Oracle® Communications

Diameter Signaling Router

DSR GLA Feature Activation Procedure

Release 8.2

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ORACLE®

Oracle Communications Diameter Signaling Router GLA Feature Activation Procedure, Release 8.2.

CAUTION: Use only the Upgrade procedure included in the Upgrade Kit.

Before upgrading any system, please access My Oracle Support (MOS) (https://support.oracle.com) and review any Technical Service Bulletins (TSBs) that relate to this upgrade.

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

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

See more information on My Oracle Support (MOS).

Table of Contents

List of Tables

List of Figures

List of Procedures

1. Introduction

This document defines the procedure that is executed to activate the Gateway Location Application (GLA) feature on a DSR network element (NE). This procedure may be run either 1) as part of a new DSR installation, after the standard DSR installation is complete, but before the NE is in service, or 2) on an in-service DSR NE, where the GLA feature is activated during a planned maintenance window to minimize the impact to network traffic.

This document also provides a procedure to deactivate GLA after it has been activated. Refer to section 3 for a discussion of deactivation.

Configuration of GLA following successful activation is beyond the scope of this document. After successful activation, the crafts person is expected to configure GLA in that order for proper operation of GLA.

No additional software installation is required before executing this procedure. The standard DSR installation procedure has loaded all of the required software, even if the GLA feature is activated later.

1.1 References

[1] DSR 8.2 Software Installation and Configuration Procedure 2/2

[2] Policy and Charging Application User's Guide

[3] DSR 8.2 Policy and Charging DRA Feature Activation Procedure

1.2 Acronyms

An alphabetized list of acronyms used in the document.

Table 1. Acronyms

Acronym	Definition
BNS	Broadband Networking Solutions
DA-MP	Diameter Agent Message Processor
DB	Database
DP	Data Processor
DSR	Diameter Signaling Router
GLA	Gateway Location Application
FOA	First Office Application
GUI	Graphical User Interface
HA	High Availability
IMI	Internal Management Interface
IP	Internet Protocol
MP	Message Processing or Message Processor
NE	Network Element
NOAM	Network Operations and Maintenance
OAM	Operations, Administration and Maintenance
SDS	Subscriber Database Server

Acronym	Definition
SOAM	System Operations and Maintenance
SSH	Secure Shell
UI	User Interface
VIP	Virtual IP
VPN	Virtual Private Network
XMI	External Management Interface

1.3 Terminology

Table 2. Terminology

Term	Definition
Communication Agent	An EXG common infrastructure component delivered as part of a common plug-in that uses the COMCOL MX framework in support of communicating Stack Events between EXG application processes on different servers.
ComAgent	Same as Communication Agent
PSBR-B	Holds network-wide subscriber binding information. Maps subscriber keys to the PCRF that hosts the subscriber's policy rules.
PSBR-S	Holds session information that is used for routing in-session messages.

1.4 General Procedure Step Format

Where it is necessary to identify the server explicitly on which a particular step is to be taken, the server name is given in the title box for the step (e.g., "ServerX" in Figure 1. Example of a Procedure Step).

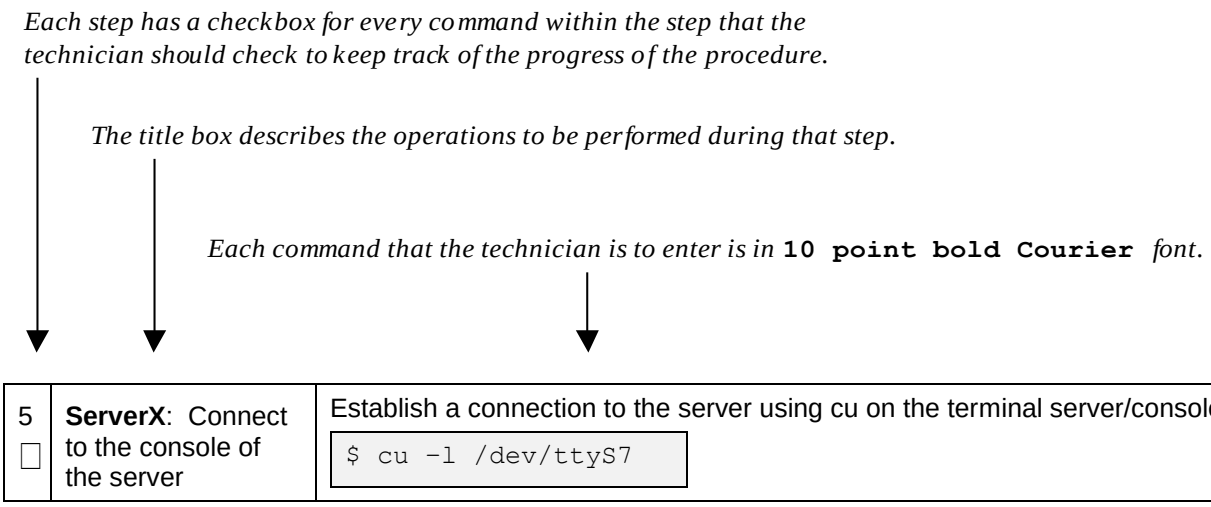


Figure 1. Example of a Procedure Step

1.5 Release Document Matrix

Table 3. PCA Activation\Configuration Procedure Reference Table

DSR Release	Reference
DSR 8.2	[2] and [3]

2. Feature Activation Overview

This section lists the required materials and information needed to execute the feature activation. In addition, Table 4 through Table 9 provides estimates of the time required to execute the procedure. These tables can be used to estimate the total time necessary to complete the feature activation. The timing values shown are estimates only – use these tables to plan the timing of the activation, **not** to execute the procedure. The detailed procedure to be executed begin in section 5.

2.1 Definition of Activation for the GLA Feature

The precise meaning of activation varies from feature to feature. This section briefly defines what activation means with respect to the GLA feature.

The main components of a GLA system include the GLA (DSR) application, the binding database (hosted by the Policy Subscriber Binding Repository, (pSBR)), and the ComAgent, which provide an interface and means to enable the GLA MPs and the pSBR MPs communicating to each other via reliable ComAgent routing services. Subscriber data concerning binding and session information is populated in the pSBR-B by the Policy Diameter Routing Agent (Policy DRA).

PDRA/PCA DSR application requires configuration of pSBR-Binding and pSBR-Session servers, and ComAgent connections to these pSBR servers. GLA relies on the configuration and ComAgent connectivity, provided by PDRA. PDRA/PCA must be pre-activated and pre-configured for GLA to be activated. Refer to Table 4. Pre-Feature Activation Overview for the appropriate DSR PCA release feature activation and configuration reference.

All software required to run GLA is available by default as part of a DSR installation or upgrade. The process of activating the feature simply makes proper use of software elements and file system files already present to change the behavior of the DSR NE.

Before GLA feature activation, there are no GLA menu items visible on the SOAM GUI or NOAM GUI and there is no GLA-related processing taking place on the DA-MP(s).

After feature activation, all selectable GLA menu items are present on the SOAM GUI or NOAM GUI, allowing full GLA configuration and provisioning. Specifically, for GLA application, the top-level GLA folder is visible on the Main Menu, and a new entry is added to the **Diameter -> Maintenance -> Applications** table, showing GLA and its state.

After activation:

The DA-MP(s) are prepared to act on GLA and ComAgent configuration and provisioning information entered at and replication from the NOAM (in case of ComAgent configuration/ provisioning) and SOAM (in case of GLA configuration/ provisioning).

Important: Once the GLA feature is activated, it is not automatically enabled. Activation simply means the mechanism for provisioning GLA behavior is in place. But the DA-MP(s) will act on GLA provisioning information only after GLA has been enabled (via the **Diameter -> Maintenance -> Applications** screen). GLA should not be enabled until after the appropriate provisioning data has been entered. GLA provisioning is beyond the scope of this document. Furthermore, for proper operation of GLA, Communication Agent and GLA application assumes that the remote server IP addresses corresponding to the ComAgent HA service (for Binding Resource) are routable/reachable. However, these networking setup/concerns are beyond the scope of the activation procedure.

2.2 Pre-Feature Activation Overview

The pre-activation procedures shown in the following table may be executed outside a maintenance window if desired. Procedure completion times shown here are estimates. Times may vary due to differences in database size, network configuration and loading, user experience, and user preparation.

Table 4. Pre-Feature Activation Overview

Procedure	Elapsed Time (Hours:Minutes)		Feature Activation Preparation Procedures	Impact
	This Step	Cum.		
System Topology Check (Procedure 1)	0:00-0:20	0:00-0:20	• Verify Network Element Configuration data • Verify System Group Configuration data • Analyze and plan DA-MP restart sequence	None
Perform Health Check (Procedure 2)	0:01-0:05	0:01-0:25	• Verify DSR release • Verify server status • Log all current alarms	None

2.3 Feature Activation Execution Overview

The procedures shown in the following table are executed inside a single maintenance window. Procedure completion times shown here are estimates. Times may vary due to differences in database size, network configuration and loading, user experience, and user preparation.

Table 5. Feature Activation Execution Overview

Procedure	Elapsed Time (Hours:Minutes)		Feature Activation Execution Procedures	Impact
	This Step	Cum.		
Perform Health Check (Procedure 3)	0:01-0:05	0:01-0:05	• Verify DSR release • Verify proper GLA feature state • Verify proper PDRA feature state • Verify server status. • Verify server and server group configurations • Log all current alarms	None

Procedure	Elapsed Time (Hours:Minutes)		Feature Activation Execution Procedures	Impact
	This Step	Cum.		
Feature Activation (Procedure 4)	0:10-0:20	0.10-0:25	• Log out of NOAM/SOAM GUI • SSH to Active NOAM • Login as admusr • Change directory to /usr/TKLC/dsr/prod/maint/loaders/ • Execute the feature activation script • Log into NOAM or SOAM GUI • Verify the GLA folder • Restart each active DA-MP server • Verify Maintenance screen • Log into NOAM GUI • Verify Maintenance screen • Close SSH connections to NOAM	GLA is activated

2.4 Post-Feature Activation Overview

The procedures shown in the following table are executed inside a maintenance window. Procedure completion times shown here are estimates. Times may vary due to differences in database size, network configuration and loading, user experience, and user preparation.

Table 6. Post-Feature Activation Overview

Procedure	Elapsed Time (Hours:Minutes)		Feature Activation Completion Procedures	Impact
	This Step	Cum.		
Perform Health Check (Procedure 5)	0:01-0:05	0:01-0:05	• Establish GUI session on the SOAM VIP • Verify server status • Log all current alarms • Verify the KPIs • Verify the Measurements	GLA has been activated on DSR

3. Feature Deactivation Overview

3.1 Pre-Feature Deactivation Overview

The procedures shown in the following table are executed inside a maintenance window. Deactivation procedure times are only estimates as the reason to execute a deactivation has a direct impact on any additional deactivation preparation that must be done. Times may vary due to differences in database size, network configuration and loading, user experience, and user preparation.

Table 7. Pre-Feature Deactivation Overview

Procedure	Elapsed Time (Hours:Minutes)		Deactivation Preparation Procedures	Impact
	This Step	Cum.		
Perform Health Check (Procedure 6)	0:01-0:05	0:01-0:05	• Verify DSR release. • Verify proper GLA feature state • Verify server status • Log current alarms	None

3.2 Feature Deactivation Execution Overview

The procedures shown in the following table are executed inside a maintenance window. Deactivation procedure times are only estimates as the reason to execute a deactivation has a direct impact on any additional deactivation preparation that must be done. Times may vary due to differences in database size, network configuration and loading, user experience, and user preparation.

Table 8. Feature Deactivation Overview

Procedure	Elapsed Time (Hours:Minutes)		Deactivation Procedures	Impact
	This Step	Cum.		
Deactivation (Procedure 7)	0:10-0:20	0:20-0:50	• Log out of active NOAM/SOAM GUI • SSH into active NOAM • Login as admusr • Change directory to /usr/TKLC/dsr/prod/maint/loaders/.. • Execute the feature deactivation script • Log into NOAM or SOAM GUI • Verify the GLA folder • Restart each active DA-MP server • Log into NOAM GUI • Verify Maintenance screen	GLA is deactivated

3.3 Post-Feature Deactivation Overview

The procedures shown in the following table are executed inside a maintenance window. Deactivation procedure times are only estimates as the reason to execute a deactivation has a direct impact on any additional deactivation preparation that must be done. Times may vary due to differences in database size, network configuration and loading, user experience, and user preparation.

Table 9. Post-Feature Deactivation Overview

Procedure	Elapsed Time (Hours:Minutes)		Post Deactivation Procedures	Impact
	This Step	Cum.		
Perform Health Check (Procedure 8)	0:01-0:05	0:01-0:05	• Verify server status • Log all current alarms • Verify the KPIs • Verify the Measurements • Verify GUI menu does not shows GLA sub-menu	None

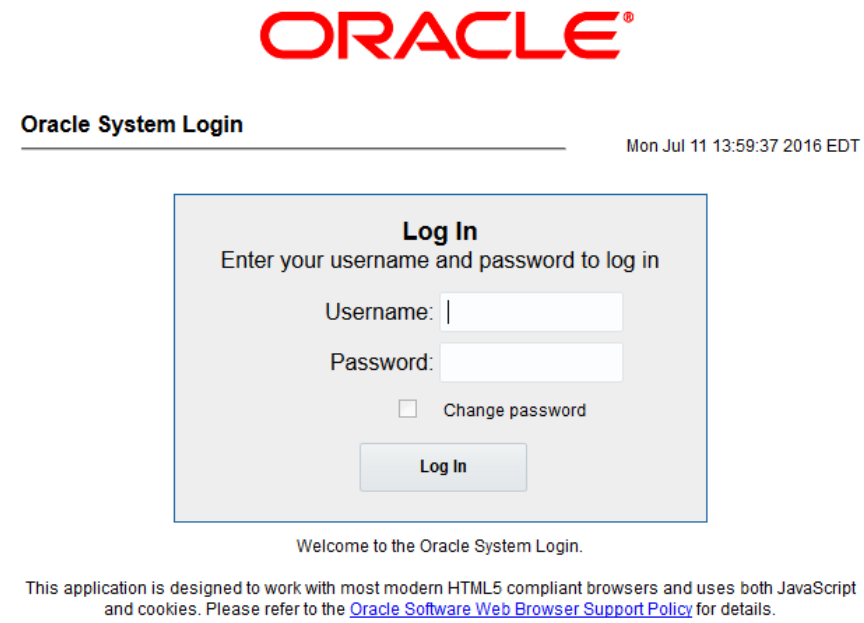
4. Feature Activation Preparation

This section provides detailed procedures to prepare a system for GLA feature activation. These procedures are executed outside a maintenance window.

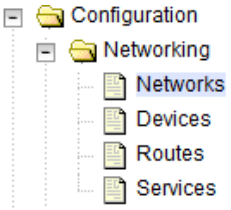
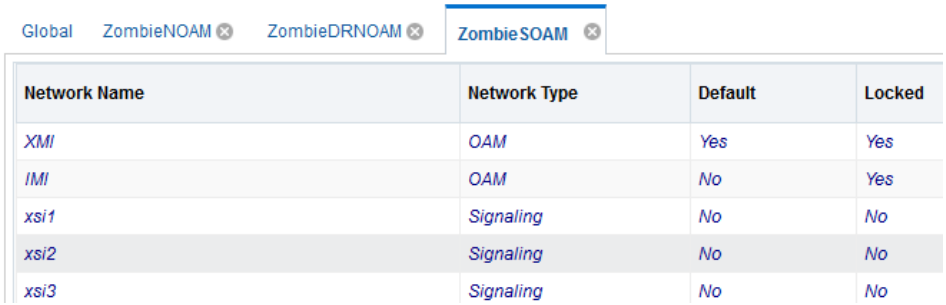
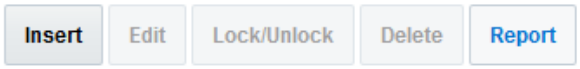
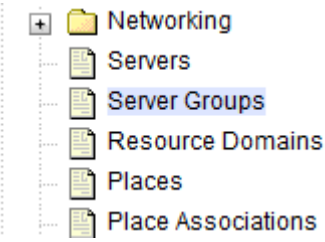
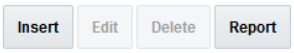
4.1 System Topology Check

This procedure is part of feature activation preparation and is used to verify the system topology of the DSR network and servers.

Procedure 1. System Topology Check

S T E P #		
	This procedure verifies system topology. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, contact My Oracle Support (MOS) and ask for assistance.	
1. ☐	**NOAM VIP GUI**: Login	Establish a GUI session on the NOAM server by using the VIP address of the NOAM server. Open the web browser and enter a URL of: `http://<Primary_NOAM_VIP_IP_Address>` Login as the ***guiadmin*** user: 

Procedure 1. System Topology Check

2. ☐	**NOAM VIP GUI**: Verify network configuration data	Navigate to **Configuration -> Networking -> Networks**.  Select the site network element tab.  Network Name / Network Type / Default / Locked XMI / OAM / Yes / Yes IMI / OAM / No / Yes xsi1 / Signaling / No / No xsi2 / Signaling / No / No xsi3 / Signaling / No / No Click **Report**.  Verify the configuration data is correct for your network. **Save** or **Print** this report to keep copies for future reference. 
3. ☐	**NOAM VIP GUI**: Verify server configuration	Navigate to **Configuration -> Server Groups**.  Click **Report**.  Verify the configuration data is correct for your network. **Save** or **Print** this report to keep copies for future reference. 

Procedure 1. System Topology Check

4. ☐	Analyze and plan DA-MP restart sequence	• Analyze system topology and plan for any DA-MPs, which will be out-of-service during the feature activation sequence. • Analyze system topology gathered in steps 2 and 3. • Determine the exact sequence of which DA-MP servers will be restarted (with the expected out-of-service periods). ***Note***: It is recommended that no more than 50% of the MPs be restarted at once.

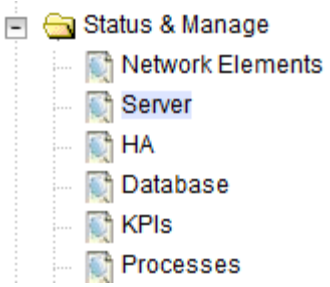
4.2 Perform Health Check

This procedure is part of feature activation preparation and determines the health and status of the DSR release network and servers. This may be executed multiple times, but must also be executed at least once 24-36 hours before the start of the maintenance window in which the feature activation is to take place.

Procedure 2. Perform Health Check (Feature Activation Preparation)

S T E P #		
		This procedure performs needed health checks. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, contact My Oracle Support (MOS) and ask for assistance.
1. ☐	**NOAM VIP GUI**: Login	Establish a GUI session on the NOAM server by using the VIP address of the NOAM server. Open the web browser and enter a URL of: `http://<Primary_NOAM_VIP_IP_Address>` Login as the ***guiadmin*** user: 

Procedure 2. Perform Health Check (Feature Activation Preparation)

<table>
<tr>
<td>2. ☐</td>
<td>NOAM VIP GUI: Verify server status</td>
<td>Navigate to Status & Manage -> Server.
 

Verify all Server Status is Normal (Norm) for Alarm (Alm), Database (DB), Replication Status, and Processes (Proc).
<table>
<tr><th>Appl State</th><th>Alm</th><th>DB</th><th>Reporting Status</th><th>Proc</th></tr>
<tr><td>Enabled</td><td>Norm</td><td>Norm</td><td>Norm</td><td>Norm</td></tr>
<tr><td>Enabled</td><td>Norm</td><td>Norm</td><td>Norm</td><td>Norm</td></tr>
<tr><td>Enabled</td><td>Norm</td><td>Norm</td><td>Norm</td><td>Norm</td></tr>
<tr><td>Enabled</td><td>Norm</td><td>Norm</td><td>Norm</td><td>Norm</td></tr>
</table>
Do not proceed to feature activation if any of the above states are not Norm. If any of these are not Norm, corrective action should be taken to restore the non-Norm status to Norm before proceeding with the feature activation.
If the Alarm (Alm) status is not Norm but only Minor alarms are present, it is acceptable to proceed with the feature activation. If there are Major or Critical alarms present, these alarms should be analyzed prior to proceeding with the feature activation. The activation may be able to proceed in the presence of certain Major or Critical alarms. Contact My Oracle Support (MOS) for assistance as necessary.</td>
</tr>
<tr>
<td>3. ☐</td>
<td>NOAM VIP GUI: Log current alarms</td>
<td>Navigate to Alarms & Events -> View Active.
 

Click Report.
 

Save or Print this report to keep copies for future reference.
 
</td>
</tr>
</table>

5. Feature Activation

Before feature activation, perform the system health check in section 4.2. This check ensures the system is ready for feature activation. Performing the system health check determines which alarms are present in the system and if feature activation 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 feature activation process is started.

If alarms are present on the server, contact My Oracle Support (MOS) to diagnose those alarms and determine whether they need to be addressed or if it is safe to proceed with the feature activation.

Read the following notes on feature activation procedures:

- 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 feature activation must initial each step. A checkbox must be provided. For procedures which are executed multiple times, the check box can be skipped, but the technician must initial each iteration the step is executed. The space on either side of the step number can be used (margin on left side or column on right side).
- Captured data is required for future support reference.

5.1 Pre-Activation Procedures

5.1.1 Perform Health Check

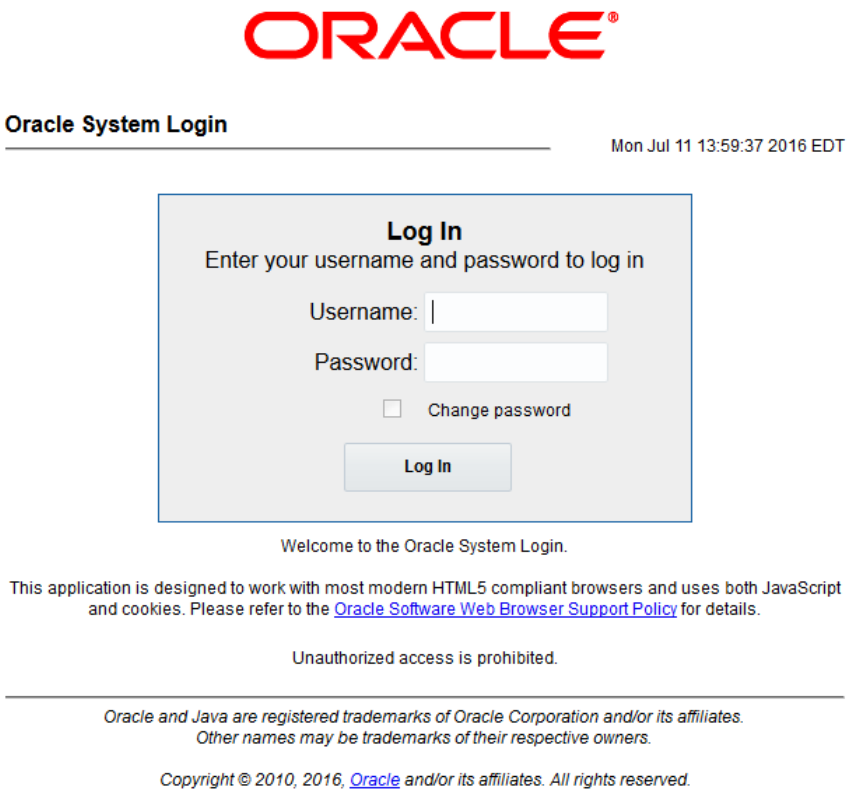
This procedure determines the health and status of the network and servers. This must be executed at the start of every maintenance window.

Note: The following Health Check procedure is the same as the Health Check procedure described in section 4.2 when preparing for feature activation, but it is repeated here to emphasize that it is being re-executed if section 4.2 was performed outside the maintenance window.

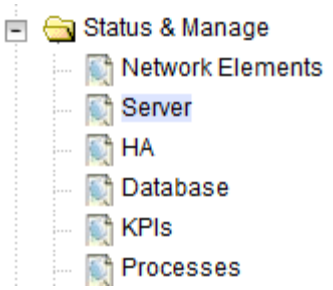
Procedure 3. Perform Health Check (Pre Feature Activation)

S T E P #	This procedure performs needed health checks. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, contact My Oracle Support (MOS) and ask for assistance.	
1. ☐	**SOAM VIP GUI**: Login	Establish a GUI session on the SOAM server by using the VIP address of the SOAM server. Open the web browser and enter a URL of: `http://<Primary_SOAM_VIP_IP_Address>` Login as the ***guiadmin*** user: 
2. ☐	**NOAM VIP GUI**: Verify GLA folder is not present	Under **Main Menu**, verify the GLA folder is NOT present.

Procedure 3. Perform Health Check (Pre Feature Activation)

3. ☐	**NOAM VIP GUI**: Login	Establish a GUI session on the NOAM server by using the VIP address of the NOAM server. Open the web browser and enter a URL of: `http://<Primary_NOAM_VIP_IP_Address>` Login as the ***guiadmin*** user: 

Procedure 3. Perform Health Check (Pre Feature Activation)

<table>
<tr>
<td>4. ☐</td>
<td>NOAM VIP GUI: Verify server status</td>
<td>Navigate to Status & Manage -> Server.
 

Verify all Server Status is Normal (Norm) for Alarm (Alm), Database (DB), Replication Status, and Processes (Proc).
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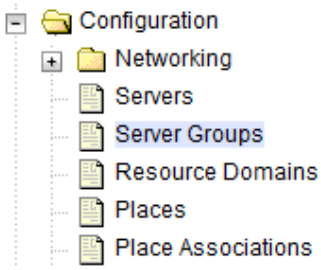
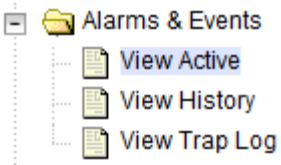
<tr><td>Enabled</td><td>Norm</td><td>Norm</td><td>Norm</td><td>Norm</td></tr>
</table>
Do not proceed to feature activation if any of the above states are not Norm. If any of these are not Norm, corrective action should be taken to restore the non-Norm status to Norm before proceeding with the feature activation.
If the Alarm (Alm) status is not Norm but only Minor alarms are present, it is acceptable to proceed with the feature activation. If there are Major or Critical alarms present, these alarms should be analyzed prior to proceeding with the feature activation. The activation may be able to proceed in the presence of certain Major or Critical alarms. Contact My Oracle Support (MOS) for assistance as necessary.</td>
</tr>
<tr>
<td>5. ☐</td>
<td>NOAM VIP GUI: Verify server configuration</td>
<td>Navigate to Configuration -> Server Groups.
 

Verify the configuration data is correct for your network.</td>
</tr>
</table>

Procedure 3. Perform Health Check (Pre Feature Activation)

6. ☐	**NOAM VIP GUI**: Log current alarms	Navigate to **Alarms & Events -> View Active**.  Click **Report**.  **Save** or **Print** this report to keep copies for future reference. 

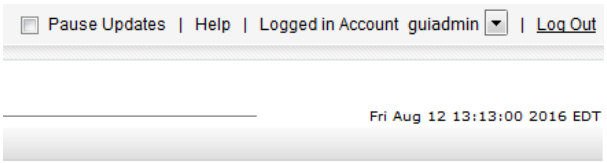
5.2 Activation Procedures

This section provides the detailed procedure steps of the feature activation execution. These procedures are executed inside a maintenance window.

5.2.1 Feature Activation

Detailed steps for GLA feature activation are provided in this procedure.

Procedure 4. Feature Activation

S T E P #	This procedure activates GLA. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, contact My Oracle Support (MOS) and ask for assistance.	
1. ☐	**NOAM/SOAM VIP GUI**: Logout	Logout of any active NOAM and/or SOAM GUI sessions: 
2. ☐	**NOAM VIP**: Establish an SSH session to active NOAM	Login as ***admusr***. `$ ssh <active NOAM XMI IP address>`
3. ☐	**NOAM VIP**: Navigate to the feature activation directory	Navigate to the feature activation directory by executing the following command: `$ cd /usr/TKLC/dsr/prod/maint/loaders/`

Procedure 4. Feature Activation

4. ☐	**NOAM VIP**: Execute the feature activation script	Run the feature activation script by executing the following command:
		`$ ./featureActivateDeactivate`
		Select **Activate**.
		`You want to Activate or Deactivate the Feature :`
		`1.Activate`
		`2.Deactivate`
		`Enter your choice :`
		Select **GLA**.
		`List of Feature you can Activate :`
		`1.RBAR`
		`2.FABR`
		`3.Mediation`
		`4.LoadGen`
		`5.GLA`
		`6.MAP Interworking`
		`7.DTLS`
		`8.DCA Framework`
		`9.DCA Application`
		Select the SOAM site for which the application will be activated:
		Note: As an alternative, you can also activate on all SOAM sites:
		`The Active SO server configured in the Topology are`
		`1. Jetta-SO-2`
		`2. ALL SOs`
		`Enter your choice on which SO you want to Activate or Deactivate the Feature :`
		Refer to Section 7.1 for output example.

Procedure 4. Feature Activation

5. ☐	**Active SOAM GUI**: Login	Establish a GUI session on the active SOAM server by using IP address of the SOAM server. Open the web browser and enter a URL of: `http://<Active_SOAM_IP_Address>` Login as the ***guiadmin*** user: 
6. ☐	**Active SOAM GUI**: Verify the GLA folder is visible	Locate and verify the GLA folder from Main Menu is visible and the configuration folder items are present. 

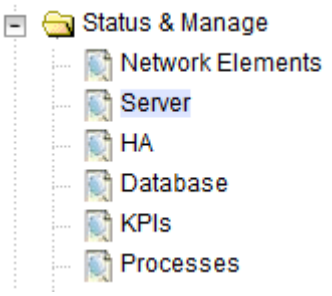
Procedure 4. Feature Activation

7. ☐	**Active SOAM GUI**: Verify application maintenance screen is visible	Verify the GLA application is present in the Application Status screen. Navigate to **Diameter -> Maintenance -> Applications**.  Verify GLA status is uninitialized. The following data should be displayed: Admin State = Disabled Operational Status = Unk Operational Reason =Unk Congestion Level = Unk

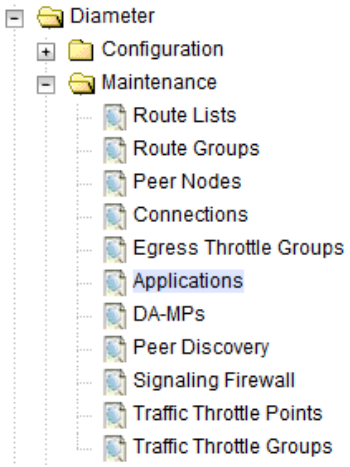
8. ☐	**Standby SOAM GUI**: Repeat verification steps	Repeat steps 5-7 for the standby SOAM.
		For DSR 5.1, 6.0, and 7.0, run the following command to activate GLA on each spare SOAM:
		Note: For DSR 7.1 or later, skip this step.
		`$ cd /usr/TKLC/dsr/prod/maint/loaders/activate`
		`$ ./load.glaActivateBsourced`

9. ☐	**SOAM VIP GUI**: Login	Establish a GUI session on the SOAM server by using the VIP address of the SOAM server. Open the web browser and enter a URL of: `http://<Primary_SOAM_VIP_IP_Address>` Login as the ***guiadmin*** user: 

Procedure 4. Feature Activation

10. ☐	**SOAM VIP GUI**: Restart DA-MPs	Multiple iterations of this step may be executed during the feature activation procedure. This is dependent on the number of DA-MP servers within your system. Make a written record of the number of times the step was performed. It is recommended that no more than 50% of the DA-MPs be restarted at once. Navigate to **Status & Manage -> Server**.  Select the desired DA-MPs, press **Ctrl** to select multiple DA-MPs at once. Click **Restart**. Click **OK** to confirm. Verify the server changes to the Err state and wait until it returns to the Enabled/Norm state. Repeat for the additional DA-MPs.
11. ☐	**Active SOAM GUI**: Enable application	Navigate to **Diameter -> Maintenance -> Applications**. Select the DA-MP servers where GLA is present. Press **Ctrl** to select multiple servers at once. Click **Enable**.  Click **OK**.

Procedure 4. Feature Activation

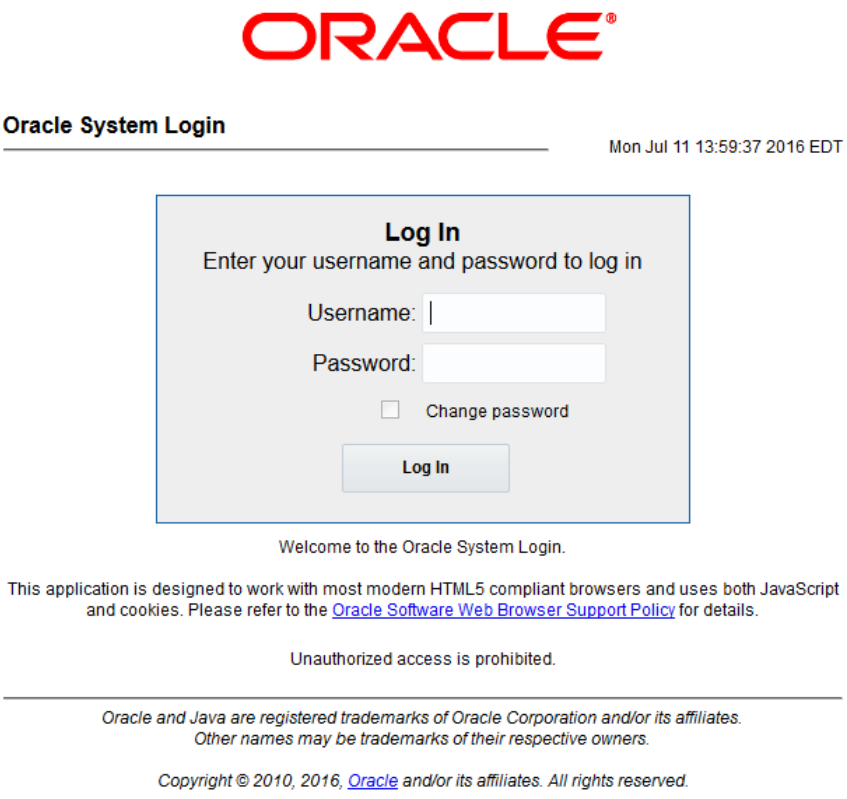
12. ☐	**Active SOAM GUI**: Verify application maintenance screen is visible	Navigate to **Diameter -> Maintenance -> Applications**.  Verify GLA status is initialized. The following data should display: Admin State = Enabled Operational Status = Available Operational Reason = Normal Congestion Level = Normal

5.3 Post-Activation Procedures

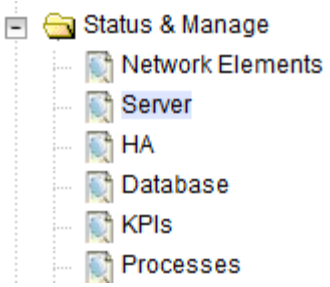
5.3.1 Perform Health Check

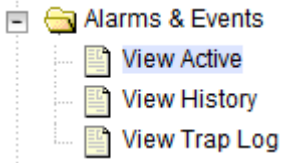
This procedure determines the health and status of the DSR release network and servers.

Procedure 5. Perform Health Check (Post-Feature Activation)

S T E P #	This procedure performs a post activation health check. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, contact My Oracle Support (MOS) and ask for assistance.	
1. ☐	**NOAM VIP GUI**: Login	Establish a GUI session on the NOAM server by using the VIP address of the NOAM server. Open the web browser and enter a URL of: `http://<Primary_NOAM_VIP_IP_Address>` Login as the ***guiadmin*** user: 

Procedure 5. Perform Health Check (Post-Feature Activation)

<table>
<tr>
<td>2. ☐</td>
<td>NOAM VIP GUI: Verify server status</td>
<td>Navigate to Status & Manage -> Server.
 

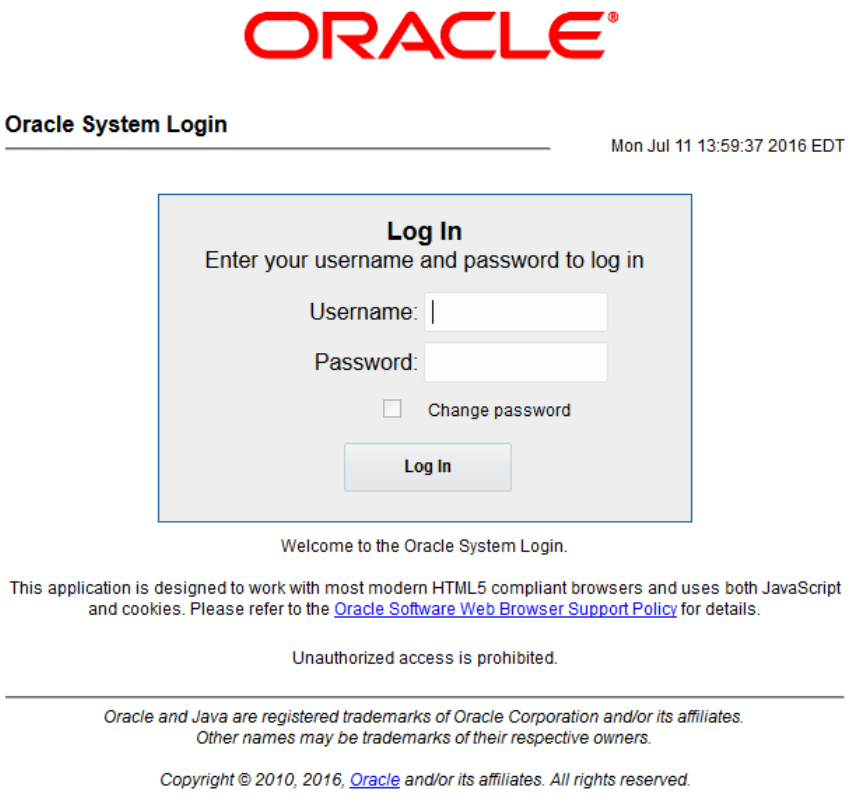
Verify all Server Status is Normal (Norm) for:
Alarm (Alm), Database (DB), Replication Status, and Processes (Proc).
<table>
<tr><th>Appl State</th><th>Alm</th><th>DB</th><th>Reporting Status</th><th>Proc</th></tr>
<tr><td>Enabled</td><td>Norm</td><td>Norm</td><td>Norm</td><td>Norm</td></tr>
<tr><td>Enabled</td><td>Norm</td><td>Norm</td><td>Norm</td><td>Norm</td></tr>
<tr><td>Enabled</td><td>Norm</td><td>Norm</td><td>Norm</td><td>Norm</td></tr>
<tr><td>Enabled</td><td>Norm</td><td>Norm</td><td>Norm</td><td>Norm</td></tr>
</table>
</td>
</tr>
<tr>
<td>3. ☐</td>
<td>NOAM VIP GUI: Log current alarms</td>
<td>Navigate to Alarms & Events -> View Active.
 

Click Report.
 

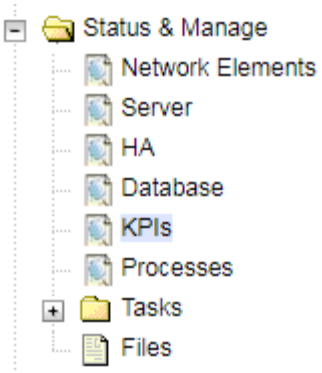
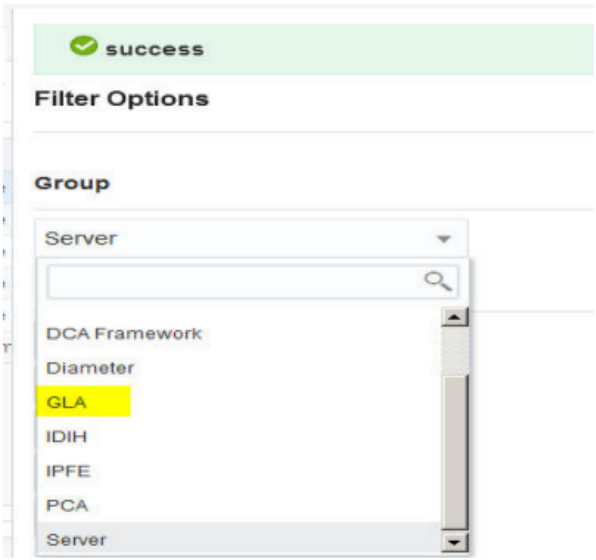
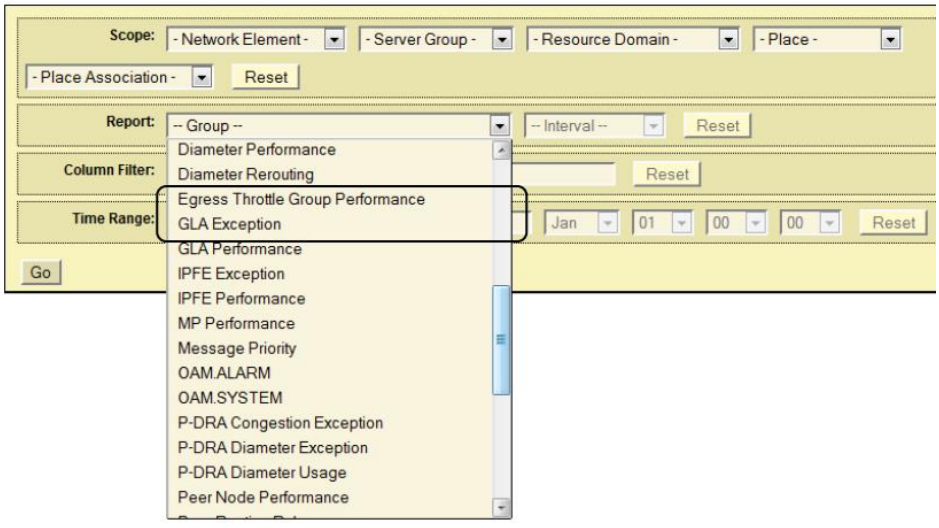
Save or Print this report to keep copies for future reference.
 

Compare this alarm report with those gathered in the pre-activation procedures. Contact My Oracle Support (MOS) if needed.</td>
</tr>
</table>

Procedure 5. Perform Health Check (Post-Feature Activation)

4. ☐	**SOAM VIP GUI**: Login	Establish a GUI session on the NOAM server by using the VIP address of the NOAM server. Open the web browser and enter a URL of: `http://<Primary_NOAM_VIP_IP_Address>` Login as the ***guiadmin*** user: 

Procedure 5. Perform Health Check (Post-Feature Activation)

5. ☐	**SOAM VIP GUI**: Verify GLA KPI screen	Navigate to **Status & Manage -> KPIs** and click the Filter icon.  Verify GLA is present in Filter Group. 
6. ☐	**SOAM VIP GUI**: Verify GLA measurement group	Navigate to **Measurements -> Report** and verify GLA measurement groups are displayed in the Report Group options. 

6. Feature Deactivation

Execute this section only if there is a problem and it is desired to revert back to the pre-activation version of the software. In general, as long as there are no Application Routing Rules using the GLA application, it will have no impact on the system and does not need to be deactivated. The deactivation procedure will cause all the GLA related configuration data (including the Application Routing Rules using GLA) to be removed.

6.1 Pre-Deactivation Procedures

Before beginning the feature deactivation, complete the Pre-Deactivation procedure below.

6.1.1 Perform Health Check

This procedure determines the health and status of the DSR network and servers.

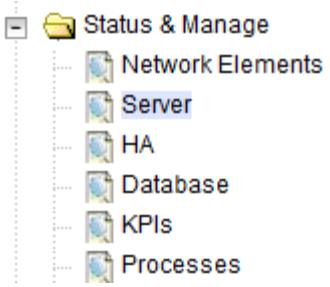
Procedure 6. Perform Health Check (Pre-Feature Deactivation)

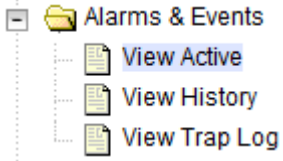
S T E P #		
	This procedure performs a health check. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, contact My Oracle Support (MOS) and ask for assistance.	
1. ☐	**SOAM VIP GUI**: Login	Establish a GUI session on the SOAM server by using the VIP address of the SOAM server. Open the web browser and enter a URL of: `http://<Primary_SOAM_VIP_IP_Address>` Login as the ***guiadmin*** user: 

Procedure 6. Perform Health Check (Pre-Feature Deactivation)

2. ☐	**SOAM VIP GUI**: Verify the GLA folder is visible	Locate and verify the GLA folder from Main Menu is visible and the configuration folder items are present  ***Note***: It should only be present after feature activation, so if it is not present, then the feature is already deactivated and there is no need to complete this deactivation procedure.
3. ☐	**NOAM VIP GUI**: Login	Establish a GUI session on the NOAM server by using the VIP address of the NOAM server. Open the web browser and enter a URL of: `http://<Primary_NOAM_VIP_IP_Address>` Login as the ***guiadmin*** user: 

Procedure 6. Perform Health Check (Pre-Feature Deactivation)

<table>
<tr>
<td>4. ☐</td>
<td>NOAM VIP GUI:
Verify server status</td>
<td>Navigate to Status & Manage -> Server.
 

Verify all Server Status is Normal (Norm) for:
Alarm (Alm), Database (DB), Replication Status, and Processes (Proc).
<table>
<tr><th>Appl State</th><th>Alm</th><th>DB</th><th>Reporting Status</th><th>Proc</th></tr>
<tr><td>Enabled</td><td>Norm</td><td>Norm</td><td>Norm</td><td>Norm</td></tr>
<tr><td>Enabled</td><td>Norm</td><td>Norm</td><td>Norm</td><td>Norm</td></tr>
<tr><td>Enabled</td><td>Norm</td><td>Norm</td><td>Norm</td><td>Norm</td></tr>
<tr><td>Enabled</td><td>Norm</td><td>Norm</td><td>Norm</td><td>Norm</td></tr>
</table>
</td>
</tr>
<tr>
<td>5. ☐</td>
<td>NOAM VIP GUI:
Log current alarms</td>
<td>Navigate to Alarms & Events -> View Active.
 

Click Report.
 

Save or Print this report to keep copies for future reference.
 

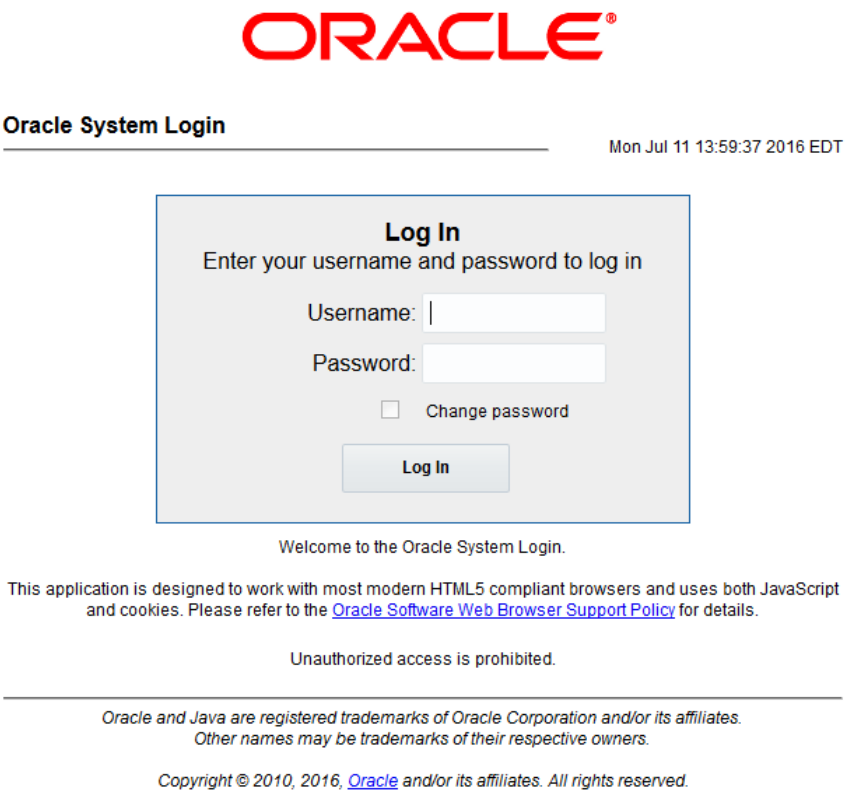
Compare this alarm report with those gathered in the pre-activation procedures. Contact My Oracle Support (MOS) if needed.</td>
</tr>
</table>

6.2 Deactivation Procedures

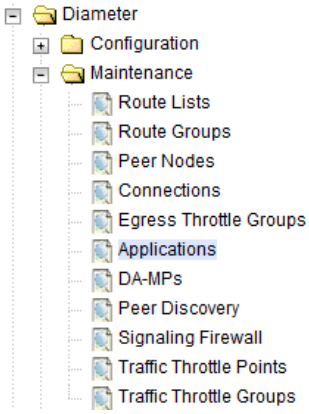
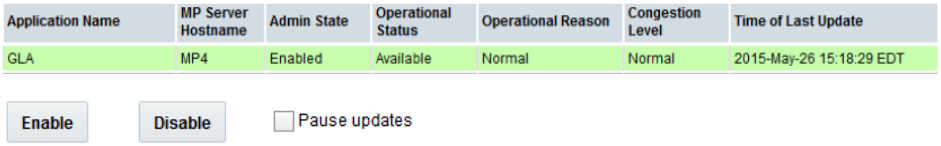
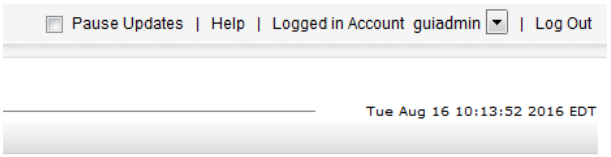
6.2.1 Feature Deactivation

This section provides the detailed steps of the GLA de-activation procedures**.**

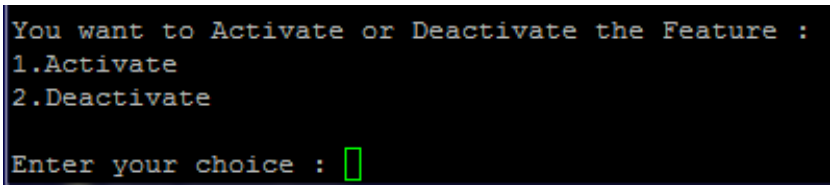
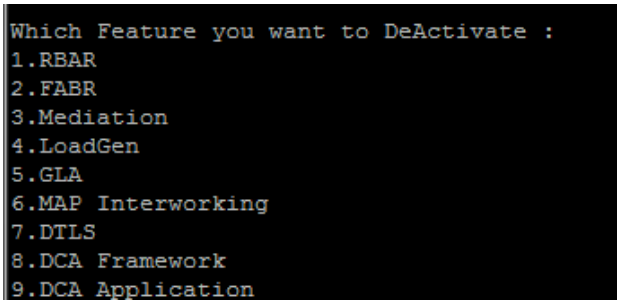
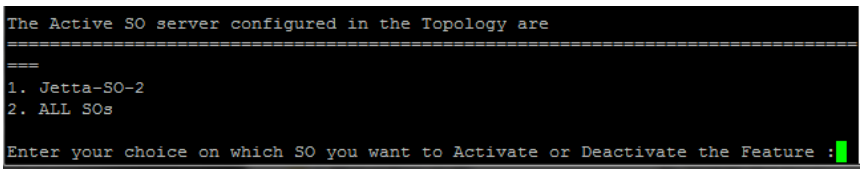
Procedure 7. Feature Deactivate

S T E P #		
	This procedure deactivates GLA. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, contact My Oracle Support (MOS) and ask for assistance.	
1. ☐	**SOAM VIP GUI**: Login	Establish a GUI session on the SOAM server by using the VIP address of the SOAM server. Open the web browser and enter a URL of: `http://<Primary_SOAM_VIP_IP_Address>` Login as the ***guiadmin*** user: 

Procedure 7. Feature Deactivate

2. ☐	**Active SOAM GUI**: Disable GLA application	Navigate to **Diameter -> Maintenance -> Applications**.  Select the GLA applications to disable. Click **Disable**.  Click **OK** to confirm.
3. ☐	**NOAM/SOAM VIP GUI**: Logout	Logout of any active NOAM and/or SOAM GUI sessions: 
4. ☐	**NOAM VIP**: Establish an SSH session	Establish an SSH session to the NOAM VIP. Login as ***admusr***.
5. ☐	**NOAM VIP**: Navigate to the feature activation directory	Navigate to the feature activation directory by executing the following command: `$ cd /usr/TKLC/dsr/prod/maint/loaders/`

Procedure 7. Feature Deactivate

6. ☐	**NOAM VIP**: Execute the feature activation script	Run the feature activation script by executing the following command: `$ ./featureActivateDeactivate` Select **Deactivate**.  Select **GLA**.  Select the SOAM site for which the application will be deactivated: ***Note***: As an alternative, you can also deactivate on all SOAM sites:  Refer to Section 7.2 for output example.

Procedure 7. Feature Deactivate

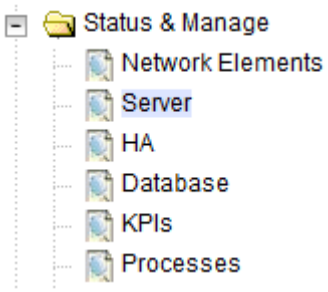
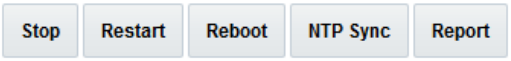
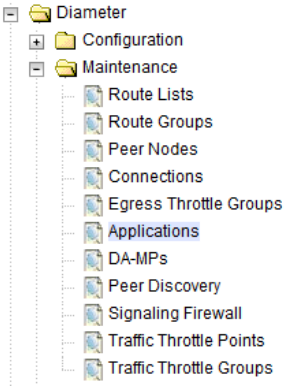
7. ☐	**Active SOAM GUI**: Login	Establish a GUI session on the active SOAM server by using IP address of the SOAM server. Open the web browser and enter a URL of: `http://<Active_SOAM_IP_Address>` Login as the ***guiadmin*** user: 
8. ☐	**Active SOAM GUI**: Verify the GLA folder is not visible	Verify the GLA folder is not visible under Main Menu.

9. ☐	**Standby SOAM GUI**: Repeat verification steps	Repeat **steps 7-8** for the standby SOAM.
		For DSR 5.1, 6.0, and 7.0, you will have to run the following command to Deactivate GLA on each spare SOAM:
		Note: For DSR 7.1 or later, skip this step.
		`$ cd /usr/TKLC/dsr/prod/maint/loaders/deactivate`
		`$ ./load.glaDeactivateBsourced`

Procedure 7. Feature Deactivate

10. ☐	**SOAM VIP GUI**: Login	Establish a GUI session on the SOAM server by using the VIP address of the SOAM server. Open the web browser and enter a URL of: `http://<Primary_SOAM_VIP_IP_Address>` Login as the ***guiadmin*** user: 

Procedure 7. Feature Deactivate

11. ☐	**SOAM VIP GUI**: Restart DA-MPs	Multiple iterations of this step may be executed during the feature activation procedure. This is dependent on the number of DA-MP servers within your system. Make a written record of the number of times the step was performed. It is recommended that no more than 50% of the DA-MPs be restarted at once. Navigate to **Status & Manage -> Server**.  Select the desired DA-MPs, press **Ctrl** to select multiple DA-MPs at once. Click **Restart**.  Click **OK** to confirm. Verify the server changes to the Err state and wait until it returns to the Enabled/Norm state. Repeat for the additional DA-MPs.
12. ☐	**SOAM VIP GUI**: Verify maintenance screen	Navigate to **Diameter -> Maintenance -> Applications**.  Verify the GLA application is not present.

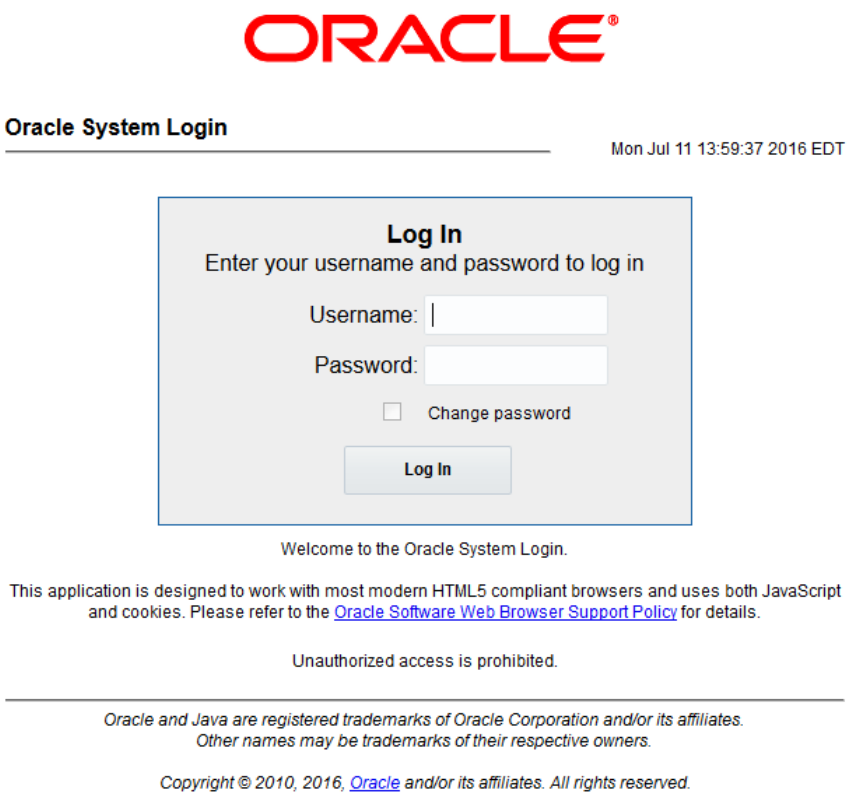
6.3 Post-Deactivation Procedures

To complete a deactivation, complete the Post-Deactivation procedure below.

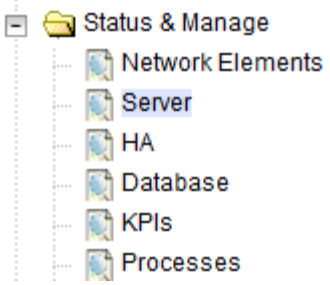
6.3.1 Perform Health Check

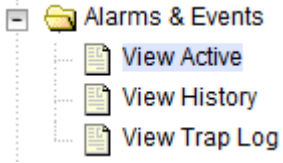
This procedure determines the health and status of the network and servers.

Procedure 8. Perform Health Check (Post-Feature Deactivation)

S T E P #	This procedure performs a post activation health check. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, contact My Oracle Support (MOS) and ask for assistance.	
1. ☐	**NOAM VIP GUI**: Login	Establish a GUI session on the NOAM server by using the VIP address of the NOAM server. Open the web browser and enter a URL of: `http://<Primary_NOAM_VIP_IP_Address>` Login as the ***guiadmin*** user: 

Procedure 8. Perform Health Check (Post-Feature Deactivation)

<table>
<tr>
<td>2. ☐</td>
<td>NOAM VIP GUI:
Verify server status</td>
<td>Navigate to Status & Manage -> Server.
 

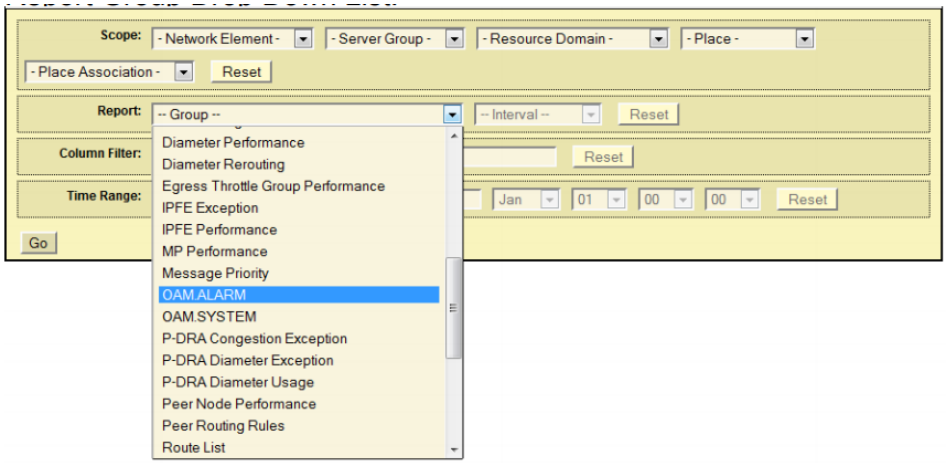
Verify all Server Status is Normal (Norm) for:
Alarm (Alm), Database (DB), Replication Status, and Processes (Proc).
<table>
<tr><th>Appl State</th><th>Alm</th><th>DB</th><th>Reporting Status</th><th>Proc</th></tr>
<tr><td>Enabled</td><td>Norm</td><td>Norm</td><td>Norm</td><td>Norm</td></tr>
<tr><td>Enabled</td><td>Norm</td><td>Norm</td><td>Norm</td><td>Norm</td></tr>
<tr><td>Enabled</td><td>Norm</td><td>Norm</td><td>Norm</td><td>Norm</td></tr>
<tr><td>Enabled</td><td>Norm</td><td>Norm</td><td>Norm</td><td>Norm</td></tr>
</table>
</td>
</tr>
<tr>
<td>3. ☐</td>
<td>NOAM VIP GUI:
Log current alarms</td>
<td>Navigate to Alarms & Events -> View Active.
 

Click Report.
 

Save or Print this report to keep copies for future reference.
 

Compare this alarm report with those gathered in the pre-Deactivation procedures. Contact My Oracle Support (MOS) if needed.
Note: No routed service alarms should exist. These include the following alarms:
<table>
<tr><th>Alarm-ID</th><th>Alarm Condition</th></tr>
<tr><td>19820</td><td>Communication Agent Routed Service Unavailable</td></tr>
<tr><td>19821</td><td>Communication Agent Routed Service Degraded</td></tr>
<tr><td>19822</td><td>Communication Agent Routed Service Congested</td></tr>
<tr><td>19823</td><td>Communication Agent Routed Service Using Low-Priority Connection Group</td></tr>
</table>
</td>
</tr>
<tr>
<td>4. ☐</td>
<td>NOAM VIP GUI:
Verify the KPIs are not shown for GLA</td>
<td>Navigate to Status & Manage -> KPIs.
Click the Filter icon.
Verify the GLA feature KPIs, mentioned in Procedure 5, step 6. , are not displayed after deactivation.</td>
</tr>
</table>

Procedure 8. Perform Health Check (Post-Feature Deactivation)

5. ☐	**NOAM VIP GUI**: Verify the measurements are not shown for GLA	Navigate to **Measurements -> Report**. Verify the GLA Measurement groups are not listed in the Report options 

7. Engineering Notes

FIPS integrity verification test failed: In DSR 7.1+, you may see 'FIPs integrity verification test failed' message displayed during the activation/Deactivation output, this message is expected and harmless.

7.1 Sample Output of Activation (Active NOAM)

```
[admusr@NO1 loaders]$ ls
activate     helper upgrade
deactivate   install      verifyFeatureActivation
featureActivateDeactivate  load.dsr.install
[admusr@NO1 loaders]$ ./featureActivateDeactivate
Tue May 26 13:22:30 EDT 2017::Starting featureActivateDeactivate main...
Start the Automation script , To run the Feature Activation/DeActivation on Acti
ve NO.
You want to Activate or Deactivate the Feature :
1.Activate
2.Deactivate
Enter your choice : 1
List of Feature you can Activate :
1.RBAR
2.FABR
3.Mediation
4.LoadGen
5.GLA
6.MAP Interworking
7.DTLS
8.DCA Framework
9.DCA Applications
Enter the choice : 5
Run script to Activate gla Feature
====================================S-T-A-R-T=================================
Execution of Activation/Deactivation Process Starts
==============================================================================
Starting Activation/Deactivation process....
Executing /usr/TKLC/dsr/prod/maint/loaders/activate/load.glaActivateAsourced scr
ipt on NO1
==============================================================================
Policy DRA is enabled, proceeding ahead with GLA activation
==============================================================================
PCRF Pooling is enabled, proceeding ahead with GLA activation
```

```
================================================================================
Add GLA to DsrApplication.
================================================================================
id=13
name=GLA
unavailableAction=SendAnswer
avpInsertion=Yes
shutdownMode=Forced
shutdownTimer=0
resultCode=3002
vendorId=0
errorString=GLA: Unavailable
resExhResultCode=3004
resExhVendorId=0
resExhErrorString=GLA: Resource Exhausted
routeListId=-1
realm=
fqdn=
mcl=0
================================================================================
Add GLA KPI group
================================================================================
KPI_Group=GLA
Visibility=VIS_SO
================================================================================
Add GLA Measurement groups
Meas_Group=GLA Performance
Visibility=VIS_SO
==================================
Meas_Group=GLA Exception
Visibility=VIS_SO
================================================================================
Add GLA GUI Configuration Permissions.
================================================================================
_appid=17
group_id=9000
group_name=GLA Configuration Permissions
================================================================================
Starting to Execute the Loaders on Mate server
```

```
================================================================================
Executing /usr/TKLC/dsr/prod/maint/loaders/activate/load.glaActivateAsourced scr
ipt on NO2
================================================================================
FIPS integrity verification test failed.
================================================================================
Add GLA to DsrApplication.
================================================================================
id=13
name=GLA
unavailableAction=SendAnswer
avpInsertion=Yes
shutdownMode=Forced
shutdownTimer=0
resultCode=3002
vendorId=0
errorString=GLA: Unavailable
resExhResultCode=3004
resExhVendorId=0
resExhErrorString=GLA: Resource Exhausted
routeListId=-1
realm=
fqdn=
mcl=0
==================================
KPI_Group=GLA
Visibility=VIS_SO
==================================
Meas_Group=GLA Performance
Visibility=VIS_SO
==================================
Meas_Group=GLA Exception
Visibility=VIS_SO
================================================================================
Add GLA GUI Configuration Permissions.
================================================================================
_appid=17
group_id=9000
group_name=GLA Configuration Permissions
```

```
================================================================================
FIPS integrity verification test failed.
================================================================================
The Active SO server configured in the Topology are
================================================================================
1. SO1
2. ALL SOs
Enter your choice on which SO you want to Activate or Deactivate the Feature :1
================================================================================
This is a 3 Tier Setup , So run the B sourced loaders on SO server : SO1
Executing /usr/TKLC/dsr/prod/maint/loaders/activate/load.glaActivateBsourced scr
ipt on SO1
FIPS integrity verification test failed.
================================================================================
Current server is HA ACTIVE
================================================================================
PCA is already activated, Proceeding ahead
================================================================================
Policy DRA is enabled, proceeding ahead with GLA activation
================================================================================
PCRF Pooling is enabled, proceeding ahead with GLA activation
================================================================================
Add GLA to DsrApplication.
================================================================================
id=13
name=GLA
unavailableAction=SendAnswer
shutdownMode=Forced
shutdownTimer=0
resultCode=3002
vendorId=0
errorString=GLA: Unavailable
resExhResultCode=3004
resExhVendorId=0
resExhErrorString=GLA: Resource Exhausted
routeListId=-1
realm=
fqdn=
mcl=0
```

```
================================================================================
Add Common DSR Application measurements for GLA.
================================================================================
repgrp=DSR Application Performance
measid=15900
subgrp=
==================================
repgrp=DSR Application Exception
measid=15904
subgrp=
==================================
repgrp=DSR Application Performance
measid=15902
subgrp=
==================================
repgrp=DSR Application Performance
measid=15903
subgrp=
==================================
repgrp=DSR Application Performance
measid=15905
subgrp=
==================================
repgrp=DSR Application Performance
measid=15906
subgrp=
================================================================================
Add GLA GUI Configuration Permissions.
================================================================================
_appid=17
group_id=9000
group_name=GLA Configuration Permissions
================================================================================
FIPS integrity verification test failed.
================================================================================
Executing the Loaders and Clearing Cache on Standby SO servers.
================================================================================
Starting to Execute the Loaders on Mate server
================================================================================
```

```
Executing /usr/TKLC/dsr/prod/maint/loaders/activate/load.glaActivateBsourced scr
ipt on SO2
================================================================================
FIPS integrity verification test failed.
================================================================================
Current server is HA STANDBY
================================================================================
PCA is already activated, Proceeding ahead
================================================================================
Policy DRA is enabled, proceeding ahead with GLA activation
================================================================================
PCRF Pooling is enabled, proceeding ahead with GLA activation
================================================================================
id=13
name=GLA
unavailableAction=SendAnswer
avpInsertion=Yes
shutdownMode=Forced
shutdownTimer=0
resultCode=3002
vendorId=0
errorString=GLA: Unavailable
resExhResultCode=3004
resExhVendorId=0
resExhErrorString=GLA: Resource Exhausted
routeListId=-1
realm=
fqdn=
mcl=0
================================================================================
Add GLA GUI Configuration Permissions.
================================================================================
_appid=17
group_id=9000
group_name=GLA Configuration Permissions
==================================
FIPS integrity verification test failed.
==========================================
Do you want to activate/deactivate this feature on another System OAM Server
```

```
[Y/N
] : n
[admusr@NO1 loaders]$
```

7.2 Sample Output of Deactivation (Active NOAM)

```
[admusr@NO2 loaders]$ ./featureActivateDeactivate
Tue Apr  1 02:21:17 EDT 2017::Starting featureActivateDeactivate main...
Start the Automation script , To run the Feature Activation/DeActivation on Active NO.
You want to Activate or Deactivate the Feature :
1.Activate
2.DeactivateEnter your choice : 2
Which Feature you want to
DeActivate :1.RBAR
2.FABR
3. Mediation
4.LoadGen
5.GLA
6.MAP Interworking
7.DTLS
8.DCA Framework
9.DCA Application
Enter your choice : 5
Run script to Deactivate gla Feature
====================================S-T-A-R-T=====================================
Execution of Activation/Deactivation Process Starts
==================================================================================
Starting Activation/Deactivation process....
Executing /usr/TKLC/dsr/prod/maint/loaders/deactivate/load.glaDeactivateAsourced
script on NO2
==================================================================================
Hiding GLA KPI group and Measurement Groups
==================================================================================
=== deleted 1 records ===
==================================================================================
Hiding GLA measurement groups
==================================================================================
=== deleted 1 records ===
=== deleted 1 records ===
==================================================================================
```

```
Removing GLA from the DSR Application Table
================================================================================
=== deleted 1 records ===
================================================================================
Removing GLA GUI permissions.
================================================================================
=== deleted 1 records ===
================================================================================================
Starting to Execute the Loaders on Standby server
================================================================================================
Executing /usr/TKLC/dsr/prod/maint/loaders/deactivate/load.glaDeactivateAsourced
script on NO1
================================================================================================
Removing GLA GUI permissions.
================================================================================
=== deleted 0 records ===
================================================================================================
The Active SO server configured in the Topology are
================================================================================================
1. SO1
2. ALL SOs
Enter your choice on which SO you want to Activate or Deactivate the Feature :1
================================================================================================
This is a 3 Tier Setup , So run the B sourced loaders on SO server : SO1
Executing /usr/TKLC/dsr/prod/maint/loaders/deactivate/load.glaDeactivateBsourced
script on SO1
================================================================================
Current server is HA ACTIVE
================================================================================
Removing all ART rules pointing to GLA
================================================================================
=== deleted 0 records ===
================================================================================
Removing applicationId=13(GLA) from the DSR Application Per Mp Table
================================================================================
=== deleted 0 records ===
================================================================================
Removing GLA from the DSR Application Table
================================================================================
=== deleted 1 records ===
```

```
==========================================================================================
  === deleted 3 records ===
==========================================================================================
Removing GLA GUI permissions.
==========================================================================================
=== deleted 1 records ===
==========================================================================================
Executing the Loaders and Clearing Cache on Standby SO servers.
==========================================================================================
==========================================================================================
Starting to Execute the Loaders on Standby server
==========================================================================================
Executing /usr/TKLC/dsr/prod/maint/loaders/deactivate/load.glaDeactivateBsourced
script on SO2
==========================================================================================
Current server is HA STANDBY
==========================================================================================
Removing GLA GUI permissions.
==========================================================================================
=== deleted 0 records ===
==========================================================================================
Do you want to activate/deactivate this feature on another System OAM Server[Y/N] : N
```

Appendix A. My Oracle Support (MOS)

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

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

1. Select **2** for New Service Request.
2. Select **3** for Hardware, Networking and Solaris Operating System Support.
3. Select one of the following options:

   For technical issues such as creating a new Service Request (SR), select 1.

   For non-technical issues such as registration or assistance with MOS, select 2.

You are connected to a live agent who can assist you with MOS registration and opening a support ticket. MOS is available 24 hours a day, 7 days a week, 365 days a year.