Oracle® Communications
Diameter Signaling Router
Policy and Charging DRA Feature Activation Procedure
Release 8.1
E88595 Revision 01

July 2017
Oracle Communications Diameter Signaling Router PCA Feature Activation Procedure, Release 8.1.

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See more information on Appendix B. My Oracle Support (MOS).
# Table of Contents

1. **Introduction** ........................................................................................................... 6
   1.1 Purpose and Scope ............................................................................................... 6
   1.2 References ............................................................................................................ 6
   1.3 Acronyms .............................................................................................................. 6
   1.4 Terminology .......................................................................................................... 7
   1.5 General Procedure Step Format ........................................................................... 8
   1.6 Release Document Matrix .................................................................................... 8

2. **Feature Activation Overview** .................................................................................. 8
   2.1 Definition of Activation for the PCA Feature ....................................................... 9
   2.2 Feature Activation Overview .............................................................................. 10
      2.2.1 Pre-Feature Activation Overview .................................................................. 10
      2.2.2 Feature Activation Execution Overview ...................................................... 10
      2.2.3 Post-Feature Activation Overview .................................................................. 11

3. **Feature Deactivation Overview** ............................................................................ 12
   3.1 Pre-Feature Deactivation Overview ..................................................................... 12
   3.2 Feature Deactivation Execution Overview .......................................................... 13
   3.3 Post-Feature Deactivation Overview ................................................................... 13

4. **Feature Activation Preparation** ............................................................................ 15
   4.1 System Topology Check ...................................................................................... 15
   4.2 Perform Health Check ....................................................................................... 17

5. **Feature Activation** ............................................................................................... 19
   5.1 Pre-Activation Procedures .................................................................................. 19
      5.1.1 Perform Health Check .................................................................................. 19
   5.2 Activation Procedures ......................................................................................... 23
      5.2.1 Feature Activation ....................................................................................... 24
      5.2.2 PCA Activation on a Newly Added Site .......................................................... 25
      5.2.3 Restart Process ............................................................................................ 26
   5.3 Post-Activation Procedures .................................................................................. 28
      5.3.1 Perform Health Check .................................................................................. 28
      5.3.2 System Health Check After Activation on NOAM Servers ............................... 28
      5.3.3 System Health Check After Activation on SOAM Servers ............................... 31

6. **Feature Deactivation** ............................................................................................ 33
   6.1 Pre-Deactivation Procedures ............................................................................... 33
      6.1.1 Perform Health Check .................................................................................. 33
   6.2 Deactivation Procedures ....................................................................................... 35
Policy and Charging DRA Feature Activation Procedure

6.2.1 Feature Deactivation ............................................................................................................. 35
6.2.2 Pre PCA Deactivation Steps ................................................................................................. 36
6.2.3 PCA Deactivation Procedure ................................................................................................. 43
6.2.4 Site Specific PCA Deactivation Procedure ............................................................................. 44
6.2.5 Post PCA Deactivation Steps ................................................................................................. 45
6.2.6 Post PCA Deactivation System Health Check ......................................................................... 55
6.3 Post-Deactivation Procedures .................................................................................................. 60
6.3.1 Perform Health Check ............................................................................................................. 60
7. Engineering Notes ....................................................................................................................... 62
7.1 Sample Output of Activation (Active NOAM) ............................................................................ 62
7.2 Sample Output of Deactivation (Active NOAM) ........................................................................ 66
Appendix A. PCA Activation on Active/Standby NOAM and SOAM Server .................................... 71
   Appendix A.1. PCA Activation on Active NOAM .......................................................................... 71
   Appendix A.1.1. Sample Output of Activation (Active NOAM) ..................................................... 71
   Appendix A.2. PCA Activation on Standby NOAM ....................................................................... 73
   Appendix A.2.1. Sample Output of Activation (Standby NOAM) .................................................. 73
   Appendix A.3. PCA Activation on Active SOAM .......................................................................... 75
   Appendix A.3.1. Sample Output of Activation (Active SOAM) ..................................................... 75
   Appendix A.4. PCA Activation on Standby SOAM ....................................................................... 77
   Appendix A.4.1. Sample Output of Activation (Standby SOAM) .................................................. 77
Appendix B. My Oracle Support (MOS) .......................................................................................... 78

List of Tables
Table 1. Acronyms .......................................................................................................................... 6
Table 2. Terminology ..................................................................................................................... 7
Table 3. PCA Activation/Configuration Procedure Reference Table ............................................. 8
Table 4. Pre-Feature Activation Overview ..................................................................................... 10
Table 5. Feature Activation Execution Overview .......................................................................... 10
Table 6. Post-Feature Activation Overview .................................................................................. 11
Table 7. Pre-Feature Deactivation Overview ................................................................................. 12
Table 8. Feature Deactivation Overview ....................................................................................... 13
Table 9. Post-Feature Deactivation Overview .............................................................................. 13

List of Figures
Figure 1. Example of a Procedure Step ......................................................................................... 8
# List of Procedures

1. **Procedure 1:** System Topology Check ................................................................. 15
2. **Procedure 2:** Perform Health Check (Feature Activation Preparation) ......................... 17
3. **Procedure 3:** Perform Health Check (Pre Feature Activation) ..................................... 20
4. **Procedure 4:** PCA Activation on Entire Network ..................................................... 24
5. **Procedure 5:** PCA Activation on Newly Added Site ................................................. 25
6. **Procedure 6:** Restart Process ................................................................................. 26
7. **Procedure 7:** Verification of Activation on NOAM Server ........................................... 28
8. **Procedure 8:** Verification of Activation on SOAM Servers ......................................... 31
9. **Procedure 9:** Perform Health Check (Pre-Feature Deactivation) ................................. 33
10. **Procedure 10:** Deactivate GLA Application ............................................................ 36
11. **Procedure 11:** Unconfigure PCA Functions (PDRA and OCDRA) ............................. 37
12. **Procedure 12:** Disable Diameter Connections ........................................................ 38
13. **Procedure 13:** Disable Application ........................................................................ 39
14. **Procedure 14:** Remove DSR Configuration Data ....................................................... 40
15. **Procedure 15:** Remove Resource Domain Configuration Data ................................. 42
16. **Procedure 16:** Remove Place Associations Configuration Data ............................... 42
17. **Procedure 17:** Remove Place Configuration Data ..................................................... 43
18. **Procedure 18:** PCA Application Deactivation ........................................................... 43
19. **Procedure 19:** PCA Application Deactivation on a Particular Site ............................. 44
20. **Procedure 20:** Move SBR Servers to OOS State ....................................................... 45
21. **Procedure 21:** Remove SBR Servers from Server Groups ........................................ 46
22. **Procedure 22:** Delete Server Groups related to SBR ............................................... 47
23. **Procedure 23:** Reboot SBR Servers ....................................................................... 48
24. **Procedure 24:** Reboot DA-MP Servers .................................................................... 50
25. **Procedure 25:** Reboot SOAM Servers ................................................................... 52
26. **Procedure 26:** Reboot NOAM Servers ................................................................... 53
27. **Procedure 27:** Verification of Application Deactivation on NOAM Server .................. 55
28. **Procedure 28:** Verification of Application Deactivation on SOAM Servers .............. 58
29. **Procedure 29:** Perform Health Check (Post-Feature Deactivation) ............................ 60
30. **Procedure 30:** PCA Activation on Active NOAM Server ......................................... 71
31. **Procedure 31:** PCA Activation on Standby NOAM Server ....................................... 73
32. **Procedure 32:** PCA Activation on Active SOAM Server ......................................... 75
33. **Procedure 33:** PCA Activation on Standby SOAM Server ....................................... 77
1. Introduction

1.1 Purpose and Scope

This document defines the procedures to activate the Policy and Charging Application (PCA) 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 PCA feature is activated during a planned maintenance window to minimize the impact to network traffic.

This document also provides a procedure to deactivate PCA after it has been activated. Please see Section 3 for a discussion of deactivation.

Configuration of PCA following successful activation is beyond the scope of this document. Please refer to the PCA User's Guide for guidance on PCA configuration post activation.

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 PCA feature is activated at a later time.

1.2 References

[1] DSR 8.1 Software Installation and Configuration Procedure 2/2
[2] DSR 8.1 PCA Configuration
[3] DSR PDRA Configuration Work Instruction, WI006808
[4] DSR PDRA Activation/Deactivation Work Instruction, WI006835
[5] DSR 8.1 PCA Activation and Configuration
[6] DSR C-Class Software Installation and Configuration Procedure 2/2
[8] DSR GLA Feature Activation Procedure
[9] DSR Software Upgrade Guide
[10] Policy and Charging Application Configuration

1.3 Acronyms

An alphabetized list of acronyms used in the document.

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>DA-MP</td>
<td>Diameter Agent Message Processor</td>
</tr>
<tr>
<td>DB</td>
<td>Database</td>
</tr>
<tr>
<td>DPI</td>
<td>Diameter Plug-In</td>
</tr>
<tr>
<td>DSR</td>
<td>Diameter Signaling Router</td>
</tr>
<tr>
<td>GLA</td>
<td>Gateway Location Application</td>
</tr>
<tr>
<td>GUI</td>
<td>Graphical User Interface</td>
</tr>
<tr>
<td>HA</td>
<td>High Availability</td>
</tr>
<tr>
<td>IMI</td>
<td>Internal Management Interface</td>
</tr>
</tbody>
</table>
### Table 2. Terminology

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Agent</td>
<td>Software infrastructure that allows applications to communicate with the SBR databases in a reliable manner.</td>
</tr>
<tr>
<td>ComAgent</td>
<td>Same as Communication Agent</td>
</tr>
<tr>
<td>NOAM</td>
<td>Network Operations and Maintenance</td>
</tr>
<tr>
<td>SBR-B</td>
<td>Holds network-wide subscriber binding information. Maps subscriber keys to the PCRF that hosts the subscriber’s policy rules.</td>
</tr>
<tr>
<td>SBR-S</td>
<td>Holds session information used for routing in-session messages.</td>
</tr>
<tr>
<td>SOAM</td>
<td>System Operations and Maintenance</td>
</tr>
</tbody>
</table>
1.5 General Procedure Step Format

Figure 1 illustrates the general format of procedure steps as they appear in this document. 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).

Each step has a checkbox for every command within the step that the technician should check to keep track of the progress of the procedure.

The title box describes the operations to be performed during that step.

Each command that the technician is to enter is in 10 point bold Courier font.

<table>
<thead>
<tr>
<th>Step</th>
<th>ServerX: Connect to the console of the server</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Establish a connection to the server using cu on the terminal server/console.</td>
</tr>
<tr>
<td></td>
<td>$ cu -l /dev/ttyS7</td>
</tr>
</tbody>
</table>

Figure 1. Example of a Procedure Step

1.6 Release Document Matrix

Table 3. PCA Activation\Configuration Procedure Reference Table

<table>
<thead>
<tr>
<th>DSR Release</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSR 5.1/6.0</td>
<td>[3] and [4]</td>
</tr>
<tr>
<td>DSR 7.0</td>
<td>[1] and [2]</td>
</tr>
<tr>
<td>DSR 7.1/7.2</td>
<td>[1] and [5]</td>
</tr>
<tr>
<td>DSR 7.3/7.4</td>
<td>[10]</td>
</tr>
<tr>
<td>DSR 8.x</td>
<td>[6], [7], and [8]</td>
</tr>
</tbody>
</table>

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 procedures. 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.
2.1 Definition of Activation for the PCA Feature

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

The main components of a PCA system include the PCA (DSR) application, the binding database (hosted by the Session Binding Repository, i.e., SBR), and finally the ComAgent which provides a interface and means to enable the PCA MPs and the SBR MPs communicating to each other via reliable ComAgent routing services. Subscriber data concerning binding and session information is populated in the SBR-B and SBR-S respectively by the Policy Diameter Routing Agent (Policy DRA).

PDRA/PCA DSR application requires configuration of SBR-Binding as well as SBR-Session servers and ComAgent connections to these SBR servers.

All software required to run GLA is available by default as part of a DSR release installation or upgrade. GLA cannot be activated until after PCA is activated. 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 PCA feature activation, there are no PCA menu items visible on the SOAM GUI and NOAM GUI and there is no PCA-related processing taking place on the DA-MP(s).

After feature activation, all selectable PCA menu items are present on the SOAM GUI and NOAM GUI, allowing full PCA configuration and provisioning. Specifically, for PCA application, the top-level PCA folder is visible on the Main Menu, and a new entry is added to the Diameter -> Maintenance -> Applications table, showing PCA and its state. Activation of PCA does not affect DSR signaling behavior except for process restarts necessary during the activation.

**Important:** Upon PCA feature activation, it is not automatically enabled. Activation simply means the mechanism for configuring PCA behavior is in place. But the DA-MP(s) acts on PCA provisioning information only after PCA has been enabled (via the Diameter -> Maintenance -> Applications screen). PCA should not be enabled until after the appropriate provisioning data has been entered. PCA provisioning is beyond the scope of this document, refer [7] Policy and Charging Application User's Guide for PCA configuration. Furthermore, for proper operation of PCA, Communication Agent and PCA application assumes the Remote servers 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. After PCA activation, please refer [7] Policy and Charging Application User's Guide for PCA configuration.
2.2 Feature Activation Overview

2.2.1 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

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Elapsed Time (Hours: Minutes)</th>
<th>Activity Feature Activation Preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This Step</td>
<td>Cum.</td>
</tr>
<tr>
<td>System Topology Check (Procedure 1)</td>
<td>0:00-1:00</td>
<td>0:00-1:00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Verify Network Element Configuration data.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Verify Server Group Configuration data.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Analyze and plan DA-MP restart sequence.</td>
</tr>
<tr>
<td>Perform Health Check (Procedure 2)</td>
<td>0:01-0:20</td>
<td>1:01-1:20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Verify server status.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Log all current alarms.</td>
</tr>
</tbody>
</table>

2.2.2 Feature Activation Execution Overview

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

Either procedure 4 or procedure 5 should be executed as per the requirement. Procedure 4 should be executed when NOAM and SOAM servers for at least one DSR site are installed and configured. Procedure 5 must be repeated if one or more DSR sites are added to a DSR network and PCA is to be used on the new sites.

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

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Elapsed Time (Hours: Minutes)</th>
<th>Activity Feature Activation Execution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This Step</td>
<td>Cum.</td>
</tr>
<tr>
<td>Perform Health Check (Procedure 3)</td>
<td>0:01-0:05</td>
<td>0:01-0:05</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Verify all servers in the network are on the same DSR release.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Verify proper PCA feature state.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Verify server status.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Verify server and server group configurations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Log all current alarms.</td>
</tr>
</tbody>
</table>
Procedure | Elapsed Time (Hours: Minutes) | Activity Feature Activation Execution
---|---|---
Feature Activation for Entire Network (Procedure 4) or Feature Activation for Newly Added Sites (Procedure 5) or Feature Activation on Active NOAM (Procedure 30) or Feature Activation on Standby NOAM (Procedure 31) or Feature Activation on Active SOAM (Procedure 32) or Feature Activation on Standby SOAM (Procedure 33) | This Step: 0:10-0:40, Cum. 0:11-0:45 | • Log out of NOAM/SOAM GUI. • SSH to active NOAM. • Login as the admusr. • Change directory to /usr/TKLC/dsr/prod/maint/loaders/activate. • Execute the feature activation script. • Log into NOAM or SOAM GUI. • Verify the Policy and Charging folder. • Verify Maintenance screen. • Log into NOAM GUI (Optional). • Restart each active DA-MP server. • Verify Maintenance screen.

Restart Process (Procedure 6) |  | • Restart process on DA-MP servers. • Restart process on SBR servers.

### 2.2.3 Post-Feature Activation Overview

The procedures shown in the following table can be executed outside 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

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Elapsed Time (Hours: Minutes)</th>
<th>Activity Feature Activation Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perform Health Check (Procedure 7)</td>
<td>This Step: 0:01-0:05, Cum. 0:01-0:05</td>
<td>• Establish GUI session on the NOAM VIP. • Verify the KPIs. • Verify the Measurements. • Verify GUI left hand menu item.</td>
</tr>
<tr>
<td>Perform Health Check (Procedure 8)</td>
<td>This Step: 0:01-0:05, Cum. 0:02-0:10</td>
<td>• Establish GUI session on the SOAM VIP. • Verify GUI left hand menu item.</td>
</tr>
</tbody>
</table>
### 3. Feature Deactivation Overview

#### 3.1 Pre-Feature Deactivation Overview

The procedures shown in the following table can be executed outside 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**

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Elapsed Time (Hours or Minutes)</th>
<th>Activity Deactivation Procedures</th>
</tr>
</thead>
</table>
| Perform Health Check (Procedure 9) | 0:01-0:05 | Establish GUI session on the SOAM VIP.  
| | | Verify GUI left hand menu item.  
| | | Establish GUI session on the NOAM VIP.  
| | | Verify server status.  
| | | Log current alarms. |
| Verify PCA application state and deactivate GLA (Procedure 10) | 00:01-00:05 | Establish GUI session on the SOAM VIP.  
| | | Verify PCA record in Diameter -> Maintenance -> Applications.  
| | | Verify GLA record in Diameter -> Maintenance -> Applications.  
| | | Deactivate GLA, if activated. |
| Unconfigure PCA Functions (PDRA and OCDRA) (Procedure 11) | 00:10-00:40 | Establish GUI session on the NOAM VIP.  
| | | Un-configure PDRA function.  
| | | Un-configure OCDRA function. |
| Disable Diameter Connections (Procedure 12) | 00:01-00:05 | Establish GUI session on the SOAM VIP.  
| | | Disable PCA-specific diameter connection. |
| Disable application (Procedure 13) | 00:01-00:05 | Establish GUI session on the SOAM VIP.  
| | | Disable PCA application. |
| Remove DSR configuration data (Procedure 14) | 00:01-00:05 | Establish GUI session on the SOAM VIP.  
| | | Remove PCA-specific DSR configuration. |
| Remove Resource Domain configuration data (Procedure 15) | 00:01-00:05 | Establish GUI session on the NOAM VIP.  
| | | Remove PCA-specific resource domain configuration. |
| Remove Place Associations configuration data (Procedure 16) | 00:01-00:05 | Establish GUI session on the NOAM VIP.  
| | | Remove Place Association configuration. |
3.2 Feature Deactivation Execution Overview

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**

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Elapsed Time (Hours or Minutes)</th>
<th>Activity Deactivation Procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remove Place configuration data (Procedure 17)</td>
<td>00:01-00:05</td>
<td>• Establish GUI session on the NOAM VIP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Remove Place configuration.</td>
</tr>
<tr>
<td>Feature Activation for Entire network (Procedure 18) or</td>
<td>0:01 – 0:40</td>
<td>• Log out of active NOAM/SOAM GUI.</td>
</tr>
<tr>
<td>Feature Deactivation on single site (Procedure 19)</td>
<td></td>
<td>• SSH into active NOAM.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Login as the admusr.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Change directory to /usr/TKLC/dsr/prod/maint/loaders/deactivate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Execute the feature deactivation script.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Log into NOAM or SOAM GUI</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Verify the Policy and Charging folder.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Log into NOAM GUI</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Restart each active DA-MP server.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Verify Maintenance screen.</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Elapsed Time (Hours or Minutes)</th>
<th>Activity Deactivation Procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Move SBR Servers to OOS State (Procedure 20)</td>
<td>0:01-0:05</td>
<td>• Establish GUI session on the NOAM VIP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Move SBR server to OOS</td>
</tr>
<tr>
<td>Remove SBR Servers from Server Groups (Procedure 21)</td>
<td>0:01-0:05</td>
<td>• Establish GUI session on the NOAM VIP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Remove SBR server from server group</td>
</tr>
<tr>
<td>Procedure</td>
<td>Elapsed Time (Hours or Minutes)</td>
<td>Activity Deactivation Procedures</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------</td>
<td>----------------------------------</td>
</tr>
</tbody>
</table>
| Reboot the Servers (Procedure 23) | This Step: 0:10-1:00, Cum. 0:12-1:05 | - Identify the sequence of the server to be rebooted  
- Reboot the server in sequence |
| Perform Health Check (Procedure 27, Procedure 28, and Procedure 29) | This Step: 0:01-0:05, Cum. 0:01-0:20 | - Verify server status.  
- Log all current alarms.  
- Verify the KPIs.  
- Verify the Measurements.  
- Verify GUI menu does not shows PCA sub-menu |
4. Feature Activation Preparation

This section provides detailed procedures to prepare a system for PCA 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**

<table>
<thead>
<tr>
<th>STEP</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. NOAM VIP GUI: Login</td>
<td>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:</td>
<td>http://&lt;Primary_NOAM_VIP_IP_Address&gt;</td>
</tr>
</tbody>
</table>

Login as the **guiadmin** user:
**Procedure 1: System Topology Check**

<table>
<thead>
<tr>
<th></th>
<th>NOAM VIP GUI: Verify network configuration data</th>
<th>Navigate to <strong>Configuration -&gt; Networking -&gt; Networks</strong>.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td><img src="image1.png" alt="Diagram" /></td>
<td><img src="image2.png" alt="Diagram" /></td>
</tr>
<tr>
<td></td>
<td>Click <strong>Report</strong>.</td>
<td>Verify the configuration data is correct for your network.</td>
</tr>
<tr>
<td></td>
<td><img src="image3.png" alt="Buttons" /></td>
<td><strong>Save</strong> or <strong>Print</strong> this report to keep copies for future reference.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>NOAM VIP GUI: Verify server configuration</th>
<th>Navigate to <strong>Configuration -&gt; Server Groups</strong>.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td><img src="image4.png" alt="Diagram" /></td>
<td><img src="image5.png" alt="Diagram" /></td>
</tr>
<tr>
<td></td>
<td>Click <strong>Report</strong>.</td>
<td>Verify the configuration data is correct for your network.</td>
</tr>
<tr>
<td></td>
<td><img src="image6.png" alt="Buttons" /></td>
<td><strong>Save</strong> or <strong>Print</strong> this report to keep copies for future reference.</td>
</tr>
</tbody>
</table>
Procedure 1: System Topology Check

4. Analyze and plan DA-MP restart sequence

During PCA Activation procedure 6 for activation of PCA on an existing system, it will be necessary to restart the application process on each DA-MP server. This step is to plan the order and level of parallelism for the process restarts such that signaling disruption is minimized.

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 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. 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)

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)

2. **NOAM VIP GUI:** Verify server status

   Navigate to **Status & Manage -> Server.**

   - Status & Manage
     - Network Elements
     - Server
     - HA
     - Database
     - KPIs
     - Processes

   Verify all Server Status is Normal (Norm) for:
   - Alarm (Alm), Database (DB), Reporting Status, and Processes (Proc).

<table>
<thead>
<tr>
<th>Appl State</th>
<th>Alm</th>
<th>DB</th>
<th>Reporting Status</th>
<th>Proc</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</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 before proceeding with the feature activation. The activation may be able to proceed in the presence of certain Major or Critical alarms. Contact Appendix B. My Oracle Support (MOS) for assistance as necessary.

3. **NOAM VIP GUI:** Log current alarms

   Navigate to **Alarms & Events -> View Active.**

   - Alarms & Events
     - View Active
     - View History
     - View Trap Log

   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 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 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.

Please 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 check box should 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 Procedure — 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)

<table>
<thead>
<tr>
<th>STEP #</th>
<th>NOAM VIP GUI: Login</th>
<th>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:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>□</td>
<td><strong>http://&lt;Primary_NOAM_VIP_IP_Address&gt;</strong></td>
</tr>
</tbody>
</table>

Login as the `guiadmin` user:
Procedure 3: Perform Health Check (Pre Feature Activation)

2. **NOAM VIP GUI:** Verify PCA Folder is not Present

   Under **Main Menu**, verify the Policy and Charging folder is NOT present.

   - **Main Menu**
     - **Administration**
       - **Configuration**
       - **Alarms & Events**
       - **Security Log**
       - **Status & Manage**
       - **Measurements**
       - **Communication Agent**
       - **Diameter Common**
       - **Diameter**
       - **RADIUS**
       - **SBR**
       - **Help**
       - **Legal Notices**
       - **Logout**

3. **NOAM VIP GUI:** Verify server status

   Navigate to **Status & Manage -> Server**.

   - **Status & Manage**
     - **Network Elements**
     - **Server**
     - **HA**
     - **Database**
     - **KPIs**
     - **Processes**
     - **Tasks**
     - **Files**

   Verify all Server Status is Normal (Norm) for:
   - Alarm (Alm)
   - Database (DB)
   - Reporting Status
   - Processes (Proc)

<table>
<thead>
<tr>
<th>Appliance State</th>
<th>Alm</th>
<th>DB</th>
<th>Reporting Status</th>
<th>Proc</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</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 before proceeding with the feature activation. The activation may be able to proceed in the presence of certain Major or Critical alarms. Contact Appendix B. My Oracle Support (MOS) for assistance as necessary.
Procedure 3: Perform Health Check (Pre Feature Activation)

4. NOAM VIP GUI: Verify server configuration

Navigate to Configuration -> Server Groups.

Verify the configuration data is correct for your network.

5. 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.

6. NOAM VIP GUI: Check the software version on all servers

Navigate to Administration -> Software Management -> Upgrade.

Verify the Upgrade ISO column shows the correct release number for all servers in the DSR network.

Note: All servers in the network must be on the same DSR release when activating PCA.
Policy and Charging DRA Feature Activation Procedure

Procedure 3: Perform Health Check (Pre Feature Activation)

7. **NOAM VIP GUI:** Check the Upgrade Acceptance status on all servers.

Navigate to **Administration -> Software Management -> Upgrade.** Verify the Upgrade State column does not show **ACCEPT** or **REJECT.**

**Note:** Upgrade must be accepted on all servers before activating PCA.

Upgrade State should be **Ready.** If the Upgrade State is **ACCEPT OR REJECT,** follow [6] DSR C-Class Software Installation and Configuration Procedure 2/2 or [9] DSR Software Upgrade Guide (whichever applies) to accept the upgrade on all servers before activating PCA.

---

5.2 Activation Procedures

This section provides the detailed procedure steps of the feature activation execution.

PCA activation can be performed either

- after all NOAM and SOAM servers are installed and configured. So if the fresh install is for a DSR system with 3 sites, the NOAMs and the SOAMs for all three sites should be installed and configured before performing PCA activation; or

- install and configure only the NOAMs and SOAMs for the first site and activate PCA using Procedure 4, then use Procedure 5 to activate PCA on additional sites later.

These procedures are executed inside a maintenance window.

The procedures in this section need to be executed in the following order:

- For PCA activation on the entire network:
  - Section 5.2.1 Feature Activation
  - Section 5.2.3 Restart Process
  - Section 5.3.2 System Health Check After Activation on NOAM Server
  - Section 5.3.3 System Health Check After Activation on SOAM Servers

- For PCA activation on a newly added site:
  - Section 5.2.2 PCA Activation on a Newly Added Site
  - Section 5.2.3 Restart Process
  - Section 5.3.2 System Health Check After Activation on NOAM Server
  - Section 5.3.3 System Health Check After Activation on SOAM Servers
### 5.2.1 Feature Activation

**Procedure 4: PCA Activation on Entire Network**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1.   | Establish a secure shell session on the active NOAM  

Establish a secure shell session on the active NOAM by using the XMI VIP address. Login as the admusr.

Use your SSH client to connect to the server (ex. Putty).

*Note:* You must consult your own software client's documentation to learn how to launch a connection. For example:

```
# ssh <active NO XMI VIP Address>
```

<table>
<thead>
<tr>
<th>2.</th>
<th>PCA Activation: Change directory</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Change to the following directory:</td>
</tr>
<tr>
<td></td>
<td><code>$ cd /usr/TKLC/dsr/prod/maint/loaders/activate</code></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3.</th>
<th>PCA Activation: Execute the PCA activation script</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Run the PCA activation script by executing the following command:</td>
</tr>
</tbody>
</table>
|      | `$ ./load.pcaActivationTopLevel`  

*Note:* This command execution starts activation on NOAM servers and all active SOAM servers.

Check the `/var/TKLC/log/pcaActivationTopLevel.log` file to see if there is any execution failure.

If the activation fails, then execute the procedure in Section 6.2.3 to restore the system back to state before start of activation.

<table>
<thead>
<tr>
<th>4.</th>
<th>PCA Activation (OPTIONAL): Clear the web server cache</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Delete all GUI cache files on active SOAMs and NOAM for a quick view of changes or wait for some time so new changes are reflected.</td>
</tr>
<tr>
<td></td>
<td><code>$ clearCache</code></td>
</tr>
</tbody>
</table>
5.2.2 PCA Activation on a Newly Added Site

This procedure needs to be executed only if a new site is added to an existing configured system. This procedure activates the PCA on newly added site only. This section is only valid if system is already configured and a new site is added to the system at a later stage. **Skip this step if PCA is being activated during a fresh install of the system.**

**Procedure 5: PCA Activation on Newly Added Site**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STATE</strong></td>
<td>This procedure activates the PCA on a single site newly added to the DSR topology. 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 Appendix B. My Oracle Support (MOS) and ask for assistance.</td>
</tr>
<tr>
<td>1.</td>
<td>Verify configuration of all SOAM servers for the newly added site. Before continuing, verify all SOAM servers should be configured in the topology for the newly added site. 1. Log into the NOAM VIP GUI. 2. Navigate <strong>Status &amp; Manage -&gt; Server</strong>. See all required SOAM servers for the newly added site are configured and Application State is enabled.</td>
</tr>
<tr>
<td>2.</td>
<td>Execute the activation procedure. For PCA activation on new site, the activation procedure needs to be executed from the NOAM. Execute the Procedures in Section 5.2.1.</td>
</tr>
</tbody>
</table>
### 5.2.3 Restart Process

**Procedure 6: Restart Process**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>This procedure restarts the DSR and SBR application processes. This procedure needs to be performed in a maintenance window. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number.</td>
</tr>
<tr>
<td></td>
<td>If this procedure fails, contact Appendix B. My Oracle Support (MOS) and ask for assistance. <strong>Note:</strong> If PCA activation is being performed on a newly added site, this procedure is limited to the servers belonging to that site only. Skip this procedure if PCA is being activated before DA-MP and SBR servers are added to the topology.</td>
</tr>
</tbody>
</table>

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 6: Restart Process

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
</table>
| 2.   | **NOAM VIP**: Restart process on DA-MP servers  
      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, you can use ‘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. |
| 3.   | **NOAM VIP**: Restart process on SBR servers  
      Navigate to **Status & Manage -> Server**.  
      Select all the SBR servers, click **Restart** and **OK** to confirm. |
### 5.3 Post-Activation Procedures

#### 5.3.1 Perform Health Check

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

#### 5.3.2 System Health Check After Activation on NOAM Servers

**Procedure 7: Verification of Activation on NOAM Server**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>NOAM VIP GUI: Login</td>
</tr>
<tr>
<td></td>
<td>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: <code>http://&lt;Primary_NOAM_VIP_IP_Address&gt;</code>  &lt;br&gt; Login as the <code>guiadmin</code> user:</td>
</tr>
</tbody>
</table>

![Oracle System Login](image)

This procedure verifies the PCA Activation on NOAM server. 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 Appendix B. My Oracle Support (MOS) and ask for assistance.
Procedure 7: Verification of Activation on NOAM Server

2. **NOAM VIP**: Verify the Resource Domain Profile shows the new profile entries.

   Verify the Resource Domain Profile shows the new profile entries.

   ![Image of Resource Domain Profile]

3. **NOAM VIP**: Verify the PCA-specific KPIs are shown.

   Verify KPI's filter option shows the KPI Group for PCA, SBR-Binding, and SBR-Session.

   ![Image of KPI filter option]

4. **NOAM VIP**: Verify the PCA-specific Measurement groups are shown.

   Verify Measurement groups are shown for OC-DRA, P-DRA, and SBR.

   ![Image of Measurement groups]
### Procedure 7: Verification of Activation on NOAM Server

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>NOAM VIP: Verify the Main Menu shows the Policy and Charging submenu</td>
</tr>
</tbody>
</table>

Verify the **Main Menu** on active NOAM shows the Policy and Charging submenu with Configuration and Maintenance screens.

- Policy and Charging
  - Configuration
    - General Options
    - Access Point Names
  - Policy DRA
    - PCRF Pools
    - PCRF Sub-Pool Selection Rules
    - Network-Wide Options
  - Online Charging DRA
    - OCS Session State
    - Realms
    - Network-Wide Options
  - Alarm Settings
  - Congestion Options
- Maintenance
  - Policy Database Query
5.3.3 System Health Check After Activation on SOAM Servers

Procedure 8: Verification of Activation on SOAM Servers

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
</table>
| 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: ![ORACLE System Login](image)

Login as the guiadmin user:
Procedure 8: Verification of Activation on SOAM Servers

2. **SOAM VIP:** Verify the Policy and Charging folder is visible in the left hand menu

Verify the Policy and Charging folder appears on the left hand menu:

- Policy and Charging
  - Configuration
    - General Options
    - Access Point Names
  - Policy DRA
    - PCRFs
    - Binding Key Priority
    - PCRF Pools
    - PCRF Pool To PRT Mapping
    - PCRF Sub-Pool Selection Rules
    - Policy Clients
    - Suspect Binding Removal Rules
    - Site Options
  - Online Charging DRA
    - OCSs
    - CTFs
    - OCS Session State
    - Realms
    - Error Codes
    - Alarm Settings
    - Congestion Options

3. **SOAM VIP:** PCA is activated

PCA is activated. Resume the remaining installation/configuration steps.
6. Feature Deactivation

Execute this section only if there is a problem, and it is required to deactivate PCA application and it is desired to revert to the pre-activation version of the software.

6.1 Pre-Deactivation Procedures

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

6.1.1 Perform Health Check

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

Procedure 9: Perform Health Check (Pre-Feature Deactivation)

<table>
<thead>
<tr>
<th>STEP</th>
<th>Description</th>
</tr>
</thead>
</table>
| 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:

```
Welcome to the Oracle System Login.
This application is designed to work with most modern HTML5 compliant browsers and uses both JavaScript and cookies. Please refer to the Oracle Software Web Browser Support Policy for details.
```
Procedure 9: Perform Health Check (Pre-Feature Deactivation)

2. NOAM VIP GUI: Verify server status

   Navigate to Status & Manage -> Server.
   - Status & Manage
   - Network Elements
   - Server
   - HA
   - Database
   - KPIs
   - Processes
   - Tasks
   - Files

   Verify all Server Status is Normal (Norm) for:
   - Alarm (Alm), Database (DB), Reporting Status, and Processes (Proc).

<table>
<thead>
<tr>
<th>App State</th>
<th>Alm</th>
<th>DB</th>
<th>Reporting Status</th>
<th>Proc</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

3. NOAM VIP GUI: Log current alarms

   Navigate to Alarms & Events -> View Active.
   - Alarms & Events
   - View Active
   - View History
   - View Trap Log

   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 Appendix B. My Oracle Support (MOS) if needed.
6.2 Deactivation Procedures

6.2.1 Feature Deactivation

This section provides the detailed steps of the PCA deactivation procedures.

The procedures in this section need to be executed in the following order:

- For PCA deactivation on the entire network
  - Section 6.2.2 Pre PCA Deactivation Steps
  - Section 6.2.3 PCA Deactivation Procedure
  - Section 6.2.5 Post PCA Deactivation Steps
  - Section 6.2.6 Post PCA Deactivation System Health Check

- For PCA deactivation on a site (in the case when the site is being decommissioned)
  - Section 6.2.4 Site Specific PCA Deactivation Procedure
  - Section 6.2.5 Post PCA Deactivation Steps
  - Section 6.2.6.2 System Health Check after Application Deactivation on SOAM Servers
6.2.2 Pre PCA Deactivation Steps

6.2.2.1 Deactivate the GLA Application

Procedure 10: Deactivate GLA Application

<table>
<thead>
<tr>
<th>STEP</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1 | **SOAM VIP GUI:** Login on the PCA server to be deactivated  
   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:  
   ![Oracle System Login](image)
   Login as the `guiadmin` user:  
   ![Oracle System Login](image) |
| 2 | **SOAM VIP:** Navigate to the Applications screen  
   Navigate to `Diameter -> Maintenance -> Applications`. |
| 3 | **SOAM VIP:** Deactivate the GLA application  
   If a GLA record is present on the Applications screen, then execute the steps to deactivate the GLA application as per deactivation procedures defined in [8] DSR GLA Feature Activation Procedure. |
| 4 | **SOAM VIP:** Perform steps on all active SOAM servers  
   Repeat Step 1-3 on those active SOAM servers on which PCA is activated. |
### 6.2.2.2 Unconfigure PCA Functions

#### Procedure 11: Unconfigure PCA Functions (PDRA and OCDRA)

<table>
<thead>
<tr>
<th>Step #</th>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
</table>
| 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: |

**Note:** Execution of this procedure causes all Diameter requests routed to the PCA application to be rejected using the Diameter result code configured for Error Condition PCA function unavailable. Before this step, the network operator should take steps to divert policy client and online charging trigger function signaling away from the PCA DSR.

If this procedure fails, contact Appendix B. My Oracle Support (MOS) and ask for assistance.
## 6.2.2.3 Disable Diameter Connections

### Procedure 12: Disable Diameter Connections

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1.   | **SOAM VIP GUI: Login**<br>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><br>Login as the **guiadmin** user:<br><br>![Oracle System Login](image1)

| 2.   | **SOAM VIP: Disable DSR connections**<br>Navigate to **Diameter -> Maintenance -> Connections**. Select all the PCA-specific diameter connections and click **Disable** or click **Disable All** (if applicable). The Admin State of connections should display as Disabled.<br>![Main Menu: Diameter -> Maintenance -> Connections](image2)

| 3.   | **SOAM VIP: Perform steps on all active SOAM servers**<br>Repeat Steps 1 to 2 on all active SOAM servers on which PCA deactivation is required.  

*Note*: PCA-specific connection includes connections to PCRFs, PCEFs, AFs, CTFTs, and OCSes.
6.2.2.4 Disable Application

Procedure 13: Disable Application

<table>
<thead>
<tr>
<th>Step #</th>
<th>Description</th>
</tr>
</thead>
</table>
| 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: |
|       | ![Oracle System Login](image) |
| 2.  | **SOAM VIP:**  
|      | Navigate to `Diameter -> Maintenance -> Applications`. |
| 3.  | **SOAM VIP:**  
|      | Disable the PCA application  
|      | Select the PCA row and click **Disable**.  
|      | If there are multiple DA-MPs under this SOAM, then there are multiple entries of PCA in this screen. Select all the entries and click **Disable**. |
### Procedure 13: Disable Application

4. **SOAM VIP:** Verify the PCA application has been disabled
   
   Navigate to **Diameter -> Maintenance -> Applications.**
   
   Verify the Application status has changed to **Disabled.**

<table>
<thead>
<tr>
<th>Application Name</th>
<th>VIP Server Hostname</th>
<th>Admin State</th>
<th>Operational Status</th>
<th>Operational Reason</th>
<th>Congestion Level</th>
<th>Time of Last Update</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCA</td>
<td>DspSetup1</td>
<td>Disabled</td>
<td>Unavailable</td>
<td>ShutDown</td>
<td>Normal</td>
<td>2017-Jan-24 23:54:05 EST</td>
</tr>
<tr>
<td>PCA</td>
<td>DspSetup2</td>
<td>Disabled</td>
<td>Unavailable</td>
<td>ShutDown</td>
<td>Normal</td>
<td>2017-Jan-24 23:54:05 EST</td>
</tr>
</tbody>
</table>

5. **SOAM VIP:** Perform steps on all active SOAM servers
   
   Repeat Steps 1 to 4 on all active SOAM servers on which PCA deactivation is required.

### 6.2.2.5 Remove DSR Configuration Data

#### Procedure 14: Remove DSR Configuration Data

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:

   \[\text{http://<Primary$_{SOAM}$$_{VIP}$ $_{IP}$ $_{Address}>} \]

   Login as the **guiadmin** user:
Procedure 14: Remove DSR Configuration Data

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td><strong>SOAM VIP:</strong> Remove Application Routing Rules&lt;br&gt;Navigate to <strong>Diameter -&gt; Configuration -&gt; Application Route Tables.</strong>&lt;br&gt;Select PCA-specific Application Route Table Name.&lt;br&gt;Either click <strong>Delete</strong> to delete the entire table or click <strong>View/Edit Rules,</strong> select PCA-specific Application Route Rules and click <strong>Delete.</strong></td>
</tr>
<tr>
<td>3.</td>
<td><strong>SOAM VIP:</strong> Remove Peer Routing Rules&lt;br&gt;Navigate to <strong>Diameter -&gt; Configuration -&gt; Peer Route Tables.</strong>&lt;br&gt;Select PCA-specific Peer Route Table Name.&lt;br&gt;Either click <strong>Delete</strong> to delete the entire table or click <strong>View/Edit Rules,</strong> select PCA-specific Peer Route Rules and click <strong>Delete.</strong></td>
</tr>
<tr>
<td>4.</td>
<td><strong>SOAM VIP:</strong> Remove Route Lists&lt;br&gt;Navigate to <strong>Diameter -&gt; Configuration -&gt; Route Lists.</strong>&lt;br&gt;Select and delete the PCA-specific or the complete configuration data (as applicable) from this screen.</td>
</tr>
<tr>
<td>5.</td>
<td><strong>SOAM VIP:</strong> Remove Route Groups&lt;br&gt;Navigate to <strong>Diameter -&gt; Configuration -&gt; Route Groups.</strong>&lt;br&gt;Select and delete the PCA-specific or the complete configuration data (as applicable) from this screen.</td>
</tr>
<tr>
<td>6.</td>
<td><strong>SOAM VIP:</strong> Remove Connections&lt;br&gt;Navigate to <strong>Diameter -&gt; Configuration -&gt; Connections.</strong>&lt;br&gt;Select and delete the PCA-specific or the complete configuration data (as applicable) from this screen. PCA-specific connection includes connections to PCRFs, PCEF, AFs, CTFs, and OCSes.</td>
</tr>
<tr>
<td>7.</td>
<td><strong>SOAM VIP:</strong> Remove Peer Nodes&lt;br&gt;Navigate to <strong>Diameter -&gt; Configuration -&gt; Peer Nodes.</strong>&lt;br&gt;Select and delete the PCA-specific or the complete configuration data (as applicable) from this screen.</td>
</tr>
<tr>
<td>8.</td>
<td><strong>SOAM VIP:</strong> Remove Local Nodes&lt;br&gt;Navigate to <strong>Diameter -&gt; Configuration -&gt; Local Nodes.</strong>&lt;br&gt;Select and delete the PCA-specific or the complete configuration data (as applicable) from this screen.</td>
</tr>
<tr>
<td>9.</td>
<td><strong>SOAM VIP:</strong> Remove CEX Configuration Sets&lt;br&gt;Navigate to <strong>Diameter -&gt; Configuration -&gt; Configuration Sets -&gt; CEX Configuration Sets.</strong>&lt;br&gt;Select and delete the PCA-specific or the complete configuration data (as applicable) from this screen.</td>
</tr>
<tr>
<td>10.</td>
<td><strong>SOAM VIP:</strong> Remove CEX parameters&lt;br&gt;Navigate to <strong>Diameter -&gt; Configuration -&gt; CEX Parameters.</strong>&lt;br&gt;Select and delete the PCA-specific or the complete configuration data (as applicable) from this screen.</td>
</tr>
<tr>
<td>11.</td>
<td><strong>SOAM VIP:</strong> Remove application IDs&lt;br&gt;Navigate to <strong>Diameter -&gt; Configuration -&gt; Application IDs.</strong>&lt;br&gt;Select and delete the PCA-specific or the complete configuration data (as applicable) from this screen.</td>
</tr>
<tr>
<td>12.</td>
<td><strong>SOAM VIP:</strong> Perform steps on all active SOAM servers&lt;br&gt;Repeat Steps 1 to 11 on all active SOAM servers.</td>
</tr>
</tbody>
</table>
6.2.2.6 Remove Resource Domain Configuration Data

Procedure 15: Remove Resource Domain Configuration Data

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 Appendix B. 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 'Policy Binding' and 'Policy Session' and 'Policy and Charging DRA' from this screen.

6.2.2.7 Remove Place Associations Configuration Data

Procedure 16: Remove Place Associations Configuration Data

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 Appendix B. 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 Policy and Charging Mated Sites. Click Edit.
   Uncheck all the Places associated with this Place Associations and click OK.
   Repeat this step for all other Place Associations of type Policy and Charging Mated Sites and Policy Binding Region from this screen.

3. NOAM VIP:
   Remove all the data from Place Associations screen as mentioned
   Navigate to Configuration -> Place Associations.
   Delete the Place Associations of type Policy and Charging Mated Sites, and Policy Binding Region from this screen.
6.2.2.8 Remove Place Configuration Data

Procedure 17: Remove Place Configuration Data

<table>
<thead>
<tr>
<th>STEP</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Establish GUI Session on the NOAM VIP</td>
</tr>
<tr>
<td>2.</td>
<td>NOAM VIP: Remove all the data from the Places screen as mentioned</td>
</tr>
</tbody>
</table>

This procedure removes the Place configuration data. Skip this step if places are being used by DCA application.

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

If this procedure fails, contact Appendix B. 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 the Places screen as mentioned
   
   Navigate to Configuration -> Places. Edit the Places and remove servers from it.

6.2.3 PCA Deactivation Procedure

Procedure 18: PCA Application Deactivation

<table>
<thead>
<tr>
<th>STEP</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Establish a secure shell session on the active NOAM</td>
</tr>
<tr>
<td>2.</td>
<td>PCA Deactivation: Change directory</td>
</tr>
<tr>
<td>3.</td>
<td>PCA Deactivation: Execute the PCA application deactivation script</td>
</tr>
<tr>
<td>4.</td>
<td>PCA Deactivation (Optional): Clear the web server cache</td>
</tr>
</tbody>
</table>

This procedure deactivates the PCA application.

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

If this procedure fails, contact Appendix B. My Oracle Support (MOS) and ask for assistance.

Note: Skip this step if PCA is to be activated on a particular site. Execute Procedure 19 instead.

1. Establish a secure shell session on the active NOAM
   
   Establish an SSH session to the NOAM VIP. Login as the admusr.

2. PCA Deactivation: Change directory
   
   Change to the following directory:
   
   `$ cd /usr/TKLC/dsr/prod/maint/loaders/deactivate`

3. PCA Deactivation: Execute the PCA application deactivation script
   
   `$ ./load.pcaDeactivationTopLevel`

   Note: This command execution will starts Deactivation on Active NOAM and all active SOAM servers.

   Check log file `/var/TKLC/log/pcaDeactivationTopLevel.log` to see if there is any execution failure.

4. PCA Deactivation (Optional): Clear the web server cache
   
   Delete all GUI cache files on active SOAM and NOAM for quick view of changes or wait for some time so new changes can reflect.

   `$ clearCache`
### 6.2.4 Site Specific PCA Deactivation Procedure

Execute this section when PCA needs to be deactivated from a particular site.

**Procedure 19: PCA Application Deactivation on a Particular Site**

<table>
<thead>
<tr>
<th>Step #</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Establish a secure shell session on the active SOAM or on which deactivation is required: Establish an SSH session to the SOAM VIP. Login as the <code>admusr</code>.</td>
</tr>
<tr>
<td>2.</td>
<td>PCA Deactivation: Change directory: Change to the following directory:</td>
</tr>
<tr>
<td></td>
<td>$ cd /usr/TKLC/dsr/prod/maint/loaders/deactivate</td>
</tr>
<tr>
<td>3.</td>
<td>PCA Deactivation: Execute the PCA application deactivation script:</td>
</tr>
<tr>
<td></td>
<td>$ ./load.pcaDeactivateBscoped</td>
</tr>
<tr>
<td>Note:</td>
<td>This command execution will start Deactivation on selected active SOAM server. Check log file <code>/var/TKLC/log/pcaDeactivateBscoped.log</code> to see if there is any execution failure.</td>
</tr>
<tr>
<td>4.</td>
<td>PCA Deactivation (Optional): Clear the web server cache: Delete all GUI cache files on active SOAM and NOAM for quick view of changes or wait for some time so new changes can reflect.</td>
</tr>
<tr>
<td></td>
<td>$ clearCache</td>
</tr>
</tbody>
</table>
6.2.5 Post PCA Deactivation Steps

If PCA Deactivation is being performed on a single site, the procedures in this section apply to the servers belonging to that site only.

6.2.5.1 Move SBR Servers to OOS State

Procedure 20: Move SBR Servers to OOS State

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. NOAM VIP GUI:</td>
<td>Login to NOAM VIP GUI. 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: <code>http://&lt;Primary_NOAM_VIP_IP_Address&gt;</code> Login as the <code>guiadmin</code> user:</td>
</tr>
<tr>
<td>2. NOAM VIP:</td>
<td>Navigate to Configuration -&gt; Server Groups.</td>
</tr>
<tr>
<td>3. NOAM VIP:</td>
<td>Find the server list. Find the servers with Function as SBR. Note: SBR can be used for DCA application as well, skip SBR servers being used for DCA application.</td>
</tr>
<tr>
<td>4. NOAM VIP:</td>
<td>Navigate to Status &amp; Manage -&gt; HA. Edit the servers from list created in Step 3. Change the value of Max Allowed HA Role to OOS.</td>
</tr>
</tbody>
</table>

Note: Please do not execute this step if you are going to activate PCA again on this system and you want to re-use the configuration data after re-activation.

If this procedure fails, contact Appendix B. My Oracle Support (MOS) and ask for assistance.
### 6.2.5.2 Remove SBR Servers from Server Groups

**Procedure 21: Remove SBR Servers from Server Groups**

<table>
<thead>
<tr>
<th>Step #</th>
<th>NOAM VIP GUI: Login</th>
<th>NOAM VIP: Navigate to Server Groups screen</th>
<th>NOAM VIP: Find the server list</th>
<th>NOAM VIP: Edit the Server Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>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: <code>http://&lt;Primary_NOAM_VIP_IP_Address&gt;</code>&lt;br&gt;Log in as the <code>guiadmin</code> user:</td>
<td>Navigate to <code>Configuration -&gt; Server Groups</code>.</td>
<td>Find the servers with Function as SBR, which were configured for PCA.&lt;br&gt;&lt;strong&gt;Note:&lt;/strong&gt; SBR can be used for DCA application as well, skip SBR Server Group being used for DCA application.</td>
<td>Navigate to <code>Configuration -&gt; Server Groups</code>. Edit the Server Group with SBR function and remove the servers from it. Repeat the steps with all server groups with SBR function, which are listed in step 3 of this procedure.</td>
</tr>
</tbody>
</table>
6.2.5.3 Delete Server Groups related to SBR

Procedure 22: Delete Server Groups related to SBR

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
</table>
| 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>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. NOAM VIP: Navigate to Server Groups Screen</td>
<td>Navigate to Configuration -&gt; Server Groups.</td>
</tr>
<tr>
<td>3. NOAM VIP: Remove Server Groups Resource Domains</td>
<td>Remove the Server Groups, which has Function value SBR.</td>
</tr>
</tbody>
</table>
6.2.5.4 Reboot the Servers

Rebooting SBR, DA-MPs, SOAM, and NOAM servers. Use caution while selecting SBR and DA-MP servers. Select SBR and DA-MP servers, which were being used for PCA.

Procedure 23: Reboot SBR Servers

<table>
<thead>
<tr>
<th>STEP</th>
<th>This procedure removes the merge data from servers by rebooting them. Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Note:</strong> Select SBR servers being used for PCA application and for which deactivation done. Skip SBR servers being used for DCA application. If this procedure fails, contact Appendix B. My Oracle Support (MOS) and ask for assistance.</td>
</tr>
</tbody>
</table>

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 23: Reboot SBR Servers

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
</table>
| 2.   | **NOAM VIP:** Navigate to Server Groups Screen  
      Navigate to Status & Manage -> Server.  
      - Status & Manage  
        - Network Elements  
        - Server  
        - HA  
        - Database  
        - KPIs  
        - Processes  
        - Tasks  
        - Files  |
| 3.   | **NOAM VIP:** Reboot the Servers.  
      Reboots all the relevant SBR servers.  
      Select all the MP servers having Function “SBR” which were being used for PCA application and click **Reboot**.  
      - Stop  
      - Restart  
      - Reboot  
      - NTP Sync  
      - Report  
      **Note:** Skip SBR servers being used for DCA applications.  
      Verify the server changes to the Err state and wait until it returns to the Enabled/Norm state. |
### Procedure 24: Reboot DA-MP Servers

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1.   | **NOAM VIP GUI:** 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:  

   ![Oracle System Login](image)  

   Welcome to the Oracle System Login.  

| 2.   | **NOAM VIP:** Navigate to Server Groups Screen. Navigate to Status & Manage -> Server. |
Procedure 24: Reboot DA-MP Servers

3. **NOAM VIP:**
   Reboot the servers

   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 DA-MP servers running PCA. Press **Ctrl** to select multiple DA-MPs at once.

   Click **Reboot.**

   Verify the server changes to the **Err** state and wait until it returns to the **Enabled/Norm** state.

   Repeat for the additional DA-MPs.
Procedure 25: Reboot SOAM Servers

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
</table>
| 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: Navigate to Server Groups screen | Navigate to Status & Manage -> Server |
| 3. NOAM VIP: Reboot the servers | Reboots all the relevant SOAM servers. Select all the SOAM servers belonging to sites running PCA and click Reboot.  
Verify the server changes to the Err state and wait until it returns to the Enabled/Norm state. |

Note: Select SOAM servers belonging to the sites running PCA. If this procedure fails, contact Appendix B. My Oracle Support (MOS) and ask for assistance.
### Procedure 26: Reboot NOAM Servers

<table>
<thead>
<tr>
<th>Step #</th>
<th>Description</th>
<th>Action</th>
</tr>
</thead>
</table>
| 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: |
|        |             | ![Oracle System Login](image) |
| 2.     | NOAM VIP: Navigate to Server Groups screen | Navigate to Status & Manage -> Server. |
|        |             | ![Server Groups Screen](image) |
### Procedure 26: Reboot NOAM Servers

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td><strong>NOAM VIP:</strong> Reboot the servers</td>
</tr>
<tr>
<td></td>
<td>Select all NOAM servers except the active NOAM and click <strong>Reboot</strong>.</td>
</tr>
<tr>
<td></td>
<td>Verify the server changes to the Err state and wait until it returns to the Enabled/Norm state.</td>
</tr>
<tr>
<td></td>
<td>Select the Active NOAM server and click <strong>Reboot</strong>.</td>
</tr>
<tr>
<td></td>
<td>After rebooting the active NOAM server, the GUI goes away. Establish a GUI session on the NOAM by using the XMI VIP address. Login as <strong>guiadmin</strong> user after some time.</td>
</tr>
</tbody>
</table>
### 6.2.6 Post PCA Deactivation System Health Check

#### 6.2.6.1 System Health Check after PCA Deactivation on NOAM Server

**Procedure 27: Verification of Application Deactivation on NOAM Server**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
</table>
| 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:

![Oracle System Login](https://example.com/login.png)

Note: Execute this procedure only when PCA is deactivated on entire network. If PCA is deactivated on a particular site, skip this procedure. If this procedure fails, contact Appendix B. My Oracle Support (MOS) and ask for assistance.
Procedure 27: Verification of Application Deactivation on NOAM Server

2. **NOAM VIP**: Verify the Resource Domain Profile does not show the profile entries of Policy and Charging DRA, Policy Session, and Policy Binding.

   ![Resource Domain Profile](image1.png)

   **Verify Application Deactivation**: Verify the Resource Domain Profile list does not show the profile entries of Binding and Session profiles.

3. **NOAM VIP**: Verify the KPIs are not shown for PCA, SBR-Binding, and SBR-Session.

   ![KPIs Filter](image2.png)

   **Verify KPIs Filter**: Verify KPIs filter option do not show the KPI groups for PCA, SBR-Binding and SBR-Session.

4. **NOAM VIP**: Verify the Measurement groups are not shown for OC-DRA, P-DRA, SBR-Binding, and SBR-Session.

   ![Measurement Groups](image3.png)

   **Verify Measurement Groups**: Verify Measurement groups are not shown for OC-DRA, P-DRA, SBR-Binding, and SBR-Session.
Procedure 27: Verification of Application Deactivation on NOAM Server

5. **NOAM VIP**: Verify the Main Menu don't show the Policy and Charging submenu

Verify Main Menu on active NOAM does not show the Policy and Charging submenu.

- File: Main Menu
  - Administration
  - Configuration
  - Alarms & Events
  - Security Log
  - Status & Manage
  - Measurements
  - Communication Agent
  - Diameter Common
  - Diameter
  - RADIUS
  - SBR
  - Help
  - Legal Notices
  - Logout
### 6.2.6.2 System Health Check after Application Deactivation on SOAM Servers

#### Procedure 28: Verification of Application Deactivation on SOAM Servers

<table>
<thead>
<tr>
<th>STEP #</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1.     | **SOAM VIP GUI:** 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 guadmin user:  

[Image of Oracle System Login page]|

This procedure verifies the PCA application deactivation on SOAM servers. Check off (✓) each step as it is completed. Boxes have been provided for this purpose under each step number.

If this procedure fails, contact Appendix B. My Oracle Support (MOS) and ask for assistance.
### Procedure 28: Verification of Application Deactivation on SOAM Servers

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Verification</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td><strong>SOAM VIP</strong>: Verify the Policy and Charging folder is not visible in the left hand menu</td>
<td>Verify the Policy and Charging folder does not appear on the left hand menu: <img src="image" alt="Main Menu" /></td>
</tr>
<tr>
<td>3.</td>
<td><strong>SOAM VIP</strong>: Verify the Diameter maintenance application menu do not show the entry of PCA application</td>
<td>Verify the Diameter maintenance application menu do not show the entry of PCA application</td>
</tr>
<tr>
<td>4.</td>
<td><strong>SOAM VIP</strong>: Verify PCA application on all active SOAM servers</td>
<td>Repeat Steps 1 to 3 on all active SOAM servers for which PCA has been deactivated.</td>
</tr>
</tbody>
</table>
6.3 Post-Deactivation Procedures
To complete a deactivation, complete this post-deactivation procedure.

6.3.1 Perform Health Check
This procedure determines the health and status of the network and servers.

Procedure 29: Perform Health Check (Post-Feature Deactivation)

<table>
<thead>
<tr>
<th>STEP</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>NOAM VIP GUI: Login</td>
</tr>
</tbody>
</table>

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 29: Perform Health Check (Post-Feature Deactivation)

2. NOAM VIP GUI: Verify server status

Navigate to Status & Manage -> Server.

Verify all Server Status is Normal (Norm) for:
Alarm (Alm), Database (DB), Reporting Status, and Processes (Proc).

<table>
<thead>
<tr>
<th>Appl State</th>
<th>Alm</th>
<th>DB</th>
<th>Reporting Status</th>
<th>Proc</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

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-Deactivation procedures. Contact Appendix B. My Oracle Support (MOS) if needed.
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)

```
[admsr@DsrSetup03Noam1 activate]$ ./load.pcaActivationTopLevel

======== Start of Log Data in file /var/TKLC/log/pcaActivationTopLevel.log ========
Log file location: /var/TKLC/log/pcaActivationTopLevel.log

Note:-
In case of any failure please execute
/usr/TKLC/dsr/prod/maint/loaders/deactivate/load.pcaDeactivationTopLevel script to
revert the changes.

Execution of Activation Process Starts

Executing /usr/TKLC/dsr/prod/maint/loaders/activate/load.pcaActivateAscoped script on DsrSetup03Noam1

======== Start of Log Data in file /var/TKLC/log/pcaActivateAscoped.log ========

Server Name  : DsrSetup03Noam1
Server Role  : NETWORK_OAMP
Node Id      : DsrSetup03Noam1
HA State     : Active
Cluster Role : Primary

Add PCA to DsrApplication.

Verify that PCA is in the table

id=6
name=PCA
unavailableAction=SendAnswer
avpInsertion=Yes
shutdownMode=Graceful
shutdownTimer=5
resultCode=3002
vendorId=0
errorString=Policy and Charging Application Unavailable Or Degraded
resExhResultCode=3004
```
resExhVendorId=0
resExhErrorString=PCA Resource Exhausted
routeListId=65535
realm=
fqdn=
mcl=0
========================================================================
Add PCA KPI group
========================================================================
Add PDRA Measurement groups
========================================================================
Add Permission Group headers for PCA
========================================================================
Add Resource Domain Profiles
========================================================================
Add Place Association Types
========================================================================
Add mapping between ResourceDomainName to ComAgentResourceId
========================================================================
RdName2ComAgentResId do not have any data. So, adding placeholders for comAgentResId
reserved for PCA
    === changed 1 records ===
Taking backup of current system values of ComAgent HA Service timeout configuration.
Setting the ComAgent HA Service timeout configuration values.
    === changed 1 records ===
    === changed 1 records ===
    === changed 1 records ===
    === changed 1 records ===
    === changed 1 records ===
    === changed 1 records ===
    === changed 1 records ===
========================================================================

Execution status of activation script on DsrSetup03Noam1: PASSED
Please check /var/TKLC/log/pcaActivateAscoped.log for more details.
========================================================================
Starting Activation on StandBy NOAMP Server if it exists in the topology.
DsrSetup03Noam1 is Active and Primary NOAMP Server. So, proceeding with next NOAMP
Server.
========================================================================
FIPS integrity verification test failed.
Executing /usr/TKLC/dsr/prod/maint/loaders/activate/load.pcaActivateStandByAscoped
script on DsrSetup03Noam2
FIPS integrity verification test failed.

======= Start of Log Data in file /var/TKLC/log/pcaActivateStandbyAscoped.log =======

Server Name : DsrSetup03Noam2
Server Role: NETWORK_OAMP
===============================================
Add PCA to DsrApplication.
===============================================
Verify that PCA is in the table
===============================================
  id=6
  name=PCA
  unavailableAction=SendAnswer
  avpInsertion=Yes
  shutdownMode=Graceful
  shutdownTimer=5
  resultCode=3002
  vendorId=0
  errorString=Policy and Charging Application Unavailable Or Degraded
  resExhResultCode=3004
  resExhVendorId=0
  resExhErrorString=PCA Resource Exhausted
  routeListId=65535
  realm=
  fqdn=
  mcl=0
  END===============================================
Add Permission Group headers for PCA
===============================================END===================

Execution status of activation script on DsrSetup03Noam2: PASSED
Please check /var/TKLC/log/pcaActivateStandbyAscoped.log.DsrSetup03Noam2 for more details.

FIPS integrity verification test failed.
FIPS integrity verification test failed.
pcaActivateStandbyAscoped.log
100% 2218 2.2KB/s 00:00

======= Activation done on all Network OAMP Servers =======

======= Starting Activation on System OAM servers =======
DsrSetup03Soam1 is Active. So, proceeding with Activation.
Policy and Charging DRA Feature Activation Procedure

FIPS integrity verification test failed.
Executing /usr/TKLC/dsr/prod/maint/loaders/activate/load.pcaActivateBscoped script on DsrSetup03Soam1
FIPS integrity verification test failed.

============== Start of Log Data in file /var/TKLC/log/pcaActivateBscoped.log ===============
Server Name : DsrSetup03Soam1
Server Role: SYSTEM_OAM
Node Id : DsrSetup03Soam1
HA State : Active

Add PCA to DsrApplication. If already present then skip.

Verify that PCA is in the table

id=6
name=PCA
unavailableAction=SendAnswer
avpInsertion=Yes
shutdownMode=Graceful
shutdownTimer=5
resultCode=3002
vendorId=0
errorString=Policy and Charging Application Unavailable Or Degraded
resExhResultCode=3004
resExhVendorId=0
resExhErrorString=PCA Resource Exhausted
routeListId=65535
realm=
fqdn=
mcl=0

Add Permission Group headers for PCA

FIPS integrity verification test failed.
FIPS integrity verification test failed.

======== Start of Log Data in file /var/TKLC/log/pcaActivateStandbyBscoped.log ======
Server Name : DsrSetup03Soam2
Server Role: SYSTEM_OAM
Node Id : DsrSetup03Soam2

=====================================
Add Permission Group headers for PCA

====================================================================================================

Execution status of activation script on DsrSetup03Soam2: PASSED
Please check /var/TKLC/log/pcaActivateStandbyBscoped.log.DsrSetup03Soam2 for more details.
FIPS integrity verification test failed.
FIPS integrity verification test failed.

====================================================================================================

Execution status of activation script on DsrSetup03Soam1: PASSED
Please check /var/TKLC/log/pcaActivateBscoped.log.DsrSetup03Soam1 for more details.
FIPS integrity verification test failed.
FIPS integrity verification test failed.
pcaActivateBscoped.log
100% 3004 2.9KB/s 00:00

====================================================================================================

DsrSetup03Soam2 is not Active. Proceeding with next system oam server for activation process.

====================================================================================================

Execution of PCA Activation Script complete.

[admusr@DsrSetup03Noam1 activate]$ 

7.2 Sample Output of Deactivation (Active NOAM)

[admusr@DsrSetup03Noam1 deactivate]$ ./load.pcaDeactivationTopLevel
========== Start of Log Data in file /var/TKLC/log/pcaDeactivationTopLevel.log ==========
Server Name : DsrSetup03Soam1
Server Role: SYSTEM_OAM
Node Id : DsrSetup03Soam1
HA State : Active
GLA is not activated, proceed ahead with PCA deactivation

Remove PCA Application from DsrApplicationPerMp table

=== deleted 3 records ===

Remove PCA Application from DsrApplication table

=== deleted 1 records ===

Remove permission group headers for PCA on SOAM server

=== deleted 1 records ===
=== deleted 1 records ===

FIPS integrity verification test failed.
FIPS integrity verification test failed.

====== Start of Log Data in file /var/TKLC/log/pcaDeactivateStandbyBscoped.log ======
Server Name : DsrSetup03Soam2
Server Role: SYSTEM_OAM
Node Id    : DsrSetup03Soam2

Remove permission group headers for PCA on SOAM server

=== deleted 1 records ===
=== deleted 1 records ===

FIPS integrity verification test failed.
FIPS integrity verification test failed.

Execution status of deactivation script on DsrSetup03Soam2: PASSED
Please check /var/TKLC/log/pcaDeactivateStandbyBscoped.log.DsrSetup03Soam2 for more details.
FIPS integrity verification test failed.

Execution status of deactivation script on DsrSetup03Soam1: PASSED
Please check /var/TKLC/log/pcaDeactivateBscoped.log.DsrSetup03Soam1 for more details.
FIPS integrity verification test failed.

pcaDeactivateBscoped.log
100% 2885 2.8KB/s 00:00

DsrSetup03Soam2 is not Active. Proceeding with next server for de-activation process.
Starting Deactivation on Standby NOAMP server if present in topology.

DsrSetup03Noam1 is Active NOAMP Server. Proceeding with next NOAMP server in the list.

FIPS integrity verification test failed.
Executing /usr/TKLC/dsr/prod/maint/loaders/deactivate/load.pcaDeactivateStandByAscoped script on DsrSetup03Noam2
FIPS integrity verification test failed.
Server Name : DsrSetup03Noam2
Server Role : NETWORK_OAMP

Remove PCA Application from DsrApplication table
=== deleted 1 records ===

Remove permission group headers for PCA
=== deleted 1 records ===
=== deleted 1 records ===

Execution status of deactivation script on DsrSetup03Noam2: PASSED
Please check /var/TKLC/log/pcaDeactivateAscoped.log.DsrSetup03Noam2 for more details.

FIPS integrity verification test failed.
FIPS integrity verification test failed.
pcaDeactivateAscoped.log
100%  963     0.9KB/s   00:00

Starting Deactivation on Active NOAMP server.

Executing /usr/TKLC/dsr/prod/maint/loaders/deactivate/load.pcaDeactivateAscoped script on DsrSetup03Noam1

== Start of Log Data in file /var/TKLC/log/pcaDeactivateAscoped.log ==
Server Name : DsrSetup03Noam1
Server Role : NETWORK_OAMP
Node Id      : DsrSetup03Noam1
HA State     : Active
Cluster Role : Primary
GLA is not activated, proceed ahead with PCA deactivation
All policy binding and session data is clean, proceed ahead with PCA deactivation

Remove PCA and pSBR KPI groups
Remove PDRA and PSBR Measurement groups

Remove permission group headers for PCA

Remove PCA from DsrApplicationPerMp table

Remove PCA Application from DsrApplication table

Remove routing profile data

Remove Psbr capacity constraints
Policy and Charging DRA Feature Activation Procedure

--- deleted 1 records ---
--- deleted 1 records ---
--- deleted 1 records ---
========================================================================= Remove data for mapping between ResourceDomainName to ComAgentResourceId reserved for policy binding and session profiles
========================================================================= --- deleted 66 records ---
Remove Resource Domain Profiles
======================================= Set HandleProtocolErrorAnswers flag in LongParam to default(No) --- changed 1 records ---
/var/TKLC/db/filemgmt/TempPcaActivationDataFile.log exists. Reading ComAgent Configuration data from it.
--- changed 1 records ---
--- changed 1 records ---
--- changed 1 records ---
--- changed 1 records ---
--- changed 1 records ---
--- changed 1 records ---
END Execution status of deactivation script on DsrSetup03Noam1: PASSED
Execution of PCA Deactivation Script complete.
E-N-D [admusr@DsrSetup03Noam1 deactivate]$
Appendix A. PCA Activation on Active/Standby NOAM and SOAM Server

The following procedures activate PCA on active/standby NOAM and SOAM servers. Follow the appropriate procedure as needed for your disaster recovery.

**Note:** These procedures need to be executed during disaster recovery and are not part of installation.

Appendix A.1. PCA Activation on Active NOAM

**Procedure 30: PCA Activation on Active NOAM Server**

<table>
<thead>
<tr>
<th>STEP #</th>
<th>This procedure activates the PCA on a NOAM system.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This procedure does not require a Maintenance window.</td>
</tr>
<tr>
<td></td>
<td>Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number.</td>
</tr>
<tr>
<td></td>
<td>If this procedure fails, contact Appendix B. My Oracle Support (MOS) and ask for assistance.</td>
</tr>
</tbody>
</table>

1. **Establish a secure shell session on the active NOAM**
   - Establish a secure shell session on the active NOAM by using the XMI VIP address. Login as the *admusr*.
   - Use your SSH client to connect to the server (ex. Putty).
   - **Note:** You must consult your own software client's documentation to learn how to launch a connection. For example:

     ```
     # ssh <active NO XMI VIP Address>
     ```

2. **PCA Activation: Change directory**
   - Change to the following directory:

     ```
     $ cd /usr/TKLC/dsr/prod/maint/loaders/activate
     ```

3. **PCA Activation: Execute the PCA Activation script**
   - Run the feature activation script by executing the following command:

     ```
     $ ./load.pcaActivateAscoped
     ```
   - Check the /var/TKLC/log/pcaActivateAscoped.log file to see if there is any execution failure.
   - If the activation fails, then execute the procedure in Section 6.2.3 to restore the system back to state before start of activation.

4. **PCA Activation (OPTIONAL): Clear the web server cache**
   - Delete all GUI cache files on active NOAM for quick view of changes or wait for some time so new changes are reflected.

   ```
   $ clearCache
   ```

**Appendix A.1.1. Sample Output of Activation (Active NOAM)**

```
[admusr@NO2 activate]$ ./load.pcaActivateAscoped

================ Start of Log Data in file /var/TKLC/log/pcaActivateAscoped.log =================
Server Name  : NO2  
Server Role  : NETWORK_OAMP  
Node Id      : NO2  
HA State     : Active  
Cluster Role : Primary

==============================
```
Add PCA to DsrApplication.

===============================================
Verify that PCA is in the table
================================

id=6
name=PCA
unavailableAction=SendAnswer
avpInsertion=Yes
shutdownMode=Graceful
shutdownTimer=5
resultCode=3002
vendorId=0
errorString=Policy and Charging Application Unavailable Or Degraded
resExhResultCode=3004
resExhVendorId=0
resExhErrorString=PCA Resource Exhausted
routeListId=65535
realm=
fqdn=
mcl=0

Add PCA KPI group

Add PDRA Measurement groups

Add Permission Group headers for PCA & SBR

Add Resource Domain Profiles

Add Place Association Types

Add mapping between ResourceDomainName to ComAgentResourceId

RdName2ComAgentResId do not have any data. So, adding placeholders for comAgentResId reserved for PCA

Add PSBR record in AppProcControl table

=== changed 1 records ===

Taking backup of current system values of ComAgent HA Service timeout configuration.
Appendix A.2. PCA Activation on Standby NOAM

Procedure 31: PCA Activation on Standby NOAM Server

| 1 | Establish a secure shell session on the active NOAM | Establish a secure shell session on the standby NOAM by using the XMI VIP address. Login as the **admusr**. Use your SSH client to connect to the server (ex. Putty).

**Note:** You must consult your own software client’s documentation to learn how to launch a connection. For example:

```
# ssh <active NO XMI VIP Address>
```

| 2 | PCA Activation: Change directory | Change to the following directory:

```
$ cd /usr/TKLC/dsr/prod/maint/loaders/activate
```

| 3 | PCA Activation: Execute the PCA Activation script | Run the feature activation script by executing the following command:

```
$ ./load.pcaActivateStandByAscoped
```

**Note:** This command execution starts activation on NOAM servers and All Active SOAM servers.

Check the */var/TKLC/log/pcaActivateStandByAscoped.log* file to see if there is any execution failure. If the activation fails, then execute the procedure in Section 6.2.3 to restore the system back to state before start of activation.

| 4 | PCA Activation (OPTIONAL): Clear the web server cache | Delete all GUI cache files on active NOAM for quick view of changes or wait for some time so new changes are reflected.

```
$ clearCache
```

Appendix A.2.1. Sample Output of Activation (Standby NOAM)

```
[admusr@NO1 activate]$ ./load.pcaActivateStandByAscoped
```
Policy and Charging DRA Feature Activation Procedure

====== Start of Log Data in file /var/TKLC/log/pcaActivateStandbyScoped.log ======

Server Name : NO1
Server Role: NETWORK_OAMP

Add PCA to DsrApplication.

Verify that PCA is in the table

id=6
name=PCA
unavailableAction=SendAnswer
avpInsertion=Yes
shutdownMode=Graceful
shutdownTimer=5
resultCode=3002
vendorId=0
errorString=Policy and Charging Application Unavailable Or Degraded
resExhResultCode=3004
resExhVendorId=0
resExhErrorString=PCA Resource Exhausted
routeListId=65535
realm=
fqdn=
mcl=0

Add Permission Group headers for PCA

END
Appendix A.3. PCA Activation on Active SOAM

Procedure 32: PCA Activation on Active SOAM Server

<table>
<thead>
<tr>
<th>Step #</th>
<th>Procedure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Establish a secure shell session on the active SOAM</td>
<td>Establish a secure shell session on the active SOAM by using the XMI VIP address. Login as the admusr. Use your SSH client to connect to the server (ex. Putty). Note: You must consult your own software client's documentation to learn how to launch a connection. For example: # ssh &lt;active SOAM XMI VIP Address&gt;</td>
</tr>
<tr>
<td>2</td>
<td>PCA Activation: Change directory</td>
<td>Change to the following directory: $ cd /usr/TKLC/dsr/prod/maint/loaders/activate</td>
</tr>
<tr>
<td>3</td>
<td>PCA Activation: Execute the PCA Activation script</td>
<td>Run the feature activation script by executing the following command: $ ./load.pcaActivateBscoped. Check the /var/TKLC/log/pcaActivateBscoped.log file to see if there is any execution failure. If the activation fails, then execute the procedure in Section 6.2.3 to restore the system back to state before start of activation.</td>
</tr>
<tr>
<td>4</td>
<td>PCA Activation (OPTIONAL): Clear the web server cache</td>
<td>Delete all GUI cache files on active SOAM for quick view of changes or wait for some time so new changes are reflected. $ clearCache</td>
</tr>
</tbody>
</table>

Appendix A.3.1. Sample Output of Activation (Active SOAM)

```
[admusr@SO1 activate]$ ./load.pcaActivateBscoped
=========== Start of Log Data in file /var/TKLC/log/pcaActivateBscoped.log ===========
Server Name : SO1
Server Role: SYSTEM_OAM
Node Id     : SO1
HA State    : Active

Add PCA to DsrApplication. If already present then skip.

Verify that PCA is in the table

id=6
name=PCA
```
unavailableAction=SendAnswer
avpInsertion=Yes
shutdownMode=Graceful
shutdownTimer=5
resultCode=3002
vendorId=0
errorString=Policy and Charging Application Unavailable Or Degraded
resExhResultCode=3004
resExhVendorId=0
resExhErrorString=PCA Resource Exhausted
routeListId=65535
realm=
fqdn=
mcl=0

==============================================================================
Add Permission Group headers for PCA & SBR on SOAM server
==============================================================================
FIPS integrity verification test failed.
FIPS integrity verification test failed.
======== Start of Log Data in file /var/TKLC/log/pcaActivateStandbyBscoped.log ========
Server Name : SO2
Server Role : SYSTEM_OAM
Node Id : SO2
HA State : Stby
==============================================================================
Add Permission Group headers for PCA
==============================================================================
Execution status of activation script on SO2: PASSED
Please check /var/TKLC/log/pcaActivateStandbyBscoped.log.SO2 for more details.
FIPS integrity verification test failed.
FIPS integrity verification test failed.
 pcaActivateStandbyBscoped.log
 100% 785 0.8KB/s 00:00
==============================================================================
## Appendix A.4. PCA Activation on Standby SOAM

### Procedure 33: PCA Activation on Standby SOAM Server

<table>
<thead>
<tr>
<th><strong>S T E P</strong></th>
<th><strong>Description</strong></th>
<th><strong>Instructions</strong></th>
</tr>
</thead>
</table>
| 1 | Establish a secure shell session on the active SOAM | Establish a secure shell session on the active SOAM by using the XMI VIP address. Login as the *admusr*. Use your SSH client to connect to the server (ex. Putty). *Note:* You must consult your own software client’s documentation to learn how to launch a connection. For example: 

```bash
# ssh <active SOAM XMI VIP Address>
```

| 2 | PCA Activation: Change directory | Change to the following directory: 

```bash
$ cd /usr/TKLC/dsr/prod/maint/loaders/activate
```

| 3 | PCA Activation: Execute the PCA Activation script | Run the feature activation script by executing the following command: 

```bash
$ ./load.pcaActivateStandByBscoped
```

Check the `/var/TKLC/log/pcaActivateStandbyBscoped.log` file to see if there is any execution failure. 

If the activation fails, then execute the procedure in Section 6.2.3 to restore the system back to state before start of activation.

| 4 | PCA Activation (OPTIONAL): Clear the web server cache | Delete all GUI cache files on active SOAM for quick view of changes or wait for some time so new changes are reflected: 

```bash
$ clearCache
```

### Appendix A.4.1. Sample Output of Activation (Standby SOAM)

```
[root@SO2 activate]# ./load.pcaActivateStandByBscoped
== Start of Log Data in file /var/TKLC/log/pcaActivateStandbyBscoped.log ==
Server Name : SO2
Server Role: SYSTEM_OAM
Node Id : SO2
HA State : Stby
=======================================
Add Permission Group headers for PCA
=======================================
END=======================================
[root@SO2 activate]#
```
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.