Oracle® Communications

Diameter Signaling Router

Release 6.0/7.0/7.1/7.2/7.3

DSR MAP-Diameter Feature Activation Procedure

E58666 Revision 04

July 2016

ORACLE

Oracle Communications Diameter Signaling Router MAP-Diameter feature activatioin procedure, Release 6.X/7.1/7.2/7.3
Copyright © 2016 Oracle and/or its affiliates. All rights reserved.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information on content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services, except as set forth in an applicable agreement between you and Oracle.

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

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

See more information on MOS in the Appendix section.

TABLE OF CONTENTS

TABLE OF CONTENTS **3**

LIST OF TABLES **5**

LIST OF FIGURES **5**

LIST OF PROCEDURES **5**

1.0 INTRODUCTION **7**

1.1 PURPOSE AND SCOPE 7
1.2 ACRONYMS 8
1.3 GENERAL PROCEDURE STEP FORMAT 9

2.0 FEATURE ACTIVATION OVERVIEW **9**

2.1 DEFINITION OF ACTIVATION FOR THE MAP-DIAMETER FEATURE 10
2.2 FEATURE ACTIVATION OVERVIEW 13
2.2.1 Pre-Feature Activation Overview *13*
2.2.2 Feature Activation Execution Overview *14*
2.2.3 Post-Feature Activation Overview *14*

3.0 FEATURE DEACTIVATION OVERVIEW **15**

3.1.1 Pre-Feature Deactivation Overview *15*
3.1.2 Feature Deactivation Execution Overview *15*
Impact *15*
3.1.3 Post-Feature Deactivation Overview *16*

4.0 FEATURE ACTIVATION PREPARATION **17**

4.1 HARDWARE REQUIRMENTS 17
4.1.1 DA-MP *17*
4.1.2 SS7-MP *18*
4.2 SYSTEM TOPOLOGY AND HARDWARE CHECK 19
4.3 PERFORM HEALTH CHECK 29

5.0 FEATURE ACTIVATION **32**

5.1 PRE-ACTIVATION PROCEDURES 33
5.1.1 Perform Health Check *33*
5.1.2 Activation Procedures *36*
5.1.3 Feature Activation *36*
5.2 POST-ACTIVATION PROCEDURES 43
5.2.1 Perform Health Check *43*

6.0 FEATURE DEACTIVATION **45**

6.1 PRE-DEACTIVATION PROCEDURES 45
6.1.1 Perform Health Check *46*
6.2 FEATURE DEACTIVATION 48
6.3 POST-DEACTIVATION PROCEDURES 54
6.3.1 Perform Health Check *54*

7.0 ENGINEERING NOTES **56**

7.1 SAMPLE OUTPUT OF ACTIVATION (ACTIVE NOAM) 56
7.2 SAMPLE OUTPUT OF DEACTIVATION (ACTIVE NOAM) 60

APPENDIX A. MY *ORACLE* SUPPORT (MOS) **63**

LIST OF TABLES

Table 1. Acronyms 8
Table 4. Pre-Feature Activation Overview 13
Table 5. Feature Activation Execution Overview 14
Table 6. Post-Feature Activation Overview 14
Table 7. Pre-Feature Deactivation Overview 15
Table 8. Feature Deactivation Overview 15
Table 9. Post-Feature Deactivation Overview 16
Table 10. DA-MP (DM-IWF) Hardware Requirements 17
Table 11. SS7-MP (MD-IWF) Hardware Requirements 18
Table 12. List of SOAM Server Groups supporting MAP-Diameter IWF 19
Table 13. Checklist for DA-MP information 19
Table 14. Checklist for SS7-MP information 20
Table 15. Hardware ID to Hardware Type Mapping for MP servers 20

LIST OF FIGURES

Figure 1: Example of a procedure step 9
Figure 2: Example of MAP Interworking folder on NOAM 10
Figure 3: Example of MAP Interworking folder on SOAM 10
Figure 4: Example of SS7/Sigtran folder on SOAM 12
Figure 5: Example of Transport Manager folder on SOAM 12
Figure 6: Example of DSR Application maintenance screen 12

List of Procedures

TABLE 1. ACRONYMS 8

FIGURE 1: EXAMPLE OF A PROCEDURE STEP 9

FIGURE 2: EXAMPLE OF MAP INTERWORKING FOLDER ON NOAM 10

FIGURE 3: EXAMPLE OF MAP INTERWORKING FOLDER ON SOAM 10

FIGURE 4: EXAMPLE OF SS7/SIGTRAN FOLDER ON SOAM 12

FIGURE 5: EXAMPLE OF TRANSPORT MANAGER FOLDER ON SOAM 12

FIGURE 6: EXAMPLE OF DSR APPLICATION MAINTENANCE SCREEN 12

TABLE 4. PRE-FEATURE ACTIVATION OVERVIEW 13

TABLE 5. FEATURE ACTIVATION EXECUTION OVERVIEW 14

TABLE 6. POST-FEATURE ACTIVATION OVERVIEW 14

TABLE 7. PRE-FEATURE DEACTIVATION OVERVIEW 15

TABLE 8. FEATURE DEACTIVATION OVERVIEW 15

TABLE 9. POST-FEATURE DEACTIVATION OVERVIEW 16

TABLE 10. DA-MP (DM-IWF) HARDWARE REQUIREMENTS 17

TABLE 11. SS7-MP (MD-IWF) HARDWARE REQUIREMENTS 18

TABLE 12. LIST OF SOAM SERVER GROUPS SUPPORTING MAP-DIAMETER IWF 19

TABLE 13. CHECKLIST FOR DA-MP INFORMATION 19
TABLE 14. CHECKLIST FOR SS7-MP INFORMATION 20
TABLE 15. HARDWARE ID TO HARDWARE TYPE MAPPING FOR MP SERVERS 20
PROCEDURE 1: SYSTEM TOPOLOGY CHECK 22
PROCEDURE 2: PERFORM HEALTH CHECK (FEATURE ACTIVATION PREPARATION) 29
PROCEDURE 3: PERFORM HEALTH CHECK (PRE FEATURE ACTIVATION) 33
PROCEDURE 4: FEATURE ACTIVATION 36
PROCEDURE 5: PERFORM HEALTH CHECK (POST-FEATURE ACTIVATION) 43
PROCEDURE 6: PERFORM HEALTH CHECK (PRE-FEATURE DEACTIVATION) 46
PROCEDURE 7: FEATURE DEACTIVATE 48
PROCEDURE 8: PERFORM HEALTH CHECK (POST-FEATURE DEACTIVATION) 54

1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

This document defines the procedure that is executed to activate the MAP-Diameter 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 MAP-Diameter feature is activated during a planned maintenance window to minimize the impact to network traffic.

This document also provides a procedure to deactivate MAP-Diameter IWF after it has been activated. Please see Section 0 for a discussion of deactivation.

No additional software installation is required prior to executing this procedure. The standard DSR installation procedure has loaded all of the required software, even if the MAP-Diameter feature is activated at a later time.

1.2 ACRONYMS

Table 1. Acronyms

DA-MP	Diameter Agent Message Processor
DB	Database
DIH	Diameter Intelligent Hub
DM-IWF	Diameter Interworking Function. The DSR Application which resides on a DA-MP which manages Diameter transactions between the local DRL instance and the MD-IWFs on the SS7-MPs.
DSR	Diameter Signaling Router
FOA	First Office Application
GUI	Graphical User Interface
HA	High Availability
IMI	Internal Management Interface
IDIH	Integrated DIH
IP	Internet Protocol
IWF	InterWorking Function
MAP	Mobile Application Part
MD-IWF	MAP Interworking Function. The TCAP application which resides on a SS7-MP which performs (1) the interworking of Diameter transactions received from DA-MPs to SS7-MAP transactions initiated towards SS7 network nodes and (2) the interworking of SS7-MAP transactions received from SS7 network nodes to Diameter transactions initiated towards Diameter Nodes via DM-IWFs on DA-MPs.
MP	Message Processing or Message Processor
NE	Network Element
NOAM	Network OAM
OAM	Operations, Administration and Maintenance
RMS	Rack Mounted Server
SOAM	System OAM
SSH	Secure Shell
UI	User Interface
VIP	Virtual IP
VPN	Virtual Private Network
XMI	External Management Interface

1.3 GENERAL PROCEDURE STEP FORMAT

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

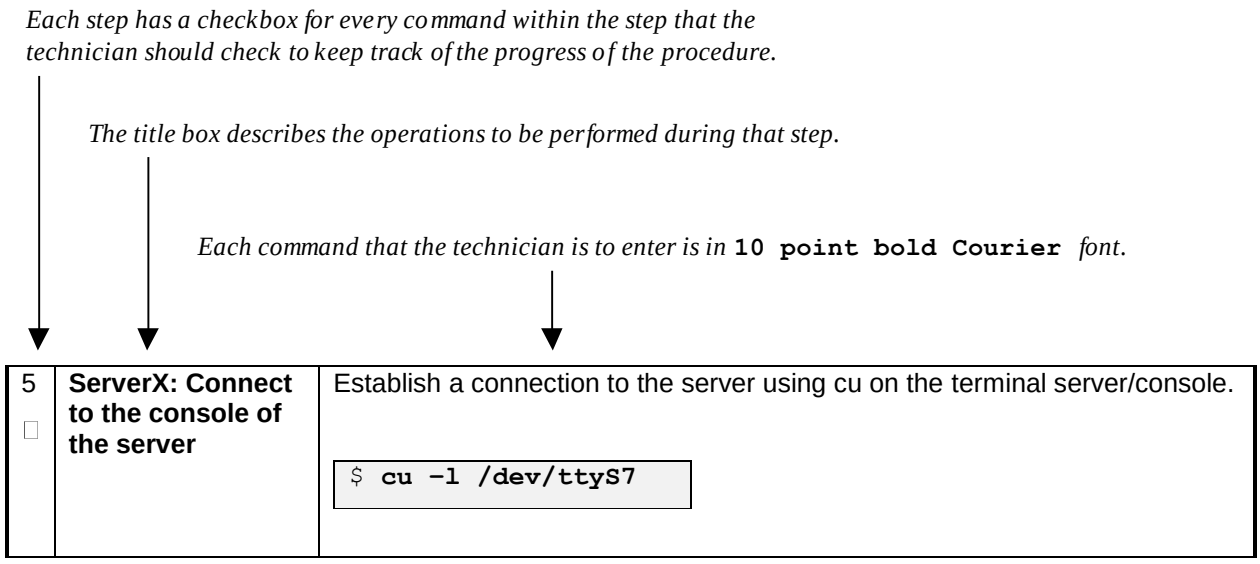


Figure 1: Example of a procedure step

2.0 FEATURE ACTIVATION OVERVIEW

Table 5 and Table 9 provide a high level overview of the actual activation and deactivation process on DSR. The reader is also invited to review the sample screens and the corresponding OAM topology to get a feel for how MAP-Diameter IWF is deployed in terms of OAM hierarchy.

This section lists the required materials and information needed to execute the feature activation. In addition, Table 4 through Table 9 provide estimates of the time required to execute the procedure. These tables can be used to estimate the total time necessary to complete the feature activation. The timing values shown are estimates only – use these tables to plan the timing of the activation, **not** to execute the procedure. The detailed procedure steps to be executed begin in Section 5.0.

2.1 DEFINITION OF ACTIVATION FOR THE MAP-DIAMETER FEATURE

This section briefly defines what activation means with respect to the MAP-Diameter IWF feature. In general, activation of a feature refers to the initialization of the feature on DSR making it possible to further configure and provision the feature on DSR.

MAP-Diameter IWF feature consists of two (co-operating) DSR Applications:

- DM-IWF - the DSR Application that runs on DA-MPs and
- MD-IWF – the DSR Application that runs on SS7-MPs

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

Prior to MAP-Diameter IWF feature activation, there are no MAP-Diameter IWF related menu items visible on the SOAM GUI or NOAM GUI, and there is no MAP-Diameter IWF related processing taking place on the DA-MPs or SS7-MPs.

After feature activation, all selectable MAP-Diameter IWF related menu items are present on the SOAM and NOAM GUI, allowing full MAP-Diameter IWF configuration and provisioning. Specifically, for MAP-Diameter IWF, the top-level “Map-Diameter IWF” folder is visible on the Main Menu on the NOAM, under which, the “Configuration” folder with MD-IWF Options, Diameter Realm, Diameter Identity, GTA Range to PC and MAP Exception screens shall be visible.

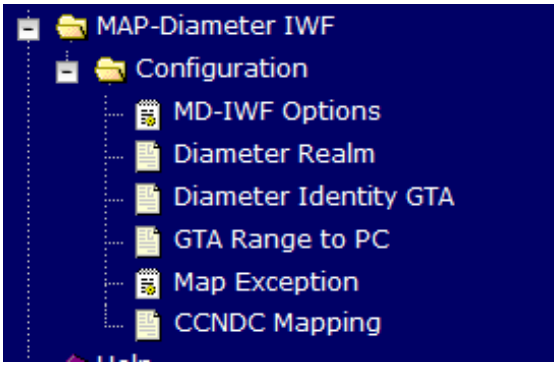


Figure 2: Example of MAP Interworking folder on NOAM

On the SOAM, the “MAP-Diameter IWF” folder shall be visible, which shall have a “Configuration” folder with “DM-IWF Options” and “Diameter Exception” screens. In addition, the SS7/Sigtran and Transport Manager folders shall be visible.

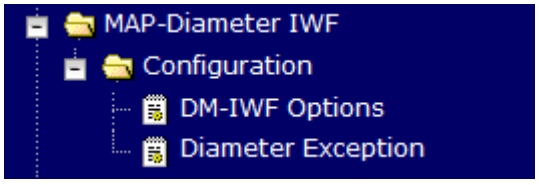


Figure 3: Example of MAP Interworking folder on SOAM

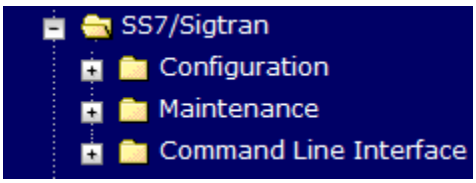


Figure 4: Example of SS7/Sigtran folder on SOAM

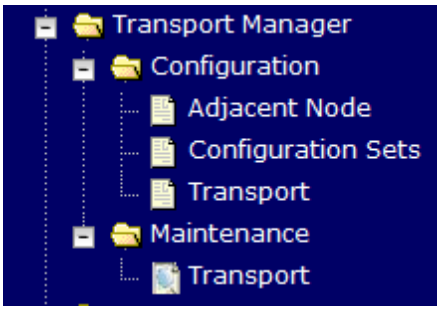


Figure 5: Example of Transport Manager folder on SOAM

On SOAM, new entries are added to the **Diameter->Maintenance->Applications** screen, showing the state of the two DSR Application components (DM-IWF and MD-IWF) that make up the MAP-Diameter IWF feature.

Main Menu: Diameter -> Maintenance -> Applications Help

Thu Dec 05 03:11:42 2013 EST

Filter

DSR Application Name	MP Server Hostname	Admin State	Operational Status	Operational Reason	Congestion Level	Time of Last Update
DM-IWF	RDU01A-DAI	Enabled	Unk	Unk	Unk	Unk
MD-IWF	RDU01A-SS7	Enabled	Unk	Unk	Unk	Unk

Figure 6: Example of DSR Application maintenance screen

Important: once the MAP-Diameter IWF feature is activated, it is not automatically enabled. Activation simply means the mechanism for provisioning MAP-Diameter IWF behavior is in place. The DA-MP(s) and SS7-MP(s) will act on provisioning information and begin providing service only after the DM-IWF and MD-IWF DSR applications have been enabled (via the **Diameter->Maintenance->Applications** screen).

The SS7-MP(s) will act on provisioning information and begin providing service only after the MD-IWF DSR application has been enabled (via the Diameter->Maintenance->Applications screen).

The crafts person shall be offered a choice whether to activate the DSR Application for each of the B-level OAMs (SOAMs) subtending from the A-level OAM (NOAM). It is possible to activate the DSR Application on only some of the B-level OAMs (SOAMs).

If the crafts person chooses to activate a MAP-Diameter IWF on a given B-level OAM (SOAM), all DA and SS7 MPs under that B-level OAM shall have the DSR Application activated. There is no option to exclude some activation MAP-Diameter IWF for some DA or SS7 MPs under that B-level OAM (SOAM).

If the crafts person chooses not to activate MAP-Diameter IWF on a given B-level OAM (SOAM), none of the DA or SS7 MPs under that B-level OAM (SOAM) shall have MAP-Diameter IWF activated. There is no option to activate MAP-Diameter IWF only for some DA or SS7 MPs in under that B-level OAM (SOAM).

Once MAP-Diameter IWF is activated on a given B-level OAM (SOAM) in this fashion, it is possible to deactivate MAP-Diameter IWF on that specific B-level OAM (SOAM) or on all SOAMs at a later time.

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 2. Pre-Feature Activation Overview

Procedure	Elapsed Time (Hours: Minutes)		Activity	Impact
	This Step	Cum.	Feature Activation Preparation	
System Topology Check (Procedure 1)	0:00-0:20	0:00-0:20	• Verify Network Element Configuration data. • Verify System Group Configuration data. • Analyze and plan DA-MP restart sequence.	None
Perform Health Check (Procedure 2)	0:01-0:05	0:21-1:05	• Verify DSR Release. • Verify Server status. • Log all current alarms.	None

2.2.2 Feature Activation Execution Overview

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

Table 3. Feature Activation Execution Overview

Procedure	Elapsed Time (Hours: Minutes)		Activity	Impact
	This Step	Cum.	Feature Activation Execution	
Perform Health Check (Procedure 2)	0:01-0:05	0:01-0:05	• Verify DSR Release. • Verify proper feature state for MAP-Diameter IWF. • Verify Server status. • Log all current alarms.	None
Feature Activation (Procedure 4)	0:10-0:40	0:11-0:50	• Log out of NOAM/SOAM GUI. • SSH to Active NOAM. • Log in as admusr. • Change directory to /usr/TKLC/dsr/prod/maint/loaders/ • Execute the feature activation script. • Log into SOAM GUI • Verify GUI folders relevant to MAP-Diameter IWF. • Verify Maintenance screens. • Log into NOAM GUI • Verify GUI folders relevant to MAP-Diameter IWF • Restart each active DA-MP and SS7-MP server. • Verify Maintenance screen.	MAP-Diameter IWF is activated

2.2.3 Post-Feature Activation Overview

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

Table 4. Post-Feature Activation Overview

Procedure	Elapsed Time (Hours: Minutes)		Activity	Impact
	This Step	Cum.	Feature Activation Completion	
Perform Health Check (Procedure 5)	0:01-0:05	0:01-0:05	• Verify Server status. • Log all current alarms.	Map-Diameter has been activated on DSR

3.0 FEATURE DEACTIVATION OVERVIEW

3.1.1 Pre-Feature Deactivation Overview

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

Table 5. Pre-Feature Deactivation Overview

Procedure	Elapsed Time (Hours or Minutes)		Activity	Impact
	This Step	Cum.	Deactivation Procedures	
Perform Health Check (Procedure 6)	0:01-0:05	0:01-0:05	• Verify DSR Release. • Verify proper MAP-Diameter IWF feature state. • Verify server status. • Log current alarms.	None

3.1.2 Feature Deactivation Execution Overview

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

Table 6. Feature Deactivation Overview

Procedure	Elapsed Time (Hours or Minutes)		Activity	Impact
	This Step	Cum.	Deactivation Procedures	
Deactivation Setup	0:10-0:30	0:10-0:30	The reason to deactivate has a direct impact on any additional backout preparation that must be done. Since all possible reasons cannot be predicted ahead of time, only estimates are given here. Execution time will vary.	None
Deactivation (Procedure 7)	00:10-00:40	0:20-1:15	• Log out of Active NOAM/SOAM GUI. • SSH into active NOAM. • Log in as admusr. • Change directory to /usr/TKLC/dsr/prod/maint/loaders/ • Execute the feature deactivation script. • Log into SOAM GUI • Verify the GUI folders for MAP-Interworking. • Log into NOAM GUI • Verify the GUI folders for MAP-Interworking. • Restart each active DA-MP and SS7-MP server. • Verify Maintenance screen.	MAP-Diameter IWF is deactivated

3.1.3 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 7. Post-Feature Deactivation Overview

Procedure	Elapsed Time (Hours or Minutes)		Activity	Impact
	This Step	Cum.	Deactivation Procedures	
Perform Health Check (Procedure 9)	0:01-0:05	0:01-0:05	Verify Server status. Log all current alarms.	None

4.0 FEATURE ACTIVATION PREPARATION

This section provides detailed procedures to prepare a system for MAP-Diameter IWF feature activation. These procedures are executed outside a maintenance window.

4.1 HARDWARE REQUIRMENTS

4.1.1 DA-MP

DM-IWF, a component of the MAP-Diameter IWF feature, is the DSR application that runs on the DA-MPs. DM-IWF has specific requirements with respect to supported hardware types and minimum memory requirement. If MAP-Diameter IWF feature is activated on a DA-MP which does not meet these minimum requirements, the “dsr” process shall fail to come up on such DA-MPs. Hence it is imperative that the crafts person verify that the minimum DM-IWF hardware requirements are met before activating this feature. Detailed information on the procedure to verify hardware requirements shall be provided later.

If the DA-MP hardware or memory does not meet the requirements, contact Appendix A. My Oracle Support (MOS) for assistance on upgrading the hardware and/or memory. It shall be the responsibility of the crafts person to ensure that all DA-MPs under the SOAM(s) on which MAP-Diameter IWF is to be activated comply with the hardware and minimum memory requirements prior to activating MAP-Diameter IWF.

Table 8. DA-MP (DM-IWF) Hardware Requirements

Supported Hardware types for DA-MP	Minimum memory requirement
RMS (Virtualized MP - TVOE guest)	24GB (24576 MB)
G6 (BL460 G6 HP C-class (half height) server blade)	48GB (49152 MB)
G8 (BL460 Gen8 HP C-class (half height) server blade)	64GB (65536 MB)
G9 (BL460 Gen9 HP C-class (half height) server blade) *–DSR 7.1+ Only*	64GB (65536 MB)

4.1.2 SS7-MP

MD-IWF, a component of the MAP-Diameter IWF feature, is the DSR application that runs on the SS7-MPs. MD-IWF has specific requirements with respect to supported hardware types and minimum memory requirement. If MAP-Diameter IWF feature is activated on an SS7-MP which does not meet these minimum MD-IWF requirements, the “mapiwf” process shall fail to come up on such SS7-MPs. Hence it is imperative that the crafts person verify that the minimum DM-IWF hardware requirements are met before activating this feature. The detailed procedure to verify hardware requirements for SS7-MPs shall be presented later.

If the SS7-MP hardware or memory does not meet the requirements, contact Appendix *A*. My Oracle Support (MOS) for assistance on upgrading the hardware and/or memory. It shall be the responsibility of the crafts person to ensure that all SS7-MPs under the SOAM(s) on which MAP-Diameter IWF is to be activated comply with the minimum hardware requirements prior to activating MAP-Diameter IWF.

Table 9. SS7-MP (MD-IWF) Hardware Requirements

Supported Hardware types for SS7-MP	Minimum memory requirement
RMS (Virtualized MP – TVOE guest)	24GB (24576 MB)
G8 (BL460 Gen8 HP C-class (half height) server blade)	128GB (65536 MB)
G9 (BL460 Gen9 HP C-class (half height) server blade) *–DSR 7.1+ Only*	128GB (65536 MB)

4.2 SYSTEM TOPOLOGY AND HARDWARE CHECK

This procedure is part of feature activation preparation and is used to verify the system topology of the DSR network and servers and to validate that the MP servers meet the hardware type requirement and minimum memory requirement for MAP-Diameter IWF feature.

Table 10. List of SOAM Server Groups supporting MAP-Diameter IWF

SOAM Server Group Name	SOAM Server Hostnames

Table 11. Checklist for DA-MP information

SOAM Server Group Name	DA-MP Server Group Name	DA-MP Server Hostnames	Hardware Type	Memory (MB)

Duplicate this check list, once for each SOAM Server Groups on which MAP-Diameter IWF is being setup

Table 12. Checklist for SS7-MP information

SOAM Server Group Name	SS7-MP Server Group Name	SS7-MP Server Hostnames	Hardware Type	Memory (MB)

Duplicate this check list, once for each SOAM Server Group on which MAP-Diameter IWF is being setup. If there are more than one SS7-MP Server Groups configured under the SOAM Server Group, duplicate this check list for each SOAM Server Group – SS7-MP Server Group combination.

The following table maps the output of the command "**cat /var/TKLC/hardware/hw_id" (**executed on DA or SS7 MP Servers) to a concise hardware type.

Table 13. Hardware ID to Hardware Type Mapping for MP servers

Hardware ID	Hardware Type
ProLiantBL460cG6	G6
ProLiantBL620cG7	G7
ProLiantBL460cGen8	G8
ProLiantBL460cGen9	G9
KVM	RMS

For the SS7-MP server group, there is currently a limitation of one SS7-MP per server group (this limitation is required due to how the SS7 stack operates). The only SS7-MP server group configuration supported is N+0 (Active/Active) where N=1. This also implies that if more than one SS7-MP needs to be provisioned under an SOAM server group, it shall require multiple SS7-MP server groups to be configured under the SOAM server group. The crafts person should keep this in mind.

Note that the hardware ID refered to here, is the hardware ID obtained by logging on to the MP. In case of RMS setups, this will be a virtualized MP (TVOE guest), not the TVOE host machine. To clarify this distinction, please review the following example. The TVOE host machine below has the following information, which is a DL380 based machine with 128GB (131072 MB) of memory.

```
[admusr@hubtones1-TVOE ~]# cat /var/TKLC/hardware/hw_id

ProLiantDL380pGen8

[admusr@hubtones1-TVOE ~]# sudo dmidecode --type 17 | grep -e "Size:\ [0-9]" |
sed -e "s/.*: //g" -e "s/ .*//g" | paste -sd+ | bc

131072
```

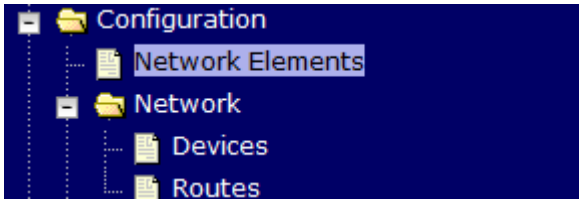
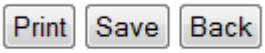
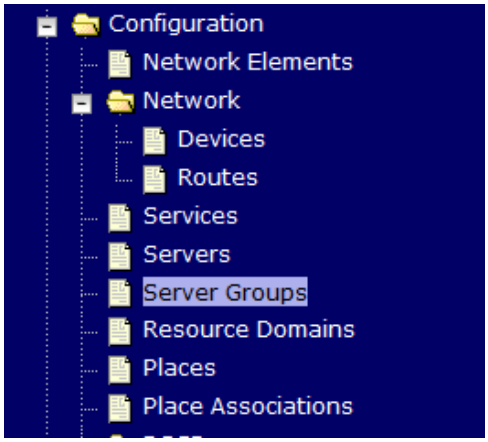
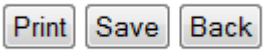
Here is the output from a virtualized MP hosted on this machine. This is the information of interest to us. This virtualized MP has 24GB (24576MB) of memory:

```
[admusr@HUBTONES-MP1 ~]# cat /var/TKLC/hardware/hw_id

KVM

[admusr@HUBTONES-MP1 ~]# sudo dmidecode --type 17 | grep -e "Size:\ [0-9]" |
sed -e "s/.*: //g" -e "s/ .*//g" | paste -sd+ | bc

24576
```

Procedure 1: System Topology Check

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

Procedure 1: System Topology Check

2 ☐	**NOAM VIP GUI:** Verify Network Configuration Data	Navigate to **Main Menu -> Configuration -> Network Elements**  Click the **Report** button. Verify the configuration data is correct for your network. **Save** or **Print** this report, keep copies for future reference. 
3 ☐	**NOAM VIP GUI:** Verify Server Configuration	Navigate to **Main Menu -> Configuration -> Server Groups**  Click the **Report** button. Verify the configuration data is correct for your network. **Save** or **Print** this report, keep copies for future reference. 

Procedure 1: System Topology Check

4 ☐	Identify the B-level OAMs (SOAMs) Server Groups and Hostnames on which MAP-Diameter IWF shall be activated.	There can be multiple B-level OAM (SOAM) server groups under the parent A-level OAM (NOAM) server group. Identify which of these SOAM server groups shall have MAP-Diameter IWF activated. 1. Review Server Configuration information obtained in Step 2 (Verify Server Configuration data). 2. Identify all Servers with a Role of "System OAM". Record the Server Group name for these Servers. Hint: This item can be conveniently accomplished by using the filter on the Configuration → Servers screen, filtering for the Role of "System OAM", and recording the common Server Group names. 3. For each SOAM Server Group identified in item #2, discuss with System Engineering or Network Planning and identify the SOAM Server Groups on which MAP-Diameter IWF needs to be activated. 4. Update the check list specified in **Table 10.** List of SOAM Server Groups supporting MAP-Diameter IWF. For each SOAM Server Group identified , document the SOAM servers in that server group in this check list. Save the check list for future reference.

Procedure 1: System Topology Check

5 ☐	Verify MP Server Group configuration	Verify that for each OAM Server Group of interest, there is an appropriately provisioned DA-MP server group and SS7-MP server group that shall support MAP-Diameter IWF. 1. Review Server Group Configuration information obtained in Step 2 (Verify Server Group Configuration data). Refer to the check list **Table 10.** List of SOAM Server Groups supporting MAP-Diameter IWF that was created in Step 5. These are the OAM Server Groups that shall be reviewed. Enter each OAM server group in a separate copy of Table 11. Checklist for DA-MP information and 2. 3. Table 12. Checklist for SS7-MP information in the column "SOAM Server Group Name ". Hint: You may need multiple copies of these tables, one copy for each SOAM server group on which MAP-Diameter IWF will be activated.In this case, obtain multiple blank copies of the two tables in advance. 4. For each OAM Server Group identified in item #1 as the OAM parent server group, discuss with System Engineering or Network Planning and identify: One Server Group at Level "C", Function "DSR (multi-active cluster)" which has at least one DA-MP Server provisioned, which shall be used as the DA-MP Server Group. Record this (DA-MP) Server Group name and the list of DA-MPs in the DA-MP Server Group in the corresponding copy of **Table 11.** Checklist for DA-MP information in the column. **5.** For each OAM Server Group identified in item #1 as the OAM parent server group, discuss with System Engineering or Network Planning and identify: One Server Group at Level "C", Function "SS7-IWF" which has at least one SS7-MP Server provisioned, which shall be used as the SS7-MP Server Group. Record this (SS7-MP) Server Group name and the list of SS7-MPs in the SS7-MP Server Group in the corresponding copy of **6.** 7. Table *12*. Checklist for SS7-MP information in the column.

Procedure 1: System Topology Check

6 ☐	**DA-MP:** Verify hardware and memory requirements	In Step 5, we identified all the DA-MPs and SS7-MPs that shall support MAP-Diameter IWF. Now, we shall verify MP hardware and memory requirements for these MP servers. After completing this step, if any MP has been identified that does not meet these requirements, **DO NOT** activate MAP-Diameter IWF. Instead, contact Appendix *A*. My Oracle Support (MOS) to upgrade the hardware or memory (as need be) to meet the requirements.
		
		1. Review your copies of **Table 11.** Checklist for DA-MP information which provide an exhaustive list all DA-MP Servers that shall support MAP-Diameter IWF.
		
		2. For each listed DA-MP Server, execute item #3 through #6
		
		3. Login to the DA-MP Server. A typical login session may look like this, however the display may differ based on the log in procedure, and your setup:
		
		`$ ssh <XMI IP Address of DA-MP>`
		
		4. Execute the following command to identify the hardware type. Review the output of this command, compare it with the Hardware ID column in Table 13. Hardware ID to Hardware Type Mapping and enter the corresponding hardware type for the DA-MP Hostname in Table 11. Checklist for DA-MP information. If no matching entry is found, enter “Unsupported Hardware”.
		
		`$ cat /var/TKLC/hardware/hw_id`
		
		5. Execute the following command to determine amount of memory (in MB) on the DA-MP Server. Enter the output of this command in the column “Memory”, against the DA-MP hostname in Table 11. Checklist for DA-MP information.
		`sudo dmidecode --type 17 | grep -e "Size:\ [0-9]" | sed -e "s/.*: //g" -e "s/ .*//g" | paste -sd+ | bc`
		Example output: 24576 (MB) corresponds to 24GB (24576 / 1024)
		
		6. Compare your completed copies of Table 11. Checklist for DA-MP information against Table 8. DA-MP (DM-IWF) Hardware Requirements. If any DA-MP hardware type is not listed under the supported hardware types, or if the memory on the DA-MP does not meet the minimum memory requirement for that hardware type:
		****** STOP *******
		Your hardware does not meet minimum hardware and memory requirements for MAP-Diameter IWF. Contact Appendix *A*. My Oracle Support (MOS) if nessesary.

Procedure 1: System Topology Check

7
☐
	SS7-MP: Verify hardware and memory requirements	In Step 6, we verified that the DA-MPs satisfy minimum hardware and memory requirements. Here, we will verify that the SS7-MPs satisfy minimum hardware and memory requirements. After completing this step, if any MP has been identified that does not meet these requirements, **DO NOT** activate MAP-Diameter IWF. Instead, contact Appendix *A*. My Oracle Support (MOS) to upgrade the hardware or memory (as need be) to meet the requirements.
		
		1. Review your copies of
		2.
		3. Table 12. Checklist for SS7-MP information which provide an exhaustive list all SS7-MP Servers that shall support MAP-Diameter IWF.
		4. For each listed SS7-MP Server, execute item #3 through #6
		5. Login to the SS7-MP Server. A typical login session may look like this, however the display may vary based on the log in procedure, and your setup:
		
		`$ ssh <XMI IP Address of SS7-MP>`
		
		6. Execute the following command to identify the hardware type. Review the output of this command, compare it with the Hardware ID column in Table 13. Hardware ID to Hardware Type Mapping and enter the corresponding hardware type for the DA-MP Hostname in Table 11. Checklist for DA-MP information. If no matching entry is found, enter “Unsupported Hardware”.
		
		`$ cat /var/TKLC/hardware/hw_id`
		
		7. Execute the following command to determine amount of memory (in MB) on the SS7-MP Server. Enter the output of this command in the column “Memory”, against the DA-MP hostname in
		8.
		9. Table 12. Checklist for SS7-MP information.
		
		`$ sudo dmidecode --type 17 | grep -e "Size:\ [0-9]" | sed -e "s/.*: //g" -e "s/ .*//g" | paste -sd+ | bc`
		Example output: 24576 (MB) corresponds to 24GB (24576 / 1024).
		
		Compare your completed copies of
		
		Table *12*. Checklist for SS7-MP information against **Table 9.** SS7-MP (MD-IWF) Hardware Requirements. If any SS7-MP hardware type is not listed under the supported hardware types, or if the memory on the SS7-MP does not meet the minimum memory requirement for that hardware type:
		
		****** STOP *******
		Your hardware does not meet minimum hardware and memory requirements for MAP-Diameter IWF. Contact Appendix *A*. My Oracle Support (MOS) to upgrade hardware and/or memory.

Procedure 1: System Topology Check

8 ☐	Analyze and plan DA-MP restart sequence	Analyze system topology and plan for any DA-MPs and SS7-MPs which will be out-of-service during the feature activation sequence. 1. Analyze system topology gathered in Step 2 and 3. 2. Determine exact sequence which DA-MP and SS7-MP servers will be restarted (with the expected out-of-service periods).

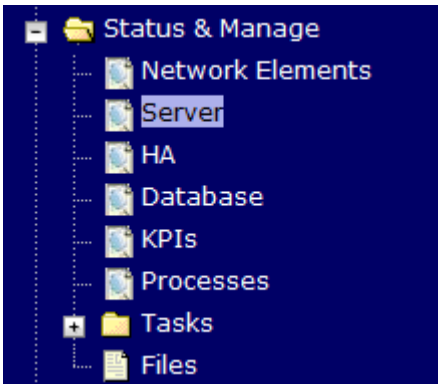
4.3 PERFORM HEALTH CHECK

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

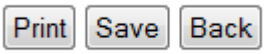
Procedure 2: Perform Health Check (Feature Activation Preparation)

S T E P #		
	This procedure provides steps to perform needed health checks. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. If this procedure fails, contact Appendix A. My *Oracle* Support (MOS) and ask for assistance.	
1 ☐	**NOAM VIP GUI:** Login	Establish a GUI session on the NOAM server by using the VIP IP 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 **Main Menu -> Status & Manage -> Server**  Verify all Server Status is Normal (Norm) for: Alarm (Alm), Database (DB), Replication Status, and Processes (Proc). | Appl State	Alm	DB	Reporting Status	Proc
---	---	---	---	---
Enabled	Norm	Norm	Norm	Norm
Enabled	Norm	Norm	Norm	Norm
Enabled	Norm	Norm	Norm	Norm
Enabled	Norm	Norm	Norm	Norm	 Do not proceed to feature activation if any of the above states are not Norm. If any of these are not Norm, corrective action should be taken to restore the non-Norm status to Norm before proceeding with the feature activation. If the Alarm (Alm) status is not Norm but only Minor alarms are present, it is acceptable to proceed with the feature activation. If there are Major or Critical alarms present, these alarms should be analyzed prior to proceeding with the feature activation. The activation may be able to proceed in the presence of certain Major or Critical alarms. Contact **Appendix** A. My Oracle Support **(MOS**) for assistance as necessary.

Procedure 2: Perform Health Check (Feature Activation Preparation)

3 ☐	**NOAM VIP GUI:** Log Current Alarms	Navigate to **Main Menu -> Alarms & Events -> View Active** Click on the **Report** button **Save** or **Print** this report, keep copies for future reference. 

5.0 FEATURE ACTIVATION

Before feature activation, perform the system health check in **Section 4.2**. This check ensures that the system is ready for feature activation. Performing the system health check determines which alarms are present in the system and if feature activation can proceed with alarms.

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

If there are servers in the system which are not in Normal state, these servers should be brought to the Normal or the Application Disabled state before the feature activation process is started.

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

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 PROCEDURES

5.1.1 Perform Health Check

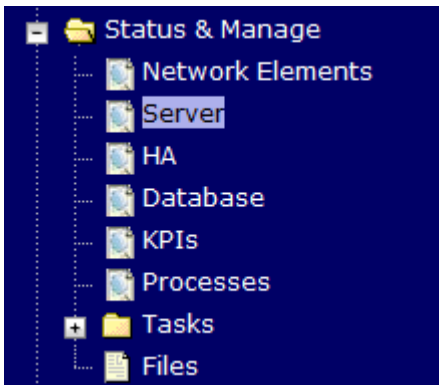
This procedure is used to determine the health and status of the network and servers. This must be executed at the start of every maintenance window.

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

Procedure 3: Perform Health Check (Pre Feature Activation)

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

Procedure 3: Perform Health Check (Pre Feature Activation)

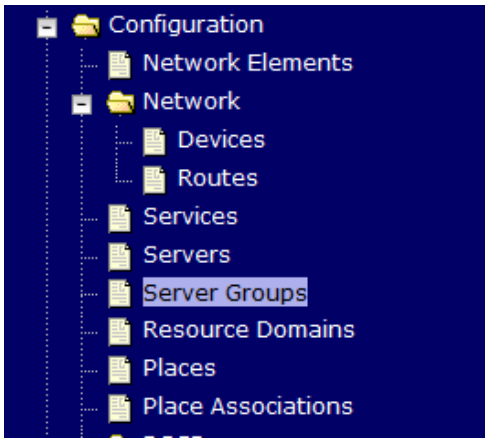
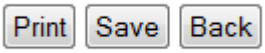
<table>
<tr><td>2
☐</td><td>NOAM VIP GUI:
Verify MAP-Diameter IWF Folder is not Present</td><td>Under Main Menu, verify the MAP-Diameter IWF folder is NOT present.</td></tr>
<tr><td>3
☐</td><td>NOAM VIP GUI:
Verify Server Status</td><td>Navigate to Main Menu -> Status & Manage -> Server
 

Verify all Server Status is Normal (Norm) for:
Alarm (Alm), Database (DB), Replication Status, and Processes (Proc).
<table>
<tr><th>Appl State</th><th>Alm</th><th>DB</th><th>Reporting Status</th><th>Proc</th></tr>
<tr><td>Enabled</td><td>Norm</td><td>Norm</td><td>Norm</td><td>Norm</td></tr>
<tr><td>Enabled</td><td>Norm</td><td>Norm</td><td>Norm</td><td>Norm</td></tr>
<tr><td>Enabled</td><td>Norm</td><td>Norm</td><td>Norm</td><td>Norm</td></tr>
<tr><td>Enabled</td><td>Norm</td><td>Norm</td><td>Norm</td><td>Norm</td></tr>
</table>

Do not proceed to feature activation if any of the above states are not Norm. If any of these are not Norm, corrective action should be taken to restore the non-Norm status to Norm before proceeding with the feature activation.

If the Alarm (Alm) status is not Norm but only Minor alarms are present, it is acceptable to proceed with the feature activation. If there are Major or Critical alarms present, these alarms should be analyzed prior to proceeding with the feature activation. The activation may be able to proceed in the presence of certain Major or Critical alarms. Contact My Oracle Support (MOS) for assistance as necessary.</td></tr>
</table>

Procedure 3: Perform Health Check (Pre Feature Activation)

4 ☐	**NOAM VIP GUI:** Verify Server Configuration	Navigate to **Main Menu -> Configuration -> Server Groups**  Verify the configuration data is correct for your network.
5 ☐	**NOAM VIP GUI:** Log Current Alarms	Navigate to **Main Menu -> Alarms & Events -> View Active** Click on the **Report** button **Save** or **Print** this report, keep copies for future reference. 

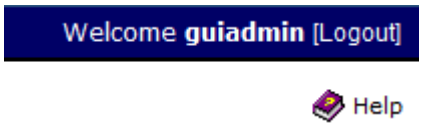
5.1.2 Activation Procedures

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

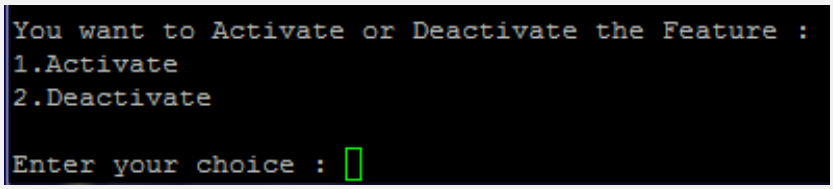
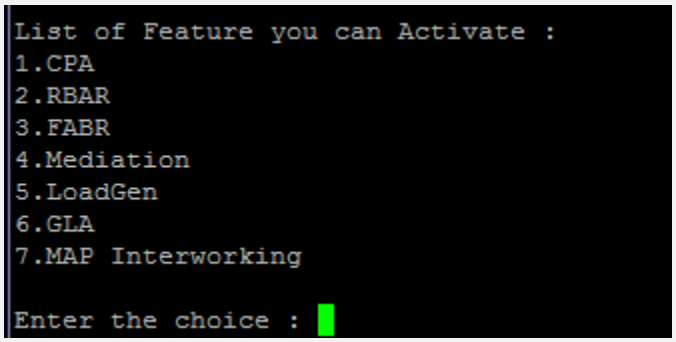
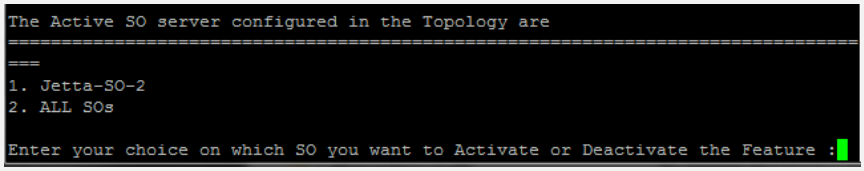
5.1.3 Feature Activation

Detailed steps for MAP-Diameter feature activation are given in the procedure below.

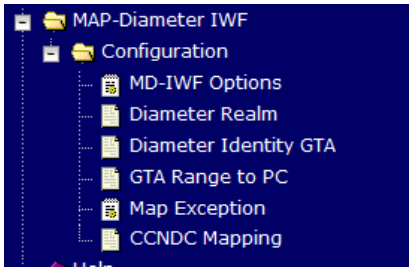
Procedure 4: Feature Activation

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

Procedure 4: Feature Activation

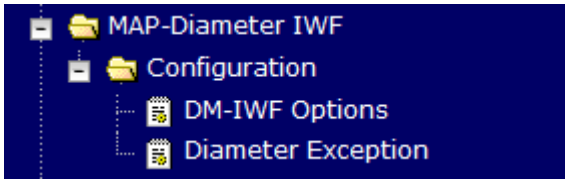
4 ☐	**NOAM VIP:** Execute the Feature Activation Script	Run the feature activation script by executing the following command:
		`$ ./featureActivateDeactivate`
		
		Choose **Activate**
		 
		`You want to Activate or Deactivate the Feature :`
		`1.Activate`
		`2.Deactivate`
		
		`Enter your choice :`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

Procedure 4: Feature Activation

5 ☐	**Active NOAM GUI:** Login	Establish a GUI session on the active NOAM server by using IP address of the NOAM server. Open the web browser and enter a URL of: `http://<Active_NOAM_IP_Address>` Login as the ***guiadmin*** user:
6 ☐	**Active NOAM GUI:** Verify the Map-Diameter IWF Folder is Visible	Locate and verify the Map-Diameter IWF folder from Main Menu is visible and the configuration folder items are present 
7 ☐	**Standby NOAM GUI:** Repeat Verification Steps	Repeat **Steps 5-6** for the Standby NOAM **Note:** If the verifications for the standby NOAM differ from the Active NOAM, stop and contact My Oracle Support (MOS)

Procedure 4: Feature Activation

8 ☐	**Active DR-NOAM GUI:** Verify and Activate	Repeat **Steps 5-6** for any DR-NOAMs present.
		
		For DSR 5.1, 6.0, and 7.0, you will have to run the following command to activate MAP-Diameter on each DR-NOAM:
		
		Note: For DSR 7.1/7.2, skip this step.
		
		`$ cd /usr/TKLC/dsr/prod/maint/loaders/activate`
		`$ ./load.mapinterworkingActivateAsourced`

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

Procedure 4: Feature Activation

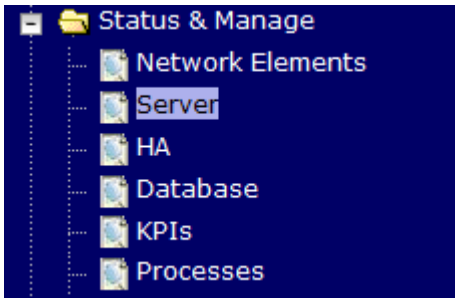
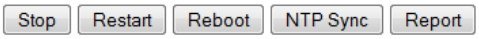
11 ☐	**Active SOAM GUI:** Verify Application Maintenance Screen is Visible	Verify the DM-IWF Application is present in the Application Status screen Navigate to **Main Menu -> Diameter -> Maintenance -> Applications**. **1.** Verify DSR Application Name "DM-IWF" status is uninitialized on each DA-MP Server. The following data should be displayed: • MP Server Hostname = <Refer to Table 13 Checklist> • Admin State = Disabled • Operational State = Unk • Operational Reason = Unk • Congestion Level = Unk • **2.** Verify DSR Application Name "MD-IWF" status is uninitialized on each SS7-MP Server. The following data should be displayed: • MP Server Hostname = <Refer to table 14 Checklist> • Admin State = Disabled • Operational State = Unk • Operational Reason = Unk • Congestion Level = Unk
12 ☐	**Standby SOAM GUI:** Repeat Verification Steps	Repeat **Steps 10-11** for the Standby SOAM **Note:** If the verifications for the standby SOAM differ from the Active SOAM, stop and contact My Oracle Support (MOS)

13 ☐	**Spare SOAM GUI:** Verify and Activate	Repeat **Steps 10-11** for any spare SOAMs present.
		
		For DSR 5.1, 6.0, and 7.0, you will have to run the following command to activate Map-Diameter IWF on each spare SOAM:
		
		Note: For DSR 7.1/7.2, skip this step.
		
		`$ cd /usr/TKLC/dsr/prod/maint/loaders/activate`
		`$ ./load.mapinterworkingActivateBsourced`

Procedure 4: Feature Activation

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

Procedure 4: Feature Activation

12 ☐	**SOAM VIP GUI:** Restart DA-MPs	Multiple iterations of this step may be executed during the feature activation procedure. This is dependent on the number of DA-MP and SS7-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/SS7-MPs be restarted at once. Navigate to **Main Menu -> Status & Manage -> Server**  Select the desired DA-MP/SS7-MPs, you can use 'Ctrl' to select multiple DA-MP/SS7-MPs at once. Click the **Restart** button.  Verify the Server changes to the Err state and wait until it returns to the Enabled/Norm state. Repeat for the additional DA-MP/SS7-MPs.
13 ☐	**Active SOAM GUI:** Verify Application Maintenance Screen is Visible	Verify the Map-Diameter IWF Application is present in the Application Status screen Navigate to **Main Menu -> Diameter -> Maintenance -> Applications**. **1.** Verify Map-Diameter IWF status is initialized. The following data should be displayed: • Admin State = Disabled • Operational State = Unavailable • Operational Reason = Shut Down • Congestion Level = Normal •

5.2 POST-ACTIVATION PROCEDURES

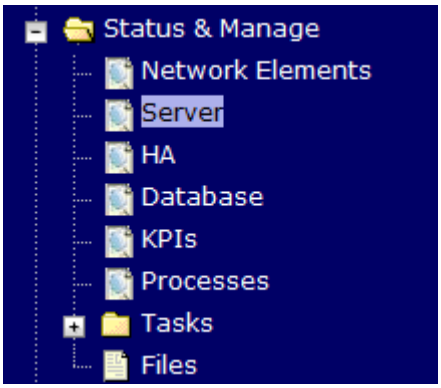
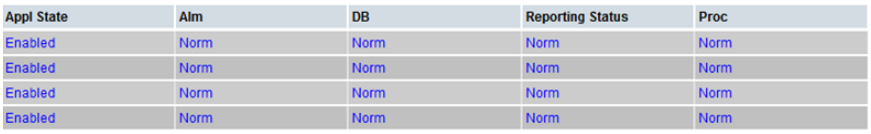
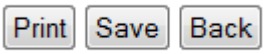
5.2.1 Perform Health Check

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

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

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

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

2 ☐	**NOAM VIP GUI:** Verify Server Status	Navigate to **Main Menu -> Status & Manage -> Server**  Verify all Server Status is Normal (Norm) for: Alarm (Alm), Database (DB), Replication Status, and Processes (Proc). 
3 ☐	**NOAM VIP GUI:** Log Current Alarms	Navigate to **Main Menu -> Alarms & Events -> View Active** Click on the **Report** button **Save** or **Print** this report, keep copies for future reference.  Compare this alarm report with those gathered in the pre-activation procedures. Contact My Oracle Support (MOS) if needed.

6.0 FEATURE DEACTIVATION

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

6.1 PRE-DEACTIVATION PROCEDURES

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

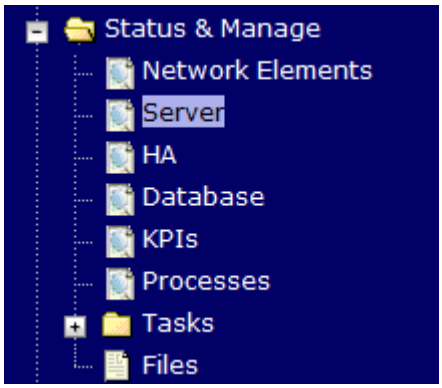
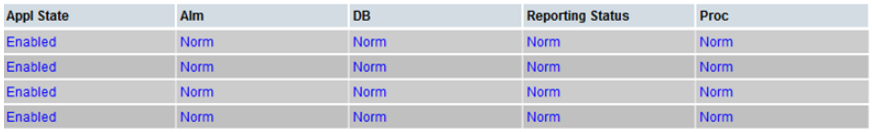
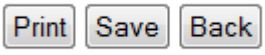
6.1.1 Perform Health Check

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

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

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

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

2 ☐	**NOAM VIP GUI:** Verify Server Status	Navigate to **Main Menu -> Status & Manage -> Server**  Verify all Server Status is Normal (Norm) for: Alarm (Alm), Database (DB), Replication Status, and Processes (Proc). 
3 ☐	NOAM VIP GUI: Log Current Alarms	Navigate to Main Menu -> Alarms & Events -> View Active Click on the Report button Save or Print this report, keep copies for future reference.  Compare this alarm report with those gathered in the pre-activation procedures. Contact My Oracle Support (MOS) if needed.

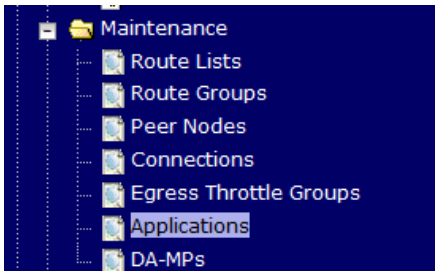
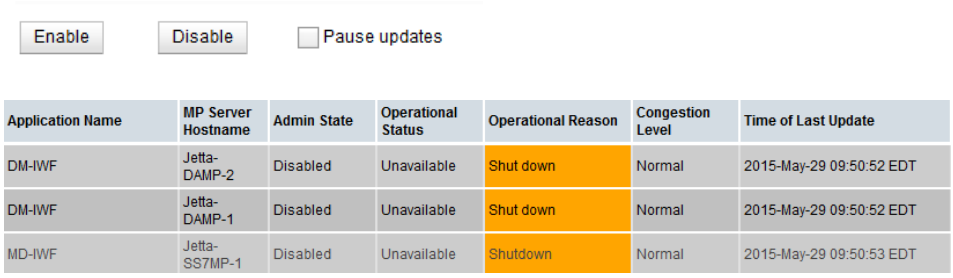
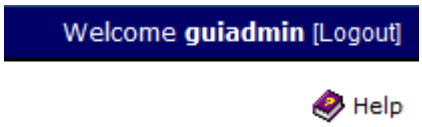
6.2 FEATURE DEACTIVATION

Detailed steps are given in the procedure below

Procedure 7: Feature Deactivate

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

Procedure 7: Feature Deactivate

2 ☐	**Active SOAM GUI:** Disable Map-Diameter IWF Application	Navigate to **Main Menu -> Diameter -> Maintenance -> Applications**  Select the DM-IWF and MD-IWF applications to disable. Click the **Disable** button. 
3 ☐	**NOAM/SOAM VIP GUI:** Logout	Logout of any active NOAM and/or SOAM GUI Sessions: 
4 ☐	**NOAM VIP:** Establish an SSH session	Establish an SSH session to the NOAM VIP. Login as ***admusr***.
5 ☐	**NOAM VIP:** Navigate to the Feature Activation/Deactivation Directory	Navigate to the feature activation directory by executing the following command: `$ cd /usr/TKLC/dsr/prod/maint/loaders/`

Procedure 7: Feature Deactivate

6 ☐	**NOAM VIP:** Execute the Feature Activation Script	Run the feature activation script by executing the following command:
		`$ ./featureActivateDeactivate`
		
		Choose **Deactivate**
		`You want to Activate or Deactivate the Feature :`
		`1.Activate`
		`2.Deactivate`
		
		`Enter your choice :`
		
		Choose **MAP Interworking**
		`List of Feature you can Activate :`
		`1.CPA`
		`2.RBAR`
		`3.FABR`
		`4.Mediation`
		`5.LoadGen`
		`6.GLA`
		`7.MAP Interworking`
		
		`Enter the choice :`
		
		Choose the SOAM site for which the application will be deactivated:
		Note: As an alternative, you can also deactivate on all SOAM sites:
		`The Active SO server configured in the Topology are`
		`1. Jetta-SO-2`
		`2. ALL SOs`
		
		`Enter your choice on which SO you want to Activate or Deactivate the Feature :`
		
		Refer to **Section 7.2** for output Example.

Procedure 7: Feature Deactivate

7 ☐	**Active NOAM GUI:** Login	Establish a GUI session on the active NOAM server by using IP address of the NOAM server. Open the web browser and enter a URL of: `http://<Active_NOAM_IP_Address>` Login as the ***guiadmin*** user:
8 ☐	**Active NOAM GUI:** Verify the Map-Diameter IWF folder is not visible	Verify the Map-Diameter IWF folder is not visible under Main Menu.
9 ☐	**Standby NOAM GUI:** Repeat Verification Steps	Repeat **Steps 7-8** for the Standby NOAM **Note:** If the verifications for the standby NOAM differ from the Active NOAM, stop and contact My Oracle Support (MOS)

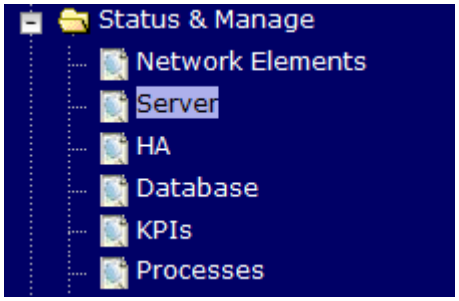
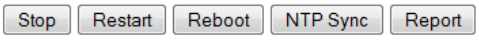
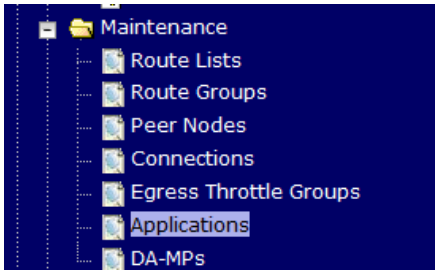
10 ☐	**DR-NOAM GUI:** Verify and Deactivate	Repeat **Steps 7-8** for any DR-NOAMs present.
		
		For DSR 5.1, 6.0, and 7.0, you will have to run the following command to Deactivate Map-Diameter on each DR-NOAM:
		
		Note: For DSR 7.1/7.2, skip this step.
		
		`$ cd /usr/TKLC/dsr/prod/maint/loaders/deactivate`
		`$ ./load.mapinterworkingDeactivateAsourced`

Procedure 7: Feature Deactivate

	Active SOAM GUI: Login	Establish a GUI session on the active SOAM server by using IP address of the SOAM server. Open the web browser and enter a URL of: `http://<Active_SOAM_IP_Address>` Login as the ***guiadmin*** user:
	Active SOAM GUI: Verify the Map-Diameter IWF Folder is not visible	Verify the Map-Diameter IWF folder is not visible under Main Menu.
	Standby SOAM GUI: Repeat Verification Steps	Repeat **Steps 5-7** for the Standby SOAM **Note:** If the verifications for the standby SOAM differ from the Active SOAM, stop and contact My Oracle Support (MOS)

11 ☐	**Spare SOAM GUI:** Verify and Deactivate	Repeat **Steps 5-7** for any spare SOAMs present.
		
		For DSR 5.1, 6.0, and 7.0, you will have to run the following command to Deactivate Map-Diameter IWF on each spare SOAM:
		
		Note: For DSR 7.1/7.2, skip this step.
		
		`$ cd /usr/TKLC/dsr/prod/maint/loaders/deactivate`
		`$ ./load.mapinterworkingDeactivateBsourced`

Procedure 7: Feature Deactivate

12 ☐	**SOAM VIP GUI:** Restart DA-MPs	Multiple iterations of this step may be executed during the feature activation procedure. This is dependent on the number of DA-MP servers within your system. Make a written record of the number of times the step was performed. It is recommended that no more than 50% of the DA-MPs be restarted at once. Navigate to **Main Menu -> Status & Manage -> Server**  Select the desired DA-MPs, you can use 'Ctrl' to select multiple DA-MPs at once. Click the **Restart** button.  Verify the Server changes to the Err state and wait until it returns to the Enabled/Norm state. Repeat for the additional DA-MPs.
13 ☐	**SOAM VIP GUI:** Verify Maintenance Screen	Navigate to **Main Menu -> Diameter -> Maintenance -> Applications**  Verify the DM-IWF and MD-IWF applications are not present.

6.3 POST-DEACTIVATION PROCEDURES

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

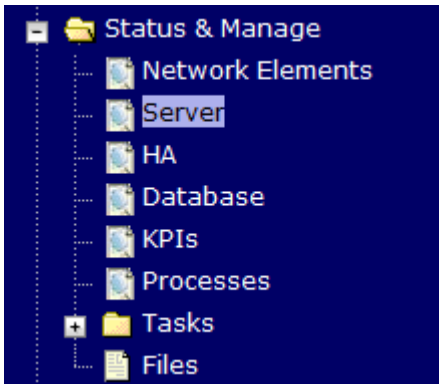
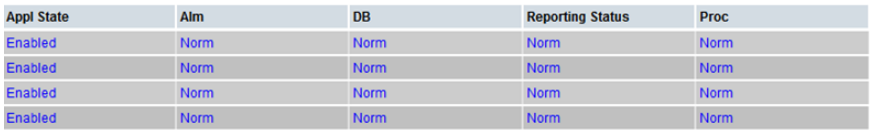
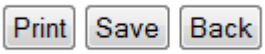
6.3.1 Perform Health Check

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

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

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

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

2 ☐	**NOAM VIP GUI:** Verify Server Status	Navigate to **Main Menu -> Status & Manage -> Server**  Verify all Server Status is Normal (Norm) for: Alarm (Alm), Database (DB), Replication Status, and Processes (Proc). 
3 ☐	**NOAM VIP GUI:** Log Current Alarms	Navigate to **Main Menu -> Alarms & Events -> View Active** Click on the **Report** button **Save** or **Print** this report, keep copies for future reference.  Compare this alarm report with those gathered in the pre-Deactivation procedures. Contact My Oracle Support (MOS) if needed.

7.0 ENGINEERING NOTES

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

7.1 SAMPLE OUTPUT OF ACTIVATION (ACTIVE NOAM)

```
[admusr@NO1 loaders]$ ./featureActivateDeactivate
Thu Apr 17 03:03:08 EDT 2014::Starting featureActivateDeactivate main...
Start the Automation script , To run the Feature Activation/DeActivation on Active NO.

You want to Activate or Deactivate the Feature :
1.Activate
2.Deactivate

Enter your choice : 1

List of Feature you can Activate :
1.CPA
2.RBAR
3.FABR
4.Mediation
5.LoadGen
6.GLA
7.MAP Interworking

Enter the choice : 7

Run script to Activate mapinterworking Feature
==================================S-T-A-R-T=====================================
================================================================================
Execution of Activation/Deactivation Process Starts
================================================================================
Starting Activation/Deactivation process....
Executing /usr/TKLC/dsr/prod/maint/loaders/activate/load.mapinterworkingActivateAsourced script on NO1
================================================================================
Current server is HA ACTIVE
================================================================================
================================================================================
Verify that DM-IWF and MD-IWF is in the table
================================================================================
id=7
name=DM-IWF
unavailableAction=SendAnswer
avpInsertion=Yes
shutdownMode=Graceful
shutdownTimer=15
resultCode=3002
vendorId=0
errorString=DM-IWF Unavailable
resExhResultCode=3004
resExhVendorId=0
resExhErrorString=DM-IWF Resource Exhausted
routeListId=-1
realm=
fqdn=
mcl=0
================================
id=12
name=MD-IWF
unavailableAction=ContinueRouting
avpInsertion=Yes
shutdownMode=Graceful
shutdownTimer=15
resultCode=3002
vendorId=0
errorString=MD-IWF Unavailable
resExhResultCode=3004
resExhVendorId=0
resExhErrorString=MD-IWF Resource Exhausted
routeListId=-1
realm=
fqdn=
mcl=0
================================
================================================================================
Adding DM-IWF Routed Service Configuration.
================================================================================
id=11
name=DMIWFSvc
preDefined=No
editableOnGui=Yes
birthTime=12/31/1969 19:00:00.000
================================
```

```
================================================================================
Adding MD-IWF Routed Service Configuration.
================================================================================
id=12
name=MDIWFSvc
preDefined=No
editableOnGui=Yes
birthTime=12/31/1969 19:00:00.000
================================
================================================================================
Add DM-IWF and MD-IWF KPI group
================================================================================
KPI_Group=DM-IWF
Visibility=VIS_SO
================================
KPI_Group=MD-IWF
Visibility=VIS_SO
================================
================================================================================
Add DM-IWF and MD-IWF Measurement groups
================================================================================
Meas_Group=DM-IWF Performance
Visibility=VIS_SO
================================
Meas_Group=DM-IWF Exception
Visibility=VIS_SO
================================
Meas_Group=MD-IWF Performance
Visibility=VIS_SO
================================
Meas_Group=MD-IWF Exception
Visibility=VIS_SO
================================
================================================================================
Add DM-IWF and MD-IWF GUI Configuration Permissions.
================================================================================
_appid=17
group_id=8500
group_name=MAP Interworking Configuration Permissions
================================================================================
Starting to Execute the Loaders on Standby server
================================================================================
Executing /usr/TKLC/dsr/prod/maint/loaders/activate/load.mapinterworkingActivateAsourced script on NO2
================================================================================
================================================================================
Current server is HA STANDBY
================================================================================
================================================================================
Verify that DM-IWF and MD-IWF is in the table
================================================================================
KPI_Group=DM-IWF
Visibility=VIS_SO
================================
KPI_Group=MD-IWF
Visibility=VIS_SO
================================
Meas_Group=DM-IWF Performance
Visibility=VIS_SO
================================
Meas_Group=DM-IWF Exception
Visibility=VIS_SO
================================
Meas_Group=MD-IWF Performance
Visibility=VIS_SO
================================
Meas_Group=MD-IWF Exception
Visibility=VIS_SO
================================
================================================================================
Add DM-IWF and MD-IWF GUI Configuration Permissions.
================================================================================
_appid=17
group_id=8500
group_name=MAP Interworking Configuration Permissions
================================
The Active SO server configured in the Topology are
================================================================================
1. SO1
2. ALL SOs
Enter your choice on which SO you want to Activate or Deactivate the Feature :1
================================================================================
This is a 3 Tier Setup , So run the B sourced loaders on SO server : SO1
Executing /usr/TKLC/dsr/prod/maint/loaders/activate/load.mapinterworkingActivateBsourced script on SO1
================================================================================
Current server is HA ACTIVE
================================================================================
================================================================================
Add DM-IWF and MD-IWF to DsrApplication.
================================================================================
================================================================================
Verify that MAPIWF is in the table
================================================================================
id=7
name=DM-IWF
unavailableAction=SendAnswer
```

```
avpInsertion=Yes
shutdownMode=Graceful
shutdownTimer=15
resultCode=3002
vendorId=0
errorString=DM-IWF Unavailable
resExhResultCode=3004
resExhVendorId=0
resExhErrorString=DM-IWF Resource Exhausted
routeListId=-1
realm=
fqdn=
mcl=0
==================================
id=12
name=MD-IWF
unavailableAction=ContinueRouting
avpInsertion=Yes
shutdownMode=Graceful
shutdownTimer=15
resultCode=3002
vendorId=0
errorString=MD-IWF Unavailable
resExhResultCode=3004
resExhVendorId=0
resExhErrorString=MD-IWF Resource Exhausted
routeListId=-1
realm=
fqdn=
mcl=0
==================================
================================================================================
Add common DSR Application measurements for DM-IWF.
================================================================================
================================================================================
Display common DSR Application measurements for DM-IWF.
================================================================================
repgrp=DSR Application Exception
measid=15604
==================================
repgrp=DSR Application Exception
measid=15605
==================================
repgrp=DSR Application Performance
measid=15600
==================================
repgrp=DSR Application Performance
measid=15601
==================================
repgrp=DSR Application Performance
measid=15602
==================================
repgrp=DSR Application Performance
measid=15603
==================================
repgrp=DSR Application Performance
measid=15606
==================================
repgrp=DSR Application Performance
measid=15607
==================================
repgrp=DSR Application Performance
measid=15608
==================================
repgrp=DSR Application Performance
measid=15609
==================================
================================================================================
Add DM-IWF and MD-IWF GUI Configuration Permissions.
================================================================================
_appid=17
group_id=8500
group_name=MAP Interworking Configuration Permissions
==================================
Executing the Loaders and Clearing Cache on Standby SO servers.
Executing /usr/TKLC/dsr/prod/maint/loaders/activate/load.mapinterworkingActivateBsourced script on SO2
================================================================================
Current server is HA STANDBY
================================================================================
================================================================================
Verify that MAPIWF is in the table
================================================================================
id=7
name=DM-IWF
unavailableAction=SendAnswer
avpInsertion=Yes
shutdownMode=Graceful
shutdownTimer=15
resultCode=3002
vendorId=0
errorString=DM-IWF Unavailable
resExhResultCode=3004
resExhVendorId=0
resExhErrorString=DM-IWF Resource Exhausted
routeListId=-1
```

```
realm=
fqdn=
mcl=0
================================
id=12
name=MD-IWF
unavailableAction=ContinueRouting
avpInsertion=Yes
shutdownMode=Graceful
shutdownTimer=15
resultCode=3002
vendorId=0
errorString=MD-IWF Unavailable
resExhResultCode=3004
resExhVendorId=0
resExhErrorString=MD-IWF Resource Exhausted
routeListId=-1
realm=
fqdn=
mcl=0
================================
================================================================================
Add common DSR Application measurements for DM-IWF.
================================================================================
================================================================================
Display common DSR Application measurements for DM-IWF.
================================================================================
repgrp=DSR Application Exception
measid=15604
================================
repgrp=DSR Application Exception
measid=15605
================================
repgrp=DSR Application Performance
measid=15600
================================
repgrp=DSR Application Performance
measid=15601
================================
repgrp=DSR Application Performance
measid=15602
================================
repgrp=DSR Application Performance
measid=15603
================================
repgrp=DSR Application Performance
measid=15606
================================
repgrp=DSR Application Performance
measid=15607
================================
repgrp=DSR Application Performance
measid=15608
================================
repgrp=DSR Application Performance
measid=15609
================================
================================================================================
Add DM-IWF and MD-IWF GUI Configuration Permissions.
================================================================================
_appid=17
group_id=8500
group_name=MAP Interworking Configuration Permissions
================================
================================================================================
Do you want to activate/deactivate this feature on another System OAM Server[Y/N] : n
[admusr@NO1 loaders]$
```

7.2 SAMPLE OUTPUT OF DEACTIVATION (ACTIVE NOAM)

```
[admusr@NO1 loaders]$ ./featureActivateDeactivate
Thu Apr 17 03:09:01 EDT 2014::Starting featureActivateDeactivate main...
Start the Automation script , To run the Feature Activation/DeActivation on Active NO.

You want to Activate or Deactivate the Feature :
1.Activate
2.Deactivate

Enter your choice : 2
Which Feature you want to DeActivate :
1.CPA
2.RBAR
3.FABR
4.Mediation
5.LoadGen
6.GLA
7.MAP Interworking

Enter your choice : 7
Run script to Deactivate mapinterworking Feature
====================================S-T-A-R-T=====================================
==================================================================================
Execution of Activation/Deactivation Process Starts
==================================================================================
Starting Activation/Deactivation process....
Executing /usr/TKLC/dsr/prod/maint/loaders/deactivate/load.mapinterworkingDeactivateAsourced script on NO1
================================================================================
Current server is HA ACTIVE
================================================================================
  === deleted 1 records ===
================================================================================
Verify MD-IWF is not present in the DsrApplication table
================================================================================
  === deleted 1 records ===
================================================================================
Verify DM-IWF is not present in the DsrApplication table
================================================================================
================================================================================
DM-IWF Feature is not Activated
================================================================================
================================================================================
MD-IWF Feature is not Activated
================================================================================
  === deleted 0 records ===
  === deleted 0 records ===
================================================================================
Verify DM-IWF and MD-IWF are not present in the DsrApplication table
================================================================================
================================================================================
Hiding DM-IWF and MD-IWF KPI groups
================================================================================
  === deleted 1 records ===
  === deleted 1 records ===
================================================================================
Hiding DM-IWF and MD-IWF measurement groups
================================================================================
  === deleted 1 records ===
  === deleted 1 records ===
  === deleted 1 records ===
  === deleted 1 records ===
================================================================================
Removing MAP Interworking GUI permissions.
================================================================================
  === deleted 1 records ===
================================================================================
Removing DMIWFSvc and MDIWFSvc COM Agent Loader Entries
================================================================================
Thu Apr 17 03:09:15 EDT 2014
Deactivating DMIWFSvc

Removing DMIWFSvc

id=11
name=DMIWFSvc
preDefined=No
editableOnGui=Yes
birthTime=12/31/1969 19:00:00.000
==================================
  === deleted 1 records ===
DMIWFSvc Deactivation is complete.

Deactivating MDIWFSvc

Removing MDIWFSvc

id=12
name=MDIWFSvc
```

```
preDefined=No
editableOnGui=Yes
birthTime=12/31/1969 19:00:00.000
==================================
  === deleted 1 records ===
MDIWFSvc Deactivation is complete.

================================================================================
Starting to Execute the Loaders on Standby server
================================================================================
Executing /usr/TKLC/dsr/prod/maint/loaders/deactivate/load.mapinterworkingDeactivateAsourced script on NO2
================================================================================
Password:
================================================================================
Current server is HA STANDBY
================================================================================
================================================================================
Verify MD-IWF is not present in the DsrApplication table
================================================================================
================================================================================
Verify DM-IWF is not present in the DsrApplication table
================================================================================
================================================================================
Verify DM-IWF and MD-IWF are not present in the DsrApplication table
================================================================================
================================================================================
Removing MAP Interworking GUI permissions.
================================================================================
  === deleted 1 records ===
================================================================================
The Active SO server configured in the Topology are
================================================================================
1. SO1
2. ALL SOs
Enter your choice on which SO you want to Activate or Deactivate the Feature :1
================================================================================
This is a 3 Tier Setup , So run the B sourced loaders on SO server : SO1
Executing /usr/TKLC/dsr/prod/maint/loaders/deactivate/load.mapinterworkingDeactivateBsourced script on SO1
================================================================================
Current server is HA ACTIVE
================================================================================
================================================================================
Removing all ART rules pointing to DM-IWF
================================================================================
  === deleted 0 records ===
================================================================================
Removing applicationId=7(DM-IWF) and applicationId=12(MD-IWF) from the DSR
Application Per Mp Table
================================================================================
  === deleted 0 records ===
  === deleted 0 records ===
  === deleted 1 records ===
  === deleted 1 records ===
================================================================================
Verify DM-IWF entries not present in AppRoultRule table
================================================================================
================================================================================
Verify DM-IWF and MD-IWF are not present in the DsrApplicationPerMp table
================================================================================
================================================================================
Verify DM-IWF and MD-IWF are not present in the DsrApplication table
================================================================================
================================================================================
Removing common DSR Application measurements for DM-IWF
================================================================================
  === deleted 10 records ===
================================================================================
Removing MAP Interworking GUI permissions.
================================================================================
  === deleted 1 records ===
================================================================================
Executing the Loaders and Clearing Cache on Standby SO servers.
================================================================================
================================================================================
Starting to Execute the Loaders on Standby server
================================================================================
Executing /usr/TKLC/dsr/prod/maint/loaders/deactivate/load.mapinterworkingDeactivateBsourced script on SO2
================================================================================
Password:

================================================================================
Current server is HA STANDBY
================================================================================
================================================================================
MD-IWF Feature is not Activated
================================================================================
================================================================================
Removing all ART rules pointing to DM-IWF
================================================================================
  === deleted 0 records ===
================================================================================
Removing applicationId=7(DM-IWF) and applicationId=12(MD-IWF) from the DSR
Application Per Mp Table
================================================================================
  === deleted 0 records ===
```

```
  === deleted 0 records ===
  === deleted 1 records ===
  === deleted 1 records ===

================================================================================
Verify DM-IWF entries not present in AppRoultRule table
================================================================================
================================================================================
Verify DM-IWF and MD-IWF are not present in the DsrApplicationPerMp table
================================================================================
================================================================================
Verify DM-IWF and MD-IWF are not present in the DsrApplication table
================================================================================
================================================================================
Removing common DSR Application measurements for DM-IWF
================================================================================
  === deleted 10 records ===
================================================================================
Removing MAP Interworking GUI permissions.
================================================================================
  === deleted 1 records ===
================================================================================
Do you want to activate/deactivate this feature on another System OAM Server[Y/N] : n
[admusr@NO1 loaders]$
```

APPENDIX A. MY *ORACLE* SUPPORT (MOS)

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

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

1. For the first set of menu options, select `2,` "New Service Request". You will hear another set of menu options.
2. In this set of menu options, select `3,` "Hardware, Networking and Solaris Operating System Support". A third set of menu options begins.
3. In the third set of options, select `2,` " Non-technical issue". Then you will be connected to a live agent who can assist you with MOS registration and provide Support Identifiers. Simply mention you are a Tekelec Customer new to MOS.