

**Oracle® Communications Service Broker**

Processing Domain Configuration Guide

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# Preface

This document provides reference information on configuring a Oracle Communications Service Broker Processing Domain using the Administration Console and Java MBeans.

## Audience

This document is intended for system administrators who are responsible for configuring Service Broker 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) – both SIGTRAN and TDM
- Session Initiation Protocol (SIP)
- Diameter protocol
- IP Multimedia Subsystem (IMS) architecture and interfaces
- Java Management Extensions (JMX)

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## Related Documents

The following documents provide additional information about Service Broker and relevant standards.

- *Oracle Communications Service Broker Release 6.0 Concepts Guide*
- *Oracle Communications Service Broker Release 6.0 System Administrator's User's Guide*

- *Oracle Communications Service Broker Release 6.0 Signaling Domain Configuration Guide*
- *Oracle Communications Service Broker Release 6.0 Orchestration Studio User's Guide*
- *Oracle Communications Service Broker Release 6.0 Online Mediation Controller Implementation Guide*
- *Oracle Communications Service Broker Release 6.0 Release Notes*

## **Downloading Oracle Communications Documentation**

Oracle Communication Service Broker documentation is available from the Oracle software delivery Web site:

<http://edelivery.oracle.com>

Additional Oracle Communications documentation is available from Oracle Technology Network:

<http://www.oracle.com/technetwork/index.html>

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# About Processing Domain Configuration

This chapter provides an overview of Processing Domain configuration.

## About the Processing Domain

A Processing Domain is a set of servers, known as Processing Servers, on which the Orchestration Engine, interworking modules, and supplementary modules are installed. A deployment of a Processing Domain requires at least two servers.

Each server in the Processing Domain runs on its own Java Virtual Machine (JVM).

Servers within a domain are symmetrical, which means that they all have the same Service Broker OSGi bundles installed and started.

## About the Configuration Process

During the configuration process, you configure the OE, IMs, and SMs deployed in the Processing Domain. In addition, you configure parameters that define how the entire Processing Tier works.

You configure each component of the Processing Domain using one of the following methods:

- Administration Console, which provides a Graphical User Interface
- Java MBeans, which expose a set of attributes and operations that you can use to configure SSUs programmatically

Each chapter of this guide provides reference information for configuring a specific component of the Processing Domain and describes both configuration methods.



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## Setting Up Processing Tier Parameters

This chapter describes how to set up parameters that define how the entire Processing Tier operates. The chapter provides information on configuring the Processing Tier using the Administration Console and Java MBeans.

### About Processing Tier Configuration

Configuration of the Processing Tier includes setting up parameters that define the following:

- **Monitoring:** Runtime MBeans that provide statistics and notifications related to the tier performance rather than an individual Service Broker module. For more information, see "Monitoring Service Broker" in *Oracle Communications Service Broker System Administrator's Guide*.
- **Overload Protection:** Protects Service Broker from failures during unexpected traffic peaks. For more information, see "Preventing System Overload" in *Oracle Communications Service Broker System Administrator's Guide*.

You can manage the Processing Tier functionality using the Tier Management node in the Domain Navigation pane.

### Configuring Monitoring Parameters

The Service Broker monitoring mechanism enables you to configure how Runtime MBeans operate and how Service Broker generates notifications. You can configure monitoring separately for the entire Processing Tier and for each of the Processing Tier components:

- Orchestration Engine
- Interworking Modules
- Supplementary Modules

Monitoring parameters that you can configure for each of these components are common for all the components. However, you can set up each of these parameters differently for different components depending on your specific requirements.

For example, you can define different triggers for generating notifications for IM-SCF and IM-SSF.

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**Warning:** Thresholds that you define for notifications serve also as thresholds for key overload indicators. If you select a measurement (Runtime MBean and attribute) as a trigger for both notification and overload protection, the threshold value that you specify in the Monitoring tab is also regarded in the context of overload protection.

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This section describes how to set up monitoring using the Service Broker Administration Console and Java MBeans:

- [Configuring Monitoring with the Administration Console](#)
- [Configuring Monitoring with Java MBeans](#)

## Configuring Monitoring with the Administration Console

This section describes how to configure monitoring of the OE, Interworking Modules, Supplementary Modules, and Processing Tier using the Service Broker Administration Console.

You need to configure monitoring separately for each Interworking Module, Supplementary Module, the OE, and the Processing Tier using the Monitoring Configuration screen. In the Administration Console, each component has its own Monitoring Configuration screen. Configuration parameters are always the same regardless of a component.

See *Oracle Communications Service Broker System Administration Guide* for more information on Service Broker monitoring.

The following sections describe these parameters.

### Accessing the Monitoring Configuration Screen

To access the Monitoring configuration pane:

1. Do one of the following according to the component you want to configure for monitoring:
  - **Orchestration Engine:** In the domain navigation pane, expand **OCSB**, expand **Processing Tier**, and then select **Orchestration Engine**.
  - **Interworking Module:** In the domain navigation pane, expand **OCSB**, expand **Processing Tier**, expand **Interworking Modules** and then select the module you want to configure for monitoring.
  - **Supplementary Module:** In the domain navigation pane, expand **OCSB**, expand **Processing Tier**, expand **Supplementary Modules** and then select the module you want to configure for monitoring.
  - **Processing Tier:** In the domain navigation pane, expand **OCSB**, expand **Processing Tier**, expand **Tier Management** and then select **Monitoring And Overload Protection**.
2. Click the **Monitoring** tab.

The Monitoring configuration pane contains the subtabs described in [Table 2-1](#).

**Table 2–1 Monitoring Subtabs**

Subtab	Description
General	Enables you to specify parameters that determine the general behavior of the notification mechanism. See " <a href="#">General</a> " for more information.
State Changed Notifications	Enables you to configure generation of notifications when a value of an attribute of a specified Runtime MBean changes. See " <a href="#">State Changed Notifications</a> " for more information.
Threshold Crossed Notifications	Enables you to configure generation of notifications when a threshold is passed. See " <a href="#">Threshold Crossed Notifications</a> " for more information.

### General

The General subtab enables you to specify parameters that determine a general behavior of the Runtime MBeans.

[Table 2–2](#) describes configuration parameters on the General subtab.

**Table 2–2 General Monitoring Parameters**

Name	Type	Description
Enable Runtime MBeans	BOOL	Specifies whether or not JMX Runtime MBeans are enabled. Possible values: <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> Default value: True
Enable Notifications	BOOL	Specifies whether or not JMX notifications are enabled. Possible values: <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> Default value: False
Notification Trigger Check Interval in Seconds	INT	Specifies the interval between consecutive sampling of counters. Counters are sampled every few seconds to check whether to invoke notifications. Default value: 30
Counter Interval in Seconds	INT	Runtime MBean counters provide measurements recorded in a recent time interval. This parameter specifies the length of this interval in seconds. Default value: 900

### State Changed Notifications

The State Changed Notifications subtab enables you to configure a notification that Service Broker generates when an attribute of a specified Runtime MBean changes to a specified value.

The State Changed Notifications subtab contains a table in which each row represents an individual notification trigger condition based on an attribute of a specific Runtime MBean.

When configuring notifications, you need to specify the fields described in [Table 2–3](#).

**Table 2–3 State Changed Notifications**

Field	Type	Description
Name	STRING	Specifies a notification name
Enabled	BOOL	Specifies whether or not the notification is enabled. Possible values: <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> Default value: True
MBean Type	STRING	Specifies a type of the Runtime MBean to be monitored
MBean Attribute	STRING	Specifies an attribute of the MBean defined in the MBean Type field to be monitored. Notice that in this parameter, you can specify only status attributes. Status attributes indicate a state of a resource.
Value	STRING	Specifies an attribute value that triggers generation of the notification
Server Filter	STRING	Specifies a filter that must be applied on the "server" key property on an MBean's instance name. If this parameter is defined, only the MBean instances with the registration name that matches the filter trigger the notification. The value of this parameter must be defined in the form of a regular expression. Default value: \S* (no filter)
Resource Filter	STRING	Specifies a filter that must be applied on the "name" key property of an MBean's instance name. If this parameter is defined, only the MBean instances with the registration name that matches the filter trigger the notification. The value of this parameter must be defined in the form of a regular expression. For example, if you want to monitor MessageByOperationRuntimeMbean's counters of a specific operation, set ResourceFilter to "\S*InitialDP\S*". Default value: \S* (no filter)
Message	STRING	Specifies a message to be set in the "message" field of the notification. Default value: "notification"

### Threshold Crossed Notifications

The Threshold Crossed Notifications subtab enables you to configure generation of notifications when a threshold is passed. The Threshold Crossed Notifications subtab contains a table in which each row represents an individual notification triggering condition based on an attribute of a specific Runtime MBean.

When configuring notifications, you need to specify the fields described in [Table 2–4](#).

**Table 2–4 Threshold Crossed Notifications Fields**

Field	Type	Description
Name	STRING	Specifies a unique notification name
Enabled	BOOL	Specifies whether or not the notification is enabled. Possible values: <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> Default value: True
MBean Type	STRING	Specifies a type of the Runtime MBean to be monitored
MBean Attribute	STRING	Specifies an attribute of the MBean defined in the MBean Type field to be monitored
Class	STRING	Specifies a notification class. Possible values: <ul style="list-style-type: none"> <li>■ High A notification is triggered when a Runtime MBean counter or gauge crosses an upper threshold.</li> <li>■ Low A notification is triggered when a Runtime MBean counter or gauge crosses a lower threshold.</li> </ul> Default value: High
Threshold Value	INT	Specifies a high threshold, when the Class field is set to "High", or low threshold, when the Class field is set to "Low"
Threshold Ceased Value	INT	Specifies a threshold for which the "ceased" notification must be triggered
Server Filter	STRING	Specifies a filter that must be applied on the "server" key property on an MBean's instance name. If this parameter is defined, only the MBean instances with the registration name that matches the filter trigger the notification.  The value of this parameter must be defined in the form of a regular expression. Default value: \S* (no filter)
Resource Filter	STRING	Specifies a filter that must be applied on the "name" key property of an MBean's instance name. If this parameter is defined, only the MBean instances with the registration name that matches the filter trigger the notification.  The value of this parameter must be defined in the form of a regular expression.  For example, if you want to monitor MessageByOperationRuntimeMbean's counters of a specific operation, set ResourceFilter to "\S*InitialDP\S*". Default value: \S* (no filter)

**Table 2-4 (Cont.) Threshold Crossed Notifications Fields**

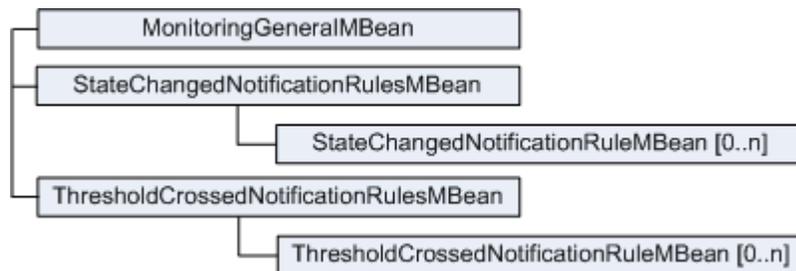
Field	Type	Description
Threshold Crossed Message	STRING	Specifies a text for the notification message that Service Broker generates when a threshold is crossed.
Threshold Ceased Message	STRING	Specifies a text for the notification message that Service Broker generates when a notification is ceased.

## Configuring Monitoring with Java MBeans

Service Broker provides a set of MBeans that contain attributes and operations for configuring monitoring through JMX. You need to configure monitoring separately for each Interworking Module, Supplementary Module, the OE, and the Processing Tier using instances of monitoring MBeans created for a particular component. Attributes and operations of monitoring MBeans are always the same regardless of a component.

Figure 2-1 shows the hierarchy of the monitoring MBeans.

**Figure 2-1 Monitoring MBeans Hierarchy**



The following sections provide reference information for the monitoring configuration MBeans.

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**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

---

## Configuring Overload Protection Parameters

The overload protection mechanism prevents Service Broker failures during traffic peaks. See "Preventing System Overload" in *Oracle Communications Service Broker System Administrator's Guide* for more information.

The Overload Protection Configuration screen lets you define key overload indicators that you identified, and for which you have defined thresholds using the Thresholds Crossed Notifications subtab of the Monitoring tab.

This section describes how to define key overload indicators and how to configure overload protection behavior, using the Service Broker Administration Console and Java MBeans:

- [Configuring Overload Protection with the Administration Console](#)
- [Configuring Overload Protection with Java MBeans](#)

## Configuring Overload Protection with the Administration Console

To access the Overload Protection configuration pane:

1. In the navigation tree in the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Tier Management**.
4. Select **Monitoring and Overload Protection**.
5. In the configuration pane, click the **Overload Protection** tab.

The **Overload Protection** tab contains the subtabs described in [Table 2-5](#).

**Table 2-5 Overload Protection Subtabs**

Tab	Description
Key Overload Indicators	Enables you to configure gauges and counters that you identified as key overload indicators, to be valid key overload indicators.  See " <a href="#">Configuring the Overload Protection Method</a> " for more information.
Overload Protection Methods	Enables you to configure how Service Broker responds to SIP and Diameter network entities that attempt to establish sessions during system overload

### Configuring Key Overload Indicators

Key overload indicators are counters and gauges (that is, attributes of any Runtime MBeans, including module-level Runtime MBeans and tier-level Runtime MBeans) that Service Broker monitors to observe system overload. Usually, key overload indicators are mission critical parameters.

System overload occurs when at least one key overload indicator crosses the upper threshold defined on the Thresholds Crossed Notifications subtab of the Monitoring tab of the Monitoring and Overload configuration screen. See "[Configuring Monitoring Parameters](#)" for more information.

---

**Note:** To enable Service Broker to observe system overload, you must set up thresholds of Runtime MBean attributes, which you define as key overload indicators, as follows:

- If a key overload indicator is a module-level Runtime MBean, you need to set up thresholds using the Monitoring tab of the appropriate module.
  - If a key overload indicator is a tier-level Runtime MBean, you need to set up thresholds using the Monitoring tab of the Monitoring and Overload configuration screen.
- 

[Table 2-6](#) describes the fields that you define for each key overload indicator.

**Table 2-6 Key Indicators Parameters**

Name	Type	Description
Name	STRING	Specifies a unique name of a key overload indicator

**Table 2–6 (Cont.) Key Indicators Parameters**

Name	Type	Description
MBean Instance Name	STRING	Specifies the object name of a Runtime MBean instance whose attribute was identified as key overload indicator.
MBean Attribute Name	INT	Specifies the name of a Runtime MBean attribute (gauge or counter) that you identified as key overload indicator.

### Configuring the Overload Protection Method

When system overload occurs, Service Broker declines new sessions and responds to the network entities that attempted to establish new sessions.

The Overload Protection Methods subtab enables you to configure how Service Broker responds to attempts by SIP and Diameter network entities to establish new sessions.

[Table 2–7](#) describes configuration parameters on the Overload Protection Methods subtab.

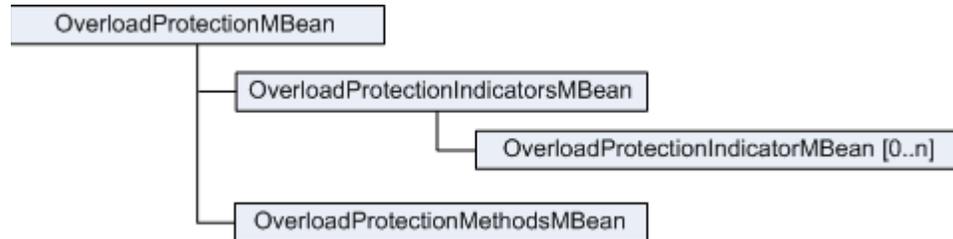
**Table 2–7 Overload Protection Methods Parameters**

Name	Type	Description
Enabled	BOOL	Specifies whether or not the overload protection mechanism is enabled. Possible values: <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul>
SIP Response Status Code	STRING	Specifies a SIP error that Service Broker returns to a SIP network entity when Service Broker declines an attempt to establish a session.
SIP Retry-After	STRING	Specifies the value that Service Broker sets in the Retry-After header of the error response sent to the network entity. This value defines how long the network entity waits before it retries to establish a session.
Diameter Response Result-Code	STRING	Specifies a response Result-Code AVP that Service Broker returns to a Diameter network entity when Service Broker declines the attempt to establish a session.
Web Service Response Status Code	INT	Specifies an error code that Service Broker returns to a Web service network entity when Service Broker declines the attempt to establish a session. Default value: 503
SAL Response Status Code	INT	Specifies an error code that Service Broker returns to a SAL application when Service Broker declines the attempt to establish a session. Default value: 503

## Configuring Overload Protection with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring overload protection parameters through JMX. [Figure 2-2](#) shows the hierarchy of the overload protection MBeans.

**Figure 2-2** *OverloadProtectionMBean Hierarchy*



The following sections provide reference information for the overload protection configuration MBeans.

---

## MonitoringGeneralMBean

MonitoringGeneralMBean enables you to configure SIP SSU monitoring tools, such as logger, counters, and notifications.

### Factory Method

Created automatically

### Attributes

- CounterIntervalInSeconds
- EnableRuntimeMbeans
- EnableNotifications
- NotificationTriggerCheckIntervalInSeconds

For more information on these attributes, see [Table 2-2](#).

### Operations

None

## StateChangedNotificationRulesMBean

StateChangedNotificationRulesMBean is a root MBean for configuring attribute change notifications.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName createStateChangedNotificationRule()**

Creates a new instance of StateChangedNotificationRuleMBean

**void destroyStateChangedNotificationRule()**

Destroys an existing instance of ChangeNotificationMBean

**ObjectName[] getStateChangedNotificationRule()**

Returns a list of StateChangedNotificationRuleMBean instances

**ObjectName lookupStateChangedNotificationRule()**

Returns a specified instance of StateChangedNotificationRuleMBean

## StateChangedNotificationRuleMBean

StateChangedNotificationRuleMBean enables you to configure how attribute change notifications for individual attributes of specified runtime MBeans are generated. StateChangedNotificationRulesMBean creates a separate instance of StateChangedNotificationRuleMBean for each attribute of an MBean.

### Factory Method

StateChangedNotificationRules.createStateChangedNotificationRule()

### Attributes

- Name
- Enabled
- MBeanType
- MBeanAttribute
- Value
- ServerFilter
- ResourceFilter
- Message

For more information on these attributes, see [Table 2-3](#).

### Operations

None

## ThresholdCrossedNotificationRulesMBean

ThresholdCrossedNotificationRulesMBean is a root MBean for configuring how notifications of a counter or gauge crossing a threshold are generated.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName createThresholdCrossedNotificationRule()**

Creates a new instance of ThresholdCrossedNotificationRuleNotificationMBean

**void destroyThresholdCrossedNotificationRule()**

Destroys an existing instance of ThresholdCrossedNotificationRuleMBean

**ObjectName[] getThresholdCrossedNotificationRule()**

Returns a list of ThresholdCrossedNotificationRuleMBean instances

**ObjectName lookupThresholdCrossedNotificationRule()**

Returns a specified instance of ThresholdCrossedNotificationRuleMBean

## ThresholdCrossedNotificationRuleMBean

ThresholdCrossedNotificationRuleMBean enables you to configure how threshold notifications for individual attributes of specified runtime MBeans are generated. ThresholdCrossedNotificationRulesMBean creates a separate instance of ThresholdCrossedNotificationRuleMBean for each attribute of an MBean.

### Factory Method

ThresholdCrossedNotificationRules.createThresholdCrossedNotificationRule()

### Attributes

- Name
- Enabled
- MBeanType
- MBeanAttribute
- Class
- ThresholdValue
- ThresholdCeasedValue
- ServerFilter
- ResourceFilter
- ThresholdCrossedMessage
- ThresholdCeasedMessage

For more information on these attributes, see [Table 2-4](#).

### Operations

None

## OverloadProtectionBean

OverloadProtectionMBean is a root MBean for overload protection configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getOverloadProtectionIndicators()**

Returns a reference to the instance of OverloadProtectionIndicatorsMBean

**ObjectName getOverloadProtectionMethods()**

Returns a reference to the instance of OverloadProtectionMethodsMBean

## OverloadProtectionIndicatorsMBean

OverloadProtectionIndicatorsMBean provides access to instances of OverloadProtectionIndicatorMBean. For each gauge or counter that you identified as a key overload indicator, you need to create a separate instance of OverloadProtectionIndicatorMBean.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getOverloadProtectionIndicators()**

Returns an array of references to instances of OverloadProtectionIndicatorMBean

**ObjectName createOverloadProtectionIndicator()**

Creates an instance of OverloadProtectionIndicatorMBean

**ObjectName destroyOverloadProtectionIndicator()**

Destroys an instance of OverloadProtectionIndicatorMBean

**ObjectName lookupOverloadProtectionIndicator()**

Returns a reference to a specified instance of OverloadProtectionIndicatorMBean

## OverloadProtectionIndicatorMBean

OverloadProtectionIndicatorMBean enables you to define a counter or a gauge (that is, an attribute of any Runtime MBean, including module-level Runtime MBeans and tier-level Runtime MBeans), that you wish to set as a valid key overload indicator.

### Factory Method

`OverloadProtectionIndicators.createOverloadProtectionIndicator()`

### Attributes

- Name
- MbeanInstanceName
- MbeanAttributeName

See [Table 2-6](#) for more information on these attributes.

### Operations

None

---

## OverloadProtectionMethodsMBean

Overload ProtectionMethodsMBean enables you to specify how Service Broker responds to SIP and Diameter network entities that attempt to establish sessions during system overload.

### Factory Method

Created automatically

### Attributes

- Enabled
- SipResponseStatusCode
- SipRetryAfter
- DiameterResponseResultCode
- WSResponseStatusCode
- SALResponseStatusCode

See [Table 2-7](#) for more information on these attributes.

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## Managing Interworking Modules

Each deployment of Oracle Communications Service Broker is a composition of various interworking modules, as required by the specific solution. This chapter describes how you can deploy, activate, and deactivate interworking modules in the Processing Domain of your system.

### Managing Interworking Modules with the Administration Console

You can manage Interworking Modules (IMs), including adding, activating, deactivating, and removing Interworking Module instances, by using the IM Configuration screen.

#### Accessing the IM Management Configuration Screen

To access the IM Management configuration pane:

1. In the Domain Navigation pane, expand **OCSB**.
2. Expand **Processing Tier** and then expand **Interworking Modules**.
3. Select **IM Management**.

The IM Management pane displays a list of Interworking Module instances deployed in the system. Information about each module instance is presented in the fields described in [Table 3-1](#):

**Table 3-1** IM Management Screen Fields

Field	Description
Instance Name	Specifies a name of the module instance

**Table 3-1 (Cont.) IM Management Screen Fields**

Field	Description
Module Type	Specifies a type of the module instance and a protocol that the module instance uses. A module type has the following format: <i>module_protocol</i> . Possible values: <ul style="list-style-type: none"> <li>■ IMSCFCAP1</li> <li>■ IMSCFCAP2</li> <li>■ IMSCFCAP3</li> <li>■ IMSCFCAP4</li> <li>■ IMSCFWIN1</li> <li>■ IMSCFWIN2</li> <li>■ IMSCFINAP</li> <li>■ IMSCFAIN01</li> <li>■ IMSCFAIN02</li> <li>■ IMASF</li> <li>■ RIMASF</li> <li>■ IMOCF</li> <li>■ IMPSXANSIMAP</li> <li>■ IMPSXMAP3</li> <li>■ IMSSFCAP1</li> <li>■ IMSSFCAP2</li> <li>■ IMSSFCAP3</li> <li>■ IMSSFWIN1</li> <li>■ IMSSFWIN2</li> <li>■ IMSSFINAP</li> <li>■ IMSSFAIN01</li> <li>■ IMSSFAIN02</li> </ul>
Version	Specifies a version of the module instance
State	Specifies a state of the module instance. Possible values: <ul style="list-style-type: none"> <li>■ Active</li> <li>■ Inactive</li> </ul>

The IM Configuration screen enables you to perform the following actions:

- Adding a new Interworking Module instance
- Activating an Interworking Module instance
- Deactivating an Interworking Module instance
- Removing an Interworking Module instance

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**Note:** After adding a new Interworking Module you have to first click the Commit button in the Change Center before you can start configuring the Interworking Module.

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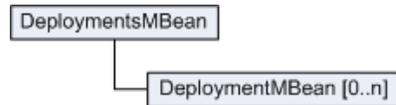


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## Managing Interworking Modules with JavaMBeans

Service Broker provides a set of MBeans that exposes attributes and operations for configuring interworking modules through JMX. [Figure 3–1](#) shows the hierarchy of interworking modules management MBeans.

**Figure 3–1 Interworking Modules Management MBean Hierarchy**



The following sections provide reference information for the interworking modules management configuration MBeans.

### DeploymentsMBean

DeploymentsMBean is a container for instances of DeploymentMBean. Each instance of DeploymentMBean represents an individual interworking module.

#### Factory Method

Created automatically

#### Attributes

None

#### Operations

**void addDeployment(string ModuleName, string Version, string Name)**

Adds a new instance of an interworking module. [Table 3–2](#) explains the parameters with which you need to invoke the operation.

**Table 3–2 Parameters Required to Create a Deployment**

Parameter	Description
ModuleName	<p>Specifies a type of the module instance and a protocol that the module instance uses. A module type has the following format: <i>module protocol</i>.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ IMSCFCAP1</li> <li>▪ IMSCFCAP2</li> <li>▪ IMSCFCAP3</li> <li>▪ IMSCFCAP4</li> <li>▪ IMSCFWIN1</li> <li>▪ IMSCFWIN2</li> <li>▪ IMSCFINAP</li> <li>▪ IMSCFAIN01</li> <li>▪ IMSCFAIN02</li> <li>▪ IMASF</li> <li>▪ RIMASF</li> <li>▪ IMOCF</li> <li>▪ IMPSXANSIMAP</li> <li>▪ IMPSXMAP3</li> <li>▪ IMSSFCAP1</li> <li>▪ IMSSFCAP2</li> <li>▪ IMSSFCAP3</li> <li>▪ IMSSFWIN1</li> <li>▪ IMSSFWIN2</li> <li>▪ IMSSFINAP</li> <li>▪ IMSSFAIN01</li> <li>▪ IMSSFAIN02</li> </ul>
Version	Specifies a version of the module instance
InstanceName	Specifies a unique name for the interworking module instance.

**void removeDeployment(string ModuleName, string Version, string ModuleInstanceName)**

Removes an instance of an interworking module. See [Table 3–2](#) for more information on the parameters required for this operation.

**void activateDeployment(string ModuleName, string Version, string ModuleInstanceName)**

Activate an instance of an interworking module. See [Table 3–2](#) for more information on the parameters required for this operation.

**void deactivateDeployment(string ModuleName, string Version, string ModuleInstanceName)**

Deactivates an instance of an interworking module. See [Table 3–2](#) for more information on the parameters required for this operation.

## DeploymentMBean

Each instance of DeploymentMBean represents an individual interworking module and defines configuration parameters for this module.

### Factory Method

Deployments.addDeployment()

### Attributes

- DeploymentStatus
- Family
- Name
- Version

See [Table 3–1](#) for more information on these attributes.

### Operations

**void activate()**

Activates the instance of an interworking module

**void deactivate()**

Deactivates the instance of an interworking module

## Defining a Default IM-ASF Module

In every system, it is recommended to have a special instance of IM-ASF, a default IM-ASF instance named "IMASF\_default".

See "[Supporting Orchestration with Non-Configured Application](#)" to understand why you should create a default IM-ASF module instance.

IM-ASF enables Service Broker to interact with an application. Typically, one instance of IM-ASF can interact with one application. You can define an application with which an instance of IM-ASF communicates by defining the alias of this application address.

When the Orchestration Engine needs to route a session to an application, one of the following can happen:

- The Orchestration Engine needs to route the session to an application registered in Service Broker.

In this case, the Orchestration Engine routes the session through an IM-ASF instance which is specifically configured to communicate with the registered application.

When receiving the session, the IM-ASF instance forwards the session to the registered application.

- The Orchestration Engine needs to route the session to an application that is not registered in Service Broker.

In this case, the Orchestration Engine routes the session through a special default IM-ASF instance named "IMASF\_default".

The role of the default IM-ASF is to forward sessions, which are intended to non-registered applications, the application address specified inside the session request, in the application address field.

To define the special instance of default IM-ASF, use the IM Management configuration screen or the DeploymentsMBean, and create a new module instance of type "IMASF" and name "IMASF\_default".

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## Configuring the Orchestration Engine

The following sections describe how to configure the Service Broker Orchestration Engine using the Service Broker Administration Console and Java MBeans.

### Configuring the Orchestration Engine with the Administration Console

This section describes how to configure the OE using the Service Broker Administration Console.

To access the Orchestration Engine configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Select **Orchestration Engine**.

[Table 4-1](#) describes the tasks involved in configuring Orchestration Engine.

**Table 4-1** OE Configuration Subtabs

Task	Description
General	Enables you to specify a subscriber profile receiver and enable SDR generation. See " <a href="#">Configuring General Parameters</a> " for more information.
Static Route OLP	Enables you to specify applications that the OE should invoke and the order in which they are invoked. This tab is ignored if the OE is not configured to work with the Static Route OLP. See " <a href="#">Configuring Static Route OLP Parameters</a> " for more information.
HSS OLP	Enables you to set up the OE connection to an HSS. This tab is ignored if the OE is not configured to work with the HSS OLP. See " <a href="#">Configuring HSS OLP Parameters</a> " for more information.
Custom OPR	Enables you to specify the name of the OPR that the OE should use to retrieve subscriber profiles. See " <a href="#">Configuring Custom OLP Parameters</a> " for more information.
Monitoring	Enables you to define how logging and notifications operate. See " <a href="#">Configuring Monitoring Parameters</a> " for more information.

## Configuring General Parameters

The General subtab enables you specify a subscriber profile receiver and enable SDR generation.

[Table 4–2](#) describes configuration parameters on the **General** subtab.

**Table 4–2** General Parameters

Name	Type	Description
Subscriber Profile Receiver	STRING	<p>Specifies which OPR the OE uses to retrieve an orchestration profile.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ <b>OlpDefaultInfoReceiver</b> Select this option when you want the OE to use the static route OLP. To define the static route, use the Static Route OLP tab. See "<a href="#">Configuring Static Route OLP Parameters</a>" for more information.</li> <li>■ <b>OlpLSSInfoReceiver</b> Select this option when you want the OE to retrieve subscriber profiles from an SM-LSS. See "<a href="#">Configuring SM-LSS</a>" for more information.</li> <li>■ <b>OlpHSSInfoReceiver</b> Select this option when you want the OE to retrieve subscriber profiles from an HSS. To define the address of the HSS, use the HSS OLP tab. See "<a href="#">Configuring HSS OLP Parameters</a>" for more information.</li> <li>■ <b>OlpCustomInfoReceiver</b> This option is relevant for the Online Mediation Controller only. Select this option when you want the OE to retrieve subscriber profiles from the Subscriber Store. You can enable the Degraded Mode only when this option is selected. See "<a href="#">Configuring Custom OLP Parameters</a>" for more information.</li> </ul>
Enable SDR	BOOL	<p>Specifies whether or not the OE generates SDRs.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> <p>Default value: True</p>

**Table 4–2 (Cont.) General Parameters**

Name	Type	Description
Enable Session Persistency	STRING	<p>Specifies the point in a call when session persistency begins. Persistency continues throughout the session with each new state overwriting the previous state in the repository.</p> <ul style="list-style-type: none"> <li>■ <b>When Session Starts</b> Persistency begins when the first session setup message is received. The current state of the session is then stored in the persistent repository. Each state is overwritten by the state that follows it until the end of the session.</li> <li>■ <b>On Ringback</b> Persistency begins when a ringing indication is received. The current state of the session is then stored in the persistent repository. Each state is overwritten by the state that follows it until the end of the session.</li> <li>■ <b>On Answer</b> Persistency begins when an answer indication is received. The current state of the session is then stored in the persistent repository. Each state is overwritten by the state that follows it until the end of the session.</li> <li>■ <b>Never</b> No state of the active session is stored.</li> </ul>

## Configuring Static Route OLP Parameters

The Static Route OLP subtab enables you to specify applications that the OE invokes and the order in which they are invoked.

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**Note:** This tab is regarded only when the OE is configured to work with the Static Route OLP. In this case the Subscriber Profile Receiver parameter in the General tab is set to `OlpDefaultInfoReceiver`.

---



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Table 4–3 describes the configuration parameter on the Static Route OLP subtab.

**Table 4–3 Static Route OLP Parameter**

Name	Type	Description
Default Routing Targets	STRING_LIST	<p>Specifies a list of application SIP URIs that the OE must invoke.</p> <p>The format of a SIP URI is:</p> <p><i>module-instance-name.module-type@convergin.com</i></p> <p>You can specify several SIP URIs separated by a space.</p> <p>For example:</p> <p><code>sip:IMSCFCAP4_instance.IMSCFCAP4@convergin.com</code>  <code>sip:IMASF_instance.IMASF@convergin.com</code></p>

## Configuring HSS OLP Parameters

In the HSS OLP tab you can define the address of the HSS that the OE connects, and you can optionally specify mobile subscribers for whom the OE obtains orchestration logic (iFCs) from the HSS.

---

**Note:** This tab is regarded only when the OE is configured to work with the HSS OLP. In this case the Subscriber Profile Receiver parameter in the General tab is set to `OlpHSSInfoReceiver`.

---

Table 4–4 describes the configuration parameters on the HSS OLP tab.

**Table 4–4 HSS OLP Parameters**

Name	Type	Description
Wildcarded PSI	STRING	<p>Specifies a regular expression that the HSS uses to search for a subscriber’s orchestration logic (iFCs).</p> <p>The HSS compares the regular expression against Public Subscriber Identities (PSIs) in its database. The HSS finds all matches and respond to the OE with one or more iFCs that comprise the subscribers orchestration logic.</p> <p>You need to specify a regular expression in a SIP URI format. You can use the following wildcards:</p> <ul style="list-style-type: none"> <li>▪ asterisk (*), which matches zero or more occurrences of any character. For example, <code>sip:78880*@oracle.com</code> matches <code>sip:78880@oracle.com</code> and <code>sip:788801@oracle.com</code>.</li> <li>▪ period (.), which matches one occurrence of any character. For example, <code>sip:78880.0@oracle.com</code> matches <code>sip:7888010@oracle.com</code> and <code>sip:7888020@oracle.com</code>.</li> <li>▪ exclamation mark (!), which represents any number of characters in the middle of the PSI or at the end of the PSI. For example, <code>sip:78880!@oracle.com</code> matches <code>sip:subscriber10@oracle.com</code> and <code>sip:subscriber11@oracle.com</code></li> </ul> <p>If you specify this parameter, it prevails the session headers, and session headers are ignored. Leave the parameter empty to have the HSS search an orchestration logic for a subscriber, based on the <b>To</b> and <b>From</b> headers of a session.</p> <p>It is recommended to use this parameter when a group of subscribers share the same orchestration logic.</p>
Destination-Host AVP	STRING	<p>Specifies the host name of the destination HSS. The OE sets this value in the Destination-Host AVP, inside the UDR that it sends to the HSS.</p> <p>Note that this value must correlate to either a PeerMBean or a RouteMBean that you already configured in the Diameter SSU.</p>
Destination-Realm AVP	STRING	<p>Specifies the value that the OE sets in the Destination-Realm AVP, inside the UDR that it sends to the HSS.</p>

## Configuring Custom OLP Parameters

In the Custom OLP tab, you specify the name of the OPR that the OE should use to retrieve subscriber profiles. This is relevant for Online Mediation Controller only. Do not change the name of the OPR.

If the subscriber profile is missing, the OPR returns the error, and the OE terminates the session.

## Configuring Monitoring Parameters

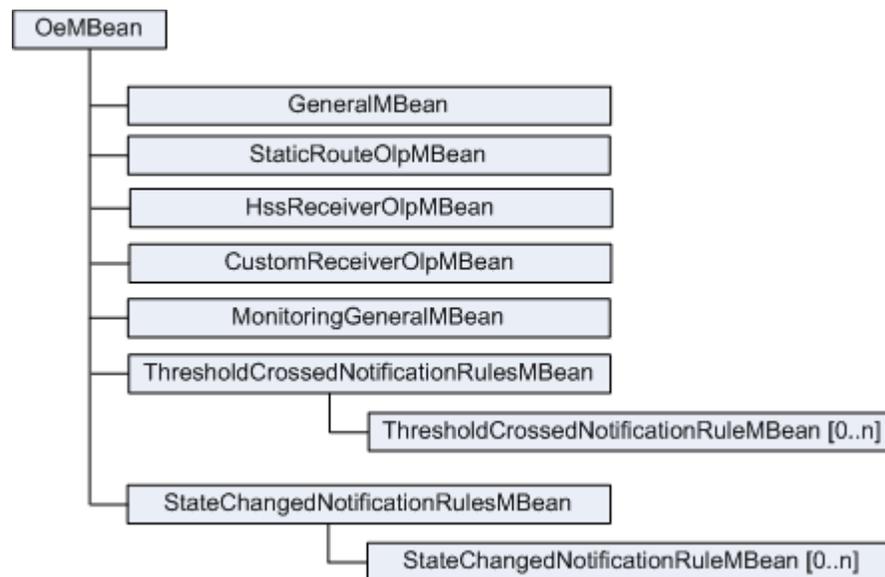
The Monitoring tab enables you to define how Runtime MBeans and notifications operate for the OE.

See "[Configuring Monitoring with the Administration Console](#)" for more information about configuring monitoring.

## Configuring the Orchestration Engine with Java MBeans

Service Broker provides a set of MBeans with attributes and operations for configuring the OE through JMX. [Figure 4-1](#) shows the hierarchy of the Orchestration Engine MBeans.

**Figure 4-1** OE MBeans Hierarchy



The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

---

**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

---

## Supporting Orchestration with Non-Configured Application

Typically, all applications in a production system are known. In this case, you define an individual IM-ASF module instance to interact with each application. In this case, orchestration logic (for example, iFC) turns a session through various applications through different IM-ASF module instances.

There are cases in which the Orchestration Engine is required to orchestrate each session differently, each through a different application. In this case, it is impossible to pre-configure the different application addresses, either because there are many of them or their address is subject to change. The application addresses are not known to Service Broker.

To support orchestration with non-configured applications, you need to define a special instance of an IM-ASF module, also known as default IM-ASF. This instance will not be limited to interaction with only a single pre-configured application, but will rather allow interaction with any application. This instance must be named "IMASF\_default".

Whenever the Orchestration Engine is required to route a session to a non-configured application, it will route it through "IMASF\_default" module. When triggered, "IMASF\_default" forwards a session to any application, as specified inside the session request, in the application address field.

For example, if the Orchestration Engine has to route a session to a non-configured application address, such as "sip:209.95.109.191:5060", the Orchestration Engine forwards this session to the default IM-ASF. The default IM-ASF forwards the session to the application server which IP address is 209.95.109.191.

For information on defining a default IM-ASF module, see ["Defining a Default IM-ASF Module"](#).

## Configuring Pre-Orchestration and Post-Orchestration with Java MBeans

With Service Broker, you can set up subscriber-specific orchestration chains. A subscriber-specific orchestration chain determines how the OE routes sessions across application servers for a specific subscriber. You configure subscriber-specific orchestration chains by specifying an iFC for each subscriber in SM-LSS.

In addition to a subscriber-specific iFC, you might need to configure iFC that the OE invokes for all subscribers before or after applications defined in a subscriber-specific iFC.

For example, you might need to play a mid-call announcement to any subscriber who does not have enough credit units to continue a call. Similarly, your business requirements might dictate the need to send a credit control request in the beginning of a session for all subscribers.

To set up iFC common for all subscribers, you can configure additional iFC that the OE invokes at the following stages:

- Before invoking a subscriber-specific iFC
- After invoking a subscriber-specific iFC
- Before triggering each application defined in the subscriber-specific iFC
- After triggering each application defined in the subscriber-specific iFC

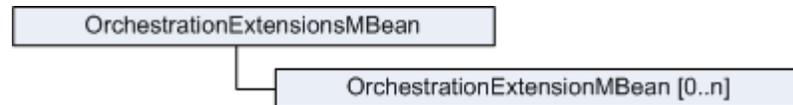
When configuring these additional iFC, you must observe the following limitations:

- You cannot group applications in these additional iFC into unidirectional groups.

- If you configure the OE to invoke a common iFC before or after triggering each application defined in the subscriber-specific iFC, and applications in the subscriber-specific iFC were grouped into unidirectional groups, then the applications defined in the common iFC belong to the same group as the application in the subscriber-specific iFC.

You specify the iFC that the OE invokes and the stage when the OE invokes the iFC using the `OrchestrationExtensionsMBean`. [Figure 4–2](#) shows the hierarchy of the `OrchestrationExtensionsMBean`.

**Figure 4–2** *OrchestrationExtensionsMBean Hierarchy*



---

## OeMBean

OeMBean is a root MBean for the OE configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getGeneral()**

Gets a reference to the instance of GeneralMBean

**ObjectName getStaticRouteOlp()**

Gets a reference to the instance of StaticRouteOlpMBean

**ObjectName getHssReceiverOlp()**

Gets a reference to the instance of HssReceiverOlpMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

## GeneralMBean

GeneralMBean enables you to specify a subscriber profile receiver.

### Factory Method

Created automatically

### Attributes

- SubscriberProfileReceiver
- EnableSdr
- EnableSessionPersistency

For more information on these attributes, see [Table 4-2](#).

### Operations

None

---

## StaticRouteOlpMBean

StaticRouteOlpMBean enables you to specify applications that the OE should invoke and the order in which the OE passes a session through these applications.

### Factory Method

Created automatically

### Attributes

DefaultRoutingTargets

For more information on this attribute, see [Table 4-3](#).

### Operations

None

## HssReceiverOlpMBean

HssReceiverOlpMBean enables you to define the address of the HSS that the OE connects, and you can optionally specify mobile subscribers for whom the OE obtains orchestration logic (iFCs) from the HSS.

### Factory Method

Created automatically

### Attributes

- WildcardedPsi
- DestinationHostAvp
- DestinationRealmAvp

For more information on this attribute, see [Table 4-4](#).

### Operations

None

---

## CustomReceiverOlpMBean

CustomReceiverOlpMBean enables you to define the name of the OPR that the OE should use to retrieve subscriber profiles.

### Factory Method

Created automatically

### Attributes

- CustomOPRName

This is relevant for Online Mediation Controller only. Do not change the name of the OPR.

### Operations

None

## OrchestrationExtensionsMBean

OrchestrationExtensionsMBean is the root MBean for configuring additional iFC that are common for all subscribers. Using OrchestrationExtensionsMBean, you need to create individual instances of OrchestrationExtensionMBean for each iFC.

### Factory Method

Created automatically.

### Attributes

None

### Operations

**ObjectName createOrchestrationExtension()**

Creates an instance of OrchestrationExtensionMBean.

**void destroyOrchestrationExtension()**

Destroys an instance of OrchestrationExtensionMBean.

**ObjectName [] lookupOrchestrationExtension()**

Gets an array of references to the instances of OrchestrationExtensionMBean.

## OrchestrationExtensionMBean

OrchestrationExtensionMBean enables you to configure an iFC that is common for all subscribers. The OE invokes these iFC in addition to subscriber-specific iFC.

### Factory Method

OrchestrationExtensions.createOrchestrationExtension()

### Attributes

#### **string Triggers**

Specifies when the OE invokes the additional iFC. You can set this attribute to the following values:

- PreChain  
The OE invokes the iFC before the subscriber-specific orchestration iFC.
- PostChain  
The OE invokes the iFC after the subscriber-specific iFC.
- PreAS  
The OE invokes the iFC before triggering each application defined in the subscriber-specific iFC.
- PostAS  
The OE invokes the iFC after triggering each application in the subscriber-specific iFC.

You can set the Trigger attribute to more than one value. The values must be separated with comma.

#### **string Ifc**

Specifies the iFC that defines how the OE orchestrates applications.

### Operations

None

---



---

## Configuring IM-SCF CAP Phase 1

The following sections describe how to configure IM-SCF using the Service Broker Administration Console and Java MBeans.

### Configuring IM-SCF CAP Phase 1 with the Administration Console

This section describes how to configure the IM-SCF CAP phase 1 using the Service Broker Administration Console.

To access the IM-SCF CAP phase 1 configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The IM-SCF CAP phase 1 configuration pane contains the subtabs described in [Table 5-1](#).

**Table 5-1 IM-SCF CAP Phase 1 Configuration Subtabs**

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. For more information, see <a href="#">"Configuring General Parameters"</a>
Call Handling	Enables you to configure how IM-SCF handles calls. For more information, see <a href="#">"Configuring Call Handling Parameters"</a> .
IN Triggering	Enables you to define the IN triggers that the IM-SCF arms in the underlying session control entity. For more information, see <a href="#">"Configuring IN Triggering Parameters"</a> .
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 <a href="#">"Charging Services"</a> for more information.
TCAP	Enables you to set up the TCAP layer of the IM-SCF. For more information, see <a href="#">"Configuring TCAP Parameters"</a> .

**Table 5–1 (Cont.) IM-SCF CAP Phase 1 Configuration Subtabs**

Subtab	Description
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See " <a href="#">Configuring Monitoring Parameters</a> " 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 5–2](#) describes the configuration parameter on the General subtab.

**Table 5–2 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.

## 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 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: <ul style="list-style-type: none"> <li>■ BER</li> <li>■ XER</li> <li>■ None</li> </ul> Default value: None  In an IN mediation solution, when IM-SCF is coupled with IM-SSF, this parameter must be set to XER.

**Table 5–3 (Cont.) IM-SCF CAP Phase 1 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.
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: 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 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: 10000
RRBCSM Accumulation Mode	BOOL	Specifies whether or not IM-SCF arms DPs using a single or multiple RRBCSM requests.  Possible values: <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul>
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: <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul>
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.

## 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 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 " <a href="#">Configuring DPs on the Call Origination Side</a> ".

**Table 5–4 (Cont.) IM-SCF CAP1 N 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 " <a href="#">Configuring DPs on the Call Termination Side</a> ".

### 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 IM-SCF CAP Phase 1 O-BCSM DPs**

Name	Type	Description
OAnswer	STRING	Specifies how the IM-SCF arms oAnswer. Possible values: <ul style="list-style-type: none"> <li>▪ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>▪ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>▪ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: NOTIFY_AND_CONTINUE
ODisconnect	STRING	Specifies how the IM-SCF arms oDisconnect. Possible values: <ul style="list-style-type: none"> <li>▪ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>▪ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>▪ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>▪ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
O Disconnect Leg	STRING	Specifies a leg on which the oDisconnect DP is armed. Possible values: <ul style="list-style-type: none"> <li>▪ 1</li> <li>▪ 2</li> <li>▪ 1,2</li> </ul> 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 IM SCF CAP Phase 1 T-BCSM DPs**

Name	Type	Description
TAnswer	STRING	Specifies how the IM-SCF arms tAnswer. Possible values: <ul style="list-style-type: none"> <li>▪ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>▪ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>▪ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: NOTIFY_AND_CONTINUE
TDisconnect	STRING	Specifies how the IM-SCF arms tDisconnect. Possible values: <ul style="list-style-type: none"> <li>▪ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>▪ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>▪ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>▪ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
TDisconnect Leg	STRING	Specifies a leg on which the tDisconnect DP is armed. Possible values: <ul style="list-style-type: none"> <li>▪ 1</li> <li>▪ 2</li> <li>▪ 1,2</li> </ul> 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 5-7](#).

**Table 5-7 Charging Services Subtabs**

Subtab	Description
General	Enables you to specify how IM-SCF sets up and sends credit reservation requests to the OE. See " <a href="#">General</a> " for more information.
Reauthorization Triggers	Enables you to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC. See " <a href="#">Reauthorization Triggers</a> " 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 5-8](#) describes the configuration parameters that you need to specify for credit reservation requests.

**Table 5-8 General Parameters**

Name	Type	Description
Service Monitoring	STRING	Specifies the component that monitors session duration. Possible values: <ul style="list-style-type: none"> <li>■ Internal IM-SCF CAP1 can monitor session duration internally only. IM-SCF CAP1 cannot delegate service monitoring to an MSC.</li> <li>■ None Session duration is not monitored.</li> </ul> Default value: None
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: <ul style="list-style-type: none"> <li>■ Initial IM-OCF sends a request after an MSC sends the first session setup message.</li> <li>■ Ringing IM-OCF sends a request after an MSC sends a ringing indication.</li> <li>■ Answer IM-OCF sends a request after an MSC sends an answer indication.</li> <li>■ Never</li> </ul> Default value: Initial

**Table 5–8 (Cont.) General Parameters**

Name	Type	Description
Start Charging Phase	STRING	Specifies when IM-SCF starts charging a session. Possible values: <ul style="list-style-type: none"> <li>■ Initial IM-SCF starts charging after an MSC sends the first session setup message.</li> <li>■ Ringing IM-SCF starts charging after an MSC sends a ringing indication.</li> <li>■ Answer IM-SCF starts charging after an MSC sends an answer indication.</li> </ul> Default value: 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.
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.

### Reauthorization Triggers

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

[Table 5–9](#) describes configuration parameters on the Reauthorization Triggers subtab.

**Table 5–9 Reauthorization Triggers Parameters**

Name	Type	Description
Info Received	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Info Received trigger.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Yes IM-SCF always reauthorizes the quota.</li> <li>■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>
Session Alerted	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Alerted trigger.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Yes IM-SCF always reauthorizes the quota.</li> <li>■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>
Session Connected	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Connected trigger.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Yes IM-SCF always reauthorizes the quota.</li> <li>■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>

**Table 5–9 (Cont.) Reauthorization Triggers Parameters**

Name	Type	Description
Session ReInvite Complete	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session ReInvite Complete trigger.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Yes IM-SCF always reauthorizes the quota.</li> <li>■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>
Session Reinvited	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Reinvited trigger.</p> <ul style="list-style-type: none"> <li>■ Yes IM-SCF always reauthorizes the quota.</li> <li>■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>
Session Update Complete	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Update Complete trigger.</p> <ul style="list-style-type: none"> <li>■ Yes IM-SCF always reauthorizes the quota.</li> <li>■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>

**Table 5–9 (Cont.) Reauthorization Triggers Parameters**

Name	Type	Description
Session Updated	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Updated trigger.</p> <ul style="list-style-type: none"> <li>▪ Yes IM-SCF always reauthorizes the quota.</li> <li>▪ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>▪ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>

## Configuring TCAP Parameters

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

Table 5–10 describes configuration parameters on the TCAP subtab.

**Table 5–10 TCAP Parameter**

Name	Type	Description
Class4 Default Timeout in Seconds	INT	<p>Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations.</p> <p>Default value: 5 seconds.</p>
Reject Timeout in Seconds	INT	<p>Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.</p>
Activate Invoke Alarm in Application Layer	BOOL	<p>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.</p> <p>The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ True</li> <li>▪ False</li> </ul> <p>Default value: False.</p>
Application Part Guard Timer	INT	<p>Specifies the PSM timer, which is a timer for incoming operations.</p> <p>The PSM timer defines the maximum time in seconds that the application (TC-User) has to respond to incoming INVOKE messages.</p>

**Table 5–10 (Cont.) TCAP Parameter**

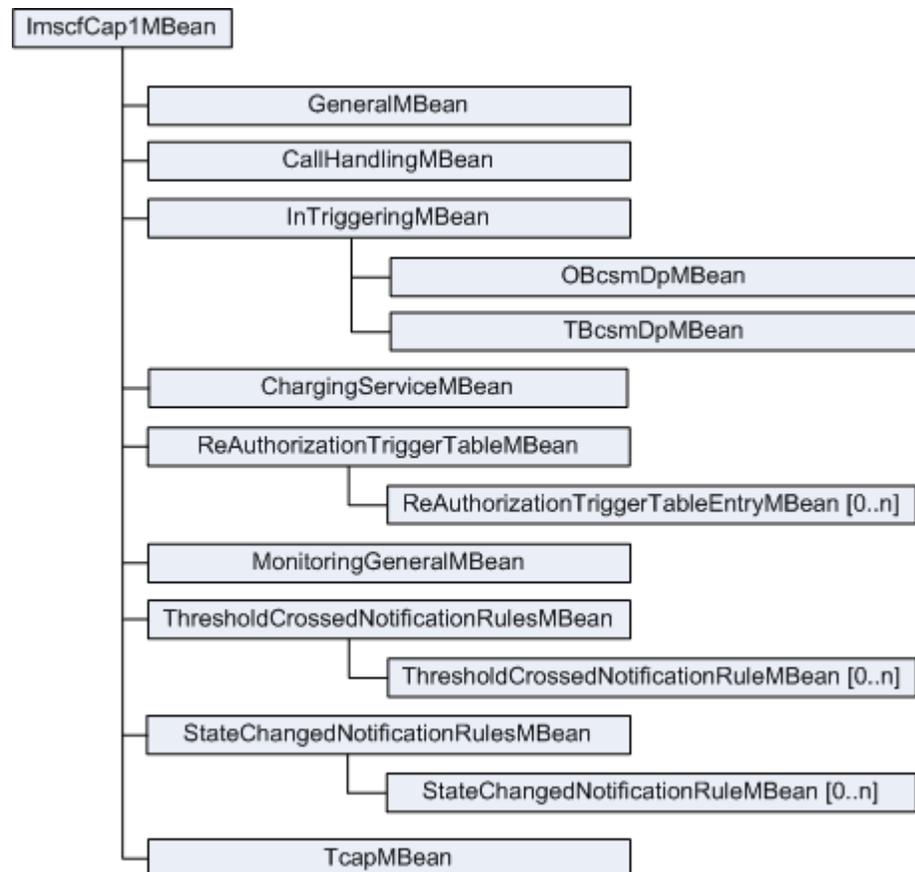
Name	Type	Description
Result Split Length	INT	Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.

## 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 ["Configuring Monitoring with the Administration Console"](#).

## Configuring IM-SCF CAP Phase 1 with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the IM-SCF CAP phase 1 through JMX. [Figure 5–1](#) shows the hierarchy of the IM-SCF CAP 1 MBeans.

**Figure 5–1 IM-SCF CAP Phase 1 MBeans Hierarchy**

The following sections provide reference information for the IM-SCF CAP phase 1 configuration MBeans.

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**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

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The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

---

## ImscfCap1MBean

ImscfCap1MBean is a root MBean for the IM-SCF CAP phase 1 configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getGeneral()**

Gets a reference to the instance of GeneralMBean

**ObjectName getCallHandling()**

Gets a reference to the instance of CallHandlingMBean

**ObjectName getInTriggering()**

Gets a reference to the instance of InTriggeringMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

**ObjectName getTcap()**

Gets a reference to the instance of TcapMBean

---

## GeneralMBean

GeneralMBean enables you to specify an alias for an Interworking Module instance.

### Factory Method

Created automatically

### Attributes

Alias

For more information on this attribute, see [Table 5-2](#).

### Operations

None

## CallHandlingMBean

CallHandlingMBean enables you to configure how a call is handled.

### Factory Method

Created automatically

### Attributes

- OeReactionIntervalInSeconds
- BodyEncodingFormat
- ActivityTestIntervalInSeconds
- ResetTimerIntervalInSeconds
- UiResetTimerIntervalInSeconds
- RrbcsmAccumulationMode
- WaitForAssistRequestInstructionsAfterEstablishTemporaryConnection
- AssistRequestInstructionsWaitingIntervalInSeconds

For more information on these attributes, see [Table 5-3](#).

### Operations

None

## InTriggeringMBean

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

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getOBcsmDp()**

Returns a reference to the instance of OBcsmDpMBean

**ObjectName createOBcsmDp()**

Creates a new instance of OBcsmDpMBean

**void destroyOBcsmDp()**

Destroys an existing instance of OBcsmDpMBean

**ObjectName lookupOBcsmDp()**

Returns a specified instance of OBcsmDpMBean

**ObjectName getTBcsmDp()**

Returns a reference to the instance of TBcsmDpMBean

**ObjectName createTBcsmDp()**

Creates a new instance of TBcsmDpMBean

**void destroyTBcsmDp()**

Destroys an existing instance of TBcsmDpMBean

**ObjectName lookupTBcsmDp()**

Returns a specified instance of TBcsmDpMBean

## OBcsmDpMBean

OBcsmDpMBean enables you to configure DPs that the IM-SCF arms on the call origination side (O-BCSM).

### Factory Method

InTriggering.createOBcsmDp()

### Attributes

- OAnswer
- ODisconnect
- ODisconnectLeg

For more information on these attributes, see [Table 5-5](#).

### Operations

None

## TBcsmDpMBean

TBcsmDpMBean enables you to configure DPs that the IM-SCF arms on the call termination side (T-BCSM).

### Factory Method

InTriggering.createTBcsmDp()

### Attributes

- TAnswer
- TDisconnect
- TDisconnectLeg

For more information on these attributes, see [Table 5-6](#).

### Operations

None

## ChargingServiceMBean

ChargingServiceMBean enables you to define how IM-SCF sends credit reservation requests and to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC.

### Factory Method

Created automatically

### Attributes

- ServiceMonitoring
- FirstCreditReservationRequest
- StartChargingPhase
- RequestedDuration
- RequestedVolume
- RequestedServiceUnits
- ServiceIdentifier
- TccdTimeout

For more information on these attributes, see [Table 5-8](#).

### Operations

None

## ReAuthorizationTriggerTableMBean

ReAuthorizationTriggerTableMBean is a container for instances of ReAuthorizationTriggerTableEntryMBean. Each instance of ReAuthorizationTriggerTableEntryMBean represents a single reauthorization trigger that an MSC sends to IM-SCF.

### Factory Method

Created automatically.

### Attributes

None

### Operations

**ObjectName[] getReAuthorizationTriggerTableEntry()**

Returns an array of references to instances of ReAuthorizationTriggerTableEntryMBean

**ObjectName createReAuthorizationTriggerTableEntry()**

Creates a new instance of ReAuthorizationTriggerTableEntryMBean

**void destroyReAuthorizationTriggerTableEntry()**

Destroys an existing instance of ReAuthorizationTriggerTableEntryMBean

**ObjectName lookupReAuthorizationTriggerTableEntry()**

Gets a reference to the instance of ReAuthorizationTriggerTableEntryMBean

## ReAuthorizationTriggerTableEntryMBean

ReAuthorizationTriggerTableMBean enables you to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC.

### Factory Method

`ReAuthorizationTriggerTable.createReAuthorizationTriggerTableEntry()`

### Attributes

- Info Received
- Session Alerted
- Session Connected
- SessionReInviteComplete
- SessionUpdateComplete
- Session Reinvited
- Session Update Complete
- Session Updated

For more information about these attributes, see [Table 5-9](#).

### Operations

None

---

## Tcap MBean

TcapMBean enables you to configure the TCAP layer of the module.

### Factory Method

Created automatically

### Attributes

- Class4DefaultTimeoutInSeconds
- RejectTimeoutInSeconds
- ActivateInvokeAlarmInApplicationLayer
- ApplicationPartGuardTimer
- ResultSplitLength

For more information on these attributes, see [Table 5–10](#).

### Operations

None

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## Configuring IM-SCF CAP Phase 2

The following sections describe how to configure IM-SCF using the Service Broker Administration Console and Java MBeans.

### Configuring IM-SCF CAP Phase 2 with the Administration Console

This section describes how to configure the IM-SCF CAP phase 2 by using the Service Broker Administration Console.

To access the IM-SCF CAP phase 2 configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The IM-SCF CAP phase 2 configuration pane contains the subtabs described in [Table 6-1](#).

**Table 6-1** IM-SCF CAP Phase 2 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. For more information, see " <a href="#">Configuring General Parameters</a> ".
Call Handling	Enables you to define the way that IM-SCF handles calls. For more information, see " <a href="#">Configuring Call Handling Parameters</a> ".
IN Triggering	Enables you to define the IN triggers that the IM-SCF arms in the underlying session control entity. For more information, see " <a href="#">Configuring IN Triggering Parameters</a> ".
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 " <a href="#">Charging Services</a> " for more information.

**Table 6–1 (Cont.) IM-SCF CAP Phase 2 Configuration Subtabs**

Subtab	Description
Media Resources	Enables you to set up the media resources that Service Broker uses to play announcements. For more information, see " <a href="#">Configuring Media Resources Parameters</a> ".
TCAP	Enables you to set up the TCAP layer of the IM-SCF. For more information, see " <a href="#">Configuring TCAP Parameters</a> ".
Monitoring	Enables you to define how Runtime MBeans and notifications operate. For more information, see " <a href="#">Configuring Monitoring Parameters</a> ".

## 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 parameter on the General subtab.

**Table 6–2 General Parameters**

Name	Type	Description
Alias	STRING	Specifies the alias of the IM's SS7 address. The alias is an index to 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/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 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
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: 10000

**Table 6–3 (Cont.) IM-SCF CAP Phase 2 Call Handling Parameters**

Name	Type	Description
UI Reset Timer Interval in Seconds	INT	<p>Specifies the time period, in seconds, from receiving IN operation and till invoking the ResetTimer operation towards the MSC (reset Tssf).</p> <p>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.</p> <p>Default value: 10000</p>
Body Encoding Format	STRING	<p>Specifies the method that the IM-SCF uses to encode IN parameters in the body of a SAL message.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ BER</li> <li>▪ XER</li> <li>▪ None</li> </ul> <p>Default value: None</p> <p>In an IN mediation solution, when IM-SCF is coupled with IM-SSF, this parameter must be set to XER.</p>
Activity Test Interval in Seconds	INT	<p>Specifies the time interval in seconds between two invocations of ActivityTest operation. This operation is used to check whether or not the call exists.</p> <p>Default value: 0, which means that the ActivityTest is not sent</p>
RRBCSM Accumulation Mode	BOOL	<p>Specifies whether or not IM-SCF arms DP's using a single or multiple RRBCSM requests.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ True</li> <li>▪ False</li> </ul>
Wait for AssistRequestInstructions after EstablishTemporaryConnection	BOOL	<p>Specifies whether or not IM-SCF expects a ARI operation, following an ETC operation to the switch.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ True</li> <li>▪ False</li> </ul>
AssistRequestInstructions Waiting Interval in Seconds	INT	<p>Specifies the time period in seconds during which the IM-SCF waits for an ARI operation, following an ETC operation to the switch</p>

**Table 6–3 (Cont.) IM-SCF CAP Phase 2 Call Handling Parameters**

Name	Type	Description
gsmSCFAddress	STRING	<p>Specifies gsmSCFAddress to be set in an EstablishTemporaryConnection (ETC) operation.</p> <p>gsmSCFAddress represents the address of IM-SCF that initiates the ETC operation. gsmSCFAddress consists of the following:</p> <ul style="list-style-type: none"> <li>■ Address indicator (one octet), including NatureOfAddress</li> <li>■ Address digits</li> </ul> <p>For more information about the format of gsmSCFAddress, see 3GPP 29.002.</p>

## 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 6–4](#).

**Table 6–4 IN Triggering Subtabs**

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

### 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 6–5](#) describes configuration parameters on the O-BCSM subtab.

**Table 6–5 O-BCSM DPs**

Name	Type	Description
RouteSelectFailure	STRING	Specifies how the IM-SCF arms RouteSelectFailure. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
OCalledPartyBusy	STRING	Specifies how the IM-SCF arms oCalledPartyBusy. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
ONoAnswer	STRING	Specifies how the IM-SCF arms oNoAnswer. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED

**Table 6–5 (Cont.) O-BCSM DPs**

Name	Type	Description
OAnswer	STRING	Specifies how the IM-SCF arms oAnswer. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
ODisconnect	STRING	Specifies how the IM-SCF arms oDisconnect. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
OAbandon	STRING	Specifies how the IM-SCF arms oAbandon. Possible values: <ul style="list-style-type: none"> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: NOTIFY_AND_CONTINUE
ODisconnect Leg	STRING	Specifies a leg on which the oDisconnect DP is armed. Possible values: <ul style="list-style-type: none"> <li>■ 1</li> <li>■ 2</li> <li>■ 1,2</li> </ul> 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 6–6 describes configuration parameters on the T-BCSM subtab.

**Table 6–6 T-BCSM DPs**

Name	Type	Description
TBusy	STRING	Specifies how the IM-SCF arms tBusy. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
TNoAnswer	STRING	Specifies how the IM-SCF arms tNoAnswer. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
TAnswer	STRING	Specifies how the IM-SCF arms tAnswer. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED

**Table 6–6 (Cont.) T-BCSM DPs**

Name	Type	Description
TDisconnect	STRING	Specifies how the IM-SCF arms tDisconnect. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
TAbandon	STRING	Specifies how the IM-SCF arms tAbandon. Possible values: <ul style="list-style-type: none"> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: NOTIFY_AND_CONTINUE
TDisconnect Leg	STRING	Specifies a leg on which the tDisconnect DP is armed. Possible values: <ul style="list-style-type: none"> <li>■ 1</li> <li>■ 2</li> <li>■ 1,2</li> </ul> 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 6-7](#).

**Table 6-7 Charging Services Subtabs**

Subtab	Description
General	Enables you to specify how IM-SCF sets up and sends credit reservation requests to the OE. See " <a href="#">General</a> " for more information.
Reauthorization Triggers	Enables you to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC. See " <a href="#">Reauthorization Triggers</a> " 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 6-8](#) describes the configuration parameters that you need to specify for credit reservation requests.

**Table 6-8 General Parameters**

Name	Type	Description
Service Monitoring	STRING	Specifies the component that monitors session duration. Possible values: <ul style="list-style-type: none"> <li>▪ Internal IM-SCF monitors session duration.</li> <li>▪ External MSC monitors session duration.</li> <li>▪ None Session duration is not monitored.</li> </ul> Default value: None

**Table 6–8 (Cont.) General Parameters**

Name	Type	Description
First Credit Reservation Request	STRING	<p>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.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Initial IM-OCF sends a request after an MSC sends the first session setup message.</li> <li>■ Ringing IM-OCF sends a request after an MSC sends a ringing indication.</li> <li>■ Answer IM-OCF sends a request after an MSC sends an answer indication.</li> <li>■ Never</li> </ul> <p>Default value: Initial</p>
First Credit Granted Notification	STRING	<p>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.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Initial IM-SCF sends an ApplyCharging message after an MSC sends the first session setup message.</li> <li>■ 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.</li> </ul> <p>Default value: Initial</p>
Start Charging Phase	STRING	<p>Specifies when IM-SCF starts charging a session.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Initial IM-SCF starts charging after an MSC sends the first session setup message.</li> <li>■ Ringing IM-SCF starts charging after an MSC sends a ringing indication.</li> <li>■ Answer IM-SCF starts charging after an MSC sends an answer indication.</li> </ul> <p>Default value: Answer</p>
Requested Duration	INT	<p>Specifies the value to which IM-OCF needs to set the CC-time AVP in a CCR sent to a billing application.</p>
Requested Volume	INT	<p>Specifies the value to which IM-OCF needs to set the CC-Total-Octets AVP in a CCR sent to a billing application.</p>

**Table 6–8 (Cont.) General Parameters**

Name	Type	Description
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.
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.

**Reauthorization Triggers**

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

Table 6–9 describes configuration parameters on the Reauthorization Triggers subtab.

**Table 6–9 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: <ul style="list-style-type: none"> <li>■ Yes IM-SCF always reauthorizes the quota.</li> <li>■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No IM-SCF never reauthorizes the quota.</li> </ul> Default value: Dynamic
Session Alerted	STRING	Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Alerted trigger. Possible values: <ul style="list-style-type: none"> <li>■ Yes IM-SCF always reauthorizes the quota.</li> <li>■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No IM-SCF never reauthorizes the quota.</li> </ul> Default value: Dynamic

**Table 6–9 (Cont.) Reauthorization Triggers Parameters**

Name	Type	Description
Session Connected	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Connected trigger.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Yes IM-SCF always reauthorizes the quota.</li> <li>■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>
Session ReInvite Complete	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session ReInvite Complete trigger.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Yes IM-SCF always reauthorizes the quota.</li> <li>■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>
Session Reinvited	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Reinvited trigger.</p> <ul style="list-style-type: none"> <li>■ Yes IM-SCF always reauthorizes the quota.</li> <li>■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>

**Table 6–9 (Cont.) Reauthorization Triggers Parameters**

Name	Type	Description
Session Update Complete	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Update Complete trigger.</p> <ul style="list-style-type: none"> <li>▪ Yes IM-SCF always reauthorizes the quota.</li> <li>▪ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>▪ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>
Session Updated	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Updated trigger.</p> <ul style="list-style-type: none"> <li>▪ Yes IM-SCF always reauthorizes the quota.</li> <li>▪ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>▪ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>

## 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 6–10](#).

**Table 6–10 IM-SCF CAP Phase 2 Media Resource Definition Fields**

Name	Type	Description
Name	STRING	Specifies a name of the media resource

**Table 6–10 (Cont.) IM-SCF CAP Phase 2 Media Resource Definition Fields**

Name	Type	Description
Alias	STRING	<p>Specifies a unique identifier that applications use to instruct Service Broker which media resource to connect in order to play announcements.</p> <p>Aliases are defined in a URI format and must contain the number of the MRF. For example: mrf.12345@domain.com.</p> <p>To specify a generic alias that fits a range of aliases, you can use the question mark character (?). A question mark can be substituted by a number.</p> <p>For example, if you set the Alias parameter to mrf.1234????@network.com, this alias fits any alias in the range from mrf.12340000@network.com to mrf.12349999@ network.com.</p>
Address Digits	STRING	<p>Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource.</p> <p><b>Note:</b> 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'.</p>
Nature of Address	STRING	<p>Specifies the NatureOfAddress part of the media resource address. The media resource address is used to set up a connection towards the media resource.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ SUBSCRIBER_NUMBER</li> <li>■ UNKNOWN</li> <li>■ NATIONAL</li> <li>■ INTERNATIONAL</li> <li>■ NETWORK_SPECIFIC</li> </ul> <p>Default value: SUBSCRIBER_NUMBER</p>
Address Numbering Plan Indicator	STRING	<p>Specifies the NumberingPlanInd part of the media resource address. The media resource address is used to set up a connection towards the media resource.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ ISDN</li> <li>■ DATA</li> <li>■ TELEX</li> </ul> <p>Default value: ISDN</p>

**Table 6–10 (Cont.) IM-SCF CAP Phase 2 Media Resource Definition Fields**

Name	Type	Description
Numbering Qualifier	STRING	<p>Specifies the numbering qualifier of the media resource address.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ NONE</li> <li>▪ DIALLED_DIGITS</li> <li>▪ USER_PROVIDED_FAILED_NETWORK_SCREENING</li> <li>▪ USER_PROVIDED_NOT_SCREENED</li> <li>▪ REDIRECTING_TERMINATING_NUMBER</li> </ul> <p>Default value: NONE</p>
Number Screening	STRING	<p>Specifies the numbering screening of the media resource address.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ UNDEFINED</li> <li>▪ USER_PROVIDED_NOT_VERIFIED</li> <li>▪ USER_PROVIDED_VERIFIED_PASSED</li> <li>▪ USER_PROVIDED_VERIFIED_FAILED</li> <li>▪ NETWORK_PROVIDED</li> </ul> <p>Default value: UNDEFINED</p>
Presentation Restriction	STRING	<p>Specifies the presentation restriction of the media resource address.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ UNDEFINED</li> <li>▪ ALLOWED</li> <li>▪ RESTRICTED</li> <li>▪ NOT_AVAILABLE</li> </ul> <p>Default value: UNDEFINED</p>
Operation Type	STRING	<p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ internal: The media resource is internal part of the SSP. ConnectToResource (CTR) operation is used to connect the media resource.</li> <li>▪ external: The media resource not a part of the SSP. EstablishTemporaryConnection (ETC) is used to connect the media resource.</li> </ul> <p>Default value: internal</p>

**Table 6–10 (Cont.) IM-SCF CAP Phase 2 Media Resource Definition Fields**

Name	Type	Description
Answer Indication	BOOL	<p>Specifies how to set the ServiceInteractionIndicatorTwo.bothwayThroughConnectionInd 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.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Yes ServiceInteractionIndicatorTwo.bothwayThroughConnectionInd is set to bothwayPathRequired</li> <li>■ No ServiceInteractionIndicatorTwo.bothwayThroughConnectionInd is set to bothwayPathNotRequired</li> <li>■ None bothwayThroughConnectionInd is omitted</li> </ul>

---

**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.

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## Configuring TCAP Parameters

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

Table 6–11 describes configuration parameters on the TCAP subtab.

**Table 6–11 TCAP Parameter**

Name	Type	Description
Class4 Default Timeout in Seconds	INT	<p>Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations.</p> <p>Default value: 5 seconds.</p>
Reject Timeout in Seconds	INT	<p>Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.</p>

**Table 6–11 (Cont.) TCAP Parameter**

Name	Type	Description
Activate Invoke Alarm in Application Layer	BOOL	<p>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.</p> <p>The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> <p>Default value: False.</p>
Application Part Guard Timer	INT	<p>Specifies the PSM timer, which is a timer for incoming operations.</p> <p>The PSM timer defines the maximum time in seconds that the application (TC-User) has to respond to incoming INVOKE messages.</p>
Result Split Length	INT	<p>Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.</p>

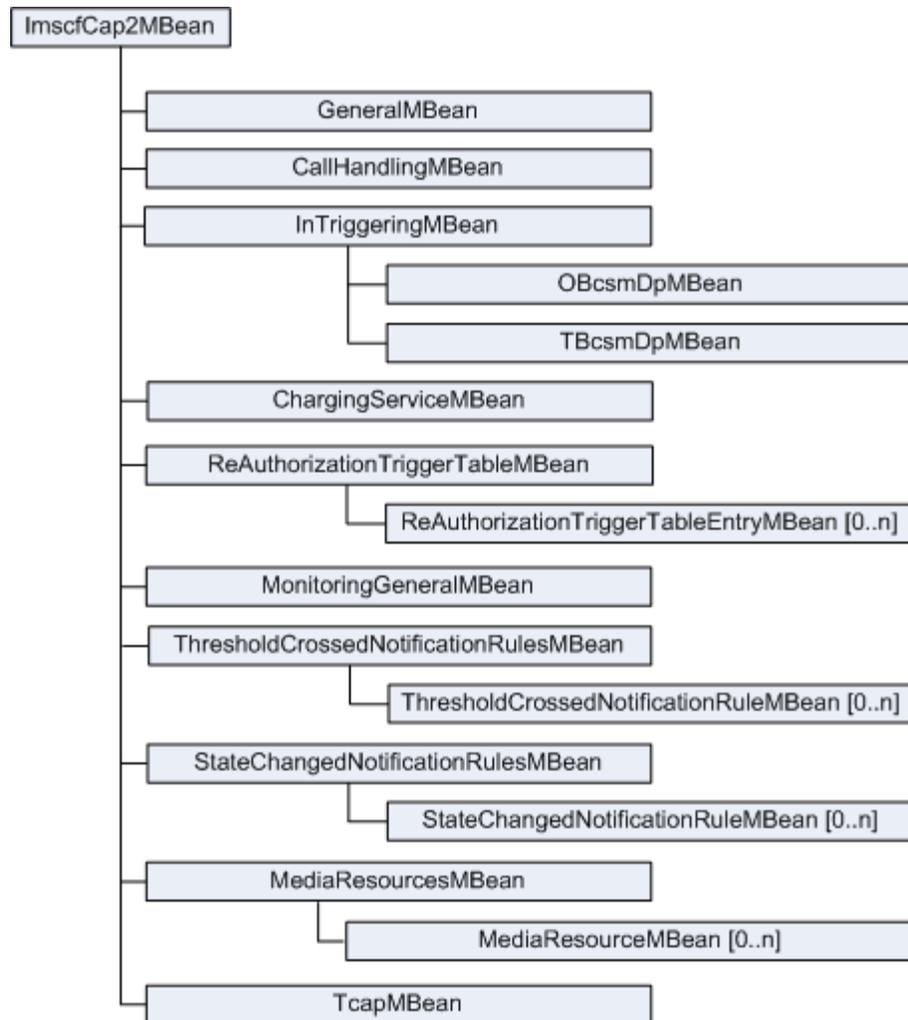
## Configuring Monitoring Parameters

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 Monitoring with the Administration Console](#)".

## Configuring IM-SCF CAP Phase 2 with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the IM-SCF CAP phase 2 through JMX. [Figure 6–1](#) shows the hierarchy of the IM-SCF CAP 2 MBeans.

**Figure 6–1 IM-SCF CAP Phase 2 MBeans Hierarchy**



The following sections provide reference information for the IM-SCF CAP phase 2 configuration MBeans.

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**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

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The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)".

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

---

## ImscfCap2MBean

ImscfCap2MBean is a root MBean for the IM-SCF CAP phase 2 configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getGeneral()**

Gets a reference to the instance of GeneralMBean

**ObjectName getCallHandling()**

Gets a reference to the instance of CallHandlingMBean

**ObjectName getInTriggering()**

Gets a reference to the instance of InTriggeringMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

**ObjectName getMediaResources()**

Gets a reference to the instance of MediaResourcesMBean

**ObjectName getTcap()**

Gets a reference to the instance of TcapMBean

## GeneralMBean

GeneralMBean enables you to specify an alias for an Interworking Module instance.

### Factory Method

Created automatically

### Attributes

Alias

For more information on this attribute, see [Table 6-2](#).

### Operations

None

## CallHandlingMBean

CallHandlingMBean enables you to configure how a call is handled.

### Factory Method

Created automatically

### Attributes

- OeReactionInterval
- ResetTimerIntervalInSeconds
- UiResetTimerIntervalInSeconds
- BodyEncodingFormat
- ActivityTestIntervalInSeconds
- RrbcsmAccumulationMode
- WaitForAssistRequestInstructionsAfterEstablishTemporaryConnection
- AssistRequestInstructionsWaitingIntervalInSeconds
- gsmSCFAddress

For more information on this attribute, see [Table 6-3](#).

### Operations

None

## InTriggeringMBean

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

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getOBcsmDp()**

Returns a reference to the instance of OBcsmDpMBean

**ObjectName createOBcsmDp()**

Creates a new instance of OBcsmDpMBean

**void destroyOBcsmDp()**

Destroys an existing instance of OBcsmDpMBean

**ObjectName lookupOBcsmDp()**

Returns a specified instance of OBcsmDpMBean

**ObjectName getTBcsmDp()**

Returns a reference to the instance of TBcsmDpMBean

**ObjectName createTBcsmDp()**

Creates a new instance of TBcsmDpMBean

**void destroyTBcsmDp()**

Destroys an existing instance of TBcsmDpMBean

**ObjectName lookupTBcsmDp()**

Returns a specified instance of TBcsmDpMBean

## OBcsmDpMBean

OBcsmDpMBean enables you to configure DPs that the IM-SCF arms on the call origination side (O-BCSM).

### Factory Method

InTriggering.createOBcsmDp()

### Attributes

- RouteSelectFailure
- OCalledPartyBusy
- ONoAnswer
- OAnswer
- ODisconnect
- OAbandon
- ODisconnectLeg

For more information on these attributes, see [Table 6-5](#).

### Operations

None

## TBcsmDpMBean

TBcsmDpMBean enables you to configure DPs that the IM-SCF arms on the call termination side (T-BCSM).

### Factory Method

InTriggering.createTBcsmDp()

### Attributes

- TBusy
- TNoAnswer
- TAnswer
- TDisconnect
- TAbandon
- TDisconnectLeg

For more information on these attributes, see [Table 6-6](#).

### Operations

None

## ChargingServiceMBean

ChargingServiceMBean enables you to define how IM-SCF sends credit reservation requests and to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC.

### Factory Method

Created automatically

### Attributes

- ServiceMonitoring
- FirstCreditReservationRequest
- FirstCreditGrantedNotification
- StartChargingPhase
- RequestedDuration
- RequestedVolume
- RequestedServiceUnits
- ServiceIdentifier
- TccdTimeout

For more information on these attributes, see [Table 6-8](#).

### Operations

None

## ReAuthorizationTriggerTableMBean

ReAuthorizationTriggerTableMBean is a container for instances of ReAuthorizationTriggerTableEntryMBean. Each instance of ReAuthorizationTriggerTableEntryMBean represents a single reauthorization trigger that an MSC sends to IM-SCF.

### Factory Method

Created automatically.

### Attributes

None

### Operations

**ObjectName[] getReAuthorizationTriggerTableEntry()**

Returns an array of references to instances of ReAuthorizationTriggerTableEntryMBean

**ObjectName createReAuthorizationTriggerTableEntry()**

Creates a new instance of ReAuthorizationTriggerTableEntryMBean

**void destroyReAuthorizationTriggerTableEntry()**

Destroys an existing instance of ReAuthorizationTriggerTableEntryMBean

**ObjectName lookupReAuthorizationTriggerTableEntry()**

Gets a reference to the instance of ReAuthorizationTriggerTableEntryMBean

## ReAuthorizationTriggerTableEntryMBean

ReAuthorizationTriggerTableMBean enables you to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC.

### Factory Method

`ReAuthorizationTriggerTable.createReAuthorizationTriggerTableEntry()`

### Attributes

- Info Received
- Session Alerted
- Session Connected
- SessionReInviteComplete
- SessionUpdateComplete
- Session Reinvited
- Session Update Complete
- Session Updated

For more information about these attributes, see [Table 6-9](#).

### Operations

None

## MediaResourcesMBean

MediaResourcesMBean is a container for instances of MediaResourceMBean. Each instance of MediaResourceMBean represents a single media resource to which an SSP can connect.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName[] getMediaResource()**

Returns an array of references to instances of MediaResourceMBean

**ObjectName createMediaResource()**

Creates a new instance of MediaResourceMBean

**void destroyMediaResource()**

Destroys an existing instance of MediaResourceMBean

**ObjectName lookupMediaResource()**

Gets a reference to the instance of MediaResourceMBean

## MediaResourceMBean

Each instance of MediaResourceMBean represents one media resource to which an SSP can connect to play announcements.

### Factory Method

MediaResources.createMediaResource()

### Attributes

- Name
- Alias
- AddressDigits
- NatureOfAddress
- AddressNumberingPlanIndicator
- NumberingQualifier
- NumberScreening
- PresentationRestriction
- OperationType
- AnswerIndication

For more information on these attributes, see [Table 6–10](#).

### Operations

None

## Tcap MBean

TcapMBean enables you to configure the TCAP layer of the module.

### Factory Method

Created automatically

### Attributes

- Class4DefaultTimeoutInSeconds
- RejectTimeoutInSeconds
- ActivateInvokeAlarmInApplicationLayer
- ApplicationPartGuardTimer
- ResultSplitLength

For more information on these attributes, see f.

### Operations

None

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## Configuring IM-SCF CAP Phase 3

The following sections describe how to configure IM-SCF using the Service Broker Administration Console and Java MBeans.

### Configuring IM-SCF CAP Phase 3 with the Administration Console

This section describes how to configure the IM-SCF CAP phase 3 by using the Service Broker Administration Console.

To access the IM-SCF CAP phase 3 configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The IM-SCF CAP phase 3 configuration pane contains the subtabs described in [Table 7-1](#).

**Table 7-1 IM-SCF CAP Phase 3 Configuration Subtabs**

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. For more information, see " <a href="#">Configuring General Parameters</a> ".
Call Handling	Enables you to define the way that IM-SCF handles calls. For more information, see " <a href="#">Configuring Call Handling Parameters</a> ".
IN Triggering	Enables you to define the IN triggers that IM-SCF arms in the underlying session control entity. For more information, see " <a href="#">Configuring IN Triggering Parameters</a> ".
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 " <a href="#">Charging Services</a> " for more information.

**Table 7-1 (Cont.) IM-SCF CAP Phase 3 Configuration Subtabs**

Subtab	Description
Media Resources	Enables you to set up the media resources that Service Broker uses to play announcements. See <a href="#">"Configuring Media Resources Parameters"</a> for more information.
TCAP	Enables you to set up the TCAP layer of the IM-SCF. See <a href="#">"Configuring TCAP Parameters"</a> for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See <a href="#">"Configuring Monitoring Parameters"</a> 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 parameter on the General subtab.

**Table 7-2 General Parameter**

Name	Type	Description
Alias	STRING	Specifies the alias of the IM's SS7 address. The alias is an index to 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 / 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 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
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: 10000

**Table 7-3 (Cont.) IM-SCF CAP Phase 3 Call Handling Parameters**

Name	Type	Description
UI Reset Timer Interval in Seconds	INT	<p>Specifies the time period, in seconds, from receiving IN operation and till invoking the ResetTimer operation towards the MSC (reset Tssf).</p> <p>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.</p> <p>Default value: 10000</p>
Body Encoding Format	STRING	<p>Specifies the method that the IM-SCF uses to encode IN parameters in the body of a SAL message.</p> <p>Possible options:</p> <ul style="list-style-type: none"> <li>■ BER</li> <li>■ XER</li> <li>■ None</li> </ul> <p>Default value: None</p> <p>In an IN mediation solution, when IM-SCF is coupled with IM-SSF, this parameter must be set to XER.</p>
Activity Test Interval in Seconds	INT	<p>Specifies the time interval in seconds between two invocations of ActivityTest operation. This operation is used to check whether or not the call exists.</p> <p>Default value: 0, which means that the ActivityTest is not sent</p>
RRBCSM Accumulation Mode	BOOL	<p>Specifies whether or not IM-SCF arms DPs using a single or multiple RRBCSM requests.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul>
Wait for AssistRequestInstructions after EstablishTemporaryConnection	BOOL	<p>Specifies whether or not IM-SCF expects an ARI operation, following an ETC operation to the switch.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul>
AssistRequestInstructions Waiting Interval in Seconds	INT	<p>Specifies the time period in seconds during which the IM-SCF waits for an ARI operation, following an ETC operation to the switch</p>

**Table 7–3 (Cont.) IM-SCF CAP Phase 3 Call Handling Parameters**

Name	Type	Description
gsmSCFAddress	STRING	<p>Specifies gsmSCFAddress to be set in an EstablishTemporaryConnection (ETC) operation.</p> <p>gsmSCFAddress represents the address of IM-SCF that initiates the ETC operation. gsmSCFAddress consists of the following:</p> <ul style="list-style-type: none"> <li>▪ Address indicator (one octet), including NatureOfAddress</li> <li>▪ Address digits</li> </ul> <p>For more information about the format of gsmSCFAddress, see 3GPP 29.002.</p>

## 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 7–4](#).

**Table 7–4 IN Triggering Subtabs**

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

### 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 7–5](#) describes configuration parameters on the O-BCSM subtab.

**Table 7-5 O-BCSM DPs**

Name	Type	Description
RouteSelectFailure	STRING	Specifies how the IM-SCF arms RouteSelectFailure. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
OCalledPartyBusy	STRING	Specifies how the IM-SCF arms oCalledPartyBusy. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
ONoAnswer	STRING	Specifies how the IM-SCF arms oNoAnswer. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED

**Table 7–5 (Cont.) O-BCSM DPs**

Name	Type	Description
OAnswer	STRING	<p>Specifies how the IM-SCF arms oAnswer.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> <p>Default value: INTERRUPTED</p>
ODisconnect	STRING	<p>Specifies how the IM-SCF arms oDisconnect.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> <p>Default value: INTERRUPTED</p>
OAbandon	STRING	<p>Specifies how the IM-SCF arms oAbandon.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> <p>Default value: INTERRUPTED</p>
ODisconnect Leg	STRING	<p>Specifies a leg on which the oDisconnect DP is armed.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ 1</li> <li>■ 2</li> <li>■ 1,2</li> </ul> <p>Default value: 1,2</p>

### 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 7–6 describes configuration parameters on the T-BCSM subtab.

**Table 7–6 T-BCSM DPs**

Name	Type	Description
TBusy	STRING	Specifies how the IM-SCF arms tBusy. Possible values: <ul style="list-style-type: none"> <li>▪ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>▪ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>▪ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>▪ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
TNoAnswer	STRING	Specifies how the IM-SCF arms tNoAnswer. Possible values: <ul style="list-style-type: none"> <li>▪ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>▪ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>▪ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>▪ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
TAnswer	STRING	Specifies how the IM-SCF arms tAnswer. Possible values: <ul style="list-style-type: none"> <li>▪ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>▪ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>▪ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>▪ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED

**Table 7–6 (Cont.) T-BCSM DPs**

Name	Type	Description
TDisconnect	STRING	Specifies how the IM-SCF arms tDisconnect. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
TAbandon	STRING	Specifies how the IM-SCF arms tAbandon. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
TDisconnect Leg	STRING	Specifies a leg on which the tDisconnect DP is armed. Possible values: <ul style="list-style-type: none"> <li>■ 1</li> <li>■ 2</li> <li>■ 1,2</li> </ul> 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 7–7 describes configuration parameters on the O-SMS subtab.

**Table 7-7 O-SMS DPs**

Name	Type	Description
OSmsSubmission	STRING	<p>Specifies how the IM-SCF arms oSmsSubmission.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> <p>Default value: INTERRUPTED</p>
OSmsFailure	STRING	<p>Specifies how the IM-SCF arms oSmsFailure.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> <p>Default value: INTERRUPTED</p>

## 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 7-8](#).

**Table 7–8 Charging Services Subtabs**

Subtab	Description
General	Enables you to specify how IM-SCF sets up and sends credit reservation requests to the OE. See " <a href="#">General</a> " for more information.
Reauthorization Triggers	Enables you to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC. See " <a href="#">Reauthorization Triggers</a> " 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 7–9](#) describes the configuration parameters that you need to specify for credit reservation requests.

**Table 7–9 General Parameters**

Name	Type	Description
Service Monitoring	STRING	Specifies the component that monitors session duration. Possible values: <ul style="list-style-type: none"> <li>▪ Internal IM-SCF monitors session duration.</li> <li>▪ External MSC monitors session duration.</li> <li>▪ None Session duration is not monitored.</li> </ul> Default value: None
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: <ul style="list-style-type: none"> <li>▪ Initial IM-OCF sends a request after an MSC sends the first session setup message.</li> <li>▪ Ringing IM-OCF sends a request after an MSC sends a ringing indication.</li> <li>▪ Answer IM-OCF sends a request after an MSC sends an answer indication.</li> <li>▪ Never</li> </ul> Default value: Initial

**Table 7–9 (Cont.) General Parameters**

Name	Type	Description
First Credit Granted Notification	STRING	<p>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.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Initial IM-SCF sends an ApplyCharging message after an MSC sends the first session setup message.</li> <li>■ 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.</li> </ul> <p>Default value: Initial</p>
Start Charging Phase	STRING	<p>Specifies when IM-SCF starts charging a session.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Initial IM-SCF starts charging after an MSC sends the first session setup message.</li> <li>■ Ringing IM-SCF starts charging after an MSC sends a ringing indication.</li> <li>■ Answer IM-SCF starts charging after an MSC sends an answer indication.</li> </ul> <p>Default value: Answer</p>
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.
Tccd Timeout	INT	<p>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.</p> <p>To disable the timeout timer, enter a negative value.</p>

### Reauthorization Triggers

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

[Table 7–10](#) describes configuration parameters on the Reauthorization Triggers subtab.

**Table 7–10 Reauthorization Triggers Parameters**

Name	Type	Description
Info Received	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Info Received trigger.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Yes IM-SCF always reauthorizes the quota.</li> <li>■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>
Session Alerted	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Alerted trigger.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Yes IM-SCF always reauthorizes the quota.</li> <li>■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>
Session Connected	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Connected trigger.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Yes IM-SCF always reauthorizes the quota.</li> <li>■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>

**Table 7–10 (Cont.) Reauthorization Triggers Parameters**

Name	Type	Description
Session ReInvite Complete	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session ReInvite Complete trigger.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Yes IM-SCF always reauthorizes the quota.</li> <li>■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>
Session Reinvited	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Reinvited trigger.</p> <ul style="list-style-type: none"> <li>■ Yes IM-SCF always reauthorizes the quota.</li> <li>■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>
Session Update Complete	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Update Complete trigger.</p> <ul style="list-style-type: none"> <li>■ Yes IM-SCF always reauthorizes the quota.</li> <li>■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>

**Table 7–10 (Cont.) Reauthorization Triggers Parameters**

Name	Type	Description
Session Updated	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Updated trigger.</p> <ul style="list-style-type: none"> <li>▪ Yes IM-SCF always reauthorizes the quota.</li> <li>▪ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>▪ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>

## 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 7–11](#).

**Table 7–11 IM-SCF CAP Phase 3 Media Resource Definition Fields**

Name	Type	Description
Name	STRING	Specifies a name of the media resource
Alias	STRING	<p>Specifies a unique identifier that applications use to instruct Service Broker which media resource to connect in order to play announcements.</p> <p>Aliases are defined in a URI format and must contain the number of the MRF. For example: mrf.12345@domain.com.</p> <p>To specify a generic alias that fits a range of aliases, you can use the question mark character (?). A question mark can be substituted by a number.</p> <p>For example, if you set the Alias parameter to mrf.1234????@network.com, this alias fits any alias in the range from mrf.12340000@network.com to mrf.12349999@ network.com.</p>
Address Digits	STRING	<p>Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource.</p> <p><b>Note:</b> 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’.</p>

**Table 7–11 (Cont.) IM-SCF CAP Phase 3 Media Resource Definition Fields**

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

**Table 7–11 (Cont.) IM-SCF CAP Phase 3 Media Resource Definition Fields**

Name	Type	Description
Presentation Restriction	STRING	<p>Specifies the presentation restriction of the media resource address.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ UNDEFINED</li> <li>■ ALLOWED</li> <li>■ RESTRICTED</li> <li>■ NOT_AVAILABLE</li> </ul> <p>Default value: UNDEFINED</p>
Operation Type	STRING	<p>Possible values:</p> <ul style="list-style-type: none"> <li>■ internal: The media resource is internal part of the SSP. ConnectToResource (CTR) operation is used to connect the media resource.</li> <li>■ external: The media resource not a part of the SSP. EstablishTemporaryConnection (ETC) is used to connect the media resource.</li> </ul> <p>Default value: internal</p>
Answer Indication	BOOL	<p>Specifies how to set the ServiceInteractionIndicatorTwo.bothwayThroughConnectionInd 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.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Yes ServiceInteractionIndicatorTwo.bothwayThroughConnectionInd is set to bothwayPathRequired</li> <li>■ No ServiceInteractionIndicatorTwo.bothwayThroughConnectionInd is set to bothwayPathNotRequired</li> <li>■ None bothwayThroughConnectionInd is omitted</li> </ul>

---

**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 7–12](#) describes configuration parameters on the TCAP subtab.

**Table 7–12 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: <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> 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.
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.

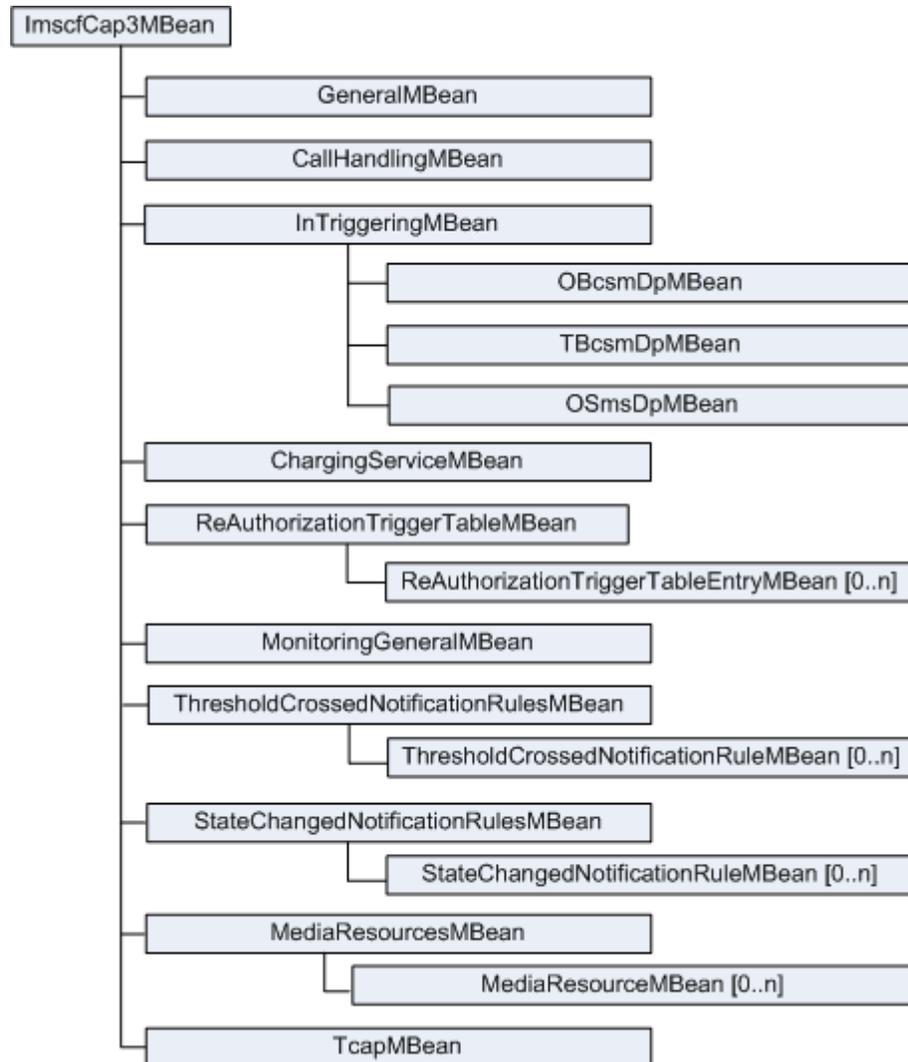
## Configuring Monitoring Parameters

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 Monitoring with the Administration Console"](#).

## Configuring IM-SCF CAP Phase 3 with the Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the IM-SCF CAP phase 3 through JMX. [Figure 7–1](#) shows the hierarchy of the IM-SCF CAP 3 MBeans.

**Figure 7-1 IM-SCF CAP Phase 3 MBeans Hierarchy**



The following sections provide reference information for the IM-SCF CAP phase 3 configuration MBeans.

---

**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

---

The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

## ImscfCap3MBean

ImscfCap3MBean is a root MBean for the IM-SCF CAP phase 3 configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getGeneral()**

Gets a reference to the instance of GeneralMBean

**ObjectName getCallHandling()**

Gets a reference to the instance of CallHandlingMBean

**ObjectName getInTriggering()**

Gets a reference to the instance of InTriggeringMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

**ObjectName getMediaResources()**

Gets a reference to the instance of MediaResourcesMBean

**ObjectName getTcap()**

Gets a reference to the instance of TcapMBean

---

## GeneralMBean

GeneralMBean enables you to specify an alias for an Interworking Module instance.

### Factory Method

Created automatically

### Attributes

Alias

For more information on this attribute, see [Table 7-2](#).

### Operations

None

## CallHandlingMBean

CallHandlingMBean enables you to configure how a call is handled.

### Factory Method

Created automatically

### Attributes

- OeReactionInterval
- ResetTimerIntervalInSeconds
- UiResetTimerIntervalInSeconds
- BodyEncodingFormat
- ActivityTestIntervalInSeconds
- RrbcsmAccumulationMode
- WaitForAssistRequestInstructionsAfterEstablishTemporaryConnection
- AssistRequestInstructionsWaitingIntervalInSeconds
- gsmSCFAddress

For more information on these attributes, see [Table 7-3](#).

### Operations

None

## InTriggeringMBean

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

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getOBcsmdp()**

Returns a reference to the instance of OBcsmdpMBean

**ObjectName createOBcsmdp()**

Creates a new instance of OBcsmdpMBean

**void destroyOBcsmdp()**

Destroys an existing instance of OBcsmdpMBean

**ObjectName lookupOBcsmdp()**

Returns a specified instance of OBcsmdpMBean

**ObjectName getTBcsmdp()**

Returns a reference to the instance of TBcsmdpMBean

**ObjectName createTBcsmdp()**

Creates a new instance of TBcsmdpMBean

**void destroyTBcsmdp()**

Destroys an existing instance of TBcsmdpMBean

**ObjectName lookupTBcsmdp()**

Returns a specified instance of TBcsmdpMBean

**ObjectName getOSmsdp()**

Returns a reference to the instance of OSmsdpMBean

**ObjectName createOSmsdp()**

Creates a new instance of OSmsdpMBean

**void destroyOSmsdp()**

Destroys an existing instance of OSmsdpMBean

**ObjectName lookupOSmsdp()**

Returns a specified instance of OSmsdpMBean

## OBcsmDpMBean

OBcsmDpMBean enables you to configure DPs that the IM-SCF arms on the call origination side (O-BCSM).

### Factory Method

InTriggering.createOBcsmDp()

### Attributes

- RouteSelectFailure
- OCalledPartyBusy
- ONoAnswer
- OAnswer
- ODisconnect
- OAbandon
- ODisconnectLeg

For more information on these attributes, see [Table 7-5](#).

### Operations

None

## TBcsmDpMBean

TBcsmDpMBean enables you to configure DPs that the IM-SCF arms on the call termination side (T-BCSM).

### Factory Method

InTriggering.createTBcsmDp()

### Attributes

- TBusy
- TNoAnswer
- TAnswer
- TDisconnect
- TAbandon
- TDisconnectLeg

For more information on these attributes, see [Table 7-6](#).

### Operations

None

## OSmsDpMBean

OSmsDpMBean enables you to configure DPs that the IM-SCF arms on the SMS origination side (O-SMS).

### Factory Method

InTriggering.createOSmsDp()

### Attributes

- OSmsSubmission
- OSmsFailure

For more information on these attributes, see [Table 7-7](#).

### Operations

None

## ChargingServiceMBean

ChargingServiceMBean enables you to define how IM-SCF sends credit reservation requests and to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC.

### Factory Method

Created automatically

### Attributes

- ServiceMonitoring
- FirstCreditReservationRequest
- FirstCreditGrantedNotification
- StartChargingPhase
- RequestedDuration
- RequestedVolume
- RequestedServiceUnits
- ServiceIdentifier
- TccdTimeout

For more information on these attributes, see [Table 7-9](#).

### Operations

None

## ReAuthorizationTriggerTableMBean

ReAuthorizationTriggerTableMBean is a container for instances of ReAuthorizationTriggerTableEntryMBean. Each instance of ReAuthorizationTriggerTableEntryMBean represents a single reauthorization trigger that an MSC sends to IM-SCF.

### Factory Method

Created automatically.

### Attributes

None

### Operations

**ObjectName[] getReAuthorizationTriggerTableEntry()**

Returns an array of references to instances of ReAuthorizationTriggerTableEntryMBean

**ObjectName createReAuthorizationTriggerTableEntry()**

Creates a new instance of ReAuthorizationTriggerTableEntryMBean

**void destroyReAuthorizationTriggerTableEntry()**

Destroys an existing instance of ReAuthorizationTriggerTableEntryMBean

**ObjectName lookupReAuthorizationTriggerTableEntry()**

Gets a reference to the instance of ReAuthorizationTriggerTableEntryMBean

## ReAuthorizationTriggerTableEntryMBean

ReAuthorizationTriggerTableMBean enables you to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC.

### Factory Method

ReAuthorizationTriggerTable.createReAuthorizationTriggerTableEntry()

### Attributes

- Info Received
- Session Alerted
- Session Connected
- SessionReInviteComplete
- SessionUpdateComplete
- Session Reinvited
- Session Update Complete
- Session Updated

For more information about these attributes, see [Table 7-10](#).

### Operations

None

## MediaResourcesMBean

MediaResourcesMBean is a container for instances of MediaResourceMBean. Each instance of MediaResourceMBean represents a single media resource to which an SSP can connect.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName[] getMediaResource()**

Returns an array of references to instances of MediaResourceMBean

**ObjectName createMediaResourceMBean()**

Creates a new instance of MediaResourceMBean

**void destroyMediaResourceMBean()**

Destroys an existing instance of MediaResourceMBean

**ObjectName lookupMediaResourceMBean()**

Gets a reference to the instance of MediaResourceMBean

## MediaResourceMBean

Each instance of MediaResourceMBean represents one media resource to which an SSP can connect to play announcements.

### Factory Method

MediaResources.createMediaResource()

### Attributes

- Name
- Alias
- AddressDigits
- NatureOfAddress
- AddressNumberingPlanIndicator
- NumberingQualifier
- NumberScreening
- PresentationRestriction
- OperationType
- AnswerIndication

For more information on these attributes, see [Table 7–11](#).

### Operations

None

## Tcap MBean

TcapMBean enables you to configure the TCAP layer of the module.

### Factory Method

Created automatically

### Attributes

- Class4DefaultTimeoutInSeconds
- RejectTimeoutInSeconds
- ActivateInvokeAlarmInApplicationLayer
- ApplicationPartGuardTimer
- ResultSplitLength

For more information on these attributes, see [Table 7-12](#).

### Operations

None



## Configuring IM-SCF CAP Phase 4

The following sections describe how to configure IM-SCF using the Service Broker Administration Console and Java MBeans.

### Configuring IM-SCF CAP Phase 4 with the Administration Console

This section describes how to configure the IM-SCF CAP phase 4 by using the Service Broker Administration Console.

To access the IM-SCF CAP phase 4 configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The IM-SCF CAP phase 4 configuration pane contains the subtabs described in [Table 8-1](#).

**Table 8-1** IM-SCF CAP Phase 4 Configuration Subtabs

Subtab	Description
General	Enables you to specify general parameters for an Interworking Module instance. See " <a href="#">Configuring General Parameters</a> " for more information.
Call Handling	Enables you to define the way that IM-SCF handles calls. See " <a href="#">Configuring Call Handling Parameters</a> " for more information.
IN Triggering	Enables you to define the IN triggers that the IM-SCF arms in the underlying session control entity. See " <a href="#">Configuring IN Triggering Parameters</a> " 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 " <a href="#">Charging Services</a> " for more information.

**Table 8–1 (Cont.) IM-SCF CAP Phase 4 Configuration Subtabs**

Subtab	Description
Media Resources	Enables you to set up the media resources that Service Broker 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 8–2 describes the configuration parameter on the General subtab.

**Table 8–2 General Parameter**

Name	Type	Description
Alias	STRING	Specifies the alias of the IM's SS7 address. The alias is an index to 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 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: <ul style="list-style-type: none"> <li>■ cap4.rel6_5_0.AutoGeneratedOssCap4Plugin</li> <li>■ cap4.rel7_5_0.AutoGeneratedOssCap4Plugin</li> </ul> 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 8–3 describes configuration parameters on the Call Handling subtab.

**Table 8–3 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

**Table 8–3 (Cont.) IM-SCF CAP Phase 4 Call Handling Parameters**

Name	Type	Description
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: 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 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: 10000
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: <ul style="list-style-type: none"> <li>■ BER</li> <li>■ XER</li> <li>■ None</li> </ul> Default value: None  In an IN mediation solution, when IM-SCF is coupled with IM-SSF, this parameter must be set to XER.
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
RRBCSM Accumulation Mode	BOOL	Specifies whether or not IM-SCF arms DPs using a single or multiple RRBCSM requests.  Possible values: <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul>
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: <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul>
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

**Table 8–3 (Cont.) IM-SCF CAP Phase 4 Call Handling Parameters**

Name	Type	Description
gsmSCFAddress	STRING	<p>Specifies gsmSCFAddress to be set in an EstablishTemporaryConnection (ETC) operation.</p> <p>gsmSCFAddress represents the address of IM-SCF that initiates the ETC operation. gsmSCFAddress consists of the following:</p> <ul style="list-style-type: none"> <li>■ Address indicator (one octet), including NatureOfAddress</li> <li>■ Address digits</li> </ul> <p>For more information about the format of gsmSCFAddress, see 3GPP 29.002.</p>

## 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 8–4](#).

**Table 8–4 IN Triggering Subtabs**

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

### 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 8–5](#) describes configuration parameters on the O-BCSM subtab.

**Table 8–5 O-BCSM DPs**

Name	Type	Description
RouteSelectFailure	STRING	Specifies how the IM-SCF arms RouteSelectFailure. Possible values: <ul style="list-style-type: none"> <li>▪ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>▪ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>▪ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>▪ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
OCalledPartyBusy	STRING	Specifies how the IM-SCF arms oCalledPartyBusy. Possible values: <ul style="list-style-type: none"> <li>▪ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>▪ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>▪ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>▪ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
ONoAnswer	STRING	Specifies how the IM-SCF arms oNoAnswer. Possible values: <ul style="list-style-type: none"> <li>▪ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>▪ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>▪ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>▪ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED

**Table 8–5 (Cont.) O-BCSM DPs**

Name	Type	Description
OTermSeized	STRING	Specifies how the IM-SCF arms oTermSeized. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
OAnswer	STRING	Specifies how the IM-SCF arms oAnswer. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
ODisconnect	STRING	Specifies how the IM-SCF arms oDisconnect. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED

**Table 8–5 (Cont.) O-BCSM DPs**

Name	Type	Description
OAbandon	STRING	Specifies how the IM-SCF arms oAbandon. Possible values: <ul style="list-style-type: none"> <li>▪ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>▪ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>▪ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>▪ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
ODisconnect Leg	STRING	Specifies a leg on which the oDisconnect DP is armed. Possible values: <ul style="list-style-type: none"> <li>▪ 1</li> <li>▪ 2</li> <li>▪ 1,2</li> </ul> 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 8–6](#) describes configuration parameters on the T-BCSM subtab.

**Table 8–6 T-BCSM DPs**

Name	Type	Description
TBusy	STRING	Specifies how the IM-SCF arms tBusy. Possible values: <ul style="list-style-type: none"> <li>▪ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>▪ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>▪ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>▪ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED

**Table 8–6 (Cont.) T-BCSM DPs**

Name	Type	Description
TNoAnswer	STRING	<p>Specifies how the IM-SCF arms tNoAnswer.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> <p>Default value: INTERRUPTED</p>
CallAccepted	STRING	<p>Specifies how the IM-SCF arms CallAccepted.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> <p>Default value: NOTIFY_AND_CONTINUE</p>
TAnswer	STRING	<p>Specifies how the IM-SCF arms tAnswer.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> <p>Default value: INTERRUPTED</p>

**Table 8–6 (Cont.) T-BCSM DPs**

Name	Type	Description
TDisconnect	STRING	Specifies how the IM-SCF arms tDisconnect. Possible values: <ul style="list-style-type: none"> <li>▪ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>▪ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>▪ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>▪ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
TAbandon	STRING	Specifies how the IM-SCF arms tAbandon. Possible values: <ul style="list-style-type: none"> <li>▪ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>▪ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>▪ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>▪ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
TDisconnect Leg	STRING	Specifies a leg on which the tDisconnect DP is armed. Possible values: <ul style="list-style-type: none"> <li>▪ 1</li> <li>▪ 2</li> <li>▪ 1,2</li> </ul> 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 8–7](#) describes configuration parameters on the Initiate Call Attempt subtab.

**Table 8-7 Initial Call Attempt DPs**

Name	Type	Description
RouteSelectFailure	STRING	Specifies how the IM-SCF arms RouteSelectFailure. Possible values: <ul style="list-style-type: none"> <li>▪ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>▪ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>▪ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>▪ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
OCalledPartyBusy	STRING	Specifies how the IM-SCF arms oCalledPartyBusy. Possible values: <ul style="list-style-type: none"> <li>▪ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>▪ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>▪ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>▪ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
ONoAnswer	STRING	Specifies how the IM-SCF arms oNoAnswer. Possible values: <ul style="list-style-type: none"> <li>▪ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>▪ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>▪ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>▪ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED

**Table 8–7 (Cont.) Initial Call Attempt DPs**

Name	Type	Description
OTermSeized	STRING	<p>Specifies how the IM-SCF arms oTermSeized.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> <p>Default value: NOTIFY_AND_CONTINUE</p>
OAnswer	STRING	<p>Specifies how the IM-SCF arms oAnswer.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> <p>Default value: INTERRUPTED</p>
ODisconnect	STRING	<p>Specifies how the IM-SCF arms ODisconnect.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> <p>Default value: INTERRUPTED</p>

### 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 8–8](#) describes configuration parameters on the O-SMS subtab.

**Table 8–8 O-SMS DPs**

Name	Type	Description
OSmsSubmission	STRING	Specifies how the IM-SCF arms oSmsSubmission. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
OSmsFailure	STRING	Specifies how the IM-SCF arms oSmsFailure. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> 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 8–9 describes configuration parameters on the T-SMS subtab.

**Table 8–9 T-SMS DPs**

Name	Type	Description
TSmsSubmission	STRING	Specifies how the IM-SCF arms tSmsSubmission. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED

**Table 8–9 (Cont.) T-SMS DPs**

Name	Type	Description
TSmsFailure	STRING	<p>Specifies how the IM-SCF arms tSmsFailure.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> <p>Default value: INTERRUPTED</p>

## 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 8–10](#).

**Table 8–10 Charging Services Subtabs**

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

### 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 8–11 describes the configuration parameters that you need to specify for credit reservation requests.

**Table 8–11 General Parameters**

Name	Type	Description
Service Monitoring	STRING	<p>Specifies the component that monitors session duration.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Internal IM-SCF monitors session duration.</li> <li>■ External MSC monitors session duration.</li> <li>■ None Session duration is not monitored.</li> </ul> <p>Default value: None</p>
First Credit Reservation Request	STRING	<p>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.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Initial IM-OCF sends a request after an MSC sends the first session setup message.</li> <li>■ Ringing IM-OCF sends a request after an MSC sends a ringing indication.</li> <li>■ Answer IM-OCF sends a request after an MSC sends an answer indication.</li> <li>■ Never</li> </ul> <p>Default value: Initial</p>
First Credit Granted Notification	STRING	<p>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.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Initial IM-SCF sends an ApplyCharging message after an MSC sends the first session setup message.</li> <li>■ 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.</li> </ul> <p>Default value: Initial</p>

**Table 8–11 (Cont.) General Parameters**

Name	Type	Description
Start Charging Phase	STRING	Specifies when IM-SCF starts charging a session. Possible values: <ul style="list-style-type: none"> <li>■ Initial IM-SCF starts charging after an MSC sends the first session setup message.</li> <li>■ Ringing IM-SCF starts charging after an MSC sends a ringing indication.</li> <li>■ Answer IM-SCF starts charging after an MSC sends an answer indication.</li> </ul> Default value: 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.
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.

### Reauthorization Triggers

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

[Table 8–12](#) describes configuration parameters on the Reauthorization Triggers subtab.

**Table 8–12 Reauthorization Triggers Parameters**

Name	Type	Description
Info Received	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Info Received trigger.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Yes IM-SCF always reauthorizes the quota.</li> <li>■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>
Session Alerted	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Alerted trigger.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Yes IM-SCF always reauthorizes the quota.</li> <li>■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>
Session Connected	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Connected trigger.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Yes IM-SCF always reauthorizes the quota.</li> <li>■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>

**Table 8–12 (Cont.) Reauthorization Triggers Parameters**

Name	Type	Description
Session ReInvite Complete	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session ReInvite Complete trigger.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Yes IM-SCF always reauthorizes the quota.</li> <li>■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>
Session Reinvited	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Reinvited trigger.</p> <ul style="list-style-type: none"> <li>■ Yes IM-SCF always reauthorizes the quota.</li> <li>■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>
Session Update Complete	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Update Complete trigger.</p> <ul style="list-style-type: none"> <li>■ Yes IM-SCF always reauthorizes the quota.</li> <li>■ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>

**Table 8–12 (Cont.) Reauthorization Triggers Parameters**

Name	Type	Description
Session Updated	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Updated trigger.</p> <ul style="list-style-type: none"> <li>▪ Yes IM-SCF always reauthorizes the quota.</li> <li>▪ Dynamic IM-SCF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>▪ No IM-SCF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>

## 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 8–13](#).

**Table 8–13 IM-SCF CAP Phase 4 Media Resource Definition Fields**

Name	Type	Description
Name	STRING	Specifies a name of the media resource
Alias	STRING	<p>Specifies a unique identifier that applications use to instruct Service Broker which media resource to connect in order to play announcements.</p> <p>Aliases are defined in a URI format and must contain the number of the MRF. For example: mrf.12345@domain.com.</p> <p>To specify a generic alias that fits a range of aliases, you can use the question mark character (?). A question mark can be substituted by a number.</p> <p>For example, if you set the Alias parameter to mrf.1234????@network.com, this alias fits any alias in the range from mrf.12340000@network.com to mrf.12349999@ network.com.</p>
Address Digits	STRING	<p>Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource.</p> <p><b>Note:</b> 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.</p>

**Table 8–13 (Cont.) IM-SCF CAP Phase 4 Media Resource Definition Fields**

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

**Table 8–13 (Cont.) IM-SCF CAP Phase 4 Media Resource Definition Fields**

Name	Type	Description
Presentation Restriction	STRING	<p>Specifies the presentation restriction of the media resource address.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ UNDEFINED</li> <li>■ ALLOWED</li> <li>■ RESTRICTED</li> <li>■ NOT_AVAILABLE</li> </ul> <p>Default value: UNDEFINED</p>
Operation Type	STRING	<p>Possible values:</p> <ul style="list-style-type: none"> <li>■ internal: The media resource is internal part of the SSP. ConnectToResource (CTR) operation is used to connect the media resource.</li> <li>■ external: The media resource not a part of the SSP. EstablishTemporaryConnection (ETC) is used to connect the media resource.</li> </ul> <p>Default value: internal</p>
Answer Indication	BOOL	<p>Specifies how to set the ServiceInteractionIndicatorTwo.bothwayThroughConnectionInd 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.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Yes ServiceInteractionIndicatorTwo.bothwayThroughConnectionInd is set to bothwayPathRequired</li> <li>■ No ServiceInteractionIndicatorTwo.bothwayThroughConnectionInd is set to bothwayPathNotRequired</li> <li>■ None bothwayThroughConnectionInd is omitted</li> </ul>

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**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.

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## Configuring TCAP Parameters

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

Table 8–14 describes configuration parameters on the TCAP subtab.

**Table 8–14 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: 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: <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> 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.
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.

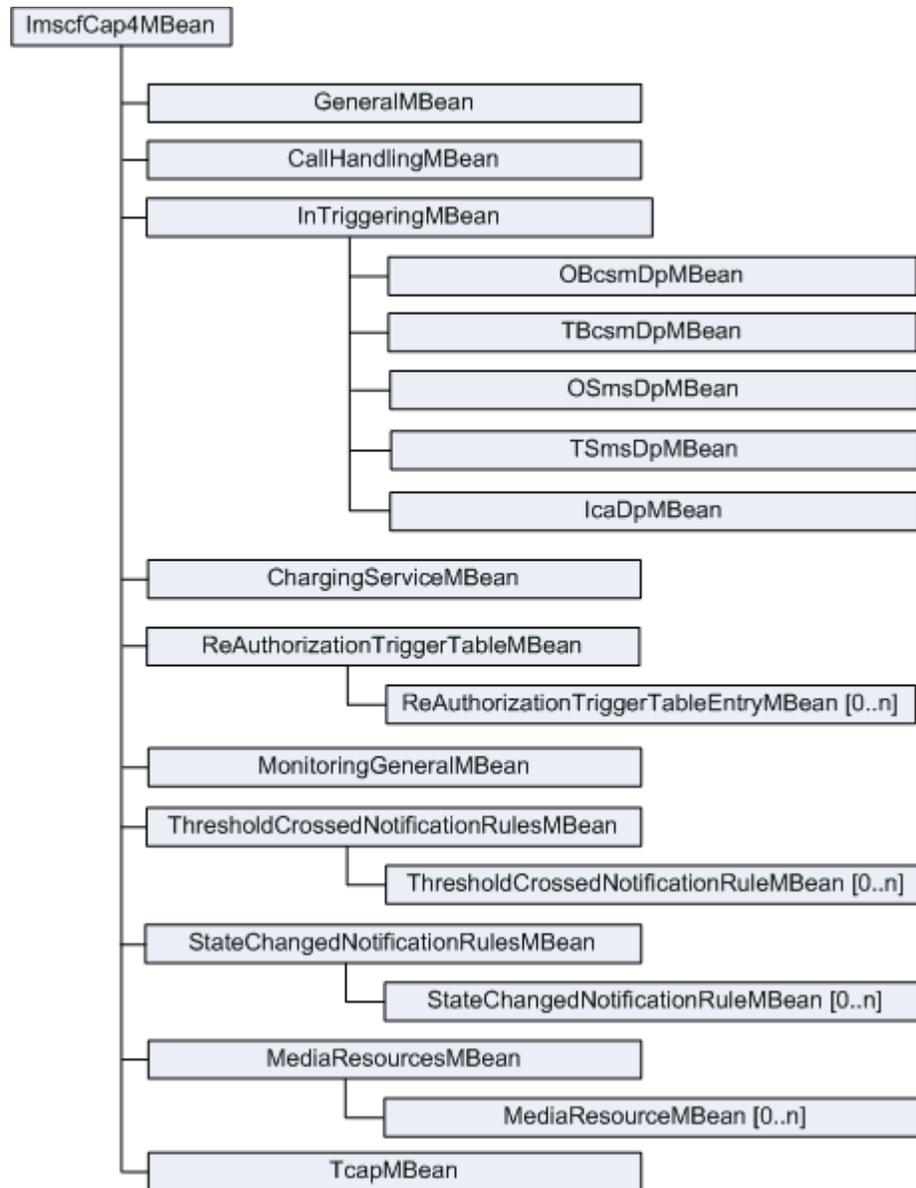
## Configuring Monitoring Parameters

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 Monitoring with the Administration Console"](#).

## Configuring IM-SCF CAP Phase 4 with the Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the IM-SCF CAP phase 4 through JMX. [Figure 8–1](#) shows the hierarchy of the IM-SCF CAP 4 MBeans.

**Figure 8–1 IM-SCF CAP Phase 4 MBeans Hierarchy**



The following sections provide reference information for the IM-SCF CAP phase 4 configuration MBeans.

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**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

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The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean

- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

## ImscfCap4MBean

ImscfCap4MBean is a root MBean for the IM-SCF CAP phase 4 configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getGeneral()**

Gets a reference to the instance of GeneralMBean

**ObjectName getCallHandling()**

Gets a reference to the instance of CallHandlingMBean

**ObjectName getInTriggering()**

Gets a reference to the instance of InTriggeringMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

**ObjectName getMediaResources()**

Gets a reference to the instance of MediaResourcesMBean

**ObjectName getTcap()**

Gets a reference to the instance of TcapMBean

## GeneralMBean

GeneralMBean enables you to specify an alias for an Interworking Module instance.

### Factory Method

Created automatically

### Attributes

Alias

For more information about this attribute, see [Table 8-2](#).

### Operations

None

## CallHandlingMBean

CallHandlingMBean enables you to configure how a call is handled.

### Factory Method

Created automatically

### Attributes

- OeReactionInterval
- ResetTimerIntervalInSeconds
- UiResetTimerIntervalInSeconds
- BodyEncodingFormat
- ActivityTestIntervalInSeconds
- RrbcsmAccumulationMode
- WaitForAssistRequestInstructionsAfterEstablishTemporaryConnection
- AssistRequestInstructionsWaitingIntervalInSeconds
- gsmSCFAddress

For more information on these attributes, see [Table 8-3](#).

### Operations

None

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## InTriggeringMBean

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

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getOBcsmDp()**

Returns a reference to the instance of OBcsmDpMBean

**ObjectName createOBcsmDp()**

Creates a new instance of OBcsmDpMBean

**void destroyOBcsmDp()**

Destroys an existing instance of OBcsmDpMBean

**ObjectName lookupOBcsmDp()**

Returns a specified instance of OBcsmDpMBean

**ObjectName getTBcsmDp()**

Returns a reference to the instance of TBcsmDpMBean

**ObjectName createTBcsmDp()**

Creates a new instance of TBcsmDpMBean

**void destroyTBcsmDp()**

Destroys an existing instance of TBcsmDpMBean

**ObjectName lookupTBcsmDp()**

Returns a specified instance of TBcsmDpMBean

**ObjectName getOSmsDp()**

Returns a reference to the instance of OSmsDpMBean

**ObjectName createOSmsDp()**

Creates a new instance of OSmsDpMBean

**void destroyOSmsDp()**

Destroys an existing instance of OSmsDpMBean

**ObjectName lookupOSmsDp()**

Returns a specified instance of OSmsDpMBean

**ObjectName getTSmsDp()**

Returns a reference to the instance of TSmsDpMBean

**ObjectName createTSmsDp()**

Creates a new instance of TSmsDpMBean

**void destroyTSmsDp()**

Destroys an existing instance of TSmsDpMBean

**ObjectName lookupTSmsDp()**

Returns a specified instance of TSmsDpMBean

**ObjectName getIcaDp()**

Returns a reference to the instance of IcaDpMBean

**ObjectName createIcaDp()**

Creates a new instance of IcaDpMBean

**void destroyIcaDp()**

Destroys an existing instance of IcaDpMBean

**ObjectName lookupIcaDp()**

Returns a specified instance of IcaDpMBean

## OBcsmDpMBean

OBcsmDpMBean enables you to configure DPs that the IM-SCF arms on the call origination side (O-BCSM).

### Factory Method

InTriggering.createOBcsmDp()

### Attributes

- RouteSelectFailure
- OCalledPartyBusy
- ONoAnswer
- OTermSeized
- OAnswer
- ODisconnect
- OAbandon
- ODisconnectLeg

For more information on these attributes, see [Table 8-5](#).

### Operations

None

## TBcsmDpMBean

TBcsmDpMBean enables you to configure DPs that the IM-SCF arms on the call termination side (T-BCSM).

### Factory Method

InTriggering.createTBcsmDp()

### Attributes

- TBusy
- TNoAnswer
- CallAccepted
- TAnswer
- TDisconnect
- TAbandon
- TDisconnectLeg

For more information on these attributes, see [Table 8-6](#).

### Operations

None

## IcaDpMBean

IcaDpMBean enables you to configure DPs that the IM-SCF arms upon receiving the InitiateCallAttempt message.

### Factory Method

InTriggering.createIcaDp()

### Attributes

- RouteSelectFailure
- OCalledPartyBusy
- ONoAnswer
- OTermSeized
- OAnswer
- ODisconnect

For more information on these attributes, see [Table 8-7](#).

### Operations

None

## OSmsDpMBean

OSmsDpMBean enables you to configure DPs that the IM-SCF arms on the SMS origination side (O-SMS).

### Factory Method

InTriggering.createOSmsDp()

### Attributes

- OSmsSubmission
- OSmsFailure

For more information on these attributes, see [Table 8-8](#).

### Operations

None

## TSmsDpMBean

TSmsDpMBean enables you to configure DPs that the IM-SCF arms on the SMS termination side (T-BCSM).

### Factory Method

InTriggering.createTSmsDp()

### Attributes

- TSmsSubmission
- TSmsFailure

For more information on these attributes, see [Table 8-9](#).

### Operations

None

## ChargingServiceMBean

ChargingServiceMBean enables you to define how IM-SCF sends credit reservation requests and to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC.

### Factory Method

Created automatically

### Attributes

- ServiceMonitoring
- FirstCreditReservationRequest
- FirstCreditGrantedNotification
- StartChargingPhase
- RequestedDuration
- RequestedVolume
- RequestedServiceUnits
- ServiceIdentifier
- TccdTimeout

For more information on these attributes, see [Table 8–11](#).

### Operations

None

## ReAuthorizationTriggerTableMBean

ReAuthorizationTriggerTableMBean is a container for instances of ReAuthorizationTriggerTableEntryMBean. Each instance of ReAuthorizationTriggerTableEntryMBean represents a single reauthorization trigger that an MSC sends to IM-SCF.

### Factory Method

Created automatically.

### Attributes

None

### Operations

**ObjectName[] getReAuthorizationTriggerTableEntry()**

Returns an array of references to instances of ReAuthorizationTriggerTableEntryMBean

**ObjectName createReAuthorizationTriggerTableEntry()**

Creates a new instance of ReAuthorizationTriggerTableEntryMBean

**void destroyReAuthorizationTriggerTableEntry()**

Destroys an existing instance of ReAuthorizationTriggerTableEntryMBean

**ObjectName lookupReAuthorizationTriggerTableEntry()**

Gets a reference to the instance of ReAuthorizationTriggerTableEntryMBean

---

## ReAuthorizationTriggerTableEntryMBean

ReAuthorizationTriggerTableMBean enables you to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC.

### Factory Method

`ReAuthorizationTriggerTable.createReAuthorizationTriggerTableEntry()`

### Attributes

- Info Received
- Session Alerted
- Session Connected
- SessionReInviteComplete
- SessionUpdateComplete
- Session Reinvited
- Session Update Complete
- Session Updated

For more information about these attributes, see [Table 8-12](#).

### Operations

None

## MediaResourcesMBean

MediaResourcesMBean is a container for instances of MediaResourceMBean. Each instance of MediaResourceMBean represents a single media resource to which an SSP can connect.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName[] getMediaResource()**

Returns an array of references to instances of MediaResourceMBean

**ObjectName createMediaResourceMBean()**

Creates a new instance of MediaResourceMBean

**void destroyMediaResourceMBean()**

Destroys an existing instance of MediaResourceMBean

**ObjectName lookupMediaResourceMBean()**

Gets a reference to the instance of MediaResourceMBean

## MediaResourceMBean

Each instance of MediaResourceMBean represents one media resource to which an SSP can connect to play announcements.

### Factory Method

MediaResources.createMediaResource()

### Attributes

- Name
- Alias
- AddressDigits
- NatureOfAddress
- AddressNumberingPlanIndicator
- NumberingQualifier
- NumberScreening
- PresentationRestriction
- OperationType
- AnswerIndication

For more information on these attributes, see [Table 8–13](#).

### Operations

None

## Tcap MBean

TcapMBean enables you to configure the TCAP layer of the module.

### Factory Method

Created automatically

### Attributes

- Class4DefaultTimeoutInSeconds
- RejectTimeoutInSeconds
- ActivateInvokeAlarmInApplicationLayer
- ApplicationPartGuardTimer
- ResultSplitLength

For more information on these attributes, see [Table 8-14](#).

### Operations

None



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## Configuring IM-SCF INAP CS-1

The following sections describe how to configure IM-SCF using the Service Broker Administration Console and Java MBeans.

### Configuring IM-SCF INAP CS-1 with the Administration Console

This section describes how to configure the IM-SCF INAP CS-1 by using the Service Broker Administration Console.

To access the IM-SCF INAP CS-1 configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The IM-SCF INAP CS-1 configuration pane contains the subtabs described in [Table 9-1](#).

**Table 9-1** IM-SCF INAP CS-1 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. For more information, see <a href="#">"Configuring General Parameters"</a>
Call Handling	Enables you to define the way that IM-SCF handles calls. See <a href="#">"Configuring Call Handling Parameters"</a> for more information.
IN Triggering	Enables you to define the IN triggers that the IM-SCF arms in the underlying session control entity. See <a href="#">"Configuring IN Triggering Parameters"</a> for more information.
Media Resources	Enables you to set up the media resources that Service Broker uses to play announcements. See <a href="#">"Configuring Media Resources Parameters"</a> for more information.
TCAP	Enables you to set up the TCAP layer of the IM-SCF. See <a href="#">"Configuring TCAP Parameters"</a> for more information.

**Table 9–1 (Cont.) IM-SCF INAP CS-1 Configuration Subtabs**

Subtab	Description
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See " <a href="#">Configuring Monitoring Parameters</a> " 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 9–2](#) describes the configuration parameter on the General subtab.

**Table 9–2 General Parameter**

Name	Type	Description
Alias	STRING	Specifies the alias of the IM's SS7 address. The alias is an index to 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 / decode SS7 messages.

## Configuring Call Handling Parameters

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

[Table 9–3](#) describes configuration parameters on the Call Handling subtab.

**Table 9–3 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
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: 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 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: 10000

**Table 9–3 (Cont.) IM-SCF INAP CS-1 Call Handling Parameters**

Name	Type	Description
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: <ul style="list-style-type: none"> <li>▪ BER</li> <li>▪ XER</li> <li>▪ None</li> </ul> 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: <ul style="list-style-type: none"> <li>▪ True</li> <li>▪ False</li> </ul>
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: <ul style="list-style-type: none"> <li>▪ True</li> <li>▪ False</li> </ul>
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
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: <ul style="list-style-type: none"> <li>▪ Address indicator (one octet), including NatureOfAddress</li> <li>▪ Address digits</li> </ul> For more information about the format of gsmSCFAddress, see 3GPP 29.002.

## 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 9–4](#).

**Table 9–4 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 <a href="#">"Configuring DPs on the Call Origination Side"</a> for more information.
T-BCSM	Enables you to configure how the IM-SCF arms DPs on the call termination side. See <a href="#">"Configuring DPs on the Call Termination Side"</a> for more information.
Initial Call Attempt	Enables you to configure how DPs that the IM-SCF arms upon receiving the InitiateCallAttempt message. See <a href="#">"Configuring DPs for Initial Call Attempt Message"</a> 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 9–5 describes configuration parameters on the O-BCSM subtab.

**Table 9–5 O-BCSM DPs**

Name	Type	Description
RouteSelectFailure	STRING	Specifies how the IM-SCF arms RouteSelectFailure. Possible values: <ul style="list-style-type: none"> <li>▪ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>▪ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>▪ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>▪ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
OCalledPartyBusy	STRING	Specifies how the IM-SCF arms oCalledPartyBusy. Possible values: <ul style="list-style-type: none"> <li>▪ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>▪ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>▪ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>▪ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED

**Table 9–5 (Cont.) O-BCSM DPs**

Name	Type	Description
ONoAnswer	STRING	Specifies how the IM-SCF arms oNoAnswer. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
OAnswer	STRING	Specifies how the IM-SCF arms oAnswer. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
ODisconnect	STRING	Specifies how the IM-SCF arms oDisconnect. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED

**Table 9–5 (Cont.) O-BCSM DPs**

Name	Type	Description
OAbandon	STRING	Specifies how the IM-SCF arms oAbandon. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
ODisconnect Leg	STRING	Specifies a leg on which the oDisconnect DP is armed. Possible values: <ul style="list-style-type: none"> <li>■ 1</li> <li>■ 2</li> <li>■ 1,2</li> </ul> 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 9–6 describes configuration parameters on the T-BCSM subtab.

**Table 9–6 T-BCSM DPs**

Name	Type	Description
TBusy	STRING	Specifies how the IM-SCF arms tBusy. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED

**Table 9–6 (Cont.) T-BCSM DPs**

Name	Type	Description
TNoAnswer	STRING	Specifies how the IM-SCF arms tNoAnswer. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
TAnswer	STRING	Specifies how the IM-SCF arms tAnswer. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
TDisconnect	STRING	Specifies how the IM-SCF arms tDisconnect. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED

**Table 9–6 (Cont.) T-BCSM DPs**

Name	Type	Description
TAbandon	STRING	Specifies how the IM-SCF arms tAbandon. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
TDisconnect Leg	STRING	Specifies a leg on which the tDisconnect DP is armed. Possible values: <ul style="list-style-type: none"> <li>■ 1</li> <li>■ 2</li> <li>■ 1,2</li> </ul> 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 9–7 describes configuration parameters on the Initiate Call Attempt subtab.

**Table 9–7 Initial Call Attempt DPs**

Name	Type	Description
RouteSelectFailure	STRING	Specifies how the IM-SCF arms RouteSelectFailure. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED

**Table 9–7 (Cont.) Initial Call Attempt DPs**

Name	Type	Description
OCalledPartyBusy	STRING	Specifies how the IM-SCF arms oCalledPartyBusy. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
ONoAnswer	STRING	Specifies how the IM-SCF arms oNoAnswer. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED
OAnswer	STRING	Specifies how the IM-SCF arms oAnswer. Possible values: <ul style="list-style-type: none"> <li>■ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>■ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>■ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>■ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> Default value: INTERRUPTED

**Table 9–7 (Cont.) Initial Call Attempt DPs**

Name	Type	Description
ODisconnect	STRING	<p>Specifies how the IM-SCF arms ODisconnect.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ INTERRUPTED The IM-SCF arms a DP as EDP-R.</li> <li>▪ NOTIFY_AND_CONTINUE The IM-SCF arms a DP as EDP-N</li> <li>▪ TRANSPARENT The IM-SCF arms a DP as TRANSPARENT</li> <li>▪ NOT_APPLICABLE The IM-SCF does not arm a DP</li> </ul> <p>Default value: INTERRUPTED</p>

## 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 INAP CS-1 Media Resource Definition Fields**

Name	Type	Description
Name	STRING	Specifies a name of the media resource
Alias	STRING	<p>Specifies a unique identifier that applications use to instruct Service Broker which media resource to connect in order to play announcements.</p> <p>Aliases are defined in a URI format. For example: mrf.network@domain.com.</p>
Address Digits	STRING	<p>Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource.</p> <p><b>Note:</b> 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'.</p>

**Table 9–8 (Cont.) IM-SCF INAP CS-1 Media Resource Definition Fields**

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

---

**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 9–9](#) describes configuration parameters on the TCAP subtab.

**Table 9–9 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: 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: <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> 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.
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.

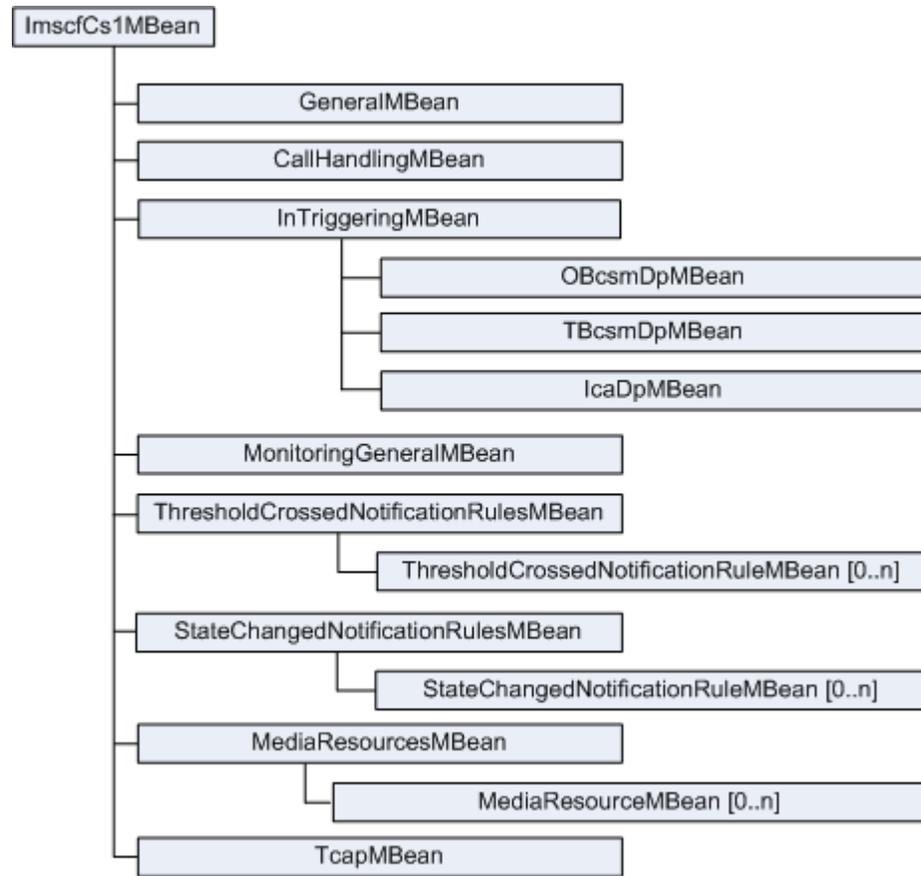
## Configuring Monitoring Parameters

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 Monitoring with the Administration Console](#)".

## Configuring IM-SCF INAP CS-1 with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the IM-SCF INAP CS-1 through JMX. [Figure 9–1](#) shows the hierarchy of the IM-SCF INAP CS-1 MBeans.

**Figure 9-1 IM-SCF INAP CS-1 MBeans Hierarchy**



The following sections provide reference information for the IM-SCF INAP CS-1 configuration MBeans.

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**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

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The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

---

## ImscfCs1MBean

ImscfCs1MBean is a root MBean for the IM-SCF INAP CS-1 configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getGeneral()**

Gets a reference to the instance of GeneralMBean

**ObjectName getCallHandling()**

Gets a reference to the instance of CallHandlingMBean

**ObjectName getInTriggering()**

Gets a reference to the instance of InTriggeringMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

**ObjectName getMediaResources()**

Gets a reference to the instance of MediaResourcesMBean

**ObjectName getTcap()**

Gets a reference to the instance of TcapMBean

## GeneralMBean

GeneralMBean enables you to specify an alias for an Interworking Module instance.

### Factory Method

Created automatically

### Attributes

Alias

For more information on this attribute, see [Table 9-2](#).

### Operations

None

## CallHandlingMBean

CallHandlingMBean enables you to configure how a call is handled.

### Factory Method

Created automatically

### Attributes

- OeReactionInterval
- ResetTimerIntervalInSeconds
- UiResetTimerIntervalInSeconds
- BodyEncodingFormat
- RrbcsmAccumulationMode
- WaitForAssistRequestInstructionsAfterEstablishTemporaryConnection
- AssistRequestInstructionsWaitingIntervalInSeconds
- gsmSCFAddress

For more information on these attributes, see [Table 9–3](#).

### Operations

None

---

## InTriggeringMBean

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

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getOBcsmDp()**

Returns a reference to the instance of OBcsmDpMBean

**ObjectName createOBcsmDp()**

Creates a new instance of OBcsmDpMBean

**void destroyOBcsmDp()**

Destroys an existing instance of OBcsmDpMBean

**ObjectName lookupOBcsmDp()**

Returns a specified instance of OBcsmDpMBean

**ObjectName getTBcsmDp()**

Returns a reference to the instance of TBcsmDpMBean

**ObjectName createTBcsmDp()**

Creates a new instance of TBcsmDpMBean

**void destroyTBcsmDp()**

Destroys an existing instance of TBcsmDpMBean

**ObjectName lookupTBcsmDp()**

Returns a specified instance of TBcsmDpMBean

**ObjectName getIcaDp()**

Returns a reference to the instance of IcaDpMBean

**ObjectName createIcaDp()**

Creates a new instance of IcaDpMBean

**void destroyIcaDp()**

Destroys an existing instance of IcaDpMBean

**ObjectName lookupIcaDp()**

Returns a specified instance of IcaDpMBean

## OBcsmDpMBean

OBcsmDpMBean enables you to configure DPs that the IM-SCF arms on the call origination side (O-BCSM).

### Factory Method

InTriggering.createOBcsmDp()

### Attributes

- routeSelectFailure
- OCalledPartyBusy
- ONoAnswer
- OTermSeized
- OAnswer
- ODisconnect
- OAbandon
- ODisconnectLeg

For more information on these attributes, see [Table 9–5](#).

### Operations

None

---

## TBcsmDpMBean

TBcsmDpMBean enables you to configure DPs that the IM-SCF arms on the call termination side (T-BCSM).

### Factory Method

InTriggering.createTBcsmDp()

### Attributes

- TBusy
- TNoAnswer
- CallAccepted
- TAnswer
- TDisconnect
- TAbandon
- TDisconnectLeg

For more information on these attributes, see [Table 9–6](#).

### Operations

None

## IcaDpMBean

IcaDpMBean enables you to configure DPs that the IM-SCF arms upon receiving the InitiateCallAttempt message.

### Factory Method

InTriggering.createIcaDp()

### Attributes

- RouteSelectFailure
- OCalledPartyBusy
- ONoAnswer
- OTermSeized
- OAnswer
- ODisconnect

For more information on these attributes, see [Table 9–7](#).

### Operations

None

## MediaResourcesMBean

MediaResourcesMBean is a container for instances of MediaResourceMBean. Each instance of MediaResourceMBean represents a single media resource to which an SSP can connect.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName[] getMediaResource()**

Returns an array of references to instances of MediaResourceMBean

**ObjectName createMediaResourceMBean()**

Creates a new instance of MediaResourceMBean

**void destroyMediaResourceMBean()**

Destroys an existing instance of MediaResourceMBean

**ObjectName lookupMediaResourceMBean()**

Gets a reference to the instance of MediaResourceMBean

---

## MediaResourceMBean

Each instance of MediaResourceMBean represents one media resource to which an SSP can connect to play announcements.

### Factory Method

MediaResources.createMediaResource()

### Attributes

- Name
- Alias
- AddressDigits
- NatureOfAddress
- AddressNumberingPlanIndicator
- OperationType
- ServiceInteractionIndicators

For more information on these attributes, see [Table 9-8](#).

### Operations

None

## Tcap MBean

TcapMBean enables you to configure the TCAP layer of the module.

### Factory Method

Created automatically

### Attributes

- Class4DefaultTimeoutInSeconds
- RejectTimeoutInSeconds
- ActivateInvokeAlarmInApplicationLayer
- ApplicationPartGuardTimer
- ResultSplitLength

For more information on these attributes, see [Table 9-9](#).

### Operations

None



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## Configuring IM-SCF WIN Phase 1

The following sections describe how to configure IM-SCF using the Service Broker Administration Console and Java MBeans.

### Configuring IM-SCF WIN Phase 1 with the Administration Console

This section describes how to configure the IM-SCF WIN phase 1 by using the Service Broker Administration Console.

To access the IM-SCF WIN phase 1 configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The IM-SCF WIN phase 1 configuration pane contains the subtabs described in [Table 10-1](#).

**Table 10-1** IM-SCF WIN Phase 1 Configuration Subtabs

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

## 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 10–2 describes the configuration parameter on the General subtab.

**Table 10–2 General Parameter**

Name	Type	Description
Alias	STRING	Specifies the alias of the IM's SS7 address. The alias is an index to 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 / decode SS7 messages.

## Configuring Call Handling Parameters

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

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

**Table 10–3 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: <ul style="list-style-type: none"> <li>■ BER</li> <li>■ XER</li> <li>■ None</li> </ul> Default value: None  In an IN mediation solution, when IM-SCF is coupled with IM-SSF, this parameter must be set to XER.
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 ConnectResource 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 10–4](#).

**Table 10–4 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.  <b>Note:</b> 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: <ul style="list-style-type: none"> <li>▪ Switched_Based: the media resource is internal part of the SSP. CCDIR operation is used to connect the media resource.</li> <li>▪ External: The media resource not a part of the SSP. ConnectResource operation is used to connect the media resource.</li> </ul>
Resource Type	STRING	Specifies the value to set in the SpecializedResource parameter of the SEIZERES operation.
Private Resource Type	STRING	Specifies the value to set in the PrivateSpecializedResource parameter of the SEIZERES operation
SN-IP Configuration	STRING	Possible values: <ul style="list-style-type: none"> <li>▪ SN IP and SCP are co-located. When you choose this option, you need to set also the SN Address parameter.</li> <li>▪ IP IP and SCP are not co-located</li> <li>▪ None</li> </ul>

**Table 10–4 (Cont.) IM-SCF WIN Phase 1 Media Resource Definition Fields**

Name	Type	Description
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 10–5](#) describes configuration parameters on the TCAP subtab.

**Table 10–5 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: 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: <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> 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.
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.

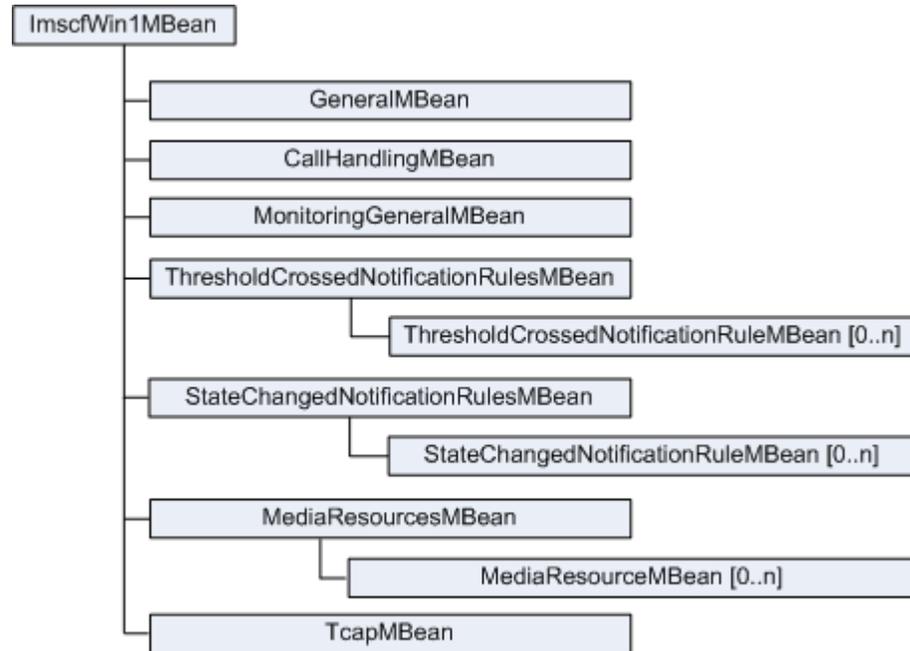
## Configuring Monitoring Parameters

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 Monitoring with the Administration Console"](#).

## Configuring IM-SCF WIN Phase 1 with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the IM-SCF WIN phase 1 through JMX. [Figure 10-1](#) shows the hierarchy of the IM-SCF WIN phase 1 MBeans.

**Figure 10-1** IM-SCF WIN Phase 1 MBeans Hierarchy



The following sections provide reference information for the IM-SCF WIN phase 1 configuration MBeans.

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**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

---

The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

---

## ImscfWin1MBean

ImscfWin1MBean is a root MBean for the IM-SCF WIN phase 2 configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getGeneral()**

Gets a reference to the instance of GeneralMBean

**ObjectName getCallHandling()**

Gets a reference to the instance of CallHandlingMBean

**ObjectName getTriggering()**

Gets a reference to the instance of TriggeringMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

**ObjectName getMediaResources()**

Gets a reference to the instance of MediaResourcesMBean

**ObjectName getTcap()**

Gets a reference to the instance of TcapMBean

## GeneralMBean

GeneralMBean enables you to specify an alias for an Interworking Module instance.

### Factory Method

Created automatically

### Attributes

Alias

For more information on this attribute, see [Table 10-2](#).

### Operations

None

---

## CallHandlingMBean

CallHandlingMBean enables you to configure how a call is handled.

### Factory Method

Created automatically

### Attributes

- OeReactionTimerInterval
- BodyEncodingFormat
- UIResetTimerIntervalInSeconds

For more information on these attributes, see [Table 10-3](#).

### Operations

None

## MediaResourcesMBean

MediaResourcesMBean is a container for instances of MediaResourceMBean. Each instance of MediaResourceMBean represents a single media resource to which an SSP can connect.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName[] getMediaResource()**

Returns an array of references to instances of MediaResourceMBean

**ObjectName createMediaResourceMBean()**

Creates a new instance of MediaResourceMBean

**void destroyMediaResourceMBean()**

Destroys an existing instance of MediaResourceMBean

**ObjectName lookupMediaResourceMBean()**

Gets a reference to the instance of MediaResourceMBean

## MediaResourceMBean

Each instance of MediaResourceMBean represents one media resource to which an SSP can connect to play announcements.

### Factory Method

MediaResources.createMediaResource()

### Attributes

- Name
- Alias
- AddressDigits
- OperationType
- SnAddress
- SnIpConfiguration
- ResourceType
- PrivateResourceType
- AnswerIndication

For more information on these attributes, see [Table 10-4](#).

### Operations

None

## Tcap MBean

TcapMBean enables you to configure the TCAP layer of the module.

### Factory Method

Created automatically

### Attributes

- Class4DefaultTimeoutInSeconds
- RejectTimeoutInSeconds
- ActivateInvokeAlarmInApplicationLayer
- ApplicationPartGuardTimer
- ResultSplitLength

For more information on these attributes, see [Table 10-5](#).

### Operations

None



## Configuring IM-SCF WIN Phase 2

The following sections describe how to configure IM-SCF using the Service Broker Administration Console and Java MBeans.

### Configuring IM-SCF WIN Phase 2 with the Administration Console

This section describes how to configure the IM-SCF WIN phase 2 using the Service Broker Administration Console.

To access the IM-SCF WIN phase 2 configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The IM-SCF WIN phase 2 configuration pane contains the subtabs described in [Table 11-1](#).

**Table 11-1** IM-SCF WIN Phase 2 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See " <a href="#">Configuring General Parameters</a> " for more information.
Call Handling	Enables you to define the way that IM-SCF handles calls. See " <a href="#">Configuring Call Handling Parameters</a> " for more information.
Media Resources	Enables you to set up the media resources that Service Broker uses to play announcements. See " <a href="#">Configuring Media Resources Parameters</a> " for more information.
TCAP	Enables you to set up the TCAP layer of the IM-SCF. See " <a href="#">Configuring TCAP Parameters</a> " for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See " <a href="#">Configuring Monitoring Parameters</a> " 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 11–2 describes the configuration parameter on the General subtab.

**Table 11–2 General Parameter**

Name	Type	Description
Alias	STRING	Specifies the alias of the IM's SS7 address. The alias is an index to 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 / decode SS7 messages.

## Configuring Call Handling Parameters

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

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

**Table 11–3 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: <ul style="list-style-type: none"> <li>▪ BER</li> <li>▪ XER</li> <li>▪ None</li> </ul> Default value: None  In an IN mediation solution, when IM-SCF is coupled with IM-SSF, this parameter must be set to XER.
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 ConnectResource operation. Whenever the timer expires, IM-SCF invokes the ResetTimer operation towards the MSC (reset SSFT) and triggers the timer again.  Default value: 20

**Table 11–3 (Cont.) IM-SCF WIN Phase 2 Call Handling Parameters**

Name	Type	Description
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. <b>Note:</b> the value defined in CCDIR Waiting Interval must be less than the value of CCDIR Interval in Seconds. Default value: 10

## 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 11–4](#).

**Table 11–4 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.
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. <b>Note:</b> 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: <ul style="list-style-type: none"> <li>▪ switch_based The media resource is internal part of the SSP. CCDIR operation is used to connect the media resource.</li> <li>▪ external The media resource not a part of the SSP. ConnectResource operation is used to connect the media resource.</li> </ul> Default value: switch_based

**Table 11–4 (Cont.) IM-SCF WIN Phase 2 Media Resource Definition Fields**

Name	Type	Description
Resource Type	STRING	Specifies the value to set in the SpecializedResource parameter of the SEIZERES operation.  Possible values: <ul style="list-style-type: none"> <li>▪ UNUSED</li> <li>▪ DTMF_TONE_DETECTOR</li> <li>▪ ASR_DIGITS</li> <li>▪ ASR_SPEECH_USER_INTERFACE</li> </ul> Default value: UNUSED
Private Resource Type	STRING	Specifies the value to set in the PrivateSpecializedResource parameter of the SEIZERES operation
SN-IP Configuration	STRING	Possible values: <ul style="list-style-type: none"> <li>▪ UNUSED</li> <li>▪ SN IP and SCP are co-located. When you choose this option, you need to set also the SN Address parameter.</li> <li>▪ IP IP and SCP are not co-located</li> </ul> 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 11–5 describes configuration parameters on the TCAP subtab.

**Table 11–5 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: 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.

**Table 11–5 (Cont.) TCAP Parameter**

Name	Type	Description
Activate Invoke Alarm in Application Layer	BOOL	<p>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.</p> <p>The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ True</li> <li>▪ False</li> </ul> <p>Default value: False.</p>
Application Part Guard Timer	INT	<p>Specifies the PSM timer, which is a timer for incoming operations.</p> <p>The PSM timer defines the maximum time in seconds that the application (TC-User) has to respond to incoming INVOKE messages.</p>
Result Split Length	INT	<p>Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.</p>

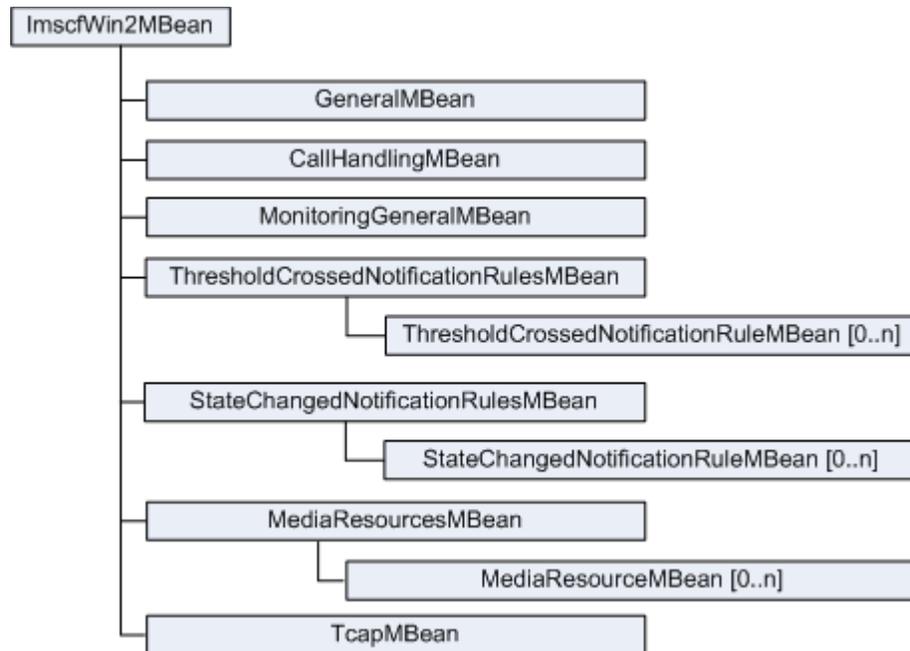
## Configuring Monitoring Parameters

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 Monitoring with the Administration Console"](#).

## Configuring IM-SCF WIN Phase 2 with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the IM-SCF WIN phase 2 through JMX. [Figure 11–1](#) shows the hierarchy of the IM-SCF WIN phase 2 MBeans.

**Figure 11-1 IM-SCF WIN phase 2 MBeans Hierarchy**



The following sections provide reference information for the IM-SCF WIN phase 2 configuration MBeans.

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**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

---

The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

## ImscfWin2MBean

ImscfWin2MBean is a root MBean for the IM-SCF WIN phase 2 configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getGeneral()**

Gets a reference to the instance of GeneralMBean

**ObjectName getCallHandling()**

Gets a reference to the instance of CallHandlingMBean

**ObjectName getTriggering()**

Gets a reference to the instance of TriggeringMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

**ObjectName getMediaResources()**

Gets a reference to the instance of MediaResourcesMBean

**ObjectName getTcap()**

Gets a reference to the instance of TcapMBean

## GeneralMBean

GeneralMBean enables you to specify an alias for an Interworking Module instance.

### Factory Method

Created automatically

### Attributes

Alias

For more information on this attribute, see [Table 11-2](#).

### Operations

None

## CallHandlingMBean

CallHandlingMBean enables you to configure how a call is handled.

### Factory Method

Created automatically

### Attributes

- OeReactionTimerInterval
- BodyEncodingFormat
- UIResetTimerIntervalInSeconds
- CcdirIntervalInSeconds
- CcdirWaitingInterval

For more information on this attribute, see [Table 11-3](#).

### Operations

None

## MediaResourcesMBean

MediaResourcesMBean is a container for instances of MediaResourceMBean. Each instance of MediaResourceMBean represents a single media resource to which an SSP can connect.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName[] getMediaResource()**

Returns an array of references to instances of MediaResourceMBean

**ObjectName createMediaResourceMBean()**

Creates a new instance of MediaResourceMBean

**void destroyMediaResourceMBean()**

Destroys an existing instance of MediaResourceMBean

**ObjectName lookupMediaResourceMBean()**

Gets a reference to the instance of MediaResourceMBean

## MediaResourceMBean

Each instance of MediaResourceMBean represents one media resource to which an SSP can connect to play announcements.

### Factory Method

MediaResources.createMediaResource()

### Attributes

- Name
- Alias
- AddressDigits
- OperationType
- SnAddress
- SnIpConfiguration
- ResourceType
- PrivateResourceType
- AnswerIndication

For more information on these attributes, see [Table 11-4](#).

### Operations

None

## Tcap MBean

TcapMBean enables you to configure the TCAP layer of the module.

### Factory Method

Created automatically

### Attributes

- Class4DefaultTimeoutInSeconds
- RejectTimeoutInSeconds
- ActivateInvokeAlarmInApplicationLayer
- ApplicationPartGuardTimer
- ResultSplitLength

For more information on these attributes, see [Table 11-5](#).

### Operations

None

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## Configuring IM-SCF AIN 0.1

The following sections describe how to configure IM-SCF using the Service Broker Administration Console and Java MBeans.

### Configuring IM-SCF AIN 0.1 with the Administration Console

This section describes how to configure the IM-SCF AIN 0.1 by using the Service Broker Administration Console.

To access the IM-SCF AIN 0.1 configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The IM-SCF AIN 0.1 configuration pane contains the subtabs described in [Table 12-1](#).

**Table 12-1** IM-SCF AIN 0.1 Configuration Subtabs

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

**Table 12–2 General Parameter**

Name	Type	Description
Alias	STRING	Specifies the alias of the IM's SS7 address. The alias is an index to 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 / decode messages.

## Configuring Call Handling Parameters

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

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

**Table 12–3 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: <ul style="list-style-type: none"> <li>■ BER</li> <li>■ XER</li> <li>■ None</li> </ul> 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: <ul style="list-style-type: none"> <li>■ continue</li> <li>■ analyzeRoute</li> </ul> Default value: analyzeRoute

**Table 12–3 (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: <ul style="list-style-type: none"> <li>▪ continue</li> <li>▪ analyzeRoute</li> </ul> Default value: analyzeRoute

## 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 12–4](#).

**Table 12–4 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: <ul style="list-style-type: none"> <li>▪ 0 PlayAnnoucnement</li> <li>▪ 1 PlayAnnouncementAndCollectDigits</li> </ul> Default value: 0

**Table 12–4 (Cont.) IM-SCF AIN 0.1 Media Resource Definition Fields**

Name	Type	Description
Disconnect Flag	BOOL	<p>Specifies whether or not to set the DisconnectFlag in SendToResource operation.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Yes The switch disconnects a call immediately after completing playing announcement</li> <li>■ No The switch does not disconnect a call immediately after completing playing announcement</li> </ul> <p>Default value: Yes</p>
Answer Indication	BOOL	<p>Specifies whether a switch sends Answer message to the calling party upon connection to the media resource.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ 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)</li> <li>■ False The media path opens only in the direction from the media resource to the caller</li> </ul> <p>Default value: True</p>

## Configuring TCAP Parameters

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

[Table 12–5](#) describes configuration parameters on the TCAP subtab.

**Table 12–5 TCAP Parameters**

Name	Type	Description
Class4 Default Timeout in Seconds	INT	<p>Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations.</p> <p>Default value: 5 seconds.</p>
Reject Timeout in Seconds	INT	<p>Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.</p>

**Table 12–5 (Cont.) TCAP Parameters**

Name	Type	Description
Activate Invoke Alarm in Application Layer	BOOL	<p>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.</p> <p>The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> <p>Default value: False.</p>
Application Part Guard Timer	INT	<p>Specifies the PSM timer, which is a timer for incoming operations.</p> <p>The PSM timer defines the maximum time in seconds that the application (TC-User) has to respond to incoming INVOKE messages.</p>
Result Split Length	INT	<p>Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.</p>

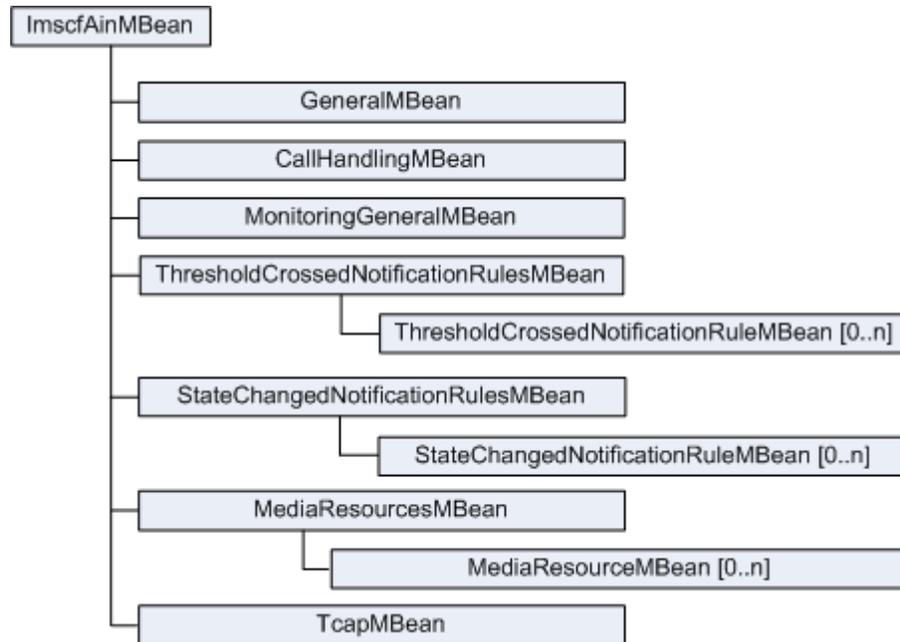
## Configuring Monitoring Parameters

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 Monitoring with the Administration Console"](#).

## Configuring IM-SCF AIN 0.1 with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the IM-SCF AIN 0.1 and IM-SCF AIN 0.2 through JMX. [Figure 12–1](#) shows the hierarchy of the IM-SCF AIN 0.1 MBeans.

**Figure 12-1 IM-SCF AIN 0.1 MBeans Hierarchy**



The following sections provide reference information for the IM-SCF AIN configuration MBeans.

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**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

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The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

## ImscfAinMBean

ImscfAinMBean is a root MBean for the IM-SCF AIN 0.1 configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getGeneral()**

Gets a reference to the instance of GeneralMBean

**ObjectName getCallHandling()**

Gets a reference to the instance of CallHandlingMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

**ObjectName getMediaResources()**

Gets a reference to the instance of MediaResourcesMBean

**ObjectName getTcap()**

Gets a reference to the instance of TcapMBean

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## GeneralMBean

GeneralMBean enables you to specify an alias for an Interworking Module instance.

### Factory Method

Created automatically

### Attributes

Alias

For more information on this attribute, see [Table 12-2](#).

### Operations

None

## CallHandlingMBean

CallHandlingMBean enables you to configure how a call is handled.

### Factory Method

Created automatically

### Attributes

- OeReactionTimeInterval
- BodyEncodingFormat
- ResponseOperationForInfoanalyzed
- ResponseOperationForInfocollected

For more information on this attribute, see [Table 12-3](#).

### Operations

None

## MediaResourcesMBean

MediaResourcesMBean is a container for instances of MediaResourceMBean. Each instance of MediaResourceMBean represents a single media resource to which an SSP can connect.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName[] getMediaResource()**

Returns an array of references to instances of MediaResourceMBean

**ObjectName createMediaResourceMBean()**

Creates a new instance of MediaResourceMBean

**void destroyMediaResourceMBean()**

Destroys an existing instance of MediaResourceMBean

**ObjectName lookupMediaResourceMBean()**

Gets a reference to the instance of MediaResourceMBean

## MediaResourceMBean

Each instance of MediaResourceMBean represents one media resource to which an SSP can connect to play announcements.

### Factory Method

MediaResources.createMediaResource()

### Attributes

- Name
- Alias
- AnnouncementOperation
- DisconnectFlag
- AnswerIndication

For more information on these attributes, see [Table 12-4](#).

### Operations

None

## Tcap MBean

TcapMBean enables you to configure the TCAP layer of the module.

### Factory Method

Created automatically

### Attributes

- Class4DefaultTimeoutInSeconds
- RejectTimeoutInSeconds
- ActivateInvokeAlarmInApplicationLayer
- ApplicationPartGuardTimer
- ResultSplitLength

For more information on these attributes, see [Table 12-5](#).

### Operations

None

## Configuring IM-SCF AIN 0.2

The following sections describe how to configure IM-SCF using the Service Broker Administration Console and Java MBeans.

### Configuring IM-SCF AIN 0.2 with the Administration Console

This section describes how to configure the IM-SCF AIN 0.2 by using the Service Broker Administration Console.

To access the IM-SCF AIN 0.2 configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The IM-SCF AIN 0.2 configuration screen contains the subtabs described in [Table 13-1](#).

**Table 13-1** IM-SCF AIN 0.2 Configuration Subtabs

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

## Configuring General Parameters

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

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

**Table 13–2 General Parameter**

Name	Type	Description
Alias	STRING	Specifies the alias of the IM's SS7 address. The alias is an index to 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 / 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 13–3.

**Table 13–3 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: <ul style="list-style-type: none"> <li>■ BER</li> <li>■ XER</li> <li>■ None</li> </ul> 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 ForInfo Analyzed	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

**Table 13–3 (Cont.) IM-SCF AIN 0.2 Call Handling Parameters**

Name	Type	Description
Response Operation For Info Collected	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

## 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 13–4](#).

**Table 13–4 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: <ul style="list-style-type: none"> <li>▪ 0 PlayAnnouncement</li> <li>▪ 1 PlayAnnouncementAndCollectDigits</li> </ul> Default value: 0
Disconnect Flag	BOOL	Specifies whether or not to set the DisconnectFlag in SendToResource operation.  Possible values: <ul style="list-style-type: none"> <li>▪ Yes The switch disconnects a call immediately after completing playing announcement</li> <li>▪ No The switch does not disconnect a call immediately after completing playing announcement</li> </ul> Default value: Yes

**Table 13–4 (Cont.) IM-SCF AIN 0.2 Media Resource Definition Fields**

Name	Type	Description
Answer Indication	BOOL	<p>Specifies whether a switch sends Answer message to the calling party upon connection to the media resource.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ 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)</li> <li>■ False The media path opens only in the direction from the media resource to the caller</li> </ul> <p>Default value: True</p>

## Configuring TCAP Parameters

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

[Table 13–5](#) describes configuration parameters on the TCAP subtab.

**Table 13–5 TCAP Parameters**

Name	Type	Description
Class4 Default Timeout in Seconds	INT	<p>Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations.</p> <p>Default value: 5 seconds.</p>
Reject Timeout in Seconds	INT	<p>Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.</p>
Activate Invoke Alarm in Application Layer	BOOL	<p>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.</p> <p>The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> <p>Default value: False.</p>
Application Part Guard Timer	INT	<p>Specifies the PSM timer, which is a timer for incoming operations.</p> <p>The PSM timer defines the maximum time in seconds that the application (TC-User) has to respond to incoming INVOKE messages.</p>

**Table 13-5 (Cont.) TCAP Parameters**

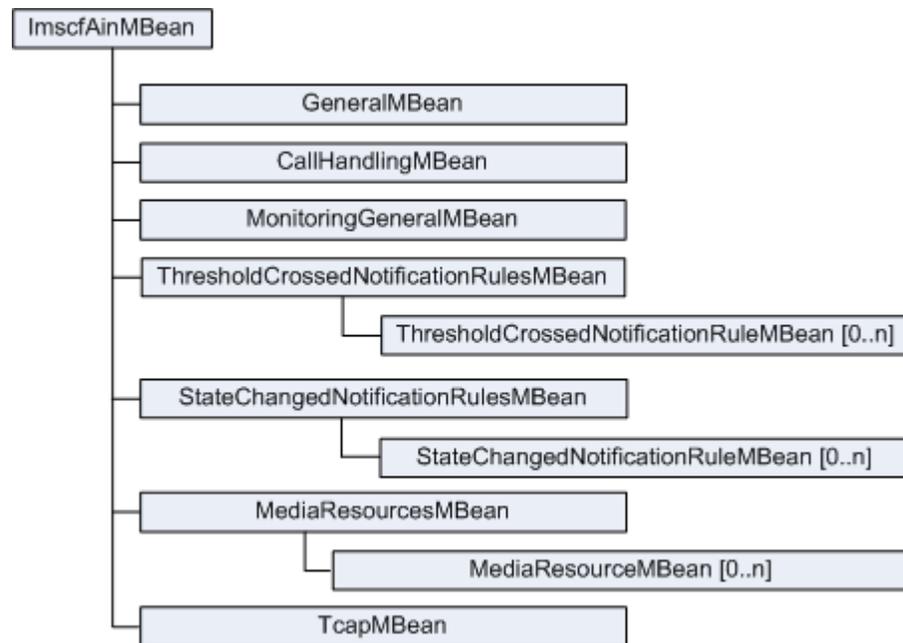
Name	Type	Description
Result Split Length	INT	Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.

## 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 ["Configuring Monitoring with the Administration Console"](#).

## Configuring IM-SCF AIN 0.2 with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the IM-SCF AIN 0.1 and IM-SCF AIN 0.2 through JMX. [Figure 13-1](#) shows the hierarchy of the IM-SCF AIN 0.2 MBeans.

**Figure 13-1 IM-SCF AIN 0.2 MBeans Hierarchy**

The following sections provide reference information for the IM-SCF AIN configuration MBeans.

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**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

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The following MBeans are common for all components of Service Broker and described in ["Configuring Monitoring with Java MBeans"](#):

- MonitoringGeneralMBean

- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

## ImscfAinMBean

ImscfAinMBean is a root MBean for the IM-SCF AIN 0.1 configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getGeneral()**

Gets a reference to the instance of GeneralMBean

**ObjectName getCallHandling()**

Gets a reference to the instance of CallHandlingMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

**ObjectName getMediaResources()**

Gets a reference to the instance of MediaResourcesMBean

**ObjectName getTcap()**

Gets a reference to the instance of TcapMBean

## GeneralMBean

GeneralMBean enables you to specify an alias for an Interworking Module instance.

### Factory Method

Created automatically

### Attributes

Alias

For more information on this attribute, see [Table 13-2](#).

### Operations

None

## CallHandlingMBean

CallHandlingMBean enables you to configure how a call is handled.

### Factory Method

Created automatically

### Attributes

- OeReactionTimeInterval
- BodyEncodingFormat
- ResponseOperationForInfoanalyzed
- ResponseOperationForInfocollected

For more information on these attributes, see [Table 13-3](#).

### Operations

None

## MediaResourcesMBean

MediaResourcesMBean is a container for instances of MediaResourceMBean. Each instance of MediaResourceMBean represents a single media resource to which an SSP can connect.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName[] getMediaResource()**

Returns an array of references to instances of MediaResourceMBean

**ObjectName createMediaResourceMBean()**

Creates a new instance of MediaResourceMBean

**void destroyMediaResourceMBean()**

Destroys an existing instance of MediaResourceMBean

**ObjectName lookupMediaResourceMBean()**

Gets a reference to the instance of MediaResourceMBean

## MediaResourceMBean

Each instance of MediaResourceMBean represents one media resource to which an SSP can connect to play announcements.

### Factory Method

MediaResources.createMediaResource()

### Attributes

- Name
- Alias
- AnnouncementOperation
- DisconnectFlag
- AnswerIndication

For more information on these attributes, see [Table 13-4](#).

### Operations

None

## Tcap MBean

TcapMBean enables you to configure the TCAP layer of the module.

### Factory Method

Created automatically

### Attributes

- Class4DefaultTimeoutInSeconds
- RejectTimeoutInSeconds
- ActivateInvokeAlarmInApplicationLayer
- ApplicationPartGuardTimer
- ResultSplitLength

For more information on these attributes, see [Table 13-5](#).

### Operations

None

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## Configuring IM-SSF CAP Phase 1

The following sections describe how to configure IM-SSF using the Service Broker Administration Console and Java MBeans.

### Configuring IM-SSF CAP Phase 1 with the Administration Console

This section describes how to configure the IM-SSF CAP phase 1 by using the Service Broker Administration Console.

To access the IM-SSF CAP phase 1 configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The IM-SSF CAP phase 1 configuration pane contains the subtabs described in [Table 14-1](#).

**Table 14-1** IM-SSF CAP Phase 1 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. For more information, see <a href="#">"Configuring General Parameters"</a> .
Call Handling	Enables you to configure how the IM-SSF handles calls. For more information, see <a href="#">"Configuring Call Handling Parameters"</a> .
Subscriber Data	Enables you to define IN triggers that the IM-SSF invokes towards the SCP above. For more information, see <a href="#">"Configuring Subscriber Data Parameters"</a> .
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 <a href="#">"Configuring Operation Propagation Parameters"</a> .
TCAP	Enables you to set up the TCAP layer of the IM-SSF. For more information, see <a href="#">"Configuring TCAP Parameters"</a> .

**Table 14–1 (Cont.) IM-SSF CAP Phase 1 Configuration Subtabs**

Subtab	Description
Monitoring	Enables you to define how Runtime MBeans and notifications operate. For more information, see " <a href="#">Configuring Monitoring Parameters</a> ".

## 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 14–2](#) describes the configuration parameter on the General subtab.

**Table 14–2 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.

## 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 CAP Phase 1 Call Handling Parameters**

Name	Type	Description
IM-SSF Mode of Operation	STRING	Specifies the IM-SSF mode of operation. Possible values: <ul style="list-style-type: none"> <li>■ DYNAMIC IM-SSF dynamically changes its call control mode, according to the mode requested by the SCP.</li> <li>■ BACK_TO_BACK IM-SSF monitors calls and ignores the mode requested by the SCP.</li> <li>■ REDIRECT IM-SSF does not monitor calls and ignores the mode requested by the SCP.</li> </ul> Default value: DYNAMIC

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

Name	Type	Description
Session Case	STRING	<p>Specifies how IM-SSF treats sessions that arrive on the southbound interface, from the OE.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ ORIG All calls are treated as originating calls</li> <li>▪ TERM All calls are treated as terminating calls</li> <li>▪ 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 Broker IM.</li> </ul> <p>Default value: DYNAMIC</p>
Tssf Duration in Seconds	INT	<p>Specifies the value, in seconds, of the IM-SSF Tssf timer.</p> <p>Default value: 20</p>
Tssf User Interaction Duration in Seconds	INT	<p>Specifies the value, in seconds, of the IM-SSF Tssf timer.</p> <p>This parameter is used when the IM-SSF is in the middle of interaction with a media resource.</p> <p>Default value: 1200</p>
Body Encoding Format	STRING	<p>Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message.</p> <p>Possible options:</p> <ul style="list-style-type: none"> <li>▪ BER</li> <li>▪ XER</li> <li>▪ NONE</li> </ul> <p>Default value: NONE</p>
NOA of Called Party Number	STRING	<p>Specifies how to set the NatureOfAddress of the CalledPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ SUBSCRIBER_NUMBER</li> <li>▪ UNKNOWN</li> <li>▪ NATIONAL</li> <li>▪ INTERNATIONAL</li> <li>▪ NETWORK_SPECIFIC</li> </ul> <p>Default value: NATIONAL</p>

**Table 14-3 (Cont.) IM-SSF CAP Phase 1 Call Handling Parameters**

Name	Type	Description
Internal Network Number Indicator of Called Party Number	BOOL	<p>Specifies how to set the InternalNetworkNumberIndicator of the CalledPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> <p>Default value: False</p>
Numbering Plan Indicator of Called Party Number	STRING	<p>Specifies how to set the NumberingPlanIndicator of the CalledPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ ISDN</li> <li>■ DATA</li> <li>■ TELEX</li> </ul> <p>Default value: DATA</p>
NOA of Calling Party Number	STRING	<p>Specifies how to set the NatureOfAddress of the CallingPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ SUBSCRIBER_NUMBER</li> <li>■ UNKNOWN</li> <li>■ NATIONAL</li> <li>■ INTERNATIONAL</li> <li>■ NETWORK_SPECIFIC</li> </ul> <p>Default value: NATIONAL</p>
Number Incomplete Indicator of Calling Party Number	BOOL	<p>Specifies how to set the IncompleteIndicator of the CallingPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible options:</p> <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> <p>Default value: True</p>

**Table 14-3 (Cont.) IM-SSF CAP Phase 1 Call Handling Parameters**

Name	Type	Description
Numbering Plan Indicator of Calling Party Number	STRING	<p>Specifies how to set the NumberingPlanIndicator of the CallingPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ ISDN</li> <li>▪ DATA</li> <li>▪ TELEX</li> </ul> <p>Default value: TELEX</p>
Screening Indicator of Calling Party Number	STRING	<p>Specifies how to set the NumberingPlanIndicator of the CallingPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ USER_PROVIDED_NOT_VERIFIED</li> <li>▪ USER_PROVIDED_VERIFIED_PASSED</li> <li>▪ USER_PROVIDED_VERIFIED_FAILED</li> <li>▪ NETWORK_PROVIDED</li> </ul> <p>Default value: USER_PROVIDED_NOT_VERIFIED</p>
Calling Party Category of Calling Party Number	STRING	<p>Specifies how to set the CallingNumberCategory of the CallingPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ UNKNOWN</li> <li>▪ LANGUAGE_FRENCH</li> <li>▪ LANGUAGE_ENGLISH</li> <li>▪ LANGUAGE_GERMAN</li> <li>▪ LANGUAGE_RUSSIAN</li> </ul> <p>Default value: LANGUAGE_ENGLISH</p>

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

Name	Type	Description
Type of Number of Called Party Number	STRING	<p>Specifies how to set the TypeOfNumber of the CalledPartyBCDNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Unknown</li> <li>■ InternationalNumber</li> <li>■ NationalNumber</li> <li>■ NetworkSpecificNumber</li> <li>■ DedicatedAccessShortcode</li> <li>■ AlphaNumericStringAttached</li> </ul> <p>Default value: NationalNumber</p>
Numbering Plan Indicator of Called Party BCD Number	STRING	<p>Specifies how to set the NumberingPlanIndicator of the CalledPartyBCDNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Unknown</li> <li>■ ISDN_TelephonyNumberingPlan</li> <li>■ DataNumberingPlan</li> <li>■ TelexNumberingPlan</li> <li>■ NationalNumberingPlan</li> </ul> <p>Default value: DataNumberingPlan</p>

## 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 CAP Phase 1 Subscriber Data Fields**

Name	Type	Description
IMSI	STRING	<p>Specifies a condition on session IMSI. When the condition is met, IM-SSF invokes triggers towards the SCP.</p> <p>To apply a rule for all IMSIs, set this parameter to Default.</p>
MSISDN	STRING	<p>Specifies a condition on session MSISDN. When the condition is met, IM-SSF invokes triggers towards the SCP.</p> <p>To apply a rule for all MSISDNs, set this parameter to Default.</p>
Service Key	STRING	Specifies a Service Key to set on the trigger to the SCP.
SCP Address Alias	STRING	<p>Specifies the SCP to which IM-SSF invokes a trigger.</p> <p>This is an alias to one of the SCCP addresses specified in the SS7 SSU configuration.</p>

**Table 14–4 (Cont.) IM-SSF CAP Phase 1 Subscriber Data Fields**

Name	Type	Description
Default Call Handling	STRING	Specifies how IM-SSF handles a call when a signal between IM-SSF and SCP fails. Possible values: <ul style="list-style-type: none"> <li>▪ CONTINUE_CALL</li> <li>▪ RELEASE_CALL</li> </ul>
TDP List	STRING_LIST	Specifies a list of TDPs that IM-SSF can trigger. Each trigger is specified in the following format: <i>id=type</i> where: id is one of the following: <ul style="list-style-type: none"> <li>▪ 2: COLLECTED_INFO</li> <li>▪ 3: ANALYSED_INFORMATION</li> <li>▪ 4: ROUTE_SELECT_FAILURE</li> <li>▪ 12: TERMINATING_ATTEMPT_AUTHORISED</li> <li>▪ 13: T_BUSY</li> <li>▪ 14: T_NO_ANSWER</li> </ul> type is one of the following: <ul style="list-style-type: none"> <li>▪ R, which means Interrupt</li> <li>▪ N, which means Notify</li> </ul> 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 14–5](#).

**Table 14–5 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.

**Table 14–5 (Cont.) IM-SSF CAP Phase 1 Operation Propagation**

Name	Type	Description
Enable Propagation	BOOL	<p>Specifies whether IM-SSF processes operations on its own or propagates a request to the session control layer.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ True The IM-SSF propagates RRBCSMEvent operations.</li> <li>▪ False The IM-SSF processes RRBCSMEvent operations.</li> </ul> <p>Default value: True</p>

## 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 Parameter**

Name	Type	Description
Class4 Default Timeout in Seconds	INT	<p>Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations.</p> <p>Default value: 5</p>
Reject Timeout in Seconds	INT	<p>Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.</p> <p>Default value: 1000</p>
Application Part Guard Timer	INT	<p>Specifies the PSM timer, which is a timer for incoming operations.</p> <p>The PSM timer defines the maximum time in seconds that the application (TC-User) has to respond to incoming INVOKE messages.</p> <p>Default value: 200</p>
Activate Invoke Alarm in Application Layer	BOOL	<p>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.</p> <p>The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ True</li> <li>▪ False</li> </ul> <p>Default value: False</p>

**Table 14–6 (Cont.) TCAP Parameter**

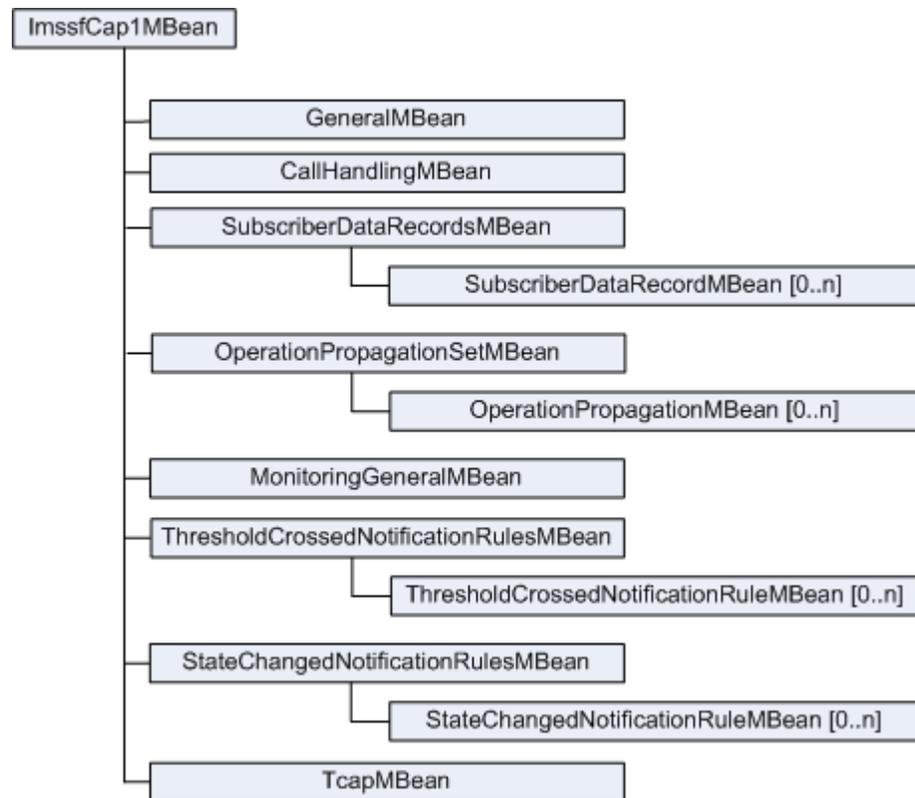
Name	Type	Description
Result Split Length	INT	Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split. Default value: 512

## 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 Monitoring with the Administration Console"](#).

## Configuring IM-SSF CAP Phase 1 with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the IM-SSF CAP phase 1 through JMX. [Figure 14–1](#) shows the hierarchy of the IM-SSF CAP 1 MBeans.

**Figure 14–1 IM-SSF CAP Phase 1 MBeans Hierarchy**

The following sections provide reference information for the IM-SSF CAP phase 1 configuration MBeans.

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**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

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The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

---

## ImssfCap1MBean

ImssfCap1MBean is a root MBean for the IM-SSF CAP phase 1 configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getGeneral()**

Gets a reference to the instance of GeneralMBean

**ObjectName getCallHandling()**

Gets a reference to the instance of CallHandlingMBean

**ObjectName getSubscriberDataRecords()**

Gets a reference to the instance of SubscriberDataRecordsMBean

**ObjectName getOperationPropagationSet()**

Gets a reference to the instance of OperationPropagationSetMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

**ObjectName getMediaResources()**

Gets a reference to the instance of MediaResourcesMBean

**ObjectName getTcap()**

Gets a reference to the instance of TcapMBean

## GeneralMBean

GeneralMBean enables you to specify an alias for an Interworking Module instance.

### Factory Method

Created automatically

### Attributes

Alias

For more information on this attribute, see [Table 14-2](#).

### Operations

None

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## CallHandlingMBean

CallHandlingMBean enables you to configure how a call is handled.

### Factory Method

Created automatically

### Attributes

- ImssfModeOfOperation
- SessionCase
- TssfDurationInSeconds
- TssfUserInteractionDurationInSeconds
- BodyEncodingFormat
- NoaOfCalledPartyNumber
- InternalNetworkNumberIndicatorOfCalledPartyNumber
- NumberingPlanIndicatorOfCalledPartyNumber
- NoaOfCallingPartyNumber
- NumberIncompleteIndicatorOfCallingPartyNumber
- NumberingPlanIndicatorOfCallingPartyNumber
- ScreeningIndicatorOfCallingPartyNumber
- CallingPartyCategoryOfCallingPartyNumber
- TypeOfNumberOfCalledPartyNumber
- NumberingPlanIndicatorOfCalledPartyBcdNumber

For more information on these attributes, see [Table 14-3](#).

### Operations

None

## SubscriberDataRecordsMBean

SubscriberDataRecordsMBean is a container for instances of SubscriberDataRecordMBean. Each instance of SubscriberDataRecordMBean defines an IN trigger that the IM-SSF invokes to the SCP above.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getSubscriberDataRecords()**

Gets an array of references to instances of SubscriberDataRecordMBean

**ObjectName createSubscriberDataRecordMBean()**

Creates a new instance of SubscriberDataRecordMBean

**void destroySubscriberDataRecordMBean()**

Destroys an existing instance of SubscriberDataRecordMBean

**ObjectName lookupSubscriberDataRecordMBean()**

Gets a reference to the instance of SubscriberDataRecordMBean

## SubscriberDataRecordMBean

Each instance of SubscriberDataRecordMBean defines an IN trigger that IM-SSF invokes to the SCP above.

### Factory Method

SubscriberDataRecords.createSubscriberDataRecord()

### Attributes

- Imsi
- Msisdn
- ServiceKey
- ScpAddressAlias
- DefaultCallHandling
- TdpList

For more information on these attributes, see [Table 14-4](#).

### Operations

None

## OperationPropagationSetMBean

OperationPropagationSetMBean is a container for instances of OperationPropagationMBean. Each instance of OperationPropagationMBean defines whether the IM-SSF processes a specific operation on its own or propagates this operation to another module.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getOperationPropagation()**

Gets an array of references to instances of OperationPropagationMBean

**ObjectName createOperationPropagationMBean()**

Creates a new instance of OperationPropagationMBean

**void destroyOperationPropagationMBean()**

Destroys an existing instance of OperationPropagationMBean

**ObjectName lookupOperationPropagationMBean()**

Gets a reference to the instance of OperationPropagationMBean

## OperationPropagationMBean

Each instance of OperationPropagationMBean defines an operation that the IM-SSF either processes on its own or propagates to this operation to another module.

### Factory Method

OperationPropagationSet.createOperationPropagation()

### Attributes

- Operation
- ModuleName
- EnablePropagation

For more information on these attributes, see [Table 14–5](#).

### Operations

None

## Tcap MBean

TcapMBean enables you to configure the TCAP layer of the module.

### Factory Method

Created automatically

### Attributes

- Class4DefaultTimeoutInSeconds
- RejectTimeoutInSeconds
- ActivateInvokeAlarmInApplicationLayer
- ApplicationPartGuardTimer
- ResultSplitLength

For more information on these attributes, see [Table 14–6](#).

### Operations

None

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## Configuring IM-SSF CAP Phase 2

The following sections describe how to configure IM-SSF using the Service Broker Administration Console and Java MBeans.

### Configuring IM-SSF CAP Phase 2 with the Administration Console

This section describes how to configure the IM-SSF CAP phase 2 by using the Service Broker Administration Console.

To access the IM-SSF CAP phase 2 configuration screen:

1. In the domain navigation pane, expand OCSB.
2. Expand **Processing Tier**.
3. Expand Interworking Modules.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The IM-SSF CAP phase 2 configuration pane contains the subtabs described in [Table 15-1](#).

**Table 15-1** IM-SSF CAP Phase 2 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See " <a href="#">Configuring General Parameters</a> " for more information.
Call Handling	Enables you to configure how the IM-SSF handles calls. See " <a href="#">Configuring Call Handling Parameters</a> " for more information.
Subscriber Data	Enables you to define IN triggers that the IM-SSF invokes towards the SCP above. See " <a href="#">Configuring Subscriber Data Parameters</a> " 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 " <a href="#">Configuring Operation Propagation Parameters</a> " for more information.
Charging	Enables you to configure functionality related to charging operations. See " <a href="#">Configuring Charging Parameters</a> " for more information.

**Table 15–1 (Cont.) IM-SSF CAP Phase 2 Configuration Subtabs**

Subtab	Description
Media Resources	Enables you to set up the media resources that Service Broker uses to play announcements. See <a href="#">"Configuring Media Resources Parameters"</a> for more information.
TCAP	Enables you to set up the TCAP layer of the IM-SSF. See <a href="#">"Configuring TCAP Parameters"</a> for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See <a href="#">"Configuring Monitoring Parameters"</a> for more information.

## Configuring General Parameters

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

[Table 15–2](#) describes the configuration parameter on the General subtab.

**Table 15–2 General Parameter**

Name	Type	Description
Alias	STRING	Specifies the alias of the IM's SS7 address. The alias is an index to 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 / 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 CAP Phase 2 Call Handling Parameters**

Name	Type	Description
IM-SSF Mode of Operation	STRING	<p>Specifies the IM-SSF mode of operation.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ DYNAMIC IM-SSF dynamically changes its call control mode, according to the mode requested by the SCP.</li> <li>■ BACK_TO_BACK IM-SSF monitors calls and ignores the mode requested by the SCP.</li> <li>■ REDIRECT IM-SSF does not monitor calls and ignores the mode requested by the SCP.</li> </ul> <p>Default value: DYNAMIC</p>
Session Case	STRING	<p>Specifies how IM-SSF treats sessions that arrive on the southbound interface, from the OE.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ ORIG All calls are treated as originating calls</li> <li>■ TERM All calls are treated as terminating calls.</li> <li>■ 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 Broker IM.</li> </ul> <p>Default value: ORIG</p>
Tssf Duration in Seconds	INT	<p>Specifies the value, in seconds, of the IM-SSF Tssf timer.</p> <p>Default value: 20</p>
Tssf User Interaction Duration in Seconds	INT	<p>Specifies the value, in seconds, of the IM-SSF Tssf timer.</p> <p>This parameter is used when the IM-SSF is in the middle of interaction with a media resource.</p> <p>Default value: 1200</p>

**Table 15-3 (Cont.) IM-SSF CAP Phase 2 Call Handling Parameters**

Name	Type	Description
IM-SSF Media Capability	BOOL	<p>Specifies whether or not the underlying network supports IP/SRF/MRF.</p> <p>This determines if the IM-SSF can handle media-related operations, such as EstablishTemporaryConnection or ConnectToResource.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> <p>Default value: True</p>
Body Encoding Format	STRING	<p>Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message.</p> <p>Possible options:</p> <ul style="list-style-type: none"> <li>■ BER</li> <li>■ XER</li> <li>■ NONE</li> </ul> <p>Default value: NONE</p>
NOA of Called Party Number	STRING	<p>Specifies how to set the NatureOfAddress of the CalledPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ SUBSCRIBER_NUMBER</li> <li>■ UNKNOWN</li> <li>■ NATIONAL</li> <li>■ INTERNATIONAL</li> <li>■ NETWORK_SPECIFIC</li> </ul> <p>Default values: NATIONAL</p>
Internal Network Number Indicator of Called Party Number	BOOL	<p>Specifies how to set the InternalNetworkNumberIndicator of the CalledPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> <p>Default value: True</p>

**Table 15–3 (Cont.) IM-SSF CAP Phase 2 Call Handling Parameters**

Name	Type	Description
Numbering Plan Indicator of Called Party Number	STRING	<p>Specifies how to set the NumberingPlanIndicator of the CalledPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ ISDN</li> <li>■ DATA</li> <li>■ TELEX</li> </ul> <p>Default value: DATA</p>
NOA of Calling Party Number	STRING	<p>Specifies how to set the NatureOfAddress of the CallingPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ SUBSCRIBER_NUMBER</li> <li>■ UNKNOWN</li> <li>■ NATIONAL</li> <li>■ INTERNATIONAL</li> <li>■ NETWORK_SPECIFIC</li> </ul> <p>Default values: NATIONAL</p>
Number Incomplete Indicator of Calling Party Number	BOOL	<p>Specifies how to set the IncompleteIndicator of the CallingPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible options:</p> <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> <p>Default value: True</p>
Numbering Plan Indicator of Calling Party Number	STRING	<p>Specifies how to set the NumberingPlanIndicator of the CallingPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ ISDN</li> <li>■ DATA</li> <li>■ TELEX</li> </ul> <p>Default value: DATA</p>

**Table 15–3 (Cont.) IM-SSF CAP Phase 2 Call Handling Parameters**

Name	Type	Description
Screening Indicator of Calling Party Number	STRING	<p>Specifies how to set the <code>NumberingPlanIndicator</code> of the <code>CallingPartyNumber</code>.</p> <p>This parameter is used when the IM-SSF sends a new <code>InitialDP</code> message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ <code>USER_PROVIDED_NOT_VERIFIED</code></li> <li>▪ <code>USER_PROVIDED_VERIFIED_PASSED</code></li> <li>▪ <code>USER_PROVIDED_VERIFIED_FAILED</code></li> <li>▪ <code>NETWORK_PROVIDED</code></li> </ul> <p>Default value: <code>USER_PROVIDED_NOT_VERIFIED</code></p>
Calling Party Category of Calling Party Number	STRING	<p>Specifies how to set the <code>CallingNumberCategory</code> of the <code>CallingPartyNumber</code>.</p> <p>This parameter is used when the IM-SSF sends a new <code>InitialDP</code> message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ <code>UNKNOWN</code></li> <li>▪ <code>LANGUAGE_FRENCH</code></li> <li>▪ <code>LANGUAGE_ENGLISH</code></li> <li>▪ <code>LANGUAGE_GERMAN</code></li> <li>▪ <code>LANGUAGE_RUSSIAN</code></li> </ul> <p>Default value: <code>LANGUAGE_ENGLISH</code></p>
Type of Number of Called Party Number	STRING	<p>Specifies how to set the <code>TypeOfNumber</code> of the <code>CalledPartyBCDNumber</code>.</p> <p>This parameter is used when the IM-SSF sends a new <code>InitialDP</code> message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ <code>Unknown</code></li> <li>▪ <code>InternationalNumber</code></li> <li>▪ <code>NationalNumber</code></li> <li>▪ <code>NetworkSpecificNumber</code></li> <li>▪ <code>DedicatedAccessShortcode</code></li> </ul> <p>Default value: <code>NationalNumber</code></p>

**Table 15–3 (Cont.) IM-SSF CAP Phase 2 Call Handling Parameters**

Name	Type	Description
Numbering Plan Indicator of Called Party BCD Number	STRING	<p>Specifies how to set the NumberingPlanIndicator of the CalledPartyBCDNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Unknown</li> <li>■ ISDN_TelephonyNumberingPlan</li> <li>■ DataNumberingPlan</li> <li>■ TelexNumberingPlan</li> <li>■ NationalNumberingPlan</li> </ul> <p>Default value: DataNumberingPlan</p>

## 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 CAP Phase 2 Subscriber Data Fields**

Name	Type	Description
IMSI	STRING	Specifies a condition on session IMSI. When the condition is met, IM-SSF invokes triggers towards the SCP.
MSISDN	STRING	Specifies a condition on session MSISDN. When the condition is met, IM-SSF invokes triggers towards the SCP.
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	<p>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).</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ CONTINUE_CALL</li> <li>■ RELEASE_CALL</li> </ul> <p>Default value: CONTINUE_CALL</p>

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

Name	Type	Description
TDP List	STRING_LIST	<p>Specifies a list of TDPs that must be triggered. Each trigger is specified in the following format:</p> <p><i>id=type</i></p> <p>where:</p> <p>id is one of the following:</p> <ul style="list-style-type: none"> <li>▪ 2: COLLECTED_INFO</li> <li>▪ 3: ANALYSED_INFORMATION</li> <li>▪ 4: ROUTE_SELECT_FAILURE</li> <li>▪ 12: TERMINATING_ATTEMPT_AUTHORISED</li> <li>▪ 13: T_BUSY</li> <li>▪ 14: T_NO_ANSWER</li> </ul> <p>type is one of the following:</p> <ul style="list-style-type: none"> <li>▪ R, which means Interrupt</li> <li>▪ N, which means Notify</li> </ul> <p>13=R, 14=N</p>

## 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 15–5](#).

**Table 15–5 IM-SSF CAP Phase 2 Operation Propagation**

Name	Type	Description
Name	STRING	Specifies a unique identifier.
Operation	STRING	<p>Specifies an operation.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ RequestReportBCSMEvent</li> <li>▪ PlayAnnouncement</li> <li>▪ PromptAndCollect</li> <li>▪ FurnishChargingInfo</li> <li>▪ ApplyCharging</li> </ul>
Module name	STRING	Specifies a name of a module instance to which an operation is propagated.

**Table 15–5 (Cont.) IM-SSF CAP Phase 2 Operation Propagation**

Name	Type	Description
Enable Propagation	BOOL	Specifies whether IM-SSF processes operations on its own or propagates a request to the session control layer. Possible values: <ul style="list-style-type: none"> <li>▪ True The IM-SSF propagates RRBCSMEvent operations.</li> <li>▪ False The IM-SSF processes RRBCSMEvent operations.</li> </ul> Default value: True

## Configuring Charging Parameters

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

[Table 15–6](#) describes configuration parameters on the Charging subtab.

**Table 15–6 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 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 15–7](#).

**Table 15–7 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 Broker 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.

**Table 15-7 (Cont.) IM-SSF CAP Phase 2 Media Resource Definition Fields**

Name	Type	Description
Nature of Address	STRING	<p>Specifies the NatureOfAddress part of the media resource address. The media resource address is used to set up a connection towards the media resource.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ SUBSCRIBER_NUMBER</li> <li>■ UNKNOWN</li> <li>■ NATIONAL</li> <li>■ INTERNATIONAL</li> <li>■ NETWORK_SPECIFIC</li> </ul> <p>Default value: SUBSCRIBER_NUMBER</p>
Address Numbering Plan Indicator	STRING	<p>Specifies the NumberingPlanInd part of the media resource address. The media resource address is used to set up a connection towards the media resource.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ ISDN</li> <li>■ DATA</li> <li>■ TELEX</li> </ul>
Numbering Qualifier	STRING	<p>Specifies the numbering qualifier of the media resource address.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ NONE</li> <li>■ DIALLED_DIGITS</li> <li>■ USER_PROVIDED_FAILED_NETWORK_SCREENING</li> <li>■ USER_PROVIDED_NOT_SCREENED</li> <li>■ REDIRECTING_TERMINATING_NUMBER</li> </ul> <p>Default value: NONE</p>
Number Screening	STRING	<p>Specifies the numbering screening of the media resource address.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ UNDEFINED</li> <li>■ USER_PROVIDED_NOT_VERIFIED</li> <li>■ USER_PROVIDED_VERIFIED_PASSED</li> <li>■ USER_PROVIDED_VERIFIED_FAILED</li> <li>■ NETWORK_PROVIDED</li> </ul> <p>Default value: UNDEFINED</p>

**Table 15–7 (Cont.) IM-SSF CAP Phase 2 Media Resource Definition Fields**

Name	Type	Description
Presentation Restriction	STRING	Specifies the presentation restriction of the media resource address. Possible values: <ul style="list-style-type: none"> <li>▪ UNDEFINED</li> <li>▪ ALLOWED</li> <li>▪ RESTRICTED</li> <li>▪ NOT_AVAILABLE</li> </ul> Default value: UNDEFINED
Operation Type	STRING	Possible values: <ul style="list-style-type: none"> <li>▪ Internal: The media resource is internal part of the SSP. ConnectToResource (CTR) operation is used to connect the media resource.</li> <li>▪ External: The media resource not a part of the SSP. EstablishTemporaryConnection (ETC) is used to connect the media resource.</li> </ul>
Answer Indication	BOOL	Specifies how to set the bothwayThroughConnectionInd in the ServiceInteractionIndicatorTwo parameter in the ETC and CTR operations. Possible values: <ul style="list-style-type: none"> <li>▪ True 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).</li> <li>▪ False The media path opens only in the direction from the media resource to the caller.</li> </ul> Default value: True

---

**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 15–8](#) describes configuration parameters in the TCAP subtab.

**Table 15–8 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: <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> 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

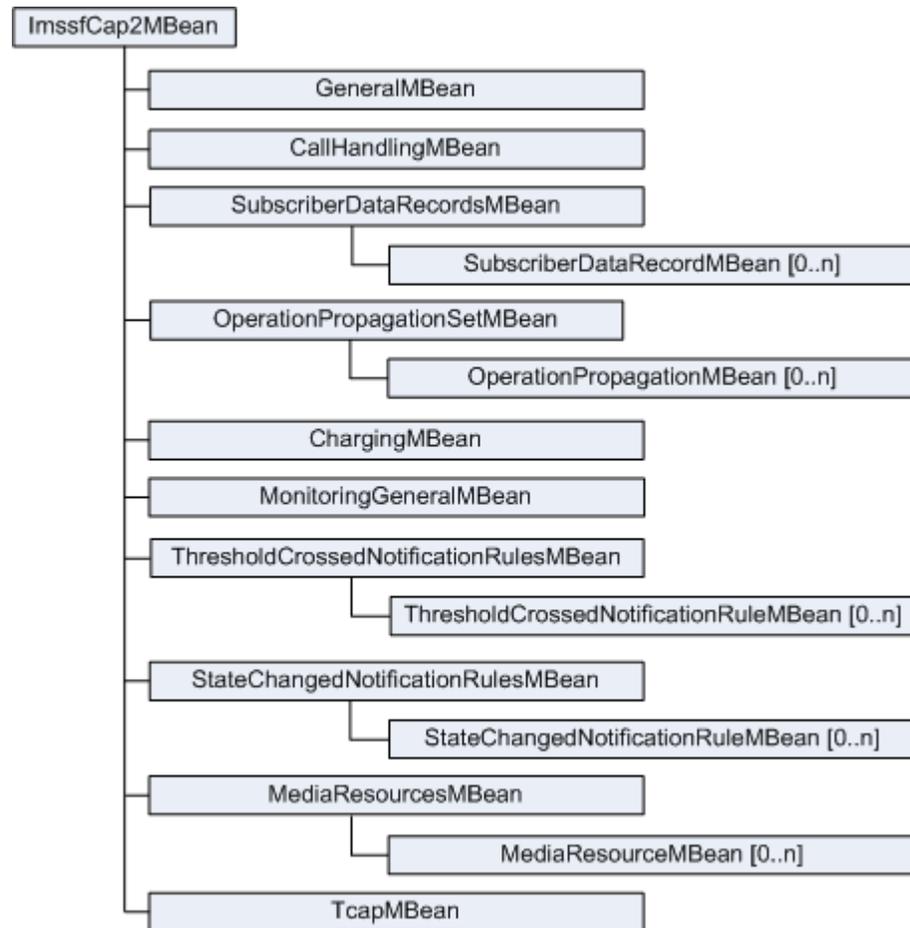
## Configuring Monitoring Parameters

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 Monitoring with the Administration Console"](#).

## Configuring IM-SSF CAP Phase 2 with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the IM-SSF CAP phase 2 through JMX. [Figure 15-1](#) shows the hierarchy of the IM-SSF CAP 2 MBeans.

**Figure 15-1** IM-SSF CAP Phase 2 MBeans Hierarchy



The following sections provide reference information for the IM-SSF CAP phase 2 configuration MBeans.

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**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

---

The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

## ImssfCap2MBean

ImssfCap2MBean is a root MBean for the IM-SSF CAP phase 2 configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getGeneral()**

Gets a reference to the instance of GeneralMBean

**ObjectName getCallHandling()**

Gets a reference to the instance of CallHandlingMBean

**ObjectName getSubscriberDataRecords()**

Gets a reference to the instance of SubscriberDataRecordsMBean

**ObjectName getOperationPropagationSet()**

Gets a reference to the instance of OperationPropagationSetMBean

**ObjectName getCharging()**

Gets a reference to the instance of ChargingMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

**ObjectName getMediaResources()**

Gets a reference to the instance of MediaResourcesMBean

**ObjectName getTcap()**

Gets a reference to the instance of TcapMBean

## GeneralMBean

GeneralMBean enables you to specify an alias for an Interworking Module instance.

### Factory Method

Created automatically

### Attributes

Alias

For more information on this attribute, see [Table 15-2](#).

### Operations

None

## CallHandlingMBean

CallHandlingMBean enables you to configure how a call is handled.

### Factory Method

Created automatically

### Attributes

- ImssfModeOfOperation
- SessionCase
- TssfDurationInSeconds
- TssfUserInteractionDurationInSeconds
- ImssfMediaCapability
- BodyEncodingFormat
- NoaOfCalledPartyNumber
- InternalNetworkNumberIndicatorOfCalledPartyNumber
- NumberingPlanIndicatorOfCalledPartyNumber
- NoaOfCallingPartyNumber
- NumberIncompleteteIndicatorOfCallingPartyNumber
- NumberingPlanIndicatorOfCallingPartyNumber
- ScreeningIndicatorOfCallingPartyNumber
- CallingPartyCategoryOfCallingPartyNumber
- TypeOfNumberOfCalledPartyNumber
- NumberingPlanIndicatorOfCalledPartyBcdNumber

For more information on these attributes, see [Table 15-3](#).

### Operations

None

## SubscriberDataRecordsMBean

SubscriberDataRecordsMBean is a container for instances of SubscriberDataRecordMBean. Each instance of SubscriberDataRecordMBean defines an IN trigger that the IM-SSF invokes to the SCP above.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getSubscriberDataRecords()**

Gets an array of references to instances of SubscriberDataRecordMBean

**ObjectName createSubscriberDataRecordMBean()**

Creates a new instance of SubscriberDataRecordMBean

**void destroySubscriberDataRecordMBean()**

Destroys an existing instance of SubscriberDataRecordMBean

**ObjectName lookupSubscriberDataRecordMBean()**

Gets a reference to the instance of SubscriberDataRecordMBean

---

## SubscriberDataRecordMBean

Each instance of SubscriberDataRecordMBean defines an IN trigger that the IM-SSF invokes to the SCP above.

### Factory Method

SubscriberDataRecords.createSubscriberDataRecord()

### Attributes

- Imsi
- Msisdn
- ServiceKey
- ScpAddressAlias
- DefaultCallHandling
- TdpList

For more information on these attributes, see [Table 15-4](#).

### Operations

None

## OperationPropagationSetMBean

OperationPropagationSetMBean is a container for instances of OperationPropagationMBean. Each instance of OperationPropagationMBean defines whether the IM-SSF processes a specific operation on its own or propagates this operation to another module.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getOperationPropagation()**

Gets an array of references to instances of OperationPropagationMBean

**ObjectName createOperationPropagationMBean()**

Creates a new instance of OperationPropagationMBean

**void destroyOperationPropagationMBean()**

Destroys an existing instance of OperationPropagationMBean

**ObjectName lookupOperationPropagationMBean()**

Gets a reference to the instance of OperationPropagationMBean

## OperationPropagationMBean

Each instance of OperationPropagationMBean defines an operation that the IM-SSF either processes on its own or propagates this operation to another module.

### Factory Method

OperationPropagationSet.createOperationPropagation()

### Attributes

- Operation
- ModuleName
- EnablePropagation

For more information on these attributes, see [Table 15-5](#).

### Operations

None

## ChargingMBean

ChargingMBean enables you to configure functionality related to charging operations.

### Factory Method

Created automatically

### Attributes

TccdInSeconds

For more information on these attributes, see [Table 15-6](#).

### Operations

None

## MediaResourcesMBean

MediaResourcesMBean is a container for instances of MediaResourceMBean. Each instance of MediaResourceMBean represents a single media resource to which an SSP can connect.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName[] getMediaResource()**

Returns an array of references to instances of MediaResourceMBean

**ObjectName createMediaResourceMBean()**

Creates a new instance of MediaResourceMBean

**void destroyMediaResourceMBean()**

Destroys an existing instance of MediaResourceMBean

**ObjectName lookupMediaResourceMBean()**

Gets a reference to the instance of MediaResourceMBean

## MediaResourceMBean

Each instance of MediaResourceMBean represents one media resource to which an SSP can connect to play announcements.

### Factory Method

MediaResources.createMediaResource()

### Attributes

- Name
- Alias
- AddressDigits
- NatureOfAddress
- AddressNumberingPlanIndicator
- NumberingQualifier
- NumberScreening
- PresentationRestriction
- OperationType
- AnswerIndication

For more information on these attributes, see [Table 15-7](#).

### Operations

None

---

## Tcap MBean

TcapMBean enables you to configure the TCAP layer of the module.

### Factory Method

Created automatically

### Attributes

- Class4DefaultTimeoutInSeconds
- RejectTimeoutInSeconds
- ActivateInvokeAlarmInApplicationLayer
- ApplicationPartGuardTimer
- ResultSplitLength

For more information on these attributes, see [Table 15-8](#).

### Operations

None

## Configuring IM-SSF CAP Phase 3

The following sections describe how to configure IM-SSF using the Service Broker Administration Console and Java MBeans.

### Configuring IM-SSF CAP Phase 3 with the Administration Console

This section describes how to configure the IM-SSF CAP phase 3 by using the Service Broker Administration Console.

To access the IM-SSF CAP phase 3 configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The IM-SSF CAP Phase 3 configuration pane contains the subtabs described in [Table 16-1](#).

**Table 16-1** IM-SSF CAP Phase 3 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See " <a href="#">Configuring General Parameters</a> " for more information.
Call Handling	Enables you to configure how the IM-SSF handles calls. See " <a href="#">Configuring Call Handling Parameters</a> " for more information.
Subscriber Data	Enables you to define IN triggers that the IM-SSF invokes towards the SCP above. See " <a href="#">Configuring Subscriber Data Parameters</a> " 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 " <a href="#">Configuring Operation Propagation Parameters</a> " for more information.
Charging	Enables you to configure functionality related to charging operations. See " <a href="#">Configuring Charging Parameters</a> " for more information.

**Table 16–1 (Cont.) IM-SSF CAP Phase 3 Configuration Subtabs**

Subtab	Description
Media Resources	Enables you to set up the media resources that Service Broker uses to play announcements. See <a href="#">"Configuring Media Resources Parameters"</a> for more information.
TCAP	Enables you to set up the TCAP layer of the IM-SSF. See <a href="#">"Configuring TCAP Parameters"</a> for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See <a href="#">"Configuring Monitoring Parameters"</a> 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 parameter on the General subtab.

**Table 16–2 General Parameter**

Name	Type	Description
Alias	STRING	Specifies the alias of the IM's SS7 address. The alias is an index to 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 / decode SS7 messages.

## Configuring Call Handling Parameters

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

[Table 16–3](#) describes configuration parameters on the Call Handling subtab.

**Table 16–3 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: <ul style="list-style-type: none"> <li>▪ DYNAMIC IM-SSF dynamically changes its call control mode, according to the mode requested by the SCP.</li> <li>▪ BACK_TO_BACK IM-SSF monitors calls and ignores the mode requested by the SCP.</li> <li>▪ REDIRECT IM-SSF does not monitor calls and ignores the mode requested by the SCP.</li> </ul> Default value: DYNAMIC

**Table 16-3 (Cont.) IM-SSF CAP Phase 3 Call Handling Parameters**

Name	Type	Description
Session Case	STRING	<p>Specifies how IM-SSF treats sessions that arrive on the southbound interface, from the OE.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ ORIG All calls are treated as originating calls.</li> <li>▪ TERM All calls are treated as terminating calls.</li> <li>▪ 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 Broker IM.</li> </ul> <p>Default value: DYNAMIC</p>
Tssf Duration in Seconds	INT	<p>Specifies the value, in seconds, of the IM-SSF Tssf timer.</p> <p>Default value: 20</p>
Tssf User Interaction Duration in Seconds	INT	<p>Specifies the value, in seconds, of the IM-SSF Tssf timer.</p> <p>This parameter is used when the IM-SSF is in the middle of interaction with a media resource.</p> <p>Default value: 1200</p>
IM-SSF Media Capability	BOOL	<p>Specifies whether or not the underlying network supports IP/SRF/MRF.</p> <p>This determines if the IM-SSF can handle media-related operations, such as EstablishTemporaryConnection or ConnectToResource</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ True</li> <li>▪ False</li> </ul> <p>Default value: True</p>
Body Encoding Format	STRING	<p>Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message.</p> <p>Possible options:</p> <ul style="list-style-type: none"> <li>▪ BER</li> <li>▪ XER</li> <li>▪ NONE</li> </ul> <p>Default value: NONE</p>

**Table 16-3 (Cont.) IM-SSF CAP Phase 3 Call Handling Parameters**

Name	Type	Description
NOA of Called Party Number	STRING	<p>Specifies how to set the NatureOfAddress of the CalledPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ SUBSCRIBER_NUMBER</li> <li>▪ UNKNOWN</li> <li>▪ NATIONAL</li> <li>▪ INTERNATIONAL</li> <li>▪ NETWORK_SPECIFIC</li> </ul> <p>Default value: NATIONAL</p>
Internal Network Number Indicator of Called Party Number	BOOL	<p>Specifies how to set the InternalNetworkNumberIndicator of the CalledPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ True</li> <li>▪ False</li> </ul> <p>Default value: True</p>
Numbering Plan Indicator of Called Party Number	STRING	<p>Specifies how to set the NumberingPlanIndicator of the CalledPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ ISDN</li> <li>▪ DATA</li> <li>▪ TELEX</li> </ul> <p>Default value: DATA</p>
NOA of Calling Party Number	STRING	<p>Specifies how to set the NatureOfAddress of the CallingPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ SUBSCRIBER_NUMBER</li> <li>▪ UNKNOWN</li> <li>▪ NATIONAL</li> <li>▪ INTERNATIONAL</li> <li>▪ NETWORK_SPECIFIC</li> </ul> <p>Default value: NATIONAL</p>

**Table 16-3 (Cont.) IM-SSF CAP Phase 3 Call Handling Parameters**

Name	Type	Description
Number Incomplete Indicator of Calling Party Number	BOOL	<p>Specifies how to set the IncompleteIndicator of the CallingPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ True</li> <li>▪ False</li> </ul> <p>Default value: True</p>
Numbering Plan Indicator of Calling Party Number	STRING	<p>Specifies how to set the NumberingPlanIndicator of the CallingPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ ISDN</li> <li>▪ DATA</li> <li>▪ TELEX</li> </ul> <p>Default value: TELEX</p>
Screening Indicator of Calling Party Number	STRING	<p>Specifies how to set the NumberingPlanIndicator of the CallingPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ USER_PROVIDED_NOT_VERIFIED</li> <li>▪ USER_PROVIDED_VERIFIED_PASSED</li> <li>▪ USER_PROVIDED_VERIFIED_FAILED</li> <li>▪ NETWORK_PROVIDED</li> </ul> <p>Default value: USER_PROVIDED_NOT_VERIFIED</p>
Calling Party Category of Calling Party Number	STRING	<p>Specifies how to set the CallingNumberCategory of the CallingPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ UNKNOWN</li> <li>▪ LANGUAGE_FRENCH</li> <li>▪ LANGUAGE_ENGLISH</li> <li>▪ LANGUAGE_GERMAN</li> <li>▪ LANGUAGE_RUSSIAN</li> </ul> <p>Default value: LANGUAGE_ENGLISH</p>

**Table 16–3 (Cont.) IM-SSF CAP Phase 3 Call Handling Parameters**

Name	Type	Description
Type of Number of Called Party Number	STRING	<p>Specifies how to set the TypeOfNumber of the CalledPartyBCDNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ Unknown</li> <li>▪ InternationalNumber</li> <li>▪ NationalNumber</li> <li>▪ NetworkSpecificNumber</li> <li>▪ DedicatedAccessShortcode</li> </ul> <p>Default value: NationalNumber</p>
Numbering Plan Indicator of Called Party BCD Number	STRING	<p>Specifies how to set the NumberingPlanIndicator of the CalledPartyBCDNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ Unknown</li> <li>▪ ISDN_TelephonyNumberingPlan</li> <li>▪ DataNumberingPlan</li> <li>▪ TelexNumberingPlan</li> <li>▪ NationalNumberingPlan</li> </ul> <p>Default value: DataNumberingPlan</p>

## 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 CAP Phase 3 Subscriber Data Fields**

Name	Type	Description
IMSI	STRING	Specifies a condition on session IMSI. When the condition is met, IM-SSF invokes triggers towards the SCP.
MSISDN	STRING	Specifies a condition on session MSISDN. When the condition is met, IM-SSF invokes triggers towards the SCP.
Service Key	STRING	Specifies a Service Key to set on the trigger to the SCP.
SCP Address Alias	STRING	<p>Specifies the SCP to which IM-SSF invokes a trigger.</p> <p>This is an alias to one of the SCCP addresses specified in the SS7 SSU configuration.</p>

**Table 16–4 (Cont.) IM-SSF CAP Phase 3 Subscriber Data Fields**

Name	Type	Description
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: <ul style="list-style-type: none"> <li>▪ CONTINUE_CALL</li> <li>▪ RELEASE_CALL</li> </ul> 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: <i>id</i> = <i>type</i> where: <i>id</i> is one of the following <ul style="list-style-type: none"> <li>▪ 2: COLLECTED_INFO</li> <li>▪ 3: ANALYSED_INFORMATION</li> <li>▪ 4: ROUTE_SELECT_FAILURE</li> <li>▪ 12: TERMINATING_ATTEMPT_AUTHORISED</li> <li>▪ 13: T_BUSY</li> <li>▪ 14: T_NO_ANSWER</li> </ul> <i>type</i> is one of the following: <ul style="list-style-type: none"> <li>▪ R, which means Interrupt</li> <li>▪ N, which means Notify</li> </ul> 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 16–5](#).

**Table 16–5 IM-SSF CAP Phase 3 Operation Propagation**

Name	Type	Description
Name	STRING	Specifies a unique identifier
Operation	STRING	Specifies an operation.  Possible values: <ul style="list-style-type: none"> <li>▪ RequestReportBCSMEvent</li> <li>▪ PlayAnnouncement</li> <li>▪ PromptAndCollect</li> <li>▪ FurnishChargingInfo</li> <li>▪ ApplyCharging</li> </ul>

**Table 16–5 (Cont.) IM-SSF CAP Phase 3 Operation Propagation**

Name	Type	Description
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: <ul style="list-style-type: none"> <li>▪ True The IM-SSF propagates RRBCSMEvent operations.</li> <li>▪ False The IM-SSF processes RRBCSMEvent operations.</li> </ul>

## Configuring Charging Parameters

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

[Table 16–6](#) describes configuration parameters on the Charging subtab.

**Table 16–6 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 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 16–7](#).

**Table 16–7 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 Broker 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.

**Table 16-7 (Cont.) IM-SSF CAP Phase 3 Media Resource Definition Fields**

Name	Type	Description
Nature of Address	STRING	<p>Specifies the NatureOfAddress part of the media resource address. The media resource address is used to set up a connection towards the media resource.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ SUBSCRIBER_NUMBER</li> <li>▪ UNKNOWN</li> <li>▪ NATIONAL</li> <li>▪ INTERNATIONAL</li> <li>▪ NETWORK_SPECIFIC</li> </ul> <p>Default value: NATIONAL</p>
Address Numbering Plan Indicator	STRING	<p>Specifies the NumberingPlanInd part of the media resource address. The media resource address is used to set up a connection towards the media resource.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ ISDN</li> <li>▪ DATA</li> <li>▪ TELEX</li> </ul> <p>Default value: ISDN</p>
Numbering Qualifier	STRING	<p>Specifies the numbering qualifier of the media resource address.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ NONE</li> <li>▪ DIALLED_DIGITS</li> <li>▪ USER_PROVIDED_FAILED_NETWORK_SCREENING</li> <li>▪ USER_PROVIDED_NOT_SCREENED</li> <li>▪ REDIRECTING_TERMINATING_NUMBER</li> </ul> <p>Default value: NONE</p>
Number Screening	STRING	<p>Specifies the numbering screening of the media resource address.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ UNDEFINED</li> <li>▪ USER_PROVIDED_NOT_VERIFIED</li> <li>▪ USER_PROVIDED_VERIFIED_PASSED</li> <li>▪ USER_PROVIDED_VERIFIED_FAILED</li> <li>▪ NETWORK_PROVIDED</li> </ul> <p>Default value: UNDEFINED</p>

**Table 16–7 (Cont.) IM-SSF CAP Phase 3 Media Resource Definition Fields**

Name	Type	Description
Presentation Restriction	STRING	<p>Specifies the presentation restriction of the media resource address.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ UNDEFINED</li> <li>■ ALLOWED</li> <li>■ RESTRICTED</li> <li>■ NOT_AVAILABLE</li> </ul> <p>Default value: UNDEFINED</p>
Operation Type	STRING	<p>Possible values:</p> <ul style="list-style-type: none"> <li>■ internal The media resource is internal part of the SSP. ConnectToResource (CTR) operation is used to connect the media resource.</li> <li>■ external The media resource not a part of the SSP. EstablishTemporaryConnection (ETC) is used to connect the media resource.</li> </ul> <p>Default value: internal</p>
Answer Indication	BOOL	<p>Specifies how to set the bothwayThroughConnectionInd in the ServiceInteractionIndicatorTwo parameter in the ETC and CTR operations.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ True 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).</li> <li>■ False The media path opens only in the direction from the media resource to the caller.</li> </ul> <p>Default value: True</p>

---

**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 16–8 describes configuration parameters on the TCAP subtab.

**Table 16–8 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: <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> 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

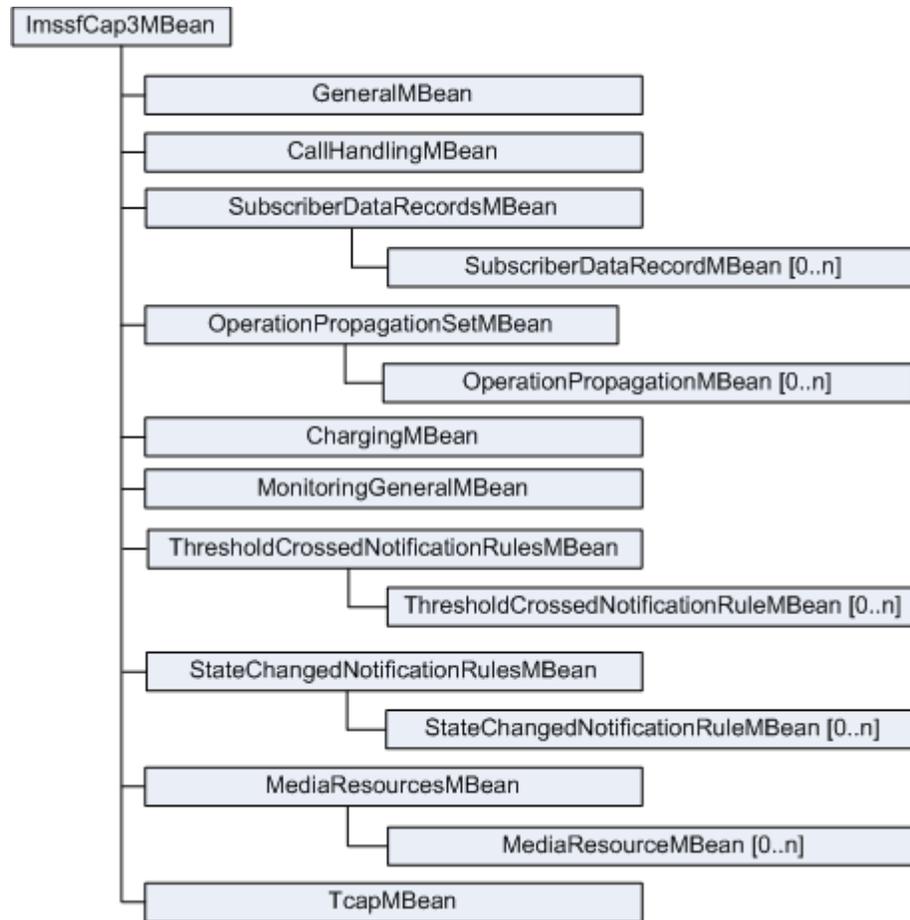
## Configuring Monitoring Parameters

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 Monitoring with the Administration Console"](#).

## Configuring IM-SSF CAP Phase 3 with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the IM-SSF CAP phase 3 through JMX. [Figure 16–1](#) shows the hierarchy of the IM-SSF CAP 3 MBeans.

**Figure 16–1 IM-SSF CAP Phase 3 MBeans Hierarchy**



The following sections provide reference information for the IM-SSF CAP phase 3 configuration MBeans.

---

**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

---

The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

---

## ImssfCap3MBean

ImssfCap3MBean is a root MBean for the IM-SSF CAP phase 3 configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getGeneral()**

Gets a reference to the instance of GeneralMBean

**ObjectName getCallHandling()**

Gets a reference to the instance of CallHandlingMBean

**ObjectName getSubscriberDataRecords()**

Gets a reference to the instance of SubscriberDataRecordsMBean

**ObjectName getOperationPropagationSet()**

Gets a reference to the instance of OperationPropagationSetMBean

**ObjectName getCharging()**

Gets a reference to the instance of ChargingMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

**ObjectName getMediaResources()**

Gets a reference to the instance of MediaResourcesMBean

**ObjectName getTcap()**

Gets a reference to the instance of TcapMBean

---

## GeneralMBean

GeneralMBean enables you to specify an alias for an Interworking Module instance.

### Factory Method

Created automatically

### Attributes

Alias

For more information on this attribute, see [Table 16-2](#).

### Operations

None

---

## CallHandlingMBean

CallHandlingMBean enables you to configure how a call is handled.

### Factory Method

Created automatically

### Attributes

- ImssfModeOfOperation
- SessionCase
- TssfDurationInSeconds
- TssfUserInteractionDurationInSeconds
- ImssfMediaCapability
- BodyEncodingFormat
- NoaOfCalledPartyNumber
- InternalNetworkNumberIndicatorOfCalledPartyNumber
- NumberingPlanIndicatorOfCalledPartyNumber
- NoaOfCallingPartyNumber
- NumberIncompleteteIndicatorOfCallingPartyNumber
- NumberingPlanIndicatorOfCallingPartyNumber
- ScreeningIndicatorOfCallingPartyNumber
- CallingPartyCategoryOfCallingPartyNumber
- TypeOfNumberOfCalledPartyNumber
- NumberingPlanIndicatorOfCalledPartyBcdNumber

For more information on these attributes, see [Table 16–3](#).

### Operations

None

---

## SubscriberDataRecordsMBean

SubscriberDataRecordsMBean is a container for instances of SubscriberDataRecordMBean. Each instance of SubscriberDataRecordMBean defines an IN trigger that the IM-SSF invokes to the SCP above.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getSubscriberDataRecords()**

Gets an array of references to instances of SubscriberDataRecordMBean

**ObjectName createSubscriberDataRecordMBean()**

Creates a new instance of SubscriberDataRecordMBean

**void destroySubscriberDataRecordMBean()**

Destroys an existing instance of SubscriberDataRecordMBean

**ObjectName lookupSubscriberDataRecordMBean()**

Gets a reference to the instance of SubscriberDataRecordMBean

## SubscriberDataRecordMBean

Each instance of SubscriberDataRecordMBean defines an IN trigger that the IM-SSF invokes to the SCP above.

### Factory Method

SubscriberDataRecords.createSubscriberDataRecord()

### Attributes

- Imsi
- Msisdn
- ServiceKey
- ScpAddressAlias
- DefaultCallHandling
- TdpList

For more information on these attributes, see [Table 16-4](#).

### Operations

None

---

## OperationPropagationSetMBean

OperationPropagationSetMBean is a container for instances of OperationPropagationMBean. Each instance of OperationPropagationMBean defines whether the IM-SSF processes a specific operation on its own or propagates this operation to another module.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getOperationPropagation()**

Gets an array of references to instances of OperationPropagationMBean

**ObjectName createOperationPropagationMBean()**

Creates a new instance of OperationPropagationMBean

**void destroyOperationPropagationMBean()**

Destroys an existing instance of OperationPropagationMBean

**ObjectName lookupOperationPropagationMBean()**

Gets a reference to the instance of OperationPropagationMBean

## OperationPropagationMBean

Each instance of OperationPropagationMBean defines an operation that the IM-SSF either processes on its own or propagates this operation to another module.

### Factory Method

OperationPropagationSet.createOperationPropagation()

### Attributes

- Operation
- ModuleName
- EnablePropagation

For more information on these attributes, see [Table 16-5](#).

### Operations

None

---

## ChargingMBean

ChargingMBean enables you to configure functionality related to charging operations.

### Factory Method

Created automatically

### Attributes

TccdInSeconds

For more information on these attributes, see [Table 16-6](#).

### Operations

None

## MediaResourcesMBean

MediaResourcesMBean is a container for instances of MediaResourceMBean. Each instance of MediaResourceMBean represents a single media resource to which an SSP can connect.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName[] getMediaResource()**

Returns an array of references to instances of MediaResourceMBean

**ObjectName createMediaResourceMBean()**

Creates a new instance of MediaResourceMBean

**void destroyMediaResourceMBean()**

Destroys an existing instance of MediaResourceMBean

**ObjectName lookupMediaResourceMBean()**

Gets a reference to the instance of MediaResourceMBean

## MediaResourceMBean

Each instance of MediaResourceMBean represents one media resource to which an SSP can connect to play announcements.

### Factory Method

MediaResources.createMediaResource()

### Attributes

- Name
- Alias
- AddressDigits
- NatureOfAddress
- AddressNumberingPlanIndicator
- NumberingQualifier
- NumberScreening
- PresentationRestriction
- OperationType
- AnswerIndication

For more information on these attributes, see [Table 16-7](#).

### Operations

None

## Tcap MBean

TcapMBean enables you to configure the TCAP layer of the module.

### Factory Method

Created automatically

### Attributes

- Class4DefaultTimeoutInSeconds
- RejectTimeoutInSeconds
- ActivateInvokeAlarmInApplicationLayer
- ApplicationPartGuardTimer
- ResultSplitLength

For more information on these attributes, see [Table 16–8](#).

### Operations

None



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## Configuring IM-SSF INAP CS-1

The following sections describe how to configure IM-SSF using the Service Broker Administration Console and Java MBeans.

### Configuring IM-SSF INAP CS-1 with the Administration Console

This section describes how to configure the IM-SSF INAP CS-1 using the Service Broker Administration Console.

To access the IM-SSF INAP CS-1 configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The IM-SSF INAP CS-1 configuration pane contains the subtabs described in [Table 17-1](#).

**Table 17-1** IM-SSF INAP CS-1 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See " <a href="#">Configuring General Parameters</a> " for more information.
Call Handling	Enables you to configure how the IM-SSF handles calls. See " <a href="#">Configuring Call Handling Parameters</a> " for more information.
Subscriber Data	Enables you to define IN triggers that the IM-SSF invokes towards the SCP above. See " <a href="#">Configuring Subscriber Data Parameters</a> " 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 " <a href="#">Configuring Operation Propagation Parameters</a> " for more information.

**Table 17-1 (Cont.) IM-SSF INAP CS-1 Configuration Subtabs**

Subtab	Description
Media Resources	Enables you to set up the media resources that Service Broker uses to play announcements. See " <a href="#">Configuring Media Resources Parameters</a> " for more information.
TCAP	Enables you to set up the TCAP layer of the IM-SSF. See " <a href="#">Configuring TCAP Parameters</a> " for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See " <a href="#">Configuring Monitoring Parameters</a> " 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 parameter on the General subtab.

**Table 17-2 General Parameter**

Name	Type	Description
Alias	STRING	Specifies the alias of the IM's SS7 address. The alias is an index to 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 / 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 INAP CS-1 Call Handling Parameters**

Name	Type	Description
IM-SSF Mode of Operation	STRING	Specifies the IM-SSF mode of operation. Possible values: <ul style="list-style-type: none"> <li>▪ DYNAMIC IM-SSF dynamically changes its call control mode, according to the mode requested by the SCP.</li> <li>▪ BACK_TO_BACK IM-SSF monitors calls and ignores the mode requested by the SCP.</li> <li>▪ REDIRECT IM-SSF does not monitor calls and ignores the mode requested by the SCP.</li> </ul> Default value: DYNAMIC

**Table 17-3 (Cont.) IM-SSF INAP CS-1 Call Handling Parameters**

Name	Type	Description
Session Case	STRING	<p>Specifies how IM-SSF treats sessions that arrive on the southbound interface, from the OE.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ ORIG All calls are treated as originating calls.</li> <li>▪ TERM All calls are treated as terminating calls.</li> <li>▪ 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 Broker IM.</li> </ul> <p>Default value: ORIG</p>
IM-SSF Media Capability	BOOL	<p>Specifies whether or not the underlying network supports IP/SRF/MRF.</p> <p>This determines if the IM-SSF can handle media-related operations, such as EstablishTemporaryConnection or ConnectToResource.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ True</li> <li>▪ False</li> </ul> <p>Default value: True</p>
Tssf Duration in Seconds	INT	<p>Specifies the value, in seconds, of the IM-SSF Tssf timer.</p> <p>Default value: 20</p>
Tssf User Interaction Duration in Seconds	INT	<p>Specifies the value, in seconds, of the IM-SSF Tssf timer.</p> <p>This parameter is used when the IM-SSF is in the middle of interaction with a media resource.</p> <p>Default value: 1200</p>
Body Encoding Format	STRING	<p>Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message.</p> <p>Possible options:</p> <ul style="list-style-type: none"> <li>▪ BER</li> <li>▪ XER</li> <li>▪ NONE</li> </ul> <p>Default value: NONE</p>

**Table 17-3 (Cont.) IM-SSF INAP CS-1 Call Handling Parameters**

Name	Type	Description
NOA of Called Party Number	STRING	<p>Specifies how to set the NatureOfAddress of the CalledPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ SUBSCRIBER_NUMBER</li> <li>▪ UNKNOWN</li> <li>▪ NATIONAL</li> <li>▪ INTERNATIONAL</li> <li>▪ NETWORK_SPECIFIC</li> </ul> <p>Default value: NATIONAL</p>
Internal Network Number Indicator of Called Party Number	BOOL	<p>Specifies how to set the InternalNetworkNumberIndicator of the CalledPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ True</li> <li>▪ False</li> </ul> <p>Default value: True</p>
Numbering Plan Indicator of Called Party Number	STRING	<p>Specifies how to set the NumberingPlanIndicator of the CalledPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ ISDN</li> <li>▪ DATA</li> <li>▪ TELEX</li> </ul> <p>Default value: DATA</p>
NOA of Calling Party Number	STRING	<p>Specifies how to set the NatureOfAddress of the CallingPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ SUBSCRIBER_NUMBER</li> <li>▪ UNKNOWN</li> <li>▪ NATIONAL</li> <li>▪ INTERNATIONAL</li> <li>▪ NETWORK_SPECIFIC</li> </ul> <p>Default value: NATIONAL</p>

**Table 17-3 (Cont.) IM-SSF INAP CS-1 Call Handling Parameters**

Name	Type	Description
Number Incomplete Indicator of Calling Party Number	BOOL	<p>Specifies how to set the IncompleteIndicator of the CallingPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible options:</p> <ul style="list-style-type: none"> <li>▪ True</li> <li>▪ False</li> </ul> <p>Default value: True</p>
Numbering Plan Indicator of Calling Party Number	STRING	<p>Specifies how to set the NumberingPlanIndicator of the CallingPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ ISDN</li> <li>▪ DATA</li> <li>▪ TELEX</li> </ul> <p>Default value: TELEX</p>
Screening Indicator of Calling Party Number	STRING	<p>Specifies how to set the NumberingPlanIndicator of the CallingPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ USER_PROVIDED_NOT_VERIFIED</li> <li>▪ USER_PROVIDED_VERIFIED_PASSED</li> <li>▪ USER_PROVIDED_VERIFIED_FAILED</li> <li>▪ NETWORK_PROVIDED</li> </ul> <p>Default values: USER_PROVIDED_NOT_VERIFIED</p>
Calling Party Category of Calling Party Number	STRING	<p>Specifies how to set the CallingNumberCategory of the CallingPartyNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ UNKNOWN</li> <li>▪ LANGUAGE_FRENCH</li> <li>▪ LANGUAGE_ENGLISH</li> <li>▪ LANGUAGE_GERMAN</li> <li>▪ LANGUAGE_RUSSIAN</li> </ul> <p>Default value: LANGUAGE_ENGLISH</p>

**Table 17-3 (Cont.) IM-SSF INAP CS-1 Call Handling Parameters**

Name	Type	Description
Type of Number of Called Party Number	STRING	<p>Specifies how to set the TypeOfNumber of the CalledPartyBCDNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Unknown</li> <li>■ InternationalNumber</li> <li>■ NationalNumber</li> <li>■ NetworkSpecificNumber</li> <li>■ DedicatedAccessShortcode</li> </ul> <p>Default value: NationalNumber</p>
Numbering Plan Indicator of Called Party BCD Number	STRING	<p>Specifies how to set the NumberingPlanIndicator of the CalledPartyBCDNumber.</p> <p>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Unknown</li> <li>■ ISDN_TelephonyNumberingPlan</li> <li>■ DataNumberingPlan</li> <li>■ TelexNumberingPlan</li> <li>■ NationalNumberingPlan</li> </ul> <p>Default value: DataNumberingPlan</p>

## 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 INAP CS-1 Subscriber Data Fields**

Name	Type	Description
IMSI	STRING	Specifies a condition on session IMSI. When the condition is met, IM-SSF invokes triggers towards the SCP.
MSISDN	STRING	Specifies a condition on session MSISDN. When the condition is met, IM-SSF invokes triggers towards the SCP.
Service Key	STRING	Specifies a Service Key to set on the trigger to the SCP.
SCP Address Alias	STRING	<p>Specifies the SCP to which IM-SSF invokes a trigger.</p> <p>This is an alias to one of the SCCP addresses specified in the SS7 SSU configuration.</p>

**Table 17-4 (Cont.) IM-SSF INAP CS-1 Subscriber Data Fields**

Name	Type	Description
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: <ul style="list-style-type: none"> <li>▪ CONTINUE_CALL</li> <li>▪ RELEASE_CALL</li> </ul> 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: <i>id=type</i> where: <i>id</i> is one of the following <ul style="list-style-type: none"> <li>▪ 2: COLLECTED_INFO</li> <li>▪ 3: ANALYSED_INFORMATION</li> <li>▪ 4: ROUTE_SELECT_FAILURE</li> <li>▪ 12: TERMINATING_ATTEMPT_AUTHORISED</li> <li>▪ 13: T_BUSY</li> <li>▪ 14: T_NO_ANSWER</li> </ul> <i>type</i> is one of the following: <ul style="list-style-type: none"> <li>▪ R, which means Interrupt</li> <li>▪ N, which means Notify</li> </ul> 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 17-5](#).

**Table 17-5 IM-SSF INAP CS1 Operation Propagation**

Name	Type	Description
Name	STRING	Specifies a unique identifier.
Operation	STRING	Specifies an operation.  Possible values: <ul style="list-style-type: none"> <li>▪ RequestReportBCSMEvent</li> <li>▪ PlayAnnouncement</li> <li>▪ PromptAndCollect</li> </ul>
Module name	STRING	Specifies a name of a module instance to which an operation is propagated.

**Table 17-5 (Cont.) IM-SSF INAP CS1 Operation Propagation**

Name	Type	Description
Enable Propagation	BOOL	<p>Specifies whether IM-SSF processes operations on its own or propagates a request to the session control layer.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ True The IM-SSF propagates RRBCSMEvent operations.</li> <li>▪ False The IM-SSF processes RRBCSMEvent operations.</li> </ul> <p>Default value: True</p>

## 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 INAP CS-1 Media Resource Definition Fields**

Name	Type	Description
Name	STRING	Specifies a name of the media resource
Alias	STRING	<p>Specifies a unique identifier that applications use to instruct Service Broker which media resource to connect to in order to play announcements.</p> <p>Aliases are defined in a URI format. For example: mrf.network@domain.com.</p>
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	<p>Specifies the NatureOfAddress part of the media resource address. The media resource address is used to set up a connection towards the media resource.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ SUBSCRIBER_NUMBER</li> <li>▪ UNKNOWN</li> <li>▪ NATIONAL</li> <li>▪ INTERNATIONAL</li> <li>▪ NETWORK_SPECIFIC</li> </ul> <p>Default value: SUBSCRIBER_NUMBER</p>

**Table 17-6 (Cont.) IM-SSF INAP CS-1 Media Resource Definition Fields**

Name	Type	Description
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: <ul style="list-style-type: none"> <li>■ ISDN</li> <li>■ DATA</li> <li>■ TELEX</li> </ul> Default value: ISDN
Operation Type	STRING	Possible values: <ul style="list-style-type: none"> <li>■ internal The media resource is internal part of the SSP. ConnectToResource (CTR) operation is used to connect the media resource.</li> <li>■ external The media resource not a part of the SSP. EstablishTemporaryConnection (ETC) is used to connect the media resource.</li> </ul> Default value: internal

## 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
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 17-7 (Cont.) TCAP Parameter**

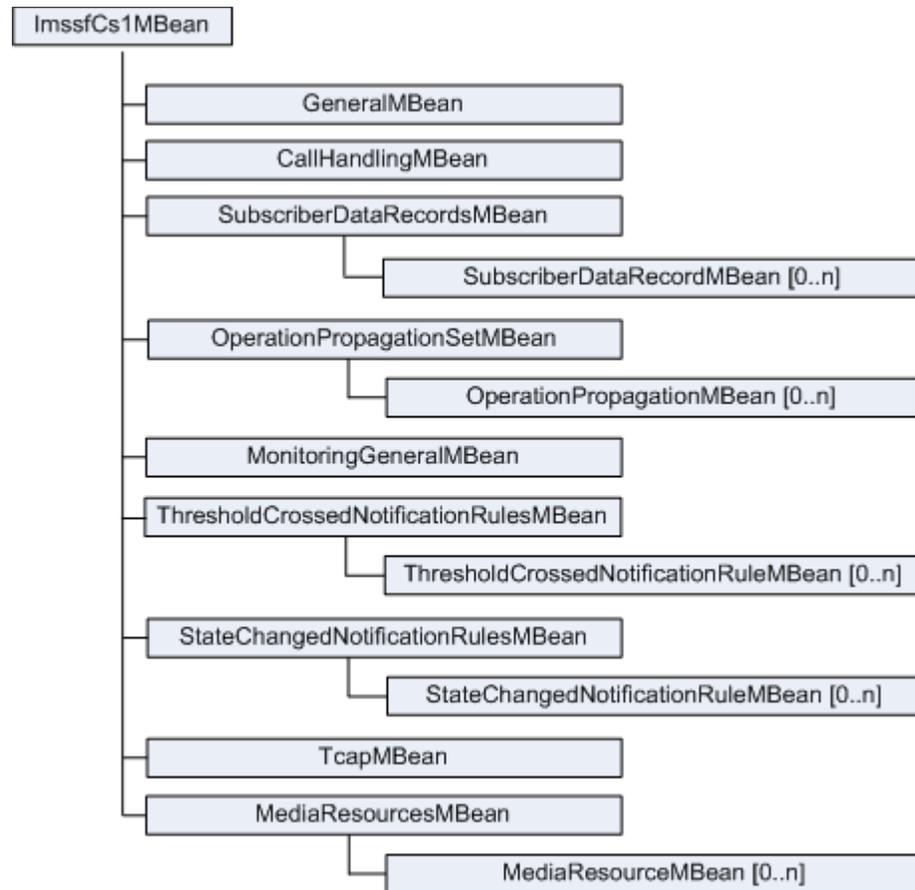
Name	Type	Description
Activate Invoke Alarm in Application Layer	BOOL	<p>When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library.</p> <p>The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> <p>Default value: False</p>
Result Split Length	INT	<p>Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.</p> <p>Default value: 512</p>

## 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 Monitoring with the Administration Console"](#).

## Configuring IM-SSF INAP CS-1 with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the IM-SSF INAP CS-1 through JMX. [Figure 17-1](#) shows the hierarchy of the IM-SSF INAP CS-1 MBeans.

**Figure 17-1 IM-SSF INAP CS-1 MBeans Hierarchy**

The following sections provide reference information for the IM-SSF INAP CS-1 configuration MBeans.

---

**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

---

The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

## ImssfCs1MBean

ImssfCs1MBean is a root MBean for the IM-SSF INAP CS-1 configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getGeneral()**

Gets a reference to the instance of GeneralMBean

**ObjectName getCallHandling()**

Gets a reference to the instance of CallHandlingMBean

**ObjectName getSubscriberDataRecords()**

Gets a reference to the instance of SubscriberDataRecordsMBean

**ObjectName getOperationPropagationSet()**

Gets a reference to the instance of OperationPropagationSetMBean

**ObjectName getCharging()**

Gets a reference to the instance of ChargingMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

**ObjectName getMediaResources()**

Gets a reference to the instance of MediaResourcesMBean

**ObjectName getTcap()**

Gets a reference to the instance of TcapMBean

## GeneralMBean

GeneralMBean enables you to specify an alias for an Interworking Module instance.

### Factory Method

Created automatically

### Attributes

Alias

For more information on this attribute, see [Table 17-2](#).

### Operations

None

## CallHandlingMBean

CallHandlingMBean enables you to configure how a call is handled.

### Factory Method

Created automatically

### Attributes

- ImssfModeOfOperation
- SessionCase
- ImssfMediaCapability
- TssfDurationInSeconds
- TssfUserInteractionDurationInSeconds
- BodyEncodingFormat
- NoaOfCalledPartyNumber
- InternalNetworkNumberIndicatorOfCalledPartyNumber
- NumberingPlanIndicatorOfCalledPartyNumber
- NoaOfCallingPartyNumber
- NumberIncompleteIndicatorOfCallingPartyNumber
- NumberingPlanIndicatorOfCallingPartyNumber
- ScreeningIndicatorOfCallingPartyNumber
- CallingPartyCategoryOfCallingPartyNumber
- TypeOfNumberOfCalledPartyBcdNumber
- NumberingPlanIndicatorOfCalledPartyBcdNumber

For more information on these attributes, see [Table 17-3](#).

### Operations

None

## SubscriberDataRecordsMBean

SubscriberDataRecordsMBean is a container for instances of SubscriberDataRecordMBean. Each instance of SubscriberDataRecordMBean defines an IN trigger that the IM-SSF invokes to the SCP above.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getSubscriberDataRecords()**

Gets an array of references to instances of SubscriberDataRecordMBean

**ObjectName createSubscriberDataRecordMBean()**

Creates a new instance of SubscriberDataRecordMBean

**void destroySubscriberDataRecordMBean()**

Destroys an existing instance of SubscriberDataRecordMBean

**ObjectName lookupSubscriberDataRecordMBean()**

Gets a reference to the instance of SubscriberDataRecordMBean

## SubscriberDataRecordMBean

Each instance of SubscriberDataRecordMBean defines an IN trigger that the IM-SSF invokes to the SCP above.

### Factory Method

SubscriberDataRecords.createSubscriberDataRecord()

### Attributes

- Imsi
- Msisdn
- ServiceKey
- ScpAddressAlias
- DefaultCallHandling
- TdpList

For more information on these attributes, see [Table 17-4](#).

### Operations

None

## OperationPropagationSetMBean

OperationPropagationSetMBean is a container for instances of OperationPropagationMBean. Each instance of OperationPropagationMBean defines whether the IM-SSF processes a specific operation on its own or propagates this operation to another module.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getOperationPropagation()**

Gets an array of references to instances of OperationPropagationMBean

**ObjectName createOperationPropagationMBean()**

Creates a new instance of OperationPropagationMBean

**void destroyOperationPropagationMBean()**

Destroys an existing instance of OperationPropagationMBean

**ObjectName lookupOperationPropagationMBean()**

Gets a reference to the instance of OperationPropagationMBean

## OperationPropagationMBean

Each instance of OperationPropagationMBean defines an operation that the IM-SSF either processes on its own or propagates this operation to another module.

### Factory Method

OperationPropagationSet.createOperationPropagation()

### Attributes

- Operation
- ModuleName
- EnablePropagation

For more information on these attributes, see [Table 17-5](#).

### Operations

None

## MediaResourcesMBean

MediaResourcesMBean is a container for instances of MediaResourceMBean. Each instance of MediaResourceMBean represents a single media resource to which an SSP can connect.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getMediaResourcesMBean()**

Gets an array of references to instances of MediaResourceMBean

**ObjectName createMediaResourceMBean()**

Creates a new instance of MediaResourceMBean

**void destroyMediaResourceMBean()**

Destroys an existing instance of MediaResourceMBean

**ObjectName lookupMediaResourceMBean()**

Gets a reference to the instance of MediaResourceMBean

---

## MediaResourceMBean

Each instance of MediaResourceMBean represents one media resource to which an SSP can connect to play announcements.

### Factory Method

MediaResources.createMediaResource()

### Attributes

- Alias
- AddressDigits
- NatureOfAddress
- AddressNumberingPlanIndicator
- OperationType

For more information on these attributes, see [Table 17-6](#).

### Operations

None

## Tcap MBean

TcapMBean enables you to configure the TCAP layer of the module.

### Factory Method

Created automatically

### Attributes

- Class4DefaultTimeoutInSeconds
- RejectTimeoutInSeconds
- ActivateInvokeAlarmInApplicationLayer
- ApplicationPartGuardTimer
- ResultSplitLength

For more information on these attributes, see [Table 17-7](#).

### Operations

None



## Configuring IM-SSF WIN Phase 1

The following sections describe how to configure IM-SSF using the Service Broker Administration Console and Java MBeans.

### Configuring IM-SSF WIN Phase 1 with the Administration Console

This section describes how to configure the IM-SSF WIN phase 1 by using the Service Broker Administration Console.

To access the IM-SSF WIN phase 1 configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The IM-SSF WIN phase 1 configuration pane contains the subtabs described in [Table 18-1](#).

**Table 18-1** IM-SSF WIN Phase 1 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See " <a href="#">Configuring General Parameters</a> " for more information.
Call Handling	Enables you to configure how the IM-SSF handles calls. See " <a href="#">Configuring Call Handling Parameters</a> " for more information.
Subscriber Data	Enables you to define IN triggers that the IM-SSF invokes towards the SCP above. See " <a href="#">Configuring Subscriber Data Parameters</a> " for more information.
Media Resources	Enables you to set up the media resources that Service Broker uses to play announcements. See " <a href="#">Configuring Media Resources Parameters</a> " for more information.
TCAP	Enables you to set up the TCAP layer of the IM-SSF. See " <a href="#">Configuring TCAP Parameters</a> " for more information.

**Table 18–1 (Cont.) IM-SSF WIN Phase 1 Configuration Subtabs**

Subtab	Description
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See " <a href="#">Configuring Monitoring Parameters</a> " 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 18–2](#) describes the configuration parameter on the General subtab.

**Table 18–2 General Parameter**

Name	Type	Description
Alias	STRING	Specifies the alias of the IM's SS7 address. The alias is an index to 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 / decode SS7 messages.

## Configuring Call Handling Parameters

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

[Table 18–3](#) describes configuration parameters on the Call Handling subtab.

**Table 18–3 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: <ul style="list-style-type: none"> <li>▪ DYNAMIC IM-SSF dynamically changes its call control mode, according to the mode requested by the SCP.</li> <li>▪ BACK_TO_BACK IM-SSF monitors calls and ignores the mode requested by the SCP.</li> <li>▪ REDIRECT IM-SSF does not monitor calls and ignores the mode requested by the SCP.</li> </ul> Default value: DYNAMIC

**Table 18-3 (Cont.) IM-SSF WIN Phase 1 Call Handling Parameters**

Name	Type	Description
Session Case	STRING	<p>Specifies how IM-SSF treats sessions that arrive on the southbound interface, from the OE.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ ORIG All calls are treated as originating calls.</li> <li>▪ TERM All calls are treated as terminating calls.</li> <li>▪ 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 Broker IM.</li> </ul> <p>Default value: DYNAMIC</p>
Tssf Duration in Seconds	INT	<p>Specifies the value, in seconds, of the IM-SSF Tssf timer.</p> <p>Default value: 20</p>
Tssf User Interaction Duration in Seconds	INT	<p>Specifies the value, in seconds, of the IM-SSF Tssf timer.</p> <p>This parameter is used when the IM-SSF is in the middle of interaction with a media resource.</p> <p>Default value: 1200</p>
IM-SSF Media Capability	BOOL	<p>Specifies whether or not the underlying network supports IP/SRF/MRF.</p> <p>This determines if the IM-SSF can handle media-related operations, such as EstablishTemporaryConnection or ConnectToResource.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ True</li> <li>▪ False</li> </ul> <p>Default value: True</p>
Body Encoding Format	STRING	<p>Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message.</p> <p>Possible options:</p> <ul style="list-style-type: none"> <li>▪ BER</li> <li>▪ XER</li> <li>▪ NONE</li> </ul> <p>Default value: NONE</p>
MSC ID	STRING	<p>Specifies the value that IM-SSF sets in the mscId field of trigger messages.</p>
MS ID	STRING	<p>Specifies the value that IM-SSF sets in the msID field of trigger messages.</p>

**Table 18-3 (Cont.) IM-SSF WIN Phase 1 Call Handling Parameters**

Name	Type	Description
Mobile Equipment Number Manufacturer Code	INT	<p>Specifies the manufacturer code of the equipment.</p> <p>This parameter is used when the IM-SSF sends a new trigger, such as <code>OriginationRequest</code> or <code>AnalyzedInformation</code> message to the SCP.</p> <p>Default value: -1</p>
Mobile Equipment Number Serial Number	STRING	<p>Specifies how to set the mobile equipment number field.</p> <p>This parameter is used when the IM-SSF sends a new trigger, such as <code>OriginationRequest</code> or <code>AnalyzedInformation</code> message to the SCP.</p>
ORREQ Dialed Digits Numbering Plan	STRING	<p>Specifies the <code>NumberingPlan</code> of the <code>DialedDigits</code> field.</p> <p>This parameter is used when IM-SSF sends a new <code>OriginationRequest</code> message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ ISDN</li> <li>▪ DATA</li> <li>▪ TELEX</li> <li>▪ TELEPHONY</li> <li>▪ MARITIME_MOBILE</li> </ul> <p>Default value: ISDN</p>
ORREQ Dialed Digits Type of Digits	STRING	<p>Specifies the <code>TypeOfDigits</code> of the <code>DialedDigits</code> field.</p> <p>This parameter is used when IM-SSF sends a new <code>OriginationRequest</code> message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ NOT_DEFINED</li> <li>▪ CALLED_PARTY_NUMBER</li> <li>▪ CALLING_PARTY_NUMBER</li> <li>▪ CALLER_INTERACTION</li> <li>▪ ROUTING_NUMBER</li> </ul> <p>Default value: CALLED_PARTY_NUMBER</p>
ORREQ MDN Type of Digits	STRING	<p>Specifies how to set the <code>TypeOfDigits</code> of the <code>MobileDirectoryNumber</code> field.</p> <p>This parameter is used when the IM-SSF sends a new <code>OriginationRequest</code> message to the SCP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ NOT_DEFINED</li> <li>▪ CALLED_PARTY_NUMBER</li> <li>▪ CALLING_PARTY_NUMBER</li> <li>▪ CALLER_INTERACTION</li> <li>▪ ROUTING_NUMBER</li> </ul> <p>Default value: CALLED_PARTY_NUMBER</p>

**Table 18–3 (Cont.) IM-SSF WIN Phase 1 Call Handling Parameters**

Name	Type	Description
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: <ul style="list-style-type: none"> <li>▪ ISDN</li> <li>▪ DATA</li> <li>▪ TELEX</li> <li>▪ TELEPHONY</li> <li>▪ MARITIME_MOBILE</li> </ul> Default value: TELEPHONY
ANALYZ 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.
ANALYZ Invoke Digits Type of Digits	STRING	Specifies the TypeOfDigits of the InvokeDigits field.  This parameter is used when IM-SSF sends a new AnalyzedInformation message to the SCP.
ANALYZ 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.
ANALYZ 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.

## 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 18–4](#).

**Table 18–4 IM-SSF WIN Phase 1 Subscriber Data Fields**

Name	Type	Description
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.

**Table 18–4 (Cont.) IM-SSF WIN Phase 1 Subscriber Data Fields**

Name	Type	Description
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: <ul style="list-style-type: none"> <li>▪ CONTINUE_CALL</li> <li>▪ RELEASE_CALL</li> </ul> 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: <i>id</i> = <i>type</i> where: <i>id</i> is one of the following: <ul style="list-style-type: none"> <li>▪ 36: Origination_Attempt_Authorized</li> <li>▪ 37: Calling_Routing_Address_Available</li> <li>▪ 64: Terminating_Resource_Available</li> <li>▪ 65: T_Busy</li> <li>▪ 66: T_No_Answer</li> </ul> <i>type</i> is one of the following: <ul style="list-style-type: none"> <li>▪ R, which means Interrupt</li> <li>▪ N, which means Notify</li> </ul> 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 18–5](#).

**Table 18–5 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.

**Table 18–5 (Cont.) IM-SSF WIN Phase 1 Media Resource Definition Fields**

Name	Type	Description
Operation Type	STRING	Possible values: <ul style="list-style-type: none"> <li>▪ 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.</li> <li>▪ external The media resource is not part of the SSP. ConnectResource operation is used to connect the media resource.</li> </ul> Default value: switched_based
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. <p><b>Note:</b> 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.</p>
Resource Type	STRING	Specifies the value to set in the SpecializedResource parameter of the SEIZERES operation. <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ UNUSED</li> <li>▪ DTMF_TONE_DETECTOR</li> <li>▪ ASR_DIGITS</li> <li>▪ ASR_SPEECH_USER_INTERFACE</li> </ul> Default value: UNUSED
Private Resource Type	STRING	Specifies the value to set in the PrivateSpecializedResource parameter of the SEIZERES operation
SN-IP Configuration	STRING	Possible values: <ul style="list-style-type: none"> <li>▪ UNUSED</li> <li>▪ SN IP and SCP are co-located. When you choose this option, you need to set also the SN Address parameter.</li> <li>▪ IP IP and SCP are not co-located</li> </ul> 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 18–6](#) describes configuration parameters on the TCAP subtab.

**Table 18–6 TCAP Parameters**

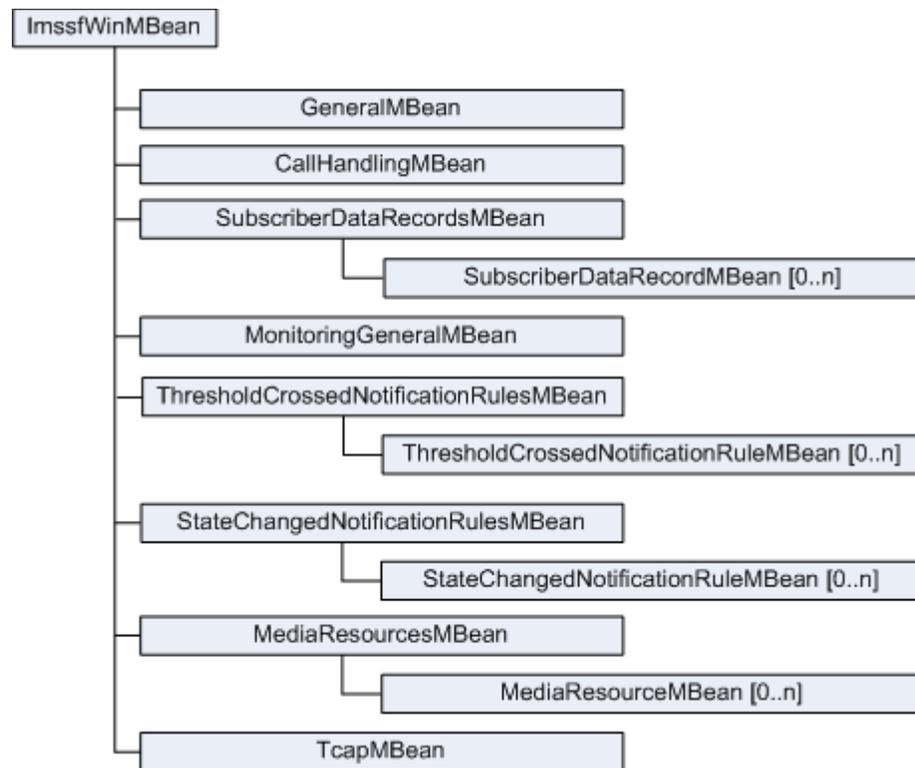
Name	Type	Description
Class4 Default Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations. Default value: 4
Reject Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for 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
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: <ul style="list-style-type: none"> <li>▪ True</li> <li>▪ False</li> </ul> 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 Monitoring with the Administration Console"](#).

## Configuring IM-SSF WIN Phase 1 with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the IM-SSF WIN through JMX. [Figure 18–1](#) shows the hierarchy of the IM-SSF WIN phase 1 MBeans.

**Figure 18–1 IM-SSF WIN MBeans Hierarchy**

The following sections provide reference information for the IM-SSF WIN configuration MBeans.

---

**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

---

The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

## ImssfWinMBean

ImssfWinMBean is a root MBean for the IM-SSF CAP WIN configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getGeneral()**

Gets a reference to the instance of GeneralMBean

**ObjectName getCallHandling()**

Gets a reference to the instance of CallHandlingMBean

**ObjectName getSubscriberDataRecords()**

Gets a reference to the instance of SubscriberDataRecordsMBean

**ObjectName getCharging()**

Gets a reference to the instance of ChargingMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

**ObjectName getMediaResources()**

Gets a reference to the instance of MediaResourcesMBean

**ObjectName getTcap()**

Gets a reference to the instance of TcapMBean

## GeneralMBean

GeneralMBean enables you to specify an alias for an Interworking Module instance.

### Factory Method

Created automatically

### Attributes

Alias

For more information on this attribute, see [Table 18-2](#).

### Operations

None

## CallHandlingMBean

CallHandlingMBean enables you to configure how a call is handled.

### Factory Method

Created automatically

### Attributes

- ImssfModeOfOperation
- SessionCase
- TssfDurationInSeconds
- TssfUserInteractionDurationInSeconds
- ImssfMediaCapability
- BodyEncodingFormat
- MscId
- MsId
- MobileEquipmentNumberManufacturerCode
- MobileEquipmentNumberSerialNumber
- OrigreqDialedDigitsNumberingPlan
- OrigreqDialedDigitsTypeOfDigits
- OrigreqMdnTypeOfDigits
- OrigreqMdnNumberingPlan
- AnlyzdInvokeDigitsNumberingPlan
- AnlyzdInvokeDigitsTypeOfDigits
- AnlyzdInvokeMobileDirectoryNumberTypeOfDigits
- AnlyzdInvokeMobileDirectoryNumberNatureNumberingPlan

For more information on these attributes, see [Table 18-3](#).

### Operations

None

## SubscriberDataRecordsMBean

SubscriberDataRecordsMBean is a container for instances of SubscriberDataRecordMBean. Each instance of SubscriberDataRecordMBean defines an IN trigger that the IM-SSF invokes to the SCP above.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getSubscriberDataRecordsMBean()**

Gets an array of references to instances of SubscriberDataRecordMBean

**ObjectName createSubscriberDataRecordMBean()**

Creates a new instance of SubscriberDataRecordMBean

**void destroySubscriberDataRecordMBean()**

Destroys an existing instance of SubscriberDataRecordMBean

**ObjectName lookupSubscriberDataRecordMBean()**

Gets a reference to the instance of SubscriberDataRecordMBean

---

## SubscriberDataRecordMBean

Each instance of SubscriberDataRecordMBean defines an IN trigger that the IM-SSF invokes to the SCP above.

### Factory Method

SubscriberDataRecords.createSubscriberDataRecord()

### Attributes

- Min
- Dn
- ScpAddressAlias
- DefaultCallHandling
- TdpList

For more information on these attributes, see [Table 18-4](#).

### Operations

None

## MediaResourcesMBean

MediaResourcesMBean is a container for instances of MediaResourceMBean. Each instance of MediaResourceMBean represents a single media resource to which an SSP can connect.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName[] getMediaResource()**

Returns an array of references to instances of MediaResourceMBean

**ObjectName createMediaResourceMBean()**

Creates a new instance of MediaResourceMBean

**void destroyMediaResourceMBean()**

Destroys an existing instance of MediaResourceMBean

**ObjectName lookupMediaResourceMBean()**

Gets a reference to the instance of MediaResourceMBean

---

## MediaResourceMBean

Each instance of MediaResourceMBean represents one media resource to which an SSP can connect to play announcements.

### Factory Method

MediaResources.createMediaResource()

### Attributes

- Alias
- OperationType
- ResourceType
- PrivateResourceType
- SnIpConfiguration
- AddressDigits
- SnAddress

For more information on these attributes, see [Table 18-5](#).

### Operations

None

## Tcap MBean

TcapMBean enables you to configure the TCAP layer of the module.

### Factory Method

Created automatically

### Attributes

- Class4DefaultTimeoutInSeconds
- RejectTimeoutInSeconds
- ActivateInvokeAlarmInApplicationLayer
- ApplicationPartGuardTimer
- ResultSplitLength

For more information on these attributes, see [Table 18–6](#).

### Operations

None



## Configuring IM-SSF WIN Phase 2

The following sections describe how to configure IM-SSF using the Service Broker Administration Console and Java MBeans.

### Configuring IM-SSF WIN Phase 2 with the Administration Console

This section describes how to configure the IM-SSF WIN phase 2 by using the Service Broker Administration Console.

To access the IM-SSF WIN phase 2 configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The IM-SSF WIN phase 2 configuration pane contains the subtabs described in [Table 19-1](#).

**Table 19-1** IM-SSF WIN Phase 2 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See " <a href="#">Configuring General Parameters</a> " for more information.
Call Handling	Enables you to configure how the IM-SSF handles calls. See " <a href="#">Configuring Call Handling Parameters</a> " for more information.
Subscriber Data	Enables you to define IN triggers that the IM-SSF invokes towards the SCP above. See " <a href="#">Configuring Subscriber Data Parameters</a> " for more information.
Media Resources	Enables you to set up the media resources that Service Broker uses to play announcements. See " <a href="#">Configuring Media Resources Parameters</a> " for more information.
TCAP	Enables you to set up the TCAP layer of the IM-SSF. See " <a href="#">Configuring TCAP Parameters</a> " for more information.

**Table 19–1 (Cont.) IM-SSF WIN Phase 2 Configuration Subtabs**

Subtab	Description
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See " <a href="#">Configuring Monitoring Parameters</a> " 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 19–2](#) describes the configuration parameter on the General subtab.

**Table 19–2 General Parameter**

Name	Type	Description
Alias	STRING	Specifies the alias of the IM's SS7 address. The alias is an index to 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 / decode SS7 messages.

## Configuring Call Handling Parameters

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

[Table 19–3](#) describes configuration parameters on the Call Handling subtab.

**Table 19–3 IM-SSF WIN Phase 2 Call Handling Parameters**

Name	Type	Description
IM-SSF Mode of Operation	STRING	Specifies the IM-SSF mode of operation. Possible values: <ul style="list-style-type: none"> <li>▪ DYNAMIC IM-SSF dynamically changes its call control mode, according to the mode requested by the SCP.</li> <li>▪ BACK_TO_BACK IM-SSF monitors calls and ignores the mode requested by the SCP.</li> <li>▪ REDIRECT IM-SSF does not monitor calls and ignores the mode requested by the SCP.</li> </ul> Default value: DYNAMIC

**Table 19-3 (Cont.) IM-SSF WIN Phase 2 Call Handling Parameters**

Name	Type	Description
Session Case	STRING	<p>Specifies how IM-SSF treats sessions that arrive on the southbound interface, from the OE.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ ORIG All calls are treated as originating calls.</li> <li>▪ TERM All calls are treated as terminating calls.</li> <li>▪ 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 Broker IM.</li> </ul> <p>Default value: ORIG</p>
Tssf Duration in Seconds	INT	<p>Specifies the value, in seconds, of the IM-SSF Tssf timer.</p> <p>Default value: 20</p>
Tssf User Interaction Duration in Seconds	INT	<p>Specifies the value, in seconds, of the IM-SSF Tssf timer.</p> <p>This parameter is used when the IM-SSF is in the middle of interaction with a media resource.</p> <p>Default value: 1200</p>
IM-SSF Media Capability	BOOL	<p>Specifies whether or not the underlying network supports IP/SRF/MRF.</p> <p>This determines if the IM-SSF can handle media-related operations, such as EstablishTemporaryConnection or ConnectToResource.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ True</li> <li>▪ False</li> </ul> <p>Default value: False</p>
Body Encoding Format	STRING	<p>Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message.</p> <p>Possible options:</p> <ul style="list-style-type: none"> <li>▪ BER</li> <li>▪ XER</li> <li>▪ NONE</li> </ul> <p>Default value: NONE</p>
MSC ID	STRING	<p>Specifies the value that IM-SSF sets in the mscId field of trigger messages.</p>
MS ID	STRING	<p>Specifies the value that IM-SSF sets in the msID field of trigger messages.</p>

**Table 19-3 (Cont.) IM-SSF WIN Phase 2 Call Handling Parameters**

Name	Type	Description
Mobile Equipment Number Manufacturer Code	INT	Specifies the manufacturer code of the equipment.  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 OriginationRequest message to the SCP.
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: <ul style="list-style-type: none"> <li>■ ISDN</li> <li>■ DATA</li> <li>■ TELEX</li> <li>■ TELEPHONY</li> <li>■ MARITIME_MOBILE</li> </ul> Default value: DATA
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: <ul style="list-style-type: none"> <li>■ NOT_DEFINED</li> <li>■ CALLED_PARTY_NUMBER</li> <li>■ CALLING_PARTY_NUMBER</li> <li>■ CALLER_INTERACTION</li> <li>■ ROUTING_NUMBER</li> </ul> Default value: CALLED_PARTY_NUMBER
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: <ul style="list-style-type: none"> <li>■ NOT_DEFINED</li> <li>■ CALLED_PARTY_NUMBER</li> <li>■ CALLING_PARTY_NUMBER</li> <li>■ CALLER_INTERACTION</li> <li>■ ROUTING_NUMBER</li> </ul> Default value: CALLING_PARTY_NUMBER

**Table 19–3 (Cont.) IM-SSF WIN Phase 2 Call Handling Parameters**

Name	Type	Description
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: <ul style="list-style-type: none"> <li>▪ ISDN</li> <li>▪ DATA</li> <li>▪ TELEX</li> <li>▪ TELEPHONY</li> <li>▪ MARITIME_MOBILE</li> </ul> Default value: TELEX
ANALYZ 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.
ANALYZ Invoke Digits Type of Digits	STRING	Specifies the TypeOfDigits of the InvokeDigits field.  This parameter is used when IM-SSF sends a new AnalyzedInformation message to the SCP.
ANALYZ 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.
ANALYZ 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.

## 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 19–4](#).

**Table 19–4 IM-SSF WIN Phase 2 Subscriber Data Fields**

Name	Type	Description
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.

**Table 19–4 (Cont.) IM-SSF WIN Phase 2 Subscriber Data Fields**

Name	Type	Description
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: <ul style="list-style-type: none"> <li>▪ CONTINUE_CALL</li> <li>▪ RELEASE_CALL</li> </ul> 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: <i>id=type</i> where: <i>id</i> is one of the following <ul style="list-style-type: none"> <li>▪ 36: Origination_Attempt_Authorized</li> <li>▪ 37: Calling_Routing_Address_Available</li> <li>▪ 38: Initial_Termination</li> <li>▪ 39: Called_Routing_Address_Available</li> <li>▪ 40: O_Answer</li> <li>▪ 41: O_Disconnect</li> <li>▪ 64: Terminating_Resource_Available</li> <li>▪ 65: T_Busy</li> <li>▪ 66: T_No_Answer</li> <li>▪ 69: T_Answer</li> <li>▪ 70: T_Disconnect</li> </ul> <i>type</i> is one of the following: <ul style="list-style-type: none"> <li>▪ R, which means Interrupt</li> <li>▪ N, which means Notify</li> </ul> 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 19–5](#).

**Table 19–5 IM-SSF WIN Phase 2 Media Resource Definition Fields**

Name	Type	Description
Name	STRING	Specifies a name of the media resource.

**Table 19-5 (Cont.) IM-SSF WIN Phase 2 Media Resource Definition Fields**

Name	Type	Description
Alias	STRING	<p>Specifies a unique identifier that applications use to instruct IM-SSF which media resource to connect in order to play announcements.</p> <p>Alias is used by IM-SSF to lookup a media resource details in this table.</p> <p>Aliases are defined in a URI format. For example: mrf.network@domain.com.</p>
Address Digits	STRING	<p>Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource.</p> <p><b>Note:</b> 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.</p>
Operation Type	STRING	<p>Possible values:</p> <ul style="list-style-type: none"> <li>■ switched_based The media resource is internal part of the SSP. CCDIR operation is used to connect the media resource.</li> <li>■ external The media resource not a part of the SSP. ConnectResource operation is used to connect the media resource.</li> </ul> <p>Default value: switched_based</p>
Resource Type	STRING	<p>Specifies the value to set in the SpecializedResource parameter of the SEIZERES operation.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ UNUSED</li> <li>■ DTMF_TONE_DETECTOR</li> <li>■ ASR_DIGITS</li> <li>■ ASR_SPEECH_USER_INTERFACE</li> </ul> <p>Default values: UNUSED</p>
Private Resource Type	STRING	<p>Specifies the value to set in the PrivateSpecializedResource parameter of the SEIZERES operation.</p>
SN-IP Configuration	STRING	<p>Possible values:</p> <ul style="list-style-type: none"> <li>■ UNUSED</li> <li>■ SN IP and SCP are co-located. When you choose this option, you need to set also the SN Address parameter.</li> <li>■ IP IP and SCP are not co-located.</li> </ul> <p>Default value: UNUSED</p>

**Table 19–5 (Cont.) IM-SSF WIN Phase 2 Media Resource Definition Fields**

Name	Type	Description
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 19–6 describes configuration parameters on the TCAP subtab.

**Table 19–6 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: <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> 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

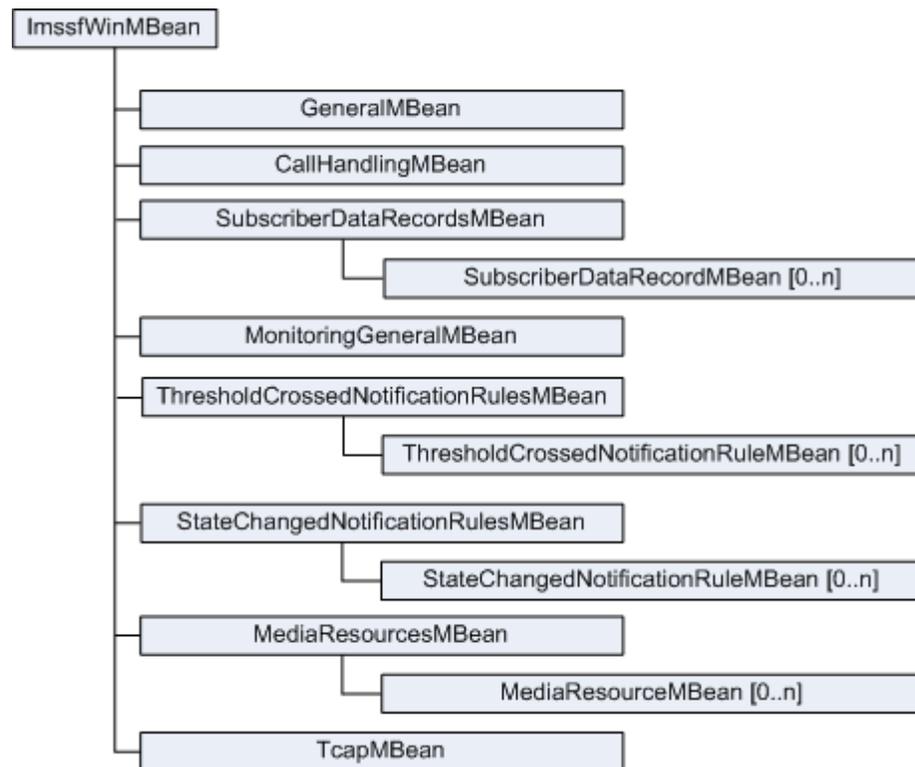
## Configuring Monitoring Parameters

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 Monitoring with the Administration Console"](#).

## Configuring IM-SSF WIN Phase 2 with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the IM-SSF WIN through JMX. [Figure 19-1](#) shows the hierarchy of the IM-SSF WIN phase 2 MBeans.

**Figure 19-1** IM-SSF WIN MBeans Hierarchy



The following sections provide reference information for the IM-SSF WIN configuration MBeans.

---

**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

---

The following MBeans are common for all components of Service Broker and described in ["Configuring Monitoring with Java MBeans"](#):

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean

- StateChangedNotificationRuleMBean

## ImssfWinMBean

ImssfWinMBean is a root MBean for the IM-SSF CAP WIN configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getGeneral()**

Gets a reference to the instance of GeneralMBean

**ObjectName getCallHandling()**

Gets a reference to the instance of CallHandlingMBean

**ObjectName getSubscriberDataRecords()**

Gets a reference to the instance of SubscriberDataRecordsMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

**ObjectName getMediaResources()**

Gets a reference to the instance of MediaResourcesMBean

**ObjectName getTcap()**

Gets a reference to the instance of TcapMBean

## GeneralMBean

GeneralMBean enables you to specify an alias for an Interworking Module instance.

### Factory Method

Created automatically

### Attributes

Alias

For more information on this attribute, see [Table 19-2](#).

### Operations

None

---

## CallHandlingMBean

CallHandlingMBean enables you to configure how a call is handled.

### Factory Method

Created automatically

### Attributes

- ImssfModeOfOperation
- SessionCase
- TssfDurationInSeconds
- TssfUserInteractionDurationInSeconds
- ImssfMediaCapability
- BodyEncodingFormat
- MscId
- MsId
- MobileEquipmentNumberSerialNumber
- MobileEquipmentNumberManufacturerCode
- OrigreqDialedDigitsNumberingPlan
- OrigreqDialedDigitsTypeOfDigits
- OrigreqMdnTypeOfDigits
- OrigreqMdnNumberingPlan
- AnlyzdInvokeDigitsNumberingPlan
- AnlyzdInvokeDigitsTypeOfDigits
- AnlyzdInvokeMobileDirectoryNumberTypeOfDigits
- AnlyzdInvokeMobileDirectoryNumberNatureNumberingPlan

For more information on these attributes, see [Table 19–3](#).

### Operations

None

## SubscriberDataRecordsMBean

SubscriberDataRecordsMBean is a container for instances of SubscriberDataRecordMBean. Each instance of SubscriberDataRecordMBean defines an IN trigger that the IM-SSF invokes to the SCP above.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getSubscriberDataRecordsMBean()**

Gets an array of references to instances of SubscriberDataRecordMBean

**ObjectName createSubscriberDataRecordMBean()**

Creates a new instance of SubscriberDataRecordMBean

**void destroySubscriberDataRecordMBean()**

Destroys an existing instance of SubscriberDataRecordMBean

**ObjectName lookupSubscriberDataRecordMBean()**

Gets a reference to the instance of SubscriberDataRecordMBean

## SubscriberDataRecordMBean

Each instance of SubscriberDataRecordMBean defines an IN trigger that the IM-SSF invokes to the SCP above.

### Factory Method

SubscriberDataRecords.createSubscriberDataRecord()

### Attributes

- Min
- Dn
- ScpAddressAlias
- DefaultCallHandling
- TdpList

For more information on these attributes, see [Table 19-4](#).

### Operations

None

## MediaResourcesMBean

MediaResourcesMBean is a container for instances of MediaResourceMBean. Each instance of MediaResourceMBean represents a single media resource to which an SSP can connect.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName[] getMediaResource()**

Returns an array of references to instances of MediaResourceMBean

**ObjectName createMediaResourceMBean()**

Creates a new instance of MediaResourceMBean

**void destroyMediaResourceMBean()**

Destroys an existing instance of MediaResourceMBean

**ObjectName lookupMediaResourceMBean()**

Gets a reference to the instance of MediaResourceMBean

## MediaResourceMBean

Each instance of MediaResourceMBean represents one media resource to which an SSP can connect to play announcements.

### Factory Method

MediaResources.createMediaResource()

### Attributes

- Alias
- AddressDigits
- OperationType
- ResourceType
- PrivateResourceType
- SnIpConfiguration

For more information on these attributes, see [Table 19-5](#).

### Operations

None

## Tcap MBean

TcapMBean enables you to configure the TCAP layer of the module.

### Factory Method

Created automatically

### Attributes

- Class4DefaultTimeoutInSeconds
- RejectTimeoutInSeconds
- ActivateInvokeAlarmInApplicationLayer
- ApplicationPartGuardTimer
- ResultSplitLength

For more information on these attributes, see [Table 19–6](#).

### Operations

None

## Configuring IM-SSF AIN 0.1

The following sections describe how to configure IM-SSF using the Service Broker Administration Console and Java MBeans.

### Configuring IM-SSF AIN 0.1 with the Administration Console

This section describes how to configure the IM-SSF AIN 0.1 using the Service Broker Administration Console.

To access the IM-SSF AIN 0.1 configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The IM-SSF AIN 0.1 configuration pane contains the subtabs described in [Table 20-1](#).

**Table 20-1** IM-SSF AIN 0.1 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See " <a href="#">Configuring General Parameters</a> " for more information.
Call Handling	Enables you to configure how the IM-SSF handles calls. See " <a href="#">Configuring Call Handling Parameters</a> " for more information.
Subscriber Data	Enables you to define IN triggers that the IM-SSF invokes towards the SCP above. See " <a href="#">Configuring Subscriber Data Parameters</a> " 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 " <a href="#">Configuring Operation Propagation Parameters</a> " for more information.

**Table 20–1 (Cont.) IM-SSF AIN 0.1 Configuration Subtabs**

Subtab	Description
Media Resources	Enables you to set up the media resources that Service Broker uses to play announcements. See <a href="#">"Configuring Media Resources Parameters"</a> for more information.
TCAP	Enables you to set up the TCAP layer of the IM-SSF. See <a href="#">"Configuring TCAP Parameters"</a> for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See <a href="#">"Configuring Monitoring Parameters"</a> 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 20–2](#) describes the configuration parameter on the General subtab.

**Table 20–2 General Parameter**

Name	Type	Description
Alias	STRING	Specifies the alias of the IM's SS7 address. The alias is an index to 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 / decode SS7 messages.

## Configuring Call Handling Parameters

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

[Table 20–3](#) describes configuration parameters on the Call Handling subtab.

**Table 20–3 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: <ul style="list-style-type: none"> <li>▪ DYNAMIC IM-SSF dynamically changes its call control mode, according to the mode requested by the SCP.</li> <li>▪ BACK_TO_BACK IM-SSF monitors calls and ignores the mode requested by the SCP.</li> <li>▪ REDIRECT IM-SSF does not monitor calls and ignores the mode requested by the SCP.</li> </ul> Default value: DYNAMIC

**Table 20-3 (Cont.) IM-SSF AIN 0.1 Call Handling Parameters**

Name	Type	Description
Session Case	STRING	<p>Specifies how the IM-SSF treats sessions that arrive on the southbound interface, from the OE.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ ORIG All calls are treated as originating calls.</li> <li>■ TERM All calls are treated as terminating calls.</li> <li>■ 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 Broker IM.</li> </ul> <p>Default value: DYNAMIC</p>
Tssf Duration in Seconds	INT	<p>Specifies the value, in seconds, of the IM-SSF Tssf timer.</p> <p>Default value: 20</p>
Tssf User Interaction Duration in Seconds	INT	<p>Specifies the value, in seconds, of the IM-SSF Tssf timer.</p> <p>This parameter is used when the IM-SSF is in the middle of interaction with a media resource.</p> <p>Default value: 1200</p>
IM-SSF Media Capability	BOOL	<p>Specifies whether or not the underlying network supports IP/SRF/MRF.</p> <p>This determines if the IM-SSF can handle media-related operations, such as EstablishTemporaryConnection or ConnectToResource.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> <p>Default value: False</p>
Body Encoding Format	STRING	<p>Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message.</p> <p>Possible options:</p> <ul style="list-style-type: none"> <li>■ BER</li> <li>■ XER</li> <li>■ NONE</li> </ul> <p>Default value: NONE</p>

**Table 20-3 (Cont.) IM-SSF AIN 0.1 Call Handling Parameters**

Name	Type	Description
NatureOfNumber of calledPartyID	STRING	<p>Specifies the NatureOfNumber value of the calledPartyID/collectedAddressInfo fields that IM-SSF sets when invoking a trigger message towards the SCP.</p> <p>Trigger messages:</p> <ul style="list-style-type: none"> <li>▪ Origination_Attempt</li> <li>▪ Info_Collected</li> <li>▪ Info_Analyze</li> <li>▪ Termination_Attempt</li> </ul> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ SUBSCRIBER_NUMBER</li> <li>▪ UNKNOWN</li> <li>▪ NATIONAL</li> <li>▪ INTERNATIONAL</li> </ul> <p>Default value: NATIONAL</p>
NumberingPlan of calledPartyID	STRING	<p>Specifies the NumberingPlan value of the calledPartyID/collectedAddressInfo fields that IM-SSF sets when invoking a trigger message towards the SCP.</p> <p>Trigger messages:</p> <ul style="list-style-type: none"> <li>▪ Origination_Attempt</li> <li>▪ Info_Collected</li> <li>▪ Info_Analyze</li> <li>▪ Termination_Attempt</li> </ul> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ ISDN</li> <li>▪ PRIVATE</li> <li>▪ UNKNOWN</li> </ul> <p>Default value: ISDN</p>
NatureOfNumber of callingPartyID	STRING	<p>Specifies the NatureOfNumber value in the CallingPartyID field that IM-SSF sets when invoking trigger message towards the SCP.</p> <p>Trigger messages:</p> <ul style="list-style-type: none"> <li>▪ Origination_Attempt</li> <li>▪ Info_Collected</li> <li>▪ Info_Analyze</li> <li>▪ Termination_Attempt</li> </ul> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ SUBSCRIBER_NUMBER</li> <li>▪ UNKNOWN</li> <li>▪ NATIONAL</li> <li>▪ INTERNATIONAL</li> </ul> <p>Default value: NATIONAL</p>

**Table 20-3 (Cont.) IM-SSF AIN 0.1 Call Handling Parameters**

Name	Type	Description
NumberingPlan of callingPartyID	STRING	<p>Specifies the NumberingPlan value in the CallingPartyID field that IM-SSF sets when invoking trigger messages towards the SCP.</p> <p>Trigger messages:</p> <ul style="list-style-type: none"> <li>▪ Origination_Attempt</li> <li>▪ Info_Collected</li> <li>▪ Info_Analyze</li> <li>▪ Termination_Attempt</li> </ul> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ ISDN</li> <li>▪ PRIVATE</li> <li>▪ UNKNOWN</li> </ul> <p>Default value: ISDN</p>
ScreeningIndicator of callingPartyID	STRING	<p>Specifies the ScreeningIndicator value in the CallingPartyID field that IM-SSF sets when invoking trigger message towards the SCP.</p> <p>Trigger messages:</p> <ul style="list-style-type: none"> <li>▪ Origination_Attempt</li> <li>▪ Info_Collected</li> <li>▪ Info_Analyze</li> <li>▪ Termination_Attempt</li> </ul> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ USER_PROVIDED_NOT_VERIFIED</li> <li>▪ USER_PROVIDED_VERIFIED_PASSED</li> <li>▪ USER_PROVIDED_VERIFIED_FAILED</li> <li>▪ NETWORK_PROVIDED</li> </ul> <p>Default value: USER_PROVIDED_NOT_VERIFIED</p>
userID	STRING	<p>Specifies the value that IM-SSF sets in the userID field when invoking trigger message towards the SCP.</p> <p>Trigger messages:</p> <ul style="list-style-type: none"> <li>▪ Origination_Attempt</li> <li>▪ Info_Collected</li> <li>▪ Info_Analyze</li> <li>▪ Termination_Attempt</li> </ul> <p>Default value: -1</p>

**Table 20–3 (Cont.) IM-SSF AIN 0.1 Call Handling Parameters**

Name	Type	Description
BearerCapability	STRING	<p>Specifies the value that IM-SSF sets in the bearerCapability field when invoking trigger message towards the SCP.</p> <p>Trigger messages:</p> <ul style="list-style-type: none"> <li>▪ Origination_Attempt</li> <li>▪ Info_Collected</li> <li>▪ Info_Analyze</li> <li>▪ Termination_Attempt</li> </ul> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ SPEECH</li> <li>▪ F31KHZAUDIO</li> <li>▪ F7KHZAUDIO</li> <li>▪ B56KBPS</li> <li>▪ B64KBPS</li> <li>▪ PACKETMODEDATA</li> </ul> <p>Default value: SPEECH</p>

## 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 20–4](#).

**Table 20–4 IM-SSF AIN 0.1 Subscriber Data Fields**

Name	Type	Description
DN	STRING	<p>Specifies a condition on session DN. When the condition is met, IM-SSF invokes triggers towards the SCP.</p> <p>To apply a rule for all DNs, set this parameter to Default.</p>
SCP Address Alias	STRING	<p>Specifies the SCP to which IM-SSF invokes a trigger.</p> <p>This is an alias to one of the SCCP addresses specified in the SS7 SSU configuration.</p>
Default Call Handling	STRING	<p>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).</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ CONTINUE_CALL</li> <li>▪ RELEASE_CALL</li> </ul> <p>Default value: CONTINUE_CALL</p>

**Table 20–4 (Cont.) IM-SSF AIN 0.1 Subscriber Data Fields**

Name	Type	Description
TDP List	STRING_LIST	<p>Specifies a list of TDPs that must be triggered.</p> <p>Each trigger is specified in the following format: <i>id=type</i></p> <p>where: <i>id</i> is one of the following</p> <ul style="list-style-type: none"> <li>▪ 225: OriginatingAttempt</li> <li>▪ 227: InfoCollected</li> <li>▪ 228: InfoAnalyzed</li> <li>▪ 3607: NetworkBusy</li> <li>▪ 3616: TerminationAttempt</li> </ul> <p><i>type</i> is one of the following:</p> <ul style="list-style-type: none"> <li>▪ R, which means Interrupt</li> <li>▪ N, which means Notify</li> </ul> <p>Separate multiple TDPs with a comma. For example: 3607=R, 3616=N</p>

## 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 20–5](#).

**Table 20–5 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	<p>Specifies whether IM-SSF processes operations on its own or propagates a request to the session control layer.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ True The IM-SSF propagates RRBCSMEvent operations.</li> <li>▪ False The IM-SSF processes RRBCSMEvent operations.</li> </ul> <p>Default value: True</p>

## 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 20–6](#).

**Table 20–6 IM-SSF AIN 0.1 Media Resource Definition Fields**

Name	Type	Description
Name	STRING	Specifies a name of the media resource.
Alias	STRING	<p>Specifies a unique identifier that applications use to instruct IM-SCF which media resource to connect in order to play announcements.</p> <p>Alias is used by IM-SCF to lookup for media resource details in this table.</p> <p>Aliases are defined in a URI format. For example: mrf.network@domain.com.</p>
Announcement Operation	INT	<p>Specifies which operation IM-SCF triggers towards the switch-based media resource.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ 0 PlayAnnouncement</li> <li>■ 1 PlayAnnouncementAndCollectDigits</li> </ul> <p>Default value: 0</p>
Disconnect Flag	BOOL	<p>Specifies whether or not to set the DisconnectFlag in SendToResource operation.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Yes The switch disconnects a call immediately after completing playing announcement.</li> <li>■ No The switch does not disconnect a call immediately after completing playing announcement.</li> </ul> <p>Default value: Yes</p>
Answer Indication	BOOL	<p>Specifies whether a switch sends Answer message to the calling party upon connection to the media resource.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ 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).</li> <li>■ False The media path opens only in the direction from the media resource to the caller.</li> </ul> <p>Default value: True</p>

## Configuring TCAP Parameters

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

[Table 20–7](#) describes configuration parameters on the TCAP subtab.

**Table 20–7 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
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: <ul style="list-style-type: none"> <li>▪ True</li> <li>▪ False</li> </ul> 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

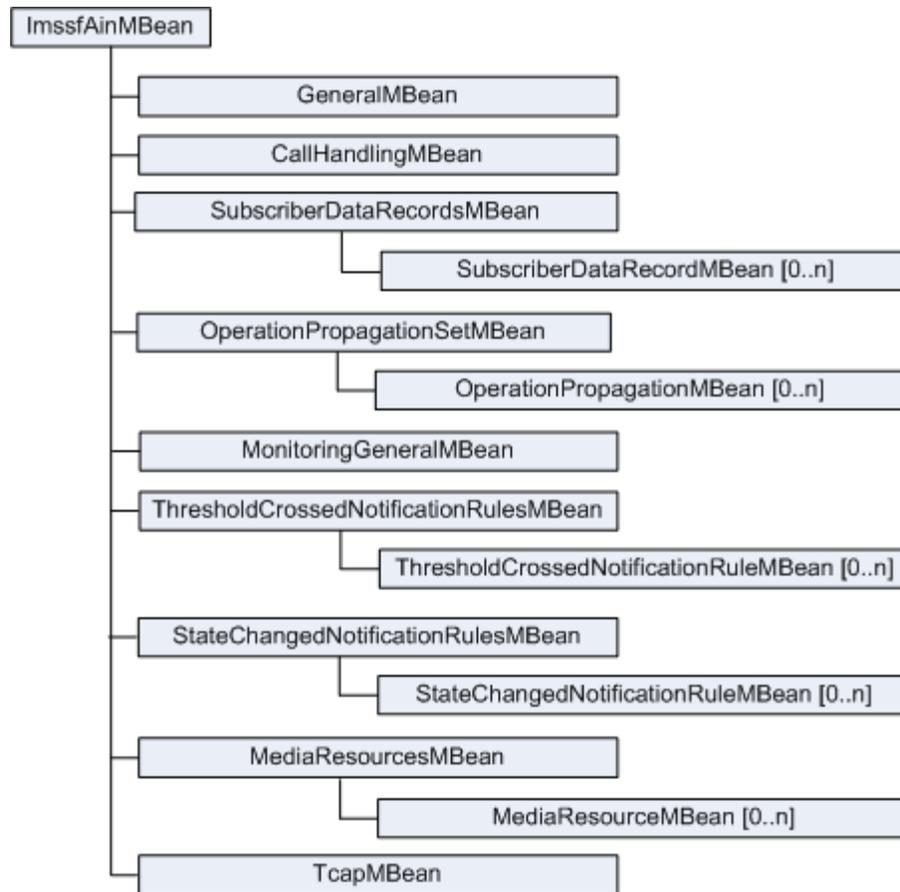
## Configuring Monitoring Parameters

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 Monitoring with the Administration Console"](#).

## Configuring IM-SSF AIN 0.1 with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the IM-SSF AIN 0.1 through JMX. [Figure 20–1](#) shows the hierarchy of the IM-SSF AIN 0.1 MBeans.

**Figure 20–1 IM-SSF AIN 0.1 MBeans Hierarchy**



The following sections provide reference information for the IM-SSF AIN 0.1 configuration MBeans.

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**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

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The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

---

## ImssfAinMBean

ImssfAinMBean is a root MBean for the IM-SSF AIN 0.1 configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getGeneral()**

Gets a reference to the instance of GeneralMBean

**ObjectName getCallHandling()**

Gets a reference to the instance of CallHandlingMBean

**ObjectName getSubscriberDataRecords()**

Gets a reference to the instance of SubscriberDataRecordsMBean

**ObjectName getOperationPropagationSet()**

Gets a reference to the instance of OperationPropagationSetMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

**ObjectName getMediaResources()**

Gets a reference to the instance of MediaResourcesMBean

**ObjectName getTcap()**

Gets a reference to the instance of TcapMBean

---

## GeneralMBean

GeneralMBean enables you to specify an alias for an Interworking Module instance.

### Factory Method

Created automatically

### Attributes

Alias

For more information on this attribute, see [Table 20-2](#).

### Operations

None

## CallHandlingMBean

CallHandlingMBean enables you to configure how a call is handled.

### Factory Method

Created automatically

### Attributes

- ImssfModeOfOperation
- SessionCase
- TssfDurationInSeconds
- TssfUserInteractionDurationInSeconds
- ImssfMediaCapability
- BodyEncodingFormat
- NatureOfNumberOfCalledPartyId
- NumberingPlanOfCalledPartyId
- UserId
- BearerCapability
- NatureOfNumberOfCallingPartyId
- NumberingPlanOfCallingPartyId
- ScreeningIndicatorOfCallingPartyId

For more information on these attributes, see [Table 20–3](#).

### Operations

None

---

## SubscriberDataRecordsMBean

SubscriberDataRecordsMBean is a container for instances of SubscriberDataRecordMBean. Each instance of SubscriberDataRecordMBean defines an IN trigger that the IM-SSF invokes to the SCP above.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getSubscriberDataRecordsMBean()**

Gets an array of references to instances of SubscriberDataRecordMBean

**ObjectName createSubscriberDataRecordMBean()**

Creates a new instance of SubscriberDataRecordMBean

**void destroySubscriberDataRecordMBean()**

Destroys an existing instance of SubscriberDataRecordMBean

**ObjectName lookupSubscriberDataRecordMBean()**

Gets a reference to the instance of SubscriberDataRecordMBean

## SubscriberDataRecordMBean

Each instance of SubscriberDataRecordMBean defines an IN trigger that the IM-SSF invokes to the SCP above.

### Factory Method

SubscriberDataRecords.createSubscriberDataRecord()

### Attributes

- Dn
- ScpAddressAlias
- DefaultCallHandling
- TdpList

For more information on these attributes, see [Table 20-4](#).

### Operations

None

---

## OperationPropagationSetMBean

OperationPropagationSetMBean is a container for instances of OperationPropagationMBean. Each instance of OperationPropagationMBean defines whether the IM-SSF processes a specific operation on its own or propagates this operation to another module.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getOperationPropagation()**

Gets an array of references to instances of OperationPropagationMBean

**ObjectName createOperationPropagationMBean()**

Creates a new instance of OperationPropagationMBean

**void destroyOperationPropagationMBean()**

Destroys an existing instance of OperationPropagationMBean

**ObjectName lookupOperationPropagationMBean()**

Gets a reference to the instance of OperationPropagationMBean

## OperationPropagationMBean

Each instance of OperationPropagationMBean defines an operation that the IM-SSF either processes on its own or propagates this operation to another module.

### Factory Method

OperationPropagationSet.createOperationPropagation()

### Attributes

- Operation
- ModuleName
- EnablePropagation

For more information on these attributes, see [Table 20-5](#).

### Operations

None

## MediaResourcesMBean

MediaResourcesMBean is a container for instances of MediaResourceMBean. Each instance of MediaResourceMBean represents a single media resource to which an SSP can connect.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName[] getMediaResource()**

Returns an array of references to instances of MediaResourceMBean

**ObjectName createMediaResourceMBean()**

Creates a new instance of MediaResourceMBean

**void destroyMediaResourceMBean()**

Destroys an existing instance of MediaResourceMBean

**ObjectName lookupMediaResourceMBean()**

Gets a reference to the instance of MediaResourceMBean

## MediaResourceMBean

Each instance of MediaResourceMBean represents one media resource to which an SSP can connect to play announcements.

### Factory Method

MediaResources.createMediaResource()

### Attributes

- Alias
- AnnouncementOperation
- DisconnectFlag
- AnswerIndication

For more information on these attributes, see [Table 20-6](#).

### Operations

None

## Tcap MBean

TcapMBean enables you to configure the TCAP layer of the module.

### Factory Method

Created automatically

### Attributes

- Class4DefaultTimeoutInSeconds
- RejectTimeoutInSeconds
- ActivateInvokeAlarmInApplicationLayer
- ApplicationPartGuardTimer
- ResultSplitLength

For more information on these attributes, see [Table 20–7](#).

### Operations

None

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## Configuring IM-SSF AIN 0.2

The following sections describe how to configure IM-SSF using the Service Broker Administration Console and Java MBeans.

### Configuring IM-SSF AIN 0.2 with the Administration Console

This section describes how to configure the IM-SSF AIN 0.2 by using the Service Broker Administration Console.

To access the IM-SSF AIN 0.2 configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The IM-SSF AIN 0.2 configuration pane contains the subtabs described in [Table 21-1](#).

**Table 21-1** IM-SSF AIN 0.2 Configuration Subtabs

Subtab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See " <a href="#">Configuring General Parameters</a> " for more information.
Call Handling	Enables you to configure how the IM-SSF handles calls. See " <a href="#">Configuring Call Handling Parameters</a> " for more information.
Subscriber Data	Enables you to define IN triggers that the IM-SSF invokes towards the SCP above. See " <a href="#">Configuring Subscriber Data Parameters</a> " 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 " <a href="#">Configuring Operation Propagation Parameters</a> " for more information.

**Table 21–1 (Cont.) IM-SSF AIN 0.2 Configuration Subtabs**

Subtab	Description
Media Resources	Enables you to set up the media resources that Service Broker uses to play announcements. See <a href="#">"Configuring Media Resources Parameters"</a> for more information.
TCAP	Enables you to set up the TCAP layer of the IM-SSF. See <a href="#">"Configuring TCAP Parameters"</a> for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See <a href="#">"Configuring Monitoring Parameters"</a> 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 21–2](#) describes the configuration parameter on the General subtab.

**Table 21–2 General Parameter**

Name	Type	Description
Alias	STRING	Specifies the alias of the IM's SS7 address. The alias is an index to 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 / decode SS7 messages.

## Configuring Call Handling Parameters

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

[Table 21–3](#) describes configuration parameters on the Call Handling subtab.

**Table 21–3 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: <ul style="list-style-type: none"> <li>▪ DYNAMIC IM-SSF dynamically changes its call control mode, according to the mode requested by the SCP.</li> <li>▪ BACK_TO_BACK IM-SSF monitors calls and ignores the mode requested by the SCP.</li> <li>▪ REDIRECT IM-SSF does not monitor calls and ignores the mode requested by the SCP.</li> </ul> Default value: DYNAMIC

**Table 21-3 (Cont.) IM-SSF AIN 0.2 Call Handling Parameters**

Name	Type	Description
Session Case	STRING	<p>Specifies how the IM-SSF treats sessions that arrive on the southbound interface, from the OE.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ ORIG All calls are treated as originating calls.</li> <li>■ TERM All calls are treated as terminating calls.</li> <li>■ 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 Broker IM.</li> </ul> <p>Default value: ORIG</p>
Tssf Duration in Seconds	INT	<p>Specifies the value, in seconds, of the IM-SSF Tssf timer.</p> <p>Default value: 20</p>
Tssf User Interaction Duration in Seconds	INT	<p>Specifies the value, in seconds, of the IM-SSF Tssf timer.</p> <p>This parameter is used when the IM-SSF is in the middle of interaction with a media resource.</p> <p>Default value: 1200</p>
IM-SSF Media Capability	BOOL	<p>Specifies whether or not the underlying network supports IP/SRF/MRF.</p> <p>This determines if the IM-SSF can handle media-related operations, such as EstablishTemporaryConnection or ConnectToResource.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> <p>Default value: False</p>
Body Encoding Format	STRING	<p>Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message.</p> <p>Possible options:</p> <ul style="list-style-type: none"> <li>■ BER</li> <li>■ XER</li> <li>■ NONE</li> </ul> <p>Default value: NONE</p>

**Table 21-3 (Cont.) IM-SSF AIN 0.2 Call Handling Parameters**

Name	Type	Description
NatureOfNumber of calledPartyID	STRING	<p>Specifies the NatureOfNumber value of the calledPartyID/collectedAddressInfo fields that IM-SSF sets when invoking a trigger message towards the SCP.</p> <p>Trigger messages:</p> <ul style="list-style-type: none"> <li>▪ Origination_Attempt</li> <li>▪ Info_Collected</li> <li>▪ Info_Analyze</li> <li>▪ Termination_Attempt</li> </ul> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ SUBSCRIBER_NUMBER</li> <li>▪ UNKNOWN</li> <li>▪ NATIONAL</li> <li>▪ INTERNATIONAL</li> </ul> <p>Default value: NATIONAL</p>
NumberingPlan of calledPartyID	STRING	<p>Specifies the NumberingPlan value of the calledPartyID/collectedAddressInfo fields that IM-SSF sets when invoking a trigger message towards the SCP.</p> <p>Trigger messages:</p> <ul style="list-style-type: none"> <li>▪ Origination_Attempt</li> <li>▪ Info_Collected</li> <li>▪ Info_Analyze</li> <li>▪ Termination_Attempt</li> </ul> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ ISDN</li> <li>▪ PRIVATE</li> <li>▪ UNKNOWN</li> </ul> <p>Default value: ISDN</p>
NatureOfNumber of callingPartyID	STRING	<p>Specifies the NatureOfNumber value in the CallingPartyID field that IM-SSF sets when invoking trigger message towards the SCP.</p> <p>Trigger messages:</p> <ul style="list-style-type: none"> <li>▪ Origination_Attempt</li> <li>▪ Info_Collected</li> <li>▪ Info_Analyze</li> <li>▪ Termination_Attempt</li> </ul> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ SUBSCRIBER_NUMBER</li> <li>▪ UNKNOWN</li> <li>▪ NATIONAL</li> <li>▪ INTERNATIONAL</li> </ul> <p>Default value: NATIONAL</p>

**Table 21-3 (Cont.) IM-SSF AIN 0.2 Call Handling Parameters**

Name	Type	Description
NumberingPlan of callingPartyID	STRING	<p>Specifies the NumberingPlan value in the CallingPartyID field that IM-SSF sets when invoking trigger message towards the SCP.</p> <p>Trigger messages:</p> <ul style="list-style-type: none"> <li>▪ Origination_Attempt</li> <li>▪ Info_Collected</li> <li>▪ Info_Analyze</li> <li>▪ Termination_Attempt</li> </ul> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ ISDN</li> <li>▪ PRIVATE</li> <li>▪ UNKNOWN</li> </ul> <p>Default value: ISDN</p>
ScreeningIndicator of callingPartyID	STRING	<p>Specifies the ScreeningIndicator value in the CallingPartyID field that IM-SSF sets when invoking trigger message towards the SCP.</p> <p>Trigger messages:</p> <ul style="list-style-type: none"> <li>▪ Origination_Attempt</li> <li>▪ Info_Collected</li> <li>▪ Info_Analyze</li> <li>▪ Termination_Attempt</li> </ul> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ USER_PROVIDED_NOT_VERIFIED</li> <li>▪ USER_PROVIDED_VERIFIED_PASSED</li> <li>▪ USER_PROVIDED_VERIFIED_FAILED</li> <li>▪ NETWORK_PROVIDED</li> </ul> <p>Default value: USER_PROVIDED_NOT_VERIFIED</p>
userID	STRING	<p>Specifies the value that IM-SSF sets in the userID field when invoking trigger message towards the SCP.</p> <p>Trigger messages:</p> <ul style="list-style-type: none"> <li>▪ Origination_Attempt</li> <li>▪ Info_Collected</li> <li>▪ Info_Analyze</li> <li>▪ Termination_Attempt</li> </ul> <p>Default value: -1</p>

**Table 21–3 (Cont.) IM-SSF AIN 0.2 Call Handling Parameters**

Name	Type	Description
BearerCapability	STRING	<p>Specifies the value that IM-SSF sets in the bearerCapability field when invoking trigger message towards the SCP.</p> <p>Trigger messages:</p> <ul style="list-style-type: none"> <li>▪ Origination_Attempt</li> <li>▪ Info_Collected</li> <li>▪ Info_Analyze</li> <li>▪ Termination_Attempt</li> </ul> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ SPEECH</li> <li>▪ F31KHZAUDIO</li> <li>▪ F7KHZAUDIO</li> <li>▪ B56KBPS</li> <li>▪ B64KBPS</li> <li>▪ PACKETMODEDATA</li> </ul> <p>Default value: SPEECH</p>

## 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 21–4](#).

**Table 21–4 IM-SSF AIN 0.2 Subscriber Data Fields**

Name	Type	Description
DN	STRING	<p>Specifies a condition on session DN. When the condition is met, IM-SSF invokes triggers towards the SCP.</p> <p>To apply a rule for all DNs, set this parameter to Default.</p>
SCP Address Alias	STRING	<p>Specifies the SCP to which IM-SSF invokes a trigger.</p> <p>This is an alias to one of the SCCP addresses specified in the SS7 SSU configuration.</p>
Default Call Handling	STRING	<p>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).</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ CONTINUE_CALL</li> <li>▪ RELEASE_CALL</li> </ul> <p>Default value: CONTINUE_CALL</p>

**Table 21–4 (Cont.) IM-SSF AIN 0.2 Subscriber Data Fields**

Name	Type	Description
TDP List	STRING_LIST	<p>Specifies a list of TDPs that must be triggered.</p> <p>Each trigger is specified in the following format:  <i>id=type</i>            where:  <i>id</i> is one of the following</p> <ul style="list-style-type: none"> <li>▪ 225: OriginatingAttempt</li> <li>▪ 227: InfoCollected</li> <li>▪ 228: InfoAnalyzed</li> <li>▪ 3607: NetworkBusy</li> <li>▪ 3616: TerminationAttempt</li> </ul> <p><i>type</i> is one of the following:</p> <ul style="list-style-type: none"> <li>▪ R, which means Interrupt</li> <li>▪ N, which means Notify</li> </ul> <p>Separate multiple TDPs with a comma. For example: 3607=R, 3616=N</p>

## 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 21–5](#).

**Table 21–5 IM-SSF AIN 0.2 Operation Propagation**

Name	Type	Description
Name	STRING	Specifies a unique identifier.
Operation	STRING	<p>Specifies an operation.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ SendNotification</li> </ul>
Module name	STRING	Specifies a name of a module instance to which an operation is propagated.
Enable Propagation	BOOL	<p>Specifies whether IM-SSF processes operations on its own or propagates a request to the session control layer.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ True The IM-SSF propagates RRBCSMEvent operations.</li> <li>▪ False The IM-SSF processes RRBCSMEvent operations.</li> </ul> <p>Default value: True</p>

## 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 21-6](#).

**Table 21-6 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: <ul style="list-style-type: none"> <li>■ 0: PlayAnnouncement</li> <li>■ 1: PlayAnnouncementAndCollectDigits</li> </ul> Default value: 0
Disconnect Flag	BOOL	Specifies whether or not to set the DisconnectFlag in SendToResource operation.  Possible values: <ul style="list-style-type: none"> <li>■ Yes: The switch disconnects a call immediately after completing playing announcement.</li> <li>■ No: The switch does not disconnect a call immediately after completing playing announcement.</li> </ul> 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: <ul style="list-style-type: none"> <li>■ 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).</li> <li>■ False The media path opens only in the direction from the media resource to the caller.</li> </ul> Default value: True

## Configuring TCAP Parameters

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

[Table 21–7](#) describes configuration parameters on the TCAP subtab.

**Table 21–7 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
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: <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> 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

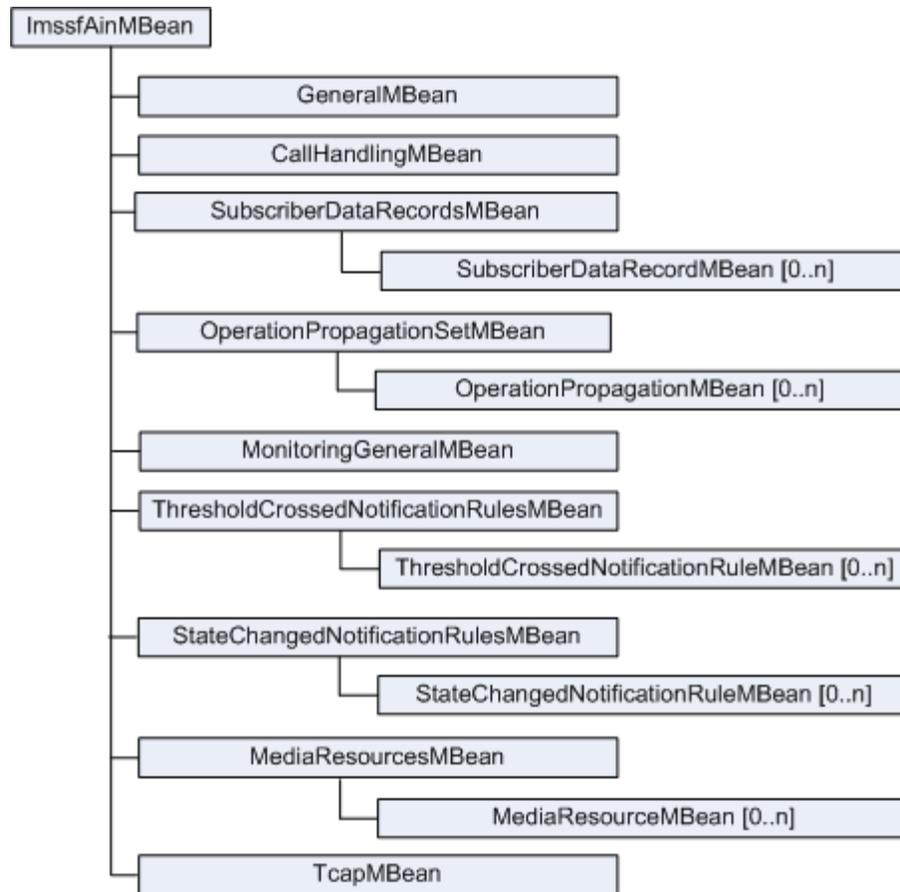
## Configuring Monitoring Parameters

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 Monitoring with the Administration Console"](#).

## Configuring IM-SSF AIN 0.2 with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the IM-SSF AIN 0.2 through JMX. [Figure 21–1](#) shows the hierarchy of the IM-SSF AIN 0.2 MBeans.

**Figure 21–1 IM-SSF AIN 0.2 MBeans Hierarchy**



The following sections provide reference information for the IM-SSF AIN 0.2 configuration MBeans.

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**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

---

The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

---

## ImssfAinMBean

ImssfAinMBean is a root MBean for the IM-SSF AIN 0.2 configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getGeneral()**

Gets a reference to the instance of GeneralMBean

**ObjectName getCallHandling()**

Gets a reference to the instance of CallHandlingMBean

**ObjectName getSubscriberDataRecords()**

Gets a reference to the instance of SubscriberDataRecordsMBean

**ObjectName getOperationPropagationSet()**

Gets a reference to the instance of OperationPropagationSetMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

**ObjectName getMediaResources()**

Gets a reference to the instance of MediaResourcesMBean

**ObjectName getTcap()**

Gets a reference to the instance of TcapMBean

## GeneralMBean

GeneralMBean enables you to specify an alias for an Interworking Module instance.

### Factory Method

Created automatically

### Attributes

Alias

For more information on this attribute, see [Table 21-2](#).

### Operations

None

## CallHandlingMBean

CallHandlingMBean enables you to configure how a call is handled.

### Factory Method

Created automatically

### Attributes

- ImssfModeOfOperation
- SessionCase
- TssfDurationInSeconds
- TssfUserInteractionDurationInSeconds
- ImssfMediaCapability
- BodyEncodingFormat
- UserId
- BearerCapability
- NatureOfNumberOfCallingPartyId
- NumberingPlanOfCallingPartyId
- ScreeningIndicatorOfCallingPartyId
- NatureOfNumberOfCalledPartyId
- NumberingPlanOfCalledPartyId

For more information on these attributes, see [Table 21–3](#).

### Operations

None

---

## SubscriberDataRecordsMBean

SubscriberDataRecordsMBean is a container for instances of SubscriberDataRecordMBean. Each instance of SubscriberDataRecordMBean defines an IN trigger that the IM-SSF invokes to the SCP above.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getSubscriberDataRecordsMBean()**

Gets an array of references to instances of SubscriberDataRecordMBean

**ObjectName createSubscriberDataRecordMBean()**

Creates a new instance of SubscriberDataRecordMBean

**void destroySubscriberDataRecordMBean()**

Destroys an existing instance of SubscriberDataRecordMBean

**ObjectName lookupSubscriberDataRecordMBean()**

Gets a reference to the instance of SubscriberDataRecordMBean

## SubscriberDataRecordMBean

Each instance of SubscriberDataRecordMBean defines an IN trigger that the IM-SSF invokes to the SCP above.

### Factory Method

SubscriberDataRecords.createSubscriberDataRecord()

### Attributes

- Dn
- ScpAddressAlias
- DefaultCallHandling
- TdpList

For more information on these attributes, see [Table 21-4](#).

### Operations

None

## OperationPropagationSetMBean

OperationPropagationSetMBean is a container for instances of OperationPropagationMBean. Each instance of OperationPropagationMBean defines whether the IM-SSF processes a specific operation on its own or propagates this operation to another module.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getOperationPropagation()**

Gets an array of references to instances of OperationPropagationMBean

**ObjectName createOperationPropagationMBean()**

Creates a new instance of OperationPropagationMBean

**void destroyOperationPropagationMBean()**

Destroys an existing instance of OperationPropagationMBean

**ObjectName lookupOperationPropagationMBean()**

Gets a reference to the instance of OperationPropagationMBean

## OperationPropagationMBean

Each instance of OperationPropagationMBean defines an operation that the IM-SSF either processes on its own or propagates this operation to another module.

### Factory Method

OperationPropagationSet.createOperationPropagation()

### Attributes

- Operation
- ModuleName
- EnablePropagation

For more information on these attributes, see [Table 21-5](#).

### Operations

None

## MediaResourcesMBean

MediaResourcesMBean is a container for instances of MediaResourceMBean. Each instance of MediaResourceMBean represents a single media resource to which an SSP can connect.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName[] getMediaResource()**

Returns an array of references to instances of MediaResourceMBean

**ObjectName createMediaResourceMBean()**

Creates a new instance of MediaResourceMBean

**void destroyMediaResourceMBean()**

Destroys an existing instance of MediaResourceMBean

**ObjectName lookupMediaResourceMBean()**

Gets a reference to the instance of MediaResourceMBean

## MediaResourceMBean

Each instance of MediaResourceMBean represents one media resource to which an SSP can connect to play announcements.

### Factory Method

MediaResources.createMediaResource()

### Attributes

- Alias
- AnnouncementOperation
- DisconnectFlag
- AnswerIndication

For more information on these attributes, see [Table 21-6](#).

### Operations

None

## Tcap MBean

TcapMBean enables you to configure the TCAP layer of the module.

### Factory Method

Created automatically

### Attributes

- Class4DefaultTimeoutInSeconds
- RejectTimeoutInSeconds
- ActivateInvokeAlarmInApplicationLayer
- ApplicationPartGuardTimer
- ResultSplitLength

For more information on these attributes, see [Table 21-7](#).

### Operations

None

## Configuring IM-ASF SIP

The following sections describe how to configure IM-ASF using the Service Broker Administration Console and Java MBeans.

### Configuring IM-ASF SIP with the Administration Console

This section describes how to configure IM-ASF SIP module instances using the Service Broker Administration Console.

To access the IM-ASF SIP configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Select **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The IM-ASF SIP configuration pane contains the subtabs described in [Table 22-1](#).

**Table 22-1** IM-ASF Configuration Subtabs

Subtab	Description
Application Server	Enables you to define the SIP Application Server that IM-ASF SIP interact with. See " <a href="#">Configuring Application Server Parameters</a> " 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 " <a href="#">Configuring Session Keep Alive Parameters</a> " for more information.
SIP	Enables you to configure standard SIP protocol parameters. See " <a href="#">Configuring SIP Parameters</a> " for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications operate. See " <a href="#">Configuring Monitoring Parameters</a> " 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 22–2 describes configuration parameters on the Application Server subtab.

**Table 22–2 Application Server Parameters**

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 22–3 describes configuration parameters on the Session Keep Alive subtab.

**Table 22–3 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 22–4 describes configuration parameters on the SIP subtab.

**Table 22–4 SIP Parameters**

Name	Type	Description
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

**Table 22–4 (Cont.) SIP Parameters**

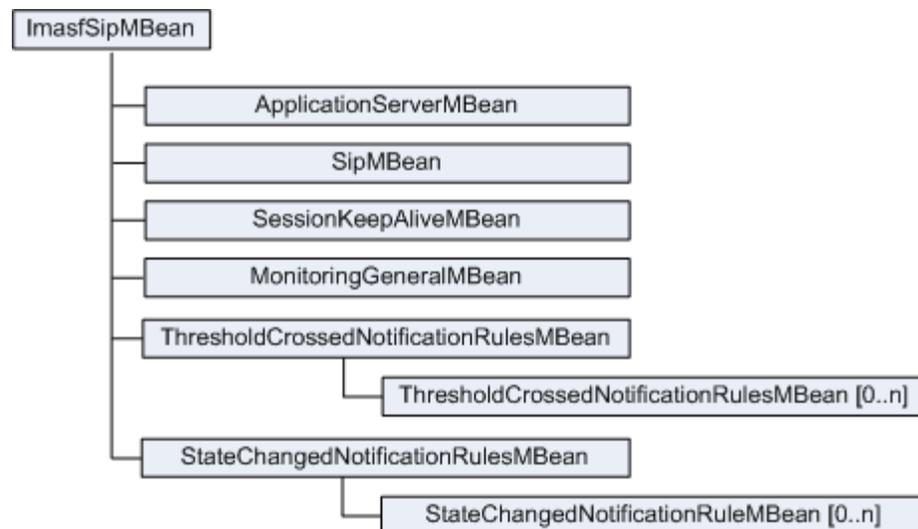
Name	Type	Description
Retransmission Interval Limit	INT	Specifies a maximum retransmission interval for non-INVITE requests and INVITE responses. Default value: 20 seconds
T7 Timeout Interval in Seconds	INT	Specifies the time period in seconds during which the IM-ASF SIP waits for the first SIP provisional response (except for 100) after sending an INVITE request. 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. Default value: 90 seconds

## 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 Monitoring with the Administration Console"](#).

## Configuring IM-ASF SIP with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the IM-ASF SIP through JMX. [Figure 22–1](#) shows the hierarchy of the IM-ASF SIP MBeans.

**Figure 22–1 IM-ASF SIP MBeans Hierarchy**

The following sections provide reference information for the IM-ASF SIP configuration MBeans.

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**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

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The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

## ImasfSipMBean

ImasfMBean is a root MBean for the IM-ASF SIP configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getApplicationServer()**

Gets a reference to the instance of ApplicationServerMBean

**ObjectName getSip()**

Gets a reference to the instance of SipMBean

**ObjectName getSessionKeepAlive()**

Gets a reference to the instance of SessionKeepAliveMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

**ObjectName getAdvanced()**

Gets a reference to the instance of AdvancedMBean

## ApplicationServerMBean

ApplicationServerMBean enables you to define the SIP Application Server that IM-ASF SIP interact with.

### Factory Method

Created automatically

### Attributes

AsAddressAlias

For more information on these attributes, see [Table 22-2](#).

### Operations

None

## SipMBean

SipMBean enables you to configure standard SIP protocol parameters.

### Factory Method

Created automatically

### Attributes

- MaxCallDurationTimeoutIntervalInMinutes
- RetransmissionIntervalLimit
- t7TimeoutIntervalInSeconds
- t9TimeoutIntervalInSeconds

For more information on these attributes, see [Table 22-4](#).

### Operations

None

## SessionKeepAliveMBean

SessionKeepAliveMBean enables you to define the keep-alive mechanism that IM-ASF SIP use to test session existence with SIP Application Servers.

### Factory Method

Created automatically

### Attributes

- InfoKeepAliveInterval
- InfoKeepAliveTimeToDie

For more information on these attributes, see [Table 22-3](#).

### Operations

None

## Default IM-ASF Module Instance

It is recommended to have a special instance of IM-ASF, a default IM-ASF instance named "IMASF\_default", in every system.

To understand why you should create a default IM-ASF module instance, see ["Supporting Orchestration with Non-Configured Application"](#).

For information on defining a default IM-ASF module, see ["Defining a Default IM-ASF Module"](#).



## Configuring R-IM-ASF SIP

The following sections describe how to configure R-IM-ASF SIP using the Service Broker Administration Console and Java MBeans.

### Configuring R-IM-ASF SIP with the Administration Console

This section describes how to configure R-IM-ASF SIP module instances using the Service Broker Administration Console.

To access the R-IM-ASF SIP configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Select **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The R-IM-ASF SIP configuration pane contains the subtabs described in [Table 23-1](#).

**Table 23-1 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 <a href="#">"Configuring the Network Entity Parameters"</a> 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 <a href="#">"Configuring Session Keep Alive Parameters"</a> for more information.
SIP	Enables you to configure standard SIP protocol parameters. See <a href="#">"Configuring SIP Parameters"</a> 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 <a href="#">"Charging Services"</a> for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications should operate. See <a href="#">"Configuring Monitoring Parameters"</a> 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 23–2 describes the parameter that you need to define.

**Table 23–2 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 "Configuring SIP Network Entities" section in the "Configuring SIP Signaling Server Units" chapter in the <i>Oracle Communications Service Broker Signaling Domain Configuration Guide</i> .

## 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 23–3 describes configuration parameters on the Session Keep Alive subtab.

**Table 23–3 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 23–4 describes configuration parameters on the SIP subtab.

**Table 23–4 SIP Parameters**

Name	Type	Description
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
Retransmission Interval Limit	INT	Specifies a maximum retransmission interval for non-INVITE requests and INVITE responses.  Default value: 20 seconds
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.  Default value: 30 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.  Default value: 90 seconds

## 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 23–5](#).

**Table 23–5 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 " <a href="#">General</a> " for more information.
Reauthorization Triggers	Enables you to specify whether R-IM-ASF reauthorizes a quota upon receiving various triggers from a CSCF.  See " <a href="#">Reauthorization Triggers</a> " 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 23–6 describes the configuration parameters that you need to specify for credit reservation requests.

**Table 23–6** General Parameters

Name	Type	Description
Service Monitoring	STRING	<p>Specifies the component that monitors session duration.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ Internal R-IM-ASF monitors session duration on its own. R-IM-ASF cannot delegate service monitoring to a CSCF.</li> <li>▪ None Session duration is not monitored.</li> </ul> <p>Default value: None</p>
First Credit Reservation Request	STRING	<p>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.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ Initial IM-OCF sends a request after a CSCF sends the first session setup message.</li> <li>▪ Ringing IM-OCF sends a request after a CSCF sends a ringing indication.</li> <li>▪ Answer IM-OCF sends a request after a CSCF sends an answer indication.</li> <li>▪ Never</li> </ul> <p>Default value: Initial</p>
Start Charging Phase	STRING	<p>Specifies when R-IM-ASF starts charging a session.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ Initial R-IM-ASF starts charging after a CSCF sends the first session setup message.</li> <li>▪ Ringing R-IM-ASF starts charging after a CSCF sends a ringing indication.</li> <li>▪ Answer R-IM-ASF starts charging after a CSCF sends an answer indication.</li> </ul> <p>Default value: Answer</p>

**Table 23–6 (Cont.) General Parameters**

Name	Type	Description
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.
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.

### 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 23–7](#) describes configuration parameters on the Reauthorization Triggers subtab.

**Table 23–7 Reauthorization Triggers Parameters**

Name	Type	Description
Info Received	STRING	Specifies whether or not R-IM-ASF reauthorizes the quota on receiving the Info Received trigger.  Possible values: <ul style="list-style-type: none"> <li>■ Yes R-IM-ASF always reauthorizes the quota.</li> <li>■ Dynamic R-IM-ASF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No R-IM-ASF never reauthorizes the quota.</li> </ul> Default value: Dynamic

**Table 23–7 (Cont.) Reauthorization Triggers Parameters**

Name	Type	Description
Session Alerted	STRING	<p>Specifies whether or not R-IM-ASF reauthorizes the quota on receiving the Session Alerted trigger.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Yes R-IM-ASF always reauthorizes the quota.</li> <li>■ Dynamic R-IM-ASF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No R-IM-ASF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>
Session Connected	STRING	<p>Specifies whether or not R-IM-ASF reauthorizes the quota on receiving the Session Connected trigger.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Yes R-IM-ASF always reauthorizes the quota.</li> <li>■ Dynamic R-IM-ASF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No R-IM-ASF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>
Session ReInvite Complete	STRING	<p>Specifies whether or not R-IM-ASF reauthorizes the quota on receiving the Session ReInvite Complete trigger.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Yes R-IM-ASF always reauthorizes the quota.</li> <li>■ Dynamic R-IM-ASF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>■ No R-IM-ASF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>

**Table 23–7 (Cont.) Reauthorization Triggers Parameters**

Name	Type	Description
Session Reinvited	STRING	<p>Specifies whether or not IM-SCF reauthorizes the quota on receiving the Session Reinvited trigger.</p> <ul style="list-style-type: none"> <li>▪ Yes R-IM-ASF always reauthorizes the quota.</li> <li>▪ Dynamic R-IM-ASF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>▪ No R-IM-ASF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>
Session Update Complete	STRING	<p>Specifies whether or not R-IM-ASF reauthorizes the quota on receiving the Session Update Complete trigger.</p> <ul style="list-style-type: none"> <li>▪ Yes R-IM-ASF always reauthorizes the quota.</li> <li>▪ Dynamic R-IM-ASF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>▪ No R-IM-ASF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>
Session Updated	STRING	<p>Specifies whether or not R-IM-ASF reauthorizes the quota on receiving the Session Updated trigger.</p> <ul style="list-style-type: none"> <li>▪ Yes R-IM-ASF always reauthorizes the quota.</li> <li>▪ Dynamic R-IM-ASF reauthorizes the quota only if a change in the rating conditions was detected (for example, when a location is changed).</li> <li>▪ No R-IM-ASF never reauthorizes the quota.</li> </ul> <p>Default value: Dynamic</p>

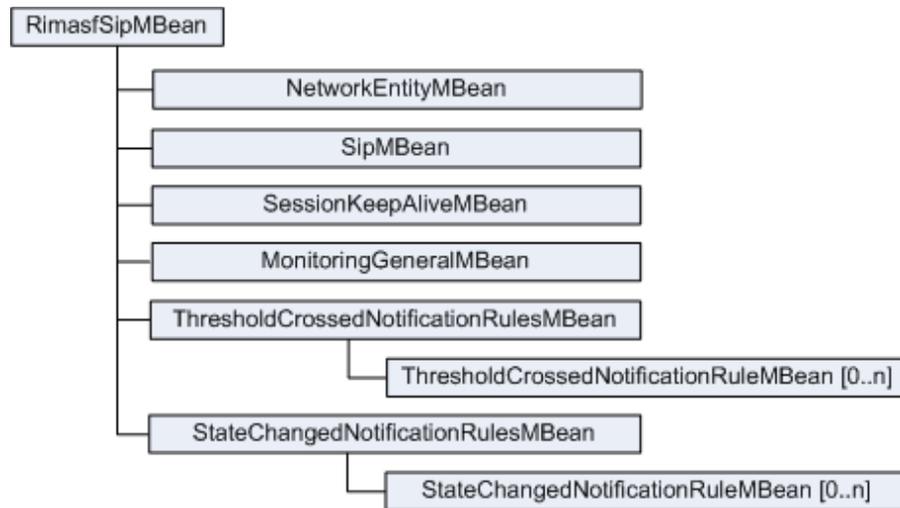
## Configuring Monitoring Parameters

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 Monitoring with the Administration Console"](#).

## Configuring R-IM-ASF SIP with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the R-IM-ASF SIP through JMX. [Figure 23–1](#) shows the hierarchy of the R-IM-ASF SIP MBeans.

**Figure 23-1 R-IM-ASF SIP MBeans Hierarchy**



The following sections provide reference information for the R-IM-ASF SIP configuration MBeans.

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**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

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The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

## RimasfSipMBean

RimasfSipMBean is a root MBean for the R-IM-ASF configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getSip()**

Gets a reference to the instance of SipMBean

**ObjectName getSessionKeepAlive()**

Gets a reference to the instance of SessionKeepAliveMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

**ObjectName getAdvanced()**

Gets a reference to the instance of AdvancedMBean

## NetworkEntityMBean

Using NetworkEntityMBean, you specify the address of the network entity with which the RIM-ASF SIP communicates. The address must be in the SIP URL format.

The alias that you provide must be defined using SipNetworkEntitiesMBean and SipNetworkEntityMBean. See the "Configuring SIP SSU with Java MBeans" section in the "Configuring SIP Signaling Server Units" chapter in the *Oracle Communications Service Broker Signaling Domain Configuration Guide*.

### Factory Method

Created automatically.

### Attributes

AsAddress

For more information about this attribute, see [Table 23-2](#).

### Operations

None

## SipMBean

SipMBean enables you to configure standard SIP protocol parameters.

### Factory Method

Created automatically

### Attributes

- MaxCallDurationTimeoutIntervalInMinutes
- RetransmissionIntervalLimit
- t7TimeoutIntervalInSeconds
- t9Timeout Interval in Seconds

For more information on these attributes, see [Table 23-4](#).

### Operations

None

## SessionKeepAliveMBean

SessionKeepAliveMBean enables you to configure the keep-alive mechanism that R-IM-ASF SIP uses to test session existence with the SIP network element.

### Factory Method

Created automatically

### Attributes

- InfoKeepAliveInterval
- InfoKeepAliveTimeToDie

For more information on these attributes, see [Table 23-3](#).

### Operations

None

## ChargingServiceMBean

ChargingServiceMBean enables you to define how IM-SCF sends credit reservation requests and to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC.

### Factory Method

Created automatically

### Attributes

- ServiceMonitoring
- FirstCreditReservationRequest
- StartChargingPhase
- RequestedDuration
- RequestedVolume
- RequestedServiceUnits
- ServiceIdentifier
- TccdTimeout

For more information on these attributes, see [Table 23–6](#).

### Operations

None

## ReAuthorizationTriggerTableMBean

ReAuthorizationTriggerTableMBean is a container for instances of ReAuthorizationTriggerTableEntryMBean. Each instance of ReAuthorizationTriggerTableEntryMBean represents a single reauthorization trigger that an MSC sends to IM-SCF.

### Factory Method

Created automatically.

### Attributes

None

### Operations

**ObjectName[] getReAuthorizationTriggerTableEntry()**

Returns an array of references to instances of ReAuthorizationTriggerTableEntryMBean

**ObjectName createReAuthorizationTriggerTableEntry()**

Creates a new instance of ReAuthorizationTriggerTableEntryMBean

**void destroyReAuthorizationTriggerTableEntry()**

Destroys an existing instance of ReAuthorizationTriggerTableEntryMBean

**ObjectName lookupReAuthorizationTriggerTableEntry()**

Gets a reference to the instance of ReAuthorizationTriggerTableEntryMBean

## ReAuthorizationTriggerTableEntryMBean

ReAuthorizationTriggerTableMBean enables you to specify whether IM-SCF reauthorizes a quota upon receiving various triggers from an MSC.

### Factory Method

`ReAuthorizationTriggerTable.createReAuthorizationTriggerTableEntry()`

### Attributes

- Info Received
- Session Alerted
- Session Connected
- SessionReInviteComplete
- SessionUpdateComplete
- Session Reinvited
- Session Update Complete
- Session Updated

For more information about these attributes, see [Table 23-7](#).

### Operations

None



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## Configuring IM-ASF SAL

This chapter describes how to configure IM-ASF SAL using the Service Broker Administration Console and Java MBeans.

### Configuring IM-ASF SAL with the Administration Console

This section describes how to configure the IM-ASF SAL module using the Service Broker Administration Console. This section assumes that you have already created and activated an IM-ASF SAL instance.

SAL is an Oracle proprietary protocol used by Oracle Communications Service Broker to communicate with SAL-based applications such as SVC and VPN, and 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.

To access the IM-ASF SAL configuration screen:

1. In the Administration Console domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Interworking Modules**.

A list of the currently deployed Interworking Modules is displayed.

4. From the module list, select the IM-ASF SAL module instance to configure.

[Table 24–1](#) shows the IM-ASF SAL **Configuration** pane subtabs. The following sections explain the configuration parameters in each of the subtabs.

**Table 24–1** IM-ASF SAL Subtabs

Subtab	Description
<b>Application Server</b>	Defines a SAL Application Server for IM-ASF SAL to interact with. See " <a href="#">Configuring Application Server Parameters</a> " for more information.
<b>Session Keep Alive</b>	Defines the keep-alive mechanism that IM-ASF SAL uses to test session existence. See " <a href="#">Configuring Session Keep Alive Parameters</a> " for more information.
<b>SAL</b>	Use to configure the SAL interface attributes of this IM.
<b>Monitoring</b>	Use to define how Runtime MBeans and notifications should operate. See " <a href="#">Configuring Monitoring Parameters</a> " for more information.

## 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 24–2](#) describes configuration parameters on the Application Server subtab.

**Table 24–2 Application Server Configuration Parameters**

Name	Data Type	Description
SAL Application Address	String	<p>Specifies the SIP URI address of the Service Broker Feature Module application to connect this IM-ASF -SAL to. The syntax is <b>sip:Applicaton_Name@Hostname.com</b>.</p> <p>Where:</p> <p><i>Application_Name</i> is be one of the following:</p> <ul style="list-style-type: none"> <li>▪ <b>voicemailapplication</b> for the PCM voice mail service.</li> <li>▪ <b>personalapplication</b> for the PCM One-number service.</li> <li>▪ <b>groupapplicaton</b> for the PCM Group service.</li> <li>▪ <b>vpn</b> for the VPN service.</li> </ul> <p><i>Hostname</i> is the system hosting the application.</p>
SAL Mode	String	<p>Specifies the SAL mode. The Session Keep Alive Parameters and SAL Parameters are only valid for <b>EXTERNAL</b> mode.</p> <p>Can be one of the following:</p> <ul style="list-style-type: none"> <li>▪ <b>INLINE</b> - Executes as part of a Service Broker session. Receives all services and resources from Service Broker.</li> <li>▪ <b>EXTERNAL</b> - Executes outside of a Service Broker session. Can get resources from Service Broker or other entities.</li> </ul>

## 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 24–3](#) describes configuration parameters on the **Session Keep Alive** subtab.

**Table 24–3 Session Keep Alive Configuration Parameters**

Name	Data Type	Description
Info Keep Alive Interval in Seconds	Integer	Specifies the interval, in seconds, between <b>INFO</b> requests.  To disable the keep-alive mechanism, set this parameter to <b>-1</b> .  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 24–4](#) describes configuration parameters on the **SAL** subtab.

**Table 24–4 SAL Configuration Parameters**

Name	Data Type	Description
Retransmission Interval Limit (T2 Timeout)	Integer	Specifies a maximum retransmission interval for non- <b>INVITE</b> requests and <b>INVITE</b> 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 <b>100</b> ) after sending an <b>INVITE</b> 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 <b>OK</b> response or any call release response (for example, <b>ERROR</b> ) in response to an <b>INVITE</b> 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 <b>OK</b> to <b>BYE</b> .  When this timer expires, IM-ASF SAL releases the session.  Default value: 60 minutes

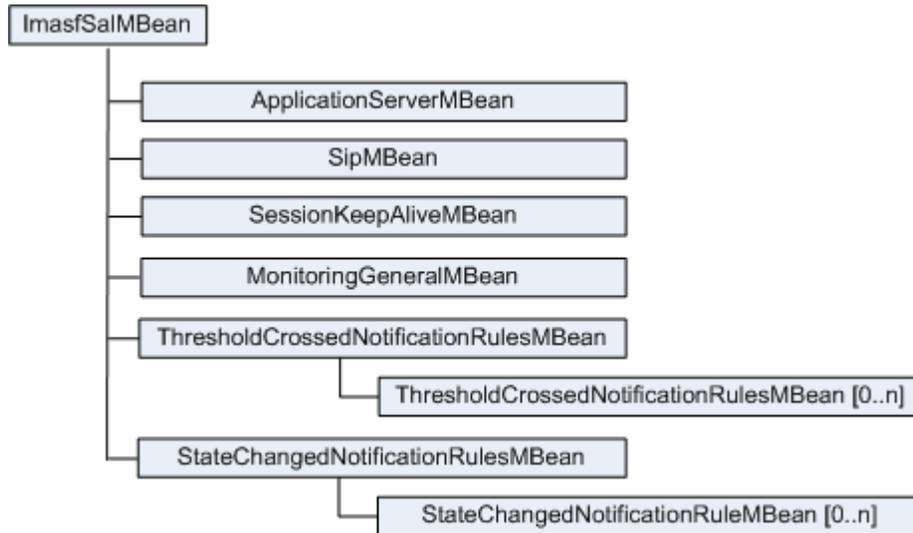
## Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-ASF SAL. For more information about configuring monitoring, see "[Configuring Monitoring with the Administration Console](#)".

## Configuring IM-ASF SAL with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the IM-ASF SAL through JMX. You can change these using the Service Broker Java Monitoring and Management Console or another JMX editor. [Figure 24–1](#) shows the hierarchy of the IM-ASF SAL MBeans.

**Figure 24–1** IM-ASF SAL MBean Hierarchy



The following sections provide reference information for the IM-ASF SAL configuration MBeans.

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**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

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The following MBeans are common for all components of Service Broker. See "[Configuring Monitoring with Java MBeans](#)" for details:

- `MonitoringGeneralMBean`
- `ThresholdCrossedNotificationRulesMBean`
- `ThresholdCrossedNotificationRuleMBean`
- `StateChangedNotificationRulesMBean`
- `StateChangedNotificationRuleMBean`

---

## ImasfSalMBean

**ImasfMBean** is the root MBean for the IM-ASF -SAL configuration.

### Factory Method

Created automatically

### Attributes

- **Modulename:** This attribute is reserved for internal use. Do not change this attribute.
- **Version:** This attribute is reserved for internal use. Do not change this attribute.
- **Name:** This attribute is reserved for internal use. Do not change this attribute.
- **TsterTimeoutIntervalSeconds:** This attribute is reserved for internal use. Do not change this attribute.
- **TcterTimeoutIntervalSeconds:** This attribute is reserved for internal use. Do not change this attribute.
- **TspTimeoutIntervalSeconds:** This attribute is reserved for internal use. Do not change this attribute.
- **TcpTimeoutIntervalSeconds:** This attribute is reserved for internal use. Do not change this attribute.
- **TcaTimeoutIntervalSeconds:** This attribute is reserved for internal use. Do not change this attribute.
- **MinSubscriptionDurationSeconds:** This attribute is reserved for internal use. Do not change this attribute.
- **MaxSubscriptionDurationSeconds:** This attribute is reserved for internal use. Do not change this attribute.
- **DefaultSubscriptionDurationSeconds:** This attribute is reserved for internal use. Do not change this attribute.
- **Rel100DefaultMode:** This attribute is reserved for internal use. Do not change this attribute.
- **DeploymentName:** The module instance name of the module this MBean configures.

### Operations

None

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## ApplicationServerMBean

Use **ApplicationServerMBean** to define the SAL Application Server that IM-ASF SAL interacts with.

### Factory Method

Created automatically

### Attributes

- **AppAddress**: For details see [Table 24–2](#).
- **DeploymentName**: The module instance name of the module this MBean configures.

### Operations

None.

## SipMBean

Use **SipMBean** to configure standard SIP protocol parameters.

### Factory Method

Created automatically

### Attributes

- **T2TimeoutIntervalSeconds.**
- **T7TimeoutIntervalSeconds.**
- **T9TimeoutIntervalSeconds.**
- **MaxCallDurationTimeoutIntervalInMinutes.**
- **DeploymentName:** The module instance name of the module this MBean configures.

For details on these attributes see [Table 24-4](#)

### Operations

None

---

## SessionKeepAliveMBean

Use **SessionKeepAliveMBean** to define the keep-alive mechanism that IM-ASF SAL uses to test session existence with SIP Application Servers.

### Factory Method

Created automatically.

### Attributes

- **InfoKeepAliveInterval.**
- **InfoKeepAliveTimeToDie.**
- **DeploymentName:** The module instance name that this MBean configures.

For details on these attributes, see [Table 24-3](#).

### Operations

None

## Default IM-ASF Module Instance

Oracle recommends that you have a special instance of IM-ASF, a default IM-ASF instance named **IMASF\_default** in every system.

To understand why you should create a default IM-ASF module instance, see "[Supporting Orchestration with Non-Configured Application](#)".

For information on defining a default IM-ASF module, see "[Defining a Default IM-ASF Module](#)".



## Configuring IM-OCF Ro

The following sections describe how to configure IM-OCF Ro using the Service Broker Administration Console and Java MBeans.

### Configuring IM-OCF Ro with the Administration Console

This section describes how to configure IM-OCF Ro module instances using the Service Broker Administration Console.

To access the IM-OCF Ro Configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Select **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The IM-OCF Ro configuration pane contains the subtabs described in [Table 25-1](#).

**Table 25-1 IM-OCF Configuration Subtabs**

Subtab	Description
Call Handling	Enables you to define how the IM-OCF Ro handles calls. See " <a href="#">Configuring Call Handling Parameters</a> " for more information.
Diameter Credit Control Application	Enables you to configure parameters specific to the IM-OCF Ro DCCA interface. See " <a href="#">Configuring Diameter Credit Control Application Parameters</a> " for more information.
Async Announcement Manager	Enables you to set up how IM-OCF Ro triggers the MRF to play announcements. See " <a href="#">Configuring Asynchronous Announcement Manager Parameters</a> " for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications should operate. See " <a href="#">Configuring Monitoring Parameters</a> " for more information.
Degraded Mode	Enables you to set up how a session is charged when an online charging server is not available. See " <a href="#">Configuring the Degraded Mode</a> " for more information.

## Configuring Call Handling Parameters

The General tab enables you to set up how IM-OCF Ro handles sessions. [Table 25-2](#) describes configuration parameters in the General subtab.

**Table 25-2 IM-OCF Ro Call Handling General Parameters**

Name	Type	Description
Event Handling	STRING	<p>Specifies which mode of Ro operation IM-OCF Ro uses to support event-based charging.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ ECUR Stands for Event Charging with Unit Reservation. With ECUR, IM-OCF Ro sends two requests. One request specifies the desired service consumption. The second request indicates the actual service that has been consumed.</li> <li>▪ IEC Stands for Immediate Event Charging. With IEC, IM-OCF Ro sends a one time request with charging information on a service that has been consumed.</li> </ul> <p>Default value: ECUR</p>
Termination-Cause AVP on SAL BYE	STRING	<p>Specifies how to set a CCR Termination-Cause AVP when session is disconnected by an internal Service Broker SAL BYE message.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ DIAMETER_LOGOUT</li> <li>▪ DIAMETER_SERVICE_NOT_PROVIDED</li> <li>▪ DIAMETER_BAD_ANSWER</li> <li>▪ DIAMETER_ADMINISTRATIVE</li> <li>▪ DIAMETER_LINK_BROKEN</li> <li>▪ DIAMETER_AUTH_EXPIRED</li> <li>▪ DIAMETER_USER_MOVED</li> <li>▪ DIAMETER_SESSION_TIMEOUT</li> </ul> <p>Default value: DIAMETER_LOGOUT</p>
Termination-Cause AVP on SAL CANCEL	STRING	<p>Specifies how to set a CCR Termination-Cause AVP when session is disconnected by an internal Service Broker SAL CANCEL message.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ DIAMETER_LOGOUT</li> <li>▪ DIAMETER_SERVICE_NOT_PROVIDED</li> <li>▪ DIAMETER_BAD_ANSWER</li> <li>▪ DIAMETER_ADMINISTRATIVE</li> <li>▪ DIAMETER_LINK_BROKEN</li> <li>▪ DIAMETER_AUTH_EXPIRED</li> <li>▪ DIAMETER_USER_MOVED</li> <li>▪ DIAMETER_SESSION_TIMEOUT</li> </ul> <p>Default value: DIAMETER_SERVICE_NOT_PROVIDED</p>

**Table 25–2 (Cont.) IM-OCF Ro Call Handling General Parameters**

Name	Type	Description
Termination-Cause AVP on SAL Final Error Response	STRING	<p>Specifies how to set a CCR Termination-Cause AVP when session is disconnected by an internal Service Broker SAL final error response message.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ DIAMETER_LOGOUT</li> <li>▪ DIAMETER_SERVICE_NOT_PROVIDED</li> <li>▪ DIAMETER_BAD_ANSWER</li> <li>▪ DIAMETER_ADMINISTRATIVE</li> <li>▪ DIAMETER_LINK_BROKEN</li> <li>▪ DIAMETER_AUTH_EXPIRED</li> <li>▪ DIAMETER_USER_MOVED</li> <li>▪ DIAMETER_SESSION_TIMEOUT</li> </ul> <p>Default value: DIAMETER_SERVICE_NOT_PROVIDED</p>

## 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 25–3](#).

**Table 25–3 IM-OCF Diameter Credit Control Application Subtabs**

Subtab	Description
AVPs	<p>Enables you to specify Attribute-Value Pairs (AVPs) to be set in CCRs.</p> <p>See "<a href="#">Configuring AVPs</a>" for more information.</p>
General	<p>Enables you to set up a DCCA dialect and enables monitor call duration.</p> <p>For more information, see "<a href="#">Configuring General Parameters</a>".</p>

### Configuring AVPs

The AVPs subtab enables you to specify Attribute-Value Pairs (AVPs) to be set in CCRs. [Table 25–4](#) describes the AVPs that you can specify.

**Table 25–4 IM-OCF DCCA AVPs Subtab Parameters**

Name	Type	Description
Destination-Host AVP	STRING	<p>Specifies the value to set in a CCR Destination-Host AVP.</p> <p>The Destination-Host AVP combined with the Destination-Realm AVP defines a Diameter destination node that communicates with the IM-OCF Ro.</p> <p>The IM-OCF Ro sends messages to the address you specify for the Diameter destination node.</p> <p>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.</p> <p>See "Configuring Outbound Destinations" in the <i>Signaling Domain Configuration Guide</i> for more information.</p> <p>In this case, the Destination-Host AVP is ignored.</p>
Destination-Realm AVP	STRING	<p>Specifies the value to set in a CCR Destination-Realm AVP.</p> <p>The Destination-Realm AVP combined with the Destination-Host AVP defines a Diameter destination node that communicates with the IM-OCF Ro.</p> <p>The IM-OCF Ro sends messages to the address you specify for the Diameter destination node.</p> <p>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.</p> <p>See "Configuring Outbound Destinations" in the <i>Signaling Domain Configuration Guide</i> for more information.</p> <p>In this case, the Destination-Host AVP is ignored.</p>
Service-Context-Id AVP	STRING	<p>Specifies the value to set in a CCR Service-Context-Id AVP.</p> <p>Default value: 32260@3gpp.org</p>
User-Name AVP	STRING	<p>Specifies the value to set in a CCR User-Name AVP.</p>
Ro Node-Functionality AVP	INT	<p>Specifies the value to set in a CCR Node-Functionality AVP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ 0 Specifies S-CSCF</li> <li>■ 1 Specifies P-CSCF</li> <li>■ 2 Specifies I-CSCF</li> <li>■ 3 Specifies MRFC</li> <li>■ 4 Specifies MGCF</li> <li>■ 5 Specifies BGCF</li> <li>■ 6 Specifies AS</li> </ul> <p>Default value: 6</p>

## Configuring General Parameters

The General subtab enables you to set up a DCCA dialect and enable monitor call duration. [Table 25–5](#) describes the parameters you can configure.

**Table 25–5 IM-OCF DCCA General Subtab Parameters**

Name	Type	Description
DCCA Dialect	STRING	Specifies the DCCA dialect that IM-OCF Ro uses. Possible values: <ul style="list-style-type: none"> <li>▪ STANDARD_DCCA Standard DCCA dialect</li> <li>▪ BRM Oracle Communications Billing and Revenue Management DCCA dialect</li> </ul> Default value: Standard

## 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 25–6](#).

**Table 25–6 IM-OCF Ro Async Announcement Manager Subtabs**

Subtab	Description
General	Enables you to specify the alias of the MRF that plays announcements. See " <a href="#">Configuring General Parameters</a> " 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 " <a href="#">Configuring Async Announcements</a> " for more information.

## Configuring General Parameters

The General subtab enables you to specify the alias of the MRF that plays announcements. [Table 25–7](#) describes the parameter you can configure.

**Table 25–7 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 25–8](#) describes the parameters you can configure.

**Table 25–8 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: <ul style="list-style-type: none"> <li>■ TRUE</li> <li>■ FALSE</li> </ul> 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: <ul style="list-style-type: none"> <li>■ ANY</li> <li>■ GRANTED_TIME</li> <li>■ RESULT_CODE</li> <li>■ SAL_ERROR</li> </ul> Default value: ANY  <b>Note:</b> 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.  <b>Note:</b> IM-OCF does not use the Lower Limit parameter if you set Reason Type to ANY.

**Table 25–8 (Cont.) Async Announcement Manager Announcements Parameters**

Name	Type	Description
Upper Limit	INT	<p>Specifies the upper limit of the range for the parameter that you specified in Reason Type.</p> <p>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.</p> <p>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.</p> <p><b>Note:</b> IM-OCF does not use the Upper Limit parameter if you set Reason Type to ANY.</p>
Network	STRING	<p>Specifies the location of the mobile subscriber required for triggering the MRF to play the announcement.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ ANY</li> <li>▪ HOME_ZONE</li> <li>▪ HOME_NETWORK</li> <li>▪ ROAMING</li> </ul> <p>Alternatively, you can specify the ID of a specific MSC that serves the mobile subscriber.</p>
Service Side	STRING	<p>Specifies the IM-OCF Ro's service side required for triggering the MRF to play the announcement.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ BOTH</li> <li>▪ ORIG</li> <li>▪ TERM</li> </ul> <p>Default value: BOTH</p>
Call State	STRING	<p>Specifies the call state when IM-OCF Ro triggers the MRF to play the announcement.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ PRECALL</li> <li>▪ MIDCALL</li> <li>▪ POSTCALL</li> </ul> <p>Default value: PRECALL</p>
Priority	INT	<p>Specifies the order in which the MRF plays different announcement when the conditions of multiple rules are met.</p> <p>Default value: 0</p>
Announcement Code	INT	<p>Specifies the identifier of the announcement that the MRF plays.</p> <p>Default value: 0</p>

**Table 25–8 (Cont.) Async Announcement Manager Announcements Parameters**

Name	Type	Description
Threshold	INT	<p>Specifies how much time, in seconds, prior to the end of quota, IM-OCF Ro triggers the MRF to play the announcement.</p> <p>IM-OCF uses the Threshold parameter only for the announcements whose Call State parameter is set to MIDCALL.</p> <p>Default value: 0</p> <p><b>Note:</b> Setting the Threshold parameter to any positive value when Call State set to PRECALL or POSTCALL causes an error.</p>

## 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 Monitoring with the Administration Console](#)".

## Configuring the Degraded Mode

In Online Mediation Solution Controller, Service Broker 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 the special mode known as 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.

To check the availability of the charging server, every time when IM-OCF Ro sends an accounting request to the charging server, IM-OCF Ro waits a specified period of time for a response from the server. If the server does not respond, IM-OCF Ro switches to the degraded mode.

After IM-OCF Ro switched to the degraded mode, IM-OCF Ro handles the session in this mode until the session is terminated even if the online charging server becomes available. However, when the charging server becomes available, IM-OCF Ro sends to the server charging information gathered during the session.

In the degraded mode, IM-OCF Ro communicates with the Service Broker local charging server. The local online charging server imitates the work of an 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). IM-OCF Ro replays the CDRs to the online charging server after this server becomes available again. Then the server actually charges the mobile subscriber.

See "Administrating Degraded Mode" in the *Oracle Communications Service Broker Online Mediation Controller Implementation Guide* for more information.

You use the Degraded Mode tab to configure the parameters of this mode as described in [Table 25–9](#).

**Table 25–9 Degraded Mode Parameters**

Name	Type	Description
On OCF Failure	STRING	<p>Specifies the behavior of IM-OCF Ro when the OCF fails.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ ALWAYS_REFUSE Degraded mode is disabled. If the OCF fails, IM-OCF Ro refuses to grant the service.</li> <li>■ 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.</li> <li>■ 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.</li> </ul> <p>Note: This setting is overridden by the OCF AVPs 'Credit Control Failure Handling' and 'Realtime Required'.</p> <p>Default value: USE_LOCAL_REFUSE</p>
CDR Mode	STRING	<p>Specifies how IM-OCF Ro writes CDRs.</p> <p>Possible options:</p> <ul style="list-style-type: none"> <li>■ NORMAL IM-OCF Ro begins to write CDRs when IM-OCF Ro switches to the degraded mode.</li> <li>■ 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.</li> <li>■ ALWAYS IM-OCF Ro always writes CDRs.</li> </ul> <p>Default value: NORMAL</p>
CDR Writer Impl	STRING	<p>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.</p>
CDR Writer Service	STRING	<p>Specifies the full path of the CDR writer service. This is a preset parameter. Do NOT change the value of this parameter.</p>
Degraded Mode Timer	INT	<p>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.</p>

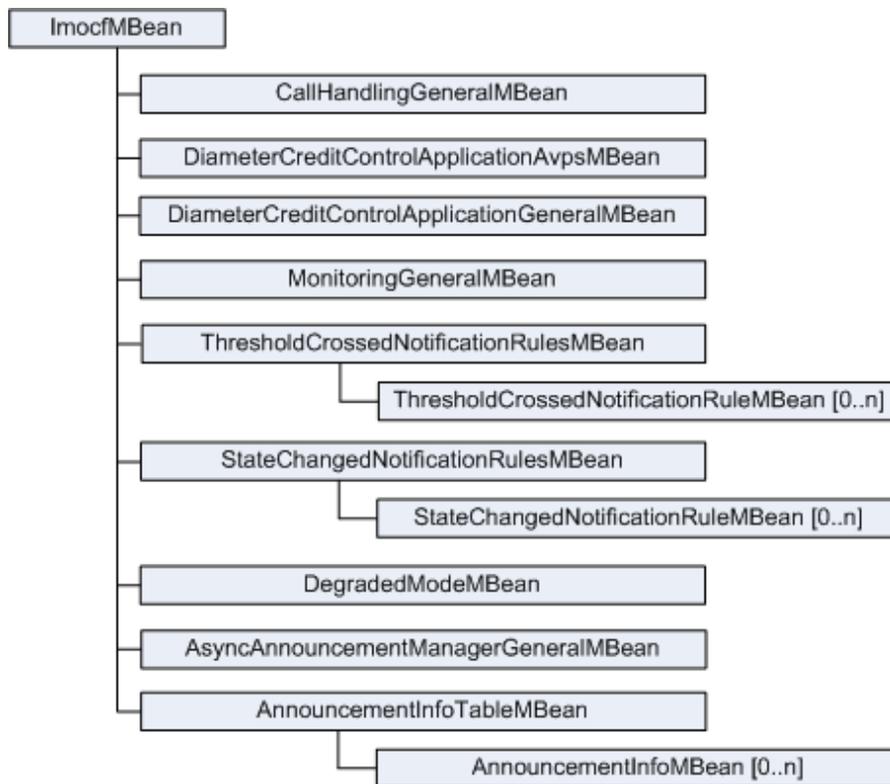
**Table 25–9 (Cont.) Degraded Mode Parameters**

Name	Type	Description
Local-OCF Alias	STRING	Specifies the alias of the local online charging server.  This alias is mapped to the destination host and destination realm of the local online charging server as defined in the configuration of Diameter SSU outbound routing rules. See "Configuring Outbound Destinations" in "Configuring Diameter Signaling Server Units" of the <i>Oracle Communications Service Broker Signaling Domain Configuration Guide</i> .
Local-OCF External Protocol	STRING	Specifies the protocol that IM-OCF Ro uses to communicate with the local online charging server.  Default value: Ro
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 IM-OCF Ro with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the IM-OCF Ro through JMX. [Figure 25–1](#) shows the hierarchy of the IM-OCF MBeans.

**Figure 25–1 IM-OCF Ro MBeans Hierarchy**



The following sections provide reference information for the IM-OCF Ro configuration MBeans.

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**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

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The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

## ImocfMBean

ImocfMBean is the root MBean for the IM-OCF Ro configuration.

### Object Name

com.convergin:Type=IMOCF,Version=*MBean\_Version*,Location=AdminServer,  
Name=IMOCF.*Instance\_Name*

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getCallHandling()**

Gets a reference to the instance of CallHandlingMBean

**ObjectName getDiameterCreditControlApplicationAvps()**

Gets a reference to the instance of DiameterCreditControlApplicationAvpsMBean

**ObjectName getDiameterCreditControlApplicationGeneral()**

Gets a reference to the instance of DiameterCreditControlApplicationGeneralMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

## CallHandlingMBean

CallHandlingMBean enables you to configure how a call is handled.

### Object Name

`com.convergin:Type=CallHandling,Version=MBean_Version,Location=AdminServer,  
Name=IMOCF.Instance_Name`

### Factory Method

Created automatically

### Attributes

- EventHandling
- TerminationCauseAvpOnSalBye
- TerminationCauseAvpOnSalCancel
- TerminationCauseAvpOnSalFinalErrorResponse

For more information on these attributes, see [Table 25-2](#).

### Operations

None

---

## DiameterCreditControlApplicationAvpsMBean

DiameterCreditControlApplicationAvpsMBean enables you to specify Attribute-Value Pairs (AVPs) to be set in CCRs.

### Object Name

`com.convergin:Type=DiameterCreditControlApplicationAvps,Version=MBean_  
Version,Location=AdminServer,Name=IMOCF.Instance_Name`

### Factory Method

Created automatically

### Attributes

- DestinationHostAvp
- DestinationRealmAvp
- ServiceContextIdAvp
- UserNameAvp
- RoNodeFunctionalityAvp

For more information on these attributes, see [Table 25-4](#).

### Operations

None

## DiameterCreditControlApplicationGeneralMBean

DiameterCreditControlApplicationGeneralMBean enables you to set up a DCCA dialect and enable monitor call duration.

### Object Name

`com.convergin:Type=DiameterCreditControlApplicationAvps,Version=MBean_Version,Location=AdminServer,Name=IMOCF.Instance_Name`

### Factory Method

Created automatically

### Attributes

DccaDialect

For more information on these attributes, see [Table 25-5](#).

### Operations

None

## DegradedModeMBean

DegradedModeMBeanMBean enables you to configure how IM-OCF Ro operates in the degraded mode.

### Object Name

`com.convergin:Type=DiameterCreditControlApplicationAvps,Version=MBean_Version,Location=AdminServer,Name=IMOCF.Instance_Name`

### Factory Method

Created automatically

### Attributes

- OnOCFFailure
- CDRMode
- CDRWriterImpl
- CDRWriterService
- DegradedModeTimer
- LocalOCFAlias
- ExternalProtocol
- Degraded Mode Error Codes

For more information on these attributes, see [Table 25-9](#).

### Operations

None

## AsyncAnnouncementManagerGeneralMBean

AsyncAnnouncementManagerGeneralMBean enables you to specify the alias of the MRF that IM-OCF Ro triggers to play announcements. Each instance of IM-OCF Ro can trigger only one instance of the MRF.

### Object Name

`com.convergin:Type=AsyncAnnouncementManagerGeneral,Version=MBean_  
Version,Location=AdminServer,Name=IMOCF.Instance_Name`

### Factory Method

Created automatically.

### Attributes

- MrfAlias

For more information about this attribute, see [Table 25-7](#).

### Operations

None

## AnnouncementInfoTableMBean

AnnouncementInfoTableMBean enables you to manage rules for playing announcements. Each rule defines conditions and the announcement that the MRF plays, if these conditions are met.

Each rule is represented by an instance of AnnouncementInfoMBean. You need to create a separate instance of AnnouncementInfoMBean for each rule.

### Object Name

*com.convergin:Type=AnnouncementInfoTable,Version=MBean\_  
Version,Location=AdminServer,Name=IMOCF.Instance\_Name*

### Factory Method

Created automatically.

### Attributes

None

### Operations

**ObjectName createAnnouncementInfo()**

Creates an instance of AnnouncementInfoMBean.

**void destroyAnnouncementInfo**

Destroys an instance of AnnouncementInfoMBean.

**ObjectName lookupAnnouncementInfo**

Returns the reference to a specified instance of AnnouncementInfoMBean.

## AnnouncementInfoMBean

AnnouncementInfo enables you to set up parameters of a rule for playing announcements. A rule defines conditions and the announcement that the MRF plays, if these conditions are met. In addition, rules determine how the MRF plays the announcement.

You need to create a separate instance of AnnouncementInfoMBean for each rule.

### Object Name

`com.convergin:Type=AnnouncementInfo,Version=MBean_  
Version,Location=AdminServer,Name=Announcement_Name`

### Factory Method

`AnnouncementInfoTable.createAnnouncementInfo()`

### Attributes

- Enabled
- ReasonType
- ReasonFrom
- ReasonTo
- Network
- ServiceSide
- CallState
- Priority
- AnnouncementCode
- Threshold

For more information about these attributes, see [Table 25-8](#).

### Operations

None



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## Configuring R-IM-OCF Ro

The following sections describe how to configure R-IM-OCF Ro using the Service Broker Administration Console and Java MBeans.

### Configuring R-IM-OCF Ro with the Administration Console

This section describes how to configure the R-IM-OCF Ro module instances using the Service Broker Administration Console.

To access the R-IM-OCF Ro Configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Select **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The R-IM-OCF Ro configuration screen contains the subtabs described in [Table 26-1](#).

**Table 26-1** R-IM-OCF Configuration Subtabs

Subtab	Description
Call Handling	Enables you to define how R-IM-OCF Ro handles calls. See " <a href="#">Configuring Call Handling Parameters</a> " for more information.
Diameter Credit Control Application	Enables you to configure parameters specific to the R-IM-OCF Ro DCCA interface. See " <a href="#">Configuring Diameter Credit Control Application Parameters</a> " for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications should operate. See " <a href="#">Configuring Monitoring Parameters</a> " for more information.

### Configuring Call Handling Parameters

The Call Handling subtab enables you to define how R-IM-OCF Ro handles calls.

[Table 26-2](#) describes configuration parameters on the Call Handling subtab.

**Table 26–2 R-IM-OCF Ro Call Handling Parameters**

Name	Type	Description
Result-Code AVP Value on Session Disconnection by AS	STRING	<p>Specifies the value that R-IM-OCF Ro sets in a CCA Result-Code AVP when a session is disconnected by the charging application.</p> <p><b>Note:</b> 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.</p>
Default Session Type	STRING	<p>Specifies how R-IM-OCF Ro marks new sessions internally.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ Orig Stands for an outgoing call</li> <li>▪ Term Stands for an incoming call</li> </ul> <p>Default value: Orig</p>
Initial CCR Mode	STRING	<p>Specifies whether incoming initial CCRs (Request-Type AVP set to Initial) are considered ECUR or SCUR.</p>
Result-Code AVP on No Response from AS	STRING	<p>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).</p> <p>Default value: 5012</p>
Result-Code AVP on SAL 4XX	STRING	<p>Specifies the value that R-IM-OCF Ro sets in a CCA Result-Code AVP when receiving an internal Service Broker SAL 4XX error.</p> <p>Default value: 4010</p> <p>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.</p>
Result-Code AVP on SAL 5XX	STRING	<p>Specifies the value that R-IM-OCF Ro sets in a CCA Result-Code AVP when receiving an internal Service Broker SAL 5XX error.</p> <p>Default value: 4010</p> <p>This parameter does not apply for 503. In that case, the Result-Code AVP is set to 3002.</p>
Result-Code AVP on SAL 6XX	STRING	<p>Specifies the value that R-IM-OCF Ro sets in a CCA Result-Code AVP when receiving an internal Service Broker SAL 6XX error.</p> <p>Default value: 4010</p>
Default Result-Code AVP	STRING	<p>Specifies the value that R-IM-OCF Ro sets in a CCA Result-Code AVP when receiving an internal Service Broker SAL error and non of the previous parameters apply.</p>

## 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 26–3](#).

**Table 26–3 R-IM-OCF Diameter Credit Control Application Subtabs**

Subtab	Description
General	Enables you to set up a DCCA dialect. See " <a href="#">Configuring General Parameters</a> " for more information.
AVPs	Enables you to specify Attribute-Value Pairs (AVPs) to be set in CCAs. See " <a href="#">Configuring AVPs Parameters</a> " for more information.

### Configuring General Parameters

The General subtab enables you to set up a DCCA dialect. [Table 26–4](#) describes the parameter you can configure.

**Table 26–4 R-IM-OCF DCCA General Subtab Parameter**

Name	Type	Description
DCCA Dialect	STRING	Specifies the DCCA dialect that R-IM-OCF Ro should use. Possible values: <ul style="list-style-type: none"> <li>▪ STANDARD_DCCA Standard DCCA dialect</li> <li>▪ BRM Oracle Communications Billing and Revenue Management DCCA dialect</li> </ul> Default value: STANDARD_DCCA

### Configuring AVPs Parameters

The AVPs subtab enables you to specify Attribute-Value Pairs (AVPs) to be set in CCAs. [Table 26–5](#) describes the AVPs that you can specify.

**Table 26–5 R-IM-OCF DCCA AVPs Subtab Parameters**

Name	Type	Description
SCUR AVPs	STRING	<p>Specifies AVPs that IM-OCF Ro place inside CCAs when constructing an SCUR CCA.</p> <p>This parameter is useful when Service Broker is required to accommodate non-standard and vendor specific AVPs when interacting with Diameter CTF entities.</p> <p>The specification is given in XML format which is described below this table.</p> <p><b>Note:</b> AVPs specified by this parameter are given lowest priority. That is, if an AVP is already available inside either:</p> <ul style="list-style-type: none"> <li>■ Internal Service Broker SAL message or</li> <li>■ XML carried on internal Service Broker SAL message or</li> <li>■ Other IM-OCF configuration</li> </ul> <p>then all the other values prevail the value defined in this XML.</p>
ECUR AVPs	STRING	<p>Specifies AVPs that IM-OCF Ro places inside CCAs when constructing an ECUR CCA.</p> <p>This parameter is useful when Service Broker is required to accommodate non-standard and vendor specific AVPs when interacting with Diameter CTF entities.</p> <p>The specification is given in XML format which is described below this table.</p> <p><b>Note:</b> AVPs specified by this parameter are given lowest priority. That is, if an AVP is already available inside any of the following:</p> <ul style="list-style-type: none"> <li>■ Internal Service Broker SAL message or</li> <li>■ XML carried on internal Service Broker SAL message or</li> <li>■ Other IM-OCF Ro configuration</li> </ul> <p>then all those values have a higher priority than the value defined in this XML.</p>
IEC AVPs	STRING	<p>This parameter is useful when Service Broker is required to accommodate non-standard and vendor specific AVPs when interacting with Diameter CTF entities.</p> <p>The specification is given in XML format which is described below this table.</p> <p><b>Note:</b> AVPs specified by this parameter are given lowest priority. That is, if an AVP is already available inside the following:</p> <ul style="list-style-type: none"> <li>■ Internal Service Broker SAL message or</li> <li>■ XML carried on internal Service Broker SAL message or</li> <li>■ Other IM-OCF Ro configuration</li> </ul> <p>then all those values have a higher priority than the value defined in this XML.</p>

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>

```

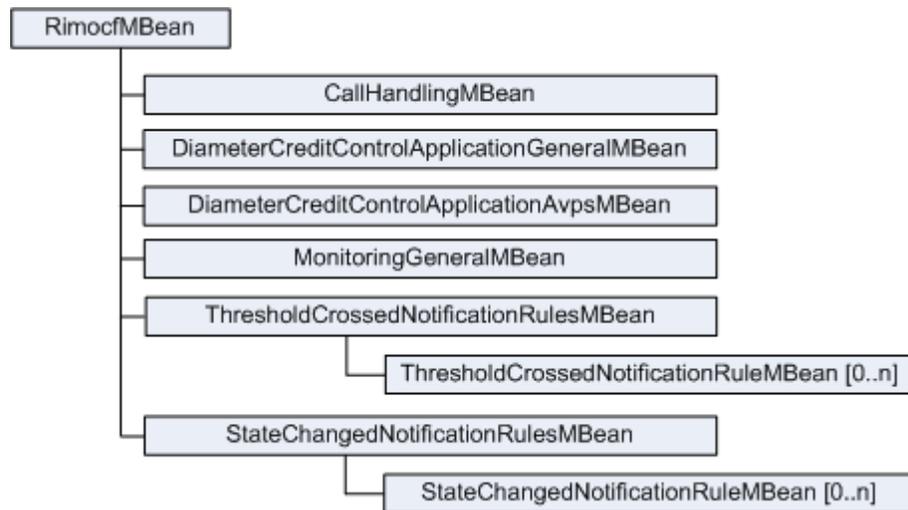
## Configuring Monitoring Parameters

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 Monitoring with the Administration Console"](#).

## Configuring R-IM-OCF Ro with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the R-IM-OCF Ro through JMX. [Figure 26-1](#) shows the hierarchy of the R-IM-OCF MBeans.

**Figure 26-1 R-IM-OCF Ro MBean Hierarchy**



The following sections provide reference information for the R-IM-OCF Ro configuration MBeans.

---

---

**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

---

---

The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

---

## RimocfMBean

RimocfMBean is a root MBean for the R-IM-OCF Ro configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getCallHandling()**

Gets a reference to the instance of CallHandlingMBean

**ObjectName getDiameterCreditControlApplicationGeneral()**

Gets a reference to the instance of DiameterCreditControlApplicationGeneralMBean

**ObjectName getDiameterCreditControlApplicationAvps()**

Gets a reference to the instance of DiameterCreditControlApplicationAvpsMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

## CallHandlingMBean

CallHandlingMBean enables you to configure how the R-IM-OCF Ro handles calls.

### Factory Method

Created automatically

### Attributes

- ResultCodeAvpValueOnSessionDisconnectionByAs
- DefaultSessionType
- InitialCcrMode
- ResultCodeAvpOnNoResponseFromAS
- ResultCodeAvpOnSa14xx
- ResultCodeAvpOnSa15xx
- ResultCodeAvpOnSa16xx
- DefaultResultCodeAvp
- CallingPartyNumber
- CalledPartyNumber

For more information on these attributes, see [Table 26–2](#).

### Operations

None

---

## DiameterCreditControlApplicationGeneralMBean

DiameterCreditControlApplicationGeneralMBean enables you to set up a DCCA dialect and enable monitor call duration.

### Factory Method

Created automatically

### Attributes

DccaDialect

For more information on these attributes, see [Table 26-4](#).

### Operations

None

## DiameterCreditControlApplicationAvpsMBean

DiameterCreditControlApplicationAvpsMBean enables you to specify Attribute-Value Pairs (AVPs) to be set in CCRs.

### Factory Method

Created automatically

### Attributes

- EcurAvps
- ScurAvps
- IecAvps

For more information on these attributes, see [Table 26-5](#).

### Operations

None



## Configuring IM-OCF PCP

The following sections describe how to configure IM-OCF PCP using the Service Broker Administration Console and Java MBeans.

### Configuring IM-OCF PCP with the Administration Console

This section describes how to configure IM-OCF PCP module instances using the Service Broker Administration Console.

To access the IM-OCF PCP Configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Select **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The IM-OCF PCP configuration pane contains the subtabs described in [Table 27-1](#).

**Table 27-1** IM-OCF PCP Configuration Subtabs

Subtab	Description
Call Handling	Enables you to define how the IM-OCF PCP handles calls. See " <a href="#">Configuring Call Handling Parameters</a> " for more information.
Diameter Credit Control Application	Enables you to configure parameters specific to the IM-OCF PCP DCCA interface. See " <a href="#">Configuring Diameter Credit Control Application Parameters</a> " for more information.
Async Announcement Manager	Enables you to set up how IM-OCF PCP triggers the MRF to play announcements. See " <a href="#">Configuring Asynchronous Announcement Manager Parameters</a> " for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications should operate. See " <a href="#">Configuring Monitoring Parameters</a> " for more information.
Degraded Mode	Enables you to set up how a session is charged when an online charging server is not available. See " <a href="#">Configuring the Degraded Mode</a> " for more information.

**Table 27-1 (Cont.) IM-OCF PCP Configuration Subtabs**

Subtab	Description
Ro PCP Mediation	Enables you to define how IM-OCF PCP translates Ro messages to PCP messages and communicates with BRM applications. See " <a href="#">Configuring Ro PCP Mediation</a> " for more information.

## Configuring Call Handling Parameters

The Call Handling tab enables you to set up how IM-OCF PCP handles sessions. [Table 27-2](#) describes configuration parameters in the General subtab.

**Table 27-2 IM-OCF PCP Call Handling General Parameters**

Name	Type	Description
Event Handling	STRING	Specifies which mode of Ro operation IM-OCF PCP uses to support event-based charging. Possible values: <ul style="list-style-type: none"> <li>▪ ECUR Stands for Event Charging with Unit Reservation. With ECUR, IM-OCF PCP sends two requests. One request specifies the desired service consumption. The second request indicates the actual service that has been consumed.</li> <li>▪ IEC Stands for Immediate Event Charging. With IEC, IM-OCF PCP sends a one time request with charging information on a service that has been consumed.</li> </ul> Default value: ECUR
Termination-Cause AVP on SAL BYE	STRING	Specifies how to set a CCR Termination-Cause AVP when session is disconnected by an internal Service Broker SAL BYE message. Possible values: <ul style="list-style-type: none"> <li>▪ DIAMETER_LOGOUT</li> <li>▪ DIAMETER_SERVICE_NOT_PROVIDED</li> <li>▪ DIAMETER_BAD_ANSWER</li> <li>▪ DIAMETER_ADMINISTRATIVE</li> <li>▪ DIAMETER_LINK_BROKEN</li> <li>▪ DIAMETER_AUTH_EXPIRED</li> <li>▪ DIAMETER_USER_MOVED</li> <li>▪ DIAMETER_SESSION_TIMEOUT</li> </ul> Default value: DIAMETER_LOGOUT

**Table 27–2 (Cont.) IM-OCF PCP Call Handling General Parameters**

Name	Type	Description
Termination-Cause AVP on SAL CANCEL	STRING	<p>Specifies how to set a CCR Termination-Cause AVP when session is disconnected by an internal Service Broker SAL CANCEL message.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ DIAMETER_LOGOUT</li> <li>▪ DIAMETER_SERVICE_NOT_PROVIDED</li> <li>▪ DIAMETER_BAD_ANSWER</li> <li>▪ DIAMETER_ADMINISTRATIVE</li> <li>▪ DIAMETER_LINK_BROKEN</li> <li>▪ DIAMETER_AUTH_EXPIRED</li> <li>▪ DIAMETER_USER_MOVED</li> <li>▪ DIAMETER_SESSION_TIMEOUT</li> </ul> <p>Default value: DIAMETER_SERVICE_NOT_PROVIDED</p>
Termination-Cause AVP on SAL Final Error Response	STRING	<p>Specifies how to set a CCR Termination-Cause AVP when session is disconnected by an internal Service Broker SAL final error response message.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ DIAMETER_LOGOUT</li> <li>▪ DIAMETER_SERVICE_NOT_PROVIDED</li> <li>▪ DIAMETER_BAD_ANSWER</li> <li>▪ DIAMETER_ADMINISTRATIVE</li> <li>▪ DIAMETER_LINK_BROKEN</li> <li>▪ DIAMETER_AUTH_EXPIRED</li> <li>▪ DIAMETER_USER_MOVED</li> <li>▪ DIAMETER_SESSION_TIMEOUT</li> </ul> <p>Default value: DIAMETER_SERVICE_NOT_PROVIDED</p>

## Configuring Diameter Credit Control Application Parameters

The Diameter Credit Control Application tab enables you to configure parameters related to the IM-OCF PCP Diameter Credit Control Application (DCCA) interface. The Diameter Credit Control Application tab contains subtabs described in [Table 27–3](#).

**Table 27–3 IM-OCF PCP Diameter Credit Control Application Subtabs**

Subtab	Description
AVPs	<p>Enables you to specify Attribute-Value Pairs (AVPs) to be set in CCRs.</p> <p>See "<a href="#">Configuring AVPs</a>" for more information.</p>
General	<p>Enables you to set up a DCCA dialect and enables monitor call duration.</p> <p>See "<a href="#">Configuring General Parameters</a>" for more information.</p>

### Configuring AVPs

The AVPs subtab enables you to specify Attribute-Value Pairs (AVPs) to be set in CCRs. [Table 27–4](#) describes the AVPs that you can specify.

**Table 27–4 IM-OCF PCP DCCA AVPs Subtab Parameters**

Name	Type	Description
Destination-Host AVP	STRING	<p>Specifies the value to set in a CCR Destination-Host AVP.</p> <p>The Destination-Host AVP combined with the Destination-Realm AVP defines a Diameter destination node that communicates with the IM-OCF PCP.</p> <p>The IM-OCF PCP sends messages to the address you specify for the Diameter destination node.</p> <p>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.</p> <p>See "Configuring Outbound Destinations" in the <i>Signaling Domain Configuration Guide</i> for more information.</p> <p>In this case, the Destination-Host AVP is ignored.</p>
Destination-Realm AVP	STRING	<p>Specifies the value to set in a CCR Destination-Realm AVP.</p> <p>The Destination-Realm AVP combined with the Destination-Host AVP defines a Diameter destination node that communicates with the IM-OCF PCP.</p> <p>The IM-OCF PCP sends messages to the address you specify for the Diameter destination node.</p> <p>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.</p> <p>See "Configuring Outbound Destinations" in the <i>Signaling Domain Configuration Guide</i> for more information.</p> <p>In this case, the Destination-Host AVP is ignored.</p>
Service-Context-Id AVP	STRING	<p>Specifies the value to set in a CCR Service-Context-Id AVP.</p> <p>Default value: 32260@3gpp.org</p>
User-Name AVP	STRING	<p>Specifies the value to set in a CCR User-Name AVP.</p>
Ro Node-Functionality AVP	INT	<p>Specifies the value to set in a CCR Node-Functionality AVP.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ 0 Specifies S-CSCF</li> <li>■ 1 Specifies P-CSCF</li> <li>■ 2 Specifies I-CSCF</li> <li>■ 3 Specifies MRFC</li> <li>■ 4 Specifies MGCF</li> <li>■ 5 Specifies BGCF</li> <li>■ 6 Specifies AS</li> </ul> <p>Default value: 6</p>

## Configuring General Parameters

The General subtab enables you to set up a DCCA dialect and enable monitor call duration. [Table 27–5](#) describes the parameters you can configure.

**Table 27–5 IM-OCF PCP DCCA General Subtab Parameters**

Name	Type	Description
DCCA Dialect	STRING	Specifies the DCCA dialect that IM-OCF uses. Possible values: <ul style="list-style-type: none"> <li>▪ STANDARD_DCCA Standard DCCA dialect</li> <li>▪ BRM Oracle Communications Billing and Revenue Management DCCA dialect</li> </ul> Default value: Standard

## Configuring Asynchronous Announcement Manager Parameters

You can set up IM-OCF PCP 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 27–6](#).

**Table 27–6 IM-OCF PCP Async Announcement Manager Subtabs**

Subtab	Description
General	Enables you to specify the alias of the MRF that plays announcements. See " <a href="#">Configuring General Parameters</a> " 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 " <a href="#">Configuring Async Announcements</a> " for more information.

## Configuring General Parameters

The General subtab enables you to specify the alias of the MRF that plays announcements. [Table 27–7](#) describes the parameter you can configure.

**Table 27–7 Async Announcement Manager General Parameter**

Name	Type	Description
MRF Alias	STRING	Specifies the alias of the MRF that IM-OCF PCP 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 27–8](#) describes the parameters you can configure.

**Table 27–8 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: <ul style="list-style-type: none"> <li>■ TRUE</li> <li>■ FALSE</li> </ul> Default value: TRUE
Reason Type	STRING	Specifies the parameter that IM-OCF PCP 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 PCP triggers the MRF to play the announcement.  Possible values: <ul style="list-style-type: none"> <li>■ ANY</li> <li>■ GRANTED_TIME</li> <li>■ RESULT_CODE</li> <li>■ SAL_ERROR</li> </ul> Default value: ANY  <b>Note:</b> When you set Reason Type to ANY, IM-OCF PCP 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 PCP triggers the MRF to play the announcement.  To configure IM-OCF PCP to trigger the MRF to play the announcement, regardless of the value of the lower limit, set this parameter to -1.  <b>Note:</b> IM-OCF PCP does not use the Lower Limit parameter if you set Reason Type to ANY.

**Table 27–8 (Cont.) Async Announcement Manager Announcements Parameters**

Name	Type	Description
Upper Limit	INT	<p>Specifies the upper limit of the range for the parameter that you specified in Reason Type.</p> <p>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 PCP triggers the MRF to play the announcement.</p> <p>To configure IM-OCF PCP to trigger the MRF to play the announcement, regardless of the value of the upper limit, set this parameter to -1.</p> <p><b>Note:</b> IM-OCF PCP does not use the Upper Limit parameter if you set Reason Type to ANY.</p>
Network	STRING	<p>Specifies the location of the mobile subscriber required for triggering the MRF to play the announcement.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ ANY</li> <li>▪ HOME_ZONE</li> <li>▪ HOME_NETWORK</li> <li>▪ ROAMING</li> </ul> <p>Alternatively, you can specify the ID of a specific MSC that serves the mobile subscriber.</p>
Service Side	STRING	<p>Specifies the IM-OCF PCP's service side required for triggering the MRF to play the announcement.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ BOTH</li> <li>▪ ORIG</li> <li>▪ TERM</li> </ul> <p>Default value: BOTH</p>
Call State	STRING	<p>Specifies the call state when IM-OCF PCP triggers the MRF to play the announcement.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ PRECALL</li> <li>▪ MIDCALL</li> <li>▪ POSTCALL</li> </ul> <p>Default value: PRECALL</p>
Priority	INT	<p>Specifies the order in which the MRF plays different announcement when the conditions of multiple rules are met.</p> <p>Default value: 0</p>
Announcement Code	INT	<p>Specifies the identifier of the announcement that the MRF plays.</p> <p>Default value: 0</p>

**Table 27–8 (Cont.) Async Announcement Manager Announcements Parameters**

Name	Type	Description
Threshold	INT	<p>Specifies how much time, in seconds, prior to the end of quota, IM-OCF PCP triggers the MRF to play the announcement.</p> <p>IM-OCF PCP uses the Threshold parameter only for the announcements whose Call State parameter is set to MIDCALL.</p> <p>Default value: 0</p> <p><b>Note:</b> Setting the Threshold parameter to any positive value when Call State set to PRECALL or POSTCALL causes an error.</p>

## Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-OCF PCP. For more information about configuring monitoring, see "[Configuring Monitoring with the Administration Console](#)".

## Configuring the Degraded Mode

In Online Mediation Solution Controller, Service Broker 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 PCP switches to the special mode known as degraded mode. This mode enables IM-OCF PCP to continue a session and charge a mobile subscriber during the time when the charging server is temporarily unavailable.

To check the availability of the charging server, every time when IM-OCF PCP sends an accounting request to the charging server, IM-OCF PCP waits a specified period of time for a response from the server. If the server does not respond, IM-OCF PCP switches to the degraded mode.

After IM-OCF PCP switched to the degraded mode, IM-OCF PCP handles the session in this mode until the session is terminated even if the online charging server becomes available. However, when the charging server becomes available, IM-OCF PCP sends to the server charging information gathered during the session.

In the degraded mode, IM-OCF PCP communicates with the Service Broker local charging server. The local online charging server imitates the work of an 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 PCP.

To gather this information, IM-OCF PCP writes Charging Data Records (CDRs). IM-OCF PCP replays the CDRs to the online charging server after this server becomes available again. Then the server actually charges the mobile subscriber.

For more information, see the discussion on administrating the degraded mode in *Oracle Communications Service Broker Online Mediation Controller Implementation Guide*.

You use the Degraded Mode tab to configure the parameters of this mode as described in [Table 27–9](#).

**Table 27-9 Degraded Mode Parameters**

Name	Type	Description
On OCF Failure	STRING	<p>Specifies the behavior of IM-OCF Ro when the OCF fails.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ ALWAYS_REFUSE Degraded mode is disabled. If the OCF fails, IM-OCF Ro refuses to grant the service.</li> <li>■ 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.</li> <li>■ 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.</li> </ul> <p>Note: This setting is overridden by the OCF AVPs 'Credit Control Failure Handling' and 'Realtime Required'.</p> <p>Default value: USE_LOCAL_REFUSE</p>
CDR Mode	STRING	<p>Specifies how IM-OCF PCP writes CDRs.</p> <p>Possible options:</p> <ul style="list-style-type: none"> <li>■ NORMAL IM-OCF PCP begins to write CDRs when IM-OCF PCP switches to the degraded mode.</li> <li>■ HISTORY Like in the Normal mode, IM-OCF PCP begins to write CDRs when IM-OCF PCP switches to the degraded mode. In addition, IM-OCF PCP stores all CDRs that IM-OCF PCP previously sent to the OCS.</li> <li>■ ALWAYS IM-OCF PCP always writes CDRs.</li> </ul> <p>Default value: NORMAL</p>
CDR Writer Impl	STRING	<p>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.</p>
CDR Writer Service	STRING	<p>Specifies the full path of the CDR writer service. This is a preset parameter. Do NOT change the value of this parameter.</p>
Degraded Mode Timer	INT	<p>Specifies the period of time, in milliseconds, that IM-OCF PCP 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 PCP switches to the degraded mode.</p>

**Table 27–9 (Cont.) Degraded Mode Parameters**

Name	Type	Description
Local-OCF Alias	STRING	Specifies the alias of the local online charging server.  This alias is mapped to the destination host and destination realm of the local online charging server as defined in the configuration of Diameter SSU outbound routing rules.  For more information, see the discussion on configuring outbound destinations in Diameter SSUs in <i>Oracle Communications Service Broker Signaling Domain Configuration Guide</i> .
Local-OCF External Protocol	STRING	Specifies the protocol that IM-OCF PCP uses to communicate with the local online charging server.
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 Ro PCP Mediation

IM-OCF PCP translates Ro messages to PCP messages and communicates with BRM applications using the Ro PCP mediator.

You set up the mediator by configuring parameters on the subtabs described in [Table 27–10](#).

**Table 27–10 Ro PCP Mediation Subtabs**

Subtab	Description
General	Enables you to define how IM-OCF PCP communicates with BRM applications.  See <a href="#">"Configuring General Parameters"</a> for more information.
SSU PCP Alias Resolver	Enables you to configure the resolution mechanism that routes requests based on the value of an AVP inside the request.  See <a href="#">"Configuring SSU PCP Alias Resolver"</a> for more information.
Service types	Enables you to set up mapping between Diameter Ro Service-Identifier AVP and BRM service types.  See <a href="#">"Configuring Service Types"</a> for more information.
Opcode mapping	Enables you to map new Diameter Ro requests to BRM PCM operation codes.  See <a href="#">"Configuring Opcode Mapping"</a> for more information.
Degraded Mode	Enables you to specify the error codes and response codes to trigger IM-OCF PCP to process a request in the degraded mode.  See <a href="#">"Configuring the Degraded Mode"</a> for more information.

### Configuring General Parameters

Using the General subtab, you define how IM-OCF PCP communicates with BRM applications. [Table 27–11](#) describes the parameters that you can configure.

**Table 27–11 Ro to PCP Mediation General Parameters**

Name	Type	Description
Client Program Name	String	The name representing IM-OCF PCP as a BRM client application when accessing BRM. Default value: Matrix
Object Type	String	Always set this value to <b>gsm</b> .
Default Opcode Timeout	Integer	The time to allow for a charging requests to execute before it is considered to have timed out. Given in seconds.
Reservation Expiration Time	Integer	The time BRM applications keeps reservation objects before they release them. Given in milliseconds. Default value: 86400000 (24 hours) See "About Creating Reservations" in the chapter "Reserving Resources for Concurrent Network Sessions" in <i>Oracle Communications Billing and Revenue Management Configuring and Collecting Payments</i> .

### Configuring SSU PCP Alias Resolver

IM-OCF PCP routes outgoing PCP requests through connection pools that you create. For more information, see the discussion on creating BRM connection pools in *Oracle Communications Service Broker Online Mediation Controller Implementation Guide*.

By default, IM-OCF PCP routes requests through all connection pools in a round-robin fashion. However, you can also enable a resolution mechanism that routes requests based on the value of an AVP inside the request. In this case, the value of the AVP is resolved into a connection pool. The value of the AVP needs to match the alias of a destination BRM application, that is the alias of a PCP network entity configured in the PCP SSU.

Table 27–12 describes the parameters that you can configure.

**Table 27–12 SSU PCP Alias Resolver Parameters**

Name	Type	Description
Enable SSU PCP Alias Resolution	Boolean	Specifies whether to enable the connection pool resolution mechanism or not. Possible values: <ul style="list-style-type: none"> <li>■ true</li> <li>■ false</li> </ul> Default value: false
AVP Code	Integer	The code of the AVP based on which value the connection pool resolution is done. Default value: 283 (Destination-Realm AVP)
AVP Vendor ID	Integer	The vendor ID of the AVP you entered in AVP Code. Default value: 0

## Configuring Service Types

Using the Service types tab, you set up mapping between Diameter Ro Service-Identifier AVP and BRM service types. [Table 27–13](#) describes the parameters that you can configure.

**Table 27–13 Ro to PCP Mediation Service Types Parameters**

Name	Type	Description
Service Identifier	Integer	The Diameter Ro service identifier to be mapped to BRM service type
Service Type	String	The BRM service type to use for the corresponding Diameter Ro service id. For example, <b>service/telco/gsm/sms</b>
Default Service Type	Boolean	Set to: <ul style="list-style-type: none"> <li>■ <b>true</b> to use this as a default value</li> <li>■ <b>false</b> to not use this as a default value</li> </ul>

## Configuring Opcode Mapping

Using the Opcode mapping tab, you map new Diameter Ro requests to BRM PCM operation codes.

To map new Diameter Ro requests to BRM PCM operation codes:

1. In the **Opcode mapping** tab, in the navigation tree, select the type of Diameter request that you want to add mapping for.
2. Click the Plus (+) button at the bottom of the navigation tree area. A new AVP node is added.
3. In the AVP tab in the right hand pane, enter the following fields for the AVP that you want to map:
  - **AVP Code**
  - **AVP Vendor ID**
  - **AVP Value**
4. Click the **Add Opcode Mapping** button. The Mapping tab appears.
5. In the Mapping tab, set the following fields as described:
  - In the **Processor Class** field, enter name of the name of the processor class implementing the mapping that you are currently configuring.
  - In the **Opcode ID** and **Opcode Flag** fields, enter the BRM operation code and operation flag.
  - In the **Opcode Timeout** field, enter the time to allow for the BRM operation to execute before it is considered to have timed out. Given in milliseconds.

## Configuring the Degraded Mode

Using the Degraded Mode tab, you can specify the error codes and response codes to trigger IM-OCF PCP to process a request in the degraded mode. [Table 27–14](#) describes the parameters that you can configure.

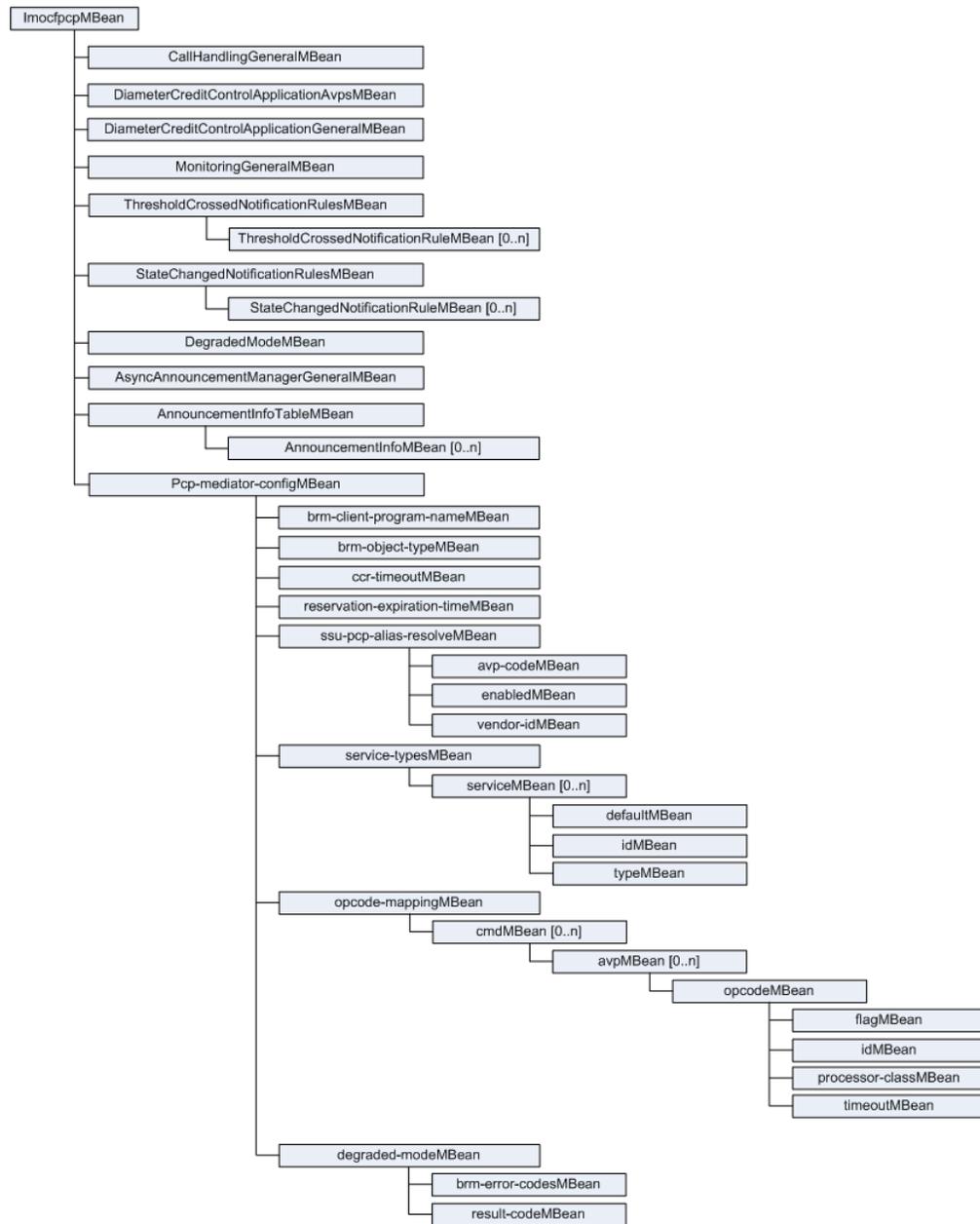
**Table 27–14** *Rf to PCP Degraded Mode Parameters*

<b>Name</b>	<b>Type</b>	<b>Description</b>
BRM error codes	STRING	Specifies the error codes that trigger IM-OCF PCP to handle the request in the degraded mode. You can enter multiple error codes separated by comma.
Result code	STRING	Specifies the result code that the mediator should generate to trigger IM-OCF PCP to handle the request in the degraded mode.

## Configuring IM-OCF PCP with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the IM-OCF PCP through JMX. [Figure 27–1](#) shows the hierarchy of the IM-OCF PCP MBeans.

**Figure 27-1 IM-OCF PCP MBeans Hierarchy**



The following sections provide reference information for the IM-OCF PCP configuration MBeans.

---

**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

---

The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean

- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

---

## ImocfpcpMBean

ImocfpcpMBean is a root MBean for the IM-OCF PCP configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getCallHandling()**

Gets a reference to the instance of CallHandlingMBean

**ObjectName getDiameterCreditControlApplicationAvps()**

Gets a reference to the instance of DiameterCreditControlApplicationAvpsMBean

**ObjectName getDiameterCreditControlApplicationGeneral()**

Gets a reference to the instance of DiameterCreditControlApplicationGeneralMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

## CallHandlingMBean

CallHandlingMBean enables you to configure how a call is handled.

### Factory Method

Created automatically

### Attributes

- EventHandling
- TerminationCauseAvpOnSalBye
- TerminationCauseAvpOnSalCancel
- TerminationCauseAvpOnSalFinalErrorResponse

For more information on these attributes, see [Table 27-2](#).

### Operations

None

---

## DiameterCreditControlApplicationAvpsMBean

DiameterCreditControlApplicationAvpsMBean enables you to specify Attribute-Value Pairs (AVPs) to be set in CCRs.

### Factory Method

Created automatically

### Attributes

- DestinationHostAvp
- DestinationRealmAvp
- ServiceContextIdAvp
- UserNameAvp
- RoNodeFunctionalityAvp

For more information on these attributes, see [Table 27-4](#).

### Operations

None

## DiameterCreditControlApplicationGeneralMBean

DiameterCreditControlApplicationGeneralMBean enables you to set up a DCCA dialect and enable monitor call duration.

### Factory Method

Created automatically

### Attributes

DccaDialect

For more information on these attributes, see [Table 27-5](#).

### Operations

None

---

## DegradedModeMBean

DegradedModeMBeanMBean enables you to configure how IM-OCF Ro operates in the degraded mode.

### Object Name

`com.convergin:Type=DiameterCreditControlApplicationAvps,Version=MBean_Version,Location=AdminServer,Name=IMOCF.Instance_Name`

### Factory Method

Created automatically

### Attributes

- OnOCFFailure
- CDRMode
- CDRWriterImpl
- CDRWriterService
- DegradedModeTimer
- LocalOCFAlias
- ExternalProtocol
- Degraded Mode Error Codes

For more information on these attributes, see [Table 27-9](#).

### Operations

None

## AsyncAnnouncementManagerGeneralMBean

AsyncAnnouncementManagerGeneralMBean enables you to specify the alias of the MRF that IM-OCF Ro triggers to play announcements. Each instance of IM-OCF Ro can trigger only one instance of the MRF.

### Object Name

`com.convergin:Type=AsyncAnnouncementManagerGeneral,Version=MBean_  
Version,Location=AdminServer,Name=IMOCF.Instance_Name`

### Factory Method

Created automatically.

### Attributes

- MrfAlias

For more information about this attribute, see [Table 27-7](#).

### Operations

None

## AnnouncementInfoTableMBean

AnnouncementInfoTableMBean enables you to manage rules for playing announcements. Each rule defines conditions and the announcement that the MRF plays, if these conditions are met.

Each rule is represented by an instance of AnnouncementInfoMBean. You need to create a separate instance of AnnouncementInfoMBean for each rule.

### Object Name

*com.convergin:Type=AnnouncementInfoTable,Version=MBean\_  
Version,Location=AdminServer,Name=IMOCF.Instance\_Name*

### Factory Method

Created automatically.

### Attributes

None

### Operations

**ObjectName createAnnouncementInfo()**

Creates an instance of AnnouncementInfoMBean.

**void destroyAnnouncementInfo**

Destroys an instance of AnnouncementInfoMBean.

**ObjectName lookupAnnouncementInfo**

Returns the reference to a specified instance of AnnouncementInfoMBean.

---

## AnnouncementInfoMBean

AnnouncementInfo enables you to set up parameters of a rule for playing announcements. A rule defines conditions and the announcement that the MRF plays, if these conditions are met. In addition, rules determine how the MRF plays the announcement.

You need to create a separate instance of AnnouncementInfoMBean for each rule.

### Object Name

`com.convergin:Type=AnnouncementInfo,Version=MBean_  
Version,Location=AdminServer,Name=Announcement_Name`

### Factory Method

`AnnouncementInfoTable.createAnnouncementInfo()`

### Attributes

- Enabled
- ReasonType
- ReasonFrom
- ReasonTo
- Network
- ServiceSide
- CallState
- Priority
- AnnouncementCode
- Threshold

For more information about these attributes, see [Table 27-8](#).

### Operations

None

## pcp-mediator-configMBean

pcp-mediator-configMBean is the root MBean that you use to configure the Ro PCP mediator.

### Object Name

oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=*MBean\_Version*.SNAPSHOT,name0=pcp-mediator-config

### Factory Method

Created automatically.

### Attributes

None

### Operations

**void addReservation\_expiration\_time()**

Creates an instance of reservation\_expiration\_timeMBean.

**void removeReservation\_expiration\_time()**

Destroys an instance of reservation\_expiration\_timeMBean.

**void addOpcode\_mapping()**

Creates an instance of opcode\_mappingMBean.

**void removeOpcode\_mapping()**

Destroys an instance of opcode\_mappingMBean.

**void addHost\_station\_id()**

Creates an instance of host\_station\_idMBean.

**void removeHost\_station\_id()**

Destroys an instance of host\_station\_idMBean.

## brm-client-program-nameMBean

Using `brm-client-program-nameMBean`, you specify the name that represents IM-OCF PCP as a BRM client application when accessing BRM.

### Object Name

```
oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=MBean_Version.SNAPSHOT,name0=pcp-mediator-config,name1=brm-client-program-name
```

### Factory Method

Created automatically.

### Attributes

`brm-client-program-name`

For more information about this attribute, see [Table 27-11](#).

### Operations

None

## brm-object-typeMBean

Using `brm-object-typeMBean`, you specify the object type. Always set this value to **gsm**.

### Object Name

```
oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=MBean_Version.SNAPSHOT,name0=pcp-mediator-config,name1=brm-object-type
```

### Factory Method

Created automatically.

### Attributes

`brm-object-type`

For more information about this attribute, see [Table 27-11](#).

### Operations

None

## ccr-timeoutMBean

Using `ccr-timeoutMBean`, you specify the time, in seconds, to allow for a charging requests to execute before it is considered to have timed out.

### Object Name

```
oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=MBean_Version.SNAPSHOT,name0=pcp-mediator-config,name1=ccr-timeout
```

### Factory Method

Created automatically.

### Attributes

`ccr-timeout`

For more information about this attribute, see [Table 27-11](#).

### Operations

None

---

## reservation-expiration-timeMBean

Using reservation-expiration-timeMBean, you specify the time, in seconds, to allow for a charging requests to execute before it is considered to have timed out.

### Object Name

oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=*MBean\_Version*.SNAPSHOT,name0=pcp-mediator-config,name1=reservation-expiration-time

### Factory Method

Created automatically.

### Attributes

reservation-expiration-time

For more information about this attribute, see [Table 27-11](#).

### Operations

None

## ssu-pcp-alias-resolveMBean

Using `ssu-pcp-alias-resolveMBean`, you can configure the resolution mechanism that routes requests based on the value of an AVP inside the request. In this case, the value of the AVP is resolved into a connection pool. The value of the AVP needs to match the alias of a destination BRM application, that is the alias of a PCP network entity configured in the PCP SSU.

### Object Name

`oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=MBean_Version.SNAPSHOT,name0=pcp-mediator-config,name1=ssupcp-alias-resolve`

### Factory Method

Created automatically.

### Attributes

None

### Operations

None

## avp-codeMBean

Using avp-codeMBean, you specify the code of the AVP based on which value the connection pool resolution is done.

### Object Name

```
oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=MBean_Version.SNAPSHOT,name0=pcp-mediator-config,name1=ssupcp-alias-resolve,name2=avp-code
```

### Factory Method

Created automatically.

### Attributes

avp-code

For more information about this attribute, see [Table 27-12](#).

### Operations

None

## enabledMBean

Using enabledMBean, you specify whether or not to enable the connection pool resolution mechanism.

### Object Name

oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=*MBean\_Version*.SNAPSHOT,name0=pcp-mediator-config,name1=ssupcp-alias-resolve,name2=enabled

### Factory Method

Created automatically.

### Attributes

enabled

For more information about this attribute, see [Table 27-12](#).

### Operations

None

---

## vendor-idMBean

Using vendor-idMBean, you specify the vendor ID of the AVP you entered in AVP Code.

### Object Name

oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=*MBean\_Version*.SNAPSHOT,name0=pcp-mediator-config,name1=ssupcp-alias-resolve,name2=vendor-id

### Factory Method

Created automatically.

### Attributes

vendor-id

For more information about this attribute, see [Table 27-12](#).

### Operations

None

## service-typesMBean

service-typesMBean is the root MBean for setting up mapping between Diameter Ro Service-Identifier AVP and BRM service types.

### Object Name

oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=*MBean\_Version*.SNAPSHOT,name0=pcp-mediator-config,name1=service-types

### Factory Method

Created automatically.

### Attributes

None

### Operations

**void addService()**

Creates an instance of serviceMBean.

**void removeService(ind ServiceID)**

Destroys an instance of serviceMBean.

## serviceMBean

Using serviceMBean, you can specify parameters of a single service.

### Object Name

oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=*MBean\_Version*.SNAPSHOT,name0=pcp-mediator-config,name1=service-types,name2=service[0]

### Factory Method

Created automatically.

### Attributes

None

### Operations

#### **void cloneIt()**

Clones the current instance of serviceMBean.

#### **void addDefault()**

Creates an instance of defaultMBean.

#### **void removeDefault()**

Destroys an instance of defaultMBean.

## defaultMBean

Using defaultMBean, you specify whether the service defined in serviceMBean should be used as a default value.

### Object Name

oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=*MBean\_Version*.SNAPSHOT,name0=pcp-mediator-config,name1=service-types,name2=service[0],name3=default

### Factory Method

Created automatically

### Attributes

default

For more information about this attribute, see [Table 27-13](#).

### Operations

None

## idMBean

Using idMBean, you specify the Diameter Ro service identifier to be mapped to BRM service type.

### Object Name

```
oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=MBean_Version.SNAPSHOT,name0=pcp-mediator-config,name1=service-types,name2=service[0],name3=id
```

### Factory Method

Created automatically.

### Attributes

id

For more information about this attribute, see [Table 27-13](#).

### Operations

None

## typeMBean

Using typeMBean, you specify the BRM service type to use for the corresponding Diameter Ro service id.

### Object Name

```
oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=MBean_Version.SNAPSHOT,name0=pcp-mediator-config,name1=service-types,name2=service[0],name3=type
```

### Factory Method

Created automatically.

### Attributes

type

For more information about this attribute, see [Table 27-13](#).

### Operations

None

---

## opcode-mappingMBean

opcode-mappingMBean is the root MBean for mapping new Diameter Ro requests to BRM PCM operation codes.

### Object Name

oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=*MBean\_Version*.SNAPSHOT,name0=pcp-mediator-config,name1=opcode-mapping

### Factory Method

Created automatically.

### Attributes

None

### Operations

**void addCmd()**

Creates an instance of cmdMBean.

**void removeCmd(int CmdID)**

Destroys an instance of cmdMBean.

## cmdMBean

cmdMBean is the root MBean for configuring the mapping between AVPs and BRM PCM opcodes.

### Object Name

oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=*MBean\_Version*.SNAPSHOT,name0=pcp-mediator-config,name1=opcode-mapping,name2=cmd[0]

### Factory Method

opcode-mapping.addCmd()

### Attributes

code

### Operations

#### **void cloneIt()**

Clones the current instance of cmdMBean.

#### **void addAvp()**

Creates an instance of avpMBean.

#### **void removeAvp(int AvpID)**

Destroys an instance of avpMBean.

#### **void addOpcode()**

Creates an instance of opcodeMBean.

#### **void removeOpcode()**

Destroys an instance of opcodeMBean.

## avpMBean

Using avpMBean, you specify the AVP that you want to map to a BRM PCM operation code.

### Object Name

```
oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=MBean_Version.SNAPSHOT,name0=pcp-mediator-config,name1=opcode-mapping,name2=cmd[0],name3=avp[0]
```

### Factory Method

```
cmd.addAvp()
```

### Attributes

- avpCode
- vendorId
- value

For more information about these attributes, see "[Configuring Opcode Mapping](#)".

### Operations

#### **void cloneIt()**

Clones the current instance of avpMBean.

#### **void addAvp()**

Creates an instance of avpMBean.

#### **void removeAvp(int AvpID)**

Destroys an instance of avpMBean.

#### **void addOpcode()**

Creates an instance of opcodeMBean.

#### **void removeOpcode()**

Destroys an instance of opcodeMBean.

---

## opcodeMBean

Using opcodeMBean, you specify the BRM PCM operation code to which you want to map an AVP.

### Object Name

oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=*MBean\_Version*.SNAPSHOT,name0=pcp-mediator-config,name1=opcode-mapping,name2=cmd[0],name3=avp[0],name4=opcode

### Factory Method

avp.addOpcode()

### Attributes

None

### Operations

**void addProcessor\_class()**

Creates an instance of processor\_classMBean.

**void removeProcessor\_class()**

Destroys an instance of processor\_classMBean.

**void addId()**

Creates an instance of idMBean.

**void removeId()**

Destroys an instance of idMBean.

**void addFlag()**

Creates an instance of flagMBean.

**void removeFlag()**

Destroys an instance of flagMBean.

**void addTimeout()**

Creates an instance of timeoutMBean.

**void removeTimeout()**

Destroys an instance of timeoutMBean.

## flagMBean

Using flagMBean, you specify the BRM opcode flag.

### Object Name

oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=*MBean\_Version*.SNAPSHOT,name0=pcp-mediator-config,name1=opcode-mapping,name2=cmd[0],name3=avp[0],name4=opcode,name5=flag

### Factory Method

opcode.addFlag()

### Attributes

flag

For more information about this attribute, see "[Configuring Opcode Mapping](#)".

### Operations

None

## idMBean

Using idMBean, you specify the BRM opcode ID.

### Object Name

oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=*MBean\_Version*.SNAPSHOT,name0=pcp-mediator-config,name1=opcode-mapping,name2=cmd[0],name3=avp[0],name4=opcode,name5=id

### Factory Method

opcode.addId()

### Attributes

id

For more information about this attribute, see "[Configuring Opcode Mapping](#)".

### Operations

None

## processor-classMBean

Using processor-classMBean, you specify the processor class to be used for handling opcode input and output mapping.

### Object Name

```
oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=MBean_Version.SNAPSHOT,name0=pcp-mediator-config,name1=opcode-mapping,name2=cmd[0],name3=avp[0],name4=opcode,name5=processor-class
```

### Factory Method

```
opcode.addProcessor_class()
```

### Attributes

```
processor-class
```

For more information about this attribute, see "[Configuring Opcode Mapping](#)".

### Operations

```
None
```

---

## timeoutMBean

Using timeoutMBean, you specify the maximum period of time, in milliseconds, that IM-OCF PCP waits for the BRM opcode results.

### Object Name

oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=MBean\_Version.SNAPSHOT,name0=pcp-mediator-config,name1=opcode-mapping,name2=cmd[0],name3=avp[0],name4=opcode,name5=timeout

### Factory Method

opcode.addTimeout()

### Attributes

timeout

For more information about this attribute, see "[Configuring Opcode Mapping](#)".

### Operations

None

## degraded-modeMBean

degraded-modeMBean is the root MBean for specifying the error codes and response codes to trigger IM-OCF PCP to process a request in the degraded mode.

### Object Name

oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=*MBean\_Version*.SNAPSHOT,name0=pcp-mediator-config,name1=degraded-mode

### Factory Method

Created automatically.

### Attributes

None

### Operations

None

## brm-error-codesMBean

Using `brm-error-codesMBean`, you specify the error codes that trigger IM-OCF PCP to handle the request in the degraded mode. You can provide multiple error codes separated by comma.

### Object Name

`oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=MBean_Version.SNAPSHOT,name0=pcp-mediator-config,name1=degraded-mode,name2=brm-error-codes`

### Factory Method

Created automatically.

### Attributes

`brm-error-codes`

For more information about this attribute, see [Table 27-14](#).

### Operations

None

---

## result-codeMBean

Using result-codeMBean, you specify the result code that the mediator should generate to trigger IM-OCF PCP o handle the request in the degraded mode.

### Object Name

oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2ro,version=*MBean\_Version*.SNAPSHOT,name0=pcp-mediator-config,name1=degraded-mode,name2=result-code

### Factory Method

Created automatically.

### Attributes

result-code

For more information about this attribute, see [Table 27-14](#).

### Operations

None

## Configuring IM-OFCF PCP

The following sections describe how to configure IM-OFCF PCP using the Service Broker Administration Console and Java MBeans.

### Configuring IM-OFCF PCP with the Administration Console

This section describes how to configure the IM-OFCF PCP module instances using the Service Broker Administration Console.

To access the IM-OFCF PCP Configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Select **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The IM-OFCF PCP configuration screen contains the tabs described in [Table 28-1](#).

**Table 28-1** IM-OFCF PCP Configuration Tabs

Subtab	Description
Call Handling	Enables you to define how IM-OFCF PCP handles calls. See " <a href="#">Configuring Call Handling Parameters</a> " for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications should operate. See " <a href="#">Configuring Monitoring Parameters</a> " for more information.
Degraded Mode	Enables you to set up how a session is charged when an online charging server is not available. See " <a href="#">Configuring the Degraded Mode</a> " for more information.
Rf PCP Mediation	Enables you to define how IM-OFCF PCP translates Rf messages to PCP messages and communicates with BRM applications. See " <a href="#">Configuring Rf PCP Mediation</a> " for more information.

### Configuring Call Handling Parameters

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

[Table 28-2](#) describes configuration parameters on the Call Handling tab.

**Table 28–2 IM-OFCF PCP Call Handling Parameters**

Name	Type	Description
Destination Alias	STRING	Specifies an alias of the offline charging server realm that you defined in the SSU PCP configuration.
Service Context	STRING	Specifies the Service-Context-Id AVP if this AVP is not set in the session that IM-OFCF PCP receives from the network.
Failure Code For Processing Error	STRING	Specifies the SAL error that IM-OFCF PCP generates if IM-OFCF PCP failed to create an ACR.

## Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-OFCF PCP. For more information about configuring monitoring, see "[Configuring Monitoring with the Administration Console](#)".

## Configuring the Degraded Mode

In Online Mediation Solution Controller, Service Broker 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-OFCF PCP switches to the special mode known as degraded mode. This mode enables IM-OFCF PCP to continue a session and charge a mobile subscriber during the time when the charging server is temporarily unavailable.

To check the availability of the charging server, every time when IM-OFCF PCP sends an accounting request to the charging server, IM-OFCF PCP waits a specified period of time for a response from the server. If the server does not respond, IM-OFCF PCP switches to the degraded mode.

After IM-OFCF PCP switched to the degraded mode, IM-OFCF PCP handles the session in this mode until the session is terminated even if the online charging server becomes available. However, when the charging server becomes available, IM-OFCF PCP sends to the server charging information gathered during the session.

In the degraded mode, IM-OFCF PCP communicates with the Service Broker local charging server. The local online charging server imitates the work of an 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-OFCF PCP.

To gather this information, IM-OFCF PCP writes Charging Data Records (CDRs). IM-OFCF PCP replays the CDRs to the online charging server after this server becomes available again. Then the server actually charges the mobile subscriber.

For more information, see the discussion on administrating the degraded mode in *Oracle Communications Service Broker Online Mediation Controller Implementation Guide*.

You use the Degraded Mode tab to configure the parameters of this mode as described in [Table 28–3](#).

**Table 28–3 Degraded Mode Parameters**

Name	Type	Description
On OCF Failure	STRING	<p>Specifies the behavior of IM-OFCF Ro when the OCF fails.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ ALWAYS_REFUSE Degraded mode is disabled. If the OCF fails, IM-OFCF Ro refuses to grant the service.</li> <li>▪ USE_LOCAL_REFUSE Degraded mode is enabled. IM-OFCF Ro writes CDRs. If a local OCF or CDR writing fails, IM-OFCF Ro refuses to grant the service.</li> <li>▪ USE_LOCAL_GRANT Degraded mode is enabled. IM-OFCF Ro writes CDRs. If a local OCF or CDR writing fails, IM-OFCF Ro grants the service.</li> </ul> <p>Note: This setting is overridden by the OCF AVPs 'Credit Control Failure Handling' and 'Realtime Required'.</p> <p>Default value: USE_LOCAL_REFUSE</p>
CDR Mode	STRING	<p>Specifies how IM-OFCF PCP writes CDRs.</p> <p>Possible options:</p> <ul style="list-style-type: none"> <li>▪ NORMAL IM-OFCF PCP begins to write CDRs when IM-OFCF PCP switches to the degraded mode.</li> <li>▪ HISTORY Like in the Normal mode, IM-OFCF PCP begins to write CDRs when IM-OFCF PCP switches to the degraded mode. In addition, IM-OFCF PCP stores all CDRs that IM-OFCF PCP previously sent to the OCS.</li> <li>▪ ALWAYS IM-OFCF PCP always writes CDRs.</li> </ul> <p>Default value: NORMAL</p>
CDR Writer Impl	STRING	<p>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.</p>
CDR Writer Service	STRING	<p>Specifies the full path of the CDR writer service. This is a preset parameter. Do NOT change the value of this parameter.</p>
Degraded Mode Timer	INT	<p>Specifies the period of time, in milliseconds, that IM-OFCF PCP waits for a response from the online charging server. If the online charging server does not respond within the specified period of time, IM-OFCF PCP switches to the degraded mode.</p>

**Table 28–3 (Cont.) Degraded Mode Parameters**

Name	Type	Description
Local-OCF Alias	STRING	Specifies the alias of the local online charging server.  This alias is mapped to the destination host and destination realm of the local online charging server as defined in the configuration of Diameter SSU outbound routing rules.  For more information, see the discussion on configuring outbound destinations in Diameter SSUs in <i>Oracle Communications Service Broker Signaling Domain Configuration Guide</i> .
Local-OCF External Protocol	STRING	Specifies the protocol that IM-OFCF PCP uses to communicate with the local online charging server.
Degraded Mode Error Codes	STRING	Specifies the error codes that trigger IM-OFCF Ro to enable the degraded mode. You can type several error codes separated by comma.

## Configuring Rf PCP Mediation

IM-OFCF PCP translates Rf messages to PCP messages and communicates with BRM applications using the Rf PCP mediator.

You set up the mediator by configuring parameters on the subtabs described in [Table 28–4](#).

**Table 28–4 Rf PCP Mediation Subtabs**

Subtab	Description
General	Enables you to define how IM-OFCF PCP communicates with BRM applications.  See " <a href="#">Configuring General Parameters</a> " for more information.
Service Types	Enables you to set up mapping between Diameter Ro Service-Identifier AVP and BRM service types.  See " <a href="#">Configuring Service Types Parameters</a> " for more information.
Degraded Mode	Enables you to specify the error codes and response codes to trigger IM-OFCF PCP to process a request in the degraded mode.  See " <a href="#">Configuring the Degraded Mode</a> " for more information.

## Configuring General Parameters

Using the General subtab, you define how IM-OFCF PCP communicates with BRM applications. [Table 28–5](#) describes the parameters that you can configure.

**Table 28–5 Rf to PCP Mediation General Parameters**

Name	Type	Description
brm-client-program-name	STRING	The name representing IM-OFCF PCP as a BRM client application when accessing BRM.  Default value: Matrix
brm-object-type	STRING	Always set this value to <b>gsm</b> .

**Table 28–5 (Cont.) Rf to PCP Mediation General Parameters**

Name	Type	Description
incremental-mode	INT	Specifies how IM-OFCF PCP calculates the used quantity for the session. Possible values: <ul style="list-style-type: none"> <li>True IM-OFCF PCP calculates the used quantity as the delta between updates.</li> <li>False IM-OFCF PCP calculates the total used quantity in all updates.</li> </ul>
acr-timeout	INT	Specifies the period of time, in milliseconds, that IM-OFCF PCP waits for a response from the BRM application. If IM-OFCF PCP does not receive a response within the specified period of time, IM-OFCF PCP handles the request in the degraded mode.

### Configuring Service Types Parameters

Using the Service Types tab, you set up mapping between Diameter Rf Service-Identifier AVP and BRM service types. [Table 28–6](#) describes the parameters that you can configure.

**Table 28–6 Rf to PCP Mediation Service Types Parameters**

Name	Type	Description
Id	INT	The Diameter Rf service identifier to be mapped to BRM service type
type	STRING	The BRM service type to use for the corresponding Diameter Rf service id. For example, <b>service/telco/gsm/sms</b>
default	STRING	Set to: <ul style="list-style-type: none"> <li><b>true</b> to use this as a default value</li> <li><b>false</b> to not use this as a default value</li> </ul>

### Configuring the Degraded Mode

Using the Degraded Mode tab, you can specify the error codes and response codes to trigger IM-OFCF PCP to process a request in the degraded mode. [Table 28–7](#) describes the parameters that you can configure.

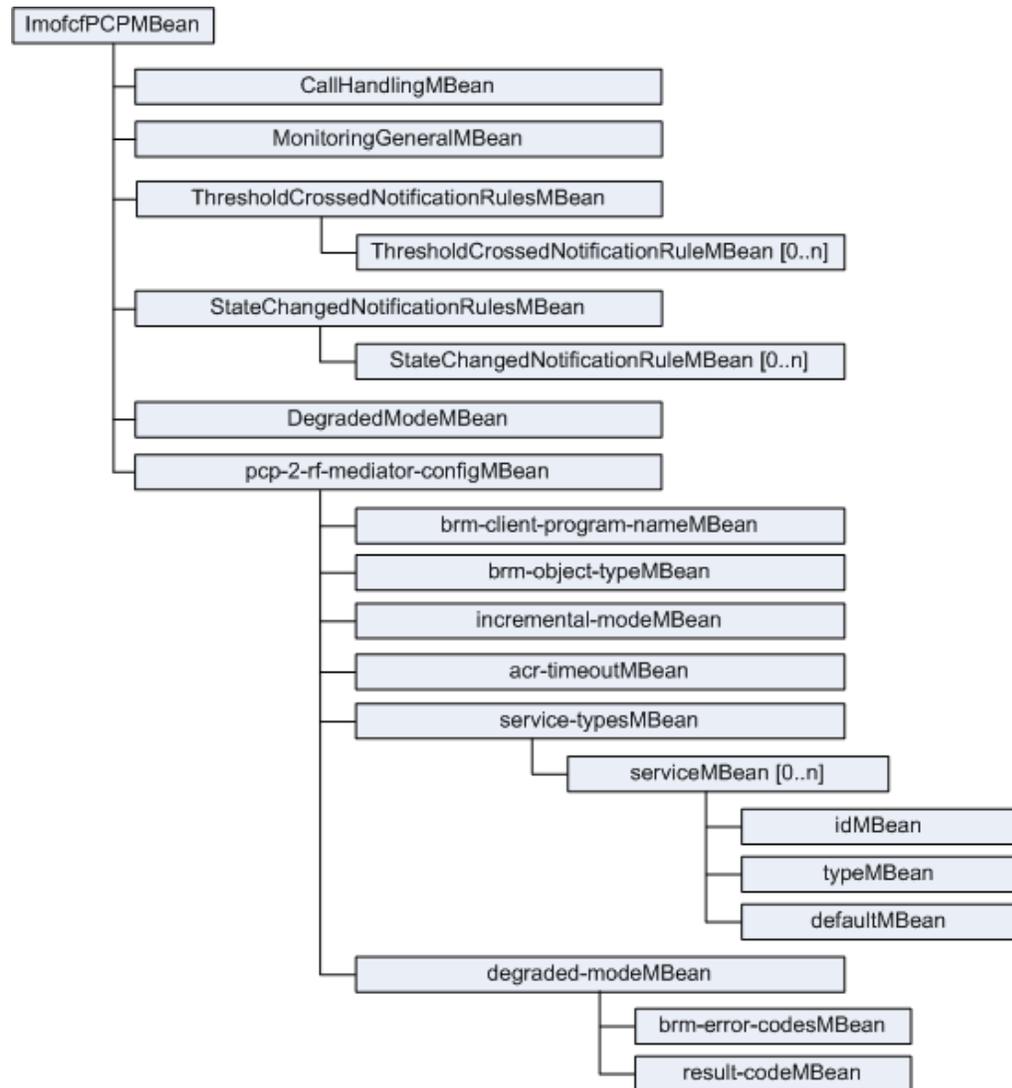
**Table 28–7 Rf to PCP Degraded Mode Parameters**

Name	Type	Description
BRM error codes	STRING	Specifies the error codes that trigger IM-OFCF PCP to handle the request in the degraded mode. You can enter multiple error codes separated by comma.
Result code	STRING	Specifies the result code that the mediator should generate to trigger IM-OFCF PCP to handle the request in the degraded mode.

## Configuring IM-OFCF PCP with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the IM-OFCF PCP through JMX. [Figure 28–1](#) shows the hierarchy of the IM-OFCF PCP MBeans.

**Figure 28–1** IM-OFCF PCP MBean Hierarchy



The following sections provide reference information for the IM-OFCF PCP configuration MBeans.

---

**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

---

The following MBeans are common for all components of Service Broker and described in ["Configuring Monitoring with Java MBeans"](#):

- MonitoringGeneralMBean

- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

---

## ImofcfPCPMBean

ImofcfPCPMBean is a root MBean for the IM-OFCF PCP configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getCallHandling()**

Gets a reference to the instance of CallHandlingMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

## CallHandlingMBean

CallHandlingMBean enables you to configure how the IM-OFCF PCP handles calls.

### Factory Method

Created automatically

### Attributes

- DestinationAlias
- ServiceContext
- FailureCodeForProcessingError

For more information on these attributes, see [Table 28–2](#).

### Operations

None

## DegradedModeMBean

DegradedModeMBeanMBean enables you to configure how IM-OCF Ro operates in the degraded mode.

### Object Name

`com.convergin:Type=DiameterCreditControlApplicationAvps,Version=MBean_Version,Location=AdminServer,Name=IMOCF.Instance_Name`

### Factory Method

Created automatically

### Attributes

- OnOCFFailure
- CDRMode
- CDRWriterImpl
- CDRWriterService
- DegradedModeTimer
- LocalOCFAlias
- ExternalProtocol
- Degraded Mode Error Codes

For more information on these attributes, see [Table 28-3](#).

### Operations

None

## pcp-2-rf-mediator-configMBean

pcp-2-rf-mediator-configMBean is the root MBean that you use to configure the Rf PCP mediator.

### Object Name

oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2rf,version=*MBean\_Version*.SNAPSHOT,name0=pcp-2-rf-mediator-config

### Factory Method

Created automatically.

### Attributes

None

### Operations

**void addOpcode\_mapping()**

Creates an instance of opcode\_mappingMBean.

**void removeOpcode\_mapping(int OpcodeID)**

Destroys an instance of opcode\_mappingMBean.

---

## brm-client-program-nameMBean

Using brm-client-program-nameMBean, you specify the name that represents IM-OFCE PCP as a BRM client application when accessing BRM.

### Object Name

oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2rf,version=*MBean\_Version*.SNAPSHOT,name0=pcp-2-rf-mediator-config,name1=brm-client-program-name

### Factory Method

Created automatically.

### Attributes

brm-client-program-name

For more information on this attribute, see [Table 28-5](#).

### Operations

None

## brm-object-typeMBean

Using brm-object-typeMBean, you specify the object type. Always set this value to **gsm**.

### Object Name

```
oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2rf,version=MBean_Version.SNAPSHOT,name0=pcp-2-rf-mediator-config,name1=brm-object-type
```

### Factory Method

Created automatically.

### Attributes

brm-object-type

For more information on this attribute, see [Table 28-5](#).

### Operations

None

## incremental-modeMBean

Using `incremental-modeMBean`, you specify how IM-OFCF PCP calculates the used quantity for the session.

### Object Name

`oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2rf,version=MBean_Version.SNAPSHOT,name0=pcp-2-rf-mediator-config,name1=incremental-mode`

### Factory Method

Created automatically.

### Attributes

`incremental-mode`

For more information on this attribute, see [Table 28-5](#).

### Operations

None

## acr-timeoutMBean

Using `acr-timeoutMBean`, you specify the period of time, in milliseconds, that IM-OFCF PCP waits for a response from the BRM application.

### Object Name

```
oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2rf,version=MBean_Version.SNAPSHOT,name0=pcp-2-rf-mediator-config,name1=acr-timeout
```

### Factory Method

Created automatically.

### Attributes

`acr-timeout`

For more information on this attribute, see [Table 28-5](#).

### Operations

None

## service-typesMBean

service-typesMBean is the root MBean is the root MBean for setting up mapping between Diameter Rf Service-Identifier AVP and BRM service types.

### Object Name

oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2rf,version=*MBean\_Version*.SNAPSHOT,name0=pcp-2-rf-mediator-config,name1=service-types

### Factory Method

Created automatically.

### Attributes

None

### Operations

**void addService()**

Creates a new instance of serviceMBean.

**void removeService(int ServiceID)**

Destroys an instance of serviceMBean.

---

## serviceMBean

Using serviceMBean, you can specify parameters of a single service.

### Object Name

```
oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2rf,version=MBean_Version.SNAPSHOT,name0=pcp-2-rf-mediator-config,name1=service-types,name2=service[0]
```

### Factory Method

Created automatically.

### Attributes

None

### Operations

#### **void cloneIt()**

Clones the current instance of serviceMBean.

#### **void addDefault()**

Creates a new instance of defaultMBean.

#### **void removeDefault()**

Destroys an instance of defaultMBean.

## idMBean

Using idMBean, you specify the Diameter Rf service identifier to be mapped to BRM service type.

### Object Name

oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2rf,version=*MBean\_Version*.SNAPSHOT,name0=pcp-2-rf-mediator-config,name1=service-types,name2=service[0],name3=default

### Factory Method

Created automatically.

### Attributes

id

For more information on this attribute, see [Table 28-6](#).

### Operations

None

## typeMBean

Using typeMBean, you specify the BRM service type to use for the corresponding Diameter Rf service id.

### Object Name

```
oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2rf,version=MBean_Version.SNAPSHOT,name0=pcp-2-rf-mediator-config,name1=service-types,name2=service[0],name3=type
```

### Factory Method

Created automatically.

### Attributes

type

For more information on this attribute, see [Table 28-6](#).

### Operations

None

## defaultMBean

Using `defaultMBean`, you specify whether the service defined in `serviceMBean` should be used as a default value.

### Object Name

```
oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2rf,version=MBean_Version.SNAPSHOT,name0=pcp-2-rf-mediator-config,name1=service-types,name2=service[0],name3=default
```

### Factory Method

```
service.addDefault()
```

### Attributes

```
default
```

For more information on this attribute, see [Table 28-6](#).

### Operations

```
None
```

## degraded-modeMBean

degraded-modeMBean is the root MBean for specifying the error codes and response codes to trigger IM-OFCF PCP to process a request in the degraded mode.

### Object Name

oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2rf,version=*MBean\_Version*.SNAPSHOT,name0=pcp-2-rf-mediator-config,name1=degraded-mode

### Factory Name

Created automatically.

### Attributes

None

### Operations

None

## brm-error-codesMBean

Using brm-error-codesMBean, you specify the error codes that trigger IM-OFCF PCP to handle the request in the degraded mode. You can provide multiple error codes separated by comma.

### Object Name

oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2rf,version=*MBean\_Version*.SNAPSHOT,name0=pcp-2-rf-mediator-config,name1=degraded-mode,name2=brm-error-codes

### Factory Method

Created automatically.

### Attributes

brm-error-codes

For more information on this attribute, see [Table 28-7](#).

### Operations

None

## result-codeMBean

Using result-codeMBean, you specify the result code that the mediator should generate to trigger IM-OFCF PCP to handle the request in the degraded mode.

### Object Name

oracle:type=oracle.axia.cm.ConfigurationMBean,name=oracle.ocsb.app.rcc.mediation.pcp2rf,version=*MBean\_Version*.SNAPSHOT,name0=pcp-2-rf-mediator-config,name1=degraded-mode,name2=result-code

### Factory Method

Created automatically.

### Attributes

result-code

For more information on this attribute, see [Table 28-7](#).

### Operations

None



---



---

## Configuring R-IM-OFCE Radius

The following sections describe how to configure R-IM-OFCE Radius using the Service Broker Administration Console and Java MBeans.

### Configuring R-IM-OFCE Radius with the Administration Console

This section describes how to configure the R-IM-OFCE Radius module instances using the Service Broker Administration Console.

To access the R-IM-OFCE Radius Configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Select **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The R-IM-OFCE Radius configuration screen contains the tabs described in [Table 29-1](#).

**Table 29-1** R-IM-OFCE Radius Configuration Tabs

Subtab	Description
Call Handling	Enables you to define how R-IM-OFCE Radius handles calls. See " <a href="#">Configuring Call Handling Parameters</a> " for more information.
Monitoring	Enables you to define how Runtime MBeans and notifications should operate. See " <a href="#">Configuring Monitoring Parameters</a> " for more information.

### Configuring Call Handling Parameters

The Call Handling subtab enables you to define how R-IM-OFCE Radius handles calls.

[Table 29-2](#) describes configuration parameters on the Call Handling tab.

**Table 29–2 R-IM-OFCF Radius Call Handling Parameters**

Name	Type	Description
Default Session Type	STRING	Specifies how R-IM-OFCF Radius marks new sessions internally. Possible values: <ul style="list-style-type: none"> <li>▪ Orig Stands for an outgoing call</li> <li>▪ Term Stands for an incoming call</li> </ul> Default value: Term
Operation Mode	STRING	Specifies the operation mode of the Radius server.
AS Reaction Timer Interval Millis	INT	Specifies the time, in milliseconds, that R-IM-OFCF Radius waits for a response from a billing application
Result Code Value For Undefined Error	INT	Specifies the value that R-IM-OFCF Radius sets in an ACA Result-Code AVP when receiving an internal SAL error
Accounting Realtime Required	STRING	Specifies the value that R-IM-OFCF Radius sets in an ACA Accounting-Realtime-Required AVP, when the ACA contains a failure result code, and this AVP is not already set

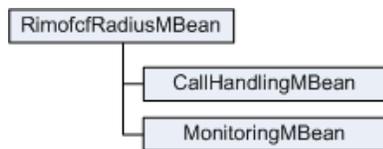
## Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an R-IM-OFCF Radius. For more information about configuring monitoring, see ["Configuring Monitoring with the Administration Console"](#).

## Configuring R-IM-OFCF with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the R-IM-OFCF Radius through JMX. [Figure 29–1](#) shows the hierarchy of the R-IM-OFCF MBeans.

**Figure 29–1 R-IM-OFCF Radius MBean Hierarchy**



The following sections provide reference information for the R-IM-OFCF Radius configuration MBeans.

---

**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

---

The following MBeans are common for all components of Service Broker and described in ["Configuring Monitoring with Java MBeans"](#):

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

---

## RimofcfRadiusMBean

RimofcfRadiusMBean is a root MBean for the R-IM-OFCE Radius configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getCallHandling()**

Gets a reference to the instance of CallHandlingMBean

**ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean

**ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean

**ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean

## CallHandlingMBean

CallHandlingMBean enables you to configure how the R-IM-OFCF Radius handles calls.

### Factory Method

Created automatically

### Attributes

- OperationMode
- ASReactionTimerIntervalMillis
- CallingPartyNumber
- CalledPartyNumber
- ResultCodeValueForUndefinedError
- AccountingRealtimeRequired

For more information on these attributes, see [Table 29–2](#).

### Operations

None



## Configuring IM-PSX GSM MAP

The following sections describe how to configure IM-PSX using the Service Broker Administration Console and Java MBeans.

### Configuring IM-PSX MAP with the Administration Console

This section describes how to configure IM-PSX module instances using the Service Broker Administration Console.

To access the IM-PSX Configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The IM-PSX configuration pane contains the tabs described in [Table 30-1](#).

**Table 30-1** IM-PSX Configuration Subtabs

Tab	Description
General	Enables you to configure general parameters for an Interworking Module instance. See " <a href="#">Configuring General Parameters</a> " for more information.
SIP Subscription	Enables you to configure the SIP SUBSCRIBE and SIP NOTIFY interface that IM-PSX exposes to SIP applications. See " <a href="#">Configuring the SIP Subscription Parameters</a> " for more information.
Map Handling	Enables you to configure the IM-PSX MAP interface. See " <a href="#">Configuring the Map Handling Parameters</a> " for more information.
TCAP	Enables you to set up parameters of the IM TCAP layer. See " <a href="#">Configuring TCAP Parameters</a> " for more information.
Monitoring	Enables you to define the way that Runtime MBeans and notifications operate. See " <a href="#">Configuring Monitoring Parameters</a> " 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 30–2](#) describes the configuration parameter in the General tab.

**Table 30–2 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.

## 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 30–3](#).

**Table 30–3 SIP Subscription Tabs**

Subtab	Description
General	Enables you to set up a pending NOTIFY message and define a PSX SIP domain. See " <a href="#">General</a> " for more information.
Accept Header	Enables you to select allowed values to which a SIP application can set the Accept header. See " <a href="#">Accept</a> " for more information.

### General

The General subtab enables you to set up a pending NOTIFY message and define a PSX SIP domain.

[Table 30–4](#) describes the configuration parameters on the General subtab.

**Table 30–4 General Parameters**

Name	Type	Description
Generate Pending NOTIFY	BOOL	Specifies whether or not Service Broker 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: <ul style="list-style-type: none"> <li>▪ True</li> <li>▪ False</li> </ul> Default value: True

**Table 30–4 (Cont.) General Parameters**

Name	Type	Description
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**

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 30–5](#).

**Table 30–5 Accept Header Value Fields**

Field	TYPE	Description
Name	STRING	Specifies the name of the format. This field is read-only.
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: <ul style="list-style-type: none"> <li>▪ True</li> <li>▪ False</li> </ul> Default value: True

**Configuring the Map Handling Parameters**

The Map Handling tab enables you to configure the IM-PSX MAP interface. [Table 30–6](#) describes the configuration parameters in the Map Handling tab.

**Table 30–6 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

**Table 30–6 (Cont.) Map Handling Parameters**

Name	Type	Description
MSISDN NatureOfAddress	STRING	Specifies the NatureOfAddress of the MSISDN parameter that IM-PSX sets in the MAP operation. Service Broker 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: <ul style="list-style-type: none"> <li>▪ NETWORK_SPECIFIC</li> <li>▪ SUBSCRIBER_NUMBER</li> <li>▪ UNKNOWN</li> <li>▪ NATIONAL</li> <li>▪ INTERNATIONAL</li> </ul> Default value: UNKNOWN  IM-PSX also uses this parameter to set the gsmScfAddressNoa
Default Numbering Plan	STRING	Specifies a default numbering plan used to set the MSISDN and gsmSCF-Address in the MAP request.  Possible values: <ul style="list-style-type: none"> <li>▪ ISDN</li> <li>▪ DATA</li> <li>▪ TELEX</li> </ul> Default value: ISDN

## Configuring TCAP Parameters

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

[Table 30–7](#) describes configuration parameters in the TCAP subtab.

**Table 30–7 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.

**Table 30–7 (Cont.) TCAP Parameters**

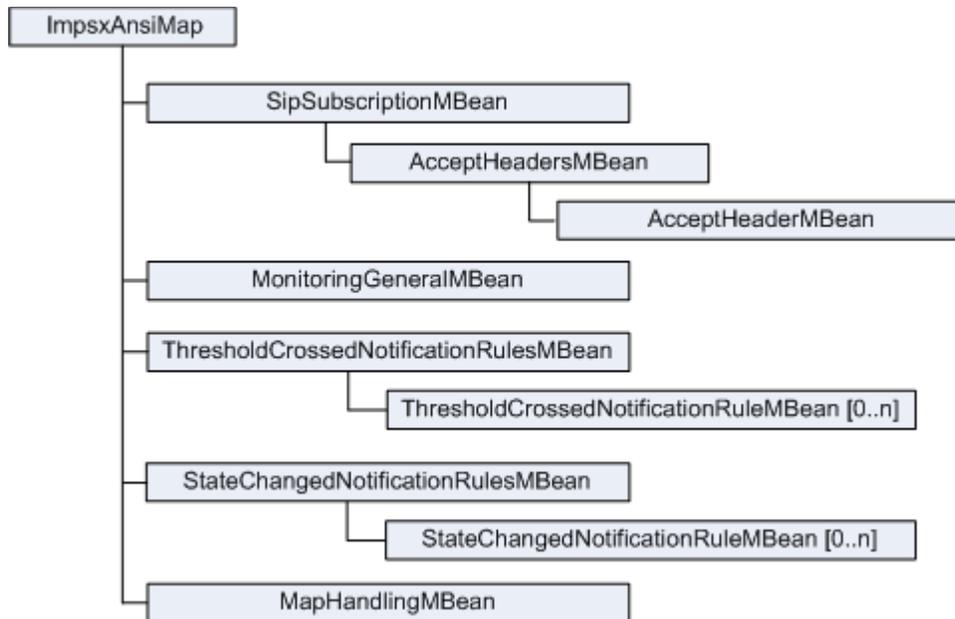
Name	Type	Description
Activate Invoke Alarm in Application Layer	BOOL	<p>When the TCAP layer receives an INVOKE, it triggers back P-ABORT if there is no response. The waiting time period for response is configured in the encoding library.</p> <p>The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> <p>Default value: False.</p>
Application Part Guard Timer	INT	<p>Specifies the PSM timer, which is a timer for incoming operations.</p> <p>The PSM timer defines the maximum time that the application (TC-User) has to respond to incoming INVOKE messages.</p>
Result Split Length	INT	<p>Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.</p>

## 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 Monitoring with the Administration Console](#)".

## Configuring IM-PSX MAP with Java MBeans

Service Broker provides a set of MBeans with attributes and operations for configuring the IM-PSX through JMX. [Figure 30–1](#) shows the hierarchy of the IM-PSX MBeans.

**Figure 30-1 IM-PSX MBeans Hierarchy**

The following sections provide reference information for the IM-PSX configuration MBeans.

---

---

**Note:** MBeans covered in this guide might include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

---

---

The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- `MonitoringGeneralMBean`
- `ThresholdCrossedNotificationRulesMBean`
- `ThresholdCrossedNotificationRuleMBean`
- `StateChangedNotificationRulesMBean`
- `StateChangedNotificationRuleMBean`

## ImpsxMap3MBean

ImpsxMap3MBean is the root MBean for the IM-PSX MAP phase 3 configuration. It provides reference to other configuration MBeans in the hierarchy, and does not expose any additional specific configuration.

### Factory Method

Created automatically.

### Attributes

None

### Operations

**ObjectName getSipSubscriptionMBean()**

Gets the qualified object name of the SipSubscriptionMBean instance

**ObjectName getMapHandlingMBean()**

Gets the qualified object name of the MapHandlingMBean instance

**ObjectName getMonitoringMBean()**

Gets the qualified object name of the MonitoringMBean instance

---

## SipSubscriptionMBean

SipSubscriptionMBean enables you to configure the SIP SUBSCRIBE and SIP NOTIFY interface that the IM-PSX exposes to SIP applications.

### Factory Method

Created automatically.

### Attributes

- GeneralPendingNotify
- PsxSipDomain

For more information on these attributes, see [Table 30-4](#).

### Operations

#### **ObjectName getAcptHeadersMBean()**

Gets the qualified ObjectName of the AcptHeadersMBean instance

## AcceptHeadersMBean

AcceptHeadersMBean is a set of AcceptHeaderMBean instances. Each instance represents one SIP NOTIFY message body format that IM-PSX supports. These are the formats that SIP applications are allowed to set in the Accept header of SIP SUBSCRIBE messages.

### Factory Method

Created automatically.

### Attributes

None

### Operations

**ObjectName getAcceptHeaderMBean()**

Gets the qualified object name of a specific AcceptHeaderMBean instance

**ObjectName getAcceptHeaderMBeans()**

Gets a list of qualified object names of all AcceptHeaderMBean instances

## AcceptHeaderMBean

Each AcceptHeaderMBean instance represents one SIP NOTIFY message body format that IM-PSX can support. The format name is visible in the AcceptHeaderMBean registration name.

### Factory Method

Created automatically.

### Attributes

Allowed

For more information on this attribute, see [Table 30-5](#).

### Operations

None

## MapHandlingMBean

MapHandlingMBean enables you to configure the IM-PSX MAP interface.

### Factory Method

Created automatically.

### Attributes

- DefaultSs7EntityAlias
- GsmScfAddress
- GsmScfAddressNoa
- MsisdnNoa
- DefaultNumberingPlan

For more information on these attributes, see [Table 30–6](#).

### Operations

None

## TcapMBean

TcapMBean enables you to configure the TCAP layer of the module.

### Factory Method

Created automatically

### Attributes

- Class4DefaultTimeout
- RejectTimeoutInSeconds
- ActivateInvokeAlarmInApplicationLayer
- ApplicationPartGuardTimer
- ResultSplitLength

For more information on these attributes, see [Table 30-7](#).

### Operations

None

## Configuring IM-PSX ANSI-MAP

The following sections describe how to configure IM-PSX using the Service Broker Administration Console and Java MBeans.

### Configuring IM-PSX ANSI-MAP with the Administration Console

This section describes how to configure IM-PSX ANSI-MAP module instances using the Service Broker Administration Console.

To access the IM-PSX ANSI-MAP Configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The configuration screen of the IM-PSX ANSI-MAP contains the tabs described in [Table 31-1](#).

**Table 31-1** IM-PSX ANSI-MAP Configuration Subtabs

Tab	Description
General	Enables you to specify an alias for an Interworking Module instance. See " <a href="#">Configuring General Parameters</a> " for more information.
SIP Subscription	Enables you to configure the SIP SUBSCRIBE and SIP NOTIFY interface that IM-PSX exposes to SIP applications. See " <a href="#">Configuring the SIP Subscription Parameters</a> " for more information.
Map Handling	Enables you to configure the IM-PSX ANSI-MAP interface. See " <a href="#">Configuring the Map Handling Parameters</a> " for more information.
TCAP	Enables you to set up parameters of the TCAP layer. See " <a href="#">Configuring TCAP Parameters</a> " for more information.
Monitoring	Enables you to define the way that Runtime MBeans and notifications operate. See " <a href="#">Configuring Monitoring Parameters</a> " for more information.

## Configuring General Parameters

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

[Table 31–2](#) describes the configuration parameter in the General tab.

**Table 31–2 IM-PSX General Parameter**

Name	Type	Description
Alias	STRING	Specifies an internal Service Broker 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.

## 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 31–3](#).

**Table 31–3 SIP Subscription Tabs**

Subtab	Description
General	Enables you to set up a pending NOTIFY message and define a PSX SIP domain.  For more information, see <a href="#">"General"</a> .
Accept Header	Enables you to select allowed values to which a SIP application can set the Accept header.  For more information, see <a href="#">"Accept"</a> .

### General

The General subtab enables you to set up a pending NOTIFY message and define a PSX SIP domain.

[Table 31–4](#) describes the configuration parameters on the General subtab.

**Table 31–4 General Parameters**

Name	Type	Description
Generate Pending NOTIFY	BOOL	Specifies whether or not Service Broker 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: <ul style="list-style-type: none"> <li>▪ True</li> <li>▪ False</li> </ul> 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-px.net

## Accept

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 31–5](#).

**Table 31–5 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: <ul style="list-style-type: none"> <li>▪ application/pdf+xml</li> <li>▪ application/ansi-is41e+ber</li> <li>▪ application/ansi-is41e+xml</li> </ul> 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: <ul style="list-style-type: none"> <li>▪ True</li> <li>▪ False</li> </ul> Default value: True

## Configuring the Map Handling Parameters

The Map Handling tab enables you to configure the IM-PSX MAP interface. [Table 31–6](#) describes the configuration parameters in the Map Handling tab.

**Table 31–6 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: <ul style="list-style-type: none"> <li>▪ SMSREQ</li> <li>▪ SEARCH</li> </ul> Default value: SEARCH

**Table 31–6 (Cont.) Map Handling Parameters**

Name	Type	Description
HLR Notify When Available	BOOL	<p>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 Broker sends to an HLR.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ True The HLR sends an SMSNotification message to IM-PSX when a subscriber becomes available again. The notification contains information about the subscriber's</li> <li>■ False The HLR does not send a notification when a subscriber becomes available again.</li> </ul> <p>Default value: True</p> <p>To enable IM-PSX to forward an SMSNotification to the application server that requested the information, perform the following actions:</p> <ul style="list-style-type: none"> <li>■ In the configuration settings of IM-ASF, define the AS to which IM-PSX needs to forward an SMSNotification.</li> <li>■ Go to the General tab in the OE Configuration screen and set the Subscriber Profile parameter to OplssInfoReceiver.</li> <li>■ In the orchestration profile, in addition to the entry for SUBSCRIBE messages, add an entry for NOTIFY messages.</li> </ul>
Search Service ID	STRING	<p>Specifies the identifier of a service of the AS that requests information about a mobile subscriber</p>
MDN NatureOfAddress	STRING	<p>Specifies the NatureOfAddress of the MDN parameter that IM-PSX sets in ANSI-MAP operations. Service Broker uses the NatureOfAddress specified in this parameter only if the NatureOfAddress is not specified in the RequestURI header of the SIP SUBSCRIBE message.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ NATIONAL</li> <li>■ INTERNATIONAL</li> </ul> <p>Default value: NATIONAL</p>

## Configuring TCAP Parameters

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

[Table 31–7](#) describes configuration parameters in the TCAP subtab.

**Table 31–7 TCAP Parameters**

Name	Type	Description
Class4 Default Timeout in Seconds	INT	<p>Specifies the time period in seconds that the IM waits for a possible REJECT. The timer starts when sending INVOKE for class 4 operations.</p> <p>Default value: 5 seconds.</p>

**Table 31-7 (Cont.) TCAP Parameters**

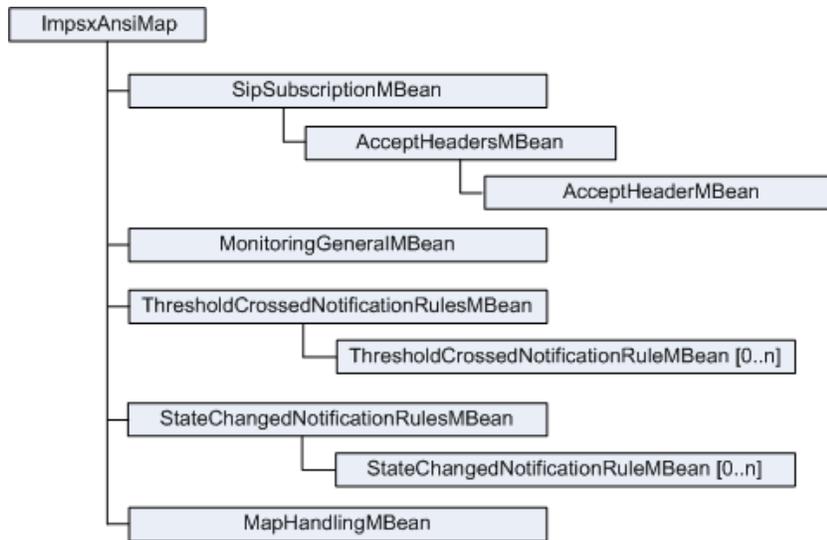
Name	Type	Description
Reject Timeout in Seconds	INT	Specifies the time period in seconds that the IM waits for a possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.
Activate Invoke Alarm in Application Layer	BOOL	<p>When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for a response is configured in the encoding library.</p> <p>The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> <p>Default value: False.</p>
Application Part Guard Timer	INT	<p>Specifies the PSM timer, which is a timer for incoming operations.</p> <p>The PSM timer defines the maximum time that the application (TC-User) has to respond to incoming INVOKE messages.</p>
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 Monitoring with the Administration Console"](#).

## Configuring IM-PSX ANSI-MAP with Java MBeans

Service Broker provides a set of MBeans with attributes and operations for configuring the IM-PSX ANSI-MAP through JMX. [Figure 31-1](#) shows the hierarchy of the IM-PSX ANSI-MAP MBeans.

**Figure 31-1 IM-PSX MBeans Hierarchy**

The following sections provide reference information for the IM-PSX configuration MBeans.

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**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

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The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- `MonitoringGeneralMBean`
- `ThresholdCrossedNotificationRulesMBean`
- `ThresholdCrossedNotificationRuleMBean`
- `StateChangedNotificationRulesMBean`
- `StateChangedNotificationRuleMBean`

## ImpsxAnsiMBean

ImpsxAnsiMBean is the root MBean for the IM-PSX ANSI-MAP configuration. It provides reference to other configuration MBeans in the hierarchy, and does not expose any specific configuration in addition.

### Factory Method

Created automatically.

### Attributes

None

### Operations

**ObjectName getSipSubscriptionMBean()**

Gets the qualified object name of the SipSubscriptionMBean instance

**ObjectName getMapHandlingMBean()**

Gets the qualified object name of the MapHandlingMBean instance

**ObjectName getMonitoringMBean()**

Gets the qualified object name of the MonitoringMBean instance

---

## SipSubscriptionMBean

SipSubscriptionMBean enables you to configure the SIP SUBSCRIBE and SIP NOTIFY interface that the IM-PSX exposes to SIP applications.

### Factory Method

Created automatically.

### Attributes

- GeneratePendingNotify
- PsxSipDomain

For more information on these attributes, see [Table 31-4](#).

### Operations

#### **ObjectName** getAcceptHeadersMBean()

Gets the qualified ObjectName of the AcceptHeadersMBean instance

## AcceptHeadersMBean

AcceptHeadersMBean is a set of AcceptHeaderMBean instances, each represents one SIP NOTIFY message body format that IM-PSX supports. These are the formats that SIP applications are allowed to set in the Accept header of SIP SUBSCRIBE messages.

### Factory Method

Created automatically.

### Attributes

None

### Operations

**ObjectName getAcceptHeaderMBean()**

Gets the qualified object name of a specific AcceptHeaderMBean instance

**ObjectName getAcceptHeaderMBeans()**

Gets a list of qualified object names of all AcceptHeaderMBean instances

## AcceptHeaderMBean

Each AcceptHeaderMBean instance represents one SIP NOTIFY message body format that IM-PSX may support. The format name is visible in the AcceptHeaderMBean registration name.

### Factory Method

Created automatically.

### Attributes

Allowed

For more information on this attribute, see [Table 31-5](#).

### Operations

None

## MapHandlingMBean

MapHandlingMBean enables you to configure the IM-PSX MAP interface.

### Factory Method

Created automatically.

### Attributes

- DefaultSs7EntityAlias
- LocationOperation
- HlrNotifyWhenAvailable
- SearchServiceID
- MdnNatureOfAddress

For more information on these attributes, see [Table 31–6](#).

### Operations

None

## TcapMBean

TcapMBean enables you to configure the TCAP layer of the module.

### Factory Method

Created automatically

### Attributes

- Class4DefaultTimeout
- RejectTimeoutInSeconds
- ActivateInvokeAlarmInApplicationLayer
- ApplicationPartGuardTimer
- ResultSplitLength

For more information on these attributes, see [Table 31–7](#).

### Operations

None

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## Configuring IM-PSX ANSI Plugin

The following sections describe how to configure IM-PSX ANSI Plugin using the Service Broker Administration Console and Java MBeans.

### About IM-PSX ANSI Plugin

IM-PSX ANSI Plugin is a network-facing module that enables Service Broker 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.

### Configuring IM-PSX ANSI Plugin with the Administration Console

This section describes how to configure IM-PSX ANSI Plugin using the Service Broker Administration Console.

To access the IM-PSX ANSI Plugin Configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Interworking Modules**.

A list of currently deployed Interworking Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The IM-PSX Plugin configuration pane contains the tabs described in [Table 32-1](#).

**Table 32-1** 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 " <a href="#">Configuring General Parameters</a> " 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 " <a href="#">Configuring Session Handling Parameters</a> " for more information.
TCAP	Enables you to set up parameters of the IM TCAP layer. See " <a href="#">Configuring TCAP Parameters</a> " for more information.

**Table 32–1 (Cont.) IM-PSX ANSI Plugin Configuration Tabs**

Tab	Description
Monitoring	Enables you to define the way that Runtime MBeans and notifications operate. See " <a href="#">Configuring Monitoring Parameters</a> " 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 32–2](#) describes the Alias parameter in the General tab.

**Table 32–2 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 32–3](#) describes the configuration parameters on the Session Handling tab.

**Table 32–3 Session Handling Parameters**

Name	Type	Description
Generate Pending NOTIFY	BOOL	Specifies whether or not Service Broker generates a SIP NOTIFY message when IM-PSX ANSI Plugin receives a SIP SUBSCRIBE message. Possible values: <ul style="list-style-type: none"> <li>■ True</li> <li>■ False</li> </ul> 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

**Table 32–3 (Cont.) Session Handling Parameters**

Name	Type	Description
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 32–4](#) describes the configuration parameters in the TCAP tab.

**Table 32–4 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: 5 seconds.
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.

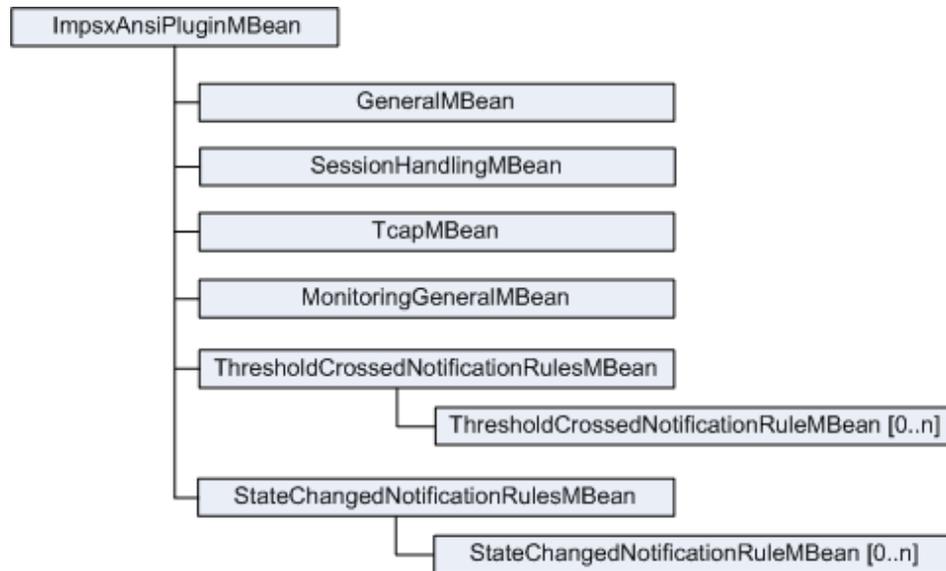
## Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-PSX ANSI Plugin. For more information, see "[Configuring Monitoring with the Administration Console](#)".

## Configuring IM-PSX ANSI Plugin with Java MBeans

Service Broker provides a set of MBeans with attributes and operations for configuring the IM-PSX ANSI Plugin through JMX. [Figure 32–1](#) shows the hierarchy of the IM-PSX ANSI Plugin MBeans.

**Figure 32-1 IM-PSX ANSI Plugin MBeans Hierarchy**



The following sections provide reference information for the IM-PSX ANSI Plugin configuration MBeans.

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**Note:** MBeans covered in this guide might include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

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The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

## ImpsxAnsiPluginMBean

ImpsxAnsiPluginMBean is the root MBean for the IM-PSX ANSI Plugin configuration. It provides reference to other configuration MBeans in the hierarchy, and does not expose any additional specific configuration.

### Factory Method

Created automatically.

### Attributes

None

### Operations

**ObjectName getGeneralMBean()**

Gets the qualified object name of the GeneralMBean instance

**ObjectName getSessionHandlingMBean()**

Gets the qualified object name of the SessionHandlingMBean instance

**ObjectName getTcapMBean()**

Gets the qualified object name of the TcapMBean instance

**ObjectName getMonitoringMBean()**

Gets the qualified object name of the MonitoringMBean instance

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## GeneralMBean

GeneralMBean enables you to configure the alias for the IM-PSX ANSI Plugin address defined in the SS7 SSU configuration.

### Factory Method

Created automatically

### Attributes

- Alias

For more information on these attributes, see [Table 32-2](#).

### Operations

None

## SessionHandlingMBean

SessionHandlingMBean enables you to configure how IM-PSX Plugin handles sessions that IM-PSX ANSI Plugin sends to, and receives from, a network.

### Factory Method

Created automatically

### Attributes

- GeneratePendingNotify
- ExpiresHeaderValue
- ContentTypeUponNoIndication
- AsNameAddress
- DefaultSs7EntityAlias
- MaxParameterLengthInTcapComponentInBytes
- PluginClassName
- PluginProtocolName

For more information on these attributes, see [Table 32-3](#).

### Operations

None

## TcapMBean

TcapMBean enables you to configure the TCAP layer of the module.

### Factory Method

Created automatically

### Attributes

- Class4DefaultTimeout
- RejectTimeoutInSeconds

For more information on these attributes, see [Table 32-4](#).

### Operations

None

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## Configuring IM-PSX ETSI Plugin

The following sections describe how to configure IM-PSX ETSI Plugin using the Service Broker Administration Console and Java MBeans.

### About IM-PSX ETSI Plugin

IM-PSX ETSI Plugin is a network-facing module that enables Service Broker 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.

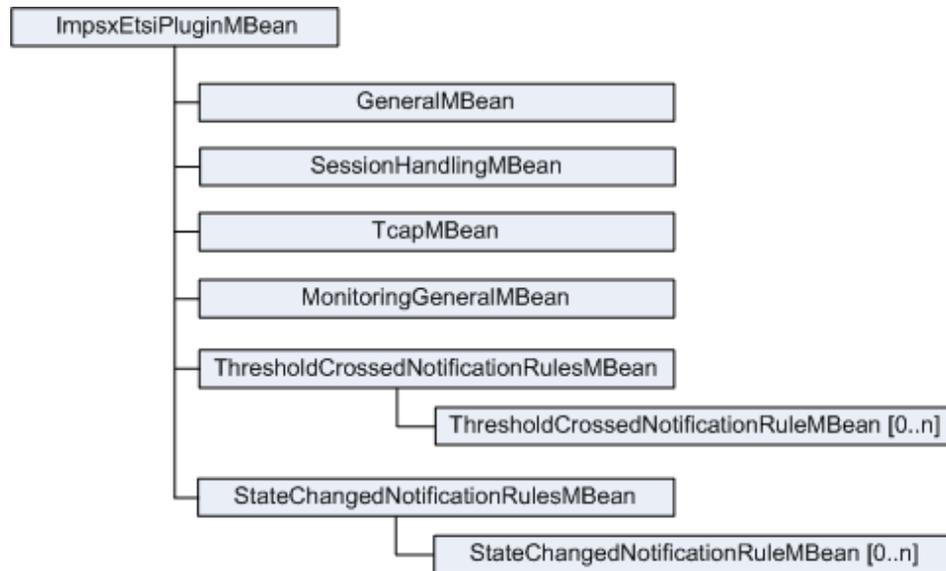
### Configuring IM-PSX ETSI Plugin with the Administration Console

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 "[Configuring IM-PSX ANSI Plugin](#)" for more information about configuring IM-PSX ANSI Plugin with the Administration Console.

### Configuring IM-PSX Plugin with Java MBeans

Service Broker provides a set of MBeans with attributes and operations for configuring the IM-PSX ETSI Plugin through JMX. [Figure 33-1](#) shows the hierarchy of the IM-PSX ETSI Plugin MBeans.

**Figure 33-1 IM-PSX ETSI Plugin MBeans Hierarchy**



The following sections provide reference information for the IM-PSX ETSI Plugin configuration MBeans.

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**Note:** MBeans covered in this guide might include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

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The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

## ImpsxEtsiPluginMBean

ImpsxEtsiPluginMBean is the root MBean for the IM-PSX ETSI Plugin configuration. It provides reference to other configuration MBeans in the hierarchy, and does not expose any additional specific configuration.

The rest of the configuration MBeans are the same as for IM-PSX ANSI Plugin. See ["Configuring IM-PSX ANSI Plugin"](#) for more information about these MBeans.

### Factory Method

Created automatically.

### Attributes

None

### Operations

**ObjectName getGeneralMBean()**

Gets the qualified object name of the GeneralMBean instance

**ObjectName getSessionHandlingMBean()**

Gets the qualified object name of the SessionHandlingMBean instance

**ObjectName getTcapMBean()**

Gets the qualified object name of the TcapMBean instance

**ObjectName getMonitoringMBean()**

Gets the qualified object name of the MonitoringMBean instance



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## Configuring IM-UIX-SMS

The following sections describe how to configure the Oracle Communications Service Broker IM-UIX-SMS Interworking Module (IM) using the Service Broker Administration Console and Java MBeans.

### About IM-UIX-SMS

IM-UIX-SMS is a network-facing module that enables Service Broker 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 *Oracle Communications Service Broker Signaling Domain 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 *Oracle Communications Service Broker Signaling Domain 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 Operations](#)" for more information.
- Monitoring parameters of IM-UIX-SMS. See "[Configuring Monitoring Parameters](#)" for more information.

You can configure these parameters by using the Administration Console or Java MBeans.

## 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.

### Specifying the Body Encoding Format with the Administration Console

To specify the body encoding format in the Administration Console:

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.
  - **XER**  
Select to use XML Encoding Rules.
  - **BER**  
Select to use Basic Encoding Rules.
7. Click **Apply**.

### Specifying the Body Encoding Format with Java MBeans

Specify the body encoding format by using the **GeneralMBean** MBean. This MBean is created automatically. See "[IM-UIX-SMS Configuration MBeans Reference](#)" for information about the object name of this MBean.

To specify the body encoding format, set the **BodyEncodingFormat** attribute of **GeneralMBean** to one of the following values:

- **NONE**  
Select if you do not want to encode the parameters of a short message.
- **XER**  
Select to use XML Encoding Rules.

- **BER**  
Select to use Basic Encoding Rules.

## Configuring SMPP 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.

### Configuring SMPP Operations with the Administration Console

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 34–1](#).

**Table 34–1 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 <i>Oracle Communications Service Broker Signaling Domain Configuration Guide</i> for more information.
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: <ul style="list-style-type: none"> <li>■ ALPHANUMERIC</li> <li>■ ABBREVIATED</li> <li>■ UNKNOWN</li> <li>■ INTERNATIONAL</li> <li>■ NATIONAL</li> <li>■ NETWORK-SPECIFIC</li> <li>■ SUBSCRIBER_NUMBER</li> </ul>

**Table 34–1 (Cont.) SMPP Handling Parameters**

Name	Type	Description
Submit Destination Address Numbering Plan Identification	STRING	<p>Specifies the numbering plan identification of the destination address, which is set in the short message.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ ALPHANUMERIC</li> <li>▪ ABBREVIATED</li> <li>▪ NATIONAL</li> <li>▪ NETWORK_SPECIFIC</li> <li>▪ SUBSCRIBER_NUMBER</li> <li>▪ UNKNOWN</li> <li>▪ ISDN</li> <li>▪ DATA</li> <li>▪ TELEX</li> <li>▪ LAND_MOBILE</li> </ul>
Submit Message Mode	STRING	<p>Specifies how the SMSC should deliver messages to the recipient SME.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ DEFAULT_SMSC_MODE</li> <li>▪ DATAGRAM_MODE</li> <li>▪ FORWARD</li> <li>▪ STORE_AND_FORWARD_MODE</li> </ul> <p><b>Note:</b> The current release of Service Broker does not currently support FORWARD.</p>
Submit Message Type	STRING	<p>Specifies the type of message that an SMPP operation carries.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ DEFAULT_MESSAGE_TYPE</li> <li>▪ SM_CONTAINS_ESME_DELIVERY_ACKNOWLEDGEMENT</li> <li>▪ SM_CONTAINS_ESME_MANUAL_USER_ACKNOWLEDGEMENT</li> </ul>
Submit SM Priority Level	STRING	<p>Specifies the priority level of a short message.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ LEVEL_0</li> <li>▪ LEVEL_1</li> <li>▪ LEVEL_2</li> <li>▪ LEVEL_3</li> </ul>
SMSC Delivery Receipt Request	STRING	<p>Specifies the type of the delivery receipt that the SMSC sends after receiving the short message.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ NO_DELIVERY_RECEIPT_REQUESTED</li> <li>▪ DELIVERY_RECEIPT_REQUESTED_FOR_SUCCESS_OR_FAILURE</li> <li>▪ DELIVERY_REQUEST_RECEIPT_REQUESTED_FOR_FAILURE</li> </ul>

**Table 34-1 (Cont.) SMPP Handling Parameters**

Name	Type	Description
SME Acknowledgement Request	STRING	<p>Specifies the type of the acknowledgement that the SME sends after receiving the short message from an SMSC.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ NO_RECEIPIENT_SME_ACKNOWLEDGEMENT_REQUESTED</li> <li>▪ SME_DELIVERY_ACKNOWLEDGEMENT_REQUESTED</li> <li>▪ SME_MANUAL_USER_ACKNOWLEDGEMENT_REQUESTED</li> <li>▪ BOTH_DELIVERY_AND_MANUAL_USER_ACKNOWLEDGEMENT_REQUESTED</li> </ul>
Submit Validity Period Format	STRING	<p>Specifies the format in which validity of the short message is defined.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ VP_NOT_PRESENT</li> <li>▪ VP_RELATIVE_FORMAT</li> <li>▪ VP_ABSOLUTE_FORMAT</li> </ul>
Submit Validity Period Source	STRING	<p>Specifies the source that defines the validity period of the short message.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ STATIC_CONFIGURATION</li> <li>▪ SAL_MESSAGE</li> </ul>
Submit Validity Period Value	INT	<p>Specifies the time, in seconds, during which the short message is valid. IM-UIX-SMS applies this value only when:</p> <ul style="list-style-type: none"> <li>▪ Submit Validity Period Source is set to STATIC_CONFIGURATION</li> <li>▪ Submit Validity Period Format is set to VP_RELATIVE_FORMAT</li> </ul>
Replace if Present	STRING	<p>Specifies whether to request the SMSC to replace a previously submitted message, that is still pending delivery.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>▪ DONT_REPLACE</li> <li>▪ REPLACE</li> </ul>

**Table 34–1 (Cont.) SMPP Handling Parameters**

Name	Type	Description
Data Coding	STRING	Specifies the coding scheme of the short message. Possible values: <ul style="list-style-type: none"> <li>▪ SMSC_DEFAULT_ALPHABET</li> <li>▪ IA5</li> <li>▪ LATIN_1</li> <li>▪ CYRILLIC</li> <li>▪ LATIN_HEBREW</li> <li>▪ UCS2</li> <li>▪ PICTOGRAM_ENCODING</li> <li>▪ ISO_2022_JP</li> <li>▪ EXTENDED_KANJI_JIS</li> <li>▪ KS_C_5601</li> </ul>
Privacy Indicator	STRING	Specifies the privacy level of the short message. Possible values: <ul style="list-style-type: none"> <li>▪ NOT_RESTRICTED</li> <li>▪ RESTRICTED</li> <li>▪ CONFIDENTIAL</li> <li>▪ SECRET</li> </ul>
Submit Include User Message Reference	STRING	Specifies whether IM-UIX-SMS sets the user_message_reference parameter in the submit_sm message. Possible values: <ul style="list-style-type: none"> <li>▪ TRUE</li> <li>▪ FALSE</li> </ul>

7. Click **Apply**.

## Configuring SMPP Operations with Java MBeans

You configure SMPP operations with JavaMBeans, you use the **SmppHandlingGeneralMBean** MBean. See "[IM-UIX-SMS Configuration MBeans Reference](#)" for more information about the object name of this MBean.

To configure SMPP operations, set the following attributes of **SmppHandlingMBean**

- DefaultSmscAlias
- SubmitDestinationAddressTypeOfNumber
- SubmitDestinationAddressNumberingPlanIdentification
- SubmitMessageMode
- SubmitMessageType
- SubmitSmPriorityLevel
- SmscDeliveryReceiptRequest
- SmeAcknowledgementRequest

- SubmitValidityPeriodFormat
- SubmitValidityPeriodSource
- SubmitValidityPeriodValue
- ReplaceIfPresent
- DataCoding
- PrivacyIndicator
- SubmitIncludeUserMessageReference

See [Table 34–1](#) for information about these attributes.

## 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 Monitoring with the Administration Console](#)".

## IM-UIX-SMS Configuration MBeans Reference

The following sections provide reference information for the IM-UIX-SMS configuration MBeans.

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**Note:** MBeans described in this chapter may include additional advanced attributes, which are not described in the chapter. Advanced attributes are reserved for internal use. Do not change any attributes that are not described in this chapter.

---

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The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

## Impuixsmssmpp34MBean

Impuixsmssmpp34MBean is the root MBean for configuring IM-UIX-SMS.

### Object Name

com.convergin:Type=IMPUIXSMSSMPP34,Version=*MBean\_Version*,Location=AdminServer,Name=IM-UIX-SMS.*Instance\_Name*

### Factory Method

Created automatically.

### Attributes

None

### Operations

#### **ObjectName getGeneral()**

Gets a reference to the instance of GeneralMBean.

#### **ObjectName getSmppHandling()**

Gets a reference to the instance of SmppHandlingMBean.

#### **ObjectName getMonitoringGeneral()**

Gets a reference to the instance of MonitoringGeneralMBean.

#### **ObjectName getThresholdCrossedNotificationRules()**

Gets a reference to the instance of ThresholdCrossedNotificationRulesMBean.

#### **ObjectName getStateChangedNotificationRules()**

Gets a reference to the instance of StateChangedNotificationRulesMBean.

## GeneralMBean

Use GeneralMBean to specify the format that IM-UIX-SMS uses to encode parameters of a **delivery\_sm** message in the body of SAL messages that are sent to the OE.

### Object Name

`com.convergin:Type=General,Version=MBean_  
Version,Location=AdminServer,Name=IM-UIX-SMS.Instance_Name`

### Factory Method

Created automatically.

### Attributes

BodyEncodingFormat

### Operations

None

## SmppHandlingMBean

Use SmppHandlingMBean to configure SMPP operations that IM-UIX-SMS uses to generate **submit\_sm** messages that are sent to an SMSC.

### Object Name

com.convergin:Type=SmppHandling,Version=MBean\_  
Version,Location=AdminServer,Name=IM-UIX-SMS.Instance\_Name

### Factory Method

Created automatically.

### Attributes

- DefaultSmscAlias
- SubmitDestinationAddressTypeOfNumber
- SubmitDestinationAddressNumberingPlanIdentification
- SubmitMessageMode
- SubmitMessageType
- SubmitSmPriorityLevel
- SmscDeliveryReceiptRequest
- SmeAcknowledgementRequest
- SubmitValidityPeriodFormat
- SubmitValidityPeriodSource
- SubmitValidityPeriodValue
- ReplaceIfPresent
- DataCoding
- PrivacyIndicator
- SubmitIncludeUserMessageReference

See [Table 34-1](#) for information about these attributes.

### Operations

None

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## Configuring IM-WS

The following sections describe how to configure IM-WS using the Service Broker Administration Console and Java MBeans.

### About IM-WS

IM-WS is a network-facing module that enables Service Broker 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 "Outbound Routing" in "Configuring the Web Services Signaling Server Unit" of the *Oracle Communications Service Broker Signaling Domain 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 "Inbound Routing" in "Configuring the Web Services Signaling Server Unit" of the *Oracle Communications Service Broker Signaling Domain 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.

## 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 or Java MBeans.

### Configuring the Web Service Parameters with 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 35–1](#).

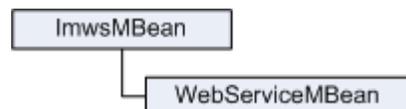
**Table 35–1 Web Service Parameters**

Field	Descriptions
Web Service Alias	Specifies the address of the web service to which IM-WS sends the request.  Service Broker resolves the alias into a physical address of a web service based on the configuration of outgoing routing rules of the WS SSU. See "Configuring Routing Rules for Outgoing Web Service Messages" in "Configuring the Web Services Signaling Server Unit" of the <i>Oracle Communications Service Broker Signaling Domain Configuration Guide</i> .
Web Service Type	Specifies the type of the web service to which IM-WS sends the request.  Possible values: <ul style="list-style-type: none"> <li>■ SOAP</li> <li>■ REST</li> </ul> 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 <b>eventnotification</b> .

### Configuring the Web Service Parameters with Java MBeans

To configure the web service parameters with Java MBeans, you use `ImwsMBean`. [Figure 35–1](#) shows the hierarchy of the Web Service MBeans. See "[IM-WS Configuration MBeans Reference](#)" for the object names of these MBeans.

**Figure 35–1 IM-WS Web Service Configuration MBeans**



To configure the web service parameters:

- Set the following attributes of **WebServiceMBean**:
  - WebServiceAlias
  - WebServiceType
  - WebServiceBodyType

See [Table 35-1](#) for more information about these attributes.

## 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 Monitoring with the Administration Console](#)".

## IM-WS Configuration MBeans Reference

The following sections provide reference information for the IM-WS configuration MBeans.

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**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

---

---

The following MBeans are common for all components of Service Broker and described in "[Configuring Monitoring with Java MBeans](#)":

- MonitoringGeneralMBean
- ThresholdCrossedNotificationRulesMBean
- ThresholdCrossedNotificationRuleMBean
- StateChangedNotificationRulesMBean
- StateChangedNotificationRuleMBean

---

## ImwsMBean

ImwsMBean is the root MBean for IM-WS configuration.

### Object Name

com.convergin:Type=IMWS,Version=*MBean\_Version*,Location=AdminServer,Name=IM-WS.IM-WS

### Factory Method

Created automatically.

### Attributes

None

### Operations

None

## WebServiceMBean

WebServiceMBean enables you to set up the parameters of the web service to which IM-WS routes the message.

### Object Name

`com.convergin:Type=WebService,Version=MBean_  
Version,Location=AdminServer,Name=IM-WS.Instance_Name`

### Factory Method

Created automatically.

### Attributes

- WebServiceAlias
- WebServiceType
- WebServiceBodyType

See [Table 35-1](#) for more information about these attributes.

### Operations

None



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## Managing Supplementary Modules

This chapter describes how you can deploy, activate, and deactivate Oracle Communications Service Broker's supplementary modules in your deployment.

### Managing Supplementary Modules with the Administration Console

You can manage supplementary modules, including adding, activating, deactivating, and removing supplementary module instances, using the SM Configuration screen.

#### Accessing the SM Configuration Screen

To access the SM Configuration page:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Supplementary Modules**.

A list of currently deployed Supplementary Modules is displayed.

4. From the module list, select the module instance that you want to configure.

The SM configuration pane displays information about each module instance in the fields described in [Table 36-1](#).

**Table 36-1** Configuration Page Fields

Field	Description
Instance Name	Displays a name of the module instance
Module Type	Displays a type of the module instance. Possible values: <ul style="list-style-type: none"> <li>▪ SMLSS</li> <li>▪ SMPME</li> </ul>
Version	Displays a version of the module instance
State	Displays a state of the module instance. Possible values: <ul style="list-style-type: none"> <li>▪ Active</li> <li>▪ Inactive</li> </ul>

The SM Configuration screen enables you to perform the following actions:

- Add a new supplementary module instance.

- Activate a supplementary module instance.
- Deactivate a supplementary module instance.
- Remove a supplementary module instance.

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**Note:** After adding a new supplementary module, you must click the Commit button. You will be able to configure the module only after clicking Commit.

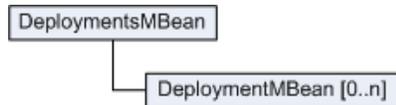
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## Managing Supplementary Modules with JavaMBeans

Service Broker provides a set of MBeans that expose attributes and operations for configuring supplementary modules through JMX. [Figure 36-1](#) shows the hierarchy of the supplementary modules management MBeans.

**Figure 36-1** *Supplementary Modules Management MBean Hierarchy*



The following sections provide reference information for the supplementary modules management configuration MBeans.

## DeploymentsMBean

DeploymentsMBean is a container for instances of DeploymentMBean. Each instance of DeploymentMBean represents an individual supplementary module.

### Factory Method

Created automatically

### Attributes

None

### Operations

**void addDeployment(string ModuleName, string Version, string Name)**

Adds a new instance of a supplementary module. [Table 36-2](#) explains the parameters with which you need to invoke the operation.

**Table 36-2 Parameters Required to Create a Deployment**

Parameter	Description
ModuleName	Specifies a type of the module instance and a protocol that the module instance uses. Possible values: <ul style="list-style-type: none"> <li>▪ SMLSS</li> <li>▪ SMPME</li> </ul>
Version	Specifies a version of the module instance
InstanceName	Specifies a unique name for the new supplementary module instance.

**void removeDeployment(string ModuleName, string Version, string ModuleInstanceName)**

Removes an instance of a supplementary module. For more information on the parameters required for this operation, see [Table 36-2](#).

**void activateDeployment(string ModuleName, string Version, string ModuleInstanceName)**

Activate an instance of a supplementary module. For more information on the parameters required for this operation, see [Table 36-2](#).

**void deactivateDeployment(string ModuleName, string Version, string ModuleInstanceName)**

Deactivates an instance of a supplementary module. For more information on the parameters required for this operation, see [Table 36-2](#).

## DeploymentMBean

Each instance of DeploymentMBean represents an individual supplementary module and defines configuration parameters for this module.

### Factory Method

Deployments.addDeployment()

### Attributes

- DeploymentStatus
- Family
- Name
- Version

For more information on these attributes, see [Table 36-1](#).

### Operations

**void activate()**

Activates the instance of a supplementary module

**void deactivate()**

Deactivates the instance of a supplementary module

## Configuring SM-LSS

The following sections describe how to configure SM-LSS using the Service Broker Administration Console and Java MBeans.

### Configuring SM-LSS with the Administration Console

This section describes how to configure the SM-LSS using the Service Broker Administration Console.

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.

Table 37-1 describes the parameters of an orchestration profile:

**Table 37-1 LSS Parameters**

Name	Type	Description
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
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.

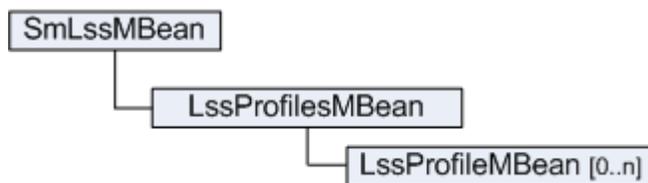
**Table 37–1 (Cont.) LSS Parameters**

Name	Type	Description
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	INT	Rule: specifies a session service key 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 Broker supports iFC as orchestration data format. For more information about iFC configuration, see Appendix 5, "Initial Filter Criteria" in <i>Oracle Communications Service Broker Configuration Guide</i> .

## Configuring SM-LSS with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the SM-LSS through JMX. Figure 37–1 shows the hierarchy of the SM-LSS MBeans.

**Figure 37–1 SM-LSS MBeans Hierarchy**



The following sections provide reference information for the SM-LSS configuration MBeans.

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**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

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## SmLssMBean

SmLssMBean is a root MBean for the SM-LSS configuration.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getLssProfilesMBean()**

Gets a reference to the instance of LssProfileMBean

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## LssProfilesMBean

LssProfilesMBean is a root MBean for individual instances of LssProfileMBean.

### Factory Method

Created automatically

### Attributes

None

### Operations

**ObjectName getLssProfilesMBean()**

Gets an array of references to instances of LssProfileMBean

**ObjectName createLssProfile()**

Creates a new instance of LssProfileMBean

**void destroyLssProfile()**

Destroys an existing instance of LssProfileMBean

**ObjectName lookupLssProfile()**

Returns a reference to the specified instance of LssProfileMBean

## LssProfileMBean

LssProfileMBean enables you to configure an orchestration profile. You can create a separate instance of LssProfileMBean for each profile.

### Factory Method

LssProfiles.createLssProfile()

### Attributes

- Id
- Level
- ByFromPrefix
- ByToPrefix
- ByServiceKey
- OlpName
- OlpData

For more information on these attributes, see [Table 37-1](#).

### Operations

None



## Configuring SM-PME

The following sections describe how to configure SM-PME using the Service Broker Administration Console and Java MBeans.

### Configuring SM-PME with the Administration Console

This section describes how to configure the SM-PME using the Service Broker Administration Console.

To access the SM-PME Configuration screen:

1. In the domain navigation pane, expand **OCSB**.
2. Expand **Processing Tier**.
3. Expand **Supplementary Modules**.

A list of currently deployed Supplementary Modules is displayed.

The list of currently deployed supplementary modules is displayed.

4. From the module list, select the module instance that you want to configure.

The SM-PME configuration pane contains the subtabs described in [Table 38-1](#).

**Table 38-1 SM-PME Parameters**

Name	Type	Description
Mapping File Name	STRING	Specifies the path of the parameter mapping file. See " <a href="#">Understanding the SM-PME Mapping File</a> " for more information on the format of an SM-PME mapping file.
Default Handling on Mapping Error	INT	Specifies whether SM-PME releases or continues a session when the mapping engine fails. Possible values: <ul style="list-style-type: none"> <li>■ Continue Session</li> <li>■ Release Session</li> </ul> Default value: Release Session
Mapping Error Response	INT	Specifies the SAL error response code that SM-PME returns when the mapping engine fails. The error response code is regarded only when Default Handling on Mapping Error is set to Release Session. Default value: 487

## Understanding the SM-PME Mapping File

Application servers may impose format requirements on the messages they receive from Service Broker. This might include limitations to the structure or contents of message headers or bodies.

The SM-PME enables you to transform a structure and contents of headers and body of SAL messages generated by Service Broker to a structure and format required by an application server that receives the message. For example, you can transform a XER representation of IN messages to make CAMEL FurnishChargingInformation to fit the format required by an application server.

The OE can send a message to the SM-PME at any point of service orchestration as defined in the orchestration logic.

You can transform a structure and contents of headers and body generated by Service Broker by coding an XSL stylesheet. An XSL stylesheet must be wrapped into an XML file, known as SM-PME mapping file, that has the following structure:

```
<mapping>
  <body>
    <Content-Type>type of content of a Service Broker message</Content-Type>
    <xsl>
      <![CDATA[<xsl:stylesheet
version="1.0"xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
      XSL transformation
      ]]>
    </xsl>
  </body>
</mapping>
```

For example, the following SM-PME mapping file transforms a CAP phase 4 message. In this example, an XSL stylesheet parses the InitialDP message generated by Service Broker and changes the value of the Service Key parameter to 17. The rest of the message and parameters of this message remain unchanged.

```
<?xml version="1.0" encoding="UTF-8"?>
<mapping>
  <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:template match="text()" />

        <xsl:template match="/Cap4">
          <Cap4><xsl:apply-templates/></Cap4>
        </xsl:template>

        <xsl:template match="initialDP">
          <initialDP>
            <serviceKey>17</serviceKey>
            <xsl:copy-of select="node()[(name()!='serviceKey')]" />
          </initialDP>
        </xsl:template>
      </xsl:stylesheet>
      ]]>
    </xsl>
  </body>
</mapping>
```

## Configuring SM-PME with Java MBeans

Service Broker provides the PmeMBean that enables you to configure the SM-PME through JMX. This section contains reference information on PmeMBean.

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**Note:** MBeans described in this guide may include additional advanced attributes, which are not described in the guide. Advanced attributes are reserved for internal use. Do not change these attributes.

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## PmeMBean

PmeMBean enables you to configure the SM-PME.

### Factory Method

Created automatically

### Attributes

- MappingFileName
- DefaultHandlingOnMappingError
- MappingErrorResponse

For more information on these attributes, see [Table 38-1](#).

### Operations

None