Oracle® Communications
Diameter Signaling Router Full Address Resolution

SDS Software Upgrade User's Guide

Release 7.1

E60672 Revision 06

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ORACLE

Oracle® Communications Diameter Signaling Router Full Address Resolution, SDS Software Upgrade User's Guide.

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1. INTRODUCTION

1.1 Purpose and Scope

This document describes methods utilized and procedures executed to perform an application's software upgrade on in-service SDS servers and SDS DP blades in an SDS network. Supported paths are major upgrades from SDS 5.0 to SDS 7.1 and minor upgrades from SDS Software Release 7.1.0-71.x to a later 7.1.y-71.z.0 release.

The audience for this document includes Oracle customers as well as the SDS group: Global Software Delivery.

This document provides step-by-step instructions to execute any Release 7.1.x software upgrade.

The SDS software includes all Tekelec Platform Distribution (TPD) software. Any TPD upgrade necessary is included automatically as part of the SDS software upgrade. The execution of this procedure assumes that the SDS software load (ISO file, CD-ROM or other form of media) has already been delivered to the customer's premises. This includes delivery of the software load to the local workstation being used to perform this upgrade.

NOTE: The distribution of the SDS software load is outside the scope of this procedure.

The new SDS 7.1 release introduces the new upgrade features:

- **SDS service continuity during upgrade (20162763)**

All SDS functionality is maintained during software upgrades. Provisioning and replication of database updates to DPs continues throughout the upgrade process. With this feature, users do not have to enable/disable global provisioning before and after the upgrade. The remote provisioning (SOAP, XML) will not be interrupted during the upgrade except the case when HA switchover occurs on the Primary SDS site. Note that the VIP address of Primary SDS site should be used for the remote provisioning.

- **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] SDS 7.1 Initial Installation and Configuration Guide, E58856
[2] Database Management: Backup and System Restoration, UG005196
[3] SDS 4.0 Disaster Recovery Guide, UG006387
[4] HP Solutions Firmware Upgrade Pack Release Notes, 795-000-2xx, v2.1.5 (or latest 2.1 version)
[5] Platform 7.0 Configuration Guide, E53486

1.3 Acronyms

Acronym	Meaning
CLI	Command Line Interface
CSV	Comma-separated Values
DP	Database Processor
DR	Disaster Recovery
GA	General Availability
GUI	Graphical User Interface
HA	High Availability
IMI	Internal Management Interface
IPM	Initial Product Manufacture
ISO	ISO 9660 file system
LA	Limited Availability
MOP	Method of Procedure
MP	Message Processing or Message Processor
NE	Network Element
NO (or NOAM)	Network OAM&P
OAM&P	Operations, Administration, Maintenance and Provisioning
SDS	Subscriber Database Server
SO (or 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 1.0.0_10.1.0 to 2.0.0_20.1.0.
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 2.0.0_20.1.0 to 2.0.0_20.2.0.
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 SDS server from its current release on a single server to a newer release.
Backout	The process of converting a single SDS 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.
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: • Server is Forced Standby • Server is Application Disabled (Signaling servers will not process any traffic)

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 K:** 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. ☐	**Active Provisioning Site VIP:** Log into the server as the "**admusr**" user.	login: **admusr** Password: **<admusr_password>**
2. ☐	**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/awpcommon:/usr/TKLC/comagent-gui:/usr/TKLC/comagent-gui:/usr/TKLC/comagent:/usr/TKLC/sds PRODPATH=/opt/comcol/prod RUNID=00 $
3. ☐	**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 Oracle's Tekelec Customer Care Center 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, whenever possible, Primary SDS site and DR SDS site network elements should 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 SDS from the source release to the target release.

2.1 Supported Upgrade Paths

The supported SDS upgrade path is shown in **Figure 1** and **Figure 2**.

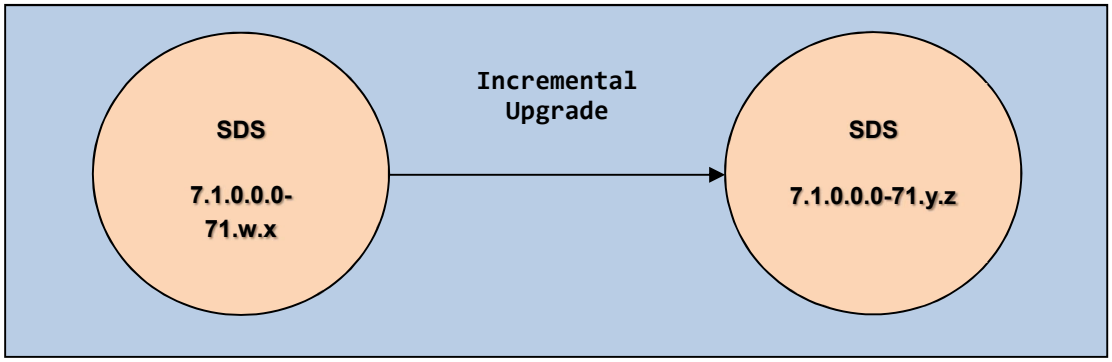


Figure 1: Supported Incremental Upgrade Paths

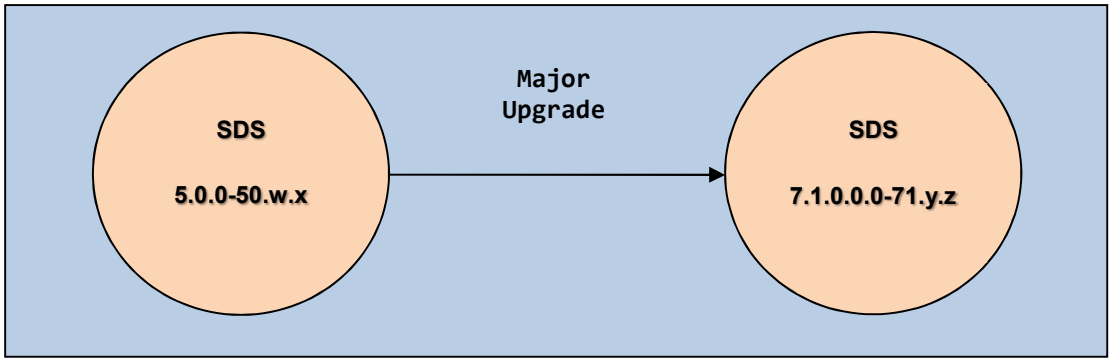


Figure 2: Supported Major Upgrade Paths

NOTE: Initial Installation is not within the scope of this upgrade document. See Initial Install doc [1] for more info

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 SDS 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 upgrade:

- Target-release ISO image file (Example: **`SDS-7.1.0.0.0_71.2.0-x86_64.iso)`**
- VPN access to the customer's network.
- GUI access to the SDS Network OAM&P VIP with administrator's privileges.
- SSH/SFTP access to the SDS Network OAM&P XMI VIP as the "admusr" user.

  NOTE: All logins into the SDS Active and DR site servers are made via the External Management (XMI) VIP 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 preferable in the case of a backout.

  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 Primary SDS (i.e. an SSH connection is made to the Active Primary SDS XMI first, then from the Active Primary SDS, an 2nd SSH connection can be made 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 SDS ISO image filename will be in the following format:

Example: **`SDS-7.1.0.0.0_71.2.0-x86_64.iso`**

NOTE: *Actual number values may vary between releases.*

Prior to the execution of this upgrade procedure it is assumed that the SDS 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 PC workstation with GUI access to the SDS XMI VIP. If the user performing the upgrade is at a remote location, it is assumed the ISO file is has already been transferred to the Active Primary SDS server prior to starting the 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†**
Primary SDS Site	
DR SDS Site	
SOAM 1 Site	
SOAM 2 Site	
SOAM 3 Site	
SOAM 4 Site	
Software	**Values**
Source Release Level	
Target Release Level	
Target Release ISO file name	
Access Information	**Values**
Primary Site XMI VIP (**GUI**)	
DR Site XMI VIP	
SDS GUI Admin Username and Password	
SDS “root” user Password	
SDS “admusr” user Password	
SDS “platcfg” user Password	
Blade’s iLO Admin Username and Password	
PM&C GUI Admin Username and Password	
PM&C user “root” Password	
PM&C user “admusr” Password	
PM&C user “PM&Cftpusr” Password	
Onboard Administrator GUI Admin Username and Password	

Table 4 - Logins, Passwords and Site Information

3.2 Upgrade Maintenance Windows

!! WARNING !! **It is recommended that SOAM NE sites containing mated Database Processors (DP) be upgraded in separate maintenance windows if at all possible.**

Table 5 - Upgrade Maintenance Windows

Maintenance Window _____ **Date:** _____ Record the names of the **Primary SDS** NE site, **DR SDS NE** site, and server's hostnames to be upgraded during Maintenance Window 1 in the space provided on the right:	**Primary SDS NE site name:** _____ ☐ **Primary SDS Active Server:** _____ ☐ **Primary SDS Standby Server:**_____ ☐ **Primary SDS Query Server:** _____ **DR SDS NE site name:** _____ ☐ **DR SDS Active Server:** _____ ☐ **DR SDS Standby Server:** _____ ☐ **DR SDS Query Server:** _____ • Check-off ☒ the associated **check box** as the upgrade is completed for each server
Maintenance Window _____ **Date:** _____ 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.	**SOAM NE site name:** _____ ☐ **Active SOAM Server:** _____ ☐ **Standby SOAM Server:** _____ ☐ **DP 1 Server**: _____ ☐ **DP 6 Server**: _____ ☐ **DP 2 Server**: _____ ☐ **DP 7 Server**: _____ ☐ **DP 3 Server**: _____ ☐ **DP 8 Server**: _____ ☐ **DP 4 Server**: _____ ☐ **DP 9 Server**: _____ ☐ **DP 5 Server**: _____ ☐ **DP 10 Server**: _____ • Check-off ☒ the associated **check box** as the upgrade is completed for each server

Maintenance Window _____ **Date:** _____ 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.	**SOAM NE site name:** _____ ☐ **Active SOAM Server:** _____ ☐ **Standby SOAM Server:** _____ ☐ **DP 1 Server**: _____ ☐ **DP 6 Server**: _____ ☐ **DP 2 Server**: _____ ☐ **DP 7 Server**: _____ ☐ **DP 3 Server**: _____ ☐ **DP 8 Server**: _____ ☐ **DP 4 Server**: _____ ☐ **DP 9 Server**: _____ ☐ **DP 5 Server**: _____ ☐ **DP 10 Server**: _____ • Check-off ☒ the associated **check box** as the upgrade is completed for each server
Maintenance Window _____ **Date:** _____ 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.	**SOAM NE site name:** _____ ☐ **Active SOAM Server:** _____ ☐ **Standby SOAM Server:** _____ ☐ **DP 1 Server**: _____ ☐ **DP 6 Server**: _____ ☐ **DP 2 Server**: _____ ☐ **DP 7 Server**: _____ ☐ **DP 3 Server**: _____ ☐ **DP 8 Server**: _____ ☐ **DP 4 Server**: _____ ☐ **DP 9 Server**: _____ ☐ **DP 5 Server**: _____ ☐ **DP 10 Server**: _____ • Check-off ☒ the associated **check box** as the upgrade is completed for each server
Maintenance Window _____ **Date:** _____ 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.	**SOAM NE site name:** _____ ☐ **Active SOAM Server:** _____ ☐ **Standby SOAM Server:** _____ ☐ **DP 1 Server**: _____ ☐ **DP 6 Server**: _____ ☐ **DP 2 Server**: _____ ☐ **DP 7 Server**: _____ ☐ **DP 3 Server**: _____ ☐ **DP 8 Server**: _____ ☐ **DP 4 Server**: _____ ☐ **DP 9 Server**: _____ ☐ **DP 5 Server**: _____ ☐ **DP 10 Server**: _____ • Check-off ☒ the associated **check box** as the upgrade is completed for each server

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	*Requirements Check*	00:15	00:15
2	*ISO Administration*	*	*
3	*Full Database Backup (PROV & COMCOL ENV for All Servers)*	01:00	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.

3.4 Primary SDS site / DR SDS site 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	*Upgrade Primary SDS NOAM NE*	01:00	02:15
5	*Upgrade DR SDS NOAM* NE	01:00	03:15

Table 7 - Primary SDS / DR SDS 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	*Upgrade SOAM NE*	01:30	01:30

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	*Upgrade Acceptance*	*	*

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.

Procedure Number	Procedure Title	Elapsed Time (Hrs:Min)	
		This Step	Cumulative
8	*Backout of a SOAM NE*	*	*
9	*Backout of the DR SDS NOAM* NE	*	*
10	*Backout of the Primary SDS NOAM* NE	*	*

Table 10 - Backout Procedures

4. SDS UPGRADE MATRIX

Upgrading the SDS 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 SDS and DR SDS sites must be upgraded in the same maintenance window.

SDS Upgrade Matrix

Network Element Type		1	2*†	3	4*	5†	6*†	7
☐	**Primary NOAM NE DR NOAM NE *(SDS / Query Server)***	✓	✓	✓	✓	✓	✗	✓
☐	**SOAM NE *(SOAM / DP)***	✓	✗	✗	✗	✗	✓	✓

Table 11 - SDS Upgrade Matrix

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

SDS Upgrade: List of Procedures

Table 12 - SDS 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. ☐	Verify that all Upgrade requirements have been met.	• Requirements are listed in **Section 3.1**: *(Upgrade Requirements)*. Verify that all Upgrade requirements have been met.
2. ☐	Verify all administration data needed during upgrade.	• 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 SDS 71.x release to understand the functional differences (if any) and possible impacts to the upgrade. When upgrading SDS to the target release, the following alarms may be reported on the GUI during the period of time when the Primary SDS Site NE is at the new software level and the DR SDS Site NE is at the old software level:

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

These alarms, if present, will exist for the Active and Standby DR SDS Site servers. They should clear themselves automatically within 5 minutes, and will cease to be raised once the DR Provisioning Site NE is upgraded to the same software level as the Primary SDS Site. To avoid seeing these alarms altogether, the upgrade of the Primary SDS Site and DR SDS Site NEs should be performed within the same maintenance window.

5.3 Perform Firmware Verification *(Upgrade Preparation)*

This procedure is part of Software Upgrade Preparation and is used to determine the whether a firmware update is required. If [4] has been provided with the upgrade kit, follow its instructions to verify the firmware on SDS rack mount servers and DP blades. Execute firmware upgrade procedures if required by [4]:

☐ Execute Section entitled "Upgrade DL360 or DL380 Server Firmware" of for SDS rack mount servers.

☐ Execute Section entitled "Upgrade Blade Server Firmware" for SDS DP blades.

5.3.1 Verify Shared Segments and Logical Volumes *(Major Upgrade from SDS 5.0 Only)*

If performing a **major upgrade** from **SDS 5.0** to **SDS 7.x,** then the user must ensure that shared segments and logical volumes on all SDS servers are in the correct state before upgrade to **SDS 7.x**.

 **STOP !**	☐ Verify Shared Segments and Logical Volumes for all servers in the **SDS** topology as specidied in **Appendix F** *(Verifying Shared Segments and Logical Volumes*).

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 SDS 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.

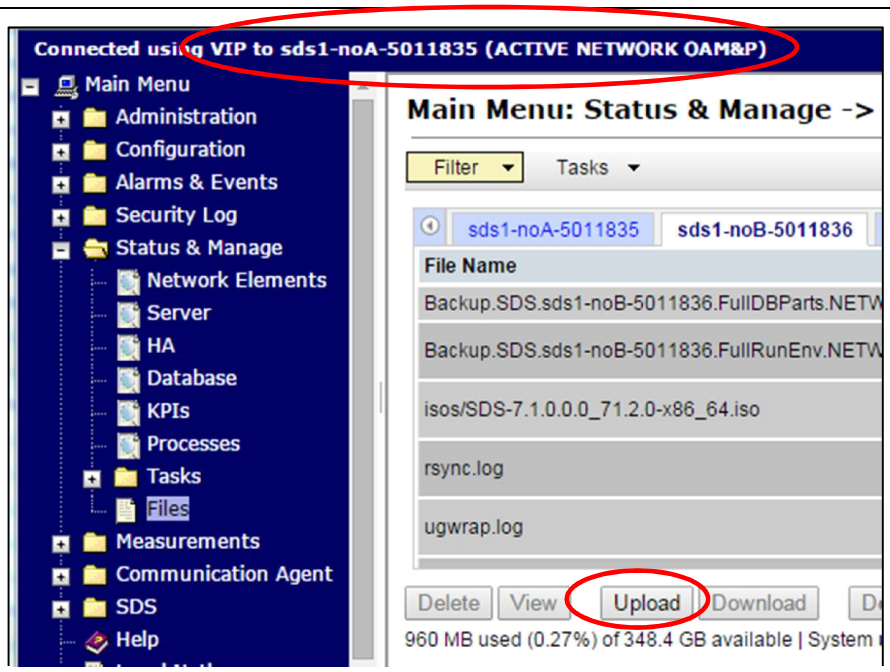
☐ Execute SDS Health Check procedures as specified in **Appendix B**.

5.5 ISO Administration

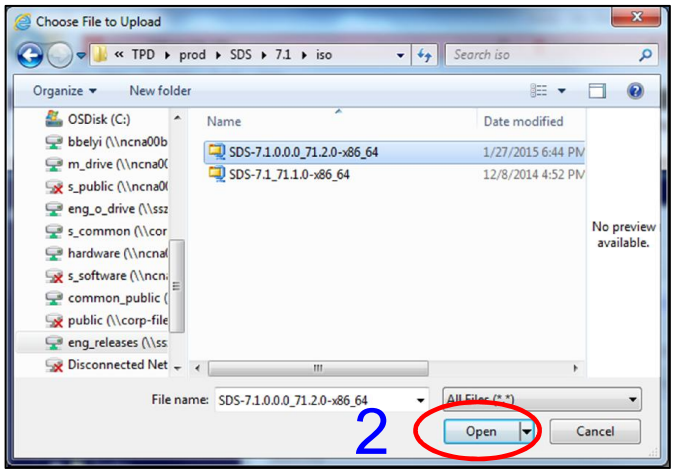
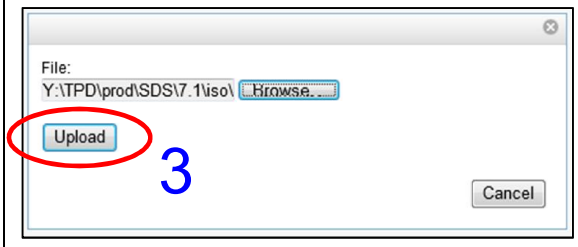
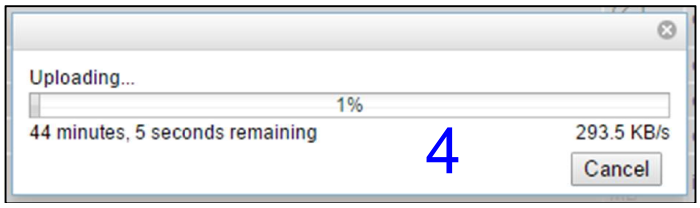
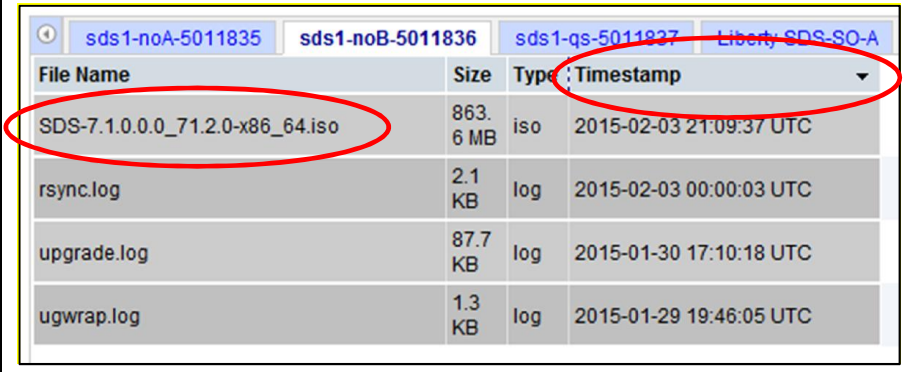
ISO transfers to the target servers may require a significant amount of time depending on the number of systems and the speed of the network. Therefore, it is highly reccommended that the ISO transfers to the target servers be completed prior to the first scheduled maintenance window.

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 ORACLE'S TEKELEC CUSTOMER CARE CENTER FOR ASSISTANCE BEFORE CONTINUING!
• **Appendix I:** *(Adding the SDS ISO to the PM&C Software Repository)* may be executed at anytime after **Procedure 2**: *(ISO Administration)* has been completed.

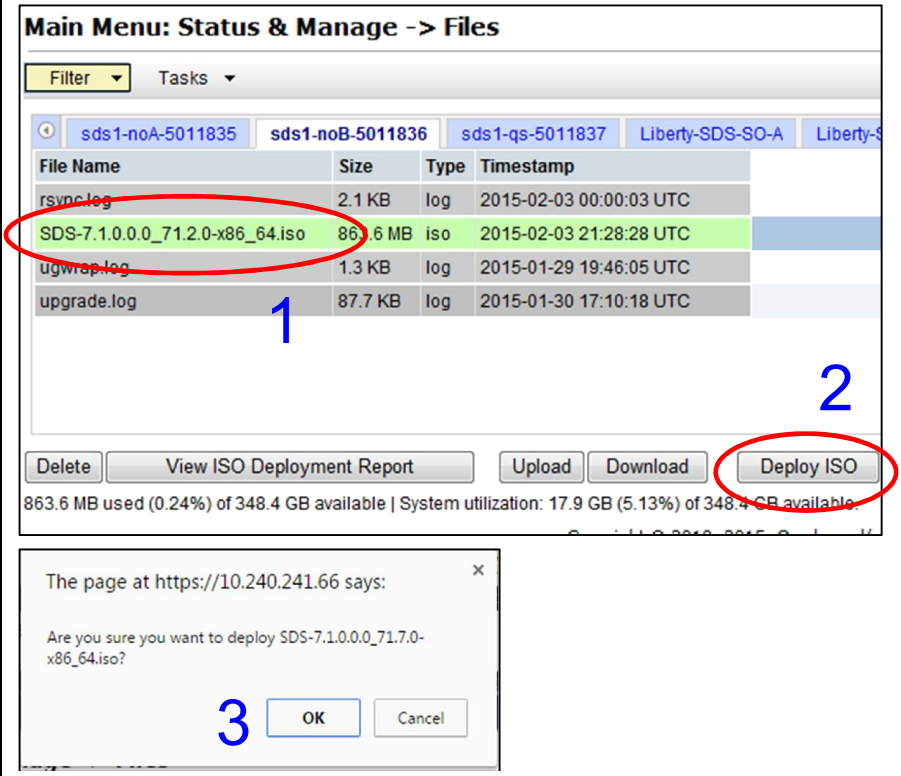
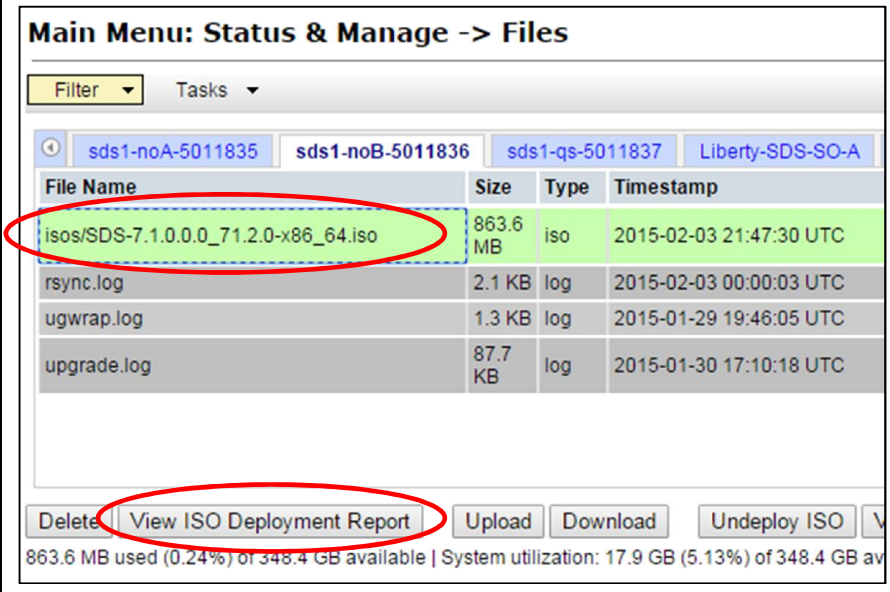
Procedure 2: ISO Administration

Step	Procedure	Result
1. ☐	Using **VIP** address, access the **Primary SDS NOAM GUI**.	• Using **VIP** address, access the **Primary SDS NOAM GUI** as described in **Appendix A.**
2. ☐	**Primary SDS NOAM VIP (GUI):** **1)** Select… **Main Menu** → **Status & Manage** → ***Files*** **2)** Select the hostname of the **Active** Primary SDS server from the list tabs. **3)** Click on the **"Upload"** button. **NOTE:** *The **Active Primary** SDS server will be displayed in the GUI banner as being connected to the **VIP** with a state of **ACTIVE NETWORK OAM&P**.*	

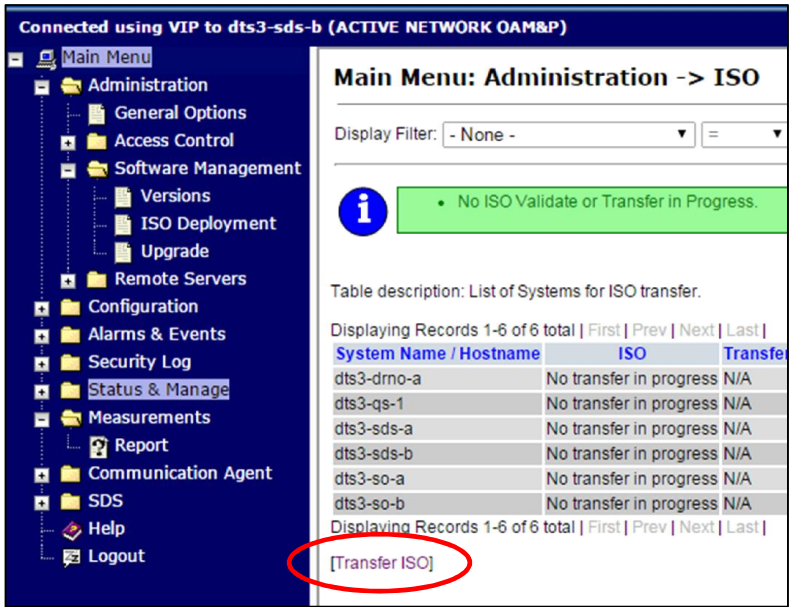
Procedure 2: ISO Administration

Step	Procedure	Result
3. ☐	**Primary SDS NOAM VIP:** **1)** Click on the **"Browse..."** dialogue button **2)** 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%. **NOTE:** *If transfering 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.*	   
4. ☐	**Primary SDS NOAM VIP:** In the top right side of the right panel, Click the **"Timestamp"** heading **twice** so that the arrow to the right points down *(this will bring the most recent files the top of the screen)*. The ISO file uploaded in **Step 3** of this procedure should now appear at the top most position in the **"File Name"** column.	

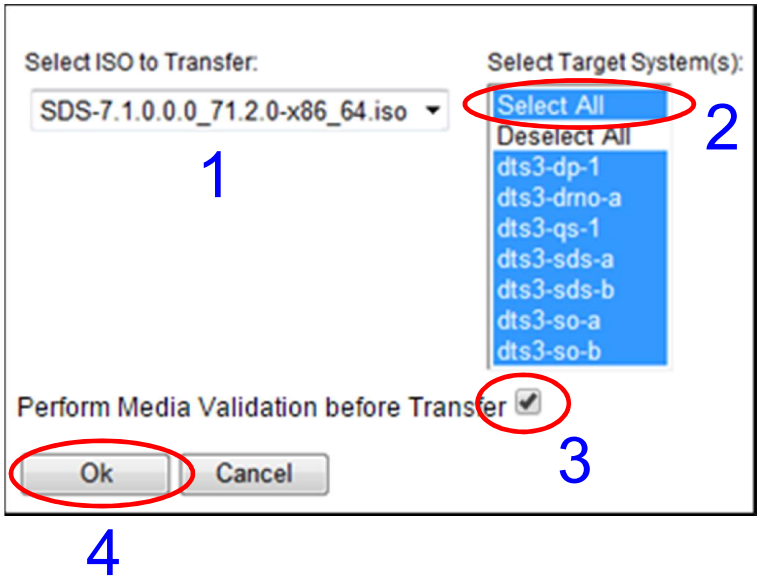
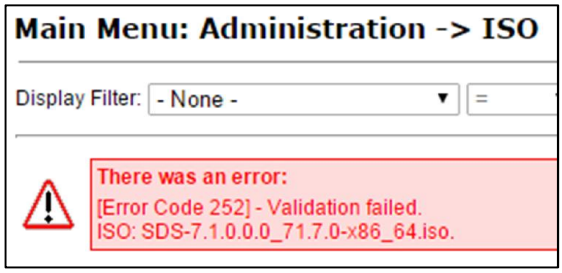
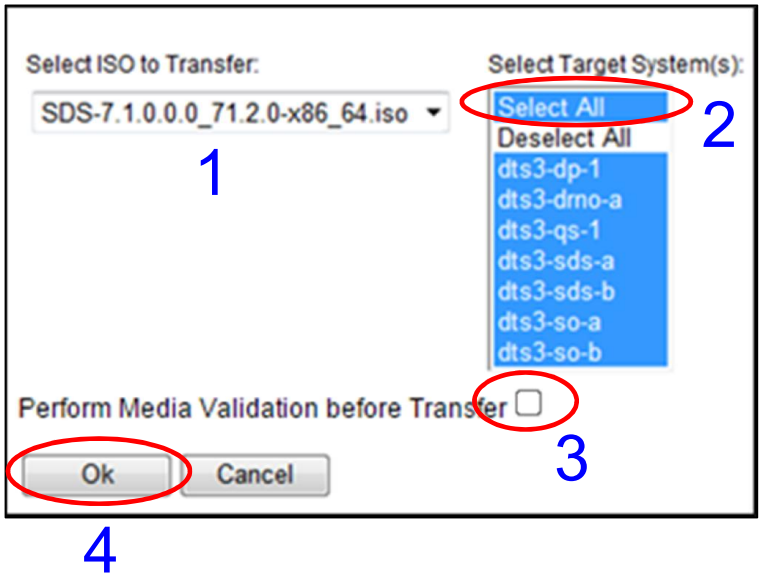
Procedure 2: ISO Administration

Step	Procedure	Result
	YIELD • If source release is **SDS 5.0**, then **SKIP** to **Step 8** of this procedure. • If source release is **SDS 7.x**, then continue with **Step 5** of this procedure.	
5. ☐	**SDS 7.x only** **Primary SDS NOAM VIP:** Deploy ISO file to all SDS servers in the entire topology. **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.	
6. ☐	**Primary SDS NOAM VIP:** Monitor the ISO deployment status. **1)** Using the cursor, select the **ISO** file uploaded in **Step 3** of this procedure. **2)** Click the **"View ISO Deployment Report"** dialogue button.	

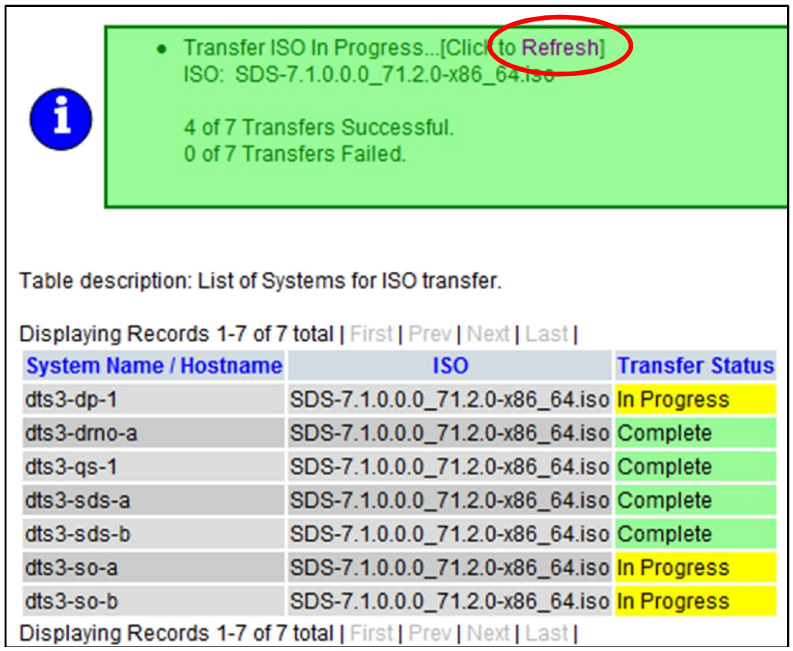
Procedure 2: ISO Administration

Step	Procedure	Result
7. ☐	**Primary SDS NOAM VIP:** The user is presented with the **ISO Deployment Report** indicating the **current status** of deployment to all servers in the topology. **Refresh** the report by clicking the **"Back"** dialogue button and repeating **Step 6** of this procedure until the **ISO** has been **"Deployed"** to all servers in the topology. **NOTE**: *This completes the ISO Administration procedures for source release **7.x, SKIP** the remaining steps of this procedure and exit at this time.*	**Main Menu: Status & Manage -> Files [View]** Main Menu: Status & Manage -> Files [View] Thu Jul 09 12:32:48 2015 UTC Deployment report for SDS-7.1.0.0.0_71.7.0-x86_64.iso: Deployed on 18/18 servers. sds-rlghnc-a: Deployed sds-rlghnc-b: Deployed qs-rlghnc: Deployed sds-mrsvnc-a: Deployed sds-mrsvnc-b: Deployed qs-mrsvnc: Deployed turks-sds-SO-a: Deployed turks-sds-SO-b: Deployed turks-DP-01: Deployed turks-DP-02: Deployed kauai-sds-SO-a: Deployed kauai-sds-SO-b: Deployed kauai-DP-01: Deployed kauai-DP-02: Deployed florence-sds-SO-a: Deployed florence-sds-SO-b: Deployed florence-DP-01: Deployed florence-DP-02: Deployed Print Save Back
THIS PROCEDURE HAS BEEN COMPLETED ***(SDS 7.x Source)***		
8. ☐	**SDS 5.0 only** **Primary SDS NOAM VIP:** Upload ISO file to the **Standby** SDS server.	• Repeat **Steps 2 - 4** of this procedure to upload **ISO** file to the **"Standby" Primary SDS NOAM** server.
9. ☐	**Primary SDS NOAM VIP:** **1)** Select… **Main Menu** → **Administration** →**Software Management** → ***ISO Deployment*** **2)** Click on the **[Transfer ISO]** link located in the bottom left quadrant of the right panel.	

Procedure 2: ISO Administration

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

Procedure 2: ISO Administration

Step	Procedure	Result
13. ☐	**Primary SDS NOAM VIP:** **1)** The user ispresented with the **ISO** Administration screen. **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. **3)** Continue to monitor the file transfer progress until a **"Transfer Status"** of **"Complete"** is received for all selected servers.	
THIS PROCEDURE HAS BEEN COMPLETED ***(SDS 5.0 Source)***		

5.6 Perform Health Check *(Post ISO Administration)*

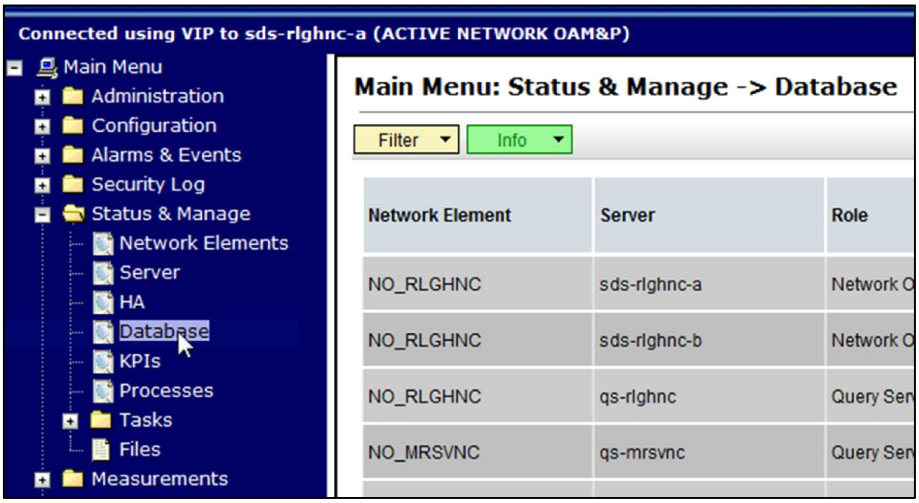
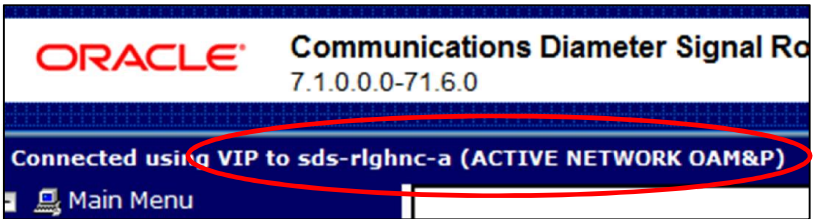
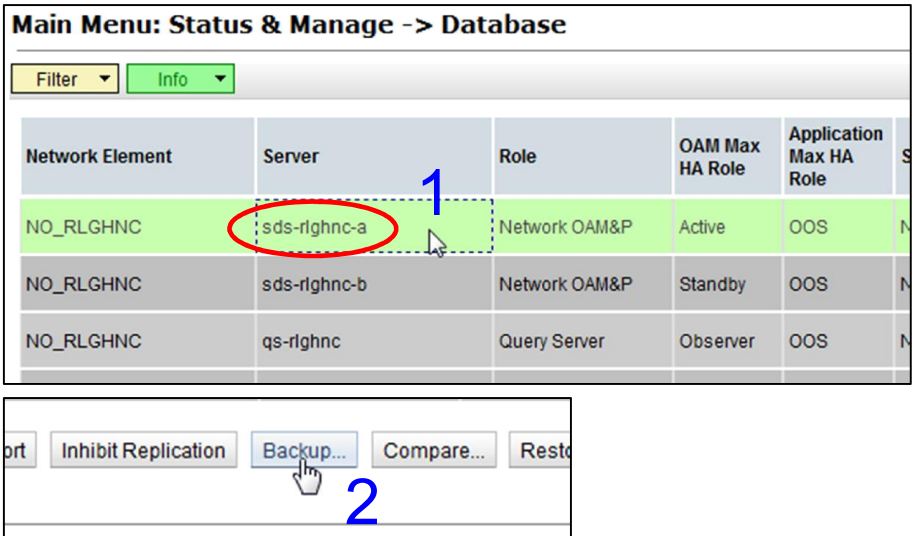
This procedure is part of Software Upgrade Preparation and is used to determine the health and status of the entire SDS network and servers. This may be executed multiple times but must also be executed at least once within the time frame of 24-36 hours prior to the start of a maintenance window.

☐ Execute SDS Health Check procedures as specified in **Appendix B.**

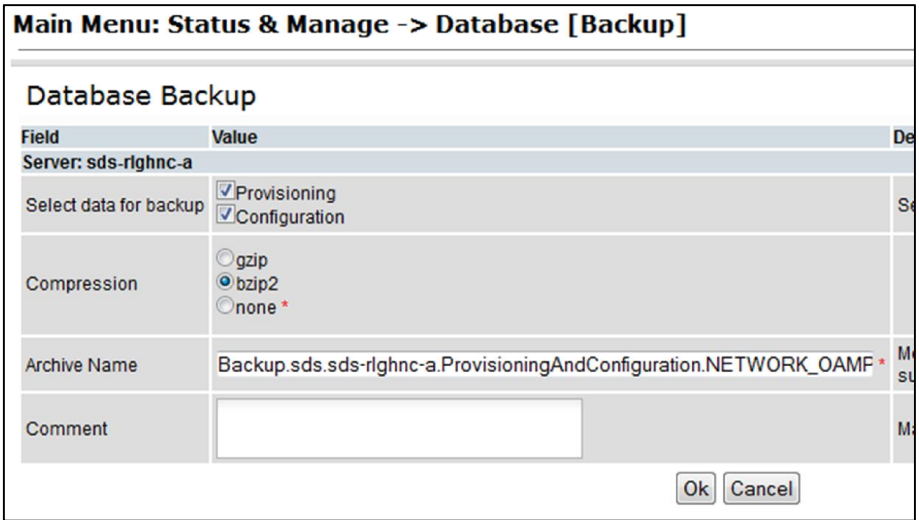
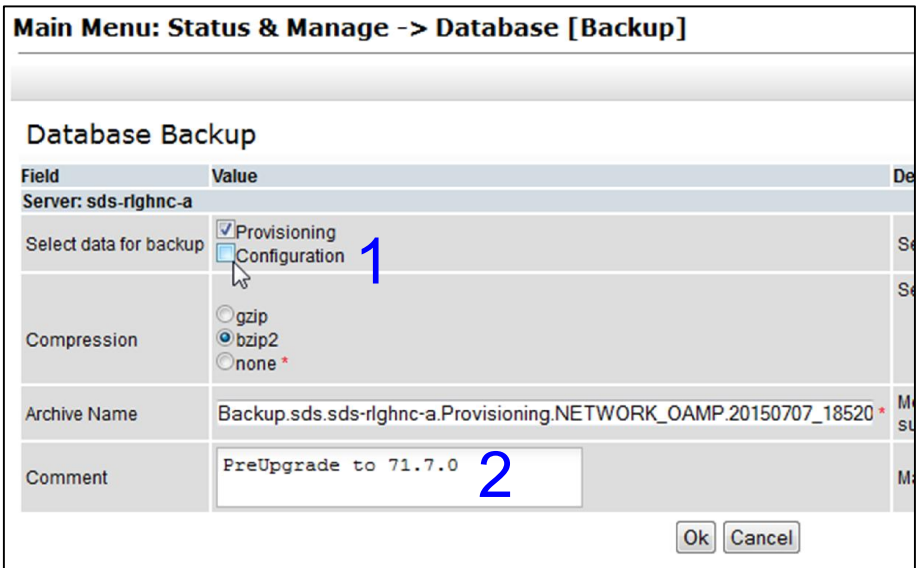
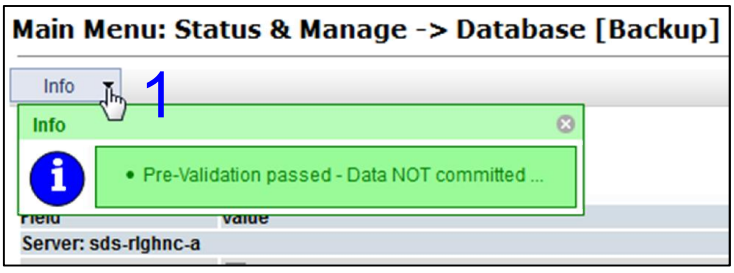
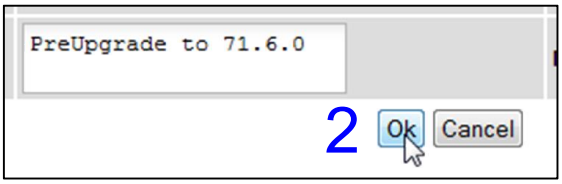
5.7 Full Database Backup (PROV & COMCOL ENV for All Servers)

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.

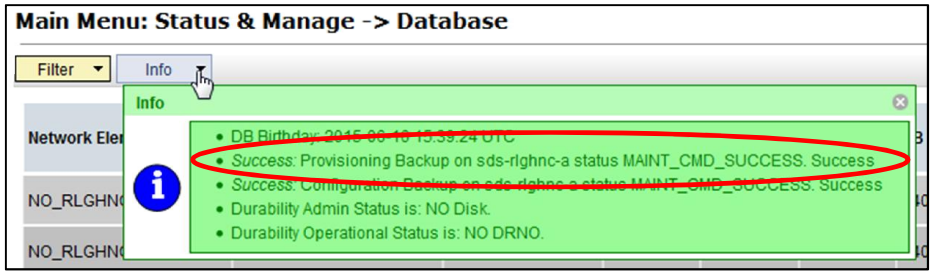
Procedure 3: Full Database Backup (PROV & COMCOL ENV for All Servers)

Step	Procedure	Result
1. ☐	Using **VIP** address, access the **Primary SDS NOAM GUI**.	• Use the **VIP** address to access the **Primary SDS NOAM GUI** as specified in **Appendix A.**
2. ☐	**Primary SDS NOAM VIP:** Select… **Main Menu** **→ Status & Manage** **→ *Database*** …as shown on the right.	
3. ☐	**Primary SDS NOAM VIP:** Verify the name of the Primary **Active Network OAM&P** SDS server from the GUI banner.	
4. ☐	**Primary SDS NOAM VIP:** **1)** Using the cursor, select the Primary **Active Network OAM&P** SDS server on the **[Status & Manage → Database]** screen. **2)** Then click the **"Backup…"** dialogue button in the bottom of the right panel.	

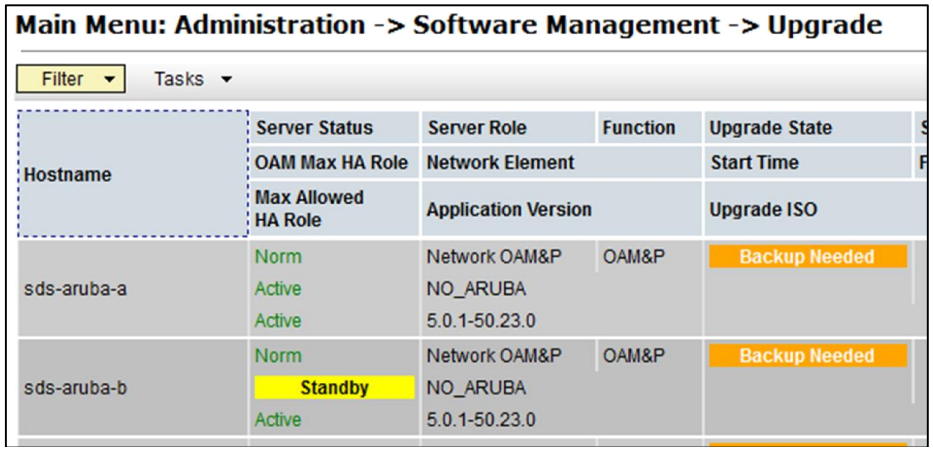
Procedure 3: Full Database Backup (PROV & COMCOL ENV for All Servers)

Step	Procedure	Result
5. ☐	**Primary SDS NOAM VIP:** The user will be present with the backup form.	
6. ☐	**Primary SDS NOAM VIP:** **1) Uncheck** the "**Configuration"** checkbox so that only **Provisioning** data is backed up. **2)** Enter a comment *(required)* and then left click the cursor outside the comment field.	
7. ☐	**Primary SDS NOAM VIP:** **1)** Click the "**Info"** tab to verify that the changes have passed **Pre-Validation**. **2)** Click **"Ok"** dialogue button in the bottom of the right panel.	 

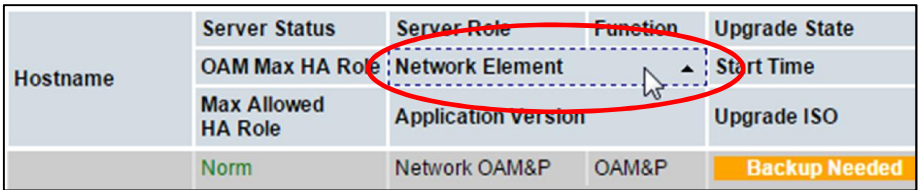
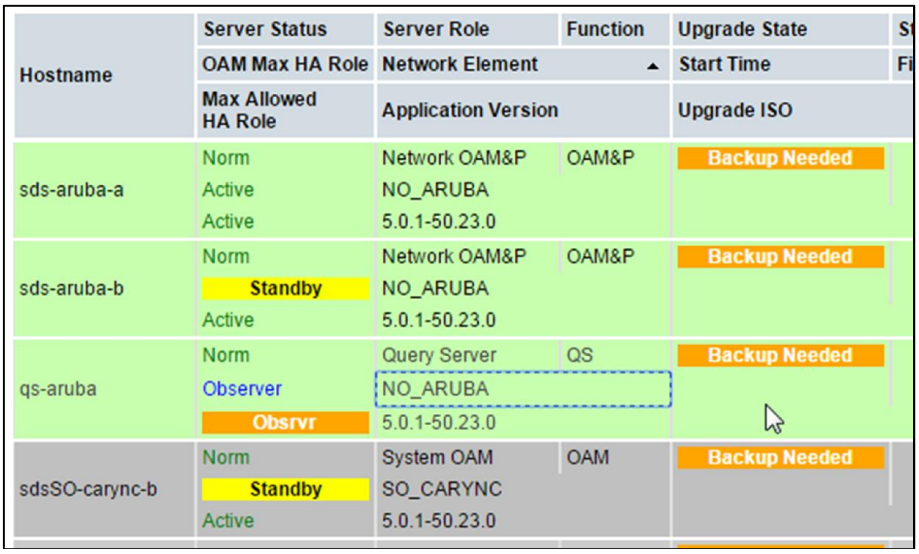
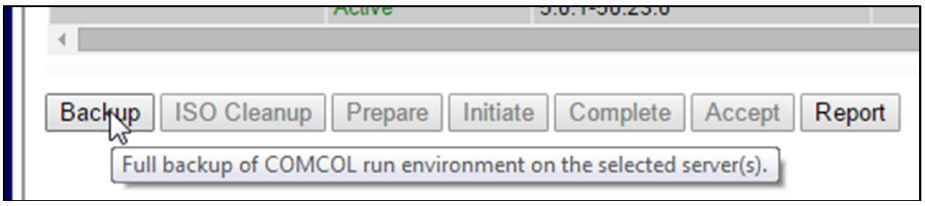
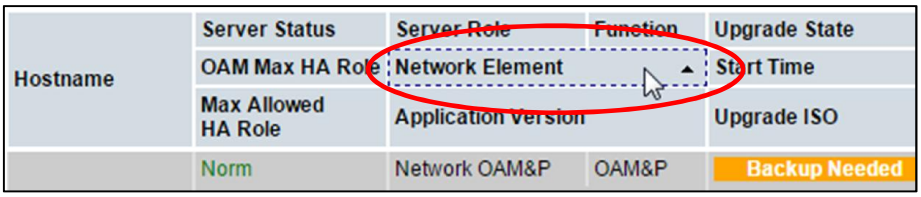
Procedure 3: Full Database Backup (PROV & COMCOL ENV for All Servers)

Step	Procedure	Result
8. ☐	**Primary SDS NOAM VIP:** **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**. If a status of **MAINT_IN_PROGRESS** is received, then periodically **refresh** the Info message by reselecting… **Main Menu** **→ Status & Manage** **→ *Database*** …then click the **"Info"** tab again. **NOTE:** *This step completes the backup of the SDS Provisioning Database.*	

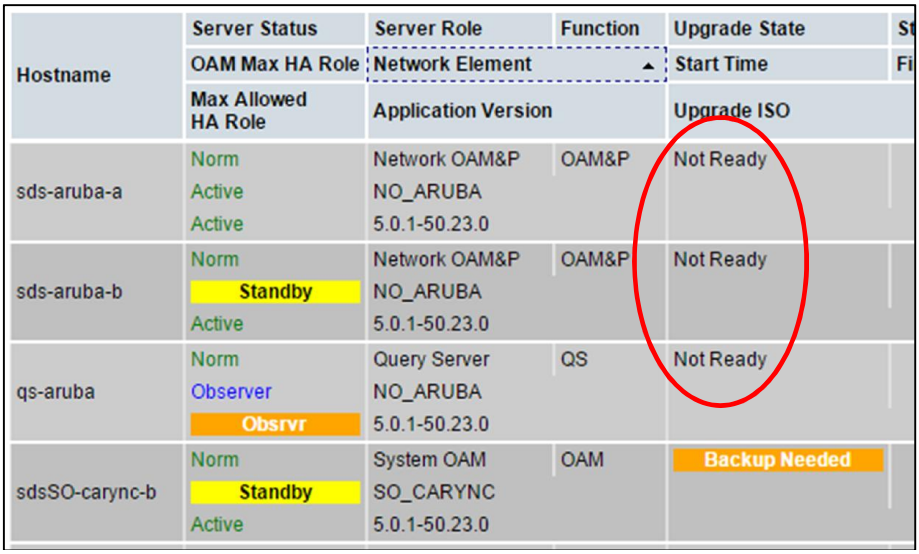
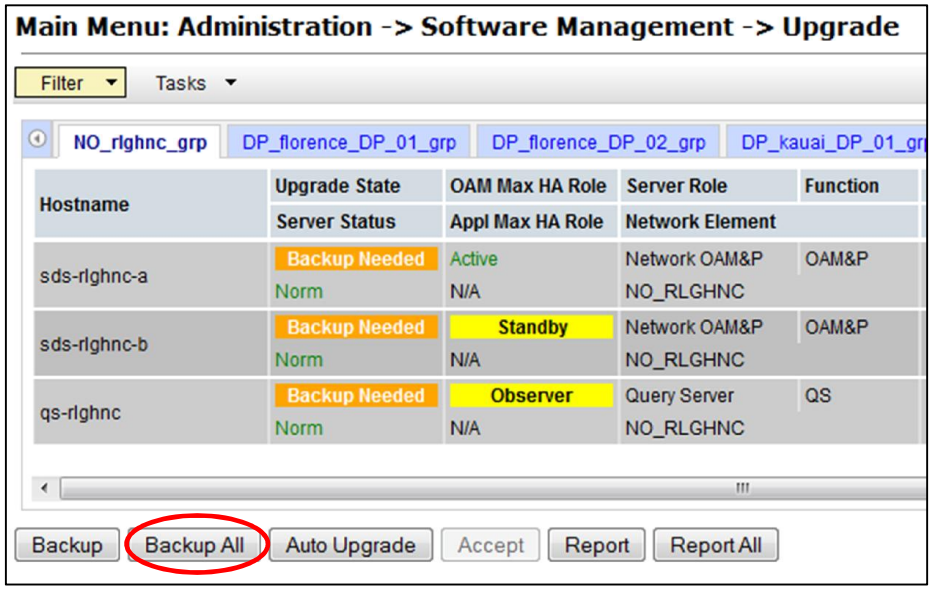
- If source release is **SDS 7.x**, then **SKIP** to **Step 16** of this procedure.
- If source release is **SDS 5.0**, then continue with **Step 9** of this procedure.

9. ☐	**SDS 5.0 only** **Primary SDS NOAM VIP:** **1)** Select… **Main Menu** **→ Adminustration** **→ Software Management** **→ Upgrade**	

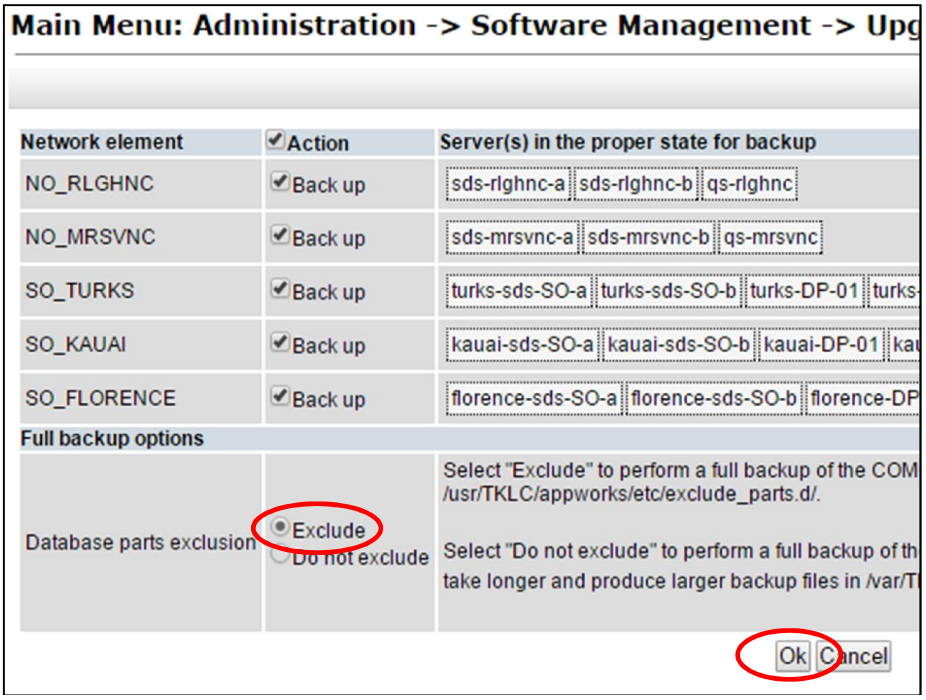
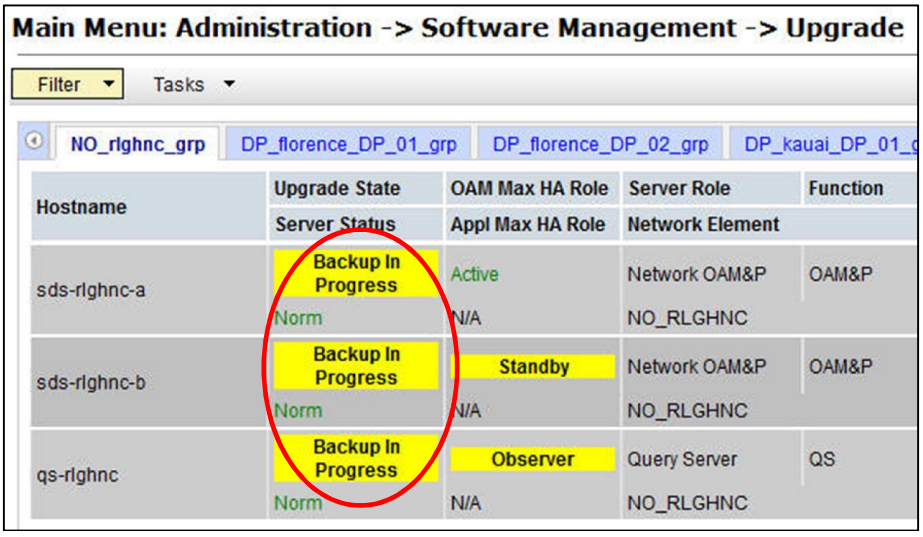
Procedure 3: Full Database Backup (PROV & COMCOL ENV for All Servers)

Step	Procedure	Result
10. ☐	**Primary SDS NOAM VIP:** Using the cursor, click the **"Network Element"** heading in the right panel to sort the servers by **NE**.	
11. ☐	**Primary SDS NOAM VIP:** **1)** While holding the **[CTRL]** key, multi-select the rows containing the **hostnames** of the servers in the **Network Element (NE)** to be upgraded. **2)** Verify that the **Upgrade State** shows **"Backup Needed"** for each server.	
12. ☐	**Primary SDS NOAM VIP:** Click the **"Backup"** dialogue button located across the bottom left of the right panel.	
13. ☐	**Primary SDS NOAM VIP:** **1) Wait for the screen to refresh** and then once again, click the **"Network Element"** heading in the right panel to sort the servers by **NE**. **2)** Use the vertical scroll bar *(if necessary)* to locate the rows containing the **hostnames** of the servers backed up in **Step 11** of this procedure.	

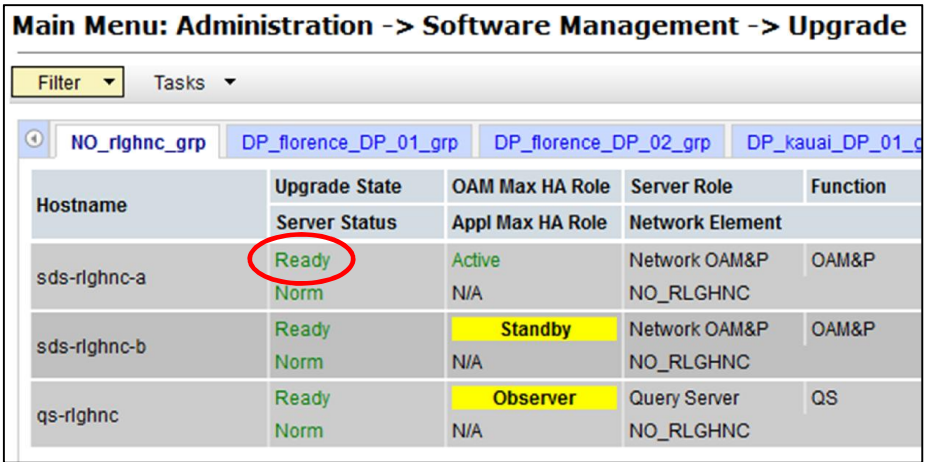
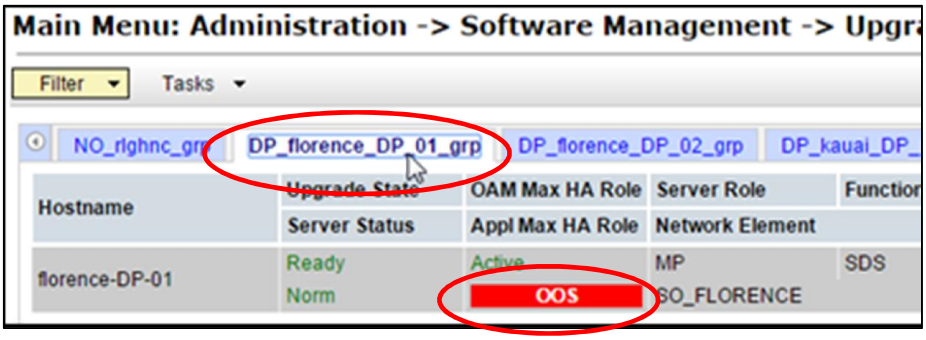
Procedure 3: Full Database Backup (PROV & COMCOL ENV for All Servers)

Step	Procedure	Result
14. ☐	**Primary SDS NOAM VIP:** The screen will auto-refresh at this point. Monitor all servers backed up in **Step 11** of this procedure until the **"Upgrade State"** changes from **"Backup Needed"** to **"Not Ready".**	
15. ☐	**Primary SDS NOAM VIP:** Execute COMCOL enviorment backups for the next NE **NOTE**: *This completes the COMCOL environment Backup procedures for source release **5.0, SKIP** the remaining steps of this procedure and exit at this time.*	• Repeat **Steps 11 - 14** of this procedure *(one Network Element at a time)*, until all servers in the topology display an **"Upgrade State"** of **"Not Ready".**
THIS PROCEDURE HAS BEEN COMPLETED ***(SDS 5.0 Source)***		
16. ☐	**SDS 7.1 only** **Primary SDS NOAM VIP:** **1)** Select… **Main Menu** → **Adminustration** → **Software Management** → ***Upgrade*** The server **"Upgrade State"** will show **"Backup Needed"** at this point. **2)** In the bottom of the right panel, click the **"Backup All"** button.	

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

Step	Procedure	Result
17. ☐	**Primary SDS NOAM VIP:** The user is presented with the **Upgrade [Backup All]** screen. **1)** Verify that the **"Exclude"** radial button is selected. **2)** Click **"Ok"** button to begin the backup(s). **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).*	
18. ☐	**Primary SDS NOAM VIP:** The user is returned to the **Active Primary SDS** 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.	

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

Step	Procedure	Result
19. ☐	**Primary SDS NOAM VIP:** The screen will auto-refresh at this point. Monitor the Backups until the server **"Upgrade State"** shows **"Ready"** for all servers on that tab. **NOTE:** *It can take up to 15 minutes for for COMCOL backup to complete.*	
20. ☐	**Primary SDS NOAM VIP:** Click on the next **tab** to the right and monitor the Backups until the server **"Upgrade State"** shows **"Ready"** for all servers on that tab. **!! IMPORTANT !!** Starting with **SDS 7.x**, the **Appl Max HA Role** is now displayed in the **Administration → Software → Upgrade** screen. This state is expected to be **OOS** for **SDS DP** servers.	
21. ☐	**Primary SDS NOAM VIP:** Monitor the remaining tabs under the **Administration → Software → Upgrade** screen until all servers on each tab display a server **"Upgrade State"** value of **"Ready"**.	• Repeat **Step 20** of this procedure until all servers in the topology display a server **"Upgrade State"** value of **"Ready"**.
THIS PROCEDURE HAS BEEN COMPLETED ***(SDS 7.x Source)***		

6. PRIMARY / DR SDS 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 K:** 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 SDS NOAM Network Elements must be upgraded within the same maintenance window.*

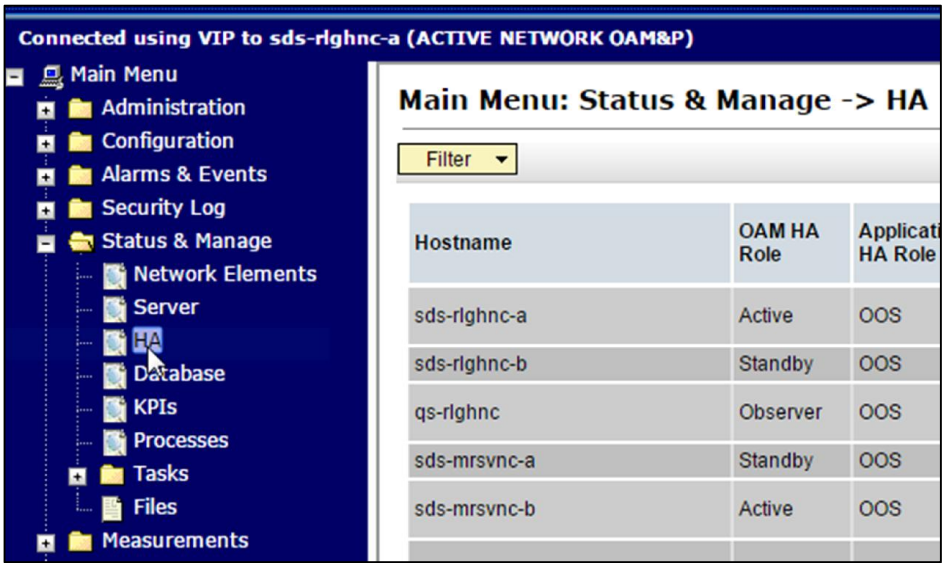
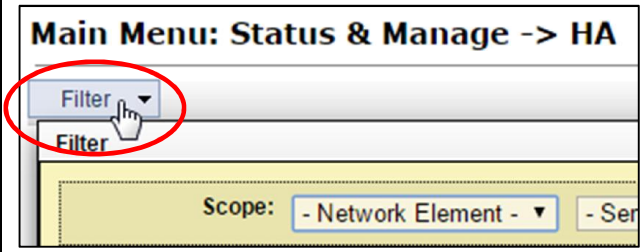
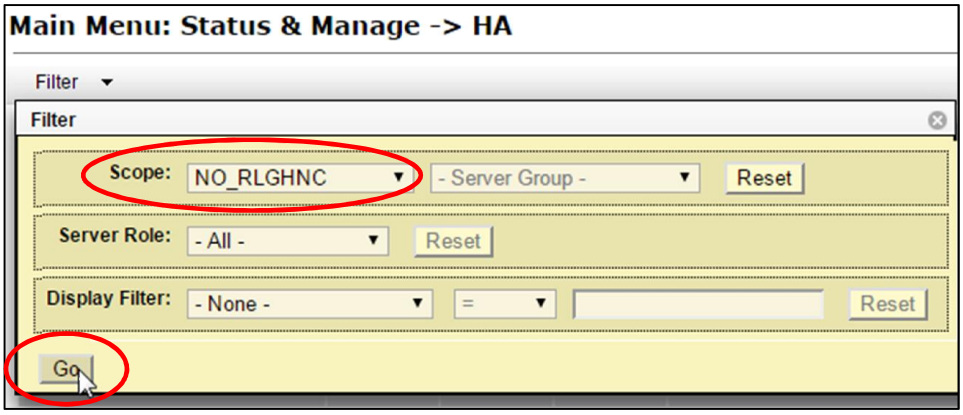
6.1 Perform Health Check *(Primary/DR NOAM Pre Upgrade)*

This procedure is part of Software Upgrade Preparation and is used to determine the health and status of the entire SDS 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.

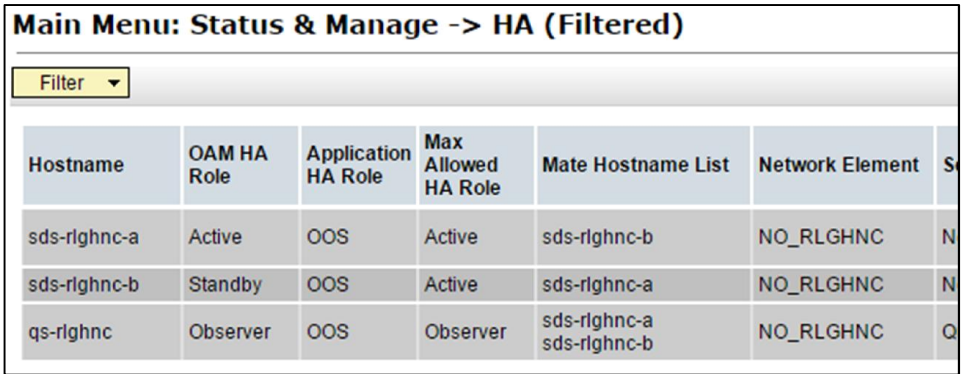
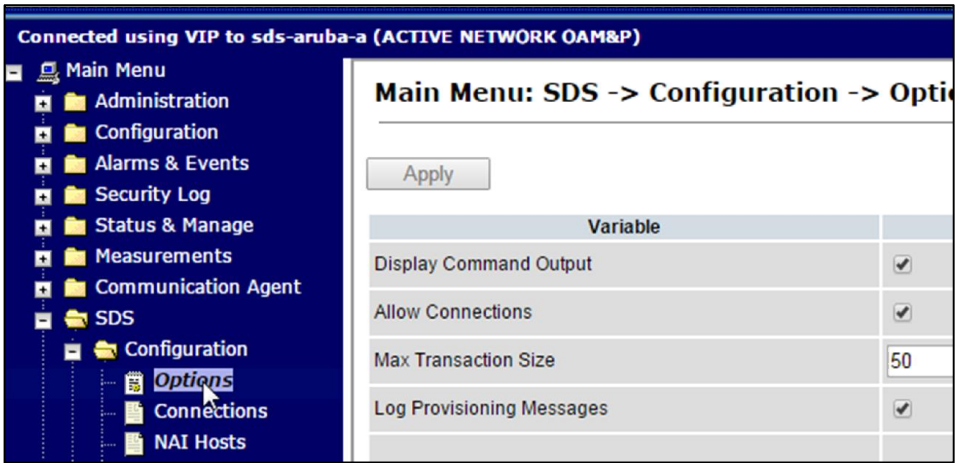
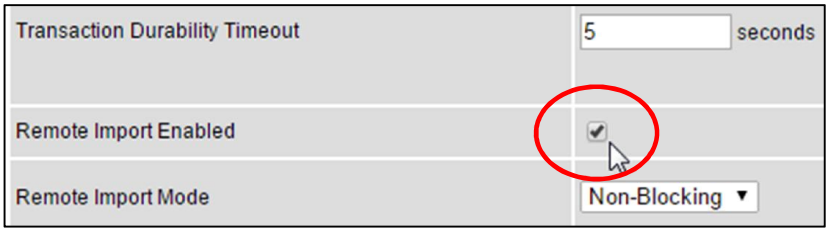
☐ Execute SDS Health Check procedures as specified in **Appendix B.**

6.2 Upgrade Primary SDS NOAM NE

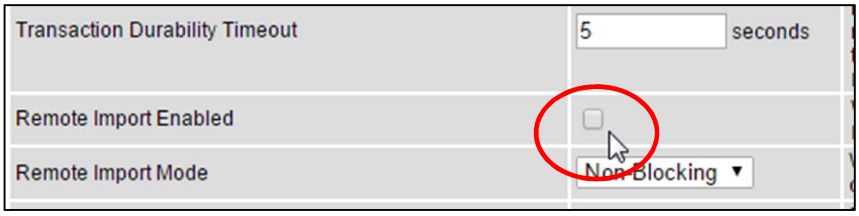
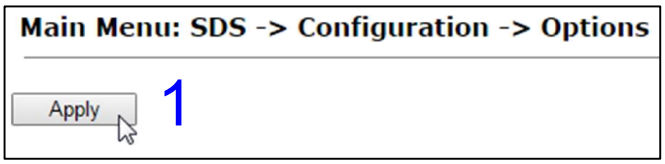
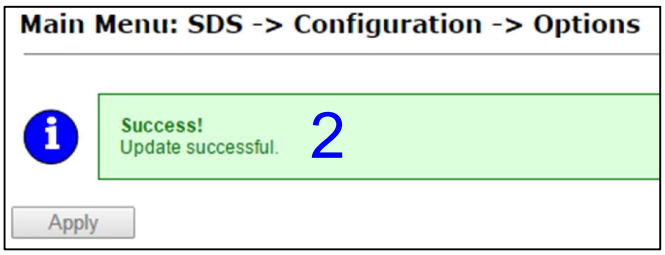
Procedure 4: Upgrade Primary SDS NOAM NE

Step	Procedure	Result
1. ☐	Using **VIP** address, access the **Primary SDS NOAM** GUI.	• Using **VIP** address, access the **Primary SDS NOAM** GUI as described in **Appendix A.**
2. ☐	**Primary SDS NOAM VIP (GUI):** Select… **Main Menu** **→ Status & Manage** **→ *HA*** …as shown on the right.	
3. ☐	Record the name of the **Primary SDS NOAM NE** in the space provided.	Using the information provided in **Section 3.1.2** *(Logins, Passwords and Site Information)* record the name of the **Primary SDS NE site** in the space provided below: **Primary SDS NOAM NE: _____**
4. ☐	**Primary SDS NOAM VIP:** **1)** Click the **"Filter"** tab in the top left of the right panel. **2)** Under **"Scope"** select the **Network Element** name for the **Primary SDS NOAM NE.** **2)** Click on the **"Go"** dialogue button.	 

Procedure 4: Upgrade Primary SDS NOAM NE

Step	Procedure	Result
5. ☐	**Primary SDS NOAM VIP:** The user should be presented with the list of servers associated with the **Primary SDS NOAM NE** Identify each "**Hostname**", its **"Server Role"** and **"OAM HA Role"**.	
6. ☐	**Primary SDS NOAM VIP:** Record the names of **Primary SDS NOAM NE** servers in the space provided to the right.	☐ **"Active" Primary SDS NOAM:** _____ ☐ **"Standby" Primary SDS NOAM:** _____ ☐ **Primary Query Server** *(if equipped)*: _____
7. ☐	**Primary SDS NOAM VIP (GUI):** Select… **Main Menu** → **SDS** → **Configuration** → ***Options*** …as shown on the right.	
8. ☐	**Primary SDS NOAM VIP:** Locate the **"Remote Import Enabled"** checkbox and record the pre-upgrade state.	 Remote Import Enabled *(pre-upgrade state)*: ☐ CHECKED ☐ NOT CHECKED

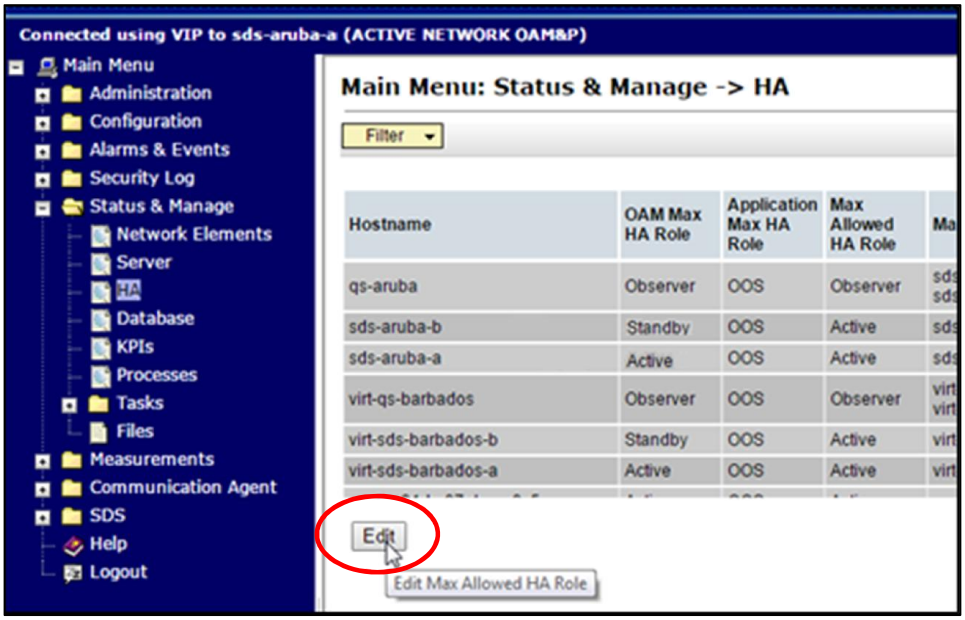
Procedure 4: Upgrade Primary SDS NOAM NE

Step	Procedure	Result
9. ☐	**Primary SDS NOAM VIP:** If the **"Remote Import Enabled"** checkbox was checked in the previous step, **REMOVE** the check mark.	
10. ☐	**Primary SDS NOAM VIP:** If the **Check mark** was **REMOVED** from the **"Remote Import Enabled"** checkbox in the previous step, then execute the following: **1)** Click the **"Apply"** dialogue box in the top left of the right panel. **2)** Verify that a **"Success!"** response is received in the banner.	 
YIELD	• If source release is **SDS 7.x**, then **SKIP** to **Step 29** of this procedure. • If source release is **SDS 5.0**, then continue with **Step 11** of this procedure.	
	NOTE: ***Steps 11*** *and* ***12*** *of this Procedure may be executed in parallel.*	
11. ☐	**SDS 5.0 only** **Primary SDS NOAM VIP:** Upgrade the **"Standby" Primary SDS NOAM s**erver.	• Upgrade the **"Standby" Primary SDS NOAM** server (as identified and recorded in **Step 6** of this Procedure) using **Appendix C** *(Upgrade Server on SDS 5.0).* • In **Step 6** of this Procedure, check-off ☒ the associated **checkbox** as the upgrade is completed for the upgraded **"Standby" Primary SDS NOAM** server.
12. ☐	**Primary SDS NOAM VIP:** Initiate upgrade for the **Primary SDS Query Server**	• Upgrade **Primary Query Server** (as identified and recorded in **Step 6** of this Procedure) using **Appendix C** *(Upgrade Server on SDS 5.0).* In **Step 6** of this Procedure, check-off ☒ the associated **checkbox** as the upgrade is completed for the upgraded **Primary Query Server**

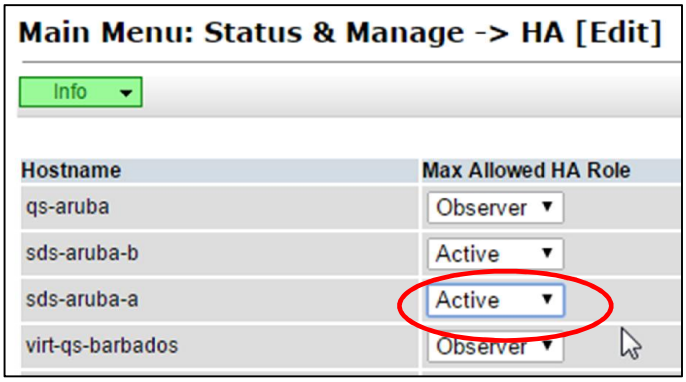
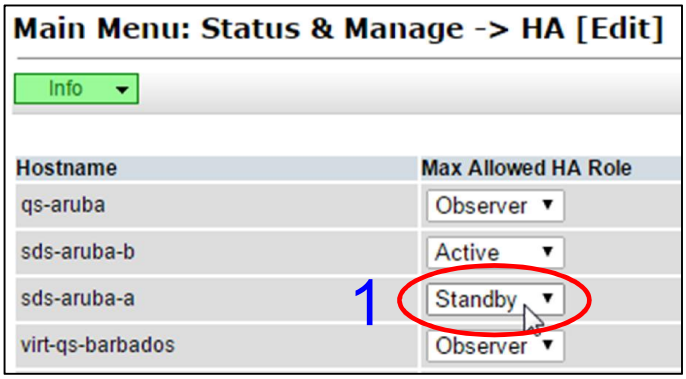
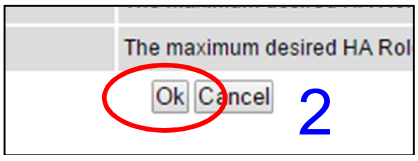
Procedure 4: Upgrade Primary SDS NOAM NE

Step	Procedure	Result
13. ☐	**Primary SDS NOAM VIP (CLI):** Using the **VIP** address, login to the **"Active" Primary SDS NOAM** with the **admusr** account.	CentOS release 5.7 (Final) Kernel 2.6.18-274.7.1.e15prerel5.0.0_72.32.0 on an x86_64 sds-rlghnc-a login: **admusr** Password: ***<admusr_password>***
14. ☐	**Primary SDS 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 PRODPATH=/opt/comcol/prod RUNID=00 [admusr@sds-rlghnc-a ~]$
15. ☐	**Primary SDS NOAM VIP:** Verify that the **DbReplication** status is **"Active"** to the **Standby Primary SDS NOAM** and the **Query Server** *(if equipped)* which were upgraded in **Steps 11** and **12** of this procedure.	[admusr@sds-rlghnc-a ~]$ **sudo irepstat -w** -- Policy 0 ActStb **[DbReplication]** AA To sds-rlghnc-b **Active** 0 0.25 1%R 0.05%cpu 47B/s AA To qs-rlghnc **Active** 0 0.25 1%R 0.05%cpu 56B/s AA To sds-mrsvnc-a **Active** 0 0.50 1%R 0.04%cpu 47B/s AB To kauai-sds-SO-b **Active** 0 0.50 1%R 0.04%cpu 63B/s AB To florence-sds-SO-a **Active** 0 0.51 1%R 0.03%cpu 65B/s AB To turks-sds-SO-b **Active** 0 0.50 1%R 0.04%cpu 65B/s irepstat (8 lines) (h)elp [admusr@sds-rlghnc-a ~]$
16. ☐	**Primary SDS NOAM VIP:** **!! IMPORTANT !!** ***DO NOT** proceed to the next step until a DbReplication status of **"Active"** is returned for the **Standby Primary SDS NOAM** and the **Query Server** (if equipped).*	• If a DbReplication status of **"Audit"** was received in the previous step, then **REPEAT Step 15** of this procedure until a status of **"Active"** is returned.
17. ☐	**Primary SDS NOAM VIP:** Exit the **CLI** for the **"Active" Primary SDS NOAM.**	[admusr@sds-rlghnc-a filemgmt]$ **exit** logout
18. ☐	Using **VIP** address, access **the Primary SDS NOAM GUI**.	• Using **VIP** address, access the **Primary SDS NOAM GUI** as described in **Appendix A.**

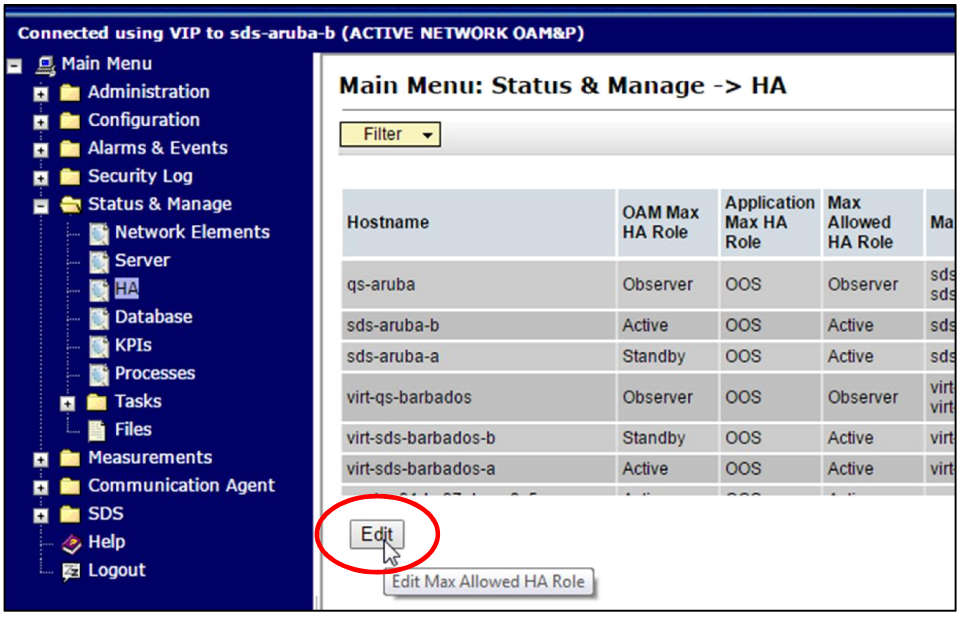
Procedure 4: Upgrade Primary SDS NOAM NE

Step	Procedure	Result
19. ☐	**Primary SDS NOAM VIP:** **1)** Select… **Main Menu** **→ Status & Manage** **→ HA** …as shown on the right. **2)** Click on the "**Edit**" dialogue button.	

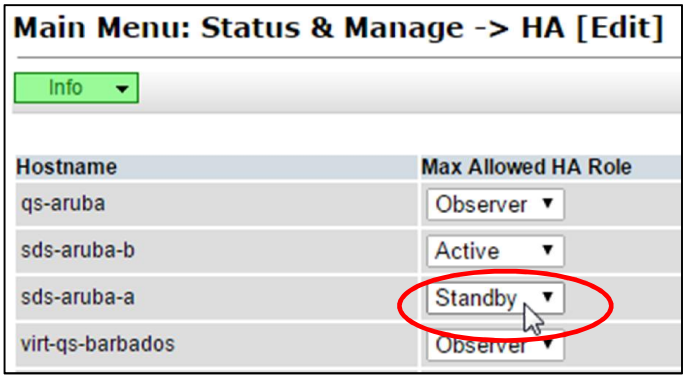
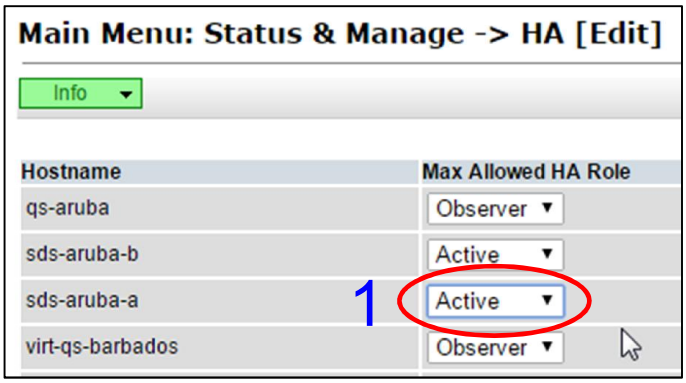
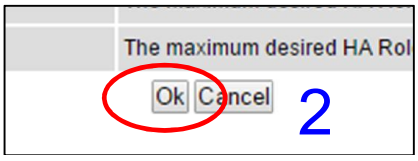
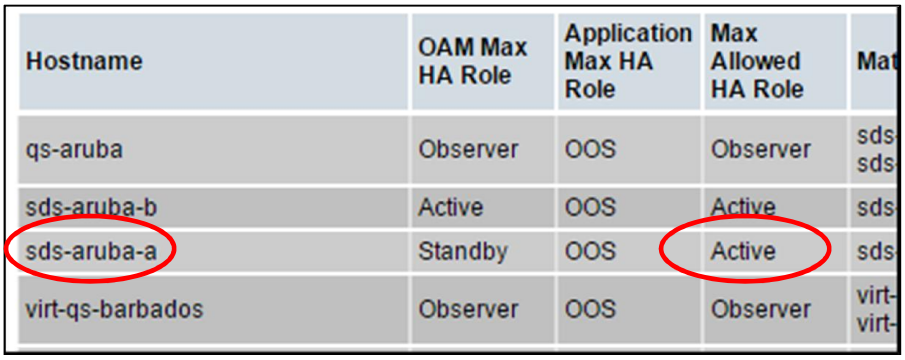
Procedure 4: Upgrade Primary SDS NOAM NE

Step	Procedure	Result
20. ☐	**Primary SDS NOAM VIP:** **1)** Select the **"Active" Primary SDS NOAM** server and change a **Max Allowed HA Role** value from **"Active"** to **"Standby".** **2)** Press the "**Ok**" button. Then on the next screen,	  
21. ☐	**Primary SDS NOAM VIP:** As the **"Active" Primary SDS NOAM** server is placed in the **"Prepare"** Upgrade state, an **HA Switchover** will occur.	• The user's **GUI** session will end as the **"Active" Primary SDS Server** goes through **HA Switchover** and becomes the **"Standby"** server.
22. ☐	**Primary SDS 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 **SDS NOAM GUI**.	

Procedure 4: Upgrade Primary SDS NOAM NE

Step	Procedure	Result
23. ☐	**Primary SDS 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: **1)** Simultaneously hold down the **[Ctrl]**, **[Shift]** and **[Delete]** keys *(most Web browsers)*. **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.**
24. ☐	Using **VIP** address, access **the Primary SDS NOAM GUI**.	• Using **VIP** address, access the **Primary SDS NOAM GUI** as described in **Appendix A.**
25. ☐	**Primary SDS NOAM VIP:** **1)** Select… **Main Menu** **→ Status & Manage** **→ HA** …as shown on the right. **2)** Click on the "**Edit**" dialogue button.	

Procedure 4: Upgrade Primary SDS NOAM NE

Step	Procedure	Result
26. ☐	**Primary SDS NOAM VIP:** **1)** Select the **"Standby" Primary SDS NOAM** server and change a **Max Allowed HA Role** value from **"Standby"** to **"Active".** **2)** Press the "**Ok**" button. Then on the next screen,	  
27. ☐	**Primary SDS NOAM VIP:** Verify that the **Max Allowed HA Role** value has been updated to **"Active"** for the **"Standby" Primary SDS NOAM** server.	
28. ☐	**Primary SDS NOAM VIP:** Initiate upgrade for the **"Active" Primary SDS NOAM** server.	• Upgrade **"Active" Primary SDS NOAM** server (as identified and recorded in **Step 6** of this Procedure) using **Appendix D** *(Server Upgrade Administration on SDS 7.x)* • In **Step 6** of this Procedure, check-off ☒ the associated **check box** as the upgrade is completed for the upgraded **"Active" Primary SDS NOAM** server.

Procedure 4: Upgrade Primary SDS NOAM NE

Step	Procedure	Result
		• For source release **SDS 5.0**, **SKIP** to **Step 37** of this procedure.
		NOTE: ***Steps 29*** *and* ***30*** *of this procedure may be executed in parallel.*
29. ☐	**SDS 7.x only** **Primary SDS NOAM VIP:** Initiate upgrade for the **"Standby" Primary SDS NOAM** server.	• Upgrade **"Standby" Primary SDS NOAM** server (as identified and recorded in **Step 6** of this procedure) using **Appendix D** *(Server Upgrade Administration on SDS 7.x)*. • In **Step 6** of this procedure, check-off ☒ the associated **checkbox** as the upgrade is completed for the upgraded **"Standby" Primary SDS NOAM** server.
30. ☐	**Primary SDS NOAM VIP:** Initiate upgrade for the **Primary Query Server**	• Upgrade **Primary Query Server** (as identified and recorded in **Step 6** of this Procedure) using **Appendix D** (*Server Upgrade Administration on SDS 7.x*) • In **Step 6** of this Procedure, check-off ☒ the associated **checkbox** as the upgrade is completed for the upgraded **Primary Query Server**

31. ☐	**Primary SDS NOAM VIP (CLI):**
	Using the **VIP** address, login to the **"Active" Primary SDS NOAM** with the **admusr** account.
		`CentOS release 5.7 (Final)`
		`Kernel 2.6.18-274.7.1.e15prerel5.0.0_72.32.0 on an x86_64`
		
		`sds-rlghnc-a login: admusr`
		`Password: <admusr_password>`

32. ☐	**Primary SDS 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`
		`PRODPATH=/opt/comcol/prod`
		`RUNID=00`
		`[admusr@sds-rlghnc-a ~]$`

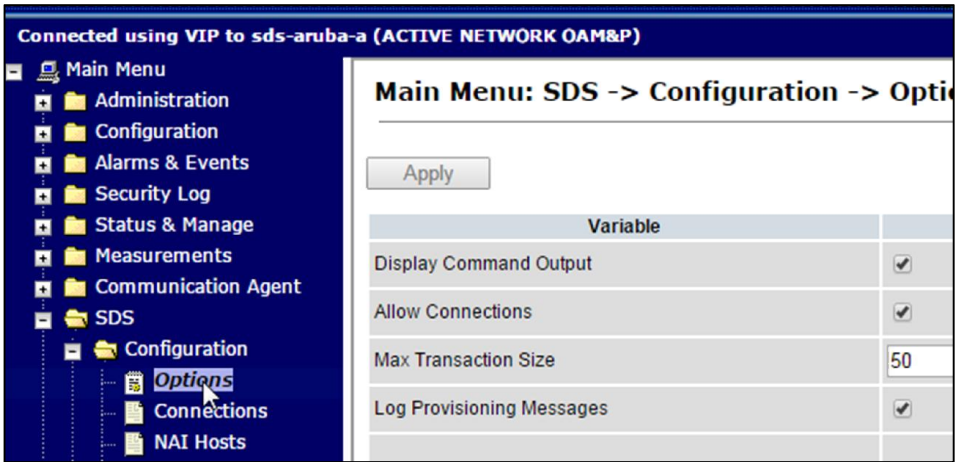
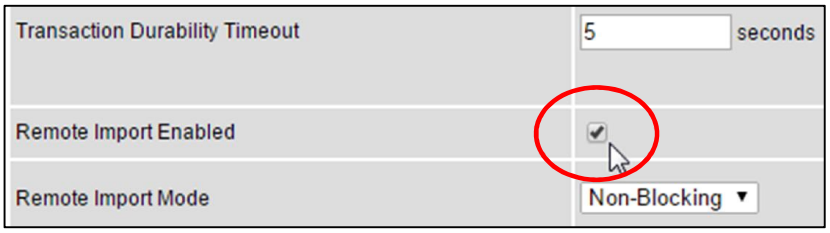
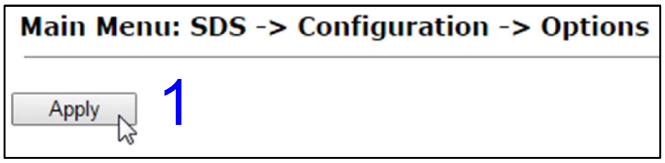
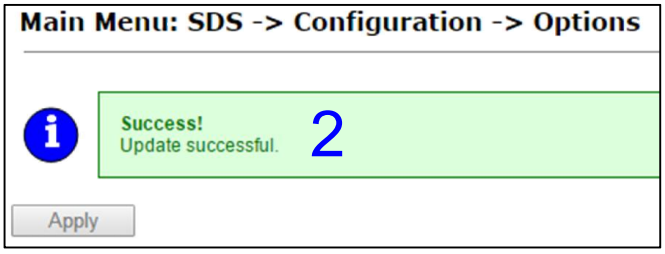
Procedure 4: Upgrade Primary SDS NOAM NE

Step	Procedure	Result

33. ☐	**Primary SDS NOAM VIP:**
	Verify that the **DbReplication** status is **"Active"** to the **Standby Primary SDS NOAM** and the **Query Server** *(if equipped)* which were upgraded in **Steps 29** and **30** of this procedure.
		`[admusr@sds-rlghnc-a ~]$ sudo irepstat -w`
		`-- Policy 0 ActStb [DbReplication]`
		`AA To sds-rlghnc-b Active 0 0.25 1%R 0.05%cpu 47B/s`
		`AA To qs-rlghnc Active 0 0.25 1%R 0.05%cpu 56B/s`
		`AA To sds-mrsvnc-a Active 0 0.50 1%R 0.04%cpu 47B/s`
		`AB To kauai-sds-SO-b Active 0 0.50 1%R 0.04%cpu 63B/s`
		`AB To florence-sds-SO-a Active 0 0.51 1%R 0.03%cpu 65B/s`
		`AB To turks-sds-SO-b Active 0 0.50 1%R 0.04%cpu 65B/s`
		
		`irepstat ( 8 lines) (h)elp`
		
		`[admusr@sds-rlghnc-a ~]$`

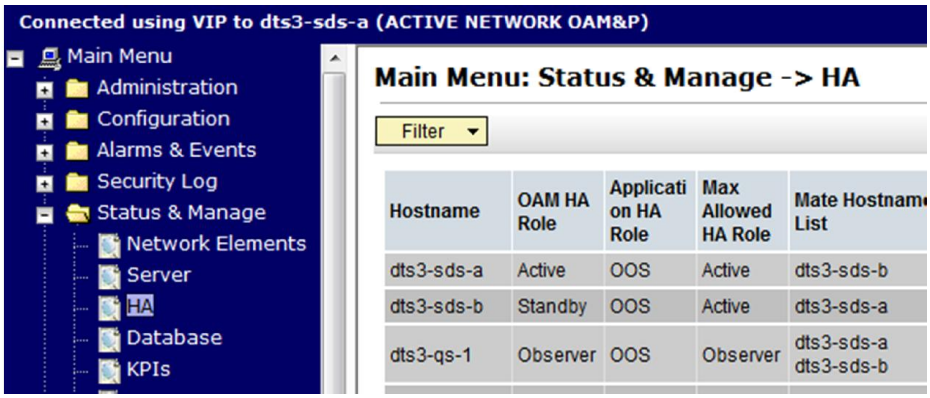
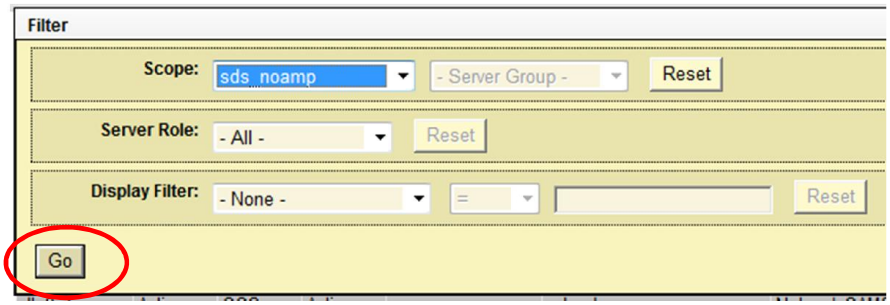
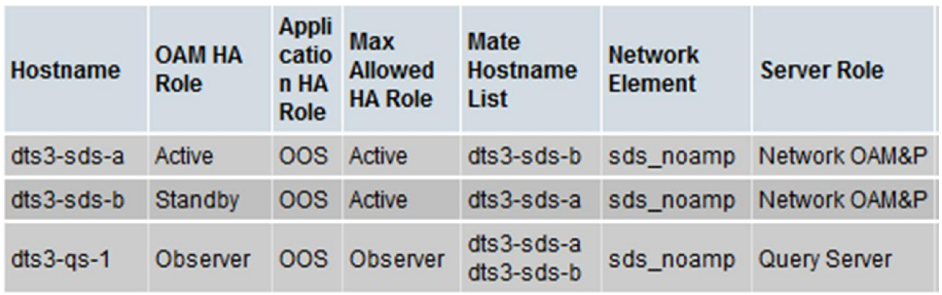
34. ☐	**Primary SDS NOAM VIP:** **!! IMPORTANT !!** ***DO NOT*** *proceed to the next step until a DbReplication status of* ***"Active"*** *is returned for the* ***Standby Primary SDS NOAM*** *and the* ***Query Server*** *(if equipped).*	If a DbReplication status of **"Audit"** was received in the previous step, then **REPEAT Step 33** of this procedure until a status of **"Active"** is returned.
35. ☐	**Primary SDS NOAM VIP:** Exit the **CLI** for the **"Active" Primary SDS NOAM.**	`[admusr@sds-rlghnc-a filemgmt]$ exit` `logout`
36. ☐	**Primary SDS NOAM VIP:** Initiate upgrade for the **"Active" Primary SDS NOAM** server. **!! IMPORTANT !!** *This will cause an HA activity Switchover to the mate Primary SDS NOAM server. This will occur within a few minutes of initiating the upgrade.*	• Upgrade **"Active" Primary SDS NOAM** server (as identified and recorded in **Step 6** of this Procedure) using **Appendix D** *(Server Upgrade Administration on SDS 7.x)* • In **Step 6** of this Procedure, check-off ☒ the associated **check box** as the upgrade is completed for the upgraded **"Active" Primary SDS NOAM** server.
37. ☐	**Primary SDS NOAM VIP:** Re-Enable Provisioning **Remote Import** *(if applicable)*.	• If the **"Remote Import Enabled"** checkbox recorded in **Step 8** of this procedure was **CHECKED**, then continue with **Step 38** below. • If the **"Remote Import Enabled"** checkbox recorded in **Step 8** of this procedure was **NOT CHECKED**, then **Procedure 4** *(Upgrade Primary SDS NOAM NE)* has been **COMPLETED**. **SKIP** the remaining steps of this procedure and **EXIT** at this time.

Procedure 4: Upgrade Primary SDS NOAM NE

Step	Procedure	Result
38. ☐	**Primary SDS NOAM VIP (GUI):** Select… **Main Menu** → **SDS** → **Configuration** → ***Options*** …as shown on the right.	
39. ☐	**Primary SDS NOAM VIP:** Locate the **"Remote Import Enabled"** checkbox and make sure that it is checked *(**ADD** the check mark if necessary)*.	
40. ☐	**Primary SDS NOAM VIP:** If the **Check mark** was **ADDED** to the **"Remote Import Enabled"** checkbox in the previous step, then execute the following: **1)** Click the **"Apply"** dialogue box in the top left of the right panel. **2)** Verify that a **"Success!"** response is received in the banner.	 
THIS PROCEDURE HAS BEEN COMPLETED		

6.3 Upgrade DR SDS NOAM NE

Procedure 5: Upgrade DR SDS NOAM NE

Step	Procedure	Result
1. ☐	Using **VIP** address, access the Primary SDS GUI.	• Using VIP address, access the Primary SDS GUI as described in Appendix A.
2. ☐	**Primary SDS NOAM VIP:** Select… **Main Menu** **→ Status & Manage** **→ HA** …as shown on the right.	
3. ☐	Record the name of the **DR SDS 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 SDS NE site** in the space provided below: **DR SDS NE site: _____**
4. ☐	**Primary SDS NOAM VIP:** **1)** From the **"Scope"** filter pull-down, select the Network Element name for the **DR SDS NE site** **2)** Click on the **"Go"** dialogue button located on the right end of the filter bar.	
5. ☐	**Primary SDS NOAM VIP:** The user should be presented with the list of servers associated with the **DR SDS NE site** Identify each "**Server**", its **"Server Role"** and **"OAM HA Role"**	

Procedure 5: Upgrade DR SDS NOAM NE

Step	Procedure	Result
6. ☐	**Primary SDS NOAM VIP:** Record the names of **DR SDS NE site** servers appropriately in the space provided to the right.	• Record the names of **DR SDS NE site** servers ☐ **DR SDS Active Server:** _____ ☐ **DR SDS Standby Server:** _____ ☐ **DR SDS Query Server:** _____
	NOTE: ***Steps 7 and 8 of this procedure may be executed in parallel using the "Upgrade Server" option or the user may choose Server Group "Auto Upgrade" to automate Steps 7 - 9 of this procedure.***	
7. ☐	**Primary SDS NOAM VIP:** Upgrade **DR Query Server**	• Upgrade **DR Query Server** (as identified and recorded in **Step 6** of this Procedure) using **Appendix D** *(Server Upgrade Administration on SDS 7.x).* • In **Step 6** of this Procedure, check-off ☒ the associated **checkbox** as the upgrade is completed for the upgraded **DR Query Server.**
8. ☐	**Primary SDS NOAM VIP:** Upgrade **"Standby" DR SDS NOAM** server.	• Upgrade **"Standby" DR SDS NOAM** server (as identified and recorded in **Step 6** of this Procedure) using **Appendix D** *(Server Upgrade Administration on SDS 7.x).* • In **Step 6** of this Procedure, check-off ☒ the associated **checkbox** as the upgrade is completed for the upgraded **"Standby" DR SDS NOAM** server**.**
9. ☐	**Primary SDS NOAM VIP:** Upgrade the **"Active" DR SDS NOAM** server. ***NOTE****: This will cause an HA activity failover to the mate DR SDS NOAM server.*	• Upgrade the **"Active" DR SDS NOAM** server (as identified and recorded in **Step 6** of this Procedure) using **Appendix D** *(Server Upgrade Administration on SDS 7.x).* • In **Step 6** of this Procedure, check-off ☒ the associated **checkbox** as the upgrade is completed for the upgraded **"Active" DR SDS NOAM** server**.**
THIS PROCEDURE HAS BEEN COMPLETED		

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

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

☐ Execute SDS 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 K:** 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 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 SDS 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 SDS Health Check procedures as specified in **Appendix B.**

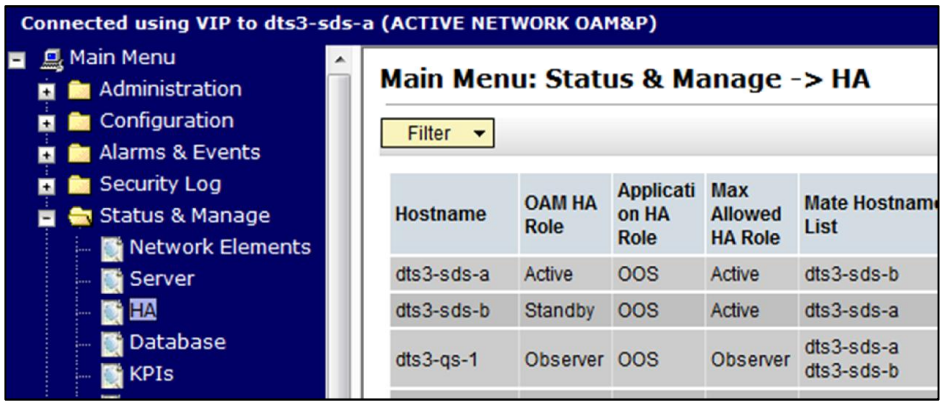
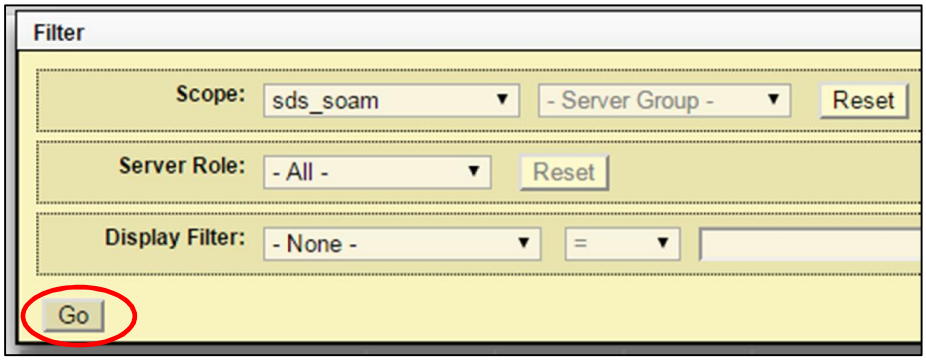
7.2 Upgrade SOAM NE

The following procedure details how to upgrade SDS SOAM sites.

NOTE: *When upgrading an **SDS** topology, it is permissible to upgrade multiple **SOAM** sites in **parallel**.*

*However, every attempt should be made to **avoid upgrading Mated SOAM sites in the same maintenace window**.*

Procedure 6: Upgrade SOAM NE

Step	Procedure	Result
1. ☐	Using **VIP** address, access the Primary SDS GUI.	• Using VIP address, access the Primary SDS GUI as described in Appendix A.
2. ☐	Record the name of the **SOAM 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 **SOAM NE site** in the space provided below: **SOAM NE site:** _____
3. ☐	**Primary SDS NOAM VIP (GUI):** Select… **Main Menu** **→ Status & Manage** **→ HA** …as shown on the right.	
4. ☐	**Primary SDS NOAM VIP:** **1)** From the **"Scope"** filter pull-down, select the **Network Element** name for the **SOAM NE site** **2)** Click on the **"Go"** dialogue button	

Procedure 6: Upgrade SOAM NE

<table>
<tr><th>Step</th><th>Procedure</th><th>Result</th></tr>
<tr><td>5.
☐</td><td>Primary SDS NOAM VIP:
The user should be presented with the list of servers associated with the SOAM NE site

Identify “Hostname”, its “Server Role” and “OAM HA Role”</td><td>
<table>
<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>
<tr><td>dts3-so-a</td><td>Active</td><td>OOS</td><td>Active</td><td>dts3-so-b</td><td>sds_soam</td><td>System OAM</td></tr>
<tr><td>dts3-so-b</td><td>Standby</td><td>OOS</td><td>Active</td><td>dts3-so-a</td><td>sds_soam</td><td>System OAM</td></tr>
<tr><td>dts3-dp-1</td><td>Active</td><td>OOS</td><td>Active</td><td></td><td>sds_soam</td><td>MP</td></tr>
</table>
</td></tr>
<tr><td>6.
☐</td><td>Primary SDS NOAM VIP:
Record the names of SOAM NE site servers in the space provided.</td><td>☐ Active SOAM Server: _____
☐ Standby SOAM Server: _____
☐ DP-1 Server: _____ ☐ DP-6 Server: _____
☐ DP-2 Server: _____ ☐ DP-7 Server: _____
☐ DP-3 Server: _____ ☐ DP-8 Server: _____
☐ DP-4 Server: _____ ☐ DP-9 Server: _____
☐ DP-5 Server: _____ ☐ DP-10 Server: _____</td></tr>
<tr><td colspan="3">NOTE: Steps 7 and 8 of this procedure must be executed serially using the “Upgrade Server” option or the user may choose Server Group “Auto Upgrade” to automate Steps 7 - 8 of this procedure.</td></tr>
<tr><td>7.
☐</td><td>Primary SDS NOAM VIP:
Upgrade the “Standby” SOAM server.

NOTE: If using the “Auto Upgrade” option, SOAM servers shall be upgraded serially (Standby then Active).</td><td>• Upgrade the “Standby” SOAM server (as identified and recorded in Step 6 of this Procedure) using Appendix D (Server Upgrade Administration on SDS 7.x).
• In Step 6 of this Procedure, check-off ☒ the associated checkbox as the upgrade is completed for the upgraded “Standby” SOAM server.</td></tr>
<tr><td>8.
☐</td><td>Primary SDS NOAM VIP:
Upgrade the “Active” SOAM server.</td><td>• Upgrade the “Active” SOAM server (as identified and recorded in Step 6 of this Procedure) using Appendix D (Server Upgrade Administration on SDS 7.x).
• In Step 6 of this Procedure, check-off ☒ the associated checkbox as the upgrade is completed for the upgraded “Active” SOAM server.</td></tr>
<tr><td colspan="3">NOTE: Up to ½ of the installed DP servers at a SOAM site may be upgraded in parallel using the “Upgrade Server” option for each individual DP server.</td></tr>
</table>

Procedure 6: Upgrade SOAM NE

Step	Procedure	Result
9. ☐	**Primary SDS NOAM VIP:** Upgrade up to ½ of the installed **DP** servers in **parallel** *(e.g. 1 of 2, 2 of 4, etc.)*.	• Upgrade up to ½ of the **DP** server(s) (as identified and recorded in **Step 6** of this procedure) in **parallel** usng the **"Upgrade Server"** option for each **DP** server as described in **Appendix D** *(Server Upgrade Administration on SDS 7.x).* In **Step 6** of this procedure, check-off ☒ the associated **checkbox** as the upgrade is completed for the upgraded **DP** server(s).
10. ☐	**Primary SDS NOAM VIP:** Upgrade all remaining **DP Servers** in this **SOAM NE site.**	• Upgrade all remaining **DP Servers** (as identified and recorded in **Step 6** of this procedure) in **parallel** usng the **"Upgrade Server"** option for each **DP** server as described in **Appendix D** *(Server Upgrade Administration on SDS 7.x).* • In **Step 6** of this Procedure, check-off ☒ the associated **checkbox** as the upgrade is completed for the upgraded **DP** server(s)
THIS PROCEDURE HAS BEEN COMPLETED		

7.3 Perform Health Check *(SOAM Post Upgrade)*

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

☐ Execute SDS Health Check procedures as specified in **Appendix B.**

8. UPGRADE ACCEPTANCE

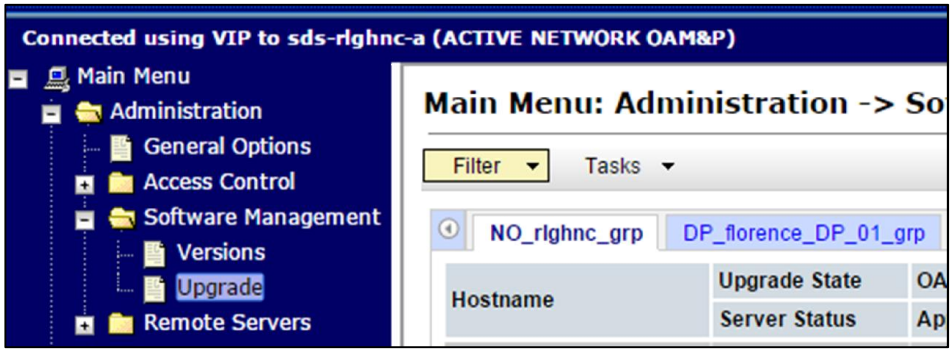
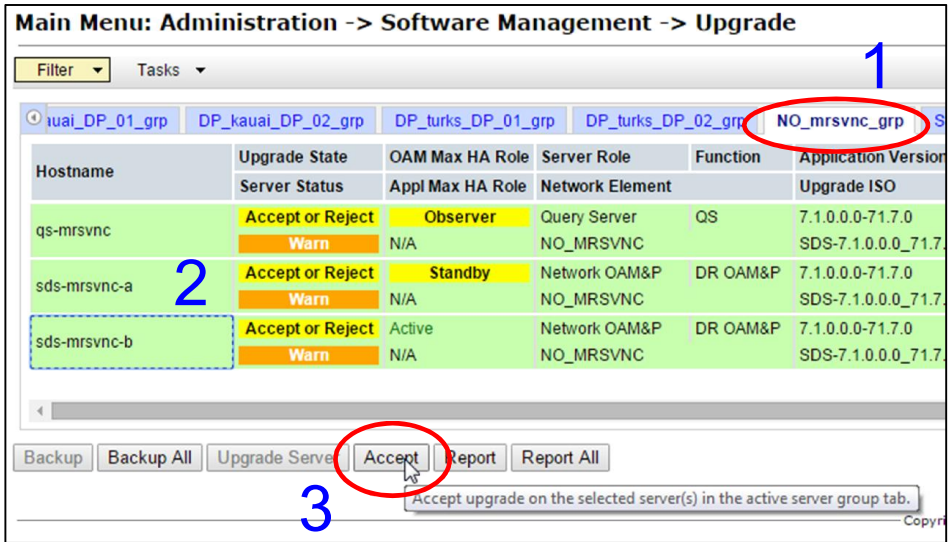
The upgrade needs either to be accepted or rejected before any subsequent upgrades may be performed in the future. Event ID: **32532** (Server Upgrade Pending Accept/Reject) will be displayed for each server until one of these two actions (**Accept** or **Reject**) is performed.

STOP !

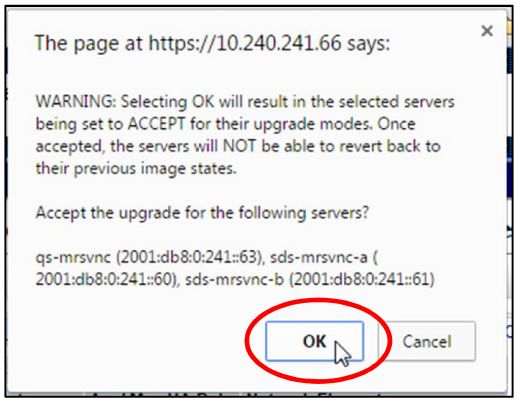
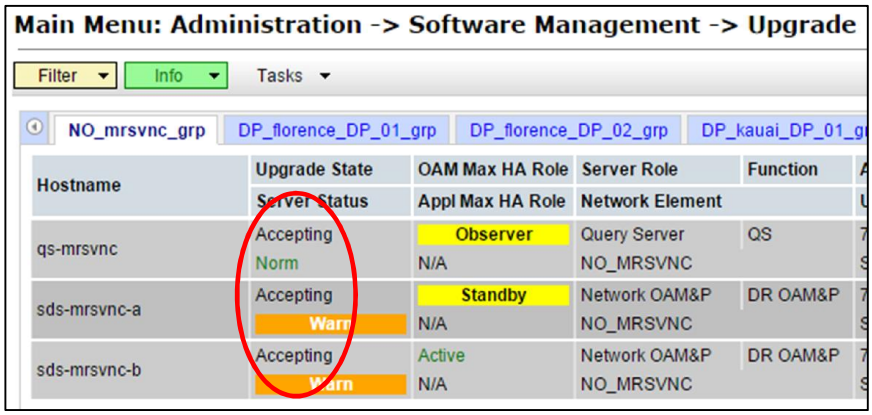
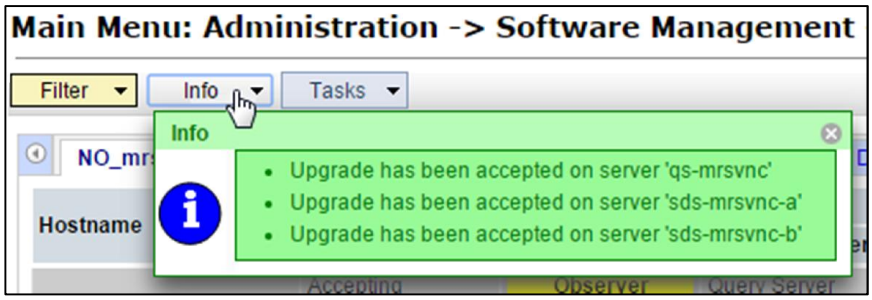
An upgrade should be **Accepted** only after all servers in the **SDS** topology have successfully completed upgrade to the target release.

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

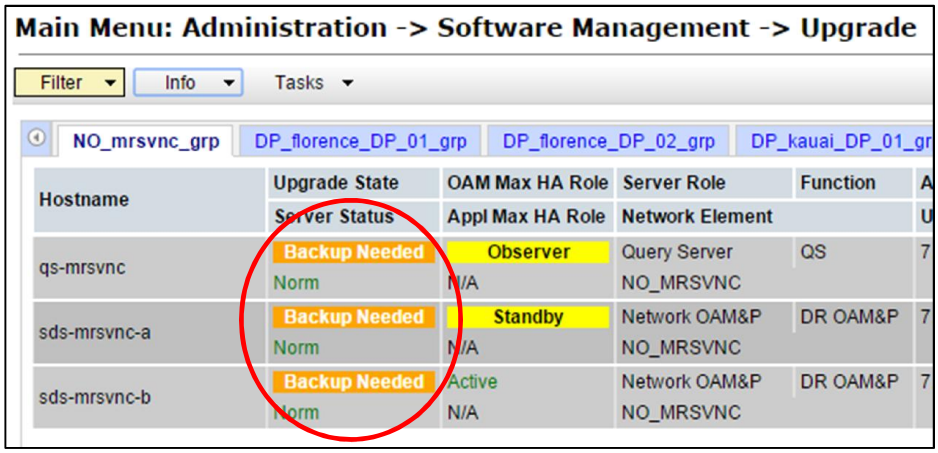
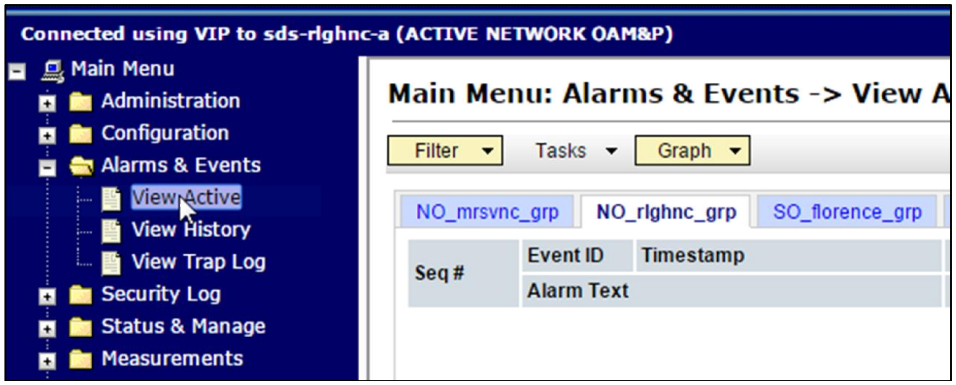
Procedure 7: Upgrade Acceptance

Step	Procedure	Result
1. ☐	Using **VIP** address, access the Primary SDS GUI.	• Using VIP address, access the Primary SDS GUI as described in Appendix A.
2. ☐	**Primary SDS NOAM VIP (GUI):** Select… **Main Menu** **→ Administration** **→Software Management** **→ Upgrade** …as shown on the right.	
3. ☐	**Primary SDS NOAM VIP:** **1)** Select the **Server Group** tab containing the server(s) to **"Accept"** upgrade. **2)** Hold down the **[CTRL]** key to **multi-select** the server(s) all server(s) in the Server Group. **3)** Click the "**Accept**" button.	

Procedure 7: Upgrade Acceptance

Step	Procedure	Result
4. ☐	**Primary SDS NOAM VIP:** **1)** A Click the "**OK**" dialogue button in the pop-up confirmation box. **2)** The screen will now refresh and the **"Upgrade State"** will change to **"Accepting"**. **3)** The pull-down **"Info"** message in the banner will indicate that **"Upgrade has been accepted"** on each server.	  

Procedure 7: Upgrade Acceptance

Step	Procedure	Result
5. ☐	**Primary SDS NOAM VIP:** Within a few minutes, the screen will refresh and display an **"Upgrade State"** of **"Backup Needed"**. **!! IMPORTANT !!** *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 Upgrade process.*	
6. ☐	**Primary SDS NOAM VIP:** **"Accept"** Upgrade on each remaining **Server Group.**	• Repeat **Steps 3 - 5** of this procedure for each additional **Server Group** tab until Upgrade has been Accepted on all servers in the SDS topology.
7. ☐	**Primary SDS NOAM VIP:** Select… **Main Menu** **→ Alarms & Events** **→View Active** …as shown on the right.	
8. ☐	**Primary SDS NOAM VIP:** Verify Upgrade Acceptance.	Verify that the following Alarm is no longer present for any server in the **SDS** topology. • **Event ID (s): *32532*** *(Server Upgrade Pending Accept/Reject)*
THIS PROCEDURE HAS BEEN COMPLETED		

9. RECOVERY PROCEDURES

Upgrade procedure recovery issues should be directed to the Oracle's Tekelec Customer Care. Before executing any of these procedures, contact the Oracle Customer Care Center at 1-888-FOR-TKLC (1-888-367-8552); or 1-919-460-2150 (international). Persons performing the upgrade should be familiar with these documents.

Recovery procedures are covered under the Disaster Recovery Guide. Execute this section only if there is a problem and it is desired to revert back to the pre-upgrade version of the software.

!! WARNING !!

- **Do not attempt to perform these backout procedures without first contacting My Oracle Support (MOS).**

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

!! WARNING !!

- **Backout procedures will cause traffic loss!**

NOTE: ***These recovery procedures are provided for the Backout of an Upgrade ONLY! (i.e. for the Backout from a failed target release to the previously installed release).***

Backout of an initial installation is not supported!

9.1 Backout Setup

Identify IP addresses of all servers that need to be backed out.

1. Select **Administration → Software Management → Upgrade**
2. Based on the "Application Version" Column, Identify all the hostnames that need to be backed out.
3. Select **Configuration → Servers**
4. Identify the IMI IP addresses of all the hostnames identified in step 2. These are required to access the server when performing the backout.

The reason to execute a backout has a direct impact on any additional backout preparation that must be done. The backout procedure will cause traffic loss. Since all possible reasons cannot be predicted ahead of time, contact the Oracle's Tekelec Customer Care Center as stated in the Warning box above.

NOTE: Verify that the two backup archive files created using Procedure 8 "Full Database Backup (All Network Elements, All Servers)" are present on every server that is to be backed-out.

These archive files are located in the **/var/TKLC/db/filemgmt** directory and have different filenames from other database backup files.

The filenames will have the format:

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

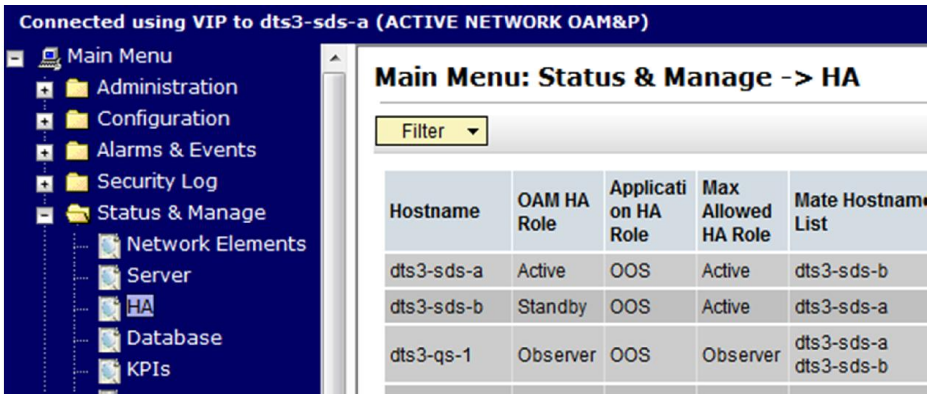
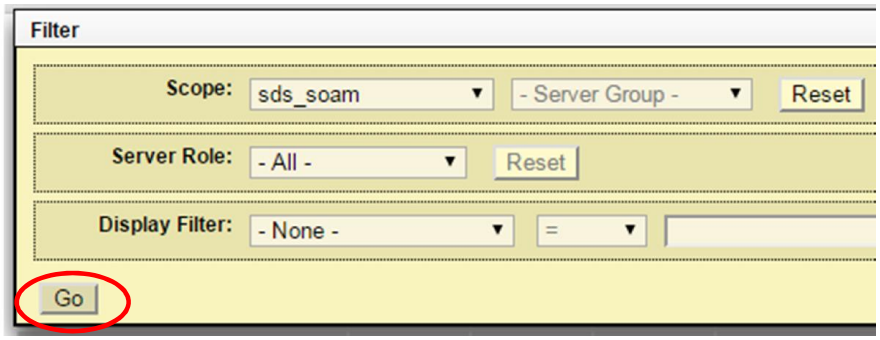
9.2 Perform Backout

The following procedures to perform a backout can only be executed once all necessary corrective setup steps have been taken to prepare for the backout. Contact the Oracle Customer Care Center as stated in the **Warning** box above to identify if all corrective setup steps have been taken.

9.2.1 Backout of a SOAM NE

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

Procedure 8: Backout of a SOAM NE

Step	Procedure	Result
1. ☐	Using **VIP** address, access the Primary SDS GUI.	• Using VIP address, access the Primary SDS GUI as described in Appendix A.
2. ☐	Record the name of the **SOAM NE site**	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: **SOAM NE site:** _____
3. ☐	**Primary SDS NOAM VIP (GUI):** Select… **Main Menu** **→ Status & Manage** **→ HA** …as shown on the right.	
4. ☐	**Primary SDS NOAM VIP:** **1)** From the **"Scope"** filter pull-down, select the Network Element name for the **SOAM NE site** **2)** Click on the **"Go"** dialogue button	

Procedure 8: Backout of a SOAM NE

<table>
<tr><th>Step</th><th>Procedure</th><th>Result</th></tr>
<tr><td>5.
☐</td><td>Primary SDS NOAM VIP:

The user should be presented with the list of servers associated with the SOAM NE site

Identify “Hostname”, its “Server Role” and “OAM HA Role”</td><td>
<table>
<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>
<tr><td>dts3-so-a</td><td>Active</td><td>OOS</td><td>Active</td><td>dts3-so-b</td><td>sds_soam</td><td>System OAM</td></tr>
<tr><td>dts3-so-b</td><td>Standby</td><td>OOS</td><td>Active</td><td>dts3-so-a</td><td>sds_soam</td><td>System OAM</td></tr>
<tr><td>dts3-dp-1</td><td>Active</td><td>OOS</td><td>Active</td><td></td><td>sds_soam</td><td>MP</td></tr>
</table>
</td></tr>
<tr><td>6.
☐</td><td>Primary SDS NOAM VIP:

Record hostnames of SOAM NE site servers in the spaces provided to the right.</td><td>
• Record the names of SOAM NE site servers:

☐ Active SOAM Server: _____

☐ Standby SOAM Server: _____

☐ DP 1 Server: _____ ☐ DP 6 Server: _____

☐ DP 2 Server: _____ ☐ DP 7 Server: _____

☐ DP 3 Server: _____ ☐ DP 8 Server: _____

☐ DP 4 Server: _____ ☐ DP 9 Server: _____

☐ DP 5 Server: _____ ☐ DP 10 Server: _____
</td></tr>
<tr><td>7.
☐</td><td>Primary SDS NOAM VIP:

Downgrade DP 1 Server</td><td>
• Downgrade DP 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 ☒ the associated check box as the downgrade is completed for the backed out DP 1 Server
</td></tr>
<tr><td>8.
☐</td><td>Primary SDS NOAM VIP:

Downgrade all remaining DP Servers in this SOAM NE site</td><td>
• Downgrade all remaining DP Servers (as identified and recorded in Step 6 of this Procedure) using Appendix E (Backout of a Single Server)

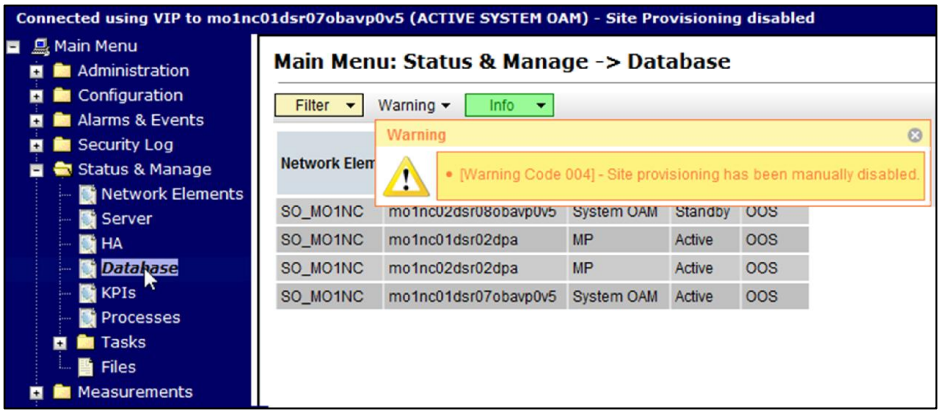
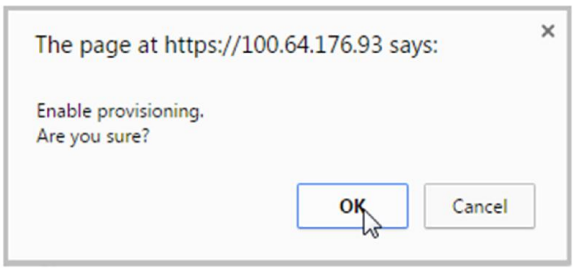
• In Step 6 of this Procedure, check-off ☒ the associated check box as the downgrade is completed for the backed out DP Server

Repeat this step until all DP servers requiring the downgrade within this SOAM NE site have been backed out.
</td></tr>
<tr><td>9.
☐</td><td>Primary SDS NOAM VIP:

Downgrade the Standby SOAM Server</td><td>
• Downgrade 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 ☒ the associated check box as the downgrade is completed for the the backed out Standby SOAM Server
</td></tr>
</table>

Procedure 8: Backout of a SOAM NE

Step	Procedure	Result
		DO NOT PROCEED with the next step until Steps 7 thru 9 of this Procedure have been successfully completed.
10. ☐	**Primary SDS NOAM VIP:** Downgrade the **Active SOAM Server**	• Downgrade 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 ☒ the associated **check box** as the downgrade is completed for the backed out **Active SOAM Server**
11. ☐	Using **VIP** address, access the **SOAM GUI**.	Using **VIP** address, access the **SOAM GUI** as described in **Appendix A.**
12. ☐	**SOAM VIP (GUI):** Select… **Main Menu** **→ Status & Manage** **→ Dstabase** …as shown on the right.	
13. ☐	**SOAM VIP:** **1)** Click the **"Enable Site Provisioning"** button in the lower left of the right panel. **2)** Click the **"OK"** button on the pop-up confirmation dialoguw box.	 
14. ☐	**SOAM VIP:** Use the **[Logout]** link in the top right of the browser to logout of the **SOAM GUI**.	

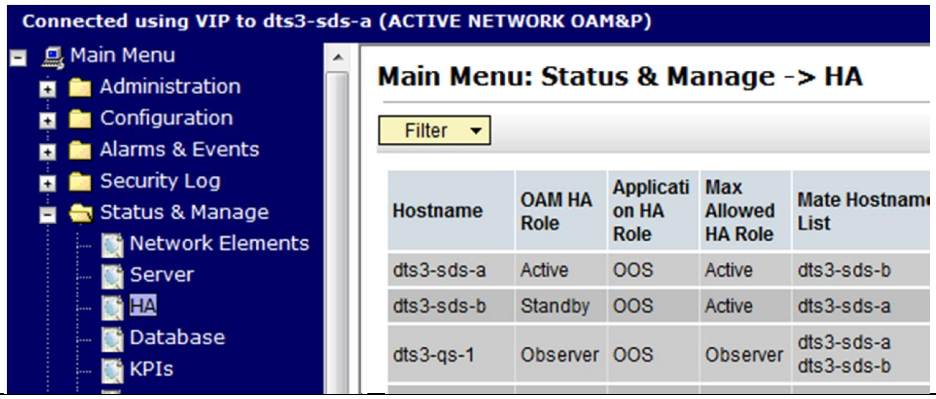
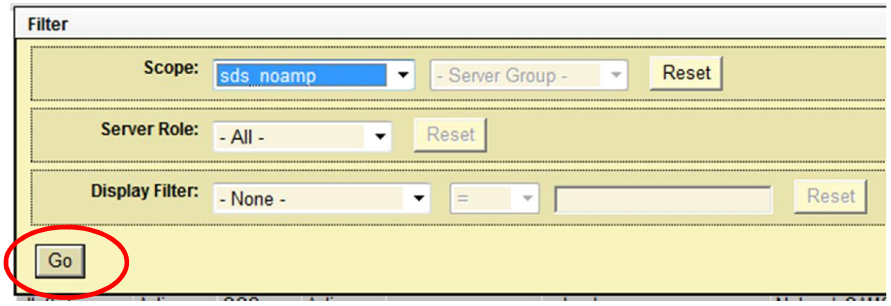
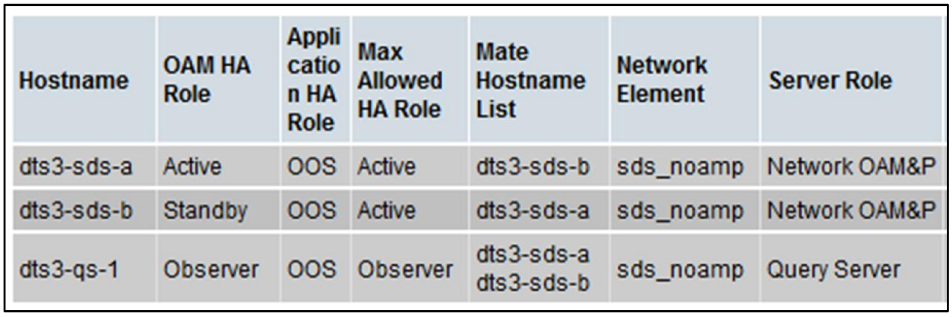
Procedure 8: Backout of a SOAM NE

Step	Procedure	Result
15. ☐	**Primary SDS NOAM VIP (GUI):** Execute downgrade for the remaining **SOAM NE site(s)**	Repeat all above steps of this procedure for the remaining **SOAM NE site(s)** (as identified and recorded in Section 3.1.2) until all SOAM NE site(s) requiring the downgrade have been backed out.
16. ☐	Execute Health Check at this time only if no other servers require the downgrade. Otherwise, proceed with the next backout procedure	Execute **Health Check** procedures *(Post Backout)* as specified in **Appendix B,** if backout procedures have been completed for all required servers.
THIS PROCEDURE HAS BEEN COMPLETED		

9.2.2 Backout of the DR SDS NOAM NE

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

Procedure 9: Backout of the DR SDS NOAM NE

Step	Procedure	Result
1. ☐	Using **VIP** address, access the Primary SDS GUI.	• Using VIP address, access the Primary SDS GUI as described in Appendix A.
2. ☐	**Primary SDS NOAM VIP (GUI):** Select… **Main Menu** **→ Status & Manage** **→ HA** …as shown on the right.	
3. ☐	Record the name of the **DR SDS 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 SDS NE site** in the space provided below: **DR SDS NE site:** _____
4. ☐	**Primary SDS NOAM VIP:** **1)** From the **"Scope"** filter pull-down, select the Network Element name for the **DR SDS NE site** **2)** Click on the **"Go"** dialogue button located on the right end of the filter bar.	
5. ☐	**Primary SDS NOAM VIP:** The user should be presented with the list of servers associated with the **DR SDS NE site** Identify each "**Server**", its **"Server Role"** and **"OAM HA Role"**	

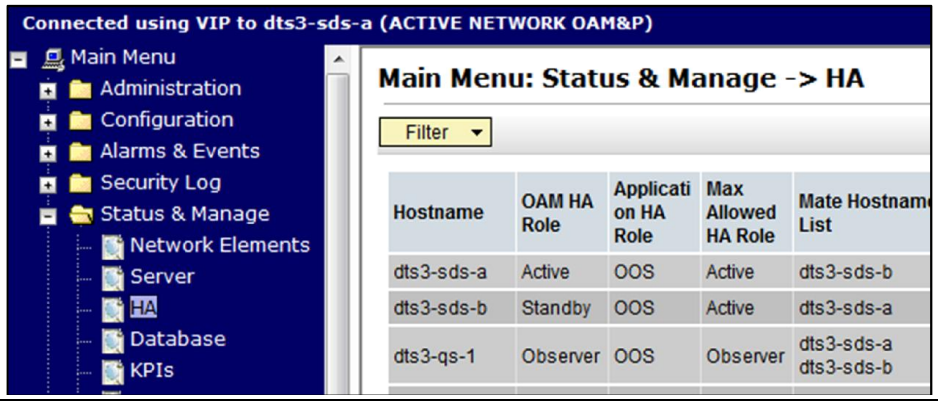
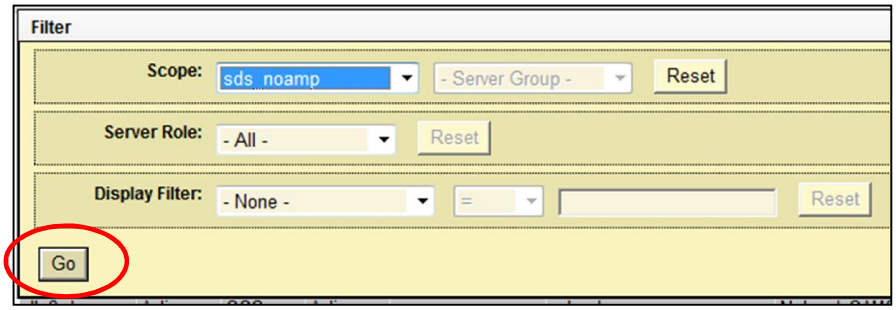
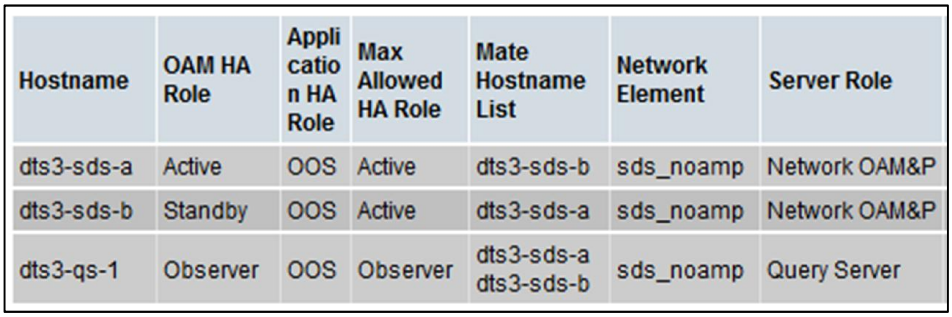
Procedure 9: Backout of the DR SDS NOAM NE

Step	Procedure	Result
6. ☐	**Primary SDS NOAM VIP:** Record the names of **DR SDS NE site** servers appropriately in the space provided to the right.	• Record the names of **DR SDS NE site** servers ☐ **DR SDS Active Server:** _____ ☐ **DR SDS Standby Server:** _____ ☐ **DR SDS Query Server:** _____
	**NOTE: Steps 7 and 8 of this Procedure may be executed in parallel.**	
7. ☐	**Primary SDS NOAM VIP:** Downgrade **DR SDS Query Server**	• Downgrade **DR SDS Query Server** (as identified and recorded in **Step 6** of this Procedure) using in **Appendix E** (Backout of a Single Server) • In **Step 6** of this Procedure, check-off ☒ the associated **check box** as the downgrade is completed for the backed out **DR SDS Query Server**
8. ☐	**Primary SDS NOAM VIP:** Downgrade **DR SDS Standby Server**	• Downgrade **DR SDS Standby Server** (as identified and recorded in **Step 6** of this Procedure) using in **Appendix E** (Backout of a Single Server) • In **Step 6** of this Procedure, check-off ☒ the associated **check box** as the downgrade is completed for the backed out **DR SDS Standby Server**
	**DO NOT PROCEED with the next step until Steps 7 and 8 of this Procedure have been successfully completed.**	
9. ☐	**Primary SDS NOAM VIP:** Downgrade **DR SDS Active Server**	• Downgrade **DR SDS Active Server** (as identified and recorded in **Step 6** of this Procedure) using in **Appendix E** (Backout of a Single Server) ***NOTE**: This will cause an HA activity failover to the mate DR SDS Server. This happens a couple minutes after initiating the upgrade.* • In **Step 6** of this Procedure, check-off ☒ the associated **check box** as the downgrade is completed for the backed out **DR SDS Active Server**
10. ☐	**Active SDS VIP:** Execute Health Check at this time only if no other servers require the backout. Otherwise, proceed with the next backout.	Execute Health Check procedures (Post Backout) as specified in **Appendix B,** if downgrade procedures have been completed for all required servers.
THIS PROCEDURE HAS BEEN COMPLETED		

9.2.3 Backout of the Primary SDS NOAM NE

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

Procedure 10: Backout of the Primary SDS NOAM NE

Step	Procedure	Result
1. ☐	Using **VIP** address, access the Primary SDS GUI.	• Using VIP address, access the Primary SDS GUI as described in Appendix A.
2. ☐	**Primary SDS NOAM VIP (GUI):** Select… **Main Menu** **→ Status & Manage** **→ HA** …as shown on the right.	
3. ☐	Record the name of the **Primary SDS 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 SDS NE site** in the space provided below: **Primary SDS NE site:** _____
4. ☐	**Primary SDS NOAM VIP:** **1)** From the **"Scope"** filter pull-down, select the Network Element name for the **Primary SDS NE site** **2)** Click on the **"Go"** dialogue button located on the right end of the filter bar.	
5. ☐	**Primary SDS NOAM VIP:** The user should be presented with the list of servers associated with the **Primary SDS NE site** Identify each "**Server**", its **"Server Role"** and **"OAM HA Role"**	

Procedure 10: Backout of the Primary SDS NOAM NE

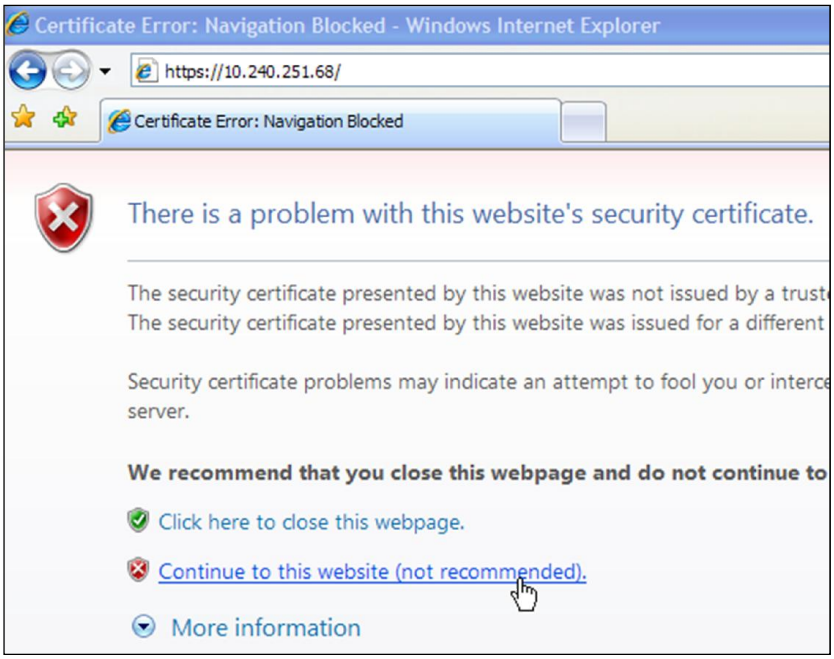
Step	Procedure	Result
6. ☐	**Primary SDS NOAM VIP:** Record the names of **Primary SDS NE site** servers appropriately in the space provided to the right.	• Record the names of **Primary SDS NE site** servers ☐ **Primary SDS Active Server:** _____ ☐ **Primary SDS Standby Server:** _____ ☐ **Primary SDS Query Server:** _____
	NOTE: ***Steps 7 and 8 of this Procedure may be executed in parallel.***	
7. ☐	**Primary SDS NOAM VIP:** Downgrade **Primary SDS Query Server**	• Downgrade **Primary SDS Query Server** (as identified and recorded in **Step 6** of this Procedure) using in **Appendix E** (Backout of a Single Server) • In **Step 6** of this Procedure, check-off ☒ the associated **check box** as the downgrade is completed for the backed out **Primary SDS Query Server**
8. ☐	**Primary SDS NOAM VIP:** Downgrade **Primary SDS "Standby" Server**	• Downgrade **Primary SDS NOAM "Standby" Server** (as identified and recorded in **Step 6** of this Procedure) using in **Appendix E** (Backout of a Single Server) • In **Step 6** of this Procedure, check-off ☒ the associated **check box** as the downgrade is completed for the backed out **Primary SDS Standby Server**
9. ☐	**Primary SDS NOAM VIP:** Using the **VIP** address, login to the **"Active" Primary SDS NOAM** with the **admusr** account.	CentOS release 5.7 (Final) Kernel 2.6.18-274.7.1.e15prerel5.0.0_72.32.0 on an x86_64 sds-rlghnc-b login: **admusr** Password: ***<admusr_password>***
10. ☐	**Primary SDS 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 PRODPATH=/opt/comcol/prod RUNID=00 [admusr@sds-rlghnc-b ~]$
11. ☐	**Primary SDS NOAM VIP:** Verify that the **DbReplication** status is **"Active"** to the **Standby Primary SDS NOAM** and the **Query Server** *(if equipped)* which were upgraded in **Steps 29** and **30** of this procedure.	[admusr@sds-rlghnc-b ~]$ **sudo irepstat -w** -- Policy 0 ActStb **[DbReplication]** AA To sds-rlghnc-a **Active** 0 0.25 1%R 0.05%cpu 47B/s AA To qs-rlghnc **Active** 0 0.25 1%R 0.05%cpu 56B/s AA To sds-mrsvnc-a **Active** 0 0.50 1%R 0.04%cpu 47B/s AB To kauai-sds-SO-b **Active** 0 0.50 1%R 0.04%cpu 63B/s AB To florence-sds-SO-a **Active** 0 0.51 1%R 0.03%cpu 65B/s AB To turks-sds-SO-b **Active** 0 0.50 1%R 0.04%cpu 65B/s irepstat (8 lines) (h)elp [admusr@sds-rlghnc-b ~]$

Procedure 10: Backout of the Primary SDS NOAM NE

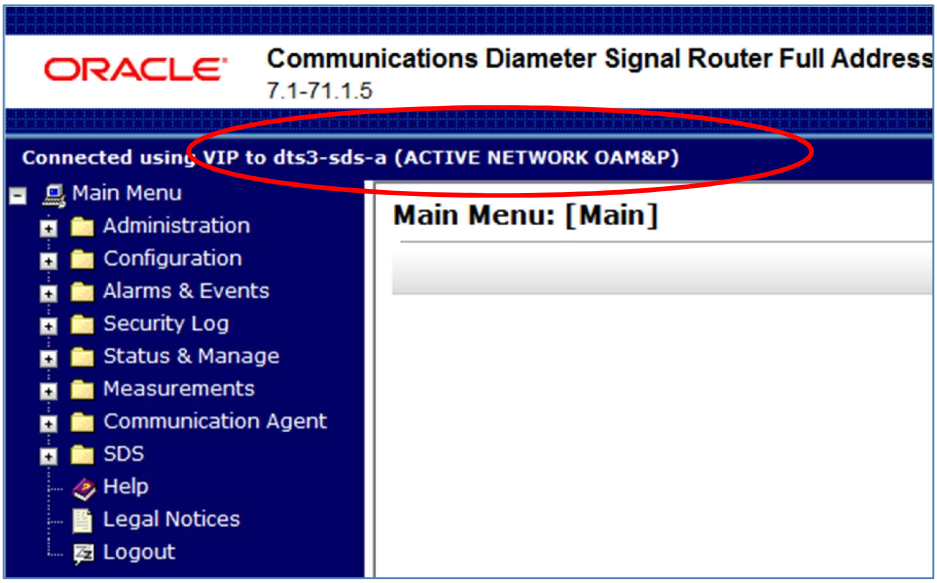
Step	Procedure	Result
12. ☐	**Primary SDS NOAM VIP:** **!! IMPORTANT !!** ***DO NOT*** *proceed to the next step until a DbReplication status of* ***"Active"*** *is returned for the* ***Standby Primary SDS NOAM*** *and the* ***Query Server*** *(if equipped).*	If a DbReplication status of **"Audit"** was received in the previous step, then **REPEAT Step 11** of this procedure until a status of **"Active**" is returned.
13. ☐	**Primary SDS NOAM VIP:** Exit the **CLI** for the **"Active" Primary SDS NOAM.**	`[admusr@sds-rlghnc-b ~]$ exit` `logout`
14. ☐	**Primary SDS NOAM VIP:** Downgrade **Primary SDS "Active" Server.** **!! IMPORTANT !!** *This will cause an HA activity Switchover to the mate Primary SDS NOAM server.*	• Downgrade **Primary SDS NOAM** "**Active" Server** (as identified and recorded in **Step 6** of this Procedure) using in **Appendix E** (Backout of a Single Server) • In **Step 6** of this Procedure, check-off ☒ the associated **check box** as the downgrade is completed for the backed out **Primary SDS NOAM Active Server**
15. ☐	Allow system to auto-clear temporary alarm states.	• Wait up to 10 minutes for Alarms associated with server backout to auto-clear. **!! IMPORTANT !!** • If **PDB Relay** was recorded as **"Enabled"** in **Appendix E, Step 8,** then **Event 14189** *(pdbRelay Time Lag)* may be persist for several hours post upgrade. This alarm can safely be ignored and should **auto-clear** when the **PDBI** *(HLRR)* **queue** catches up with real-time replication.
16. ☐	Execute Health Check	Execute Health Check procedures (Post Backout) as specified in **Appendix B,** if downgrade procedures have been completed for all required servers.
THIS PROCEDURE HAS BEEN COMPLETED		

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
1. ☐	**OAM VIP (GUI):** **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 SDS site or SOAM site) - see **Table 4** **2)** If a certificate error is received, click on the link which states… *"Continue to this website (not recommended)."*	
2. ☐	**OAM VIP (GUI):** The user should be presented a login screen similar to the one shown on the right. Login to the GUI using the default user and password.	

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

Step	Procedure	Result
3. ☐	**OAM VIP (GUI):** The user should be presented the Main Menu as shown on the right. 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.	 **NOTE:** The message may show connection to either a **"NETWORK OAM&P"** or a **"SYSTEM OAM"** depending on the selected NE.
THIS PROCEDURE HAS BEEN COMPLETED		

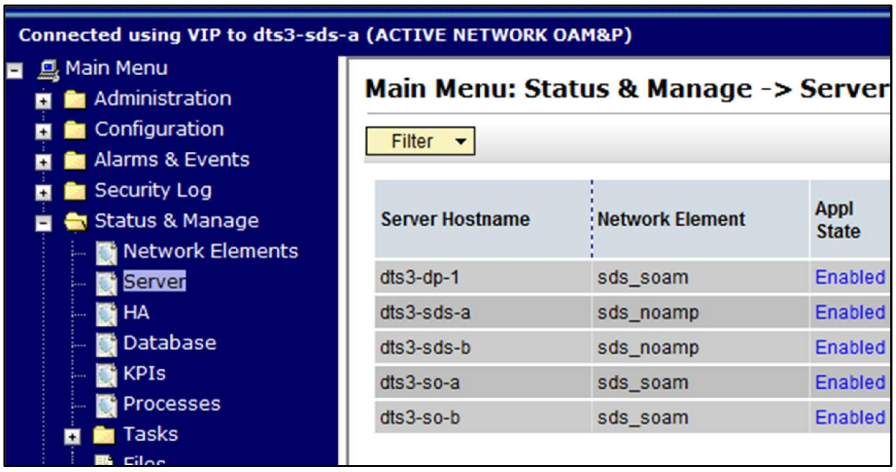
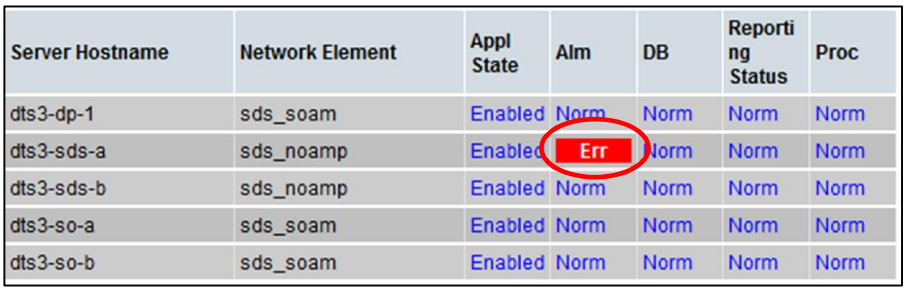
APPENDIX B. HEALTH CHECK PROCEDURES

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

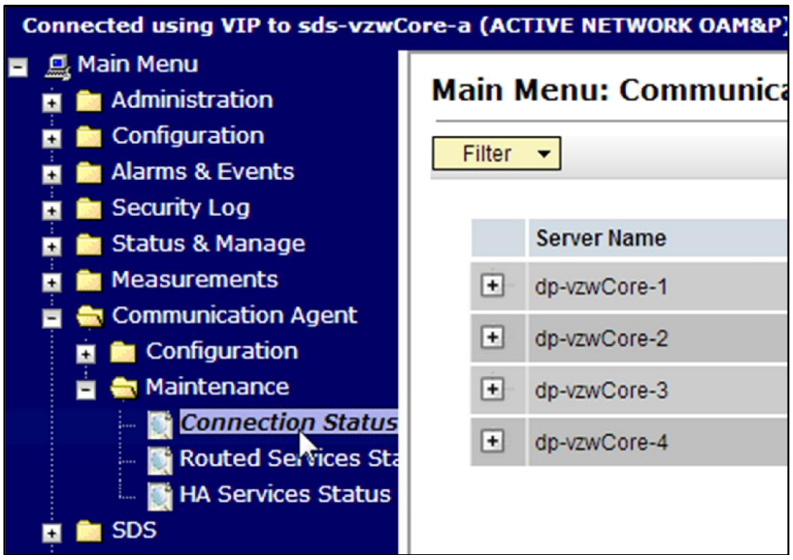
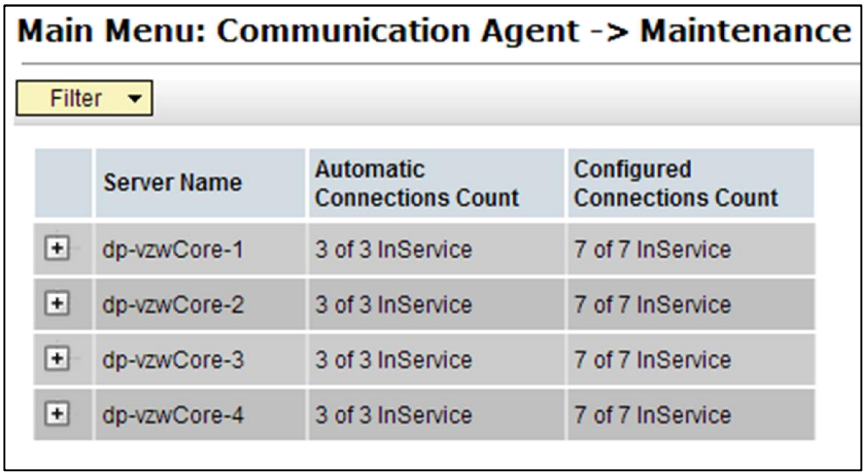
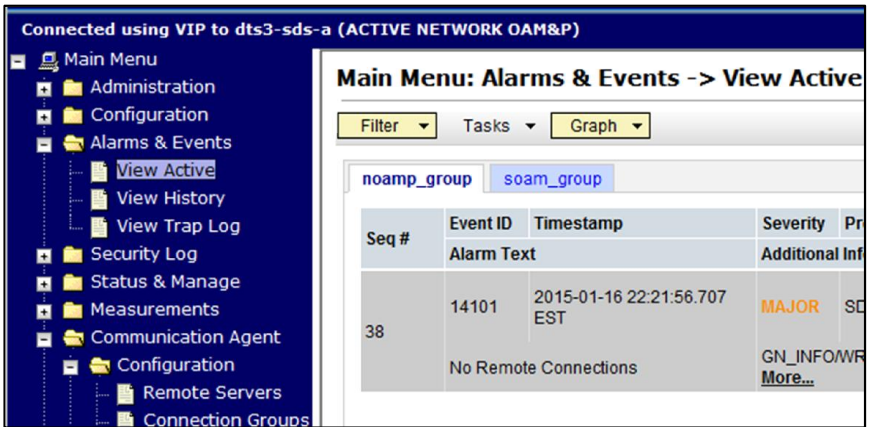
Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number.

SHOULD ANY STEP IN THIS PROCEDURE FAIL, STOP AND CONTACT ORACLE'S TEKELEC CUSTOMER CARE CENTER FOR ASSISTANCE BEFORE CONTINUING!

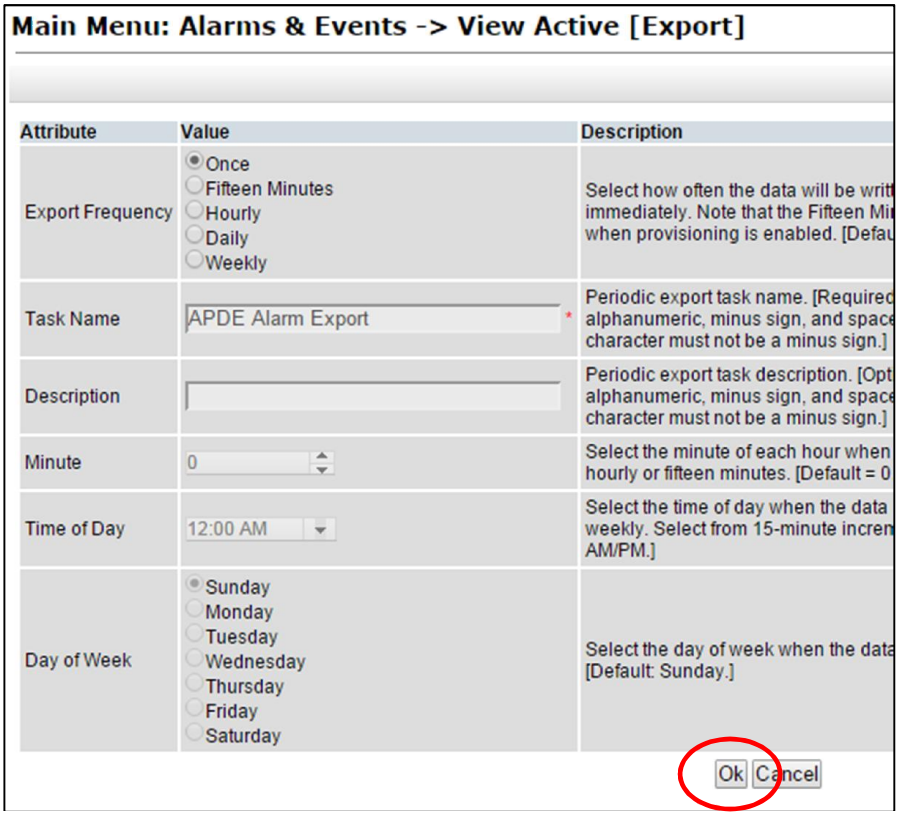
Appendix B: Health Check Procedures

Step	Procedure	Result
1. ☐	Using **VIP** address, access the Primary SDS GUI.	➢ Using **VIP** address, access the **Primary SDS NOAM GUI** as described in **Appendix A**
2. ☐	**Primary SDS NOAM VIP (GUI):** Select… **Main Menu** **→ Status & Manage** **→ Server** …as shown on the right.	
3. ☐	**Primary SDS NOAM VIP (GUI):** Verify that all server statuses show **"Norm"** for Alarm (Alm), Database (DB), Reporting Status, and Processes (Proc) as shown on the right. If any other server statuses are present, they will appear in a colored box as shown on the right. **NOTE:** Other server states include **Err, Warn, Man** and **Unk**.	 **NOTE:** *Post-Upgrade, upgraded servers will have an **"Alm"** status of **"Err"** due to the following expected alarm.* • ***Event ID (s): 32532** (Server Upgrade Pending Accept/Reject)* *This alarm will remain present until the Upgrade is accepted and may be ignored at this time.*

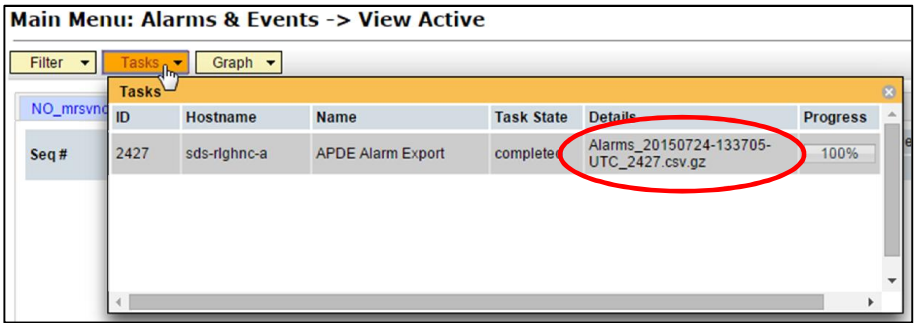
Appendix B: Health Check Procedures

Step	Procedure	Result
4. ☐	**Primary SDS NOAM VIP (GUI):** Select… **Main Menu** **→ Communication Agent** **→ Maintenance** **→ Connection Status** …as shown on the right.	
5. ☐	**Primary SDS NOAM VIP (GUI):** Verify that all **"Connection Counts"** show equivalent counts **(e.g. "n of n" InService for Automatic / "y of y" InService for Configured)** as shown to the right. **NOTE:** ***DPs*** *will show a* ***"Configured Connections Count"*** *of* ***"1 of 2 InService"*** *for Active/Standby configurations. This is normal and can be ignored.*	
6. ☐	**Primary SDS NOAM VIP (GUI):** Select… **Main Menu** **→ Alarm & Events** **→ View Active** …as shown on the right.	

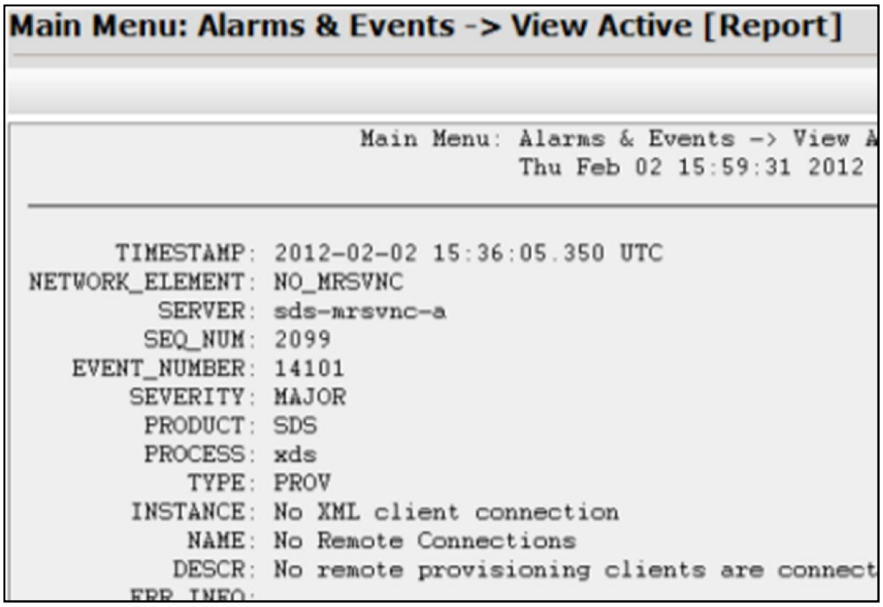
Appendix B: Health Check Procedures

Step	Procedure	Result
7. ☐	**Primary SDS NOAM VIP (GUI):** View Alarm Status in the right panel.	When viewing **Pre-Upgrade** Status: If any Alarms are present, STOP and contact Oracle's Tekelec Customer Care Center for assistance before attempting to continue. When viewing **Post-Upgrade** Status: Active NO server may have the following expected alarms: Alarm ID = **10075** (Application processes have been manually stopped) Alarm ID = **10008** (Provisioning Manually Disabled) Servers that still have replication disabled will have the following expected alarm: Alarm ID = **31113** (Replication Manually Disabled) You may also see alarms: Alarm ID = **10010** (Stateful database not yet synchronized with mate database) Alarm ID = **32532** (Server Upgrade Pending Accept/Reject)
8. ☐	**Primary SDS NOAM VIP (GUI):** Select the **"Export"** dialogue button from the bottom left corner of the screen.	
9. ☐	**Primary SDS NOAM VIP (GUI):** Click the **"Ok"** button at the bottom of the screen.	

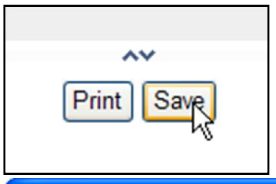
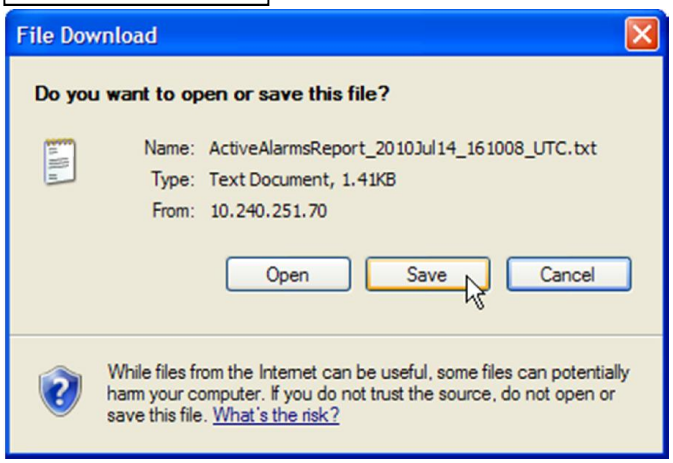
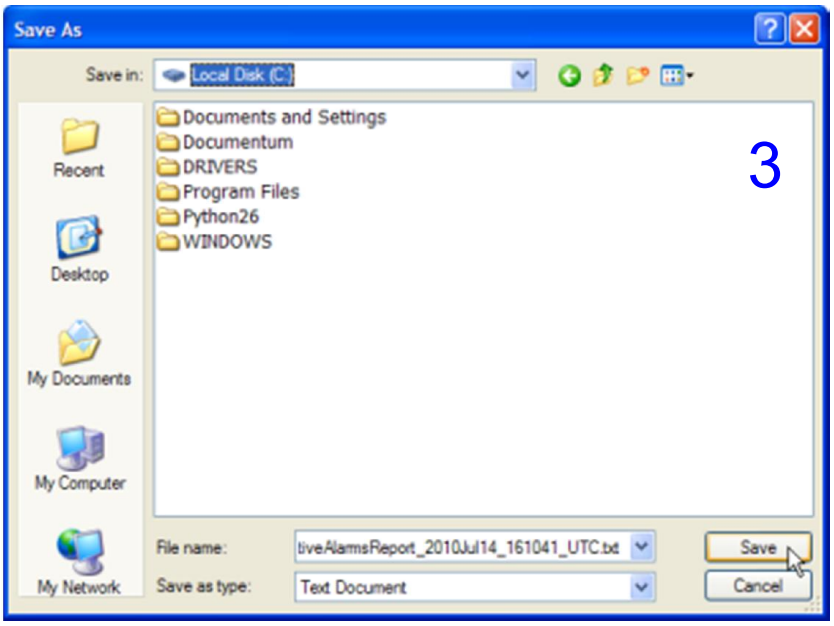
Appendix B: Health Check Procedures

Step	Procedure	Result
10. ☐	**Primary SDS NOAM VIP (GUI):** The name of the exported Alarms CSV file will appear in the **"Tasks"** tab in the banner at the top of the right panel.	
11. ☐	**Primary SDS NOAM VIP (GUI):** Record the filename of Alarms CSV file generated in the space provided to the right.	Example: Alarms<yyyymmdd>_<hhmmss>.csv ➢ ***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

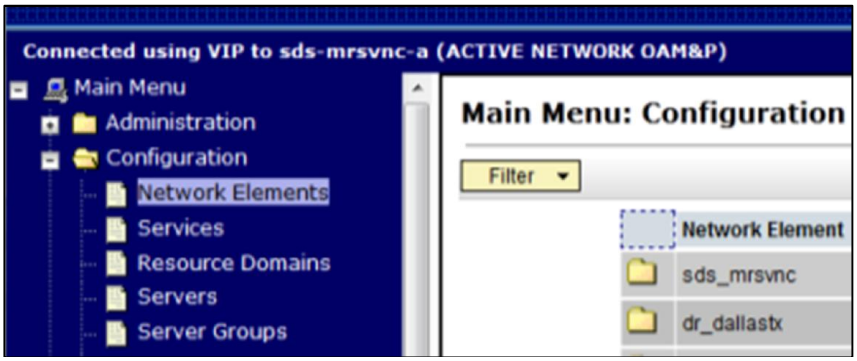
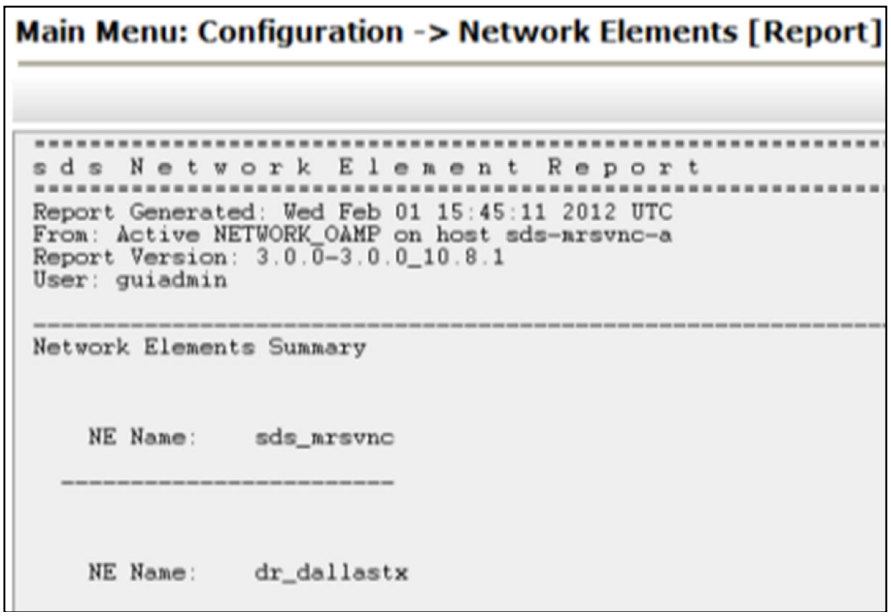
Appendix B: Health Check Procedures

Step	Procedure	Result
12. ☐	**Primary SDS NOAM VIP (GUI):** Select the **"Report"** dialogue button from the bottom left corner of the screen.	
13. ☐	**Primary SDS NOAM VIP (GUI):** An **Active "Alarms & Events" Report** will be generated and displayed in the right panel.	

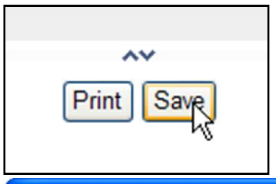
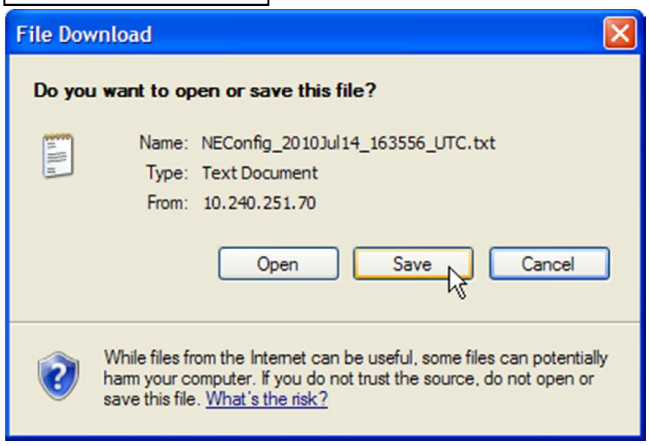
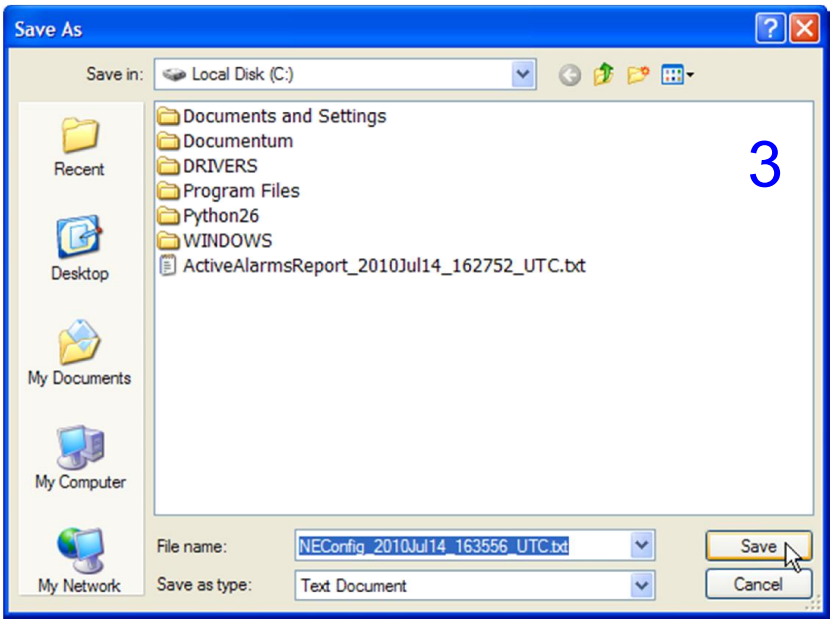
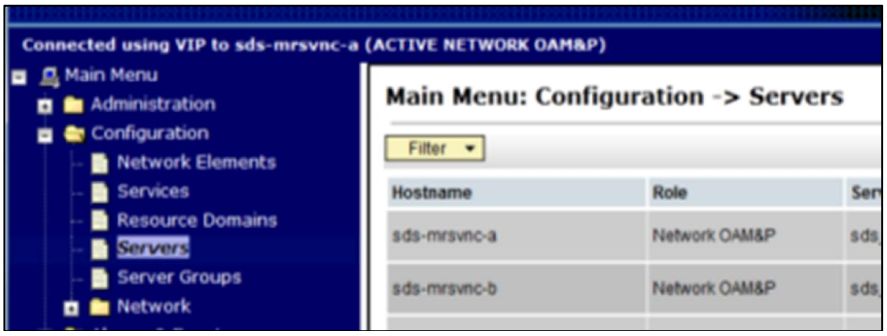
Appendix B: Health Check Procedures

Step	Procedure	Result
14. ☐	**Primary SDS NOAM VIP (GUI):** **1)** Select the **"Save"** dialogue button from the bottom/middle of the right panel. **2)** Click the **"Save"** dialogue button on the File Download pop-up box. **3)** Select a directory on the local disk drive to store the Active "Alarms & Events" Report file and click the **"Save"** dialogue button.	 1  2  3

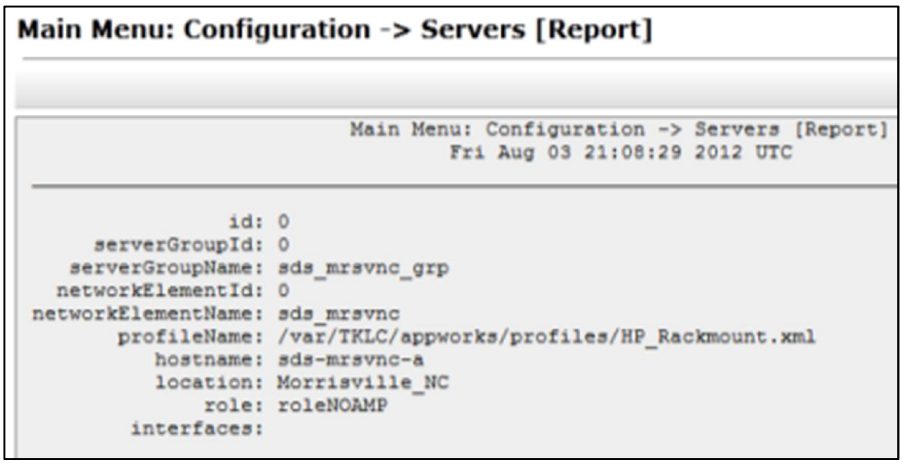
Appendix B: Health Check Procedures

Step	Procedure	Result
15. ☐	**Primary SDS NOAM VIP (GUI):** Select… **Main Menu** **→ Configuration** **→ Network Elements** …as shown on the right.	
16. ☐	**Primary SDS NOAM VIP (GUI):** Select the **"Report"** dialogue button from the bottom left corner of the screen.	
17. ☐	**Primary SDS NOAM VIP (GUI):** A **"Network Element Report"** will be generated and displayed in the right panel.	

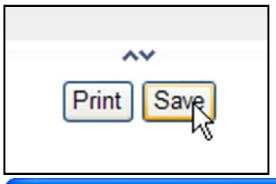
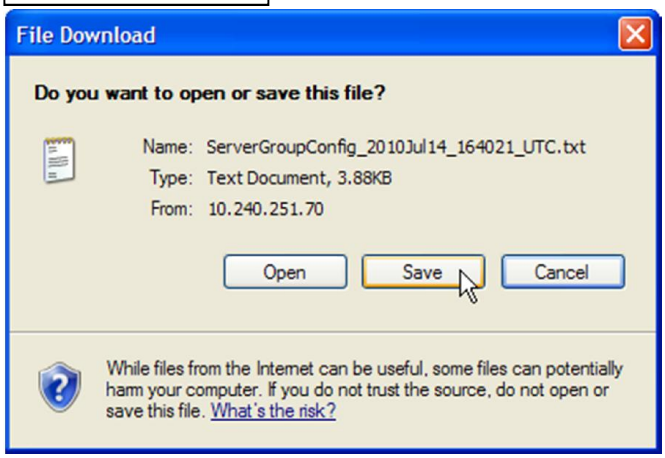
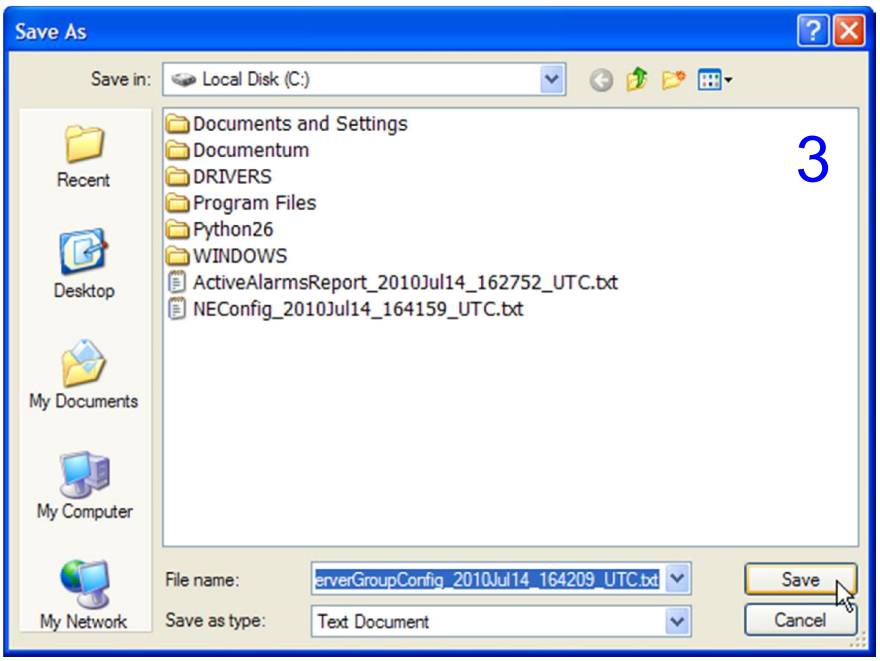
Appendix B: Health Check Procedures

Step	Procedure	Result
18. ☐	**Primary SDS NOAM VIP (GUI):** **1)** Select the **"Save"** dialogue button from the bottom/middle of the right panel. **2)** Click the **"Save"** dialogue button on the File Download pop-up box. **3)** Select a directory on the local disk drive to store the "Network Elements Report" file and click the **"Save"** dialogue button.	 1  2  3
19. ☐	**Primary SDS NOAM VIP (GUI):** Select… **<u>Main Menu</u>** **→ Configuration** **→ Servers** …as shown on the right.	

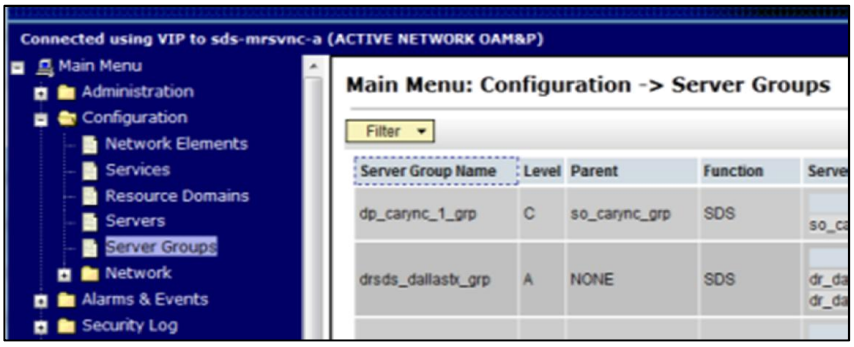
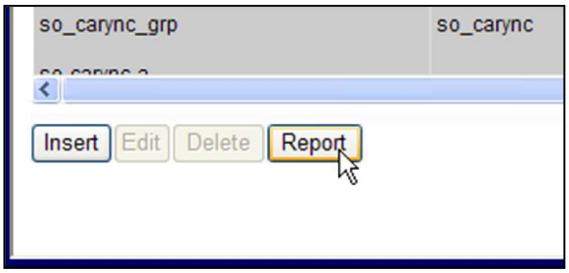
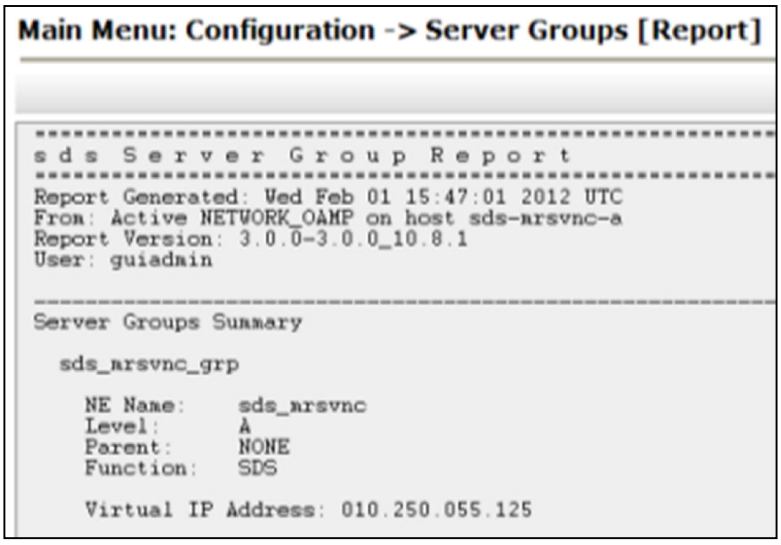
Appendix B: Health Check Procedures

Step	Procedure	Result
20. ☐	**Primary SDS NOAM VIP (GUI):** Select the **"Report"** dialogue button from the bottom left corner of the screen.	
21. ☐	**Primary SDS NOAM VIP (GUI):** A **"Server Report"** will be generated and displayed in the right panel.	

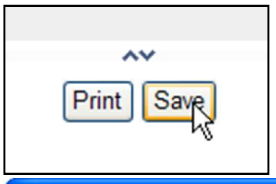
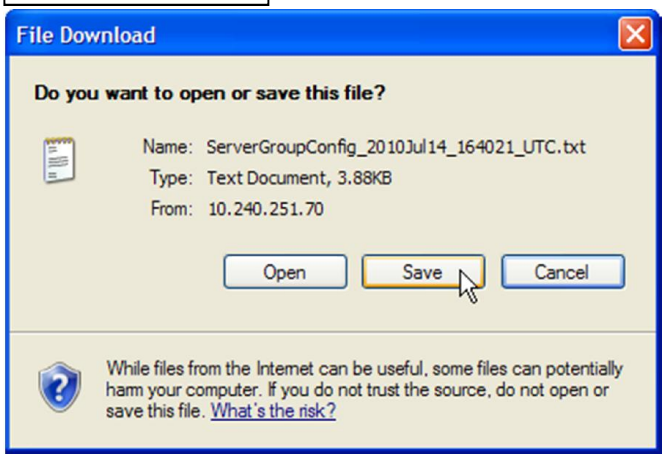
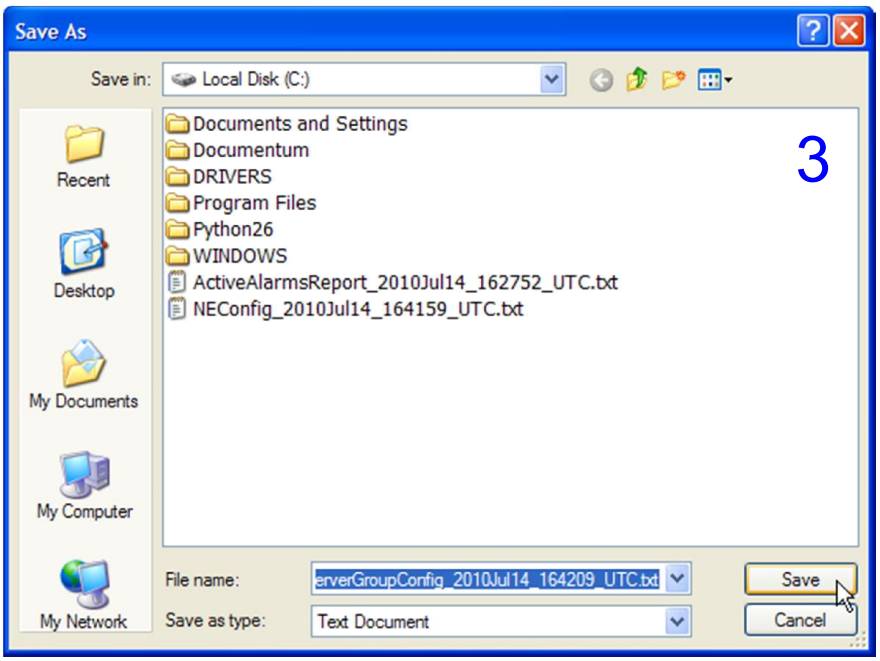
Appendix B: Health Check Procedures

Step	Procedure	Result
22. ☐	**Primary SDS NOAM VIP (GUI):** **1)** Select the **"Save"** dialogue button from the bottom/middle of the right panel. **2)** Click the **"Save"** dialogue button on the File Download pop-up box. **3)** Select a directory on the local disk drive to store the "Server Group Report" file and click the **"Save"** dialogue button.	 1  2  3

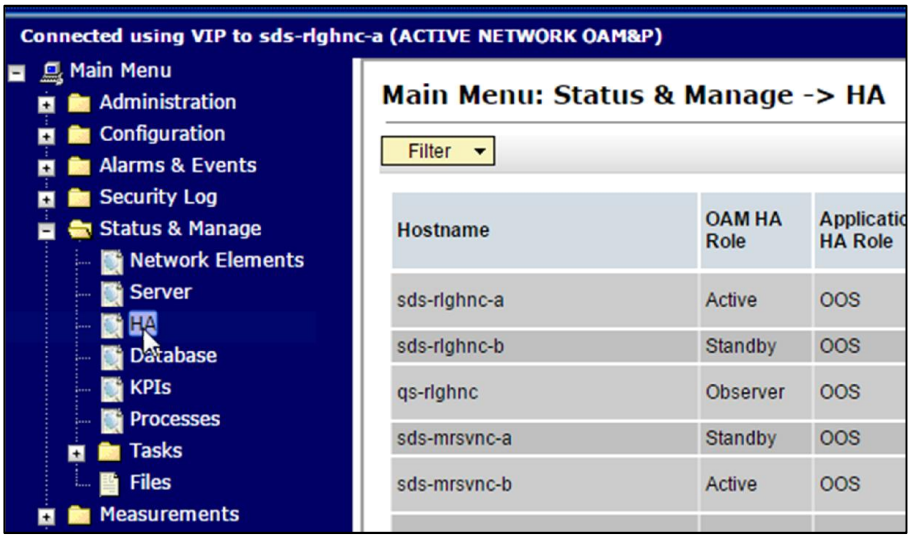
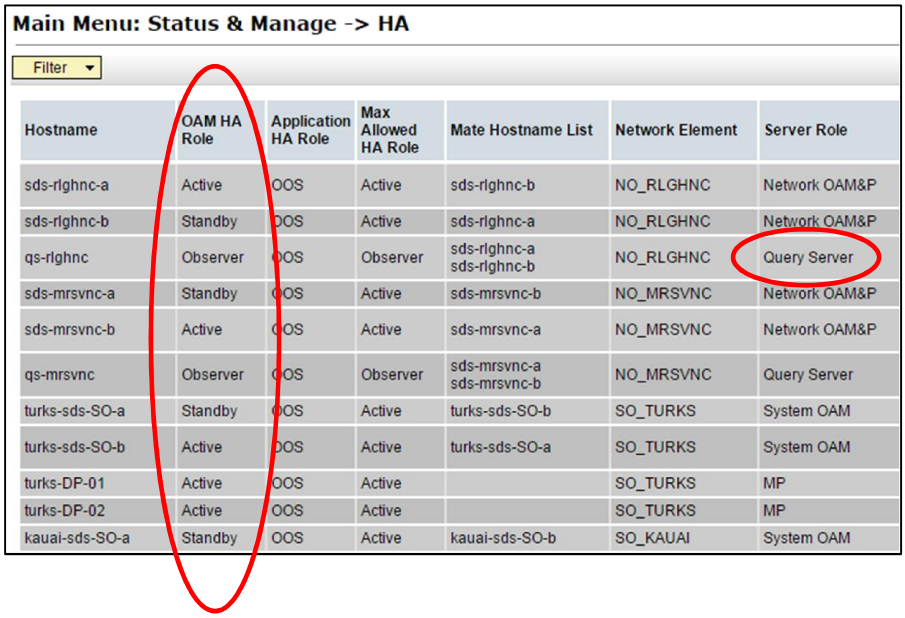
Appendix B: Health Check Procedures

Step	Procedure	Result
23. ☐	**Primary SDS NOAM VIP (GUI):** Select… **Main Menu** **→ Configuration** **→ Server Groups** …as shown on the right.	
24. ☐	**Primary SDS NOAM VIP (GUI):** Select the **"Report"** dialogue button from the bottom left corner of the screen.	
25. ☐	**Primary SDS NOAM VIP (GUI):** A **"Server Group Report"** will be generated and displayed in the right panel.	

Appendix B: Health Check Procedures

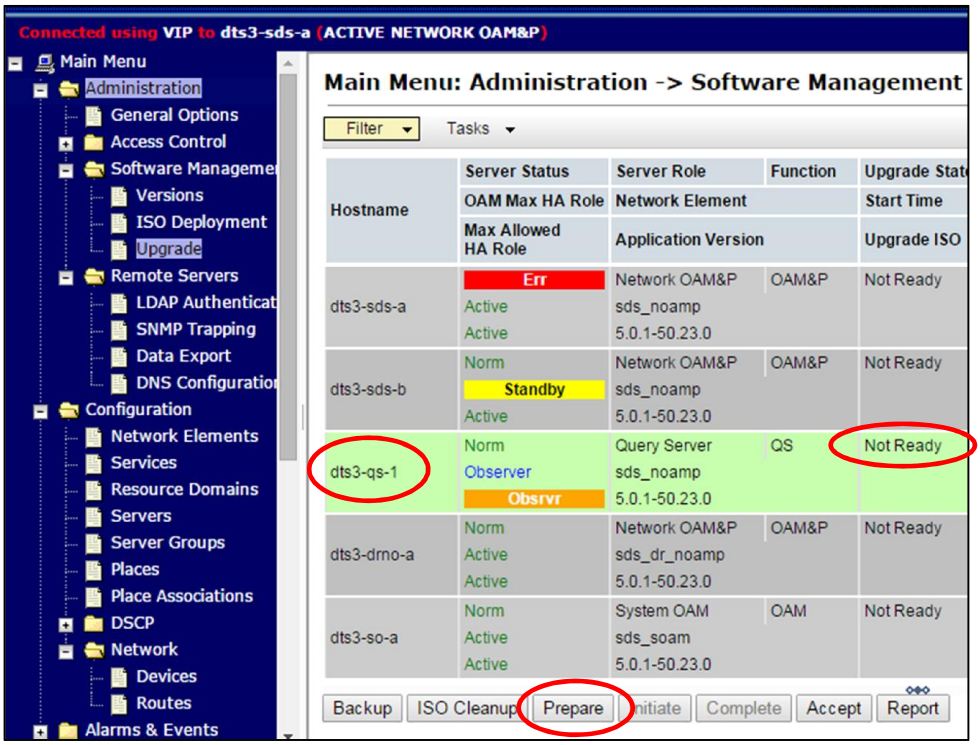
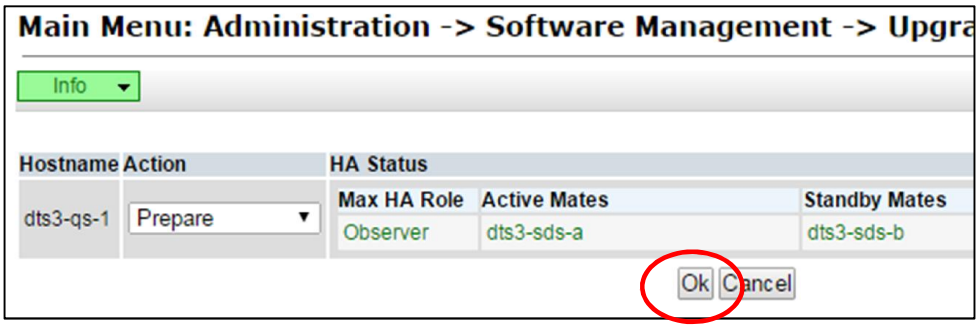
Step	Procedure	Result
26. ☐	**Primary SDS NOAM VIP (GUI):** **1)** Select the **"Save"** dialogue button from the bottom/middle of the right panel. **2)** Click the **"Save"** dialogue button on the File Download pop-up box. **3)** Select a directory on the local disk drive to store the "Server Group Report" file and click the **"Save"** dialogue button.	 1  2  3
27. ☐	Provide the saved files to Oracle's Tekelec Customer Care Center for Health Check Analysis.	• If executing this procedure as a pre or post Upgrade Health Check (HC1/HC2/HC3), provide the following saved files to Oracle's Tekelec Customer Care Center for proper Health Check Analysis: ○ **Active "Alarms & Events" Report** [Appendix B, Step 14] ○ **Network Elements Report** [Appendix B, Step 18] ○ **Server Report** [Appendix B, Step 22] ○ **Server Group Report** [Appendix B, Step 26]

Appendix B: Health Check Procedures

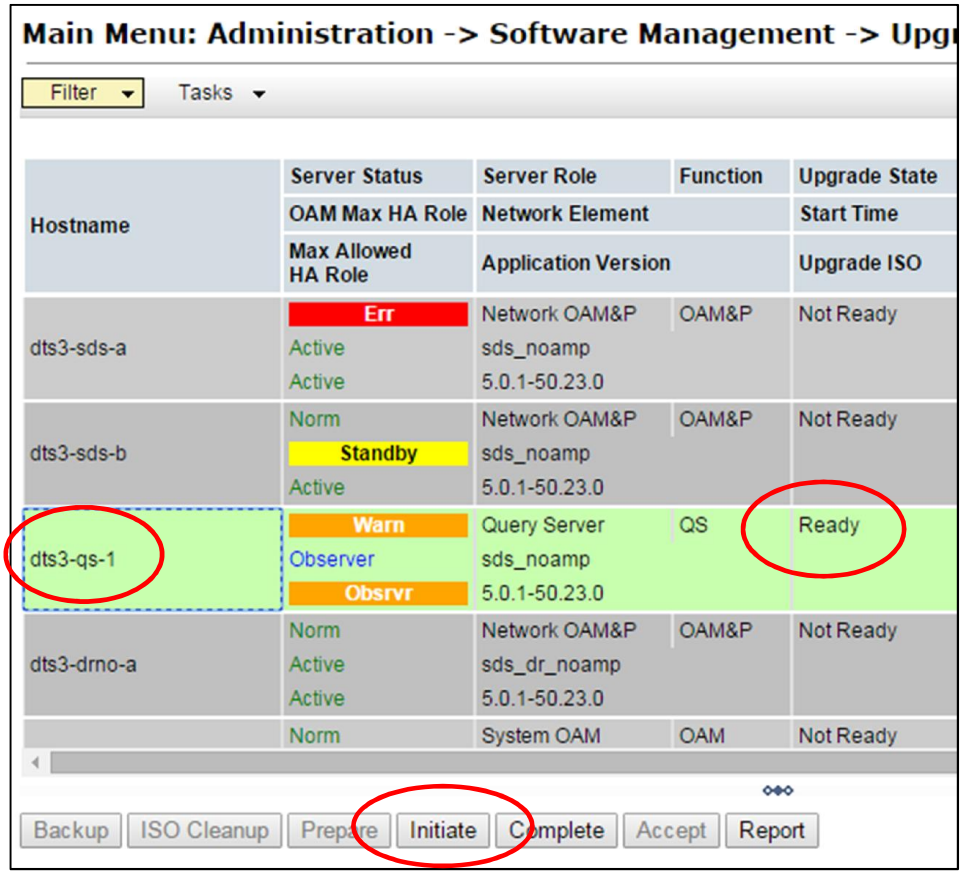
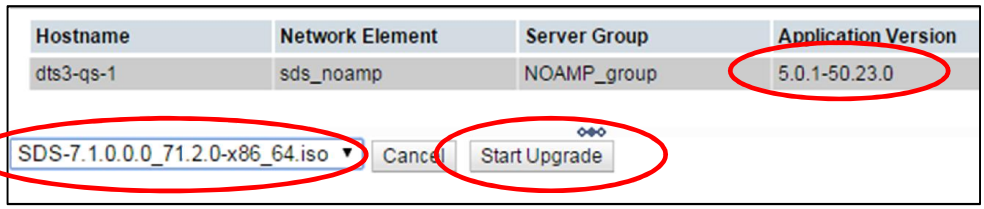
Step	Procedure	Result
28. ☐	**Primary SDS NOAM VIP (GUI):** Select… **Main Menu** **→ Status & Manage** **→ HA** …as shown on the right.	
29. ☐	**Primary SDS NOAM VIP (GUI):** **1)** Verify that the **"OAM HA Role"** for all servers shows either **"Active"** or **"Standby"** as shown to the right. **NOTE:** An **"HA Status"** of **"Observer"** is allowed when Server Role is **"Query Server"**.	
30. ☐	**Primary SDS NOAM VIP (GUI):** Verify the **"OAM HA Role"** for all remaining servers on the **[Main Menu: Status & Manage → HA]** screen.	• 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.
THIS PROCEDURE HAS BEEN COMPLETED		

APPENDIX C. UPGRADE SERVER ON SDS 5.0

Appendix C: Upgrade Server on SDS 5.0

Step	Procedure	Result
1. ☐	Using **VIP** address, access the **Primary SDS NOAM GUI**.	• Using **VIP** address, access the **Primary SDS NOAM GUI** as described in **Appendix A.**
2. ☐	**SDS 5.0 only** **Primary SDS NOAM VIP:** **1)** Select… **Main Menu** **→ Administration** **→Software Management** **→ Upgrade** **2)** Using the vertical scroll bar in the right panel, scroll to the row containing the **hostname** of the server to be upgraded. **3)** Verify that the **Upgrade State** shows **"Not Ready"**. **4)** Click the **"Prepare"** dialogue button located in the bottom left of the right panel.	
3. ☐	**Primary SDS NOAM VIP:** The user should be presented with the **Upgrade [Make Ready]** screen. Click on **"Ok"** dialogue button.	

Appendix C: Upgrade Server on SDS 5.0

Step	Procedure	Result
4. ☐	**Primary SDS NOAM VIP:** **1)** Select… **Main Menu** **→ Administration** **→Software Management** **→ Upgrade** **2)** Using the vertical scroll bar in the right panel, scroll to the row containing the **hostname** of the server to be upgraded. **3)** Verify that the **Upgrade State** shows **"Ready"**. **NOTE:** If the **Upgrade State** fails to show **"Ready"**, the user may need to repeat above sub-steps **3)** Click the **"Initiate"** dialogue button	
5. ☐	**Primary SDS NOAM VIP:** 1) Verify that the **Application Version** shows the **<source_release>** 2) Using the pull-down menu, select the **<target_release>** 3) Click the **"Start Upgrade"** dialogue button	

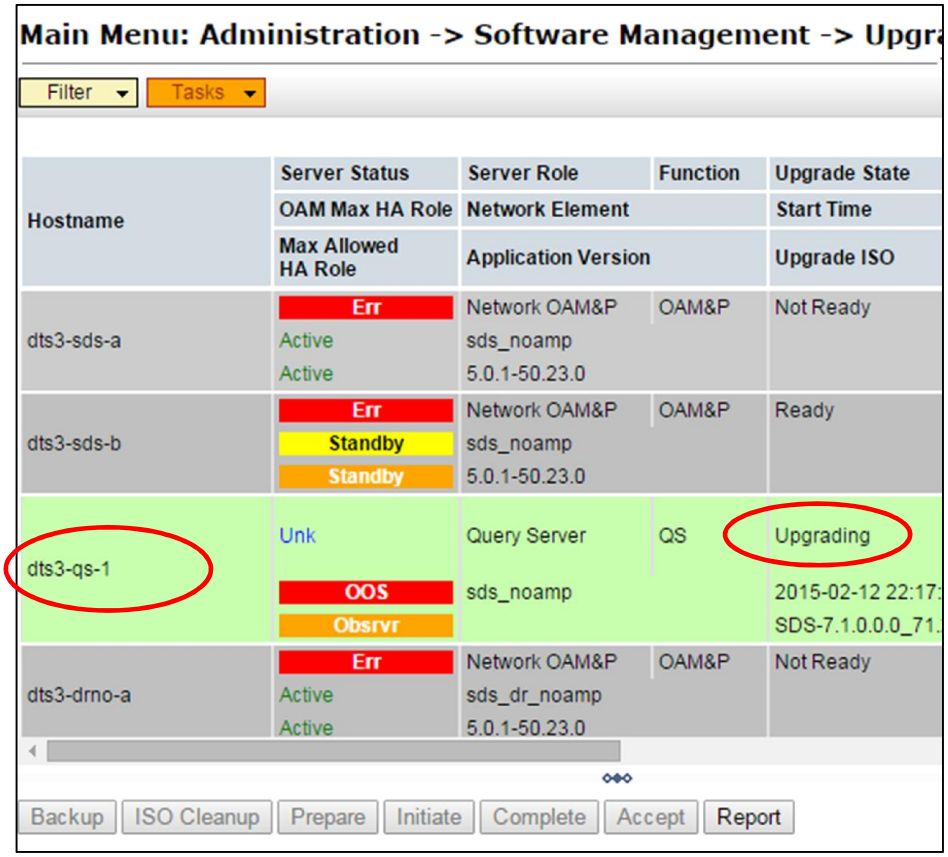
Appendix C: Upgrade Server on SDS 5.0

<table>
<tr><th>Step</th><th>Procedure</th><th>Result</th></tr>
<tr><td>6.
☐</td><td>Primary SDS NOAM VIP:
The user is returned to the…

<u>Main Menu</u>
→ Administration
→Software Management
→ Upgrade

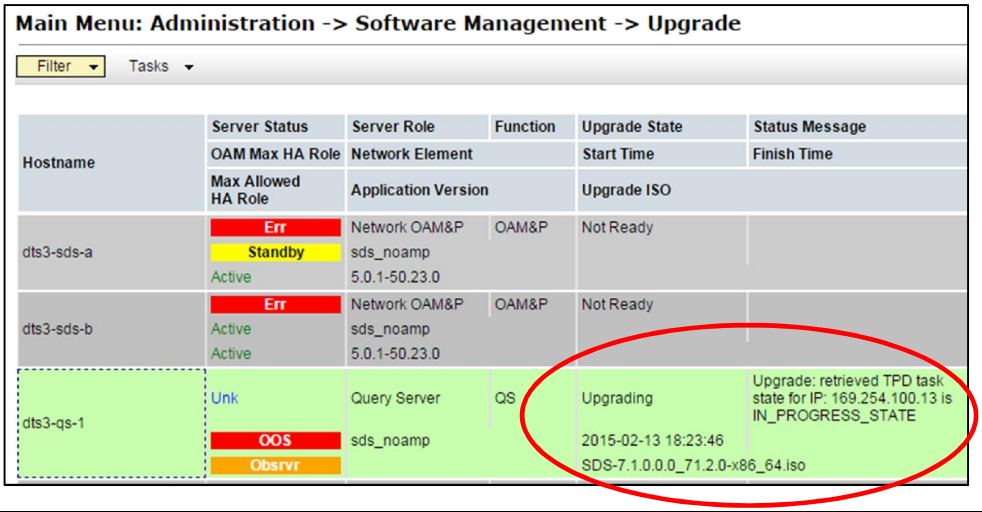
…screen as shown on the right.

1) Scroll to the row containing the hostname of the server to be upgraded.

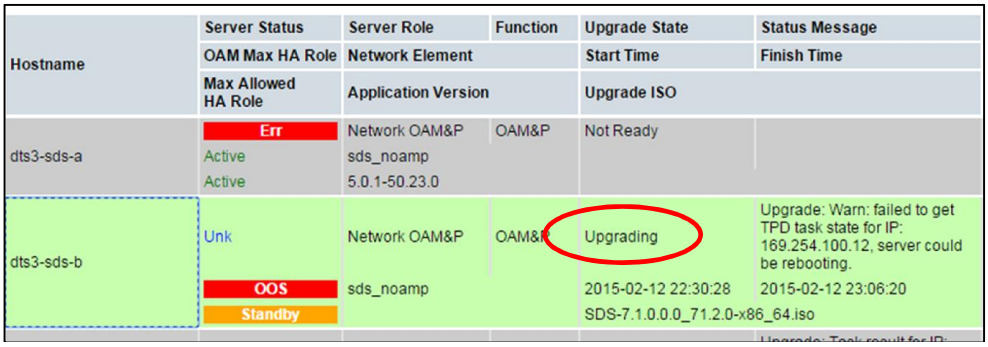
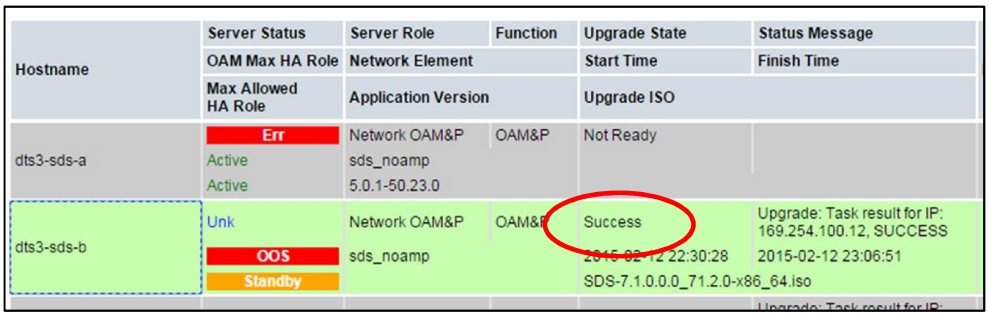
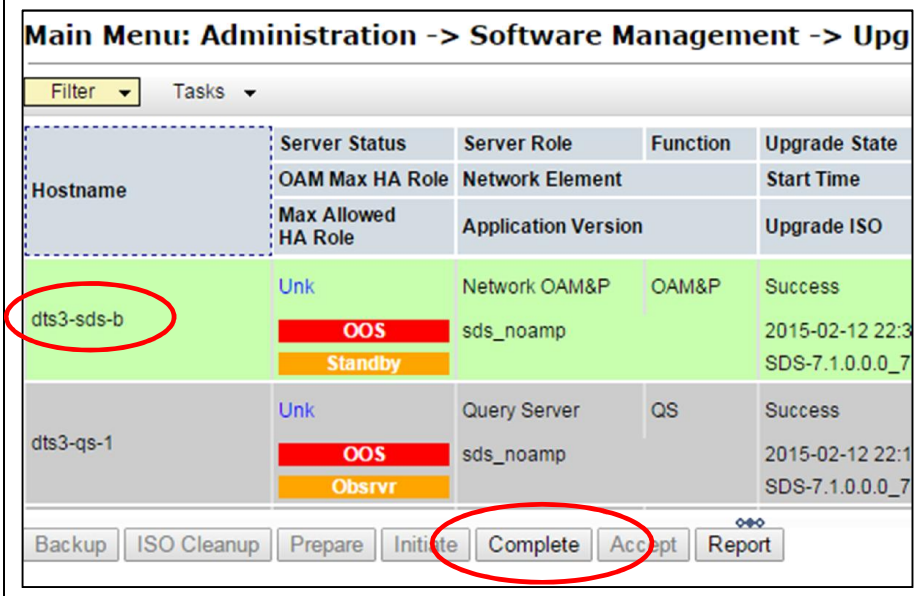
2) Verify that the Upgrade State shows “Upgrading”.</td><td> 

NOTE: As a result of the server undergoing upgrade, several alarms related to “DB Replication” (Event IDs 31101, 31102, 31106, 31107, and 31114) may appear and remain present until the upgrade has been completed.</td></tr>
<tr><td>7.
☐</td><td>Primary SDS NOAM VIP:
1) Select…
<u>Main Menu</u>
→ Administration
→Software Management
→ Upgrade

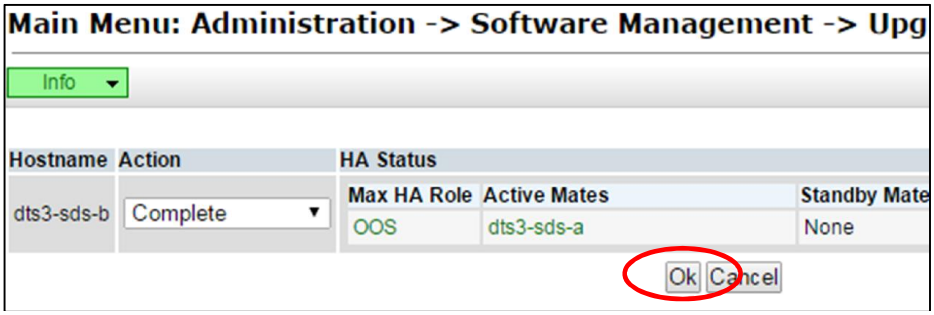
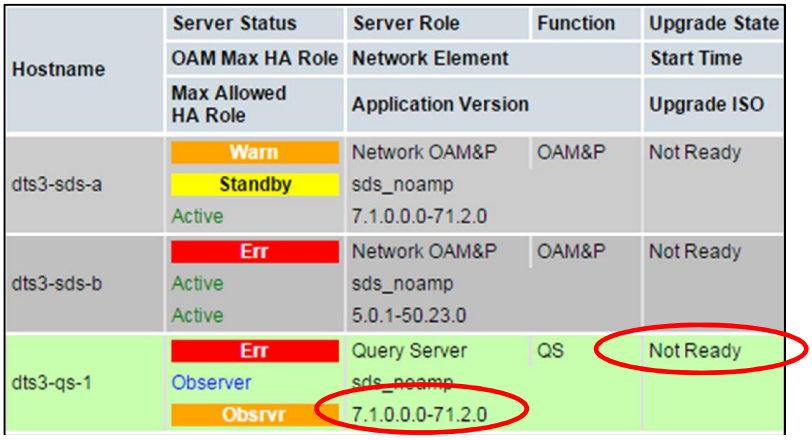
2) The Upgrade State field should be Upgrading

3) The Status Message field should contain status IN_PROGRESS_STATE</td><td> 
</td></tr>
</table>

Appendix C: Upgrade Server on SDS 5.0

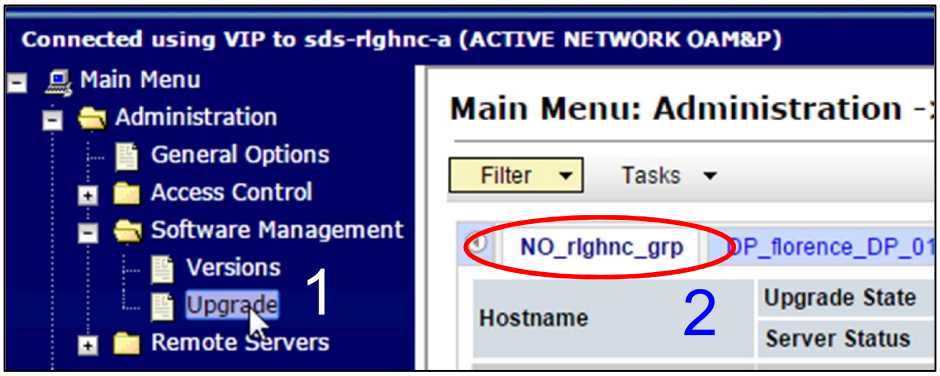
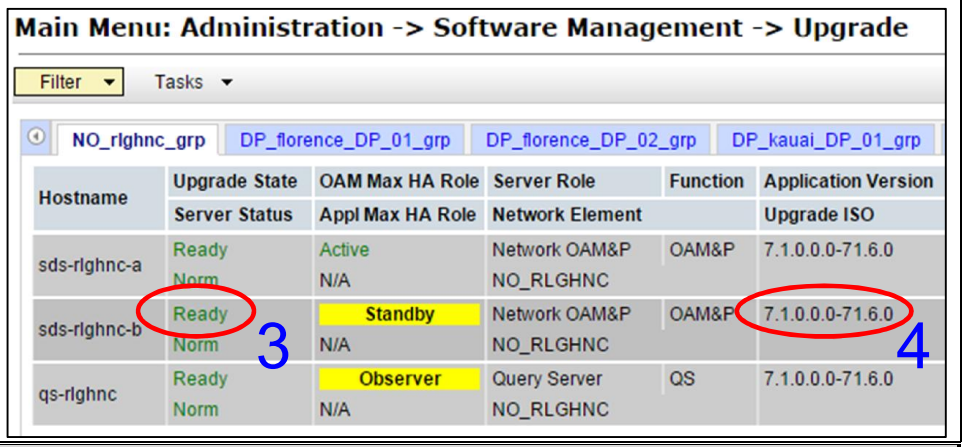
Step	Procedure	Result
8. ☐	**Primary SDS NOAM VIP:** When the server initiates a post-upgrade reboot, the **Upgrade State** field should be **Upgrading**	
9. ☐	**Primary SDS 5.0 Site VIP:** After the post-upgrade reboot has been completed, the **Upgrade State** field should be **Succes**	
10. ☐	**Primary SDS NOAM VIP:** **1)** Select… **Main Menu** **→ Administration** **→Software Management** **→ Upgrade** **2)** Select the row containing the **hostname** of the upgraded server **3)** Click the **"Complete"** dialogue button	

Appendix C: Upgrade Server on SDS 5.0

Step	Procedure	Result
11. ☐	**Primary SDS NOAM VIP:** The user presented with the **Upgrade [Complete]** screen. Click an **"Ok"** dialogue button.	
12. ☐	**Primary SDS NOAM VIP:** The user presented with the **Upgrade** screen. **1)** Verify that the **Application Version** now shows the **<target_release>**. **2)** Verify that the **Upgrade State** shows **"Not Ready"**.	
THIS PROCEDURE HAS BEEN COMPLETED		

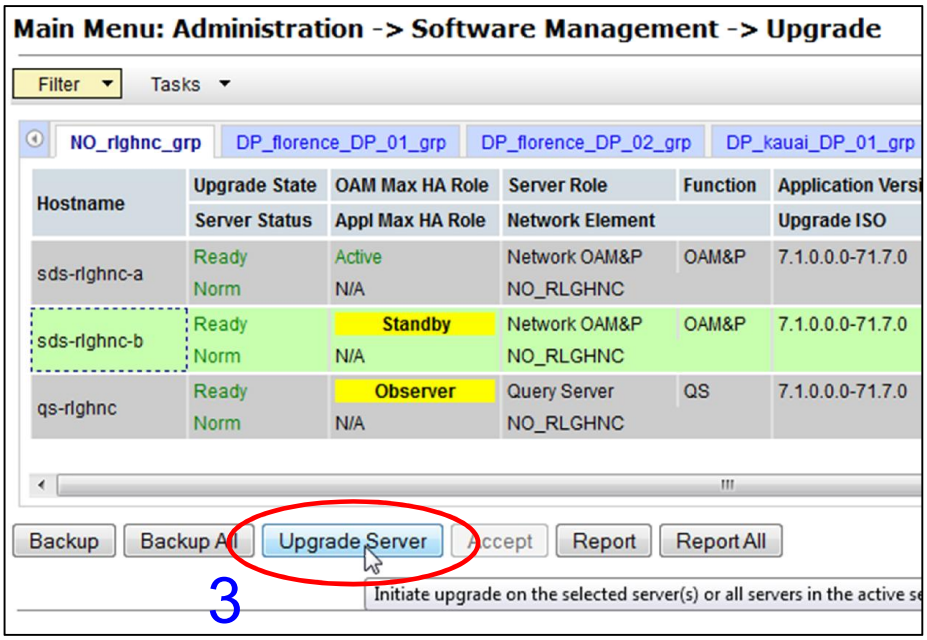
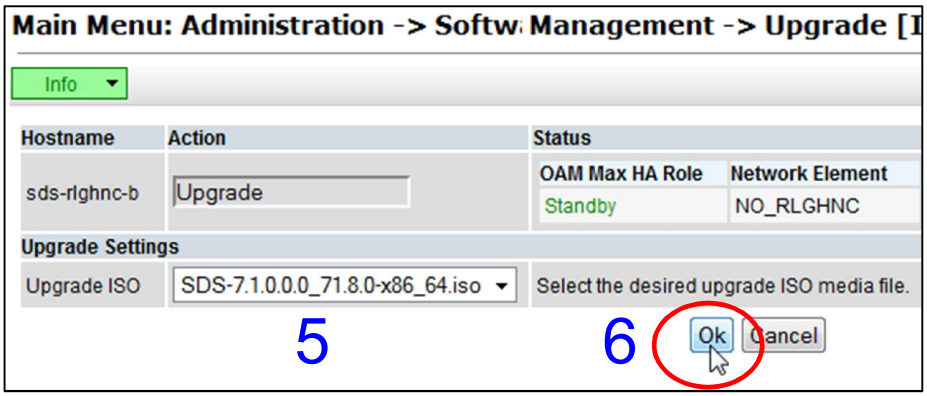
APPENDIX D. SERVER UPGRADE ADMINISTRATION ON SDS 7.X

Appendix D: Server Upgrade Administration on SDS 7.x

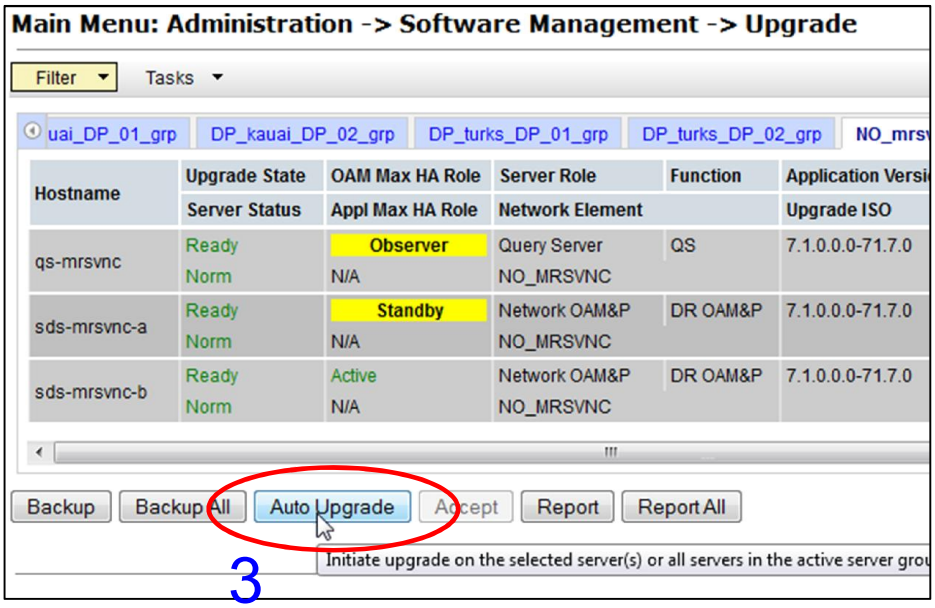
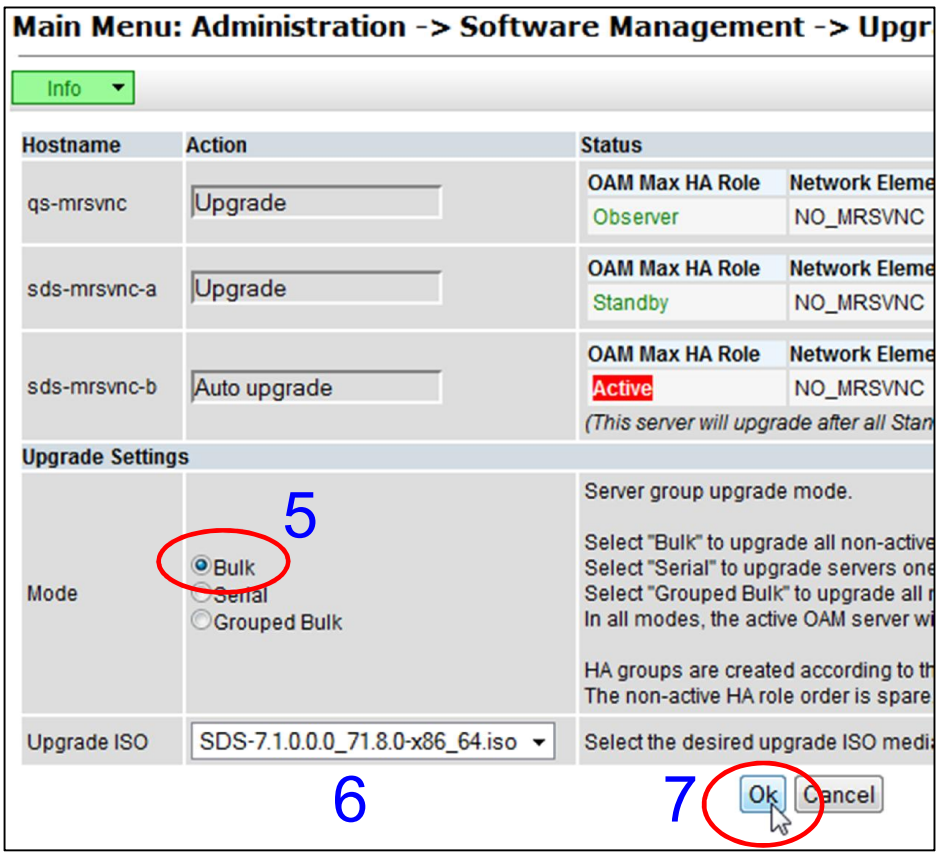
Step	Procedure	Result
1. ☐	Using **VIP** address, access **the Primary SDS NOAM GUI**.	• Using **VIP** address, access the **Primary SDS NOAM GUI** as described in **Appendix A.**
2. ☐	**Primary SDS NOAM VIP (GUI):** **1)** Select… **Main Menu** **→ Administration** **→Software Management** **→ Upgrade** **2)** Select **Server Group** tab for the server(s) to be upgraded. **3)** Verify that the **"Upgrade State"** shows **"Ready"** for the server(s) to be upgraded. **4)** Verify the **Application Version** value for server(s) is the source software release version	 

- If executing **Server Group "Auto Upgrade"**, then **SKIP** to **Step 4** of this procedure.
  - *Allowed for **DR NOAM** & **SOAM** Server Groups only!*
- If executing **Single Server** *(or multi-selected)* **Upgrade**, then continue with **Step 3** of this procedure.
  - *Required for **Primary NOAM** & **DP** Server Groups.*

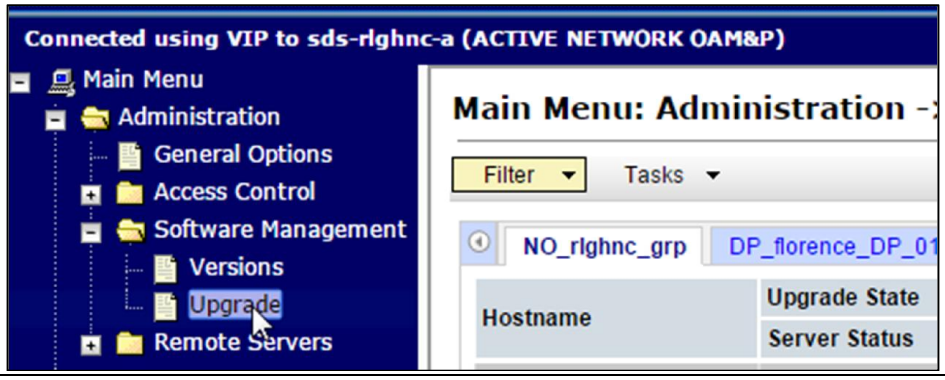
Appendix D: Server Upgrade Administration on SDS 7.x

Step	Procedure	Result
3. ☐	**Primary SDS NOAM VIP:** ***This Step:*** ***Single Server (or multi-selected) Upgrade only!*** **1)** Use the **[CTRL]** key to **multi-select** individually server(s) for upgrade. **2)** Ensure the **"Upgrade Server"** dialogue button is enabled. **3)** Click the **"Upgrade Server"** dialogue button. **4)** The user should be presented with the **Upgrade [Initiate]** screen **5)** Select the **Upgrade ISO** file to be used in the server upgrade. **6)** Click the "**Ok**" dialogue button to start rthe upgrade. **7) SKIP** to **Step 5** of this procedure. **NOTE**: *During server upgrade, multiple alarms are expected and can be safely ignored. These include but are not limited to the following:* **Event ID:** *10073, 10075, 31101, 31102, 31106, 31107, 31114 & 31283*	 

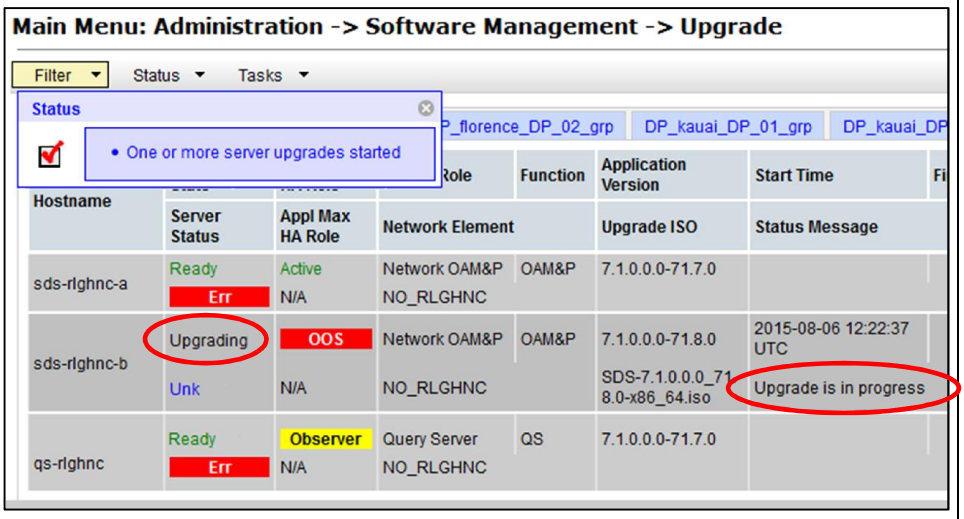
Appendix D: Server Upgrade Administration on SDS 7.x

Step	Procedure	Result
4. ☐	**Primary SDS NOAM VIP:** ***This Step:*** ***Server Group "Auto Upgrade" only!*** **!! WARNING !!** **DO NOT** use the **"Auto Upgrade"** option when upgrading the **"Primary" SDS NOAM** Server Group. **1) DO NOT** select any servers if using **Auto Upgrade** for the **Server Group**. **2)** Ensure the **"Auto Upgrade"** dialogue button is enabled. **3)** Click the **"Auto Upgrade"** dialogue button. **4)** The user should be presented with the **Upgrade [Initiate]** screen **5)** Select **"Bulk"** mode. **6)** Select the **Upgrade ISO** file to be used in the server upgrade. **7)** Click the "**Ok**" dialogue button to start rthe upgrade. **NOTE**: *When Auto Upgrade **"Bulk"** mode is selected, all non-Active servers will be upgraded first (e.g. Standby, Query Server, etc.).* **NOTE**: *During server upgrade, multiple alarms are expected and can be safely ignored. These include but are not limited to the following:* **Event ID:** *10073, 10075, 31101, 31102, 31106, 31107, 31114 & 31283*	 

Appendix D: Server Upgrade Administration on SDS 7.x

Step	Procedure	Result
YIELD		• If upgrading the formerly **"Active" Primary SDS NOAM** server *(i.e. 2nd NOAM to be upgraded)*, then continue with **Step 5** of this procedure. • Otherwise, **SKIP** to **Step 10** of this procedure.
5. ☐	**Primary SDS NOAM VIP:** If upgrading the **"Active" Primary SDS NOAM Server,** an **HA Switchover** will occur at this time.	• The user's **GUI** session will end as the **"Active" Primary SDS Server** goes through **HA Switchover** and becomes the **"Standby"** server.
6. ☐	**Primary SDS NOAM VIP:** Use the **[Logout]** link in the top right of the browser to logout of the **SDS NOAM GUI**.	
7. ☐	**Primary SDS NOAM VIP:** **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: **1)** Simultaneously hold down the **[Ctrl]**, **[Shift]** and **[Delete]** keys *(most Web browsers)*. **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.**
8. ☐	Using **VIP** address, access **the Primary SDS NOAM GUI**.	• Using **VIP** address, access the **Primary SDS NOAM GUI** as described in **Appendix A.**
9. ☐	**Primary SDS NOAM VIP:** **1)** Select… **Main Menu** → **Administration** →**Software Management** → **Upgrade**	

Appendix D: Server Upgrade Administration on SDS 7.x

<table>
<tr><th>Step</th><th>Procedure</th><th>Result</th></tr>
<tr><td>10.
☐</td><td>Primary SDS NOAM VIP:
The user should now monitor the “Upgrade State” and the “Status Message” for the servers being upgraded.</td><td> 
</td></tr>
<tr><td>11.
☐</td><td>Primary SDS NOAM VIP:
As Upgrade executes for each server, the user will observe the following states.

NOTE: Some states may transition faster than the screen refresh rate and appear to skip.</td><td>
<table>
<tr><th>Sequence</th><th>Upgrade State</th><th>Status Message</th></tr>
<tr><td>1.</td><td>Pending</td><td>Pending Upgrade</td></tr>
<tr><td>2.</td><td>Preparing</td><td>Upgrade task started</td></tr>
<tr><td>3.</td><td>Validating</td><td>Validating upgrade ISO image</td></tr>
<tr><td>4.</td><td>Upgrading</td><td>Upgrade is in progress</td></tr>
<tr><td>5.</td><td>Rebooting</td><td>Warn: failed to get TPD task state, server could be rebooting.</td></tr>
<tr><td>6.</td><td>Not Ready</td><td>Upgraded server to new ISO</td></tr>
<tr><td>7.</td><td>Accept or Reject</td><td>Success: Server upgrade is complete</td></tr>
</table>
</td></tr>
<tr><td colspan="3"> 

!!! 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 J: Recovering from a Failed Upgrade.</td></tr>
<tr><td>12.
☐</td><td>Primary SDS NOAM VIP:
View post-upgrade status</td><td>View post-upgrade status of the server(s):

Post-Upgrade, upgraded servers will have the following expected alarm.

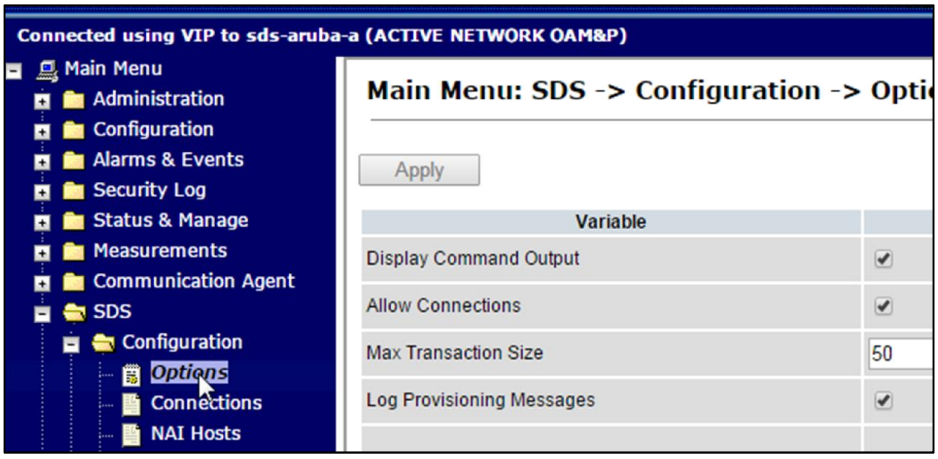
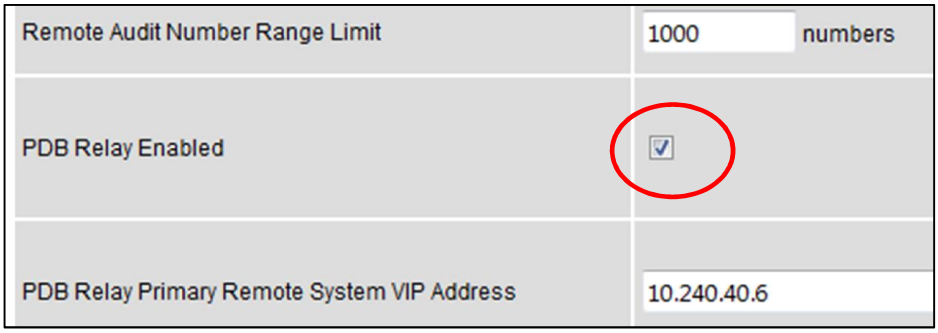
• Event ID (s): 32532 (Server Upgrade Pending Accept/Reject)</td></tr>
<tr><td>13.
☐</td><td>Return to the referring Procedure.</td><td>• The user should now return to the Procedure/Step which referred them to Appendix D (Server Upgrade Administration on SDS 7.x).</td></tr>
<tr><td colspan="3">THIS PROCEDURE HAS BEEN COMPLETED</td></tr>
</table>

APPENDIX E. BACKOUT OF A SINGLE SERVER

Appendix E: Backout of a Single Server

Step	Procedure	Result
1. ☐	**Primary SDS NOAM VIP:** Ensure that the server to be downgraded is in the **"Accept or Reject"** state.	1. Select the **[Main Menu: Administration →Software Management → Upgrade]** screen. 2. Select the **tab** containing the server(s) to be backed out. 3. Verify its Upgrade State is **"Accept or Reject"**.
2. ☐	**Primary SDS NOAM VIP:** Set the **Max Allowed HA Role** to **"Standby"**.	1. Select the **[Main Menu: Status & Manage →HA]** screen; *the HA status screen displays.* 2. Press the **"Edit"** button. 3. 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**)*. 4. Press the **"Ok"** button; *the HA status screen displays.* Verify that the **Max Allowed HA Role** is set to the values specified above.
YIELD	• If downgrading the **"Active" Primary SDS NOAM** server, then continue with **Step 3** of this procedure. • Otherwise, **SKIP** to **Step 13** of this procedure.	
3. ☐	**Primary SDS NOAM VIP:** If downgrading the **"Active" Primary SDS NOAM Server,** an **HA Switchover** will occur at this time.	• The user's **GUI** session will end as the **"Active" Primary SDS Server** goes through **HA Switchover** and becomes the **"Standby"** server.
4. ☐	**Primary SDS NOAM VIP:** Use the **[Logout]** link in the top right of the browser to logout of the **SDS NOAM GUI**.	
5. ☐	**Primary SDS NOAM VIP:** **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.**

Appendix E: Backout of a Single Server

Step	Procedure	Result
6. ☐	Using **VIP** address, access **the Primary SDS NOAM GUI**.	• Using **VIP** address, access the **Primary SDS NOAM GUI** again as described in **Appendix A.**
7. ☐	**Primary SDS NOAM VIP (GUI):** Select… **Main Menu** → **SDS** → **Configuration** → ***Options*** …as shown on the right.	
8. ☐	**Primary SDS NOAM VIP:** Locate the **"PDB Relay Enabled"** checkbox and determine if it is **CHECKED** or **NOT CHECKED**. Record the value	 **CHECKED** *(Yes/No)* **PDB Relay Enabled** _____
YIELD	• If the **PDB Relay Enabled** checkbox is **NOT CHECKED,** then **SKIP** to **Step 13** of this procedure. • If the **PDB Relay Enabled** checkbox is **CHECKED, CONTINUE** with **Step 9** of this procedure.	

9. ☐	**Primary SDS NOAM VIP (CLI):**
	Using the **VIP** address, login to the **"Active" Primary SDS NOAM** with the **admusr** account.
		`CentOS release 5.7 (Final)`
		`Kernel 2.6.18-274.7.1.e15prerel5.0.0_72.32.0 on an x86_64`
		
		`sds-rlghnc-b login: admusr`
		`Password: <admusr_password>`

Appendix E: Backout of a Single Server

Step	Procedure	Result
10. ☐	**Primary SDS 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 PRODPATH=/opt/comcol/prod RUNID=00 [admusr@sds-rlghnc-b ~]$
11. ☐	**Primary SDS NOAM VIP:** Set the **pdbRelay TimeStamp"** to **"0"**.	[admusr@sds-rlghnc-b ~]$ **iset -fvalue=0 ProvOptions where "var='pdbRelayMsgLogTimeStamp'"** [admusr@sds-rlghnc-b ~]$
12. ☐	**Primary SDS NOAM VIP:** Exit the **CLI** for the **"Active" Primary SDS NOAM.**	[admusr@sds-rlghnc-b ~]$ **exit** logout
13. ☐	**Primary SDS NOAM VIP (GUI):** **Stop** the software.	1. Select the **[Main Menu: Status & Manage → Server]** screen; *the Server status screen displays.* 2. Select the server(s) to be backed out and press the **"Stop"** button. 3. Click **"OK"** to confirm the operation. 4. Verify that the **Appl State** updates to **"Disabled"**
14. ☐	**Primary SDS NOAM VIP:** Verify that the server(s) are **Backout Ready**.	1. Reselect the **[Main Menu: Administration →Software Management → Upgrade]** screen. 2. Reselect the tab of the server group containing the server(s) to be backed out. **NOTE:** *It might take a couple minutes for the grid to update.* If the **Primary Active SDS** is at **7.1** release, then verify its Upgrade State is displayed as **"Backout Ready"** If the **Primary Active SDS** is at **5.0** release, then verify its Upgrade State is displayed as **"Ready"** ***NOTE:*** *If this is the Active server in an Active-Standby pair, these steps WILL cause an HA switchover. The HA switchover is an expected outcome. Continue the steps on the new Active NOAMP.*
15. ☐	**Server CLI:** **SSH** to the server(s) to be backed out.	Use your SSH client to connect to the server (ex. ssh, PuTTY): Note: You must consult your own software client's documentation to learn how to launch a connection. For example: **ssh <server address>** ***NOTE****: If you do not have direct access to the XMI, then you must access the target server via a connection through the active NO. SSH to the active NO XMI first. Once you are logged into the NO; from there, SSH to the target server's XMI address.*
16. ☐	**Server CLI:** Login as user **"admusr"**.	**login as: admusr** **password: <enter password**

Appendix E: Backout of a Single Server

Step	Procedure	Result

17. ☐	**Server CLI:**
	Execute the backout
		Execute the backout using the reject script:
		`$ sudo /var/TKLC/backout/reject`
		Output similar to that shown below will appear on the screen.
		Answer **"y"** to continue the backout.
		***** TRUNCATED OUTPUT *****
		`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`

18. ☐	**Server CLI:** Backout proceeds followed by an **automatic reboot**.	Many informational messages will come across the terminal screen as the backout proceeds: Finally, after reject is complete, the server will automatically **reboot** and the user will be automatically logged out.
19. ☐	**Server CLI:** **SSH** to the server(s) to be backed out.	After the reboot has completed, use your SSH client to reconnect to the server (ex. ssh, PuTTY): Note: You must consult your own software client's documentation to learn how to launch a connection. For example: `ssh <server address>` NOTE: If you do not have direct access to the XMI, then you must access the target server via a connection through the active NO. SSH to the active NO XMI first. Once you are logged into the NO; from there, SSH to the target server's XMI address.

20. ☐	**Server CLI:**
	Login as user **"admusr"**.
		These commands are performed as admusr, and it is necessary to use sudo for some of the commands.
		`login as:  admusr`
		`password:  <enter password>`

Appendix E: Backout of a Single Server

Step	Procedure	Result

21. ☐	**Server CLI:**
	Verify the Backout
		Examine the upgrade logs in the directory /var/TKLC/log/upgrade and verify that no errors were reported:
		`$ grep ERROR /var/TKLC/log/upgrade/upgrade.log`
		1. Examine the output of the above commands to determine if any errors were reported.
		Note: The following errors can be ignored:
		`DEBUG: 'iqt' command failed (is IDB running?)`
		and/or
		`ERROR: createVolumes needs logical volume objects passed in.`
		`ERROR: There was a problem creating Logical Volumes.`
		`ERROR: Check log for error relating to exitCode: 6.`
		`ERROR-{HA::Mgr}: No Clusternode found for resource entry, (tklc-ha-active)!`
		`ERROR-{HA::Mgr}: Failed to initialize ResourceConf!`
		`ERROR: generateTest did not return an object!`
		`ERROR: Should not happen!`
		`ERROR: failed to initialize HA syscheck modules`
		`ERROR: failed to restart syscheck`
		2. If the backout was not successful because other errors were recorded in the logs, then contact Oracle Customer Care Center for further instructions.
		3. If the backout was successful (no errors or failures), then continue with the remaining steps.

22. ☐	**Server CLI:**
	Restore the COMCOL Full DB/Run environment.
	
	NOTE: *The COMCOL restore process may take several minutes to complete.*
		Execute the backout_restore utility to restore the full database run environment.
		`$ sudo /var/tmp/backout_restore`
		Output similar to that shown below will appear on the screen.
		Answer **"y"** to continue the restore.
		***** TRUNCATED OUTPUT *****
		`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`
		If the restore was successful, the following will be displayed:
		`Success: Full restore of COMCOL run env has completed. Return to the backout procedure document for further instruction.`
		If an error is encountered and reported by the utility, then work with Oracle Customer Care Center for further instructions.

23. ☐	**Server CLI:** Reboot the server	Enter the following command to reboot the server. `$ sudo init 6` This step can take several minutes and will terminate the SSH session.

Appendix E: Backout of a Single Server

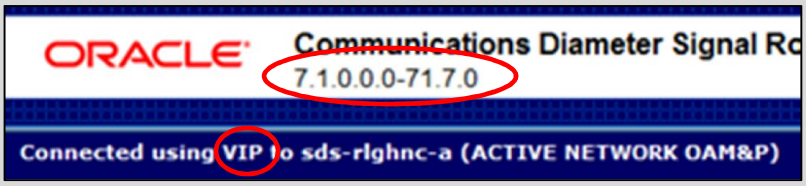
Step	Procedure	Result
24. ☐	**Server CLI:** **SSH** to the server(s) which were backed out.	After the reboot has completed, use your SSH client to reconnect to the server (ex. ssh, PuTTY): Note: You must consult your own software client's documentation to learn how to launch a connection. For example: `ssh <server address>` **NOTE:** *If you do not have direct access to the XMI, then you must access the target server(s) via an SSH connection from the active NO. SSH to the active NO XMI first, then from there, SSH to the target server's XMI address.*

25. ☐	**Server CLI:**
	Login as user **"admusr"**.
		These commands are performed as admusr, and it is necessary to use sudo for some of the commands.
		
		`login as: admusr`
		`password: <enter password>`

26. ☐	**Server CLI:**
	Verify that the **"httpd"** service has restarted.
		Verify services are have restarted:
		
		1. If this is an NO or SO, verify httpd service is running.
		
		`$ sudo service httpd status`
		
		2. Verify expected output displays httpd is running (the process IDs are variable so the actual number value can be ignored):
		
		`httpd (pid xxxx) is running...`
		
		3. If httpd is not running, wait for a few minutes and retry the above command. If httpd is still not running after 3 minutes, then services have failed to restart. Contact Oracle Customer Care Center for further instructions.

27. ☐	**Primary SDS NOAM VIP (GUI):** Verify the server(s) **Application Version** and **Upgrade State.**	**1.** Select the **[Main Menu: Administration →Software Management → Upgrade]** screen. **2.** Select the **tab** containing the server(s) which were backed out. **3.** Verify the **Application Version** value for this server has been backed out to the source release version. **4.** Verify the **Upgrade State**.

Appendix E: Backout of a Single Server

Step	Procedure	Result
		For Primary Active SDS at release 7.1: ○ If the **Upgrade State** is **"Ready"**, **SKIP** to **Step 34** of this procedure. ○ If the **Upgrade State** is **"Not Ready"**, then proceed to **Step 28** of this procedure. ***For Primary Active SDS at release 5.0:*** *(i.e due to backout of the entire topology)* ○ If the **Upgrade State** is **"Not Ready"**, then **SKIP** to **Step 34** of this procedure. ○ If the **Upgrade State** is **"Ready"**, then **SKIP** to **Step 31** of this procedure. **NOTE:** *The **Primary Active SDS** release can be seen on the **NOAM GUI** banner (via the **VIP**).* 
28. ☐	**Primary SDS NOAM VIP:** ***(Primary Active SDS release 7.1)*** Set the **Max Allowed HA Role** to **"Active"**.	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**. **1.** Select the **[Main Menu: Status & Manage → HA]** screen; *the HA status screen displays.* **2.** Press 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 remain set to **Observer**).* **4.** Press the **"Ok"** button; *the HA status screen displays.* **5.** Verify that the **Max Allowed HA Role** is set to the values specified above.
29. ☐	**Primary SDS NOAM VIP:** **Restart** the software.	**1.** Select **[Main Menu: Status & Manage → Server]** screen; *the Server status screen displays.* **2.** If the server(s) which were backed out show an **Appl State** state of **"Enabled"**, **SKIP** to the next Step. **3.** If the server(s) which were backed out show an **Appl State** state of **"Disabled"**, select the server(s) press **"Restart"** button. **4.** Click **"OK"** to confirm the operation. **5.** Verify that the **Appl State** updates to **"Enabled"**.
30. ☐	**Primary SDS NOAM VIP:** **Verify** the **Upgrade State**.	**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 34** of this procedure.
31. ☐	**Primary SDS NOAM VIP:** ***(Primary Active SDS release 5.0)*** **Stop** the software *(if necessary).*	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"**. **1.** Select **[Main Menu: Status & Manage →Server]** screen; *the Server Status screen displays.* **2.** If the server(s) which were backed out show an **Appl State** of **"Enabled"**, then select the server(s) and press the **Stop** button**.**
32. ☐	**Primary SDS NOAM VIP:** Verify the server(s) **Upgrade State.**	**1.** Select **[Main Menu: Administration → Software Management → Upgrade]** screen; *the Upgrade Administration screen displays.* **2.** If the server(s) which were backed out show an **Upgrade State** is **"Not Ready"**, **SKIP** to **Step 34** of this procedure.

Appendix E: Backout of a Single Server

Step	Procedure	Result
33. ☐	**Primary SDS NOAM VIP:** **"Complete"** the backout action *(if necessary)*.	**1.** If the server(s) which were backed out show an **Upgrade State** of **"Ready"** or **"Success"**, then **2.** Select the server(s) which were backed out and press the **"Complete"** button. **3.** The **Upgrade [Complete]** screen will appear. Leave the Action set to its default value of "Complete". **4.** Click **"OK"** to confirm the action; *this will update the **Max Allowed HA Role** of the backed out server(s) to **Active**, which will cause the server **Upgrade State** to change to **Not Ready**.* The user may see the following SOAP error appear in the GUI banner. `SOAP error while clearing upgrade status of hostname=[frame10311b6] ip=[172.16.1.28]` **NOTE:** *It is safe to ignore this error message.*
34.	**Backout** has been completed.	• **Return to the referring procedure.**
THIS PROCEDURE HAS BEEN COMPLETED		

APPENDIX F. VERIFYING SHARED SEGMENTS AND LOGICAL VOLUMES

This procedure verifies increases in database size needed by imports in SDS 5.0 and re-aligns existing partition sizes to meet the resource demands of SDS **5.0**. This script can be run for all servers at once or for one server at a time.

!!! IMPORTANT !!! This procedure is a prerequisite for **Major Upgrade** from **SDS 5.0 to SDS 7.x only. DO NOT** execute for **7.x to 7.y** Incremental upgrades.

STOP !

☐ ***Before executing this procedure…***

1. Please login to the **"My Oracle Support" (MOS)** website

   *See **Appendix K:** Accessing My Oracle Support (MOS) if assistance is needed.*
2. From the **Dashboard**, click on the **"Patches & Updates"** tab.
3. Search for **"Patch 20513402"** *(SDS 5.0 Patch for Bug 20418367)*
4. Download the patch and replace the **"/usr/TKLC/sds/bin/lv50fix"** script on the "**Active" Primary SDS NOAM** server.

Appendix F: Verifying Shared Segments and Logical Volumes

Step	Procedure	Result
1. ☐	**Primary SDS VIP (SSH):** To validate *all* servers, login to the Primary SDS Active server	• Run this command to validate ***all*** servers: `# /usr/TKLC/sds/bin/lv50fix validate all` **NOTE**: *This script produces much output and, first, verifies if all servers in the entire SDS topology are ready to have their shared segments and logical volumes resized. Then it performs those changes on all servers in the SDS topology.*

2. ☐	**Primary SDS VIP (SSH):**
	
	When validating ***all*** servers, the user will see output similar to that shown to the right
		`# /usr/TKLC/sds/bin/lv50fix validate all`
		`lv50fix script is running command "validate all" saving output in "/tmp/lv50fix.log.03_04_2015.02"`
		
		`Verify sdsSO-carync-b, SYSTEM_OAM, using VG Size: 112352.00m ...`
		`Verified final shared segment size: 8192 matches final: 8192`
		`Verified final lv: apw_tmp size: 10.00g matches final: 10.00g`
		`Verified final lv: filemgmt size: 28.69g matches final: 28.69g`
		`Verified final lv: logs_process size: 7.50g matches final: 7.50g`
		`Verified final lv: logs_security size: 7.50g matches final: 7.50g`
		`Verified ------- lv: netbackup_lv size: 2.00g matches initial/final: 2.00g`
		`Verified ------- lv: plat_root size: 1.00g matches initial/final: 1.00g`
		`Verified ------- lv: plat_tmp size: 1.00g matches initial/final: 1.00g`
		`Verified ------- lv: plat_usr size: 4.00g matches initial/final: 4.00g`
		`Verified ------- lv: plat_var size: 1.00g matches initial/final: 1.00g`
		`Verified ------- lv: plat_var_tklc size: 4.00g matches initial/final: 4.00g`
		`Verified final lv: run_db size: 21.50g matches final: 21.50g`
		`Verified final vg free size: 21.53g matches final: 21.53g`
		`Verified ------- /tmp/appworks_temp percent Used: 2 percent is no more than 99 percent`
		`Verified ------- /var/TKLC/db/filemgmt percent Used: 1 percent is no more than 99 percent`
		
		***** TRUNCATED OUTPUT *****

Step	Procedure	Result
3. ☐	**Primary SDS VIP (SSH):** The user should review the **"Validation:"** summary which appears at the end of the output and report any **FAILED:** or **"partially done"** server to **My Oracle Support (MOS)** for resolution.	***** TRUNCATED OUTPUT ***** Verified ------- lv: logs_security size: 10.00g matches initial/final: 10.00g Verified ------- lv: netbackup_lv size: 2.00g matches initial/final: 2.00g Verified ------- lv: plat_root size: 1.00g matches initial/final: 1.00g Verified ------- lv: plat_tmp size: 1.00g matches initial/final: 1.00g Verified ------- lv: plat_usr size: 4.00g matches initial/final: 4.00g Verified initial vg free size: 25.25g matches initial: 25.25g Verified ------- /var/TKLC/rundb percent Used: 1 percent is no more than 48 percent Hostname: dp-carync-1, MP, has already made 1 changes and ready for 3, so is ready for these changes (since it is safe to re-do them). **Validation: FAILED: 6 servers NOT ready for changes**(and also have ready for update: 0 with initial values, 5 already updated, and **3 partially done** (no harm to re-do))
THIS PROCEDURE HAS BEEN COMPLETED		

APPENDIX G. 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 G: Manually Performing ISO Validation

Step	Procedure	Result

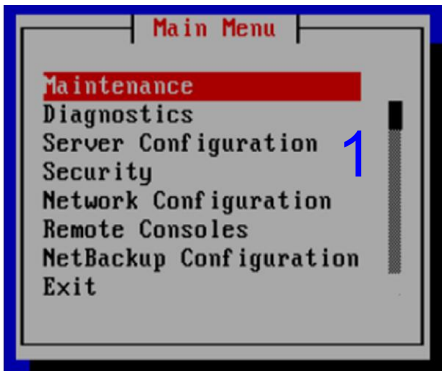
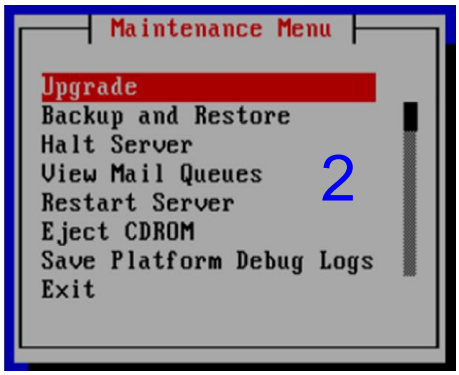
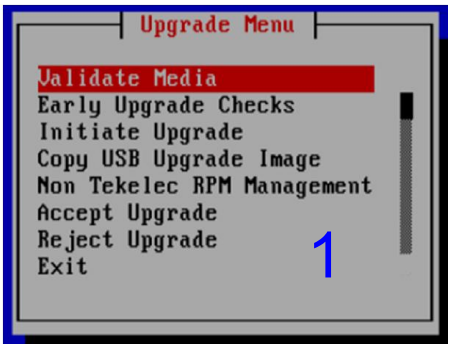
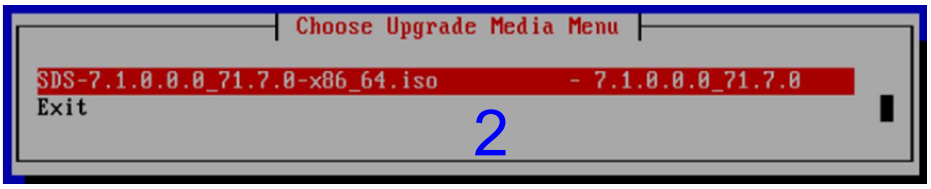
1. ☐	**Primary SDS NOAM VIP (CLI):**
	Using the **VIP** address, login to the **"Active" Primary SDS NOAM** with the **admusr** account.
		`CentOS release 5.7 (Final)`
		`Kernel 2.6.18-274.7.1.e15prerel5.0.0_72.32.0 on an x86_64`
		
		`sds-rlghnc-a login: admusr`
		`Password: <admusr_password>`

2. ☐	**Primary SDS NOAM VIP:**
	The user will be presented with output similar to that shown to the right.
		`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`
		`PRODPATH=/opt/comcol/prod`
		`RUNID=00`
		`[admusr@sds-rlghnc-a ~]$`

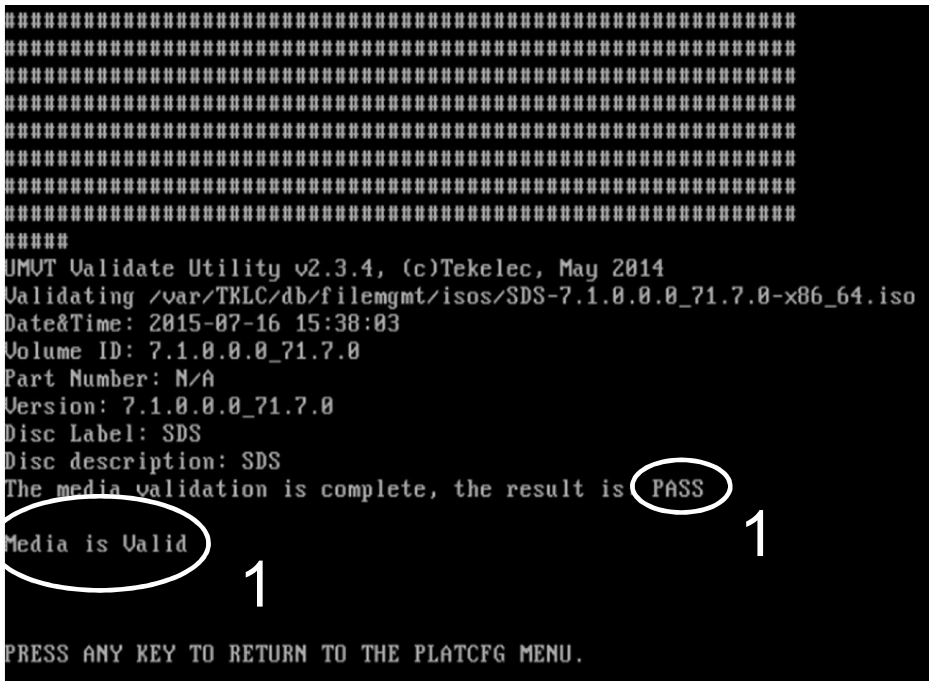
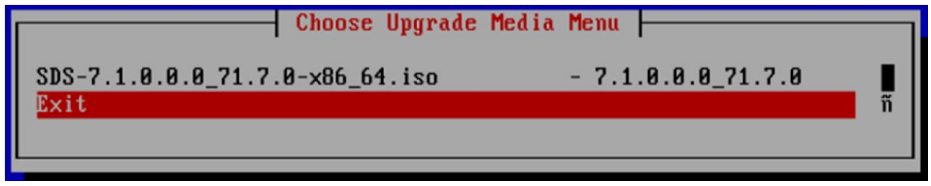
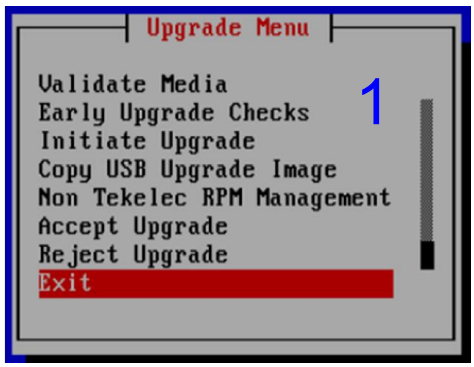
3. ☐	**Primary SDS NOAM VIP:**
	Verify that the ISO file is present in the **/var/TKLC/upgrade/** directory.
	
	If the ISO file to be validated is present in the output then **SKIP** to **Step 5** of this procedure.
	
	Otherwise, continue to the next step.
		`[admusr@sds-rlghnc-a ~]$ ls /var/TKLC/upgrade/`
		`SDS-7.1.0.0.0_71.11.0-x86_64.iso`
		`[admusr@sds-rlghnc-a ~]$`

4. ☐	**Primary SDS NOAM VIP:** **Copy** the ISO file to the **/var/TKLC/upgrade/** directory.	`[admusr@sds-rlghnc-a ~]$ cp -p /var/TKLC/db/filemgmt/SDS-7.1.0.0.0_71.11.0-x86_64.iso /var/TKLC/upgrade/` `[admusr@sds-rlghnc-a ~]$`
5. ☐	**Primary SDS NOAM VIP:** Become the **"platcfg"** user using the **"su"** command. For password information, refer to **Table 4** *(Logins, Passwords and Site Information) if necessary*.	`[admusr@sds-rlghnc-a ~]$ su - platcfg` `Password: <platcfg_password>`

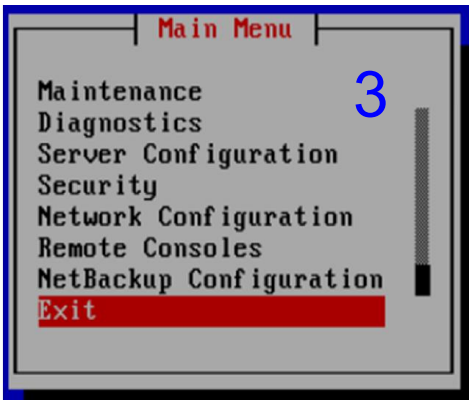
Appendix G: Manually Performing ISO Validation

Step	Procedure	Result
6. ☐	**Primary SDS NOAM VIP:** **1)** From the **platcfg [Main Menu]**, select the **"Maintenance"** menu option and press the **[ENTER]** key. **2)** From the **platcfg [Maintenance Menu]**, select the **"Upgrade"** menu option and press the **[ENTER]** key.	 
7. ☐	**Primary SDS NOAM VIP:** **1)** From the **platcfg [Upgrade Menu]**, select the **"Validate Media"** menu option and press the **[ENTER]** key. **2)** From the **platcfg [Choose Upgrade Media Menu]**, select the target **ISO** file and press the **[ENTER]** key.	 

Appendix G: Manually Performing ISO Validation

Step	Procedure	Result
8. ☐	**Primary SDS NOAM VIP:** **1)** Verify that the **ISO** Media is **"Valid"**. **2)** Press the **[ENTER]** key to return to the **platcfg** menu.	
9. ☐	**Primary SDS NOAM VIP:** From the **platcfg [Choose Upgrade Media Menu]**, select the **"Exit"** menu option and press the **[ENTER]** key.	
10. ☐	**Primary SDS NOAM VIP:** **1)** From the **platcfg [Main Menu]**, select the **"Exit"** menu option and press the **[ENTER]** key. **2)** From the **platcfg [Maintenance Menu]**, select the **"Exit"** menu option and press the **[ENTER]** key.	 

Appendix G: Manually Performing ISO Validation

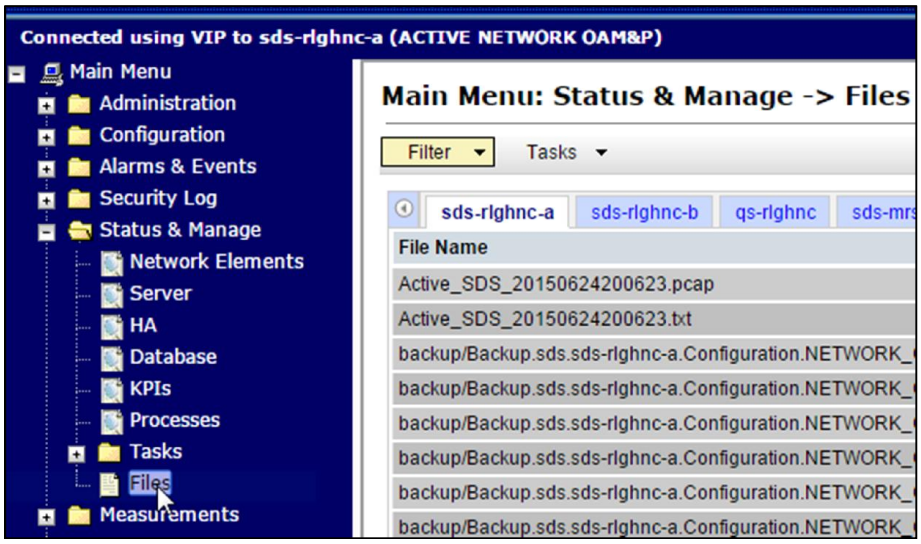
Step	Procedure	Result
	3) From the **platcfg [Main Menu]**, select the **"Exit"** menu option and press the **[ENTER]** key.	
11. ☐	**Primary SDS NOAM VIP:** Exit the CLI to the Active Primary SDS NOAM.	`[admusr@sds-rlghnc-a ~]$ exit`
12. ☐	**Return to the referring Procedure.**	• The user should now return to the **Procedure/Step** which referred them to **Appendix G** *(Manually Performing ISO Validation)*.
THIS PROCEDURE HAS BEEN COMPLETED		

APPENDIX H. UNDEPLOYING AN ISO FILE *(POST UPGRADE ACCEPTANCE)*

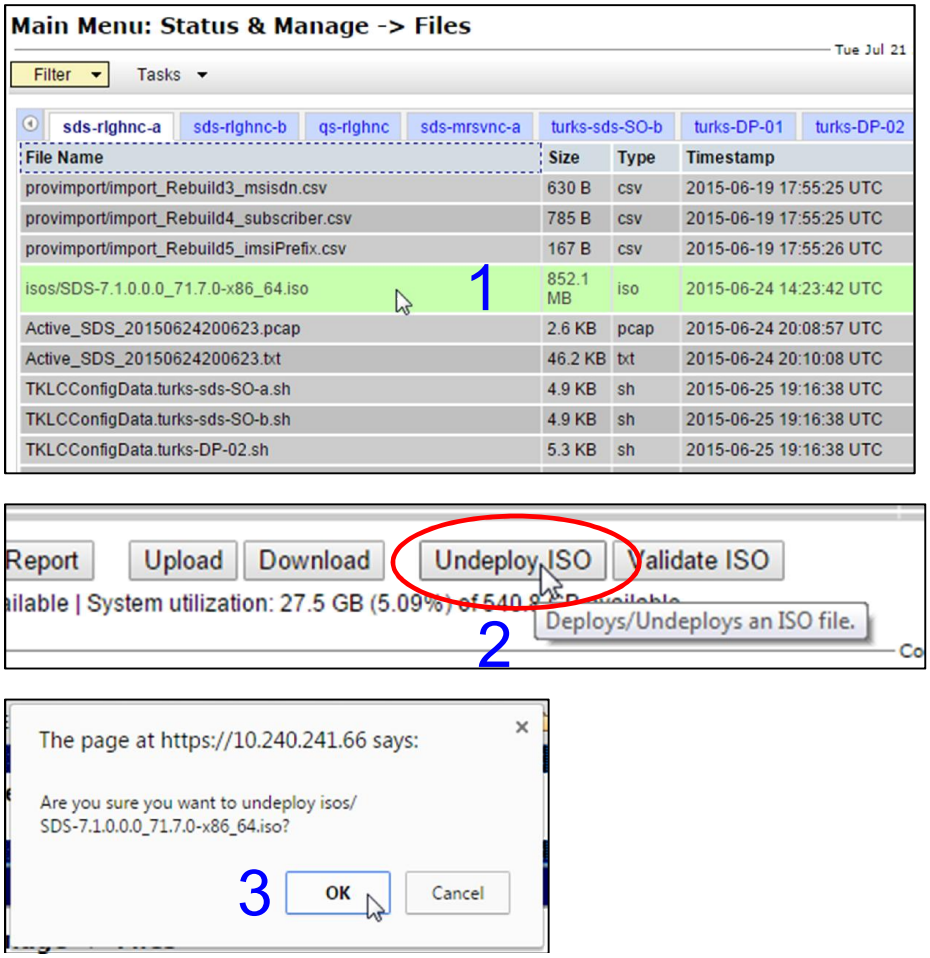
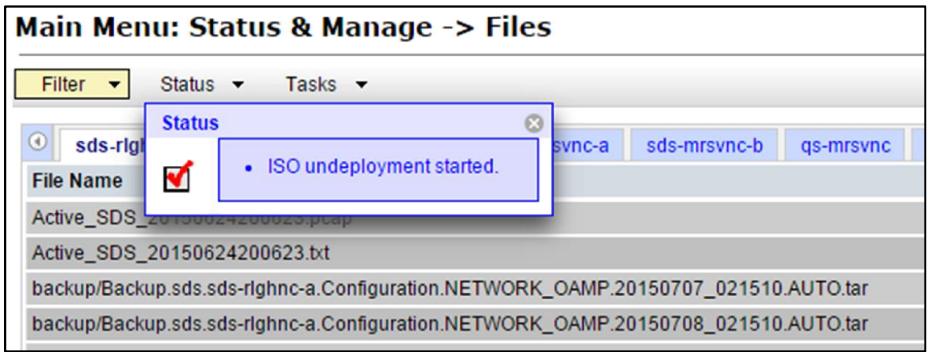
This procedure should only be executed post Upgrade Acceptance and removes a deployed **ISO** file from all servers in the SDS topology except the **"Active" Primary NOAM** server. At the end of the procedure the ISO will still be present in the **/var/TKLC/db/filemgmt/isos/** directory on the **"Active"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

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

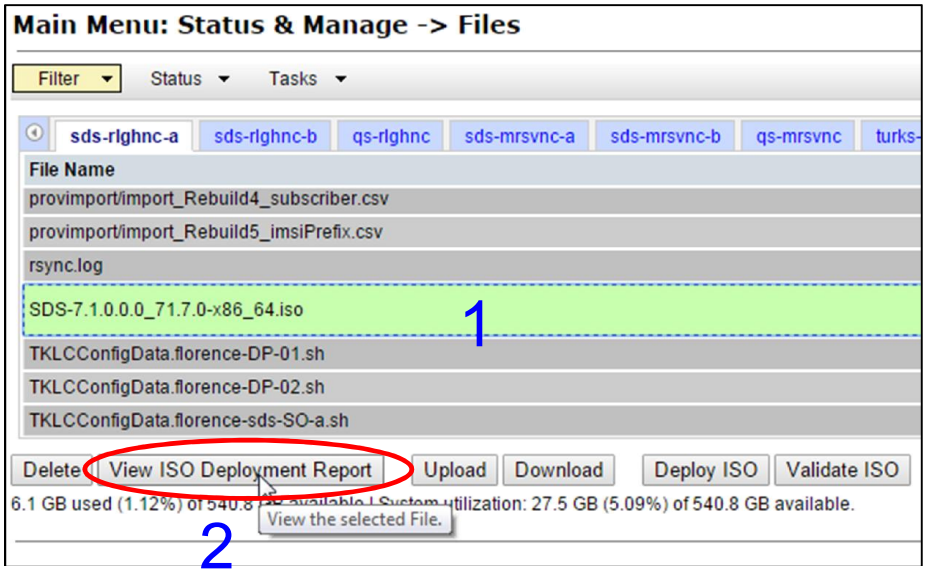
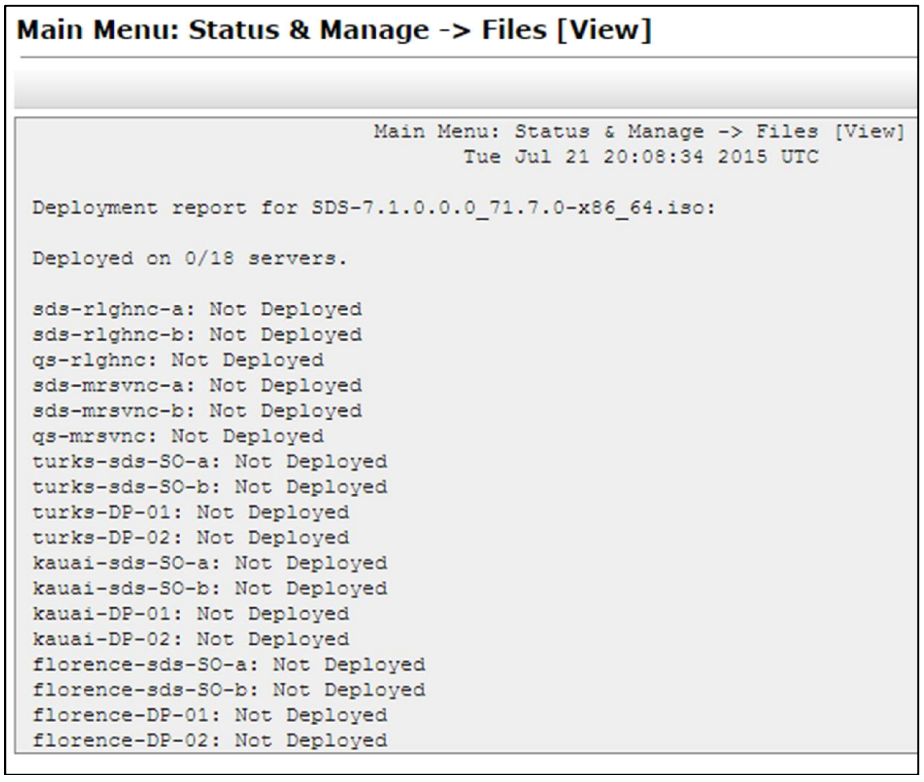
Appendix H: Undeploying an ISO file *(Post Upgrade Acceptance)*

Step	Procedure	Result
1. ☐	Using **VIP** address, access **the Primary SDS NOAM GUI**.	• Using **VIP** address, access the **Primary SDS NOAM GUI** as described in **Appendix A.**
2. ☐	**Primary SDS NOAM VIP (GUI):** Select… **Main Menu** **→ Status & Manage** **→ Files** …as shown on the right.	

Appendix H: Undeploying an ISO file *(Post Upgrade Acceptance)*

Step	Procedure	Result
3. ☐	**Primary SDS NOAM VIP:** **1)** Select the **ISO** file for the target **7.x** release. **2)** Click the **"Undeploy ISO"** dialogue button. **3)** Click **"OK"** on the confirmation pop-up window.	
4. ☐	**Primary SDS NOAM VIP:** The **"Status"** tab in the banner will display a confirmation message stating **"ISO undeployment started"**.	

Appendix H: Undeploying an ISO file *(Post Upgrade Acceptance)*

Step	Procedure	Result
5. ☐	**Primary SDS NOAM VIP (GUI):** Monitor the ISO undeployment status. **1)** Using the cursor, reselect the **ISO** file for the target **7.x** release. **2)** Click the **"View ISO Deployment Report"** dialogue button.	
6. ☐	**Primary SDS NOAM VIP (GUI):** The user is presented with the **Deployment Report** indicating the **current status** of undeployment to all servers in the topology. **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.	
THIS PROCEDURE HAS BEEN COMPLETED		

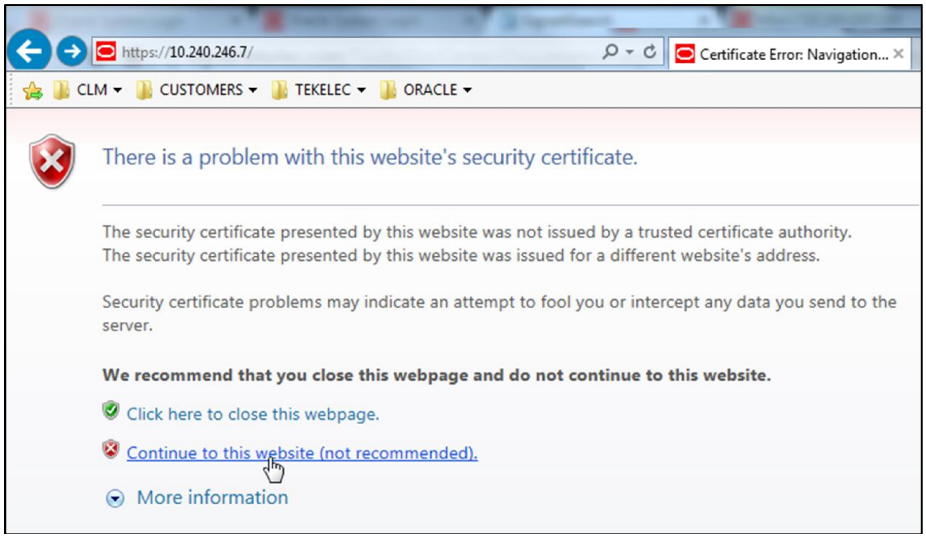
APPENDIX I. ADDING THE SDS ISO TO THE PM&C SOFTWARE REPOSITORY

This procedure must be done once for each the PM&C at each DSR Signaling site that contains SDS SOAM/DP servers. This procedure requires that

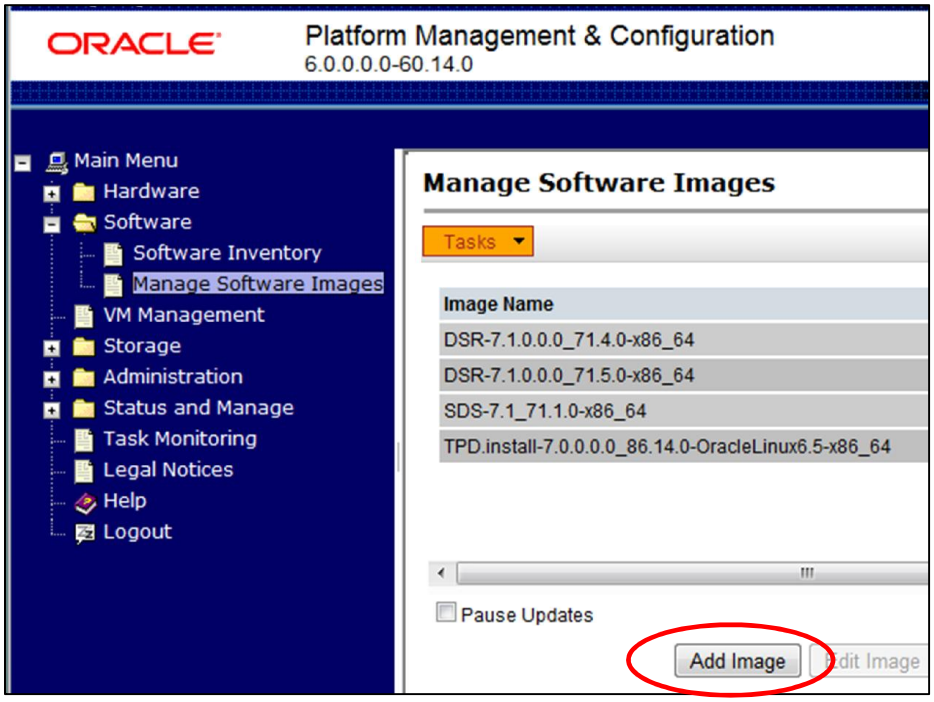
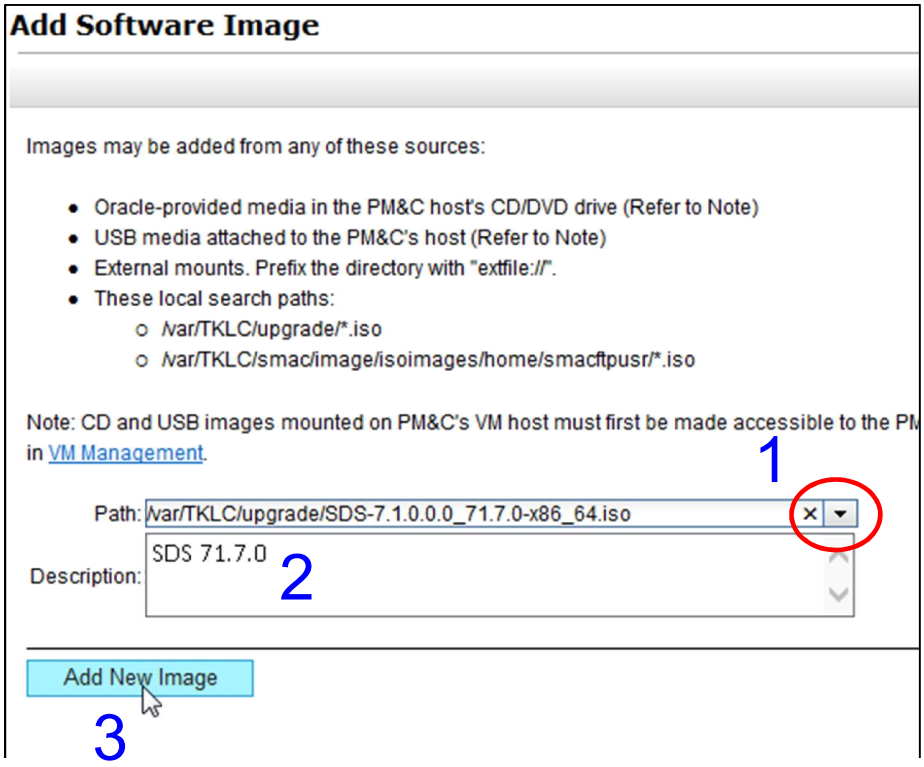
Appendix I: Adding the SDS ISO to the PM&C Software Repository

Step	Procedure	Result
1. ☐	**Primary SDS NOAM VIP (CLI):** Using the **VIP** address, login to the **"Active" Primary SDS NOAM** with the **admusr** account.	CentOS release 5.7 (Final) Kernel 2.6.18-274.7.1.e15prerel5.0.0_72.32.0 on an x86_64 sds-rlghnc-a login: **admusr** Password: ***<admusr_password>***
2. ☐	**Primary SDS 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 PRODPATH=/opt/comcol/prod RUNID=00 [admusr@sds-rlghnc-a ~]$
3. ☐	**Primary SDS NOAM VIP:** Access the **"filemgmt"** directory where the target ISO file was uploaded to.	[admusr@sds-rlghnc-a ~]$ **cd /var/TKLC/db/filemgmt/** [admusr@sds-rlghnc-a filemgmt]$
4. ☐	**Primary SDS NOAM VIP:** Identify the exact name of the target ISO file.	[admusr@sds-rlghnc-a filemgmt]$ **ls -l *.iso** -rw-rw-r-- 1 awadmin awadm 893536256 Jun 24 14:23 **SDS-7.1.0.0.0_71.7.0-x86_64.iso** [admusr@sds-rlghnc-a filemgmt]$
5. ☐	**Primary SDS 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 SDS-7.1.0.0.0_71.7.0-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>*** SDS-7.1.0.0.0_71.7.0-x86_64.iso 100% 852MB 11.2MB/s 01:16 [admusr@sds-rlghnc-a filemgmt]$
6. ☐	**Primary SDS NOAM VIP:** Exit the **CLI** for the **"Active" Primary SDS NOAM.**	[admusr@sds-rlghnc-a filemgmt]$ **exit** logout

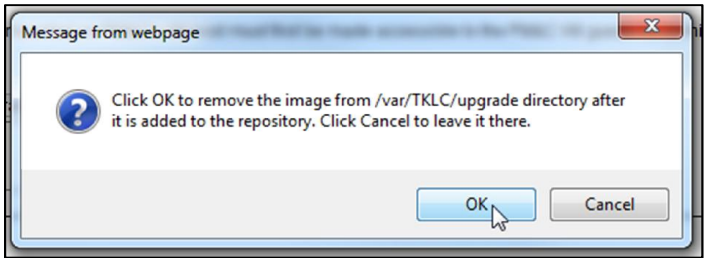
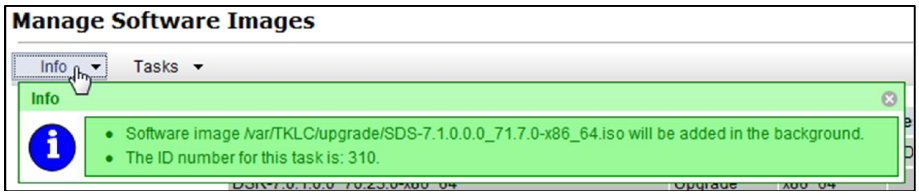
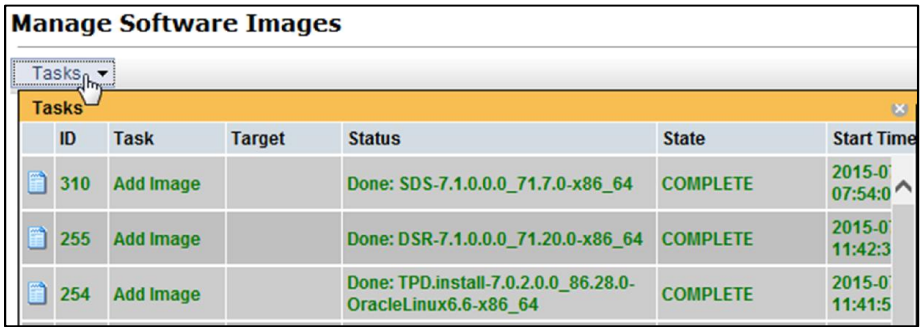
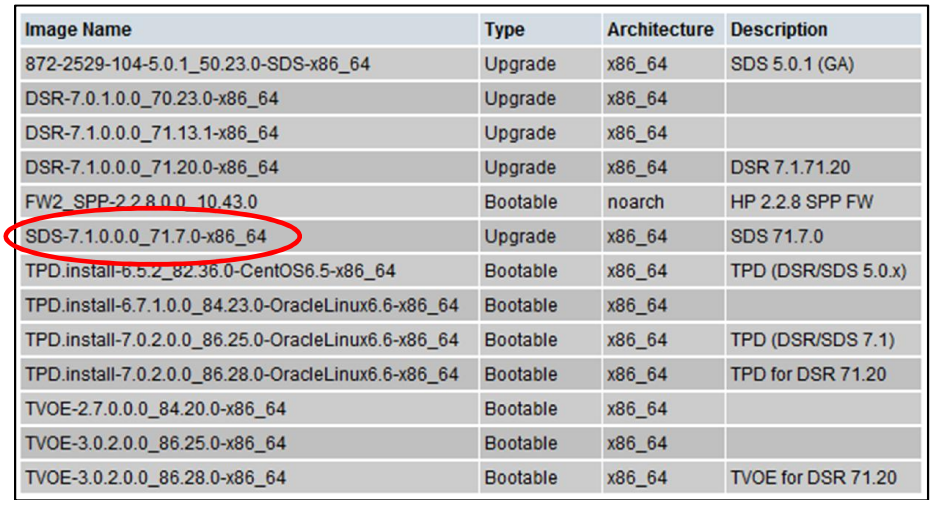
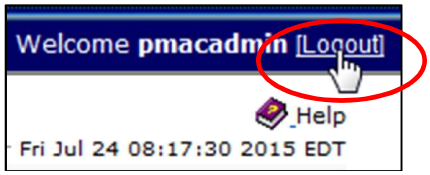
Appendix I: Adding the SDS ISO to the PM&C Software Repository

Step	Procedure	Result
7. ☐	**PM&C Server: (GUI):** **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 **SDS SOAM NE.** **2)** If a certificate error is received, click on the link which states… *"Continue to this website (not recommended)."*	
8. ☐	**PM&C Server:** The user should be presented a PM&C login screen similar to the one shown on the right. Login to the GUI using the default user and password.	

Appendix I: Adding the SDS ISO to the PM&C Software Repository

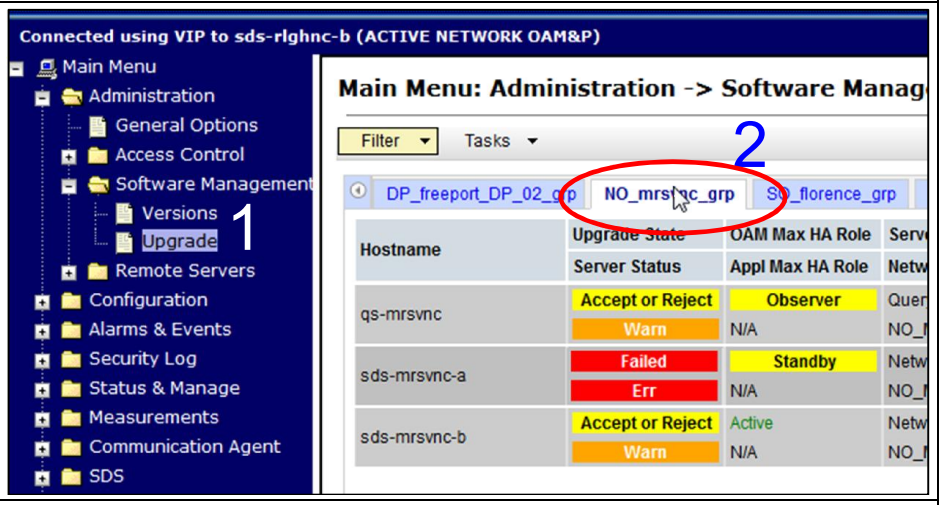
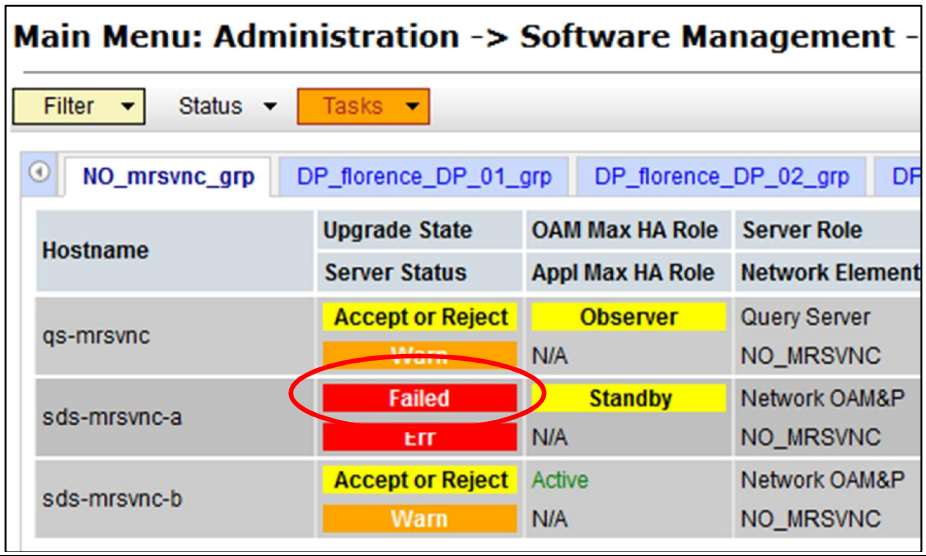
Step	Procedure	Result
9. ☐	**PM&C Server:** **1)** Select… **Main Menu** → **Software** → ***Manage Software Images*** …as shown on the right. **2)** Select the **"Add Image"** button	
10. ☐	**PM&C Server:** **1)** Click the **"Path:"** pull-down and select the traget ISO file from the list. **2)** Input the **SDS release information** in the **"Description:"** field. **3)** Select **"Add New Image"** button.	

Appendix I: Adding the SDS ISO to the PM&C Software Repository

Step	Procedure	Result
11. ☐	**PM&C Server:** 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.	
12. ☐	**PM&C Server:** An info message will be raised to show a new background task.	
13. ☐	**PM&C Server:** The user may monitor the progress using the **"Tasks"** tab in the banner on the same screen.	
14. ☐	**PM&C Server:** When the task is complete, the new software image will be displayed in the Image list.	
15. ☐	**PM&C Server:** Click the **"Logout"** link on the PM&C server GUI.	
THIS PROCEDURE HAS BEEN COMPLETED		

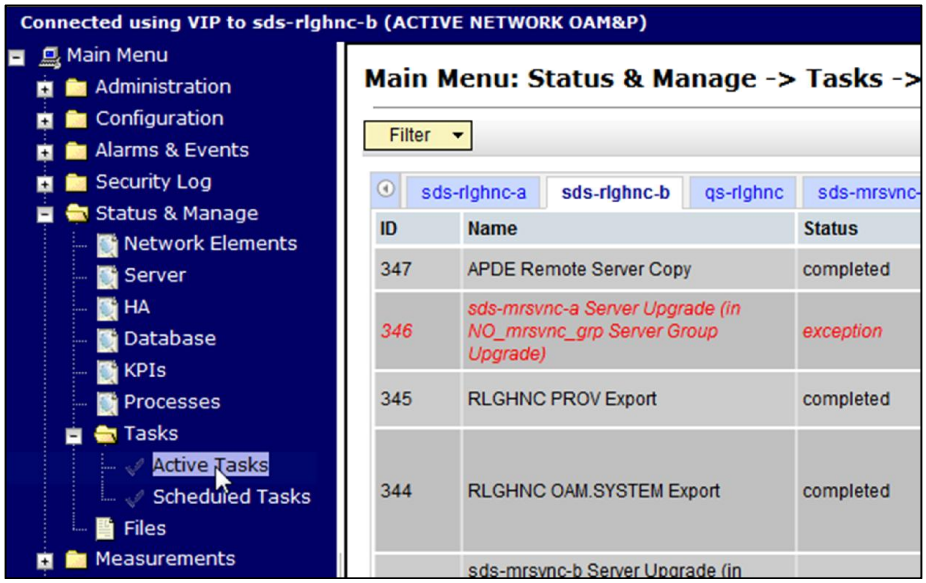
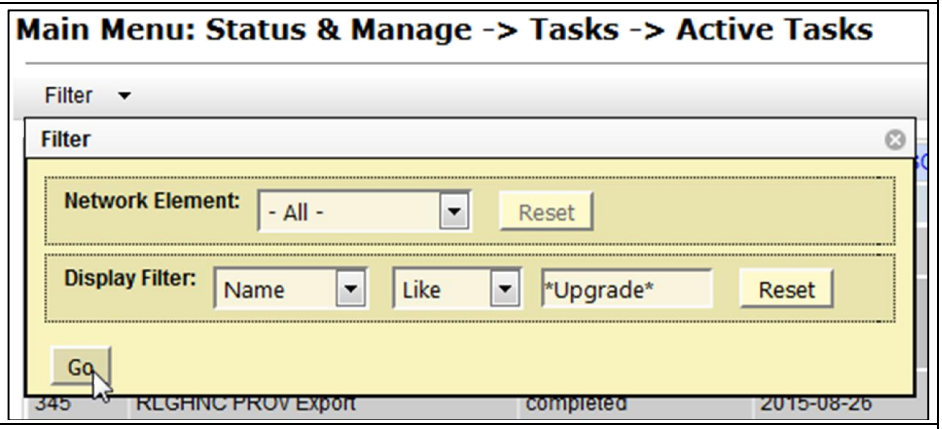
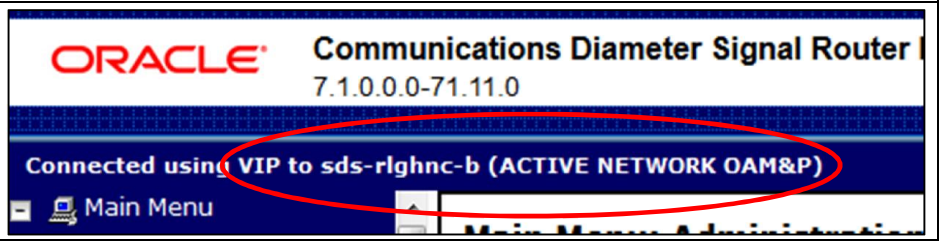
APPENDIX J. RECOVERING FROM A FAILED UPGRADE

Appendix J: Recovering from a Failed Upgrade

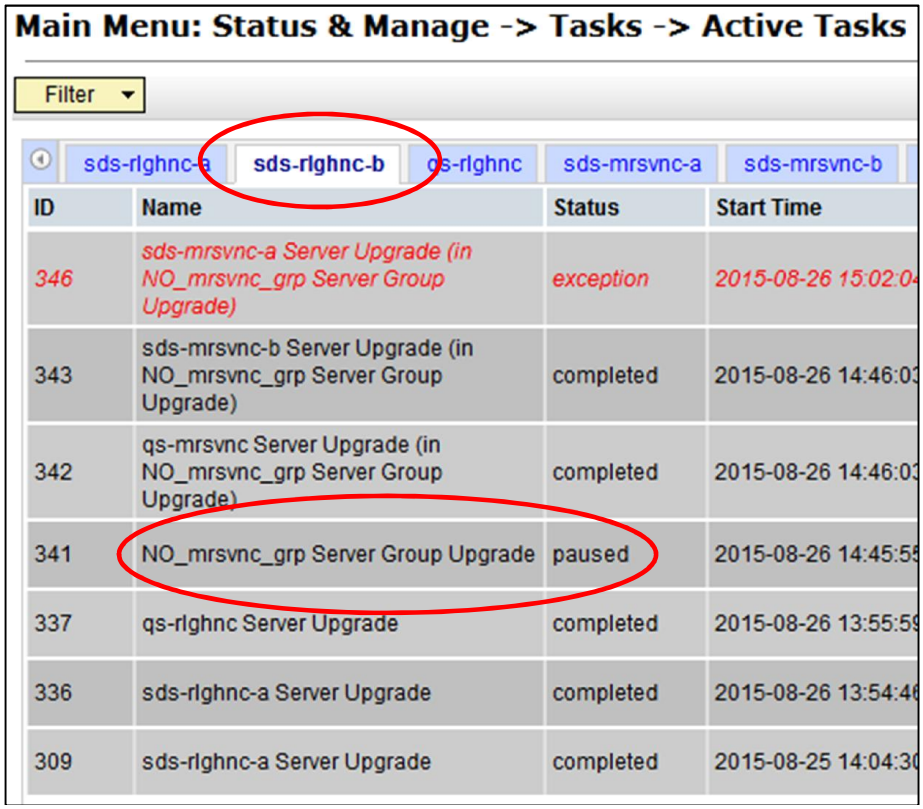
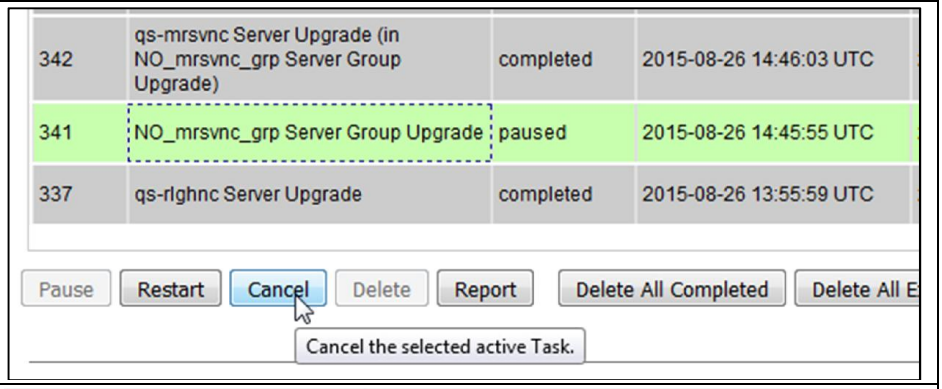
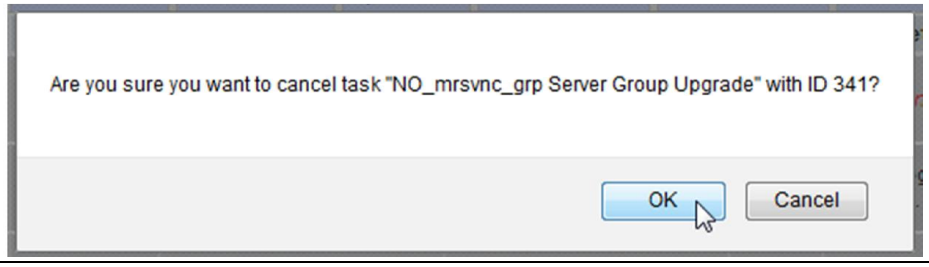
Step	Procedure	Result
1. ☐	Using **VIP** address, access the **Primary SDS NOAM GUI**.	Using **VIP** address, access the **Primary SDS NOAM GUI** as described in **Appendix A.**
2. ☐	**Primary SDS NOAM VIP (GUI):** **1)** Select… **Main Menu** **→ Administration** **→Software Management** **→ Upgrade** **2)** Select **Server Group** tab for the server(s) being upgraded.	
3. ☐	**Primary SDS NOAM VIP:** Verify the **"Upgrade State"** for each server undergoing SW upgrade. Identify *any Server(s) with an **"Upgrade State"** of **"Failed"**.*	

- 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.

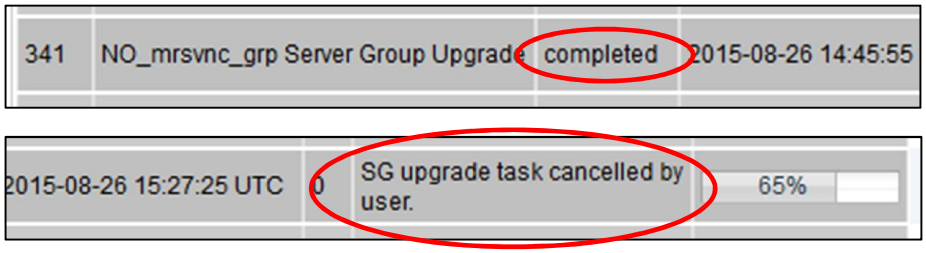
Appendix J: Recovering from a Failed Upgrade

Step	Procedure	Result
4. ☐	**Primary SDS NOAM VIP:** Select… **Main Menu** → **Status & Manage** →**Tasks** → ***Active Tasks*** …as shown on the right.	
5. ☐	**Primary SDS NOAM VIP:** Filter the **"Active Tasks"** screen setting the parameters as shown. **Display Filter Values:** ***1)*** *Name* ***2)*** *Like* ***3)*** **Upgrade**	
6. ☐	**Primary SDS NOAM VIP:** Verify the **hostname** of the Primary **Active SDS NOAM** server from the GUI banner.	

Appendix J: Recovering from a Failed Upgrade

Step	Procedure	Result
7. ☐	**Primary SDS NOAM VIP:** **1)** If not auto-selected, select the **tab** displaying the **hostname** of the Primary **Active SDS NOAM** server identified in the previous step. **2)** Locate the task for the **"Server Group Upgrade"**. It will show a **Status** of **"paused"**.	
8. ☐	**Primary SDS NOAM VIP:** **1)** Select the **"Server Group Upgrade"** task with the cursor. It will become **highlighted** on the screen. **2)** Click the **"Cancel"** dialogue button to cancel the task.	
9. ☐	**Primary SDS NOAM VIP:** Click the **"OK"** button on the confirmation box.	

Appendix J: Recovering from a Failed Upgrade

Step	Procedure	Result
10. ☐	**Primary SDS NOAM VIP:** For the **"Server Group Upgrade"** task… **1)** Verify that the **Status** has changed from **"paused"** to **"completed"**. **2)** Verify that the **Result Details** column now states **"SG upgrade task cancelled by user."**	

11. ☐	**Failed Server (CLI):**
	Using the **XMI** address, login to the Failed Server with the **admusr** account.
		`CentOS release 5.7 (Final)`
		`Kernel 2.6.18-274.7.1.e15prerel5.0.0_72.32.0 on an x86_64`
		
		`sds-mrsvnc-a login: admusr`
		`Password: <admusr_password>`

12. ☐	**Failed Server (CLI):**
	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`
		`PRODPATH=/opt/comcol/prod`
		`RUNID=00`
		`[admusr@sds-mrsvnc-a ~]$`

13. ☐	**Failed Server (CLI):**
	Inspect the **"upgrade.log"** file to identify the reason for the failure.
		`[admusr@sds-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@sds-mrsvnc-a ~]$`

Appendix J: Recovering from a Failed Upgrade

<table>
<tr><th>Step</th><th>Procedure</th><th>Result</th></tr>
<tr><td>14. ☐</td><td>Failed Server (CLI):
If the “earlyChecks.log” file is identified as the source, look for the Errors contained in that file.</td><td><pre>[admusr@sds-mrsvnc-a upgrade]$ grep ERROR /var/TKLC/log/upgrade/earlyChecks.log

ERROR: There are alarms on the system!
ERROR: <<<   OUTPUT   >>>
ERROR: SEQ: 15 UPTIME: 2070747 BIRTH: 1438969736 TYPE: SET
ALARM:
TKSPLATMI10|tpdNTPDaemonNotSynchronizedWarning|1.3.6.1.4.1.323.
5.3.18.3.1.3.10|32509|Communications|Communications Subsystem
Failure
ERROR: <<< END OUTPUT >>>
ERROR: earlyUpgradeChecks() code failed for
Upgrade::EarlyPolicy::TPDEarlyChecks
ERROR: Failed running earlyUpgradeChecks() code
ERROR: Early Upgrade Checks Failed!
[admusr@sds-mrsvnc-a upgrade]$</pre></td></tr>
<tr><td colspan="3"> 
• Although outside of the scope of this document, the user is expected to use standard troubleshooting techniques to clear the alarm condition from the Failed Server.
• If troubleshooting assistance is needed, refer to Appendix K: Accessing My Oracle Support (MOS) for information on contacting MOS.
• DO NOT PROCEED TO STEP 15 OF THIS PROCEDURE UNTIL THE ALARM CONDITION HAS BEEN CLEARED!</td></tr>
<tr><td>15. ☐</td><td>Failed Server (CLI):
Use the alarmMgr utility to verify that all Platform alarms have been cleared from the system.</td><td><pre>[admusr@sds-mrsvnc-b ~]$ alarmMgr -alarmStatus
[admusr@sds-mrsvnc-b ~]$</pre></td></tr>
<tr><td>16. ☐</td><td>Failed Server (CLI):
Exit the CLI for the Failed Server.</td><td><pre>[admusr@sds-mrsvnc-a ~]$ exit
logout</pre></td></tr>
<tr><td>17. ☐</td><td>Primary SDS NOAM VIP (GUI):
Re-execute the Server Upgrade.

NOTE: Once failed, the Auto Server Group Upgrade (i.e. Auto Upgrade) option should not be repeated for that Server Group.</td><td>• Return to the referring Upgrade procedure and re-execute SW Upgrade for the Failed Server using the “Upgrade Server” option Only!</td></tr>
<tr><td colspan="3">THIS PROCEDURE HAS BEEN COMPLETED</td></tr>
</table>

APPENDIX K. ACCESSING MY ORACLE SUPPORT (MOS)

"My Oracle Support (MOS) (https://support.oracle.com) is your initial point of contact for all product support and training needs. A respresentabite 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 Oracle Support hotline for your local country from the list at http://www.oracle.com/us/support/contact/index.html.

When calling, make the selections in the sequence shown below on the Support telephone menu:

- Select **2** for New Service Request.
- Select **3** for Hardware, Networking, and Solaris Operating System Support.
- Select **2** for Non-Technical Issue.

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 Customer Access Support (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 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 system ability to provide any required critical or major trouble notification

Other problems severely affecting service, capacity/ traffic, billing, and maintenance capabilities may also be defined as critical by prior discussion and agreement with Oracle.