Oracle® Communications Service Controller

Modules Configuration Guide

Release 6.2

F18712-02

April 2020

ORACLE®

Oracle Communications Service Controller Modules Configuration Guide, Release 6.2

F18712-02

Contents

12 Setting Up IM-SSF CAP Phase 3

13 Setting Up IM-SSF INAP CS-1

14 Setting Up IM-SSF WIN Phase 1

19 Setting Up R-IM-ASF SIP

20 Setting Up IM-ASF SAL

21 Setting Up IM-OCF Ro

22 Setting Up R-IM-OCF Ro

23 Setting Up IM-PSX GSM MAP

24 Setting Up IM-PSX ANSI-MAP

25 Setting Up IM-PSX ANSI Plugin

26 Setting Up IM-PSX ETSI Plugin

27 Setting Up IM-UIX-SMS

Preface

This document provides reference information on configuring Oracle Communications Service Controller interworking and supplementary modules using the Administration Console.

Audience

This document is intended for system administrators who are responsible for configuring Service Controller in their network.

This document assumes that the reader is already familiar with:

- Intelligent Network (IN) architecture, concepts and variant protocols
- Signaling System #7 (SS7) for SIGTRAN
- Session Initiation Protocol (SIP)
- Diameter protocol
- IP Multimedia Subsystem (IMS) architecture and interfaces
- Java Management Extensions (JMX)

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info or visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing impaired.

1

Setting Up IM-SCF CAP Phase 1

This chapter describes how to set up an IM-SCF CAP Phase 1 interworking module.

About IM-SCF CAP Phase 1 Setup

The process of IM-SCF CAP phase 1 setup requires the following:

1. Adding an IM-SCF CAP phase 1 to your Oracle Communications Service Controller deployment. You can add as many modules of type IM-SCF CAP phase 1 as you need. See "Adding an IM-SCF CAP Phase 1 to the Service Controller Deployment" for more information.
2. Configuring the IM-SCF CAP phase 1. See "Configuring an IM-SCF CAP Phase 1" for more information.

Adding an IM-SCF CAP Phase 1 to the Service Controller Deployment

To add an IM-SCF CAP phase 1:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMSCFCAP1**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-SCF CAP phase 1 to your deployment, in the **Change Center** pane, click **Commit**.

An new module of type IM-SCF CAP phase 1 is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an IM-SCF CAP Phase 1

To configure an IM-SCF CAP phase 1:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added IM-SCF CAP phase 1.

   The IM-SCF CAP phase 1 Configuration tab contains the subtabs described in Table 1–1.

Table 1–1 IM-SCF CAP Phase 1 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See "Configuring General Parameters" for more information.
Call Handling	Enables you to configure how IM-SCF handles calls. For more information, see "Configuring Call Handling Parameters".
IN Triggering	Enables you to define the IN triggers that the IM-SCF arms in the underlying session control entity. For more information, see "Configuring IN Triggering Parameters".
Charging Service	Enables you to define how IM-SCF sends credit reservation requests and specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC. See "Charging Services" for more information.
TCAP	Enables you to set up the TCAP layer of the IM-SCF. For more information, see "Configuring TCAP Parameters".
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See "Configuring Monitoring Parameters" for more information.

Configuring General Parameters

The General subtab displays the protocol variant that is used to encode and decode SS7 messages and enables you to specify an alias for an IM instance.

Table 1–2 describes the configuration parameters on the General subtab.

Table 1–2 General Parameters

Name	Type	Description
Alias	STRING	Specifies an alias of the IM instance. Using this alias, the SS7 SSU recognizes the instances of the IMs to which incoming messages should be routed. For more information on how the SS7 SSU uses aliases and how to configure incoming routing in the SS7 SSU, see the discussion on configuring the SS7 Signaling Server Unit for SIGTRAN in *Service Controller Signaling Server Units Configuration Guide*.
Plugin	STRING	Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode and decode SS7 messages.

Configuring Call Handling Parameters

The Call Handling subtab enables you to define how IM-SCF handles calls.

Table 1–3 describes configuration parameters on the Call Handling subtab.

Table 1–3 IM-SCF CAP Phase 1 Call Handling Parameters

Name	Type	Description
OE Reaction Interval in Seconds	INT	Specifies the time period in seconds during which the IM-SCF waits for the OE to respond to SAL messages. When this timer expires, IM-SCF decides how to handle existing session (Continue or Release) according to the configuration settings. Default value: 100
Body Encoding Format	STRING	Specifies the method that the IM-SCF uses to encode IN parameters in the body of a SAL message. Possible options: ■ BER ■ XER ■ None Default value: None In an IN mediation solution, when IM-SCF is coupled with IM-SSF, this parameter must be set to XER.
RRBCSM Accumulation Mode	BOOL	Specifies whether or not IM-SCF arms DPs using a single or multiple RRBCSM requests. Possible values: ■ True ■ False
Activity Test Interval In Seconds	INT	Specifies the time interval in seconds between two invocations of Activity Test operation. Set to 0 to prevent sending of Activity Test.

Configuring IN Triggering Parameters

The IN Triggering subtab enables you to define IN triggers that the IM-SCF arms in the underlying session control entity and specify additional parameters.

The IN Triggering subtab contains the subtabs described in Table 1–4.

Table 1–4 IM-SCF CAP1 N Triggering Subtabs

Subtab	Description
O-BCSM	Enables you to configure how the IM-SCF arms DPs on the call origination side. For more information, see "Configuring DPs on the Call Origination Side".
T-BCSM	Enables you to configure how the IM-SCF arms DPs on the call termination side. For more information, see "Configuring DPs on the Call Termination Side".

Configuring DPs on the Call Origination Side

The O-BCSM subtab enables you to configure how the IM-SCF arms DPs on the call origination side.

Table 1–5 describes configuration parameters on the O-BCSM subtab.

Table 1–5 IM-SCF CAP Phase 1 O-BCSM DPs

Name	Type	Description
OAnswer	STRING	Specifies how the IM-SCF arms oAnswer. Possible values: ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: NOTIFY_AND_CONTINUE
ODisconnect	STRING	Specifies how the IM-SCF arms oDisconnect. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED

Table 1–5 (Cont.) IM-SCF CAP Phase 1 O-BCSM DPs

Name	Type	Description
O Disconnect Leg	STRING	Specifies a leg on which the oDisconnect DP is armed. Possible values: ■ 1 ■ 2 ■ 1,2 Default value: 1,2

Configuring DPs on the Call Termination Side

The T-BCSM subtab enables you to configure how the IM-SCF arms DPs on the call termination side.

Table 1–6 describes configuration parameters on the T-BCSM subtab.

Table 1–6 IM SCF CAP Phase 1 T-BCSM DPs

Name	Type	Description
TAnswer	STRING	Specifies how the IM-SCF arms tAnswer. Possible values: ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: NOTIFY_AND_CONTINUE
TDisconnect	STRING	Specifies how the IM-SCF arms tDisconnect. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
TDisconnect Leg	STRING	Specifies a leg on which the tDisconnect DP is armed. Possible values: ■ 1 ■ 2 ■ 1,2 Default value: 1,2

Charging Services

You can configure IM-SCF to monitor session duration and charge sessions. IM-SCF provides the following capabilities:

- Credit reservation requests generation

  IM-SCF sends these requests to IM-OCF through the OE. IM-OCF translates credit reservation requests to Diameter CCRs, which are then forwarded to a billing application.

- Session monitoring and charging

  IM-SCF monitors and charges a session on its own.

- Quota reauthorization

  You can specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC.

To set up IM-SCF charging services, you use the Charging Services tab. This tab contains the subtabs described in Table 1–7.

Table 1–7 Charging Services Subtabs

Subtab	Description
General	Enables you to specify how IM-SCF sets up and sends credit reservation requests to the OE. See "General" for more information.
Reauthorization Triggers	Enables you to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC. See "Reauthorization Triggers" for more information.

General

The General subtab enables you to specify how IM-SCF sets up and sends credit reservation requests to the OE. The OE forwards these requests to application-facing IMs as defined in the orchestration logic.

Table 1–8 describes the configuration parameters that you need to specify for credit reservation requests.

Table 1–8 General Parameters

Name	Type	Description
Service Monitoring	STRING	Specifies the component that monitors session duration. Possible values: ■ Internal IM-SCF CAP1 can monitor session duration internally only. IM-SCF CAP1 cannot delegate service monitoring to an MSC. ■ None Session duration is not monitored. Default value: None

Table 1–8 (Cont.) General Parameters

Name	Type	Description
Tccd Timeout	INT	Specifies the maximum time, in seconds, that IM-SCF waits for a credit reservation response after sending a credit reservation request. If the timeout expires, IM-SCF releases the call. To disable the timeout timer, enter a negative value.
First Credit Reservation Request	STRING	Specifies when IM-OCF sends the first CCR to a billing application. This request is generated by IM-SCF and sent to IM-OCF through the OE. Possible values: ■ ON_INITIAL_EVENT IM-OCF sends a request after an MSC sends the first session setup message. ■ ON_RINGBACK IM-OCF sends a request after an MSC sends a ringing indication. ■ ON_ANSWER IM-OCF sends a request after an MSC sends an answer indication. ■ NEVER Default value: ON_INITIAL_EVENT
First Credit Granted Notification	STRING	Specifies when IM-OCF sends the first credit granted notification to a billing application. This request is generated by IM-SCF and sent to IM-OCF through the OE. Possible values: ■ ON_INITIAL_EVENT IM-OCF sends a request after an MSC sends the first session setup message. ■ ON_ANSWER IM-OCF sends a request after an MSC sends an answer indication. Default value: ON_INITIAL_EVENT
Start Charging Phase	STRING	Specifies when IM-SCF starts charging a session. Possible values: ■ ON_INITIAL_EVENT IM-SCF starts charging after an MSC sends the first session setup message. ■ ON_RINGBACK IM-SCF starts charging after an MSC sends a ringing indication. ■ ON_ANSWER IM-SCF starts charging after an MSC sends an answer indication. Default value: ON_ANSWER
Requested Duration	INT	Specifies the value to which IM-OCF needs to set the CC-time AVP in a CCR sent to a billing application.

Table 1–8 (Cont.) General Parameters

Name	Type	Description
Requested Volume	INT	Specifies the value to which IM-OCF needs to set the CC-Total-Octets AVP in a CCR sent to a billing application.
Requested Service Units	INT	Specifies the value to which IM-OCF needs to set the CC-Service-Specific-Units AVP in a CCR sent to a billing application.
Service Identifier	INT	Specifies the value to which IM-OCF needs to set the Service-Identifier AVP in a CCR sent to a billing application.

Reauthorization Triggers

The Reauthorization Triggers subtab enables you to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC.

Table 1–9 describes configuration parameters on the Reauthorization Triggers subtab.

Table 1–9 Reauthorization Triggers Parameters

Name	Type	Description
Name	STRING	A unique identifier for the trigger.
Trigger Type	STRING	Specifies the trigger for reauthorization of granted quota. Possible values: ■ ALERTED ■ CONNECTED ■ INFO_RECEIVED ■ REINVITED ■ REINVITED_OK ■ UPDATED ■ UPDATED_OK
Mode	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Updated trigger. ■ YES IM-SCF always reauthorizes the quota. ■ DYNAMIC IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ NO IM-SCF never reauthorizes the quota. Default value: DYNAMIC

Table 1–10 describes the preconfigured triggers on the Reauthorization Triggers subtab.

Table 1–10 Reauthorization Triggers

Name	Type	Description
Info Received	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Info Received trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session Alerted	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Alerted trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session Connected	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Connected trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic

Table 1–10 (Cont.) Reauthorization Triggers

Name	Type	Description
Session ReInvite Complete	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session ReInvite Complete trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session Reinvited	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Reinvited trigger. ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session Update Complete	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Update Complete trigger. ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic

Table 1–10 (Cont.) Reauthorization Triggers

Name	Type	Description
Session Updated	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Updated trigger. ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic

Configuring TCAP Parameters

The TCAP subtab enables you to set up parameters of the IM TCAP layer.

Table 1–11 describes configuration parameters on the TCAP subtab.

Table 1–11 TCAP Parameter

Name	Type	Description
Class4 Default Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations. Default value: 5 seconds.
Reject Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.
Activate Invoke Alarm in Application Layer	BOOL	When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ True ■ False Default value: False.
Application Part Guard Timer	INT	Specifies the PSM timer, which is a timer for incoming operations. The PSM timer defines the maximum time in seconds that the application (TC-User) has to respond to incoming INVOKE messages.

Table 1–11 (Cont.) TCAP Parameter

Name	Type	Description
Result Split Length	INT	Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-SCF. For more information about configuring monitoring, see the discussion on configuring Service Controller monitoring in *Service Controller System Administrator's Guide*.

2

Setting Up IM-SCF CAP Phase 2

This chapter describes how to set up an IM-SCF CAP Phase 2 interworking module.

About IM-SCF CAP Phase 2 Setup

The process of IM-SCF CAP phase 2 setup requires the following:

1. Adding an IM-SCF CAP phase 2 to your Oracle Communications Service Controller deployment. You can add as many modules of type IM-SCF CAP as you need. See "Adding an IM-SCF CAP Phase 2 to the Service Controller Deployment" for more information.
2. Configuring the IM-SCF CAP phase 2. See "Configuring an IM-SCF CAP Phase 2" for more information.

Adding an IM-SCF CAP Phase 2 to the Service Controller Deployment

To add an IM-SCF CAP phase 2:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMSCFCAP2**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-SCF CAP phase 2 to your deployment, in the **Change Center** pane, click **Commit**.

A new module of type IM-SCF CAP phase 2 is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an IM-SCF CAP Phase 2

To configure an IM-SCF CAP phase 2:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added IM-SCF CAP phase 2.

   The IM-SCF CAP phase 2 Configuration tab contains the subtabs described in Table 2–1.

Table 2–1 IM-SCF CAP Phase 2 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See "Configuring General Parameters" for more information.
Call Handling	Enables you to define the way that IM-SCF handles calls. For more information, see "Configuring Call Handling Parameters".
IN Triggering	Enables you to define the IN triggers that the IM-SCF arms in the underlying session control entity. For more information, see "Configuring IN Triggering Parameters".
Charging Service	Enables you to define how IM-SCF sends credit reservation requests and specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC. See "Charging Services" for more information.
Media Resources	Enables you to set up the media resources that Service Controller uses to play announcements. For more information, see "Configuring Media Resources Parameters".
TCAP	Enables you to set up the TCAP layer of the IM-SCF. For more information, see "Configuring TCAP Parameters".
Monitoring	Enables you to define how Runtime MBeans and notifications operate. For more information, see "Configuring Monitoring Parameters".

Configuring General Parameters

The General subtab displays the protocol variant that is used to encode / decode SS7 messages and enables you to specify an alias for an Interworking Module instance.

Table 2–2 describes the configuration parameters on the General subtab.

Table 2–2 General Parameters

Name	Type	Description
Alias	STRING	Specifies an alias of the IM instance. Using this alias, the SS7 SSU recognizes the instances of the IMs to which incoming messages should be routed. For more information on how the SS7 SSU uses aliases and how to configure incoming routing in the SS7 SSU, see the discussion on configuring the SS7 Signaling Server Unit for SIGTRAN in *Service Controller Signaling Server Units Configuration Guide*.
Plugin	STRING	Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode/decode SS7 messages.

Configuring Call Handling Parameters

The Call Handling subtab enables you to define how IM-SCF handles calls.

Table 2–3 describes configuration parameters on the Call Handling subtab.

Table 2–3 IM-SCF CAP Phase 2 Call Handling Parameters

Name	Type	Description
OE Reaction Interval in Seconds	INT	Specifies the time period in seconds during which the IM-SCF waits for the OE to respond to SAL messages. When this timer expires, IM-SCF decides how to handle existing session (Continue or Release) according to the configuration settings. Default value: 100
Body Encoding Format	STRING	Specifies the method that the IM-SCF uses to encode IN parameters in the body of a SAL message. Possible values: ■ BER ■ XER ■ None Default value: None In an IN mediation solution, when IM-SCF is coupled with IM-SSF, this parameter must be set to XER.
RRBCSM Accumulation Mode	BOOL	Specifies whether or not IM-SCF arms DPs using a single or multiple RRBCSM requests. Possible values: ■ True ■ False
Activity Test Interval in Seconds	INT	Specifies the time interval in seconds between two invocations of ActivityTest operation. This operation is used to check whether or not the call exists. Default value: 0, which means that the ActivityTest is not sent

Table 2–3 (Cont.) IM-SCF CAP Phase 2 Call Handling Parameters

Name	Type	Description
Wait for AssistRequestInstructions Waiting Interval in Seconds	INT	Specifies the time period in seconds during which the IM-SCF waits for an ARI operation, following an ETC operation to the switch
Wait for AssistRequestInstructions after EstablishTemporaryConnection	BOOL	Specifies whether or not IM-SCF expects a ARI operation, following an ETC operation to the switch. Possible values: ■ True ■ False
Reset Timer Interval in Seconds	INT	Specifies the time period, in seconds, from receiving IN operation and till invoking the ResetTimer operation towards the MSC (reset Tssf). Default value: 10
UI Reset Timer Interval in Seconds	INT	Specifies the time period, in seconds, from receiving IN operation and till invoking the ResetTimer operation towards the MSC (reset Tssf). As opposed to the Reset Timer Interval in Seconds parameter, this parameter is used when IM-SCF is in the middle of interaction with a media resource. Default value: 900
gsmSCFAddress	STRING	Specifies gsmSCFAddress to be set in an EstablishTemporaryConnection (ETC) operation and InitiateCallAttempt (ICA) operations. gsmSCFAddress represents the address of IM-SCF that initiates the ETC operation. gsmSCFAddress consists of the following: ■ Address indicator (one octet), including NatureOfAddress ■ Address digits For more information about the format of gsmSCFAddress, see 3GPP 29.002.
Wait for Apply Charging Report or Call Information	INT	Specifies the time period in seconds during which the IM-SCF waits for ACR or CIR operation.

Configuring IN Triggering Parameters

The IN Triggering subtab enables you to define IN triggers that the IM-SCF arms in the underlying session control entity and specify additional parameters.

The IN Triggering subtab contains the subtabs described in Table 2–4.

Table 2–4 IN Triggering Subtabs

Subtab	Description
O-BCSM	Enables you to configure how the IM-SCF arms DPs on the call origination side. For more information, see "Configuring DPs on the Call Origination Side".
T-BCSM	Enables you to configure how the IM-SCF arms DPs on the call termination side. For more information, see "Configuring DPs on the Call Termination Side".

Configuring DPs on the Call Origination Side

The O-BCSM subtab enables you to configure how the IM-SCF arms DPs on the call origination side.

Table 2–5 describes configuration parameters on the O-BCSM subtab.

Table 2–5 O-BCSM DPs

Name	Type	Description
RouteSelectFailure	STRING	Specifies how the IM-SCF arms RouteSelectFailure. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
OCalledPartyBusy	STRING	Specifies how the IM-SCF arms oCalledPartyBusy. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED

Table 2–5 (Cont.) O-BCSM DPs

Name	Type	Description
ONoAnswer	STRING	Specifies how the IM-SCF arms oNoAnswer. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
OAnswer	STRING	Specifies how the IM-SCF arms oAnswer. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
ODisconnect	STRING	Specifies how the IM-SCF arms oDisconnect. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED

Table 2–5 (Cont.) O-BCSM DPs

Name	Type	Description
OAbandon	STRING	Specifies how the IM-SCF arms oAbandon. Possible values: ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: NOTIFY_AND_CONTINUE
ODisconnect Leg	STRING	Specifies a leg on which the oDisconnect DP is armed. Possible values: ■ 1 ■ 2 ■ 1,2 Default value: 1,2

Configuring DPs on the Call Termination Side

The T-BCSM subtab enables you to configure how the IM-SCF arms DPs on the call termination side.

Table 2–6 describes configuration parameters on the T-BCSM subtab.

Table 2–6 T-BCSM DPs

Name	Type	Description
TBusy	STRING	Specifies how the IM-SCF arms tBusy. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED

Table 2–6 (Cont.) T-BCSM DPs

Name	Type	Description
TNoAnswer	STRING	Specifies how the IM-SCF arms tNoAnswer. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
TAnswer	STRING	Specifies how the IM-SCF arms tAnswer. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
TDisconnect	STRING	Specifies how the IM-SCF arms tDisconnect. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED

Table 2–6 (Cont.) T-BCSM DPs

Name	Type	Description
TAbandon	STRING	Specifies how the IM-SCF arms tAbandon. Possible values: ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: NOTIFY_AND_CONTINUE
TDisconnect Leg	STRING	Specifies a leg on which the tDisconnect DP is armed. Possible values: ■ 1 ■ 2 ■ 1,2 Default value: 1,2

Charging Services

You can configure IM-SCF to monitor session duration and charge sessions. IM-SCF provides the following capabilities:

- Credit reservation requests generation

  IM-SCF sends these requests to IM-OCF through the OE. IM-OCF translates credit reservation requests to Diameter CCRs, which are then forwarded to a billing application.

- Session monitoring and charging

  You can specify whether a session is monitored by IM-SCF or by an MSC. In the former case, IM-SCF generates an ApplyCharging message based on the Granted-Service-Unit AVP of the CCA received from a billing application. IM-SCF sends this ApplyCharging message to an MSC. Then the MSC applies charging. If the session is monitored by IM-SCF, IM-SCF applies charging on its own.

- Quota reauthorization

  You can specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC.

To set up IM-SCF charging services, you use the Charging Services tab. This tab contains the subtabs described in Table 2–7.

Table 2–7 Charging Services Subtabs

Subtab	Description
General	Enables you to specify how IM-SCF sets up and sends credit reservation requests to the OE. See "General" for more information.

Table 2–7 (Cont.) Charging Services Subtabs

Subtab	Description
Reauthorization Triggers	Enables you to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC. See "Reauthorization Triggers" for more information.

General

The General subtab enables you to specify how IM-SCF sets up and sends credit reservation requests to the OE. The OE forwards these requests to application-facing IMs as defined in the orchestration logic.

Table 2–8 describes the configuration parameters that you need to specify for credit reservation requests.

Table 2–8 General Parameters

Name	Type	Description
Service Monitoring Type	STRING	Specifies the component that monitors session duration. Possible values: ■ Internal IM-SCF monitors session duration. ■ External MSC monitors session duration. ■ None Session duration is not monitored. Default value: None
Tccd Timeout	INT	Specifies the maximum time, in seconds, that IM-SCF waits for a credit reservation response after sending a credit reservation request. If the timeout expires, IM-SCF releases the call. To disable the timeout timer, enter a negative value.
First Credit Reservation Request	STRING	Specifies when IM-OCF sends the first CCR to a billing application. This request is generated by IM-SCF and sent to IM-OCF through the OE. Possible values: ■ ON_INITIAL_EVENT IM-OCF sends a request after an MSC sends the first session setup message. ■ ON_RINGBACK IM-OCF sends a request after an MSC sends a ringing indication. ■ ON_ANSWER IM-OCF sends a request after an MSC sends an answer indication. ■ NEVER Default value: ON_INITIAL_EVENT

Table 2–8 (Cont.) General Parameters

Name	Type	Description
First Credit Granted Notification	STRING	When the Service Monitoring parameter is set to "External" and session duration is monitored by an MSC, the First Credit Granted Notification parameter specifies when IM-SCF sends an ApplyCharging message to the MSC. Possible values: ■ ON_INITIAL_EVENT IM-SCF sends an ApplyCharging message after an MSC sends the first session setup message. ■ ON_ANSWER IM-SCF sends an ApplyCharging message after an MSC sends an answer indication. In this case, the answer event must be armed as EDP-R. Default value: ON_INITIAL_EVENT
Start Charging Phase	STRING	Specifies when IM-SCF starts charging a session. Possible values: ■ ON_INITIAL_EVENT IM-SCF starts charging after an MSC sends the first session setup message. ■ ON_RINGBACK IM-SCF starts charging after an MSC sends a ringing indication. ■ ON_ANSWER IM-SCF starts charging after an MSC sends an answer indication. Default value: ON_ANSWER
Requested Duration	INT	Specifies the value to which IM-OCF needs to set the CC-time AVP in a CCR sent to a billing application.
Requested Volume	INT	Specifies the value to which IM-OCF needs to set the CC-Total-Octets AVP in a CCR sent to a billing application.
Requested Service Units	INT	Specifies the value to which IM-OCF needs to set the CC-Service-Specific-Units AVP in a CCR sent to a billing application.
Service Identifier	INT	Specifies the value to which IM-OCF needs to set the Service-Identifier AVP in a CCR sent to a billing application.

Reauthorization Triggers

The Reauthorization Triggers subtab enables you to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC.

Table 2–9 describes configuration parameters on the Reauthorization Triggers subtab.

Table 2–9 Reauthorization Triggers Parameters

Name	Type	Description
Name	STRING	A unique identifier for the trigger.

Table 2–9 (Cont.) Reauthorization Triggers Parameters

Name	Type	Description
Trigger Type	STRING	Specifies the trigger for reauthorization of granted quota. Possible values: ■ ALERTED ■ CONNECTED ■ INFO_RECEIVED ■ REINVITED ■ REINVITED_OK ■ UPDATED ■ UPDATED_OK
Mode	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Updated trigger. ■ YES IM-SCF always reauthorizes the quota. ■ DYNAMIC IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ NO IM-SCF never reauthorizes the quota. Default value: DYNAMIC

Table 2–10 describes the preconfigured triggers on the Reauthorization Triggers subtab.

Table 2–10 Reauthorization Triggers

Name	Type	Description
Info Received	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Info Received trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic

Table 2–10 (Cont.) Reauthorization Triggers

Name	Type	Description
Session Alerted	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Alerted trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session Connected	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Connected trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session ReInvite Complete	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session ReInvite Complete trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic

Table 2–10 (Cont.) Reauthorization Triggers

Name	Type	Description
Session Reinvited	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Reinvited trigger. ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session Update Complete	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Update Complete trigger. ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session Updated	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Updated trigger. ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic

Configuring Media Resources Parameters

Using the Media Resources tab, you configure media resources that Service Controller uses to play announcements. In addition, you define how Service Controller translates the string URL of the announcement received from an application to an integer required by an SS7 MRF.

The Media Resources tab contains the subtabs described in Table 2–11.

Table 2–11 Media Resources Subtabs

Subtab	Description
General	Enables you to configure media resources that IM-SCF uses to play announcements. See "General" for more information.
Announcements	Enables you to configure how the IM-SCF translates announcement URLs to announcement IDs. See "Announcements" for more information.

General

Table 2–12 describes the parameters that define MRFs that the IM-SCF uses to play announcements.

Table 2–12 MRF Parameters

Name	Type	Description
Name	STRING	Specifies a name of the media resource.
Alias	STRING	Specifies a unique identifier that applications use to instruct Service Controller which media resource to connect in order to play announcements. The alias has the format of a SIP URI: sip: name1.name2@domain_name. For example: sip:ocsb.mrf@processing_domain1. If a name contains numbers, you can specify a generic alias that fits a range of aliases by using the question mark character (?) as a wildcard character. A question mark can be substituted by any number. For example, if you set the Alias parameter to mrf.1234????@oracle, this alias fits any alias in the range from mrf.12340000@oracle to mrf.12349999@ oracle.
Address Digits	STRING	Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource. To use a pre-defined media resource to play announcements, set: ■ **Address Digits** to **none** ■ **Operation Type** to **internal** In this case, Service Controller ignores the following parameters: ■ **Nature of Address** ■ **Address Numbering Plan Indicator** ■ **Numbering Qualifier** ■ **Number Screening** ■ **Presentation Restriction**

Table 2–12 (Cont.) MRF Parameters

Name	Type	Description
Nature of Address	STRING	Specifies the NatureOfAddress part of the media resource address. The media resource address is used to set up a connection towards the media resource. Possible values: ■ SUBSCRIBER_NUMBER ■ UNKNOWN ■ NATIONAL ■ INTERNATIONAL ■ NETWORK-SPECIFIC Default value: SUBSCRIBER_NUMBER
Address Numbering Plan Indicator	STRING	Specifies the NumberingPlanInd part of the media resource address. The media resource address is used to set up a connection towards the media resource. Possible values: ■ ISDN ■ DATA ■ TELEX Default value: ISDN
Numbering Qualifier	STRING	Specifies the numbering qualifier of the media resource address. Possible values: ■ NONE ■ DIALLED_DIGITS ■ USER_PROVIDED_FAILED_NETWORK_SCREENING ■ USER_PROVIDED_NOT_SCREENED ■ REDIRECTING_TERMINATING_NUMBER Default value: NONE
Number Screening	STRING	Specifies the numbering screening of the media resource address. Possible values: ■ UNDEFINED ■ USER_PROVIDED_NOT_VERIFIED ■ USER_PROVIDED_VERIFIED_PASSED ■ USER_PROVIDED_VERIFIED_FAILED ■ NETWORK_PROVIDED Default value: UNDEFINED

Table 2–12 (Cont.) MRF Parameters

Name	Type	Description
Presentation Restriction	STRING	Specifies the presentation restriction of the media resource address. Possible values: ■ UNDEFINED ■ ALLOWED ■ RESTRICTED ■ NOT_AVAILABLE Default value: UNDEFINED
Operation Type	STRING	Possible values: ■ internal: The media resource is internal part of the SSP. ConnectToResource (CTR) operation is used to connect the media resource. ■ external: The media resource not a part of the SSP. EstablishTemporaryConnection (ETC) is used to connect the media resource. Default value: internal
Answer Indication	BOOL	Specifies how to set the ServiceInteractionIndicatorTwo.bothway ThroughConnectionInd parameter in ETC and CTR operations in order to specify whether IM-SCF needs to request opening of the voice channel in both directions or in one direction only. Possible values: ■ Yes ServiceInteractionIndicatorTwo. bothwayThroughConnectionInd is set to bothwayPathRequired ■ No ServiceInteractionIndicatorTwo. bothwayThroughConnectionInd is set to bothwayPathNotRequired ■ None bothwayThroughConnectionInd is omitted

Note: When an internal media resource is used (CTR), the Address Digits, Nature of Address and Address Numbering Plan Indicator parameters can be set to 'None' in order to instruct the network's session control entity to connect its pre-configured media resource.

Announcements

An application can request Service Controller to play an announcement by sending to Service Controller a SIP INFO message that contains an MSCML representation of a PlayAnnouncement operation. This message contains the URL of the announcement to be played. Because an SS7 MRF requires an integer to identify the announcement

rather than a string value, Service Controller translates the URL to an announcement ID before sending a request to the MRF.

Using the Announcements subtab, you define to which announcement ID Service Controller translates each URL as described in Table 2–13.

Table 2–13 Announcement URLs to Announcement IDs Translation Parameters

Name	Type	Description
Name	STRING	Specifies the name of the announcement.
MRF Alias	STRING	Specifies the alias of the MRF for which Service Controller translates the URL specified in the General Announcement ID parameter to the ID defined in the Specific Announcement parameter. The alias has the format of a SIP URI: sip: name1.name2@domain_name. For example: sip:ocsb.mrf@processing_domain1. If a name contains numbers, you can specify a generic alias that fits a range of aliases by using the question mark character (?) as a wildcard character. A question mark can be substituted by any number. For example, if you set the Alias parameter to mrf.1234????@oracle, this alias fits any alias in the range from mrf.12340000@oracle to mrf.12349999@ oracle. You define parameters of the MRF in the General subtab of the Media Resources tab.
General Announcement ID	STRING	Specifies the URL of the announcement that Service Controller translates to the integer representing the announcement ID and specified in the Specific Announcement parameter.
Specific Announcement	INT	Specifies the announcement ID to which Service Controller translates the value specified in the General Announcement ID.

Configuring TCAP Parameters

The TCAP subtab enables you to set up parameters of the IM TCAP layer.

Table 2–14 describes configuration parameters on the TCAP subtab.

Table 2–14 TCAP Parameter

Name	Type	Description
Class4 Default Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations. Default value: 10000
Reject Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.

Table 2–14 (Cont.) TCAP Parameter

Name	Type	Description
Application Part Guard Timer	INT	Specifies the PSM timer, which is a timer for incoming operations. The PSM timer defines the maximum time in seconds that the application (TC-User) has to respond to incoming INVOKE messages.
Activate Invoke Alarm in Application Layer	BOOL	When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ True ■ False Default value: False.
Result Split Length	INT	Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-SCF. For more information about configuring monitoring, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

3

Setting Up IM-SCF CAP Phase 3

This chapter describes how to set up an IM-SCF CAP Phase 3 interworking module.

About IM-SCF CAP Phase 3 Setup

The process of IM-SCF CAP phase 3 setup requires the following:

1. Adding an IM-SCF CAP phase 3 to your Oracle Communications Service Controller deployment. You can add as many modules of type IM-SCF CAP as you need. See "Adding an IM-SCF CAP Phase 3 to the Service Controller Deployment" for more information.
2. Configuring the IM-SCF CAP phase 3. See "Configuring an IM-SCF CAP Phase 3" for more information.

Adding an IM-SCF CAP Phase 3 to the Service Controller Deployment

To add an IM-SCF CAP phase 3:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMSCFCAP3**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-SCF CAP phase 3 to your deployment, in the **Change Center** pane, click **Commit**.

A new module of type IM-SCF CAP phase 3 is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an IM-SCF CAP Phase 3

To configure an IM-SCF CAP Phase 3:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added IM-SCF CAP phase 3.

   The IM-SCF CAP phase 3 configuration pane contains the subtabs described in Table 3–1.

Table 3–1 IM-SCF CAP Phase 3 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See "Configuring General Parameters" for more information.
Call Handling	Enables you to define the way that IM-SCF handles calls. For more information, see "Configuring Call Handling Parameters".
IN Triggering	Enables you to define the IN triggers that IM-SCF arms in the underlying session control entity. For more information, see "Configuring IN Triggering Parameters".
Charging Service	Enables you to define how IM-SCF sends credit reservation requests and specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC. See "Charging Services" for more information.
Media Resources	Enables you to set up the media resources that Service Controller uses to play announcements. See "Configuring Media Resources Parameters" for more information.
TCAP	Enables you to set up the TCAP layer of the IM-SCF. See "Configuring TCAP Parameters" for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See "Configuring Monitoring Parameters" for more information.

Configuring General Parameters

The General subtab displays the protocol variant that is used to encode / decode SS7 messages and enables you to specify an alias for an Interworking Module instance.

Table 3–2 describes the configuration parameters on the General subtab.

Table 3–2 General Parameters

Name	Type	Description
Alias	STRING	Specifies an alias of the IM instance. Using this alias, the SS7 SSU recognizes the instances of the IMs to which incoming messages should be routed. For more information on how the SS7 SSU uses aliases and how to configure incoming routing in the SS7 SSU, see the discussion on configuring the SS7 Signaling Server Unit for SIGTRAN in *Service Controller Signaling Server Units Configuration Guide*.
Plugin	STRING	Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode / decode SS7 messages.

Configuring Call Handling Parameters

The Call Handling subtab enables you to define how IM-SCF handles calls.

Table 3–3 describes configuration parameters on the Call Handling subtab.

Table 3–3 IM-SCF CAP Phase 3 Call Handling Parameters

Name	Type	Description
OE Reaction Interval in Seconds	INT	Specifies the time period in seconds during which the IM-SCF waits for the OE to respond to SAL messages. When this timer expires, IM-SCF decides how to handle existing session (Continue or Release) according to the configuration settings. Default value: 100
Body Encoding Format	STRING	Specifies the method that the IM-SCF uses to encode IN parameters in the body of a SAL message. Possible options: ■ BER ■ XER ■ None Default value: None In an IN mediation solution, when IM-SCF is coupled with IM-SSF, this parameter must be set to XER.
RRBCSM Accumulation Mode	BOOL	Specifies whether or not IM-SCF arms DPs using a single or multiple RRBCSM requests. Possible values: ■ True ■ False
Activity Test Interval in Seconds	INT	Specifies the time interval in seconds between two invocations of ActivityTest operation. This operation is used to check whether or not the call exists. Default value: 0, which means that the ActivityTest is not sent

Table 3–3 (Cont.) IM-SCF CAP Phase 3 Call Handling Parameters

Name	Type	Description
Wait for Assist Request Instruction after Establishing Temporary Connection	INT	Specifies the time period in seconds during which the IM-SCF waits for ARI operation, following an ETC operation to the switch.
Wait for AssistRequestInstructions after EstablishTemporaryConnection	BOOL	Specifies whether or not IM-SCF expects an ARI operation, following an ETC operation to the switch. Possible values: ■ True ■ False
Reset Timer Interval in Seconds	INT	Specifies the time period, in seconds, from receiving IN operation and till invoking the ResetTimer operation towards the MSC (reset Tssf). Default value: 10
UI Reset Timer Interval in Seconds	INT	Specifies the time period, in seconds, from receiving IN operation and till invoking the ResetTimer operation towards the MSC (reset Tssf). As opposed to Reset Timer Interval in Seconds, this parameter is used when IM-SCF is in the middle of interaction with a media resource. Default value: 900
gsmSCFAddress	STRING	Specifies gsmSCFAddress to be set in an EstablishTemporaryConnection (ETC) and InitiateCallAttempt (ICA) operations. gsmSCFAddress represents the address of IM-SCF that initiates the ETC operation. gsmSCFAddress consists of the following: ■ Address indicator (one octet), including NatureOfAddress ■ Address digits For more information about the format of gsmSCFAddress, see 3GPP 29.002.
Wait for Apply Charging Report or Call Information	INT	Specifies the time period in seconds during which the IM-SCF waits for an ACR or CIR operation.

Configuring IN Triggering Parameters

The IN Triggering subtab enables you to define IN triggers that the IM-SCF arms in the underlying session control entity and specify additional parameters.

The IN Triggering subtab contains the subtabs described in Table 3–4.

Table 3–4 IN Triggering Subtabs

Subtab	Description
O-BCSM	Enables you to configure how the IM-SCF arms DPs on the call origination side. For more information, see "Configuring DPs on the Call Origination Side".

Table 3–4 (Cont.) IN Triggering Subtabs

Subtab	Description
T-BCSM	Enables you to configure how the IM-SCF arms DPs on the call termination side. For more information, see "Configuring DPs on the Call Termination Side".
O-SMS	Enables you to configure how the IM-SCF arms DPs on the SMS origination side. For more information, see "Configuring DPs on the SMS Origination Side".

Configuring DPs on the Call Origination Side

The O-BCSM subtab enables you to configure how the IM-SCF arms DPs on the call origination side.

Table 3–5 describes configuration parameters on the O-BCSM subtab.

Table 3–5 O-BCSM DPs

Name	Type	Description
RouteSelectFailure	STRING	Specifies how the IM-SCF arms RouteSelectFailure. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
OCalledPartyBusy	STRING	Specifies how the IM-SCF arms oCalledPartyBusy. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED

Table 3–5 (Cont.) O-BCSM DPs

Name	Type	Description
ONoAnswer	STRING	Specifies how the IM-SCF arms oNoAnswer. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
OAnswer	STRING	Specifies how the IM-SCF arms oAnswer. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
ODisconnect	STRING	Specifies how the IM-SCF arms oDisconnect. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED

Table 3–5 (Cont.) O-BCSM DPs

Name	Type	Description
OAbandon	STRING	Specifies how the IM-SCF arms oAbandon. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
ODisconnect Leg	STRING	Specifies a leg on which the oDisconnect DP is armed. Possible values: ■ 1 ■ 2 ■ 1,2 Default value: 1,2

Configuring DPs on the Call Termination Side

The T-BCSM subtab enables you to configure how the IM-SCF arms DPs on the call termination side.

Table 3–6 describes configuration parameters on the T-BCSM subtab.

Table 3–6 T-BCSM DPs

Name	Type	Description
TBusy	STRING	Specifies how the IM-SCF arms tBusy. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED

Table 3–6 (Cont.) T-BCSM DPs

Name	Type	Description
TNoAnswer	STRING	Specifies how the IM-SCF arms tNoAnswer. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
TAnswer	STRING	Specifies how the IM-SCF arms tAnswer. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
TDisconnect	STRING	Specifies how the IM-SCF arms tDisconnect. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED

Table 3–6 (Cont.) T-BCSM DPs

Name	Type	Description
TAbandon	STRING	Specifies how the IM-SCF arms tAbandon. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
TDisconnect Leg	STRING	Specifies a leg on which the tDisconnect DP is armed. Possible values: ■ 1 ■ 2 ■ 1,2 Default value: 1,2

Configuring DPs on the SMS Origination Side

The O-SMS subtab enables you to configure how the IM-SCF arms DPs on the SMS origination side.

Table 3–7 describes configuration parameters on the O-SMS subtab.

Table 3–7 O-SMS DPs

Name	Type	Description
OSmsSubmission	STRING	Specifies how the IM-SCF arms oSmsSubmission. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED

Table 3–7 (Cont.) O-SMS DPs

Name	Type	Description
OSmsFailure	STRING	Specifies how the IM-SCF arms oSmsFailure. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED

Charging Services

You can configure IM-SCF to monitor session duration and charge sessions. IM-SCF provides the following capabilities:

- Credit reservation requests generation

  IM-SCF sends these requests to IM-OCF through the OE. IM-OCF translates credit reservation requests to Diameter CCRs, which are then forwarded to a billing application.

- Session monitoring and charging

  You can specify whether a session is monitored by IM-SCF or by an MSC. In the former case, IM-SCF generates an ApplyCharging message based on the Granted-Service-Unit AVP of the CCA received from a billing application. IM-SCF sends this ApplyCharging message to an MSC. Then the MSC applies charging. If the session is monitored by IM-SCF, IM-SCF applies charging on its own.

- Quota reauthorization

  You can specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC.

To set up IM-SCF charging services, you use the Charging Services tab. This tab contains the subtabs described in Table 3–8.

Table 3–8 Charging Services Subtabs

Subtab	Description
General	Enables you to specify how IM-SCF sets up and sends credit reservation requests to the OE. See "General" for more information.
Reauthorization Triggers	Enables you to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC. See "Reauthorization Triggers" for more information.

General

The General subtab enables you to specify how IM-SCF sets up and sends credit reservation requests to the OE. The OE forwards these requests to application-facing IMs as defined in the orchestration logic.

Table 3–9 describes the configuration parameters that you need to specify for credit reservation requests.

Table 3–9 General Parameters

Name	Type	Description
Service Monitoring	STRING	Specifies the component that monitors session duration. Possible values: ■ Internal IM-SCF monitors session duration. ■ External MSC monitors session duration. ■ None Session duration is not monitored. Default value: None
Tccd Timeout	INT	Specifies the maximum time, in seconds, that IM-SCF waits for a credit reservation response after sending a credit reservation request. If the timeout expires, IM-SCF releases the call. To disable the timeout timer, enter a negative value.
First Credit Reservation Request	STRING	Specifies when IM-OCF sends the first CCR to a billing application. This request is generated by IM-SCF and sent to IM-OCF through the OE. Possible values: ■ ON_INITIAL_EVENT IM-OCF sends a request after an MSC sends the first session setup message. ■ ON_RINGBACK IM-OCF sends a request after an MSC sends a ringing indication. ■ ON_ANSWER IM-OCF sends a request after an MSC sends an answer indication. ■ NEVER Default value: ON_INITIAL_EVENT

Table 3–9 (Cont.) General Parameters

Name	Type	Description
First Credit Granted Notification	STRING	When the Service Monitoring parameter is set to "External" and session duration is monitored by an MSC, the First Credit Granted Notification parameter specifies when IM-SCF sends an ApplyCharging message to the MSC. Possible values: ■ ON_INITIAL_EVENT IM-SCF sends an ApplyCharging message after an MSC sends the first session setup message. ■ ON_ANSWER IM-SCF sends an ApplyCharging message after an MSC sends an answer indication. In this case, the answer event must be armed as EDP-R. Default value: ON_INITIAL_EVENT
Start Charging Phase	STRING	Specifies when IM-SCF starts charging a session. Possible values: ■ ON_INITIAL_EVENT IM-SCF starts charging after an MSC sends the first session setup message. ■ ON_RINGBACK IM-SCF starts charging after an MSC sends a ringing indication. ■ ON_ANSWER IM-SCF starts charging after an MSC sends an answer indication. Default value: ON_ANSWER
Requested Duration	INT	Specifies the value to which IM-OCF needs to set the CC-time AVP in a CCR sent to a billing application.
Requested Volume	INT	Specifies the value to which IM-OCF needs to set the CC-Total-Octets AVP in a CCR sent to a billing application.
Requested Service Units	INT	Specifies the value to which IM-OCF needs to set the CC-Service-Specific-Units AVP in a CCR sent to a billing application.
Service Identifier	INT	Specifies the value to which IM-OCF needs to set the Service-Identifier AVP in a CCR sent to a billing application.

Reauthorization Triggers

The Reauthorization Triggers subtab enables you to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC.

Table 3–10 describes configuration parameters on the Reauthorization Triggers subtab.

Table 3–10 Reauthorization Triggers Parameters

Name	Type	Description
Name	STRING	A unique identifier for the trigger.

Table 3–10 (Cont.) Reauthorization Triggers Parameters

Name	Type	Description
Trigger Type	STRING	Specifies the trigger for reauthorization of granted quota. Possible values: ■ ALERTED ■ CONNECTED ■ INFO_RECEIVED ■ REINVITED ■ REINVITED_OK ■ UPDATED ■ UPDATED_OK
Mode	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Updated trigger. ■ YES IM-SCF always reauthorizes the quota. ■ DYNAMIC IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ NO IM-SCF never reauthorizes the quota. Default value: DYNAMIC

Table 3–11 describes the preconfigured triggers on the Reauthorization Triggers subtab.

Table 3–11 Reauthorization Triggers

Name	Type	Description
Info Received	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Info Received trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic

Table 3–11 (Cont.) Reauthorization Triggers

Name	Type	Description
Session Alerted	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Alerted trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session Connected	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Connected trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session ReInvite Complete	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session ReInvite Complete trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic

Table 3–11 (Cont.) Reauthorization Triggers

Name	Type	Description
Session Reinvited	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Reinvited trigger. ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session Update Complete	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Update Complete trigger. ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session Updated	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Updated trigger. ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic

Configuring Media Resources Parameters

Using the Media Resources tab, you configure media resources that Service Controller uses to play announcements. In addition, you define how Service Controller translates the string URL of the announcement received from an application to an integer required by an SS7 MRF.

The Media Resources tab contains the subtabs described in Table 3–12.

Table 3–12 Media Resources Subtabs

Subtab	Description
General	Enables you to configure media resources that IM-SCF uses to play announcements. See "General" for more information.
Announcements	Enables you to configure how the IM-SCF translates announcement URLs to announcement IDs. See "Announcements" for more information.

General

Table 3–13 describes the parameters that define MRFs that the IM-SCF uses to play announcements.

Table 3–13 MRF Parameters

Name	Type	Description
Name	STRING	Specifies a name of the media resource.
Alias	STRING	Specifies a unique identifier that applications use to instruct Service Controller which media resource to connect in order to play announcements. The alias has the format of a SIP URI: sip: name1.name2@domain_name. For example: sip:ocsb.mrf@processing_domain1. If a name contains numbers, you can specify a generic alias that fits a range of aliases by using the question mark character (?) as a wildcard character. A question mark can be substituted by any number. For example, if you set the Alias parameter to mrf.1234????@oracle, this alias fits any alias in the range from mrf.12340000@oracle to mrf.12349999@ oracle.
Address Digits	STRING	Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource. To use a pre-defined media resource to play announcements, set: ■ **Address Digits** to **none** ■ **Operation Type** to **internal** In this case, Service Controller ignores the following parameters: ■ **Nature of Address** ■ **Address Numbering Plan Indicator** ■ **Numbering Qualifier** ■ **Number Screening** ■ **Presentation Restriction**

Table 3–13 (Cont.) MRF Parameters

Name	Type	Description
Nature of Address	STRING	Specifies the NatureOfAddress part of the media resource address. The media resource address is used to set up a connection towards the media resource. Possible values: ■ SUBSCRIBER_NUMBER ■ UNKNOWN ■ NATIONAL ■ INTERNATIONAL ■ NETWORK-SPECIFIC Default value: SUBSCRIBER_NUMBER
Address Numbering Plan Indicator	STRING	Specifies the NumberingPlanInd part of the media resource address. The media resource address is used to set up a connection towards the media resource. Possible values: ■ ISDN ■ DATA ■ TELEX Default value: ISDN
Numbering Qualifier	STRING	Specifies the numbering qualifier of the media resource address. Possible values: ■ NONE ■ DIALLED_DIGITS ■ USER_PROVIDED_FAILED_NETWORK_SCREENING ■ USER_PROVIDED_NOT_SCREENED ■ REDIRECTING_TERMINATING_NUMBER Default value: NONE
Number Screening	STRING	Specifies the numbering screening of the media resource address. Possible values: ■ UNDEFINED ■ USER_PROVIDED_NOT_VERIFIED ■ USER_PROVIDED_VERIFIED_PASSED ■ USER_PROVIDED_VERIFIED_FAILED ■ NETWORK_PROVIDED Default value: UNDEFINED

Table 3–13 (Cont.) MRF Parameters

Name	Type	Description
Presentation Restriction	STRING	Specifies the presentation restriction of the media resource address. Possible values: ■ UNDEFINED ■ ALLOWED ■ RESTRICTED ■ NOT_AVAILABLE Default value: UNDEFINED
Operation Type	STRING	Possible values: ■ internal: The media resource is internal part of the SSP. ConnectToResource (CTR) operation is used to connect the media resource. ■ external: The media resource not a part of the SSP. EstablishTemporaryConnection (ETC) is used to connect the media resource. Default value: internal
Answer Indication	BOOL	Specifies how to set the ServiceInteractionIndicatorTwo.bothway ThroughConnectionInd parameter in ETC and CTR operations in order to specify whether IM-SCF needs to request opening of the voice channel in both directions or in one direction only. Possible values: ■ Yes ServiceInteractionIndicatorTwo. bothwayThroughConnectionInd is set to bothwayPathRequired ■ No ServiceInteractionIndicatorTwo. bothwayThroughConnectionInd is set to bothwayPathNotRequired ■ None bothwayThroughConnectionInd is omitted

Note: When an internal media resource is used (CTR), the Address Digits, Nature of Address and Address Numbering Plan Indicator parameters can be set to 'None' in order to instruct the network's session control entity to connect its pre-configured media resource.

Announcements

An application can request Service Controller to play an announcement by sending to Service Controller a SIP INFO message that contains an MSCML representation of a PlayAnnouncement operation. This message contains the URL of the announcement to be played. Because an SS7 MRF requires an integer to identify the announcement

rather than a string value, Service Controller translates the URL to an announcement ID before sending a request to the MRF.

Using the Announcements subtab, you define to which announcement ID Service Controller translates each URL as described in Table 3–14.

Table 3–14 Announcement URLs to Announcement IDs Translation Parameters

Name	Type	Description
Name	STRING	Specifies the name of the announcement.
MRF Alias	STRING	Specifies the alias of the MRF for which Service Controller translates the URL specified in the General Announcement ID parameter to the ID defined in the Specific Announcement parameter. The alias has the format of a SIP URI: sip: name1.name2@domain_name. For example: sip:ocsb.mrf@processing_domain1. If a name contains numbers, you can specify a generic alias that fits a range of aliases by using the question mark character (?) as a wildcard character. A question mark can be substituted by any number. For example, if you set the Alias parameter to mrf.1234????@oracle, this alias fits any alias in the range from mrf.12340000@oracle to mrf.12349999@ oracle. You define parameters of the MRF in the **General** subtab of the **Media Resources** tab.
General Announcement ID	STRING	Specifies the URL of the announcement that Service Controller translates to the integer representing the announcement ID and specified in the Specific Announcement parameter.
Specific Announcement	INT	Specifies the announcement ID to which Service Controller translates the value specified in the General Announcement ID.

Configuring TCAP Parameters

The TCAP subtab enables you to set up parameters of the IM TCAP layer.

Table 3–15 describes configuration parameters on the TCAP subtab.

Table 3–15 TCAP Parameter

Name	Type	Description
Class4 Default Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations. Default value: 10000
Reject Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.

Table 3–15 (Cont.) TCAP Parameter

Name	Type	Description
Application Part Guard Timer	INT	Specifies the PSM timer, which is a timer for incoming operations. The PSM timer defines the maximum time in seconds that the application (TC-User) has to respond to incoming INVOKE messages.
Activate Invoke Alarm in Application Layer	BOOL	When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ True ■ False Default value: False.
Result Split Length	INT	Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-SCF. For more information about configuring monitoring, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

4

Setting Up IM-SCF CAP Phase 4

This chapter describes how to set up an IM-SCF CAP Phase 4 interworking module.

About IM-SCF CAP Phase 4 Setup

The process of IM-SCF CAP phase 4 setup requires the following:

1. Adding an IM-SCF CAP phase 4 to your Oracle Communications Service Controller deployment. You can add as many modules of type IM-SCF CAP as you need. See "Adding an IM-SCF CAP Phase 4 to the Service Controller Deployment" for more information.
2. Configuring the IM-SCF CAP phase 4. See "Configuring an IM-SCF CAP Phase 4" for more information.

Adding an IM-SCF CAP Phase 4 to the Service Controller Deployment

To add an IM-SCF CAP phase 4:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMSCFCAP4**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-SCF CAP phase 4 to your deployment, in the **Change Center** pane, click **Commit**.

A new module of type IM-SCF CAP phase 4 is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an IM-SCF CAP Phase 4

To configure an IM-SCF CAP Phase 4:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added IM-SCF CAP phase 4.

   The IM-SCF CAP phase 4 configuration pane contains the subtabs described in Table 4–1.

Table 4–1 IM-SCF CAP Phase 4 Configuration Subtabs

Subtab	Description
General	Enables you to specify general parameters for an Interworking Module instance. See "Configuring General Parameters" for more information.
Call Handling	Enables you to define the way that IM-SCF handles calls. See "Configuring Call Handling Parameters" for more information.
IN Triggering	Enables you to define the IN triggers that the IM-SCF arms in the underlying session control entity. See "Configuring IN Triggering Parameters" for more information.
Charging Service	Enables you to define how IM-SCF sends credit reservation requests and specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC. See "Charging Services" for more information.
Media Resources	Enables you to set up the media resources that Service Controller uses to play announcements. See "Configuring Media Resources Parameters" for more information.
TCAP	Enables you to set up the TCAP layer of the IM-SCF. See "Configuring TCAP Parameters" for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See "Configuring Monitoring Parameters" for more information.

Configuring General Parameters

The General subtab enables you to set the CAP phase 4 variant appropriate for your network and to specify an alias for an Interworking Module instance.

Table 4–2 describes the configuration parameters on the General subtab.

Table 4–2 General Parameter

Name	Type	Description
Alias	STRING	Specifies an alias of the IM instance. Using this alias, the SS7 SSU recognizes the instances of the IMs to which incoming messages should be routed. For more information on how the SS7 SSU uses aliases and how to configure incoming routing in the SS7 SSU, see the discussion on configuring the SS7 Signaling Server Unit for SIGTRAN in *Service Controller Signaling Server Units Configuration Guide*.
Plugin	STRING	Specifies the CAP phase 4 variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode and decode SS7 messages. There are two CAP phase 4 variants: ■ cap4.rel6_5_0.AutoGeneratedOssCap4Plugin ■ cap4.rel7_5_0.AutoGeneratedOssCap4Plugin You can manually type the version appropriate to your network requirements in the Plugin text field.

Configuring Call Handling Parameters

The Call Handling subtab enables you to define how IM-SCF handles calls.

Table 4–3 describes configuration parameters on the Call Handling subtab.

Table 4–3 IM-SCF CAP Phase 4 Call Handling Parameters

Name	Type	Description
OE Reaction Interval in Seconds	INT	Specifies the time period in seconds during which the IM-SCF waits for the OE to respond to SAL messages. When this timer expires, IM-SCF decides how to handle existing session (Continue or Release) according to the configuration settings. Default value: 100
Body Encoding Format	STRING	Specifies the method that the IM-SCF uses to encode IN parameters in the body of a SAL message. Possible options: ■ BER ■ XER ■ None Default value: None In an IN mediation solution, when IM-SCF is coupled with IM-SSF, this parameter must be set to XER.
RRBCSM Accumulation Mode	BOOL	Specifies whether or not IM-SCF arms DPs using a single or multiple RRBCSM requests. Possible values: ■ True ■ False

Table 4–3 (Cont.) IM-SCF CAP Phase 4 Call Handling Parameters

Name	Type	Description
Activity Test Interval in Seconds	INT	Specifies the time interval in seconds between two invocations of ActivityTest operation. This operation is used to check whether or not the call exists. Default value: 0, which means that the ActivityTest is not sent
Wait for Assist Request Instructions after Establish Temporary Connection	INT	Specifies the time period in seconds during which the IM-SCF waits for ARI operation, following a ETC operation to the switch. Default value: 10
Wait for AssistRequestInstructions after EstablishTemporaryConnection	BOOL	Specifies whether or not IM-SCF expects a ARI operation, following an ETC operation to the switch. Possible values: ■ True ■ False
Reset Timer Interval in Seconds	INT	Specifies the time period, in seconds, from receiving IN operation and till invoking the ResetTimer operation towards the SSF. Default value: 10
UI Reset Timer Interval in Seconds	INT	Specifies the time period, in seconds, from receiving IN operation and till invoking the ResetTimer operation towards the SSF in a User Interaction mode. Default value: 900
gsmSCFAddress	STRING	Specifies a gsmSCFAddress to be set in an EstablishTemporaryConnection (ETC) and InitiateCallAttempt (ICA) operations. gsmSCFAddress represents the address of IM-SCF that initiates the ETC operation. gsmSCFAddress consists of the following: ■ Address indicator (one octet), including NatureOfAddress ■ Address digits For more information about the format of gsmSCFAddress, see 3GPP 29.002.
Wait for Apply Charging Report or Call Information	INT	Specifies the time period in seconds during which the IM-SCF waits for an ACR or CIR operation.

Configuring IN Triggering Parameters

The IN Triggering subtab enables you to define IN triggers that the IM-SCF arms in the underlying session control entity and specify additional parameters.

The IN Triggering subtab contains the subtabs described in Table 4–4.

Table 4–4 IN Triggering Subtabs

Subtab	Description
O-BCSM	Enables you to configure how the IM-SCF arms DPs on the call origination side. See "Configuring DPs on the Call Origination Side" for more information.
T-BCSM	Enables you to configure how the IM-SCF arms DPs on the call termination side. See "Configuring DPs on the Call Termination Side" for more information.
InitiateCallAttempt	Enables you to configure how DPs that the IM-SCF arms upon receiving the InitiateCallAttempt message. See "Configuring DPs for Initial Call Attempt Message" for more information.
O-SMS	Enables you to configure how the IM-SCF arms DPs on the SMS origination side. See "Configuring DPs on the SMS Origination Side" for more information.
T-SMS	Enables you to configure how the IM-SCF arms DPs on the SMS termination side. See "Configuring DPs on the SMS Termination Side" for more information.

Configuring DPs on the Call Origination Side

The O-BCSM subtab enables you to configure how the IM-SCF arms DPs on the call origination side.

Table 4–5 describes configuration parameters on the O-BCSM subtab.

Table 4–5 O-BCSM DPs

Name	Type	Description
RouteSelectFailure	STRING	Specifies how the IM-SCF arms RouteSelectFailure. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED

Table 4–5 (Cont.) O-BCSM DPs

Name	Type	Description
OCalledPartyBusy	STRING	Specifies how the IM-SCF arms oCalledPartyBusy. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
ONoAnswer	STRING	Specifies how the IM-SCF arms oNoAnswer. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
OTermSeized	STRING	Specifies how the IM-SCF arms oTermSeized. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: NOTIFY_AND_CONTINUE

Table 4–5 (Cont.) O-BCSM DPs

Name	Type	Description
OAnswer	STRING	Specifies how the IM-SCF arms oAnswer. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
ODisconnect	STRING	Specifies how the IM-SCF arms oDisconnect. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
OAbandon	STRING	Specifies how the IM-SCF arms oAbandon. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
ODisconnect Leg	STRING	Specifies a leg on which the oDisconnect DP is armed. Possible values: ■ 1 ■ 2 ■ 1,2 Default value: 1,2

Configuring DPs on the Call Termination Side

The T-BCSM subtab enables you to configure how the IM-SCF arms DPs on the call termination side.

Table 4–6 describes configuration parameters on the T-BCSM subtab.

Table 4–6 T-BCSM DPs

Name	Type	Description
TBusy	STRING	Specifies how the IM-SCF arms tBusy. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
TNoAnswer	STRING	Specifies how the IM-SCF arms tNoAnswer. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
CallAccepted	STRING	Specifies how the IM-SCF arms CallAccepted. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: NOTIFY_AND_CONTINUE

Table 4–6 (Cont.) T-BCSM DPs

Name	Type	Description
TAnswer	STRING	Specifies how the IM-SCF arms tAnswer. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
TDisconnect	STRING	Specifies how the IM-SCF arms tDisconnect. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
TAbandon	STRING	Specifies how the IM-SCF arms tAbandon. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
TDisconnect Leg	STRING	Specifies a leg on which the tDisconnect DP is armed. Possible values: ■ 1 ■ 2 ■ 1,2 Default value: 1,2

Configuring DPs for Initial Call Attempt Message

The Initiate Call Attempt subtab enables you to configure how DPs that the IM-SCF arms upon receiving the InitiateCallAttempt message.

Table 4–7 describes configuration parameters on the Initiate Call Attempt subtab.

Table 4–7 Initial Call Attempt DPs

Name	Type	Description
RouteSelectFailure	STRING	Specifies how the IM-SCF arms RouteSelectFailure. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
OCalledPartyBusy	STRING	Specifies how the IM-SCF arms oCalledPartyBusy. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
ONoAnswer	STRING	Specifies how the IM-SCF arms oNoAnswer. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED

Table 4–7 (Cont.) Initial Call Attempt DPs

Name	Type	Description
OTermSeized	STRING	Specifies how the IM-SCF arms oTermSeized. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: NOTIFY_AND_CONTINUE
OAnswer	STRING	Specifies how the IM-SCF arms oAnswer. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
ODisconnect	STRING	Specifies how the IM-SCF arms ODisconnect. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED

Configuring DPs on the SMS Origination Side

The O-SMS subtab enables you to configure how the IM-SCF arms DPs on the SMS origination side.

Table 4–8 describes configuration parameters on the O-SMS subtab.

Table 4–8 O-SMS DPs

Name	Type	Description
OSmsSubmission	STRING	Specifies how the IM-SCF arms oSmsSubmission. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
OSmsFailure	STRING	Specifies how the IM-SCF arms oSmsFailure. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED

Configuring DPs on the SMS Termination Side

The O-SMS subtab enables you to configure how the IM-SCF arms DPs on the SMS termination side.

Table 4–9 describes configuration parameters on the T-SMS subtab.

Table 4–9 T-SMS DPs

Name	Type	Description
TSmsSubmission	STRING	Specifies how the IM-SCF arms tSmsSubmission. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED

Table 4–9 (Cont.) T-SMS DPs

Name	Type	Description
TSmsFailure	STRING	Specifies how the IM-SCF arms tSmsFailure. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED

Charging Services

You can configure IM-SCF to monitor session duration and charge sessions. IM-SCF provides the following capabilities:

- Credit reservation requests generation

  IM-SCF sends these requests to IM-OCF through the OE. IM-OCF translates credit reservation requests to Diameter CCRs, which are then forwarded to a billing application.

- Session monitoring and charging

  You can specify whether a session is monitored by IM-SCF or by an MSC. In the former case, IM-SCF generates an ApplyCharging message based on the Granted-Service-Unit AVP of the CCA received from a billing application. IM-SCF sends this ApplyCharging message to an MSC. Then the MSC applies charging. If the session is monitored by IM-SCF, IM-SCF applies charging on its own.

- Quota reauthorization

  You can specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC.

To set up IM-SCF charging services, you use the Charging Services tab. This tab contains the subtabs described in Table 4–10.

Table 4–10 Charging Services Subtabs

Subtab	Description
General	Enables you to specify how IM-SCF sets up and sends credit reservation requests to the OE. See "General" for more information.
Reauthorization Triggers	Enables you to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC. See "Reauthorization Triggers" for more information.

General

The General subtab enables you to specify how IM-SCF sets up and sends credit reservation requests to the OE. The OE forwards these requests to application-facing IMs as defined in the orchestration logic.

Table 4–11 describes the configuration parameters that you need to specify for credit reservation requests.

Table 4–11 General Parameters

Name	Type	Description
Service Monitoring	STRING	Specifies the component that monitors session duration. Possible values: ■ Internal IM-SCF monitors session duration. ■ External MSC monitors session duration. ■ None Session duration is not monitored. Default value: None
Tccd Timeout	INT	Specifies the maximum time, in seconds, that IM-SCF waits for a credit reservation response after sending a credit reservation request. If the timeout expires, IM-SCF releases the call. To disable the timeout timer, enter a negative value.
First Credit Reservation Request	STRING	Specifies when IM-OCF sends the first CCR to a billing application. This request is generated by IM-SCF and sent to IM-OCF through the OE. Possible values: ■ ON_INITIAL_EVENT IM-OCF sends a request after an MSC sends the first session setup message. ■ ON_RINGBACK IM-OCF sends a request after an MSC sends a ringing indication. ■ ON_ANSWER IM-OCF sends a request after an MSC sends an answer indication. ■ NEVER Default value: ON_INITIAL_EVENT

Table 4–11 (Cont.) General Parameters

Name	Type	Description
First Credit Granted Notification	STRING	When the Service Monitoring parameter is set to "External" and session duration is monitored by an MSC, the First Credit Granted Notification parameter specifies when IM-SCF sends an ApplyCharging message to the MSC. Possible values: ■ ON_INITIAL_EVENT IM-SCF sends an ApplyCharging message after an MSC sends the first session setup message. ■ ON_ANSWER IM-SCF sends an ApplyCharging message after an MSC sends an answer indication. In this case, the answer event must be armed as EDP-R. Default value: ON_INITIAL_EVENT
Start Charging Phase	STRING	Specifies when IM-SCF starts charging a session. Possible values: ■ ON_INITIAL_EVENT IM-SCF starts charging after an MSC sends the first session setup message. ■ ON_RINGBACK IM-SCF starts charging after an MSC sends a ringing indication. ■ ON_ANSWER IM-SCF starts charging after an MSC sends an answer indication. Default value: ON_ANSWER
Requested Duration	INT	Specifies the value to which IM-OCF needs to set the CC-time AVP in a CCR sent to a billing application.
Requested Volume	INT	Specifies the value to which IM-OCF needs to set the CC-Total-Octets AVP in a CCR sent to a billing application.
Requested Service Units	INT	Specifies the value to which IM-OCF needs to set the CC-Service-Specific-Units AVP in a CCR sent to a billing application.
Service Identifier	INT	Specifies the value to which IM-OCF needs to set the Service-Identifier AVP in a CCR sent to a billing application.

Reauthorization Triggers

The Reauthorization Triggers subtab enables you to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC.

Table 4–12 describes configuration parameters on the Reauthorization Triggers subtab.

Table 4–12 Reauthorization Triggers Parameters

Name	Type	Description
Name	STRING	A unique identifier for the trigger.

Table 4–12 (Cont.) Reauthorization Triggers Parameters

Name	Type	Description
Trigger Type	STRING	Specifies the trigger for reauthorization of granted quota. Possible values: ■ ALERTED ■ CONNECTED ■ INFO_RECEIVED ■ REINVITED ■ REINVITED_OK ■ UPDATED ■ UPDATED_OK
Mode	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Updated trigger. ■ YES IM-SCF always reauthorizes the quota. ■ DYNAMIC IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ NO IM-SCF never reauthorizes the quota. Default value: DYNAMIC

Table 4–13 describes the preconfigured triggers on the Reauthorization Triggers subtab.

Table 4–13 Reauthorization Triggers Parameters

Name	Type	Description
Info Received	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Info Received trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic

Table 4–13 (Cont.) Reauthorization Triggers Parameters

Name	Type	Description
Session Alerted	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Alerted trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session Connected	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Connected trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session ReInvite Complete	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session ReInvite Complete trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic

Table 4–13 (Cont.) Reauthorization Triggers Parameters

Name	Type	Description
Session Reinvited	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Reinvited trigger. ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session Update Complete	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Update Complete trigger. ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session Updated	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Updated trigger. ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic

Configuring Media Resources Parameters

Using the Media Resources tab, you configure media resources that Service Controller uses to play announcements. In addition, you define how Service Controller translates the string URL of the announcement received from an application to an integer required by an SS7 MRF.

The Media Resources tab contains the subtabs described in Table 4–14.

Table 4–14 Media Resources Subtabs

Subtab	Description
General	Enables you to configure media resources that IM-SCF uses to play announcements. See "General" for more information.
Announcements	Enables you to configure how the IM-SCF translates announcement URLs to announcement IDs. See "Announcements" for more information.

General

Table 4–15 describes the parameters that define MRFs that the IM-SCF uses to play announcements.

Table 4–15 MRF Parameters

Name	Type	Description
Name	STRING	Specifies a name of the media resource.
Alias	STRING	Specifies a unique identifier that applications use to instruct Service Controller which media resource to connect in order to play announcements. The alias has the format of a SIP URI: sip: name1.name2@domain_name. For example: sip:ocsb.mrf@processing_domain1. If a name contains numbers, you can specify a generic alias that fits a range of aliases by using the question mark character (?) as a wildcard character. A question mark can be substituted by any number. For example, if you set the Alias parameter to mrf.1234????@oracle, this alias fits any alias in the range from mrf.12340000@oracle to mrf.12349999@ oracle.
Address Digits	STRING	Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource. To use a pre-defined media resource to play announcements, set: ■ **Address Digits** to **none** ■ **Operation Type** to **internal** In this case, Service Controller ignores the following parameters: ■ **Nature of Address** ■ **Address Numbering Plan Indicator** ■ **Numbering Qualifier** ■ **Number Screening** ■ **Presentation Restriction**

Table 4–15 (Cont.) MRF Parameters

Name	Type	Description
Nature of Address	STRING	Specifies the NatureOfAddress part of the media resource address. The media resource address is used to set up a connection towards the media resource. Possible values: ■ SUBSCRIBER_NUMBER ■ UNKNOWN ■ NATIONAL ■ INTERNATIONAL ■ NETWORK-SPECIFIC Default value: SUBSCRIBER_NUMBER
Address Numbering Plan Indicator	STRING	Specifies the NumberingPlanInd part of the media resource address. The media resource address is used to set up a connection towards the media resource. Possible values: ■ ISDN ■ DATA ■ TELEX Default value: ISDN
Numbering Qualifier	STRING	Specifies the numbering qualifier of the media resource address. Possible values: ■ NONE ■ DIALLED_DIGITS ■ USER_PROVIDED_FAILED_NETWORK_SCREENING ■ USER_PROVIDED_NOT_SCREENED ■ REDIRECTING_TERMINATING_NUMBER Default value: NONE
Number Screening	STRING	Specifies the numbering screening of the media resource address. Possible values: ■ UNDEFINED ■ USER_PROVIDED_NOT_VERIFIED ■ USER_PROVIDED_VERIFIED_PASSED ■ USER_PROVIDED_VERIFIED_FAILED ■ NETWORK_PROVIDED Default value: UNDEFINED

Table 4–15 (Cont.) MRF Parameters

Name	Type	Description
Presentation Restriction	STRING	Specifies the presentation restriction of the media resource address. Possible values: ■ UNDEFINED ■ ALLOWED ■ RESTRICTED ■ NOT_AVAILABLE Default value: UNDEFINED
Operation Type	STRING	Possible values: ■ internal: The media resource is internal part of the SSP. ConnectToResource (CTR) operation is used to connect the media resource. ■ external: The media resource not a part of the SSP. EstablishTemporaryConnection (ETC) is used to connect the media resource. Default value: internal
Answer Indication	BOOL	Specifies how to set the ServiceInteractionIndicatorTwo.bothway ThroughConnectionInd parameter in ETC and CTR operations in order to specify whether IM-SCF needs to request opening of the voice channel in both directions or in one direction only. Possible values: ■ Yes ServiceInteractionIndicatorTwo. bothwayThroughConnectionInd is set to bothwayPathRequired ■ No ServiceInteractionIndicatorTwo. bothwayThroughConnectionInd is set to bothwayPathNotRequired ■ None bothwayThroughConnectionInd is omitted

Note: When an internal media resource is used (CTR), the Address Digits, Nature of Address and Address Numbering Plan Indicator parameters can be set to 'None' in order to instruct the network's session control entity to connect its pre-configured media resource.

Announcements

An application can request Service Controller to play an announcement by sending to Service Controller a SIP INFO message that contains an MSCML representation of a PlayAnnouncement operation. This message contains the URL of the announcement to be played. Because an SS7 MRF requires an integer to identify the announcement

rather than a string value, Service Controller translates the URL to an announcement ID before sending a request to the MRF.

Using the Announcements subtab, you define to which announcement ID Service Controller translates each URL as described in Table 4–16.

Table 4–16 Announcement URLs to Announcement IDs Translation Parameters

Name	Type	Description
Name	STRING	Specifies the name of the announcement.
MRF Alias	STRING	Specifies the alias of the MRF for which Service Controller translates the URL specified in the General Announcement ID parameter to the ID defined in the Specific Announcement parameter. The alias has the format of a SIP URI: sip: name1.name2@domain_name. For example: sip:ocsb.mrf@processing_domain1. If a name contains numbers, you can specify a generic alias that fits a range of aliases by using the question mark character (?) as a wildcard character. A question mark can be substituted by any number. For example, if you set the Alias parameter to mrf.1234????@oracle, this alias fits any alias in the range from mrf.12340000@oracle to mrf.12349999@ oracle. You define parameters of the MRF in the **General** subtab of the **Media Resources** tab.
General Announcement ID	STRING	Specifies the URL of the announcement that Service Controller translates to the integer representing the announcement ID and specified in the Specific Announcement parameter.
Specific Announcement	INT	Specifies the announcement ID to which Service Controller translates the value specified in the General Announcement ID.

Configuring TCAP Parameters

The TCAP subtab enables you to set up parameters of the IM TCAP layer.

Table 4–17 describes configuration parameters on the TCAP subtab.

Table 4–17 TCAP Parameter

Name	Type	Description
Class4 Default Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations. Default value: 10000
Reject Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.

Table 4–17 (Cont.) TCAP Parameter

Name	Type	Description
Application Part Guard Timer	INT	Specifies the PSM timer, which is a timer for incoming operations. The PSM timer defines the maximum time in seconds that the application (TC-User) has to respond to incoming INVOKE messages.
Activate Invoke Alarm in Application Layer	BOOL	When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ True ■ False Default value: False.
Result Split Length	INT	Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-SCF. For more information about configuring monitoring, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

5

Setting Up IM-SCF INAP CS-1

This chapter describes how to set up an IM-SCF INAP CS-1 interworking module.

About IM-SCF INAP CS-1 Setup

The process of IM-SCF INAP CS-1 setup requires the following:

1. Adding an IM-SCF INAP CS-1 to your Oracle Communications Service Controller deployment. You can add as many modules of type IM-SCF INAP CS-1 as you need. See "Adding an IM-SCF INAP CS-1 to the Service Controller Deployment" for more information.
2. Configuring the IM-SCF INAP CS-1. See "Configuring an IM-SCF INAP CS-1" for more information.

Adding an IM-SCF INAP CS-1 to the Service Controller Deployment

To add an IM-SCF INAP CS-1:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMSCFCS1**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-SCF INAP CS-1 to your deployment, in the **Change Center** pane, click **Commit**.

A new module of type IM-SCF INAP CS-1 is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an IM-SCF INAP CS-1

To configure an IM-SCF INAP CS-1:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added IM-SCF INAP CS-1.

   The IM-SCF INAP CS-1 configuration pane contains the subtabs described in Table 5–1.

Table 5–1 IM-SCF INAP CS-1 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See "Configuring General Parameters" for more information.
Call Handling	Enables you to define the way that IM-SCF handles calls. See "Configuring Call Handling Parameters" for more information.
IN Triggering	Enables you to define the IN triggers that the IM-SCF arms in the underlying session control entity. See "Configuring IN Triggering Parameters" for more information.
Media Resources	Enables you to set up the media resources that Service Controller uses to play announcements. See "Configuring Media Resources Parameters" for more information.
TCAP	Enables you to set up the TCAP layer of the IM-SCF. See "Configuring TCAP Parameters" for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See "Configuring Monitoring Parameters" for more information.

Configuring General Parameters

The General subtab displays the protocol variant that is used to encode / decode SS7 messages and enables you to specify an alias for an Interworking Module instance.

Table 5–2 describes the configuration parameters on the General subtab.

Table 5–2 General Parameter

Name	Type	Description
Alias	STRING	Specifies an alias of the IM instance. Using this alias, the SS7 SSU recognizes the instances of the IMs to which incoming messages should be routed. For more information on how the SS7 SSU uses aliases and how to configure incoming routing in the SS7 SSU, see the discussion on configuring the SS7 Signaling Server Unit for SIGTRAN in *Service Controller Signaling Server Units Configuration Guide*.
Plugin	STRING	Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode / decode SS7 messages.

Configuring Call Handling Parameters

The Call Handling subtab enables you to define how IM-SCF handles calls.

Table 5–3 describes configuration parameters on the Call Handling subtab.

Table 5–3 IM-SCF INAP CS-1 Call Handling Parameters

Name	Type	Description
OE Reaction Interval in Seconds	INT	Specifies the time period in seconds during which the IM-SCF waits for the OE to respond to SAL messages. When this timer expires, IM-SCF decides how to handle existing session (Continue or Release) according to the configuration settings. Default value: 100
Body Encoding Format	STRING	Specifies the method that the IM-SCF uses to encode IN parameters in the body of a SAL message. Possible options: ■ BER ■ XER ■ None Default value: None In an IN mediation solution, when IM-SCF is coupled with IM-SSF, this parameter must be set to XER.
RRBCSM Accumulation Mode	BOOL	Specifies whether or not IM-SCF arms DPs using a single or multiple RRBCSM requests. Possible values: ■ True ■ False
Activity Test Interval in Seconds	INT	Specifies the time interval in seconds between two invocations of ActivityTest operation. This operation is used to check whether or not the call exists. Default value: 0, which means that the ActivityTest is not sent

Table 5–3 (Cont.) IM-SCF INAP CS-1 Call Handling Parameters

Name	Type	Description
Wait for Assist Request Instructions after Establish Temporary Connection	INT	Specifies the time period in seconds during which the IM-SCF waits for ARI operation, following a ETC operation to the switch. Default value: 10
Wait for AssistRequestInstructions after EstablishTemporaryConnection	BOOL	Specifies whether or not IM-SCF expects a ARI operation, following an ETC operation to the switch. Possible values: ■ True ■ False
Reset Timer Interval in Seconds	INT	Specifies the time period, in seconds, from receiving IN operation and till invoking the ResetTimer operation towards the SSF. Default value: 10000
UI Reset Timer Interval in Seconds	INT	Specifies the time period, in seconds, from receiving IN operation and till invoking the ResetTimer operation towards the SSF in a User Interaction mode. Default value: 10000
gsmSCFAddress	STRING	Specifies gsmSCFAddress to be set in an EstablishTemporaryConnection (ETC) operation. gsmSCFAddress represents the address of IM-SCF that initiates the ETC operation. gsmSCFAddress consists of the following: ■ Address indicator (one octet), including NatureOfAddress ■ Address digits For more information about the format of gsmSCFAddress, see 3GPP 29.002.
Wait for Apply Charging Report or Call Information	INT	Specifies the time period in seconds during which the IM-SCF waits for an ACR or CIR operation.

Configuring IN Triggering Parameters

The IN Triggering subtab enables you to define IN triggers that the IM-SCF arms in the underlying session control entity and specify additional parameters.

The IN Triggering subtab contains the subtabs described in Table 5–4.

Table 5–4 IM-SCF INAP CS1 Triggering Subtabs

Subtab	Description
O-BCSM	Enables you to configure how the IM-SCF arms DPs on the call origination side. See "Configuring DPs on the Call Origination Side" for more information.

Table 5–4 (Cont.) IM-SCF INAP CS1 Triggering Subtabs

Subtab	Description
T-BCSM	Enables you to configure how the IM-SCF arms DPs on the call termination side. See "Configuring DPs on the Call Termination Side" for more information.
Initial Call Attempt	Enables you to configure how DPs that the IM-SCF arms upon receiving the InitiateCallAttempt message. See "Configuring DPs for Initial Call Attempt Message" for more information.

Configuring DPs on the Call Origination Side

The O-BCSM subtab enables you to configure how the IM-SCF arms DPs on the call origination side.

Table 5–5 describes configuration parameters on the O-BCSM subtab.

Table 5–5 O-BCSM DPs

Name	Type	Description
RouteSelectFailure	STRING	Specifies how the IM-SCF arms RouteSelectFailure. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
OCalledPartyBusy	STRING	Specifies how the IM-SCF arms oCalledPartyBusy. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED

Table 5–5 (Cont.) O-BCSM DPs

Name	Type	Description
ONoAnswer	STRING	Specifies how the IM-SCF arms oNoAnswer. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
OAnswer	STRING	Specifies how the IM-SCF arms oAnswer. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
ODisconnect	STRING	Specifies how the IM-SCF arms oDisconnect. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED

Table 5–5 (Cont.) O-BCSM DPs

Name	Type	Description
OAbandon	STRING	Specifies how the IM-SCF arms oAbandon. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
ODisconnect Leg	STRING	Specifies a leg on which the oDisconnect DP is armed. Possible values: ■ 1 ■ 2 ■ 1,2 Default value: 1,2

Configuring DPs on the Call Termination Side

The T-BCSM subtab enables you to configure how the IM-SCF arms DPs on the call termination side.

Table 5–6 describes configuration parameters on the T-BCSM subtab.

Table 5–6 T-BCSM DPs

Name	Type	Description
TBusy	STRING	Specifies how the IM-SCF arms tBusy. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED

Table 5–6 (Cont.) T-BCSM DPs

Name	Type	Description
TNoAnswer	STRING	Specifies how the IM-SCF arms tNoAnswer. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
TAnswer	STRING	Specifies how the IM-SCF arms tAnswer. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
TDisconnect	STRING	Specifies how the IM-SCF arms tDisconnect. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED

Table 5–6 (Cont.) T-BCSM DPs

Name	Type	Description
TAbandon	STRING	Specifies how the IM-SCF arms tAbandon. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
TDisconnect Leg	STRING	Specifies a leg on which the tDisconnect DP is armed. Possible values: ■ 1 ■ 2 ■ 1,2 Default value: 1,2

Configuring DPs for Initial Call Attempt Message

The Initiate Call Attempt subtab enables you to configure how DPs that the IM-SCF arms upon receiving the InitiateCallAttempt message.

Table 5–7 describes configuration parameters on the Initiate Call Attempt subtab.

Table 5–7 Initial Call Attempt DPs

Name	Type	Description
RouteSelectFailure	STRING	Specifies how the IM-SCF arms RouteSelectFailure. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED

Table 5–7 (Cont.) Initial Call Attempt DPs

Name	Type	Description
OCalledPartyBusy	STRING	Specifies how the IM-SCF arms oCalledPartyBusy. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
ONoAnswer	STRING	Specifies how the IM-SCF arms oNoAnswer. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED
OAnswer	STRING	Specifies how the IM-SCF arms oAnswer. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED

Table 5–7 (Cont.) Initial Call Attempt DPs

Name	Type	Description
ODisconnect	STRING	Specifies how the IM-SCF arms ODisconnect. Possible values: ■ INTERRUPTED The IM-SCF arms a DP as EDP-R. ■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N ■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT ■ NOT_APPLICABLE The IM-SCF does not arm a DP Default value: INTERRUPTED

Configuring Media Resources Parameters

The Media Resources subtab enables you to define the media resources that the SSP can connect in order to play announcements.

The table in the Media Resources subtab displays the media resources that are used to play announcements. Each row represents one media resource. When defining a new media resource, you need to specify the fields described in Table 5–8.

Table 5–8 IM-SCF INAP CS-1 Media Resource Definition Fields

Name	Type	Description
Name	STRING	Specifies a name of the media resource
Alias	STRING	Specifies a unique identifier that applications use to instruct Service Controller which media resource to connect in order to play announcements. Aliases are defined in a URI format. For example: mrf.network@domain.com.
Address Digits	STRING	Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource. **Note:** when this parameter is not set, the network's session control entity uses a pre-configured media resource to play announcements. In this case, Nature of Address and Address Numbering Plan Indicator should be set to 'None'.

Table 5–8 (Cont.) IM-SCF INAP CS-1 Media Resource Definition Fields

Name	Type	Description
Nature of Address	STRING	Specifies the NatureOfAddress part of the media resource address. The media resource address is used to set up a connection towards the media resource. Possible values: ■ SUBSCRIBER_NUMBER ■ UNKNOWN ■ NATIONAL ■ INTERNATIONAL ■ NETWORK_SPECIFIC Default value: SUBSCRIBER_NUMBER
Address Numbering Plan Indicator	STRING	Specifies the NumberingPlanInd part of the media resource address. The media resource address is used to set up a connection towards the media resource. Possible values: ■ ISDN ■ DATA ■ TELEX Default value: ISDN
Operation Type	STRING	Possible values: ■ internal: The media resource is internal part of the SSP. ConnectToResource (CTR) operation is used to connect the media resource. ■ external: The media resource not a part of the SSP. EstablishTemporaryConnection (ETC) is used to connect the media resource. Default value: internal
Service Interaction Indicators	STRING	Specifies the ServiceInteractionIndicators parameter in the ConnectToResource operation. Provide the value of the Service Interaction Indicators parameter as a hex string. For example, a two octet long string is represented as 03A5. If you leave this parameter empty or set it to "none", IM-SCF does not add ServiceInteractionIndicators to ConnectToResource.

Note: When an internal media resource is used (CTR), the Address Digits, Nature of Address and Address Numbering Plan Indicator parameters can be set to 'None' in order to instruct the network's session control entity to connect its pre-configured media resource.

Configuring TCAP Parameters

The TCAP subtab enables you to set up parameters of the IM TCAP layer.

Table 5–9 describes configuration parameters on the TCAP subtab.

Table 5–9 TCAP Parameter

Name	Type	Description
Class4 Default Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations. Default value: 10000
Reject Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.
Application Part Guard Timer	INT	Specifies the PSM timer, which is a timer for incoming operations. The PSM timer defines the maximum time in seconds that the application (TC-User) has to respond to incoming INVOKE messages.
Activate Invoke Alarm in Application Layer	BOOL	When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ True ■ False Default value: False.
Result Split Length	INT	Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-SCF. For more information about configuring monitoring, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

6

Setting Up IM-SCF WIN Phase 1

This chapter describes how to set up an IM-SCF WIN Phase 1 interworking module.

About IM-SCF WIN Phase 1 Setup

The process of IM-SCF WIN Phase 1 setup requires the following:

1. Adding an IM-SCF WIN Phase 1 to your Oracle Communications Service Controller deployment. You can add as many modules of type IM-SCF WIN Phase 1 as you need. See "Adding an IM-SCF WIN Phase 1 to the Service Controller Deployment" for more information.
2. Configuring the IM-SCF WIN Phase 1. See "Configuring an IM-SCF WIN Phase 1" for more information.

Adding an IM-SCF WIN Phase 1 to the Service Controller Deployment

To add an IM-SCF WIN phase 1:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMSCFWIN1**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-SCF WIN phase 1 to your deployment, in the **Change Center** pane, click **Commit**.

A new module of type IM-SCF WIN phase 1 is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an IM-SCF WIN Phase 1

To configure an IM-SCF WIN phase 1:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added IM-SCF WIN phase 1.

   The IM-SCF WIN phase 1 configuration pane contains the subtabs described in Table 6–1.

Table 6–1 IM-SCF WIN Phase 1 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See "Configuring General Parameters" for more information.
Call Handling	Enables you to define the way that IM-SCF handles calls. For more information, see "Configuring Call Handling Parameters".
Media Resources	Enables you to set up the media resources that Service Controller uses to play announcements. For more information, see "Configuring Media Resources Parameters".
TCAP	Enables you to set up the TCAP layer of the IM-SCF. For more information, see "Configuring TCAP Parameters".
Monitoring	Enables you to define how Runtime MBeans and notifications operate. For more information, see "Configuring Monitoring Parameters".

Configuring General Parameters

The General subtab displays the protocol variant that is used to encode / decode SS7 messages and enables you to specify an alias for an Interworking Module instance.

Table 6–2 describes the configuration parameters on the General subtab.

Table 6–2 General Parameters

Name	Type	Description
Alias	STRING	Specifies an alias of the IM instance. Using this alias, the SS7 SSU recognizes the instances of the IMs to which incoming messages should be routed. For more information on how the SS7 SSU uses aliases and how to configure incoming routing in the SS7 SSU, see the discussion on configuring the SS7 Signaling Server Unit for SIGTRAN in *Service Controller Signaling Server Units Configuration Guide*.
Plugin	STRING	Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode / decode SS7 messages.

Configuring Call Handling Parameters

The Call Handling subtab enables you to define how IM-SCF handles calls.

Table 6–3 describes configuration parameters on the Call Handling subtab.

Table 6–3 IM-SCF WIN Phase 1 Call Handling Parameters

Name	Type	Description
OE Reaction Interval in Seconds	INT	Specifies the time period in seconds during which the IM-SCF waits for the OE to respond to SAL messages. When this timer expires, IM-SCF decides how to handle existing session (Continue or Release) according to the configuration settings. Default value: 100
Body Encoding Format	STRING	Specifies the method that the IM-SCF uses to encode IN parameters in the body of a SAL message. Possible options: ■ BER ■ XER ■ None Default value: None In an IN mediation solution, when IM-SCF is coupled with IM-SSF, this parameter must be set to XER.
CCDIR Interval in Seconds	INT	Specifies the interval in seconds between two invocations of CCDIR operations.
CCDIR Waiting Interval	INT	Specifies the interval in seconds that IM-SCF waits for CCDIR response. The value defined in CCDIR Waiting Interval must be less than the value of CCDIR Interval in Seconds.
UI Reset Timer Interval in Seconds	INT	Specifies the value, in seconds, of the WIN REST timer. The timer is first triggered upon invocation of ConnectRersource operation. Whenever the timer expires, IM-SCF invokes the ResetTimer operation towards the MSC (reset SSFT) and triggers the timer again. Default value: 20

Configuring Media Resources Parameters

The Media Resources subtab enables you to define the media resources that the SSP can connect in order to play announcements.

The table in the Media Resources subtab displays the media resources that are used to play announcements. Each row represents one media resource. When defining a new media resource, you need to specify the fields described in Table 6–4.

Table 6–4 IM-SCF WIN Phase 1 Media Resource Definition Fields

Name	Type	Description
Name	STRING	Specifies a name of the media resource
Alias	STRING	Specifies a unique identifier that applications use to instruct IM-SCF which media resource to connect in order to play announcements. Alias is used by IM-SCF to lookup a media resource details in this table. Aliases are defined in a URI format. For example: mrf.network@domain.com.
Address Digits	STRING	Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource. Note: when this parameter is not set, the network's session control entity uses a pre-configured media resource to play announcements. In this case, Nature of Address and Address Numbering Plan Indicator should be set to 'None'.
Operation Type	STRING	Possible values: ■ Switched_Based: the media resource is internal part of the SSP. CCDIR operation is used to connect the media resource. ■ External: The media resource not a part of the SSP. ConnectResource operation is used to connect the media resource.
Resource Type	STRING	Specifies the value to set in the SpecializedResource parameter of the SEIZERES operation. Possible values: ■ UNUSED ■ DTMF_TONE_DETECTOR ■ ASR_DIGITS ■ ASR_SPEECH_USER_INTERFACE
Private Resource Type	STRING	Specifies the value to set in the PrivateSpecializedResource parameter of the SEIZERES operation
SN-IP Configuration	STRING	Possible values: ■ SN IP and SCP are co-located. When you choose this option, you need to set also the SN Address parameter. ■ IP IP and SCP are not co-located ■ None
SN Address	STRING	Specifies the value to set in the DestinationDigits parameter of the CONNRES operation. This value is regarded only when SN-IP Configuration parameter is set to SN.

Configuring TCAP Parameters

The TCAP subtab enables you to set up parameters of the IM TCAP layer.

Table 6–5 describes configuration parameters on the TCAP subtab.

Table 6–5 TCAP Parameter

Name	Type	Description
Class4 Default Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations. Default value: 10000
Reject Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.
Application Part Guard Timer	INT	Specifies the PSM timer, which is a timer for incoming operations. The PSM timer defines the maximum time in seconds that the application (TC-User) has to respond to incoming INVOKE messages.
Activate Invoke Alarm in Application Layer	BOOL	When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ True ■ False Default value: False.
Result Split Length	INT	Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-SCF. For more information about configuring monitoring, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

7

Setting Up IM-SCF WIN Phase 2

This chapter describes how to set up an IM-SCF WIN Phase 2 interworking module.

About IM-SCF WIN Phase 2 Setup

The process of IM-SCF WIN Phase 2 setup requires the following:

1. Adding an IM-SCF WIN Phase 2 to your Oracle Communications Service Controller deployment. You can add as many modules of type IM-SCF WIN Phase 2 as you need. See "Adding an IM-SCF WIN Phase 2 to the Service Controller Deployment" for more information.
2. Configuring the IM-SCF WIN Phase 1. See "Configuring an IM-SCF WIN Phase 2" for more information.

Adding an IM-SCF WIN Phase 2 to the Service Controller Deployment

To add an IM-SCF WIN phase 2:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMSCFWIN2**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-SCF WIN phase 2 to your deployment, in the **Change Center** pane, click **Commit**.

A new module of type IM-SCF WIN phase 2 is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an IM-SCF WIN Phase 2

To configure an IM-SCF WIN phase 2:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added IM-SCF WIN phase 2.

   The IM-SCF WIN phase 2 configuration pane contains the subtabs described in Table 7–1.

Table 7–1 IM-SCF WIN Phase 2 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See "Configuring General Parameters" for more information.
Call Handling	Enables you to define the way that IM-SCF handles calls. See "Configuring Call Handling Parameters" for more information.
Charging Service	Enables you to define how IM-SCF sends credit reservation requests and specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC. See "Charging Services" for more information.
Media Resources	Enables you to set up the media resources that Service Controller uses to play announcements. See "Configuring Media Resources Parameters" for more information.
TCAP	Enables you to set up the TCAP layer of the IM-SCF. See "Configuring TCAP Parameters" for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See "Configuring Monitoring Parameters" for more information.

Configuring General Parameters

The General subtab displays the protocol variant that is used to encode /decode SS7 messages and enables you to specify an alias for an Interworking Module instance.

Table 7–2 describes the configuration parameters on the General subtab.

Table 7–2 General Parameters

Name	Type	Description
Alias	STRING	Specifies an alias of the IM instance. Using this alias, the SS7 SSU recognizes the instances of the IMs to which incoming messages should be routed. For more information on how the SS7 SSU uses aliases and how to configure incoming routing in the SS7 SSU, see the discussion on configuring the SS7 Signaling Server Unit for SIGTRAN in *Service Controller Signaling Server Units Configuration Guide*.
Plugin	STRING	Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode / decode SS7 messages.

Configuring Call Handling Parameters

The Call Handling subtab enables you to define how IM-SCF handles calls.

Table 7–3 describes configuration parameters on the Call Handling subtab.

Table 7–3 IM-SCF WIN Phase 2 Call Handling Parameters

Name	Type	Description
OE Reaction Interval in Seconds	INT	Specifies the time period in seconds during which the IM-SCF waits for the OE to respond to SAL messages. When this timer expires, IM-SCF decides how to handle existing session (Continue or Release) according to the configuration settings. Default value: 100
Body Encoding Format	STRING	Specifies the method that the IM-SCF uses to encode IN parameters in the body of a SAL message. Possible options: ■ BER ■ XER ■ None Default value: None In an IN mediation solution, when IM-SCF is coupled with IM-SSF, this parameter must be set to XER.
CCDIR Interval in Seconds	INT	Specifies the interval in seconds between two invocations of CCDIR operations. Default value: 1000
CCDIR Waiting Interval	INT	Specifies the interval in seconds that IM-SCF waits for CCDIR response. Note: the value defined in CCDIR Waiting Interval must be less than the value of CCDIR Interval in Seconds. Default value: 10

Table 7–3 (Cont.) IM-SCF WIN Phase 2 Call Handling Parameters

Name	Type	Description
UI Reset Timer Interval in Seconds	INT	Specifies the value, in seconds, of the WIN REST timer. The timer is first triggered upon invocation of ConnectRersource operation. Whenever the timer expires, IM-SCF invokes the ResetTimer operation towards the MSC (reset SSFT) and triggers the timer again. Default value: 20

Charging Services

You can configure IM-SCF to monitor session duration and charge sessions. IM-SCF provides the following capabilities:

- Credit reservation requests generation

  IM-SCF sends these requests to IM-OCF through the OE. IM-OCF translates credit reservation requests to Diameter CCRs, which are then forwarded to a billing application.

- Session monitoring and charging

  IM-SCF monitors and charges a session on its own.

- Quota reauthorization

  You can specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC.

To set up IM-SCF charging services, you use the Charging Services tab. This tab contains the subtabs described in Table 7–4.

Table 7–4 Charging Services Subtabs

Subtab	Description
General	Enables you to specify how IM-SCF sets up and sends credit reservation requests to the OE. See "General" for more information.
Reauthorization Triggers	Enables you to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC. See "Reauthorization Triggers" for more information.

General

The General subtab enables you to specify how IM-SCF sets up and sends credit reservation requests to the OE. The OE forwards these requests to an IM-OCF, which translates credit reservation requests to Diameter CCRs, which are then forwarded to a billing application.

Table 7–5 describes the configuration parameters that you need to specify for credit reservation requests.

Table 7–5 General Parameters

Name	Type	Description
Service Monitoring	STRING	Specifies the component that monitors session duration. Possible values: ■ Internal IM-SCF CAP1 can monitor session duration internally only. IM-SCF CAP1 cannot delegate service monitoring to an MSC. ■ None Session duration is not monitored. Default value: None
Tccd Timeout	INT	Specifies the maximum time, in seconds, that IM-SCF waits for a credit reservation response after sending a credit reservation request. If the timeout expires, IM-SCF releases the call. To disable the timeout timer, enter a negative value.
First Credit Reservation Request	STRING	Specifies when IM-OCF sends the first CCR to a billing application. This request is generated by IM-SCF and sent to IM-OCF through the OE. Possible values: ■ ON_INITIAL_EVENT IM-OCF sends a request after an MSC sends the first session setup message. ■ ON_RINGBACK IM-OCF sends a request after an MSC sends a ringing indication. ■ ON_ANSWER IM-OCF sends a request after an MSC sends an answer indication. ■ NEVER Default value: ON_INITIAL_EVENT
First Credit Granted Notification	STRING	Specifies when IM-OCF sends the first credit granted notification to a billing application. This request is generated by IM-SCF and sent to IM-OCF through the OE. Possible values: ■ ON_INITIAL_EVENT IM-OCF sends a request after an MSC sends the first session setup message. ■ ON_ANSWER IM-OCF sends a request after an MSC sends an answer indication. Default value: ON_INITIAL_EVENT

Table 7–5 (Cont.) General Parameters

Name	Type	Description
Start Charging Phase	STRING	Specifies when IM-SCF starts charging a session. Possible values: ■ ON_INITIAL_EVENT IM-SCF starts charging after an MSC sends the first session setup message. ■ ON_RINGBACK IM-SCF starts charging after an MSC sends a ringing indication. ■ ON_ANSWER IM-SCF starts charging after an MSC sends an answer indication. Default value: ON_ANSWER
Requested Duration	INT	Specifies the value to which IM-OCF needs to set the CC-time AVP in a CCR sent to a billing application.
Requested Volume	INT	Specifies the value to which IM-OCF needs to set the CC-Total-Octets AVP in a CCR sent to a billing application.
Requested Service Units	INT	Specifies the value to which IM-OCF needs to set the CC-Service-Specific-Units AVP in a CCR sent to a billing application.
Service Identifier	INT	Specifies the value to which IM-OCF needs to set the Service-Identifier AVP in a CCR sent to a billing application.

Reauthorization Triggers

The Reauthorization Triggers subtab enables you to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC.

Table 7–6 describes configuration parameters on the O-BCSM subtab.

Table 7–6 Reauthorization Triggers Parameters

Name	Type	Description
Name	STRING	A unique identifier for the trigger.
Trigger Type	STRING	Specifies the trigger for reauthorization of granted quota. Possible values: ■ ALERTED ■ CONNECTED ■ INFO_RECEIVED ■ REINVITED ■ REINVITED_OK ■ UPDATED ■ UPDATED_OK

Table 7–6 (Cont.) Reauthorization Triggers Parameters

Name	Type	Description
Mode	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Updated trigger. ■ YES IM-SCF always reauthorizes the quota. ■ DYNAMIC IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ NO IM-SCF never reauthorizes the quota. Default value: DYNAMIC

Table 7–7 describes the preconfigured triggers on the Reauthorization Triggers subtab.

Table 7–7 Reauthorization Triggers

Name	Type	Description
Info Received	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Info Received trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session Alerted	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Alerted trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic

Table 7–7 (Cont.) Reauthorization Triggers

Name	Type	Description
Session Connected	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Connected trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session ReInvite Complete	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session ReInvite Complete trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session Reinvited	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Reinvited trigger. ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic

Table 7–7 (Cont.) Reauthorization Triggers

Name	Type	Description
Session Update Complete	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Update Complete trigger. ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session Updated	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Updated trigger. ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic

Configuring Media Resources Parameters

The Media Resources subtab enables you to define the media resources that the SSP can connect in order to play announcements.

The table in the Media Resources subtab displays the media resources that are used to play announcements. Each row represents one media resource. When defining a new media resource, you need to specify the fields described in Table 7–8.

Table 7–8 IM-SCF WIN Phase 2 Media Resource Definition Fields

Name	Type	Description
Name	STRING	Specifies a name of the media resource
Alias	STRING	Specifies a unique identifier that applications use to instruct IM-SCF which media resource to connect in order to play announcements. Alias is used by IM-SCF to lookup a media resource details in this table. Aliases are defined in a URI format. For example: mrf.network@domain.com.

Table 7–8 (Cont.) IM-SCF WIN Phase 2 Media Resource Definition Fields

Name	Type	Description
Address Digits	STRING	Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource. Note: when this parameter is not set, the network's session control entity uses a pre-configured media resource to play announcements. In this case, Nature of Address and Address Numbering Plan Indicator should be set to None.
Operation Type	STRING	Possible values: ■ switch_based The media resource is internal part of the SSP. CCDIR operation is used to connect the media resource. ■ external The media resource not a part of the SSP. ConnectResource operation is used to connect the media resource. Default value: switch_based
Resource Type	STRING	Specifies the value to set in the SpecializedResource parameter of the SEIZERES operation. Possible values: ■ UNUSED ■ DTMF_TONE_DETECTOR ■ ASR_DIGITS ■ ASR_SPEECH_USER_INTERFACE
Private Resource Type	STRING	Specifies the value to set in the PrivateSpecializedResource parameter of the SEIZERES operation
SN-IP Configuration	STRING	Possible values: ■ UNUSED ■ SN IP and SCP are co-located. When you choose this option, you need to set also the SN Address parameter. ■ IP IP and SCP are not co-located
SN Address	STRING	Specifies the value to set in the DestinationDigits parameter of the CONNRES operation. This value is regarded only when SN-IP Configuration parameter is set to SN.

Configuring TCAP Parameters

The TCAP subtab enables you to set up parameters of the IM TCAP layer.

Table 7–9 describes configuration parameters on the TCAP subtab.

Table 7–9 TCAP Parameter

Name	Type	Description
Class4 Default Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations. Default value: 10000
Reject Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.
Application Part Guard Timer	INT	Specifies the PSM timer, which is a timer for incoming operations. The PSM timer defines the maximum time in seconds that the application (TC-User) has to respond to incoming INVOKE messages.
Activate Invoke Alarm in Application Layer	BOOL	When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ True ■ False Default value: False.
Result Split Length	INT	Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-SCF. For more information about configuring monitoring, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

8

Setting Up IM-SCF AIN 0.1

This chapter describes how to set up an IM-SCF AIN 0.1 interworking module.

About IM-SCF AIN 0.1 Setup

The process of IM-SCF AIN 0.1 setup requires the following:

1. Adding an IM-SCF AIN 0.1 to your Oracle Communications Service Controller deployment. You can add as many modules of type IM-SCF AIN 0.1 as you need. See "Adding an IM-SCF AIN 0.1 to the Service Controller Deployment" for more information.
2. Configuring the IM-SCF AIN 0.1. See "Configuring an IM-SCF AIN 0.1" for more information.

Adding an IM-SCF AIN 0.1 to the Service Controller Deployment

To add an IM-SCF AIN 0.1:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMSCFAIN01**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-SCF AIN 0.1 to your deployment, in the **Change Center** pane, click **Commit**.

A new module of type IM-SCF AIN 0.1 is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an IM-SCF AIN 0.1

To configure an IM-SCF AIN 0.1:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added IM-SCF AIN 0.1.

   The IM-SCF AIN 0.1 configuration pane contains the subtabs described in Table 8–1.

Table 8–1 IM-SCF AIN 0.1 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See "Configuring General Parameters" for more information.
Call Handling	Enables you to define the way that IM-SCF handles calls. See "Configuring Call Handling Parameters" for more information.
Charging Service	Enables you to define how IM-SCF sends credit reservation requests and specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC. See "Charging Services" for more information.
Media Resources	Enables you to set up the media resources that Service Controller uses to play announcements. See "Configuring Media Resources Parameters" for more information.
TCAP	Enables you to set up the TCAP layer of the IM-SCF. See "Configuring TCAP Parameters" for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See "Configuring Monitoring Parameters" for more information.

Configuring General Parameters

The General subtab displays the protocol variant that is used to encode / decode SS7 messages and enables you to specify an alias for an Interworking Module instance.

Table 8–2 describes the configuration parameters on the General subtab.

Table 8–2 General Parameters

Name	Type	Description
Alias	STRING	Specifies an alias of the IM instance. Using this alias, the SS7 SSU recognizes the instances of the IMs to which incoming messages should be routed. For more information on how the SS7 SSU uses aliases and how to configure incoming routing in the SS7 SSU, see the discussion on configuring the SS7 Signaling Server Unit for SIGTRAN in *Service Controller Signaling Server Units Configuration Guide*.
Plugin	STRING	Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode / decode messages.

Configuring Call Handling Parameters

The Call Handling subtab enables you to define how IM-SCF handles calls.

Table 8–3 describes configuration parameters on the Call Handling subtab.

Table 8–3 IM-SCF AIN 0.1 Call Handling Parameters

Name	Type	Description
OE Reaction Interval in Seconds	INT	Specifies the time period in seconds during which the IM-SCF waits for the OE to respond to SAL messages. When this timer expires, IM-SCF decides how to handle existing session (Continue or Release) according to the configuration settings. Default value: 100
Body Encoding Format	STRING	Specifies the method that the IM-SCF uses to encode IN parameters in the body of a SAL message. Possible options: ■ BER ■ XER ■ None Default value: None In an IN mediation solution, when IM-SCF is coupled with IM-SSF, this parameter must be set to XER.
Response Operation For Infoanalyzed	STRING	Specifies whether IM-SCF uses Continue or AnalyzeRoute as a response to calls initiated by Infoanalyzd when the realized called number has not changed. Possible values: ■ analyze_route ■ continue Default value: analyze_route

Table 8–3 (Cont.) IM-SCF AIN 0.1 Call Handling Parameters

Name	Type	Description
Response Operation For Infocollected	STRING	Specifies whether IM-SCF uses Continue or AnalyzeRoute as a response to calls initiated by Infocollected when the realized called number has not changed. Possible values: ■ analyze_route ■ continue Default value: analyze_route
Response Operation For Origination Attempt	STRING	Specifies whether IM-SCF uses Continue or AnalyzeRoute as a response to calls initiated by Origination Attempt. Possible values: ■ analyze_route ■ continue Default value: analyze_route
Response Operation For Network Busy	STRING	Specifies whether IM-SCF uses Continue or AnalyzeRoute as a response to calls initiated by Network Busy. Possible values: ■ analyze_route ■ continue Default value: analyze_route
Called Party SIP User Part For Origination Attempt	STRING	Specifies the user part set in Invite Request URI on Origination Attempt.

Charging Services

You can configure IM-SCF to monitor session duration and charge sessions. IM-SCF provides the following capabilities:

- Credit reservation requests generation

  IM-SCF sends these requests to IM-OCF through the OE. IM-OCF translates credit reservation requests to Diameter CCRs, which are then forwarded to a billing application.

- Session monitoring and charging

  IM-SCF monitors and charges a session on its own.

- Quota reauthorization

  You can specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC.

To set up IM-SCF charging services, you use the Charging Services tab. This tab contains the subtabs described in Table 8–4.

Table 8–4 Charging Services Subtabs

Subtab	Description
General	Enables you to specify how IM-SCF sets up and sends credit reservation requests to the OE. See "General" for more information.
Reauthorization Triggers	Enables you to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC. See "Reauthorization Triggers" for more information.

General

The General subtab enables you to specify how IM-SCF sets up and sends credit reservation requests to the OE. The OE forwards these requests to an IM-OCF, which translates credit reservation requests to Diameter CCRs, which are then forwarded to a billing application.

Table 8–5 describes the configuration parameters that you need to specify for credit reservation requests.

Table 8–5 General Parameters

Name	Type	Description
Service Monitoring	STRING	Specifies the component that monitors session duration. Possible values: ■ Internal IM-SCF CAP1 can monitor session duration internally only. IM-SCF CAP1 cannot delegate service monitoring to an MSC. ■ None Session duration is not monitored. Default value: None
Tccd Timeout	INT	Specifies the maximum time, in seconds, that IM-SCF waits for a credit reservation response after sending a credit reservation request. If the timeout expires, IM-SCF releases the call. To disable the timeout timer, enter a negative value.

Table 8–5 (Cont.) General Parameters

Name	Type	Description
First Credit Reservation Request	STRING	Specifies when IM-OCF sends the first CCR to a billing application. This request is generated by IM-SCF and sent to IM-OCF through the OE. Possible values: ■ ON_INITIAL_EVENT IM-OCF sends a request after an MSC sends the first session setup message. ■ ON_RINGBACK IM-OCF sends a request after an MSC sends a ringing indication. ■ ON_ANSWER IM-OCF sends a request after an MSC sends an answer indication. ■ NEVER Default value: ON_INITIAL_EVENT
First Credit Granted Notification	STRING	Specifies when IM-OCF sends the first credit granted notification to a billing application. This request is generated by IM-SCF and sent to IM-OCF through the OE. Possible values: ■ ON_INITIAL_EVENT IM-OCF sends a request after an MSC sends the first session setup message. ■ ON_ANSWER IM-OCF sends a request after an MSC sends an answer indication. Default value: ON_INITIAL_EVENT
Start Charging Phase	STRING	Specifies when IM-SCF starts charging a session. Possible values: ■ ON_INITIAL_EVENT IM-SCF starts charging after an MSC sends the first session setup message. ■ ON_RINGBACK IM-SCF starts charging after an MSC sends a ringing indication. ■ ON_ANSWER IM-SCF starts charging after an MSC sends an answer indication. Default value: ON_ANSWER
Requested Duration	INT	Specifies the value to which IM-OCF needs to set the CC-time AVP in a CCR sent to a billing application.
Requested Volume	INT	Specifies the value to which IM-OCF needs to set the CC-Total-Octets AVP in a CCR sent to a billing application.
Requested Service Units	INT	Specifies the value to which IM-OCF needs to set the CC-Service-Specific-Units AVP in a CCR sent to a billing application.

Table 8–5 (Cont.) General Parameters

Name	Type	Description
Service Identifier	INT	Specifies the value to which IM-OCF needs to set the Service-Identifier AVP in a CCR sent to a billing application.

Reauthorization Triggers

The Reauthorization Triggers subtab enables you to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC.

Table 8–6 describes configuration parameters on the O-BCSM subtab.

Table 8–6 Reauthorization Triggers Parameters

Name	Type	Description
Name	STRING	A unique identifier for the trigger.
Trigger Type	STRING	Specifies the trigger for reauthorization of granted quota. Possible values: ■ ALERTED ■ CONNECTED ■ INFO_RECEIVED ■ REINVITED ■ REINVITED_OK ■ UPDATED ■ UPDATED_OK
Mode	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Updated trigger. ■ YES IM-SCF always reauthorizes the quota. ■ DYNAMIC IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ NO IM-SCF never reauthorizes the quota. Default value: DYNAMIC

Table 8–7 describes the preconfigured triggers on the Reauthorization Triggers subtab.

Table 8–7 Reauthorization Triggers

Name	Type	Description
Info Received	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Info Received trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session Alerted	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Alerted trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session Connected	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Connected trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic

Table 8–7 (Cont.) Reauthorization Triggers

Name	Type	Description
Session ReInvite Complete	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session ReInvite Complete trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session Reinvited	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Reinvited trigger. ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session Update Complete	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Update Complete trigger. ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic

Table 8–7 (Cont.) Reauthorization Triggers

Name	Type	Description
Session Updated	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Updated trigger. ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic

Configuring Media Resources Parameters

The Media Resources subtab enables you to define the media resources that the SSP can connect in order to play announcements.

The table in the Media Resources subtab displays the media resources that are used to play announcements. Each row represents one media resource. When defining a new media resource, you need to specify the fields described in Table 8–8.

Table 8–8 IM-SCF AIN 0.1 Media Resource Definition Fields

Name	Type	Description
Name	STRING	Specifies a name of the media resource
Alias	STRING	Specifies a unique identifier that applications use to instruct IM-SCF which media resource to connect in order to play announcements. Alias is used by IM-SCF to lookup for media resource details in this table. Aliases are defined in a URI format. For example: mrf.network@domain.com.
Announcement Operation	INT	Specifies which operation IM-SCF triggers towards the switch-based media resource. Possible values: ■ 0 PlayAnnoucnement ■ 1 PlayAnnouncementAndCollectDigits Default value: 0

Table 8–8 (Cont.) IM-SCF AIN 0.1 Media Resource Definition Fields

Name	Type	Description
Disconnect Flag	BOOL	Specifies whether or not to set the DisconnectFlag in SendToResource operation. Possible values: ■ Yes The switch disconnects a call immediately after completing playing announcement ■ No The switch does not disconnect a call immediately after completing playing announcement Default value: Yes
Answer Indication	BOOL	Specifies whether a switch sends Answer message to the calling party upon connection to the media resource. Possible values: ■ True Connection to the media resource causes the switch to generate answer indication towards the calling party. This opens a media path from the caller to the media resource (bothwayPathRequired) ■ False The media path opens only in the direction from the media resource to the caller Default value: True

Configuring TCAP Parameters

The TCAP subtab enables you to set up parameters of the IM TCAP layer.

Table 8–9 describes configuration parameters on the TCAP subtab.

Table 8–9 TCAP Parameters

Name	Type	Description
Class4 Default Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations. Default value: 10000
Reject Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.
Application Part Guard Timer	INT	Specifies the PSM timer, which is a timer for incoming operations. The PSM timer defines the maximum time in seconds that the application (TC-User) has to respond to incoming INVOKE messages.

Table 8–9 (Cont.) TCAP Parameters

Name	Type	Description
Activate Invoke Alarm in Application Layer	BOOL	When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ True ■ False Default value: False.
Result Split Length	INT	Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-SCF. For more information about configuring monitoring, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

9

Setting Up IM-SCF AIN 0.2

This chapter describes how to set up an IM-SCF AIN 0.2 interworking module.

About IM-SCF AIN 0.2 Setup

The process of IM-SCF AIN 0.2 setup requires the following:

1. Adding an IM-SCF AIN 0.2 to your Oracle Communications Service Controller deployment. You can add as many modules of type IM-SCF AIN 0.2 as you need. See "Adding an IM-SCF AIN 0.2 to the Service Controller Deployment" for more information.
2. Configuring the IM-SCF AIN 0.2. See "Configuring an IM-SCF AIN 0.2" for more information.

Adding an IM-SCF AIN 0.2 to the Service Controller Deployment

To add an IM-SCF AIN 0.2:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMSCFAIN02**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-SCF AIN 0.2 to your deployment, in the **Change Center** pane, click **Commit**.

A new module of type IM-SCF AIN 0.2 is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an IM-SCF AIN 0.2

To configure an IM-SCF AIN 0.2:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added IM-SCF AIN 0.2.

   The IM-SCF AIN 0.2 configuration screen contains the subtabs described in Table 9–1.

Table 9–1 IM-SCF AIN 0.2 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See "Configuring General Parameters" for more information.
Call Handling	Enables you to define the way that IM-SCF handles calls. For more information, see "Configuring Call Handling Parameters".
Charging Service	Enables you to define how IM-SCF sends credit reservation requests and specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC. See "Charging Services" for more information.
Media Resources	Enables you to set up the media resources that Service Controller uses to play announcements. For more information, see "Configuring Media Resources Parameters".
TCAP	Enables you to set up the TCAP layer of the IM-SCF. For more information, see "Configuring TCAP Parameters".
Monitoring	Enables you to define how Runtime MBeans and notifications operate. For more information, see "Configuring Monitoring Parameters".

Configuring General Parameters

The General subtab enables you to specify an alias for an Interworking Module instance.

Table 9–2 describes the configuration parameters on the General subtab.

Table 9–2 General Parameters

Name	Type	Description
Alias	STRING	Specifies an alias of the IM instance. Using this alias, the SS7 SSU recognizes the instances of the IMs to which incoming messages should be routed. For more information on how the SS7 SSU uses aliases and how to configure incoming routing in the SS7 SSU, see the discussion on configuring the SS7 Signaling Server Unit for SIGTRAN in *Service Controller Signaling Server Units Configuration Guide*.
Plugin	STRING	Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode / decode SS7 messages.

Configuring Call Handling Parameters

The Call Handling subtab enables you to define how IM-SCF handles calls.

When configuring Call Handling, you must define the parameters described in Table 9–3.

Table 9–3 IM-SCF AIN 0.2 Call Handling Parameters

Name	Type	Description
OE Reaction Interval in Seconds	INT	Specifies the time period in seconds during which the IM-SCF waits for the OE to respond to SAL messages. When this timer expires, IM-SCF decides how to handle existing session (Continue or Release) according to the configuration settings. Default value: 100
Body Encoding Format	STRING	Specifies the method that the IM-SCF uses to encode IN parameters in the body of a SAL message. Possible options: ■ BER ■ XER ■ None Default value: None In an IN mediation solution, when IM-SCF is coupled with IM-SSF, this parameter must be set to XER.

Table 9–3 (Cont.) IM-SCF AIN 0.2 Call Handling Parameters

Name	Type	Description
Response Operation ForInfoanalyzed	STRING	Specifies whether IM-SCF uses Continue or AnalyzeRoute as a response to calls initiated by Infoanalyzd when the realized called number has not changed. Possible values: ■ analyze_route ■ continue Default value: analyze_route
Response Operation For Infocollected	STRING	Specifies whether IM-SCF uses Continue or AnalyzeRoute as a response to calls initiated by Infocollected when the realized called number has not changed Possible values: ■ analyze_route ■ continue Default value: analyze_route
Response Operation For Origination Attempt	STRING	Specifies whether IM-SCF uses Continue or AnalyzeRoute as a response to calls initiated by Origination Attempt. Possible values: ■ analyze_route ■ continue Default value: analyze_route
Response Operation For Network Busy	STRING	Specifies whether IM-SCF uses Continue or AnalyzeRoute as a response to calls initiated by Network Busy. Possible values: ■ analyze_route ■ continue Default value: analyze_route
Called Party SIP User Part For Origination Attempt	STRING	Specifies the user part set in Invite Request URI on Origination Attempt.

Charging Services

You can configure IM-SCF to monitor session duration and charge sessions. IM-SCF provides the following capabilities:

- Credit reservation requests generation

  IM-SCF sends these requests to IM-OCF through the OE. IM-OCF translates credit reservation requests to Diameter CCRs, which are then forwarded to a billing application.

- Session monitoring and charging

  IM-SCF monitors and charges a session on its own.

- Quota reauthorization

  You can specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC.

To set up IM-SCF charging services, you use the Charging Services tab. This tab contains the subtabs described in Table 9–4.

Table 9–4 Charging Services Subtabs

Subtab	Description
General	Enables you to specify how IM-SCF sets up and sends credit reservation requests to the OE. See "General" for more information.
Reauthorization Triggers	Enables you to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC. See "Reauthorization Triggers" for more information.

General

The General subtab enables you to specify how IM-SCF sets up and sends credit reservation requests to the OE. The OE forwards these requests to an IM-OCF, which translates credit reservation requests to Diameter CCRs, which are then forwarded to a billing application.

Table 9–5 describes the configuration parameters that you need to specify for credit reservation requests.

Table 9–5 General Parameters

Name	Type	Description
Service Monitoring	STRING	Specifies the component that monitors session duration. Possible values: ■ Internal IM-SCF CAP1 can monitor session duration internally only. IM-SCF CAP1 cannot delegate service monitoring to an MSC. ■ None Session duration is not monitored. Default value: None
Tccd Timeout	INT	Specifies the maximum time, in seconds, that IM-SCF waits for a credit reservation response after sending a credit reservation request. If the timeout expires, IM-SCF releases the call. To disable the timeout timer, enter a negative value.

Table 9–5 (Cont.) General Parameters

Name	Type	Description
First Credit Reservation Request	STRING	Specifies when IM-OCF sends the first CCR to a billing application. This request is generated by IM-SCF and sent to IM-OCF through the OE. Possible values: ■ ON_INITIAL_EVENT IM-OCF sends a request after an MSC sends the first session setup message. ■ ON_RINGBACK IM-OCF sends a request after an MSC sends a ringing indication. ■ ON_ANSWER IM-OCF sends a request after an MSC sends an answer indication. ■ NEVER Default value: ON_INITIAL_EVENT
First Credit Granted Notification	STRING	Specifies when IM-OCF sends the first credit granted notification to a billing application. This request is generated by IM-SCF and sent to IM-OCF through the OE. Possible values: ■ ON_INITIAL_EVENT IM-OCF sends a request after an MSC sends the first session setup message. ■ ON_ANSWER IM-OCF sends a request after an MSC sends an answer indication. Default value: ON_INITIAL_EVENT
Start Charging Phase	STRING	Specifies when IM-SCF starts charging a session. Possible values: ■ ON_INITIAL_EVENT IM-SCF starts charging after an MSC sends the first session setup message. ■ ON_RINGBACK IM-SCF starts charging after an MSC sends a ringing indication. ■ ON_ANSWER IM-SCF starts charging after an MSC sends an answer indication. Default value: ON_ANSWER
Requested Duration	INT	Specifies the value to which IM-OCF needs to set the CC-time AVP in a CCR sent to a billing application.
Requested Volume	INT	Specifies the value to which IM-OCF needs to set the CC-Total-Octets AVP in a CCR sent to a billing application.
Requested Service Units	INT	Specifies the value to which IM-OCF needs to set the CC-Service-Specific-Units AVP in a CCR sent to a billing application.

Table 9–5 (Cont.) General Parameters

Name	Type	Description
Service Identifier	INT	Specifies the value to which IM-OCF needs to set the Service-Identifier AVP in a CCR sent to a billing application.

Reauthorization Triggers

The Reauthorization Triggers subtab enables you to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC.

Table 9–6 describes configuration parameters on the O-BCSM subtab.

Table 9–6 Reauthorization Triggers Parameters

Name	Type	Description
Name	STRING	A unique identifier for the trigger.
Trigger Type	STRING	Specifies the trigger for reauthorization of granted quota. Possible values: ■ ALERTED ■ CONNECTED ■ INFO_RECEIVED ■ REINVITED ■ REINVITED_OK ■ UPDATED ■ UPDATED_OK
Mode	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Updated trigger. ■ YES IM-SCF always reauthorizes the quota. ■ DYNAMIC IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ NO IM-SCF never reauthorizes the quota. Default value: DYNAMIC

Table 9–7 describes the preconfigured triggers on the Reauthorization Triggers subtab.

Table 9–7 Reauthorization Triggers

Name	Type	Description
Info Received	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Info Received trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session Alerted	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Alerted trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session Connected	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Connected trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic

Table 9–7 (Cont.) Reauthorization Triggers

Name	Type	Description
Session ReInvite Complete	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session ReInvite Complete trigger. Possible values: ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session Reinvited	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Reinvited trigger. ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic
Session Update Complete	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Update Complete trigger. ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic

Table 9–7 (Cont.) Reauthorization Triggers

Name	Type	Description
Session Updated	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Updated trigger. ■ Yes IM-SCF always reauthorizes the quota. ■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No IM-SCF never reauthorizes the quota. Default value: Dynamic

Configuring Media Resources Parameters

The Media Resources subtab enables you to define the media resources that the SSP can connect in order to play announcements.

The table in the Media Resources subtab displays the media resources that are used to play announcements. Each row represents one media resource. When defining a new media resource, you need to specify the fields described in Table 9–8.

Table 9–8 IM-SCF AIN 0.2 Media Resource Definition Fields

Name	Type	Description
Name	STRING	Specifies a name of the media resource
Alias	STRING	Specifies a unique identifier that applications use to instruct IM-SCF which media resource to connect in order to play announcements. Alias is used by IM-SCF to lookup for media resource details in this table. Aliases are defined in a URI format. For example: mrf.network@domain.com.
Announcement Operation	INT	Specifies which operation IM-SCF triggers towards the switch-based media resource. Possible values: ■ 0 PlayAnnoucnement ■ 1 PlayAnnouncementAndCollectDigits Default value: 0

Table 9–8 (Cont.) IM-SCF AIN 0.2 Media Resource Definition Fields

Name	Type	Description
Disconnect Flag	BOOL	Specifies whether or not to set the DisconnectFlag in SendToResource operation. Possible values: ■ Yes The switch disconnects a call immediately after completing playing announcement ■ No The switch does not disconnect a call immediately after completing playing announcement Default value: Yes
Answer Indication	BOOL	Specifies whether a switch sends Answer message to the calling party upon connection to the media resource. Possible values: ■ True Connection to the media resource causes the switch to generate answer indication towards the calling party. This opens a media path from the caller to the media resource (bothwayPathRequired) ■ False The media path opens only in the direction from the media resource to the caller Default value: True

Configuring TCAP Parameters

The TCAP subtab enables you to set up parameters of the IM TCAP layer.

Table 9–9 describes configuration parameters on the TCAP subtab.

Table 9–9 TCAP Parameters

Name	Type	Description
Class4 Default Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations. Default value: 10000
Reject Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.
Application Part Guard Timer	INT	Specifies the PSM timer, which is a timer for incoming operations. The PSM timer defines the maximum time in seconds that the application (TC-User) has to respond to incoming INVOKE messages.

Table 9–9 (Cont.) TCAP Parameters

Name	Type	Description
Activate Invoke Alarm in Application Layer	BOOL	When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ True ■ False Default value: False.
Result Split Length	INT	Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-SCF. For more information about configuring monitoring, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

10

Setting Up IM-SSF CAP Phase 1

This chapter describes how to set up an IM-SSF CAP Phase 1 interworking module.

About IM-SSF CAP Phase 1 Setup

The process of IM-SSF CAP Phase 1 setup requires the following:

1. Adding an IM-SSF CAP Phase 1 to your Oracle Communications Service Controller deployment. You can add as many modules of type IM-SSF CAP Phase 1 as you need. See "Adding an IM-SSF CAP Phase 1 to the Service Controller Deployment" for more information.
2. Configuring the IM-SSF CAP Phase 1. See "Configuring an IM-SSF CAP Phase 1" for more information.

Adding an IM-SSF CAP Phase 1 to the Service Controller Deployment

To add an IM-SSF CAP phase 1:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMSSFCAP1**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-SSF CAP phase 1 to your deployment, in the **Change Center** pane, click **Commit**.

A new module of type IM-SSF CAP phase 1 is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an IM-SSF CAP Phase 1

To configure an IM-SSF CAP Phase 1:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added M-SSF CAP Phase 1.

   The IM-SSF CAP phase 1 configuration pane contains the subtabs described in Table 10–1.

Table 10–1 IM-SSF CAP Phase 1 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See "Configuring General Parameters" for more information.
Call Handling	Enables you to configure how the IM-SSF handles calls. For more information, see "Configuring Call Handling Parameters".
Subscriber Data	Enables you to define IN triggers that the IM-SSF invokes towards the SCP above. For more information, see "Configuring Subscriber Data Parameters".
Operation Propagation	Enables you to define whether the IM-SSF processes operations on its own or propagates these operations to another module. For more information, see "Configuring Operation Propagation Parameters".
TCAP	Enables you to set up the TCAP layer of the IM-SSF. For more information, see "Configuring TCAP Parameters".
Monitoring	Enables you to define how Runtime MBeans and notifications operate. For more information, see "Configuring Monitoring Parameters".

Configuring General Parameters

The General subtab displays the protocol variant that is used to encode and decode SS7 messages and enables you to specify an alias for an IM instance.

Table 10–2 describes the configuration parameters on the General subtab.

Table 10–2 General Parameters

Name	Type	Description
Alias	STRING	Specifies an alias of the IM instance. Using this alias, the SS7 SSU recognizes the instances of the IMs to which incoming messages should be routed. For more information on how the SS7 SSU uses aliases and how to configure incoming routing in the SS7 SSU, see the discussion on configuring the SS7 Signaling Server Unit for SIGTRAN in *Service Controller Signaling Server Units Configuration Guide*.
Plugin	STRING	Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to enclode and decode SS7 messages.

Configuring Call Handling Parameters

The Call Handling subtab enables you to define how IM-SSF handles calls.

Table 10–3 describes configuration parameters on the Call Handling subtab.

Table 10–3 IM-SSF CAP Phase 1 Call Handling Parameters

Name	Type	Description
IM-SSF Mode of Operation	STRING	Specifies the IM-SSF mode of operation. Possible values: ■ DYNAMIC IM-SSF dynamically changes its call control mode, according to the mode requested by the SCP. ■ BACK_TO_BACK IM-SSF monitors calls and ignores the mode requested by the SCP. ■ REDIRECT IM-SSF does not monitor calls and ignores the mode requested by the SCP. Default value: DYNAMIC
Session Case	STRING	Specifies how IM-SSF treats sessions that arrive on the southbound interface, from the OE. Possible values: ■ ORIG All calls are treated as originating calls ■ TERM All calls are treated as terminating calls ■ DYNAMIC Calls are treated dynamically as either originating or terminating calls, depending on the SAL Route header and/or the x-wcs-session-case header generated by a southbound Service Controller IM. Default value: DYNAMIC

Table 10–3 (Cont.) IM-SSF CAP Phase 1 Call Handling Parameters

Name	Type	Description
Tssf Duration in Seconds	INT	Specifies the value, in seconds, of the IM-SSF Tssf timer. Default value: 20
Tssf User Interaction Duration in Seconds	INT	Specifies the value, in seconds, of the IM-SSF Tssf timer. This parameter is used when the IM-SSF is in the middle of interaction with a media resource. Default value: 1200
Body Encoding Format	STRING	Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message. Possible options: ■ BER ■ XER ■ NONE Default value: NONE
Nature of Address of Called Party Number	STRING	Specifies how to set the NatureOfAddress of the CalledPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ SUBSCRIBER_NUMBER ■ UNKNOWN ■ NATIONAL ■ INTERNATIONAL ■ NETWORK_SPECIFIC Default value: NATIONAL
Internal Network Number Indicator of Called Party Number	BOOL	Specifies how to set the InternalNetworkNumberIndicator of the CalledPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ TRUE ■ FALSE Default value: TRUE

Table 10–3 (Cont.) IM-SSF CAP Phase 1 Call Handling Parameters

Name	Type	Description
Numbering Plan Indicator of Called Party Number	STRING	Specifies how to set the NumberingPlanIndicator of the CalledPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ ISDN ■ DATA ■ TELEX Default value: ISDN
Nature of Address of Calling Party Number	STRING	Specifies how to set the NatureOfAddress of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ SUBSCRIBER_NUMBER ■ UNKNOWN ■ NATIONAL ■ INTERNATIONAL ■ NETWORK_SPECIFIC Default value: NATIONAL
Number Incomplete Indicator of Calling Party Number	BOOL	Specifies how to set the IncompleteIndicator of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible options: ■ True ■ False Default value: True
Numbering Plan Indicator of Calling Party Number	STRING	Specifies how to set the NumberingPlanIndicator of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ ISDN ■ DATA ■ TELEX Default value: ISDN

Table 10–3 (Cont.) IM-SSF CAP Phase 1 Call Handling Parameters

Name	Type	Description
Screening Indicator of Calling Party Number	STRING	Specifies how to set the NumberingPlanIndicator of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ USER_PROVIDED_NOT_VERIFIED ■ USER_PROVIDED_VERIFIED_PASSED ■ USER_PROVIDED_VERIFIED_FAILED ■ NETWORK_PROVIDED Default value: USER_PROVIDED_NOT_VERIFIED
Calling Party Category	STRING	Specifies how to set the CallingNumberCategory of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ UNKNOWN ■ LANGUAGE_FRENCH ■ LANGUAGE_ENGLISH ■ LANGUAGE_GERMAN ■ LANGUAGE_RUSSIAN Default value: LANGUAGE_ENGLISH
Type of Number of Called Party Number	STRING	Specifies how to set the TypeOfNumber of the CalledPartyBCDNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ Unknown ■ InternationalNumber ■ NationalNumber ■ NetworkSpecificNumber ■ DedicatedAccessShortcode ■ AlphaNumericStringAttached Default value: NationalNumber

Table 10–3 (Cont.) IM-SSF CAP Phase 1 Call Handling Parameters

Name	Type	Description
Numbering Plan Indicator of Called Party BCD Number	STRING	Specifies how to set the NumberingPlanIndicator of the CalledPartyBCDNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ Unknown ■ ISDN_TelephonyNumberingPlan ■ DataNumberingPlan ■ TelexNumberingPlan ■ NationalNumberingPlan Default value: DataNumberingPlan

Configuring Subscriber Data Parameters

The Subscriber Data subtab enables you to define IN triggers that IM-SSF invokes towards the SCP above.

The table on the Subscriber Data subtab displays the rules for invoking triggers. Each row represents one rule. When defining a new rule, you need to specify the fields described in Table 10–4.

Table 10–4 IM-SSF CAP Phase 1 Subscriber Data Fields

Name	Type	Description
Name	STRING	A unique identifier.
IMSI	STRING	Specifies a condition on session IMSI. When the condition is met, IM-SSF invokes triggers towards the SCP. To apply the rule for all IMSIs, set this parameter to **default** (case sensitive).
MSISDN	STRING	Specifies a condition on session MSISDN. When the condition is met, IM-SSF invokes triggers towards the SCP. To apply the rule for all MSISDNs, set this parameter to **default** (case sensitive).
Service Key	STRING	Specifies a Service Key to set on the trigger to the SCP.
SCP Address Alias	STRING	Specifies the SCP to which IM-SSF invokes a trigger. This is an alias to one of the SCCP addresses specified in the SS7 SSU configuration.
Default Call Handling	STRING	Specifies how IM-SSF handles a call when a signal between IM-SSF and SCP fails. Possible values: ■ CONTINUE_CALL ■ RELEASE_CALL

Table 10–4 (Cont.) IM-SSF CAP Phase 1 Subscriber Data Fields

Name	Type	Description
TDP List	STRING_LIST	Specifies a list of TDPs that IM-SSF can trigger. Each trigger is specified in the following format: *id=type* where: id is one of the following: ■ 2: COLLECTED_INFO ■ 3: ANALYSED_INFORMATION ■ 4: ROUTE_SELECT_FAILURE ■ 12: TERMINATING_ATTEMPT_AUTHORISED ■ 13: T_BUSY ■ 14: T_NO_ANSWER type is one of the following: ■ R, which means Interrupt ■ N, which means Notify When you want to define multiple TDPs, separate these TDPs with a comma. For example: 13=R,14=N

Configuring Operation Propagation Parameters

The Operation Propagation parameters subtab enables you to define whether the IM-SSF processes operations on its own or propagates these operations to another module.

The table on the Operation Propagation subtab displays a list of operations. Each row represents one operation for which you define whether IM-SSF processes this operation or propagates the operation to another module. When configuring a new operation, you need to specify the fields described in Table 10–5.

Table 10–5 IM-SSF CAP Phase 1 Operation Propagation

Name	Type	Description
Name	STRING	Specifies a unique identifier.
Operation	STRING	Specifies an operation. Possible values: RequestReportBCSMEvent
Module name	STRING	Specifies a name of a module instance to which an operation is propagated.
Enable Propagation	BOOL	Specifies whether IM-SSF processes operations on its own or propagates a request to the session control layer. Possible values: ■ True The IM-SSF propagates RRBCSMEvent operations. ■ False The IM-SSF processes RRBCSMEvent operations. Default value: True

Configuring TCAP Parameters

The TCAP subtab enables you to set up parameters of the IM TCAP layer.

Table 10–6 describes configuration parameters on the TCAP subtab.

Table 10–6 TCAP Parameter

Name	Type	Description
Class4 Default Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations. Default value: 5
Reject Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations. Default value: 1000
Application Part Guard Timer	INT	Specifies the PSM timer, which is a timer for incoming operations. The PSM timer defines the maximum time in seconds that the application (TC-User) has to respond to incoming INVOKE messages. Default value: 200
Activate Invoke Alarm in Application Layer	BOOL	When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ True ■ False Default value: False
Result Split Length	INT	Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split. Default value: 512

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-SSF. For more information about configuring monitoring, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

11

Setting Up IM-SSF CAP Phase 2

This chapter describes how to set up an IM-SSF CAP Phase 2 interworking module.

About IM-SSF CAP Phase 2 Setup

The process of IM-SSF CAP Phase 2 setup requires the following:

1. Adding an IM-SSF CAP Phase 2 to your Oracle Communications Service Controller deployment. You can add as many modules of type IM-SSF CAP Phase 2 as you need. See "Adding an IM-SSF CAP Phase 2 to the Service Controller Deployment" for more information.
2. Configuring the IM-SSF CAP Phase 2. See "Configuring an IM-SSF CAP Phase 2" for more information.

Adding an IM-SSF CAP Phase 2 to the Service Controller Deployment

To add an IM-SSF CAP phase 2:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMSSFCAP2**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-SSF CAP phase 2 to your deployment, in the **Change Center** pane, click **Commit**.

A new module of type IM-SSF CAP phase 2 is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an IM-SSF CAP Phase 2

To configure an IM-SSF CAP Phase 2:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added IM-SSF CAP Phase 2.

   The IM-SSF CAP phase 2 configuration pane contains the subtabs described in Table 11–1.

Table 11–1 IM-SSF CAP Phase 2 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See "Configuring General Parameters" for more information.
Call Handling	Enables you to configure how the IM-SSF handles calls. See "Configuring Call Handling Parameters" for more information.
Subscriber Data	Enables you to define IN triggers that the IM-SSF invokes towards the SCP above. See "Configuring Subscriber Data Parameters" for more information.
Charging	Enables you to configure functionality related to charging operations. See "Configuring Charging Parameters" for more information.
Operation Propagation	Enables you to define whether the IM-SSF processes operations on its own or propagates these operations to another module. See "Configuring Operation Propagation Parameters" for more information.
Media Resources	Enables you to set up the media resources that Service Controller uses to play announcements. See "Configuring Media Resources Parameters" for more information.
TCAP	Enables you to set up the TCAP layer of the IM-SSF. See "Configuring TCAP Parameters" for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See "Configuring Monitoring Parameters" for more information.

Configuring General Parameters

The General subtab displays the protocol variant that is used to enclode / decode an SS7 interface and enables you to specify an alias for an Interworking Module instance.

Table 11–2 describes the configuration parameters on the General subtab.

Table 11–2 General Parameters

Name	Type	Description
Alias	STRING	Specifies an alias of the IM instance. Using this alias, the SS7 SSU recognizes the instances of the IMs to which incoming messages should be routed. For more information on how the SS7 SSU uses aliases and how to configure incoming routing in the SS7 SSU, see the discussion on configuring the SS7 Signaling Server Unit for SIGTRAN in *Service Controller Signaling Server Units Configuration Guide*.
Plugin	STRING	Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode / decode SS7 messages.

Configuring Call Handling Parameters

The Call Handling subtab enables you to define how IM-SSF handles calls.

Table 11–3 describes configuration parameters on the Call Handling subtab.

Table 11–3 IM-SSF CAP Phase 2 Call Handling Parameters

Name	Type	Description
IM-SSF Mode of Operation	STRING	Specifies the IM-SSF mode of operation. Possible values: ■ DYNAMIC IM-SSF dynamically changes its call control mode, according to the mode requested by the SCP. ■ BACK_TO_BACK IM-SSF monitors calls and ignores the mode requested by the SCP. ■ REDIRECT IM-SSF does not monitor calls and ignores the mode requested by the SCP. Default value: DYNAMIC

Table 11–3 (Cont.) IM-SSF CAP Phase 2 Call Handling Parameters

Name	Type	Description
Session Case	STRING	Specifies how IM-SSF treats sessions that arrive on the southbound interface, from the OE. Possible values: ■ ORIG All calls are treated as originating calls ■ TERM All calls are treated as terminating calls. ■ DYNAMIC Calls are treated dynamically as either originating or terminating calls, depending on the SAL Route header and/or the x-wcs-session-case header generated by a southbound Service Controller IM. Default value: DYNAMIC
Tssf Duration in Seconds	INT	Specifies the value, in seconds, of the IM-SSF Tssf timer. Default value: 20
Tssf User Interaction Duration in Seconds	INT	Specifies the value, in seconds, of the IM-SSF Tssf timer. This parameter is used when the IM-SSF is in the middle of interaction with a media resource. Default value: 1200
IM-SSF Media Capability	BOOL	Specifies whether or not the underlying network supports IP/SRF/MRF. This determines if the IM-SSF can handle media-related operations, such as EstablishTemporaryConnection or ConnectToResource. Possible values: ■ True ■ False Default value: True
Body Encoding Format	STRING	Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message. Possible options: ■ BER ■ XER ■ NONE Default value: NONE

Table 11–3 (Cont.) IM-SSF CAP Phase 2 Call Handling Parameters

Name	Type	Description
Nature of Address of Called Party Number	STRING	Specifies how to set the NatureOfAddress of the CalledPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ SUBSCRIBER_NUMBER ■ UNKNOWN ■ NATIONAL ■ INTERNATIONAL ■ NETWORK_SPECIFIC Default values: NATIONAL
Internal Network Number Indicator of Called Party Number	BOOL	Specifies how to set the InternalNetworkNumberIndicator of the CalledPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ TRUE ■ FALSE Default value: TRUE
Numbering Plan Indicator of Called Party Number	STRING	Specifies how to set the NumberingPlanIndicator of the CalledPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ ISDN ■ DATA ■ TELEX Default value: ISDN
Nature of Address of Calling Party Number	STRING	Specifies how to set the NatureOfAddress of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ SUBSCRIBER_NUMBER ■ UNKNOWN ■ NATIONAL ■ INTERNATIONAL ■ NETWORK_SPECIFIC Default values: NATIONAL

Table 11–3 (Cont.) IM-SSF CAP Phase 2 Call Handling Parameters

Name	Type	Description
Number Incomplete Indicator of Calling Party Number	BOOL	Specifies how to set the IncompleteIndicator of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible options: ■ True ■ False Default value: True
Numbering Plan Indicator of Calling Party Number	STRING	Specifies how to set the NumberingPlanIndicator of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ ISDN ■ DATA ■ TELEX Default value: ISDN
Screening Indicator of Calling Party Number	STRING	Specifies how to set the NumberingPlanIndicator of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ USER_PROVIDED_NOT_VERIFIED ■ USER_PROVIDED_VERIFIED_PASSED ■ USER_PROVIDED_VERIFIED_FAILED ■ NETWORK_PROVIDED Default value: USER_PROVIDED_NOT_VERIFIED

Table 11–3 (Cont.) IM-SSF CAP Phase 2 Call Handling Parameters

Name	Type	Description
Calling Party Category	STRING	Specifies how to set the CallingNumberCategory of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ UNKNOWN ■ LANGUAGE_FRENCH ■ LANGUAGE_ENGLISH ■ LANGUAGE_GERMAN ■ LANGUAGE_RUSSIAN Default value: LANGUAGE_ENGLISH
Type of Number of Called Party Number	STRING	Specifies how to set the TypeOfNumber of the CalledPartyBCDNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ Unknown ■ InternationalNumber ■ NationalNumber ■ NetworkSpecificNumber ■ DedicatedAccessShortcode Default value: NationalNumber
Numbering Plan Indicator of Called Party BCD Number	STRING	Specifies how to set the NumberingPlanIndicator of the CalledPartyBCDNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ Unknown ■ ISDN_TelephonyNumberingPlan ■ DataNumberingPlan ■ TelexNumberingPlan ■ NationalNumberingPlan Default value: DataNumberingPlan

Configuring Subscriber Data Parameters

The Subscriber Data subtab enables you to define IN triggers that IM-SSF invokes towards the SCP above.

The table on the Subscriber Data subtab displays the rules for invoking triggers. Each row represents one rule. When defining a new rule, you need to specify the fields

described in Table 11–4.

Table 11–4 IM-SSF CAP Phase 2 Subscriber Data Fields

Name	Type	Description
Name	STRING	A unique identifier.
IMSI	STRING	Specifies a condition on session IMSI. When the condition is met, IM-SSF invokes triggers towards the SCP. To apply the rule for all IMSIs, set this parameter to **default** (case sensitive).
MSISDN	STRING	Specifies a condition on session MSISDN. When the condition is met, IM-SSF invokes triggers towards the SCP. To apply the rule for all MSISDNs, set this parameter to **default** (case sensitive).
Service Key	STRING	Specifies a Service Key to set on the trigger to the SCP.
SCP Address Alias	STRING	Specifies the SCP to which IM-SSF invokes a trigger. This is an alias to one of the SCCP addresses specified in the SS7 SSU configuration.
Default Call Handling	STRING	Specifies how IM-SSF handles a call when a signal between IM-SSF and SCP fails (that is invokes a trigger towards the failed SCP). Possible values: ■ CONTINUE_CALL ■ RELEASE_CALL Default value: CONTINUE_CALL
TDP List	STRING _LIST	Specifies a list of TDPs that must be triggered. Each trigger is specified in the following format: *id=type* where: id is one of the following: ■ 2: COLLECTED_INFO ■ 3: ANALYSED_INFORMATION ■ 4: ROUTE_SELECT_FAILURE ■ 12: TERMINATING_ATTEMPT_AUTHORISED ■ 13: T_BUSY ■ 14: T_NO_ANSWER type is one of the following: ■ R, which means Interrupt ■ N, which means Notify 13=R, 14=N

Configuring Charging Parameters

The Charging subtab enables you to configure functionality related to charging operations.

Table 11–5 describes configuration parameters on the Charging subtab.

Table 11–5 IM-SSF CAP Phase 2 Charging Parameters

Name	Type	Description
Tccd in Seconds	INT	Specifies the time interval, in seconds, that the IM-SSF waits for ApplyCharging message after sending the ApplyChargingReport message. Tccd range of values is 1 to 20 seconds. Default value: 8

Configuring Operation Propagation Parameters

The Operation Propagation parameters subtab enables you to define whether the IM-SSF processes operations on its own or propagates these operations to another module.

The table on the Operation Propagation subtab displays a list of operations. Each row represents one operation for which you define whether IM-SSF processes this operation or propagates the operation to another module. When configuring a new operation, you need to specify the fields described in Table 11–6.

Table 11–6 IM-SSF CAP Phase 2 Operation Propagation

Name	Type	Description
Name	STRING	Specifies a unique identifier.
Operation	STRING	Specifies an operation. Possible values: ■ RequestReportBCSMEvent ■ PlayAnnouncement ■ PromptAndCollect ■ FurnishChargingInfo ■ ApplyCharging
Module Name	STRING	Specifies a name of a module instance to which an operation is propagated.
Enable Propagation	BOOL	Specifies whether IM-SSF processes operations on its own or propagates a request to the session control layer. Possible values: ■ True The IM-SSF propagates RRBCSMEvent operations. ■ False The IM-SSF processes RRBCSMEvent operations. Default value: True

Configuring Media Resources Parameters

The Media Resources subtab enables you to define the media resources that the SSP can connect in order to play announcements.

The table in the Media Resources subtab displays the media resources that are used to play announcements. Each row represents one media resource. When defining a new media resource, you need to specify the fields described in Table 11–7.

Table 11–7 IM-SSF CAP Phase 2 Media Resource Definition Fields

Name	Type	Description
Name	STRING	Specifies a name of the media resource.
Alias	STRING	Specifies a unique identifier that applications use to instruct Service Controller which media resource to connect in order to play announcements. Aliases are defined in a URI format. For example: mrf.network@domain.com.
Address Digits	STRING	Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource.
Nature of Address	STRING	Specifies the NatureOfAddress part of the media resource address. The media resource address is used to set up a connection towards the media resource. Possible values: ■ SUBSCRIBER_NUMBER ■ UNKNOWN ■ NATIONAL ■ INTERNATIONAL ■ NETWORK_SPECIFIC Default value: SUBSCRIBER_NUMBER
Address Numbering Plan Indicator	STRING	Specifies the NumberingPlanInd part of the media resource address. The media resource address is used to set up a connection towards the media resource. Possible values: ■ ISDN ■ DATA ■ TELEX
Numbering Qualifier	STRING	Specifies the numbering qualifier of the media resource address. Possible values: ■ NONE ■ DIALLED_DIGITS ■ USER_PROVIDED_FAILED_NETWORK_SCREENING ■ USER_PROVIDED_NOT_SCREENED ■ REDIRECTING_TERMINATING_NUMBER Default value: NONE

Table 11–7 (Cont.) IM-SSF CAP Phase 2 Media Resource Definition Fields

Name	Type	Description
Number Screening	STRING	Specifies the numbering screening of the media resource address. Possible values: ■ UNDEFINED ■ USER_PROVIDED_NOT_VERIFIED ■ USER_PROVIDED_VERIFIED_PASSED ■ USER_PROVIDED_VERIFIED_FAILED ■ NETWORK_PROVIDED Default value: UNDEFINED
Presentation Restriction	STRING	Specifies the presentation restriction of the media resource address. Possible values: ■ UNDEFINED ■ ALLOWED ■ RESTRICTED ■ NOT_AVAILABLE Default value: UNDEFINED
Operation Type	STRING	Possible values: ■ Internal: The media resource is internal part of the SSP. ConnectToResource (CTR) operation is used to connect the media resource. ■ External: The media resource not a part of the SSP. EstablishTemporaryConnection (ETC) is used to connect the media resource.
Answer Indication	BOOL	Specifies how to set the bothwayThroughConnectionInd in the ServiceInteractionIndicatorTwo parameter in the ETC and CTR operations. Possible values: ■ Yes Connection to the media resource causes the switch to generate answer indication backwards. This opens a media path from the caller to the media resource (bothwayPathRequired). ■ False The media path opens only in the direction from the media resource to the caller. ■ None Default value: Yes

Note: When an internal media resource is used (CTR), the Address Digits, Nature of Address and Address Numbering Plan Indicator parameters can be set to 'None' in order to instruct the network's session control entity to connect its pre-configured media resource.

Configuring TCAP Parameters

The TCAP subtab enables you to set up parameters of the IM TCAP layer.

Table 11–8 describes configuration parameters in the TCAP subtab.

Table 11–8 TCAP Parameter

Name	Type	Description
Class4 Default Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations. Default value: 5
Reject Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations. Default value: 1000
Application Part Guard Timer	INT	Specifies the PSM timer, which is a timer for incoming operations. The PSM timer defines the maximum time in seconds that the application (TC-User) has to respond to incoming INVOKE messages. Default value: 200
Activate Invoke Alarm in Application Layer	BOOL	When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ True ■ False Default value: False

Table 11–8 (Cont.) TCAP Parameter

Name	Type	Description
Result Split Length	INT	Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split. Default value: 512

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-SSF. For more information about configuring monitoring, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

12

Setting Up IM-SSF CAP Phase 3

This chapter describes how to set up an IM-SSF CAP Phase 3 interworking module.

About IM-SSF CAP Phase 3 Setup

The process of IM-SSF CAP Phase 3 setup requires the following:

1. Adding an IM-SSF CAP Phase 3 to your Oracle Communications Service Controller deployment. You can add as many modules of type IM-SSF CAP Phase 3 as you need. See "Adding an IM-SSF CAP Phase 3 to the Service Controller Deployment" for more information.
2. Configuring the IM-SSF CAP Phase 3. See "Configuring an IM-SSF CAP Phase 3" for more information.

Adding an IM-SSF CAP Phase 3 to the Service Controller Deployment

To add an IM-SSF CAP phase 3:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMSSFCAP3**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-SSF CAP phase 3 to your deployment, in the **Change Center** pane, click **Commit**.

A new module of type IM-SSF CAP phase 3 is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an IM-SSF CAP Phase 3

To configure an IM-SSF CAP Phase 3:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added IM-SSF CAP Phase 3.

   The IM-SSF CAP Phase 3 configuration pane contains the subtabs described in Table 12–1.

Table 12–1 IM-SSF CAP Phase 3 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See "Configuring General Parameters" for more information.
Call Handling	Enables you to configure how the IM-SSF handles calls. See "Configuring Call Handling Parameters" for more information.
Subscriber Data	Enables you to define IN triggers that the IM-SSF invokes towards the SCP above. See "Configuring Subscriber Data Parameters" for more information.
Charging	Enables you to configure functionality related to charging operations. See "Configuring Charging Parameters" for more information.
Operation Propagation	Enables you to define whether the IM-SSF processes operations on its own or propagates these operations to another module. See "Configuring Operation Propagation Parameters" for more information.
Media Resources	Enables you to set up the media resources that Service Controller uses to play announcements. See "Configuring Media Resources Parameters" for more information.
TCAP	Enables you to set up the TCAP layer of the IM-SSF. See "Configuring TCAP Parameters" for more information.
SMS Handling	Enables you to define how the IM-SSF handles SMS messages. See "Configuring SMS Handling" for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See "Configuring Monitoring Parameters" for more information.

Configuring General Parameters

The General subtab displays the protocol variant that is used to encode / decode SS7 messages and enables you to specify an alias for an Interworking Module instance.

Table 12–2 describes the configuration parameters on the General subtab.

Table 12–2 General Parameters

Name	Type	Description
Alias	STRING	Specifies an alias of the IM instance. Using this alias, the SS7 SSU recognizes the instances of the IMs to which incoming messages should be routed. For more information on how the SS7 SSU uses aliases and how to configure incoming routing in the SS7 SSU, see the discussion on configuring the SS7 Signaling Server Unit for SIGTRAN in *Service Controller Signaling Server Units Configuration Guide*.
Plugin	STRING	Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode / decode SS7 messages.

Configuring Call Handling Parameters

The Call Handling subtab enables you to define how IM-SSF handles calls.

Table 12–3 describes configuration parameters on the Call Handling subtab.

Table 12–3 IM-SSF CAP Phase 3 Call Handling Parameters

Name	Type	Description
IM-SSF Mode of Operation	STRING	Specifies the IM-SSF mode of operation. Possible values: ■ DYNAMIC IM-SSF dynamically changes its call control mode, according to the mode requested by the SCP. ■ BACK_TO_BACK IM-SSF monitors calls and ignores the mode requested by the SCP. ■ REDIRECT IM-SSF does not monitor calls and ignores the mode requested by the SCP. Default value: DYNAMIC
Session Case	STRING	Specifies how IM-SSF treats sessions that arrive on the southbound interface, from the OE. Possible values: ■ ORIG All calls are treated as originating calls. ■ TERM All calls are treated as terminating calls. ■ DYNAMIC Calls are treated dynamically as either originating or terminating calls, depending on the SAL Route header and/or the x-wcs-session-case header generated by a southbound Service Controller IM. Default value: DYNAMIC

Table 12–3 (Cont.) IM-SSF CAP Phase 3 Call Handling Parameters

Name	Type	Description
Tssf Duration in Seconds	INT	Specifies the value, in seconds, of the IM-SSF Tssf timer. Default value: 20
Tssf User Interaction Duration in Seconds	INT	Specifies the value, in seconds, of the IM-SSF Tssf timer. This parameter is used when the IM-SSF is in the middle of interaction with a media resource. Default value: 1200
IM-SSF Media Capability	BOOL	Specifies whether or not the underlying network supports IP/SRF/MRF. This determines if the IM-SSF can handle media-related operations, such as EstablishTemporaryConnection or ConnectToResource Possible values: ■ True ■ False Default value: True
Body Encoding Format	STRING	Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message. Possible options: ■ BER ■ XER ■ NONE Default value: NONE
Nature of Address of Called Party Number	STRING	Specifies how to set the NatureOfAddress of the CalledPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ SUBSCRIBER_NUMBER ■ UNKNOWN ■ NATIONAL ■ INTERNATIONAL ■ NETWORK_SPECIFIC Default value: NATIONAL

Table 12–3 (Cont.) IM-SSF CAP Phase 3 Call Handling Parameters

Name	Type	Description
Internal Network Number Indicator of Called Party Number	BOOL	Specifies how to set the InternalNetworkNumberIndicator of the CalledPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ TRUE ■ FALSE Default value: TRUE
Numbering Plan Indicator of Called Party Number	STRING	Specifies how to set the NumberingPlanIndicator of the CalledPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ ISDN ■ DATA ■ TELEX Default value: ISDN
Nature of Address of Calling Party Number	STRING	Specifies how to set the NatureOfAddress of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ SUBSCRIBER_NUMBER ■ UNKNOWN ■ NATIONAL ■ INTERNATIONAL ■ NETWORK_SPECIFIC Default value: NATIONAL
Number Incomplete Indicator of Calling Party Number	BOOL	Specifies how to set the IncompleteIndicator of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ True ■ False Default value: True

Table 12–3 (Cont.) IM-SSF CAP Phase 3 Call Handling Parameters

Name	Type	Description
Numbering Plan Indicator of Calling Party Number	STRING	Specifies how to set the NumberingPlanIndicator of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ ISDN ■ DATA ■ TELEX Default value: ISDN
Screening Indicator of Calling Party Number	STRING	Specifies how to set the NumberingPlanIndicator of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ USER_PROVIDED_NOT_VERIFIED ■ USER_PROVIDED_VERIFIED_PASSED ■ USER_PROVIDED_VERIFIED_FAILED ■ NETWORK_PROVIDED Default value: USER_PROVIDED_NOT_VERIFIED
Calling Party Category	STRING	Specifies how to set the CallingNumberCategory of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ UNKNOWN ■ LANGUAGE_FRENCH ■ LANGUAGE_ENGLISH ■ LANGUAGE_GERMAN ■ LANGUAGE_RUSSIAN ■ LANGUAGE_SPANISH ■ RESERVED Default value: LANGUAGE_ENGLISH

Table 12–3 (Cont.) IM-SSF CAP Phase 3 Call Handling Parameters

Name	Type	Description
Type of Number of Called Party Number	STRING	Specifies how to set the TypeOfNumber of the CalledPartyBCDNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ Unknown ■ InternationalNumber ■ NationalNumber ■ NetworkSpecificNumber ■ DedicatedAccessShortcode ■ AlphaNumericStringAttached Default value: NationalNumber
Numbering Plan Indicator of Called Party BCD Number	STRING	Specifies how to set the NumberingPlanIndicator of the CalledPartyBCDNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ Unknown ■ ISDN_TelephonyNumberingPlan ■ DataNumberingPlan ■ TelexNumberingPlan ■ NationalNumberingPlan ■ PrivateNumberingPlan ■ ReservedForCTS ■ ReservedForExtension Default value: DataNumberingPlan

Configuring Subscriber Data Parameters

The Subscriber Data subtab enables you to define IN triggers that IM-SSF invokes towards the SCP above.

The table on the Subscriber Data subtab displays the rules for invoking triggers. Each row represents one rule. When defining a new rule, you need to specify the fields described in Table 12–4.

Table 12–4 IM-SSF CAP Phase 3 Subscriber Data Fields

Name	Type	Description
Name	STRING	A unique identifier.
IMSI	STRING	Specifies a condition on session IMSI. When the condition is met, IM-SSF invokes triggers towards the SCP. To apply the rule for all IMSIs, set this parameter to **default** (case sensitive).

Table 12–4 (Cont.) IM-SSF CAP Phase 3 Subscriber Data Fields

Name	Type	Description
MSISDN	STRING	Specifies a condition on session MSISDN. When the condition is met, IM-SSF invokes triggers towards the SCP. To apply the rule for all MSISDNs, set this parameter to **default** (case sensitive).
Service Key	STRING	Specifies a Service Key to set on the trigger to the SCP.
SCP Address Alias	STRING	Specifies the SCP to which IM-SSF invokes a trigger. This is an alias to one of the SCCP addresses specified in the SS7 SSU configuration.
Default Call Handling	STRING	Specifies how IM-SSF handles a call when a signal between IM-SSF and SCP fails (that is, invokes a trigger towards the failed SCP). Possible values: ■ CONTINUE_CALL ■ RELEASE_CALL Default value: CONTINUE_CALL
TDP List	STRING _LIST	Specifies a list of TDPs that must be triggered. Each trigger is specified in the following format: *id*=type where: *id* is one of the following ■ 2: COLLECTED_INFO ■ 3: ANALYSED_INFORMATION ■ 4: ROUTE_SELECT_FAILURE ■ 12: TERMINATING_ATTEMPT_AUTHORISED ■ 13: T_BUSY ■ 14: T_NO_ANSWER type is one of the following: ■ R, which means Interrupt ■ N, which means Notify 13=R, 14=N

Configuring Charging Parameters

The Charging subtab enables you to configure functionality related to charging operations.

Table 12–5 describes configuration parameters on the Charging subtab.

Table 12–5 IM-SSF CAP Phase 3 Charging Parameter

Name	Type	Description
Tccd in Seconds	INT	Specifies the time interval, in seconds, that the IM-SSF waits for ApplyCharging message after sending the ApplyChargingReport message. Tccd range of values is 1 to 20 seconds. Default value: 8

Configuring Operation Propagation Parameters

The Operation Propagation parameters subtab enables you to define whether the IM-SSF processes operations on its own or propagates these operations to another module.

The table on the Operation Propagation subtab displays a list of operations. Each row represents one operation for which you define whether IM-SSF processes this operation or propagates the operation to another module. When configuring a new operation, you need to specify the fields described in Table 12–6.

Table 12–6 IM-SSF CAP Phase 3 Operation Propagation

Name	Type	Description
Name	STRING	Specifies a unique identifier
Operation	STRING	Specifies an operation. Possible values: ■ RequestReportBCSMEvent ■ PlayAnnouncement ■ PromptAndCollect ■ FurnishChargingInfo ■ ApplyCharging
Module Name	STRING	Specifies a name of a module instance to which an operation is propagated.
Enable propagation	BOOL	Specifies whether IM-SSF operations on its own or propagates a request to the session control layer. Possible values: ■ True The IM-SSF propagates RRBCSMEvent operations. ■ False The IM-SSF processes RRBCSMEvent operations.

Configuring Media Resources Parameters

The Media Resources subtab enables you to define the media resources that the SSP can connect in order to play announcements.

The table in the Media Resources subtab displays the media resources that are used to play announcements. Each row represents one media resource. When defining a new media resource, you need to specify the fields described in Table 12–7.

Table 12–7 IM-SSF CAP Phase 3 Media Resource Definition Fields

Name	Type	Description
Name	STRING	Specifies a name of the media resource.
Alias	STRING	Specifies a unique identifier that applications use to instruct Service Controller which media resource to connect in order to play announcements. Aliases are defined in a URI format. For example: mrf.network@domain.com.

Table 12–7 (Cont.) IM-SSF CAP Phase 3 Media Resource Definition Fields

Name	Type	Description
Address Digits	STRING	Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource.
Nature of Address	STRING	Specifies the NatureOfAddress part of the media resource address. The media resource address is used to set up a connection towards the media resource. Possible values: ■ SUBSCRIBER_NUMBER ■ UNKNOWN ■ NATIONAL ■ INTERNATIONAL ■ NETWORK_SPECIFIC Default value: NATIONAL
Address Numbering Plan Indicator	STRING	Specifies the NumberingPlanInd part of the media resource address. The media resource address is used to set up a connection towards the media resource. Possible values: ■ ISDN ■ DATA ■ TELEX Default value: ISDN
Numbering Qualifier	STRING	Specifies the numbering qualifier of the media resource address. Possible values: ■ NONE ■ DIALLED_DIGITS ■ USER_PROVIDED_FAILED_NETWORK_SCREENING ■ USER_PROVIDED_NOT_SCREENED ■ REDIRECTING_TERMINATING_NUMBER Default value: NONE
Number Screening	STRING	Specifies the numbering screening of the media resource address. Possible values: ■ UNDEFINED ■ USER_PROVIDED_NOT_VERIFIED ■ USER_PROVIDED_VERIFIED_PASSED ■ USER_PROVIDED_VERIFIED_FAILED ■ NETWORK_PROVIDED Default value: UNDEFINED

Table 12–7 (Cont.) IM-SSF CAP Phase 3 Media Resource Definition Fields

Name	Type	Description
Presentation Restriction	STRING	Specifies the presentation restriction of the media resource address. Possible values: ■ UNDEFINED ■ ALLOWED ■ RESTRICTED ■ NOT_AVAILABLE Default value: UNDEFINED
Operation Type	STRING	Possible values: ■ internal The media resource is internal part of the SSP. ConnectToResource (CTR) operation is used to connect the media resource. ■ external The media resource not a part of the SSP. EstablishTemporaryConnection (ETC) is used to connect the media resource. Default value: internal
Answer Indication	BOOL	Specifies how to set the bothwayThroughConnectionInd in the ServiceInteractionIndicatorTwo parameter in the ETC and CTR operations. Possible values: ■ Yes Connection to the media resource causes the switch to generate answer indication backwards. This opens a media path from the caller to the media resource (bothwayPathRequired). ■ No The media path opens only in the direction from the media resource to the caller. ■ None Default value: Yes

Note: When an internal media resource is used (CTR), the Address Digits, Nature of Address and Address Numbering Plan Indicator parameters can be set to 'None' in order to instruct the network's session control entity to connect its pre-configured media resource.

Configuring TCAP Parameters

The TCAP subtab enables you to set up parameters of the IM TCAP layer.

Table 12–8 describes configuration parameters on the TCAP subtab.

Table 12–8 TCAP Parameter

Name	Type	Description
Class4 Default Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations. Default value: 5
Reject Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations. Default value: 1000
Application Part Guard Timer	INT	Specifies the PSM timer, which is a timer for incoming operations. The PSM timer defines the maximum time in seconds that the application (TC-User) has to respond to incoming INVOKE messages. Default value: 200
Activate Invoke Alarm in Application Layer	BOOL	When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ True ■ False Default value: False
Result Split Length	INT	Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split. Default value: 512

Configuring SMS Handling

The SMS Handling tab enables you to define how the IM-SSF handles SMS messages.

The SMS Handling tab contains the subtabs described in Table 12–9.

Table 12–9 SMS Handling Subtabs

Subtab	Description
SMS General	Enables you to define how the IM-SSF should set the parameters of the DestinationSubscriberNumber and CallingPartyNumber. See "Configuring SMS Handling General Parameters" for more information.
SMS-CSI	Enables you to define CAMEL Subscription Information (CSI) for SMS messages. See "Configuring SMS CSI Parameters" for more information.

Configuring SMS Handling General Parameters

The SMS General subtab enables you to define how the IM-SSF should set the parameters of the DestinationSubscriberNumber and CallingPartyNumber.

Table 12–10 describes configuration parameters on the SMS General subtab.

Table 12–10 SMS Handling General Parameters

Name	Type	Description
Numbering Plan Indicator Of Destination Subscriber Number	STRING	Specifies how the IM-SSF CAP3 should set the NumberingPlanIndicator of the DestinationSubscriberNumber. The IM-SSF CAP3 uses this parameter when sending an InitialDPSMS message to the SCP. Possible values: ■ Unknown ■ ISDN_TelephoneNumberingPlan ■ DataNumberingPlan ■ TelexNumberingPlan ■ NationalNumberingPlan ■ PrivateNumberingPlan ■ ReservedForCTS ■ ReservedForExtension Default value: DataNumberingPlan
Type Of Number Of Destination Subscriber Number	STRING	Specifies how the IM-SSF CAP3 should set the NatureOfAddress of the DestinationSubscriberNumber. The IM-SSF CAP3 uses this parameter when sending an InitialDPSMS message to the SCP. Possible values: ■ Unknown ■ InternationalNumber ■ NationalNumber ■ NetworkSpecificNumber ■ DedicatedAccessShortCode ■ AlphaNumericStringAttached Default value: NationalNumber

Table 12–10 (Cont.) SMS Handling General Parameters

Name	Type	Description
Numbering Plan Indicator Of SMS Calling Party Number	STRING	Specifies how the IM-SSF CAP3 should set the NumberingPlanIndicator of the CallingPartyNumber for the SMS message. The IM-SSF CAP3 uses this parameter when sending an InitialDPSMS message to the SCP. ■ Unknown ■ ISDN_TelephoneNumberingPlan ■ DataNumberingPlan ■ TelexNumberingPlan ■ NationalNumberingPlan ■ PrivateNumberingPlan ■ ReservedForCTS ■ ReservedForExtension Default value: DataNumberingPlan
NOA Of SMS Calling Party Number	STRING	Specifies how the IM-SS CAP3 should set the NatureOfAddress of the CallingPartyNumber for the SMS message. The IM-SSF CAP3 uses this parameter when sending an InitialDPSMS message to the SCP. Possible values: ■ UNKNOWN ■ NATIONAL ■ INTERNATIONAL ■ SUBSCRIBER_NUMBER ■ DEDICATED ■ ABBREVIATED ■ NETWORK_SPECIFIC ■ ALPHANUMERIC Default value: NATIONAL

Configuring SMS CSI Parameters

The SMS-CSI subtab enables you to define CAMEL Subscription Information (CSI) for SMS messages.

The table on the SMS-CSI subtab displays the rules for invoking triggers. Each row represents one rule. When defining a new rule, you need to specify the fields described in Table 12–11.

Table 12–11 SMS CSI Parameters

Name	Type	Description
Name	STRING	Specifies a unique identifier.
IMSI	STRING	Specifies a condition on session IMSI. When the condition is met, the IM-SSF invokes triggers towards the SCP. To apply the rule for all IMSIs, set this parameter to **default** (case sensitive).

Table 12–11 (Cont.) SMS CSI Parameters

Name	Type	Description
MSISDN	STRING	Specifies a condition on session MSISDN. When the condition is met, the IM-SSF invokes triggers towards the SCP. To apply the rule for all MSISDNs, set this parameter to **default** (case sensitive).
Service Key	STRING	Specifies a Service Key to set on the trigger to the SCP.
SCP Address Alias	STRING	Specifies the SCP to which the IM-SSF invokes a trigger. This is an alias to one of the SCCP addresses specified in the SS7 SSU configuration.
Default Call Handling	STRING	Specifies how the IM-SSF handles a call when a signal between the IM-SSF and the SCP fails (that is, invokes a trigger towards the failed SCP). Possible values: ■ continue_call ■ release_call Default value: continue_call
TDP List	STRING	Specifies a list of comma separated TDPs that must be triggered. Each trigger is specified in the following format: *id=type* where *id* is one of the following: ■ 2 COLLECTED_INFO ■ 3 ANALYSED_INFORMATION ■ 4 ROUTE_SELECT_FAILURE ■ 12 TERMINATING_ATTEMPT_AUTHORISED ■ 13 T_BUSY ■ 14 T_NO_ANSWER *type* is one of the following: ■ R Interrupt ■ N Notify For example: 13=R, 14=N

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-SSF. For more information about configuring monitoring, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

13

Setting Up IM-SSF INAP CS-1

This chapter describes how to set up an IM-SSF INAP CS-1 interworking module.

About IM-SSF INAP CS-1 Setup

The process of IM-SSF INAP CS-1 setup requires the following:

1. Adding an IM-SSF INAP CS-1 to your Oracle Communications Service Controller deployment. You can add as many modules of type IM-SSF INAP CS-1 as you need. See "Adding an IM-SSF INAP CS-1 3 to the Service Controller Deployment" for more information.
2. Configuring the IM-SSF INAP CS-1. See "Configuring an IM-SSF INAP CS-1" for more information.

Adding an IM-SSF INAP CS-1 3 to the Service Controller Deployment

To add an IM-SSF INAP CS-1:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMSSFCS1**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-SSF INAP CS-1 to your deployment, in the **Change Center** pane, click **Commit**.

A new module of type IM-SSF INAP CS-1 is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an IM-SSF INAP CS-1

To configure an IM-SSF INAP CS-1:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added IM-SSF INAP CS-1.

   The IM-SSF INAP CS-1 configuration pane contains the subtabs described in Table 13–1.

Table 13–1 IM-SSF INAP CS-1 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See "Configuring General Parameters" for more information.
Call Handling	Enables you to configure how the IM-SSF handles calls. See "Configuring Call Handling Parameters" for more information.
Subscriber Data	Enables you to define IN triggers that the IM-SSF invokes towards the SCP above. See "Configuring Subscriber Data Parameters" for more information.
Operation Propagation	Enables you to define whether the IM-SSF processes operations on its own or propagates these operations to another module. See "Configuring Operation Propagation Parameters" for more information.
Media Resources	Enables you to set up the media resources that Service Controller uses to play announcements. See "Configuring Media Resources Parameters" for more information.
TCAP	Enables you to set up the TCAP layer of the IM-SSF. See "Configuring TCAP Parameters" for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See "Configuring Monitoring Parameters" for more information.

Configuring General Parameters

The General subtab displays the protocol variant that is used to encode / decode SS7 messages and enables you to specify an alias for an Interworking Module instance.

Table 13–2 describes the configuration parameters on the General subtab.

Table 13–2 General Parameters

Name	Type	Description
Alias	STRING	Specifies an alias of the IM instance. Using this alias, the SS7 SSU recognizes the instances of the IMs to which incoming messages should be routed. For more information on how the SS7 SSU uses aliases and how to configure incoming routing in the SS7 SSU, see the discussion on configuring the SS7 Signaling Server Unit for SIGTRAN in *Service Controller Signaling Server Units Configuration Guide*.
Plugin	STRING	Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode / decode SS7 messages.

Configuring Call Handling Parameters

The Call Handling subtab enables you to define how the IM-SSF handles calls.

Table 13–3 describes configuration parameters on the Call Handling subtab.

Table 13–3 IM-SSF INAP CS-1 Call Handling Parameters

Name	Type	Description
IM-SSF Mode of Operation	STRING	Specifies the IM-SSF mode of operation. Possible values: ■ DYNAMIC IM-SSF dynamically changes its call control mode, according to the mode requested by the SCP. ■ BACK_TO_BACK IM-SSF monitors calls and ignores the mode requested by the SCP. ■ REDIRECT IM-SSF does not monitor calls and ignores the mode requested by the SCP. Default value: DYNAMIC
Session Case	STRING	Specifies how IM-SSF treats sessions that arrive on the southbound interface, from the OE. Possible values: ■ ORIG All calls are treated as originating calls. ■ TERM All calls are treated as terminating calls. ■ DYNAMIC Calls are treated dynamically as either originating or terminating calls, depending on the SAL Route header and/or the x-wcs-session-case header generated by a southbound Service Controller IM. Default value: DYNAMIC

Table 13–3 (Cont.) IM-SSF INAP CS-1 Call Handling Parameters

Name	Type	Description
Tssf Duration in Seconds	INT	Specifies the value, in seconds, of the IM-SSF Tssf timer. Default value: 20
Tssf User Interaction Duration in Seconds	INT	Specifies the value, in seconds, of the IM-SSF Tssf timer. This parameter is used when the IM-SSF is in the middle of interaction with a media resource. Default value: 1200
IM-SSF Media Capability	BOOL	Specifies whether or not the underlying network supports IP/SRF/MRF. This determines if the IM-SSF can handle media-related operations, such as EstablishTemporaryConnection or ConnectToResource. Possible values: ■ True ■ False Default value: True
Body Encoding Format	STRING	Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message. Possible options: ■ BER ■ XER ■ NONE Default value: NONE
Nature of Address of Called Party Number	STRING	Specifies how to set the NatureOfAddress of the CalledPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ SUBSCRIBER_NUMBER ■ UNKNOWN ■ NATIONAL ■ INTERNATIONAL ■ NETWORK_SPECIFIC Default value: NATIONAL

Table 13–3 (Cont.) IM-SSF INAP CS-1 Call Handling Parameters

Name	Type	Description
Internal Network Number Indicator of Called Party Number	BOOL	Specifies how to set the InternalNetworkNumberIndicator of the CalledPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ True ■ False Default value: True
Numbering Plan Indicator of Called Party Number	STRING	Specifies how to set the NumberingPlanIndicator of the CalledPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ ISDN ■ DATA ■ TELEX Default value: DATA
Nature of Address of Calling Party Number	STRING	Specifies how to set the NatureOfAddress of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ SUBSCRIBER_NUMBER ■ UNKNOWN ■ NATIONAL ■ INTERNATIONAL ■ NETWORK_SPECIFIC Default value: NATIONAL
Number Incomplete Indicator of Calling Party Number	BOOL	Specifies how to set the IncompleteIndicator of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible options: ■ True ■ False Default value: True

Table 13–3 (Cont.) IM-SSF INAP CS-1 Call Handling Parameters

Name	Type	Description
Numbering Plan Indicator of Calling Party Number	STRING	Specifies how to set the NumberingPlanIndicator of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ ISDN ■ DATA ■ TELEX Default value: ISDN
Screening Indicator of Calling Party Number	STRING	Specifies how to set the NumberingPlanIndicator of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ USER_PROVIDED_NOT_VERIFIED ■ USER_PROVIDED_VERIFIED_PASSED ■ USER_PROVIDED_VERIFIED_FAILED ■ NETWORK_PROVIDED Default values: USER_PROVIDED_NOT_VERIFIED
Calling Party Category	STRING	Specifies how to set the CallingNumberCategory of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ UNKNOWN ■ LANGUAGE_FRENCH ■ LANGUAGE_ENGLISH ■ LANGUAGE_GERMAN ■ LANGUAGE_RUSSIAN Default value: LANGUAGE_ENGLISH
Type of Number of Called Party Number	STRING	Specifies how to set the TypeOfNumber of the CalledPartyBCDNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ Unknown ■ InternationalNumber ■ NationalNumber ■ NetworkSpecificNumber ■ DedicatedAccessShortcode Default value: NationalNumber

Table 13–3 (Cont.) IM-SSF INAP CS-1 Call Handling Parameters

Name	Type	Description
Numbering Plan Indicator of Called Party BCD Number	STRING	Specifies how to set the NumberingPlanIndicator of the CalledPartyBCDNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values: ■ Unknown ■ ISDN_TelephonyNumberingPlan ■ DataNumberingPlan ■ TelexNumberingPlan ■ NationalNumberingPlan Default value: DataNumberingPlan

Configuring Subscriber Data Parameters

The Subscriber Data subtab enables you to define IN triggers that IM-SSF invokes towards the SCP above.

The table on the Subscriber Data subtab displays the rules for invoking triggers. Each row represents one rule. When defining a new rule, you need to specify the fields described in Table 13–4.

Table 13–4 IM-SSF INAP CS-1 Subscriber Data Fields

Name	Type	Description
Name	STRING	A unique identifier.
IMSI	STRING	Specifies a condition on session IMSI. When the condition is met, IM-SSF invokes triggers towards the SCP. To apply the rule for all IMSIs, set this parameter to **default** (case sensitive).
MSISDN	STRING	Specifies a condition on session MSISDN. When the condition is met, IM-SSF invokes triggers towards the SCP. To apply the rule for all MSISDNs, set this parameter to **default** (case sensitive).
Service Key	STRING	Specifies a Service Key to set on the trigger to the SCP.
SCP Address Alias	STRING	Specifies the SCP to which IM-SSF invokes a trigger. This is an alias to one of the SCCP addresses specified in the SS7 SSU configuration.
Default Call Handling	STRING	Specifies how IM-SSF handles a call when a signal between IM-SSF and SCP fails (that is invokes a trigger towards the failed SCP). Possible values: ■ CONTINUE_CALL ■ RELEASE_CALL Default value: CONTINUE_CALL

Table 13–4 (Cont.) IM-SSF INAP CS-1 Subscriber Data Fields

Name	Type	Description
TDP List	STRING_LIST	Specifies a list of TDPs that must be triggered. Each trigger is specified in the following format: *id=type* where: *id* is one of the following ■ 2: COLLECTED_INFO ■ 3: ANALYSED_INFORMATION ■ 4: ROUTE_SELECT_FAILURE ■ 12: TERMINATING_ATTEMPT_AUTHORISED ■ 13: T_BUSY ■ 14: T_NO_ANSWER *type* is one of the following: ■ R, which means Interrupt ■ N, which means Notify 13=R, 14=N

Configuring Operation Propagation Parameters

The Operation Propagation parameters subtab enables you to define whether the IM-SSF processes operations on its own or propagates these operations to another module.

The table on the Operation Propagation subtab displays a list of operations. Each row represents one operation for which you define whether IM-SSF processes this operation or propagates the operation to another module. When configuring a new operation, you need to specify the fields described in Table 13–5.

Table 13–5 IM-SSF INAP CS1 Operation Propagation

Name	Type	Description
Name	STRING	Specifies a unique identifier.
Operation	STRING	Specifies an operation. Possible values: ■ RequestReportBCSMEvent ■ PlayAnnouncement ■ PromptAndCollect
Module name	STRING	Specifies a name of a module instance to which an operation is propagated.
Enable Propagation	BOOL	Specifies whether IM-SSF processes operations on its own or propagates a request to the session control layer. Possible values: ■ True The IM-SSF propagates RRBCSMEvent operations. ■ False The IM-SSF processes RRBCSMEvent operations. Default value: True

Configuring Media Resources Parameters

The Media Resources subtab enables you to define the media resources that the SSP can connect in order to play announcements.

The table in the Media Resources subtab displays the media resources that are used to play announcements. Each row represents one media resource. When defining a new media resource, you need to specify the fields described in Table 13–6.

Table 13–6 IM-SSF INAP CS-1 Media Resource Definition Fields

Name	Type	Description
Name	STRING	Specifies a name of the media resource
Alias	STRING	Specifies a unique identifier that applications use to instruct Service Controller which media resource to connect to in order to play announcements. Aliases are defined in a URI format. For example: mrf.network@domain.com.
Address Digits	STRING	Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource.
Nature of Address	STRING	Specifies the NatureOfAddress part of the media resource address. The media resource address is used to set up a connection towards the media resource. Possible values: ■ SUBSCRIBER_NUMBER ■ UNKNOWN ■ NATIONAL ■ INTERNATIONAL ■ NETWORK_SPECIFIC Default value: SUBSCRIBER_NUMBER
Address Numbering Plan Indicator	STRING	Specifies the NumberingPlanInd part of the media resource address. The media resource address is used to set up a connection towards the media resource. Possible values: ■ ISDN ■ DATA ■ TELEX Default value: ISDN

Table 13–6 (Cont.) IM-SSF INAP CS-1 Media Resource Definition Fields

Name	Type	Description
Operation Type	STRING	Possible values: ■ internal The media resource is internal part of the SSP. ConnectToResource (CTR) operation is used to connect the media resource. ■ external The media resource not a part of the SSP. EstablishTemporaryConnection (ETC) is used to connect the media resource. Default value: internal
Service Interaction Indicators	STRING	Specifies the value of ServiceInteractionIndicators to include in ConnectToResource operations. If set to the string 'none', or left empty no ServiceInteractionIndicators parameter is included. Specify value as a hex string. For example, a 2 octet string is specified as 'O3A5'.

Configuring TCAP Parameters

The TCAP subtab enables you to set up parameters of the IM TCAP layer.

Table 13–7 describes configuration parameters on the TCAP subtab.

Table 13–7 TCAP Parameter

Name	Type	Description
Class4 Default Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations. Default value: 5
Reject Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations. Default value: 1000
Application Part Guard Timer	INT	Specifies the PSM timer, which is a timer for incoming operations. The PSM timer defines the maximum time in seconds that the application (TC-User) has to respond to incoming INVOKE messages. Default value: 200

Table 13–7 (Cont.) TCAP Parameter

Name	Type	Description
Activate Invoke Alarm in Application Layer	BOOL	When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ True ■ False Default value: False
Result Split Length	INT	Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split. Default value: 512

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-SSF. For more information about configuring monitoring, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

14

Setting Up IM-SSF WIN Phase 1

This chapter describes how to set up an IM-SSF WIN Phase 1 interworking module.

About IM-SSF WIN Phase 1 Setup

The process of IM-SSF WIN phase 1 setup requires the following:

1. Adding an IM-SSF WIN phase 1 to your Oracle Communications Service Controller deployment. You can add as many modules of type IM-SSF WIN phase 1 as you need. See "Adding an IM-SSF WIN Phase 1 to the Service Controller Deployment" for more information.
2. Configuring the IM-SSF WIN phase 1. See "Configuring an IM-SSF WIN Phase 1" for more information.

Adding an IM-SSF WIN Phase 1 to the Service Controller Deployment

To add an IM-SSF WIN phase 1:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMSSFWIN1**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-SSF WIN phase 1 to your deployment, in the **Change Center** pane, click **Commit**.

A new module of type IM-SSF WIN phase 1 is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an IM-SSF WIN Phase 1

To configure an IM-SSF WIN phase 1:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added IM-SSF WIN phase 1.

   The IM-SSF WIN phase 1 configuration pane contains the subtabs described in Table 14–1.

Table 14–1 IM-SSF WIN Phase 1 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See "Configuring General Parameters" for more information.
Call Handling	Enables you to configure how the IM-SSF handles calls. See "Configuring Call Handling Parameters" for more information.
Subscriber Data	Enables you to define IN triggers that the IM-SSF invokes towards the SCP above. See "Configuring Subscriber Data Parameters" for more information.
Media Resources	Enables you to set up the media resources that Service Controller uses to play announcements. See "Configuring Media Resources Parameters" for more information.
TCAP	Enables you to set up the TCAP layer of the IM-SSF. See "Configuring TCAP Parameters" for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See "Configuring Monitoring Parameters" for more information.

Configuring General Parameters

The General subtab displays the protocol variant that is used to encode / decode SS7 messages and enables you to specify an alias for an Interworking Module instance.

Table 14–2 describes the configuration parameters on the General subtab.

Table 14–2 General Parameters

Name	Type	Description
Alias	STRING	Specifies an alias of the IM instance. Using this alias, the SS7 SSU recognizes the instances of the IMs to which incoming messages should be routed. For more information on how the SS7 SSU uses aliases and how to configure incoming routing in the SS7 SSU, see the discussion on configuring the SS7 Signaling Server Unit for SIGTRAN in *Service Controller Signaling Server Units Configuration Guide*.
Plugin	STRING	Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode / decode SS7 messages.

Configuring Call Handling Parameters

The Call Handling subtab enables you to define how IM-SSF handles calls.

Table 14–3 describes configuration parameters on the Call Handling subtab.

Table 14–3 IM-SSF WIN Phase 1 Call Handling Parameters

Name	Type	Description
IM-SSF Mode of Operation	STRING	Specifies the IM-SSF mode of operation. Possible values: ■ DYNAMIC IM-SSF dynamically changes its call control mode, according to the mode requested by the SCP. ■ BACK_TO_BACK IM-SSF monitors calls and ignores the mode requested by the SCP. ■ REDIRECT IM-SSF does not monitor calls and ignores the mode requested by the SCP. Default value: DYNAMIC
Session Case	STRING	Specifies how IM-SSF treats sessions that arrive on the southbound interface, from the OE. Possible values: ■ ORIG All calls are treated as originating calls. ■ TERM All calls are treated as terminating calls. ■ DYNAMIC Calls are treated dynamically as either originating or terminating calls, depending on the SAL Route header and/or the x-wcs-session-case header generated by a southbound Service Controller IM. Default value: DYNAMIC

Table 14–3 (Cont.) IM-SSF WIN Phase 1 Call Handling Parameters

Name	Type	Description
Tssf Duration in Seconds	INT	Specifies the value, in seconds, of the IM-SSF Tssf timer. Default value: 20
Tssf User Interaction Duration in Seconds	INT	Specifies the value, in seconds, of the IM-SSF Tssf timer. This parameter is used when the IM-SSF is in the middle of interaction with a media resource. Default value: 1200
IM-SSF Media Capability	BOOL	Specifies whether or not the underlying network supports IP/SRF/MRF. This determines if the IM-SSF can handle media-related operations, such as EstablishTemporaryConnection or ConnectToResource. Possible values: ■ True ■ False Default value: True
Body Encoding Format	STRING	Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message. Possible options: ■ BER ■ XER ■ NONE Default value: NONE
MSC ID	STRING	Specifies the value that IM-SSF sets in the mscId field of trigger messages.
MS ID	STRING	Specifies the value that IM-SSF sets in the msID field of trigger messages.
Mobile Equipment Number Manufacturer Code	INT	Specifies the manufacturer code of the equipment. This parameter is used when the IM-SSF sends a new trigger, such as OriginationRequest or AnalyzedInformation message to the SCP. Default value: -1
Mobile Equipment Number Serial Number	STRING	Specifies how to set the mobile equipment number field. This parameter is used when the IM-SSF sends a new trigger, such as OriginationRequest or AnalyzedInformation message to the SCP.

Table 14–3 (Cont.) IM-SSF WIN Phase 1 Call Handling Parameters

Name	Type	Description
ORREQ Dialed Digits Numbering Plan	STRING	Specifies the NumberingPlan of the DialedDigits field. This parameter is used when IM-SSF sends a new OriginationRequest message to the SCP. Possible values: ■ ISDN ■ DATA ■ TELEX ■ TELEPHONY ■ MARITIME_MOBILE ■ LAND_MOBILE ■ PRIVATE ■ ANSI_SS7_PC_AND_SSN ■ INTERNET_PROTOCOL ■ UNKNOWN Default value: ISDN
ORREQ Dialed Digits Type of Digits	STRING	Specifies the TypeOfDigits of the DialedDigits field. This parameter is used when IM-SSF sends a new OriginationRequest message to the SCP. Possible values: ■ NOT_DEFINED ■ CALLED_PARTY_NUMBER ■ CALLING_PARTY_NUMBER ■ CALLER_INTERACTION ■ ROUTING_NUMBER ■ BILLING_NUMBER ■ DESTINATION_NUMBER ■ LATA ■ CARRIER Default value: CALLED_PARTY_NUMBER

Table 14–3 (Cont.) IM-SSF WIN Phase 1 Call Handling Parameters

Name	Type	Description
ORREQ MDN Type of Digits	STRING	Specifies how to set the TypeOfDigits of the MobileDirectoryNumber field. This parameter is used when the IM-SSF sends a new OriginationRequest message to the SCP. Possible values: ■ NOT_DEFINED ■ CALLED_PARTY_NUMBER ■ CALLING_PARTY_NUMBER ■ CALLER_INTERACTION ■ ROUTING_NUMBER ■ BILLING_NUMBER ■ DESTINATION_NUMBER ■ LATA ■ CARRIER Default value: CALLED_PARTY_NUMBER
ORREQ MDN Numbering Plan	STRING	Specifies the NumberingPlan of the MobileDirectoryNumber field. This parameter is used when IM-SSF sends a new OriginationRequest message to the SCP. Possible values: ■ ISDN ■ DATA ■ TELEX ■ TELEPHONY ■ MARITIME_MOBILE ■ LAND_MOBILE ■ PRIVATE ■ ANSI_SS7_PC_AND_SSN ■ UNKNOWN Default value: TELEPHONY

Table 14–3 (Cont.) IM-SSF WIN Phase 1 Call Handling Parameters

Name	Type	Description
Analyzed Invoke Digits Numbering Plan	STRING	Specifies the NumberingPlan of the InvokeDigits field. This parameter is used when IM-SSF sends a new AnalyzedInformation message to the SCP. Possible values: ■ ISDN ■ DATA ■ TELEX ■ TELEPHONY ■ MARITIME_MOBILE ■ LAND_MOBILE ■ PRIVATE ■ ANSI_SS7_PC_AND_SSN ■ INTERNET_PROTOCOL ■ UNKNOWN Default value: CALLED_PARTY_NUMBER
Analyzed Information Dialed Digits Type of Digits	STRING	Specifies the TypeOfDigits of the DialedDigits field. This parameter is used when IM-SSF sends a new AnalyzedInformation message to the SCP. Possible values: ■ NOT_DEFINED ■ CALLED_PARTY_NUMBER ■ CALLING_PARTY_NUMBER ■ CALLER_INTERACTION ■ ROUTING_NUMBER ■ BILLING_NUMBER ■ DESTINATION_NUMBER ■ LATA ■ CARRIER Default value: CALLED_PARTY_NUMBER
Analyzed Invoke Calling Party Number Digits	STRING	Possible values: ■ NOT_DEFINED ■ CALLED_PARTY_NUMBER ■ CALLING_PARTY_NUMBER ■ CALLER_INTERACTION ■ ROUTING_NUMBER ■ BILLING_NUMBER ■ DESTINATION_NUMBER ■ LATA ■ CARRIER Default value: CALLED_PARTY_NUMBER

Table 14–3 (Cont.) IM-SSF WIN Phase 1 Call Handling Parameters

Name	Type	Description
Analyzed Invoke Calling Party Number Digits	STRING	Possible values: ■ NOT_DEFINED ■ CALLED_PARTY_NUMBER ■ CALLING_PARTY_NUMBER ■ CALLER_INTERACTION ■ ROUTING_NUMBER ■ BILLING_NUMBER ■ DESTINATION_NUMBER ■ LATA ■ CARRIER Default value: CALLED_PARTY_NUMBER
Analyzed Invoke Routing Digits Type of Digits	STRING	Possible values: ■ NOT_DEFINED ■ CALLED_PARTY_NUMBER ■ CALLING_PARTY_NUMBER ■ CALLER_INTERACTION ■ ROUTING_NUMBER ■ BILLING_NUMBER ■ DESTINATION_NUMBER ■ LATA ■ CARRIER Default value: ROUTING_NUMBER
Analyzed Invoke Routing Digits Numbering Plan	STRING	Possible values: ■ ISDN ■ DATA ■ TELEX ■ TELEPHONY ■ MARITIME_MOBILE ■ LAND_MOBILE ■ PRIVATE ■ ANSI_SS7_PC_AND_SSN ■ INTERNET_PROTOCOL ■ UNKNOWN Default value: TELEPHONY

Table 14–3 (Cont.) IM-SSF WIN Phase 1 Call Handling Parameters

Name	Type	Description
Analyzed Invoke Carrier Digits Type of Digits	STRING	Possible values: ■ ISDN ■ DATA ■ TELEX ■ TELEPHONY ■ MARITIME_MOBILE ■ LAND_MOBILE ■ PRIVATE ■ ANSI_SS7_PC_AND_SSN ■ INTERNET_PROTOCOL ■ UNKNOWN Default value: CALLED_PARTY_NUMBER
Analyzed Invoke Carrier Digits Numbering Plan	STRING	Possible values: ■ NOT_DEFINED ■ CALLED_PARTY_NUMBER ■ CALLING_PARTY_NUMBER ■ CALLER_INTERACTION ■ ROUTING_NUMBER ■ BILLING_NUMBER ■ DESTINATION_NUMBER ■ LATA ■ CARRIER Default value: CARRIER
Analyzed Invoke Destination Digits Type of Digits	STRING	Possible values: ■ NOT_DEFINED ■ CALLED_PARTY_NUMBER ■ CALLING_PARTY_NUMBER ■ CALLER_INTERACTION ■ ROUTING_NUMBER ■ BILLING_NUMBER ■ DESTINATION_NUMBER ■ LATA ■ CARRIER Default value: ROUTING_NUMBER

Table 14–3 (Cont.) IM-SSF WIN Phase 1 Call Handling Parameters

Name	Type	Description
Analyzed Invoke Destination Digits Numbering	STRING	Possible values: ■ ISDN ■ DATA ■ TELEX ■ TELEPHONY ■ MARITIME_MOBILE ■ LAND_MOBILE ■ PRIVATE ■ ANSI_SS7_PC_AND_SSN ■ INTERNET_PROTOCOL ■ UNKNOWN Default value: TELEPHONY
Analyzed Invoke Mobile Directory Number Type of Digits	STRING	Specifies how to set the TypeOfDigits of the MobileDirectoryNumber field. This parameter is used when IM-SSF sends a new AnalyzedInformation message to the SCP. Possible values: ■ NOT_DEFINED ■ CALLED_PARTY_NUMBER ■ CALLING_PARTY_NUMBER ■ CALLER_INTERACTION ■ ROUTING_NUMBER ■ BILLING_NUMBER ■ DESTINATION_NUMBER ■ LATA ■ CARRIER Default value: CALLING_PARTY_NUMBER
Analyzed Invoke Mobile Directory Number Nature Numbering Plan	STRING	Specifies the NumberingPlan of the MobileDirectoryNumber field. This parameter is used when IM-SSF sends a new AnalyzedInformation message to the SCP. Possible values: ■ ISDN ■ DATA ■ TELEX ■ TELEPHONY ■ MARITIME_MOBILE ■ LAND_MOBILE ■ PRIVATE ■ ANSI_SS7_PC_AND_SSN ■ INTERNET_PROTOCOL ■ UNKNOWN Default value: TELEPHONY

Configuring Subscriber Data Parameters

The Subscriber Data subtab enables you to define IN triggers that IM-SSF invokes towards the SCP above.

The table on the Subscriber Data subtab displays the rules for invoking triggers. Each row represents one rule. When defining a new rule, you need to specify the fields described in Table 14–4.

Table 14–4 IM-SSF WIN Phase 1 Subscriber Data Fields

Name	Type	Description
Name	STRING	A unique identifier.
MIN	STRING	Specifies a condition on session MIN When the condition is met, IM-SSF invokes triggers towards the SCP. To apply a rule for all MINs, set this parameter to Default.
DN	STRING	Specifies a condition on session DN. When the condition is met, IM-SSF invokes triggers towards the SCP. To apply a rule for all DNs, set this parameter to Default.
SCP Address Alias	STRING	Specifies the SCP to which IM-SSF invokes a trigger. This is an alias to one of the SCCP addresses specified in the SS7 SSU configuration.
Default Call Handling	STRING	Specifies how IM-SSF handles a call when a signal between IM-SSF and SCP fails (that is, (that is, invokes a trigger towards the failed SCP). Possible values: ■ CONTINUE_CALL ■ RELEASE_CALL Default value: CONTINUE_CALL
TDP List	STRING _LIST	Specifies a list of TDPs that must be triggered. Each trigger is specified in the following format: *id*=type where: *id* is one of the following: ■ 36: Origination_Attempt_Authorized ■ 37: Calling_Routing_Address_Available ■ 64: Terminating_Resource_Available ■ 65: T_Busy ■ 66: T_No_Answer type is one of the following: ■ R, which means Interrupt ■ N, which means Notify When you want to define multiple TDPs, separate these TDPs with a comma. For example: 65=R,66=N

Configuring Media Resources Parameters

The Media Resources subtab enables you to define the media resources that the SSP can connect in order to play announcements.

The table in the Media Resources subtab displays the media resources that are used to play announcements. Each row represents one media resource. When defining a new media resource, you need to specify the fields described in Table 14–5.

Table 14–5 IM-SSF WIN Phase 1 Media Resource Definition Fields

Name	Type	Description
Name	STRING	Specifies a name of the media resource.
Alias	STRING	Specifies a unique identifier that applications use to instruct IM-SSF which media resource to connect in order to play announcements. Alias is used by IM-SSF to lookup a media resource details in this table. Aliases are defined in a URI format. For example: mrf.network@domain.com.
Address Digits	STRING	Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource. **Note:** when this parameter is not set, the network's session control entity uses a pre-configured media resource to play announcements. In this case, Nature of Address and Address Numbering Plan Indicator should be set to None.
Operation Type	STRING	Possible values: ■ switched_based The media resource is an internal part of the SSP. CCDIR operation is used to set up a connection towards the media. resource. ■ external The media resource is not part of the SSP. ConnectResource operation is used to connect the media resource. Default value: switched_based
Resource Type	STRING	Specifies the value to set in the SpecializedResource parameter of the SEIZERES operation. Possible values: ■ UNUSED ■ DTMF_TONE_DETECTOR ■ ASR_DIGITS ■ ASR_SPEECH_USER_INTERFACE Default value: UNUSED
Private Resource Type	STRING	Specifies the value to set in the PrivateSpecializedResource parameter of the SEIZERES operation

Table 14–5 (Cont.) IM-SSF WIN Phase 1 Media Resource Definition Fields

Name	Type	Description
SN-IP Configuration	STRING	Possible values: ■ UNUSED ■ SN IP and SCP are co-located. When you choose this option, you need to set also the SN Address parameter. ■ IP IP and SCP are not co-located Default value: UNUSED
SN Address	STRING	Specifies the value to set in the DestinationDigits parameter of the CONNRES operation. This value is regarded only when SN-IP Configuration parameter is set to SN.

Configuring TCAP Parameters

The TCAP subtab enables you to set up parameters of the IM TCAP layer.

Table 14–6 describes configuration parameters on the TCAP subtab.

Table 14–6 TCAP Parameters

Name	Type	Description
Class4 Default Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations. Default value: 4
Reject Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations. Default value: 1000
Application Part Guard Timer	INT	Specifies the PSM timer, which is a timer for incoming operations. The PSM timer defines the maximum time in seconds that the application (TC-User) has to respond to incoming INVOKE messages. Default value: 200

Table 14–6 (Cont.) TCAP Parameters

Name	Type	Description
Activate Invoke Alarm in Application Layer	BOOL	When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ True ■ False Default value: False
Result Split Length	INT	Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split. Default value: 512

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-SSF. For more information about configuring monitoring, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

15

Setting Up IM-SSF WIN Phase 2

This chapter describes how to set up an IM-SSF WIN Phase 2 interworking module.

About IM-SSF WIN Phase 2 Setup

The process of IM-SSF WIN phase 2 setup requires the following:

1. Adding an IM-SSF WIN phase 2 to your Oracle Communications Service Controller deployment. You can add as many modules of type IM-SSF WIN phase 2 as you need. See "Adding an IM-SSF WIN Phase 2 to the Service Controller Deployment" for more information.
2. Configuring the IM-SSF WIN phase 2. See "Configuring an IM-SSF WIN Phase 2" for more information.

Adding an IM-SSF WIN Phase 2 to the Service Controller Deployment

To add an IM-SSF WIN phase 2:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMSSFWIN2**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-SSF WIN phase 2 to your deployment, in the **Change Center** pane, click **Commit**.

A new module of type IM-SSF WIN phase 2 is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an IM-SSF WIN Phase 2

To configure an IM-SSF WIN phase 2:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added IM-SSF WIN phase 2.

   The IM-SSF WIN phase 2 configuration pane contains the subtabs described in Table 15–1.

Table 15–1 IM-SSF WIN Phase 2 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See "Configuring General Parameters" for more information.
Call Handling	Enables you to configure how the IM-SSF handles calls. See "Configuring Call Handling Parameters" for more information.
Subscriber Data	Enables you to define IN triggers that the IM-SSF invokes towards the SCP above. See "Configuring Subscriber Data Parameters" for more information.
Media Resources	Enables you to set up the media resources that Service Controller uses to play announcements. See "Configuring Media Resources Parameters" for more information.
TCAP	Enables you to set up the TCAP layer of the IM-SSF. See "Configuring TCAP Parameters" for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See "Configuring Monitoring Parameters" for more information.

Configuring General Parameters

The General subtab displays the protocol variant that is used to encode / decode SS7 messages and enables you to configure general parameters for an Interworking Module instance.

Table 15–2 describes the configuration parameters on the General subtab.

Table 15–2 General Parameters

Name	Type	Description
Alias	STRING	Specifies an alias of the IM instance. Using this alias, the SS7 SSU recognizes the instances of the IMs to which incoming messages should be routed. For more information on how the SS7 SSU uses aliases and how to configure incoming routing in the SS7 SSU, see the discussion on configuring the SS7 Signaling Server Unit for SIGTRAN in *Service Controller Signaling Server Units Configuration Guide*.
Plugin	STRING	Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode / decode SS7 messages.

Configuring Call Handling Parameters

The Call Handling subtab enables you to define how IM-SSF handles calls.

Table 15–3 describes configuration parameters on the Call Handling subtab.

Table 15–3 IM-SSF WIN Phase 1 Call Handling Parameters

Name	Type	Description
IM-SSF Mode of Operation	STRING	Specifies the IM-SSF mode of operation. Possible values: ■ DYNAMIC IM-SSF dynamically changes its call control mode, according to the mode requested by the SCP. ■ BACK_TO_BACK IM-SSF monitors calls and ignores the mode requested by the SCP. ■ REDIRECT IM-SSF does not monitor calls and ignores the mode requested by the SCP. Default value: DYNAMIC
Session Case	STRING	Specifies how IM-SSF treats sessions that arrive on the southbound interface, from the OE. Possible values: ■ ORIG All calls are treated as originating calls. ■ TERM All calls are treated as terminating calls. ■ DYNAMIC Calls are treated dynamically as either originating or terminating calls, depending on the SAL Route header and/or the x-wcs-session-case header generated by a southbound Service Controller IM. Default value: DYNAMIC

Table 15–3 (Cont.) IM-SSF WIN Phase 1 Call Handling Parameters

Name	Type	Description
Tssf Duration in Seconds	INT	Specifies the value, in seconds, of the IM-SSF Tssf timer. Default value: 20
Tssf User Interaction Duration in Seconds	INT	Specifies the value, in seconds, of the IM-SSF Tssf timer. This parameter is used when the IM-SSF is in the middle of interaction with a media resource. Default value: 1200
IM-SSF Media Capability	BOOL	Specifies whether or not the underlying network supports IP/SRF/MRF. This determines if the IM-SSF can handle media-related operations, such as EstablishTemporaryConnection or ConnectToResource. Possible values: ■ True ■ False Default value: True
Body Encoding Format	STRING	Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message. Possible options: ■ BER ■ XER ■ NONE Default value: NONE
MSC ID	STRING	Specifies the value that IM-SSF sets in the mscId field of trigger messages.
MS ID	STRING	Specifies the value that IM-SSF sets in the msID field of trigger messages.
Mobile Equipment Number Manufacturer Code	INT	Specifies the manufacturer code of the equipment. This parameter is used when the IM-SSF sends a new trigger, such as OriginationRequest or AnalyzedInformation message to the SCP. Default value: -1
Mobile Equipment Number Serial Number	STRING	Specifies how to set the mobile equipment number field. This parameter is used when the IM-SSF sends a new trigger, such as OriginationRequest or AnalyzedInformation message to the SCP.

Table 15–3 (Cont.) IM-SSF WIN Phase 1 Call Handling Parameters

Name	Type	Description
ORREQ Dialed Digits Numbering Plan	STRING	Specifies the NumberingPlan of the DialedDigits field. This parameter is used when IM-SSF sends a new OriginationRequest message to the SCP. Possible values: ■ ISDN ■ DATA ■ TELEX ■ TELEPHONY ■ MARITIME_MOBILE ■ LAND_MOBILE ■ PRIVATE ■ ANSI_SS7_PC_AND_SSN ■ INTERNET_PROTOCOL ■ UNKNOWN Default value: ISDN
ORREQ Dialed Digits Type of Digits	STRING	Specifies the TypeOfDigits of the DialedDigits field. This parameter is used when IM-SSF sends a new OriginationRequest message to the SCP. Possible values: ■ NOT_DEFINED ■ CALLED_PARTY_NUMBER ■ CALLING_PARTY_NUMBER ■ CALLER_INTERACTION ■ ROUTING_NUMBER ■ BILLING_NUMBER ■ DESTINATION_NUMBER ■ LATA ■ CARRIER Default value: CALLED_PARTY_NUMBER

Table 15–3 (Cont.) IM-SSF WIN Phase 1 Call Handling Parameters

Name	Type	Description
ORREQ MDN Type of Digits	STRING	Specifies how to set the TypeOfDigits of the MobileDirectoryNumber field. This parameter is used when the IM-SSF sends a new OriginationRequest message to the SCP. Possible values: ■ NOT_DEFINED ■ CALLED_PARTY_NUMBER ■ CALLING_PARTY_NUMBER ■ CALLER_INTERACTION ■ ROUTING_NUMBER ■ BILLING_NUMBER ■ DESTINATION_NUMBER ■ LATA ■ CARRIER Default value: CALLED_PARTY_NUMBER
ORREQ MDN Numbering Plan	STRING	Specifies the NumberingPlan of the MobileDirectoryNumber field. This parameter is used when IM-SSF sends a new OriginationRequest message to the SCP. Possible values: ■ ISDN ■ DATA ■ TELEX ■ TELEPHONY ■ MARITIME_MOBILE ■ LAND_MOBILE ■ PRIVATE ■ ANSI_SS7_PC_AND_SSN ■ UNKNOWN Default value: TELEPHONY

Table 15–3 (Cont.) IM-SSF WIN Phase 1 Call Handling Parameters

Name	Type	Description
Analyzed Invoke Digits Numbering Plan	STRING	Specifies the NumberingPlan of the InvokeDigits field. This parameter is used when IM-SSF sends a new AnalyzedInformation message to the SCP. Possible values: ■ ISDN ■ DATA ■ TELEX ■ TELEPHONY ■ MARITIME_MOBILE ■ LAND_MOBILE ■ PRIVATE ■ ANSI_SS7_PC_AND_SSN ■ INTERNET_PROTOCOL ■ UNKNOWN Default value: CALLED_PARTY_NUMBER
Analyzed Information Dialed Digits Type of Digits	STRING	Specifies the TypeOfDigits of the DialedDigits field. This parameter is used when IM-SSF sends a new AnalyzedInformation message to the SCP. Possible values: ■ NOT_DEFINED ■ CALLED_PARTY_NUMBER ■ CALLING_PARTY_NUMBER ■ CALLER_INTERACTION ■ ROUTING_NUMBER ■ BILLING_NUMBER ■ DESTINATION_NUMBER ■ LATA ■ CARRIER Default value: CALLED_PARTY_NUMBER
Analyzed Invoke Calling Party Number Digits	STRING	Possible values: ■ NOT_DEFINED ■ CALLED_PARTY_NUMBER ■ CALLING_PARTY_NUMBER ■ CALLER_INTERACTION ■ ROUTING_NUMBER ■ BILLING_NUMBER ■ DESTINATION_NUMBER ■ LATA ■ CARRIER Default value: CALLED_PARTY_NUMBER

Table 15–3 (Cont.) IM-SSF WIN Phase 1 Call Handling Parameters

Name	Type	Description
Analyzed Invoke Calling Party Number Digits	STRING	Possible values: ■ NOT_DEFINED ■ CALLED_PARTY_NUMBER ■ CALLING_PARTY_NUMBER ■ CALLER_INTERACTION ■ ROUTING_NUMBER ■ BILLING_NUMBER ■ DESTINATION_NUMBER ■ LATA ■ CARRIER Default value: CALLED_PARTY_NUMBER
Analyzed Invoke Routing Digits Type of Digits	STRING	Possible values: ■ NOT_DEFINED ■ CALLED_PARTY_NUMBER ■ CALLING_PARTY_NUMBER ■ CALLER_INTERACTION ■ ROUTING_NUMBER ■ BILLING_NUMBER ■ DESTINATION_NUMBER ■ LATA ■ CARRIER Default value: ROUTING_NUMBER
Analyzed Invoke Routing Digits Numbering Plan	STRING	Possible values: ■ ISDN ■ DATA ■ TELEX ■ TELEPHONY ■ MARITIME_MOBILE ■ LAND_MOBILE ■ PRIVATE ■ ANSI_SS7_PC_AND_SSN ■ INTERNET_PROTOCOL ■ UNKNOWN Default value: TELEPHONY

Table 15–3 (Cont.) IM-SSF WIN Phase 1 Call Handling Parameters

Name	Type	Description
Analyzed Invoke Carrier Digits Type of Digits	STRING	Possible values: ■ ISDN ■ DATA ■ TELEX ■ TELEPHONY ■ MARITIME_MOBILE ■ LAND_MOBILE ■ PRIVATE ■ ANSI_SS7_PC_AND_SSN ■ INTERNET_PROTOCOL ■ UNKNOWN Default value: CALLED_PARTY_NUMBER
Analyzed Invoke Carrier Digits Numbering Plan	STRING	Possible values: ■ NOT_DEFINED ■ CALLED_PARTY_NUMBER ■ CALLING_PARTY_NUMBER ■ CALLER_INTERACTION ■ ROUTING_NUMBER ■ BILLING_NUMBER ■ DESTINATION_NUMBER ■ LATA ■ CARRIER Default value: CARRIER
Analyzed Invoke Destination Digits Type of Digits	STRING	Possible values: ■ NOT_DEFINED ■ CALLED_PARTY_NUMBER ■ CALLING_PARTY_NUMBER ■ CALLER_INTERACTION ■ ROUTING_NUMBER ■ BILLING_NUMBER ■ DESTINATION_NUMBER ■ LATA ■ CARRIER Default value: ROUTING_NUMBER

Table 15–3 (Cont.) IM-SSF WIN Phase 1 Call Handling Parameters

Name	Type	Description
Analyzed Invoke Destination Digits Numbering	STRING	Possible values: ■ ISDN ■ DATA ■ TELEX ■ TELEPHONY ■ MARITIME_MOBILE ■ LAND_MOBILE ■ PRIVATE ■ ANSI_SS7_PC_AND_SSN ■ INTERNET_PROTOCOL ■ UNKNOWN Default value: TELEPHONY
Analyzed Invoke Mobile Directory Number Type of Digits	STRING	Specifies how to set the TypeOfDigits of the MobileDirectoryNumber field. This parameter is used when IM-SSF sends a new AnalyzedInformation message to the SCP. Possible values: ■ NOT_DEFINED ■ CALLED_PARTY_NUMBER ■ CALLING_PARTY_NUMBER ■ CALLER_INTERACTION ■ ROUTING_NUMBER ■ BILLING_NUMBER ■ DESTINATION_NUMBER ■ LATA ■ CARRIER Default value: CALLING_PARTY_NUMBER
Analyzed Invoke Mobile Directory Number Nature Numbering Plan	STRING	Specifies the NumberingPlan of the MobileDirectoryNumber field. This parameter is used when IM-SSF sends a new AnalyzedInformation message to the SCP. Possible values: ■ ISDN ■ DATA ■ TELEX ■ TELEPHONY ■ MARITIME_MOBILE ■ LAND_MOBILE ■ PRIVATE ■ ANSI_SS7_PC_AND_SSN ■ INTERNET_PROTOCOL ■ UNKNOWN Default value: TELEPHONY

Configuring Subscriber Data Parameters

The Subscriber Data subtab enables you to define IN triggers that IM-SSF invokes towards the SCP above.

The table on the Subscriber Data subtab displays the rules for invoking triggers. Each row represents one rule. When defining a new rule, you need to specify the fields described in Table 15–4.

Table 15–4 IM-SSF WIN Phase 2 Subscriber Data Fields

Name	Type	Description
Name	STRING	A unique identifier.
MIN	STRING	Specifies a condition on session MIN When the condition is met, IM-SSF invokes triggers towards the SCP. To apply a rule for all MINs, set this parameter to Default.
DN	STRING	Specifies a condition on session DN. When the condition is met, IM-SSF invokes triggers towards the SCP. To apply a rule for all DNs, set this parameter to Default.
SCP Address Alias	STRING	Specifies the SCP to which IM-SSF invokes a trigger. This is an alias to one of the SCCP addresses specified in the SS7 SSU configuration.
Default Call Handling	STRING	Specifies how IM-SSF handles a call when a signal between IM-SSF and SCP fails (that is, invokes a trigger towards the failed SCP). Possible values: ■ CONTINUE_CALL ■ RELEASE_CALL Default value: CONTINUE_CALL

Table 15–4 (Cont.) IM-SSF WIN Phase 2 Subscriber Data Fields

Name	Type	Description
TDP List	STRING_LIST	Specifies a list of TDPs that must be triggered. Each trigger is specified in the following format: *id=type* where: *id* is one of the following ■ 36: Origination_Attempt_Authorized ■ 37: Calling_Routing_Address_Available ■ 38: Initial_Termination ■ 39: Called_Routing_Address_Available ■ 40: O_Answer ■ 41: O_Disconnect ■ 64: Terminating_Resource_Available ■ 65: T_Busy ■ 66: T_No_Answer ■ 69: T_Answer ■ 70: T_Disconnect *type* is one of the following: ■ R, which means Interrupt ■ N, which means Notify Separate multiple TDPs with a comma. For example: 65=R,66=N

Configuring Media Resources Parameters

The Media Resources subtab enables you to define the media resources that the SSP can connect in order to play announcements.

The table in the Media Resources subtab displays the media resources that are used to play announcements. Each row represents one media resource. When defining a new media resource, you need to specify the fields described in Table 15–5.

Table 15–5 IM-SSF WIN Phase 2 Media Resource Definition Fields

Name	Type	Description
Name	STRING	Specifies a name of the media resource.
Alias	STRING	Specifies a unique identifier that applications use to instruct IM-SSF which media resource to connect in order to play announcements. Alias is used by IM-SSF to lookup a media resource details in this table. Aliases are defined in a URI format. For example: mrf.network@domain.com.

Table 15–5 (Cont.) IM-SSF WIN Phase 2 Media Resource Definition Fields

Name	Type	Description
Address Digits	STRING	Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource. **Note:** when this parameter is not set, the network's session control entity uses a pre-configured media resource to play announcements. In this case, Nature of Address and Address Numbering Plan Indicator should be set to None.
Resource Type	STRING	Specifies the value to set in the SpecializedResource parameter of the SEIZERES operation. Possible values: ■ UNUSED ■ DTMF_TONE_DETECTOR ■ ASR_DIGITS ■ ASR_SPEECH_USER_INTERFACE Default values: UNUSED
Operation Type	STRING	Possible values: ■ switched_based The media resource is internal part of the SSP. CCDIR operation is used to connect the media resource. ■ external The media resource not a part of the SSP. ConnectResource operation is used to connect the media resource. Default value: switched_based
Private Resource Type	STRING	Specifies the value to set in the PrivateSpecializedResource parameter of the SEIZERES operation.
SN-IP Configuration	STRING	Possible values: ■ UNUSED ■ SN IP and SCP are co-located. When you choose this option, you need to set also the SN Address parameter. ■ IP IP and SCP are not co-located. Default value: UNUSED
SN Address	STRING	Specifies the value to set in the DestinationDigits parameter of the CONNRES operation. This value is regarded only when SN-IP Configuration parameter is set to SN.

Configuring TCAP Parameters

The TCAP subtab enables you to set up parameters of the IM TCAP layer.

Table 15–6 describes configuration parameters on the TCAP subtab.

Table 15–6 TCAP Parameter

Name	Type	Description
Class4 Default Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations. Default value: 5
Reject Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations. Default value: 1000
Application Part Guard Timer	INT	Specifies the PSM timer, which is a timer for incoming operations. The PSM timer defines the maximum time in seconds that the application (TC-User) has to respond to incoming INVOKE messages. Default value: 200
Activate Invoke Alarm in Application Layer	BOOL	When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ True ■ False Default value: False
Result Split Length	INT	Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split. Default value: 512

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-SSF. For more information about configuring monitoring, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

16

Setting Up IM-SSF AIN 0.1

This chapter describes how to set up an IM-SSF AIN 0.1 interworking module.

About IM-SSF AIN 0.1 Setup

The process of IM-SSF AIN 0.1 setup requires the following:

1. Adding an IM-SSF AIN 0.1 to your Oracle Communications Service Controller deployment. You can add as many modules of type IM-SSF AIN 0.1 as you need. See "Adding an IM-SSF AIN 0.1 to the Service Controller Deployment" for more information.
2. Configuring the IM-SSF AIN 0.1. See "Configuring an IM-SSF AIN 0.1" for more information.

Adding an IM-SSF AIN 0.1 to the Service Controller Deployment

To add an IM-SSF AIN 0.1:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMSSFAIN01**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-SSF AIN 0.1 to your deployment, in the **Change Center** pane, click **Commit**.

A new module of type IM-SSF AIN 0.1 is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an IM-SSF AIN 0.1

To configure an IM-SSF AIN 0.1:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added IM-SSF AIN 0.1.

   The IM-SSF AIN 0.1 configuration pane contains the subtabs described in Table 16–1.

Table 16–1 IM-SSF AIN 0.1 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See "Configuring General Parameters" for more information.
Call Handling	Enables you to configure how the IM-SSF handles calls. See "Configuring Call Handling Parameters" for more information.
Subscriber Data	Enables you to define IN triggers that the IM-SSF invokes towards the SCP above. See "Configuring Subscriber Data Parameters" for more information.
Operation Propagation	Enables you to define whether the IM-SSF processes operations on its own or propagates these operations to another module. See "Configuring Operation Propagation Parameters" for more information.
Media Resources	Enables you to set up the media resources that Service Controller uses to play announcements. See "Configuring Media Resources Parameters" for more information.
TCAP	Enables you to set up the TCAP layer of the IM-SSF. See "Configuring TCAP Parameters" for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See "Configuring Monitoring Parameters" for more information.

Configuring General Parameters

The General subtab displays the protocol variant that is used to encode / decode SS7 messages and enables you to specify an alias for an Interworking Module instance.

Table 16–2 describes the configuration parameters on the General subtab.

Table 16–2 General Parameters

Name	Type	Description
Alias	STRING	Specifies an alias of the IM instance. Using this alias, the SS7 SSU recognizes the instances of the IMs to which incoming messages should be routed. For more information on how the SS7 SSU uses aliases and how to configure incoming routing in the SS7 SSU, see the discussion on configuring the SS7 Signaling Server Unit for SIGTRAN in *Service Controller Signaling Server Units Configuration Guide*.
Plugin	STRING	Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to enclode / decode SS7 messages.

Configuring Call Handling Parameters

The Call Handling subtab enables you to define how the IM-SSF handles calls.

Table 16–3 describes configuration parameters on the Call Handling subtab.

Table 16–3 IM-SSF AIN 0.1 Call Handling Parameters

Name	Type	Description
IM-SSF Mode of Operation	STRING	Specifies the IM-SSF mode of operation. Possible values: ■ DYNAMIC IM-SSF dynamically changes its call control mode, according to the mode requested by the SCP. ■ BACK_TO_BACK IM-SSF monitors calls and ignores the mode requested by the SCP. ■ REDIRECT IM-SSF does not monitor calls and ignores the mode requested by the SCP. Default value: DYNAMIC
Session Case	STRING	Specifies how the IM-SSF treats sessions that arrive on the southbound interface, from the OE. Possible values: ■ ORIG All calls are treated as originating calls. ■ TERM All calls are treated as terminating calls. ■ DYNAMIC Calls are treated dynamically as either originating or terminating calls, depending on the SAL Route header and/or the x-wcs-session-case header generated by a southbound Service Controller IM. Default value: DYNAMIC
Tssf Duration in Seconds	INT	Specifies the value, in seconds, of the IM-SSF Tssf timer. Default value: 20

Table 16–3 (Cont.) IM-SSF AIN 0.1 Call Handling Parameters

Name	Type	Description
Tssf User Interaction Duration in Seconds	INT	Specifies the value, in seconds, of the IM-SSF Tssf timer. This parameter is used when the IM-SSF is in the middle of interaction with a media resource. Default value: 1200
IM-SSF Media Capability	BOOL	Specifies whether or not the underlying network supports IP/SRF/MRF. This determines if the IM-SSF can handle media-related operations, such as EstablishTemporaryConnection or ConnectToResource. Possible values: ■ True ■ False Default value: True
Body Encoding Format	STRING	Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message. Possible options: ■ BER ■ XER ■ NONE Default value: NONE
NatureOfNumber of calledPartyID	STRING	Specifies the NatureOfNumber value of the calledPartyID/collectedAddressInfo fields that IM-SSF sets when invoking a trigger message towards the SCP. Trigger messages: ■ Origination_Attempt ■ Info_ Collected ■ Info_Analyze ■ Termination_Attempt Possible values: ■ SUBSCRIBER_NUMBER ■ UNKNOWN ■ NATIONAL ■ INTERNATIONAL Default value: NATIONAL

Table 16–3 (Cont.) IM-SSF AIN 0.1 Call Handling Parameters

Name	Type	Description
NumberingPlan of calledPartyID	STRING	Specifies the NumberingPlan value of the calledPartyID/collectedAddressInfo fields that IM-SSF sets when invoking a trigger message towards the SCP. Trigger messages: ■ Origination_Attempt ■ Info_ Collected ■ Info_Analyze ■ Termination_Attempt Possible values: ■ ISDN ■ PRIVATE ■ UNKNOWN Default value: ISDN
NatureOfNumber of callingPartyID	STRING	Specifies the NatureOfNumber value in the CallingPartyID field that IM-SSF sets when invoking trigger message towards the SCP. Trigger messages: ■ Origination_Attempt ■ Info_Collected ■ Info_Analyze ■ Termination_Attempt Possible values: ■ SUBSCRIBER_NUMBER ■ UNKNOWN ■ NATIONAL ■ INTERNATIONAL Default value: NATIONAL
NumberingPlan of callingPartyID	STRING	Specifies the NumberingPlan value in the CallingPartyID field that IM-SSF sets when invoking trigger messages towards the SCP. Trigger messages: ■ Origination_Attempt ■ Info_Collected ■ Info_Analyze ■ Termination_Attempt Possible values: ■ ISDN ■ PRIVATE ■ UNKNOWN Default value: ISDN

Table 16–3 (Cont.) IM-SSF AIN 0.1 Call Handling Parameters

Name	Type	Description
ScreeningIndicator of callingPartyID	STRING	Specifies the ScreeningIndicator value in the CallingPartyID field that IM-SSF sets when invoking trigger message towards the SCP. Trigger messages: ■ Origination_Attempt ■ Info_Collected ■ Info_Analyze ■ Termination_Attempt Possible values: ■ USER_PROVIDED_NOT_VERIFIED ■ USER_PROVIDED_VERIFIED_PASSED ■ USER_PROVIDED_VERIFIED_FAILED ■ NETWORK_PROVIDED Default value: USER_PROVIDED_NOT_VERIFIED
userID	STRING	Specifies the value that IM-SSF sets in the userID field when invoking trigger message towards the SCP. Trigger messages: ■ Origination_Attempt ■ Info_Collected ■ Info_Analyze ■ Termination_Attempt Default value: -1
BearerCapability	STRING	Specifies the value that IM-SSF sets in the bearerCapability field when invoking trigger message towards the SCP. Trigger messages: ■ Origination_Attempt ■ Info_Collected ■ Info_Analyze ■ Termination_Attempt Possible values: ■ SPEECH ■ F31KHZAUDIO ■ F7KHZAUDIO ■ B56KBPS ■ B64KBPS ■ PACKETMODEDATA Default value: SPEECH

Configuring Subscriber Data Parameters

The Subscriber Data subtab enables you to define IN triggers that IM-SSF invokes towards the SCP above.

The table on the Subscriber Data subtab displays the rules for invoking triggers. Each row represents one rule. When defining a new rule, you need to specify the fields described in Table 16–4.

Table 16–4 IM-SSF AIN 0.1 Subscriber Data Fields

Name	Type	Description
Name	STRING	A unique identifier.
DN	STRING	Specifies a condition on session DN. When the condition is met, IM-SSF invokes triggers towards the SCP. To apply a rule for all DNs, set this parameter to Default.
SCP Address Alias	STRING	Specifies the SCP to which IM-SSF invokes a trigger. This is an alias to one of the SCCP addresses specified in the SS7 SSU configuration.
Default Call Handling	STRING	Specifies how IM-SSF handles a call when a signal between IM-SSF and SCP fails (that is, invokes a trigger towards the failed SCP). Possible values: ■ CONTINUE_CALL ■ RELEASE_CALL Default value: CONTINUE_CALL
TDP List	STRING_LIST	Specifies a list of TDPs that must be triggered. Each trigger is specified in the following format: *id=type* where: *id* is one of the following ■ 225: OriginatingAttempt ■ 227: InfoCollected ■ 228: InfoAnalyzed ■ 3607: NetworkBusy ■ 3616: TerminationAttempt *type* is one of the following: ■ R, which means Interrupt ■ N, which means Notify Separate multiple TDPs with a comma. For example: 3607=R, 3616=N

Configuring Operation Propagation Parameters

The Operation Propagation parameters subtab enables you to define whether the IM-SSF processes operations on its own or propagates these operations to another module.

The table on the Operation Propagation subtab displays a list of operations. Each row represents one operation for which you define whether IM-SSF processes this operation or propagates the operation to another module. When configuring a new operation, you need to specify the fields described in Table 16–5.

Table 16–5 IM-SSF AIN 0.1 Operation Propagation

Name	Type	Description
Name	STRING	Specifies a unique identifier.
Operation	STRING	Set this value to SendNotification.
Module name	STRING	Specifies a name of a module instance to which an operation is propagated.
Enable Propagation	BOOL	Specifies whether IM-SSF processes operations on its own or propagates a request to the session control layer. Possible values: ■ True The IM-SSF propagates RRBCSMEvent operations. ■ False The IM-SSF processes RRBCSMEvent operations. Default value: True

Configuring Media Resources Parameters

The Media Resources subtab enables you to define the media resources that the SSP can connect in order to play announcements.

The table in the Media Resources subtab displays the media resources that are used to play announcements. Each row represents one media resource. When defining a new media resource, you need to specify the fields described in Table 16–6.

Table 16–6 IM-SSF AIN 0.1 Media Resource Definition Fields

Name	Type	Description
Name	STRING	Specifies a name of the media resource.
Alias	STRING	Specifies a unique identifier that applications use to instruct IM-SCF which media resource to connect in order to play announcements. Alias is used by IM-SCF to lookup for media resource details in this table. Aliases are defined in a URI format. For example: mrf.network@domain.com.
Announcement Operation	INT	Specifies which operation IM-SCF triggers towards the switch-based media resource. Possible values: ■ 0 PlayAnnoucnement ■ 1 PlayAnnouncementAndCollectDigits Default value: 0

Table 16–6 (Cont.) IM-SSF AIN 0.1 Media Resource Definition Fields

Name	Type	Description
Disconnect Flag	BOOL	Specifies whether or not to set the DisconnectFlag in SendToResource operation. Possible values: ■ Yes The switch disconnects a call immediately after completing playing announcement. ■ No The switch does not disconnect a call immediately after completing playing announcement. Default value: Yes
Answer Indication	BOOL	Specifies whether a switch sends Answer message to the calling party upon connection to the media resource. Possible values: ■ Yes Connection to the media resource causes the switch to generate answer indication towards the calling party. This opens a media path from the caller to the media resource (bothwayPathRequired). ■ No The media path opens only in the direction from the media resource to the caller. ■ None Default value: Yes

Configuring TCAP Parameters

The TCAP subtab enables you to set up the TCAP layer of the IM TCAP layer.

Table 16–7 describes configuration parameters on the TCAP subtab.

Table 16–7 TCAP Parameter

Name	Type	Description
Class4 Default Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations. Default value: 5
Reject Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations. Default value: 1000

Table 16–7 (Cont.) TCAP Parameter

Name	Type	Description
Application Part Guard Timer	INT	Specifies the PSM timer, which is a timer for incoming operations. The PSM timer defines the maximum time in seconds that the application (TC-User) has to respond to incoming INVOKE messages. Default value: 200
Activate Invoke Alarm in Application Layer	BOOL	When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ True ■ False Default value: False
Result Split Length	INT	Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split. Default value: 512

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-SSF. For more information about configuring monitoring, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

17

Setting Up IM-SSF AIN 0.2

This chapter describes how to set up an IM-SSF AIN 0.2 interworking module.

About IM-SSF AIN 0.2 Setup

The process of IM-SSF AIN 0.2 setup requires the following:

1. Adding an IM-SSF AIN 0.2 to your Oracle Communications Service Controller deployment. You can add as many modules of type IM-SSF AIN 0.2 as you need. See "Adding an IM-SSF AIN 0.2 to the Service Controller Deployment" for more information.
2. Configuring the IM-SSF AIN 0.2. See "Configuring an IM-SSF AIN 0.2" for more information.

Adding an IM-SSF AIN 0.2 to the Service Controller Deployment

To add an IM-SSF AIN 0.2:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMSSFAIN02**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-SSF AIN 0.2 to your deployment, in the **Change Center** pane, click **Commit**.

A new module of type IM-SSF AIN 0.2 is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an IM-SSF AIN 0.2

To configure an IM-SSF AIN 0.2:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added IM-SSF AIN 0.2.

   The IM-SSF AIN 0.2 configuration pane contains the subtabs described in Table 17–1.

Table 17–1 IM-SSF AIN 0.2 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See "Configuring General Parameters" for more information.
Call Handling	Enables you to configure how the IM-SSF handles calls. See "Configuring Call Handling Parameters" for more information.
Subscriber Data	Enables you to define IN triggers that the IM-SSF invokes towards the SCP above. See "Configuring Subscriber Data Parameters" for more information.
Operation Propagation	Enables you to define whether the IM-SSF processes operations on its own or propagates these operations to another module. See "Configuring Operation Propagation Parameters" for more information.
Media Resources	Enables you to set up the media resources that Service Controller uses to play announcements. See "Configuring Media Resources Parameters" for more information.
TCAP	Enables you to set up the TCAP layer of the IM-SSF. See "Configuring TCAP Parameters" for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See "Configuring Monitoring Parameters" for more information.

Configuring General Parameters

The General subtab displays the protocol variant that is used to encode / decode SS7 messages and enables you to specify an alias for an Interworking Module instance.

Table 17–2 describes the configuration parameters on the General subtab.

Table 17–2 General Parameters

Name	Type	Description
Alias	STRING	Specifies an alias of the IM instance. Using this alias, the SS7 SSU recognizes the instances of the IMs to which incoming messages should be routed. For more information on how the SS7 SSU uses aliases and how to configure incoming routing in the SS7 SSU, see the discussion on configuring the SS7 Signaling Server Unit for SIGTRAN in *Service Controller Signaling Server Units Configuration Guide*.
Plugin	STRING	Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to enclode / decode SS7 messages.

Configuring Call Handling Parameters

The Call Handling subtab enables you to define how the IM-SSF handles calls.

Table 17–3 describes configuration parameters on the Call Handling subtab.

Table 17–3 IM-SSF AIN 0.2 Call Handling Parameters

Name	Type	Description
IM-SSF Mode of Operation	STRING	Specifies the IM-SSF mode of operation. Possible values: ■ DYNAMIC IM-SSF dynamically changes its call control mode, according to the mode requested by the SCP. ■ BACK_TO_BACK IM-SSF monitors calls and ignores the mode requested by the SCP. ■ REDIRECT IM-SSF does not monitor calls and ignores the mode requested by the SCP. Default value: DYNAMIC
Session Case	STRING	Specifies how the IM-SSF treats sessions that arrive on the southbound interface, from the OE. Possible values: ■ ORIG All calls are treated as originating calls. ■ TERM All calls are treated as terminating calls. ■ DYNAMIC Calls are treated dynamically as either originating or terminating calls, depending on the SAL Route header and/or the x-wcs-session-case header generated by a southbound Service Controller IM. Default value: DYNAMIC
Tssf Duration in Seconds	INT	Specifies the value, in seconds, of the IM-SSF Tssf timer. Default value: 20

Table 17–3 (Cont.) IM-SSF AIN 0.2 Call Handling Parameters

Name	Type	Description
Tssf User Interaction Duration in Seconds	INT	Specifies the value, in seconds, of the IM-SSF Tssf timer. This parameter is used when the IM-SSF is in the middle of interaction with a media resource. Default value: 1200
IM-SSF Media Capability	BOOL	Specifies whether or not the underlying network supports IP/SRF/MRF. This determines if the IM-SSF can handle media-related operations, such as EstablishTemporaryConnection or ConnectToResource. Possible values: ■ True ■ False Default value: True
Body Encoding Format	STRING	Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message. Possible options: ■ BER ■ XER ■ NONE Default value: NONE
NatureOfNumber of calledPartyID	STRING	Specifies the NatureOfNumber value of the calledPartyID/collectedAddressInfo fields that IM-SSF sets when invoking a trigger message towards the SCP. Trigger messages: ■ Origination_Attempt ■ Info_ Collected ■ Info_Analyze ■ Termination_Attempt Possible values: ■ SUBSCRIBER_NUMBER ■ UNKNOWN ■ NATIONAL ■ INTERNATIONAL Default value: NATIONAL

Table 17–3 (Cont.) IM-SSF AIN 0.2 Call Handling Parameters

Name	Type	Description
NumberingPlan of calledPartyID	STRING	Specifies the NumberingPlan value of the calledPartyID/collectedAddressInfo fields that IM-SSF sets when invoking a trigger message towards the SCP. Trigger messages: ■ Origination_Attempt ■ Info_ Collected ■ Info_Analyze ■ Termination_Attempt Possible values: ■ ISDN ■ PRIVATE ■ UNKNOWN Default value: ISDN
NatureOfNumber of callingPartyID	STRING	Specifies the NatureOfNumber value in the CallingPartyID field that IM-SSF sets when invoking trigger message towards the SCP. Trigger messages: ■ Origination_Attempt ■ Info_Collected ■ Info_Analyze ■ Termination_Attempt Possible values: ■ SUBSCRIBER_NUMBER ■ UNKNOWN ■ NATIONAL ■ INTERNATIONAL Default value: NATIONAL
NumberingPlan of callingPartyID	STRING	Specifies the NumberingPlan value in the CallingPartyID field that IM-SSF sets when invoking trigger message towards the SCP. Trigger messages: ■ Origination_Attempt ■ Info_Collected ■ Info_Analyze ■ Termination_Attempt Possible values: ■ ISDN ■ PRIVATE ■ UNKNOWN Default value: ISDN

Table 17–3 (Cont.) IM-SSF AIN 0.2 Call Handling Parameters

Name	Type	Description
ScreeningIndicator of callingPartyID	STRING	Specifies the ScreeningIndicator value in the CallingPartyID field that IM-SSF sets when invoking trigger message towards the SCP. Trigger messages: ■ Origination_Attempt ■ Info_Collected ■ Info_Analyze ■ Termination_Attempt Possible values: ■ USER_PROVIDED_NOT_VERIFIED ■ USER_PROVIDED_VERIFIED_PASSED ■ USER_PROVIDED_VERIFIED_FAILED ■ NETWORK_PROVIDED Default value: USER_PROVIDED_NOT_VERIFIED
User ID	STRING	Specifies the value that IM-SSF sets in the userID field when invoking trigger message towards the SCP. Trigger messages: ■ Origination_Attempt ■ Info_Collected ■ Info_Analyze ■ Termination_Attempt Default value: -1
BearerCapability	STRING	Specifies the value that IM-SSF sets in the bearerCapability field when invoking trigger message towards the SCP. Trigger messages: ■ Origination_Attempt ■ Info_Collected ■ Info_Analyze ■ Termination_Attempt Possible values: ■ SPEECH ■ F31KHZAUDIO ■ F7KHZAUDIO ■ B56KBPS ■ B64KBPS ■ PACKETMODEDATA Default value: SPEECH

Configuring Subscriber Data Parameters

The Subscriber Data subtab enables you to define IN triggers that IM-SSF invokes towards the SCP above.

The table on the Subscriber Data subtab displays the rules for invoking triggers. Each row represents one rule. When defining a new rule, you need to specify the fields described in Table 17–4.

Table 17–4 IM-SSF AIN 0.2 Subscriber Data Fields

Name	Type	Description
Name	STRING	A unique identifier.
DN	STRING	Specifies a condition on session DN. When the condition is met, IM-SSF invokes triggers towards the SCP. To apply a rule for all DNs, set this parameter to Default.
SCP Address Alias	STRING	Specifies the SCP to which IM-SSF invokes a trigger. This is an alias to one of the SCCP addresses specified in the SS7 SSU configuration.
Default Call Handling	STRING	Specifies how IM-SSF handles a call when a signal between IM-SSF and SCP fails (that is, invokes a trigger towards the failed SCP). Possible values: ■ CONTINUE_CALL ■ RELEASE_CALL Default value: CONTINUE_CALL
TDP List	STRING_LIST	Specifies a list of TDPs that must be triggered. Each trigger is specified in the following format: *id=type* where: *id* is one of the following ■ 225: OriginatingAttempt ■ 227: InfoCollected ■ 228: InfoAnalyzed ■ 3607: NetworkBusy ■ 3616: TerminationAttempt *type* is one of the following: ■ R, which means Interrupt ■ N, which means Notify Separate multiple TDPs with a comma. For example: 3607=R, 3616=N

Configuring Operation Propagation Parameters

The Operation Propagation parameters subtab enables you to define whether the IM-SSF processes operations on its own or propagates these operations to another module.

The table on the Operation Propagation subtab displays a list of operations. Each row represents one operation for which you define whether IM-SSF processes this operation or propagates the operation to another module. When configuring a new operation, you need to specify the fields described in Table 17–5.

Table 17–5 IM-SSF AIN 0.2 Operation Propagation

Name	Type	Description
Name	STRING	Specifies a unique identifier.
Operation	STRING	Specifies an operation. Possible values: ■ SendNotification
Module name	STRING	Specifies a name of a module instance to which an operation is propagated.
Enable Propagation	BOOL	Specifies whether IM-SSF processes operations on its own or propagates a request to the session control layer. Possible values: ■ True The IM-SSF propagates RRBCSMEvent operations. ■ False The IM-SSF processes RRBCSMEvent operations. Default value: True

Configuring Media Resources Parameters

The Media Resources subtab enables you to define the media resources that the SSP can connect in order to play announcements.

The table in the Media Resources subtab displays the media resources that are used to play announcements. Each row represents one media resource. When defining a new media resource, you need to specify the fields described in Table 17–6.

Table 17–6 IM-SSF AIN 0.2 Media Resource Definition Fields

Name	Type	Description
Name	STRING	Specifies a name of the media resource.
Alias	STRING	Specifies a unique identifier that applications use to instruct IM-SCF which media resource to connect in order to play announcements. Alias is used by IM-SCF to lookup for media resource details in this table. Aliases are defined in a URI format. For example: mrf.network@domain.com.
Announcement Operation	INT	Specifies which operation IM-SCF triggers towards the switch-based media resource. Possible values: ■ 0: PlayAnnoucnement ■ 1: PlayAnnouncementAndCollectDigits Default value: 0

Table 17–6 (Cont.) IM-SSF AIN 0.2 Media Resource Definition Fields

Name	Type	Description
Disconnect Flag	BOOL	Specifies whether or not to set the DisconnectFlag in SendToResource operation. Possible values: ■ Yes: The switch disconnects a call immediately after completing playing announcement. ■ No: The switch does not disconnect a call immediately after completing playing announcement. Default value: Yes
Answer Indication	BOOL	Specifies whether a switch sends Answer message to the calling party upon connection to the media resource. Possible values: ■ Yes Connection to the media resource causes the switch to generate answer indication towards the calling party. This opens a media path from the caller to the media resource (bothwayPathRequired). ■ No The media path opens only in the direction from the media resource to the caller. ■ None Default value: Yes

Configuring TCAP Parameters

The TCAP subtab enables you to set up parameters of the IM TCAP layer.

Table 17–7 describes configuration parameters on the TCAP subtab.

Table 17–7 TCAP Parameter

Name	Type	Description
Class4 Default Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations. Default value: 5
Reject Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations. Default value: 1000

Table 17–7 (Cont.) TCAP Parameter

Name	Type	Description
Application Part Guard Timer	INT	Specifies the PSM timer, which is a timer for incoming operations. The PSM timer defines the maximum time in seconds that the application (TC-User) has to respond to incoming INVOKE messages. Default value: 200
Activate Invoke Alarm in Application Layer	BOOL	When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ True ■ False Default value: False
Result Split Length	INT	Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split. Default value: 512

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-SSF. For more information about configuring monitoring, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

18

Setting Up IM-ASF SIP

This chapter describes how to set up an IM-ASF interworking module.

About IM-ASF Setup

The process of IM-ASF setup requires the following:

1. Adding an IM-ASF to your Oracle Communications Service Controller deployment. You can add as many modules of type IM-ASF as you need. See "Adding an IM-ASF to the Service Controller Deployment" for more information.
2. Configuring the IM-ASF. See "Configuring an IM-ASF" for more information.

Adding an IM-ASF to the Service Controller Deployment

To add an IM-ASF:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMASF**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-ASF to your deployment, in the **Change Center** pane, click **Commit**.

   A new module of type IM-ASF is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an IM-ASF

To configure an IM-ASF:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added IM-ASF.

   The IM-ASF SIP configuration pane contains the subtabs described in Table 18–1.

Table 18–1 IM-ASF Configuration Subtabs

Subtab	Description
Application Server	Enables you to define the SIP Application Server that IM-ASF SIP interact with. See "Configuring Application Server Parameters" for more information.
Session Keep Alive	Enables you to define the keep-alive mechanism that is used to test session existence with SIP Application Servers. See "Configuring Session Keep Alive Parameters" for more information.
SIP	Enables you to configure standard SIP protocol parameters. See "Configuring SIP Parameters" for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See "Configuring Monitoring Parameters" for more information.

Configuring Application Server Parameters

An IM-ASF SIP module instance interacts with one SIP Application Server. The Application Server subtab enables you to define an alias for this Application Server.

Table 18–2 describes the configuration parameter on the Application Server subtab.

Table 18–2 Application Server Parameter

Name	Type	Description
AS Address Alias	STRING	Specifies the address of the SIP AS to which IM-ASF SIP module instance is connected. You must select the alias of an address that is already defined in the SIP Network Entities tab.

Configuring Session Keep Alive Parameters

IM-ASF SIP performs regular checks of SIP sessions using a mechanism known as keep-alive mechanism. This mechanism enables the IM-ASF SIP to check whether or not a session is still in progress by periodically sending INFO requests to the SIP AS and checking the response. 200 OK response indicates that the session is still in progress. Any other response, or no response at all, indicates that the session was dropped.

Table 18–3 describes configuration parameters on the Session Keep Alive subtab.

Table 18–3 Session Keep Alive Parameters

Name	Type	Description
INFO Keep Alive Interval in Seconds	INT	Specifies the interval, in seconds, between consecutive invocations of INFO requests. To disable the keep-alive mechanism, set this parameter to -1. When this parameter is not defined, then the keep-alive mechanism is disabled.
INFO Keep Alive Time to Die	INT	Specifies the interval, in seconds, that the IM-ASF SIP waits for a response to keep-alive messages. If there is no response within the time specified in this parameter, the session is ended.

Configuring SIP Parameters

Enables you to configure standard SIP protocol parameters.

Table 18–4 describes configuration parameters on the SIP subtab.

Table 18–4 SIP Parameters

Name	Type	Description
Retransmission Interval Limit	INT	Specifies a maximum retransmission interval for non-INVITE requests and INVITE responses. Default value: 20 seconds
T7 Timeout Interval Seconds	INT	Specifies the time period in seconds during which the IM-ASF SIP waits for the first SIP provisional response (except for 100) after sending an INVITE request. You need to set the T7 timer in the IM-SCF CAP configuration using the following MBean: **com.convergin.wcs.osgi.im.scf.*CAP_Version* > *MBean_Version* > *IMSCFCAPCAP_Verion* > ModuleInstance[*ModuleInstance_Number*] > Sip > t7TimeoutIntervalSeconds**. The T7 timer in the IM-ASF and IM-SCF configuration must be set to the same value. Default value: 40 seconds

Table 18–4 (Cont.) SIP Parameters

Name	Type	Description
T9 Timeout Interval Seconds	INT	Specifies the time period in seconds during which the IM-ASF SIP waits for an OK response or any call release response (for example, ERROR) after sending an INVITE request. You need to set the T9 timer in the IM-SCF CAP configuration using the following MBean: **com.convergin.wcs.osgi.im.scf.*CAP_Version* > *MBean_Version* > *IMSCFCAPCAP_Verion* > ModuleInstance**[*ModuleInstance_Number*] **> Sip > t9TimeoutIntervalSeconds**. The T9 timer in the IM-ASF and IM-SCF configuration must be set to the same value. Default value: 90 seconds
Max Call Duration Timeout Interval in Minutes	INT	Specifies the maximum duration of established calls which are measured from OK to BYE. When this timer expires, IM-ASF SIP releases the session. Default value: 60 minutes

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-ASF. For more information about configuring monitoring, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

19

Setting Up R-IM-ASF SIP

This chapter describes how to set up an R-IM-ASF SIP interworking module.

About R-IM-ASF Setup

The process of R-IM-ASF setup requires the following:

1. Adding an R-IM-ASF to your Oracle Communications Service Controller deployment. You can add as many modules of type R-IM-ASF as you need. See "Adding an R-IM-ASF to the Service Controller Deployment" for more information.
2. Configuring the R-IM-ASF. See "Configuring an R-IM-ASF" for more information.

Adding an R-IM-ASF to the Service Controller Deployment

To add an R-IM-ASF:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **RIMASF**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new R-IM-ASF to your deployment, in the **Change Center** pane, click **Commit**.

A new module of type R-IM-ASF is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an R-IM-ASF

To configure an R-IM-ASF:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added R-IM-ASF.

   The R-IM-ASF SIP configuration pane contains the subtabs described in Table 19–1.

Table 19–1 R-IM-ASF Configuration Subtabs

Subtab	Description
Network Entity	Enables you to specify the URL address of the network entity with which the R-IM-ASF SIP communicates. See "Configuring the Network Entity Parameters" for more information.
Session Keep Alive	Enables you to define the keep-alive mechanism that R-IM-ASF SIP use to test session existence with the SIP network element. See "Configuring Session Keep Alive Parameters" for more information.
SIP	Enables you to configure standard SIP protocol parameters. See "Configuring SIP Parameters" for more information.
Charging Service	Enables you to define how R-IM-ASF sends credit reservation requests and specify whether R-IM-ASF reauthorizes a quota upon receiving various triggers from a CSCF. See "Charging Services" for more information.
Media Resource Announcements	Enables you to set up the media resources that Service Controller uses to play announcements. See "Configuring Media Resource Announcements Parameters" for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications should operate. See "Configuring Monitoring Parameters" for more information.

Configuring the Network Entity Parameters

You use the Network Entity tab to specify the URL address of the network entity with which the R-IM-ASF SIP communicates.

Table 19–2 describes the parameter that you need to define.

Table 19–2 Network Entity Parameter

Name	Type	Description
Network Entity Address Alias	STRING	Specifies the address of the network entity with which the R-IM-ASF SIP communicates. Define the address in the SIP URI format. The alias that you provide must be defined in the SIP Network Entities tab on the SSU SIP configuration screen. See the discussion on configuring SIP Signaling Server Units in *Service Controller Signaling Server Units Configuration Guide*.

Configuring Session Keep Alive Parameters

R-IM-ASF SIP performs regular checks of SIP sessions using a mechanism known as keep-alive mechanism. This mechanism enables the R-IM-ASF SIP to check whether or not a session is still in progress by periodically sending INFO requests to the SIP network element and checking the response. 200 OK response indicates that the session is still in progress. Any other response, or no response at all, indicates that the session was dropped.

Table 19–3 describes configuration parameters on the Session Keep Alive subtab.

Table 19–3 Session Keep Alive Parameters

Name	Type	Description
INFO Keep Alive Interval in Seconds	INT	Specifies the interval, in seconds, between consecutive invocations of INFO requests. To disable the keep-alive mechanism, set this parameter to -1. When this parameter is not defined, then the keep-alive mechanism is disabled.
INFO Keep Alive Time to Die	INT	Specifies the interval, in seconds, that the R-IM-ASF waits for a response to keep-alive messages. If there is no response within the time specified in this parameter, the session is ended.

Configuring SIP Parameters

You use the SIP Parameters tab to configure standard SIP protocol parameters.

Table 19–4 describes configuration parameters on the SIP subtab.

Table 19–4 SIP Parameters

Name	Type	Description
Retransmission Interval Limit	INT	Specifies a maximum retransmission interval for non-INVITE requests and INVITE responses. Default value: 20 seconds

Table 19–4 (Cont.) SIP Parameters

Name	Type	Description
T7 Timeout Interval in Seconds	INT	Specifies the time period in seconds during which the IM-ASF SIP waits for the first SIP provisional response (except for 100) after sending an INVITE request. You need to set the T7 timer in the IM-SSF CAP configuration using the following MBean: **com.convergin.wcs.osgi.im.ssf.*CAP_Version* > *MBean_Version* > *IMSSFCAPCAP_Version* > ModuleInstance[*ModuleInstance_Number*] > Sip > t7TimeoutIntervalSeconds**. The T7 timer in the IM-ASF and IM-SSF configuration must be set to the same value. Default value: 40 seconds
T9 Timeout Interval in Seconds	INT	Specifies the time period in seconds during which the IM-ASF SIP waits for an OK response or any call release response (for example, ERROR) after sending an INVITE request. You need to set the T9 timer in the IM-SSF CAP configuration using the following MBean: **com.convergin.wcs.osgi.im.ssf.*CAP_Version* > *MBean_Version* > *IMSSFCAPCAP_Version* > ModuleInstance[*ModuleInstance_Number*] > Sip > t9TimeoutIntervalSeconds**. The T9 timer in the IM-ASF and IM-SSF configuration must be set to the same value. Default value: 90 seconds
Max Call Duration Timeout Interval in Minutes	INT	Specifies the maximum duration of established calls which are measured from OK to BYE. When this timer expires, IM-ASF SIP releases the session. Default value: 60 minutes

Charging Services

You can configure R-IM-ASF to monitor session duration and charge sessions. R-IM-ASF provides the following capabilities:

- Credit reservation requests generation

  R-IM-ASF sends these requests to IM-OCF through the OE. IM-OCF translates credit reservation requests to Diameter CCRs, which are then forwarded to a billing application.

- Session monitoring and charging

  R-IM-ASF monitors and charges a session on its own.

- Quota reauthorization

  You can specify whether R-IM-ASF reauthorizes a quota upon receiving various triggers from a CSCF.

To set up R-IM-ASF charging services, you use the Charging Services tab. This tab contains the subtabs described in Table 19–5.

Table 19–5 Charging Services Subtabs

Subtab	Description
General	Enables you to specify how R-IM-ASF sets up and sends credit reservation requests to the OE. See "General" for more information.
Reauthorization Triggers	Enables you to specify whether R-IM-ASF reauthorizes a quota upon receiving various triggers from a CSCF. See "Reauthorization Triggers" for more information.

General

The General subtab enables you to specify how R-IM-ASF sets up and sends credit reservation requests to the OE. The OE forwards these requests to an IM-OCF, which translates credit reservation requests to Diameter CCRs, which are then forwarded to a billing application.

Table 19–6 describes the configuration parameters that you need to specify for credit reservation requests.

Table 19–6 General Parameters

Name	Type	Description
Service Monitoring	STRING	Specifies the component that monitors session duration. Possible values: ■ INTERNAL R-IM-ASF monitors session duration on its own. R-IM-ASF cannot delegate service monitoring to a CSCF. ■ NONE Session duration is not monitored. Default value: NONE
Tccd Timeout	INT	Specifies the maximum time, in seconds, that R-IM-ASF waits for a credit reservation response after sending a credit reservation request. If the timeout expires, R-IM-ASF releases the call. To disable the timeout timer, enter a negative value.

Table 19–6 (Cont.) General Parameters

Name	Type	Description
First Credit Reservation Request	STRING	Specifies when IM-OCF sends the first CCR to a billing application. This request is generated by R-IM-ASF and sent to IM-OCF through the OE. Possible values: ■ ON_INITIAL_EVENT IM-OCF sends a request after a CSCF sends the first session setup message. ■ ON_RINGBACK IM-OCF sends a request after a CSCF sends a ringing indication. ■ ON_ANSWER IM-OCF sends a request after a CSCF sends an answer indication. ■ NEVER Default value: ON_INITIAL_EVENT
First Credit Granted Notification	STRING	Specifies when IM-OCF sends the first credit granted notification to a billing application. This request is generated by IM-SCF and sent to IM-OCF through the OE. Possible values: ■ ON_INITIAL_EVENT IM-OCF sends a request after an MSC sends the first session setup message. ■ ON_ANSWER IM-OCF sends a request after an MSC sends an answer indication. Default value: ON_INITIAL_EVENT
Start Charging Phase	STRING	Specifies when R-IM-ASF starts charging a session. Possible values: ■ ON_INITIAL_EVENT R-IM-ASF starts charging after a CSCF sends the first session setup message. ■ ON_RINGBACK R-IM-ASF starts charging after a CSCF sends a ringing indication. ■ ON_ANSWER R-IM-ASF starts charging after a CSCF sends an answer indication. Default value: ON_ANSWER
Requested Duration	INT	Specifies the value to which IM-OCF needs to set the CC-time AVP in a CCR sent to a billing application.
Requested Volume	INT	Specifies the value to which IM-OCF needs to set the CC-Total-Octets AVP in a CCR sent to a billing application.
Requested Service Units	INT	Specifies the value to which IM-OCF needs to set the CC-Service-Specific-Units AVP in a CCR sent to a billing application.

Table 19–6 (Cont.) General Parameters

Name	Type	Description
Service Identifier	INT	Specifies the value to which IM-OCF needs to set the Service-Identifier AVP in a CCR sent to a billing application.

Reauthorization Triggers

The Reauthorization Triggers subtab enables you to specify whether R-IM-ASF reauthorizes a quota upon receiving various triggers from a CSCF.

Table 19–7 describes configuration parameters on the Reauthorization Triggers subtab.

Table 19–7 Reauthorization Triggers Parameters

Name	Type	Description
Name	STRING	A unique identifier for the trigger.
Trigger Type	STRING	Specifies the trigger for reauthorization of granted quota. Possible values: ■ ALERTED ■ CONNECTED ■ INFO_RECEIVED ■ REINVITED ■ REINVITED_OK ■ UPDATED ■ UPDATED_OK
Mode	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Updated trigger. ■ YES IM-SCF always reauthorizes the quota. ■ DYNAMIC IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ NO IM-SCF never reauthorizes the quota. Default value: DYNAMIC

Table 19–8 describes the preconfigured triggers on the Reauthorization Triggers subtab.

Table 19–8 Preconfigured Triggers

Name	Type	Description
Info Received	STRING	Specifies whether or not R-IM-ASF reauthorizes the quota on receiving the Info Received trigger. Possible values: ■ Yes R-IM-ASF always reauthorizes the quota. ■ Dynamic R-IM-ASF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No R-IM-ASF never reauthorizes the quota. Default value: Dynamic
Session Alerted	STRING	Specifies whether or not R-IM-ASF reauthorizes the quota on receiving the Session Alerted trigger. Possible values: ■ Yes R-IM-ASF always reauthorizes the quota. ■ Dynamic R-IM-ASF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No R-IM-ASF never reauthorizes the quota. Default value: Dynamic
Session Connected	STRING	Specifies whether or not R-IM-ASF reauthorizes the quota on receiving the Session Connected trigger. Possible values: ■ Yes R-IM-ASF always reauthorizes the quota. ■ Dynamic R-IM-ASF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No R-IM-ASF never reauthorizes the quota. Default value: Dynamic

Table 19–8 (Cont.) Preconfigured Triggers

Name	Type	Description
Session ReInvite Complete	STRING	Specifies whether or not R-IM-ASF reauthorizes the quota on receiving the Session ReInvite Complete trigger. Possible values: ■ Yes R-IM-ASF always reauthorizes the quota. ■ Dynamic R-IM-ASF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No R-IM-ASF never reauthorizes the quota. Default value: Dynamic
Session Reinvited	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Reinvited trigger. ■ Yes R-IM-ASF always reauthorizes the quota. ■ Dynamic R-IM-ASF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No R-IM-ASF never reauthorizes the quota. Default value: Dynamic
Session Update Complete	STRING	Specifies whether or not R-IM-ASF reauthorizes the quota on receiving the Session Update Complete trigger. ■ Yes R-IM-ASF always reauthorizes the quota. ■ Dynamic R-IM-ASF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No R-IM-ASF never reauthorizes the quota. Default value: Dynamic

Table 19–8 (Cont.) Preconfigured Triggers

Name	Type	Description
Session Updated	STRING	Specifies whether or not R-IM-ASF reauthorizes the quota on receiving the Session Updated trigger. ■ Yes R-IM-ASF always reauthorizes the quota. ■ Dynamic R-IM-ASF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed). ■ No R-IM-ASF never reauthorizes the quota. Default value: Dynamic

Configuring Media Resource Announcements Parameters

The Media Resources Announcements subtab enables you to define the media resources that the SSP can connect in order to play announcements.

The table in the Media Resources subtab displays the media resources that are used to play announcements. Each row represents one media resource. When defining a new media resource, you need to specify the fields described in Table 19–9.

Table 19–9 R-IM-ASF SIP Media Resource Definition Fields

Name	Type	Description
Name	STRING	Specifies a name of the media resource.
MRF Alias	STRING	Specifies an identifier for the announcement in the Media Resource Table.
General Announcement ID	STRING	Specifies the general announcement ID as it appears in the MSCML play ID.
Specific Announcement	STRING	Specifies the MRF specific announcement representation.

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an R-IM-ASF. For more information about configuring monitoring, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

20

Setting Up IM-ASF SAL

This chapter describes how to set up an IM-ASF SAL interworking module.

Session abstraction layer (SAL) is an Oracle proprietary protocol used by Oracle Communications Service Controller to communicate with SAL-based applications that you implement using the SAL API. SAL is closely related to the SIP protocol and contains many of the same parameters, such as the SIP timers.

About IM-ASF SAL Setup

The process of IM-ASF SAL setup requires the following:

1. Adding an IM-ASF SAL to your Service Controller deployment. You can add as many modules of type IM-ASF SAL as you need. See "Adding an IM-ASF SAL to the Service Controller Deployment" for more information.
2. Configuring the IM-ASF SAL. See "Configuring an IM-ASF SAL" for more information.

Adding an IM-ASF SAL to the Service Controller Deployment

To add an IM-ASF SAL:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMASFSAL**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.

9. To add the new IM-ASF SAL to your deployment, in the **Change Center** pane, click **Commit**.

   A new module of type IM-ASF SAL is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an IM-ASF SAL

To configure an IM-ASF SAL:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added IM-ASF SAL.

   Table 20–1 shows the IM-ASF SAL **Configuration** pane subtabs. The following sections explain the configuration parameters in each of the subtabs.

Table 20–1 IM-ASF SAL Subtabs

Subtab	Description
Application Server	Defines a SAL Application Server for IM-ASF SAL to interact with. See "Configuring Application Server Parameters" for more information.
Session Keep Alive	Defines the keep-alive mechanism that IM-ASF SAL uses to test session existence. See "Configuring Session Keep Alive Parameters" for more information.
SAL	Use to configure the SAL interface attributes of this IM.

Configuring Application Server Parameters

Each IM-ASF SAL instance interacts with one SAL-based application. You specify this server using the Application Server subtab.

Table 20–2 describes configuration parameters on the Application Server subtab.

Table 20–2 Application Server Configuration Parameters

Name	Data Type	Description
SAL Application Address	String	Specifies the SIP URI address of the Service Controller Feature Module application to connect this IM-ASF -SAL to. The syntax is `sip:`*Applicaton_Name*`@`*Hostname*`.com`. Where: *Application_Name* is be one of the following: ▪ voicemailapplication for the PCM voice mail service. ▪ personalapplication for the PCM One-number service. ▪ groupapplicaton for the PCM Group service. *Hostname* is the system hosting the application.

Table 20–2 (Cont.) Application Server Configuration Parameters

Name	Data Type	Description
SAL Mode	String	Specifies the SAL mode. The Session Keep Alive Parameters and SAL Parameters are only valid for EXTERNAL mode. Can be one of the following: ■ INLINE - Executes as part of a Service Controller session. Receives all services and resources from Service Controller. ■ EXTERNAL - Executes outside of a Service Controller session. Can get resources from Service Controller or other entities.

Configuring Session Keep Alive Parameters

These parameters are only valid in EXTERNAL mode.

IM-ASF SAL performs regular checks of SAL sessions using the keep-alive mechanism. This mechanism enables IM-ASF SAL to check whether or not a session is still in progress by periodically sending INFO requests to the SAL application server and checking the responses. A `200 OK` response indicates that the session is still in progress. Any other response, or no response at all indicates that the session was dropped.

Table 20–3 describes configuration parameters on the **Session Keep Alive** subtab.

Table 20–3 Session Keep Alive Configuration Parameters

Name	Data Type	Description
Info Keep Alive Interval in Seconds	Integer	Specifies the interval, in seconds, between INFO requests. To disable the keep-alive mechanism, set this parameter to -1. If no parameter is present the keep-alive mechanism is disabled.
Info Keep Alive Time to Die	Integer	Specifies the interval, in seconds, that the IM-ASF SAL waits for a response to keep-alive messages. If there is no response within the time specified, the session is ended.

Configuring SAL Parameters

These parameters are only valid in EXTERNAL mode.

Enables you to configure standard SAL protocol parameters. These SAL parameters are equivalent to their SIP counterparts.

Table 20–4 describes configuration parameters on the SAL subtab.

Table 20–4 SAL Configuration Parameters

Name	Data Type	Description
Retransmission Interval Limit (T2 Timeout)	Integer	Specifies a maximum retransmission interval for non-INVITE requests and INVITE responses. Default value: 20 seconds
T7 Timeout Interval in Seconds	Integer	Specifies the time period in seconds that IM-ASF SAL waits for the first SAL provisional response (except for 100) after sending an INVITE request. Default value: 40 seconds.
T9 Timeout Interval in Seconds	Integer	Specifies the time period in seconds for IM-ASF SAL to wait for an OK response or any call release response (for example, ERROR) in response to an INVITE request. Default value: 90 seconds
Max Call Duration Timeout Interval in Minutes	Integer	Specifies the maximum duration of established calls in minutes, which are measured from OK to BYE. When this timer expires, IM-ASF SAL releases the session. Default value: 60 minutes

The system properties in Table 20–4 can be set at the command line when you start the Administration Server by running the **start.sh** script.

```
oracle.ocsb.default.t2.time.seconds

oracle.ocsb.default.t7.time.seconds

oracle.ocsb.default.t9.time.seconds

oracle.ocsb.default.mcd.time.minutes
```

At the command line, enter start.sh and then use this format -D<property_name>=<value>. Use space delimiters, if you want to set multiple properties.

21

Setting Up IM-OCF Ro

This chapter describes how to set up an IM-OCF Ro interworking module.

About IM-OCF Setup

The process of IM-OCF setup requires the following:

1. Adding an IM-OCF to your Oracle Communications Service Controller deployment. You can add as many modules of type IM-OCF as you need. See "Adding an IM-OCF to the Service Controller Deployment" for more information.
2. Configuring the IM-OCF. See "Configuring an IM-OCF" for more information.

Adding an IM-OCF to the Service Controller Deployment

To add an IM-OCF:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMOCF**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-OCF to your deployment, in the **Change Center** pane, click **Commit**.

   A new module of type IM-OCF is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an IM-OCF

To configure an IM-OCF:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added IM-OCF.

   The IM-OCF configuration pane contains the subtabs described in Table 21–1.

Table 21–1 IM-OCF Configuration Subtabs

Subtab	Description
Call Handling	Enables you to define how the IM-OCF Ro handles calls. See "Configuring Call Handling Parameters" for more information.
Diameter Credit Control Application	Enables you to configure parameters specific to the IM-OCF Ro DCCA interface. See "Configuring Diameter Credit Control Application Parameters" for more information.
Async Announcement Manager	Enables you to set up how IM-OCF Ro triggers the MRF to play announcements. See "Configuring Asynchronous Announcement Manager Parameters" for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications should operate. See "Configuring Monitoring Parameters" for more information.
Degraded Mode	Enables you to set up how a session is charged when an online charging server is not available. See "Configuring the Degraded Mode" for more information.

Configuring Call Handling Parameters

The General tab enables you to set up how IM-OCF Ro handles sessions. Table 21–2 describes configuration parameters in the General subtab.

Table 21–2 IM-OCF Ro Call Handling General Parameters

Name	Type	Description
Termination-Cause AVP on SAL BYE	STRING	Specifies how to set a CCR Termination-Cause AVP when session is disconnected by an internal Service Controller SAL BYE message. Possible values: ■ DIAMETER_LOGOUT ■ DIAMETER_SERVICE_NOT_PROVIDED ■ DIAMETER_BAD_ANSWER ■ DIAMETER_ADMINISTRATIVE ■ DIAMETER_LINK_BROKEN ■ DIAMETER_AUTH_EXPIRED ■ DIAMETER_USER_MOVED ■ DIAMETER_SESSION_TIMEOUT Default value: DIAMETER_LOGOUT Service Controller ignores this parameter when the Diameter-based orchestration mode is enabled. For more information about this mode, see the discussion on about setting up orchestrated charging mediation in *Service Broker Online Mediation Controller Implementation Guide Release 6.1*.
Termination-Cause AVP on SAL CANCEL	STRING	Specifies how to set a CCR Termination-Cause AVP when session is disconnected by an internal Service Controller SAL CANCEL message. Possible values: ■ DIAMETER_LOGOUT ■ DIAMETER_SERVICE_NOT_PROVIDED ■ DIAMETER_BAD_ANSWER ■ DIAMETER_ADMINISTRATIVE ■ DIAMETER_LINK_BROKEN ■ DIAMETER_AUTH_EXPIRED ■ DIAMETER_USER_MOVED ■ DIAMETER_SESSION_TIMEOUT Default value: DIAMETER_SERVICE_NOT_PROVIDED Service Controller ignores this parameter when the Diameter-based orchestration mode is enabled. See *Service Broker Online Mediation Controller Implementation Guide Release 6.1* for more information about this mode.

Table 21–2 (Cont.) IM-OCF Ro Call Handling General Parameters

Name	Type	Description
Termination-Cause AVP on SAL Final Error Response	STRING	Specifies how to set a CCR Termination-Cause AVP when session is disconnected by an internal Service Controller SAL final error response message. Possible values: ▪ DIAMETER_LOGOUT ▪ DIAMETER_SERVICE_NOT_PROVIDED ▪ DIAMETER_BAD_ANSWER ▪ DIAMETER_ADMINISTRATIVE ▪ DIAMETER_LINK_BROKEN ▪ DIAMETER_AUTH_EXPIRED ▪ DIAMETER_USER_MOVED ▪ DIAMETER_SESSION_TIMEOUT Default value: DIAMETER_SERVICE_NOT_PROVIDED Service Controller ignores this parameter when the Diameter-based orchestration mode is enabled. See *Service Broker Online Mediation Controller Implementation Guide Release 6.1* for more information about this mode.
Send CCR On Threshold Indication	BOOL	Indicates whether the IMOCF should send CCR if received a SAL message that indicates a threshold has been reached. Service Controller ignores this parameter when the Diameter-based orchestration mode is enabled. See *Service Broker Online Mediation Controller Implementation Guide Release 6.1* for more information about this mode. The default value is FALSE.

Configuring Diameter Credit Control Application Parameters

The Diameter Credit Control Application tab enables you to configure parameters related to the IM-OCF Ro Diameter Credit Control Application (DCCA) interface. The Diameter Credit Control Application tab contains subtabs described in Table 21–3.

Table 21–3 IM-OCF Diameter Credit Control Application Subtabs

Subtab	Description
AVPs	Enables you to specify Attribute-Value Pairs (AVPs) to be set in CCRs. See "Configuring AVPs" for more information.
General	Enables you to set up a DCCA dialect and enables monitor call duration. For more information, see "Configuring General Parameters".

Configuring AVPs

The AVPs subtab enables you to specify Attribute-Value Pairs (AVPs) to be set in CCRs. Table 21–4 describes the AVPs that you can specify.

Table 21–4 IM-OCF DCCA AVPs Subtab Parameters

Name	Type	Description
Destination-Host AVP	STRING	Specifies the value to set in a CCR Destination-Host AVP. The Destination-Host AVP combined with the Destination-Realm AVP defines a Diameter destination node that communicates with the IM-OCF Ro. The IM-OCF Ro sends messages to the address you specify for the Diameter destination node. An alternative way to specify a Diameter destination node is to set the Destination-Realm AVP field with an alias of a Diameter destination node, which you define in the Diameter SSU Outbound Destination (see the discussion on configuring outbound destinations in the Diameter SSU in *Service Controller Signaling Server Units Configuration Guide* for more information). In this case, the Destination-Host AVP is ignored.
Destination-Realm AVP	STRING	Specifies the value to set in a CCR Destination-Realm AVP. The Destination-Realm AVP combined with the Destination-Host AVP defines a Diameter destination node that communicates with the IM-OCF Ro. The IM-OCF Ro sends messages to the address you specify for the Diameter destination node. An alternative way to specify a Diameter destination node is to set the Destination-Realm AVP field with an alias of a Diameter destination node, which you define in the Diameter SSU Outbound Destination (see the discussion on configuring outbound destinations in the Diameter SSU in *Service Controller Signaling Server Units Configuration Guide* for more information.). In this case, the Destination-Host AVP is ignored. If you leave this field blank, the IM-OCF works in the degraded mode.
Service-Context-Id AVP	STRING	Specifies the value to set in a CCR Service-Context-Id AVP. Default value: 32260@3gpp.org
User-Name AVP	STRING	Specifies the value to set in a CCR User-Name AVP.
Ro Node-Functionality AVP	INT	Specifies the value to set in a CCR Node-Functionality AVP. Possible values: ■ S_CSCF ■ P-CSCF ■ I-CSCF ■ MRFC ■ MGCF ■ BGCF ■ AS Default value: AS

Configuring General Parameters

The General subtab enables you to set up a DCCA dialect and enable monitor call duration. Table 21–5 describes the parameters you can configure.

Table 21–5 IM-OCF DCCA General Subtab Parameters

Name	Type	Description
DCCA Dialect Plugin	STRING	Specifies the DCCA dialect that IM-OCF Ro uses. Possible values: ■ **STANDARD_DCCA** Standard DCCA dialect ■ **BRM** Oracle Communications Billing and Revenue Management DCCA dialect

Configuring Asynchronous Announcement Manager Parameters

You can set up IM-OCF Ro to trigger an MRF to play announcements. Using the Async Announcement Manager tab, you can specify the alias of the MRF that plays announcements. In addition, you set up the rules that define the announcement to be played and the way how the MRF plays this announcement. For example, you can define that the MRF plays an announcement to a calling party when the time granted for the call is over, and the mobile subscriber is located in the home network.

You set up the Announcement Manager by configuring parameters on the subtabs described in Table 21–6.

Service Controller ignores the Announcement Manager configuration when the Diameter-based orchestration mode is enabled. See *Service Broker Online Mediation Controller Implementation Guide Release 6.1* for more information about this mode.

Table 21–6 IM-OCF Ro Async Announcement Manager Subtabs

Subtab	Description
General	Enables you to specify the alias of the MRF that plays announcements. See "Configuring General Parameters" for more information.
Async Announcements	Enables you to set up the rules that define announcements to be played as well as to specify how the MRF plays these announcements. See "Configuring Async Announcements" for more information.

Configuring General Parameters

The General subtab enables you to specify the alias of the MRF that plays announcements. Table 21–7 describes the parameter you can configure.

Table 21–7 Async Announcement Manager General Parameter

Name	Type	Description
MRF Alias	STRING	Specifies the alias of the MRF that IM-OCF Ro uses to play announcements. The alias has the format of a SIP URI: sip: name1.name2@domain_name. For example: sip:ocsb.mrf@processing_domain1.

Configuring Async Announcements

The Async Announcements subtab enables you to set up rules for playing announcements. In addition, you set up the rules that define the announcement to be played and the way how the MRF plays this announcement.

The subtab contains the table in which each row represents a single rule. Table 21–8 describes the parameters you can configure.

Table 21–8 Async Announcement Manager Announcements Parameters

Name	Type	Description
Name	STRING	Specifies the unique identifier of the rule.
Enabled	BOOL	Specifies whether or not the announcement is enabled. Possible values: ■ TRUE ■ FALSE Default value: TRUE
Reason Type	STRING	Specifies the parameter that IM-OCF Ro checks in the CCA message received from the online charging server. When the value of the specified parameter matches the range that you defined using the Lower Limit and Upper Limit parameters, IM-OCF triggers the MRF to play the announcement. Possible values: ■ ANY ■ GRANTED_TIME ■ RESULT_CODE ■ SAL_ERROR Default value: ANY **Note**: When you set Reason Type to ANY, IM-OCF Ro always triggers the MRF to play the announcement.
Lower Limit	INT	Specifies the lower limit of the range for the parameter that you specified in Reason Type. When the value of the specified parameter is greater than the value set in Lower Limit and less than the value set in Upper Limit, IM-OCF Ro triggers the MRF to play the announcement. To configure IM-OCF Ro to trigger the MRF to play the announcement, regardless of the value of the lower limit, set this parameter to -1. **Note**: IM-OCF does not use the Lower Limit parameter if you set Reason Type to ANY.
Upper Limit	INT	Specifies the upper limit of the range for the parameter that you specified in Reason Type. When the value of the specified parameter is greater than the value set in Lower Limit and less than the value set in Upper Limit, IM-OCF Ro triggers the MRF to play the announcement. To configure IM-OCF Ro to trigger the MRF to play the announcement, regardless of the value of the upper limit, set this parameter to -1. **Note**: IM-OCF does not use the Upper Limit parameter if you set Reason Type to ANY.

Table 21–8 (Cont.) Async Announcement Manager Announcements Parameters

Name	Type	Description
Network	STRING	Specifies the location of the mobile subscriber required for triggering the MRF to play the announcement. Possible values: ■ ANY ■ HOME_ZONE ■ HOME_NETWORK ■ ROAMING Alternatively, you can specify the ID of a specific MSC that serves the mobile subscriber.
Service Side	STRING	Specifies the IM-OCF Ro's service side required for triggering the MRF to play the announcement. Possible values: ■ BOTH ■ ORIG ■ TERM Default value: BOTH
Call State	STRING	Specifies the call state when IM-OCF Ro triggers the MRF to play the announcement. Possible values: ■ PRECALL **Note**: A PRECALL announcement can be played at a call initiation and alerting phases only. ■ MIDCALL ■ POSTCALL Default value: PRECALL
Priority	INT	Specifies the order in which the MRF plays different announcement when the conditions of multiple rules are met.
Announcement Code	INT	Specifies the identifier of the announcement that the MRF plays.
Threshold	INT	Specifies how much time, in seconds, prior to the end of quota, IM-OCF Ro triggers the MRF to play the announcement. IM-OCF uses the Threshold parameter only for the announcements whose Call State parameter is set to MIDCALL. **Note**: Setting the Threshold parameter to any positive value when Call State set to PRECALL or POSTCALL causes an error.

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-OCF Ro. For more information about configuring monitoring, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

Configuring the Degraded Mode

Service Controller relies upon an external online charging server (OCS) to apply charges for the use of network services.

When an online charging server is unavailable, IM-OCF Ro switches to degraded mode. This mode enables IM-OCF Ro to continue a session and charge a mobile subscriber during the time when the charging server is temporarily unavailable.

IM-OCF Ro waits a specified period of time for a response from the server after sending an accounting request. If the server does not respond, IM-OCF Ro switches to the degraded mode.

After IM-OCF Ro switches to degraded mode, IM-OCF Ro handles the session in this mode until the session is terminated even if the online charging server becomes available. IM-OCF Ro sends charging information gathered during the session once the session is complete and the OCS is back online.

In the degraded mode, IM-OCF Ro communicates with the Service Controller local charging server. The local online charging server assumes the role of the external charging server. This means that the local charging server can receive Credit Control Requests (CCRs) from, and send Credit Control Answers (CCAs) to, IM-OCF Ro.

To gather this information, IM-OCF Ro writes charging data records (CDRs) to **logs/dmode.cdr**. You can review **dmode.cdr** and manually adjust subscriber accounts in the OCS. Then the server actually charges the mobile subscriber.

See the discussion about administrating degraded mode in *Service Broker Online Mediation Controller Implementation Guide Release 6.1* for more information.

You use the Degraded Mode tab to configure the parameters of this mode as described in Table 21–9.

Table 21–9 Degraded Mode Parameters

Name	Type	Description
On OCF Failure	STRING	Specifies the behavior of IM-OCF Ro when the OCF fails. Possible values: ■ ALWAYS_REFUSE Degraded mode is disabled. If the OCF fails, IM-OCF Ro refuses to grant the service. ■ USE_LOCAL_REFUSE Degraded mode is enabled. IM-OCF Ro writes CDRs. If a local OCF or CDR writing fails, IM-OCF Ro refuses to grant the service. ■ USE_LOCAL_GRANT Degraded mode is enabled. IM-OCF Ro writes CDRs. If a local OCF or CDR writing fails, IM-OCF Ro grants the service. Note: This setting is overridden by the OCF AVPs 'Credit Control Failure Handling' and 'Realtime Required'. Default value: USE_LOCAL_REFUSE

Table 21–9 (Cont.) Degraded Mode Parameters

Name	Type	Description
CDR Mode	STRING	Specifies how IM-OCF Ro writes CDRs. Possible options: ■ NORMAL IM-OCF Ro begins to write CDRs when IM-OCF Ro switches to the degraded mode. ■ HISTORY Like in the Normal mode, IM-OCF Ro begins to write CDRs when IM-OCF Ro switches to the degraded mode. In addition, IM-OCF stores all CDRs that IM-OCF previously sent to the OCS. ■ ALWAYS IM-OCF Ro always writes CDRs. Default value: NORMAL
CDR Writer Impl	STRING	Specifies the full path of the bundle that implements the CDR writer functionality. This is a preset parameter. Do NOT change the value of this parameter.
Degraded Mode Timer	INT	Specifies the period of time, in milliseconds, that IM-OCF Ro waits for a response from the online charging server. If the online charging server does not respond within the specified period of time, IM-OCF Ro switches to the degraded mode.
Degraded Mode Error Codes	STRING	Specifies the error codes that trigger IM-OCF Ro to enable the degraded mode. You can type several error codes separated by comma.

Configuring Redirection

Charging IMs handling Diameter responses from online charging systems can perform session redirection based on criteria in Credit Control Answers (CCA). Configure the default IM redirection behavior in the IM configuration node **Redirection** tab.

See the discussion on redirection in *Service Broker Online Mediation Controller Implementation Guide Release 6.1* for more information on using session redirection.

22

Setting Up R-IM-OCF Ro

This chapter describes how to set up an R-IM-OCF Ro interworking module.

About R-IM-OCF Setup

The process of R-IM-OCF setup requires the following:

1. Adding an R-IM-OCF to your Oracle Communications Service Controller deployment. You can add as many modules of type R-IM-OCF as you need. See "Adding an R-IM-OCF to the Service Controller Deployment" for more information.
2. Configuring the R-IM-OCF. See "Configuring an R-IM-OCF" for more information.

Adding an R-IM-OCF to the Service Controller Deployment

To add an R-IM-OCF:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **RIMOCF**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new R-IM-OCF to your deployment, in the **Change Center** pane, click **Commit**.

A new module of type R-IM-OCF is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an R-IM-OCF

To configure an R-IM-OCF:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added R-IM-OCF.

   The R-IM-OCF Ro configuration screen contains the subtabs described in Table 22–1.

Table 22–1 R-IM-OCF Configuration Subtabs

Subtab	Description
Call Handling	Enables you to define how R-IM-OCF Ro handles calls. See "Configuring Call Handling Parameters" for more information.
Diameter Credit Control Application	Enables you to configure parameters specific to the R-IM-OCF Ro DCCA interface. See "Configuring Diameter Credit Control Application Parameters" for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications should operate. See "Configuring Monitoring Parameters" for more information.

Configuring Call Handling Parameters

The Call Handling subtab enables you to define how R-IM-OCF Ro handles calls.

Table 22–2 describes configuration parameters on the Call Handling subtab.

Table 22–2 R-IM-OCF Ro Call Handling Parameters

Name	Type	Description
Default Session Type	STRING	Specifies how R-IM-OCF Ro marks new sessions internally. Possible values: ▪ Orig Stands for an outgoing call ▪ Term Stands for an incoming call Default value: Orig
Result-Code AVP Value on Session Disconnection by AS	STRING	Specifies the value that R-IM-OCF Ro sets in a CCA Result-Code AVP when a session is disconnected by the charging application. **Note:** when the application disconnects a session, R-IM-OCF Ro generates a CCA only as a response to CCR. If R-IM-OCF Ro does not receive CCR to which it can respond in a reasonable time period, R-IM-OCF Ro abnormally disconnect the session.

Table 22–2 (Cont.) R-IM-OCF Ro Call Handling Parameters

Name	Type	Description
Result-Code AVP on No Response from AS	STRING	Specifies the value that R-IM-OCF Ro sets in a CCA Result-Code AVP in a case when the charging application is not responding (that is a response timer expires). Default value: 5012
Result-Code AVP on SAL 4XX	STRING	Specifies the value that R-IM-OCF Ro sets in a CCA Result-Code AVP when receiving an internal Service Controller SAL 4XX error. Default value: 4010 This parameter does not apply for 402, 403 and 404. In that case, the Result-Code AVP is set to 4012, 4010 and 5030 respectively.
Result-Code AVP on SAL 5XX	STRING	Specifies the value that R-IM-OCF Ro sets in a CCA Result-Code AVP when receiving an internal Service Controller SAL 5XX error. Default value: 4010 This parameter does not apply for 503. In that case, the Result-Code AVP is set to 3002.
Result-Code AVP on SAL 6XX	STRING	Specifies the value that R-IM-OCF Ro sets in a CCA Result-Code AVP when receiving an internal Service Controller SAL 6XX error. Default value: 4010
Default Result-Code AVP	STRING	Specifies the value that R-IM-OCF Ro sets in a CCA Result-Code AVP when receiving an internal Service Controller SAL error and non of the previous parameters apply.

Configuring Diameter Credit Control Application Parameters

The Diameter Credit Control Application tab enables you to configure parameters related to the IM-OCF Ro Diameter Credit Control Application (DCCA) interface. The Diameter Credit Control Application tab contains subtabs described in Table 22–3.

Table 22–3 R-IM-OCF Diameter Credit Control Application Subtabs

Subtab	Description
General	Enables you to set up a DCCA dialect. See "Configuring General Parameters" for more information.
AVPs	Enables you to specify Attribute-Value Pairs (AVPs) to be set in CCAs. See "Configuring AVPs Parameters" for more information.

Configuring General Parameters

The General subtab enables you to set up a DCCA dialect. Table 22–4 describes the parameter you can configure.

Table 22–4 R-IM-OCF DCCA General Subtab Parameter

Name	Type	Description
DCCA Dialect Plugin	STRING	Specifies the DCCA dialect that R-IM-OCF Ro should use. Possible values: ■ **STANDARD_DCCA** Standard DCCA dialect ■ **BRM** Oracle Communications Billing and Revenue Management DCCA dialect

Configuring AVPs Parameters

The AVPs subtab enables you to specify Attribute-Value Pairs (AVPs) to be set in CCAs. Table 22–5 describes the AVPs that you can specify.

Table 22–5 R-IM-OCF DCCA AVPs Subtab Parameters

Name	Type	Description
Session-based AVPs	STRING	Specifies AVPs that IM-OCF Ro place inside CCAs when constructing an SCUR or ECUR CCA. This parameter is useful when Service Controller is required to accommodate non-standard and vendor specific AVPs when interacting with Diameter CTF entities. The specification is given in XML format which is described below this table. **Note:** AVPs specified by this parameter are given lowest priority. That is, if an AVP is already available inside either: ■ Internal Service Controller SAL message or ■ XML carried on internal Service Controller SAL message or ■ Other IM-OCF configuration then all the other values prevail the value defined in this XML.
Immediate event AVPs	STRING	This parameter is useful when Service Controller is required to accommodate non-standard and vendor specific AVPs when interacting with Diameter CTF entities. The specification is given in XML format which is described below this table. **Note:** AVPs specified by this parameter are given lowest priority. That is, if an AVP is already available inside the following: ■ Internal Service Controller SAL message or ■ XML carried on internal Service Controller SAL message or ■ Other IM-OCF Ro configuration then all those values have a higher priority than the value defined in this XML.

You need to specify values of the SCUR AVPs, ECUR AVPs and IEC AVPs parameters in an XML format. This format enables you to specify AVPs that R-IM-OCF must place inside CCAs when R-IM-OCF Ro constructs a CCA.

In the XML format in which you specify AVPs, you need to define the following parameters:

- Command name
- AVP group
- AVP

The following XML code shows an example of how you can cause R-IM-OCF Ro to add the CC-Time AVP into CCAs that R-IM-OCF generates.

```
<dcca>
   <command name="CCA" code="272">
      <gavp name="Multiple-Services-Credit-Control" code="456" vendor-id="0"
type="GROUPED">
         <gavp name="Granted-Service-Units" code="431" vendor-id="0"
type="GROUPED">
            <avp name="CC-Time" code="420" vendor-id="0" type="INTEGER">10</avp>
         </gavp>
        </gavp>
   </command>
</dcca>
```

The XML code that you provide for AVPs, must conform to the following XML schema:

```
<?xml version="1.0" encoding="UTF-8"?>

<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xs="http://www.w3.org/2001/XMLSchema">

<xsd:element name="dcca">
   <xsd:complexType>
      <xsd:sequence minOccurs="1" maxOccurs="1">
         <xsd:element ref="command" />
      </xsd:sequence>
   </xsd:complexType>
</xsd:element>

<xsd:element name="command">
   <xsd:complexType>
      <xsd:sequence>
         <xsd:element ref="avp" maxOccurs="unbounded" />
         <xsd:element ref="gavp" maxOccurs="unbounded" />
      </xsd:sequence>
      <xsd:attribute ref="name" use="required" />
      <xsd:attribute ref="code" use="required" />
   </xsd:complexType>
</xsd:element>

<xsd:element name="gavp">
   <xsd:complexType>
      <xsd:choice>
         <xsd:element ref="avp" maxOccurs="unbounded" />
         <xsd:element ref="gavp" maxOccurs="unbounded" />
      </xsd:choice>
      <xsd:attribute ref="name" use="required" />
      <xsd:attribute ref="code" use="required" />
      <xsd:attribute ref="vendor-id" use="optional" />
      <xsd:attribute ref="type" use="required" />
   </xsd:complexType>
```

```
</xsd:element>

<xsd:element name="avp">
   <xsd:complexType>
      <xsd:attribute ref="name" use="required" />
      <xsd:attribute ref="code" use="required" />
      <xsd:attribute ref="type" use="required" />
      <xsd:attribute ref="vendor-id" use="optional" />
   </xsd:complexType>
</xsd:element>

<xsd:attribute name="name" type="xsd:string" />
<xsd:attribute name="code" type="xsd:int" />
<xsd:attribute name="vendor-id" type="xsd:int" />

<xsd:attribute name="type">
   <xsd:simpleType>
      <xsd:restriction base="xsd:string">
         <xsd:enumeration value="STRING" />
         <xsd:enumeration value="INTEGER" />
         <xsd:enumeration value="LONG" />
         <xsd:enumeration value="BYTES" />
         <xsd:enumeration value="GROUPED" />
      </xsd:restriction>
   </xsd:simpleType>
</xsd:attribute>
</xsd:schema>
```

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an R-IM-OCF Ro. For more information about configuring monitoring, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

23

Setting Up IM-PSX GSM MAP

This chapter describes how to set up an IM-PSX GSM MAP interworking module.

About IM-PSX GSM MAP Setup

The process of IM-PSX GSM MAP setup requires the following:

1. Adding an IM-PSX GSM MAP to your Oracle Communications Service Controller deployment. You can add as many modules of type IM-PSX GSM MAP as you need. See "Adding an IM-PSX GSM MAP to the Service Controller Deployment" for more information.
2. Configuring the IM-PSX GSM MAP. See "Configuring an IM-PSX GSM MAP" for more information.

Adding an IM-PSX GSM MAP to the Service Controller Deployment

To add an IM-PSX GSM MAP:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMPSXGSM**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-PSX GSM MAP to your deployment, in the **Change Center** pane, click **Commit**.

A new module of type IM-PSX GSM MAP is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an IM-PSX GSM MAP

To configure an IM-PSX GSM MAP:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added IM-PSX GSM MAP.

   The IM-PSX GSM MAP configuration pane contains the tabs described in Table 23–1.

Table 23–1 IM-PSX Configuration Subtabs

Tab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See "Configuring General Parameters" for more information.
SIP Subscription	Enables you to configure the SIP SUBSCRIBE and SIP NOTIFY interface that IM-PSX exposes to SIP applications. See "Configuring the SIP Subscription Parameters" for more information.
Map Handling	Enables you to configure the IM-PSX MAP interface. See "Configuring the Map Handling Parameters" for more information.
TCAP	Enables you to set up parameters of the IM TCAP layer. See "Configuring TCAP Parameters" for more information.
Monitoring	Enables you to define the way that Runtime MBeans and notifications operate. See "Configuring Monitoring Parameters" for more information.

Configuring General Parameters

The General tab displays the protocol variant that is used to encode and decode SS7 messages and enables you to specify an alias for an IM instance.

Table 23–2 describes the configuration parameter in the General tab.

Table 23–2 IM-PSX General Parameter

Name	Type	Description
Alias	STRING	Specifies the alias of the IM's SS7 address. The alias is an index to the SS7 SSU configuration, where the IM's SS7 address is configured. The IM uses this alias to set the origination field of outgoing SS7 messages. This ensures that further session messages arrive to this IM instance.
Plugin	STRING	Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode and decode SS7 messages. Default value: `com.convergin.common.ase.plugin.oss.map.phase2plus.OssGsmMapPlugin`

Configuring the SIP Subscription Parameters

The SIP Subscription tab enables you to configure the SIP SUBSCRIBE and SIP NOTIFY interface that IM-PSX exposes to SIP applications.

The SIP Subscription tab contains the subtabs described in Table 23–3.

Table 23–3 SIP Subscription Tabs

Subtab	Description
General	Enables you to set up a pending NOTIFY message and define a PSX SIP domain. See "General" for more information.
Accept Header	Enables you to select allowed values to which a SIP application can set the Accept header. See "Accept Header" for more information.

General

The General subtab enables you to set up a pending NOTIFY message and define a PSX SIP domain.

Table 23–4 describes the configuration parameters on the General subtab.

Table 23–4 General Parameters

Name	Type	Description
Generate Pending NOTIFY	BOOL	Specifies whether or not Service Controller needs to generate a SIP NOTIFY message with the Subscription-State set to pending together with an empty body when a new subscription is created and the terminal state is still unknown. Possible values: ■ TRUE ■ FALSE Default value: TRUE
PSX SIP Domain	STRING	Specifies a SIP domain name for IM-PSX. The application can use this value in the domain part of the RequestURI header and the To header to refer a request to a specific SS7 entity whose alias is configured in DefaultSS7EntityAlias. Default value: ocsb-psx.net

Accept Header

The Accept subtab enables you to select formats of the body message that IM-PSX supports.

The Accept subtab contains a table in which each row represents one of the formats that SIP applications are allowed to set in the Accept header of SIP SUBSCRIBE messages. When setting up a format, you need to specify the values described in Table 23–5.

Table 23–5 Accept Header Value Fields

Field	TYPE	Description
Name	STRING	Specifies the name of the format. This field is read-only.

Table 23–5 (Cont.) Accept Header Value Fields

Field	TYPE	Description
Allowed	BOOL	Specifies whether IM-PSX supports the respective SIP NOTIFY message body format. When the format is supported, SIP applications can set this format in the Accept header of SIP SUBSCRIBE messages. Possible values: ■ TRUE ■ FALSE Default value: True

Configuring the Map Handling Parameters

The Map Handling tab enables you to configure the IM-PSX MAP interface. Table 23–6 describes the configuration parameters in the Map Handling tab.

Table 23–6 Map Handling Parameters

Name	Type	Description
Default SS7 Entity Alias	STRING	Specifies an SS7 entity to which the IM-PSX sends a MAP request. The parameter defines an alias for one of the SCCP addresses configured in the SS7 SSU. The parameter is used only when the address is not provided in the To header of the SIP SUBSCRIBE message. Default value: hlr
gsmSCF Address	STRING	Specifies a value to be set in the gsmSCF-Address parameter of the MAP request. The parameter defines the address that identifies an IM-PSX in a mobile network. Default value: Unknown
gsmSCF Nature of Address	STRING	Specifies the NatureOfAddress of the gsmSCF-Address parameter in the MAP request
MSISDN NatureOfAddress	STRING	Specifies the NatureOfAddress of the MSISDN parameter that IM-PSX sets in the MAP operation. Service Controller uses the NatureOfAddress specified in this parameter only if the NatureOfAddress is not specified in the RequestURI header of the SIP SUBSCRIBE message. Possible values: ■ UNKNOWN ■ NATIONAL ■ INTERNATIONAL ■ SUBSCRIBER_NUMBER ■ NETWORK_SPECIFIC Default value: UNKNOWN IM-PSX also uses this parameter to set the gsmScfAddressNoa

Table 23–6 (Cont.) Map Handling Parameters

Name	Type	Description
Default Numbering Plan	STRING	Specifies a default numbering plan used to set the MSISDN and gsmSCF-Address in the MAP request. Possible values: ■ ISDN ■ DATA ■ TELEX Default value: ISDN

Configuring TCAP Parameters

The TCAP subtab enables you to set up the parameters of the TCAP layer.

Table 23–7 describes configuration parameters in the TCAP subtab.

Table 23–7 TCAP Parameters

Name	Type	Description
Class4 Default Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for a possible REJECT. The timer starts when sending INVOKE for class 4 operations. Default value: 5 seconds.
Reject Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for a possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.
Application Part Guard Timer	INT	Specifies the PSM timer, which is a timer for incoming operations. The PSM timer defines the maximum time that the application (TC-User) has to respond to incoming INVOKE messages.
Activate Invoke Alarm in Application Layer	BOOL	When the TCAP layer receives an INVOKE, it triggers back P-ABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ True ■ False Default value: False.
Result Split Length	INT	Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-PSX. For more information about configuring monitoring, see

"Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

24

Setting Up IM-PSX ANSI-MAP

This chapter describes how to set up an IM-PSX ANSI-MAP interworking module.

About IM-PSX ANSI-MAP Setup

The process of IM-PSX ANSI-MAP setup requires the following:

1. Adding an IM-PSX ANSI-MAP to your Oracle Communications Service Controller deployment. You can add as many modules of type IM-PSX ANSI-MAP as you need. See "Adding an IM-PSX ANSI-MAP to the Service Controller Deployment" for more information.
2. Configuring the IM-PSX ANSI-MAP. See "Configuring an IM-PSX ANSI-MAP" for more information.

Adding an IM-PSX ANSI-MAP to the Service Controller Deployment

To add an IM-PSX ANSI-MAP:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMPSXANSIMAP**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-PSX ANSI-MAP to your deployment, in the **Change Center** pane, click **Commit**.

A new module of type IM-PSX ANSI-MAP is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an IM-PSX ANSI-MAP

To configure an IM-PSX ANSI-MAP:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added IM-PSX ANSI-MAP.

   The configuration screen of the IM-PSX ANSI-MAP contains the tabs described in Table 24–1.

Table 24–1 IM-PSX ANSI-MAP Configuration Subtabs

Tab	Description
General	Enables you to specify an alias for an Interworking Module instance. See "Configuring General Parameters" for more information.
SIP Subscription	Enables you to configure the SIP SUBSCRIBE and SIP NOTIFY interface that IM-PSX exposes to SIP applications. See "Configuring the SIP Subscription Parameters" for more information.
Map Handling	Enables you to configure the IM-PSX ANSI-MAP interface. See "Configuring the Map Handling Parameters" for more information.
TCAP	Enables you to set up parameters of the TCAP layer. See "Configuring TCAP Parameters" for more information.
Monitoring	Enables you to define the way that Runtime MBeans and notifications operate. See "Configuring Monitoring Parameters" for more information.

Configuring General Parameters

The General tab enables you to specify an alias for an Interworking Module instance.

Table 24–2 describes the configuration parameter in the General tab.

Table 24–2 IM-PSX General Parameter

Name	Type	Description
Alias	STRING	Specifies an internal Service Controller alias given to an IM-PSX instance. This alias is used in the SSU configuration, in the Incoming Routing Rules tab to specify routing rules towards this IM-PSX instance.
Plugin	STRING	Specifies the protocol ASE plugin class name. Default value: `com.convergin.common.ase.plugin.oss.ansi.map.is41e.OssIs41ePlugin`

Configuring the SIP Subscription Parameters

The SIP Subscription tab enables you to configure the SIP SUBSCRIBE and SIP NOTIFY interface that IM-PSX exposes to SIP applications.

The SIP Subscription tab contains the subtabs described in Table 24–3.

Table 24–3 SIP Subscription Tabs

Subtab	Description
General	Enables you to a set up a pending NOTIFY message and define a PSX SIP domain. For more information, see "General".
Accept Header	Enables you to select allowed values to which a SIP application can set the Accept header. For more information, see "Accept Header".

General

The General subtab enables you to set up a pending NOTIFY message and define a PSX SIP domain.

Table 24–4 describes the configuration parameters on the General subtab.

Table 24–4 General Parameters

Name	Type	Description
Generate Pending NOTIFY	BOOL	Specifies whether or not Service Controller needs to generate a SIP NOTIFY message with Subscription-State set to pending together with an empty body when a new subscription is created and the terminal state is yet unknown. Possible values: ■ TRUE ■ FALSE Default value: TRUE
PSX SIP Domain	STRING	Specifies a domain name for IM-PSX. The application can use this value in the domain part of the RequestURI header and the To header to refer a request to a specific SS7 entity whose alias is configured in DefaultSS7EntityAlias. Default value: ocsb-psx.net

Accept Header

The Accept subtab enables you to select formats of the body message that IM-PSX supports.

The Accept subtab contains a table in which each row represents a format that SIP applications are allowed to set in the Accept header of SIP SUBSCRIBE messages. When setting up a format, you need to specify the values described in Table 24–5.

Table 24–5 Accept Header Value Fields

Field	TYPE	Description
Name	STRING	Specifies a format in which a in-dialog and out-of-dialog SIP NOTIFY message body is encoded. This is a read-only field. IM-PSX can support the following formats: ■ application/pidf+xml ■ application/ansi-is41e+ber ■ application/ansi-is41e+xml You can define which of these formats IM-PSX supports.
Allowed	BOOL	Specifies whether IM-PSX supports each of the formats displayed in the Name column. When it is supported, SIP applications can set the format in the Accept header of SIP SUBSCRIBE messages. Possible values: ■ TRUE ■ FALSE Default value: TRUE

Configuring the Map Handling Parameters

The Map Handling tab enables you to configure the IM-PSX MAP interface. Table 24–6 describes the configuration parameters in the Map Handling tab.

Table 24–6 Map Handling Parameters

Name	Type	Description
Default SS7 Entity Alias	STRING	Specifies an SS7 entity to which the IM-PSX sends a MAP request. The parameter defines an alias to one of the SCCP addresses configured in the SS7 SSU. The parameter is used only when the To header domain part of a SIP SUBSCRIBE message equals to the PSX domain. Default value: hlr
Location Operation	STRING	Specifies a default ANSI-MAP operation that the IM-PSX sends to an HLR. Possible values: ■ SMSReq ■ Search Default value: Search

Table 24–6 (Cont.) Map Handling Parameters

Name	Type	Description
HLR Notify When Available	BOOL	Specifies whether or not an HLR sends SMSNotification to the IM-PSX when a mobile subscriber who was previously unavailable becomes available again. This parameter is set in the SMSReq operation that Service Controller sends to an HLR. Possible values: ■ TRUE The HLR sends an SMSNotification message to IM-PSX when a subscriber becomes available again. The notification contains information about the subscriber's ■ FALSE The HLR does not send a notification when a subscriber becomes available again. Default value: True To enable IM-PSX to forward an SMSNotification to the application server that requested the information, perform the following actions: ■ In the configuration settings of IM-ASF, define the AS to which IM-PSX needs to forward an SMSNotification. ■ Go to the General tab in the OE Configuration screen and set the Subscriber Profile parameter to OlpLssInfoReceiver. ■ In the orchestration profile, in addition to the entry for SUBSCRIBE messages, add an entry for NOTIFY messages.
Search Service ID	STRING	Specifies the identifier of a service of the AS that requests information about a mobile subscriber
MDN NatureOfAddress	STRING	Specifies the NatureOfAddress of the MDN parameter that IM-PSX sets in ANSI-MAP operations. Service Controller uses the NatureOfAddress specified in this parameter only if the NatureOfAddress is not specified in the RequestURI header of the SIP SUBSCRIBE message. Possible values: ■ NATIONAL ■ INTERNATIONAL Default value: NATIONAL

Configuring TCAP Parameters

The TCAP subtab enables you to set up the parameters in the TCAP layer.

Table 24–7 describes configuration parameters in the TCAP subtab.

Table 24–7 TCAP Parameters

Name	Type	Description
Class4 Default Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for a possible REJECT. The timer starts when sending INVOKE for class 4 operations. Default value: 5 seconds.

Table 24–7 (Cont.) TCAP Parameters

Name	Type	Description
Reject Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for a possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.
Application Part Guard Timer	INT	Specifies the PSM timer, which is a timer for incoming operations. The PSM timer defines the maximum time that the application (TC-User) has to respond to incoming INVOKE messages.
Activate Invoke Alarm in Application Layer	BOOL	When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for a response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ TRUE ■ FALSE Default value: FALSE.
Result Split Length	INT	Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-PSX. For more information about configuring monitoring, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

25

Setting Up IM-PSX ANSI Plugin

This chapter describes how to set up an IM-PSX ANSI Plugin interworking module.

About IM-PSX ANSI Plugin

IM-PSX ANSI Plugin is a network-facing module that enables Oracle Communications Service Controller to handle messages which existing IMs do not support. Unlike other network-facing IMs that communicate with TCAP users (such as CAP, INAP, WIN, or MAP), IM-PSX ANSI Plugin communicates with TCAP directly.

About IM-PSX ANSI Plugin Setup

The process of IM-PSX ANSI Plugin setup requires the following:

1. Adding an IM-PSX ANSI Plugin to your Service Controller deployment. You can add as many modules of type IM-PSX ANSI Plugin as you need. See "Adding an IM-PSX ANSI Plugin to the Service Controller Deployment" for more information.
2. Configuring the IM-PSX ANSI Plugin. See "Configuring an IM-PSX ANSI Plugin" for more information.

Adding an IM-PSX ANSI Plugin to the Service Controller Deployment

To add an IM-PSX ANSI Plugin:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMPSXANSIPLUGIN**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.

8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-PSX ANSI Plugin to your deployment, in the **Change Center** pane, click **Commit**.

   A new module of type IM-PSX ANSI Plugin is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an IM-PSX ANSI Plugin

To configure an IM-PSX ANSI Plugin:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added IM-PSX ANSI Plugin.

   The IM-PSX ANSI Plugin configuration pane contains the tabs described in Table 25–1.

Table 25–1 IM-PSX ANSI Plugin Configuration Tabs

Tab	Description
General	Enables you to configure the alias of the IM-PSX ANSI Plugin address specified in the SS7 SSU configuration. See "Configuring General Parameters" for more information.
Session Handling	Enables you to configure how IM-PSX ANSI Plugin handles sessions that IM-PSX ANSI Plugin sends to, and receives from, a network. See "Configuring Session Handling Parameters" for more information.
TCAP	Enables you to set up parameters of the IM TCAP layer. See "Configuring TCAP Parameters" for more information.
Monitoring	Enables you to define the way that Runtime MBeans and notifications operate. See "Configuring Monitoring Parameters" for more information.

Configuring General Parameters

The General tab enables you to configure the alias for the IM-PSX ANSI Plugin address defined in the SS7 SSU configuration.

Table 25–2 describes the Alias parameter in the General tab.

Table 25–2 IM-PSX ANSI Plugin General Parameter

Name	Type	Description
Alias	STRING	Specifies the alias of the IM's SS7 address.

Configuring Session Handling Parameters

The Session Handling tab enables you to configure how IM-PSX ANSI Plugin handles sessions that it sends to, and receives from, a network.

Table 25–3 describes the configuration parameters on the Session Handling tab.

Table 25–3 Session Handling Parameters

Name	Type	Description
Generate Pending Notify	BOOL	Specifies whether or not Service Controller generates a SIP NOTIFY message when IM-PSX ANSI Plugin receives a SIP SUBSCRIBE message. Possible values: ■ TRUE ■ FALSE Default value: FALSE
Expires Header Value	INT	Specifies the value to which IM-PSX ANSI Plugin sets the Expires header when the session is initiated by a network entity. Default value: 1000
Content Type Upon No Indication	STRING	Specifies the default content type if the content type is not specified. Default value: `application/tcap-component-portion+xml+ber`
AS Name Address	STRING	Specifies the address of the AS that IM-PSX ANSI Plugin sets in the RequestURI and To headers.
Default SS7 Entity Alias	STRING	Specifies an SS7 entity to which IM-PSX ANSI Plugin sends a request. The parameter defines an alias for one of the SCCP addresses configured in the SS7 SSU. The parameter is used only when the address is not provided in the To header of the SIP SUBSCRIBE message.
Max Parameter Length in Tcap Component in Bytes	INT	Specifies the maximum length of the parameter value in Tcap Component, in bytes that the AS sends to IM-PSX ANSI Plugin. Default value: 512
Plugin Class Name	STRING	Specifies the class name of the plugin that encodes parameters of a TCAP message to XER. If you do not specify the class name, IM-PSX ANSI Plugin forwards parameters of a TCAP message as a byte array.
Plugin Protocol Name	STRING	Specifies the name of the protocol of the plugin, if the plugin for converting parameters of a TCAP message to XER is used.

Configuring TCAP Parameters

The TCAP subtab enables you to set up the parameters of the TCAP layer.

Table 25–4 describes the configuration parameters in the TCAP tab.

Table 25–4 TCAP Parameters

Name	Type	Description
Class4 Default Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for a possible REJECT message. The timer starts when sending an INVOKE message for class 4 operations. Default value: 10000 seconds.

Table 25–4 (Cont.) TCAP Parameters

Name	Type	Description
Reject Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for a possible REJECT message. The timer starts when sending an INVOKE message for class 1-3 operations. Default value: 1000 seconds

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-PSX ANSI Plugin. For more information, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

26

Setting Up IM-PSX ETSI Plugin

This chapter describes how to set up an IM-PSX ETSI Plugin interworking module.

About IM-PSX ETSI Plugin

IM-PSX ETSI Plugin is a network-facing module that enables Oracle Communications Service Controller to handle messages which existing IMs do not support. Unlike other network-facing IMs that communicate with TCAP users (such as CAP, INAP, WIN, or MAP), IM-PSX ETSI Plugin communicates with TCAP directly.

The configuration process of IM-PSX ETSI Plugin with the Administration Console is the same as the configuration process of IM-PSX ANSI Plugin. See "Setting Up IM-PSX ANSI Plugin" for more information about configuring IM-PSX ANSI Plugin with the Administration Console.

Configuring an IM-PSX ETSI Plugin to Map Between SS7 TCAP/MAP and SIP SUBSCRIBE/NOTIFY

To configure an IM-PSX ETSI plugin to map between SS7 TCAP/MAP and SIP Subscribe/Notify:

1. In the Admin Console, create an IMPSXETSI plugin type instance.
2. Configure the IMPSXETSI plugin instance with the following settings:
   - For **LocalAllias**, set it to the SSN alias configured in SS7 or Sigtran.
   - For **Default SS7 Entity Alias**, set to the remote SS7 SSN alias.
   - For **Plugin Class Name**, set to **MAP3**.
   - For **Plugin Protocol Name**, enter **com.convergin.common.ase.plugin.oss.map.phase2plus.OssGsmMapPlugin**.
   - For **ContentType Upon No Indication**, enter **application/tcap-compomext-portion+xml**.
3. Configure the SS7 protocol operations:
   a. Add an operation named noteSubscriberDataModified for the SS7 Network initiated dialogue mapping (for example, map noteSubscriberDataModified to SIP SUBSCRIBE). Go to axiaConsole, find the IMPSXETSIPLUGIN as below, click on **addOperation** and set the following values:
      – For **class**: 1
      – For **code**: 5

- For **invocationTimer**: 15
- For **name**, enter **NoteSubscriberDataModified**
- For **type**: local

b. Add an operation named AnyTimeInterrogation for SIP AS (for example, OCECAS) initiated dialogue mapping (for example, map SIP SUBSCRIBE to AnyTimeInterrogation). Go to axiaConsole, find the IMPSXETSIPLUGIN, click on **addOperation**, and set the following values:

- For **class**: 1
- For **code**: 71
- For **invocationTimer**: 15
- For **name**: enter **AnyTimeInterrogation**
- For **type**: local

27

Setting Up IM-UIX-SMS

This chapter describes how to set up an IM-UIX-SMS interworking module.

About IM-UIX-SMS

IM-UIX-SMS is a network-facing module that enables Oracle Communications Service Controller to receive messages from, and send them to, Short Message Service Centers (SMSCs) through the Short Message Peer-to-Peer Protocol (SMPP).

In conjunction with application-facing IMs (for example, IM-ASF), IM-UIX-SMS provides a solution for routing messages between SMSCs and applications.

IM-UIX-SMS communicates with SMSCs as follows:

- An SMSC sends messages to IM-UIX-SMS.

  IM-UIX-SMS receives a **delivery_sm** request sent by an SMSC through the SMPP SSU. IM-UIX-SMS translates the request to a SAL message and sends it to the OE. The OE routes the message to an appropriate IM based on the orchestration logic.

  See the discussion on configuring incoming routing rules in the chapter on configuring SMPP Signaling Server Units in *Service Controller Signaling Server Units Configuration Guide* for more information about setting up rules for routing messages to IM-UIX-SMS instances.

- IM-UIX-SMS sends messages to an SMSC.

  IM-UIX-SMS receives a message sent by an application through an application-facing IM that supports the appropriate protocol (for example, through IM-ASF when a message is sent over SIP). Based on the received message, IM-UIX-SMS generates a **submit_sm** message and sends it to an SMSC through the SMPP SSU.

  See the discussion on configuring SMPP network entities in the chapter on configuring SMPP Signaling Server Units in *Service Controller Signaling Server Units Configuration Guide* for more information about setting up rules for routing messages to SMSCs.

To set up the communication between SMSCs and IM-UIX-SMS, you need to configure the following parameters:

- The body encoding format, which defines the format that IM-UIX-SMS uses to encode the parameters of a **delivery_sm** message. See "Specifying the Body Encoding Format" for more information.
- Parameters of SMPP operations that IM-UIX-SMS uses to generate a **submit_sm** message. See "Configuring SMPP Handling Operations" for more information.

- Monitoring parameters of IM-UIX-SMS. See "Configuring Monitoring Parameters" for more information.

About IM-UIX-SMS Setup

The process of IM-PSX GSM MAP setup requires the following:

1. Adding an IM-UIX-SMS to your Service Controller deployment. You can add as many modules of type IM-UIX-SMS as you need. See "Adding an IM-UIX-SMS to the Service Controller Deployment" for more information.
2. Configuring the IM-PSX GSM MAP. See the following sections for more information:
   - Specifying the Body Encoding Format
   - Configuring SMPP Handling Operations
   - Configuring Monitoring Parameters

Adding an IM-UIX-SMS to the Service Controller Deployment

To add an IM-PSX GSM MAP:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMUIXSMSSMPP34**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-UIX-SMS to your deployment, in the **Change Center** pane, click **Commit**.

   A new module of type IM-UIX-SMS is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Specifying the Body Encoding Format

IM-UIX-SMS receives **delivery_sm** messages from SMSCs. Before routing these messages to the OE, IM-UIX-SMS translates them into SAL messages. You can select the encoding format that IM-UIX-SMS uses to encode parameters of **delivery_sm** messages in the body of SAL messages.

To specify the body encoding format:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Interworking Modules**.
4. Select the instance of IM-UIX-SMS that you want to configure.

   The IM-UIX-SMS configuration pane appears.
5. Click the **General** tab.
6. From the **Body Encoding Format** list, select the format that IM-UIX-SMS uses to encode the parameters of a short message in the body of SAL messages:
   - **NONE**

     Select if you do not want to encode the parameters of a short message.
   - **BER**

     Select to use Basic Encoding Rules.
   - **XER**

     Select to use XML Encoding Rules.
7. Click **Apply**.

Configuring SMPP Handling Operations

To route a message sent by an application to an SMSC, IM-UIX-SMS generates a **submit_sm** message. You configure how IM-UIX-SMS generates this message by configuring SMPP operations.

To configure SMPP operations:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Interworking Modules**.
4. Select the instance of IM-UIX-SMS that you want to configure.

   The IM-UIX-SMS configuration pane appears.
5. Click the **SMPP Handling** tab.
6. Fill in the fields described in Table 27–1.

Table 27–1 SMPP Handling Parameters

Name	Type	Description
Default SMSC Alias	STRING	Specifies the alias of the SMSC to which IM-UIX-SMS sends the message. You map this alias to the physical address of an SMSC by configuring the SMPP SSU. See the discussion on configuring SMPP network entities in the chapter on configuring SMPP Signaling Server Units in *Service Controller Signaling Server Units Configuration Guide* for more information.
Service Type	STRING	Specifies the identifier of destination service in the SMSC, for submit_sm messages.

Table 27–1 (Cont.) SMPP Handling Parameters

Name	Type	Description
Submit Destination Address Type of Number	STRING	Specifies the type of number of the destination address, which is set in the short message. Possible values: ■ UNKNOWN ■ INTERNATIONAL ■ NATIONAL ■ NETWORK_SPECIFIC ■ SUBSCRIBER_NUMBER ■ ALPHANUMERIC ■ ABBREVIATED Default value: UNKNOWN
Submit Destination Address Numbering Plan Identification	STRING	Specifies the numbering plan identification of the destination address, which is set in the short message. Possible values: ■ UNKNOWN ■ ISDN ■ DATA ■ TELEX ■ LAND_MOBILE ■ NATIONAL ■ PRIVATE ■ ERMES ■ INTERNET ■ WAP_CLIENT_ID Default value: UNKNOWN
Submit Message Mode	STRING	Specifies how the SMSC should deliver messages to the recipient SME. Possible values: ■ DEFAULT_SMSC_MODE ■ DATAGRAM_MODE ■ FORWARD ■ STORE_AND_FORWARD_MODE Default Value: DEFAULT_SMSC_MODE **Note**: The current release of Service Controller does not currently support FORWARD.

Table 27–1 (Cont.) SMPP Handling Parameters

Name	Type	Description
Submit Message Type	STRING	Specifies the type of message that an SMPP operation carries. Possible values: ■ DEFAULT_MESSAGE_TYPE ■ SM_CONTAINS_ESME_DELIVERY_ACKNOWLEDGEMENT ■ SM_CONTAINS_ESME_MANUAL_USER_ACKNOWLEDGEMENT Default value: DEFAULT_MESSAGE_TYPE
Submit SM Priority Level	STRING	Specifies the priority level of a short message. Possible values: ■ LEVEL_0 ■ LEVEL_1 ■ LEVEL_2 ■ LEVEL_3 Default value: LEVEL_0
SMSC Delivery Receipt Request	STRING	Specifies the type of the delivery receipt that the SMSC sends after receiving the short message. Possible values: ■ NO_DELIVERY_RECEIPT_REQUESTED ■ DELIVERY_RECEIPT_REQUESTED_FOR_SUCCESS_OR_FAILURE ■ DELIVERY_REQUEST_RECEIPT_REQUESTED_FOR_FAILURE Default value: NO_DELIVERY_RECEIPT_REQUESTED
SME Acknowledgement Request	STRING	Specifies the type of the acknowledgement that the SME sends after receiving the short message from an SMSC. Possible values: ■ NO_RECEIPIENT_SME_ACKNOWLEDGDEMENT _REQUESTED ■ SME_DELIVERY_ACKNOWLEDGEMENT_REQUESTED ■ SME_MANUAL_USER_ACKNOWLEDGEMENT_REQUESTED ■ BOTH_DELIVERY_AND_MANUAL_USER_ACKNOWLEDGEMENT_REQUESTED Default value: NO_RECEIPIENT_SME_ACKNOWLEDGDEMENT _REQUESTED

Table 27–1 (Cont.) SMPP Handling Parameters

Name	Type	Description
Submit Validity Period Format	STRING	Specifies the format in which validity of the short message is defined. Possible values: ■ VP_NOT_PRESENT ■ VP_RELATIVE_FORMAT ■ VP_ABSOLUTE_FORMAT Default value: VP_NOT_PRESENT
Submit Validity Period Source	STRING	Specifies the source that defines the validity period of the short message. Possible values: ■ STATIC_CONFIGURATION ■ SAL_MESSAGE Default value: STATIC_CONFIGURATION
Submit Validity Period Value	INT	Specifies the time, in seconds, during which the short message is valid. IM-UIX-SMS applies this value only when: ■ Submit Validity Period Source is set to STATIC_CONFIGURATION ■ Submit Validity Period Format is set to VP_RELATIVE_FORMAT Default value: -1
Replace if Present	STRING	Specifies whether to request the SMSC to replace a previously submitted message, that is still pending delivery. Possible values: ■ DONT_REPLACE ■ REPLACE Default value: DONT_REPLACE
Data Coding	STRING	Specifies the coding scheme of the short message. Possible values: ■ SMSC_DEFAULT_ALPHABET ■ IA5 ■ LATIN_1 ■ CYRILLIC ■ LATIN_HEBREW ■ UCS2 ■ PICTOGRAM_ENCODING ■ ISO_2022_JP ■ EXTENDED_KANJI_JIS ■ KS_C_5601 Default value: SMSC_DEFAULT_ALPHABET

Table 27–1 (Cont.) SMPP Handling Parameters

Name	Type	Description
Privacy Indicator	STRING	Specifies the privacy level of the short message. Possible values: ■ NOT_RESTRICTED ■ RESTRICTED ■ CONDIFENTIAL ■ SECRET Default value: NOT_RESTRICTED
Submit Include User Message Reference	STRING	Specifies whether IM-UIX-SMS sets the user_message_reference parameter in the submit_sm message. Possible values: ■ TRUE ■ FALSE Default value: FALSE

7. Click **Apply**.

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-UIX-SMS. For more information about configuring monitoring, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

28

Setting Up IM-UIX-USSD SMPP

This chapter describes how to set up an IM-UIX-USSD SMPP interworking module.

About IM-UIX-USSD SMPP Setup

The process of IM-UIX-USSD SMPP setup requires the following:

1. Adding an IM-UIX-USSD SMPP to your Oracle Communications Service Controller deployment. You can add as many modules of type IM-UIX-USSD SMPP as you need. See "Adding an IM-UIX-USSD SMPP to the Service Controller Deployment" for more information.
2. Configuring the IM-UIX-USSD SMPP. See "Configuring an IM-UIX-USSD" for more information.

Adding an IM-UIX-USSD SMPP to the Service Controller Deployment

To add an IM-UIX-USSD SMPP:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **IMUIXUSSDSMPP34**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-UIX-USSD SMPP to your deployment, in the **Change Center** pane, click **Commit**.

A new module of type IM-UIX-USSD SMPP is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring an IM-UIX-USSD

To configure an IM-PSX ANSI-MAP:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Interworking Modules** node, select the newly added IM-PSX ANSI-MAP.

The IM-UIX-USSD configuration pane contains the tabs described in Table 28–1.

Table 28–1 IM-UIX-USSD Configuration Tabs

Tab	Description
Supplementary Service Handling	Enables you to specify a format that IM-UIX-USSD uses to encode USSD in a SAL message and the time period that IM-UIX-USSD waits for the SIP application to send a new request. See "Configuring Supplementary Service Handling" for more information.
SMPP Handling	Enables you to configure how IM-UIX-USSD handles USSD received from, and sent to, an HLR. See "Configuring SMPP Handling Parameters" for more information.
Monitoring	Enables you to define the way that Runtime MBeans and notifications operate. See "Configuring Monitoring Parameters" for more information.

Configuring Supplementary Service Handling

The **Supplementary Service Handling** tab enables you to specify a format that IM-UIX-USSD uses to encode USSD in a SAL message and the time period that IM-UIX-USSD waits for the SIP application to send a new request.

Table 28–2 describes the configuration parameters on the **Supplementary Service Handling** tab.

Table 28–2 IM-UIX-USSD Supplementary Service Handling Parameters

Name	Type	Description
Body Encoding Format	STRING	Specifies the method that the IM-UIX-USSD uses to encode USSD in the body of a SAL message. Possible options: ▪ BER ▪ XER ▪ None Default value: None
AS Idle Interval in Seconds	INT	Specifies the maximum time period, in seconds, that IM-UIX-USSD waits for the SIP application to send a new request. When the specified time is reached, IM-UIX-USSD terminates the session.
USSD Message Maximum Length	INT	Specifies the maximum length of the USSD message.

Configuring SMPP Handling Parameters

The **SMPP Handling** tab enables you to configure how IM-UIX-USSD generates a submit_sm message.

Table 28–3 describes the configuration parameters on the **SMPP Handling** tab.

Table 28–3 SMPP Handling Parameters

Name	Type	Description
Default SMSC Alias	STRING	Specifies the alias of the SMSC to which IM-UIX-USSD sends SMPP requests. You map this alias to the physical address of an SMSC by configuring the SMPP SSU. See the discussion on configuring SMPP network entities in the chapter on configuring SMPP Signaling Server Units in *Service Controller Signaling Server Units Configuration Guide* for more information.
Service Type	STRING	Specifies the SMS Application service associated with the message.
Submit Destination Address Type of Number	STRING	Specifies the type of number of the destination address, which is set in the short message. Possible values: ■ ALPHANUMERIC ■ ABBREVIATED ■ UNKNOWN ■ INTERNATIONAL ■ NATIONAL ■ NETWORK-SPECIFIC ■ SUBSCRIBER_NUMBER
Submit Destination Address Numbering Plan Identification	STRING	Specifies the numbering plan identification of the destination address, which is set in the short message. Possible values: ■ ALPHANUMERIC ■ ABBREVIATED ■ NATIONAL ■ NETWORK_SPECIFIC ■ SUBSCRIBER_NUMBER ■ UNKNOWN ■ ISDN ■ DATA ■ TELEX ■ LAND_MOBILE

Table 28–3 (Cont.) SMPP Handling Parameters

Name	Type	Description
Submit Message Mode	STRING	Specifies how the SMSC should deliver messages to the recipient SME. Possible values: ■ DEFAULT_SMSC_MODE ■ DATAGRAM_MODE ■ FORWARD ■ STORE_AND_FORWARD_MODE **Note**: The current release of Service Controller does not currently support FORWARD.
Submit Message Type	STRING	Specifies the type of message that an SMPP operation carries. Possible values: ■ DEFAULT_MESSAGE_TYPE ■ SM_CONTAINS_ESME_DELIVERY_ACKNOWLEDGEMENT ■ SM_CONTAINS_ESME_MANUAL_USER_ACKNOWLEDGEMENT
Submit SM Priority Level	STRING	Specifies the priority level of a short message. Possible values: ■ LEVEL_0 ■ LEVEL_1 ■ LEVEL_2 ■ LEVEL_3
SMSC Delivery Receipt Request	STRING	Specifies the type of the delivery receipt that the SMSC sends after receiving the short message. Possible values: ■ NO_DELIVERY_RECEIPT_REQUESTED ■ DELIVERY_RECEIPT_REQUESTED_FOR_SUCCESS_OR_FAILURE ■ DELIVERY_REQUEST_RECEIPT_REQUESTED_FOR_FAILURE
SME Acknowledgement Request	STRING	Specifies the type of the acknowledgement that the SME sends after receiving the short message from an SMSC. Possible values: ■ NO_RECEIPIENT_SME_ACKNOWLEDGDEMENT _REQUESTED ■ SME_DELIVERY_ACKNOWLEDGEMENT_REQUESTED ■ SME_MANUAL_USER_ACKNOWLEDGEMENT_REQUESTED ■ BOTH_DELIVERY_AND_MANUAL_USER_ACKNOWLEDGEMENT_REQUESTED

Table 28–3 (Cont.) SMPP Handling Parameters

Name	Type	Description
Submit Validity Period Format	STRING	Specifies the format in which validity of the short message is defined. Possible values: ■ VP_NOT_PRESENT ■ VP_RELATIVE_FORMAT ■ VP_ABSOLUTE_FORMAT
Submit Validity Period Source	STRING	Specifies the source that defines the validity period of the short message. Possible values: ■ STATIC_CONFIGURATION ■ SAL_MESSAGE
Submit Validity Period Value	INT	Specifies the time, in seconds, during which the short message is valid. IM-UIX-USSD applies this value only when: ■ Submit Validity Period Source is set to STATIC_CONFIGURATION ■ Submit Validity Period Format is set to VP_RELATIVE_FORMAT
Replace if Present	STRING	Specifies whether to request the SMSC to replace a previously submitted message, that is still pending delivery. Possible values: ■ DONT_REPLACE ■ REPLACE
Data Coding	STRING	Specifies the coding scheme of the short message. Possible values: ■ SMSC_DEFAULT_ALPHABET ■ IA5 ■ LATIN_1 ■ CYRILLIC ■ LATIN_HEBREW ■ UCS2 ■ PICTOGRAM_ENCODING ■ ISO_2022_JP ■ EXTENDED_KANJI_JIS ■ KS_C_5601
Privacy Indicator	STRING	Specifies the privacy level of the short message. Possible values: ■ NOT_RESTRICTED ■ RESTRICTED ■ CONDIFENTIAL ■ SECRET

Table 28–3 (Cont.) SMPP Handling Parameters

Name	Type	Description
Submit Include User Message Reference	STRING	Specifies whether IM-UIX-USSD sets the user_message_reference parameter in the submit_sm message. Possible values: ■ TRUE ■ FALSE
Preferred Identity	STRING	Specifies a preferred identity of the SMPP submit_sm destination address. Possible values: ■ IMSI ■ MSISDN
USSD Confirmation Phase	STRING	Specifies the phase for which the IM-UIX-USSD sends a USSD acknowledgement to the application. Possible values: ■ SUBMIT_SM_RESP ■ DELIVER_SM
SMSC Reaction Interval in Seconds	INT	Specifies the time period, in seconds, during which the IM-UIX-USSD waits for the SMSC to confirm the USSD request with a deliver_sm.

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-UIX-USSD. For more information about configuring monitoring, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

29

Setting Up IM-WS

This chapter describes how to set up an IM-WS interworking module.

About IM-WS

IM-WS is a network-facing module that enables Oracle Communications Service Controller to receive messages from, and send messages to, Web services using Simple Object Access Protocol (SOAP) or Representative State Transfer (REST) protocol.

In conjunction with application-facing modules, IM-WS provides a solution for routing messages from applications to Web services.

IM-WS communicates with Web services as follows:

- Sending messages from IM-WS to a Web service:

  IM-WS receives a SAL message from an application-facing IM. For example, it might be an event notification submitted by an application and translated to the SAL format by an application-facing IM. IM-WS translates this message into a SOAP or REST message and send it to a Web service through the WS SSU.

  See the discussion on configuring the Web Services Signaling Server Unit in *Service Controller Signaling Server Units Configuration Guide* for more information about setting up rules for routing messages to Web services.

- Sending messages from a Web service to IM-WS:

  IM-WS receives a SOAP message sent by a Web service through the WS SSU. IM-WS translates this message from SOAP or REST to a SAL message and sends it to the OE. The OE routes the message to an appropriate IM based on the orchestration logic.

  See the discussion on configuring the Web Services Signaling Server Unit in *Service Controller Signaling Server Units Configuration Guide* for more information about setting up rules for routing messages to IM-WS instances.

To set up the communication between Web services and IM-WS, you need to configure the following parameters:

- Web service parameters, which define the Web service to which IM-WS sends a message. See "Configuring the Web Service Parameters" for more information.
- Monitoring parameters of IM-WS. See "Configuring Monitoring Parameters" for more information.

About IM-WS Setup

The process of IM-WS setup requires the following:

1. Adding an IM-WS to your Service Controller deployment. You can add as many modules of type IM-WS as you need. See "Adding an IM-WS to the Service Controller Deployment" for more information.
2. Configuring the IM-PSX GSM MAP. See the following sections for more information:
   - Configuring the Web Service Parameters
   - Configuring Monitoring Parameters

Adding an IM-WS to the Service Controller Deployment

To add an IM-WS:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Interworking Modules** node.
4. Select **IM Management**.
5. On the bottom of the IM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select IMWS.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new IM-WS to your deployment, in the **Change Center** pane, click **Commit**.

   A new module of type IM-WS is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Interworking Modules** node.

Configuring the Web Service Parameters

To route a message sent by an application to a Web service and translated to the SAL format by an application-facing IM, IM-WS translates the SAL message into a SOAP or REST message. You can specify the parameters that IM-WS sets in the SOAP or REST message using the Administration Console.

To configure Web service parameters:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.

3. Expand **Interworking Modules**.
4. Select the instance of IM-WS that you want to configure.

   The IM-WS configuration pane appears.
5. In the IM-WS configuration pane, click the **Web Service** tab.
6. Fill in the fields described in Table 29–1.

Table 29–1 Web Service Parameters

Field	Descriptions
Web Service Alias	Specifies the address of the Web service to which IM-WS sends the request. Service Controller resolves the alias into a physical address of a Web service based on the configuration of outgoing routing rules of the WS SSU. See the discussion on configuring the Web Services Signaling Server Unit in *Service Controller Signaling Server Units Configuration Guide*.
Web Service Type	Specifies the type of the Web service to which IM-WS sends the request. Possible values: ■ SOAP ■ REST Default value: SOAP
Web Service Body Type	Specifies the content type of the message body that IM-WS sends. If the message is an event notification, set this parameter to `eventnotification`.

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-WS. For more information about configuring monitoring, see "Configuring Service Controller Monitoring" in "Monitoring Service Controller Using Runtime MBeans" in *Service Controller System Administrator's Guide*.

30

Setting Up SM-LSS

This chapter describes how to configure an SM-LSS supplementary module.

Configuring an SM-LSS

An Oracle Communications Service Controller deployment includes the instance of SM-LSS already installed.

To configure an SM-LSS:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Supplementary Modules** node, select the SM-LSS.

   The SM-LSS configuration screen enables you to configure orchestration profiles. The SM-LSS configuration screen displays the orchestration profiles in a table, where each row defines one profile. An orchestration profile consists of the following information:

   - A Rule, which define conditions that must be met in order for the OE to select this profile and apply it over a session.
   - OLP name, which define the type of OLP that the OE should use to process the orchestration profile.
   - OLP data, which define an orchestration profile.

   A default orchestration profile is created during installation.

   Table 30–1 describes the parameters of an orchestration profile:

Table 30–1 LSS Parameters

Name	Type	Description
Name	STRING	A unique identifier
ID	INT	Specifies an internal unique orchestration profile identifier. Default value: 0
Level	INT	Specifies the orchestration profile priority. This parameter prioritizes orchestration profiles when more than one profile can be applied. The lower the number, the higher the priority. A value of 0 assigns the highest priority. A value of 100 assigns the lowest priority. Default value: 0

Table 30–1 (Cont.) LSS Parameters

Name	Type	Description
By From Prefix	STRING	Rule: specifies a session calling party's prefix as a condition that must be met to apply the orchestration profile. When this value is not set, the orchestration logic can be applied for any prefix. Default value: By From Prefix is not set.
By To Prefix	STRING	Rule: specifies a session destination party's prefix as a condition that must be met to apply the orchestration profile. When this value is not set, the orchestration logic can be applied for any prefix. Default value: By To Prefix is not set.
By Service Key	STRING	Specifies a regular expression as a condition that must be met to apply the orchestration profile. When this value is not set, the orchestration logic can be applied for any service key. Default value: By Service Key is not set.
OLP Name	STRING	Specifies an OLP that the OE must use to process the orchestration profile data. Set OLP Name to 3GPP-IFC.
OLP Data	Medium Text	Specifies the orchestration profile data for the OLP to process. OLP Data can contain more than 255 characters. The current version of Service Controller supports iFC as orchestration data format. For more information about iFC configuration, see the discussion on Initial Filter Criteria in *Service Controller Orchestration User's Guide*.

31

Setting Up SM-PME

This chapter describes the role of the SM-PME and explains how to configure an SM-PME supplementary module.

About the SM-PME

Applications might impose requirements on the structure of the headers and body in SIP messages that these applications receive from Oracle Communications Service Controller. For example, an application might require that the **Subject** header contains a particular value.

You can add the SM-PME to your orchestration chain. In this case, the SM-PME modifies the structure and contents of SIP message's headers and body before the OE routes the message to a next application in the orchestration chain.

You define how the SM-PME modifies the headers and body in a file, known as mapping file. A mapping file is an XML file. It contains an XSL transform that the SM-PME applies to the SIP headers and body. Because an XSL transform can be applied to XML only, the SM-PME first converts the headers and body to an XML. Then the SM-PME modifies headers and body by applying the mapping file to the XML. After the headers and body are modified, the SM-PME converts the headers and body back to their original format.

About the Mapping File

The mapping file consists of the following sections:

- Header manipulation: This section is wrapped in the **<header>** element. A mapping file can contain only one **<header>** element.
- Body manipulation: This section is wrapped in the **<body>** element. A mapping file can contain multiple **<body>** elements. Each **<body>** element contains the **<Content-Type>** element that specifies the protocol of the body, such as SDP or CAP.

Both the header manipulation section and each body manipulation section contain an XSL transform. Example 31–1 shows how a typical mapping file is structured.

Example 31–1 Mapping File Structure

```
<?xml version="1.0" encoding="UTF-8"?>
<mapping>
   <header>
      <xsl><![CDATA[
         <xsl:stylesheet version="1.0"
xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
```

```
            <!-- XSL transform for headers -->
         </xsl:stylesheet>
      ]]></xsl>
   </header>

   <body>
      <Content-Type>application/sdp</Content-Type>
      <xsl><![CDATA[
         <xsl:stylesheet version="1.0"
xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
            <!-- XSL transform for the SDP body -->
         </xsl:stylesheet>
      ]]></xsl>
   </body>

   <body>
      <Content-Type>application/cap-phase4+xml</Content-Type>
      <xsl><![CDATA[
         <xsl:stylesheet version="1.0"
xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
               <!-- XSL transform for the CAP4 body -->
         </xsl:stylesheet>
      ]]></xsl>
   </body>
</mapping>
```

When configuring the SM-PME, you specify the path of the mapping file. If you do not specify the mapping file, the SM-PME does not modify the message.

About Manipulating SIP Headers

The SM-PME can modify headers of SIP requests only. Before the SM-PME applies a mapping file to headers of a SIP request, the SM-PME converts the headers of the request to an XML representation. Example 31–2 shows the original format of SIP message headers.

Example 31–2 Original Format of SIP Message Headers

```
INVITE sip:bob@biloxi.com SIP/2.0
Via: SIP/2.0/UDP
bigbox3.site3.atlanta.com;branch=z9hG4bK77ef4c2312983.1
Via: SIP/2.0/UDP tzach.com
Max-Forwards: 69
To: Bob <sip:bob@biloxi.com>
From: Alice <sip:alice@atlanta.com>;tag=1928301774
Call-ID: a84b4c76e66710
CSeq: 314159 INVITE
Contact: <sip:alice@pc33.atlanta.com>
Content-Type: application/sdp
```

Example 31–3 shows the XML representation to which the SM-PME converted the headers.

Example 31–3 XML Representation of SIP Message Headers

```
<?xml version="1.0" encoding="UTF-8"?>
<SALMsgHeader>
   <Request-Line>INVITE sip:bob@biloxi.com SIP/2.0</Request-Line>
   <SALHeader>
      <Header>From</Header>
```

```
    <Content>"Alice&lt;sip:alice @ atlanta.com&gt;;tag=1928301774"</Content>
   </SALHeader>

   <SALHeader>
      <Header>To</Header>
      <Content>"Bob&lt;sip:bob @ biloxi.com&gt;"
   </SALHeader>

   <SALHeader>
      <Header>Via</Header>
      <Content>"SIP/2.0/UDP
bigbox3.site3.atlanta.com;branch=z9hG4bK77ef4c2312983.1"</Content>
   </SALHeader>

   <SALHeader>
      <Header>Via</Header>
      <Content>"SIP/2.0/UDP Tzach.com"</Content>
   </SALHeader>

   <SALHeader>
      <Header>Max-Forwards</Header>
      <Content>"69"</Content>
   </SALHeader>

   <SALHeader>
      <Header>Call-ID</Header>
      <Content>a84b4c76e66710</Content>
   </SALHeader>

   <SALHeader>
      <Header>CSeq</Header>
      <Content>314159 INVITE</Content>
   </SALHeader>

   <SALHeader>
      <Header>Contact</Header>
      <Content>"&lt;sip:alice @ pc33.atlanta.com&lt;"</Content>
   </SALHeader>

</SALMsgHeader>
```

Example 31–4 shows how you can code an XSL transform that changes the value of the **Subject** header. The transform copies the rest of the headers without any modification. See http://www.w3.org/TR/xslt for more information about XSLT. The code related to the headers manipulation is emphasized with bold.

Example 31–4 SIP Headers Manipulation

```
<?xml version="1.0" encoding="UTF-8"?>
<mapping>
   <header>
      <xsl><![CDATA[
         <xsl:stylesheet version="1.0"
xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
            <xsl:template match="/SALMsgHeader">
               <SALMsgHeader>
                  <xsl:copy-of select="node()[(name()='Request-Line')]"/>
                  <xsl:copy-of select="node()[(name()='Status-Line')]"/>
                  <xsl:for-each select="SALHeader">
                        <SALHeader>
```

```
                        <xsl:choose>
                           <xsl:when test="Header='Subject'">
                              <xsl:copy-of select="Header"/>
                              <Content>This is a new subject</Content>
                           </xsl:when>
                           <xsl:otherwise>
                              <xsl:copy-of select="Header"/>
                              <xsl:copy-of select="Content"/>
                           </xsl:otherwise>
                        </xsl:choose>
                     </SALHeader>
                  </xsl:for-each>
               </SALMsgHeader>
            </xsl:template>
         </xsl:stylesheet>
      ]]></xsl>
   </header>

   <body>
      <!-- XSL transform for the SDP body -->
   </body>
</mapping>
```

About Manipulating the SDP Body

The SM-PME can modify the body of both SIP requests and responses. Before the SM-PME applies a mapping file to the body of a SIP message, the SM-PME converts the body of the message to an XML representation. The SM-PME supports message bodies encoded in either SDP or SS7-based protocols, such as CAP or MAP. Example 31–5 shows the original format of the SDP body.

Example 31–5 Original SDP Body

```
v=0
o=user1 53655765 2353687777 IN IP4 10.162.34.115
c=IN IP4 10.162.34.115
t=0 0
m=audio 6001 RTP/AVP 0
a=rtpmap:0 PCMU/8000
```

Example 31–6 shows the XML representation to which the SM-PME converts the SDP body.

Example 31–6 XML Representation of the SDP Body

```
<?xml version="1.0" ?>
<SDPSessionDescription>
   <Field>
      <Type>v</Type>
      <Value>0</Value>
   </Field>

   <Field>
      <Type>o</Type>
      <Value>user1 53655765 2353687777 IN IP4 10.162.34.115</Value>
   </Field>

   <Field>
      <Type>c</Type>
      <Value>IN IP4 10.162.34.115</Value>
```

```
   </Field>

   <Field>
      <Type>t</Type>
      <Value>0 0</Value>
   </Field>

   <Field>
      <Type>m</Type>
      <Value>audio 6001 RTP/AVP 0</Value>
   </Field>

   <Field>
      <Type>a</Type>
      <Value>rtpmap:0 PCMU/8000</Value>
   </Field>
</SDPSessionDescription>
```

Example 31–7 shows how you can create an XSL transform that sets the value of the **<Type>** element to **1 0**. See http://www.w3.org/TR/xslt for more information about XSLT. The code related to the SDP body manipulation is emphasized with bold. The **<Content-Type>** element specifies that the transform is designed for SDP messages.

Example 31–7 Manipulating the SDP Body

```
<?xml version="1.0" encoding="UTF-8"?>
<mapping>
   <header>
      <xsl><![CDATA[
         <xsl:stylesheet version="1.0"
xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
            <!-- XSL transform for headers -->
         </xsl:stylesheet>
      ]]></xsl>
   </header>

   <body>
      <Content-Type>application/sdp</Content-Type>
      <xsl><![CDATA[
         <xsl:stylesheet version="1.0"
xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
            <xsl:template match="/SDPSessionDescription">
               <SDPSessionDescription>
                  <xsl:for-each select="Field">
                     <Field>
                        <xsl:choose>
                           <xsl:when test="Type='t'">
                              <xsl:copy-of select="Type"/>
                              <Value>1 0</Value>
                           </xsl:when>
                           <xsl:otherwise>
                              <xsl:copy-of select="Type"/>
                              <xsl:copy-of select="Value"/>
                           </xsl:otherwise>
                        </xsl:choose>
                     </Field>
                  </xsl:for-each>
               </SDPSessionDescription>
            </xsl:template>
         </xsl:stylesheet>
```

```
      ]]></xsl>
   </body>
</mapping>
```

The SM-PME converts the body to the XML representation only if there is at least one non-empty **<body>** element.

About Changing a Content Type

You can change the content type of a body in the transformation result using the **<Content-Type-Result>** element. If you do not specify this element, then the content type of the body in the transformation result is the same as in the original message.

Example 31–8 shows how you can create an XSL transform that changes the content body from application/cap-phase4+xml (see the value of the **<Content-Type>** element) to application/cap-phase3+xml (see the value of the **<Content-Type-Result>** element).

Example 31–8 Changing the Content Type

```
<?xml version="1.0" encoding="UTF-8"?>
<mapping>
   <header>
      <!-- XSL transform for the SDP body -->.
   </header>

<body>
   <Content-Type>application/cap-phase4+xml</Content-Type>
   <Content-Type-Result>application/cap-phase3+xml</Content-Type-Result>
   <xsl><![CDATA[
      <xsl:stylesheet version="1.0"
xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
         <xsl:template match="text()" />
            <xsl:template match="Cap4">
               <xsl:apply-templates />
            </xsl:template>
            <xsl:template match="initialDP">
               <Cap3>
                  <initialDP>
                     <xsl:copy-of select="serviceKey"/>
                     <xsl:copy-of select="bearerCapability"/>
                     <xsl:copy-of select="timeAndTimezone"/>
                  </initialDP>
               </Cap3>
            </xsl:template>
      </xsl:stylesheet>
   ]]></xsl>
</body>
</mapping>
```

Adding an SM-PME to the Service Controller Deployment

To add an SM-PME:

1. In the domain navigation pane, expand the **OCSB** node.
2. Expand the **Processing Tier** node.
3. Expand the **Supplementary Modules** node.
4. Select **SM Management**.

5. On the bottom of the SM Management pane, click **New**.
6. In the **New** window, fill out the fields as follows:
   - In the **Type** list, select **SM-PME**.
   - In the **Version** list, select the required version.
   - In the **Name** field, enter a name for this module as it should appear in the list of modules. In this field, you can only use lower case letters (a-z), upper case letters (A-Z), numbers (0-9), and underscores (_). If you attempt to use a character which is not allowed, Service Controller displays the error message and prompts you to enter a different name.
7. Click **OK**.
8. In the notification window that reminds you to commit the changes, click **OK**.
9. To add the new SM-PME to your deployment, in the **Change Center** pane, click **Commit**.

   A new module of type SM-PME is now added to your Service Controller deployment. The new module is displayed in the domain navigation pane under the **Supplementary Modules** node.

Configuring an SM-PME

To configure an SM-PME:

1. In the **Change Center**, click **Lock & Edit**.
2. In the domain navigation pane, under the **Supplementary Modules** node, select the newly added SM-PME.

   The SM-PME configuration pane contains the subtabs described in Table 31–1.

Table 31–1 SM-PME Parameters

Name	Type	Description
Mapping File Name	STRING	Specifies the path of the parameter mapping file. See "About the SM-PME" for more information on the format of an SM-PME mapping file.
Default Handling on Mapping Error	STRING	Specifies whether SM-PME releases or continues a session when the mapping engine fails. Possible values: ■ Continue Session ■ Release Session Default value: Continue Session
Mapping Error Response	INT	Specifies the SAL response error code that SM-PME returns when the mapping engine fails. The response error code is used only when the SM-PME releases a session after mapping failure. That is, the Default Handling on Mapping Error parameter is set to 1. Default value: 487