exhrNO-rlghnc-b	EXHR-4.1.0_41.4.0-x86_64.iso	Complete	exhrSO-carync-a	EXHR-4.1.0_41.4.0-x86_64.iso	In Progress	exhrSO-carync-b	EXHR-4.1.0_41.4.0-x86_64.iso	In Progress	exhrSO-drhmcn-a	EXHR-4.1.0_41.4.0-x86_64.iso	In Progress	exhrSO-drhmcn-b	EXHR-4.1.0_41.4.0-x86_64.iso	In Progress	mp1-carync	EXHR-4.1.0_41.4.0-x86_64.iso	In Progress	mp1-drhmcn	EXHR-4.1.0_41.4.0-x86_64.iso	In Progress	mp2-carync	EXHR-4.1.0_41.4.0-x86_64.iso	In Progress	mp2-drhmcn	EXHR-4.1.0_41.4.0-x86_64.iso	In Progress	qs-mrsvnc	EXHR-4.1.0_41.4.0-x86_64.iso	In Progress	qs-rlghnc	EXHR-4.1.0_41.4.0-x86_64.iso	In Progress
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<p>THIS PROCEDURE HAS BEEN COMPLETED (for Upgrade from HLRR 4.0 Source)</p>																																															

5.6 Perform Health Check (Post ISO Administration)

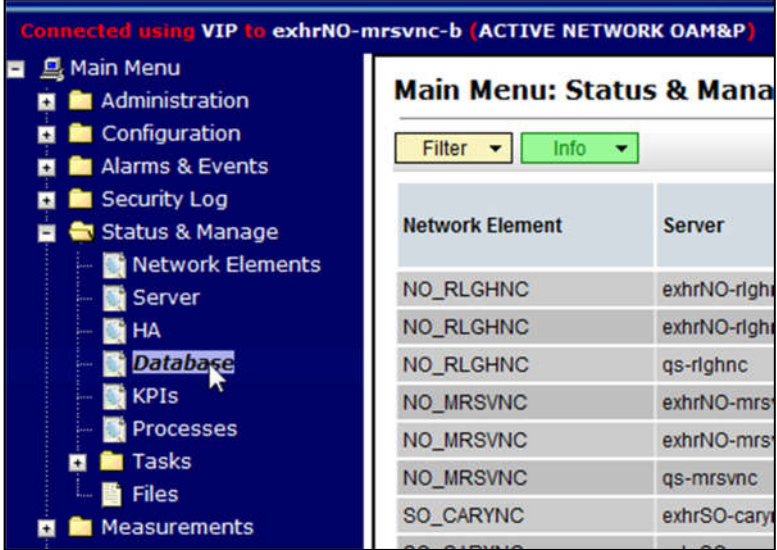
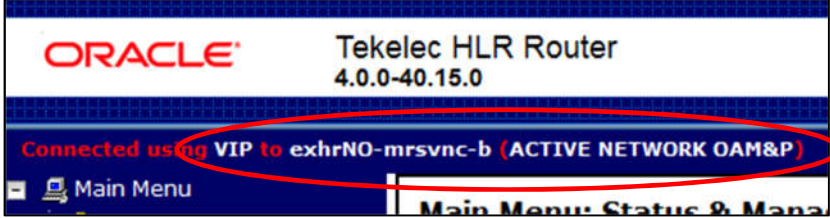
This procedure is part of Software Upgrade Preparation and is used to determine the health and status of the entire HLR Router network and servers. This may be executed multiple times but must also be executed at least once within the time frame of 24-36 hours prior to the start of a maintenance window.

- Execute HLR Router Health Check procedures as specified in **Appendix B**.

5.7 Full Database Backup (PROV & COMCOL ENV for All Servers)

This procedure is part of Software Upgrade Preparation and is used to conduct a full backup of the COMCOL run environment on every server, to be used in the event of a backout/rollback of the new software release.

Procedure 3: Full Database Backup (PROV & COMCOL ENV for All Servers)

Step	Procedure	Result																
<p>1.</p> <input type="checkbox"/>	<p>Using the VIP address, access the Primary HLRR NOAM GUI.</p>	<ul style="list-style-type: none"> Use the VIP address to access the Primary HLRR NOAM GUI as specified in Appendix A. 																
<p>2.</p> <input type="checkbox"/>	<p>Primary NOAM VIP: Select...</p> <p>Main Menu → Status & Manage → Database</p> <p>...as shown on the right.</p>	 <p>The screenshot shows the 'Main Menu' on the left with a tree structure. The 'Database' option is highlighted. On the right, a 'Main Menu: Status & Mana' window is open, displaying a table of network elements and servers.</p> <table border="1"> <thead> <tr> <th>Network Element</th> <th>Server</th> </tr> </thead> <tbody> <tr><td>NO_RLGHNC</td><td>exhrNO-rlghnc</td></tr> <tr><td>NO_RLGHNC</td><td>exhrNO-rlghnc</td></tr> <tr><td>NO_RLGHNC</td><td>qs-rlghnc</td></tr> <tr><td>NO_MRSVNC</td><td>exhrNO-mrsvnc</td></tr> <tr><td>NO_MRSVNC</td><td>exhrNO-mrsvnc</td></tr> <tr><td>NO_MRSVNC</td><td>qs-mrsvnc</td></tr> <tr><td>SO_CARYNC</td><td>exhrSO-carync</td></tr> </tbody> </table>	Network Element	Server	NO_RLGHNC	exhrNO-rlghnc	NO_RLGHNC	exhrNO-rlghnc	NO_RLGHNC	qs-rlghnc	NO_MRSVNC	exhrNO-mrsvnc	NO_MRSVNC	exhrNO-mrsvnc	NO_MRSVNC	qs-mrsvnc	SO_CARYNC	exhrSO-carync
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<p>3.</p> <input type="checkbox"/>	<p>Primary NOAM VIP: The name of the Primary Active NOAM HLRR server may be easily verified from the GUI banner.</p>	 <p>The screenshot shows the top banner of the GUI. It includes the Oracle logo, the text 'Tekelec HLR Router 4.0.0-40.15.0', and a status bar that says 'Connected using VIP to exhrNO-mrsvnc-b (ACTIVE NETWORK OAM&P)'. The status bar text is circled in red.</p>																

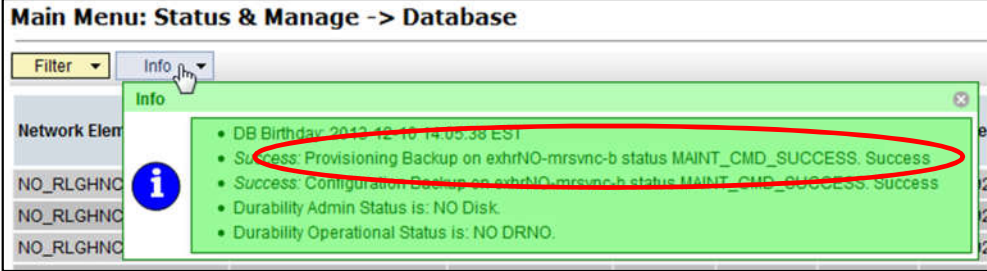
Procedure 3: Full Database Backup (PROV & COMCOL ENV for All Servers)


Step	Procedure	Result																								
<p>4.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) Using the cursor, select the Primary Active NOAM HLRR server on the [Status & Manage → Database] screen.</p> <p>2) Then click the “Backup...” dialogue button in the bottom of the right panel.</p>	<p>Main Menu: Status & Manage -> Database</p> <table border="1"> <thead> <tr> <th>Network Element</th> <th>Server</th> <th>Role</th> <th>OAM Max HA Role</th> </tr> </thead> <tbody> <tr> <td>NO_RLGHNC</td> <td>exhrNO-righnc-b</td> <td>Network OAM&P</td> <td>Active</td> </tr> <tr> <td>NO_RLGHNC</td> <td>exhrNO-righnc-a</td> <td>Network OAM&P</td> <td>Standby</td> </tr> <tr> <td>NO_RLGHNC</td> <td>qs-righnc</td> <td>Query Server</td> <td>Observer</td> </tr> <tr style="background-color: #e0ffe0;"> <td>NO_MRSVNC</td> <td>exhrNO-mrsvnc-b</td> <td>Network OAM&P</td> <td>Active</td> </tr> <tr> <td>NO_MRSVNC</td> <td>exhrNO-mrsvnc-a</td> <td>Network OAM&P</td> <td>Standby</td> </tr> </tbody> </table> <p>Buttons: Inhibit Replication, Backup..., Compare..., Resto...</p>	Network Element	Server	Role	OAM Max HA Role	NO_RLGHNC	exhrNO-righnc-b	Network OAM&P	Active	NO_RLGHNC	exhrNO-righnc-a	Network OAM&P	Standby	NO_RLGHNC	qs-righnc	Query Server	Observer	NO_MRSVNC	exhrNO-mrsvnc-b	Network OAM&P	Active	NO_MRSVNC	exhrNO-mrsvnc-a	Network OAM&P	Standby
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<p>5.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>The user will be present with the backup form.</p>	<p>Main Menu: Status & Manage -> Database [Backup]</p> <p>Database Backup</p> <table border="1"> <thead> <tr> <th>Field</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Server:</td> <td>exhrNO-mrsvnc-b</td> </tr> <tr> <td>Select data for backup</td> <td><input checked="" type="checkbox"/> Provisioning <input checked="" type="checkbox"/> Configuration</td> </tr> <tr> <td>Compression</td> <td><input type="radio"/> gzip <input checked="" type="radio"/> bzip2 <input type="radio"/> none *</td> </tr> <tr> <td>Archive Name</td> <td>Backup.EXHR.exhrNO-mrsvnc-b.ProvisioningAndConfiguration.NETWORK_C</td> </tr> <tr> <td>Comment</td> <td><input type="text"/></td> </tr> </tbody> </table> <p>Buttons: Ok, Cancel</p>	Field	Value	Server:	exhrNO-mrsvnc-b	Select data for backup	<input checked="" type="checkbox"/> Provisioning <input checked="" type="checkbox"/> Configuration	Compression	<input type="radio"/> gzip <input checked="" type="radio"/> bzip2 <input type="radio"/> none *	Archive Name	Backup.EXHR.exhrNO-mrsvnc-b.ProvisioningAndConfiguration.NETWORK_C	Comment	<input type="text"/>												
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Procedure 3: Full Database Backup (PROV & COMCOL ENV for All Servers)

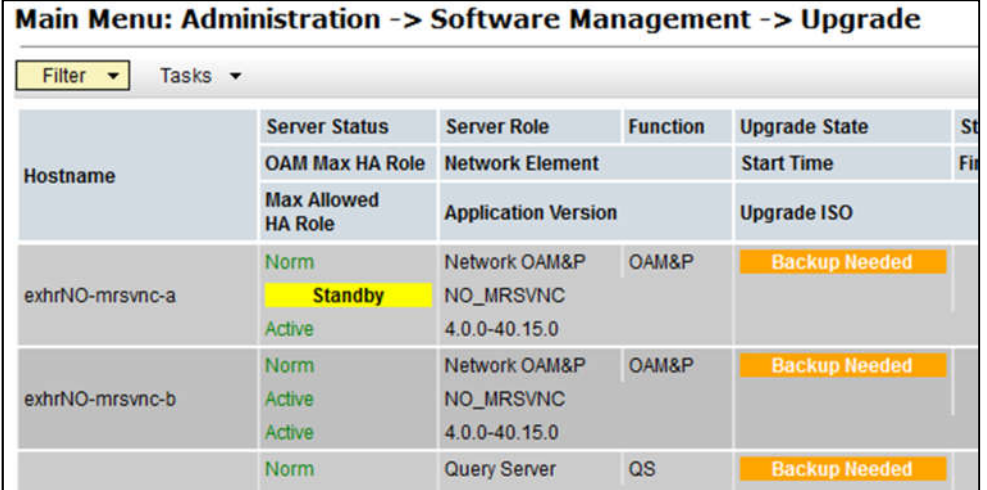
Step	Procedure	Result
<p>6.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) Uncheck the “Configuration” checkbox so that only “Provisioning” data is backed up.</p> <p>2) Select “none” for the Compression setting.</p> <p>3) Enter a comment (<i>required</i>) and then left click the cursor outside the comment field.</p>	
<p>7.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) Click the “Info” tab to verify that the changes have passed Pre-Validation.</p> <p>2) Click “Ok” dialogue button in the bottom of the right panel.</p>	

Procedure 3: Full Database Backup (PROV & COMCOL ENV for All Servers)

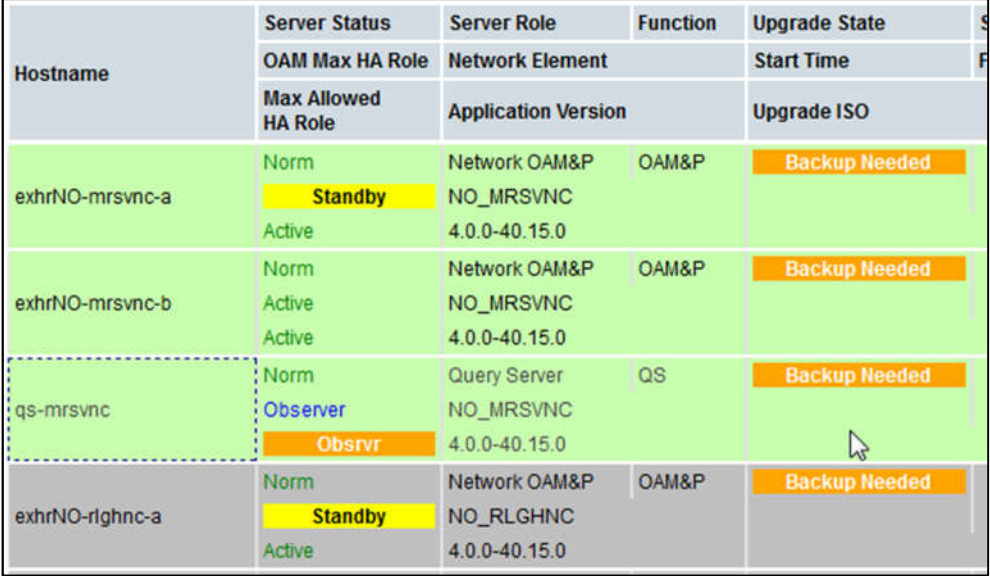
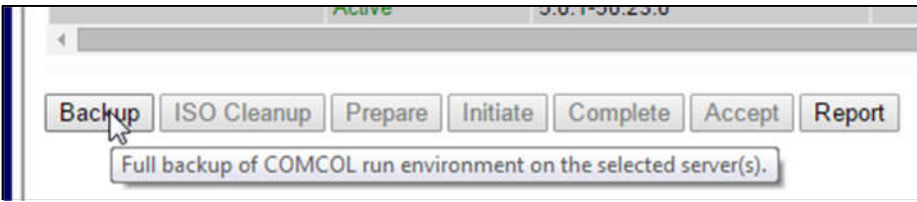
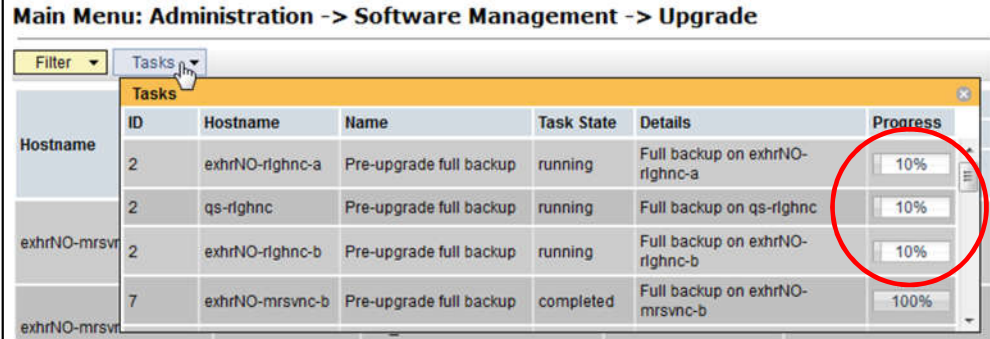
Step	Procedure	Result
8. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>Wait for the screen to refresh (≈ 1-2 minutes) then click the “Info” tab to verify that the Provisioning Backup shows a status of MAINT_CMD_SUCCESS.</p> <p>If a status of MAINT_IN_PROGRESS is received, then periodically refresh the Info message by reselecting...</p> <p>Main Menu → Status & Manage → Database</p> <p>...then click the “Info” tab again.</p> <p>NOTE: This step completes the backup of the HLRR Provisioning Database.</p>	<p>Main Menu: Status & Manage -> Database</p>  <p>NOTE: The length of time required to complete the backup of the HLRR Provisioning Database will vary based on the size of the customer database. The user should allow up to 60 minutes for this step to complete.</p>



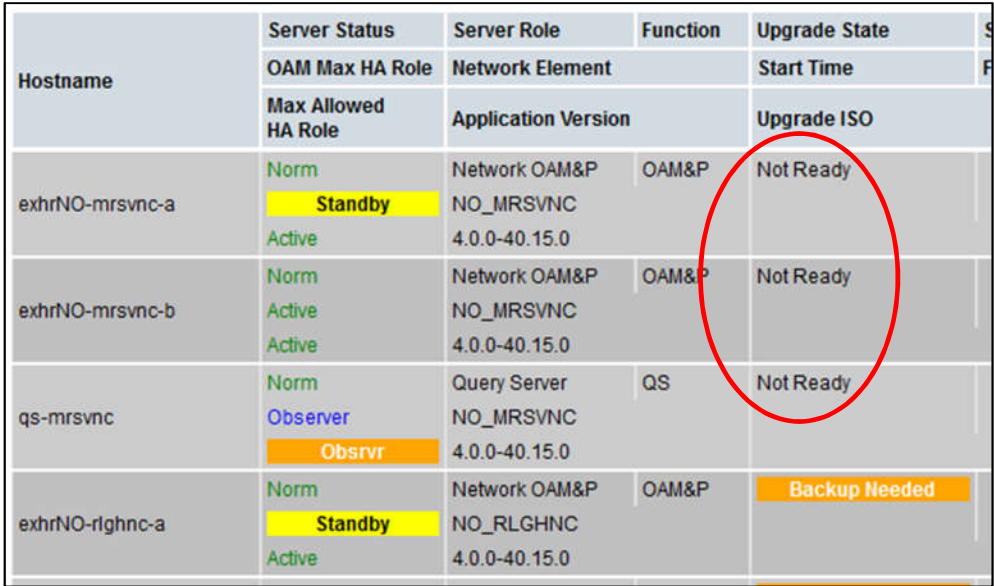
- If source release is **HLRR 4.1**, then **SKIP** to **Step 15** of this procedure.
- If source release is **HLRR 4.0**, then continue with **Step 9** of this procedure.

9. <input type="checkbox"/>	<p>HLRR 4.0 only</p> <p>Primary NOAM VIP:</p> <p>1) Select...</p> <p>Main Menu → Administration → Software Management → Upgrade</p>	<p>Main Menu: Administration -> Software Management -> Upgrade</p>  <table border="1"> <thead> <tr> <th>Hostname</th> <th>Server Status</th> <th>Server Role</th> <th>Function</th> <th>Upgrade State</th> <th>Start Time</th> </tr> </thead> <tbody> <tr> <td rowspan="3">exhrNO-mrsvnc-a</td> <td>Norm</td> <td>Network OAM&P</td> <td>OAM&P</td> <td>Backup Needed</td> <td></td> </tr> <tr> <td>Standby</td> <td>NO_MRSVNC</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Active</td> <td>4.0.0-40.15.0</td> <td></td> <td></td> <td></td> </tr> <tr> <td rowspan="3">exhrNO-mrsvnc-b</td> <td>Norm</td> <td>Network OAM&P</td> <td>OAM&P</td> <td>Backup Needed</td> <td></td> </tr> <tr> <td>Active</td> <td>NO_MRSVNC</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Active</td> <td>4.0.0-40.15.0</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>Norm</td> <td>Query Server</td> <td>QS</td> <td>Backup Needed</td> <td></td> </tr> </tbody> </table>	Hostname	Server Status	Server Role	Function	Upgrade State	Start Time	exhrNO-mrsvnc-a	Norm	Network OAM&P	OAM&P	Backup Needed		Standby	NO_MRSVNC				Active	4.0.0-40.15.0				exhrNO-mrsvnc-b	Norm	Network OAM&P	OAM&P	Backup Needed		Active	NO_MRSVNC				Active	4.0.0-40.15.0					Norm	Query Server	QS	Backup Needed	
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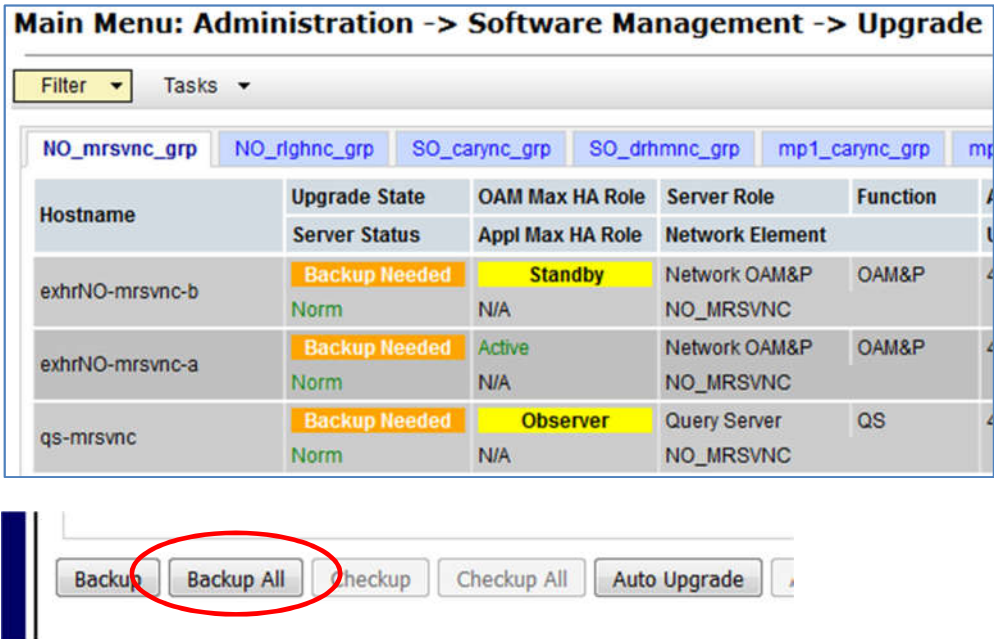
Procedure 3: Full Database Backup (PROV & COMCOL ENV for All Servers)

Step	Procedure	Result																																																									
<p>10.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) While holding the [CTRL] key, multi-select the rows containing the hostnames of the servers in the Network Element (NE) to be upgraded.</p> <p>2) Verify that the Upgrade State shows “Backup Needed” for each server.</p>	 <table border="1"> <thead> <tr> <th>Hostname</th> <th>Server Status</th> <th>Server Role</th> <th>Function</th> <th>Upgrade State</th> </tr> </thead> <tbody> <tr> <td rowspan="3">exhrNO-mrsvnc-a</td> <td>Norm</td> <td>Network OAM&P</td> <td>OAM&P</td> <td>Backup Needed</td> </tr> <tr> <td>Standby</td> <td>NO_MRSVNC</td> <td></td> <td></td> </tr> <tr> <td>Active</td> <td>4.0.0-40.15.0</td> <td></td> <td></td> </tr> <tr> <td rowspan="3">exhrNO-mrsvnc-b</td> <td>Norm</td> <td>Network OAM&P</td> <td>OAM&P</td> <td>Backup Needed</td> </tr> <tr> <td>Active</td> <td>NO_MRSVNC</td> <td></td> <td></td> </tr> <tr> <td>Active</td> <td>4.0.0-40.15.0</td> <td></td> <td></td> </tr> <tr> <td rowspan="3">qs-mrsvnc</td> <td>Norm</td> <td>Query Server</td> <td>QS</td> <td>Backup Needed</td> </tr> <tr> <td>Observer</td> <td>NO_MRSVNC</td> <td></td> <td></td> </tr> <tr> <td>Obsvr</td> <td>4.0.0-40.15.0</td> <td></td> <td></td> </tr> <tr> <td rowspan="3">exhrNO-rghnc-a</td> <td>Norm</td> <td>Network OAM&P</td> <td>OAM&P</td> <td>Backup Needed</td> </tr> <tr> <td>Standby</td> <td>NO_RLGHNC</td> <td></td> <td></td> </tr> <tr> <td>Active</td> <td>4.0.0-40.15.0</td> <td></td> <td></td> </tr> </tbody> </table>	Hostname	Server Status	Server Role	Function	Upgrade State	exhrNO-mrsvnc-a	Norm	Network OAM&P	OAM&P	Backup Needed	Standby	NO_MRSVNC			Active	4.0.0-40.15.0			exhrNO-mrsvnc-b	Norm	Network OAM&P	OAM&P	Backup Needed	Active	NO_MRSVNC			Active	4.0.0-40.15.0			qs-mrsvnc	Norm	Query Server	QS	Backup Needed	Observer	NO_MRSVNC			Obsvr	4.0.0-40.15.0			exhrNO-rghnc-a	Norm	Network OAM&P	OAM&P	Backup Needed	Standby	NO_RLGHNC			Active	4.0.0-40.15.0		
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<p>11.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>Click the “Backup” dialogue button located across the bottom left of the right panel.</p>	 <p>Backup ISO Cleanup Prepare Initiate Complete Accept Report</p> <p>Full backup of COMCOL run environment on the selected server(s).</p>																																																									
<p>12.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>Wait for the screen to refresh once again then click the “Tasks” tab to view the individual backup task progress.</p>	 <p>Main Menu: Administration -> Software Management -> Upgrade</p> <table border="1"> <thead> <tr> <th>Hostname</th> <th>ID</th> <th>Hostname</th> <th>Name</th> <th>Task State</th> <th>Details</th> <th>Progress</th> </tr> </thead> <tbody> <tr> <td rowspan="2">exhrNO-mrsvnc-a</td> <td>2</td> <td>exhrNO-rghnc-a</td> <td>Pre-upgrade full backup</td> <td>running</td> <td>Full backup on exhrNO-rghnc-a</td> <td>10%</td> </tr> <tr> <td>2</td> <td>qs-rghnc</td> <td>Pre-upgrade full backup</td> <td>running</td> <td>Full backup on qs-rghnc</td> <td>10%</td> </tr> <tr> <td rowspan="2">exhrNO-mrsvnc-b</td> <td>2</td> <td>exhrNO-rghnc-b</td> <td>Pre-upgrade full backup</td> <td>running</td> <td>Full backup on exhrNO-rghnc-b</td> <td>10%</td> </tr> <tr> <td>7</td> <td>exhrNO-mrsvnc-b</td> <td>Pre-upgrade full backup</td> <td>completed</td> <td>Full backup on exhrNO-mrsvnc-b</td> <td>100%</td> </tr> </tbody> </table>	Hostname	ID	Hostname	Name	Task State	Details	Progress	exhrNO-mrsvnc-a	2	exhrNO-rghnc-a	Pre-upgrade full backup	running	Full backup on exhrNO-rghnc-a	10%	2	qs-rghnc	Pre-upgrade full backup	running	Full backup on qs-rghnc	10%	exhrNO-mrsvnc-b	2	exhrNO-rghnc-b	Pre-upgrade full backup	running	Full backup on exhrNO-rghnc-b	10%	7	exhrNO-mrsvnc-b	Pre-upgrade full backup	completed	Full backup on exhrNO-mrsvnc-b	100%																								
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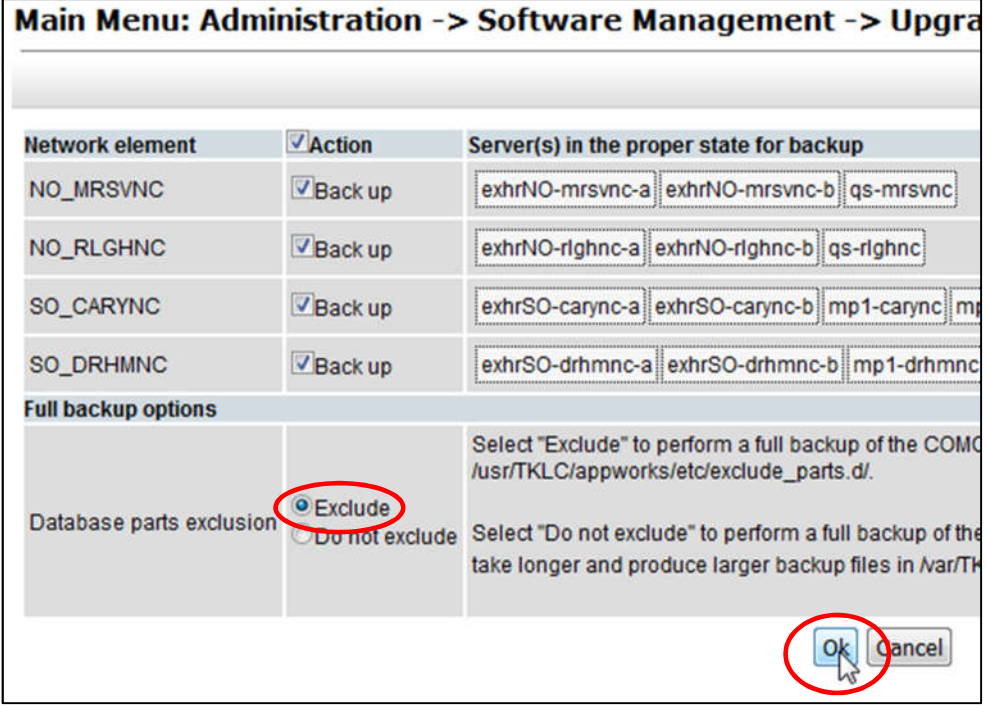
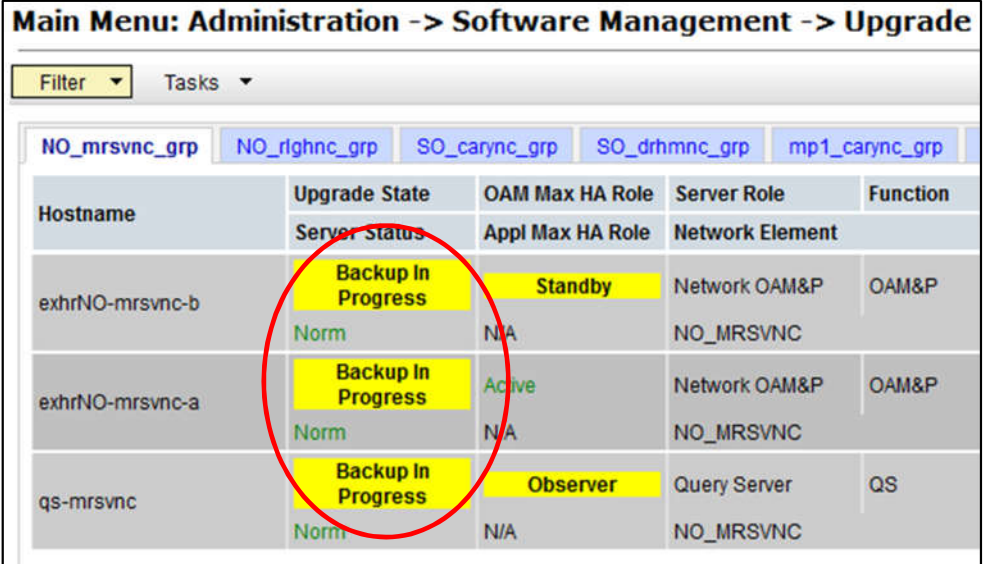
Procedure 3: Full Database Backup (PROV & COMCOL ENV for All Servers)

Step	Procedure	Result																																			
13. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>The "Upgrade" screen and the "Tasks" tab Progress bar will auto-refresh at this point.</p> <p>Monitor all servers backed up in Step 10 of this procedure until the "Upgrade State" changes from "Backup Needed" to "Not Ready".</p> <p>NOTE: The COMCOL environment backups may take several minutes to complete. Please allow at least 30 minutes.</p>	 <table border="1"> <thead> <tr> <th>Hostname</th> <th>Server Status</th> <th>Server Role</th> <th>Function</th> <th>Upgrade State</th> </tr> </thead> <tbody> <tr> <td></td> <td>OAM Max HA Role</td> <td>Network Element</td> <td></td> <td>Start Time</td> </tr> <tr> <td></td> <td>Max Allowed HA Role</td> <td>Application Version</td> <td></td> <td>Upgrade ISO</td> </tr> <tr> <td>exhrNO-mrsvnc-a</td> <td>Norm Standby Active</td> <td>Network OAM&P NO_MRSVNC 4.0.0-40.15.0</td> <td>OAM&P</td> <td>Not Ready</td> </tr> <tr> <td>exhrNO-mrsvnc-b</td> <td>Norm Active Active</td> <td>Network OAM&P NO_MRSVNC 4.0.0-40.15.0</td> <td>OAM&P</td> <td>Not Ready</td> </tr> <tr> <td>qs-mrsvnc</td> <td>Norm Observer Obsrvr</td> <td>Query Server NO_MRSVNC 4.0.0-40.15.0</td> <td>QS</td> <td>Not Ready</td> </tr> <tr> <td>exhrNO-rlghnc-a</td> <td>Norm Standby Active</td> <td>Network OAM&P NO_RLGHNC 4.0.0-40.15.0</td> <td></td> <td>Backup Needed</td> </tr> </tbody> </table>	Hostname	Server Status	Server Role	Function	Upgrade State		OAM Max HA Role	Network Element		Start Time		Max Allowed HA Role	Application Version		Upgrade ISO	exhrNO-mrsvnc-a	Norm Standby Active	Network OAM&P NO_MRSVNC 4.0.0-40.15.0	OAM&P	Not Ready	exhrNO-mrsvnc-b	Norm Active Active	Network OAM&P NO_MRSVNC 4.0.0-40.15.0	OAM&P	Not Ready	qs-mrsvnc	Norm Observer Obsrvr	Query Server NO_MRSVNC 4.0.0-40.15.0	QS	Not Ready	exhrNO-rlghnc-a	Norm Standby Active	Network OAM&P NO_RLGHNC 4.0.0-40.15.0		Backup Needed
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14. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>Execute COMCOL environment backups for the next NE</p>	<ul style="list-style-type: none"> Repeat Steps 10 - 13 of this procedure (one Network Element at a time), until all servers in the topology display an "Upgrade State" of "Not Ready". <p>NOTE: This completes the COMCOL environment Backup procedures for source release 4.0, SKIP the remaining steps of this procedure and exit at this time.</p>																																			
<p>THIS PROCEDURE HAS BEEN COMPLETED (Upgrade from HLRR 4.0 Source)</p>																																					

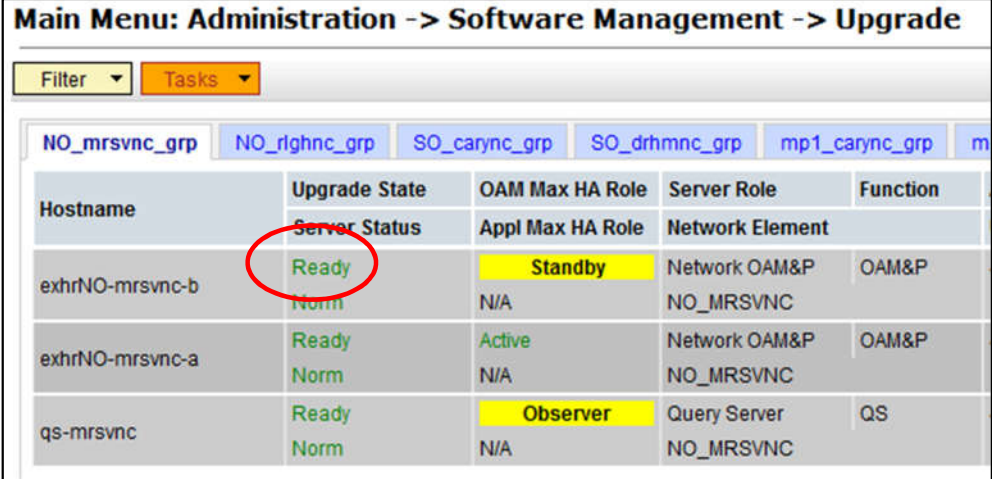
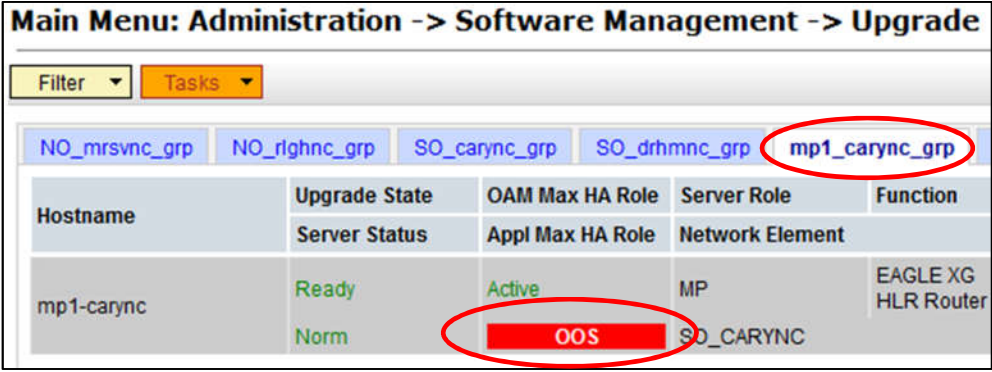
Upgrade from HLRR 4.1 Source only:

15. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>1) Select...</p> <p>Main Menu → Administration → Software Management → Upgrade</p> <p>The server "Upgrade State" will show "Backup Needed" at this point.</p> <p>2) In the bottom of the right panel, click the "Backup All" button.</p>	 <p>Main Menu: Administration -> Software Management -> Upgrade</p> <p>Filter Tasks</p> <table border="1"> <thead> <tr> <th>Hostname</th> <th>Upgrade State</th> <th>OAM Max HA Role</th> <th>Server Role</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td></td> <td>Server Status</td> <td>Appl Max HA Role</td> <td>Network Element</td> <td></td> </tr> <tr> <td>exhrNO-mrsvnc-b</td> <td>Backup Needed Norm</td> <td>Standby N/A</td> <td>Network OAM&P NO_MRSVNC</td> <td>OAM&P</td> </tr> <tr> <td>exhrNO-mrsvnc-a</td> <td>Backup Needed Norm</td> <td>Active N/A</td> <td>Network OAM&P NO_MRSVNC</td> <td>OAM&P</td> </tr> <tr> <td>qs-mrsvnc</td> <td>Backup Needed Norm</td> <td>Observer N/A</td> <td>Query Server NO_MRSVNC</td> <td>QS</td> </tr> </tbody> </table> <p>Backup Backup All Checkup Checkup All Auto Upgrade</p>	Hostname	Upgrade State	OAM Max HA Role	Server Role	Function		Server Status	Appl Max HA Role	Network Element		exhrNO-mrsvnc-b	Backup Needed Norm	Standby N/A	Network OAM&P NO_MRSVNC	OAM&P	exhrNO-mrsvnc-a	Backup Needed Norm	Active N/A	Network OAM&P NO_MRSVNC	OAM&P	qs-mrsvnc	Backup Needed Norm	Observer N/A	Query Server NO_MRSVNC	QS
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Procedure 3: Full Database Backup (PROV & COMCOL ENV for All Servers)

Step	Procedure	Result																									
<p>16.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>The user is presented with the Upgrade [Backup All] screen.</p> <p>1) Verify that the “Exclude” radial button is selected.</p> <p>2) Click “Ok” button to begin the backup(s).</p> <p>NOTE: All servers in the topology which are in a state from which upgrade can be initiated will be visible on this screen (i.e. servers in “Forced Standby” or “OOS” will not present).</p>	 <p>Main Menu: Administration -> Software Management -> Upgrade</p> <table border="1"> <thead> <tr> <th>Network element</th> <th>Action</th> <th>Server(s) in the proper state for backup</th> </tr> </thead> <tbody> <tr> <td>NO_MRSVNC</td> <td><input checked="" type="checkbox"/> Back up</td> <td>exhrNO-mrsvnc-a exhrNO-mrsvnc-b qs-mrsvnc</td> </tr> <tr> <td>NO_RLGHNC</td> <td><input checked="" type="checkbox"/> Back up</td> <td>exhrNO-rlghnc-a exhrNO-rlghnc-b qs-rlghnc</td> </tr> <tr> <td>SO_CARYNC</td> <td><input checked="" type="checkbox"/> Back up</td> <td>exhrSO-carync-a exhrSO-carync-b mp1-carync mp1-rlghnc</td> </tr> <tr> <td>SO_DRHMNC</td> <td><input checked="" type="checkbox"/> Back up</td> <td>exhrSO-drhmnc-a exhrSO-drhmnc-b mp1-drhmnc</td> </tr> </tbody> </table> <p>Full backup options</p> <p>Database parts exclusion: <input checked="" type="radio"/> Exclude <input type="radio"/> Do not exclude</p> <p>Select "Exclude" to perform a full backup of the COMCOL environment. Select "Do not exclude" to perform a full backup of the take longer and produce larger backup files in /var/TKL/TKL/appworks/etc/exclude_parts.d/.</p> <p><input checked="" type="button"/> Ok <input type="button"/> Cancel</p>	Network element	Action	Server(s) in the proper state for backup	NO_MRSVNC	<input checked="" type="checkbox"/> Back up	exhrNO-mrsvnc-a exhrNO-mrsvnc-b qs-mrsvnc	NO_RLGHNC	<input checked="" type="checkbox"/> Back up	exhrNO-rlghnc-a exhrNO-rlghnc-b qs-rlghnc	SO_CARYNC	<input checked="" type="checkbox"/> Back up	exhrSO-carync-a exhrSO-carync-b mp1-carync mp1-rlghnc	SO_DRHMNC	<input checked="" type="checkbox"/> Back up	exhrSO-drhmnc-a exhrSO-drhmnc-b mp1-drhmnc										
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<p>17.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>The user is returned to the Active Primary HLRR server tab on the Administration -> Software -> Upgrade screen where the server “Upgrade State” should now show “Backup in Progress” for all servers on that tab.</p>	 <p>Main Menu: Administration -> Software Management -> Upgrade</p> <p>Filter Tasks</p> <p>NO_mrsvnc_grp NO_rlghnc_grp SO_carync_grp SO_drhmnc_grp mp1_carync_grp</p> <table border="1"> <thead> <tr> <th>Hostname</th> <th>Upgrade State</th> <th>OAM Max HA Role</th> <th>Server Role</th> <th>Function</th> </tr> <tr> <th></th> <th>Server Status</th> <th>Appl Max HA Role</th> <th>Network Element</th> <th></th> </tr> </thead> <tbody> <tr> <td>exhrNO-mrsvnc-b</td> <td>Backup in Progress</td> <td>Standby</td> <td>Network OAM&P</td> <td>OAM&P</td> </tr> <tr> <td>exhrNO-mrsvnc-a</td> <td>Backup in Progress</td> <td>Active</td> <td>Network OAM&P</td> <td>OAM&P</td> </tr> <tr> <td>qs-mrsvnc</td> <td>Backup in Progress</td> <td>Observer</td> <td>Query Server</td> <td>QS</td> </tr> </tbody> </table>	Hostname	Upgrade State	OAM Max HA Role	Server Role	Function		Server Status	Appl Max HA Role	Network Element		exhrNO-mrsvnc-b	Backup in Progress	Standby	Network OAM&P	OAM&P	exhrNO-mrsvnc-a	Backup in Progress	Active	Network OAM&P	OAM&P	qs-mrsvnc	Backup in Progress	Observer	Query Server	QS
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Procedure 3: Full Database Backup (PROV & COMCOL ENV for All Servers)

Step	Procedure	Result																									
<p>18.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>The screen will auto-refresh at this point.</p> <p>Monitor the Backups until the server “Upgrade State” shows “Ready” for all servers on that tab.</p> <p>NOTE: It can take up to 20 minutes for for COMCOL backup to complete.</p>	 <p>Main Menu: Administration -> Software Management -> Upgrade</p> <p>Filter Tasks</p> <p>NO_mrsvnc_grp NO_rghnc_grp SO_carync_grp SO_drhmcn_grp mp1_carync_grp m</p> <table border="1"> <thead> <tr> <th>Hostname</th> <th>Upgrade State</th> <th>OAM Max HA Role</th> <th>Server Role</th> <th>Function</th> </tr> <tr> <th></th> <th>Server Status</th> <th>Appl Max HA Role</th> <th>Network Element</th> <th></th> </tr> </thead> <tbody> <tr> <td>exhrNO-mrsvnc-b</td> <td>Ready</td> <td>Standby</td> <td>Network OAM&P</td> <td>OAM&P</td> </tr> <tr> <td>exhrNO-mrsvnc-a</td> <td>Ready</td> <td>Active</td> <td>Network OAM&P</td> <td>OAM&P</td> </tr> <tr> <td>qs-mrsvnc</td> <td>Ready</td> <td>Observer</td> <td>Query Server</td> <td>QS</td> </tr> </tbody> </table>	Hostname	Upgrade State	OAM Max HA Role	Server Role	Function		Server Status	Appl Max HA Role	Network Element		exhrNO-mrsvnc-b	Ready	Standby	Network OAM&P	OAM&P	exhrNO-mrsvnc-a	Ready	Active	Network OAM&P	OAM&P	qs-mrsvnc	Ready	Observer	Query Server	QS
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<p>19.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>Click on the each tab and monitor the Backups until the server “Upgrade State” shows “Ready” for all servers on all tabs.</p> <p>!! IMPORTANT !!</p> <p>Starting with HLRR 4.1, the Appl Max HA Role is now displayed in the Administration -> Software -> Upgrade screen.</p> <p>This state is expected to be OOS for HLRR MP servers.</p>	 <p>Main Menu: Administration -> Software Management -> Upgrade</p> <p>Filter Tasks</p> <p>NO_mrsvnc_grp NO_rghnc_grp SO_carync_grp SO_drhmcn_grp mp1_carync_grp</p> <table border="1"> <thead> <tr> <th>Hostname</th> <th>Upgrade State</th> <th>OAM Max HA Role</th> <th>Server Role</th> <th>Function</th> </tr> <tr> <th></th> <th>Server Status</th> <th>Appl Max HA Role</th> <th>Network Element</th> <th></th> </tr> </thead> <tbody> <tr> <td>mp1-carync</td> <td>Ready</td> <td>Active</td> <td>MP</td> <td>EAGLE XG HLR Router</td> </tr> <tr> <td></td> <td>Norm</td> <td>OOS</td> <td>SO_CARYNC</td> <td></td> </tr> </tbody> </table>	Hostname	Upgrade State	OAM Max HA Role	Server Role	Function		Server Status	Appl Max HA Role	Network Element		mp1-carync	Ready	Active	MP	EAGLE XG HLR Router		Norm	OOS	SO_CARYNC						
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mp1-carync	Ready	Active	MP	EAGLE XG HLR Router																							
	Norm	OOS	SO_CARYNC																								
<p>20.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>Monitor the remaining tabs under the Administration -> Software -> Upgrade screen until all servers on each tab display a server “Upgrade State” value of “Ready”.</p>	<ul style="list-style-type: none"> Repeat Step 19 of this procedure until all servers in the topology display a server “Upgrade State” value of “Ready”. 																									
<p>THIS PROCEDURE HAS BEEN COMPLETED (Upgrade from HLRR 4.1 Source)</p>																											

6. PRIMARY / DR HLRR NOAM UPGRADE EXECUTION

Call **My Oracle Support (MOS)** and inform them of your plans to upgrade this system prior to executing this upgrade.

Refer to **Appendix J: Accessing My Oracle Support (MOS)** for information on contacting **MOS**.

Before upgrade, users must perform the system Health Check (**Appendix B**). This check ensures that the system to be upgraded is in an upgrade-ready state. Performing the system health check determines which alarms are present in the system and if upgrade can proceed with alarms.

****** WARNING ******

If there are servers in the system, which are not in Normal state, these servers should be brought to the Normal or the Application Disabled state before the upgrade process is started. The sequence of upgrade is such that servers providing support services to other servers will be upgraded first.

****** WARNING ******

Please read the following notes on this procedure:

If a procedural STEP fails to execute successfully or fails to receive the desired output, **STOP** and contact **MOS** for assistance before attempting to continue.

Procedure completion times shown here are estimates. Times may vary due to differences in database size, user experience, and user preparation.

Where possible, command response outputs are shown as accurately as possible. EXCEPTIONS are as follows:

- Session banner information such as time and date.
- System-specific configuration information such as hardware locations, IP addresses and hostnames.
- ANY information marked with “XXXX” or “YYYY.” Where appropriate, instructions are provided to determine what output should be expected in place of “XXXX or YYYY”
- Aesthetic differences unrelated to functionality such as browser attributes: window size, colors, toolbars and button layouts.

After completing each step and at each point where data is recorded from the screen, the technician performing the upgrade must mark the provided Checkbox.

For procedures which are executed multiple times, a mark can be made below the Checkbox (in the same column) for each additional iteration that the step is executed.

Retention of Captured data is required as a future support reference if this procedure is executed by someone other than Oracle's Tekelec Customer Care Center.

NOTE: *In order to minimize possible impacts due to database schema changes, Primary and DR HLRR NOAM Network Elements must be upgraded within the same maintenance window.*

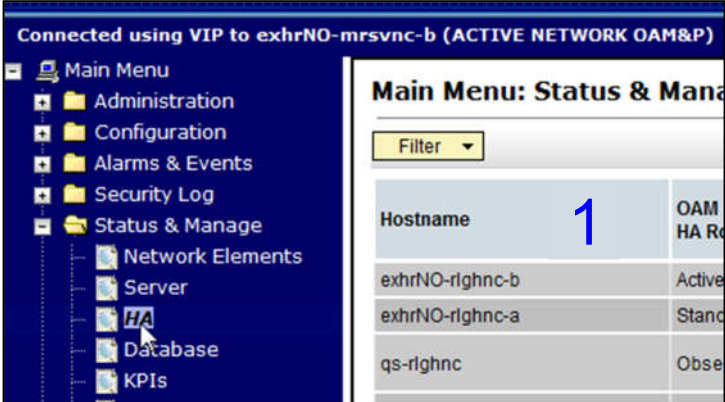
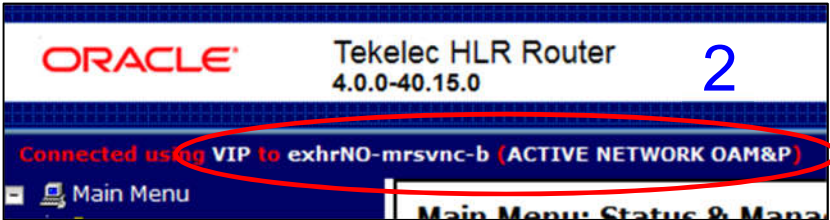
6.1 Perform Health Check (Primary/DR NOAM Pre Upgrade)

This procedure is part of Software Upgrade Preparation and is used to determine the health and status of the entire HLR Router network and servers. This may be executed multiple times but must also be executed at least once within the time frame of 24-36 hours prior to the start of a maintenance window.

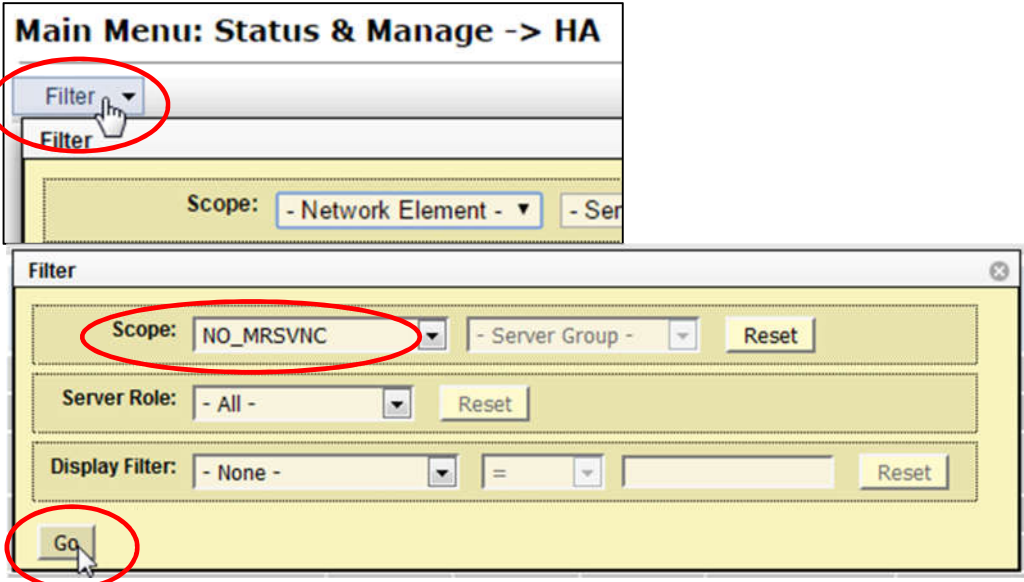
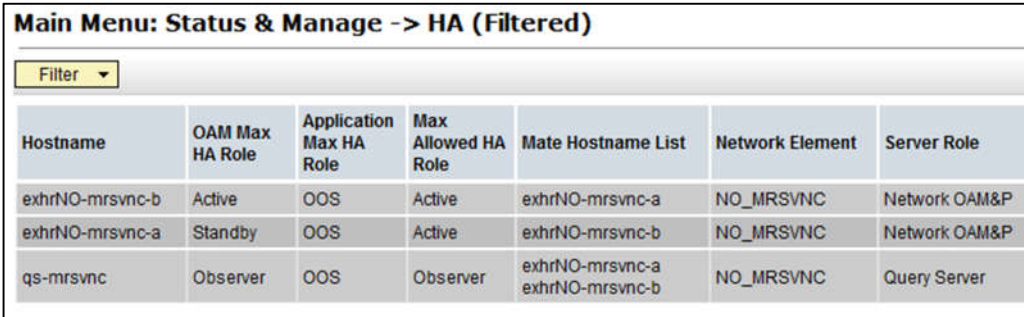
Execute HLR Router Health Check procedures as specified in **Appendix B**.

6.2 Upgrade Primary NOAM NE

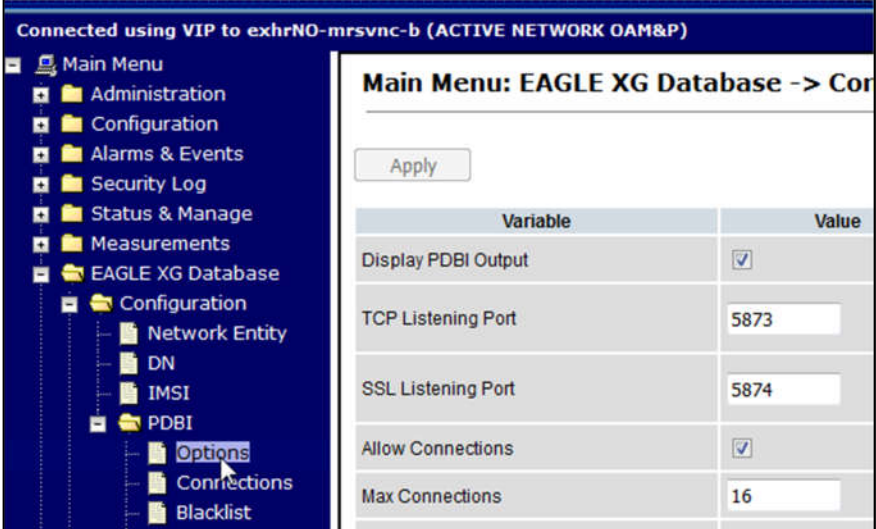
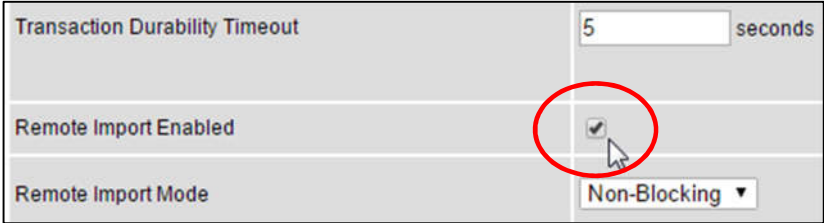

Procedure 4: Upgrade Primary NOAM NE

Step	Procedure	Result																																																	
<p>1.</p> <input type="checkbox"/>	<p>Using the VIP address, access the Primary HLRR NOAM GUI.</p>	<ul style="list-style-type: none"> Using the VIP address, access the Primary HLRR NOAM GUI as described in Appendix A. 																																																	
<p>2.</p> <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>1) Select...</p> <p>Main Menu → Status & Manage → Database</p> <p>2) The name of the Primary Active NOAM server may be easily verified from the GUI banner.</p> <p>3) Using the Primary Active NOAM server as a reference point, we can now identify the name of the Primary NOAM NE.</p>	  <table border="1"> <thead> <tr> <th>Hostname</th> <th>OAM Max HA Role</th> <th>Application Max HA Role</th> <th>Max Allowed HA Role</th> <th>Mate Hostname List</th> <th>Network Element</th> <th>Server Role</th> </tr> </thead> <tbody> <tr> <td>exhrNO-rlghnc-b</td> <td>Active</td> <td>OOS</td> <td>Active</td> <td>exhrNO-rlghnc-a</td> <td>NO_RLGHNC</td> <td>Network OAM&P</td> </tr> <tr> <td>exhrNO-rlghnc-a</td> <td>Standby</td> <td>OOS</td> <td>Active</td> <td>exhrNO-rlghnc-b</td> <td>NO_RLGHNC</td> <td>Network OAM&P</td> </tr> <tr> <td>qs-rlghnc</td> <td>Observer</td> <td>OOS</td> <td>Observer</td> <td>exhrNO-rlghnc-a exhrNO-rlghnc-b</td> <td>NO_RLGHNC</td> <td>Query Server</td> </tr> <tr> <td>exhrNO-mrsvnc-b</td> <td>Active</td> <td>OOS</td> <td>Active</td> <td>exhrNO-mrsvnc-a</td> <td>NO_MRSVNC</td> <td>Network OAM&P</td> </tr> <tr> <td>exhrNO-mrsvnc-a</td> <td>Standby</td> <td>OOS</td> <td>Active</td> <td>exhrNO-mrsvnc-b</td> <td>NO_MRSVNC</td> <td>Network OAM&P</td> </tr> <tr> <td>qs-mrsvnc</td> <td>Observer</td> <td>OOS</td> <td>Observer</td> <td>exhrNO-mrsvnc-a exhrNO-mrsvnc-b</td> <td>NO_MRSVNC</td> <td>Query Server</td> </tr> </tbody> </table>	Hostname	OAM Max HA Role	Application Max HA Role	Max Allowed HA Role	Mate Hostname List	Network Element	Server Role	exhrNO-rlghnc-b	Active	OOS	Active	exhrNO-rlghnc-a	NO_RLGHNC	Network OAM&P	exhrNO-rlghnc-a	Standby	OOS	Active	exhrNO-rlghnc-b	NO_RLGHNC	Network OAM&P	qs-rlghnc	Observer	OOS	Observer	exhrNO-rlghnc-a exhrNO-rlghnc-b	NO_RLGHNC	Query Server	exhrNO-mrsvnc-b	Active	OOS	Active	exhrNO-mrsvnc-a	NO_MRSVNC	Network OAM&P	exhrNO-mrsvnc-a	Standby	OOS	Active	exhrNO-mrsvnc-b	NO_MRSVNC	Network OAM&P	qs-mrsvnc	Observer	OOS	Observer	exhrNO-mrsvnc-a exhrNO-mrsvnc-b	NO_MRSVNC	Query Server
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<p>3.</p> <input type="checkbox"/>	<p>Record the name of the Primary HLRR NOAM NE in the space provided.</p>	<p>Using the information provided in Section 3.1.2 (Logins, Passwords and Site Information) record the name of the Primary HLRR NE site in the space provided below:</p> <p>Primary HLRR NOAM NE: _____</p>																																																	

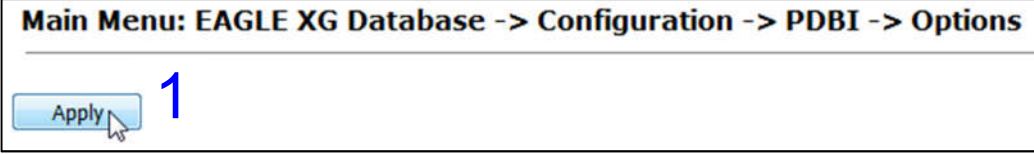
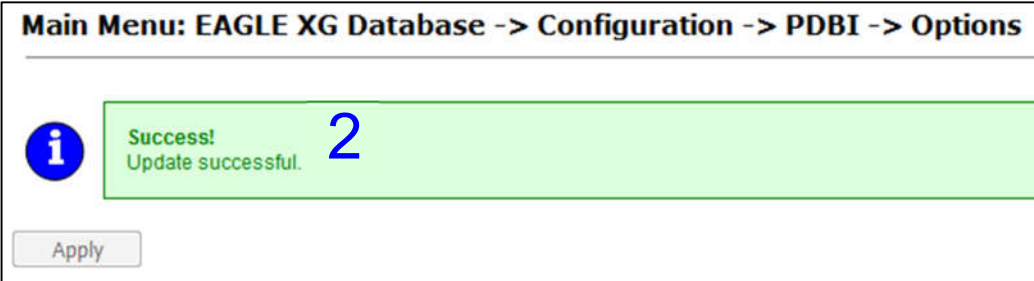
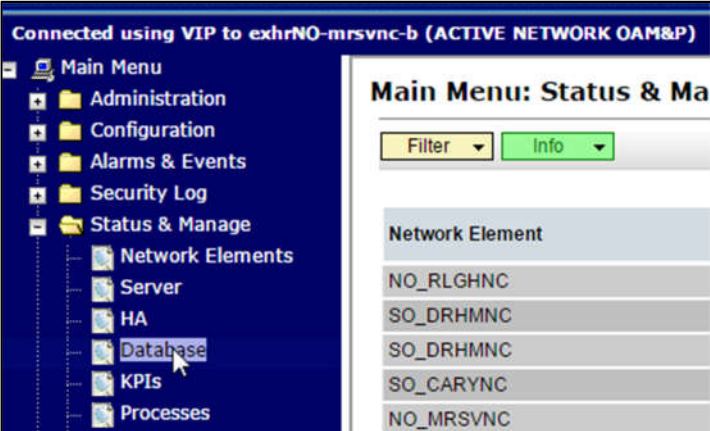
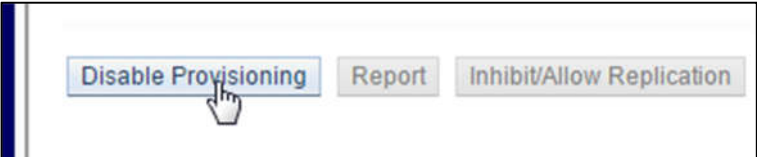
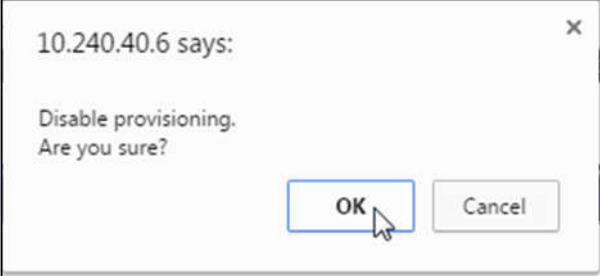
Procedure 4: Upgrade Primary NOAM NE

Step	Procedure	Result																												
<p>4.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) Click the “Filter” tab in the top left of the right panel.</p> <p>2) Under “Scope” select the Network Element name for the Primary HLRR NOAM NE.</p> <p>2) Click on the “Go” dialogue button.</p>																													
<p>5.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>The user should be presented with the list of servers associated with the Primary HLRR NOAM NE</p> <p>Identify each “Hostname”, its “Server Role” and “OAM HA Role”.</p>	 <table border="1"> <thead> <tr> <th>Hostname</th> <th>OAM Max HA Role</th> <th>Application Max HA Role</th> <th>Max Allowed HA Role</th> <th>Mate Hostname List</th> <th>Network Element</th> <th>Server Role</th> </tr> </thead> <tbody> <tr> <td>exhrNO-mrsvnc-b</td> <td>Active</td> <td>OOS</td> <td>Active</td> <td>exhrNO-mrsvnc-a</td> <td>NO_MRSVNC</td> <td>Network OAM&P</td> </tr> <tr> <td>exhrNO-mrsvnc-a</td> <td>Standby</td> <td>OOS</td> <td>Active</td> <td>exhrNO-mrsvnc-b</td> <td>NO_MRSVNC</td> <td>Network OAM&P</td> </tr> <tr> <td>qs-mrsvnc</td> <td>Observer</td> <td>OOS</td> <td>Observer</td> <td>exhrNO-mrsvnc-a exhrNO-mrsvnc-b</td> <td>NO_MRSVNC</td> <td>Query Server</td> </tr> </tbody> </table>	Hostname	OAM Max HA Role	Application Max HA Role	Max Allowed HA Role	Mate Hostname List	Network Element	Server Role	exhrNO-mrsvnc-b	Active	OOS	Active	exhrNO-mrsvnc-a	NO_MRSVNC	Network OAM&P	exhrNO-mrsvnc-a	Standby	OOS	Active	exhrNO-mrsvnc-b	NO_MRSVNC	Network OAM&P	qs-mrsvnc	Observer	OOS	Observer	exhrNO-mrsvnc-a exhrNO-mrsvnc-b	NO_MRSVNC	Query Server
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qs-mrsvnc	Observer	OOS	Observer	exhrNO-mrsvnc-a exhrNO-mrsvnc-b	NO_MRSVNC	Query Server																								
<p>6.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>Record the names of Primary HLRR NOAM NE servers in the space provided to the right.</p>	<p><input type="checkbox"/> Primary NOAM “Active”: _____</p> <p><input type="checkbox"/> Primary NOAM “Standby”: _____</p> <p><input type="checkbox"/> Primary Query Server (if equipped): _____</p>																												

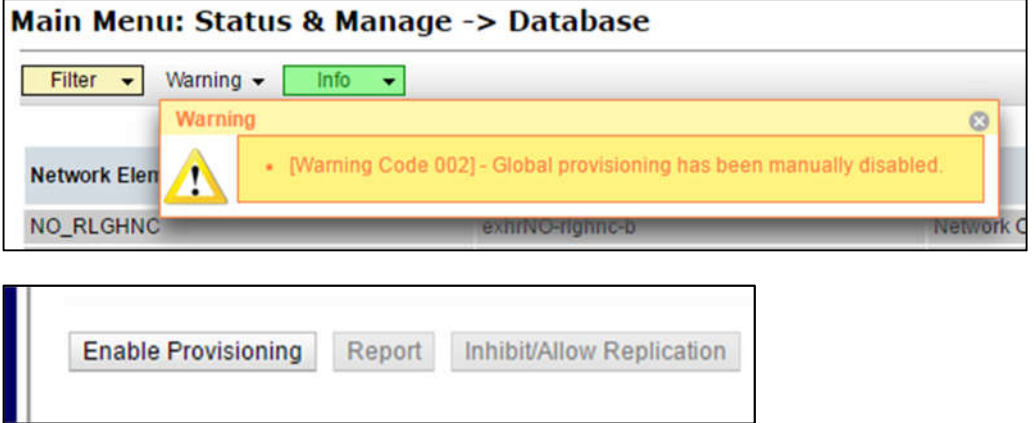
Procedure 4: Upgrade Primary NOAM NE


Step	Procedure	Result												
<p>7.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI): Select...</p> <p>Main Menu → EAGLE XG Database → Configuration → PDBI → Options</p> <p>...as shown on the right.</p>	 <p>Connected using VIP to exhrNO-mrsvnc-b (ACTIVE NETWORK OAM&P)</p> <p>Main Menu: EAGLE XG Database -> Cor</p> <table border="1"> <thead> <tr> <th>Variable</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Display PDBI Output</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>TCP Listening Port</td> <td>5873</td> </tr> <tr> <td>SSL Listening Port</td> <td>5874</td> </tr> <tr> <td>Allow Connections</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Max Connections</td> <td>16</td> </tr> </tbody> </table>	Variable	Value	Display PDBI Output	<input checked="" type="checkbox"/>	TCP Listening Port	5873	SSL Listening Port	5874	Allow Connections	<input checked="" type="checkbox"/>	Max Connections	16
Variable	Value													
Display PDBI Output	<input checked="" type="checkbox"/>													
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Allow Connections	<input checked="" type="checkbox"/>													
Max Connections	16													
<p>8.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP: Locate the “Remote Import Enabled” checkbox and record the pre-upgrade state.</p>	 <p>Transaction Durability Timeout: 5 seconds</p> <p>Remote Import Enabled: <input checked="" type="checkbox"/></p> <p>Remote Import Mode: Non-Blocking</p> <p>Remote Import Enabled (<i>pre-upgrade state</i>):</p> <p><input type="checkbox"/> CHECKED</p> <p><input type="checkbox"/> NOT CHECKED</p>												
<p>9.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP: If the “Remote Import Enabled” checkbox was checked in the previous step, REMOVE the check mark.</p>	 <p>Transaction Durability Timeout: 5 seconds</p> <p>Remote Import Enabled: <input type="checkbox"/></p> <p>Remote Import Mode: Non-Blocking</p>												

Procedure 4: Upgrade Primary NOAM NE

Step	Procedure	Result
<p>10.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>If the Check mark was REMOVED from the “Remote Import Enabled” checkbox in the previous step, then execute the following:</p> <p>1) Click the “Apply” dialogue box in the top left of the right panel.</p> <p>2) Verify that a “Success!” response is received in the banner.</p>	 
<p>11.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>Select...</p> <p>Main Menu → Status & Manage → Database</p> <p>...as shown on the right.</p>	
<p>12.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) Click the “Disable Provisioning” dialogue button at the bottom of the right panel.</p> <p>2) Click the “OK” button on the confirmation pop-up box.</p>	 

Procedure 4: Upgrade Primary NOAM NE

Step	Procedure	Result
<p>13.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) Verify that a Warning message indicating that “Global provisioning has been manually disabled” will appear in the banner.</p> <p>2) Verify that the text on the dialogue button at the bottom of the right panel changes to state “Enable Provisioning”.</p> <p>NOTE: Event ID 10008 (Provisioning Manually Disabled) will appear at this time and can be safely ignored.</p>	



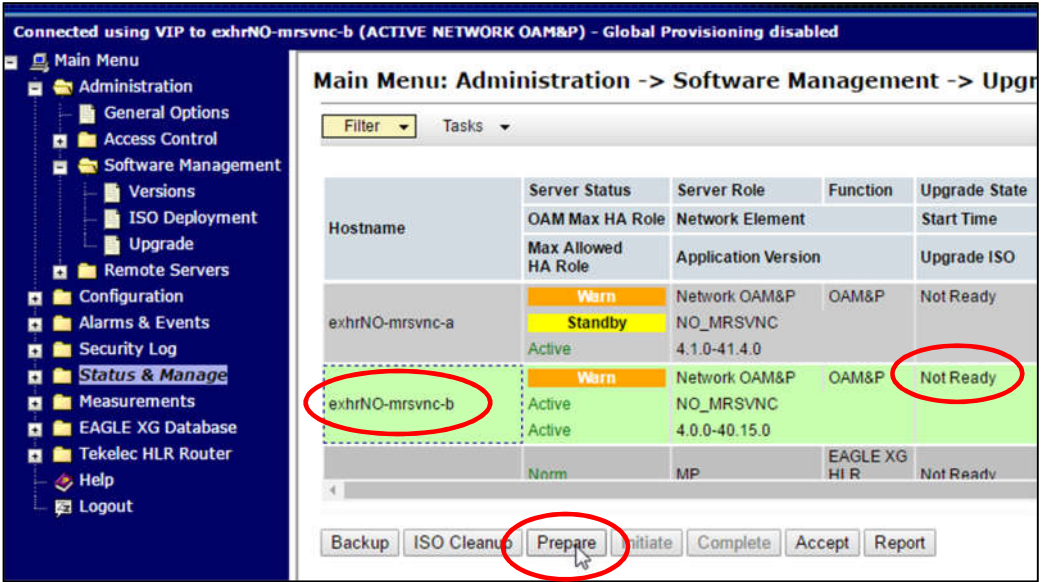

- If source release is **HLRR 4.1**, then **SKIP** to **Step 37** of this procedure.
- If source release is **HLRR 4.0**, then continue with **Step 14** of this procedure.

<p>14.</p> <p><input type="checkbox"/></p>	<p>HLRR 4.0 only</p> <p>Primary NOAM VIP:</p> <p>Upgrade the “Standby” Primary NOAM server.</p>	<ul style="list-style-type: none"> • Upgrade the Primary NOAM “Standby” server (as identified and recorded in Step 6 of this procedure) using Appendix C (Upgrade Server on HLRR 4.0). • In Step 6 of this procedure, check-off <input checked="" type="checkbox"/> the associated checkbox as the upgrade is completed for the upgraded Primary NOAM “Active” server.
<p>15.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (CLI):</p> <p>Using the VIP address, login to the “Active” Primary HLRR NOAM with the admusr account.</p>	<pre>CentOS release 6.7 Kernel 2.6.18-274.4.1.el5prere15.0.0_72.32.0 on an x86_64 exhrNO-mrsvnc-b login: admusr Password: <admusr_password></pre>
<p>16.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>The user will be presented with output similar to that shown to the right.</p>	<p>*** TRUNCATED OUTPUT ***</p> <pre>RELEASE=6.4 RUNID=00 VPATH=/var/TKLC/rundb:/usr/TKLC/appworks:/usr/TKLC/awpcommon:/usr/TKLC/c omagent-gui:/usr/TKLC/comagent-gui:/usr/TKLC/comagent:/usr/TKLC/sds PROMPATH=/opt/comcol/prod RUNID=00 [admusr@exhrNO-mrsvnc-b ~]\$</pre>


Procedure 4: Upgrade Primary NOAM NE

Step	Procedure	Result
<p>17.</p> <input type="checkbox"/>	<p>Primary NOAM VIP: Verify that the DbReplication status is “Active” to the Standby Primary NOAM which was upgraded in Step 14 of this procedure.</p>	<pre>[admusr@exhrNO-mrsvnc-b ~]\$ sudo irepstat -w -- Policy 0 ActStb [DbReplication] AA To exhrNO-rlghnc-b Active 0 0.00 1%R 3%S 0.04%cpu 22B/s AA To exhrNO-mrsvnc-a Active 0 0.00 1%R 0.05%cpu 21B/s AA To qs-mrsvnc Active 0 0.00 1%R 3%S 0.05%cpu 22B/s AB To exhrSO-carync-a Active 0 0.00 1%R 3%S 0.05%cpu 22B/s AB To exhrSO-drhmc-b Active 0 0.00 1%R 3%S 0.04%cpu 22B/s irepstat (7 lines) (h)elp [admusr@exhrNO-mrsvnc-b ~]\$</pre>
<p>18.</p> <input type="checkbox"/>	<p>Primary NOAM VIP: !! IMPORTANT !! DO NOT proceed to the next step until a DbReplication status of “Active” is returned for the Standby Primary NOAM server.</p>	<ul style="list-style-type: none"> If a DbReplication status of “Audit” was received for the Standby Primary NOAM server in the previous step, then REPEAT Step 17 of this procedure until a status of “Active” is returned.
<p>19.</p> <input type="checkbox"/>	<p>Primary NOAM VIP: Exit the CLI for the “Active” Primary NOAM server.</p>	<pre>[admusr@exhrNO-mrsvnc-b filemgmt]\$ exit Logout</pre>
<p>20.</p> <input type="checkbox"/>	<p>Using the VIP address, access the Primary NOAM GUI.</p>	<ul style="list-style-type: none"> Using the VIP address, access the Primary NOAM GUI as described in Appendix A.

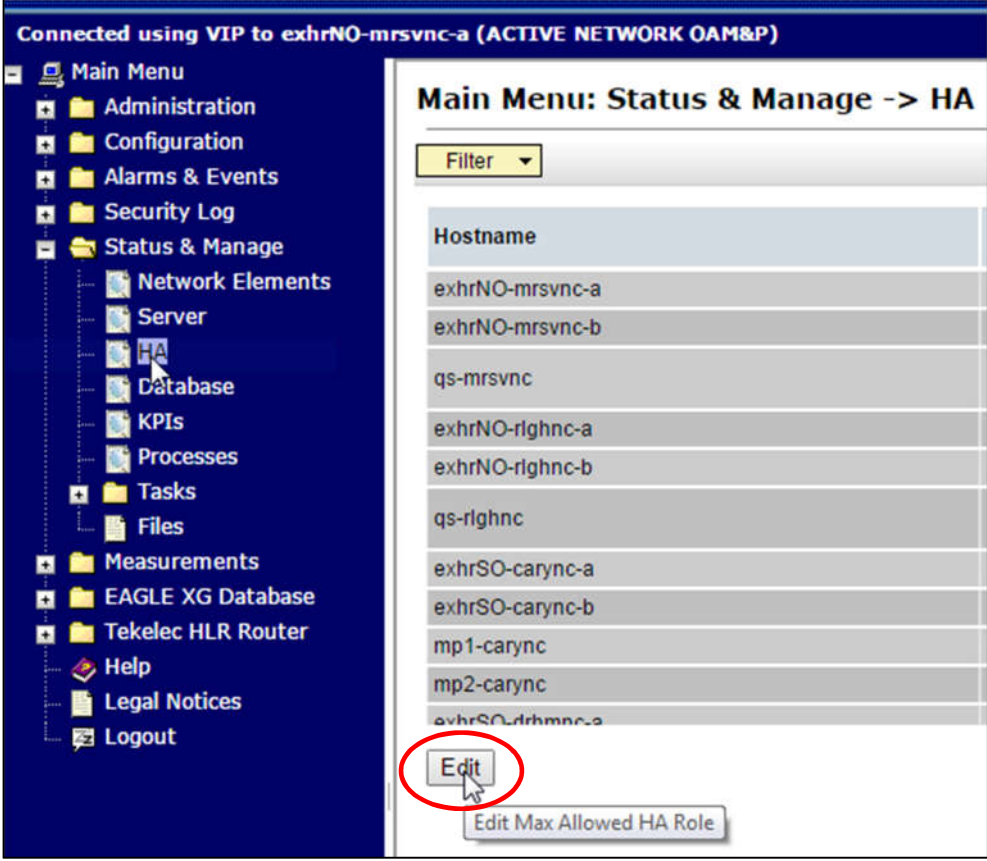
Procedure 4: Upgrade Primary NOAM NE

Step	Procedure	Result																																																		
<p>21.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) Select...</p> <p>Main Menu</p> <p>→ Administration → Software Management → Upgrade</p> <p>2) Using the vertical scroll bar in the right panel, scroll to the row containing the hostname of the “Active” Primary HLRR NOAM (as identified and recorded in Step 6 of this procedure).</p> <p>3) Verify that the Upgrade State shows “Not Ready”.</p> <p>4) Click the “Prepare” dialogue button located in the bottom left of the right panel.</p>	 <p>Connected using VIP to exhrNO-mrsvnc-b (ACTIVE NETWORK OAM&P) - Global Provisioning disabled</p> <p>Main Menu: Administration -> Software Management -> Upgrade</p> <table border="1"> <thead> <tr> <th>Hostname</th> <th>Server Status</th> <th>Server Role</th> <th>Function</th> <th>Upgrade State</th> </tr> </thead> <tbody> <tr> <td></td> <td>OAM Max HA Role</td> <td>Network Element</td> <td></td> <td>Start Time</td> </tr> <tr> <td></td> <td>Max Allowed HA Role</td> <td>Application Version</td> <td></td> <td>Upgrade ISO</td> </tr> <tr> <td>exhrNO-mrsvnc-a</td> <td>Warn</td> <td>Network OAM&P</td> <td>OAM&P</td> <td>Not Ready</td> </tr> <tr> <td></td> <td>Standby</td> <td>NO_MRSVNC</td> <td></td> <td></td> </tr> <tr> <td></td> <td>Active</td> <td>4.1.0-41.4.0</td> <td></td> <td></td> </tr> <tr> <td>exhrNO-mrsvnc-b</td> <td>Warn</td> <td>Network OAM&P</td> <td>OAM&P</td> <td>Not Ready</td> </tr> <tr> <td></td> <td>Active</td> <td>NO_MRSVNC</td> <td></td> <td></td> </tr> <tr> <td></td> <td>Active</td> <td>4.0.0-40.15.0</td> <td></td> <td></td> </tr> <tr> <td></td> <td>Norm</td> <td>MP</td> <td>EAGLE XG HI R</td> <td>Not Ready</td> </tr> </tbody> </table> <p>Buttons: Backup, ISO Cleanup, Prepare, Initiate, Complete, Accept, Report</p>	Hostname	Server Status	Server Role	Function	Upgrade State		OAM Max HA Role	Network Element		Start Time		Max Allowed HA Role	Application Version		Upgrade ISO	exhrNO-mrsvnc-a	Warn	Network OAM&P	OAM&P	Not Ready		Standby	NO_MRSVNC				Active	4.1.0-41.4.0			exhrNO-mrsvnc-b	Warn	Network OAM&P	OAM&P	Not Ready		Active	NO_MRSVNC				Active	4.0.0-40.15.0				Norm	MP	EAGLE XG HI R	Not Ready
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<p>22.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>The user should be presented with the Upgrade [Make Ready] screen.</p> <p>Click on “Ok” dialogue button.</p>	 <p>Main Menu: Administration -> Software Management -> Upgrade [Prepare]</p> <p>Info</p> <table border="1"> <thead> <tr> <th>Hostname</th> <th>Action</th> <th>HA Status</th> <th>Max HA Role</th> <th>Active Mates</th> <th>Standby Mates</th> <th>Spare Mates</th> </tr> </thead> <tbody> <tr> <td>exhrNO-mrsvnc-b</td> <td>Prepare</td> <td>Active</td> <td>None</td> <td>None</td> <td>exhrNO-mrsvnc-a</td> <td>None</td> </tr> </tbody> </table> <p>Buttons: Ok, Cancel</p>	Hostname	Action	HA Status	Max HA Role	Active Mates	Standby Mates	Spare Mates	exhrNO-mrsvnc-b	Prepare	Active	None	None	exhrNO-mrsvnc-a	None																																				
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exhrNO-mrsvnc-b	Prepare	Active	None	None	exhrNO-mrsvnc-a	None																																														
<p>23.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>As the “Active” Primary HLRR NOAM server is placed in the “Prepare” Upgrade state, an HA Switchover will occur.</p>	<ul style="list-style-type: none"> The user will be disconnected from the GUI session as the “Active” Primary NOAM Server goes through HA Switchover and becomes the “Standby” server. 																																																		

Procedure 4: Upgrade Primary NOAM NE

Step	Procedure	Result
<p>24.</p> <input type="checkbox"/>	<p>Primary NOAM VIP: If not automatically logged out of the GUI, use the [Logout] link in the top right of the browser to logout of the Primary HLRR NOAM GUI.</p>	
<p>25.</p> <input type="checkbox"/>	<p>Primary NOAM VIP (GUI):</p> <p>Clear the browser cache.</p> <p>!! IMPORTANT !! DO NOT proceed to the next step until the browser cache has been cleared.</p>	<p>JavaScript libraries, images and other objects are often modified in the upgrade. Browsers can sometimes cause GUI problems by holding on to the old objects in the built-in cache. To prevent these problems always clear the browser cache before logging into an OAM GUI which has just been upgraded:</p> <ol style="list-style-type: none"> 1) Simultaneously hold down the [Ctrl], [Shift] and [Delete] keys (<i>most Web browsers</i>). 2) Select the appropriate object types to delete from the cache via the pop-up dialog. (e.g. “Temporary Internet Files”, “Cache” or “Cached images and files”, etc.). Other browsers may label these objects differently. 3) Clear the cached data.
<p>26.</p> <input type="checkbox"/>	<p>Using the VIP address, access the Primary HLRR NOAM GUI.</p>	<ul style="list-style-type: none"> • Using the VIP address, access the Primary HLRR NOAM GUI as described in Appendix A.

Procedure 4: Upgrade Primary NOAM NE

Step	Procedure	Result
<p>27.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) Select...</p> <p>Main Menu</p> <p>→ Status & Manage</p> <p>→ HA</p> <p>2) Click on the "Edit" dialogue button.</p>	 <p>The screenshot shows a web interface titled "Connected using VIP to exhrNO-mrsvnc-a (ACTIVE NETWORK OAM&P)". On the left is a "Main Menu" with categories like Administration, Configuration, Alarms & Events, Security Log, Status & Manage, Network Elements, Server, Database, KPIs, Processes, Tasks, Files, Measurements, EAGLE XG Database, Tekelec HLR Router, Help, Legal Notices, and Logout. The "Status & Manage" category is expanded, showing sub-items: Network Elements, Server, Database, KPIs, Processes, Tasks, Files, Measurements, EAGLE XG Database, Tekelec HLR Router, Help, Legal Notices, and Logout. The "Server" sub-item is further expanded to show "HA". The "HA" sub-menu is open, displaying a list of hostnames: exhrNO-mrsvnc-a, exhrNO-mrsvnc-b, qs-mrsvnc, exhrNO-rlghnc-a, exhrNO-rlghnc-b, qs-rlghnc, exhrSO-carync-a, exhrSO-carync-b, mp1-carync, mp2-carync, and exhrSO-drbmnc-a. At the bottom of the HA list, there is an "Edit" button circled in red, with a tooltip that says "Edit Max Allowed HA Role".</p>

Procedure 4: Upgrade Primary NOAM NE

Step	Procedure	Result																		
<p>28.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) Select the “Standby” Primary HLRR NOAM server and change a Max Allowed HA Role value from “Standby” to “Active”.</p> <p>2) Press the “Ok” button at the bottom of the right panel.</p>	<p>Main Menu: Status & Manage -> HA [Edit]</p> <table border="1"> <thead> <tr> <th>Hostname</th> <th>Max Allowed HA Role</th> </tr> </thead> <tbody> <tr> <td>exhrNO-mrsvnc-a</td> <td>Active</td> </tr> <tr> <td>exhrNO-mrsvnc-b</td> <td>Standby</td> </tr> <tr> <td>qs-mrsvnc</td> <td>Observer</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Hostname</th> <th>Max Allowed HA Role</th> </tr> </thead> <tbody> <tr> <td>exhrNO-mrsvnc-a</td> <td>Active</td> </tr> <tr> <td>exhrNO-mrsvnc-b</td> <td>Active</td> </tr> <tr> <td>qs-mrsvnc</td> <td>Observer</td> </tr> <tr> <td>exhrNO-rlghnc-a</td> <td>Active</td> </tr> </tbody> </table> <p>The maximum desired HA Rol</p> <p>Ok Cancel</p>	Hostname	Max Allowed HA Role	exhrNO-mrsvnc-a	Active	exhrNO-mrsvnc-b	Standby	qs-mrsvnc	Observer	Hostname	Max Allowed HA Role	exhrNO-mrsvnc-a	Active	exhrNO-mrsvnc-b	Active	qs-mrsvnc	Observer	exhrNO-rlghnc-a	Active
Hostname	Max Allowed HA Role																			
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qs-mrsvnc	Observer																			
exhrNO-rlghnc-a	Active																			
<p>29.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>Verify that the Max Allowed HA Role value has been updated to “Active” for the “Standby” Primary NOAM server.</p>	<table border="1"> <thead> <tr> <th>Hostname</th> <th>OAM HA Role</th> <th>Application HA Role</th> <th>Max Allowed HA Role</th> </tr> </thead> <tbody> <tr> <td>exhrNO-mrsvnc-a</td> <td>Active</td> <td>OOS</td> <td>Active</td> </tr> <tr> <td>exhrNO-mrsvnc-b</td> <td>Standby</td> <td>Standby</td> <td>Active</td> </tr> <tr> <td>qs-mrsvnc</td> <td>Observer</td> <td>Observer</td> <td>Observer</td> </tr> </tbody> </table>	Hostname	OAM HA Role	Application HA Role	Max Allowed HA Role	exhrNO-mrsvnc-a	Active	OOS	Active	exhrNO-mrsvnc-b	Standby	Standby	Active	qs-mrsvnc	Observer	Observer	Observer		
Hostname	OAM HA Role	Application HA Role	Max Allowed HA Role																	
exhrNO-mrsvnc-a	Active	OOS	Active																	
exhrNO-mrsvnc-b	Standby	Standby	Active																	
qs-mrsvnc	Observer	Observer	Observer																	
<p>30.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>Select...</p> <p>Main Menu</p> <p>→ Status & Manage</p> <p>→ Server</p> <p>...as shown on the right.</p>	<p>Connected using VIP to exhrNO-mrsvnc-a (ACTIVE NETWORK OAM&P)</p> <ul style="list-style-type: none"> Main Menu <ul style="list-style-type: none"> Administration Configuration Alarms & Events Security Log Status & Manage <ul style="list-style-type: none"> Network Elements Server HA Database 																		

Procedure 4: Upgrade Primary NOAM NE

Step	Procedure	Result																																			
31. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>Using the vertical scroll bar in the right panel, scroll to the row containing the hostname of “Standby” (formerly Active) Primary NOAM server.</p> <p>NOTE: Although currently “Standby”, this is the same server that was identified and recorded as “Active” in Step 6 of this procedure.</p>	<table border="1"> <thead> <tr> <th>Server Hostname</th> <th>Network Element</th> <th>Appl State</th> <th>Alm</th> <th>DB</th> <th>Reporting Status</th> <th>Proc</th> </tr> </thead> <tbody> <tr> <td>exhrNO-mrsvnc-a</td> <td>NO_MRSVNC</td> <td>Enabled</td> <td>Warn</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> <tr style="background-color: #e0ffe0;"> <td>exhrNO-mrsvnc-b</td> <td>NO_MRSVNC</td> <td>Disabled</td> <td>Warn</td> <td>Norm</td> <td>Norm</td> <td>Man</td> </tr> <tr> <td>exhrNO-rlghnc-a</td> <td>NO_RLGHNC</td> <td>Enabled</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> <tr> <td>exhrNO-rlghnc-b</td> <td>NO_RLGHNC</td> <td>Enabled</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> </tbody> </table>	Server Hostname	Network Element	Appl State	Alm	DB	Reporting Status	Proc	exhrNO-mrsvnc-a	NO_MRSVNC	Enabled	Warn	Norm	Norm	Norm	exhrNO-mrsvnc-b	NO_MRSVNC	Disabled	Warn	Norm	Norm	Man	exhrNO-rlghnc-a	NO_RLGHNC	Enabled	Norm	Norm	Norm	Norm	exhrNO-rlghnc-b	NO_RLGHNC	Enabled	Norm	Norm	Norm	Norm
Server Hostname	Network Element	Appl State	Alm	DB	Reporting Status	Proc																															
exhrNO-mrsvnc-a	NO_MRSVNC	Enabled	Warn	Norm	Norm	Norm																															
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exhrNO-rlghnc-a	NO_RLGHNC	Enabled	Norm	Norm	Norm	Norm																															
exhrNO-rlghnc-b	NO_RLGHNC	Enabled	Norm	Norm	Norm	Norm																															
32. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>1) Click the “Restart” dialogue button at the bottom of the right panel.</p> <p>2) Click the “Ok” button on the pop-up confirmation box.</p>																																				
33. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>For the row containing the hostname of “Standby” (formerly Active) Primary NOAM server.</p> <p>1) Verify that the “Appl State” changes to “Enabled”.</p> <p>2) Verify that the “Proc” value changes to “Norm”.</p>	<table border="1"> <thead> <tr> <th>Server Hostname</th> <th>Network Element</th> <th>Appl State</th> <th>Alm</th> <th>DB</th> <th>Reporting Status</th> <th>Proc</th> </tr> </thead> <tbody> <tr> <td>exhrNO-mrsvnc-a</td> <td>NO_MRSVNC</td> <td>Enabled</td> <td>Warn</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> <tr style="background-color: #e0e0e0;"> <td>exhrNO-mrsvnc-b</td> <td>NO_MRSVNC</td> <td>Enabled</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> <tr> <td>exhrNO-rlghnc-a</td> <td>NO_RLGHNC</td> <td>Enabled</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> </tbody> </table>	Server Hostname	Network Element	Appl State	Alm	DB	Reporting Status	Proc	exhrNO-mrsvnc-a	NO_MRSVNC	Enabled	Warn	Norm	Norm	Norm	exhrNO-mrsvnc-b	NO_MRSVNC	Enabled	Norm	Norm	Norm	Norm	exhrNO-rlghnc-a	NO_RLGHNC	Enabled	Norm	Norm	Norm	Norm							
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exhrNO-mrsvnc-b	NO_MRSVNC	Enabled	Norm	Norm	Norm	Norm																															
exhrNO-rlghnc-a	NO_RLGHNC	Enabled	Norm	Norm	Norm	Norm																															



NOTE: Steps 34 and 35 of this procedure may be executed in parallel.

Procedure 4: Upgrade Primary NOAM NE


Step	Procedure	Result
34. <input type="checkbox"/>	Primary NOAM VIP: Initiate upgrade for the current "Standby" Primary NOAM server.	<ol style="list-style-type: none"> Upgrade the "Standby" (formerly Active) Primary NOAM server using Appendix D (Server Upgrade Administration on HLRR 4.1) <p>NOTE: Although currently "Standby", this is the same server that was identified and recorded as "Active" in Step 6 of this procedure.</p> <ol style="list-style-type: none"> In Step 6 of this procedure, check-off <input checked="" type="checkbox"/> the associated check box as the upgrade is completed for the upgraded Primary NOAM "Active" server.
35. <input type="checkbox"/>	Primary NOAM VIP: Initiate upgrade for the Primary Query Server .	<ol style="list-style-type: none"> Upgrade the Primary Query Server (as identified and recorded in Step 6 of this procedure) using Appendix D (Server Upgrade Administration on HLRR 4.1) In Step 6 of this procedure, check-off <input checked="" type="checkbox"/> the associated check box as the upgrade is completed for the upgraded Primary Query Server.
36. <input type="checkbox"/>	Primary NOAM VIP: !! IMPORTANT !! DO NOT proceed until both upgrades for the current "Standby" Primary NOAM server and the Primary Query Server have been successfully completed.	<ol style="list-style-type: none"> Verify that both upgrades specified in Steps 34 and 35 have been successfully completed. For upgrade from source release HLRR 4.0, SKIP to Step 51 of this procedure.

Upgrade from HLRR 4.1 source only:

37. <input type="checkbox"/>	Primary NOAM VIP: Initiate upgrade for the "Standby" Primary NOAM server.	<ol style="list-style-type: none"> Upgrade the Primary NOAM "Standby" server (as identified and recorded in Step 6 of this procedure) using Appendix D (Server Upgrade Administration on HLRR 4.1). In Step 6 of this procedure, check-off <input checked="" type="checkbox"/> the associated checkbox as the upgrade is completed for the upgraded Primary NOAM "Standby" server.
38. <input type="checkbox"/>	Primary NOAM VIP (CLI): Using the VIP address, login to the "Active" Primary NOAM server with the admusr account.	<pre>CentOS release 6.7 Kernel 2.6.32-573.18.1.el6prere17.0.3.0.0_86.43.0.x86 on an x86_64 exhrNO-mrsvnc-b login: admusr Password: <admusr_password></pre>
39. <input type="checkbox"/>	Primary NOAM VIP: The user will be presented with output similar to that shown to the right.	<p>*** TRUNCATED OUTPUT ***</p> <pre>RELEASE=6.4 RUNID=00 VPATH=/var/TKLC/rundb:/usr/TKLC/appworks:/usr/TKLC/awpcommon:/usr/TKLC/c omagent-gui:/usr/TKLC/comagent-gui:/usr/TKLC/comagent:/usr/TKLC/sds PROMPATH=/opt/comcol/prod RUNID=00 [admusr@exhrNO-mrsvnc-b ~]\$</pre>

Procedure 4: Upgrade Primary NOAM NE

Step	Procedure	Result
40. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>Verify that the DbReplication status is “Active” to the Standby Primary NOAM which was upgraded in Step 37 of this procedure.</p>	<pre>[admusr@exhrNO-mrsvnc-b ~]\$ sudo irepstat -w -- Policy 0 ActStb [DbReplication] AA To exhrNO-rlghnc-b Active 0 0.00 1%R 3%S 0.04%cpu 22B/s AA To exhrNO-mrsvnc-a Active 0 0.00 1%R 0.05%cpu 21B/s AA To qs-mrsvnc Active 0 0.00 1%R 3%S 0.05%cpu 22B/s AB To exhrSO-carync-a Active 0 0.00 1%R 3%S 0.05%cpu 22B/s AB To exhrSO-drhmc-b Active 0 0.00 1%R 3%S 0.04%cpu 22B/s irepstat (7 lines) (h)elp [admusr@exhrNO-mrsvnc-b ~]\$</pre>
41. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>!! IMPORTANT !!</p> <p>DO NOT proceed to the next step until a DbReplication status of “Active” is returned for the Standby Primary NOAM server.</p>	<p>If a DbReplication status of “Audit” was received for the Standby Primary NOAM server in the previous step, then REPEAT Step 40 of this procedure until a status of “Active” is returned.</p>
42. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>Exit the CLI for the “Active” Primary NOAM server.</p>	<pre>[admusr@exhrNO-mrsvnc-b filemgmt]\$ exit logout</pre>



NOTE: Steps 43 and 44 of this procedure may be executed in parallel.

43. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>Initiate upgrade for the “Active” Primary NOAM server.</p> <p>!! IMPORTANT !!</p> <p><i>This will cause an HA activity Switchover to the mate Primary HLRR NOAM server. This will occur within a few minutes of initiating the upgrade.</i></p>	<ol style="list-style-type: none"> Upgrade the Primary NOAM “Active” server (as identified and recorded in Step 6 of this procedure) using Appendix D (Server Upgrade Administration on HLRR 4.1) In Step 6 of this procedure, check-off <input checked="" type="checkbox"/> the associated check box as the upgrade is completed for the upgraded Primary NOAM “Active” server.
44. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>Initiate upgrade for the Primary Query Server</p>	<ol style="list-style-type: none"> Upgrade the Primary Query Server (as identified and recorded in Step 6 of this procedure) using Appendix D (Server Upgrade Administration on HLRR 4.1) In Step 6 of this procedure, check-off <input checked="" type="checkbox"/> the associated checkbox as the upgrade is completed for the upgraded Primary Query Server.

Procedure 4: Upgrade Primary NOAM NE

Step	Procedure	Result
<p>45.</p> <input type="checkbox"/>	<p>Primary NOAM VIP (CLI):</p> <p>!! IMPORTANT !!</p> <p>DO NOT execute this step until the upgrades specified in Steps 43 and 44 of this procedure have both completed successfully.</p> <p>Using the VIP address, login to the “Active” Primary NOAM server with the admusr account.</p>	<pre>CentOS release 6.7 Kernel 2.6.32-573.18.1.el6prere17.0.3.0.0_86.43.0.x86 on an x86_64 exhrNO-mrsvnc-b login: admusr Password: <admusr_password></pre>
<p>46.</p> <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>The user will be presented with output similar to that shown to the right.</p>	<p>*** TRUNCATED OUTPUT ***</p> <pre>RELEASE=6.4 RUNID=00 VPATH=/var/TKLC/rundb:/usr/TKLC/appworks:/usr/TKLC/awpcommon:/usr/TKLC/comagent-gui:/usr/TKLC/comagent-gui:/usr/TKLC/comagent:/usr/TKLC/sds PROMPATH=/opt/comcol/prod RUNID=00 [admusr@exhrNO-mrsvnc-b ~]\$</pre>
<p>47.</p> <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>Edit the ServiceCategory table using the “ivi” utility.</p>	<pre>[admusr@exhrNO-mrsvnc-a ~]\$ ivi ServiceCategory</pre>
<p>48.</p> <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>Using the VI Editor command set, add a line for ComAgent to the bottom of the list using the values and syntax exactly as shown to the right.</p> <p>NOTE: Numerical values for other line entries in the list may vary from what is shown to the right.</p>	<pre>#!/bin/sh iload -ha -xU -frecNum -fname -fintraSitePath -finterSitePath ServiceCategory \ <<'!!!!' 0 Unspecified NodeInfoPath NodeInfoPath 1 OAM INTERNALIMI INTERNALXMI 2 Replication INTERNALIMI INTERNALXMI 3 Signaling NodeInfoPath NodeInfoPath 5 HA_Secondary INTERNALIMI INTERNALXMI 7 HA_MP_Secondary INTERNALIMI INTERNALXMI 8 Replication_MP INTERNALIMI INTERNALXMI 20 ComAgent NodeInfoPath NodeInfoPath !!!! ~ ~ ~</pre>

Procedure 4: Upgrade Primary NOAM NE

Step	Procedure	Result
<p>49.</p> <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>1) Using the VI Editor command set, save the file (<i>hit the [ESC] key to exit Edit mode, then type “:wq!” and hit the [ENTER] key to write the change.</i>)</p> <p>2) Answer “y” when prompted to apply the changes.</p>	<pre>~ ~ :wq! "/tmp/IvI18490" 12L, 411C written APPLY THE CHANGES [yn]? y LOADED OK [admusr@exhrNO-mrsvnc-a ~]\$</pre>
<p>50.</p> <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>Verify that the ServiceCategory table now displays the ComAgent line exactly as shown to the right.</p>	<pre>[admusr@exhrNO-mrsvnc-a ~]\$ iqt ServiceCategory grep ComAgent 20 ComAgent NodeInfoPath NodeInfoPath [admusr@exhrNO-mrsvnc-a ~]\$</pre>
<p>51.</p> <input type="checkbox"/>	<p>Proceed to Procedure 5.</p>	<ul style="list-style-type: none"> Execute Procedure 5 at this time. <p>NOTE: <i>In order to minimize possible impacts due to database schema changes, Primary and DR NOAM NE sites must be upgraded within the same maintenance window.</i></p>
<p>THIS PROCEDURE HAS BEEN COMPLETED.</p>		

6.3 Upgrade DR NOAM NE

Procedure 5: Upgrade DR NOAM NE

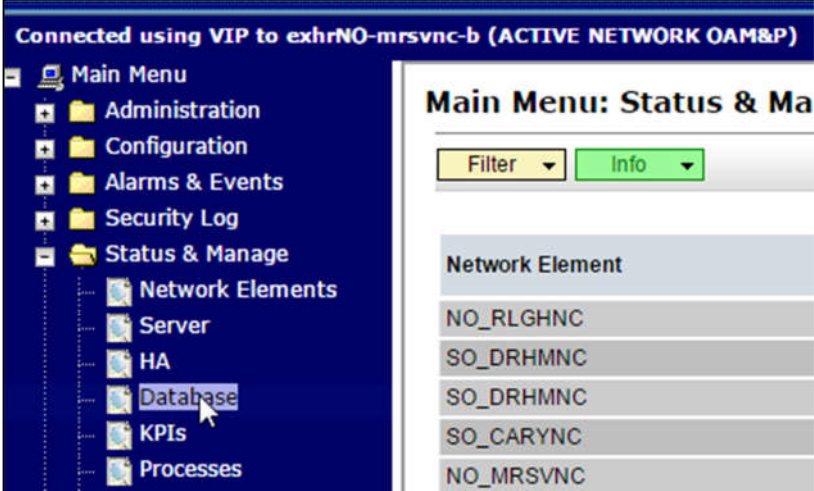
Step	Procedure	Result																									
1. <input type="checkbox"/>	Using the VIP address, access the Primary HLRR NOAM GUI .	<ul style="list-style-type: none"> Using the VIP address, access the Primary HLRR NOAM GUI as described in Appendix A. 																									
2. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>1) Select...</p> <p>Main Menu</p> <p>→ Administration → Software Management → Upgrade</p> <p>2) Click on the tab associated with the DR NOAM Server Group.</p> <p>3) From the “OAM Max HA Role” field, identify the HA state of each server in the Server Group.</p>	<table border="1"> <thead> <tr> <th>Hostname</th> <th>Upgrade State</th> <th>OAM Max HA Role</th> <th>Server Role</th> <th>Function</th> </tr> <tr> <th></th> <th>Server Status</th> <th>Appl Max HA Role</th> <th>Network Element</th> <th></th> </tr> </thead> <tbody> <tr> <td>exhrNO-righnc-b</td> <td>Ready Norm</td> <td>Active N/A</td> <td>Network OAM&P NO_RLGHNC</td> <td>DR OAM&P</td> </tr> <tr> <td>exhrNO-righnc-a</td> <td>Ready Norm</td> <td>Standby N/A</td> <td>Network OAM&P NO_RLGHNC</td> <td>DR OAM&P</td> </tr> <tr> <td>qs-righnc</td> <td>Ready Norm</td> <td>Observer N/A</td> <td>Query Server NO_RLGHNC</td> <td>QS</td> </tr> </tbody> </table>	Hostname	Upgrade State	OAM Max HA Role	Server Role	Function		Server Status	Appl Max HA Role	Network Element		exhrNO-righnc-b	Ready Norm	Active N/A	Network OAM&P NO_RLGHNC	DR OAM&P	exhrNO-righnc-a	Ready Norm	Standby N/A	Network OAM&P NO_RLGHNC	DR OAM&P	qs-righnc	Ready Norm	Observer N/A	Query Server NO_RLGHNC	QS
Hostname	Upgrade State	OAM Max HA Role	Server Role	Function																							
	Server Status	Appl Max HA Role	Network Element																								
exhrNO-righnc-b	Ready Norm	Active N/A	Network OAM&P NO_RLGHNC	DR OAM&P																							
exhrNO-righnc-a	Ready Norm	Standby N/A	Network OAM&P NO_RLGHNC	DR OAM&P																							
qs-righnc	Ready Norm	Observer N/A	Query Server NO_RLGHNC	QS																							
3. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>Record the names of DR HLRR NE site servers appropriately in the space provided to the right.</p>	<ul style="list-style-type: none"> Record the names of DR NOAM NE site servers <p><input type="checkbox"/> DR NOAM Active Server: _____</p> <p><input type="checkbox"/> DR NOAM Standby Server: _____</p> <p><input type="checkbox"/> DR Query Server (Observer): _____</p>																									

NOTES:


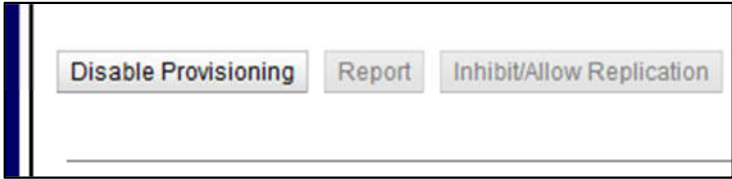
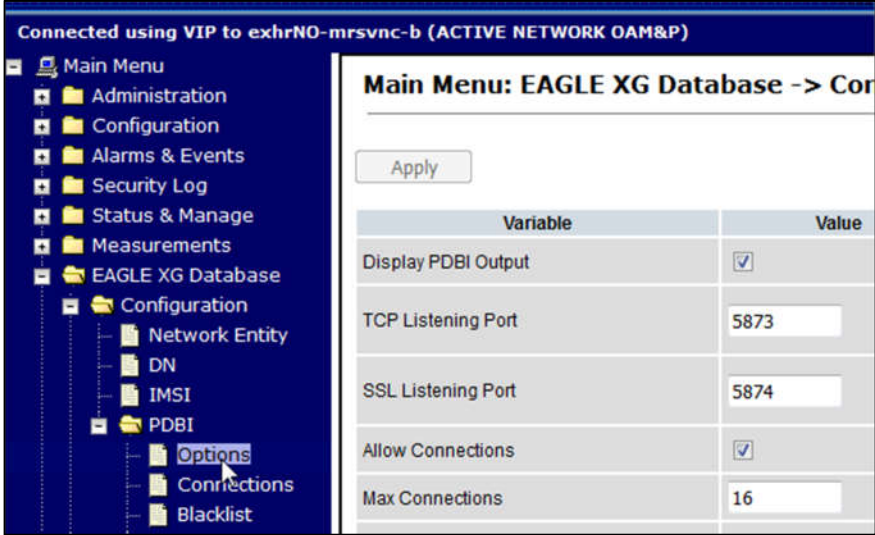
- Steps 4 - 6 of this procedure may be automated using the Server Group “Auto Upgrade” option (recommended).**
- or -
- Steps 4 and 5 of this procedure may be executed in parallel using the “Upgrade Server” option, and then after the completion of both upgrades, Step 6 may also be executed using the “Upgrade Server” option.**

4. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>Upgrade “Standby” DR NOAM server.</p>	<ol style="list-style-type: none"> Upgrade “Standby” DR NOAM server (as identified and recorded in Step 3 of this procedure) using Appendix D (Server Upgrade Administration on HLRR 4.1). In Step 3 of this procedure, check-off <input checked="" type="checkbox"/> the associated checkbox as the upgrade is completed for the upgraded “Standby” DR NOAM server.
5. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>Upgrade DR Query Server</p>	<ol style="list-style-type: none"> Upgrade DR Query Server (as identified and recorded in Step 3 of this procedure) using Appendix D (Server Upgrade Administration on HLRR 4.1). In Step 3 of this procedure, check-off <input checked="" type="checkbox"/> the associated checkbox as the upgrade is completed for the upgraded DR Query Server.


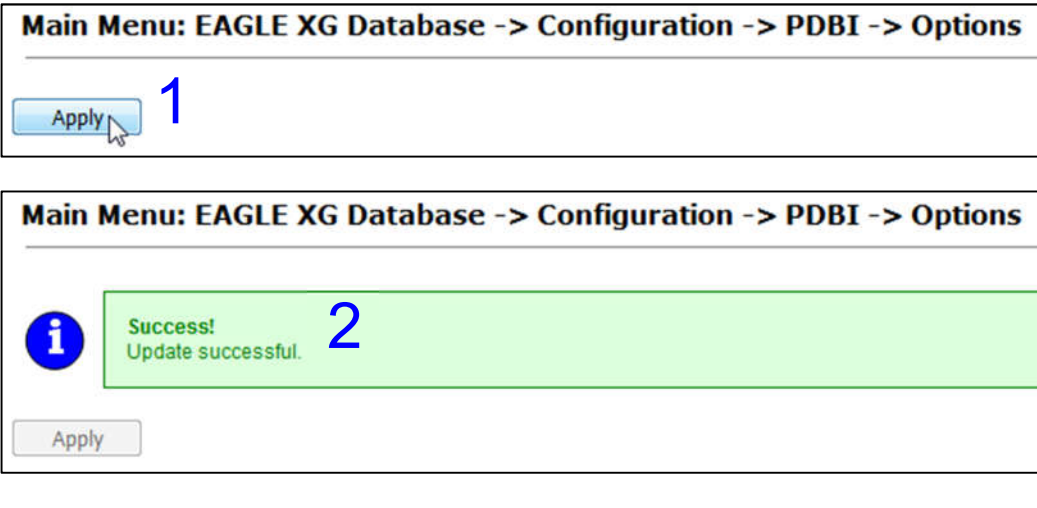
Procedure 5: Upgrade DR NOAM NE

Step	Procedure	Result						
<p>6.</p> <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>!! IMPORTANT !!</p> <p><i>If upgrading the DR NOAM Server Group using the "Upgrade Server" option, DO NOT execute this step until the upgrade of the "Standby" DR NOAM and the DR Query Server have both completed successfully.</i></p> <p>Upgrade the "Active" DR HLRR NOAM server.</p> <p><i>NOTE: This will cause an HA activity failover to the mate DR HLRR NOAM server.</i></p>	<ul style="list-style-type: none"> Upgrade the "Active" DR NOAM server (as identified and recorded in Step 3 of this procedure) using Appendix D (Server Upgrade Administration on HLRR 4.1). In Step 3 of this procedure, check-off <input checked="" type="checkbox"/> the associated checkbox as the upgrade is completed for the upgraded "Active" DR NOAM server. 						
<p>7.</p> <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>Select...</p> <p>Main Menu</p> <p>→ Status & Manage</p> <p>→ Database</p> <p>...as shown on the right.</p>	 <p>The screenshot shows a web-based interface titled "Connected using VIP to exhrNO-mrsvnc-b (ACTIVE NETWORK OAM&P)". On the left is a "Main Menu" tree with categories: Administration, Configuration, Alarms & Events, Security Log, Status & Manage, Network Elements, Server, HA, Database (highlighted with a mouse cursor), KPIs, and Processes. On the right is a "Main Menu: Status & Ma" panel with a "Filter" dropdown and an "Info" button. Below these are several rows of "Network Element" data:</p> <table border="1"> <thead> <tr> <th>Network Element</th> </tr> </thead> <tbody> <tr> <td>NO_RLGHNC</td> </tr> <tr> <td>SO_DRHMNC</td> </tr> <tr> <td>SO_DRHMNC</td> </tr> <tr> <td>SO_CARYNC</td> </tr> <tr> <td>NO_MRSVNC</td> </tr> </tbody> </table>	Network Element	NO_RLGHNC	SO_DRHMNC	SO_DRHMNC	SO_CARYNC	NO_MRSVNC
Network Element								
NO_RLGHNC								
SO_DRHMNC								
SO_DRHMNC								
SO_CARYNC								
NO_MRSVNC								

Procedure 5: Upgrade DR NOAM NE

Step	Procedure	Result
<p>8.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) Click the “Enable Provisioning” dialogue button at the bottom of the right panel.</p> <p>2) Click the “OK” button on the confirmation pop-up box.</p>	
<p>9.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>Verify that the text on the dialogue button at the bottom of the right panel changes to state “Disable Provisioning”.</p>	
<p>10.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>Re-Enable Provisioning Remote Import (if applicable).</p>	<ul style="list-style-type: none"> • If the value for the “Remote Import Enabled” checkbox recorded in Procedure 4, Step 8 was CHECKED, then continue with Step 11 of this procedure. • If the value for the “Remote Import Enabled” checkbox recorded in Procedure 4, Step 8 was NOT CHECKED, then Procedure 5 (Upgrade DR NOAM NE) has been COMPLETED. SKIP the remaining steps of this procedure.
<p>11.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>Select...</p> <p>Main Menu</p> <p>→ EAGLE XG Database</p> <p>→ Configuration</p> <p>→ PDBI</p> <p>→ Options</p> <p>...as shown on the right.</p>	

Procedure 5: Upgrade DR NOAM NE

Step	Procedure	Result
<p>12.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP: Locate the “Remote Import Enabled” checkbox and make sure that it is checked (ADD the check mark if necessary).</p>	 <p>Transaction Durability Timeout: 5 seconds</p> <p>Remote Import Enabled: <input checked="" type="checkbox"/></p> <p>Remote Import Mode: Non-Blocking</p>
<p>13.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP: If the Check mark was ADDED to the “Remote Import Enabled” checkbox in the previous step, then execute the following:</p> <p>1) Click the “Apply” dialogue box in the top left of the right panel.</p> <p>2) Verify that a “Success!” response is received in the banner.</p>	 <p>Main Menu: EAGLE XG Database -> Configuration -> PDBI -> Options</p> <p>Apply 1</p> <p>Main Menu: EAGLE XG Database -> Configuration -> PDBI -> Options</p> <p>Success! Update successful. 2</p> <p>Apply</p>
<p>THIS PROCEDURE HAS BEEN COMPLETED</p>		

6.4 Perform Health Check (Primary/DR NOAM Post Upgrade)

This procedure is used to determine the health and status of the entire HLR Router network and servers after Primary and DR NOAM upgrade has been completed.

- Execute HLR Router Health Check procedures as specified in **Appendix B**.

7. SOAM UPGRADE EXECUTION

Call **My Oracle Support (MOS)** and inform them of your plans to upgrade this system prior to executing this upgrade.

Refer to **Appendix J: Accessing My Oracle Support (MOS)** for information on contacting **MOS**.

Before upgrade, users must perform the system Health Check **Appendix B**. This check ensures that the system to be upgraded is in an upgrade-ready state. Performing the system health check determines which alarms are present in the system and if upgrade can proceed with alarms.

**** **WARNING** ****

If there are servers in the system, which are not in Normal state, these servers should be brought to the Normal or the Application Disabled state before the upgrade process is started. The sequence of upgrade is such that servers providing support services to other servers will be upgraded first.

**** **WARNING** ****

Please read the following notes on this procedure:

If a procedural STEP fails to execute successfully or fails to receive the desired output, **STOP** and contact **MOS** for assistance before attempting to continue.

Procedure completion times shown here are estimates. Times may vary due to differences in database size, user experience, and user preparation.

here possible, command response outputs are shown as accurately as possible. EXCEPTIONS are as follows:

- Session banner information such as time and date.
- System-specific configuration information such as hardware locations, IP addresses and hostnames.
- ANY information marked with “XXXX” or “YYYY.” Where appropriate, instructions are provided to determine what output should be expected in place of “XXXX or YYYY”
- Aesthetic differences unrelated to functionality such as browser attributes: window size, colors, toolbars and button layouts.

After completing each step and at each point where data is recorded from the screen, the technician performing the upgrade must mark the provided Check Box.

For procedures which are executed multiple times, a mark can be made below the Check Box (in the same column) for each additional iteration the step is executed.

Retention of Captured data is required as a future support reference if this procedure is executed by someone other than Oracle's Tekelec Customer Care Center.

NOTE: For large systems containing multiple Signaling Network Elements, it may not be feasible to apply the software upgrade to every Network Element within a single maintenance window.


7.1 Perform Health Check (SOAM Pre Upgrade)

This procedure is part of Software Upgrade Preparation and is used to determine the health and status of the entire HLR Router network and servers. This may be executed multiple times but must also be executed at least once within the time frame of 24-36 hours prior to the start of a maintenance window.

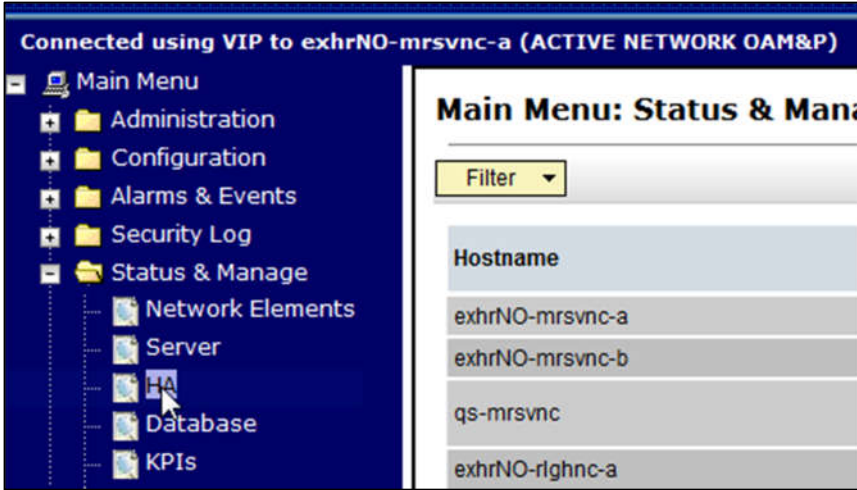
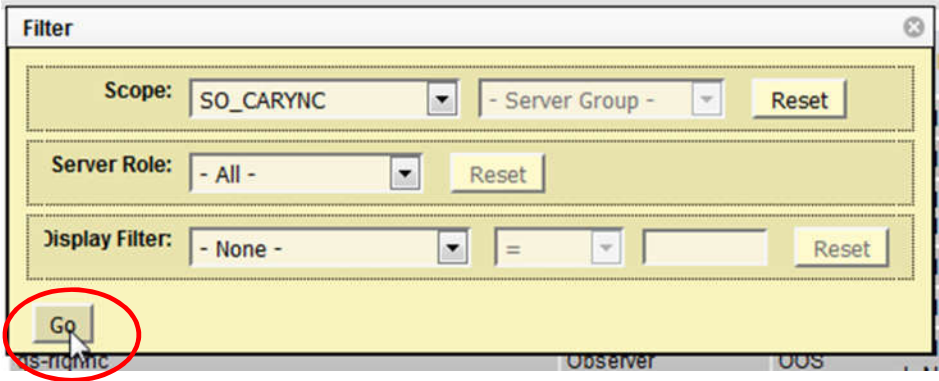
Execute HLR Router Health Check procedures as specified in **Appendix B**.

7.2 Upgrade SOAM NE

The following procedure details how to upgrade HLR Router SOAM sites.


	<p>NOTE: When upgrading an HLR Router topology, it is permissible to upgrade multiple SOAM sites in parallel.</p> <p>However, every attempt should be made to AVOID upgrading Mated SOAM sites in the same maintenance window.</p>
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Procedure 6: Upgrade SOAM NE

Step	Procedure	Result
1. <input type="checkbox"/>	Using the VIP address, access the Primary HLRR NOAM GUI.	<ul style="list-style-type: none"> Using the VIP address, access the Primary HLRR NOAM GUI as described in Appendix A.
2. <input type="checkbox"/>	Record the name of the SOAM NE site in the space provided to the right.	<p>Using the information provided in Section 3.1.2 (Logins, Passwords and Site Information) record the name of the SOAM NE site in the space provided below:</p> <p>SOAM NE site: _____</p>
3. <input type="checkbox"/>	<p>Primary NOAM VIP (GUI):</p> <p>Select...</p> <p>Main Menu → Status & Manage → HA</p> <p>...as shown on the right.</p>	
4. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>1) From the “Scope” filter pull-down, select the Network Element name for the SOAM NE site</p> <p>2) Click on the “Go” dialogue button</p>	

Procedure 6: Upgrade SOAM NE

Step	Procedure	Result																																			
5. <input type="checkbox"/>	<p>Primary NOAM VIP: The user should be presented with the list of servers associated with the SOAM NE site</p> <p>Identify "Hostname", its "Server Role" and "OAM HA Role"</p>	<table border="1"> <thead> <tr> <th>Hostname</th> <th>OAM HA Role</th> <th>Application HA Role</th> <th>Max Allowed HA Role</th> <th>Mate Hostname List</th> <th>Network Element</th> <th>Server Role</th> </tr> </thead> <tbody> <tr> <td>exhrSO-carync-a</td> <td>Active</td> <td>OOS</td> <td>Active</td> <td>exhrSO-carync-b</td> <td>SO_CARYNC</td> <td>System OAM</td> </tr> <tr> <td>exhrSO-carync-b</td> <td>Standby</td> <td>Standby</td> <td>Active</td> <td>exhrSO-carync-a</td> <td>SO_CARYNC</td> <td>System OAM</td> </tr> <tr> <td>mp1-carync</td> <td>Active</td> <td>Active</td> <td>Active</td> <td></td> <td>SO_CARYNC</td> <td>MP</td> </tr> <tr> <td>mp2-carync</td> <td>Active</td> <td>OOS</td> <td>Active</td> <td></td> <td>SO_CARYNC</td> <td>MP</td> </tr> </tbody> </table>	Hostname	OAM HA Role	Application HA Role	Max Allowed HA Role	Mate Hostname List	Network Element	Server Role	exhrSO-carync-a	Active	OOS	Active	exhrSO-carync-b	SO_CARYNC	System OAM	exhrSO-carync-b	Standby	Standby	Active	exhrSO-carync-a	SO_CARYNC	System OAM	mp1-carync	Active	Active	Active		SO_CARYNC	MP	mp2-carync	Active	OOS	Active		SO_CARYNC	MP
Hostname	OAM HA Role	Application HA Role	Max Allowed HA Role	Mate Hostname List	Network Element	Server Role																															
exhrSO-carync-a	Active	OOS	Active	exhrSO-carync-b	SO_CARYNC	System OAM																															
exhrSO-carync-b	Standby	Standby	Active	exhrSO-carync-a	SO_CARYNC	System OAM																															
mp1-carync	Active	Active	Active		SO_CARYNC	MP																															
mp2-carync	Active	OOS	Active		SO_CARYNC	MP																															
6. <input type="checkbox"/>	<p>Primary NOAM VIP: Record the names of the SOAM NE site servers in the space provided.</p>	<p><input type="checkbox"/> Active SOAM Server: _____</p> <p><input type="checkbox"/> Standby SOAM Server: _____</p> <p><input type="checkbox"/> MP-1 Server: _____ <input type="checkbox"/> MP-5 Server: _____</p> <p><input type="checkbox"/> MP-2 Server: _____ <input type="checkbox"/> MP-6 Server: _____</p> <p><input type="checkbox"/> MP-3 Server: _____ <input type="checkbox"/> MP-7 Server: _____</p> <p><input type="checkbox"/> MP-4 Server: _____ <input type="checkbox"/> MP-8 Server: _____</p>																																			



NOTES:

- **Steps 7 - 8 of this procedure may be automated using the Server Group "Auto Upgrade" option (recommended).**
- or -
- **Step 7 of this procedure may be executed using the "Upgrade Server" option, and then after the "Standby" SOAM server upgrade completes, Step 7 may also be executed using the "Upgrade Server" option.**

7. <input type="checkbox"/>	<p>Primary NOAM VIP: Upgrade the "Standby" SOAM server.</p> <p>NOTE: If using the "Auto Upgrade" option, SOAM servers shall be upgraded serially (Standby then Active).</p>	<ul style="list-style-type: none"> • Upgrade the "Standby" SOAM server (as identified and recorded in Step 6 of this procedure) using Appendix D (<i>Server Upgrade Administration on HLRR 4.1</i>). • In Step 6 of this procedure, check-off <input checked="" type="checkbox"/> the associated checkbox as the upgrade is completed for the upgraded "Standby" SOAM server.
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Procedure 6: Upgrade SOAM NE

Step	Procedure	Result
8. <input type="checkbox"/>	<p>Primary NOAM VIP: !! IMPORTANT !! <i>If upgrading the SOAM Server Group using the "Upgrade Server" option, DO NOT execute this step until the upgrade of the "Standby" SOAM server has completed successfully.</i></p> <p>Upgrade the "Active" SOAM server.</p>	<ul style="list-style-type: none"> Upgrade the "Active" SOAM server (as identified and recorded in Step 6 of this procedure) using Appendix D (<i>Server Upgrade Administration on HLRR 4.1</i>). In Step 6 of this procedure, check-off <input checked="" type="checkbox"/> the associated checkbox as the upgrade is completed for the upgraded "Active" SOAM server.



NOTE: Up to 1/2 of the installed MP servers at a SOAM site may be upgraded in parallel using the "Upgrade Server" option for each individual MP server.

9. <input type="checkbox"/>	<p>Primary NOAM VIP: !! IMPORTANT !! <i>DO NOT execute this step until the upgrade of BOTH SOAM servers has been completed successfully.</i></p> <p>Upgrade up to 1/2 of the installed MP servers in parallel (e.g. 1 of 2, 2 of 4, etc.).</p>	<ul style="list-style-type: none"> Upgrade up to 1/2 of the MP server(s) (as identified and recorded in Step 6 of this procedure) in parallel using the "Upgrade Server" option for each MP server as described in Appendix D (<i>Server Upgrade Administration on HLRR 4.1</i>). <p>In Step 6 of this procedure, check-off <input checked="" type="checkbox"/> the associated checkbox as the upgrade is completed for the upgraded MP server(s).</p> <p>!! IMPORTANT !! Starting with HLRR 4.1 (i.e. post upgrade), the Appl Max HA Role will be displayed in the Administration → Software → Upgrade screen. This state is expected to be OOS for HLRR MP servers and can be safely ignored.</p>
10. <input type="checkbox"/>	<p>Primary NOAM VIP: Upgrade all remaining MP Servers in the SOAM NE site.</p>	<ul style="list-style-type: none"> Upgrade all remaining MP Servers (as identified and recorded in Step 6 of this procedure) in parallel using the "Upgrade Server" option for each MP server as described in Appendix D (<i>Server Upgrade Administration on HLRR 4.1</i>). In Step 6 of this procedure, check-off <input checked="" type="checkbox"/> the associated checkbox as the upgrade is completed for the upgraded MP server(s)

THIS PROCEDURE HAS BEEN COMPLETED

7.3 Perform Health Check (SOAM Post Upgrade)


This procedure is used to determine the health and status of the HLR Router network and servers after the completion of SOAM upgrade.

- Execute HLR Router Health Check procedures as specified in **Appendix B**.

8. UPGRADE ACCEPTANCE

The upgrade needs either to be accepted or rejected before any subsequent upgrades may be performed in the future.

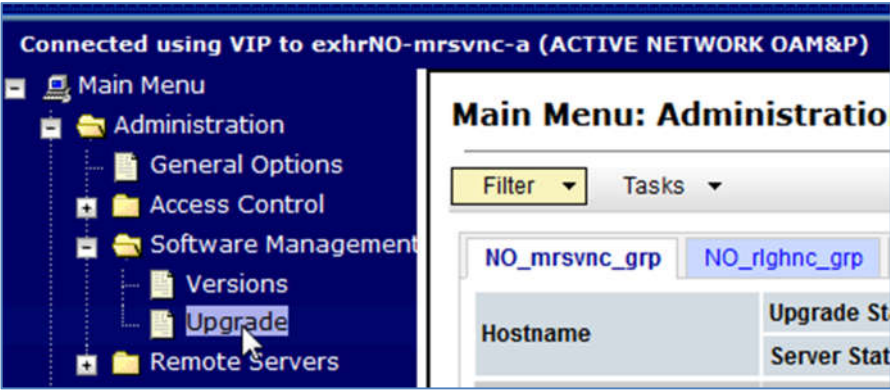
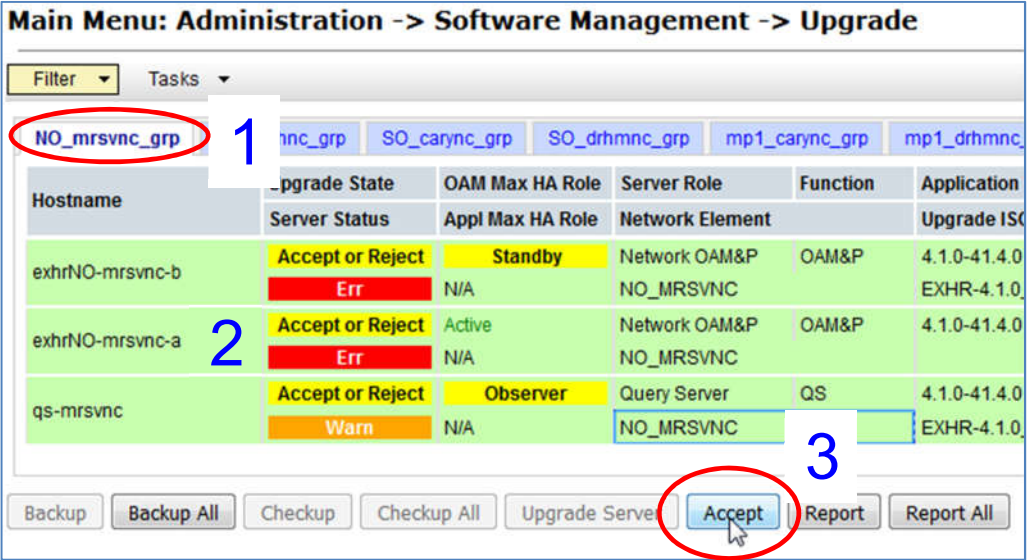
Event ID: 32532 (*Server Upgrade Pending Accept/Reject*) will be displayed for each server until one of these two actions (**Accept** or **Reject**) is performed.



An upgrade should be **Accepted** only after all servers in the **HLR Router** topology have successfully completed upgrade to the target release.

The user should also be aware that **Upgrade Acceptance prevents any possibility of backout to the previous release!!!**

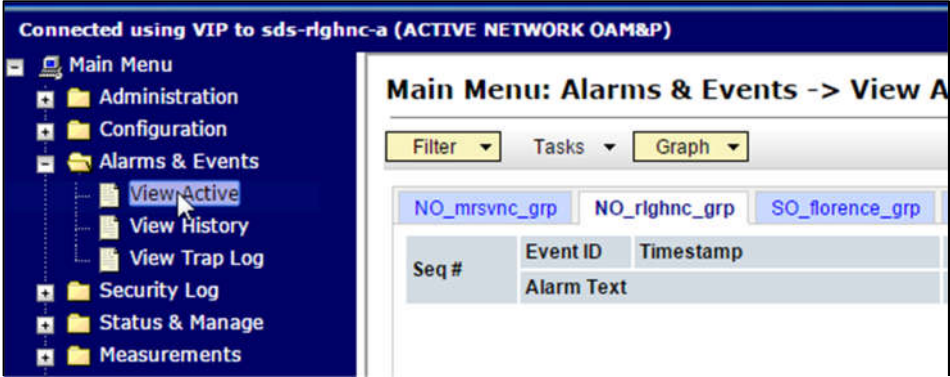
Procedure 7: Upgrade Acceptance

Step	Procedure	Result
1.	Using the VIP address, access the Primary HLRR NOAM GUI.	<ul style="list-style-type: none"> Using the VIP address, access the Primary HLRR NOAM GUI as described in Appendix A.
2.	<p>Primary NOAM VIP (GUI):</p> <p>Select...</p> <p>Main Menu</p> <p>→ Administration</p> <p>→ Software Management</p> <p>→ Upgrade</p> <p>...as shown on the right.</p>	
3.	<p>Primary NOAM VIP:</p> <p>1) Select the Server Group tab containing the server(s) to “Accept” upgrade.</p> <p>2) Hold down the [CTRL] key to multi-select the server(s) all server(s) in the Server Group.</p> <p>3) Click the “Accept” button.</p>	

Procedure 7: Upgrade Acceptance

Step	Procedure	Result																																										
<p>4.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) A Click the “OK” dialogue button in the pop-up confirmation box.</p> <p>2) The screen will now refresh and the “Upgrade State” will change to “Accepting”.</p> <p>3) The pull-down “Info” message in the banner will indicate that “Upgrade has been accepted” on each server.</p>	<div> <p>WARNING: Selecting OK will result in the selected servers being set to ACCEPT for their upgrade modes. Once accepted, the servers will NOT be able to revert back to their previous image states. Accept the upgrade for the following servers? exhrNO-mrsvnc-b (10.240.40.5), exhrNO-mrsvnc-a (10.240.40.20), qs-mrsvnc (10.240.40.7)</p> <p><input type="button" value="OK"/> <input type="button" value="Cancel"/></p> </div> <div> <table border="1"> <thead> <tr> <th>NO_mrsvnc_grp</th> <th>NO_rghnc_grp</th> <th>SO_carync_grp</th> <th>SO_drhmcn_grp</th> <th>mp1_carync_grp</th> <th>mp1</th> </tr> <tr> <th>Hostname</th> <th>Upgrade State</th> <th>OAM Max HA Role</th> <th>Server Role</th> <th>Function</th> <th>Ap</th> </tr> <tr> <th></th> <th>Server Status</th> <th>Appl Max HA Role</th> <th>Network Element</th> <th></th> <th>Up</th> </tr> </thead> <tbody> <tr> <td>exhrNO-mrsvnc-b</td> <td>Accepting Norm</td> <td>Standby</td> <td>Network OAM&P</td> <td>OAM&P</td> <td>4.</td> </tr> <tr> <td>exhrNO-mrsvnc-a</td> <td>Accepting Norm</td> <td>Active</td> <td>Network OAM&P</td> <td>OAM&P</td> <td>4.</td> </tr> <tr> <td>qs-mrsvnc</td> <td>Accepting Norm</td> <td>Observer</td> <td>Query Server</td> <td>QS</td> <td>4.</td> </tr> <tr> <td></td> <td></td> <td></td> <td>NO_MRSVNC</td> <td></td> <td>EX</td> </tr> </tbody> </table> </div> <div> <p>Main Menu: Administration -> Software Management -></p> <p>Filter Info Tasks</p> <p>NO_rghnc</p> <p>Info</p> <ul style="list-style-type: none"> • Upgrade has been accepted on server 'exhrNO-rghnc-b' • Upgrade has been accepted on server 'exhrNO-rghnc-a' • Upgrade has been accepted on server 'qs-rghnc' </div>	NO_mrsvnc_grp	NO_rghnc_grp	SO_carync_grp	SO_drhmcn_grp	mp1_carync_grp	mp1	Hostname	Upgrade State	OAM Max HA Role	Server Role	Function	Ap		Server Status	Appl Max HA Role	Network Element		Up	exhrNO-mrsvnc-b	Accepting Norm	Standby	Network OAM&P	OAM&P	4.	exhrNO-mrsvnc-a	Accepting Norm	Active	Network OAM&P	OAM&P	4.	qs-mrsvnc	Accepting Norm	Observer	Query Server	QS	4.				NO_MRSVNC		EX
NO_mrsvnc_grp	NO_rghnc_grp	SO_carync_grp	SO_drhmcn_grp	mp1_carync_grp	mp1																																							
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exhrNO-mrsvnc-a	Accepting Norm	Active	Network OAM&P	OAM&P	4.																																							
qs-mrsvnc	Accepting Norm	Observer	Query Server	QS	4.																																							
			NO_MRSVNC		EX																																							
<p>5.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>Within a few minutes, the screen will refresh and display an “Upgrade State” of “Backup Needed”.</p> <p>!! IMPORTANT !!</p> <p>The “Backup Needed” Upgrade State is expected to remain until the next Software Upgrade is performed. DO NOT re-run COMCOL backups except when directed to do so during the next Upgrade process.</p>	<div> <table border="1"> <thead> <tr> <th>NO_mrsvnc_grp</th> <th>NO_rghnc_grp</th> <th>SO_carync_grp</th> <th>SO_drhmcn_grp</th> <th>mp1_carync_grp</th> <th>mp1</th> </tr> <tr> <th>Hostname</th> <th>Upgrade State</th> <th>OAM Max HA Role</th> <th>Server Role</th> <th>Function</th> <th>A</th> </tr> <tr> <th></th> <th>Server Status</th> <th>Appl Max HA Role</th> <th>Network Element</th> <th></th> <th>U</th> </tr> </thead> <tbody> <tr> <td>exhrNO-mrsvnc-b</td> <td>Backup Needed Norm</td> <td>Standby</td> <td>Network OAM&P</td> <td>OAM&P</td> <td>4.</td> </tr> <tr> <td>exhrNO-mrsvnc-a</td> <td>Backup Needed Norm</td> <td>Active</td> <td>Network OAM&P</td> <td>OAM&P</td> <td>4.</td> </tr> <tr> <td>qs-mrsvnc</td> <td>Backup Needed Norm</td> <td>Observer</td> <td>Query Server</td> <td>QS</td> <td>4.</td> </tr> <tr> <td></td> <td></td> <td></td> <td>NO_MRSVNC</td> <td></td> <td></td> </tr> </tbody> </table> </div>	NO_mrsvnc_grp	NO_rghnc_grp	SO_carync_grp	SO_drhmcn_grp	mp1_carync_grp	mp1	Hostname	Upgrade State	OAM Max HA Role	Server Role	Function	A		Server Status	Appl Max HA Role	Network Element		U	exhrNO-mrsvnc-b	Backup Needed Norm	Standby	Network OAM&P	OAM&P	4.	exhrNO-mrsvnc-a	Backup Needed Norm	Active	Network OAM&P	OAM&P	4.	qs-mrsvnc	Backup Needed Norm	Observer	Query Server	QS	4.				NO_MRSVNC		
NO_mrsvnc_grp	NO_rghnc_grp	SO_carync_grp	SO_drhmcn_grp	mp1_carync_grp	mp1																																							
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			NO_MRSVNC																																									

Procedure 7: Upgrade Acceptance

Step	Procedure	Result
<p>6.</p> <input type="checkbox"/>	<p>Primary NOAM VIP: “Accept” Upgrade on each remaining Server Group.</p>	<ul style="list-style-type: none"> Repeat Steps 3 - 5 of this procedure for each additional Server Group tab until Upgrade has been Accepted on all servers in the HLR Router topology.
<p>7.</p> <input type="checkbox"/>	<p>Primary NOAM VIP: Select... Main Menu → Alarms & Events → View Active ...as shown on the right.</p>	
<p>8.</p> <input type="checkbox"/>	<p>Primary NOAM VIP: Verify Upgrade Acceptance.</p>	<p>Verify that the following Alarm is no longer present for any server in the HLR Router topology.</p> <ul style="list-style-type: none"> Event ID (s): 32532 (<i>Server Upgrade Pending Accept/Reject</i>)
<p>THIS PROCEDURE HAS BEEN COMPLETED</p>		

9. BACKOUT PROCEDURES

9.1 Backout Overview

Since software upgrade is a complex operation, the exact circumstances surrounding a failed upgrade cannot be predetermined. Therefore, the user is always directed to contact My Oracle Support (MOS) for assistance before executing any upgrade backout procedures (refer to **Appendix J: Accessing My Oracle Support (MOS)** for information on contacting MOS).

The procedures that follow assume that the entire HLR Router topology will be backed out (i.e. all SOAM sites followed by the DR & Primary NOAM sites). If backout is required for an individual server rather than the entire topology, the user is directed to use **Appendix E (Backout of a Single Server)**.



!! WARNING !!

- **Do not attempt to perform these backout procedures without first contacting My Oracle Support (MOS).**
- **Backout procedures may cause traffic loss!**



NOTE: These recovery procedures are provided for the Backout of a Software Upgrade only! (i.e. for the Backout from a target release to the previously installed source release). Backout of an initial installation is not supported!

9.2 Backout Setup

Identify the IP addresses of all servers that require backout.

1. From the **Primary NOAM GUI**, select the **[Main Menu: Administration → Software Management → Upgrade]** screen.
2. Under each Server Group tab, view the “Application Version” Column and identify the hostnames of all servers that require backout.
3. Select the **[Main Menu: Configuration → Servers]** screen.
 - a. Click the **“Report”** dialogue button.
 - b. Click the **“Save”** dialogue button and save the Servers report to a local workstation.
4. Identify the **XMI IP address** (*IMI IP address for T1200 MP servers*) for each hostname identified in **Step 2** above.
These IP addresses are required to access the server CLI during backout.

NOTE: Verify that the (2) COMCOL backup files created using **Procedure 3 - Full Database Backup (PROV & COMCOL ENV for All Servers)** must be present on every server that is to be backed-out. These backup files are located in the `/var/TKLC/db/filemgmt` directory and have the following naming convention:

- Backup.<application>.<server>.FullDBParts.<role>.<date_time>.UPG.tar.bz2
- Backup. <application>.<server>.FullRunEnv.<role>.<date_time>.UPG.tar.bz2

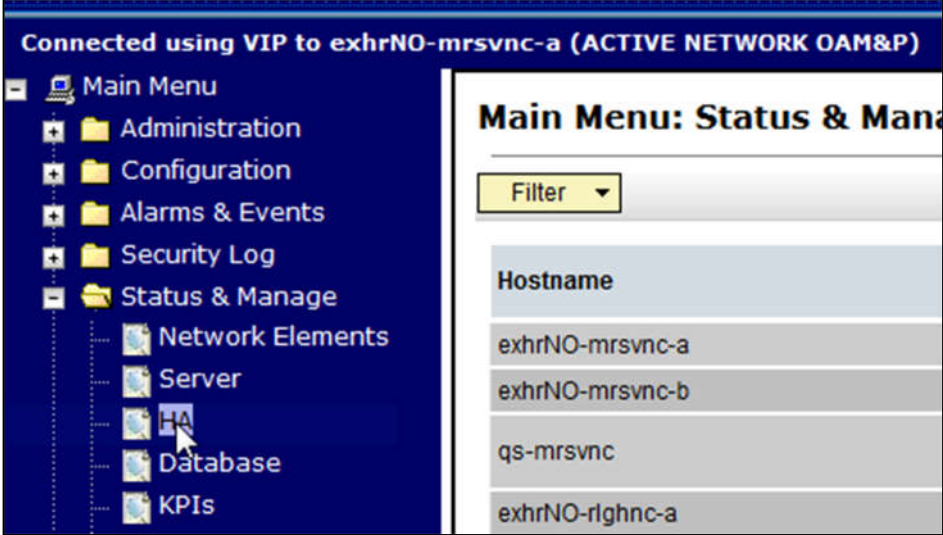
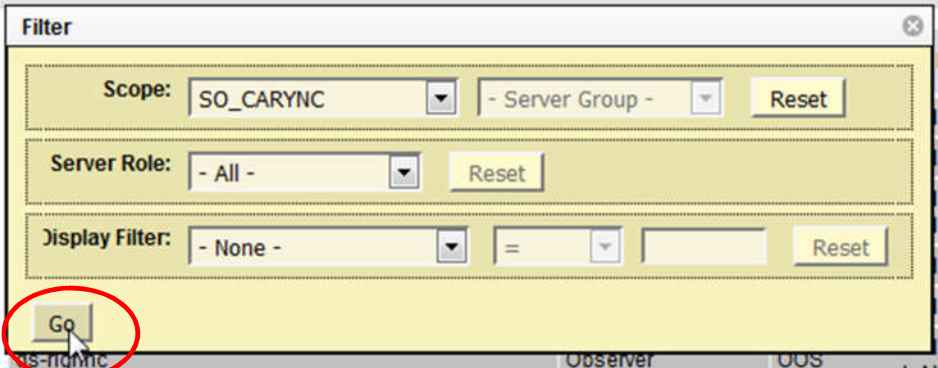
9.3 Perform Backout

Procedures used to perform upgrade backout should only be executed once all steps specified under **Section 9.2 (Backout Setup)** have been completed.

9.3.1 Backout of a SOAM NE

The following procedure details how to perform upgrade backout for all servers associated with the SOAM NE.

Procedure 8: Backout of a SOAM NE


Step	Procedure	Result
<p>1.</p> <input type="checkbox"/>	<p>Using the VIP address, access the Primary HLRR NOAM GUI.</p>	<ul style="list-style-type: none"> Using the VIP address, access the Primary HLRR NOAM GUI as described in Appendix A.
<p>2.</p> <input type="checkbox"/>	<p>Record the name of the SOAM NE site in the space provided to the right.</p>	<p>Using the information provided in Section 3.1.2 (Logins, Passwords and Site Information) record the name of the SOAM NE site in the space provided below:</p> <p>SOAM NE site: _____</p>
<p>3.</p> <input type="checkbox"/>	<p>Primary NOAM VIP (GUI): Select...</p> <p>Main Menu → Status & Manage → HA</p> <p>...as shown on the right.</p>	
<p>4.</p> <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>1) From the "Scope" filter pull-down, select the Network Element name for the SOAM NE site</p> <p>2) Click on the "Go" dialogue button</p>	

Procedure 8: Backout of a SOAM NE

Step	Procedure	Result																																			
<p>5.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>The user should be presented with the list of servers associated with the SOAM NE site</p> <p>Identify "Hostname", its "Server Role" and "OAM HA Role"</p>	<table border="1"> <thead> <tr> <th>Hostname</th> <th>OAM HA Role</th> <th>Application HA Role</th> <th>Max Allowed HA Role</th> <th>Mate Hostname List</th> <th>Network Element</th> <th>Server Role</th> </tr> </thead> <tbody> <tr> <td>exhrSO-carync-a</td> <td>Active</td> <td>OOS</td> <td>Active</td> <td>exhrSO-carync-b</td> <td>SO_CARYNC</td> <td>System OAM</td> </tr> <tr> <td>exhrSO-carync-b</td> <td>Standby</td> <td>Standby</td> <td>Active</td> <td>exhrSO-carync-a</td> <td>SO_CARYNC</td> <td>System OAM</td> </tr> <tr> <td>mp1-carync</td> <td>Active</td> <td>Active</td> <td>Active</td> <td></td> <td>SO_CARYNC</td> <td>MP</td> </tr> <tr> <td>mp2-carync</td> <td>Active</td> <td>OOS</td> <td>Active</td> <td></td> <td>SO_CARYNC</td> <td>MP</td> </tr> </tbody> </table>	Hostname	OAM HA Role	Application HA Role	Max Allowed HA Role	Mate Hostname List	Network Element	Server Role	exhrSO-carync-a	Active	OOS	Active	exhrSO-carync-b	SO_CARYNC	System OAM	exhrSO-carync-b	Standby	Standby	Active	exhrSO-carync-a	SO_CARYNC	System OAM	mp1-carync	Active	Active	Active		SO_CARYNC	MP	mp2-carync	Active	OOS	Active		SO_CARYNC	MP
Hostname	OAM HA Role	Application HA Role	Max Allowed HA Role	Mate Hostname List	Network Element	Server Role																															
exhrSO-carync-a	Active	OOS	Active	exhrSO-carync-b	SO_CARYNC	System OAM																															
exhrSO-carync-b	Standby	Standby	Active	exhrSO-carync-a	SO_CARYNC	System OAM																															
mp1-carync	Active	Active	Active		SO_CARYNC	MP																															
mp2-carync	Active	OOS	Active		SO_CARYNC	MP																															
<p>6.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>Record hostnames of the SOAM NE site servers in the spaces provided to the right.</p>	<ul style="list-style-type: none"> Record the names of SOAM NE site servers: <ul style="list-style-type: none"> <input type="checkbox"/> Active SOAM Server: _____ <input type="checkbox"/> Standby SOAM Server: _____ <input type="checkbox"/> MP-1 Server: _____ <input type="checkbox"/> MP-6 Server: _____ <input type="checkbox"/> MP-2 Server: _____ <input type="checkbox"/> MP-7 Server: _____ <input type="checkbox"/> MP-3 Server: _____ <input type="checkbox"/> MP-8 Server: _____ <input type="checkbox"/> MP-4 Server: _____ <input type="checkbox"/> MP-9 Server: _____ <input type="checkbox"/> MP-5 Server: _____ <input type="checkbox"/> MP-10 Server: _____ 																																			
<p>7.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>Backout the MP-1 server.</p>	<ul style="list-style-type: none"> Backout the MP-1 server (as identified and recorded in Step 6 of this procedure) using Appendix E (Backout of a Single Server). In Step 6 of this procedure, check-off <input checked="" type="checkbox"/> the associated check box as the backout is completed for the MP-1 server. 																																			
<p>8.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>Backout all remaining MP servers in the associated SOAM NE.</p> <p>NOTE: <i>If the backouts of the remaining MP servers are to be staggered, repeat this step until all MP servers within the SOAM NE have completed Appendix E (Backout of a Single Server).</i></p>	<ul style="list-style-type: none"> Backout the remaining MP servers (as identified and recorded in Step 6 of this procedure) using Appendix E (Backout of a Single Server). In Step 6 of this procedure, check-off <input checked="" type="checkbox"/> the associated check box as the backout is completed for each MP server. 																																			

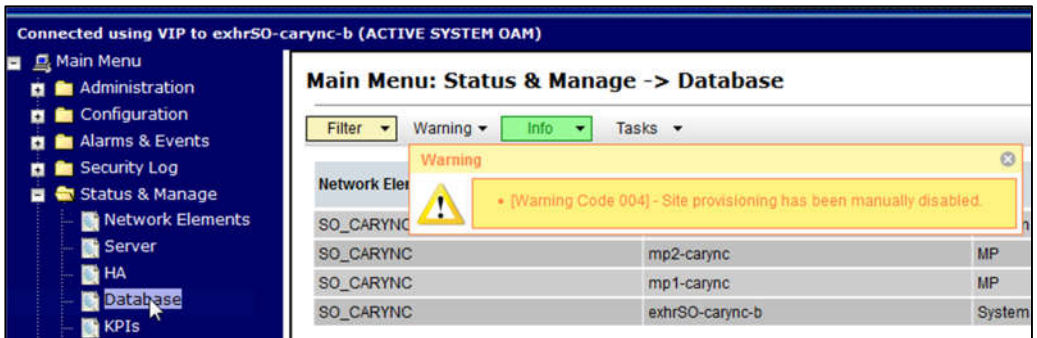
Procedure 8: Backout of a SOAM NE

Step	Procedure	Result
9. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>!! IMPORTANT !!</p> <p>DO NOT execute this step until the backout of all MP servers associated with the SOAM NE have been completed successfully.</p> <p>Backout the "Standby" SOAM server.</p>	<ul style="list-style-type: none"> Backout the "Standby" SOAM server (as identified and recorded in Step 6 of this procedure) using Appendix E (Backout of a Single Server). In Step 6 of this procedure, check-off <input checked="" type="checkbox"/> the associated check box as the backout is completed for the "Standby" SOAM server.



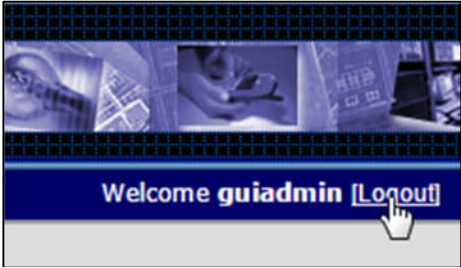
DO NOT proceed with the next step until Steps 7 - 9 of this procedure have been successfully completed.

10. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>Backout the "Active" SOAM server.</p>	<ul style="list-style-type: none"> Backout the "Active" SOAM server (as identified and recorded in Step 6 of this procedure) using Appendix E (Backout of a Single Server) In Step 6 of this procedure, check-off <input checked="" type="checkbox"/> the associated check box as the backout is completed for the "Active" SOAM server.
11. <input type="checkbox"/>	<p>Using the VIP address, access the SOAM GUI.</p>	<ul style="list-style-type: none"> Using the VIP address, access the SOAM GUI as described in Appendix A.

12. <input type="checkbox"/>	<p>SOAM VIP (GUI):</p> <p>Select...</p> <p>Main Menu</p> <p>→ Status & Manage</p> <p>→ Dstabase</p> <p>...as shown on the right.</p>	
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13. <input type="checkbox"/>	<p>SOAM VIP:</p> <p>1) Click the "Enable Site Provisioning" button in the lower left of the right panel.</p> <p>2) Click the "OK" button on the pop-up confirmation dialogue box.</p>	
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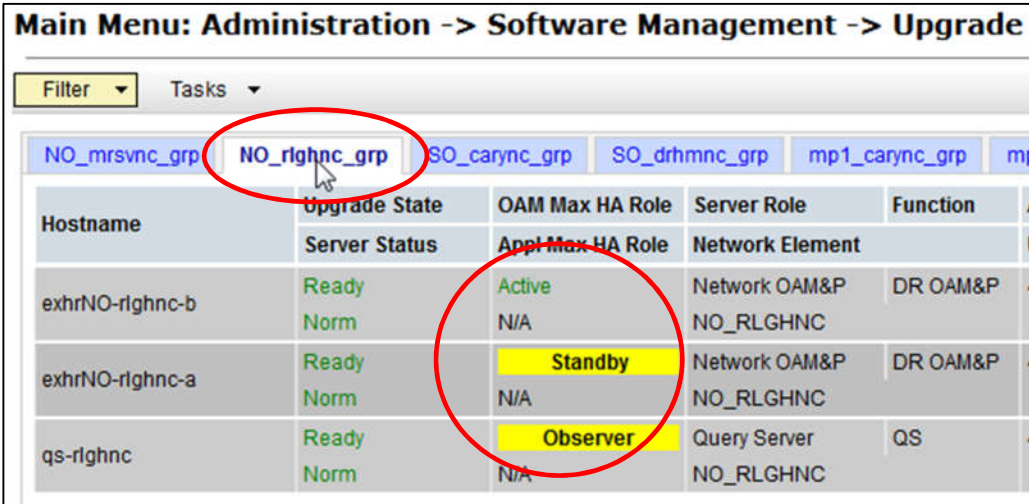
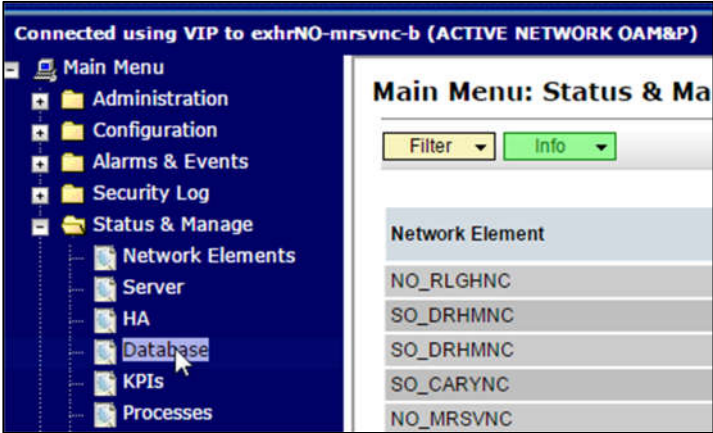
Procedure 8: Backout of a SOAM NE

Step	Procedure	Result
<p>14.</p> <input type="checkbox"/>	<p>SOAM VIP: Use the [Logout] link in the top right of the browser to logout of the SOAM GUI.</p>	
<p>15.</p> <input type="checkbox"/>	<p>Using the VIP address, access the Primary HLRR NOAM GUI.</p>	<ul style="list-style-type: none"> Using the VIP address, access the Primary HLRR NOAM GUI as described in Appendix A.
<p>16.</p> <input type="checkbox"/>	<p>Primary NOAM VIP (GUI): Execute backout for the remaining SOAM NE site(s).</p>	<ul style="list-style-type: none"> Repeat Steps 1 - 16 of this procedure for each remaining SOAM NE site(s) requiring backout. <p>NOTE: <i>If backout of the remaining SOAM NE site(s) cannot be completed in a single Maintenance Window, the user should be aware that it is not recommended to leave servers within the same NE on different software releases for normal operation (i.e DO NOT start backout procedures on a NE unless all servers within the NE can be completed within the given Maintenance Window).</i></p>
<p>17.</p> <input type="checkbox"/>	<p>Execute a post SOAM backout Health Check at this time.</p>	<ul style="list-style-type: none"> Execute a Health Check as specified in Appendix B (Health Check Procedures), if no other SOAM NE sites require backout in the given Maintenance Window.
<p>THIS PROCEDURE HAS BEEN COMPLETED</p>		

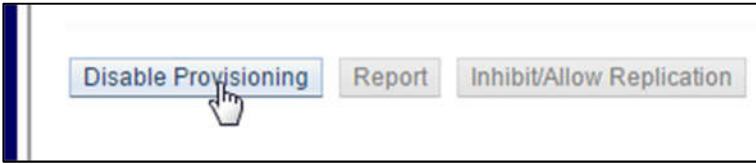

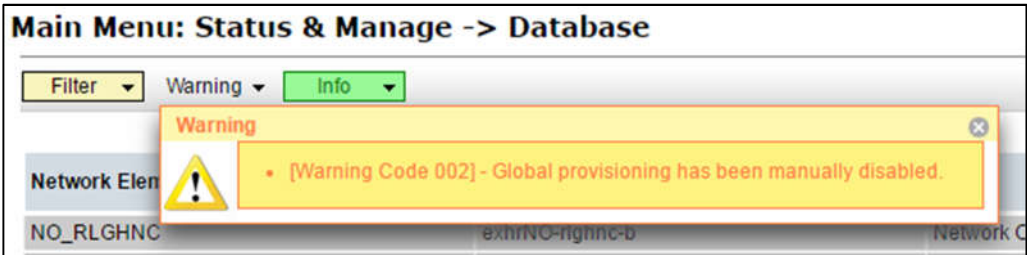
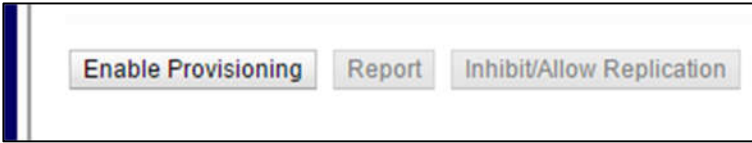
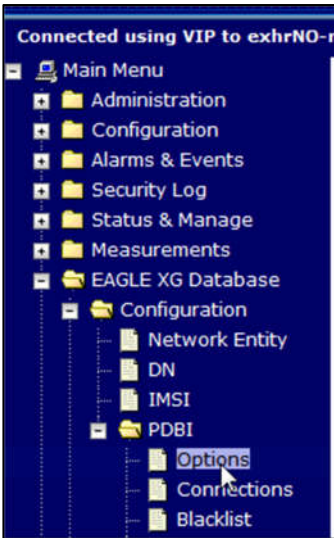
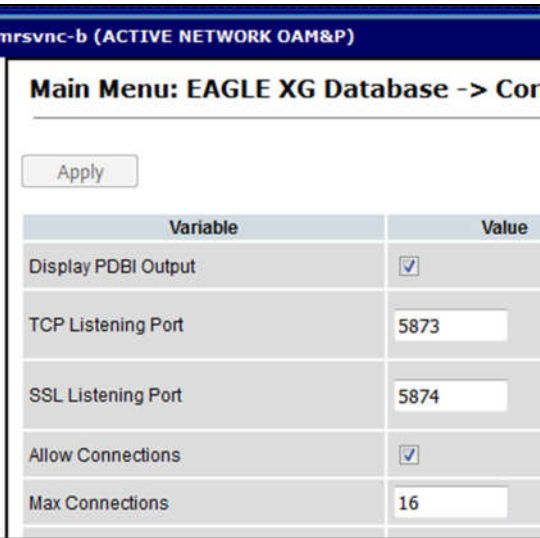
9.3.2 Backout of the DR NOAM NE

The following procedure details how to perform software backout for servers in the DR NOAM NE.

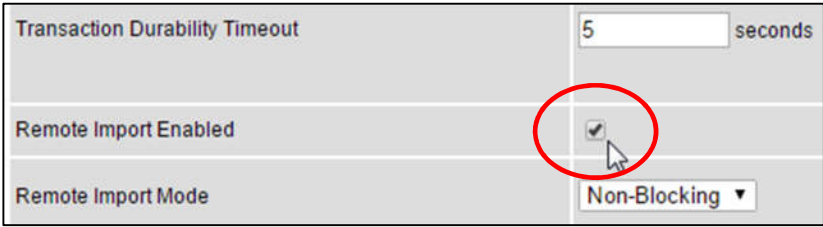
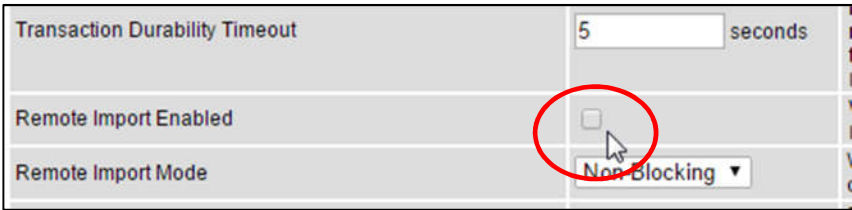
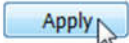


Procedure 9: Backout of the DR NOAM NE


Step	Procedure	Result																									
1. <input type="checkbox"/>	Using the VIP address, access the Primary HLRR NOAM GUI .	<ul style="list-style-type: none"> Using the VIP address, access the Primary HLRR NOAM GUI as described in Appendix A. 																									
2. <input type="checkbox"/>	Record the name of the DR NOAM NE site in the space provided to the right.	Using the information provided in Section 3.1.2 (Logins, Passwords and Site Information) record the name of the DR NOAM NE site in the space provided below: DR NOAM NE site: _____																									
3. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>1) Select...</p> <p>Main Menu → Administration → Software Management → Upgrade</p> <p>2) Click on the tab associated with the DR NOAM Server Group.</p> <p>3) From the "OAM Max HA Role" field, identify the HA state of each server in the Server Group.</p>	 <table border="1"> <thead> <tr> <th>Hostname</th> <th>Upgrade State</th> <th>OAM Max HA Role</th> <th>Server Role</th> <th>Function</th> </tr> <tr> <th></th> <th>Server Status</th> <th>Appl Max HA Role</th> <th>Network Element</th> <th></th> </tr> </thead> <tbody> <tr> <td>exhrNO-rghnc-b</td> <td>Ready Norm</td> <td>Active N/A</td> <td>Network OAM&P NO_RLGHNC</td> <td>DR OAM&P</td> </tr> <tr> <td>exhrNO-rghnc-a</td> <td>Ready Norm</td> <td>Standby N/A</td> <td>Network OAM&P NO_RLGHNC</td> <td>DR OAM&P</td> </tr> <tr> <td>qs-rghnc</td> <td>Ready Norm</td> <td>Observer N/A</td> <td>Query Server NO_RLGHNC</td> <td>QS</td> </tr> </tbody> </table>	Hostname	Upgrade State	OAM Max HA Role	Server Role	Function		Server Status	Appl Max HA Role	Network Element		exhrNO-rghnc-b	Ready Norm	Active N/A	Network OAM&P NO_RLGHNC	DR OAM&P	exhrNO-rghnc-a	Ready Norm	Standby N/A	Network OAM&P NO_RLGHNC	DR OAM&P	qs-rghnc	Ready Norm	Observer N/A	Query Server NO_RLGHNC	QS
Hostname	Upgrade State	OAM Max HA Role	Server Role	Function																							
	Server Status	Appl Max HA Role	Network Element																								
exhrNO-rghnc-b	Ready Norm	Active N/A	Network OAM&P NO_RLGHNC	DR OAM&P																							
exhrNO-rghnc-a	Ready Norm	Standby N/A	Network OAM&P NO_RLGHNC	DR OAM&P																							
qs-rghnc	Ready Norm	Observer N/A	Query Server NO_RLGHNC	QS																							
4. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>Record the names of DR HLRR NE site servers appropriately in the space provided to the right.</p>	<ul style="list-style-type: none"> Record the names of DR HLRR NE site servers <input type="checkbox"/> DR NOAM Active Server: _____ <input type="checkbox"/> DR NOAM Standby Server: _____ <input type="checkbox"/> DR Query Server (Observer): _____ 																									
5. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>Select...</p> <p>Main Menu → Status & Manage → Database</p> <p>...as shown on the right.</p>																										

Procedure 9: Backout of the DR NOAM NE

Step	Procedure	Result												
<p>6.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) Click the “Disable Provisioning” dialogue button at the bottom of the right panel.</p> <p>2) Click the “OK” button on the confirmation pop-up box.</p>	 												
<p>7.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) Verify that a Warning message indicating that “Global provisioning has been manually disabled” will appear in the banner.</p> <p>2) Verify that the text on the dialogue button at the bottom of the right panel changes to state “Enable Provisioning”.</p> <p>NOTE: Event ID 10008 (Provisioning Manually Disabled) will appear at this time and can be safely ignored.</p>	 												
<p>8.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>Select...</p> <p>Main Menu → EAGLE XG Database → Configuration → PDBI → Options</p> <p>...as shown on the right.</p>	  <table border="1"> <thead> <tr> <th>Variable</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Display PDBI Output</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>TCP Listening Port</td> <td>5873</td> </tr> <tr> <td>SSL Listening Port</td> <td>5874</td> </tr> <tr> <td>Allow Connections</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Max Connections</td> <td>16</td> </tr> </tbody> </table>	Variable	Value	Display PDBI Output	<input checked="" type="checkbox"/>	TCP Listening Port	5873	SSL Listening Port	5874	Allow Connections	<input checked="" type="checkbox"/>	Max Connections	16
Variable	Value													
Display PDBI Output	<input checked="" type="checkbox"/>													
TCP Listening Port	5873													
SSL Listening Port	5874													
Allow Connections	<input checked="" type="checkbox"/>													
Max Connections	16													

Procedure 9: Backout of the DR NOAM NE

Step	Procedure	Result
<p>9.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP: Locate the “Remote Import Enabled” checkbox and record the pre-upgrade state.</p>	 <p>Transaction Durability Timeout 5 seconds</p> <p>Remote Import Enabled <input checked="" type="checkbox"/></p> <p>Remote Import Mode Non-Blocking</p> <p>Remote Import Enabled (<i>pre-upgrade state</i>):</p> <p><input type="checkbox"/> CHECKED</p> <p><input type="checkbox"/> NOT CHECKED</p>
<p>10.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP: If the “Remote Import Enabled” checkbox was checked in the previous step, REMOVE the check mark.</p>	 <p>Transaction Durability Timeout 5 seconds</p> <p>Remote Import Enabled <input type="checkbox"/></p> <p>Remote Import Mode Non-Blocking</p>
<p>11.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP: If the Check mark was REMOVED from the “Remote Import Enabled” checkbox in the previous step, then execute the following:</p> <p>1) Click the “Apply” dialogue box in the top left of the right panel.</p> <p>2) Verify that a “Success!” response is received in the banner.</p>	<p>Main Menu: EAGLE XG Database -> Configuration -> PDBI -> Options</p> <p> 1</p> <hr/> <p>Main Menu: EAGLE XG Database -> Configuration -> PDBI -> Options</p> <p> 2</p> <p></p>



NOTE: Steps 12 and 13 of this procedure may be executed in parallel.

<p>12.</p>	<p>Primary NOAM VIP: Backout the DR NOAM “Standby” server.</p>	<ul style="list-style-type: none"> • Backout the DR NOAM “Standby” server (as identified and recorded in Step 4 of this procedure) using in Appendix E (Backout of a Single Server) • In Step 4 of this procedure, check-off <input checked="" type="checkbox"/> the associated check box as the backout is completed for the DR NOAM “Standby” server.
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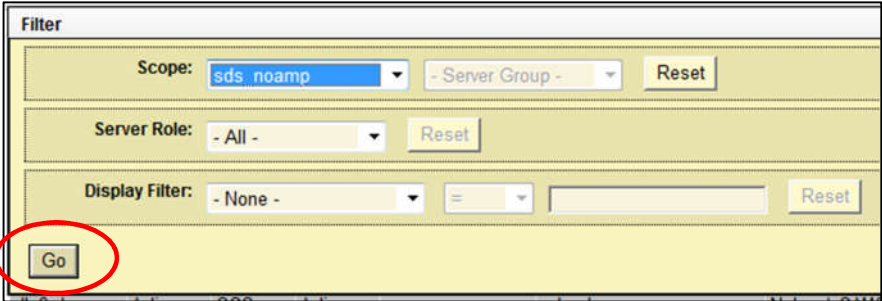
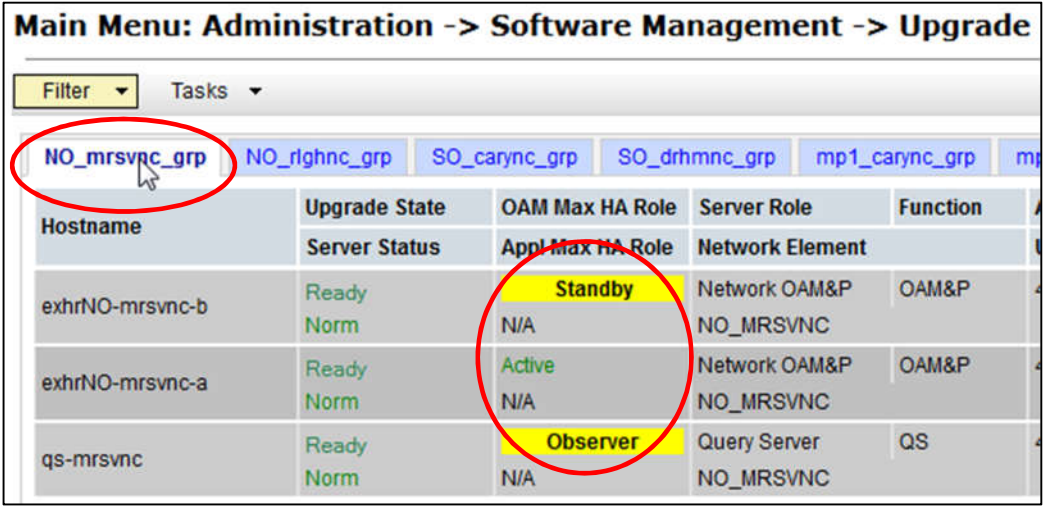
Procedure 9: Backout of the DR NOAM NE

Step	Procedure	Result
<p>13.</p> <input type="checkbox"/>	<p>Primary NOAM VIP: Backout the DR Query Server.</p>	<ul style="list-style-type: none"> Backout the DR Query Server (as identified and recorded in Step 4 of this procedure) using in Appendix E (Backout of a Single Server). In Step 4 of this procedure, check-off <input checked="" type="checkbox"/> the associated check box as the backout is completed for the DR Query Server.
<p>14.</p> <input type="checkbox"/>	<p>Primary NOAM VIP: !! IMPORTANT !! DO NOT execute this step until the backouts specified in DR NOAM "Standby" server and the DR Query Server have both completed successfully. Backout the DR "Active" server.</p>	<ul style="list-style-type: none"> Backout DR NOAM "Active" server (as identified and recorded in Step 4 of this procedure) using in Appendix E (Backout of a Single Server) <p>NOTE: <i>This will cause an HA activity failover to the mate DR NOAM server. This should occur within minutes of initiating the upgrade.</i></p> <ul style="list-style-type: none"> In Step 4 of this procedure, check-off <input checked="" type="checkbox"/> the associated check box as the backout is completed for the DR NOAM "Active" server.
<p>15.</p> <input type="checkbox"/>	<p>!! IMPORTANT !! DO NOT execute Procedure 10 until the backouts for all DR NOAM NE servers (as identified and recorded in Step 4 of this procedure) have completed successfully. Proceed to Procedure 10.</p>	<ul style="list-style-type: none"> Execute Procedure 10 at this time. <p>NOTE: <i>In order to minimize possible impacts due to database schema changes, Primary and DR NOAM NE sites must be backed out within the same maintenance window.</i></p>
<p>THIS PROCEDURE HAS BEEN COMPLETED</p>		


9.3.3 Backout of the Primary NOAM NE

The following procedure details how to perform software Backout for servers in the Primary NOAM NE.

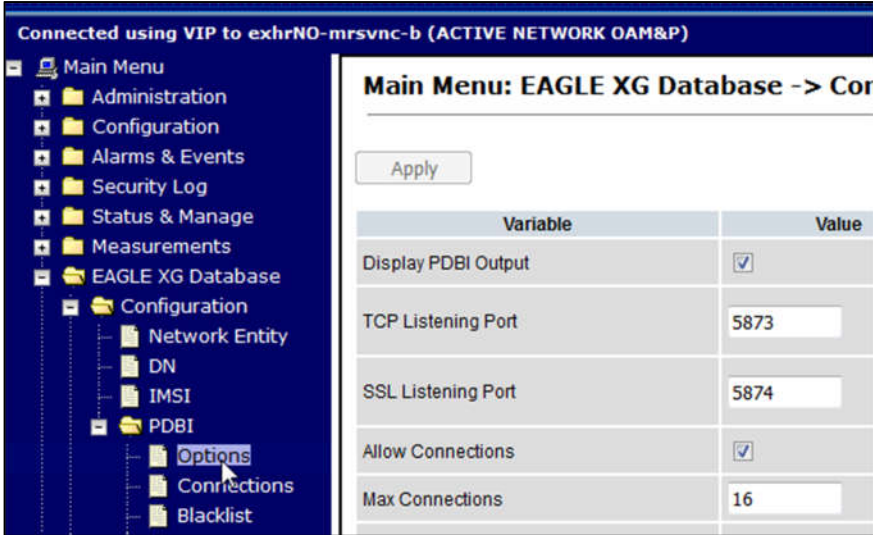
Procedure 10: Backout of the Primary NOAM NE

Step	Procedure	Result																				
1. <input type="checkbox"/>	Using the VIP address, access the Primary HLRR NOAM GUI .	<ul style="list-style-type: none"> Using the VIP address, access the Primary HLRR NOAM GUI as described in Appendix A. 																				
2. <input type="checkbox"/>	Record the name of the Primary NOAM NE site in the space provided to the right.	Using the information provided in Section 3.1.2 (Logins, Passwords and Site Information) record the name of the Primary NOAM NE site in the space provided below: Primary NOAM NE site: _____																				
3. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>1) From the “Scope” filter pull-down, select the Network Element name for the Primary HLRR NE site</p> <p>2) Click on the “Go” dialogue button located on the right end of the filter bar.</p>																					
4. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>1) Select...</p> <p>Main Menu → Administration → Software Management → Upgrade</p> <p>2) Click on the tab associated with the Primary NOAM Server Group.</p> <p>3) From the “OAM Max HA Role” field, identify the HA state of each server in the Server Group.</p>	 <table border="1"> <thead> <tr> <th>Hostname</th> <th>Upgrade State</th> <th>OAM Max HA Role</th> <th>Server Role</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>exhrNO-mrsvnc-b</td> <td>Ready Norm</td> <td>Standby</td> <td>Network OAM&P NO_MRSVNC</td> <td>OAM&P</td> </tr> <tr> <td>exhrNO-mrsvnc-a</td> <td>Ready Norm</td> <td>Active</td> <td>Network OAM&P NO_MRSVNC</td> <td>OAM&P</td> </tr> <tr> <td>qs-mrsvnc</td> <td>Ready Norm</td> <td>Observer</td> <td>Query Server NO_MRSVNC</td> <td>QS</td> </tr> </tbody> </table>	Hostname	Upgrade State	OAM Max HA Role	Server Role	Function	exhrNO-mrsvnc-b	Ready Norm	Standby	Network OAM&P NO_MRSVNC	OAM&P	exhrNO-mrsvnc-a	Ready Norm	Active	Network OAM&P NO_MRSVNC	OAM&P	qs-mrsvnc	Ready Norm	Observer	Query Server NO_MRSVNC	QS
Hostname	Upgrade State	OAM Max HA Role	Server Role	Function																		
exhrNO-mrsvnc-b	Ready Norm	Standby	Network OAM&P NO_MRSVNC	OAM&P																		
exhrNO-mrsvnc-a	Ready Norm	Active	Network OAM&P NO_MRSVNC	OAM&P																		
qs-mrsvnc	Ready Norm	Observer	Query Server NO_MRSVNC	QS																		
5. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>Record the names of the Primary NOAM NE site servers appropriately in the space provided to the right.</p>	<ul style="list-style-type: none"> Record the names of Primary HLRR NE site servers <input type="checkbox"/> Primary NOAM Active Server: _____ <input type="checkbox"/> Primary NOAM Standby Server: _____ <input type="checkbox"/> Primary Query Server (Observer): _____ 																				

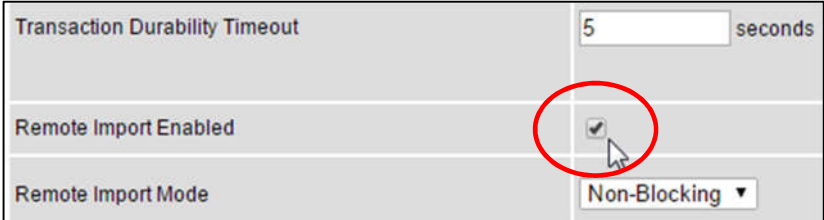
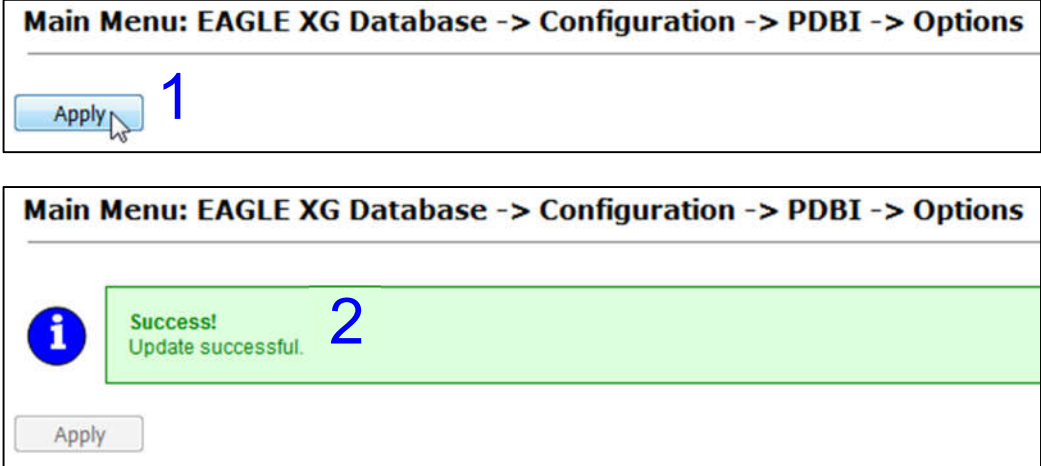
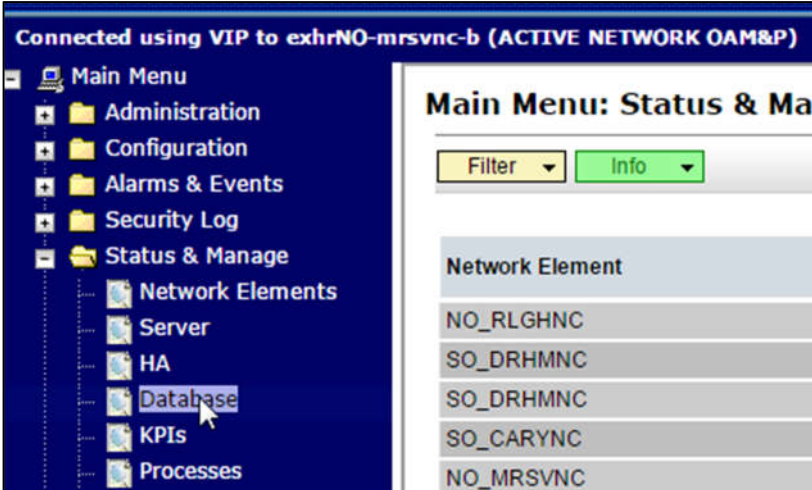
Procedure 10: Backout of the Primary NOAM NE

Step	Procedure	Result
 NOTE: Steps 6 and 7 of this procedure may be executed in parallel.		
6. <input type="checkbox"/>	Primary NOAM VIP: Backout the Primary NOAM “Standby” server.	<ul style="list-style-type: none"> Backout the Primary NOAM “Standby” server (as identified and recorded in Step 5 of this procedure) using in Appendix E (Backout of a Single Server) In Step 5 of this procedure, check-off <input checked="" type="checkbox"/> the associated check box as the backout is completed for the Primary NOAM “Standby” server.
7. <input type="checkbox"/>	Primary NOAM VIP: Backout the Primary Query Server .	<ul style="list-style-type: none"> Backout the Primary Query Server (as identified and recorded in Step 5 of this procedure) using in Appendix E (Backout of a Single Server). In Step 5 of this procedure, check-off <input checked="" type="checkbox"/> the associated check box as the backout is completed for the Primary Query Server.
8. <input type="checkbox"/>	Primary NOAM VIP (CLI): Using the VIP address, login to the “Active” Primary NOAM server with the admusr account.	<pre>CentOS release 6.7 Kernel 2.6.32-573.18.1.el6prere17.0.3.0.0_86.43.0.x86 on an x86_64 exhrNO-mrsvnc-a login: admusr Password: <admusr_password></pre>
9. <input type="checkbox"/>	Primary NOAM VIP: The user will be presented with output similar to that shown to the right.	<p>*** TRUNCATED OUTPUT ***</p> <pre>RELEASE=6.4 RUNID=00 VPATH=/var/TKLC/rundb:/usr/TKLC/appworks:/usr/TKLC/awpcommon:/usr/TKLC/comagent-gui:/usr/TKLC/comagent-gui:/usr/TKLC/comagent:/usr/TKLC/sds PROMPATH=/opt/comcol/prod RUNID=00 [admusr@exhrNO-mrsvnc-a ~]\$</pre>
10. <input type="checkbox"/>	Primary NOAM VIP: Verify that the DbReplication status is “Active” to the Standby Primary NOAM server which was backed out in Step 6 of this procedure.	<pre>[admusr@exhrNO-mrsvnc-a ~]\$ sudo irepstat -w -- Policy 0 ActStb [DbReplication] AA To exhrNO-rlghnc-b Active 0 0.00 1%R 3%S 0.04%cpu 22B/s AA To exhrNO-mrsvnc-b Active 0 0.00 1%R 0.05%cpu 21B/s AA To qs-mrsvnc Active 0 0.00 1%R 3%S 0.05%cpu 22B/s AB To exhrSO-carync-a Active 0 0.00 1%R 3%S 0.05%cpu 22B/s AB To exhrSO-drhmnc-b Active 0 0.00 1%R 3%S 0.04%cpu 22B/s irepstat (7 lines) (h)elp [admusr@exhrNO-mrsvnc-a ~]\$</pre>
11. <input type="checkbox"/>	Primary NOAM VIP: !! IMPORTANT !! DO NOT proceed to the next step until a DbReplication status of “Active” is returned for the Standby Primary NOAM server.	<p>If a DbReplication status of “Audit” was received for the Standby Primary NOAM server in the previous step, then REPEAT Step 10 of this procedure until a status of “Active” is returned.</p>

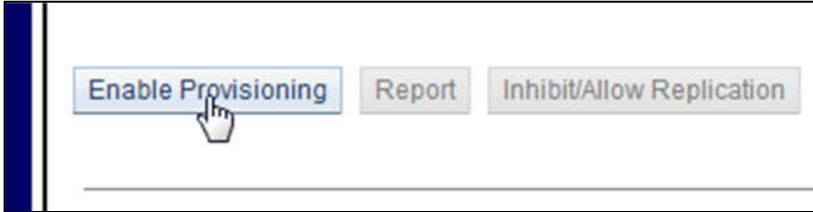
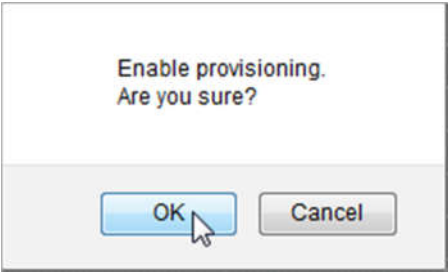
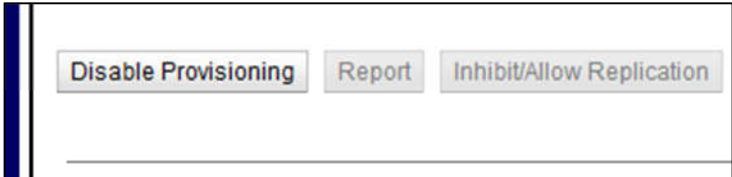
Procedure 10: Backout of the Primary NOAM NE

Step	Procedure	Result												
12. <input type="checkbox"/>	Primary NOAM VIP: Exit the CLI for the "Active" Primary NOAM server.	[admusr@exhrNO-mrsvnc-b filemgmt]\$ exit Logout												
13. <input type="checkbox"/>	Primary NOAM VIP (GUI): Backout Primary NOAM "Active" server. !! IMPORTANT !! <i>This will cause an HA activity Switchover to the mate Primary HLRR NOAM server.</i>	<ul style="list-style-type: none"> Backout Primary NOAM "Active" server (as identified and recorded in Step 5 of this procedure) using in Appendix E (Backout of a Single Server) In Step 5 of this procedure, check-off <input checked="" type="checkbox"/> the associated check box as the backout is completed for the backed out Primary NOAM "Active" server. 												
14. <input type="checkbox"/>	Allow system to auto-clear temporary alarm states. NOTE: Event ID 10008 (Provisioning Manually Disabled) will remain present at this time but can be safely ignored.	<ul style="list-style-type: none"> Wait up to 15 minutes for Alarms associated with server backout to auto-clear before continuing to Section 9.4. 												
15. <input type="checkbox"/>	Primary NOAM VIP: Re-Enable Provisioning Remote Import (if applicable).	<ul style="list-style-type: none"> If the value for the "Remote Import Enabled" checkbox recorded in Procedure 9, Step 9 was CHECKED, then proceed with Step 16 of this procedure. If the value for the "Remote Import Enabled" checkbox recorded in Procedure 9, Step 9 was NOT CHECKED, then SKIP to Step 19 of this procedure. 												
16. <input type="checkbox"/>	Primary NOAM VIP (GUI): Select... Main Menu → EAGLE XG Database → Configuration → PDBI → Options ...as shown on the right.	 <p>The screenshot shows a GUI titled "Connected using VIP to exhrNO-mrsvnc-b (ACTIVE NETWORK OAM&P)". On the left is a tree view of the "Main Menu" with folders for Administration, Configuration, Alarms & Events, Security Log, Status & Manage, Measurements, EAGLE XG Database, and Configuration. Under "EAGLE XG Database", there are sub-folders for Network Entity, DN, IMSI, PDBI, Options, Connections, and Blacklist. The "Options" folder is selected. On the right, a window titled "Main Menu: EAGLE XG Database -> Cor" displays a table of variables and their values:</p> <table border="1"> <thead> <tr> <th>Variable</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Display PDBI Output</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>TCP Listening Port</td> <td>5873</td> </tr> <tr> <td>SSL Listening Port</td> <td>5874</td> </tr> <tr> <td>Allow Connections</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Max Connections</td> <td>16</td> </tr> </tbody> </table>	Variable	Value	Display PDBI Output	<input checked="" type="checkbox"/>	TCP Listening Port	5873	SSL Listening Port	5874	Allow Connections	<input checked="" type="checkbox"/>	Max Connections	16
Variable	Value													
Display PDBI Output	<input checked="" type="checkbox"/>													
TCP Listening Port	5873													
SSL Listening Port	5874													
Allow Connections	<input checked="" type="checkbox"/>													
Max Connections	16													

Procedure 10: Backout of the Primary NOAM NE

Step	Procedure	Result
<p>17.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP: Locate the “Remote Import Enabled” checkbox and make sure that it is checked (ADD the check mark if necessary).</p>	
<p>18.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP: If the Check mark was ADDED to the “Remote Import Enabled” checkbox in the previous step, then execute the following:</p> <p>1) Click the “Apply” dialogue box in the top left of the right panel.</p> <p>2) Verify that a “Success!” response is received in the banner.</p>	
<p>19.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP: Select...</p> <p>Main Menu → Status & Manage → Database</p> <p>...as shown on the right.</p>	

Procedure 10: Backout of the Primary NOAM NE

Step	Procedure	Result
<p>20.</p> <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>1) Click the “Enable Provisioning” dialogue button at the bottom of the right panel.</p> <p>2) Click the “OK” button on the confirmation pop-up box.</p>	 
<p>21.</p> <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>Verify that the text on the dialogue button at the bottom of the right panel changes to state “Disable Provisioning”.</p>	
<p>THIS PROCEDURE HAS BEEN COMPLETED</p>		

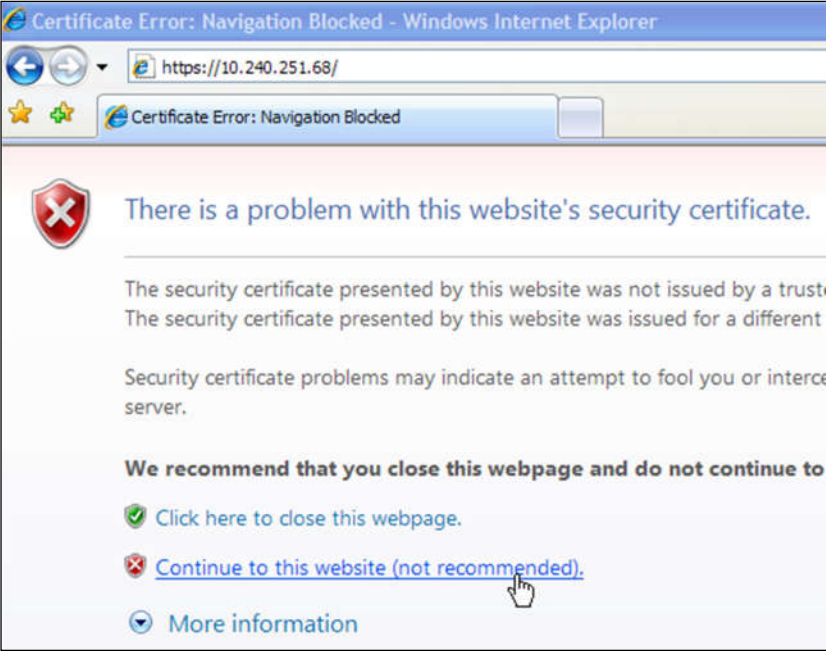

9.4 Perform Health Check (Post NOAM Backout)

This procedure is used to determine the health and status of the HLR Router network and servers.

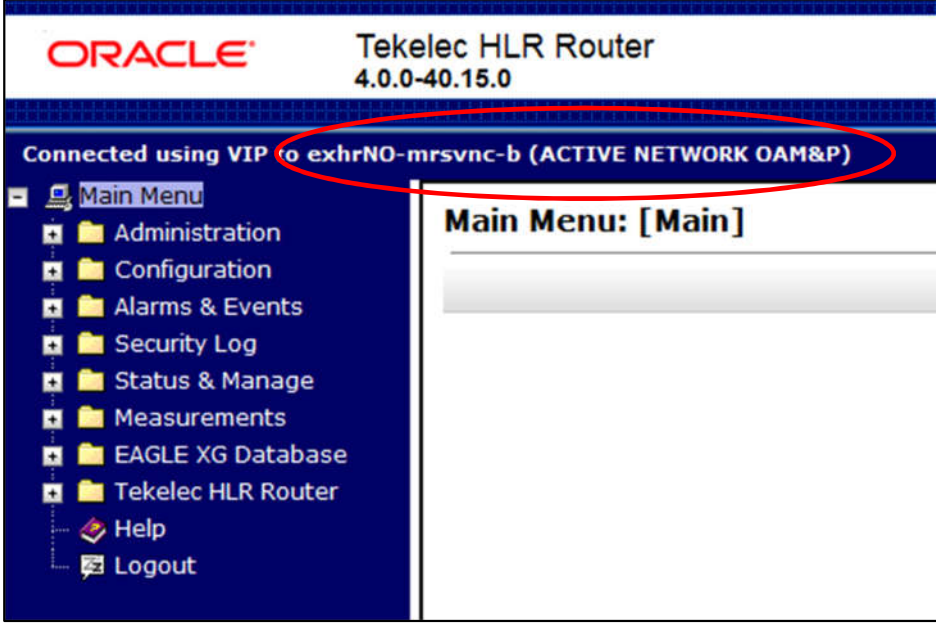
- Execute HLR Router Health Check procedures as specified in **Appendix B**.

APPENDIX A. ACCESSING THE OAM GUI USING THE VIP (NOAM / SOAM)

Appendix A: Accessing the OAM GUI using the VIP (NOAM / SOAM)

Step	Procedure	Result
<p>1.</p> <p><input type="checkbox"/></p>	<p>OAM VIP (GUI):</p> <p>1) Launch the approved Web browser Internet Explorer 8.0, 9.0 or 10.0 and connect to the XMI Virtual IP Address (VIP) assigned to OAM site (Primary HLRR site or SOAM site) - see Table 4</p> <p>2) If a certificate error is received, click on the link which states...</p> <p><i>“Continue to this website (not recommended).”</i></p>	
<p>2.</p> <p><input type="checkbox"/></p>	<p>OAM VIP (GUI):</p> <p>The user should be presented a login screen similar to the one shown on the right.</p> <p>Login to the GUI using the default user and password.</p>	

Appendix A: Accessing the OAM GUI using the VIP (NOAM / SOAM)

Step	Procedure	Result
<p>3.</p> <p><input type="checkbox"/></p>	<p>OAM VIP (GUI):</p> <p>The user should be presented the Main Menu as shown on the right.</p> <p>Verify that the message shown across the top of the right panel indicates that the browser is using the “VIP” connected to the Active OAM server.</p>	 <p>NOTE: The message may show connection to either a “NETWORK OAM&P” or a “SYSTEM OAM” depending on the selected NE.</p>
<p>THIS PROCEDURE HAS BEEN COMPLETED</p>		

APPENDIX B. HEALTH CHECK PROCEDURES

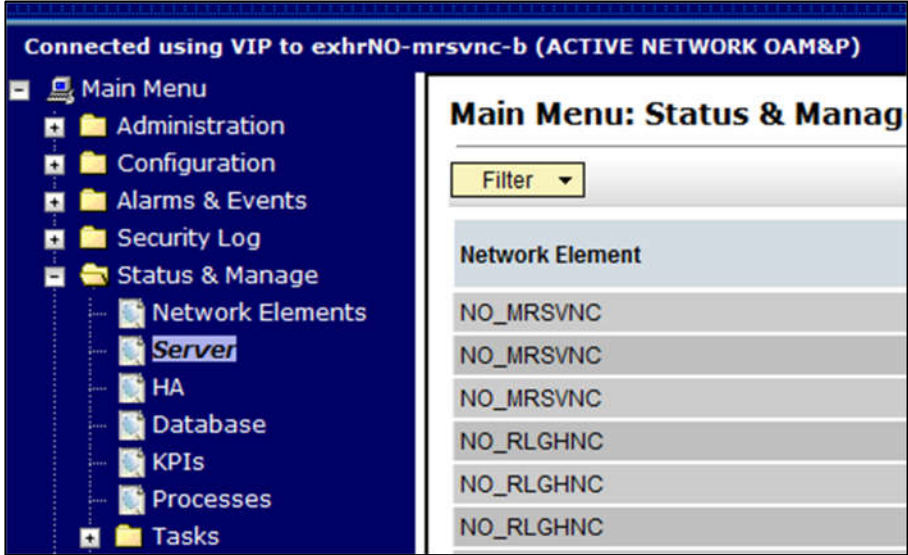
This procedure is part of Software Upgrade Preparation and is used to determine the health and status of the HLR Router network and servers.

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

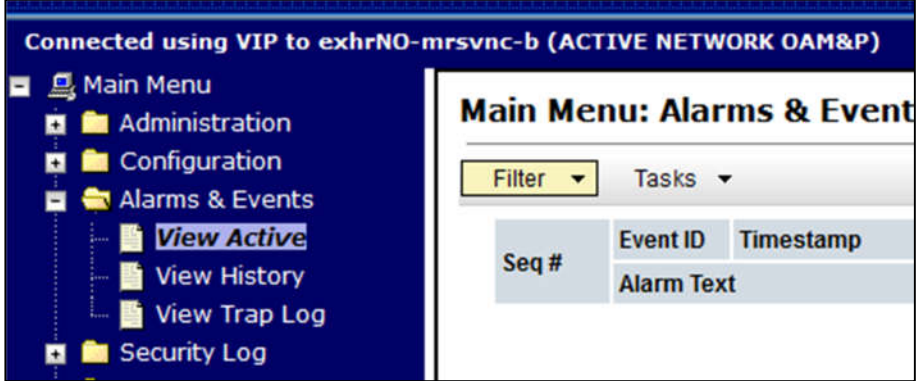

SHOULD ANY STEP IN THIS PROCEDURE FAIL, STOP AND CONTACT “MY ORACLE SUPPORT” (MOS) FOR ASSISTANCE BEFORE CONTINUING!

Refer to **Appendix J - Accessing My Oracle Support (MOS)**, for more information on contacting Oracle Customer Service.

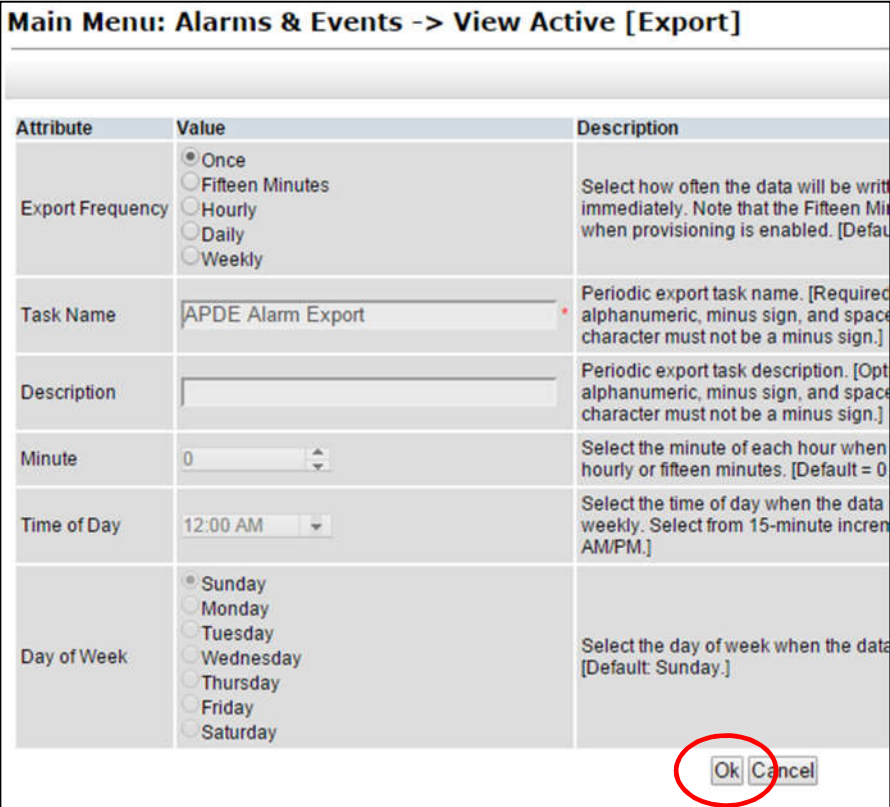
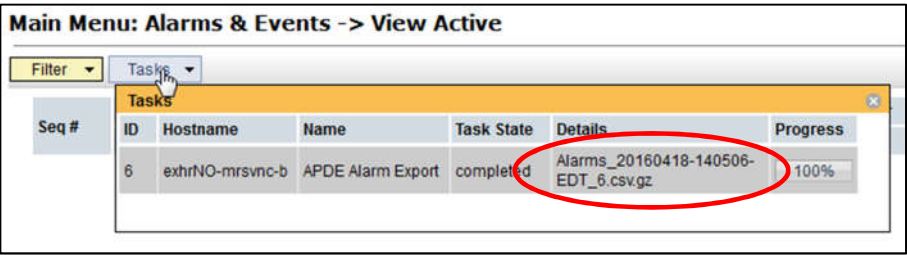
Appendix B: Health Check Procedures

Step	Procedure	Result																																																	
1. <input type="checkbox"/>	Using the VIP address, access the Primary HLRR NOAM GUI.	➤ Using the VIP address, access the Primary HLRR NOAM GUI as described in Appendix A																																																	
2. <input type="checkbox"/>	<p>Primary NOAM VIP (GUI): Select...</p> <p>Main Menu → Status & Manage → Server</p> <p>...as shown on the right.</p>																																																		
3. <input type="checkbox"/>	<p>Primary NOAM VIP (GUI):</p> <p>Verify that all server statuses show “Norm” for Alarm (Alm), Database (DB), Reporting Status, and Processes (Proc) as shown on the right.</p> <p>If any other server statuses are present, they will appear in a colored box as shown on the right.</p> <p>NOTE: Other server states include Err, Warn, Man and Unk.</p>	<table border="1"> <thead> <tr> <th>Network Element</th> <th>Server Hostname</th> <th>Appl State</th> <th>Alm</th> <th>DB</th> <th>Reporting Status</th> <th>Proc</th> </tr> </thead> <tbody> <tr> <td>NO_MRSVNC</td> <td>exhrNO-mrsvnc-b</td> <td>Enabled</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> <tr> <td>NO_MRSVNC</td> <td>exhrNO-mrsvnc-a</td> <td>Enabled</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> <tr> <td>NO_MRSVNC</td> <td>qs-mrsvnc</td> <td>Enabled</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> <tr> <td>NO_RLGHNC</td> <td>exhrNO-rlghnc-b</td> <td>Enabled</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> <tr> <td>NO_RLGHNC</td> <td>exhrNO-rlghnc-a</td> <td>Enabled</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> <tr> <td>NO_RLGHNC</td> <td>qs-rlghnc</td> <td>Enabled</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> <td>Norm</td> </tr> </tbody> </table> <p>NOTE: Post-Upgrade, upgraded servers will have an “Alm” status of “Err” due to the following expected alarm.</p> <ul style="list-style-type: none"> • Event ID (s): 32532 (Server Upgrade Pending Accept/Reject) <p><i>This alarm will remain present until the Upgrade is accepted and may be ignored at this time.</i></p>	Network Element	Server Hostname	Appl State	Alm	DB	Reporting Status	Proc	NO_MRSVNC	exhrNO-mrsvnc-b	Enabled	Norm	Norm	Norm	Norm	NO_MRSVNC	exhrNO-mrsvnc-a	Enabled	Norm	Norm	Norm	Norm	NO_MRSVNC	qs-mrsvnc	Enabled	Norm	Norm	Norm	Norm	NO_RLGHNC	exhrNO-rlghnc-b	Enabled	Norm	Norm	Norm	Norm	NO_RLGHNC	exhrNO-rlghnc-a	Enabled	Norm	Norm	Norm	Norm	NO_RLGHNC	qs-rlghnc	Enabled	Norm	Norm	Norm	Norm
Network Element	Server Hostname	Appl State	Alm	DB	Reporting Status	Proc																																													
NO_MRSVNC	exhrNO-mrsvnc-b	Enabled	Norm	Norm	Norm	Norm																																													
NO_MRSVNC	exhrNO-mrsvnc-a	Enabled	Norm	Norm	Norm	Norm																																													
NO_MRSVNC	qs-mrsvnc	Enabled	Norm	Norm	Norm	Norm																																													
NO_RLGHNC	exhrNO-rlghnc-b	Enabled	Norm	Norm	Norm	Norm																																													
NO_RLGHNC	exhrNO-rlghnc-a	Enabled	Norm	Norm	Norm	Norm																																													
NO_RLGHNC	qs-rlghnc	Enabled	Norm	Norm	Norm	Norm																																													


Appendix B: Health Check Procedures

Step	Procedure	Result
<p>4.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>Select...</p> <p><u>Main Menu</u> → Alarm & Events → View Active</p> <p>...as shown on the right.</p>	
<p>5.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>View Alarm Status in the right panel.</p>	<p>When viewing Pre-Upgrade Status:</p> <p>If any Alarms are present, STOP and contact “My Oracle Support” (MOS) for assistance before attempting to continue. Refer to Appendix J - Accessing My Oracle Support (MOS), for more information on contacting Oracle Customer Service.</p> <p>When viewing Post-Upgrade Status:</p> <p>Active NO server may have the following expected alarms: Alarm ID = 10075 (Application processes have been manually stopped) Alarm ID = 10008 (Provisioning Manually Disabled)</p> <p>Servers that still have replication disabled will have the following expected alarm: Alarm ID = 31113 (Replication Manually Disabled)</p> <p>You may also see alarms: Alarm ID = 10010 (Stateful database not yet synchronized with mate database) Alarm ID = 32532 (Server Upgrade Pending Accept/Reject)</p>
<p>6.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>Select the “Export” dialogue button from the bottom left corner of the screen.</p>	

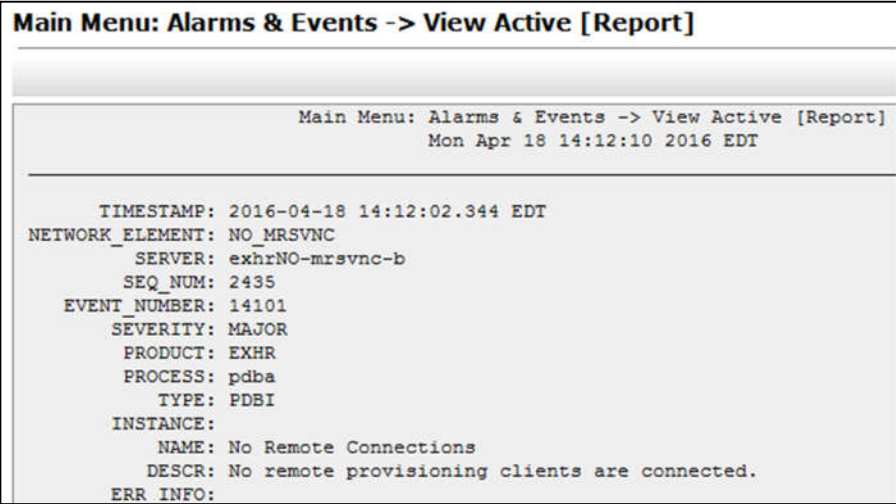
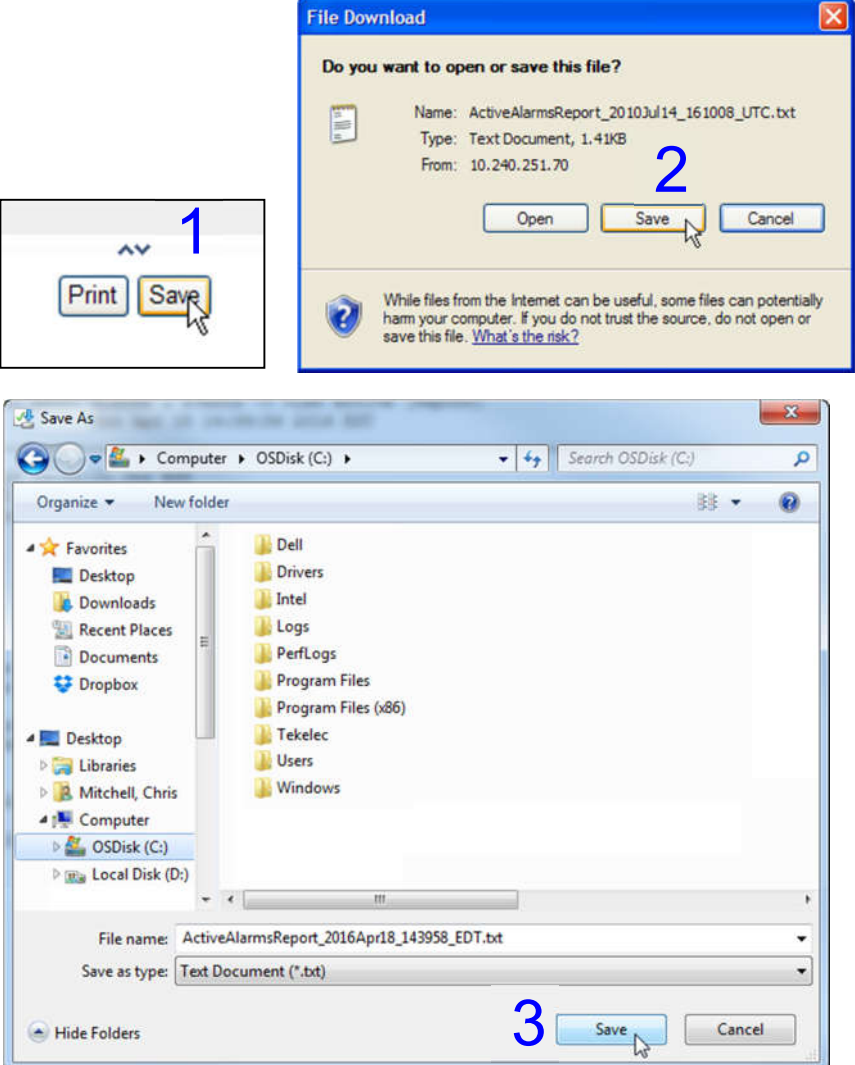
Appendix B: Health Check Procedures

Step	Procedure	Result
<p>7.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>Click the “Ok” button at the bottom of the screen.</p>	
<p>8.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>The name of the exported Alarms CSV file will appear in the “Tasks” tab in the banner at the top of the right panel.</p>	

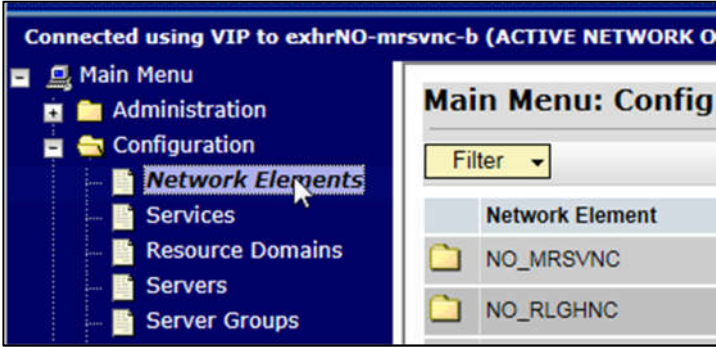

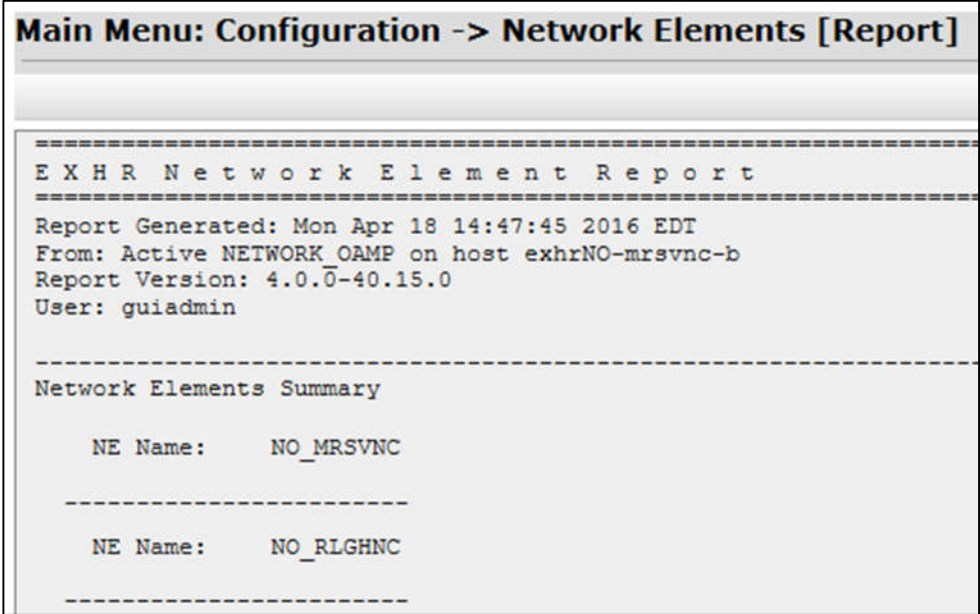
Appendix B: Health Check Procedures

Step	Procedure	Result
<p>9.</p> <input type="checkbox"/>	<p>Primary NOAM VIP (GUI):</p> <p>Record the filename of Alarms CSV file generated in the space provided to the right.</p> <p>NOTE: Copies of this page may be made as needed for additional SOAM NE Maintenance Windows.</p>	<p>Example: Alarms<yyyymmdd>_<hhmmss>.csv</p> <p>Primary NOAM Alarm Status:</p> <ul style="list-style-type: none"> ➤ Pre ISO Administration: Alarms _____ - _____ .csv.gz ➤ Post ISO Administration: Alarms _____ - _____ .csv.gz ➤ Pre Primary NOAM Upgrade (MW1): Alarms _____ - _____ .csv.gz ➤ Post DR NOAM Upgrade (MW1): Alarms _____ - _____ .csv.gz ➤ Pre SOAM Upgrade (MW2): Alarms _____ - _____ .csv.gz ➤ Post SOAM Upgrade (MW2): Alarms _____ - _____ .csv.gz ➤ Pre SOAM Upgrade (MW3): Alarms _____ - _____ .csv.gz ➤ Post SOAM Upgrade (MW3): Alarms _____ - _____ .csv.gz ➤ Pre SOAM Upgrade (MW4): Alarms _____ - _____ .csv.gz ➤ Post SOAM Upgrade (MW4): Alarms _____ - _____ .csv.gz ➤ Pre SOAM Upgrade (MW5): Alarms _____ - _____ .csv.gz ➤ Post SOAM Upgrade (MW5): Alarms _____ - _____ .csv.gz ➤ Pre SOAM Upgrade (MW6): Alarms _____ - _____ .csv.gz ➤ Post SOAM Upgrade (MW6): Alarms _____ - _____ .csv.gz
<p>10.</p> <input type="checkbox"/>	<p>Primary NOAM VIP (GUI):</p> <p>Select the “Report” dialogue button from the bottom left corner of the screen.</p>	

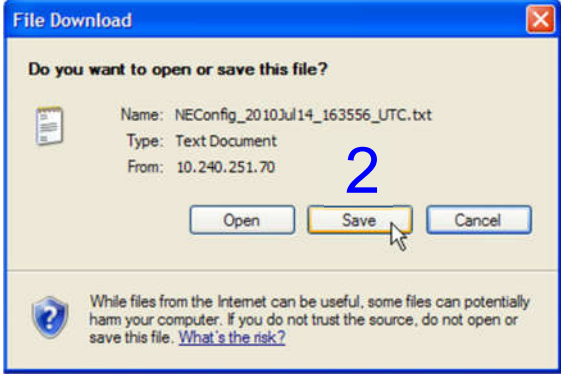

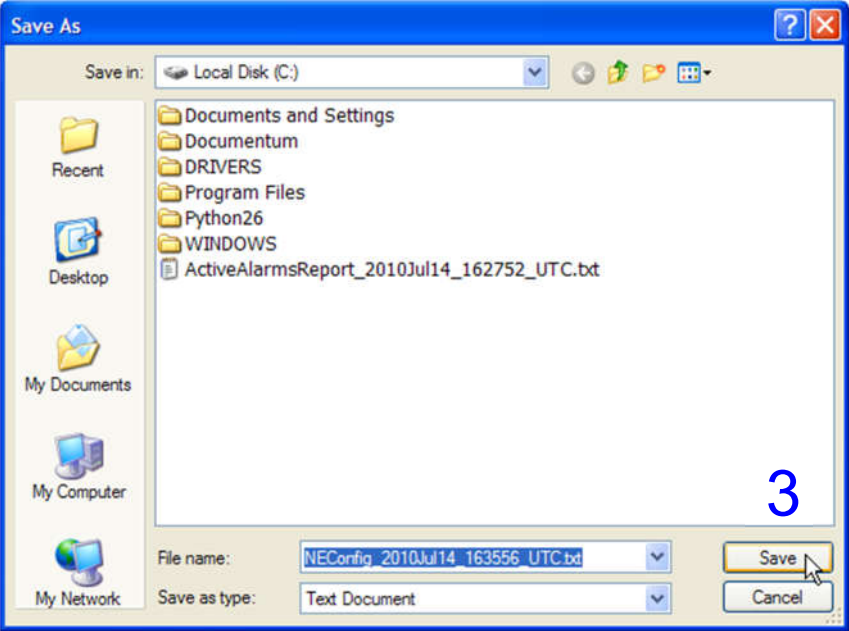
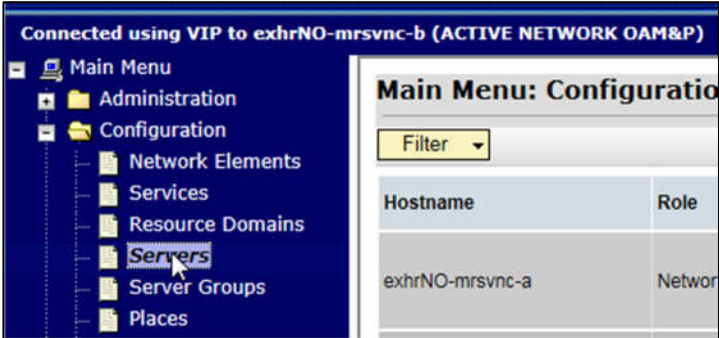
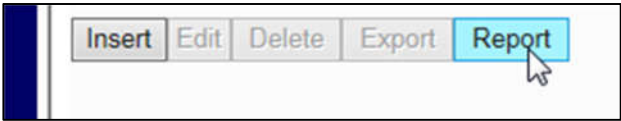
Appendix B: Health Check Procedures

Step	Procedure	Result
<p>11.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>An Active “Alarms & Events” Report will be generated and displayed in the right panel.</p>	 <p>Main Menu: Alarms & Events -> View Active [Report]</p> <p>Main Menu: Alarms & Events -> View Active [Report] Mon Apr 18 14:12:10 2016 EDT</p> <pre> TIMESTAMP: 2016-04-18 14:12:02.344 EDT NETWORK_ELEMENT: NO_MRSVNC SERVER: exhrNO-mrsvnc-b SEQ_NUM: 2435 EVENT_NUMBER: 14101 SEVERITY: MAJOR PRODUCT: EXHR PROCESS: pdba TYPE: PDBI INSTANCE: NAME: No Remote Connections DESCR: No remote provisioning clients are connected. ERR_INFO: </pre>
<p>12.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>1) Select the “Save” dialogue button from the bottom/middle of the right panel.</p> <p>2) Click the “Save” dialogue button on the File Download pop-up box.</p> <p>3) Select a directory on the local disk drive to store the Active “Alarms & Events” Report file and click the “Save” dialogue button.</p>	 <p>1</p> <p>2</p> <p>3</p>

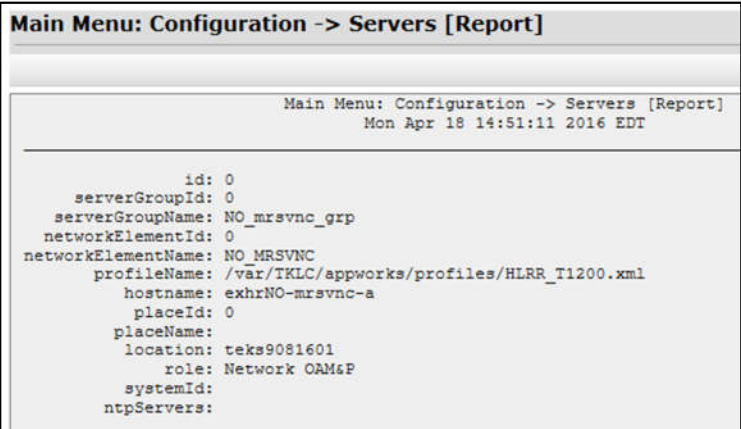

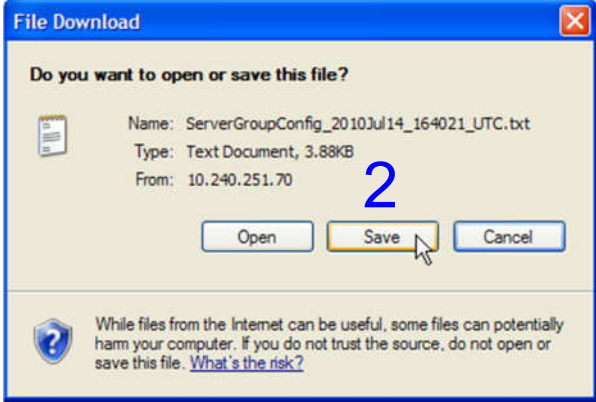
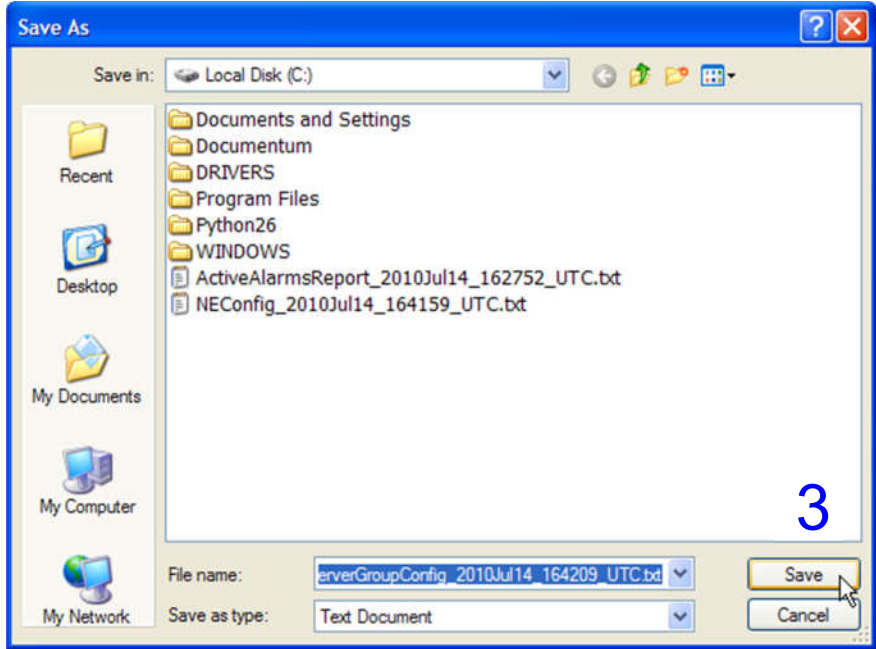
Appendix B: Health Check Procedures

Step	Procedure	Result
<p>13.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>Select...</p> <p>Main Menu → Configuration → Network Elements</p> <p>...as shown on the right.</p>	 <p>Connected using VIP to exhrNO-mrsvnc-b (ACTIVE NETWORK O</p> <p>Main Menu</p> <ul style="list-style-type: none"> Administration Configuration <ul style="list-style-type: none"> Network Elements Services Resource Domains Servers Server Groups <p>Main Menu: Config</p> <p>Filter</p> <p>Network Element</p> <ul style="list-style-type: none"> NO_MRSVNC NO_RLGHNC
<p>14.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>Select the “Report” dialogue button from the bottom left corner of the screen.</p>	 <p>To create a new Network Element, upload a valid configuration file:</p> <p>Browse... Upload File</p> <p>Insert Edit Delete Lock/Unlock Report Export</p>
<p>15.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>A “Network Element Report” will be generated and displayed in the right panel.</p>	 <p>Main Menu: Configuration -> Network Elements [Report]</p> <pre> ===== E X H R N e t w o r k E l e m e n t R e p o r t ===== Report Generated: Mon Apr 18 14:47:45 2016 EDT From: Active NETWORK_OAMP on host exhrNO-mrsvnc-b Report Version: 4.0.0-40.15.0 User: guiadmin ----- Network Elements Summary NE Name: NO_MRSVNC ----- NE Name: NO_RLGHNC ----- </pre>

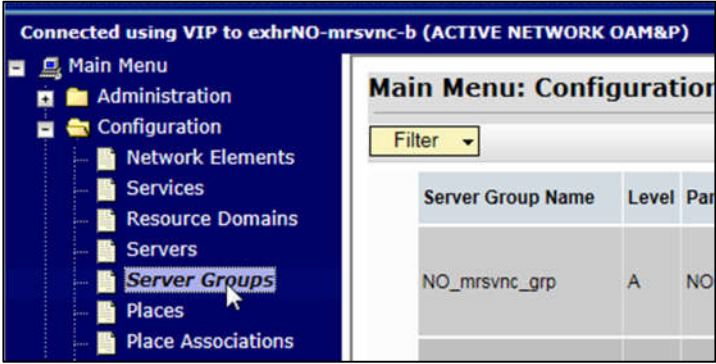
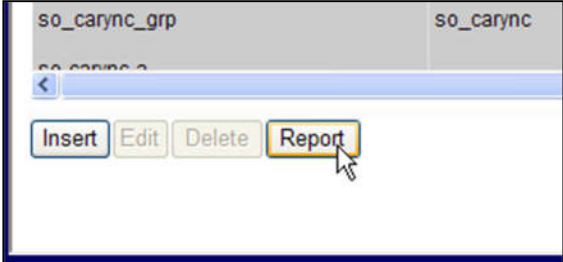
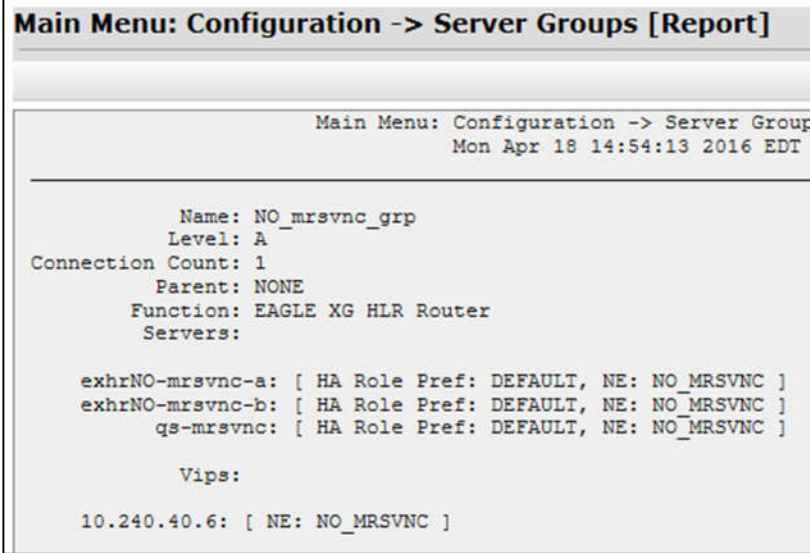
Appendix B: Health Check Procedures

Step	Procedure	Result
<p>16.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>1) Select the “Save” dialogue button from the bottom/middle of the right panel.</p> <p>2) Click the “Save” dialogue button on the File Download pop-up box.</p> <p>3) Select a directory on the local disk drive to store the “Network Elements Report” file and click the “Save” dialogue button.</p>	  
<p>17.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>Select...</p> <p>Main Menu → Configuration → Servers</p> <p>...as shown on the right.</p>	
<p>18.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>Select the “Report” dialogue button from the bottom left corner of the screen.</p>	

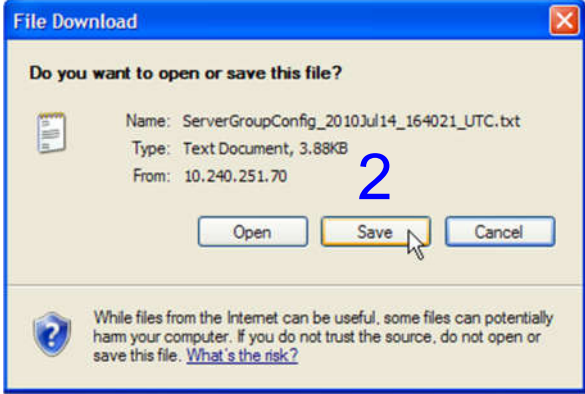
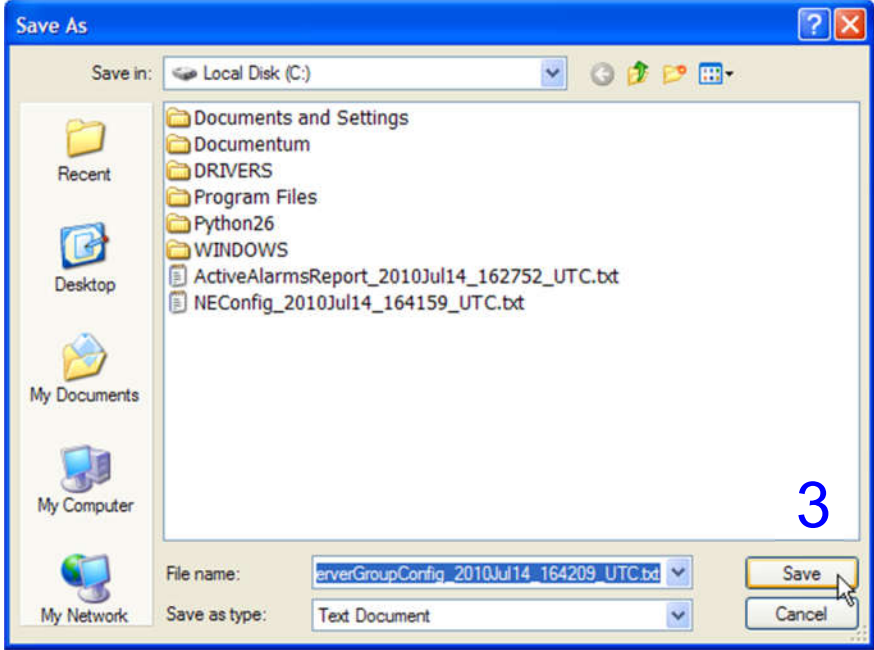

Appendix B: Health Check Procedures

Step	Procedure	Result
<p>19.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>A “Server Report” will be generated and displayed in the right panel.</p>	 <pre> Main Menu: Configuration -> Servers [Report] Main Menu: Configuration -> Servers [Report] Mon Apr 18 14:51:11 2016 EDT id: 0 serverGroupId: 0 serverGroupName: NO_mrsvnc_grp networkElementId: 0 networkElementName: NO_MRSVNC profileName: /var/TKLC/appworks/profiles/HLRR_T1200.xml hostname: exhrNO-mrsvnc-a placeId: 0 placeName: location: teks9081601 role: Network OAM&P systemId: ntpServers: </pre>
<p>20.</p> <p><input type="checkbox"/></p> <p>1) Select the “Save” dialogue button from the bottom/middle of the right panel.</p> <p>2) Click the “Save” dialogue button on the File Download pop-up box.</p> <p>3) Select a directory on the local disk drive to store the “Server Group Report” file and click the “Save” dialogue button.</p>	<p>1</p> 	 <p>2</p>  <p>3</p>

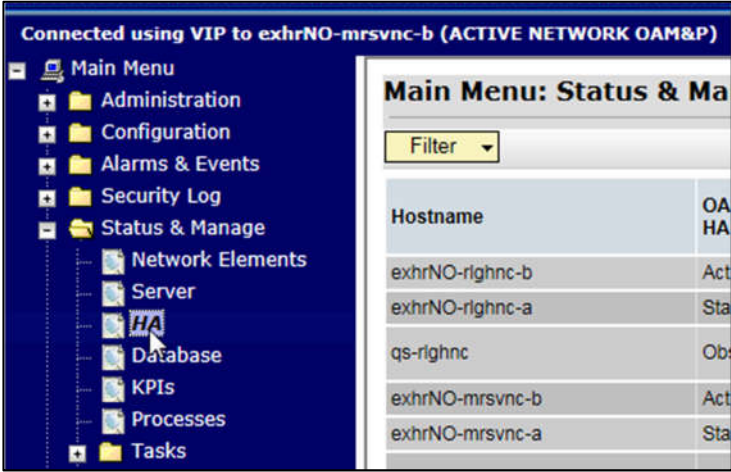
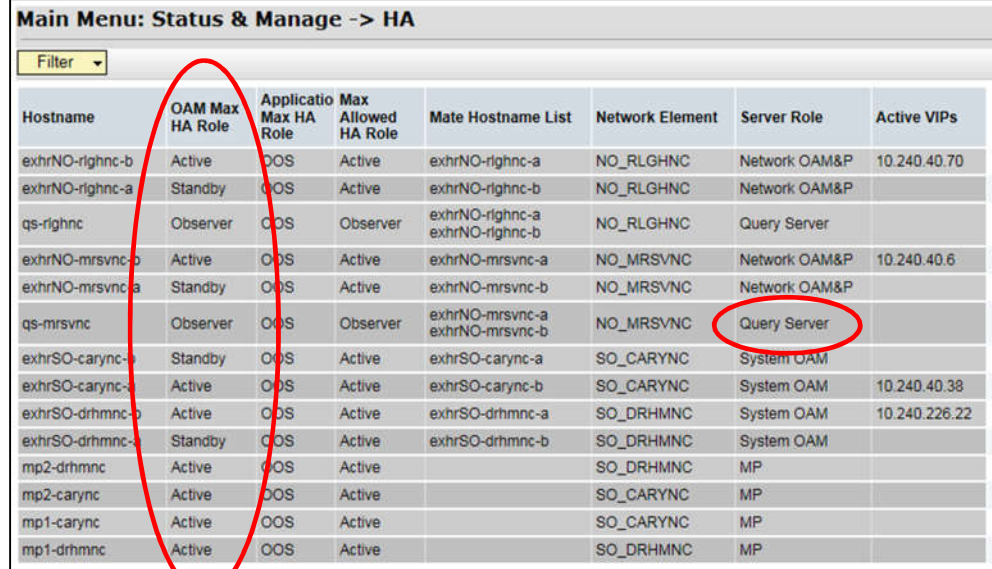
Appendix B: Health Check Procedures


Step	Procedure	Result						
<p>21.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>Select...</p> <p>Main Menu → Configuration → Server Groups</p> <p>...as shown on the right.</p>	 <p>The screenshot shows the 'Main Menu: Configuration' window. On the left is a tree view with 'Server Groups' highlighted. On the right is a table with columns 'Server Group Name', 'Level', and 'Parent'. The table contains one entry: 'NO_mrvnc_grp' at level 'A' with parent 'NO'.</p> <table border="1"> <thead> <tr> <th>Server Group Name</th> <th>Level</th> <th>Parent</th> </tr> </thead> <tbody> <tr> <td>NO_mrvnc_grp</td> <td>A</td> <td>NO</td> </tr> </tbody> </table>	Server Group Name	Level	Parent	NO_mrvnc_grp	A	NO
Server Group Name	Level	Parent						
NO_mrvnc_grp	A	NO						
<p>22.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>Select the “Report” dialogue button from the bottom left corner of the screen.</p>	 <p>The screenshot shows a toolbar with buttons for 'Insert', 'Edit', 'Delete', and 'Report'. The 'Report' button is highlighted with a mouse cursor.</p>						
<p>23.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>A “Server Group Report” will be generated and displayed in the right panel.</p>	 <p>The screenshot shows the 'Main Menu: Configuration -> Server Groups [Report]' window. It displays the following text:</p> <pre> Main Menu: Configuration -> Server Group Mon Apr 18 14:54:13 2016 EDT Name: NO_mrvnc_grp Level: A Connection Count: 1 Parent: NONE Function: EAGLE XG HLR Router Servers: exhrNO-mrvnc-a: [HA Role Pref: DEFAULT, NE: NO_MRSVNC] exhrNO-mrvnc-b: [HA Role Pref: DEFAULT, NE: NO_MRSVNC] qs-mrvnc: [HA Role Pref: DEFAULT, NE: NO_MRSVNC] Vips: 10.240.40.6: [NE: NO_MRSVNC] </pre>						

Appendix B: Health Check Procedures

Step	Procedure	Result
<p>24.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>1) Select the “Save” dialogue button from the bottom/middle of the right panel.</p> <p>2) Click the “Save” dialogue button on the File Download pop-up box.</p> <p>3) Select a directory on the local disk drive to store the “Server Group Report” file and click the “Save” dialogue button.</p>	  
<p>25.</p> <p><input type="checkbox"/></p>	<p>Provide the saved files to “My Oracle Support” (MOS) for Health Check Analysis.</p>	<ul style="list-style-type: none"> • If executing this procedure as a pre or post Upgrade Health Check (HC1/HC2/HC3), provide the following saved files to “My Oracle Support” (MOS) for Health Check Analysis: <ul style="list-style-type: none"> ○ Active “Alarms & Events” Report [Appendix B, Step 12] ○ Network Elements Report [Appendix B, Step 16] ○ Server Report [Appendix B, Step 20] ○ Server Group Report [Appendix B, Step 24]

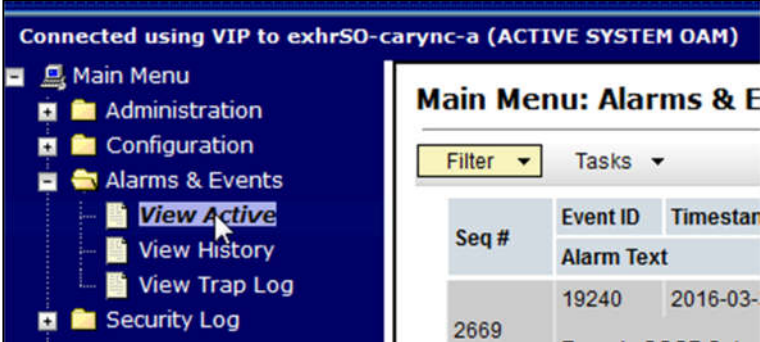

Appendix B: Health Check Procedures

Step	Procedure	Result																																																																																																																								
<p>26.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>Select...</p> <p>Main Menu → Status & Manage → HA</p> <p>...as shown on the right.</p>																																																																																																																									
<p>27.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>1) Verify that the “OAM Max HA Role” for all servers shows either “Active” or “Standby” as shown to the right.</p> <p>NOTE: An “HA Status” of “Observer” is allowed when Server Role is “Query Server”.</p>	 <table border="1"> <thead> <tr> <th>Hostname</th> <th>OAM Max HA Role</th> <th>Application Max HA Role</th> <th>Max Allowed HA Role</th> <th>Mate Hostname List</th> <th>Network Element</th> <th>Server Role</th> <th>Active VIPs</th> </tr> </thead> <tbody> <tr> <td>exhrNO-righnc-b</td> <td>Active</td> <td>OOS</td> <td>Active</td> <td>exhrNO-righnc-a</td> <td>NO_RLGHNC</td> <td>Network OAM&P</td> <td>10.240.40.70</td> </tr> <tr> <td>exhrNO-righnc-a</td> <td>Standby</td> <td>OOS</td> <td>Active</td> <td>exhrNO-righnc-b</td> <td>NO_RLGHNC</td> <td>Network OAM&P</td> <td></td> </tr> <tr> <td>qs-righnc</td> <td>Observer</td> <td>OOS</td> <td>Observer</td> <td>exhrNO-righnc-a exhrNO-righnc-b</td> <td>NO_RLGHNC</td> <td>Query Server</td> <td></td> </tr> <tr> <td>exhrNO-mrsync-b</td> <td>Active</td> <td>OOS</td> <td>Active</td> <td>exhrNO-mrsync-a</td> <td>NO_MRSVNC</td> <td>Network OAM&P</td> <td>10.240.40.6</td> </tr> <tr> <td>exhrNO-mrsync-a</td> <td>Standby</td> <td>OOS</td> <td>Active</td> <td>exhrNO-mrsync-b</td> <td>NO_MRSVNC</td> <td>Network OAM&P</td> <td></td> </tr> <tr> <td>qs-mrsync</td> <td>Observer</td> <td>OOS</td> <td>Observer</td> <td>exhrNO-mrsync-a exhrNO-mrsync-b</td> <td>NO_MRSVNC</td> <td>Query Server</td> <td></td> </tr> <tr> <td>exhrSO-carync-a</td> <td>Standby</td> <td>OOS</td> <td>Active</td> <td>exhrSO-carync-b</td> <td>SO_CARYNC</td> <td>System OAM</td> <td></td> </tr> <tr> <td>exhrSO-carync-b</td> <td>Active</td> <td>OOS</td> <td>Active</td> <td>exhrSO-carync-a</td> <td>SO_CARYNC</td> <td>System OAM</td> <td>10.240.40.38</td> </tr> <tr> <td>exhrSO-drhmc-b</td> <td>Active</td> <td>OOS</td> <td>Active</td> <td>exhrSO-drhmc-a</td> <td>SO_DRHMNC</td> <td>System OAM</td> <td>10.240.226.22</td> </tr> <tr> <td>exhrSO-drhmc-a</td> <td>Standby</td> <td>OOS</td> <td>Active</td> <td>exhrSO-drhmc-b</td> <td>SO_DRHMNC</td> <td>System OAM</td> <td></td> </tr> <tr> <td>mp2-drhmc</td> <td>Active</td> <td>OOS</td> <td>Active</td> <td></td> <td>SO_DRHMNC</td> <td>MP</td> <td></td> </tr> <tr> <td>mp2-carync</td> <td>Active</td> <td>OOS</td> <td>Active</td> <td></td> <td>SO_CARYNC</td> <td>MP</td> <td></td> </tr> <tr> <td>mp1-carync</td> <td>Active</td> <td>OOS</td> <td>Active</td> <td></td> <td>SO_CARYNC</td> <td>MP</td> <td></td> </tr> <tr> <td>mp1-drhmc</td> <td>Active</td> <td>OOS</td> <td>Active</td> <td></td> <td>SO_DRHMNC</td> <td>MP</td> <td></td> </tr> </tbody> </table>	Hostname	OAM Max HA Role	Application Max HA Role	Max Allowed HA Role	Mate Hostname List	Network Element	Server Role	Active VIPs	exhrNO-righnc-b	Active	OOS	Active	exhrNO-righnc-a	NO_RLGHNC	Network OAM&P	10.240.40.70	exhrNO-righnc-a	Standby	OOS	Active	exhrNO-righnc-b	NO_RLGHNC	Network OAM&P		qs-righnc	Observer	OOS	Observer	exhrNO-righnc-a exhrNO-righnc-b	NO_RLGHNC	Query Server		exhrNO-mrsync-b	Active	OOS	Active	exhrNO-mrsync-a	NO_MRSVNC	Network OAM&P	10.240.40.6	exhrNO-mrsync-a	Standby	OOS	Active	exhrNO-mrsync-b	NO_MRSVNC	Network OAM&P		qs-mrsync	Observer	OOS	Observer	exhrNO-mrsync-a exhrNO-mrsync-b	NO_MRSVNC	Query Server		exhrSO-carync-a	Standby	OOS	Active	exhrSO-carync-b	SO_CARYNC	System OAM		exhrSO-carync-b	Active	OOS	Active	exhrSO-carync-a	SO_CARYNC	System OAM	10.240.40.38	exhrSO-drhmc-b	Active	OOS	Active	exhrSO-drhmc-a	SO_DRHMNC	System OAM	10.240.226.22	exhrSO-drhmc-a	Standby	OOS	Active	exhrSO-drhmc-b	SO_DRHMNC	System OAM		mp2-drhmc	Active	OOS	Active		SO_DRHMNC	MP		mp2-carync	Active	OOS	Active		SO_CARYNC	MP		mp1-carync	Active	OOS	Active		SO_CARYNC	MP		mp1-drhmc	Active	OOS	Active		SO_DRHMNC	MP	
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<p>28.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>Verify the “OAM HA Max Role” for all remaining servers on the [Main Menu: Status & Manage → HA] screen.</p>	<ul style="list-style-type: none"> • Scroll thru each page of the [Main Menu: Status & Manage → HA] screen until the “OAM HA Role” for has been verified for all servers in the topology. 																																																																																																																								

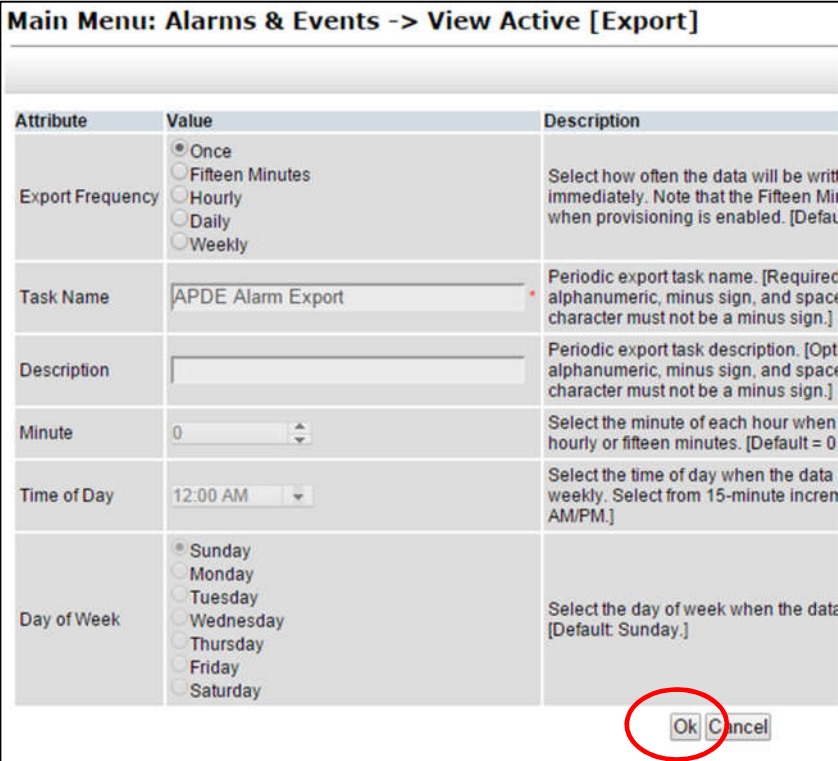
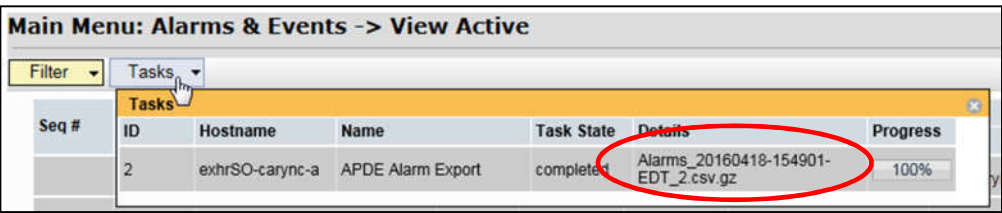


- If executing this Health Check procedure during NOAM NE upgrade, then SKIP the remainder of this procedure and return to the referring Section of the document.
- If executing this Health Check procedure during SOAM NE upgrade, then CONTINUE with Step 29 of this procedure.

Appendix B: Health Check Procedures

Step	Procedure	Result
<p>29.</p> <input type="checkbox"/>	<p>Using the VIP address, access the HLRR SOAM GUI.</p>	<p>Using the VIP address, access the HLRR SOAM GUI as described in Appendix A</p>
<p>30.</p> <input type="checkbox"/>	<p>SOAM VIP (GUI): Select...</p> <p>Main Menu → Alarm & Events → View Active</p> <p>...as shown on the right.</p>	 <p>The screenshot shows a web browser window titled "Connected using VIP to exhrSO-carync-a (ACTIVE SYSTEM OAM)". On the left is a "Main Menu" with folders for Administration, Configuration, Alarms & Events, and Security Log. Under "Alarms & Events", "View Active" is highlighted with a mouse cursor. On the right is a preview of the "Main Menu: Alarms & Events" page, showing a table with columns for Seq #, Event ID, and Timestamp. The table contains two rows of data: (2669, 19240, 2016-03-...).</p>
<p>31.</p> <input type="checkbox"/>	<p>SOAM VIP (GUI): View Alarm Status in the right panel.</p>	<p><u>When viewing Pre-Upgrade Status:</u></p> <p>Since HLR Router alarms at the SOAM reflect SS7 activity, it is common for alarms to be present during normal operation. Therefore, this Health Check will only capture current alarms thru the "Export" function (pre-upgrade) so that they may be compared to the post-upgrade alarm activity if needed.</p> <p>If any Alarms are unexpected and require assistance, then STOP and contact "My Oracle Support" (MOS) before attempting to continue. Refer to Appendix J - Accessing My Oracle Support (MOS), for more information on contacting Oracle Customer Service.</p> <p><u>When viewing Post-Upgrade Status:</u></p> <p>Active NO server may have the following expected alarms: Alarm ID = 10075 (Application processes have been manually stopped) Alarm ID = 10008 (Provisioning Manually Disabled)</p> <p>Servers that still have replication disabled will have the following expected alarm: Alarm ID = 31113 (Replication Manually Disabled)</p> <p>You may also see alarms: Alarm ID = 10010 (Stateful database not yet synchronized with mate database) Alarm ID = 32532 (Server Upgrade Pending Accept/Reject)</p>
<p>32.</p> <input type="checkbox"/>	<p>SOAM VIP (GUI): Select the "Export" dialogue button from the bottom left corner of the screen.</p>	 <p>The screenshot shows two buttons: "Export" and "Report". A mouse cursor is pointing at the "Export" button.</p>

Appendix B: Health Check Procedures

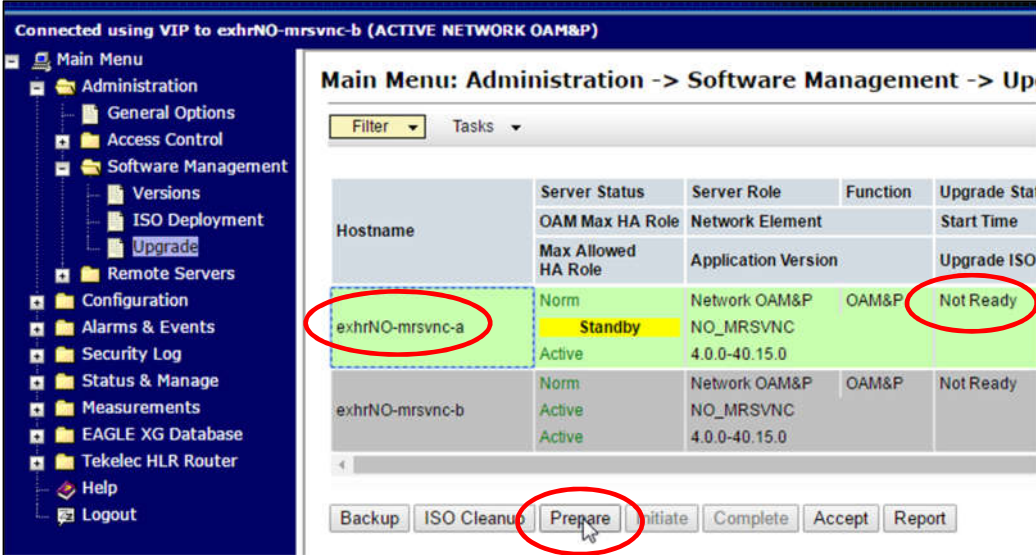
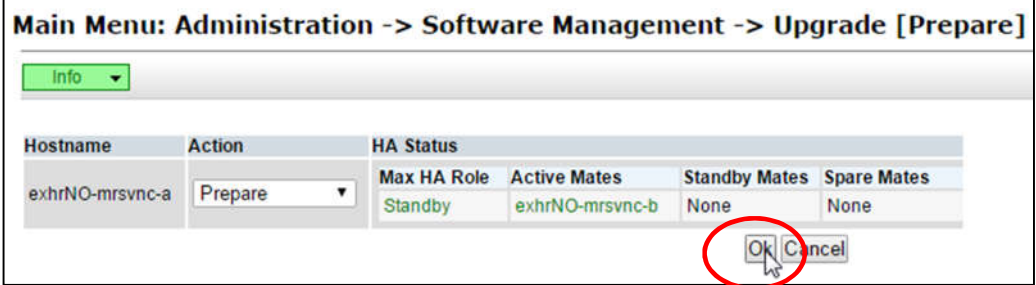
Step	Procedure	Result
<p>33.</p> <p><input type="checkbox"/></p>	<p>SOAM VIP (GUI):</p> <p>Leave all fields at the default value and click the “Ok” button at the bottom of the screen.</p>	
<p>34.</p> <p><input type="checkbox"/></p>	<p>SOAM VIP (GUI):</p> <p>The name of the exported Alarms CSV file will appear in the “Tasks” tab in the banner at the top of the right panel.</p>	

Appendix B: Health Check Procedures

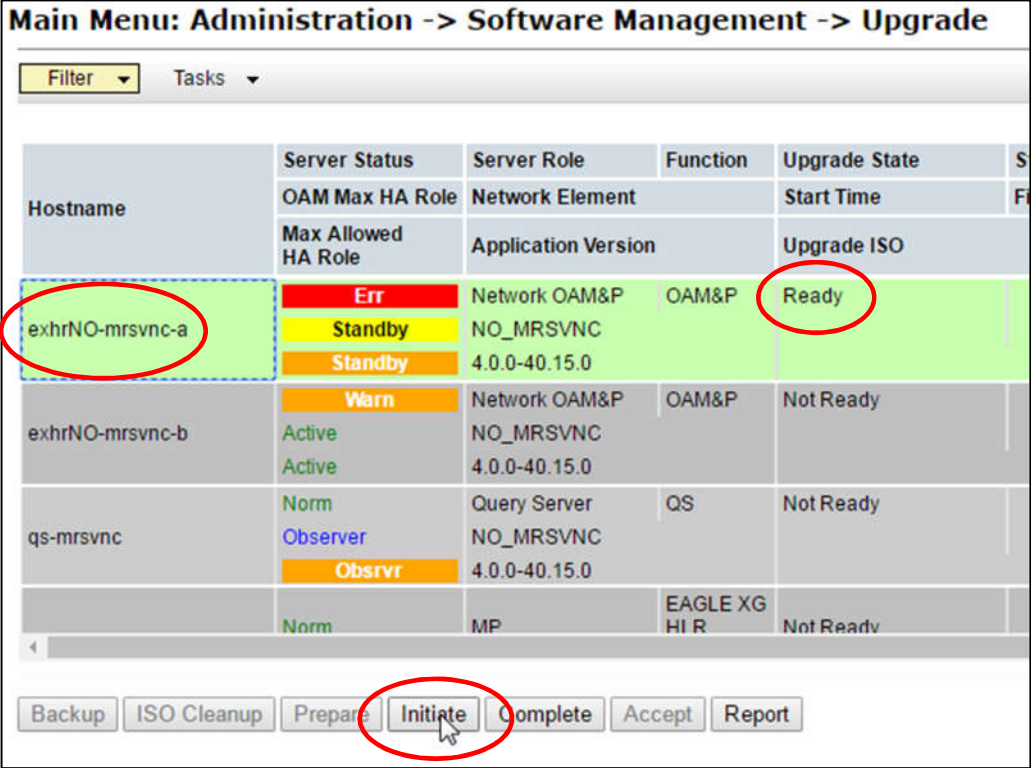
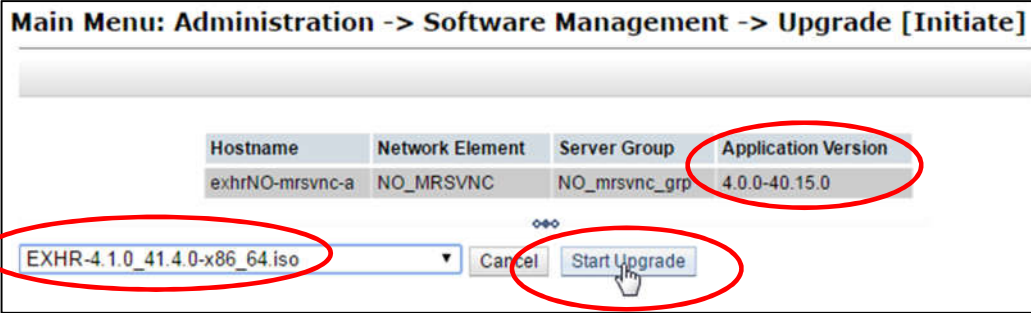
Step	Procedure	Result
<p>35.</p> <input type="checkbox"/>	<p>SOAM VIP (GUI): Record the filename of Alarms CSV file generated in the space provided to the right.</p> <p><i>NOTE: This procedure assumes that no more than (4) SOAM NE(s) will be upgraded in a single maintenance window.</i></p> <p><i>Copies of this page may be made as needed if additional SOAM NE(s) are to be upgraded in the same Maintenance Windows.</i></p>	<p>Example: Alarms<yyyymmdd>_<hhmmss>.csv</p> <p>SOAM Alarm Status:</p> <p>SOAM Site 1 (Name) _____</p> <p>➤ Pre SOAM Site 1 Upgrade: Alarms _____ - _____ .csv.gz</p> <p>➤ Post SOAM Site 1 Upgrade: Alarms _____ - _____ .csv.gz</p> <p>SOAM Site 2 (Name) _____</p> <p>➤ Pre SOAM Site 1 Upgrade: Alarms _____ - _____ .csv.gz</p> <p>➤ Post SOAM Site 1 Upgrade: Alarms _____ - _____ .csv.gz</p> <p>SOAM Site 3 (Name) _____</p> <p>➤ Pre SOAM Site 1 Upgrade: Alarms _____ - _____ .csv.gz</p> <p>➤ Post SOAM Site 1 Upgrade: Alarms _____ - _____ .csv.gz</p> <p>SOAM Site 4 (Name) _____</p> <p>➤ Pre SOAM Site 1 Upgrade: Alarms _____ - _____ .csv.gz</p> <p>➤ Post SOAM Site 1 Upgrade: Alarms _____ - _____ .csv.gz</p>
<p>36.</p> <input type="checkbox"/>	<p>Export the SOAM alarms for each SOAM NE to be upgraded in this Maintenance Window.</p>	<ul style="list-style-type: none"> Repeat Steps 29 - 35 of this procedure for each SOAM NE to be upgraded in this Maintenance Window.
<p>THIS PROCEDURE HAS BEEN COMPLETED</p>		

APPENDIX C. UPGRADE SERVER ON HLRR 4.0

Appendix C: Upgrade Server on HLRR 4.0

Step	Procedure	Result																	
<p>1.</p> <p><input type="checkbox"/></p>	<p>HLRR 4.0 only</p> <p>Using the VIP address, access the Primary HLRR NOAM GUI.</p>	<ul style="list-style-type: none"> Using the VIP address, access the Primary HLRR NOAM GUI as described in Appendix A. 																	
<p>2.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) Select... Main Menu → Administration → Software Management → Upgrade</p> <p>2) Using the vertical scroll bar in the right panel, scroll to the row containing the hostname of the server to be upgraded.</p> <p>3) Verify that the Upgrade State shows “Not Ready”.</p> <p>4) Click the “Prepare” dialogue button located in the bottom left of the right panel.</p>	 <p>Connected using VIP to exhrNO-mrsvnc-b (ACTIVE NETWORK OAM&P)</p> <p>Main Menu: Administration -> Software Management -> Up</p> <table border="1"> <thead> <tr> <th>Hostname</th> <th>Server Status</th> <th>Server Role</th> <th>Function</th> <th>Upgrade Sta</th> </tr> </thead> <tbody> <tr> <td>exhrNO-mrsvnc-a</td> <td>Norm</td> <td>Network OAM&P</td> <td>OAM&P</td> <td>Not Ready</td> </tr> <tr> <td>exhrNO-mrsvnc-b</td> <td>Active</td> <td>Network OAM&P</td> <td>OAM&P</td> <td>Not Ready</td> </tr> </tbody> </table> <p>Buttons: Backup, ISO Cleanup, Prepare, Initiate, Complete, Accept, Report</p>	Hostname	Server Status	Server Role	Function	Upgrade Sta	exhrNO-mrsvnc-a	Norm	Network OAM&P	OAM&P	Not Ready	exhrNO-mrsvnc-b	Active	Network OAM&P	OAM&P	Not Ready		
Hostname	Server Status	Server Role	Function	Upgrade Sta															
exhrNO-mrsvnc-a	Norm	Network OAM&P	OAM&P	Not Ready															
exhrNO-mrsvnc-b	Active	Network OAM&P	OAM&P	Not Ready															
<p>3.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>The user should be presented with the Upgrade [Make Ready] screen.</p> <p>Click on “Ok” dialogue button.</p>	 <p>Main Menu: Administration -> Software Management -> Upgrade [Prepare]</p> <p>Info</p> <table border="1"> <thead> <tr> <th>Hostname</th> <th>Action</th> <th colspan="3">HA Status</th> </tr> <tr> <th></th> <th></th> <th>Max HA Role</th> <th>Active Mates</th> <th>Standby Mates</th> <th>Spare Mates</th> </tr> </thead> <tbody> <tr> <td>exhrNO-mrsvnc-a</td> <td>Prepare</td> <td>Standby</td> <td>exhrNO-mrsvnc-b</td> <td>None</td> <td>None</td> </tr> </tbody> </table> <p>Buttons: OK, Cancel</p>	Hostname	Action	HA Status					Max HA Role	Active Mates	Standby Mates	Spare Mates	exhrNO-mrsvnc-a	Prepare	Standby	exhrNO-mrsvnc-b	None	None
Hostname	Action	HA Status																	
		Max HA Role	Active Mates	Standby Mates	Spare Mates														
exhrNO-mrsvnc-a	Prepare	Standby	exhrNO-mrsvnc-b	None	None														

Appendix C: Upgrade Server on HLRR 4.0

Step	Procedure	Result																																				
<p>4.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) Select...</p> <p>Main Menu → Administration → Software Management → Upgrade</p> <p>2) Using the vertical scroll bar in the right panel, scroll to the row containing the hostname of the server to be upgraded.</p> <p>3) Verify that the Upgrade State shows "Ready".</p> <p>NOTE: If the Upgrade State fails to show "Ready", the user may need to repeat above sub-steps</p> <p>3) Click the "Initiate" dialogue button</p>	 <p>Main Menu: Administration -> Software Management -> Upgrade</p> <table border="1"> <thead> <tr> <th>Hostname</th> <th>Server Status</th> <th>Server Role</th> <th>Function</th> <th>Upgrade State</th> <th>Upgrade ISO</th> </tr> </thead> <tbody> <tr> <td>exhrNO-mrsvnc-a</td> <td>Err Standby Standby</td> <td>Network OAM&P</td> <td>OAM&P</td> <td>Ready</td> <td></td> </tr> <tr> <td>exhrNO-mrsvnc-b</td> <td>Warn Active Active</td> <td>Network OAM&P</td> <td>OAM&P</td> <td>Not Ready</td> <td></td> </tr> <tr> <td>qs-mrsvnc</td> <td>Norm Observer</td> <td>Query Server</td> <td>QS</td> <td>Not Ready</td> <td></td> </tr> <tr> <td></td> <td>Obsvr</td> <td>NO_MRSVNC</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>Norm</td> <td>MP</td> <td>EAGLE XG HI R</td> <td>Not Ready</td> <td></td> </tr> </tbody> </table> <p>Buttons: Backup, ISO Cleanup, Prepare, Initiate, Complete, Accept, Report</p>	Hostname	Server Status	Server Role	Function	Upgrade State	Upgrade ISO	exhrNO-mrsvnc-a	Err Standby Standby	Network OAM&P	OAM&P	Ready		exhrNO-mrsvnc-b	Warn Active Active	Network OAM&P	OAM&P	Not Ready		qs-mrsvnc	Norm Observer	Query Server	QS	Not Ready			Obsvr	NO_MRSVNC					Norm	MP	EAGLE XG HI R	Not Ready	
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	Norm	MP	EAGLE XG HI R	Not Ready																																		
<p>5.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) Verify that the Application Version shows the <source_release></p> <p>2) Using the pull-down menu, select the <target_release></p> <p>3) Click the "Start Upgrade" dialogue button</p>	 <p>Main Menu: Administration -> Software Management -> Upgrade [Initiate]</p> <table border="1"> <thead> <tr> <th>Hostname</th> <th>Network Element</th> <th>Server Group</th> <th>Application Version</th> </tr> </thead> <tbody> <tr> <td>exhrNO-mrsvnc-a</td> <td>NO_MRSVNC</td> <td>NO_mrsvnc_grp</td> <td>4.0.0-40.15.0</td> </tr> </tbody> </table> <p>Dropdown menu: EXHR-4.1.0_41.4.0-x86_64.iso</p> <p>Buttons: Cancel, Start Upgrade</p>	Hostname	Network Element	Server Group	Application Version	exhrNO-mrsvnc-a	NO_MRSVNC	NO_mrsvnc_grp	4.0.0-40.15.0																												
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Appendix C: Upgrade Server on HLRR 4.0

Step	Procedure	Result																														
<p>6.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>The user is returned to the...</p> <p>Main Menu → Administration → Software Management → Upgrade</p> <p>...screen as shown on the right.</p> <p>1) Scroll to the row containing the hostname of the server to be upgraded.</p> <p>2) Verify that the Upgrade State shows “Upgrading”.</p>	<p>Main Menu: Administration -> Software Management -> Upgrade</p> <p>Filter Tasks</p> <table border="1"> <thead> <tr> <th>Hostname</th> <th>Server Status</th> <th>Server Role</th> <th>Function</th> <th>Upgrade State</th> <th>Status Message</th> </tr> <tr> <td></td> <th>OAM Max HA Role</th> <th>Network Element</th> <td></td> <th>Start Time</th> <th>Finish Time</th> </tr> <tr> <td></td> <th>Max Allowed HA Role</th> <th>Application Version</th> <td></td> <th>Upgrade ISO</th> <td></td> </tr> </thead> <tbody> <tr> <td>exhrNO-mrsvnc-a</td> <td>Warn Standby Standby</td> <td>Network OAM&P NO_MRSVNC 4.0.0-40.15.0</td> <td>OAM&P</td> <td>Upgrading</td> <td>Starting upgrade of IP: 10.240.40.4</td> </tr> <tr> <td>exhrNO-mrsvnc-b</td> <td>Warn Active Active</td> <td>Network OAM&P NO_MRSVNC 4.0.0-40.15.0</td> <td>OAM&P</td> <td>Not Ready</td> <td></td> </tr> </tbody> </table> <p>NOTE: As a result of the server undergoing upgrade, several alarms may appear and remain present until the upgrade has been completed. These alarms include but are not limited to Event ID(s): 10073, 31101, 31102, 31106, 31107, 31114 and 31283.</p>	Hostname	Server Status	Server Role	Function	Upgrade State	Status Message		OAM Max HA Role	Network Element		Start Time	Finish Time		Max Allowed HA Role	Application Version		Upgrade ISO		exhrNO-mrsvnc-a	Warn Standby Standby	Network OAM&P NO_MRSVNC 4.0.0-40.15.0	OAM&P	Upgrading	Starting upgrade of IP: 10.240.40.4	exhrNO-mrsvnc-b	Warn Active Active	Network OAM&P NO_MRSVNC 4.0.0-40.15.0	OAM&P	Not Ready	
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exhrNO-mrsvnc-a	Warn Standby Standby	Network OAM&P NO_MRSVNC 4.0.0-40.15.0	OAM&P	Upgrading	Starting upgrade of IP: 10.240.40.4																											
exhrNO-mrsvnc-b	Warn Active Active	Network OAM&P NO_MRSVNC 4.0.0-40.15.0	OAM&P	Not Ready																												
<p>7.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) Select...</p> <p>Main Menu → Administration → Software Management → Upgrade</p> <p>2) The Upgrade State field should be Upgrading</p> <p>3) The Status Message field should contain status “IN_PROGRESS_STATE”.</p>	<table border="1"> <thead> <tr> <th>Hostname</th> <th>Server Status</th> <th>Server Role</th> <th>Function</th> <th>Upgrade State</th> <th>Status Message</th> </tr> <tr> <td></td> <th>OAM Max HA Role</th> <th>Network Element</th> <td></td> <th>Start Time</th> <th>Finish Time</th> </tr> <tr> <td></td> <th>Max Allowed HA Role</th> <th>Application Version</th> <td></td> <th>Upgrade ISO</th> <td></td> </tr> </thead> <tbody> <tr> <td>exhrNO-mrsvnc-a</td> <td>Warn Standby Standby</td> <td>Network OAM&P NO_MRSVNC 4.0.0-40.15.0</td> <td>OAM&P</td> <td>Upgrading</td> <td>Upgrade: retrieved TPD task state for IP: 10.240.40.4 is IN_PROGRESS_STATE</td> </tr> <tr> <td>exhrNO-mrsvnc-b</td> <td>Err Active Active</td> <td>Network OAM&P NO_MRSVNC 4.0.0-40.15.0</td> <td>OAM&P</td> <td>Not Ready</td> <td></td> </tr> </tbody> </table>	Hostname	Server Status	Server Role	Function	Upgrade State	Status Message		OAM Max HA Role	Network Element		Start Time	Finish Time		Max Allowed HA Role	Application Version		Upgrade ISO		exhrNO-mrsvnc-a	Warn Standby Standby	Network OAM&P NO_MRSVNC 4.0.0-40.15.0	OAM&P	Upgrading	Upgrade: retrieved TPD task state for IP: 10.240.40.4 is IN_PROGRESS_STATE	exhrNO-mrsvnc-b	Err Active Active	Network OAM&P NO_MRSVNC 4.0.0-40.15.0	OAM&P	Not Ready	
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<p>8.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>At the completion of the upgrade, the server will initiate a post-upgrade reboot.</p> <p>During this reboot, the Status Message field will display the following expected message:</p> <p>“Warn: failed to get TPD task state for IP: <server_IP>, server could be rebooting.”</p>	<table border="1"> <thead> <tr> <th>Hostname</th> <th>Server Status</th> <th>Server Role</th> <th>Function</th> <th>Upgrade State</th> <th>Status Message</th> </tr> <tr> <td></td> <th>OAM Max HA Role</th> <th>Network Element</th> <td></td> <th>Start Time</th> <th>Finish Time</th> </tr> <tr> <td></td> <th>Max Allowed HA Role</th> <th>Application Version</th> <td></td> <th>Upgrade ISO</th> <td></td> </tr> </thead> <tbody> <tr> <td>exhrNO-mrsvnc-a</td> <td>Unk OOS Standby</td> <td>Network OAM&P NO_MRSVNC</td> <td>OAM&P</td> <td>Upgrading</td> <td>Upgrade: Warn: failed to get TPD task state for IP: 10.240.40.4, server could be rebooting.</td> </tr> <tr> <td>exhrNO-mrsvnc-b</td> <td>Err Active Active</td> <td>Network OAM&P NO_MRSVNC 4.0.0-40.15.0</td> <td>OAM&P</td> <td>Not Ready</td> <td></td> </tr> </tbody> </table>	Hostname	Server Status	Server Role	Function	Upgrade State	Status Message		OAM Max HA Role	Network Element		Start Time	Finish Time		Max Allowed HA Role	Application Version		Upgrade ISO		exhrNO-mrsvnc-a	Unk OOS Standby	Network OAM&P NO_MRSVNC	OAM&P	Upgrading	Upgrade: Warn: failed to get TPD task state for IP: 10.240.40.4, server could be rebooting.	exhrNO-mrsvnc-b	Err Active Active	Network OAM&P NO_MRSVNC 4.0.0-40.15.0	OAM&P	Not Ready	
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Appendix C: Upgrade Server on HLRR 4.0

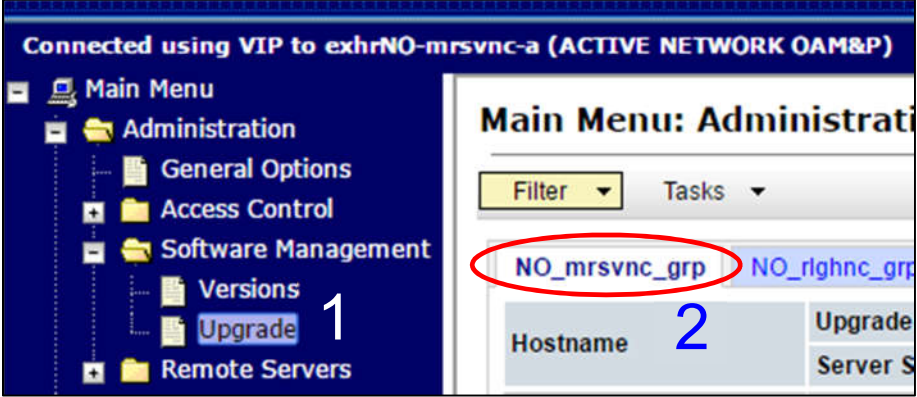
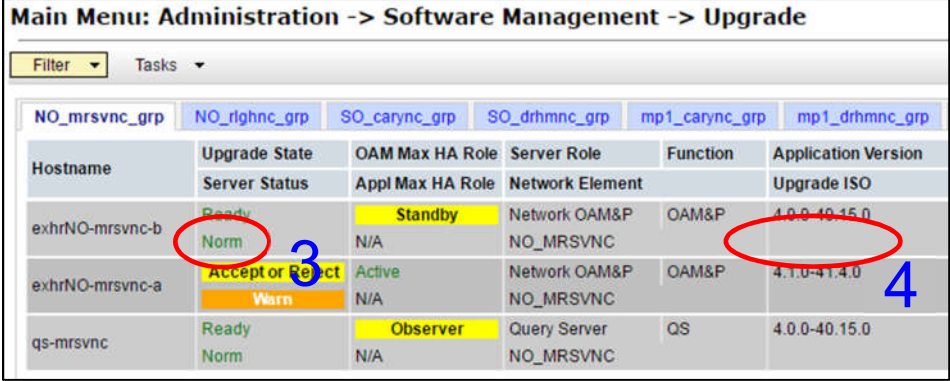
Step	Procedure	Result																														
<p>9.</p> <p><input type="checkbox"/></p>	<p>Primary HLRR 4.0 Site VIP:</p> <p>After the post-upgrade reboot has been completed, the Upgrade State field should show a value of “Success”.</p>	<table border="1"> <thead> <tr> <th>Hostname</th> <th>Server Status</th> <th>Server Role</th> <th>Function</th> <th>Upgrade State</th> <th>Status Message</th> </tr> <tr> <td></td> <td>OAM Max HA Role</td> <td>Network Element</td> <td></td> <td>Start Time</td> <td>Finish Time</td> </tr> <tr> <td></td> <td>Max Allowed HA Role</td> <td>Application Version</td> <td></td> <td>Upgrade ISO</td> <td></td> </tr> </thead> <tbody> <tr> <td>exhrNO-mrsvnc-a</td> <td>Err Standby Standby</td> <td>Network OAM&P NO_MRSVNC 4.1.0-41.4.0</td> <td>OAM&P</td> <td>Success</td> <td>Upgrade: Task result for IP: 10.240.40.4, SUCCESS 2016-04-20 16:01:25 2016-04-20 17:10:43 EXHR-4.1.0_41.4.0-x86_64.iso</td> </tr> <tr> <td>exhrNO-mrsvnc-b</td> <td>Warn Active Active</td> <td>Network OAM&P NO_MRSVNC 4.0.0-40.15.0</td> <td>OAM&P</td> <td>Not Ready</td> <td></td> </tr> </tbody> </table>	Hostname	Server Status	Server Role	Function	Upgrade State	Status Message		OAM Max HA Role	Network Element		Start Time	Finish Time		Max Allowed HA Role	Application Version		Upgrade ISO		exhrNO-mrsvnc-a	Err Standby Standby	Network OAM&P NO_MRSVNC 4.1.0-41.4.0	OAM&P	Success	Upgrade: Task result for IP: 10.240.40.4, SUCCESS 2016-04-20 16:01:25 2016-04-20 17:10:43 EXHR-4.1.0_41.4.0-x86_64.iso	exhrNO-mrsvnc-b	Warn Active Active	Network OAM&P NO_MRSVNC 4.0.0-40.15.0	OAM&P	Not Ready	
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<p>10.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) Select...</p> <p>Main Menu → Administration → Software Management → Upgrade</p> <p>2) Select the row containing the hostname of the upgraded server</p> <p>3) Click the “Complete” dialogue button</p>	<p>Main Menu: Administration -> Software Management -> Upgrade</p> <p>Filter Tasks</p> <table border="1"> <thead> <tr> <th>Hostname</th> <th>Server Status</th> <th>Server Role</th> <th>Function</th> <th>Upgrade State</th> <th>Status Message</th> </tr> <tr> <td></td> <td>OAM Max HA Role</td> <td>Network Element</td> <td></td> <td>Start Time</td> <td>Finish Time</td> </tr> <tr> <td></td> <td>Max Allowed HA Role</td> <td>Application Version</td> <td></td> <td>Upgrade ISO</td> <td></td> </tr> </thead> <tbody> <tr> <td>exhrNO-mrsvnc-a</td> <td>Err Standby Standby</td> <td>Network OAM&P NO_MRSVNC 4.1.0-41.4.0</td> <td>OAM&P</td> <td>Success</td> <td>Upgrade: Task result for IP: 10.240.40.4, SUCCESS 2016-04-20 16:01:25 2016-04-20 17:10:43 EXHR-4.1.0_41.4.0-x86_64.iso</td> </tr> <tr> <td>exhrNO-mrsvnc-b</td> <td>Warn Active Active</td> <td>Network OAM&P NO_MRSVNC 4.0.0-40.15.0</td> <td>OAM&P</td> <td>Not Ready</td> <td></td> </tr> </tbody> </table> <p>Backup ISO Cleanup Prepare Initiate Complete Accept Report</p>	Hostname	Server Status	Server Role	Function	Upgrade State	Status Message		OAM Max HA Role	Network Element		Start Time	Finish Time		Max Allowed HA Role	Application Version		Upgrade ISO		exhrNO-mrsvnc-a	Err Standby Standby	Network OAM&P NO_MRSVNC 4.1.0-41.4.0	OAM&P	Success	Upgrade: Task result for IP: 10.240.40.4, SUCCESS 2016-04-20 16:01:25 2016-04-20 17:10:43 EXHR-4.1.0_41.4.0-x86_64.iso	exhrNO-mrsvnc-b	Warn Active Active	Network OAM&P NO_MRSVNC 4.0.0-40.15.0	OAM&P	Not Ready	
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<p>11.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>The user presented with the Upgrade [Complete] screen.</p> <p>Click an “Ok” dialogue button.</p>	<p>Main Menu: Administration -> Software Management -> Upgrade [Complete]</p> <p>Info</p> <table border="1"> <thead> <tr> <th>Hostname</th> <th>Action</th> <th>HA Status</th> </tr> <tr> <td></td> <td></td> <td>Max HA Role Active Mates Standby Mates Spare Mates</td> </tr> </thead> <tbody> <tr> <td>exhrNO-mrsvnc-a</td> <td>Complete</td> <td>Standby exhrNO-mrsvnc-b None None</td> </tr> </tbody> </table> <p>Ok Cancel</p>	Hostname	Action	HA Status			Max HA Role Active Mates Standby Mates Spare Mates	exhrNO-mrsvnc-a	Complete	Standby exhrNO-mrsvnc-b None None																					
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Appendix C: Upgrade Server on HLRR 4.0

Step	Procedure	Result																																																	
<p>12.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>The user presented with the Upgrade screen.</p> <p>1) Verify that the Application Version now shows the “target” release.</p> <p>2) Verify that the Upgrade State now shows “Not Ready”.</p>	<table border="1"> <thead> <tr> <th>Hostname</th> <th>Server Status</th> <th>Server Role</th> <th>Function</th> <th>Upgrade State</th> </tr> <tr> <td></td> <td>OAM Max HA Role</td> <td colspan="2">Network Element</td> <td>Start Time</td> </tr> <tr> <td></td> <td>Max Allowed HA Role</td> <td colspan="2">Application Version</td> <td>Upgrade ISO</td> </tr> </thead> <tbody> <tr> <td>exhrNO-mrsvnc-a</td> <td>Err</td> <td>Network OAM&P</td> <td>OAM&P</td> <td>Not Ready</td> </tr> <tr> <td></td> <td>Standby</td> <td colspan="2">NO_MRSVNC</td> <td></td> </tr> <tr> <td></td> <td>Active</td> <td colspan="2">4.1.0-41.4.0</td> <td></td> </tr> <tr> <td>exhrNO-mrsvnc-b</td> <td>Norm</td> <td>Network OAM&P</td> <td>OAM&P</td> <td>Not Ready</td> </tr> <tr> <td></td> <td>Active</td> <td colspan="2">NO_MRSVNC</td> <td></td> </tr> <tr> <td></td> <td>Active</td> <td colspan="2">4.0.0-40.15.0</td> <td></td> </tr> </tbody> </table>					Hostname	Server Status	Server Role	Function	Upgrade State		OAM Max HA Role	Network Element		Start Time		Max Allowed HA Role	Application Version		Upgrade ISO	exhrNO-mrsvnc-a	Err	Network OAM&P	OAM&P	Not Ready		Standby	NO_MRSVNC				Active	4.1.0-41.4.0			exhrNO-mrsvnc-b	Norm	Network OAM&P	OAM&P	Not Ready		Active	NO_MRSVNC				Active	4.0.0-40.15.0		
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APPENDIX D. SERVER UPGRADE ADMINISTRATION ON HLRR 4.1

Appendix D: Server Upgrade Administration on HLRR 4.1

Step	Procedure	Result																																				
<p>1.</p> <p><input type="checkbox"/></p>	<p>Using the VIP address, access the Primary HLRR NOAM GUI.</p>	<ul style="list-style-type: none"> Using the VIP address, access the Primary HLRR NOAM GUI as described in Appendix A. 																																				
<p>2.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>1) Select...</p> <p>Main Menu → Administration → Software Management → Upgrade</p> <p>2) Select the tab associated with the Server Group containing the server(s) to be upgraded.</p> <p>3) Verify that the “Upgrade State” shows “Ready” for the server(s) to be upgraded.</p> <p>4) Verify the Application Version value for server(s) is the source software release version</p>	 <p>The screenshot shows the 'Main Menu: Administration' interface. The left sidebar shows the navigation path: Main Menu > Administration > Software Management > Upgrade. The main area shows a list of server groups with 'NO_mrsvnc_grp' selected and circled in red. A '2' is placed next to the 'Upgrade' button.</p>  <p>The second screenshot shows the 'Main Menu: Administration -> Software Management -> Upgrade' table. The table has columns: Hostname, Upgrade State, Server Status, OAM Max HA Role, Appl Max HA Role, Network Element, Network OAM&P, OAM&P, Upgrade ISO. The 'exhrNO-mrsvnc-a' row is highlighted, with 'Norm' circled in red and a '3' next to it, and '4.1.0-41.4.0' circled in red with a '4' next to it.</p> <table border="1"> <thead> <tr> <th>Hostname</th> <th>Upgrade State</th> <th>Server Status</th> <th>OAM Max HA Role</th> <th>Appl Max HA Role</th> <th>Network Element</th> <th>Network OAM&P</th> <th>OAM&P</th> <th>Upgrade ISO</th> </tr> </thead> <tbody> <tr> <td>exhrNO-mrsvnc-b</td> <td>Ready</td> <td>Norm</td> <td>Standby</td> <td>N/A</td> <td>NO_MRSVNC</td> <td>NO_MRSVNC</td> <td>OAM&P</td> <td>4.0.0-40.15.0</td> </tr> <tr> <td>exhrNO-mrsvnc-a</td> <td>Ready</td> <td>Accept or Reject Warn</td> <td>Active</td> <td>N/A</td> <td>NO_MRSVNC</td> <td>NO_MRSVNC</td> <td>OAM&P</td> <td>4.1.0-41.4.0</td> </tr> <tr> <td>qs-mrsvnc</td> <td>Ready</td> <td>Norm</td> <td>Observer</td> <td>N/A</td> <td>NO_MRSVNC</td> <td>NO_MRSVNC</td> <td>QS</td> <td>4.0.0-40.15.0</td> </tr> </tbody> </table>	Hostname	Upgrade State	Server Status	OAM Max HA Role	Appl Max HA Role	Network Element	Network OAM&P	OAM&P	Upgrade ISO	exhrNO-mrsvnc-b	Ready	Norm	Standby	N/A	NO_MRSVNC	NO_MRSVNC	OAM&P	4.0.0-40.15.0	exhrNO-mrsvnc-a	Ready	Accept or Reject Warn	Active	N/A	NO_MRSVNC	NO_MRSVNC	OAM&P	4.1.0-41.4.0	qs-mrsvnc	Ready	Norm	Observer	N/A	NO_MRSVNC	NO_MRSVNC	QS	4.0.0-40.15.0
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qs-mrsvnc	Ready	Norm	Observer	N/A	NO_MRSVNC	NO_MRSVNC	QS	4.0.0-40.15.0																														



- If executing **Server Group “Auto Upgrade” option**, then **SKIP** to **Step 4** of this procedure.
 - **Allowed for DR NOAM & SOAM Server Groups only!**
- If executing the **“Upgrade Server” option (single or multi-selected)**, then proceed to **Step 3** of this procedure.
 - **Required for Primary NOAM & MP Server Groups.**

Appendix D: Server Upgrade Administration on HLRR 4.1

Step	Procedure	Result
<p>3.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>This Step: Single Server Upgrade (or multi-selected) only!</p> <p>NOTE: Always use this option when upgrading the Primary NOAM or MP Server Groups.</p> <p>1) Use cursor to select the server or use the [CTRL] key to multi-select individually server(s) for upgrade.</p> <p>2) Ensure the “Upgrade Server” dialogue button is enabled.</p> <p>3) Click the “Upgrade Server” dialogue button.</p> <p>4) The user should be presented with the Upgrade [Initiate] screen</p> <p>5) Select the Upgrade ISO file to be used in the server upgrade.</p> <p>6) Click the “Ok” dialogue button to start the upgrade.</p> <p>7) SKIP to Step 5 of this procedure.</p>	<p>Main Menu: Administration -> Software Management -> Upgrade</p> <p>Main Menu: Administration -> Software Management -> Upgrade [Initiate]</p>



Appendix D: Server Upgrade Administration on HLRR 4.1

Step	Procedure	Result																														
<p>4.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>This Step: Server Group "Auto Upgrade" only!</p> <p>!! WARNING !!</p> <p>The "Auto Upgrade" option is valid for DR NOAM and SOAM Server Groups only!</p> <p>DO NOT use the "Auto Upgrade" option when upgrading the Primary NOAM or MP Server Groups.</p> <p>1) DO NOT select any individual servers using the cursor.</p> <p>2) Ensure the "Auto Upgrade" dialogue button is enabled.</p> <p>3) Click the "Auto Upgrade" dialogue button.</p> <p>4) The user should be presented with the Upgrade [Initiate] screen</p> <p>5) Select "Bulk" mode.</p> <p>6) Leave the "Availability" value at default (50%).</p> <p>7) Select the Upgrade ISO file to be used in the server upgrade.</p> <p>8) Click the "Ok" dialogue button to start the upgrade.</p> <p>NOTE: When Auto Upgrade "Bulk" mode is selected, all non-Active servers will be upgraded first (e.g. Standby, Query Server, etc.).</p>	<div> <p>Main Menu: Administration -> Software Management -> Upgrade</p> <p>Filter Tasks</p> <table border="1"> <thead> <tr> <th>Hostname</th> <th>Upgrade State</th> <th>OAM Max HA Role</th> <th>Server Role</th> <th>Function</th> <th>Application Vers</th> </tr> </thead> <tbody> <tr> <td>exhrNO-righnc-b</td> <td>Ready</td> <td>Active</td> <td>Network OAM&P</td> <td>DR OAM&P</td> <td>4.0.0-40.15.0</td> </tr> <tr> <td>exhrNO-righnc-a</td> <td>Ready</td> <td>Standby</td> <td>Network OAM&P</td> <td>DR OAM&P</td> <td>4.0.0-40.15.0</td> </tr> <tr> <td>qs-righnc</td> <td>Ready</td> <td>Observer</td> <td>Query Server</td> <td>QS</td> <td>4.0.0-40.15.0</td> </tr> </tbody> </table> <p>Backup Backup All Checkup Checkup All Auto Upgrade Accept Report Report All</p> </div> <p style="text-align: center; color: blue; font-size: 24px;">3</p> <div> <p>Main Menu: Administration -> Software Management</p> <p>Info</p> <table border="1"> <thead> <tr> <th>Hostname</th> <th>Action</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>chltinchlrrmp02</td> <td>Auto upgrade</td> <td>OAM Max HA Role Active</td> </tr> </tbody> </table> <p>Upgrade Settings</p> <p>Mode: Bulk (5), Serial, Grouped Bulk</p> <p>Availability: 50%</p> <p>Upgrade ISO: EXHR-4.1.0_41.7.0-x86_64.iso (7)</p> <p>Ok (8) Cancel</p> </div>	Hostname	Upgrade State	OAM Max HA Role	Server Role	Function	Application Vers	exhrNO-righnc-b	Ready	Active	Network OAM&P	DR OAM&P	4.0.0-40.15.0	exhrNO-righnc-a	Ready	Standby	Network OAM&P	DR OAM&P	4.0.0-40.15.0	qs-righnc	Ready	Observer	Query Server	QS	4.0.0-40.15.0	Hostname	Action	Status	chltinchlrrmp02	Auto upgrade	OAM Max HA Role Active
Hostname	Upgrade State	OAM Max HA Role	Server Role	Function	Application Vers																											
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Hostname	Action	Status																														
chltinchlrrmp02	Auto upgrade	OAM Max HA Role Active																														



- If upgrading the **formerly “Active” Primary NOAM server** (i.e. the **2nd NOAM to be upgraded**), then continue with **Step 5** of this procedure.
- For all other server upgrades, **SKIP to Step 10** of this procedure.

Appendix D: Server Upgrade Administration on HLRR 4.1

Step	Procedure	Result
5. <input type="checkbox"/>	Primary NOAM VIP: When upgrade is initiated on the “Active” Primary NOAM server, an HA Switchover will occur.	The user will be disconnected from the GUI session as the “Active” Primary NOAM server goes through HA Switchover and becomes the “Standby” server.
6. <input type="checkbox"/>	Primary NOAM VIP: If not automatically logged out of the GUI , use the [Logout] link in the top right of the browser to logout of the Primary NOAM GUI .	
7. <input type="checkbox"/>	Primary NOAM VIP (GUI): Clear the browser cache. !! IMPORTANT !! DO NOT proceed to the next step until the browser cache has been cleared.	JavaScript libraries, images and other objects are often modified in the upgrade. Browsers can sometimes cause GUI problems by holding on to the old objects in the built-in cache. To prevent these problems always clear the browser cache before logging into an OAM GUI which has just been upgraded: 4) Simultaneously hold down the [Ctrl] , [Shift] and [Delete] keys (most Web browsers). 5) Select the appropriate object types to delete from the cache via the pop-up dialog. (e.g. “Temporary Internet Files”, “Cache” or “Cached images and files”, etc.). Other browsers may label these objects differently. Clear the cached data.
8. <input type="checkbox"/>	Once again, use the VIP address to access the Primary NOAM GUI .	<ul style="list-style-type: none"> • Using the VIP address, access the Primary HLRR NOAM GUI as described in Appendix A.
9. <input type="checkbox"/>	Primary NOAM VIP (GUI): 1) Select... Main Menu → Administration → Software Management → Upgrade 2) Select the tab associated with the Server Group containing the server(s) to be upgraded.	

Appendix D: Server Upgrade Administration on HLRR 4.1

Step	Procedure	Result																																													
<p>10. <input type="checkbox"/></p> <p>Primary NOAM VIP: The user should now monitor the “Upgrade State” and the “Status Message” entries for the servers being upgraded.</p> <p>As Upgrade executes for each server, the user should observe the states shown to the right.</p> <p>NOTE: <i>Some states may transition faster than the screen refresh rate and appear to skip.</i></p> <p>NOTE: <i>During server upgrade, multiple alarms are expected and can be safely ignored. These include but are not limited to the following:</i></p> <p>Event ID: 10073, 10075, 31101, 31102, 31106, 31107, 31114 & 31283</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: none;"></td> <td style="border: none;"></td> <td style="border: none;"></td> <td style="border: none;"></td> <td style="border: none;"></td> <td style="border: none;"></td> </tr> <tr> <td style="border: none;"></td> <td style="border: none;"></td> <td style="border: none;"></td> <td style="border: none;"></td> <td style="border: none;"></td> <td style="border: none;"></td> </tr> <tr> <td style="border: none;"></td> <td style="border: none;"></td> <td style="border: none;"></td> <td style="border: none;"></td> <td style="border: none;"></td> <td style="border: none;"></td> </tr> <tr> <td style="border: none;"></td> <td style="border: none;"></td> <td style="border: none;"></td> <td style="border: none;"></td> <td style="border: none;"></td> <td style="border: none;"></td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #ffffcc;"> <th>Sequence</th> <th>Upgrade State</th> <th>Status Message</th> </tr> </thead> <tbody> <tr> <td rowspan="2" style="text-align: center;">1.</td> <td rowspan="2" style="text-align: center;">Pending</td> <td>Upgrade task started <i>(Upgrade Server option)</i></td> </tr> <tr> <td>Pending Upgrade <i>(Auto Upgrade option)</i></td> </tr> <tr> <td style="text-align: center;">2.</td> <td style="text-align: center;">Validating</td> <td>ISO validation started - Server: <hostname>, ISO: <iso_image></td> </tr> <tr> <td style="text-align: center;">3.</td> <td style="text-align: center;">Upgrading</td> <td>Upgrade is in Progress</td> </tr> <tr> <td style="text-align: center;">4.</td> <td style="text-align: center;">Rebooting</td> <td>Warn: failed to get TPD task state, server could be rebooting.</td> </tr> <tr> <td style="text-align: center;">5.</td> <td style="text-align: center;">Success / Not Ready</td> <td>Upgraded Server to new ISO</td> </tr> <tr> <td style="text-align: center;">6.</td> <td style="text-align: center;">Accept or Reject</td> <td>Success: Server upgrade is complete</td> </tr> </tbody> </table>																									Sequence	Upgrade State	Status Message	1.	Pending	Upgrade task started <i>(Upgrade Server option)</i>	Pending Upgrade <i>(Auto Upgrade option)</i>	2.	Validating	ISO validation started - Server: <hostname>, ISO: <iso_image>	3.	Upgrading	Upgrade is in Progress	4.	Rebooting	Warn: failed to get TPD task state, server could be rebooting.	5.	Success / Not Ready	Upgraded Server to new ISO	6.	Accept or Reject	Success: Server upgrade is complete
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!!! IMPORTANT !!!

- Unless executing parallel upgrades, **DO NOT PROCEED** until an “**Upgrade State**” of “**Accept or Reject**” is received.
- If an Upgrade failure is experienced (i.e. **Upgrade State = Failed**), refer to **Appendix I: Recovering from a Failed Upgrade**.

<p>11. <input type="checkbox"/></p> <p>Primary NOAM VIP: Post-upgrade, alarms shown to the right are expected and should be ignored.</p>	<ul style="list-style-type: none"> Once the “Accept or Reject” Upgrade State is reached, the following alarm(s) will be raised for each upgraded server: Event ID(s): 32532 <i>(Server Upgrade Pending Accept/Reject)</i>
<p>12. <input type="checkbox"/></p> <p>Return to the referring Procedure.</p>	<ul style="list-style-type: none"> The user should now return to the Procedure/Step which referred them to Appendix D <i>(Server Upgrade Administration on HLRR 4.1)</i>.

THIS PROCEDURE HAS BEEN COMPLETED

APPENDIX E. BACKOUT OF A SINGLE SERVER

Every attempt should be made to correct any actionable post upgrade issue prior to executing a backout. Therefore, the user should always contact **“My Oracle Support”** if troubleshooting assistance is needed. Refer to **Appendix J - Accessing My Oracle Support (MOS)**, for more information on contacting Oracle Customer Service.


NOTE: The user is expected to already be familiar with all aspects of the GUI required for backout since the backout procedure re-uses many of the same GUI screens as the upgrade process. Therefore, the following backout procedure has been stream-lined by focusing on written instruction rather than screen captures.

Appendix E: Backout of a Single Server

Step	Procedure	Result
1. <input type="checkbox"/>	Using the VIP address, access the Primary HLRR NOAM GUI .	<ul style="list-style-type: none"> Using the VIP address, access the Primary HLRR NOAM GUI as described in Appendix A.
2. <input type="checkbox"/>	Primary NOAM VIP: Ensure that the server to be backed out is in the “Accept or Reject” state.	<ol style="list-style-type: none"> Select the [Main Menu: Administration → Software Management → Upgrade] screen. Select the tab containing the server(s) to be backed out. Verify its Upgrade State is “Accept or Reject”.
3. <input type="checkbox"/>	Primary NOAM VIP: Set the Max Allowed HA Role to “Standby” .	<ol style="list-style-type: none"> Select the [Main Menu: Status & Manage → HA] screen. Click the “Edit” button. Select the server(s) to be backed out and choose a Max Allowed HA Role value of “Standby” (unless it is a Query server, in which case the value should remain set to Observer). Click the “Ok” button (the HA status screen displays). Verify that the Max Allowed HA Role is set to the values specified above for each server to be backed out.




- If performing backout on the **Primary NOAM “Active”** server, then continue with **Step 4** of this procedure.
- For all other server backouts, **SKIP** to **Step 8** of this procedure.

4. <input type="checkbox"/>	Primary NOAM VIP: When upgrade is initiated on the “Active” Primary NOAM server, an HA Switchover will occur.	<ul style="list-style-type: none"> The user will be disconnected from the GUI session as the “Active” Primary NOAM server goes through HA Switchover and becomes the “Standby” server.
5. <input type="checkbox"/>	Primary NOAM VIP: If not automatically logged out of the GUI , use the [Logout] link in the top right of the browser to logout of the Primary NOAM GUI .	

Appendix E: Backout of a Single Server

Step	Procedure	Result
6. <input type="checkbox"/>	<p>Primary NOAM VIP (GUI):</p> <p>Clear the browser cache.</p> <p>!! IMPORTANT !!</p> <p>DO NOT proceed to the next step until the browser cache has been cleared.</p>	<p>JavaScript libraries, images and other objects are often modified in the upgrade. Browsers can sometimes cause GUI problems by holding on to the old objects in the built-in cache. To prevent these problems always clear the browser cache before logging into an OAM GUI which has just been upgraded:</p> <ol style="list-style-type: none"> 1) Simultaneously hold down the [Ctrl], [Shift] and [Delete] keys (<i>most Web browsers</i>). 2) Select the appropriate object types to delete from the cache via the pop-up dialog. (e.g. “Temporary Internet Files”, “Cache” or “Cached images and files”, etc.). Other browsers may label these objects differently. <p>Clear the cached data.</p>
7. <input type="checkbox"/>	<p>Once again, use the VIP address to access the Primary NOAM GUI.</p>	<ul style="list-style-type: none"> • Using the VIP address, access the Primary HLRR NOAM GUI as described in Appendix A.
8. <input type="checkbox"/>	<p>Primary NOAM VIP (GUI):</p> <p>Stop the software.</p>	<ol style="list-style-type: none"> 1. Select the [Main Menu: Status & Manage → Server] screen. 2. Select the server(s) to be backed out and click the “Stop” button. <p>NOTE: <i>If multiple servers are to be selected, holding down the [CTRL] key allows the cursor to multi-select servers on the [Main Menu: Status & Manage → Server] screen.</i></p> <ol style="list-style-type: none"> 3. Click the “OK” button on the confirmation pop-up box. 4. Verify that the value for the “Appl State” changes to “Disabled”.
9. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>Verify that the server(s) are Backout Ready.</p>	<ol style="list-style-type: none"> 1. Select the [Main Menu: Administration → Software Management → Upgrade] screen. 2. Select the tab of the server group containing the server(s) to be backed out. 3. Verify that the server(s) to be backed out display the correct value for the “Upgrade State” field.

	<ul style="list-style-type: none"> • If the Primary NOAM “Active” server is at Release 4.1, then verify that the Upgrade State for the server(s) to be backed out display a value of “Backout Ready”. • If the Primary NOAM “Active” server is at Release 4.0, then verify its Upgrade State for the server(s) to be backed out display a value of “Ready”.
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10. <input type="checkbox"/>	<p>Server CLI:</p> <p>SSH to the CLI of the server(s) to be backed out and login with the admusr account.</p>	<pre>CentOS release 6.7 Kernel 2.6.32-573.18.1.el6prere17.0.3.0.0_86.43.0.x86 on an x86_64 exhrNO-mrsvnc-b login: admusr Password: <admusr_password></pre>
11. <input type="checkbox"/>	<p>Server CLI:</p> <p>The user will be presented with output similar to that shown to the right.</p>	<p>*** TRUNCATED OUTPUT ***</p> <pre>RELEASE=6.4 RUNID=00 VPATH=/var/TKLC/rundb:/usr/TKLC/appworks:/usr/TKLC/awpcommon:/usr/TKLC/comagent-gui:/usr/TKLC/comagent-gui:/usr/TKLC/comagent:/usr/TKLC/sds PROMPATH=/opt/comcol/prod RUNID=00 [admusr@exhrNO-mrsvnc-b ~]\$</pre>

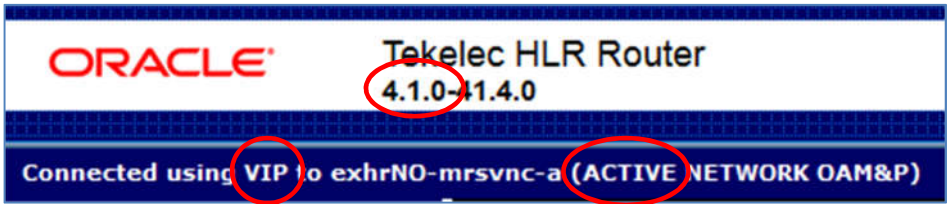
Appendix E: Backout of a Single Server

Step	Procedure	Result
<p>12.</p> <input type="checkbox"/>	<p>Server CLI: Execute the backout script.</p>	<p>Execute the backout using the reject script:</p> <pre>\$ sudo /var/TKLC/backout/reject</pre> <p>Output similar to that shown below will appear on the screen. Answer “y” to continue the backout.</p> <p>*** TRUNCATED OUTPUT ***</p> <pre>Executing.. /var/TKLC/backout/backout_server --check Verifying that backout is possible. Checking for stale RPM DB locks... Current platform version: 7.0.2.0.0-86.30.0 Continue backout? [y/N]: y</pre>
<p>13.</p> <input type="checkbox"/>	<p>Server CLI: The backout script will be followed by an automated reboot at its completion.</p>	<p>Many informational messages will come across the terminal screen as the backout proceeds:</p> <p>Finally, after the backout script is complete, the server will automatically reboot and the user will be logged out.</p>
<p>14.</p> <input type="checkbox"/>	<p>Server CLI: After the reboot has completed, use SSH to reconnect to the server(s) to be backed out and login with the admusr account.</p>	<pre>CentOS release 6.7 Kernel 2.6.32-573.18.1.el6prere17.0.3.0.0_86.43.0.x86 on an x86_64 exhrNO-mrsvnc-b login: admusr Password: <admusr_password></pre>
<p>15.</p> <input type="checkbox"/>	<p>Server CLI: The user will be presented with output similar to that shown to the right.</p>	<p>*** TRUNCATED OUTPUT ***</p> <pre>RELEASE=6.4 RUNID=00 VPATH=/var/TKLC/rundb:/usr/TKLC/appworks:/usr/TKLC/awpcommon:/usr/TKLC/comagent-gui:/usr/TKLC/comagent-gui:/usr/TKLC/comagent:/usr/TKLC/sds PROMPATH=/opt/comcol/prod RUNID=00 [admusr@exhrNO-mrsvnc-b ~]\$</pre>
<p>16.</p> <input type="checkbox"/>	<p>Server CLI: Verify the Backout.</p>	<p>Examine the upgrade logs in the directory /var/TKLC/log/upgrade and verify that no errors were reported:</p> <pre>\$ grep ERROR /var/TKLC/log/upgrade/upgrade.log</pre> <ol style="list-style-type: none"> Examine the output of the above commands to determine if any errors were reported. <u>Example output:</u> <pre>1461771238:: 19235 SS7 Received M3UA ERROR None EH Normal 0 10 B NoCount 0 0 ***** Received M3UA ERROR \$</pre> <p>NOTE: Output such as that shown above can be safely ignored.</p> <ol style="list-style-type: none"> If the backout was not successful because other errors were recorded in the logs, then contact “My Oracle Support” (MOS) for further instructions. If the backout was successful (no actionable errors or failures), then continue with the remaining steps.

Appendix E: Backout of a Single Server

Step	Procedure	Result
<p>17.</p> <input type="checkbox"/>	<p>Server CLI: Restore the COMCOL Full DB/Run environment.</p> <p>NOTE: <i>The COMCOL restore process may take several minutes to complete.</i></p>	<p>Execute the backout_restore utility to restore the full database run environment.</p> <pre>\$ sudo /var/tmp/backout_restore</pre> <p>Output similar to that shown below will appear on the screen. Answer "y" to continue the restore.</p> <p>*** TRUNCATED OUTPUT ***</p> <pre>This process will totally destroy the existing DB on this server. This should only be done to recover a server when an upgrade has been backed-out/rolled-back. Are you sure you want to proceed? (y n): y</pre> <p>If the restore was successful, the following will be displayed:</p> <pre>Success: Full restore of COMCOL run env has completed. Return to the backout procedure document for further instruction.</pre> <p>If an error is encountered and reported by the utility, then work with Oracle Customer Care Center for further instructions.</p>
<p>18.</p> <input type="checkbox"/>	<p>Server CLI: Reboot the server.</p> <p>NOTE: <i>This step will take several minutes to complete. As the server reboots, the user will be logged out of the SSH session.</i></p>	<p>Enter the following commands to reboot the server.</p> <pre>\$ sudo -i init 6</pre> <p>*** TRUNCATED OUTPUT ***</p> <pre>RELEASE=6.4 RUNID=00 VPATH=/var/TKLC/rundb:/usr/TKLC/appworks:/usr/TKLC/awpcommon:/u sr/TKLC/awptransportmgr:/usr/TKLC/comagent- gui:/usr/TKLC/comagent:/usr/TKLC/awpss7:/usr/TKLC/exhr PRODPATH=/opt/comcol/prod RUNID=00 \$</pre>
<p>19.</p> <input type="checkbox"/>	<p>Server CLI: After the reboot has completed, use SSH to reconnect to the server(s) to be backed out and login with the admusr account.</p>	<pre>CentOS release 6.7 Kernel 2.6.32-573.18.1.el6prere17.0.3.0.0_86.43.0.x86 on an x86_64 exhrNO-mrsvnc-b login: admusr Password: <admusr_password></pre>
<p>20.</p> <input type="checkbox"/>	<p>Server CLI: The user will be presented with output similar to that shown to the right.</p>	<p>*** TRUNCATED OUTPUT ***</p> <pre>RELEASE=6.4 RUNID=00 VPATH=/var/TKLC/rundb:/usr/TKLC/appworks:/usr/TKLC/awpcommon:/usr/TKLC /comagent-gui:/usr/TKLC/comagent-gui:/usr/TKLC/comagent:/usr/TKLC/sds PROMPATH=/opt/comcol/prod RUNID=00 [admusr@exhrNO-mrsvnc-b ~]\$</pre>

Appendix E: Backout of a Single Server

Step	Procedure	Result
<p>21.</p> <input type="checkbox"/>	<p>Server CLI:</p> <p>Verify that the “httpd” service has restarted.</p> <p>NOTE: If httpd is still not running after 3 minutes, then services have failed to restart. Contact “My Oracle Support” (MOS) for further instructions.</p>	<p>Verify services are have restarted:</p> <ol style="list-style-type: none"> If this is an NOAM or SOAM, verify httpd service is running. <pre>\$ sudo -i service httpd status</pre> Verify expected output displays httpd is running (the process IDs are variable so the actual number value can be ignored): <pre>*** TRUNCATED OUTPUT *** PRODPATH=/opt/comcol/prod RUNID=00 httpd (pid 12800) is running... \$</pre> If httpd is not running, wait for a few minutes and retry the above command.
<p>22.</p> <input type="checkbox"/>	<p>Using the VIP address, access the Primary HLRR NOAM GUI.</p>	<ul style="list-style-type: none"> Using the VIP address, access the Primary HLRR NOAM GUI as described in Appendix A.
<p>23.</p> <input type="checkbox"/>	<p>Verify the release level of the Primary NOAM “Active” server from the information presented in the GUI banner and record it in the space provided to the right.</p>	 <p>Primary NOAM “Active” server Release Level: _____</p>
<p>24.</p> <input type="checkbox"/>	<p>Primary NOAM VIP (GUI):</p> <p>Verify the server(s) Application Version and Upgrade State.</p>	<ol style="list-style-type: none"> Select the [Main Menu: Administration → Software Management → Upgrade] screen. Select the tab containing the server(s) which were backed out. Verify the Application Version value for this server has been backed out to the source release version. Verify the Upgrade State.



For Primary NOAM "Active" server at release 4.1:

- If the Upgrade State is "Ready", SKIP to Step 30 of this procedure.
- If the Upgrade State is "Not Ready", then proceed to Step 25 of this procedure.

For Primary NOAM "Active" server at release 4.0: (i.e after backout of the entire topology)

- If the Upgrade State is "Not Ready", then SKIP to Step 30 of this procedure.
- If the Upgrade State is "Ready", then SKIP to Step 28 of this procedure.

Appendix E: Backout of a Single Server

Step	Procedure	Result
25. <input type="checkbox"/>	<p>Primary NOAM VIP: <i>(Primary NOAM "Active" server release at 4.1)</i></p> <p>Set the Max Allowed HA Role to "Active".</p>	<p>Due to backout being initiated from the command line instead of through the GUI, you will have to modify the backed out server so its Upgrade State moves to Ready.</p> <ol style="list-style-type: none"> 1. Select the [Main Menu: Status & Manage → HA] screen. 2. Click the "Edit" button. 3. Select the backed out server(s) and choose a Max Allowed HA Role value of Active (unless it is a Query server, in which case the value should be set to Observer). 4. Click the "Ok" button; the HA status screen displays. 5. Verify that the Max Allowed HA Role is set to the values specified above for each backed out server.
26. <input type="checkbox"/>	<p>Primary NOAM VIP: Restart the software.</p>	<ol style="list-style-type: none"> 1. Select [Main Menu: Status & Manage → Server] screen. 2. If the server(s) which were backed out show an Appl State state of "Enabled", SKIP to the Step 27. 3. If the server(s) which were backed out show an Appl State state of "Disabled", select the server(s) and click the "Restart" button. 4. Click "OK" button on the pop-up confirmation box. 5. Verify that the Appl State has changed to "Enabled".
27. <input type="checkbox"/>	<p>Primary NOAM VIP: Verify the Upgrade State.</p>	<ol style="list-style-type: none"> 1. Select [Main Menu: Administration → Software Management → Upgrade] screen. 2. Select the tab of the server group containing the server(s) which were backed out. 3. Verify that the Upgrade State is now "Ready" (it may take several seconds for the grid to update). 4. SKIP to Step 30 of this procedure.
28. <input type="checkbox"/>	<p>Primary NOAM VIP: <i>(Primary NOAM "Active" server release at 4.0)</i></p> <p>Stop the software (if necessary).</p>	<p>Due to backout being initiated from the command line instead of through the GUI, you may have to modify the Upgrade State of the backed out server(s) to achieve a state of "Not Ready".</p> <ol style="list-style-type: none"> 1. Select [Main Menu: Status & Manage → Server] screen. 2. If the server(s) which were backed out show an Appl State of "Enabled", then select the server(s) and click the Stop button.

Appendix E: Backout of a Single Server

Step	Procedure	Result
29. <input type="checkbox"/>	Primary NOAM VIP: Verify the server(s) Upgrade State.	<ol style="list-style-type: none">1. Select [Main Menu: Administration → Software Management → Upgrade] screen.2. If the server(s) which were backed out show an Upgrade State of “Not Ready”, SKIP to Step 30 of this procedure.
30. <input type="checkbox"/>	Backout has been completed.	<ul style="list-style-type: none">• Return to the referring procedure.
THIS PROCEDURE HAS BEEN COMPLETED		

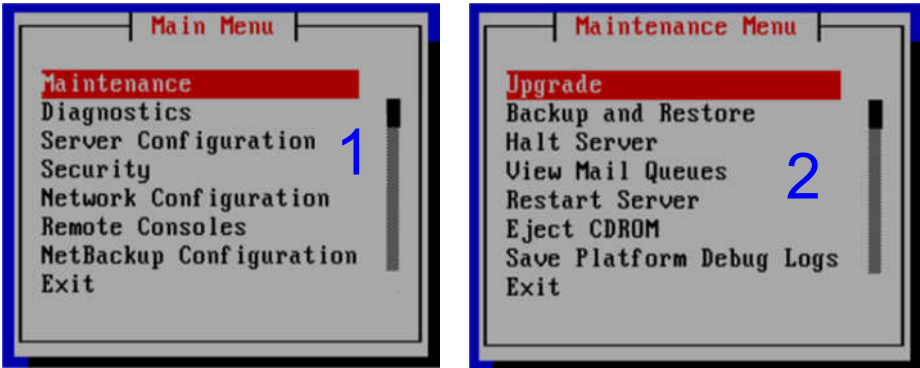
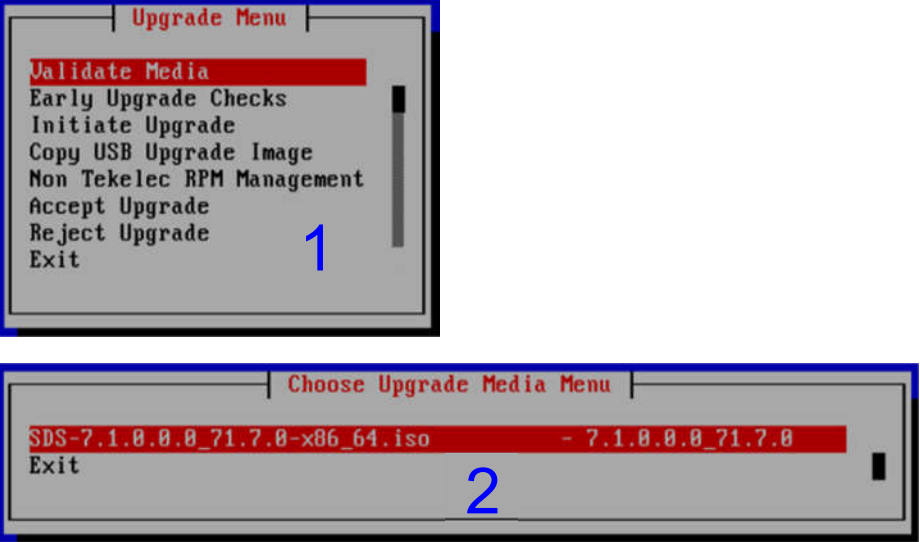
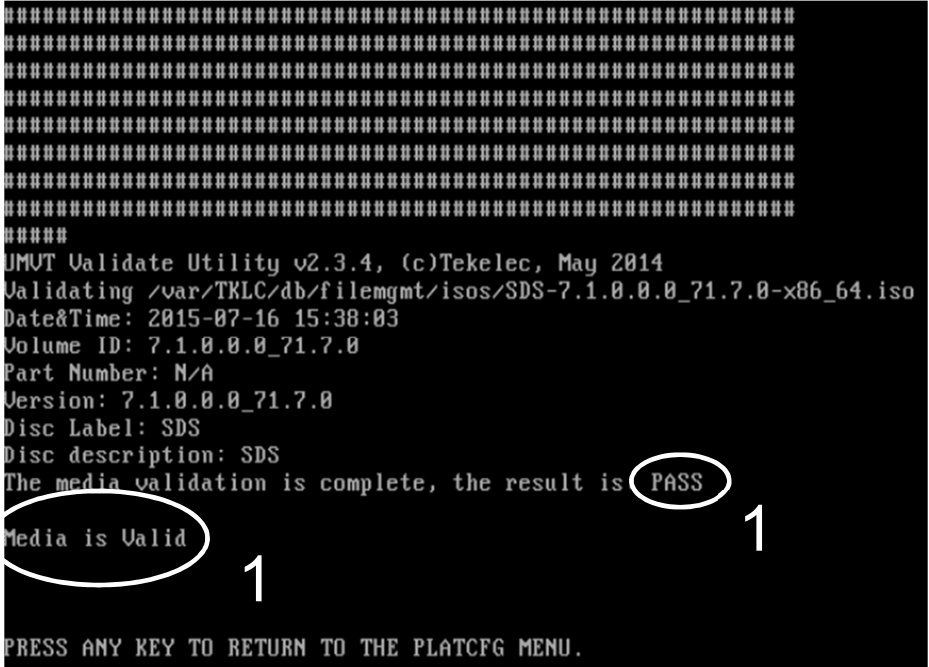
APPENDIX F. MANUALLY PERFORMING ISO VALIDATION

NOTE: This a procedure assumes that the **ISO** file to be validated has already been uploaded to the server in question and is present in the `/var/TKLC/db/filemgmt/`, `/var/TKLC/db/filemgmt/isos/` or `/var/TKLC/upgrade/` directory.

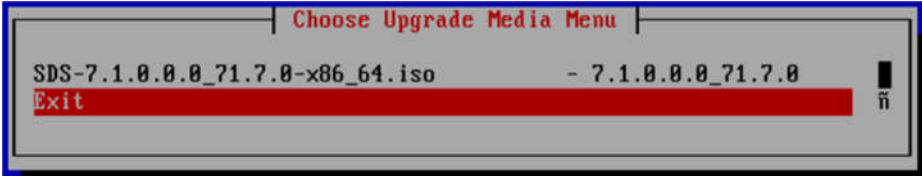
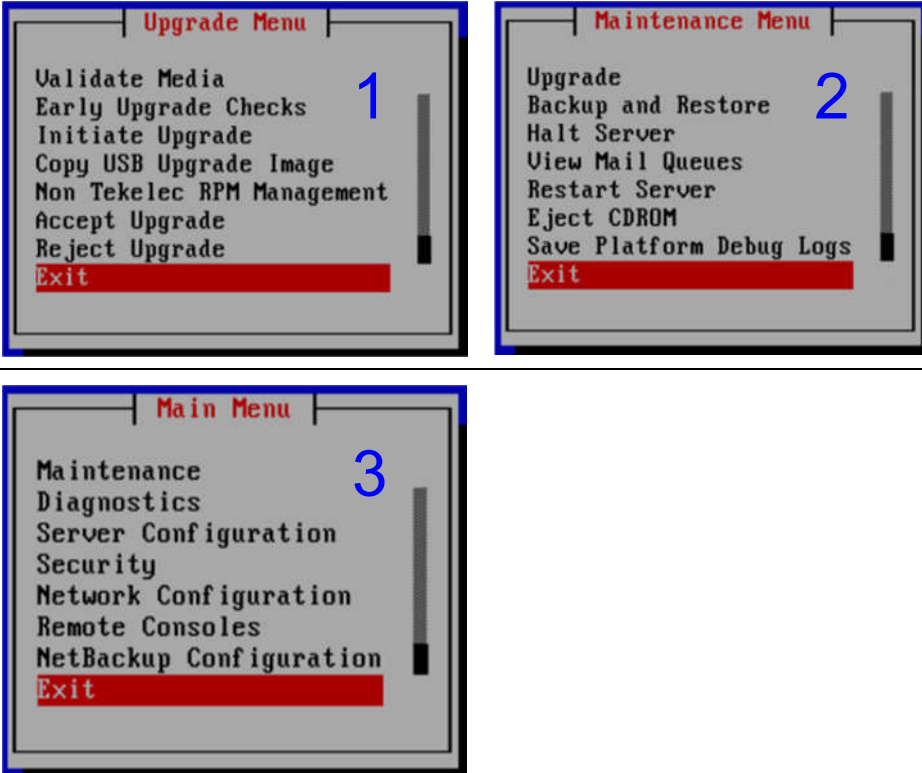
Appendix F: Manually Performing ISO Validation

Step	Procedure	Result
1. <input type="checkbox"/>	<p>Primary NOAM VIP (CLI):</p> <p>Using the VIP address, login to the “Active” Primary HLRR NOAM with the admusr account.</p>	<pre>CentOS release 6.7 Kernel 2.6.18-274.4.1.el5prere15.0.0_72.32.0 on an x86_64 exhrNO-rlghnc-a login: admusr Password: <admusr_password></pre>
2. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>The user will be presented with output similar to that shown to the right.</p>	<pre>RELEASE=6.4 RUNID=00 VPATH=/var/TKLC/rundb:/usr/TKLC/appworks:/usr/TKLC/awpcommon:/u sr/TKLC/comagent-gui:/usr/TKLC/comagent- gui:/usr/TKLC/comagent:/usr/TKLC/sds PROMPATH=/opt/comcol/prod RUNID=00 [admusr@exhrNO-rlghnc-a ~]\$</pre>
3. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>Verify that the ISO file is present in the <code>/var/TKLC/upgrade/</code> directory.</p> <p>If the ISO file to be validated is present in the output then SKIP to Step 5 of this procedure.</p> <p>Otherwise, continue to the next step.</p>	<pre>[admusr@exhrNO-rlghnc-a ~]\$ ls /var/TKLC/upgrade/ HLR Router-4.1.0.0_71.11.0-x86_64.iso [admusr@exhrNO-rlghnc-a ~]\$</pre>
4. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>Copy the ISO file to the <code>/var/TKLC/upgrade/</code> directory.</p>	<pre>[admusr@exhrNO-rlghnc-a ~]\$ cp -p /var/TKLC/db/filemgmt/HLR Router-4.1.0.0_71.11.0-x86_64.iso /var/TKLC/upgrade/ [admusr@exhrNO-rlghnc-a ~]\$</pre>
5. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>Become the “platcfg” user using the “su” command.</p> <p>For password information, refer to Table 4 (Logins, Passwords and Site Information) if necessary.</p>	<pre>[admusr@exhrNO-rlghnc-a ~]\$ su - platcfg Password: <platcfg_password></pre>

Appendix F: Manually Performing ISO Validation

Step	Procedure	Result
<p>6.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) From the platcfg [Main Menu], select the “Maintenance” menu option and press the [ENTER] key.</p> <p>2) From the platcfg [Maintenance Menu], select the “Upgrade” menu option and press the [ENTER] key.</p>	
<p>7.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) From the platcfg [Upgrade Menu], select the “Validate Media” menu option and press the [ENTER] key.</p> <p>2) From the platcfg [Choose Upgrade Media Menu], select the target ISO file and press the [ENTER] key.</p>	
<p>8.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) Verify that the ISO Media is “Valid”.</p> <p>2) Press the [ENTER] key to return to the platcfg menu.</p>	

Appendix F: Manually Performing ISO Validation

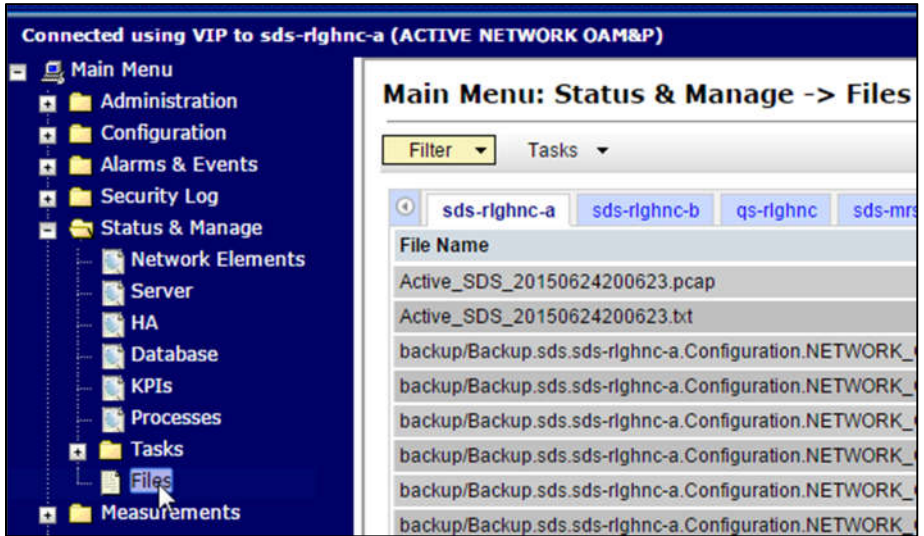
Step	Procedure	Result
<p>9.</p> <input type="checkbox"/>	<p>Primary NOAM VIP: From the platcfg [Choose Upgrade Media Menu], select the “Exit” menu option and press the [ENTER] key.</p>	
<p>10.</p> <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>1) From the platcfg [Main Menu], select the “Exit” menu option and press the [ENTER] key.</p> <p>2) From the platcfg [Maintenance Menu], select the “Exit” menu option and press the [ENTER] key.</p> <p>3) From the platcfg [Main Menu], select the “Exit” menu option and press the [ENTER] key.</p>	
<p>11.</p> <input type="checkbox"/>	<p>Primary NOAM VIP: Exit the CLI to the Active Primary HLRR NOAM.</p>	<pre>[admusr@exhrNO-rlghnc-a ~]\$ exit</pre>
<p>12.</p> <input type="checkbox"/>	<p>Return to the referring Procedure.</p>	<ul style="list-style-type: none"> The user should now return to the Procedure/Step which referred them to Appendix F (Manually Performing ISO Validation).
<p>THIS PROCEDURE HAS BEEN COMPLETED</p>		

APPENDIX G. UNDEPLOYING AN ISO FILE (POST UPGRADE ACCEPTANCE)

This procedure should only be executed post Upgrade Acceptance and removes a deployed **ISO** file from all servers in the HLR Router topology except the “Active” **Primary NOAM** server. At the end of the procedure the ISO will still be present in the `/var/TKLC/db/filemgmt/isos/` directory on the “Active” **Primary NOAM** server.

Once this procedure is completed, the file may then be manually deleted (*if desired*) from the HLRR NOAM GUI (VIP) under the [Main Menu: Status & Manage → Files] screen.

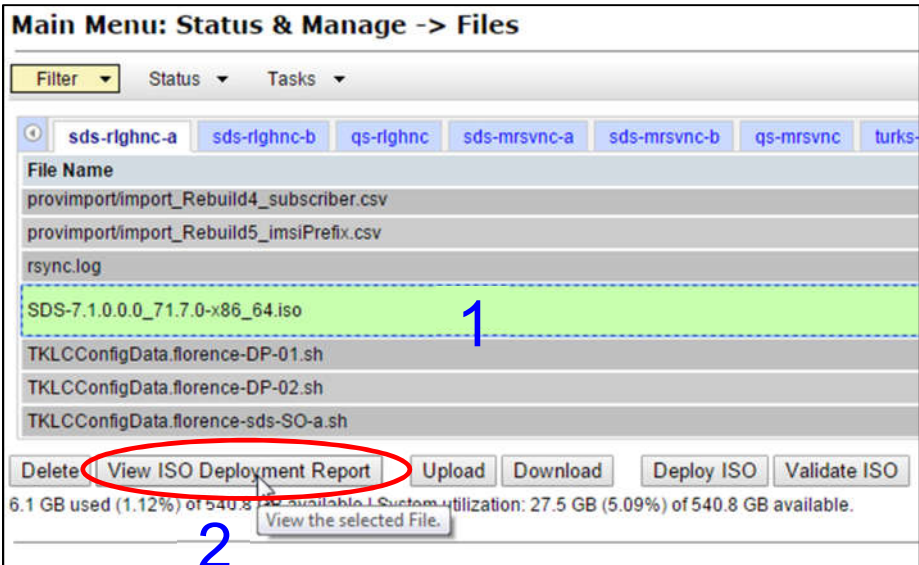
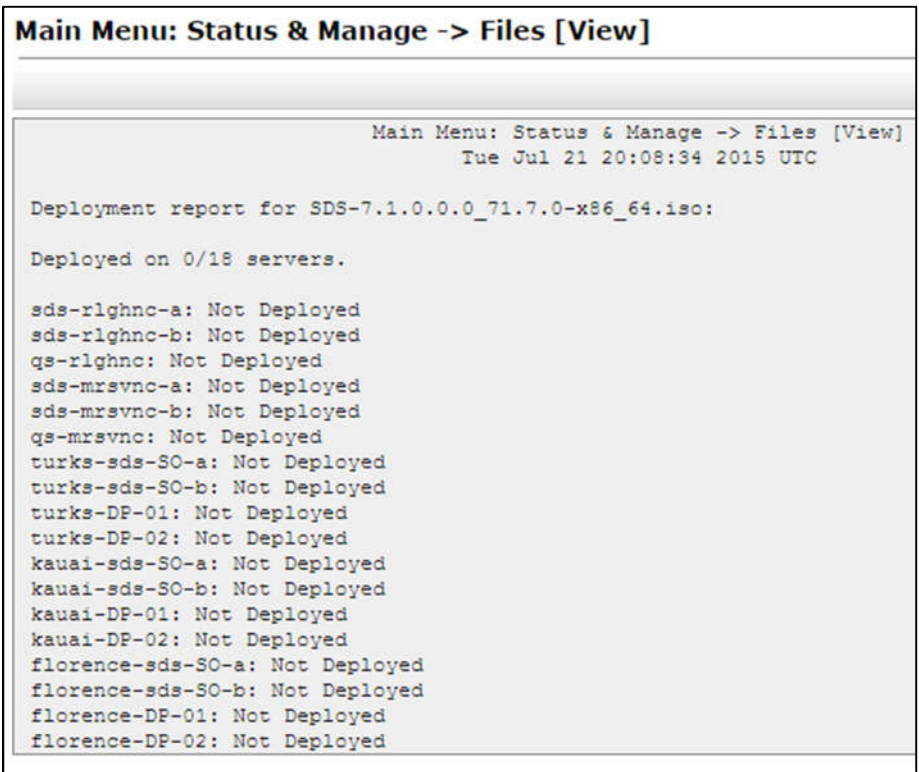
Appendix G: Undeploying an ISO file (Post Upgrade Acceptance)

Step	Procedure	Result
<p>1.</p> <input type="checkbox"/>	<p>Using the VIP address, access the Primary HLRR NOAM GUI.</p>	<ul style="list-style-type: none"> Using the VIP address, access the Primary HLRR NOAM GUI as described in Appendix A.
<p>2.</p> <input type="checkbox"/>	<p>Primary NOAM VIP (GUI): Select...</p> <p>Main Menu → Status & Manage → Files</p> <p>...as shown on the right.</p>	 <p>The screenshot shows the GUI interface with a dark blue sidebar menu. The 'Main Menu' is expanded, and 'Status & Manage' is selected. Under 'Status & Manage', the 'Files' option is highlighted with a mouse cursor. The main content area shows the title 'Main Menu: Status & Manage -> Files' and a list of file names, including 'Active_SDS_20150624200623.pcap' and several backup files.</p>

Appendix G: Undeploying an ISO file (Post Upgrade Acceptance)

Step	Procedure	Result																																								
<p>3.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) Select the ISO file for the target release.</p> <p>2) Click the “Undeploy ISO” dialogue button.</p> <p>3) Click “OK” on the confirmation pop-up window.</p>	<p>Main Menu: Status & Manage -> Files Tue Jul 21</p> <p>Filter Tasks</p> <table border="1"> <thead> <tr> <th>File Name</th> <th>Size</th> <th>Type</th> <th>Timestamp</th> </tr> </thead> <tbody> <tr><td>provimport/import_Rebuild3_msisdn.csv</td><td>630 B</td><td>csv</td><td>2015-06-19 17:55:25 UTC</td></tr> <tr><td>provimport/import_Rebuild4_subscriber.csv</td><td>785 B</td><td>csv</td><td>2015-06-19 17:55:25 UTC</td></tr> <tr><td>provimport/import_Rebuild5_imsiPrefix.csv</td><td>167 B</td><td>csv</td><td>2015-06-19 17:55:26 UTC</td></tr> <tr style="background-color: #e0ffe0;"><td>isos/SDS-7.1.0.0.0_71.7.0-x86_64.iso</td><td>852.1 MB</td><td>iso</td><td>2015-06-24 14:23:42 UTC</td></tr> <tr><td>Active_SDS_20150624200623.pcap</td><td>2.6 KB</td><td>pcap</td><td>2015-06-24 20:08:57 UTC</td></tr> <tr><td>Active_SDS_20150624200623.txt</td><td>46.2 KB</td><td>txt</td><td>2015-06-24 20:10:08 UTC</td></tr> <tr><td>TKLCConfigData.turks-sds-SO-a.sh</td><td>4.9 KB</td><td>sh</td><td>2015-06-25 19:16:38 UTC</td></tr> <tr><td>TKLCConfigData.turks-sds-SO-b.sh</td><td>4.9 KB</td><td>sh</td><td>2015-06-25 19:16:38 UTC</td></tr> <tr><td>TKLCConfigData.turks-DP-02.sh</td><td>5.3 KB</td><td>sh</td><td>2015-06-25 19:16:38 UTC</td></tr> </tbody> </table> <p>Report Upload Download Undeploy ISO Validate ISO</p> <p>available System utilization: 27.5 GB (5.09%) of 540.9 GB available</p> <p>Deploys/Undeploys an ISO file.</p> <p>The page at https://10.240.241.66 says:</p> <p>Are you sure you want to undeploy isos/SDS-7.1.0.0.0_71.7.0-x86_64.iso?</p> <p>OK Cancel</p>	File Name	Size	Type	Timestamp	provimport/import_Rebuild3_msisdn.csv	630 B	csv	2015-06-19 17:55:25 UTC	provimport/import_Rebuild4_subscriber.csv	785 B	csv	2015-06-19 17:55:25 UTC	provimport/import_Rebuild5_imsiPrefix.csv	167 B	csv	2015-06-19 17:55:26 UTC	isos/SDS-7.1.0.0.0_71.7.0-x86_64.iso	852.1 MB	iso	2015-06-24 14:23:42 UTC	Active_SDS_20150624200623.pcap	2.6 KB	pcap	2015-06-24 20:08:57 UTC	Active_SDS_20150624200623.txt	46.2 KB	txt	2015-06-24 20:10:08 UTC	TKLCConfigData.turks-sds-SO-a.sh	4.9 KB	sh	2015-06-25 19:16:38 UTC	TKLCConfigData.turks-sds-SO-b.sh	4.9 KB	sh	2015-06-25 19:16:38 UTC	TKLCConfigData.turks-DP-02.sh	5.3 KB	sh	2015-06-25 19:16:38 UTC
File Name	Size	Type	Timestamp																																							
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TKLCConfigData.turks-DP-02.sh	5.3 KB	sh	2015-06-25 19:16:38 UTC																																							
<p>4.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>The “Status” tab in the banner will display a confirmation message stating “ISO undeployment started”.</p>	<p>Main Menu: Status & Manage -> Files</p> <p>Filter Status Tasks</p> <p>File Name <input checked="" type="checkbox"/> Status</p> <ul style="list-style-type: none"> ISO undeployment started. <p>Active_SDS_20150624200623.pcap</p> <p>Active_SDS_20150624200623.txt</p> <p>backup/Backup.sds.sds-rlghnc-a.Configuration.NETWORK_OAMP.20150707_021510.AUTO.tar</p> <p>backup/Backup.sds.sds-rlghnc-a.Configuration.NETWORK_OAMP.20150708_021510.AUTO.tar</p>																																								

Appendix G: Undeploying an ISO file (Post Upgrade Acceptance)

Step	Procedure	Result
<p>5.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>Monitor the ISO undeployment status.</p> <p>1) Using the cursor, reselect the ISO file for the target 4.1 release.</p> <p>2) Click the “View ISO Deployment Report” dialogue button.</p>	 <p>Main Menu: Status & Manage -> Files</p> <p>Filter Status Tasks</p> <p>sds-rlghnc-a sds-rlghnc-b qs-rlghnc sds-mrsvnc-a sds-mrsvnc-b qs-mrsvnc turks-</p> <p>File Name</p> <p>provimport/import_Rebuild4_subscriber.csv</p> <p>provimport/import_Rebuild5_imsiPrefix.csv</p> <p>rsync.log</p> <p>SDS-7.1.0.0.0_71.7.0-x86_64.iso 1</p> <p>TKLCConfigData.florence-DP-01.sh</p> <p>TKLCConfigData.florence-DP-02.sh</p> <p>TKLCConfigData.florence-sds-SO-a.sh</p> <p>Delete View ISO Deployment Report Upload Download Deploy ISO Validate ISO</p> <p>6.1 GB used (1.12%) of 540.8 GB available. System utilization: 27.5 GB (5.09%) of 540.8 GB available.</p> <p>View the selected File.</p> <p>2</p>
<p>6.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP (GUI):</p> <p>The user is presented with the Deployment Report indicating the current status of undeployment to all servers in the topology.</p> <p>Refresh the report by clicking the “Back” dialogue button and repeating Step 5 of this procedure until the ISO shows “Not Deployed” to all servers in the topology.</p>	 <p>Main Menu: Status & Manage -> Files [View]</p> <p>Main Menu: Status & Manage -> Files [View]</p> <p>Tue Jul 21 20:08:34 2015 UTC</p> <p>Deployment report for SDS-7.1.0.0.0_71.7.0-x86_64.iso:</p> <p>Deployed on 0/18 servers.</p> <p>sds-rlghnc-a: Not Deployed</p> <p>sds-rlghnc-b: Not Deployed</p> <p>qs-rlghnc: Not Deployed</p> <p>sds-mrsvnc-a: Not Deployed</p> <p>sds-mrsvnc-b: Not Deployed</p> <p>qs-mrsvnc: Not Deployed</p> <p>turks-sds-SO-a: Not Deployed</p> <p>turks-sds-SO-b: Not Deployed</p> <p>turks-DP-01: Not Deployed</p> <p>turks-DP-02: Not Deployed</p> <p>kauai-sds-SO-a: Not Deployed</p> <p>kauai-sds-SO-b: Not Deployed</p> <p>kauai-DP-01: Not Deployed</p> <p>kauai-DP-02: Not Deployed</p> <p>florence-sds-SO-a: Not Deployed</p> <p>florence-sds-SO-b: Not Deployed</p> <p>florence-DP-01: Not Deployed</p> <p>florence-DP-02: Not Deployed</p>
<p>THIS PROCEDURE HAS BEEN COMPLETED</p>		

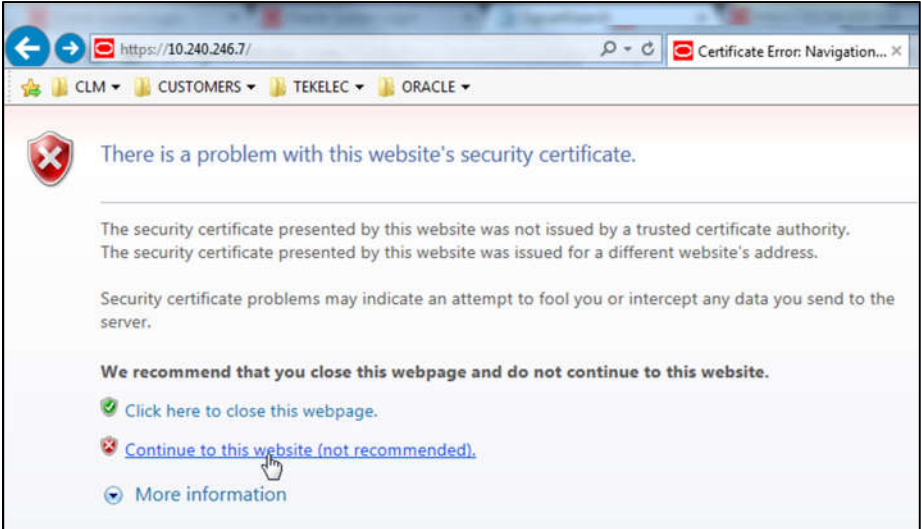

APPENDIX H. ADDING THE HLRR ISO TO THE PM&C SW REPOSITORY (HP ONLY)

This procedure must be done once for the PM&C located on the TVOE hosts of each HLR Router NOAM-A server.

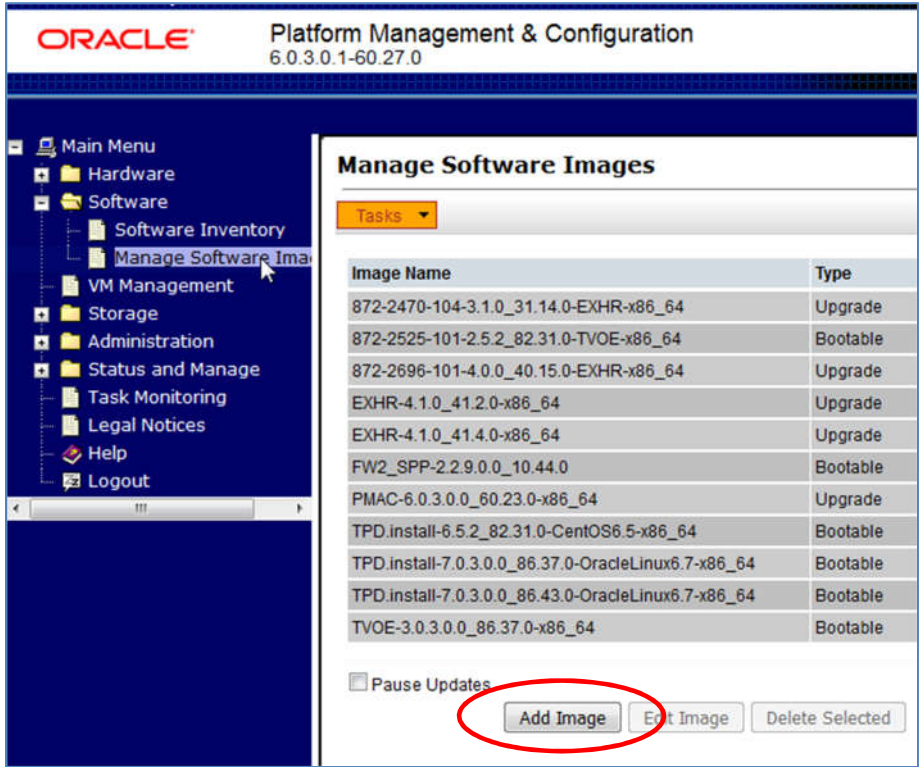
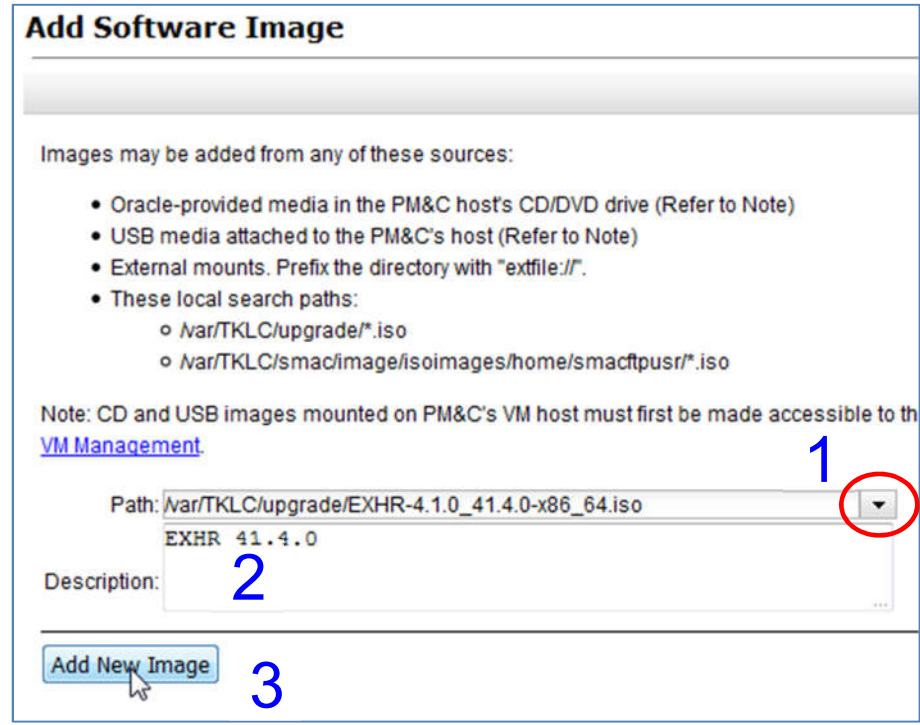
Appendix H: Adding the HLRR ISO to the PM&C SW Repository (HP only) (HP only)

Step	Procedure	Result
1. <input type="checkbox"/>	Primary NOAM VIP (CLI): Using the VIP address, login to the “Active” Primary HLRR NOAM with the admusr account.	CentOS release 6.7 Kernel 2.6.32-573.18.1.el6prere17.0.3.0.0_86.43.0.x86 on an x86_64 exhrNO-rlghnc-a login: admusr Password: <admusr_password>
2. <input type="checkbox"/>	Primary NOAM VIP: The user will be presented with output similar to that shown to the right.	*** TRUNCATED OUTPUT *** RELEASE=6.4 RUNID=00 VPATH=/var/TKLC/rundb:/usr/TKLC/appworks:/usr/TKLC/awpcommon:/usr/TKLC/comagent-gui:/usr/TKLC/comagent-gui:/usr/TKLC/comagent:/usr/TKLC/sds PROMPATH=/opt/comcol/prod RUNID=00 [admusr@exhrNO-rlghnc-a ~]\$
3. <input type="checkbox"/>	Primary NOAM VIP: Access the “filemgmt” directory where the target ISO file was uploaded to.	[admusr@exhrNO-rlghnc-a ~]\$ cd /var/TKLC/db/filemgmt/ [admusr@exhrNO-rlghnc-a filemgmt]\$
4. <input type="checkbox"/>	Primary NOAM VIP: Identify the exact name of the target ISO file.	[admusr@exhrNO-rlghnc-a filemgmt]\$ ls -l *.iso -rw-rw-r-- 1 awadmin awadm 893536256 Jun 24 14:23 872-2696-101-4.1.0_41.4.0-EXHR-x86_64.iso [admusr@exhrNO-rlghnc-a filemgmt]\$
5. <input type="checkbox"/>	Primary NOAM VIP: Use Secure Copy (scp) to copy the target ISO file to the /var/TKLC/upgrade/ directory of the remote PM&C server as the “admusr” user.	\$ scp -p 872-2696-101-4.1.0_41.4.0-EXHR-x86_64.iso admusr@10.240.246.7:/var/TKLC/upgrade/ FIPS integrity verification test failed. The authenticity of host '10.240.246.7 (10.240.246.7)' can't be established. RSA key fingerprint is 23:aa:7e:12:40:d6:20:d6:19:62:c0:07:9d:20:30:35. Are you sure you want to continue connecting (yes/no)? yes Warning: Permanently added '10.240.246.7' (RSA) to the list of known hosts. Password: <admusr_password> 872-2696-101-4.1.0_41.4.0-EXHR-x86_64.iso 100% 852MB 11.2MB/s 01:16 [admusr@exhrNO-rlghnc-a filemgmt]\$
6. <input type="checkbox"/>	Primary NOAM VIP: Exit the CLI for the “Active” Primary HLRR NOAM.	[admusr@exhrNO-rlghnc-a filemgmt]\$ exit logout

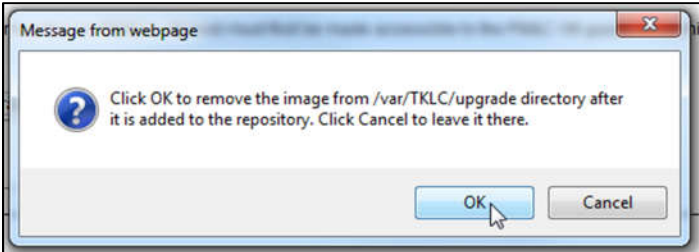
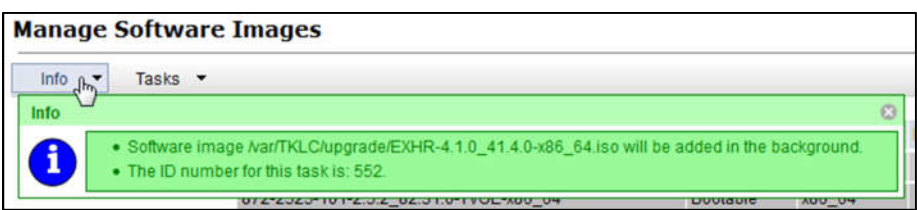
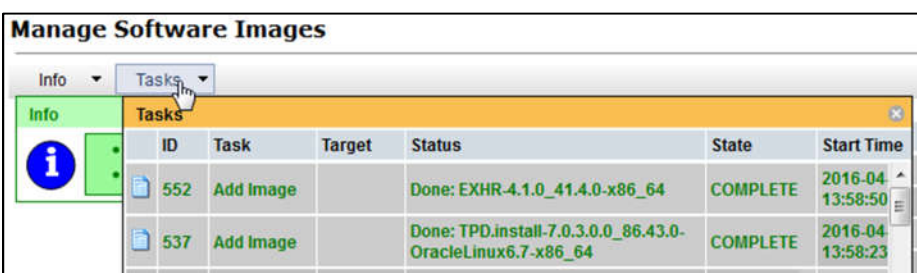
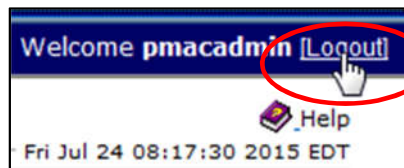
Appendix H: Adding the HLRR ISO to the PM&C SW Repository (HP only) (HP only)

Step	Procedure	Result
<p>7.</p> <p><input type="checkbox"/></p>	<p>PM&C Server: (GUI):</p> <p>1) Launch approved Web browser Internet Explorer 8.0, 9.0 or 10.0 and connect to the Management IP Address assigned to PM&C Server associated with the HLRR NOAM NE.</p> <p>2) If a certificate error is received, click on the link which states...</p> <p><i>“Continue to this website (not recommended).”</i></p>	
<p>8.</p> <p><input type="checkbox"/></p>	<p>PM&C Server:</p> <p>The user should be presented a PM&C login screen similar to the one shown on the right.</p> <p>Login to the GUI using the default user and password.</p>	

Appendix H: Adding the HLRR ISO to the PM&C SW Repository (HP only) (HP only)

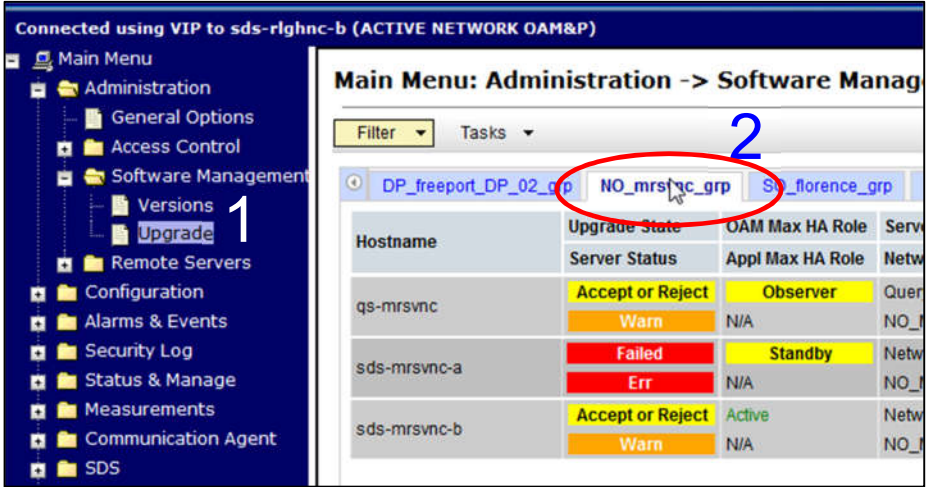
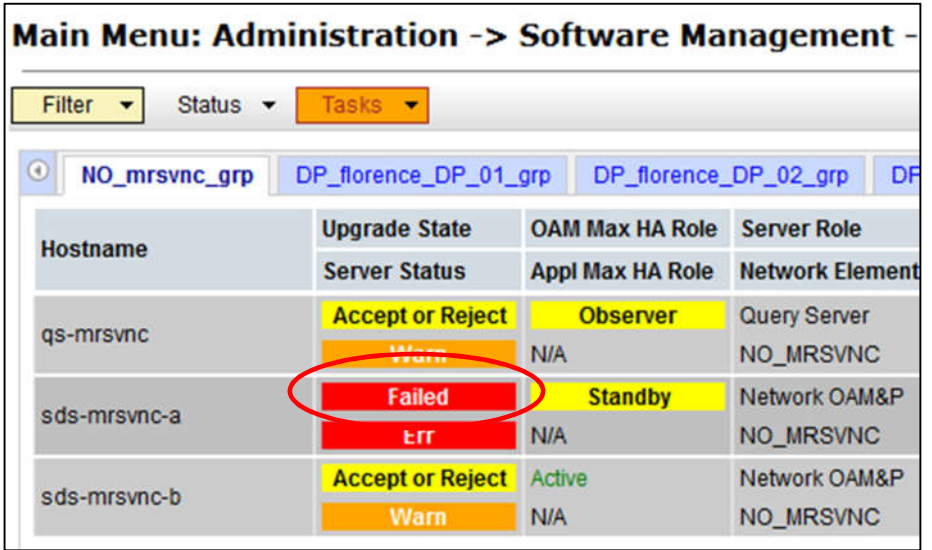
Step	Procedure	Result																								
<p>9.</p> <p><input type="checkbox"/></p>	<p>PM&C Server:</p> <p>1) Select...</p> <p>Main Menu → Software → Manage Software Images</p> <p>...as shown on the right.</p> <p>2) Select the “Add Image” button</p>	 <p>The screenshot shows the Oracle Platform Management & Configuration interface. On the left is a navigation tree with 'Main Menu' expanded to 'Software' and 'Manage Software Images' selected. The main area displays a table of software images with columns for 'Image Name' and 'Type'. At the bottom, the 'Add Image' button is circled in red.</p> <table border="1"> <thead> <tr> <th>Image Name</th> <th>Type</th> </tr> </thead> <tbody> <tr> <td>872-2470-104-3.1.0_31.14.0-EXHR-x86_64</td> <td>Upgrade</td> </tr> <tr> <td>872-2525-101-2.5.2_82.31.0-TVOE-x86_64</td> <td>Bootable</td> </tr> <tr> <td>872-2696-101-4.0.0_40.15.0-EXHR-x86_64</td> <td>Upgrade</td> </tr> <tr> <td>EXHR-4.1.0_41.2.0-x86_64</td> <td>Upgrade</td> </tr> <tr> <td>EXHR-4.1.0_41.4.0-x86_64</td> <td>Upgrade</td> </tr> <tr> <td>FW2_SPP-2.2.9.0.0_10.44.0</td> <td>Bootable</td> </tr> <tr> <td>PMAC-6.0.3.0.0_60.23.0-x86_64</td> <td>Upgrade</td> </tr> <tr> <td>TPD.install-6.5.2_82.31.0-CentOS6.5-x86_64</td> <td>Bootable</td> </tr> <tr> <td>TPD.install-7.0.3.0.0_86.37.0-OracleLinux6.7-x86_64</td> <td>Bootable</td> </tr> <tr> <td>TPD.install-7.0.3.0.0_86.43.0-OracleLinux6.7-x86_64</td> <td>Bootable</td> </tr> <tr> <td>TVOE-3.0.3.0.0_86.37.0-x86_64</td> <td>Bootable</td> </tr> </tbody> </table>	Image Name	Type	872-2470-104-3.1.0_31.14.0-EXHR-x86_64	Upgrade	872-2525-101-2.5.2_82.31.0-TVOE-x86_64	Bootable	872-2696-101-4.0.0_40.15.0-EXHR-x86_64	Upgrade	EXHR-4.1.0_41.2.0-x86_64	Upgrade	EXHR-4.1.0_41.4.0-x86_64	Upgrade	FW2_SPP-2.2.9.0.0_10.44.0	Bootable	PMAC-6.0.3.0.0_60.23.0-x86_64	Upgrade	TPD.install-6.5.2_82.31.0-CentOS6.5-x86_64	Bootable	TPD.install-7.0.3.0.0_86.37.0-OracleLinux6.7-x86_64	Bootable	TPD.install-7.0.3.0.0_86.43.0-OracleLinux6.7-x86_64	Bootable	TVOE-3.0.3.0.0_86.37.0-x86_64	Bootable
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TVOE-3.0.3.0.0_86.37.0-x86_64	Bootable																									
<p>10.</p> <p><input type="checkbox"/></p>	<p>PM&C Server:</p> <p>1) If the ISO does not automatically appear in the Path: field, click the Path: pull-down and select the target ISO file from the list.</p> <p>2) Input the HLR Router release information in the “Description:” field.</p> <p>3) Select “Add New Image” button.</p>	 <p>The screenshot shows the 'Add Software Image' form. The 'Path' field contains the path <code>/var/TKLC/upgrade/EXHR-4.1.0_41.4.0-x86_64.iso</code> and has a pull-down menu circled in red with a blue '1' next to it. The 'Description' field contains <code>EXHR 41.4.0</code> and has a blue '2' next to it. The 'Add New Image' button has a blue '3' next to it.</p>																								

Appendix H: Adding the HLRR ISO to the PM&C SW Repository (HP only) (HP only)

Step	Procedure	Result																																																
<p>11.</p> <p><input type="checkbox"/></p>	<p>PM&C Server:</p> <p>Click “OK” on the pop-up confirmation box to allow the target ISO file to be deleted after it has been successfully added to the PM&C Software Repository.</p>																																																	
<p>12.</p> <p><input type="checkbox"/></p>	<p>PM&C Server:</p> <p>An info message will be raised to show a new background task.</p>																																																	
<p>13.</p> <p><input type="checkbox"/></p>	<p>PM&C Server:</p> <p>The user may monitor the progress using the “Tasks” tab in the banner on the same screen.</p>																																																	
<p>14.</p> <p><input type="checkbox"/></p>	<p>PM&C Server:</p> <p>When the task is complete, the new software image will be displayed in the Image list.</p>	<table border="1"> <thead> <tr> <th>Image Name</th> <th>Type</th> <th>Architecture</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>872-2470-104-3.1.0_31.14.0-EXHR-x86_64</td> <td>Upgrade</td> <td>x86_64</td> <td></td> </tr> <tr> <td>872-2525-101-2.5.2_82.31.0-TVOE-x86_64</td> <td>Bootable</td> <td>x86_64</td> <td></td> </tr> <tr> <td>872-2696-101-4.0.0_40.15.0-EXHR-x86_64</td> <td>Upgrade</td> <td>x86_64</td> <td></td> </tr> <tr> <td>EXHR-4.1.0_41.2.0-x86_64</td> <td>Upgrade</td> <td>x86_64</td> <td></td> </tr> <tr> <td>EXHR-4.1.0_41.4.0-x86_64</td> <td>Upgrade</td> <td>x86_64</td> <td>EXHR 41.4.0</td> </tr> <tr> <td>FW2_SPP-2.2.9.0.0_10.44.0</td> <td>Bootable</td> <td>noarch</td> <td></td> </tr> <tr> <td>PMAC-6.0.3.0.0_60.23.0-x86_64</td> <td>Upgrade</td> <td>x86_64</td> <td></td> </tr> <tr> <td>TPD.install-6.5.2_82.31.0-CentOS6.5-x86_64</td> <td>Bootable</td> <td>x86_64</td> <td></td> </tr> <tr> <td>TPD.install-7.0.3.0.0_86.37.0-OracleLinux6.7-x86_64</td> <td>Bootable</td> <td>x86_64</td> <td></td> </tr> <tr> <td>TPD.install-7.0.3.0.0_86.43.0-OracleLinux6.7-x86_64</td> <td>Bootable</td> <td>x86_64</td> <td></td> </tr> <tr> <td>TVOE-3.0.3.0.0_86.37.0-x86_64</td> <td>Bootable</td> <td>x86_64</td> <td></td> </tr> </tbody> </table>	Image Name	Type	Architecture	Description	872-2470-104-3.1.0_31.14.0-EXHR-x86_64	Upgrade	x86_64		872-2525-101-2.5.2_82.31.0-TVOE-x86_64	Bootable	x86_64		872-2696-101-4.0.0_40.15.0-EXHR-x86_64	Upgrade	x86_64		EXHR-4.1.0_41.2.0-x86_64	Upgrade	x86_64		EXHR-4.1.0_41.4.0-x86_64	Upgrade	x86_64	EXHR 41.4.0	FW2_SPP-2.2.9.0.0_10.44.0	Bootable	noarch		PMAC-6.0.3.0.0_60.23.0-x86_64	Upgrade	x86_64		TPD.install-6.5.2_82.31.0-CentOS6.5-x86_64	Bootable	x86_64		TPD.install-7.0.3.0.0_86.37.0-OracleLinux6.7-x86_64	Bootable	x86_64		TPD.install-7.0.3.0.0_86.43.0-OracleLinux6.7-x86_64	Bootable	x86_64		TVOE-3.0.3.0.0_86.37.0-x86_64	Bootable	x86_64	
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<p>15.</p> <p><input type="checkbox"/></p>	<p>PM&C Server:</p> <p>Click the “Logout” link on the PM&C server GUI.</p>																																																	
<p>THIS PROCEDURE HAS BEEN COMPLETED</p>																																																		

APPENDIX I. RECOVERING FROM A FAILED UPGRADE


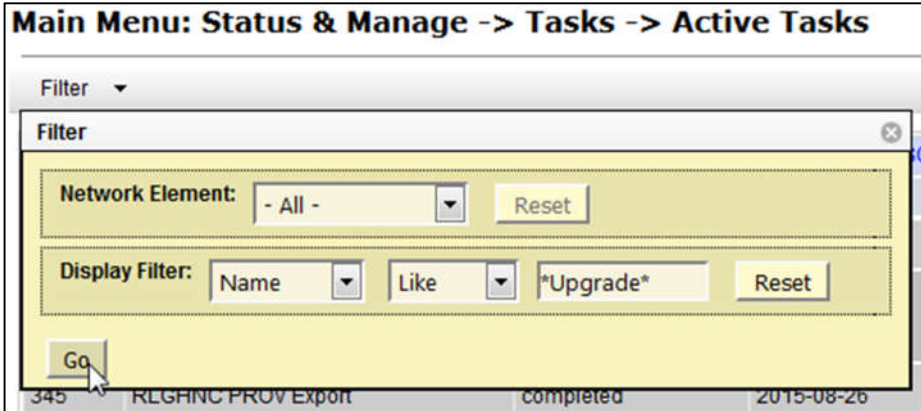
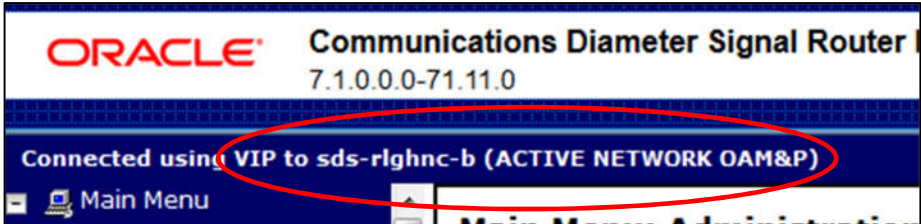
Appendix I: Recovering from a Failed Upgrade

Step	Procedure	Result
1. <input type="checkbox"/>	Using the VIP address, access the Primary HLRR NOAM GUI .	Using the VIP address, access the Primary HLRR NOAM GUI as described in Appendix A .
2. <input type="checkbox"/>	<p>Primary NOAM VIP (GUI):</p> <p>1) Select...</p> <p>Main Menu → Administration → Software Management → Upgrade</p> <p>2) Select Server Group tab for the server(s) being upgraded.</p>	
3. <input type="checkbox"/>	<p>Primary NOAM VIP:</p> <p>Verify the “Upgrade State” for each server undergoing SW upgrade.</p> <p>Identify any <i>Server(s)</i> with an “Upgrade State” of “Failed”.</p>	

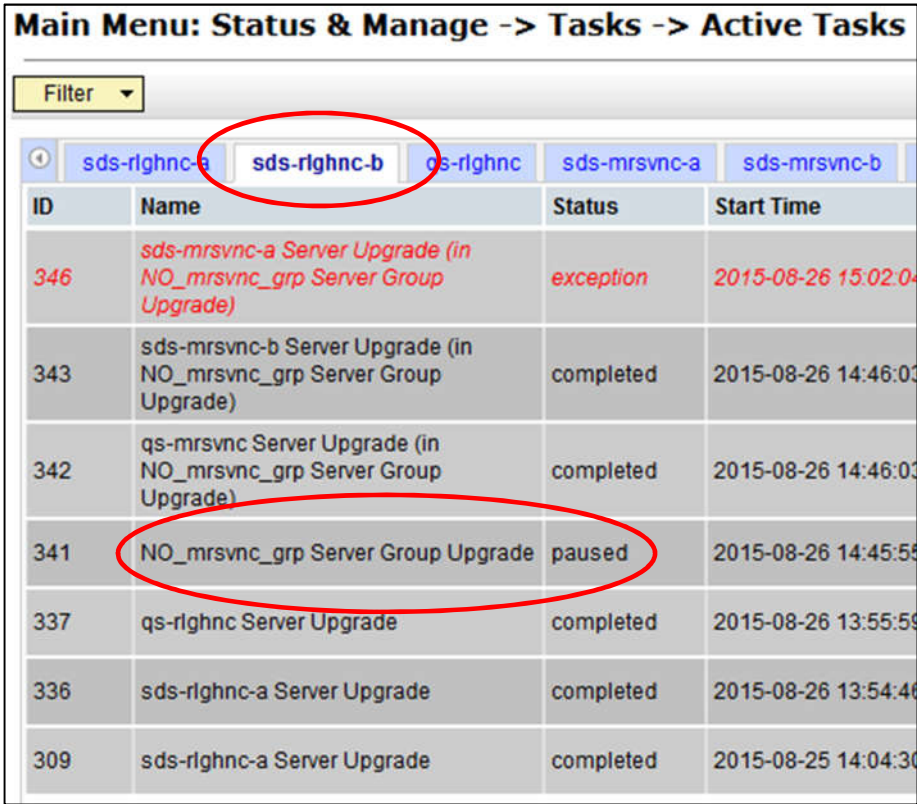
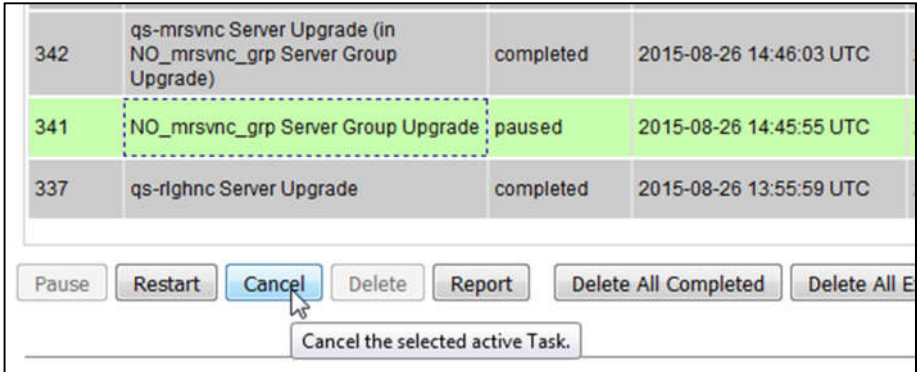
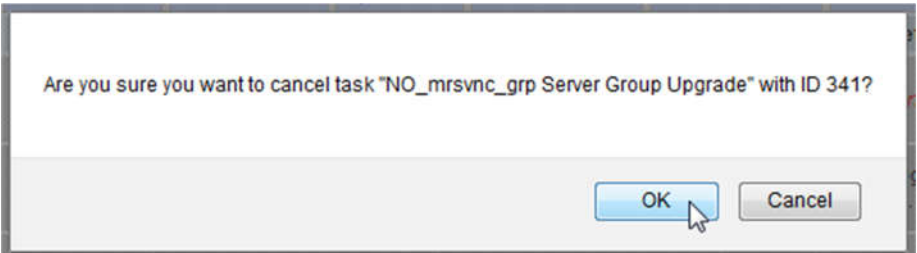


- If the **Failed Server** was upgraded using the “**Upgrade Server**” option, then **SKIP** to **Step 11** of this procedure.
- If the **Failed Server** was upgraded using the “**Auto Upgrade**” option (*i.e. Auto Server Group Upgrade*), then **CONTINUE** to **Step 4** of this procedure.

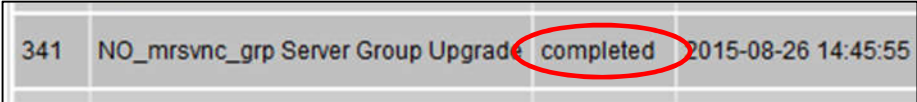
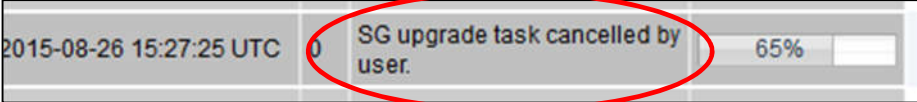
Appendix I: Recovering from a Failed Upgrade

Step	Procedure	Result															
<p>4.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP: Select...</p> <p>Main Menu → Status & Manage → Tasks → Active Tasks</p> <p>...as shown on the right.</p>	 <table border="1"> <thead> <tr> <th>ID</th> <th>Name</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>347</td> <td>APDE Remote Server Copy</td> <td>completed</td> </tr> <tr> <td>346</td> <td>sds-mrsvnc-a Server Upgrade (in NO_mrsvnc_grp Server Group Upgrade)</td> <td>exception</td> </tr> <tr> <td>345</td> <td>RLGHNC PROV Export</td> <td>completed</td> </tr> <tr> <td>344</td> <td>RLGHNC OAM.SYSTEM Export</td> <td>completed</td> </tr> </tbody> </table>	ID	Name	Status	347	APDE Remote Server Copy	completed	346	sds-mrsvnc-a Server Upgrade (in NO_mrsvnc_grp Server Group Upgrade)	exception	345	RLGHNC PROV Export	completed	344	RLGHNC OAM.SYSTEM Export	completed
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<p>5.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP: Filter the “Active Tasks” screen setting the parameters as shown.</p> <p>Display Filter Values:</p> <ol style="list-style-type: none"> 1) Name 2) Like 3) *Upgrade* 																
<p>6.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP: Verify the hostname of the Primary Active HLRR NOAM server from the GUI banner.</p>																

Appendix I: Recovering from a Failed Upgrade

Step	Procedure	Result																																
<p>7.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) If not auto-selected, select the tab displaying the hostname of the Primary Active HLRR NOAM server identified in the previous step.</p> <p>2) Locate the task for the “Server Group Upgrade”. It will show a Status of “paused”.</p>	 <p>Main Menu: Status & Manage -> Tasks -> Active Tasks</p> <p>Filter</p> <p>sds-rhnc-a sds-rhnc-b qs-rhnc sds-mrsvnc-a sds-mrsvnc-b</p> <table border="1"> <thead> <tr> <th>ID</th> <th>Name</th> <th>Status</th> <th>Start Time</th> </tr> </thead> <tbody> <tr> <td>346</td> <td>sds-mrsvnc-a Server Upgrade (in NO_mrsvnc_grp Server Group Upgrade)</td> <td>exception</td> <td>2015-08-26 15:02:04</td> </tr> <tr> <td>343</td> <td>sds-mrsvnc-b Server Upgrade (in NO_mrsvnc_grp Server Group Upgrade)</td> <td>completed</td> <td>2015-08-26 14:46:03</td> </tr> <tr> <td>342</td> <td>qs-mrsvnc Server Upgrade (in NO_mrsvnc_grp Server Group Upgrade)</td> <td>completed</td> <td>2015-08-26 14:46:03</td> </tr> <tr> <td>341</td> <td>NO_mrsvnc_grp Server Group Upgrade</td> <td>paused</td> <td>2015-08-26 14:45:55</td> </tr> <tr> <td>337</td> <td>qs-rhnc Server Upgrade</td> <td>completed</td> <td>2015-08-26 13:55:59</td> </tr> <tr> <td>336</td> <td>sds-rhnc-a Server Upgrade</td> <td>completed</td> <td>2015-08-26 13:54:46</td> </tr> <tr> <td>309</td> <td>sds-rhnc-a Server Upgrade</td> <td>completed</td> <td>2015-08-25 14:04:30</td> </tr> </tbody> </table>	ID	Name	Status	Start Time	346	sds-mrsvnc-a Server Upgrade (in NO_mrsvnc_grp Server Group Upgrade)	exception	2015-08-26 15:02:04	343	sds-mrsvnc-b Server Upgrade (in NO_mrsvnc_grp Server Group Upgrade)	completed	2015-08-26 14:46:03	342	qs-mrsvnc Server Upgrade (in NO_mrsvnc_grp Server Group Upgrade)	completed	2015-08-26 14:46:03	341	NO_mrsvnc_grp Server Group Upgrade	paused	2015-08-26 14:45:55	337	qs-rhnc Server Upgrade	completed	2015-08-26 13:55:59	336	sds-rhnc-a Server Upgrade	completed	2015-08-26 13:54:46	309	sds-rhnc-a Server Upgrade	completed	2015-08-25 14:04:30
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309	sds-rhnc-a Server Upgrade	completed	2015-08-25 14:04:30																															
<p>8.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>1) Select the “Server Group Upgrade” task with the cursor. It will become highlighted on the screen.</p> <p>2) Click the “Cancel” dialogue button to cancel the task.</p>	 <table border="1"> <tbody> <tr> <td>342</td> <td>qs-mrsvnc Server Upgrade (in NO_mrsvnc_grp Server Group Upgrade)</td> <td>completed</td> <td>2015-08-26 14:46:03 UTC</td> </tr> <tr> <td>341</td> <td>NO_mrsvnc_grp Server Group Upgrade</td> <td>paused</td> <td>2015-08-26 14:45:55 UTC</td> </tr> <tr> <td>337</td> <td>qs-rhnc Server Upgrade</td> <td>completed</td> <td>2015-08-26 13:55:59 UTC</td> </tr> </tbody> </table> <p>Pause Restart Cancel Delete Report Delete All Completed Delete All E</p> <p>Cancel the selected active Task.</p>	342	qs-mrsvnc Server Upgrade (in NO_mrsvnc_grp Server Group Upgrade)	completed	2015-08-26 14:46:03 UTC	341	NO_mrsvnc_grp Server Group Upgrade	paused	2015-08-26 14:45:55 UTC	337	qs-rhnc Server Upgrade	completed	2015-08-26 13:55:59 UTC																				
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<p>9.</p> <p><input type="checkbox"/></p>	<p>Primary NOAM VIP:</p> <p>Click the “OK” button on the confirmation box.</p>	 <p>Are you sure you want to cancel task "NO_mrsvnc_grp Server Group Upgrade" with ID 341?</p> <p>OK Cancel</p>																																

Appendix I: Recovering from a Failed Upgrade

Step	Procedure	Result
<p>10.</p> <input type="checkbox"/>	<p>Primary NOAM VIP: For the “Server Group Upgrade” task...</p> <p>1) Verify that the Status has changed from “paused” to “completed”.</p> <p>2) Verify that the Result Details column now states “SG upgrade task cancelled by user.”</p>	 
<p>11.</p> <input type="checkbox"/>	<p>Failed Server (CLI): Using the XMI address, login to the Failed Server with the admusr account.</p>	<pre>CentOS release 6.7 Kernel 2.6.32-573.18.1.el6prere17.0.3.0.0_86.43.0.x86 on an x86_64 exhrNO-mrsvnc-a login: admusr Password: <admusr_password></pre>
<p>12.</p> <input type="checkbox"/>	<p>Failed Server (CLI): The user will be presented with output similar to that shown to the right.</p>	<p>*** TRUNCATED OUTPUT ***</p> <pre>RELEASE=6.4 RUNID=00 VPATH=/var/TKLC/rundb:/usr/TKLC/appworks:/usr/TKLC/awpcommon:/u sr/TKLC/comagent-gui:/usr/TKLC/comagent- gui:/usr/TKLC/comagent:/usr/TKLC/sds PROMPATH=/opt/comcol/prod RUNID=00 [admusr@exhrNO-mrsvnc-a ~]\$</pre>
<p>13.</p> <input type="checkbox"/>	<p>Failed Server (CLI): Inspect the “upgrade.log” file to identify the reason for the failure.</p>	<pre>[admusr@exhrNO-mrsvnc-a ~]\$ tail /var/TKLC/log/upgrade/upgrade.log 1439256874:: INFO: Removing '/etc/my.cnf' from RCS repository 1439256874:: INFO: Removing '/etc/pam.d/password-auth' from RCS repository 1439256874:: INFO: Removing '/etc/pam.d/system-auth' from RCS repository 1439256874:: INFO: Removing '/etc/sysconfig/network- scripts/ifcfg-eth0' from RCS repository 1439256874:: INFO: Removing '/var/lib/prelink/force' from RCS repository 1439256874::Marking task 1439256861.0 as finished. 1439256874:: 1440613685::Early Checks failed for the next upgrade 1440613691::Look at earlyChecks.log for more info 1440613691:: [admusr@exhrNO-mrsvnc-a ~]\$</pre>

Appendix I: Recovering from a Failed Upgrade

Step	Procedure	Result
14. <input type="checkbox"/>	<p>Failed Server (CLI):</p> <p>If the “earlyChecks.log” file is identified as the source, look for the Errors contained in that file.</p>	<pre>[admusr@exhrNO-mrsvnc-a upgrade]\$ grep ERROR /var/TKLC/log/upgrade/earlyChecks.log</pre> <pre>ERROR: There are alarms on the system!</pre> <pre>ERROR: <<< OUTPUT >>></pre> <pre>ERROR: SEQ: 15 UPTIME: 2070747 BIRTH: 1438969736 TYPE: SET</pre> <pre>ALARM:</pre> <pre>TKSPLATMI10 tpdNTPDaemonNotSynchronizedWarning 1.3.6.1.4.1.323.5.3.18.3.1.3.10 32509 Communications Communications Subsystem Failure</pre> <pre>ERROR: <<< END OUTPUT >>></pre> <pre>ERROR: earlyUpgradeChecks() code failed for Upgrade::EarlyPolicy::TPDEarlyChecks</pre> <pre>ERROR: Failed running earlyUpgradeChecks() code</pre> <pre>ERROR: Early Upgrade Checks Failed!</pre> <pre>[admusr@exhrNO-mrsvnc-a upgrade]\$</pre>



- Although outside of the scope of this document, the user is expected to use standard troubleshooting techniques to clear the alarm condition from the Failed Server.
- If troubleshooting assistance is needed, refer to **Appendix J: Accessing My Oracle Support (MOS)** for information on contacting MOS.
- **DO NOT PROCEED TO STEP 15 OF THIS PROCEDURE UNTIL THE ALARM CONDITION HAS BEEN CLEARED!**

15. <input type="checkbox"/>	<p>Failed Server (CLI):</p> <p>Use the alarmMgr utility to verify that all Platform alarms have been cleared from the system.</p>	<pre>[admusr@exhrNO-mrsvnc-b ~]\$ alarmMgr -alarmStatus</pre> <pre>[admusr@exhrNO-mrsvnc-b ~]\$</pre>
16. <input type="checkbox"/>	<p>Failed Server (CLI):</p> <p>Exit the CLI for the Failed Server.</p>	<pre>[admusr@exhrNO-mrsvnc-a ~]\$ exit</pre> <pre>logout</pre>
17. <input type="checkbox"/>	<p>Primary NOAM VIP (GUI):</p> <p>Re-execute the Server Upgrade.</p> <p>NOTE: <i>Once failed, the Auto Server Group Upgrade (i.e. Auto Upgrade) option should not be repeated for that Server Group.</i></p>	<ul style="list-style-type: none"> • Return to the referring Upgrade procedure and re-execute SW Upgrade for the Failed Server using the “Upgrade Server” option Only!

THIS PROCEDURE HAS BEEN COMPLETED

APPENDIX J. ACCESSING MY ORACLE SUPPORT (MOS)

My Oracle Support

My Oracle Support (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 menu 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.

MOS is available 24 hours a day, 7 days a week, 365 days a year.

Emergency Response

In the event of a critical service situation, emergency response is offered by the CAS main number at **1-800-223-1711** (toll-free in the US), or by calling the Oracle Support hotline for your local country from the list at <http://www.oracle.com/us/support/contact/index.html>. The emergency response provides immediate coverage, automatic escalation, and other features to ensure that the critical situation is resolved as rapidly as possible.

A critical situation is defined as a problem with the installed equipment that severely affects service, traffic, or maintenance capabilities, and requires immediate corrective action. Critical situations affect service and/or system operation resulting in one or several of these situations:

- A total system failure that results in loss of all transaction processing capability
- Significant reduction in system capacity or traffic handling capability
- Loss of the system’s ability to perform automatic system reconfiguration
- Inability to restart a processor or the system
- Corruption of system databases that requires service affecting corrective actions
- Loss of access for maintenance or recovery operations
- Loss of the system ability to provide any required critical or major trouble notification

Any other problem severely affecting service, capacity/traffic, billing, and maintenance capabilities may be defined as critical by prior discussion and agreement with Oracle.

Locate Product Documentation on the Oracle Help Center Site

Oracle customer documentation is available on the web at the Oracle Help Center (OHC) site, <http://docs.oracle.com>. You do not have to register to access these documents. Viewing these files requires Adobe Acrobat Reader, which can be downloaded at <http://www.adobe.com>.

1. Access the OHC site [at http://docs.oracle.com](http://docs.oracle.com).
2. Click **Industries**.
3. Under the Oracle Communications subheading, click the **Oracle Communications documentation** link.
The Communications Documentation page appears. Most products covered by these documentation sets will appear under the headings “Network Session Delivery and Control Infrastructure” or “Platforms.”
4. Click the Product and then the Release Number. A list of the entire documentation set for the selected product and release appears.
5. To download a file to your location, right-click the PDF link, select **Save target as** (or similar command based on your browser), and save to a local folder.