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Diameter Signaling Router

SCEF Feature Activation Guide

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Table of Contents

1. Introduction 5
1.1 Purpose and Scope 5
1.2 References 5
1.3 Acronyms 5
1.4 Terminology 6
1.5 General Procedure Step Format 6
2. Feature Activation Overview 7
2.1 Pre-Feature Activation Overview 7
2.1.1 Feature Activation Execution Overview 7
2.1.2 Post-Feature Activation Overview 8
3. Feature Deactivation Overview 9
3.1 Pre-Feature Deactivation Overview 9
3.2 Feature Deactivation Execution Overview 9
3.3 Post-Feature Deactivation Overview 10
4. Feature Activation Preparation 11
4.1 System Topology Check 11
4.2 Perform Health Check 12
5. Feature Activation 15
5.1 Pre-Activation Procedures 15
5.1.1 Perform Health Check 15
5.2 Activation Procedures 17
5.2.1 Feature Activation 17
5.3 Post-Activation Procedures 22
5.3.1 Perform Health Check 22
6. Feature Deactivation 26
6.1 Pre-Deactivation Procedures 26
6.1.1 Perform Health Check 26
6.1.2 Pre SCEF Deactivation Steps 27
6.2 Deactivation Procedures 33
6.2.1 Feature Deactivation 33
6.3 Post-Deactivation Procedures 38
6.3.1 Perform Health Check 38
7. Engineering Notes 40
7.1 Sample Output of Activation (Active NOAM) 40
7.2 Sample Output of Deactivation (Active NOAM) 43

List of Tables

Table 1. Acronyms 5
Table 2. Terminology 6
Table 3. Pre-Feature Activation Overview 7
Table 4. Feature Activation Execution Overview 8
Table 5. Post-Feature Activation Overview 8
Table 6. Pre-Feature Deactivation Overview 9
Table 7. Feature Deactivation Overview 9
Table 8. Post-Feature Deactivation Overview 10

List of Figures

Figure 1. Example of a Procedure Step 6

List of Procedures

Procedure 1: System Topology Check 11
Procedure 2: Perform Health Check (Feature Activation Preparation) 13
Procedure 3: Perform Health Check (Pre Feature Activation) 15
Procedure 4: Feature Activation 17
Procedure 5: Perform Health Check (Post-Feature Activation) 22
Procedure 6: Perform Health Check (Pre-Feature Deactivation) 26
Procedure 7: Disable Diameter Connections 27
Procedure 8: Disable Application 29
Procedure 9: Remove DSR Configuration Data 30
Procedure 10: Remove Resource Domain Configuration Data 32
Procedure 11: Remove Place Associations Configuration Data 32
Procedure 12: Remove Place Configuration Data 33
Procedure 13: Feature Deactivate 33
Procedure 14: Perform Health Check (Post-Feature Deactivation) 38
Procedure 15: Enable TCP Port 47

1. Introduction

1.1 Purpose and Scope

This document defines the procedure that is executed to activate the Service Capability Exposure Function (SCEF) feature. 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 SCEF feature is activated during a planned maintenance window to minimize the impact to network traffic.

This document also provides a procedure to deactivate SCEF feature after it has been activated. Refer to Section 6 for a discussion of deactivation.

1.2 References

[1] DSR 8.5.1 API Gateway installation Guide

1.3 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
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 OAM
OAM	Operations, Administration and Maintenance
SCEF	Service Capability Exposure Function
SDS	Subscriber Database Server
SOAM	System OAM
SSH	Secure Shell
UI	User Interface
VIP	Virtual IP

Acronym	Definition
VPN	Virtual Private Network
XMI	External Management Interface

1.4 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
SOAM	System Operations and Maintenance

1.5 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).

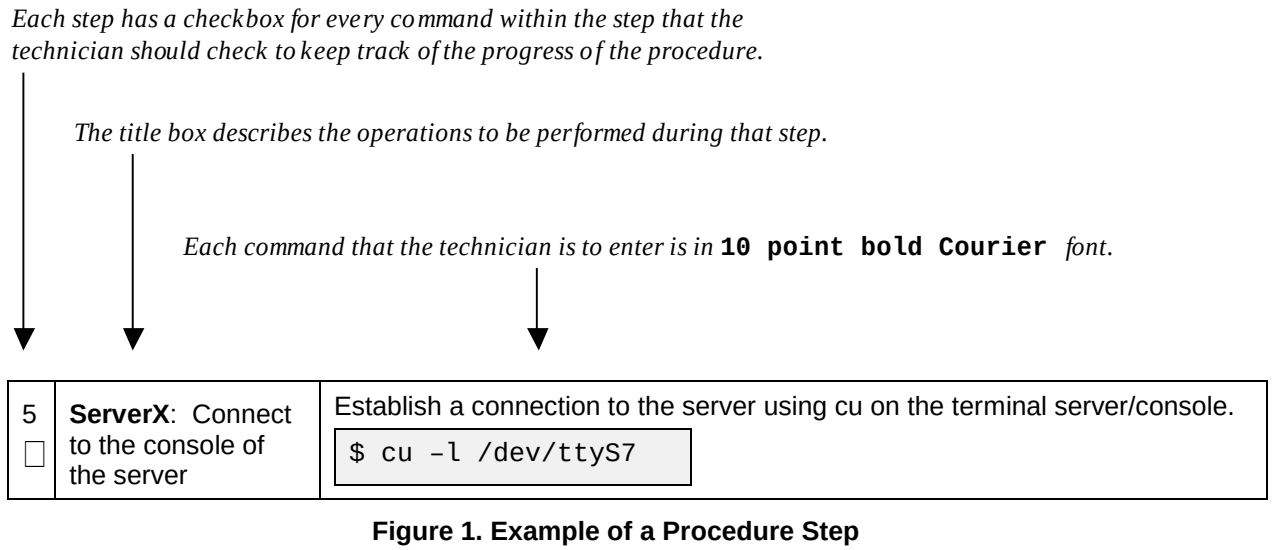


Figure 1. Example of a Procedure Step

2. Feature Activation Overview

This section lists the required materials and information needed to execute the feature activation. In addition, Table 3 through Table 8 provide 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 steps to be executed begin in Section 5.

Note: Before activating, refer to DSR API Gateway install guide to create and configure VMs for DSR APIGW.

TCP port **49152** must be open for the communication between DSR APIGW and DA-MP. Refer to Appendix A for more details.

2.1 Pre-Feature Activation Overview

Execute the pre-activation procedures shown in the following table outside a maintenance window, if required. 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 3. Pre-Feature Activation Overview

Procedure	Elapsed Time (Hours: Minutes)		Activity Feature Activation Preparation	Impact
	This Step	Cum.		
System Topology Check (Procedure 1)	0:20	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)	0:05	0.25	• Verify SCEF release. • Verify server status. • Log all current alarms.	None

2.1.1 Feature Activation Execution Overview

Execute the procedures shown in the following table within 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 4. Feature Activation Execution Overview

Procedure	Elapsed Time (Hours: Minutes)		Activity Feature Activation Execution	Impact
	This Step	Cum.		
Perform Health Check (Procedure 3)	0:05	0:05	• Verify DSR release. • Verify proper SCEF feature state. • Verify server status. • Log all current alarms.	None
Feature Activation (Procedure 4)	0:20	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 SOAM GUI. • Verify the SBR and IPFE Folders. • Restart each active DA-MP server. • Verify Maintenance screen. • Log into NOAM GUI. • Verify Maintenance screen. • Close SSH connections to NOAM.	SCEF feature is activated

2.1.2 Post-Feature Activation Overview

Execute the procedures shown in the following table within 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 5. Post-Feature Activation Overview

Procedure	Elapsed Time (Hours: Minutes)		Activity Feature Activation Completion	Impact
	This Step	Cum.		
Perform Health Check (Procedure 5)	0:05	0:05	• Verify server status. • Log all current alarms.	SCEF feature has been activated on DSR

3. Feature Deactivation Overview

3.1 Pre-Feature Deactivation Overview

Execute the procedures shown in the following table within 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 6. Pre-Feature Deactivation Overview

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

3.2 Feature Deactivation Execution Overview

Execute the procedures shown in the following table within 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. Feature Deactivation Overview

Procedure	Elapsed Time (Hours or Minutes)		Activity Deactivation Procedures	Impact
	This Step	Cum.		
Deactivation Setup	0:30	0:30	The reason to deactivate has a direct impact on any additional backout preparation that must be done. Since not all possible reasons can be predicted ahead of time, only estimates are given here. Execution time will vary.	None

Procedure	Elapsed Time (Hours or Minutes)		Activity Deactivation Procedures	Impact
	This Step	Cum.		
Deactivation (Procedure 13)	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 SOAM GUI. • Verify the SBR and IPFE Folders. • Restart each active DA-MP server. • Log into NOAM GUI • Verify Maintenance screen.	SCEF feature 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 8. Post-Feature Deactivation Overview

Procedure	Elapsed Time (Hours or Minutes)		Activity Deactivation Procedures	Impact
	This Step	Cum.		
Perform Health Check (Procedure 14)	0:05	0:05	• Verify server status. • Log all current alarms.	None

4. Feature Activation Preparation

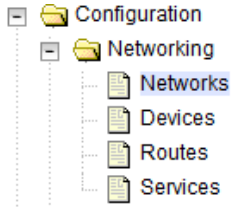
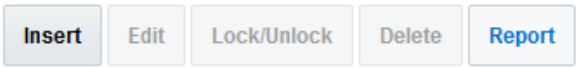
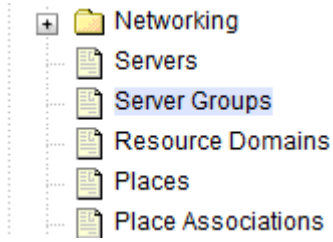
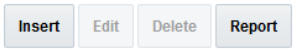
This section provides detailed procedures to prepare a system for SCEF feature activation. These procedures are executed outside a maintenance window.

4.1 System Topology Check

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

Procedure 1: System Topology Check

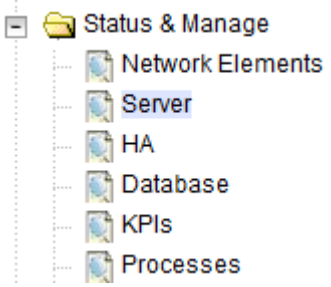
Step#	Procedure	Description
Check off (√) the boxes provided for each step, once completed. Contact My Oracle Support (MOS) for assistance.		
1 ☐	**NOAM VIP GUI**: Login	Establish a GUI session on the NOAM server by using the VIP address of the NOAM server. Open the web browser and enter a URL of: `http://<Primary_NOAM_VIP_IP_Address>` Login as the ***guiadmin*** user:

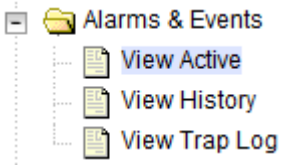
Step#	Procedure	Description
2 ☐	**NOAM VIP GUI**: Verify network configuration data	Navigate to **Configuration -> Networking -> Networks**.  Click **Report**.  Verify the configuration data is correct for your network. **Save** or **Print** this report to keep copies for future reference.
3 ☐	**NOAM 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.
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 exact sequence which DA-MP servers must 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 is used to determine the health and status of the SCEF release 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 before the start of the maintenance window in which the feature activation will take place.

Procedure 2: Perform Health Check (Feature Activation Preparation)

Step#	Procedure	Description
Check off (√) the boxes provided for each step, once completed. Contact My Oracle Support (MOS) 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:
2 ☐	**NOAM VIP GUI**: Verify server status	Navigate to **Status & Manage -> Server**.  Verify all Server Status is Normal (Norm) for: Alarm (Alm), Database (DB), Replication Status, and Processes (Proc). Appl State | Alm | DB | Reporting Status | Proc Enabled | Norm | Norm | Norm | Norm Enabled | Norm | Norm | Norm | Norm Enabled | Norm | Norm | Norm | Norm Enabled | Norm | Norm | Norm | Norm 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.

Step#	Procedure	Description
		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.
3 ☐	**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. Feature Activation

Before feature activation, perform the system health check in Section 4.2. This check ensures that 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 the 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 **Appendix B** 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 should be provided. For procedures which are executed multiple times, the checkbox 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 the right side).
- Captured data is required for future support reference.

5.1 Pre-Activation Procedures

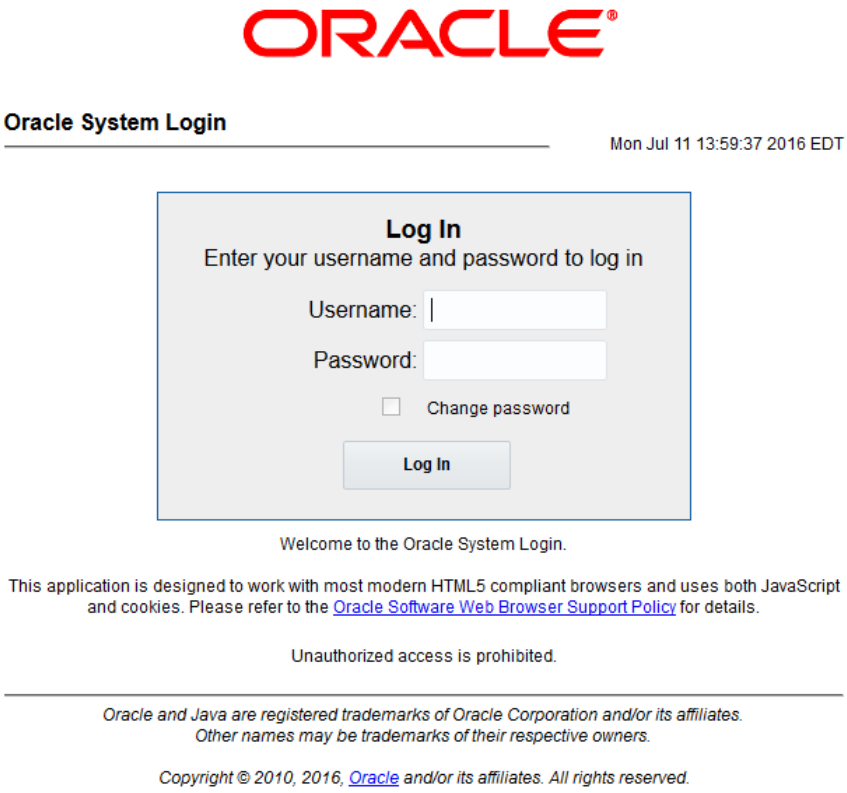
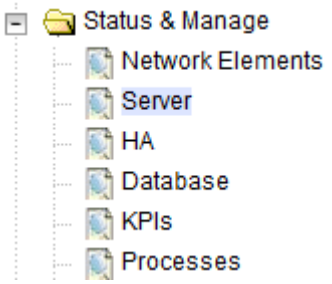
5.1.1 Perform Health Check

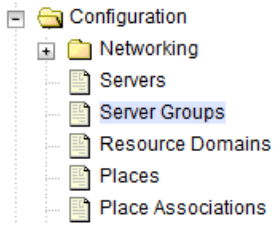
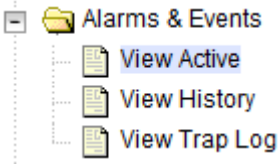
This procedure is used to determine the health and status of the network and servers. This must be executed at the start of every maintenance window.

Note: The Health Check procedure below 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)

Step#	Procedure	Description
Check off (√) the boxes provided for each step, once completed. Contact My Oracle Support (MOS) for assistance.		

Step#	Procedure	Description
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: 
2 ☐	**NOAM VIP GUI**: Verify server status	Navigate to **Status & Manage -> Server**.  Verify all Server Status is Normal (Norm) for: Alarm (Alm), Database (DB), Replication Status, and Processes (Proc). Appl State | Alm | DB | Reporting Status | Proc Enabled | Norm | Norm | Norm | Norm Enabled | Norm | Norm | Norm | Norm Enabled | Norm | Norm | Norm | Norm Enabled | Norm | Norm | Norm | Norm

Step#	Procedure	Description
		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.
3 ☐	**NOAM VIP GUI**: Verify server configuration	Navigate to **Configuration -> Server Groups**.  Verify the configuration data is correct for your network. DA MP, USBR, Place association and …
4 ☐	**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

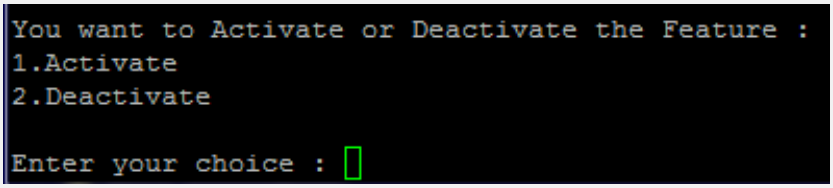
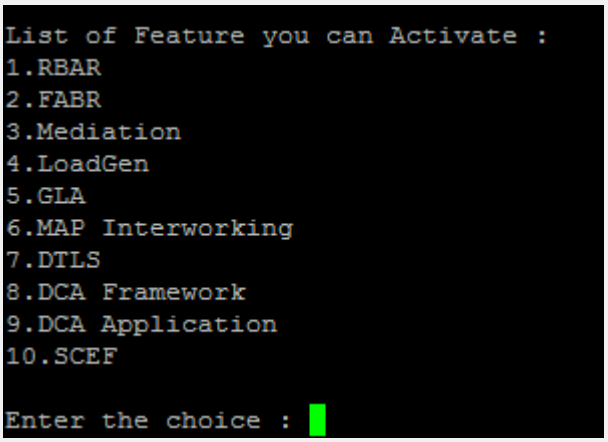
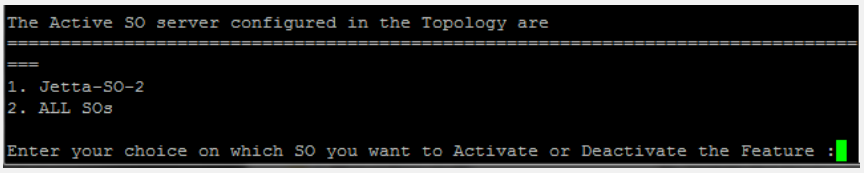
This section provides the detailed procedure steps of the feature activation execution. These procedures are executed inside a maintenance window.

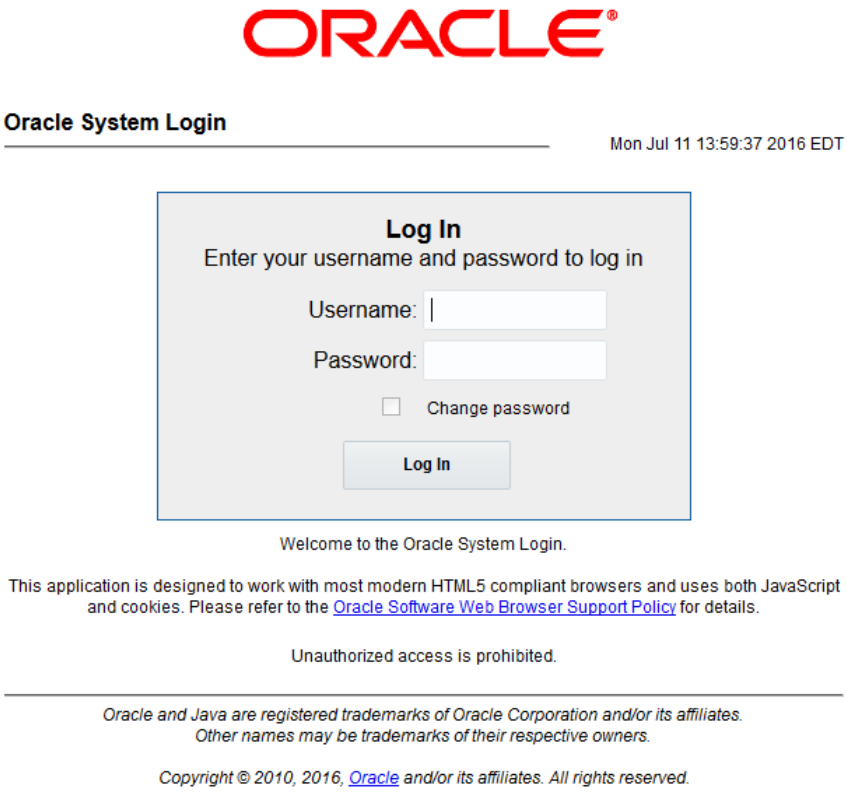
5.2.1 Feature Activation

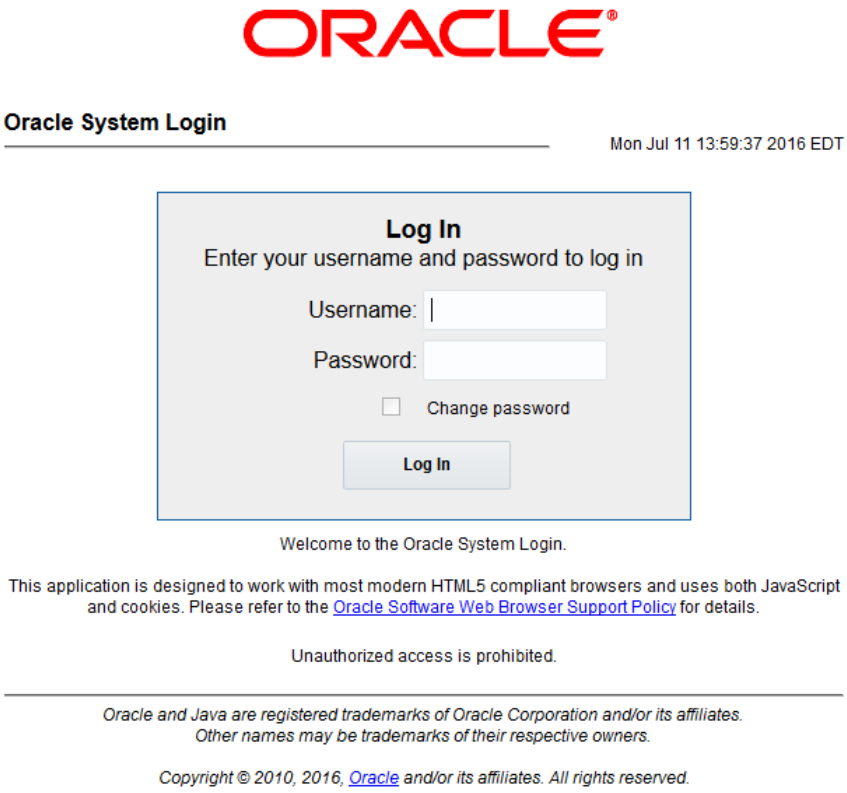
This procedure provides detailed steps to activate SCEF.

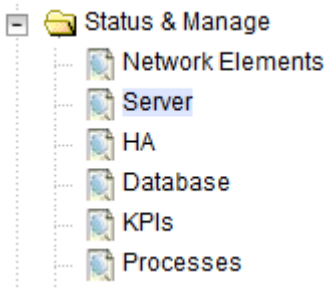
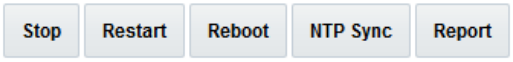
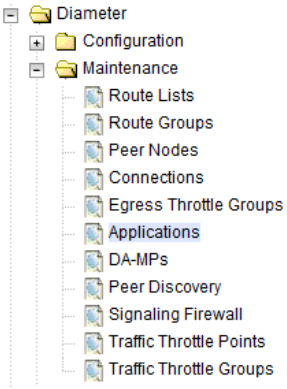
Procedure 4: Feature Activation

Step#	Procedure	Description
Check off (√) the boxes provided for each step, once completed. Contact My Oracle Support (MOS) for assistance.		

Step#	Procedure	Description
1 ☐	**NOAM VIP**: Establish an SSH session	Establish an SSH session to the NOAM VIP. Login as ***admusr***.
2 ☐	**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/`
3 ☐	**NOAM VIP**: Execute the feature activation script	Run the feature activation script by executing the following command: `$ ./featureActivateDeactivate` Enter 1 to **Activate** the feature.  Enter 10 to select **SCEF**.  Select the SOAM site for which the application must be activated: ***Note***: As an alternative, you can also activate on all SOAM sites:  Refer to Section 7.1 for output example.

Step#	Procedure	Description
4 ☐	**Active SOAM GUI**: Login	Establish a GUI session on the active SOAM server by using the 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: 
5 ☐	**SOAM VIP GUIs**: Verify the SCEF related folder is visible	In **Measurement -> Reports** window, SCEF related groups are added. In **Diameter -> Maintenance -> Application**, SCEF application is displayed.
6 ☐	**Close SSH connection to active NOAMs**	Log out of the active NOAM login shell and close the SSH connections by executing the following command: `# exit` Close the SSH connection

Step#	Procedure	Description
7 ☐	**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: 

Step#	Procedure	Description
8 ☐	**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.
9 ☐	**SOAM VIP GUI**: Verify maintenance screen	Navigate to **Diameter -> Maintenance -> Applications**.  Verify the SCEF application is present.

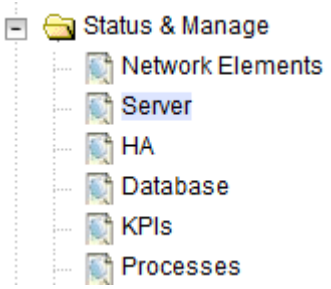
5.3 Post-Activation Procedures

5.3.1 Perform Health Check

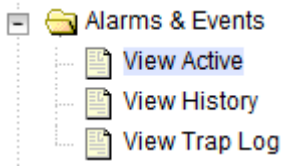
This procedure is used to determine the health and status of the SCEF release network and servers.

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

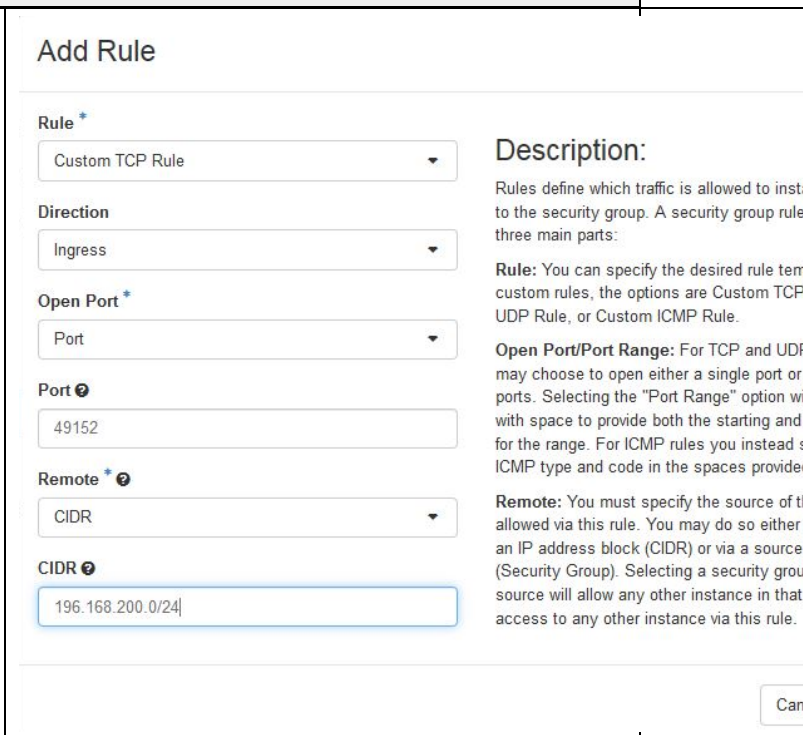
STEP#	Procedure	Description
Check off (√) the boxes provided for each step, once completed. Contact My Oracle Support (MOS) for assistance.		
1 ☐	**NOAM VIP GUI**: Login	Establish a GUI session on the NOAM server by using the VIP address of the NOAM server. Open the web browser and enter a URL of: `http://<Primary_NOAM_VIP_IP_Address>` Login as the ***guiadmin*** user:

STEP#	Procedure	Description
2 ☐	**NOAM VIP GUI**: Verify server status	Navigate to **Status & Manage -> Server**.  Verify all Server Status is Normal (Norm) for: Alarm (Alm), Database (DB), Replication Status, and Processes (Proc).

Appl State	Alm	DB	Reporting Status	Proc
Enabled	Norm	Norm	Norm	Norm
Enabled	Norm	Norm	Norm	Norm
Enabled	Norm	Norm	Norm	Norm
Enabled	Norm	Norm	Norm	Norm

3 ☐	**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. Compare this alarm report with those gathered in the pre-activation procedures. Contact Enable TCP Port Procedure 15: Enable TCP Port

STEP#	Procedure	Description
This procedure describes steps to enable TCP port (**49152**). Check off (√) each step as it is completed. Boxes have been provided for this p number. If this procedure fails, contact My Oracle Support (MOS) and ask for assistance		
1. ☐	Login to OpenStack server GUI	Establish a GUI session with Openstack.
2. ☐	**NOAM VIP**: Add rule to the security group	1. Navigate to **Network -> Security Groups**. 2. Click on **Manage Rules**. 3. Click **Add Rule**. 4. Enter the required details in the ***Add Rule*** w

STEP#	Procedure	Description
		 5. Click **Add**. **Note**: The CIDR address must be same as the DSR APIGW XSI a that is communicating to the DAMP. This step needs to be repeate are multiple XSIs configured on OCSG with different CIDRs. My Oracle Support (MOS) for assistance.

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 SCEF application, it will have no impact on the system and does not need to be deactivated. The deactivation procedure will cause all the SCEF related configuration data (including the ComAgent DP service related configuration and Application Routing Rules using SCEF) to be removed. The crafts person must ensure that this is acceptable.

6.1 Pre-Deactivation Procedures

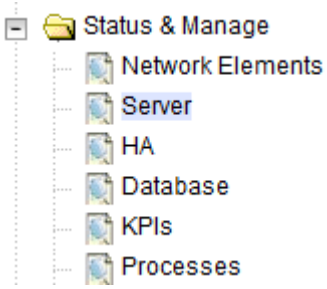
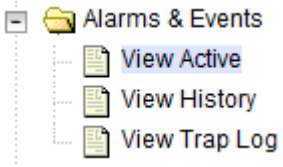
Before beginning the feature deactivation, complete the pre-deactivation procedure below.

6.1.1 Perform Health Check

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

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

STEP#	Procedure	Description
Check off (√) the boxes provided for each step, once completed. Contact My Oracle Support (MOS) 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:

STEP#	Procedure	Description
2 ☐	**NOAM VIP GUI**: Verify server status	Navigate to **Status & Manage -> Server**.  Verify all Server Status is Normal (Norm) for: Alarm (Alm), Database (DB), Replication Status, and Processes (Proc).
3 ☐	**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. Compare this alarm report with those gathered in the pre-activation procedures. Contact My Oracle Support (MOS) for assistance.

6.1.2 Pre SCEF Deactivation Steps

6.2.2.3 Disable Diameter Connections

Procedure 7: Disable Diameter Connections

STEP#	Procedure	Description
This procedure disables the Diameter connections. This procedure does not require a maintenance window. 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. ***Note***: Repeat this procedure for all the sites on which SCEF deactivation is required.		

STEP#	Procedure	Description
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. ☐	**SOAM VIP**: Disable DSR connections	Navigate to **Diameter -> Maintenance -> Connections**. Select all the SCEF-specific diameter connections and click **Disable** or click **Disable All** (if applicable). The Admin State of connections should displays as Disabled.
3. ☐	**SOAM VIP: Perform steps on all active SOAM servers**	Repeat Steps 1 to 2 on all active SOAM servers on which SCEF deactivation is required.

6.2.2.4 Disable Application

Procedure 8: Disable Application

STEP#	Procedure	Description
This procedure disables the SCEF application. This procedure does not require a maintenance window. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. ***Note***: Repeat this procedure for all the sites on which SCEF deactivation is required. If this procedure fails, contact My Oracle Support (MOS) and ask for assistance.		
4. ☐	**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:
5. ☐	**SOAM VIP**: Navigate to Applications screen	Navigate to **Diameter -> Maintenance -> Applications**.
6. ☐	**SOAM VIP**: Disable the SCEF application	Select the SCEF row and click **Disable**. If there are multiple DA-MPs under this SOAM, then there are multiple entries of SCEF in this screen. Select all the entries and click **Disable**.

STEP#	Procedure	Description
7. ☐	**SOAM VIP**: Verify the SCEF application has been disabled	Navigate to **Diameter -> Maintenance -> Applications**. Verify the Application status has changed to **Disabled**. Application Name | MP Server Hostname | Admin State | Operational Status | Operational Reason | Congestion Level | Time of Last Update SCEF | Mon860new-mp1 | Enabled | Available | Normal | Normal | 2018-Jul-08 14:36:24 EDT SCEF | Mon860new-mp2 | Enabled | Available | Normal | Normal | 2018-Jul-06 04:26:02 EDT
8. ☐	**SOAM VIP**: Perform steps on all active SOAM servers	Repeat Steps 1 to 4 on all active SOAM servers on which SCEF deactivation is required.

6.2.2.5 Remove DSR Configuration Data

Procedure 9: Remove DSR Configuration Data

STEP#	Procedure	Description
This procedure removes the DSR configuration data. 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. **Note**: Do not execute this step if you are going to activate SCEF again on this system and you want to re-use the configuration data after re-activation.		
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:

STEP#	Procedure	Description
2. ☐	**SOAM VIP**: Remove Application Routing Rules	Navigate to **Diameter -> Configuration -> Application Route Tables**. Select SCEF-specific Application Route Table Name. Either click **Delete** to delete the entire table or click **View/Edit Rules,** select SCEF-specific Application Route Rules and click **Delete**.
3. ☐	**SOAM VIP**: Remove Peer Routing Rules	Navigate to **Diameter -> Configuration -> Peer Route Tables**. Select SCEF-specific Peer Route Table Name. Either click **Delete** to delete the entire table or click **View/Edit Rules,** select SCEF-specific Peer Route Rules and click **Delete**.
4. ☐	**SOAM VIP**: Remove Route Lists	Navigate to **Diameter -> Configuration -> Route Lists**. Select and delete the SCEF-specific or the complete configuration data (as applicable) from this screen.
5. ☐	**SOAM VIP**: Remove Route Groups	Navigate to **Diameter -> Configuration -> Route Groups**. Select and delete the SCEF-specific or the complete configuration data (as applicable) from this screen.
6. ☐	**SOAM VIP**: Remove Connections	Navigate to **Diameter -> Configuration -> Connections**. Select and delete the SCEF-specific or the complete configuration data (as applicable) from this screen. SCEF-specific connection includes connections to HSS and MMEs.
7. ☐	**SOAM VIP**: Remove Peer Nodes	Navigate to **Diameter -> Configuration -> Peer Nodes**. Select and delete the SCEF-specific or the complete configuration data (as applicable) from this screen.
8. ☐	**SOAM VIP**: Remove Local Nodes	Navigate to **Diameter -> Configuration -> Local Nodes**. Select and delete the SCEF-specific or the complete configuration data (as applicable) from this screen.
9. ☐	**SOAM VIP**: Remove CEX Configuration Sets	Navigate to **Diameter -> Configuration -> Configuration Sets -> CEX Configuration Sets**. Select and delete the SCEF-specific or the complete configuration data (as applicable) from this screen.
10. ☐	**SOAM VIP**: Remove CEX parameters	Navigate to **Diameter -> Configuration -> CEX Parameters**. Select and delete the SCEF-specific or the complete configuration data (as applicable) from this screen.
11. ☐	**SOAM VIP**: Remove application IDs	Navigate to **Diameter -> Configuration -> Application IDs**. Select and delete the SCEF-specific or the complete configuration data (as applicable) from this screen.
12. ☐	**SOAM VIP**: Perform steps on all active SOAM servers	Repeat Steps 1 to 11 on all active SOAM servers.

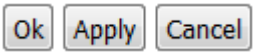
6.2.2.5 Remove Resource Domain Configuration Data

Procedure 10: Remove Resource Domain Configuration Data

STEP#	Procedure	Description
This procedure removes the Resource Domain configuration data. 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. ☐	Establish GUI Session on the NOAM VIP	Establish a GUI session on the NOAM by using the XMI VIP address. Login as the **guiadmin** user.
2. ☐	**NOAM VIP**: Remove all the data from Place screen as mentioned	Navigate to **Configuration -> Resource Domains**. Delete the Resource Domain of type 'SCEF' from this screen.

6.2.2.6 Remove Place Associations Configuration Data

Procedure 11: Remove Place Associations Configuration Data

STEP#	Procedure	Description
This procedure removes the Place Association configuration data. 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. ☐	Establish GUI Session on the NOAM VIP	Establish a GUI session on the NOAM by using the XMI VIP address. Login as the **guiadmin** user.
2. ☐	**NOAM VIP**: Unconfigure the associated Places from the Place Associations as mentioned	Navigate to **Configuration -> Place Associations**. Select the Place Associations of type **SBR_ASSOC**. Click **Edit**. Uncheck all the Places associated with this Place Associations and click **OK**. 

6.2.2.7 Remove Place Configuration Data

Procedure 12: Remove Place Configuration Data

STEP#	Procedure	Description
This procedure removes the Place configuration data. 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.		
3. ☐	Establish GUI Session on the NOAM VIP	Establish a GUI session on the NOAM by using the XMI VIP address. Login as the **guiadmin** user.
4. ☐	**NOAM VIP**: Remove all the data from the Places screen as mentioned	Navigate to **Configuration -> Places**. Edit the Places and remove servers from it.

6.2 Deactivation Procedures

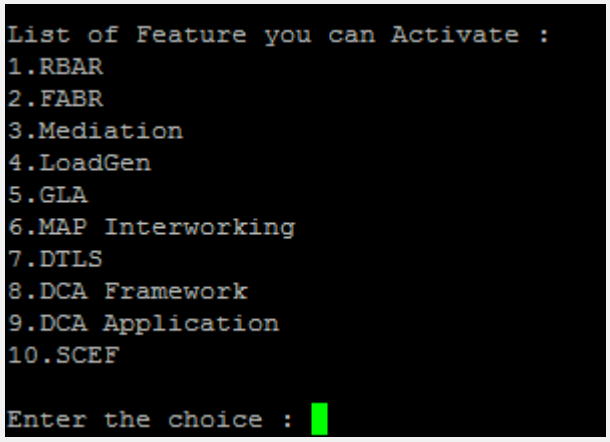
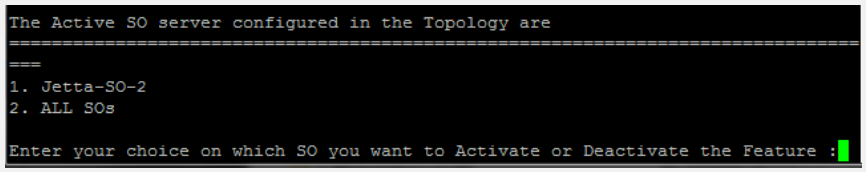
6.2.1 Feature Deactivation

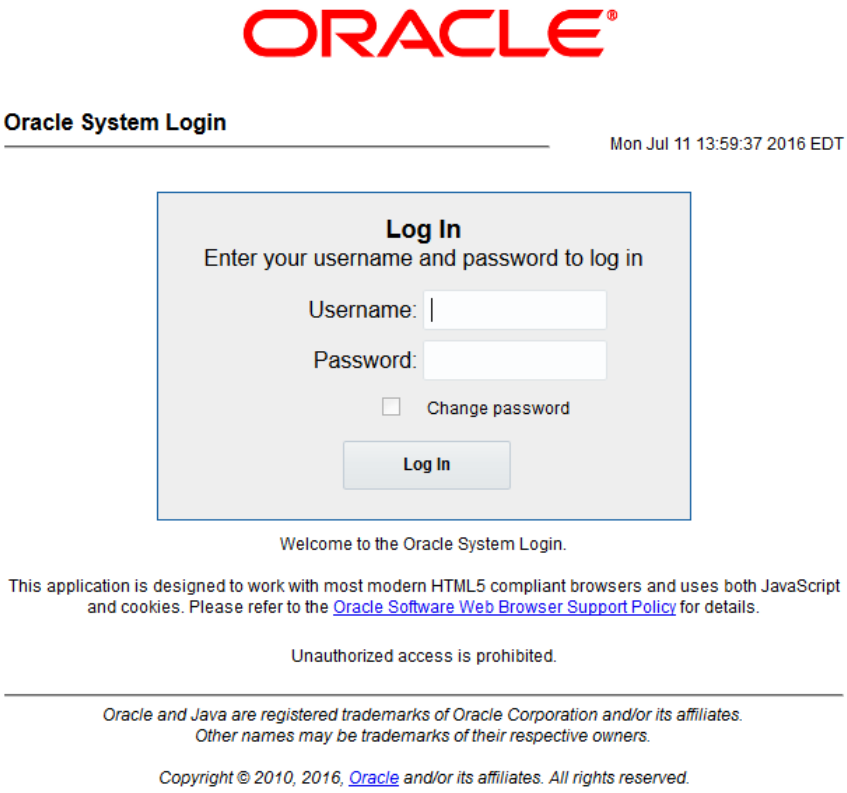
This section provides the detailed steps of the SCEF de-activation procedures.

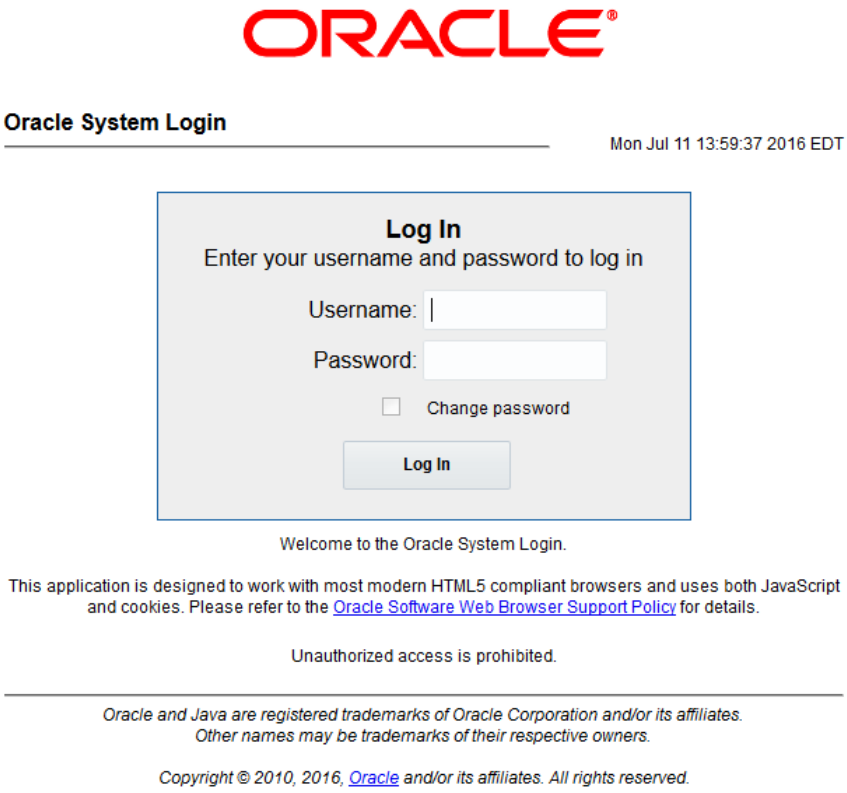
Procedure 13: Feature Deactivate

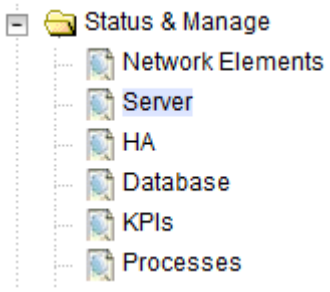
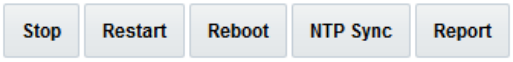
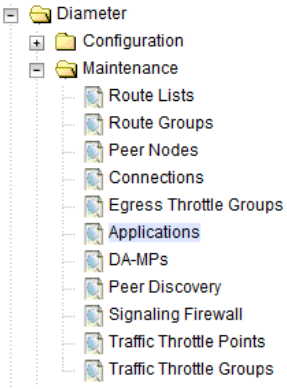
STEP#	Procedure	Description
Check off (√) the boxes provided for each step, once completed. Contact My Oracle Support (MOS) for assistance.		
1 ☐	**NOAM VIP**: Establish an SSH session	Establish an SSH session to the NOAM VIP. Login as ***admusr***.
2 ☐	**NOAM VIP**: Navigate to the feature activation directory	Navigate to the feature activation directory by executing the following command: `$ cd /usr/TKLC/dsr/prod/maint/loaders/`

3
☐
	NOAM VIP: Execute the feature activation script	Run the feature activation script by executing the following command:
		`$ ./featureActivateDeactivate`
		Enter 2 to **Deactivate**.
		`You want to Activate or Deactivate the Feature :`
		`1.Activate`
		`2.Deactivate`
		
		`Enter your choice :`

STEP#	Procedure	Description
		Enter 10 to select **SCEF**.  Select the SOAM site for which the application must be deactivated: ***Note***: As an alternative, you can also deactivate on all SOAM sites:  Refer to Section 7.2 for output example.

STEP#	Procedure	Description
4 ☐	**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: 
5 ☐	**Active SOAM GUI**: Verify the SCEF related folders are not visible	In **Measurement -> Reports** window, SCEF related groups are removed. In **Diameter -> Maintenance -> Application**, SCEF application is not displayed.
6 ☐	**Standby SOAM GUI**: Repeat verification steps	Repeat **Steps 7-8** for the standby SOAM ***Note***: If the verifications for the standby SOAM differ from the Active SOAM, stop. Contact My Oracle Support (MOS) for assistance.

STEP#	Procedure	Description
7 ☐	**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: 

STEP#	Procedure	Description
8 ☐	**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.
9 ☐	**SOAM VIP GUI**: Verify maintenance screen	Navigate to **Diameter -> Maintenance -> Applications**.  Verify the SCEF application is not present.

6.3 Post-Deactivation Procedures

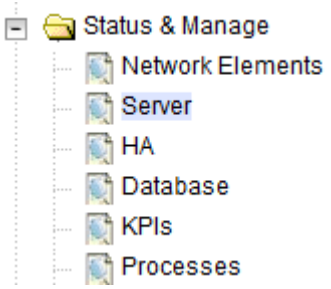
This chapter provides post deactivation steps to be followed.

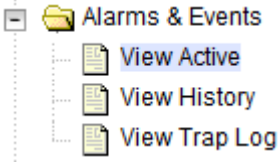
6.3.1 Perform Health Check

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

Procedure 14: Perform Health Check (Post-Feature Deactivation)

STEP#	Procedure	Description
Check off (√) the boxes provided for each step, once completed. Contact My Oracle Support (MOS) 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:

<table>
<tr><th>STEP#</th><th>Procedure</th><th>Description</th></tr>
<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) for assistance.
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>
</table>

7. Engineering Notes

FIPS integrity verification test failed: In SCEF, 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)

```
Run script to activate SCEF 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.scefActivateAsourced script
on E1B180NOAM1
==================================================================================
Add COM Agent Routed service Configuration.
==================================================================================
id=14
name=DPService
preDefined=No
editableOnGui=Yes
birthTime=12/31/1969 19:00:00.000
================================
==================================================================================
Add COM Agent connection group for the DP service.
==================================================================================
id=1
name=DPSvcGroup
preDefined=No
================================
==================================================================================
Add DP Service and Connection group mapping.
==================================================================================
routedServiceId=14
connGroupId=1
priority=10
================================
==================================================================================
Add SCEF KPI group
```

```
================================================================================
KPI_Group=SCEF
Visibility=VIS_SO
================================
================================================================================
Add SCEF Measurement groups
================================================================================
================================================================================
Add SCEF Measurement groups
================================================================================
Meas_Group=Full Address Resolution Performance
Visibility=VIS_SO
================================
Meas_Group=Full Address Resolution Exception
Visibility=VIS_SO
================================
================================================================================
Add SCEF GUI Configuration Permissions.
================================================================================
_appid=17
group_id=7051
group_name=SCEF Configuration Permissions
================================
================================================================================
Starting to Execute the Loaders on Mate server
================================================================================
Executing /usr/TKLC/dsr/prod/maint/loaders/activate/load.scefActivateAsourced script
on E1B280NOAM2
================================================================================
FIPS integrity verification test failed.
id=14
name=DPService
preDefined=No
editableOnGui=Yes
birthTime=12/31/1969 19:00:00.000
================================
id=1
name=DPSvcGroup
preDefined=No
================================
```

```
routedServiceId=14
connGroupId=1
priority=10
==================================
KPI_Group=SCEF
Visibility=VIS_SO
==================================
Meas_Group=Full Address Resolution Performance
Visibility=VIS_SO
==================================
Meas_Group=Full Address Resolution Exception
Visibility=VIS_SO
==================================
================================================================================
Add SCEF GUI Configuration Permissions.
================================================================================
_appid=17
group_id=7051
group_name=SCEF Configuration Permissions
==================================
FIPS integrity verification test failed.
================================================================================
The Active SO server configured in the Topology are
================================================================================
1. E1B380SOAM1
2. ALL SOs

Enter your choice on which SO you want to Activate or Deactivate the Feature :2
Activate/Deactivate scef on all SOs configured in the Topology


================================================================================
This is a 3 Tier Setup , So run the B sourced loaders on SO server : E1B380SOAM1
Executing /usr/TKLC/dsr/prod/maint/loaders/activate/load.scefActivateBsourced script
on E1B380SOAM1
FIPS integrity verification test failed.
================================================================================
Current server is HA ACTIVE
================================================================================
================================================================================
Add SCEF to DsrApplication.
```

```
================================================================================
id=4
name=SCEF
unavailableAction=ContinueRouting
avpInsertion=Yes
shutdownMode=Forced
shutdownTimer=0
resultCode=3002
vendorId=0
errorString=SCEF Unavailable
resExhResultCode=3004
resExhVendorId=0
resExhErrorString=SCEF Resource Exhausted
routeListId=-1
realm=
fqdn=
mcl=0
==================================
================================================================================
Add SCEF GUI Configuration Permissions.
================================================================================
_appid=17
group_id=7051
group_name=SCEF Configuration Permissions
==================================
FIPS integrity verification test failed.
================================================================================
Executing the Loaders and Clearing Cache on Standby SO servers.
================================================================================
================================================================================
There is no Standby/Spare SOAMP server configured in the Topology
================================================================================
================================================================================
 [admusr@Jetta-NO-2 loaders]$
```

7.2 Sample Output of Deactivation (Active NOAM)

Run script to deactivate SCEF feature:

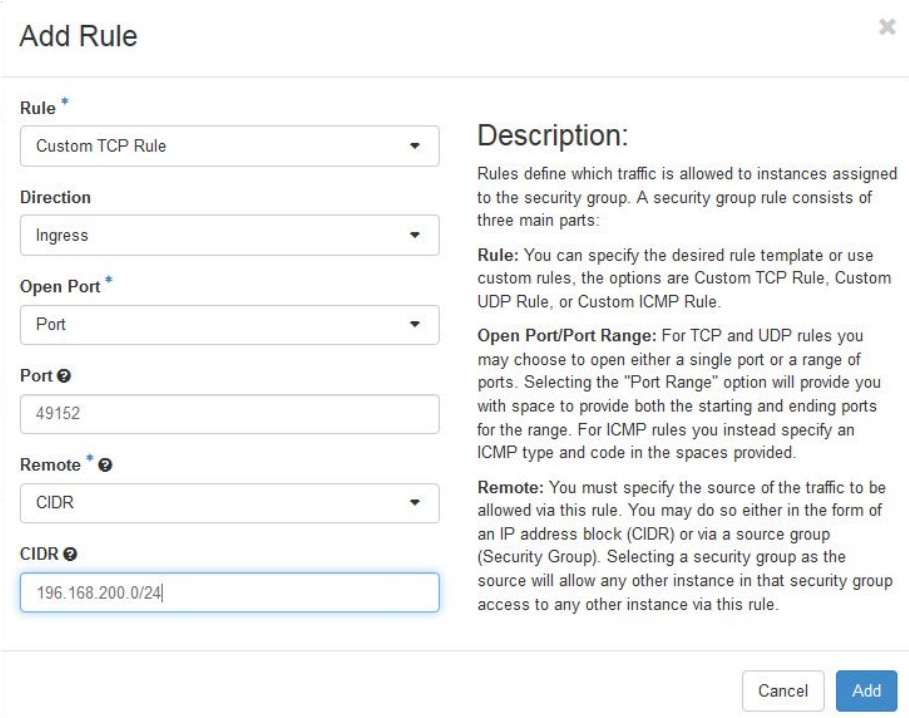
```
====================================S-T-A-R-T=====================================


==================================================================================
Execution of Activation/Deactivation Process Starts
==================================================================================
Starting Activation/Deactivation process....
==================================================================================
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 :1
Verifying feature is activated or not on Jetta-SO-2
FIPS integrity verification test failed.
================================================
SCEF is activated on Jetta-SO-2
================================================
Executing /usr/TKLC/dsr/prod/maint/loaders/deactivate/load.scefDeactivateAsourced
script on Jetta-NO-2
==================================================================================
Hiding SCEF KPI group and Measurement Groups
==================================================================================
  === deleted 1 records ===
==================================================================================
Hiding SCEF measurement groups
==================================================================================
  === deleted 1 records ===
  === deleted 1 records ===
==================================================================================
Removing DP Service COM Agent Loader Entries
==================================================================================
Log path: /var/TKLC/db/filemgmt/dpservice_deactivate.log
==================================================================================
Since remote servers are not deleted on SCEF Deactivation, operator should
manually delete all the remote server entries from configuration.
==================================================================================
==================================================================================
Removing SCEF GUI permissions.
==================================================================================
```

```
  === deleted 1 records ===
================================================================================
Starting to Execute the Loaders on Mate server
================================================================================
Executing /usr/TKLC/dsr/prod/maint/loaders/deactivate/load.scefDeactivateAsourced
script on Jetta-NO-1
================================================================================
FIPS integrity verification test failed.
================================================================================
Removing SCEF GUI permissions.
================================================================================
  === deleted 1 records ===
FIPS integrity verification test failed.
================================================================================
This is a 3 Tier Setup , So run the B sourced loaders on SO server : Jetta-SO-2
Executing /usr/TKLC/dsr/prod/maint/loaders/deactivate/load.scefDeactivateBsourced
script on Jetta-SO-2
FIPS integrity verification test failed.
================================================================================
Current server is HA ACTIVE
================================================================================
Removing all ART rules pointing to SCEF
================================================================================
  === deleted 0 records ===
================================================================================
Removing applicationId=4(SCEF) from the DSR Application Per Mp Table
================================================================================
  === deleted 3 records ===
================================================================================
Removing SCEF from the DSR Application Table
================================================================================
  === deleted 1 records ===
================================================================================
Removing common DSR Application measurements for SCEF
================================================================================
  === deleted 1 records ===
  === deleted 1 records ===
  === deleted 1 records ===
  === deleted 1 records ===
  === deleted 1 records ===
```

```
  === deleted 1 records ===
  === deleted 1 records ===
================================================================================
Removing SCEF GUI permissions.
================================================================================
  === deleted 1 records ===
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/deactivate/load.scefDeactivateBsourced
script on Jetta-SO-1
================================================================================
FIPS integrity verification test failed.
================================================================================
Current server is HA STANDBY
================================================================================
================================================================================
Removing common DSR Application measurements for SCEF
================================================================================
  === deleted 1 records ===
  === deleted 1 records ===
  === deleted 1 records ===
  === deleted 1 records ===
  === deleted 1 records ===
  === deleted 1 records ===
  === deleted 1 records ===
================================================================================
Removing SCEF GUI permissions.
================================================================================
  === deleted 1 records ===
FIPS integrity verification test failed.
================================================================================
Do you want to activate/deactivate this feature on another System OAM Server[Y/N] :
n
```

Appendix A. Enable TCP Port

Procedure 15: Enable TCP Port

STEP#	Procedure	Description
This procedure describes steps to enable TCP port (**49152**). 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.		
5. ☐	Login to OpenStack server GUI	Establish a GUI session with Openstack.
6. ☐	**NOAM VIP**: Add rule to the security group	6. Navigate to **Network -> Security Groups**. 7. Click on **Manage Rules**. 8. Click **Add Rule**. 9. Enter the required details in the ***Add Rule*** window.  10. Click **Add**. **Note**: The CIDR address must be same as the DSR APIGW XSI address that is communicating to the DAMP. This step needs to be repeated if there are multiple XSIs configured on OCSG with different CIDRs.

Appendix B. 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.

Appendix C. Emergency Response

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

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

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

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

Appendix D. Locate Product Documentation on the Oracle Help Center

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

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