Oracle® Communications Service Broker
Configuration Guide
Release 5.0
E15182-01

December 2010
Contents

Preface ............................................................................................................................................................ xxix

Audience ....................................................................................................................................................... xxix
Related Documents ........................................................................................................................................ xxix
Conventions ................................................................................................................................................. xxix

1 Understanding Service Broker Configuration

Configuration Overview .......................................................................................................................... 1-1
  Domain Configuration Mode ................................................................................................................. 1-1
  Configuration Tools ............................................................................................................................ 1-1

Administration Console Overview ...................................................................................................... 1-2
  Starting the Stand-Alone Administration Console ........................................................................... 1-2
  Starting the Web Administration Console ....................................................................................... 1-3
  Logging in to the Web Administration Console ................................................................................ 1-3
  Understanding the Administration Console User Interface ............................................................. 1-3
  Locking a Domain Configuration for Changes .................................................................................. 1-4
  Switching Domain Configuration Mode ............................................................................................ 1-4

Configuration MBeans Overview ........................................................................................................ 1-4
  About the Service Broker Configuration MBeans ........................................................................... 1-4
  Service Broker MBean Object Names ................................................................................................. 1-5
  Opening a Domain Configuration and Locking it for Changes ......................................................... 1-6
  Switching Domain Configuration Mode ............................................................................................. 1-6
  Using JConsole to Access Configuration MBeans ........................................................................... 1-6
    Starting JConsole ............................................................................................................................. 1-7
    Understanding the Hierarchy of MBeans in JConsole .................................................................. 1-10

2 Service Broker Configuration Steps

Preceding Steps ........................................................................................................................................ 2-1

Configuring a Service Broker Signaling Domain ................................................................................. 2-1
  Mapping Custom Signaling Server Names to Service Broker Server Names .................................... 2-1
  Defining Signaling Servers .................................................................................................................. 2-2
  Configuring SSUs ............................................................................................................................... 2-2

Configuring a Service Broker Processing Domain .............................................................................. 2-3
  Mapping Custom Processing Server Names to Service Broker Server Names .............................. 2-3
  Defining Processing Servers .............................................................................................................. 2-3
  Deploying Service Broker Interworking Modules ............................................................................ 2-4
Managing Service Broker Domains

Introduction to Service Broker Domain Management ................................................. 3-1
Mapping Custom Server Names to Service Broker Server Names ............................. 3-2
Setting a Service Broker Domain Name .................................................................... 3-2
Managing Domain Bundles .......................................................................................... 3-2
  Managing Bundles with the Administration Console .............................................. 3-3
    Installing a Bundle ................................................................................................. 3-3
    Uninstalling a Bundle ........................................................................................... 3-3
    Starting a Bundle .................................................................................................. 3-4
    Stopping a Bundle ................................................................................................. 3-4
  Managing Bundles with Java MBeans .................................................................... 3-4
Managing Domain Servers .......................................................................................... 3-4
  Managing Servers with the Administration Console .............................................. 3-5
    Adding a Server to a Domain Configuration .......................................................... 3-5
    Removing a Server from a Domain Configuration .................................................. 3-5
    Stopping a Server .................................................................................................. 3-5
  Managing Servers with Java MBeans .................................................................... 3-6
Managing Processing Domain Groups ....................................................................... 3-6
  Managing Processing Domain Groups with the Administration Console .............. 3-6
    Adding Processing Domain Groups ...................................................................... 3-7
    Removing Processing Domain Groups ................................................................... 3-7
    Adding Domains to a Processing Domains Group ................................................. 3-8
    Removing Domains from a Processing Domains Group ........................................ 3-8
    Configuring Processing Domain Groups with Java MBeans ............................... 3-8
  DomainGroupsMBean ............................................................................................. 3-9
  DomainGroupMBean ............................................................................................... 3-10
  DomainMBean .......................................................................................................... 3-11
  ServersMBean .......................................................................................................... 3-12
  ServerMBean .......................................................................................................... 3-13

Managing the Service Broker Processing Tier

Understanding Processing Tier Management ............................................................... 4-1
Configuring Monitoring Parameters .......................................................................... 4-1
Configuring Overload Protection Parameters ............................................................ 4-2
  Configuring Overload Protection with the Administration Console ....................... 4-2
    Configuring Key Overload Indicators ................................................................... 4-2
    Configuring Overload Protection Method .............................................................. 4-3
    Configuring Overload Protection with Java MBeans .............................................. 4-4
  OverloadProtectionBean ......................................................................................... 4-5
  OverloadProtectionIndicatorsMBean ....................................................................... 4-6
5 Managing Interworking Modules

Managing Interworking Modules with the Administration Console ........................................ 5-1
   Accessing the IM Management Configuration Screen .................................................... 5-1

Managing Interworking Modules with Java MBeans .............................................................. 5-3
   DeploymentsMBean ........................................................................................................... 5-3
   Factory Method ................................................................................................................ 5-3
   Attributes .......................................................................................................................... 5-3
   Operations ......................................................................................................................... 5-3
   DeploymentMBean ............................................................................................................ 5-5
   Factory Method ................................................................................................................ 5-5
   Attributes .......................................................................................................................... 5-5
   Operations ......................................................................................................................... 5-5

Defining a Default IM-ASF Module .................................................................................... 5-5

6 Configuring Service Broker Monitoring

Understanding Service Broker Monitoring Configuration ................................................... 6-1

Configuring Monitoring with the Administration Console ................................................ 6-1
   Accessing the Monitoring Configuration Screen ............................................................ 6-2
   General .............................................................................................................................. 6-2
   State Changed Notifications ............................................................................................ 6-3
   Threshold Crossed Notifications ...................................................................................... 6-4

Configuring Monitoring with Java MBeans ........................................................................ 6-5

MonitoringMBean ................................................................................................................ 6-7

StateChangedNotificationRulesMBean .............................................................................. 6-8

StateChangedNotificationRuleMBean ................................................................................ 6-9

ThresholdCrossedNotificationRulesMBean ......................................................................... 6-10

ThresholdCrossedNotificationRuleMBean .......................................................................... 6-11

7 Configuring SS7 Signaling Server Units for SIGTRAN

Configuring SS7 SSU for SIGTRAN with the Administration Console ............................... 7-1

SSU SS7 SIGTRAN ............................................................................................................. 7-2

M3UA .................................................................................................................................. 7-2
   Local Point Code .............................................................................................................. 7-3
   Connectivity ...................................................................................................................... 7-3
   Network Mapping ............................................................................................................ 7-6
   Network Routing ............................................................................................................ 7-8

SCCP ................................................................................................................................. 7-10
   General ............................................................................................................................. 7-10
   Local SSNs ....................................................................................................................... 7-11
   Local GTs ......................................................................................................................... 7-12
   Remote PC and SSN Addresses ....................................................................................... 7-13
   Remote Fixed GTs .......................................................................................................... 7-15
   Remote Dynamic GTs ..................................................................................................... 7-17

OverloadProtectionIndicatorMBean ..................................................................................... 4-7
OverloadProtectionMethodsMBean ...................................................................................... 4-8
Global Title Routing .......................................................... 7-18
Routing ............................................................................. 7-20
Accessing the Routing Tab ............................................... 7-20
Configuring Incoming Routing Rules Parameters .............. 7-21
Configuring Incoming Routing Criteria Parameters .......... 7-22
Configuring SS7 SSU for SIGTRAN with Java MBeans ..... 7-23
SsuSs7SigtranMBean .......................................................... 7-24
SsuSs7SigtranTargetMBean .............................................. 7-25
M3uaMBean ...................................................................... 7-26
IpLocalSystemsMBean .................................................... 7-27
IpLocalSystemMBean ....................................................... 7-28
IpRemoteSystemsMBean .................................................. 7-29
IpRemoteSystemMBean .................................................... 7-30
SctpAssociationsMBean ................................................... 7-31
SctpAssociationMBean .................................................... 7-32
M3uaRoutesMBean .......................................................... 7-33
M3uaRouteMBean ............................................................ 7-34
SccpIncomingRoutingRulesMBean ................................... 7-35
SccpIncomingRoutingRuleMBean ...................................... 7-36
SccpIncomingRoutingCriteriaMBean ................................ 7-37
SccpMBean ....................................................................... 7-38
SccpLocalAddressFixedGtsMBean .................................... 7-39
SccpLocalAddressFixedGtMBean ...................................... 7-40
SccpLocalAddressSsnsMBean ............................................ 7-41
SccpLocalAddressSsnMBean .............................................. 7-42
SccpRemoteAddressDynamicGtsMBean ............................ 7-43
SccpRemoteAddressDynamicGtMBean ............................... 7-44
SccpRemoteAddressFixedGtsMBean .................................. 7-45
SccpRemoteAddressFixedGtMBean ................................... 7-46
SccpRemoteAddressSsnsMBean ........................................ 7-47
SccpRemoteAddressSsnMBean ......................................... 7-48
SccpGttEntityMBean ....................................................... 7-49

8 Configuring SS7 Signaling Server Units for TDM

Configuring SS7 SSU TDM with the Administration Console .................................................. 8-1
SSU SS7 TDM .................................................................... 8-2
MTP .................................................................................. 8-3
  Local Point Code .......................................................... 8-3
  Connectivity ................................................................. 8-4
Network Mapping ........................................................... 8-7
Network Routing ............................................................. 8-9
SCCP .............................................................................. 8-12
  General .......................................................................... 8-13
  Local SSNs ................................................................. 8-14
  Local GTs ................................................................. 8-14
  Remote PC and SSN Addresses ................................... 8-15
  Remote Fixed GTs ..................................................... 8-17
9 Configuring SIP Signaling Server Units

9.1 Configuring SIP SSU with the Administration Console ........................................... 9-1
  SIP Server ................................................................. 9-1
  Incoming Routing Rules .................................................. 9-2
  SIP Network Entities .................................................... 9-3
  Network Access .......................................................... 9-4

9.2 Configuring SIP SSU with Java MBeans ................................................................. 9-4
  SipSsuMBean ............................................................. 9-6
  SipIncomingRoutingRulesMBean ..................................... 9-7
  SipIncomingRoutingRuleMBean ....................................... 9-8
  SipNetworkEntitiesMBean ............................................. 9-9
  SipNetworkEntityMBean .............................................. 9-10
10 Configuring Diameter Signaling Server Units

Configuring Diameter SSU with the Administration Console ............................................. 10-1
Incoming Routing Rules ......................................................................................................... 10-1
Configuring Diameter SSU with Java MBeans .................................................................... 10-2
DiameterIncomingRoutingRulesMBean ................................................................................. 10-5
DiameterIncomingRoutingRuleMBean ................................................................................. 10-6
DiameterConfigMBean .......................................................................................................... 10-7
NameMBean .......................................................................................................................... 10-8
NodeMBean .......................................................................................................................... 10-9
HostMBean ........................................................................................................................... 10-12
PortMBean ............................................................................................................................ 10-13
TargetMBean ........................................................................................................................ 10-14
RealmMBean ......................................................................................................................... 10-15
AddressMBean ...................................................................................................................... 10-16
Tls_enabledMBean .................................................................................................................. 10-17
Sctp_enabledMBean ............................................................................................................... 10-18
Debug_enabledMBean ............................................................................................................ 10-19
Message_debugMBean ............................................................................................................ 10-20
Message_debug_enabledMBean .............................................................................................. 10-21
Peer_retry_delayMBean ......................................................................................................... 10-22
Allow_dynamic_peersMBean ................................................................................................. 10-23
Request_timeoutMBean ......................................................................................................... 10-24
Watchdog_timeoutMBean ...................................................................................................... 10-25
Include_origin_state_idMBean ............................................................................................. 10-26
PeerMBean ........................................................................................................................... 10-27
AddressMBean ...................................................................................................................... 10-28
HostMBean .......................................................................................................................... 10-29
PortMBean ........................................................................................................................... 10-30
ProtocolMBean ..................................................................................................................... 10-31
Watchdog-enabledMBean ...................................................................................................... 10-32
RouteMBean ........................................................................................................................ 10-33
Application-idMBean ............................................................................................................ 10-34
Default-routeMBean ............................................................................................................. 10-35
NameMBean .......................................................................................................................... 10-36
ActionMBean ........................................................................................................................ 10-37
ServerMBean ........................................................................................................................ 10-38

11 Configuring the Orchestration Engine

Configuring the Orchestration Engine with the Administration Console ......................... 11-1
Configuring General Parameters ......................................................................................... 11-2
Configuring Static Route OLP Parameters .......................................................................... 11-2
Configuring HSS OLP Parameters ...................................................................................... 11-3
Configuring Monitoring Parameters ................................................................................... 11-4
Configuring the Orchestration Engine with Java MBeans .................................................. 11-4
12 Configuring IM-SCF

Configuring IM-SCF CAP Phase 1 ................................................................. 12-1
  Configuring IM-SCF CAP Phase 1 with the Administration Console ...... 12-1
    Configuring General Parameters ......................................................... 12-2
    Configuring Call Handling Parameters .............................................. 12-2
    Configuring IN Triggering Parameters .............................................. 12-4
    Configuring TCAP Parameters ......................................................... 12-5
    Configuring Monitoring Parameters ................................................ 12-6

Configuring IM-SCF CAP Phase 1 with Java MBeans ............................ 12-6
  ImscfCap1MBean ................................................................................. 12-7
    Factory Method .............................................................................. 12-7
    Attributes ...................................................................................... 12-7
    Operations .................................................................................... 12-8
  GeneralMBean .................................................................................... 12-8
    Factory Method .............................................................................. 12-8
    Attributes ...................................................................................... 12-8
    Operations .................................................................................... 12-8
  CallHandlingMBean ............................................................................. 12-8
    Factory Method .............................................................................. 12-8
    Attributes ...................................................................................... 12-8
    Operations .................................................................................... 12-9
  InTriggeringMBean ............................................................................. 12-9
    Factory Method .............................................................................. 12-9
    Attributes ...................................................................................... 12-9
    Operations .................................................................................... 12-9
  OBcsmDpMBean .................................................................................. 12-9
    Factory Method .............................................................................. 12-9
    Attributes ...................................................................................... 12-10
    Operations .................................................................................... 12-10
  TBcsmDpMBean .................................................................................. 12-10
    Factory Method .............................................................................. 12-10
    Attributes ...................................................................................... 12-10
    Operations .................................................................................... 12-10
  Tcap MBean ....................................................................................... 12-10
    Factory Method .............................................................................. 12-10
    Attributes ...................................................................................... 12-10
    Operations .................................................................................... 12-10

Configuring IM-SCF CAP Phase 2 ......................................................... 12-11
  Configuring IM-SCF CAP Phase 2 with the Administration Console ...... 12-11
    Configuring General Parameters ...................................................... 12-11
    Configuring Call Handling Parameters .......................................... 12-12
Configuring IN Triggering Parameters .......................................................... 12-13
Configuring Media Resources Parameters.................................................. 12-17
Configuring TCAP Parameters .................................................................. 12-19
Configuring Monitoring Parameters .......................................................... 12-20
Configuring IM-SCF CAP Phase 2 with Java MBeans ................................. 12-20
ImscfCap2MBean ....................................................................................... 12-21
Factory Method ....................................................................................... 12-21
Attributes ............................................................................................... 12-22
Operations ............................................................................................. 12-22
GeneralMBean ......................................................................................... 12-22
Factory Method ....................................................................................... 12-22
Attributes ............................................................................................... 12-22
Operations ............................................................................................. 12-22
CallHandlingMBean .................................................................................. 12-22
Factory Method ....................................................................................... 12-22
Attributes ............................................................................................... 12-22
Operations ............................................................................................. 12-23
InTriggeringMBean ................................................................................... 12-23
Factory Method ....................................................................................... 12-23
Attributes ............................................................................................... 12-23
Operations ............................................................................................. 12-23
OBcsmDpMBean ....................................................................................... 12-24
Factory Method ....................................................................................... 12-24
Attributes ............................................................................................... 12-24
Operations ............................................................................................. 12-24
TBcsmDpMBean ....................................................................................... 12-24
Factory Method ....................................................................................... 12-24
Attributes ............................................................................................... 12-24
Operations ............................................................................................. 12-24
MediaResourcesMBean ............................................................................. 12-24
Factory Method ....................................................................................... 12-25
Attributes ............................................................................................... 12-25
Operations ............................................................................................. 12-25
MediaResourceMBean ............................................................................. 12-25
Factory Method ....................................................................................... 12-25
Attributes ............................................................................................... 12-25
Operations ............................................................................................. 12-25
TcapMBean ............................................................................................. 12-25
Factory Method ....................................................................................... 12-26
Attributes ............................................................................................... 12-26
Operations ............................................................................................. 12-26
Configuring IM-SCF CAP Phase 3 ............................................................... 12-26
Configuring IM-SCF CAP Phase 3 with the Administration Console ......... 12-26
Configuring General Parameters ............................................................. 12-27
Configuring Call Handling Parameters .................................................... 12-27
Configuring IN Triggering Parameters ..................................................... 12-29
Configuring Media Resources Parameters ................................................ 12-34
Configuring IN Triggering Parameters ................................................................. 12-47
Configuring Media Resources Parameters .......................................................... 12-54
Configuring TCAP Parameters ............................................................................. 12-57
Configuring Monitoring Parameters .................................................................... 12-58
Configuring IM-SCF CAP Phase 4 with the Java MBeans ................................. 12-58

ImScfCap4MBean ................................................................................................. 12-60
Factory Method .................................................................................................... 12-60
Attributes .................................................................................................................
Operations ................................................................................................................
GeneralMBean ......................................................................................................... 12-60
Factory Method .................................................................................................... 12-60
Attributes .................................................................................................................
Operations ................................................................................................................
CallHandlingMBean ............................................................................................... 12-61
Factory Method .................................................................................................... 12-61
Attributes .................................................................................................................
Operations ................................................................................................................
InTriggeringMBean ............................................................................................... 12-61
Factory Method .................................................................................................... 12-61
Attributes .................................................................................................................
Operations ................................................................................................................
OBcsmDpMBean .................................................................................................... 12-62
Factory Method .................................................................................................... 12-62
Attributes .................................................................................................................
Operations ................................................................................................................
TBcsmDpMBean .................................................................................................... 12-63
Factory Method .................................................................................................... 12-63
Attributes .................................................................................................................
Operations ................................................................................................................
IcaDpMBean ............................................................................................................ 12-63
Factory Method ................................................................................................... 12-63
Attributes .................................................................................................................
Operations ................................................................................................................
OSmsDpMBean ....................................................................................................... 12-64
Factory Method ................................................................................................... 12-64
Attributes .................................................................................................................
Operations ................................................................................................................
TSmsDpMBean ....................................................................................................... 12-64
Factory Method ................................................................................................... 12-64
Attributes .................................................................................................................
Operations ................................................................................................................
MediaResourcesMBean ......................................................................................... 12-65
Factory Method ................................................................................................... 12-65
Attributes .................................................................................................................
Operations ................................................................................................................
MediaResourceMBean .......................................................................................... 12-65
Factory Method ................................................................................................... 12-65
MediaResourceMBean ............................................................................................................. 12-83
  Factory Method .................................................................................................................. 12-83
  Attributes .......................................................................................................................... 12-83
  Operations ......................................................................................................................... 12-83
TcapMBean .......................................................................................................................... 12-83
  Factory Method .................................................................................................................. 12-83
  Attributes .......................................................................................................................... 12-83
  Operations ......................................................................................................................... 12-83
Configuring IM-SCF WIN Phase 2 ....................................................................................... 12-84
  Configuring IM-SCF WIN Phase 2 with the Administration Console .................. 12-84
    Configuring General Parameters .................................................................................. 12-84
    Configuring Call Handling Parameters ........................................................................ 12-85
    Configuring Media Resources Parameters ..................................................................... 12-85
    Configuring TCAP Parameters ..................................................................................... 12-86
    Configuring Monitoring Parameters ............................................................................. 12-87
  Configuring IM-SCF WIN Phase 1 with Java MBeans .................................................. 12-87
ImscfWin1MBean ................................................................................................................. 12-88
  Factory Method .................................................................................................................. 12-88
  Attributes .......................................................................................................................... 12-88
  Operations ......................................................................................................................... 12-88
GeneralMBean ..................................................................................................................... 12-89
  Factory Method .................................................................................................................. 12-89
  Attributes .......................................................................................................................... 12-89
  Operations ......................................................................................................................... 12-89
CallHandlingMBean ............................................................................................................. 12-89
  Factory Method .................................................................................................................. 12-89
  Attributes .......................................................................................................................... 12-89
  Operations ......................................................................................................................... 12-90
MediaResourcesMBean ........................................................................................................ 12-90
  Factory Method .................................................................................................................. 12-90
  Attributes .......................................................................................................................... 12-90
  Operations ......................................................................................................................... 12-90
MediaResourceMBean ........................................................................................................... 12-90
  Factory Method .................................................................................................................. 12-90
  Attributes .......................................................................................................................... 12-90
  Operations ......................................................................................................................... 12-90
TcapMBean .......................................................................................................................... 12-91
  Factory Method .................................................................................................................. 12-91
  Attributes .......................................................................................................................... 12-91
  Operations ......................................................................................................................... 12-91
Configuring IM-SCF WIN Phase 2 ....................................................................................... 12-91
  Configuring IM-SCF WIN Phase 2 with the Administration Console .................. 12-91
    Configuring General Parameters .................................................................................. 12-92
    Configuring Call Handling Parameters ........................................................................ 12-92
    Configuring Media Resources Parameters ..................................................................... 12-93
    Configuring TCAP Parameters ..................................................................................... 12-94
    Configuring Monitoring Parameters ............................................................................. 12-95
### Configuring IM-SSF

#### Configuring IM-SSF CAP Phase 1

- **MediaResourceMBean**
  - Factory Method
  - Attributes
  - Operations
- **Tcap MBean**
  - Factory Method
  - Attributes
  - Operations

#### Configuring IM-SSF AIN 0.2

- **Configuring IM-SSF AIN 0.2 with Java MBeans**
- **Configuring IM-SSF AIN 0.2 with the Administration Console**

### Configuring IM-SCF AIN 0.2

- **Configuring IM-SCF AIN 0.2 with the Administration Console**
  - Configuring General Parameters
  - Configuring Call Handling Parameters
  - Configuring Media Resources Parameters
  - Configuring TCAP Parameters
  - Configuring Monitoring Parameters
- **Configuring IM-SCF AIN 0.2 with Java MBeans**
  - **ImscfAinMBean**
    - Factory Method
    - Attributes
    - Operations
  - **GeneralMBean**
    - Factory Method
    - Attributes
    - Operations
  - **CallHandlingMBean**
    - Factory Method
    - Attributes
    - Operations
  - **MediaResourcesMBean**
    - Factory Method
    - Attributes
    - Operations
  - **MediaResourceMBean**
    - Factory Method
    - Attributes
    - Operations
  - **Tcap MBean**
    - Factory Method
    - Attributes
    - Operations

### Configuring Monitoring Parameters

### Configuring Media Resources Parameters

### Configuring Call Handling Parameters

### Configuring General Parameters

---

13 **Configuring IM-SSF**

- **Configuring IM-SSF CAP Phase 1**
  - **Configuring IM-SSF CAP Phase 1 with the Administration Console**
  - Configuring General Parameters
Configuring IM-SSF CAP Phase 2 ................................................................. 13-14
Configuring IM-SSF CAP Phase 2 with the Administration Console ............ 13-14
Configuring General Parameters ............................................................... 13-15
Configuring Call Handling Parameters .................................................... 13-16
Configuring Subscriber Data Parameters .................................................. 13-20
Configuring Operation Propagation Parameters ....................................... 13-21
Configuring Charging Parameters .......................................................... 13-22
Configuring Media Resources Parameters ................................................ 13-22
Configuring TCAP Parameters ............................................................... 13-24
<table>
<thead>
<tr>
<th>Operation</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configuring Monitoring Parameters</td>
<td>13-25</td>
</tr>
<tr>
<td>Configuring IM-SSF CAP Phase 2 with Java MBeans</td>
<td>13-26</td>
</tr>
<tr>
<td>ImssfCap2MBean</td>
<td>13-27</td>
</tr>
<tr>
<td>Factory Method</td>
<td>13-27</td>
</tr>
<tr>
<td>Attributes</td>
<td>13-27</td>
</tr>
<tr>
<td>Operations</td>
<td>13-27</td>
</tr>
<tr>
<td>GeneralMBean</td>
<td>13-27</td>
</tr>
<tr>
<td>Factory Method</td>
<td>13-27</td>
</tr>
<tr>
<td>Attributes</td>
<td>13-27</td>
</tr>
<tr>
<td>Operations</td>
<td>13-28</td>
</tr>
<tr>
<td>CallHandlingMBean</td>
<td>13-28</td>
</tr>
<tr>
<td>Factory Method</td>
<td>13-28</td>
</tr>
<tr>
<td>Attributes</td>
<td>13-28</td>
</tr>
<tr>
<td>Operations</td>
<td>13-28</td>
</tr>
<tr>
<td>SubscriberDataRecordsMBean</td>
<td>13-28</td>
</tr>
<tr>
<td>Factory Method</td>
<td>13-28</td>
</tr>
<tr>
<td>Attributes</td>
<td>13-28</td>
</tr>
<tr>
<td>Operations</td>
<td>13-29</td>
</tr>
<tr>
<td>SubscriberDataRecordMBean</td>
<td>13-29</td>
</tr>
<tr>
<td>Factory Method</td>
<td>13-29</td>
</tr>
<tr>
<td>Attributes</td>
<td>13-29</td>
</tr>
<tr>
<td>Operations</td>
<td>13-29</td>
</tr>
<tr>
<td>OperationPropagationSetMBean</td>
<td>13-29</td>
</tr>
<tr>
<td>Factory Method</td>
<td>13-29</td>
</tr>
<tr>
<td>Attributes</td>
<td>13-29</td>
</tr>
<tr>
<td>Operations</td>
<td>13-29</td>
</tr>
<tr>
<td>OperationPropagationMBean</td>
<td>13-30</td>
</tr>
<tr>
<td>Factory Method</td>
<td>13-30</td>
</tr>
<tr>
<td>Attributes</td>
<td>13-30</td>
</tr>
<tr>
<td>Operations</td>
<td>13-30</td>
</tr>
<tr>
<td>ChargingMBean</td>
<td>13-30</td>
</tr>
<tr>
<td>Factory Method</td>
<td>13-30</td>
</tr>
<tr>
<td>Attributes</td>
<td>13-30</td>
</tr>
<tr>
<td>Operations</td>
<td>13-30</td>
</tr>
<tr>
<td>MediaResourcesMBean</td>
<td>13-30</td>
</tr>
<tr>
<td>Factory Method</td>
<td>13-31</td>
</tr>
<tr>
<td>Attributes</td>
<td>13-31</td>
</tr>
<tr>
<td>Operations</td>
<td>13-31</td>
</tr>
<tr>
<td>MediaResourceMBean</td>
<td>13-31</td>
</tr>
<tr>
<td>Factory Method</td>
<td>13-31</td>
</tr>
<tr>
<td>Attributes</td>
<td>13-31</td>
</tr>
<tr>
<td>Operations</td>
<td>13-31</td>
</tr>
<tr>
<td>Tcap MBean</td>
<td>13-31</td>
</tr>
<tr>
<td>Factory Method</td>
<td>13-32</td>
</tr>
<tr>
<td>Attributes</td>
<td>13-32</td>
</tr>
<tr>
<td>Operations</td>
<td>13-32</td>
</tr>
</tbody>
</table>

Configuring IM-SSF CAP Phase 3: 13-32
<table>
<thead>
<tr>
<th>Configuration Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configuring IM-SSF CAP Phase 3 with the Administration Console</td>
<td>13-32</td>
</tr>
<tr>
<td>Configuring General Parameters</td>
<td>13-33</td>
</tr>
<tr>
<td>Configuring Call Handling Parameters</td>
<td>13-33</td>
</tr>
<tr>
<td>Configuring Subscriber Data Parameters</td>
<td>13-37</td>
</tr>
<tr>
<td>Configuring Operation Propagation Parameters</td>
<td>13-38</td>
</tr>
<tr>
<td>Configuring Charging Parameters</td>
<td>13-39</td>
</tr>
<tr>
<td>Configuring Media Resources Parameters</td>
<td>13-39</td>
</tr>
<tr>
<td>Configuring TCAP Parameters</td>
<td>13-42</td>
</tr>
<tr>
<td>Configuring Monitoring Parameters</td>
<td>13-43</td>
</tr>
<tr>
<td>Configuring IM-SSF CAP Phase 3 with Java MBeans</td>
<td>13-43</td>
</tr>
<tr>
<td><strong>ImssfCap3MBean</strong></td>
<td>13-44</td>
</tr>
<tr>
<td>Factory Method</td>
<td>13-44</td>
</tr>
<tr>
<td>Attributes</td>
<td>13-44</td>
</tr>
<tr>
<td>Operations</td>
<td>13-44</td>
</tr>
<tr>
<td><strong>GeneralMBean</strong></td>
<td>13-45</td>
</tr>
<tr>
<td>Factory Method</td>
<td>13-45</td>
</tr>
<tr>
<td>Attributes</td>
<td>13-45</td>
</tr>
<tr>
<td>Operations</td>
<td>13-45</td>
</tr>
<tr>
<td><strong>CallHandlingMBean</strong></td>
<td>13-45</td>
</tr>
<tr>
<td>Factory Method</td>
<td>13-45</td>
</tr>
<tr>
<td>Attributes</td>
<td>13-45</td>
</tr>
<tr>
<td>Operations</td>
<td>13-46</td>
</tr>
<tr>
<td><strong>SubscriberDataRecordsMBean</strong></td>
<td>13-46</td>
</tr>
<tr>
<td>Factory Method</td>
<td>13-46</td>
</tr>
<tr>
<td>Attributes</td>
<td>13-46</td>
</tr>
<tr>
<td>Operations</td>
<td>13-46</td>
</tr>
<tr>
<td><strong>SubscriberDataRecordMBean</strong></td>
<td>13-46</td>
</tr>
<tr>
<td>Factory Method</td>
<td>13-46</td>
</tr>
<tr>
<td>Attributes</td>
<td>13-46</td>
</tr>
<tr>
<td>Operations</td>
<td>13-46</td>
</tr>
<tr>
<td><strong>OperationPropagationSetMBean</strong></td>
<td>13-47</td>
</tr>
<tr>
<td>Factory Method</td>
<td>13-47</td>
</tr>
<tr>
<td>Attributes</td>
<td>13-47</td>
</tr>
<tr>
<td>Operations</td>
<td>13-47</td>
</tr>
<tr>
<td><strong>OperationPropagationMBean</strong></td>
<td>13-47</td>
</tr>
<tr>
<td>Factory Method</td>
<td>13-47</td>
</tr>
<tr>
<td>Attributes</td>
<td>13-47</td>
</tr>
<tr>
<td>Operations</td>
<td>13-47</td>
</tr>
<tr>
<td><strong>ChargingMBean</strong></td>
<td>13-47</td>
</tr>
<tr>
<td>Factory Method</td>
<td>13-47</td>
</tr>
<tr>
<td>Attributes</td>
<td>13-48</td>
</tr>
<tr>
<td>Operations</td>
<td>13-48</td>
</tr>
<tr>
<td><strong>MediaResourcesMBean</strong></td>
<td>13-48</td>
</tr>
<tr>
<td>Factory Method</td>
<td>13-48</td>
</tr>
<tr>
<td>Attributes</td>
<td>13-48</td>
</tr>
<tr>
<td>Operations</td>
<td>13-48</td>
</tr>
<tr>
<td><strong>MediaResourceMBean</strong></td>
<td>13-48</td>
</tr>
</tbody>
</table>
Configuring IM-SSF INAP CS-1.......................................................... 13-49
Configuring IM-SSF INAP CS-1 with the Administration Console .... 13-49
Configuring General Parameters....................................................... 13-50
Configuring Call Handling Parameters.......................................... 13-50
Configuring Subscriber Data Parameters....................................... 13-54
Configuring Operation Propagation Parameters.......................... 13-55
Configuring Media Resources Parameters.................................... 13-56
Configuring TCAP Parameters....................................................... 13-57
Configuring Monitoring Parameters.............................................. 13-58
Configuring IM-SSF INAP CS-1 with Java MBeans ..................... 13-58
ImssfCs1MBean .............................................................................. 13-59
Factory Method ........................................................................... 13-60
Attributes .................................................................................... 13-60
Operations .................................................................................. 13-60
GeneralMBean ............................................................................. 13-60
Factory Method ........................................................................... 13-60
Attributes .................................................................................... 13-60
Operations .................................................................................. 13-60
CallHandlingMBean ..................................................................... 13-61
Factory Method ........................................................................... 13-61
Attributes .................................................................................... 13-61
Operations .................................................................................. 13-61
SubscriberDataRecordsMBean ..................................................... 13-61
Factory Method ........................................................................... 13-61
Attributes .................................................................................... 13-61
Operations .................................................................................. 13-61
SubscriberDataRecordMBean ...................................................... 13-62
Factory Method ........................................................................... 13-62
Attributes .................................................................................... 13-62
Operations .................................................................................. 13-62
OperationPropagationSetMBean ............................................... 13-62
Factory Method ........................................................................... 13-62
Attributes .................................................................................... 13-62
Operations .................................................................................. 13-62
OperationPropagationMBean ..................................................... 13-63
Factory Method ........................................................................... 13-63
Attributes .................................................................................... 13-63
Operations .................................................................................. 13-63
MediaResourcesMBean ............................................................... 13-63
Factory Method ........................................................................... 13-63
Configuring IM-SSF WIN Phase 1.......................................................... 13-64
  Configuring IM-SSF WIN Phase 1 with the Administration Console...... 13-64
  Configuring General Parameters......................................................... 13-65
  Configuring Call Handling Parameters............................................... 13-65
  Configuring Subscriber Data Parameters............................................ 13-69
  Configuring Media Resources Parameters.......................................... 13-70
  Configuring TCAP Parameters.......................................................... 13-71
  Configuring Monitoring Parameters.................................................. 13-72
Configuring IM-SSF WIN Phase 1 with Java MBeans ......................... 13-72
ImssfWinMBean.................................................................................... 13-73
  Factory Method.................................................................................. 13-73
  Attributes.......................................................................................... 13-73
  Operations........................................................................................ 13-74
GeneralMBean.................................................................................... 13-74
  Factory Method.................................................................................. 13-74
  Attributes.......................................................................................... 13-74
  Operations......................................................................................... 13-74
CallHandlingMBean............................................................................ 13-74
  Factory Method.................................................................................. 13-74
  Attributes.......................................................................................... 13-74
  Operations........................................................................................ 13-75
SubscriberDataRecordsMBean.......................................................... 13-75
  Factory Method.................................................................................. 13-75
  Attributes.......................................................................................... 13-75
  Operations......................................................................................... 13-75
SubscriberDataRecordMBean........................................................... 13-76
  Factory Method.................................................................................. 13-76
  Attributes.......................................................................................... 13-76
  Operations........................................................................................ 13-76
MediaResourcesMBean....................................................................... 13-76
  Factory Method.................................................................................. 13-76
  Attributes.......................................................................................... 13-76
  Operations......................................................................................... 13-76
MediaResourceMBean....................................................................... 13-77
  Factory Method.................................................................................. 13-77
  Attributes.......................................................................................... 13-77
  Operations......................................................................................... 13-77
Tcap MBean................................................................................................................................. 13-77
  Factory Method .......................................................................................................................... 13-77
  Attributes ................................................................................................................................. 13-77
  Operations................................................................................................................................. 13-77

Configuring IM-SSF WIN Phase 2............................................................................................... 13-77
Configuring IM-SSF WIN Phase 2 with the Administration Console........................................ 13-78
  Configuring General Parameters.............................................................................................. 13-78
  Configuring Call Handling Parameters...................................................................................... 13-79
  Configuring Subscriber Data Parameters.................................................................................. 13-82
  Configuring Media Resources Parameters............................................................................... 13-83
  Configuring TCAP Parameters................................................................................................. 13-84
  Configuring Monitoring Parameters......................................................................................... 13-85
Configuring IM-SSF WIN Phase 2 with Java MBeans................................................................. 13-86
ImssfWinMBean........................................................................................................................................ 13-86
  Factory Method ........................................................................................................................ 13-87
  Attributes ................................................................................................................................. 13-87
  Operations................................................................................................................................. 13-87
GeneralMBean.................................................................................................................................... 13-87
  Factory Method ........................................................................................................................ 13-87
  Attributes ................................................................................................................................. 13-87
  Operations................................................................................................................................. 13-87
CallHandlingMBean...................................................................................................................... 13-87
  Factory Method ........................................................................................................................ 13-87
  Attributes ................................................................................................................................. 13-88
  Operations................................................................................................................................. 13-87
SubscriberDataRecordsMBean...................................................................................................... 13-88
  Factory Method ........................................................................................................................ 13-88
  Attributes ................................................................................................................................. 13-88
  Operations................................................................................................................................. 13-88
SubscriberDataRecordMBean...................................................................................................... 13-89
  Factory Method ........................................................................................................................ 13-89
  Attributes ................................................................................................................................. 13-89
  Operations................................................................................................................................. 13-89
MediaResourcesMBean.................................................................................................................. 13-89
  Factory Method ........................................................................................................................ 13-89
  Attributes ................................................................................................................................. 13-89
  Operations................................................................................................................................. 13-89
MediaResourceMBean.................................................................................................................. 13-90
  Factory Method ........................................................................................................................ 13-90
  Attributes ................................................................................................................................. 13-90
  Operations................................................................................................................................. 13-90
Tcap MBean................................................................................................................................. 13-90
  Factory Method ........................................................................................................................ 13-90
  Attributes ................................................................................................................................. 13-90
  Operations................................................................................................................................. 13-90

Configuring IM-SSF AIN 0.1 ......................................................................................................... 13-90
Configuring IM-SSF AIN 0.1 with the Administration Console.................................................. 13-90
Configuring General Parameters ................................................................. 13-91
Configuring Call Handling Parameters ....................................................... 13-92
Configuring Subscriber Data Parameters ................................................... 13-95
Configuring Operation Propagation Parameters ...................................... 13-96
Configuring Media Resources Parameters ............................................... 13-97
Configuring TCAP Parameters ................................................................. 13-98
Configuring Monitoring Parameters ......................................................... 13-99
Configuring IM-SSF AIN 0.1 with Java MBeans ....................................... 13-99

ImssfAinMBean ............................................................................................ 13-100
  Factory Method ...................................................................................... 13-101
  Attributes ............................................................................................ 13-101
  Operations .......................................................................................... 13-101
GeneralMBean ........................................................................................... 13-101
  Factory Method ...................................................................................... 13-101
  Attributes ............................................................................................ 13-101
  Operations .......................................................................................... 13-101
CallHandlingMBean .................................................................................. 13-102
  Factory Method ...................................................................................... 13-102
  Attributes ............................................................................................ 13-102
  Operations .......................................................................................... 13-102
SubscriberDataRecordsMBean ................................................................. 13-102
  Factory Method ...................................................................................... 13-102
  Attributes ............................................................................................ 13-102
  Operations .......................................................................................... 13-102
SubscriberDataRecordMBean ................................................................. 13-103
  Factory Method ...................................................................................... 13-103
  Attributes ............................................................................................ 13-103
  Operations .......................................................................................... 13-103
OperationPropagationSetMBean ............................................................. 13-103
  Factory Method ...................................................................................... 13-103
  Attributes ............................................................................................ 13-103
  Operations .......................................................................................... 13-103
OperationPropagationMBean ................................................................. 13-104
  Factory Method ...................................................................................... 13-104
  Attributes ............................................................................................ 13-104
  Operations .......................................................................................... 13-104
MediaResourcesMBean ............................................................................. 13-104
  Factory Method ...................................................................................... 13-104
  Attributes ............................................................................................ 13-104
  Operations .......................................................................................... 13-104
MediaResourceMBean .............................................................................. 13-104
  Factory Method ...................................................................................... 13-104
  Attributes ............................................................................................ 13-104
  Operations .......................................................................................... 13-105
Tcap MBean .............................................................................................. 13-105
  Factory Method ...................................................................................... 13-105
  Attributes ............................................................................................ 13-105
Configuring IM-SSF AIN 0.2

Configuring IM-SSF AIN 0.2 with the Administration Console
  Configuring General Parameters
  Configuring Call Handling Parameters
  Configuring Subscriber Data Parameters
  Configuring Operation Propagation Parameters
  Configuring Media Resources Parameters
  Configuring TCAP Parameters
  Configuring Monitoring Parameters

Configuring IM-SSF AIN 0.2 with Java MBeans

ImssfAinMBean
  Factory Method
  Attributes
  Operations

GeneralMBean
  Factory Method
  Attributes
  Operations

CallHandlingMBean
  Factory Method
  Attributes
  Operations

SubscriberDataRecordsMBean
  Factory Method
  Attributes
  Operations

SubscriberDataRecordMBean
  Factory Method
  Attributes
  Operations

OperationPropagationSetMBean
  Factory Method
  Attributes
  Operations

OperationPropagationMBean
  Factory Method
  Attributes
  Operations

MediaResourcesMBean
  Factory Method
  Attributes
  Operations

MediaResourceMBean
  Factory Method
  Attributes
  Operations
### 14 Configuring IM-ASF SIP

**Configuring IM-ASF SIP with the Administration Console**

- Configuring Application Server Parameters ........................................... 14-2
- Configuring Session Keep Alive Parameters ........................................... 14-2
- Configuring SIP Parameters ................................................................. 14-2
- Configuring Monitoring Parameters ..................................................... 14-3

**Configuring IM-ASF SIP with Java MBeans**

- ImasfSipMBean ...................................................................................... 14-5
- ApplicationServerMBean ....................................................................... 14-6
- SipMBean .............................................................................................. 14-7
- SessionKeepAliveMBean ........................................................................ 14-8
- Default IM-ASF Module Instance ....................................................... 14-9

### 15 Configuring R-IM-ASF SIP

**Configuring R-IM-ASF SIP with the Administration Console**

- Configuring Session Keep Alive Parameters ........................................... 15-1
- Configuring SIP Parameters ................................................................. 15-2
- Configuring Monitoring Parameters ..................................................... 15-3

**Configuring R-IM-ASF SIP with Java MBeans**

- RimasfSipMBean .................................................................................... 15-4
- SipMBean .............................................................................................. 15-5
- SessionKeepAliveMBean ........................................................................ 15-6

### 16 Configuring IM-OCF

**Configuring IM-OCF with the Administration Console**

- Configuring Call Handling Parameters ................................................ 16-2
  - Configuring Call Handling General Parameters ................................ 16-2
  - Configuring CCR Handling ............................................................... 16-4
- Configuring Diameter Credit Control Application Parameters ............ 16-5
  - Configuring General Parameters .................................................... 16-6
  - Configuring AVPs ............................................................................. 16-6
  - Configuring Credit Control Failure Handling .................................. 16-7
- Configuring MRF Parameters ............................................................. 16-9
  - Configuring General MRF Parameters ............................................ 16-9
  - Configuring MRF Announcements ................................................. 16-10
- Configuring Monitoring Parameters .................................................. 16-11

**Configuring IM-OCF with Java MBeans**

- ImocfMBean .......................................................................................... 16-11
- CallHandlingGeneralMBean ............................................................... 16-14
- SendCcrRecordsMBean ......................................................................... 16-15
- SendCcrRecordMBean ......................................................................... 16-16
<table>
<thead>
<tr>
<th>Class Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>DiameterCreditControlApplicationAvpsMBean</td>
<td>16-17</td>
</tr>
<tr>
<td>DiameterCreditControlApplicationGeneralMBean</td>
<td>16-18</td>
</tr>
<tr>
<td>CcfhRecordsMBean</td>
<td>16-19</td>
</tr>
<tr>
<td>CcfhRecordMBean</td>
<td>16-20</td>
</tr>
<tr>
<td>MrfAnnouncementsGeneralMBean</td>
<td>16-21</td>
</tr>
<tr>
<td>AnnouncementRecordsMBean</td>
<td>16-22</td>
</tr>
<tr>
<td>AnnouncementRecordMBean</td>
<td>16-23</td>
</tr>
</tbody>
</table>

### 17 Configuring R-IM-OCF

Configuring R-IM-OCF with the Administration Console ........................................ 17-1
  - Configuring Call Handling Parameters ............................................................ 17-1
  - Configuring Diameter Credit Control Application Parameters ............................ 17-3
    - Configuring General Parameters ....................................................................... 17-3
    - Configuring AVPs Parameters ........................................................................... 17-3
    - Configuring Monitoring Parameters ................................................................... 17-6
  - Configuring R-IM-OCF with Java MBeans ............................................................ 17-6
    - RimocfMBean ..................................................................................................... 17-8
    - CallHandlingMBean ......................................................................................... 17-9
    - DiameterCreditControlApplicationGeneralMBean ............................................. 17-10
    - DiameterCreditControlApplicationAvpsMBean .................................................. 17-11

### 18 Configuring IM-PSX

Configuring IM-PSX GSM MAP .................................................................................... 18-1
  - Configuring IM-PSX MAP with the Administration Console .................................... 18-1
    - Configuring General Parameters ....................................................................... 18-2
    - Configuring the SIP Subscription Parameters .................................................... 18-2
    - Configuring the Map Handling Parameters ........................................................ 18-3
    - Configuring TCAP Parameters ............................................................................. 18-4
    - Configuring Monitoring Parameters .................................................................... 18-5
  - Configuring IM-PSX MAP with Java MBeans .......................................................... 18-5
    - ImpsxMap3MBean ............................................................................................... 18-6
    - SipSubscriptionMBean ....................................................................................... 18-7
    - AcceptHeadersMBean ......................................................................................... 18-7
    - AcceptHeaderMBean ........................................................................................... 18-7
    - MapHandlingMBean ............................................................................................ 18-8
    - TcapMBean .......................................................................................................... 18-8
  - Configuring IM-PSX ANSI-MAP .............................................................................. 18-8
    - Configuring IM-PSX ANSI-MAP with the Administration Console ............................ 18-9
      - Configuring General Parameters ....................................................................... 18-9
      - Configuring the SIP Subscription Parameters ..................................................... 18-9
      - Configuring the Map Handling Parameters ........................................................ 18-11
      - Configuring TCAP Parameters .......................................................................... 18-12
      - Configuring Monitoring Parameters .................................................................. 18-13
    - Configuring IM-PSX ANSI-MAP with Java MBeans .................................................. 18-13
      - ImpsxAnsiMBean ............................................................................................. 18-14
      - SipSubscriptionMBean ..................................................................................... 18-15
      - AcceptHeadersMBean ...................................................................................... 18-15
AcceptHeaderMBean .................................................................................................................. 18-15
MapHandlingMBean .................................................................................................................. 18-16
TcapMBean ................................................................................................................................. 18-16

19 Managing Supplementary Modules
Managing Supplementary Modules with the Administration Console .................................. 19-1
Accessing the SM Configuration Screen .................................................................................. 19-1
Managing Supplementary Modules with Java MBeans ............................................................. 19-2
DeploymentsMBean .................................................................................................................. 19-3
DeploymentMBean .................................................................................................................... 19-4

20 Configuring SM-LSS
Configuring SM-LSS with the Administration Console ......................................................... 20-1
Configuring SM-LSS with Java MBeans .................................................................................. 20-2
SmLssMBean .............................................................................................................................. 20-3
LssProfilesMBean ...................................................................................................................... 20-4
LssProfileMBean ....................................................................................................................... 20-5

21 Configuring SM-PME
Configuring SM-PME with the Administration Console ......................................................... 21-1
Understanding the SM-PME Mapping File ............................................................................... 21-2
Configuring SM-PME with Java MBeans .................................................................................. 21-3
PmeMBean ................................................................................................................................ 21-4

A Initial Filter Criteria
Initial Filter Criteria Standard .................................................................................................... A-1
Configuring Initial Filter Criteria ............................................................................................ A-1
Basic Initial Filter Criteria Elements ....................................................................................... A-2
  Priority ..................................................................................................................................... A-2
  Trigger Point ............................................................................................................................ A-2
  Application Server ................................................................................................................. A-2
Preface

This document provides reference information on configuring Oracle Communications Service Broker 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)
- IP Multimedia Subsystem (IMS) architecture and interfaces
- Java Management Extensions (JMX)

Related Documents

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

Oracle Communications Service Broker User Manuals
- Oracle Communications Service Broker Concepts Guide
- Oracle Communications Service Broker Installation Guide
- Oracle Communications Service Broker System Administrator’s Guide

Java Specifications Requests
- Java Community Process JSR 003, Java Management Extensions Specification
- Java Community Process JSR 160, Java Management Extensions Remote API

Conventions

The following text conventions are used in this document:
<table>
<thead>
<tr>
<th>Convention</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>boldface</strong></td>
<td>Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.</td>
</tr>
<tr>
<td><strong>italic</strong></td>
<td>Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.</td>
</tr>
<tr>
<td><strong>monospace</strong></td>
<td>Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.</td>
</tr>
</tbody>
</table>
This chapter introduces the Oracle Communications Service Broker Administration Console and Configuration MBeans. It will also guide you through the various configuration tasks and the order in which they are performed.

The following sections introduce the Service Broker configuration:

- Configuration Overview
- Administration Console Overview
- Configuration MBeans Overview

**Configuration Overview**

A Service Broker deployment includes two types of domains:

- **Signaling Domain** - used to manage the servers of the Signaling Tier and the SSUs running on these servers.
- **Processing Domain** - used to manage the servers of the Processing Tier and the module instances (that is OE and IM instances) running on these servers.

Each domain has an associated domain configuration, which is stored in the domain configuration directory. When you make configuration updates, you need to make changes in the domain configuration directory.

**Domain Configuration Mode**

The domain configuration mode specifies how configuration updates are propagated to servers in the domain.

If configuration updates are propagated to all servers in the domain as the changes are done, the domain configuration is online.

If updates are done only to the domain configuration and applied to each server when it is re-started, the domain configuration is offline.

Setting the domain configuration offline makes it possible to perform a set of configuration updates and have them applied the next time a server is restarted. This is used for example when doing a rolling upgrade of an installation.

**Configuration Tools**

You can access a domain configuration directory using one of the following tools:

- Administration Console - a graphical user interface.
Administration Console Overview

JMX Configuration MBeans - A Java software API based on standard Java Management Extensions (JMX). The API provides a machine interface for configuration.

Scripting Engine - the JMX Configuration MBeans are also accessible through a Scripting Engine. The script format is an XML which represents MBeans and MBean attributes that you want to configure. See "Using Scripting for Configuration and Management" in Oracle Communications Service Broker System Administrator's Guide for instructions.

JMX-compliant GUI - you can use any JMX-compliant GUI, for example, JConsole which is included with JDK.

All configuration tasks can be achieved in either way. You can use the Administration Console, the Configuration MBeans, the Scripting Engine and the JMX-compliant GUI interchangeably to make configuration changes, because all tools use Configuration MBeans as their underlying layer.

Administration Console Overview

The Administration Console enables you to manage a domain configuration. It renders in the GUI the data stored in the domain configuration directory, and it has read and write access to the domain configuration directory.

The Administration Console can be installed and run from any machine that has access to the domain configuration directory.

The Administration Console can run in two ways:

- Stand-alone Administration Console
- Web Administration Console

For information on starting the Administration Console see "Starting the Stand-Alone Administration Console" and "Starting the Web Administration Console".

The Administration Console manages a single domain. In a typical production deployment there are two instances of the Administration Console, one to manage the Signaling Domain and another to manage the Processing Domain.

Note: In a test environment, where one domain includes both Signaling Servers and Processing Servers, there is only one Administration Console instance. In this case, the Administration Console manages both the Signaling Tier and Processing Tier in one domain.

Starting the Stand-Alone Administration Console

You run the stand-alone Administration Console from the machine on which it is installed.

To start the stand-alone Administration Console:

1. Open a command line shell.
2. Change to the Oracle_home/axia/admin_console directory.
3. Enter the following command:

   ./start.sh
Starting the Web Administration Console

You run the Web Administration Console from the machine on which it is installed.

To start the Web Administration Console:

1. Open a command line shell.
2. Change to the Oracle_home/axia/admin_console directory.
3. Enter the following command:
   ```bash
   ./web.sh domain_configuration_directory
   ```
   Where domain_configuration_directory is the path to the domain configuration directory.
4. When prompted for User name and Password, enter the authentication information to use during the Web Administration Console login procedure.

Logging in to the Web Administration Console

To log in to the Web Administration Console:

1. Open your Web browser.
2. Enter the URL:
   ```plaintext
   [https | http]://host:port/console
   ```
   where
   - https or http depends on your security configuration.
   - host is the IP-address or host name.
   - port is the port for the Web Administration Console server. The default value for the port is 9000.
3. If it is the first time you log in to the Web Administration Console, you are prompted to accept the certificate provided in the keystore. This is done differently depending on which Web browser you use. It also depends on if a self-signed certificate is used or if the certificate was provided by a certificate authority.
4. When prompted for, enter the user name and password. The authentication information must exactly match the information provided when the Web Administration Console server was started. See "Starting the Web Administration Console".

Understanding the Administration Console User Interface

The Administration Console consists of several working areas described in Table 1–1.

<table>
<thead>
<tr>
<th>Working Area</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domain Navigation pane</td>
<td>Provides a hierarchical view of the domain. You can use the Domain Navigation pane to access individual components which are deployed in the domain. In a Signaling Domain you can navigate through SSUs, whereas in a Processing Domain you can navigate through the OE, IMs and SMs.</td>
</tr>
</tbody>
</table>
Locking a Domain Configuration for Changes
You need to lock a domain configuration in order to make configuration updates to it. When you lock the domain, it is locked for edits from other administration clients. To lock a domain configuration, click the Lock & Edit button in the Change Center pane.

After locking a domain configuration, you can make changes to it. You need to commit the changes in order to apply them on the domain configuration. To apply changes on a domain configuration, click the Commit button in the Change Center pane.

As long as you don’t commit changes, you can discard them. To discard changes, click the Discard button. After you discard all changes, the domain configuration is locked again.

Switching Domain Configuration Mode
For information on domain configuration modes, see "Domain Configuration Mode".

To switch the domain configuration mode from online to offline, click the Switch to Offline Mode button in the Change Center pane. Click the button again to switch back from offline to online.

Configuration MBeans Overview
Service Broker provides a standard software API to configure the Service Broker modules in the form of Java Management eXtensions (JMX) Configuration MBeans. JMX is a Java technology that provides tools to manage system resources (e.g. applications, devices). The resources are represented by objects called Management Beans (MBeans). JMX configuration MBeans are simple Java objects that provide an API to set/get configuration attributes. Service Broker configuration is entirely supported by JMX configuration MBeans and can be used by JMX clients to set/get Service Broker configuration. JMX is specified in the Java Specification Requests.

This section describes the Service Broker Configuration MBeans.

About the Service Broker Configuration MBeans
You can access and manage a domain configuration using the configuration MBeans on the domain’s Administration Server (where the domain Administration Console is running). Each component in a domain, that is SSU, OE, IM or SM, has a set of MBeans, organized in a logical hierarchy, that together form the complete component configuration.

Figure 1–1 shows an example of the MBean hierarchy for the IM-SCF CAP phase 1 component:
Service Broker MBean Object Names

All MBeans are registered in the MBean Server under an object name of type javax.management.ObjectName. Service Broker encodes its MBean object names as follows:

com.convergin:Type=<MBean-type-name>,Target=<server>,Version=<version_number>, Location=AdminServer,Name=<component-name>.<unique-resource-name>

Table 1–2 describes the key properties that Service Broker encodes in its MBean object names.

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type=&lt;MBean-type-name&gt;</td>
<td>The short name of the MBean’s type. The short name is the unqualified type name without the MBean suffix. For example, for an MBean that is an instance of the LinksetMBean, the Type would be Linkset.</td>
</tr>
<tr>
<td>Target=&lt;server&gt;</td>
<td>In the specific case of SS7 SSU MBeans, this property specifies the name of the target server where the SSU is running.</td>
</tr>
<tr>
<td>Version=&lt;version_number&gt;</td>
<td>Specifies the version of the MBean instance. When you upgrade an MBean to a later version, this parameter parameter enables Service Broker to keep the same name for different versions of the same MBean and use the version number to differentiate between them.</td>
</tr>
<tr>
<td>Location=AdminServer</td>
<td>Specifies the location of an MBean. This parameter is always set to AdminServer.</td>
</tr>
</tbody>
</table>
Opening a Domain Configuration and Locking it for Changes

You need to open a domain configuration in order to make configuration updates to it. When you open the domain, it is locked for edits from other administration clients. To open a domain configuration, invoke the operation openDomain on the MBean DomainServiceMBean.

Once you open the domain, you can make configuration changes in two modes:

- **Autocommit mode**
  When you update configurations in this mode, changes are committed and written to the configuration directory immediately. This is the default configuration mode.

- **Transaction mode**
  When you update configuration in this mode, multiple changes accumulate into one transaction. Setting the domain configuration to transaction mode makes it possible to perform a set of configuration updates and have them applied all at once. To change to the transaction mode, invoke the operation `begin` on the MBean ConfigurationAdminMBean. To commit the accumulated changes, invoke the operation `commit` on the MBean ConfigurationAdminMBean. To discard the accumulated changes, invoke the operation `rollback` on the MBean ConfigurationAdminMBean.

To release the lock created when the domain was opened, invoke the operation `closeDomain` on the MBean DomainServiceMBean.

For more information, see "DomainServiceMBean" and "ConfigurationAdminMBean" in the chapter "Managing Domains" in Oracle Communications Service Broker System Administrator’s Guide.

Switching Domain Configuration Mode

For information on domain configuration modes, see "Domain Configuration Mode".

To switch the domain configuration mode from online to offline, or from offline to online, set the attribute **OnLine** on the MBean DomainServiceMBean.

Using JConsole to Access Configuration MBeans

JConsole is a Java Monitoring and Management Console included in JDK 5.0 or higher. It provides configuration GUI for applications running on java platforms and supporting the Java Management eXtension technology. By using JConsole you can manage the Service Broker configuration MBeans.

With JConsole you can:

---

**Table 1–2 (Cont.) Service Broker MBean Object Name Key Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Names=&lt;component-name&gt;.&lt;unique-resource-name&gt;</td>
<td>The name of the Service Broker component whose configuration is stored in the MBean, followed by a unique string that was provided upon creation of the MBean to identify the component resource which is represented by the MBean.</td>
</tr>
</tbody>
</table>

For example:

```
com.convergin:Type=IpRemoteSystem,Target=ssu_managed_1,Version=1.0,
Location=AdminServer,Name=sbssuss7.SG01
```
- View Service Broker configuration by viewing instances of configuration MBeans, as well as their attributes and operations
- Update Service Broker configuration by setting writable attribute values and invoking operations

Figure 1–2 shows an example of using JConsole for viewing information about an MBean instance’s attribute.

**Figure 1–2  Viewing Information about MBean Instance's Attribute**

![Figure 1–2](image)

For more information on using JConsole, see http://download.oracle.com/javase/6/docs/technotes/guides/management/jconsole.html.

**Starting JConsole**

To start JConsole:

1. Run jconsole.exe. This file is located in JDK_HOME/bin, where JDK_HOME is the directory in which the Java Development Kit (JDK) is installed.

The JConsole: New Connection dialog box is displayed as shown on Figure 1–3.
2. Select the Remote Process option button and specify the IP address and port of the Administration Console Server on which configuration MBeans run.

3. Click Connect. The Java Monitoring and Management Console window is displayed as shown on Figure 1–4.
4. Click the MBeans tab. The list of available domains and their MBeans is displayed on the left pane as shown on Figure 1–5.
5. On the left, in the navigation tree, expand the com.convergin node. This node contains all Service Broker MBeans.

6. Under com.convergin, select the MBean that you want to monitor. The information about the selected MBean is selected in the right pane.

**Understanding the Hierarchy of MBeans in JConsole**

For each individual MBean, JConsole automatically generates a tree structure based on the object name of an MBean (for more information about the format of MBean object names, see "Service Broker MBean Object Names").

In this tree structure, each nested node represents a single property of the object name. For example, the object name of an OeMbean instance is com.convergin:Type=OE,Version=1.0.0,Location=AdminServer,Name=oe_instance.oe_instance. **Figure 1–6** shows the tree structure that JConsole generated for this MBean.

**Figure 1–6 MBean Tree Structure**
Notice that all Service Broker MBeans are located under the com.convergin node, because they all have a com.convergin domain in their object name. Under the com.convergin node you’ll find all the types of Service Broker MBeans, each node represents one type of MBean.

Different instances of the same MBean type are displayed as different nodes nested into the node representing their common type. For example, different instances of DeploymentMBean are displayed as different nodes under the Deployment node, as shown on Figure 1–7.

**Figure 1–7  Example of Displaying Different Instances of the Same Type**
This chapter provides a quick-step guide for the steps that you need to perform in order to configure the Service Broker:

- Preceding Steps
- Configuring a Service Broker Signaling Domain
- Configuring a Service Broker Processing Domain
- Preliminary Configuration

Preceding Steps

Before you can start configuring Service Broker, make sure to follow the Service Broker post-installation instructions. See "Next Steps" in Oracle Communications Service Broker Installation Guide.

At this stage, you should have a Signaling and Processing Domains installed in your system, with respective Signaling and Processing servers installed.

The following are steps that you perform before configuring Service Broker:

1. Start the Administration Console. See "Starting the Stand-Alone Administration Console" or "Starting the Web Administration Console". This will also start both the configuration MBeans

2. If you choose to configure Service Broker using configuration scripts, start the Scripting Engine. See "Starting the Scripting Engine" in Oracle Communications Service Broker System Administrator’s Guide for instructions.

Configuring a Service Broker Signaling Domain

To configure a Service Broker Signaling Domain, you need to perform the following steps in the following order:

1. Mapping Custom Signaling Server Names to Service Broker Server Names
2. Defining Signaling Servers
3. Configuring SSUs

Mapping Custom Signaling Server Names to Service Broker Server Names

To operate properly, Service Broker imposes certain requirements on naming servers in the Signaling Domain. If you want to specify your own names for Signaling Servers
that do not follow these patterns, you need to map custom server names to names that follow the pattern required by Service Broker.

For more information, see "Mapping Custom Server Names to Service Broker Server Names".

**Defining Signaling Servers**

A Signaling Server is a server deployed in the Signaling Domain.

Figure 2–1 shows the menu item in the Navigation pane that enables you to add Signaling Servers to the Signaling Domain.

![Figure 2–1 Defining Signaling Servers](image)

For more information, see "Managing Domain Servers".

**Configuring SSUs**

SSUs enable Service Broker to connect to SS7-based networks and IMS-based networks through standard software and hardware interfaces.

Depending on the type of signaling networks to which the servers in your domain connect, you need to configure a relevant type of the SSUs in your domain as follows:

- Configure SSU SS7 TDM to enable Service Broker connectivity to a TDM-based SS7 network
- Configure SSU SS7 SIGTRAN to enable Service Broker connectivity to a SIGTRAN SS7 network
- Configure SSU SIP to enable Service Broker connectivity to a SIP network
- Configure SSU Diameter to enable Service Broker connectivity to Diameter entities

Figure 2–2 shows the menu item in the Navigation pane that enables you to configure various types of SSUs.
Configuring a Service Broker Processing Domain

To configure a Service Broker Processing Domain, you need to perform the following steps in the following order:

1. Mapping Custom Processing Server Names to Service Broker Server Names
2. Defining Processing Servers
3. Deploying Service Broker Interworking Modules
4. Deploying Supplementary Modules
5. Configuring the Orchestration Engine
6. Configuring Interworking Modules
7. Configuring Supplementary Modules
8. Configuring the Processing Tier

Mapping Custom Processing Server Names to Service Broker Server Names

To operate properly, Service Broker imposes certain requirements on naming servers in the Processing Domain. If you want to specify your own names for Processing Servers that do not follow these patterns, you need to map custom server names to names that follow the pattern required by Service Broker.

For more information, see "Mapping Custom Server Names to Service Broker Server Names".

Defining Processing Servers

A Processing Server is a server deployed in the Processing Domain. Figure 2–3 shows the menu item in the Navigation pane that enables you to add Processing Servers to the Processing Domain.
Deploying Service Broker Interworking Modules

IMs enable the OE to communicate with various application platforms and session control entities in the network. Figure 2–4 shows the menu item in the Navigation pane that enables you to add IMs to the Processing Domain.

**Note:** You can skip this step if you choose to perform preliminary configuration. See "Preliminary Configuration".
Deploying Supplementary Modules

Supplementary Modules facilitate and complement Service Broker solutions in specific deployments. Figure 2–5 shows the menu item in the Navigation pane that enables you to deploy the SMs.

For more information, see "Managing Interworking Modules".
Configuring the Orchestration Engine

The OE routes service and charging requests that arrive from the network to one or more service platforms. The OE manages interactions between service platforms and session routing across applications. Figure 2–6 shows the menu item in the Navigation pane that enables you to configure the OE.
Figure 2–6  Configuring the Orchestration Engine

For more information, see "Configuring the Orchestration Engine".

Configuring Interworking Modules

After adding IMs to the Processing Domain (for more information, see "Deploying Service Broker Interworking Modules"), you can configure each of the added IM instances.

Figure 2–7 shows the menu item in the Navigation pane that enables you to configure the IMs.
Configuring a Service Broker Processing Domain

Figure 2–7 Configuring Interworking Modules

For more information, see the following sections:

- Configuring IM-SCF
- Configuring IM-SSF
- Configuring IM-ASF SIP
- Configuring R-IM-ASF SIP
- Configuring IM-OCF
- Configuring R-IM-OCF
- Configuring IM-PSX

Configuring Supplementary Modules

After adding Supplementary Modules to the Processing Domain (for more information, see "Deploying Supplementary Modules"), you can configure each of the
added IM instances.  Figure 2–8 shows the menu item in the Navigation pane that enables you to configure the IMs.

**Figure 2–8  Configuring Supplementary Modules**

For more information, see the following sections:

- Configuring SM-LSS
- Configuring SM-PME

**Configuring the Processing Tier**

Service Broker enables you to define how the Processing Tier communicates with the Signaling Tier. In addition, you can configure monitoring of the Processing Tier and set up the Service Broker overload protection mechanism.

**Figure 2–9** shows the menu item in the Navigation pane that enables you to configure the Processing Tier.
Preliminary Configuration

Service Broker allows you to perform full system configuration, immediately after completing Administration Console and Domain Configuration installation, and prior to setting up the domain servers.

You can use preliminary configuration to perform offline practice and analysis of various system configuration options and scenarios. Preliminary configuration is typically used during planning, development or test phases.

Before you start setting up the preliminary configuration, you have to remove the Processing Servers and Signaling Servers that the installation automatically setup.

Once you complete a domain preliminary configuration, you can add servers to the domain. New servers will obtain the preliminary configuration and work according to it.

For more information, see "Managing the Service Broker Processing Tier".

Figure 2–9 Configuring the Processing Tier
Managing Service Broker Domains

This chapter describes how to manage domains using the Administration Console and Java MBeans:

- Introduction to Service Broker Domain Management
- Mapping Custom Server Names to Service Broker Server Names
- Setting a Service Broker Domain Name
- Managing Domain Bundles
- Managing Domain Servers
- Managing Processing Domain Groups

Introduction to Service Broker Domain Management

A set of Processing Servers are grouped into a Processing Domain and a set of Signaling Servers are grouped into a Signaling Domain.

Servers within a domain are symmetrical, which means that they all have the same software bundles deployed and started.

Domain management includes the following tasks:

- Mapping custom server names to server names required by Service Broker
  
  To operate properly, Service Broker imposes certain requirements on naming servers in the Signaling Domain and Processing Domain. If you want to specify your own custom server names that do not follow these patterns, you need to map custom server names to names that follow the pattern required by Service Broker.
  
  For more information, see "Mapping Custom Server Names to Service Broker Server Names".

- Setting the Service Broker domain name
  
  When you create a domain, you must assign a unique name to the domain, in addition to the domain name that you already defined when you created the domain.
  
  For more information, see "Setting a Service Broker Domain Name".

- Managing domain bundles
  
  When you create a domain, the domain’s bundles are copied to a domain directory. You can define which of the bundles in the domain directory are relevant to your specific deployment.
  
  For more information, see "Managing Domain Bundles".
Mapping Custom Server Names to Service Broker Server Names

To operate properly, Service Broker imposes the following requirements on naming servers in the Signaling Domain and Processing Domain:

- Names of Signaling Servers must follow the pattern "ssu_<server-number>". For example, the following names are valid: ssu_1, ssu_2, ssu_3.
- Names of Processing Servers must follow the pattern "pn_<server-number>". For example, the following names are valid: pn_1, pn_2, pn_3.

During the installation, if you specified custom server names that do not follow these patterns, you need to map custom server names to names that follow the pattern required by Service Broker. You can perform this mapping using ServersMBean and ServerMBean.

The hierarchy of the MBeans is shown on Figure 3–1.

**Figure 3–1  ServersMBean Hierarchy**

![ServersMBean Hierarchy Diagram](image)

For more information, see ServersMBean and ServerMBean.

Setting a Service Broker Domain Name

After you created a domain, in addition to the name that you assigned to a domain during its creation, you must assign a Service Broker domain name to it.

A Service Broker domain name is a unique string name.

You can set the Service Broker domain name using MBeans only. To set it, set the SbDomainName attribute in the SystemMBean MBean.

Managing Domain Bundles

The settings of each OSGi Bundle identify the bundle in the domain. Table 3–1 describes OSGi Bundle properties.
The following sections describe how you can manage OSGi bundles with the Administration Console and Java MBeans.

- Managing Bundles with the Administration Console
- Managing Bundles with Java MBeans

### Managing Bundles with the Administration Console

To access the Bundles Configuration screen:

- In the Domain Navigation pane, expand OCSB and do one of the following:
  - Expand Signaling Tier > Domain Management and select Packages
  - Expand Processing Tier > Domain Management and select Packages

The Packages Configuration pane displays the properties described in Table 3–1. Typing a Package name into the Filter text field displays a filtered list of packages.

### Installing a Bundle

Before you install a bundle in the domain, you must extract a copy of the bundle in the Domain Configuration Directory.

To install a bundle:

1. In the Bundles screen, click Install.
   
   The Install dialog box is displayed.
2. In the Location field, type the location from where you extracted the bundle.
3. In the Start Level, type a digit to indicate the level, then click Apply.

   The new OSGi Bundle now appears in the Bundle list.

### Uninstalling a Bundle

Before you uninstall a bundle, you have to stop the bundle. See "Stopping a Bundle" for instructions.

To uninstall a bundle:

---

**Table 3–1  OSGi Bundle Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Symbolic name of the OSGi bundle. Format: Alpha-numeric characters. Case sensitive. No spaces in the name.</td>
</tr>
<tr>
<td>Version</td>
<td>Version number of the bundle. Format: Alpha-numeric. IP-address form or DNS name format.</td>
</tr>
<tr>
<td>State</td>
<td>The state of the bundle:</td>
</tr>
<tr>
<td></td>
<td>• Installed</td>
</tr>
<tr>
<td></td>
<td>• Prepare Start</td>
</tr>
<tr>
<td></td>
<td>• Start</td>
</tr>
<tr>
<td>Start Level</td>
<td>OSGi start level of the bundle</td>
</tr>
<tr>
<td></td>
<td>Format: Numeric</td>
</tr>
</tbody>
</table>
1. From the Bundle list, select the checkbox corresponding to the bundle you want to uninstall.
2. Click Uninstall.

The selected OSGi Bundle is removed from the list. The bundle is not deleted from the Configuration Directory.

**Starting a Bundle**
To start a bundle:
1. In the Bundle list, select the checkbox corresponding to the bundle you want to start.
2. Click Start.

**Stopping a Bundle**
To stop a bundle:
1. In the Bundle list, select the checkbox corresponding to the bundle you want to stop.
2. Click Stop.

**Managing Bundles with Java MBeans**
You can manage OSGi Bundles through JMX, using the DeploymentServiceMBean. For more information, see the MBean DeploymentServiceMBean in the chapter "Upgrading and Patching" in Oracle Communications Server Broker System Administrator's Guide.

**Managing Domain Servers**
Each Signaling Server and Processing Server has a set of server-unique settings that identifies the server in the domain. Table 3–2 describes server properties.

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>The name of the server. The name must be unique across all domains. Format: alpha-numeric. Case-sensitive. No white spaces. Do not use white space in the name.</td>
</tr>
<tr>
<td>Host</td>
<td>The host name or IP-address of the machine where the server runs. Format: alpha-numeric. IP-address format or DNS name format.</td>
</tr>
<tr>
<td>Port</td>
<td>The IP port to use for the server when it is at RUNNING level. Format: numeric.</td>
</tr>
<tr>
<td>Jmx Jrmp Port</td>
<td>The port to use for Java Remote Method Protocol (JRMP) invocations to the server. Format: numeric.</td>
</tr>
<tr>
<td>Jmx Registry</td>
<td>The port to use for the MBean Server on the server. Format: numeric.</td>
</tr>
</tbody>
</table>
The following sections describe how you can manage domain servers using the Administration Console and the Java MBeans.

- Managing Servers with the Administration Console
- Managing Servers with Java MBeans

Managing Servers with the Administration Console

To access the Server Configuration screen:

- In the Domain Navigation pane, expand OCSB and do one of the following:
  - Expand Signaling Tier > Domain Management and select Servers
  - Expand Processing Tier > Domain Management and select Servers

The Servers Configuration pane displays the properties described in Table 3–2.

Typing a server name into the Filter text field displays a filtered list of servers.

Adding a Server to a Domain Configuration

Before you add a server to the Domain Configuration, you have to install the Service Broker software on that server. See Oracle Communications Service Broker Installation Guide for instructions.

To add a server to a domain:

1. In the Servers List screen, click the New button.
   The Add Server dialog box is displayed.
2. Type the relevant information into the respective fields. (For details, see Table 3–2.)
3. Click Apply.

Removing a Server from a Domain Configuration

Before you remove a server from the Domain Configuration you have to stop the server. For more information about stopping servers, see “Stopping a Server”.

To remove a server from the domain:

1. In the Servers screen, in the list of servers, select the checkbox corresponding to the server you want to remove.
2. Click Delete.

Stopping a Server

To stop a server in a domain:

1. In the Servers screen, in the list of servers, select the checkbox corresponding to the server that you want to stop.
2. Click the Stop button.

### Table 3–2 (Cont.) Server Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin Port</td>
<td>The IP port to use for the server when it is at SAFE level. This is the port used for configuration when the server is starting up. Format: numeric</td>
</tr>
</tbody>
</table>

The following sections describe how you can manage domain servers using the Administration Console and the Java MBeans.
Managing Servers with Java MBeans

You can manage domain servers through JMX, using the DomainServiceMBean. For more information, see the MBean DomainServiceMBean in the chapter "Managing Domains" in Oracle Communications Server Broker System Administrator’s Guide.

Managing Processing Domain Groups

**Note:** You can define Processing Domain Groups only in Signaling Domains.

In a Multi-processing Domain deployment, domains can be grouped into a Processing Domain Group (PDG), based on a shared functionality among different Processing Domains.

You can configure SSUs to route sessions to PDGs. For more information, see "Configuring Incoming Routing Rules Parameters" in:

- Configuring SS7 Signaling Server Units for SIGTRAN
- Configuring SS7 Signaling Server Units for TDM
- Configuring SIP Signaling Server Units
- Configuring Diameter Signaling Server Units

Domains in a PDG share traffic load, so that traffic, routed by an SSU to a PDG, is distributed among the domains in the PDG. When you add a domain to a PDG, you assign a weight to it to indicate the relative load of traffic that it takes.

Table 3–3 describes the subtabs in the PDGs Configuration screen.

<table>
<thead>
<tr>
<th>Tab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domain Groups</td>
<td>Enables you to create and remove PDGs.</td>
</tr>
<tr>
<td>Domains</td>
<td>Enables you to specify Processing Domains that belong to a PDG that you previously created in the Domain Groups tab.</td>
</tr>
<tr>
<td></td>
<td>It also enables you define a weight to each Processing Domain, indicating the traffic load that it takes relatively to the total traffic load handled by the PDG.</td>
</tr>
</tbody>
</table>

Table 3–3 Processing Domain Groups Subtabs

The following sections describe how you can configure Processing Domain Groups (PDGs) using the Administration Console and the Java MBeans.

- Managing Processing Domain Groups with the Administration Console
- Configuring Processing Domain Groups with Java MBeans

Managing Processing Domain Groups with the Administration Console

To access the Processing Domain Groups Configuration screen:

- In the Domain Navigation pane, expand OCSB > Signaling Tier > Domain Management and select Processing Domain Groups.

The Processing Domain Configuration pane displays the two subtabs described in Table 3–3.
You use the Domain Groups subtab to create or remove PDGs.

**Table 3–4** describes the fields you define to create a PDG.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>A unique system-internal PDG identifier.</td>
</tr>
<tr>
<td>Group Name</td>
<td>STRING</td>
<td>Specifies the name of the PDG you want to create. It is recommended that you use the same name you specified in the Name field. Note: when you configure SSUs to route incoming messages to PDGs, this is the PDG name that you use.</td>
</tr>
</tbody>
</table>

After you create PDGs, you use the Domains subtab to define the Processing Domains that belong to each PDG.

The PDGs you created are displayed in the Parent drop-down list. You now need to select a PDG and then specify the Processing Domains you want to include in the PDG. For each Processing Domain that you add, you also set the weight for traffic load.

**Table 3–5** describes the fields in which you define Processing Domains and their properties.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>A unique system-internal Processing Domain identifier.</td>
</tr>
<tr>
<td>Domain Name</td>
<td>STRING</td>
<td>Enables you to specify the name of the domain that you add to a PDG. This must be the domain name as was specified in the SbDomainName attribute of the SystemMBean MBean.</td>
</tr>
<tr>
<td>Weight</td>
<td>INTEGER</td>
<td>Enables you to specify the proportion of traffic routed to each Processing Domain within a group.</td>
</tr>
</tbody>
</table>

**Adding Processing Domain Groups**

To add a Processing Domain to a Processing Domain Group:

1. In the Domain Groups subtab, click New.
2. In the New Domain Groups dialog box, define the fields described in **Table 3–4**.
3. Click Apply.

Each Processing Domain Group you create appears in a list under the Domain Groups subtab.

**Removing Processing Domain Groups**

To remove a Processing Domain Group:

1. In the Domain Groups subtab, select the checkbox corresponding to the Processing Domain Group you want to remove.
2. Click Delete.
The Processing Domain Group is deleted. The Processing Domains this group supported are no longer grouped.

Adding Domains to a Processing Domains Group
1. In the Domains subtab, click the Parent drop-down list and select the Processing Domain Group to which you want to add a Processing Domain.
2. Click New.
   In the Domain dialog box, define the fields described in Table 3–5.
3. Click Apply.

Removing Domains from a Processing Domains Group
1. In the Domains subtab, select the checkbox corresponding to the Processing Domain you want to remove.
2. Click Delete.
   The Processing Domain is removed from the group.

Configuring Processing Domain Groups with Java MBeans
You can configure Processing Domain Groups through JMX, using the MBeans shown on Figure 3–2.

Figure 3–2  DomainGroupsMBean Hierarchy

For more information, see DomainGroupsMBean, DomainGroupMBean, and DomainMBean.
DomainGroupsMBean

DomainGroupsMBean is a root MBean for managing domain groups.

Factory Method

Created automatically

Attributes

None

Operations

ObjectName[] getDomainGroups()
Returns a list of DomainGroupMBean instances

ObjectName createDomainGroup()
Creates a new instance of DomainGroupMBean

void destroyDomainGroup()
Destroys an existing instance of DomainGroupMBean

ObjectName lookupDomainGroup()
Returns a specified instance of DomainGroupMBean
DomainGroupMBean

DomainGroupMBean enables you to define a domain group name and manage domains within this domain group. Each DomainGroupMBean represents one domain group.

Factory Method

DomainGroupsMBean.createDomainGroup()

Attributes

GroupName
For more information about this attribute, see Table 3–4.

Operations

ObjectName[] getDomains()
Returns a list of DomainMBean instances

ObjectName createDomain()
Creates a new instance of DomainMBean

void destroyDomain()
Destroys an existing instance of DomainMBean

ObjectName lookupDomain()
Returns a specified instance of DomainMBean
DomainMBean

DomainMBean enables you to configure domains.

Factory Method

DomainGroupMBean.createDomain()

Attributes

- DomainName
- Weight

For more information on these attributes, see Table 3–5.

Operations

None
ServersMBean

ServersMBean is a root MBean for configuration of mapping between custom names that you specify for Signaling and Processing Servers and server names that follow the patterns required by Service Broker.

Factory Method

Created automatically.

Attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a name of the mapping configuration</td>
</tr>
<tr>
<td>MaxServerNumber</td>
<td>INT</td>
<td>Specifies a maximum number of servers whose names are to be mapped</td>
</tr>
</tbody>
</table>

Operations

ObjectName createServer()
Creates an instance of ServerMBean

void destroyServer()
Destroys an instance of ServerMBean

ObjectName[] getServer()
Gets an array of references to instances of ServerMBean

ObjectName lookupServer()
Returns a specified instance of ServerMBean
ServerMBean

ServerMBean enables you to map a custom name of one server to a server name which follows the pattern required by Service Broker.

Factory Method

Servers.createServer()

Attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ManagedServerName</td>
<td>STRING</td>
<td>Specifies the custom server name that you specified during server installation.</td>
</tr>
<tr>
<td>SbServerName</td>
<td>STRING</td>
<td>Specifies a name that follows the pattern required by Service Broker.</td>
</tr>
<tr>
<td>SbServerId</td>
<td>STRING</td>
<td>Specifies a unique ID that the server uses when generating TCAP messages. The ID must be unique across all domains.</td>
</tr>
</tbody>
</table>

Operations

None
This chapter describes how to manage the Processing Tier using the Administration Console and Java MBeans:

- Understanding Processing Tier Management
- Configuring Monitoring Parameters
- Configuring Overload Protection Parameters

**Understanding Processing Tier Management**

Oracle Communications Service Broker provides some tier-layer functionality which is available only in the Processing Tier layer:

- 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 Monitoring tab enables you to define how Runtime MBeans and notifications operate in the Processing Tier level.

See "Configuring Service Broker Monitoring" for more information about configuring monitoring with the Administration Console.

**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.
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 screen:


2. Click the Overload Protection tab. This tab enables you to define key overload indicators and configure overload protection behavior.

The Overload Protection Configuration tab contains the subtabs described in Table 4–1.

<table>
<thead>
<tr>
<th>Tab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key Overload Indicators</td>
<td>Enables you to configure gauges and counters that you identified as key overload indicators, to be valid key overload indicators. For more information, see &quot;Configuring Overload Protection Method&quot;.</td>
</tr>
<tr>
<td>Overload Protection Methods</td>
<td>Enables you to configure how Service Broker responds to SIP and Diameter network entities that attempt to establish sessions during system overload.</td>
</tr>
</tbody>
</table>

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 (for more information, see "Configuring Service Broker Monitoring").
Configuring Overload Protection Parameters

**Note:** To enable Service Broker to observe system overload, you must setup 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 4–2 describes the fields that you define for each key overload indicator.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique name of a key overload indicator</td>
</tr>
<tr>
<td>MBean Instance Name</td>
<td>STRING</td>
<td>Specifies the object name of a Runtime MBean instance whose attribute was identified as key overload indicator.</td>
</tr>
<tr>
<td>MBean Attribute Name</td>
<td>INT</td>
<td>Specifies the name of a Runtime MBean attribute (gauge or counter) that you identified as key overload indicator.</td>
</tr>
</tbody>
</table>

### Configuring 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 4–3 describes configuration parameters on the Overload Protection Methods subtab.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Enabled                     | BOOL   | Specifies whether or not the overload protection mechanism is enabled. Possible values:  
  ■ True  
  ■ False |
| 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. |
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. The hierarchy of the MBeans is shown on Figure 4–1.

**Figure 4–1  OverloadProtectionMBean Hierarchy**

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter Response Result-Code</td>
<td>STRING</td>
<td>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.</td>
</tr>
</tbody>
</table>
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

For more information on these attributes, see Table 4–2.

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
- SipResponseStatus
- SipRetryAfter
- DiameterResponseResult

For more information on these attributes, see Table 4–3.
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 your deployment:

- Managing Interworking Modules with the Administration Console
- Managing Interworking Modules with JavaMBeans
- Defining a Default IM-ASF Module

Managing Interworking Modules with the Administration Console

You can manage Interworking Modules, 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 screen:

- On the Domain Navigation pane, select OCSB > Processing Tier > Interworking Modules > IM Management. The IM Configuration screen is displayed in the Configuration pane.

The IM Management Configuration screen displays a list of Interworking Module instances deployed in the system. Information about each module instance is presented in the fields described in Table 5–1:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instance Name</td>
<td>Specifies a name of the module instance</td>
</tr>
</tbody>
</table>
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

**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.
Managing Interworking Modules with JavaMBeans

Service Broker provides a set of MBeans that exposes attributes and operations for configuring interworking modules through JMX shown on Figure 5–1.

Figure 5–1  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 5–2 explains the parameters with which you need to invoke the operation.
### Table 5–2 Parameters Required to Create a Deployment

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>ModuleName</code></td>
<td>Specifies a type of the module instance and a protocol that the module instance uses. A module type has the following format: <code>&lt;module&gt;&lt;protocol&gt;</code>. Possible values:</td>
</tr>
<tr>
<td></td>
<td>- IMSCFCAP1</td>
</tr>
<tr>
<td></td>
<td>- IMSCFCAP2</td>
</tr>
<tr>
<td></td>
<td>- IMSCFCAP3</td>
</tr>
<tr>
<td></td>
<td>- IMSCFCAP4</td>
</tr>
<tr>
<td></td>
<td>- IMSCFWIN1</td>
</tr>
<tr>
<td></td>
<td>- IMSCFWIN2</td>
</tr>
<tr>
<td></td>
<td>- IMSCFINAP</td>
</tr>
<tr>
<td></td>
<td>- IMSCFAIN01</td>
</tr>
<tr>
<td></td>
<td>- IMSCFAIN02</td>
</tr>
<tr>
<td></td>
<td>- IMASF</td>
</tr>
<tr>
<td></td>
<td>- RIMASF</td>
</tr>
<tr>
<td></td>
<td>- IMOCF</td>
</tr>
<tr>
<td></td>
<td>- IMSSFCAP1</td>
</tr>
<tr>
<td></td>
<td>- IMSSFCAP2</td>
</tr>
<tr>
<td></td>
<td>- IMSSFCAP3</td>
</tr>
<tr>
<td></td>
<td>- IMSSFWIN1</td>
</tr>
<tr>
<td></td>
<td>- IMSSFWIN2</td>
</tr>
<tr>
<td></td>
<td>- IMSSFFINAP</td>
</tr>
<tr>
<td></td>
<td>- IMSSFAIN01</td>
</tr>
<tr>
<td></td>
<td>- IMSSFAIN02</td>
</tr>
<tr>
<td><code>Version</code></td>
<td>Specifies a version of the module instance</td>
</tr>
<tr>
<td><code>InstanceName</code></td>
<td>Specifies a unique name for the interworking module instance.</td>
</tr>
</tbody>
</table>

```java
void removeDeployment(string ModuleName, string Version, string ModuleInstanceName)

Removes an instance of an interworking module. For more information on the parameters required for this operation, see Table 5–2.

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

Activate an instance of an interworking module. For more information on the parameters required for this operation, see Table 5–2.

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

Deactivates an instance of an interworking module. For more information on the parameters required for this operation, see Table 5–2.
```
Defining a Default IM-ASF Module

**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**

For more information on these attributes, see Table 5–1.

**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**

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".

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".
The following sections describe how to configure monitoring of Service Broker using the Administration Console and Java MBeans:

- Understanding Service Broker Monitoring Configuration
- Configuring Monitoring with the Administration Console
- Configuring Monitoring with Java MBeans

Understanding Service Broker Monitoring Configuration

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:

- OE
- Interworking Modules
- Supplementary Modules

Monitoring parameters that you can configure for each of these components are common for all the components. However, you can setup 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.

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. (For more information on Service Broker monitoring, see the System Administration Guide.)

The following sections describe these parameters.
Accessing the Monitoring Configuration Screen

To access the Monitoring Configuration page:

1. Depending on a component for which you want to configure monitoring, do one of the following:
   - When you want to configure monitoring of the OE, on the Domain Navigation pane, select OCSB > Processing Tier > OE.
   - When you want to configure monitoring of an Interworking Module, on the Domain Navigation pane, select OCSB > Processing Tier > Interworking Modules and select the module for which you want to configure monitoring.
   - When you want to configure monitoring of a Supplementary Module, on the Domain Navigation pane, select OCSB > Processing Tier > Supplementary Modules and select the module for which you want to configure monitoring.
   - When you want to configure monitoring of the Processing Tier, on the Domain Navigation pane, select OCSB > Processing Tier > Tier Management > Monitoring and Overload.

2. Click the Monitoring tab. The Monitoring Configuration screen contains the subtabs described in Table 6–1.

**Table 6–1 Monitoring Subtabs**

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Enables you to specify parameters that determine a general behavior of the notification mechanism. For more information, see &quot;General&quot;.</td>
</tr>
<tr>
<td>State Changed Notifications</td>
<td>Enables you to configure generation of notifications when a value of an attribute of a specified Runtime MBean changes. For more information, see &quot;State Changed Notifications&quot;.</td>
</tr>
<tr>
<td>Threshold Crossed Notifications</td>
<td>Enables you to configure generation of notifications when a threshold is passed. For more information, see &quot;Threshold Crossed Notifications&quot;.</td>
</tr>
</tbody>
</table>

**General**

The General subtab enables you to specify parameters that determine a general behavior of the Runtime MBeans. Table 6–2 describes configuration parameters on the General subtab.

**Table 6–2 General Monitoring Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable Runtime MBeans</td>
<td>BOOL</td>
<td>Specifies whether or not JMX Runtime MBeans are enabled. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ True</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ False</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: True</td>
</tr>
</tbody>
</table>
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 6–3.

### Table 6–3 State Changed Notifications

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a notification name</td>
</tr>
<tr>
<td>Enabled</td>
<td>BOOL</td>
<td>Specifies whether or not the notification is enabled.</td>
</tr>
<tr>
<td>MBean Type</td>
<td>STRING</td>
<td>Specifies a type of the Runtime MBean to be monitored.</td>
</tr>
<tr>
<td>MBean Attribute</td>
<td>STRING</td>
<td>Specifies an attribute of the MBean defined in the MBean Type field to be monitored.</td>
</tr>
<tr>
<td>Value</td>
<td>STRING</td>
<td>Specifies an attribute value that triggers generation of the notification</td>
</tr>
</tbody>
</table>

### Table 6–2 (Cont.) General Monitoring Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable Notifications</td>
<td>BOOL</td>
<td>Specifies whether or not JMX notifications are enabled.</td>
</tr>
<tr>
<td>Possible values: True</td>
<td>False</td>
<td>Default value: False</td>
</tr>
<tr>
<td>Notification Trigger Check Interval in Seconds</td>
<td>INT</td>
<td>Specifies the interval between consecutive sampling of counters.</td>
</tr>
<tr>
<td>Counters are sampled every few seconds to check whether to invoke notifications.</td>
<td></td>
<td>Default value: 30</td>
</tr>
<tr>
<td>Counter Interval in Seconds</td>
<td>INT</td>
<td>Runtime MBean counters provide measurements recorded in a recent time interval. This parameter specifies the length of this interval in seconds.</td>
</tr>
</tbody>
</table>

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 6–3.
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 a attribute of a specific Runtime MBean.

When configuring notifications, you need to specify the fields described in Table 6–4.

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique notification name</td>
</tr>
<tr>
<td>Enabled</td>
<td>BOOL</td>
<td>Specifies whether or not the notification is enabled. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ True</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ False</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: True</td>
</tr>
<tr>
<td>MBean Type</td>
<td>STRING</td>
<td>Specifies a type of the Runtime MBean to be monitored</td>
</tr>
<tr>
<td>MBean Attribute</td>
<td>STRING</td>
<td>Specifies an attribute of the MBean defined in the MBean Type field to be monitored</td>
</tr>
</tbody>
</table>
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.
The hierarchy of the monitoring MBeans is shown on Figure 6–1.

**Figure 6–1 Monitoring MBeans Hierarchy**

```
MonitoringGeneralMBean
   \|--StateChangedNotificationRulesMBean
       \|--StateChangedNotificationRuleMBean [0..n]
       \|--ThresholdCrossedNotificationRulesMBean
           \|--ThresholdCrossedNotificationRuleMBean [0..n]
```

The following sections provide reference information for the monitoring 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.
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 6–2.

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 6–3.

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 6–4.

Operations

None
This section describes how to configure SS7 SSU in a network in which SS7 traffic is carried over SIGTRAN M3UA.

- Configuring SS7 SSU for SIGTRAN with the Administration Console
- Configuring SS7 SSU for SIGTRAN with Java MBeans

Configuring SS7 SSU for SIGTRAN with the Administration Console

This section describes how to configure SS7 SSU for SIGTRAN using the Service Broker Administration Console.

The section provides graphical representations of a deployment example.

To access the SS7 SSU configuration screen:

- In the Domain Navigation pane, select OCSB > Signaling Tier > SSU SS7 SIGTRAN. The SSU SS7 SIGTRAN Configuration screen is displayed in the Configuration pane.

The configuration screen of SSU SS7 SIGTRAN contains the tabs described in Table 7–1.

<table>
<thead>
<tr>
<th>Tab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSU SS7 SIGTRAN</td>
<td>Enables you to assign a point code to a Service Broker SSU and define the underlying SS7 stack.  For more information, see “SSU SS7 SIGTRAN”.</td>
</tr>
<tr>
<td>M3UA</td>
<td>Enables you to configure the M3UA layers of the SS7 stack. For more information, see “M3UA”.</td>
</tr>
<tr>
<td>SCCP</td>
<td>Enables you to configure SCCP addresses: subsystems and global titling. For more information, see “SCCP”.</td>
</tr>
</tbody>
</table>

Note: You must configure the parameters exactly in the order they are presented in Table 7–1.
Configuring SS7 SSU for SIGTRAN with the Administration Console

SSU SS7 SIGTRAN

The SSU SS7 SIGTRAN tab enables you to assign a point code to a Service Broker SSU and configure the M3UA stack runtime options.

To access the SSU SS7 SIGTRAN tab:

- In the SSU SS7 SIGTRAN Configuration screen, click the SSU SS7 SIGTRAN tab. The General subtab is displayed. This subtab contains the parameters described in Table 7–2.

Table 7–2 SS7 SSU SIGTRAN Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vendor</td>
<td>STRING</td>
<td>Specifies the SIGTRAN stack vendor. Possible options: isigtran, dialogic</td>
</tr>
<tr>
<td>Standard</td>
<td>STRING</td>
<td>Specifies which standard to use to encode M3UA messages. Possible values: ANSI, ETSI. Default value: ETSI</td>
</tr>
<tr>
<td>SS7 Stack IP</td>
<td>INT</td>
<td>Specifies the IP address of the underlying SS7 stack process</td>
</tr>
<tr>
<td>SS7 Stack Port</td>
<td>INT</td>
<td>Specifies the port that the underlying SS7 stack process listens to</td>
</tr>
</tbody>
</table>

M3UA

The M3UA tab enables you to configure the M3UA layers of the SS7 stack.

To access the M3UA tab:

1. In the SSU SS7 Configuration screen, click the M3UA tab. The M3UA configuration screen is displayed.

2. In the SSU Instance drop-down list, select the Signaling Server that you want to configure.

3. Select one of the subtabs described in Table 7–3.

Table 7–3 M3UA Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Point Code</td>
<td>Enables you to specify a point code for each SSU instance. For more information, see &quot;Local Point Code&quot;.</td>
</tr>
</tbody>
</table>
Configuring SS7 SSU for SIGTRAN with the Administration Console

Table 7–3  (Cont.) M3UA Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connectivity</td>
<td>Enables you to set up an IP connection between the Service Broker SSU instances and an SS7 network. For more information, see “Connectivity”.</td>
</tr>
<tr>
<td>Network Mapping</td>
<td>Enables you to define SCTP associations and connect SSUs to adjacent signaling points. For more information, see “Network Mapping”.</td>
</tr>
<tr>
<td>Network Routing</td>
<td>Enables you to configure routes to entities in an SS7 network. For more information, see “Network Routing”.</td>
</tr>
</tbody>
</table>

Local Point Code
The Local Point Code subtab enables you to specify a point code of the SSU instance that you selected in the SSU Instance drop-down list, as described in Table 7–4.

Table 7–4  Point Code Field

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Point Code</td>
<td>INT</td>
<td>Specifies a local point code of the SSU instance that you selected in the SSU Instance drop-down list. A value of the parameter must be integer.</td>
</tr>
</tbody>
</table>

Connectivity
The Connectivity subtab enables you to set up an IP connection between the Service Broker SSU instances and an SS7 network. You configure SSU instances as local systems and other SS7 network entities that are directly connected to the SSU instance as remote systems.

Table 7–5 describes the subtabs on the SS7 SSU Connectivity subtab.

Table 7–5  SS7 Connectivity Subtab

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local System</td>
<td>Enables you to configure the SS7 SSU instance as a local M3UA system. For more information, see “Configuring the Local System”.</td>
</tr>
<tr>
<td>Remote Systems</td>
<td>Enables you to configure network entities. For more information, see “Configuring Remote Systems”.</td>
</tr>
</tbody>
</table>

Configuring the Local System
The Local System subtab enables you to configure the SS7 SSU instance as a local M3UA system.

Figure 7–1 shows components of the local systems configuration example.
The Local System subtab contains a table in which you configure one row that defines an SSU instance as a local system. When defining the SSU instance as a local system, you need to specify the fields described in Table 7–6.

### Table 7–6  Local Systems Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a descriptive name for the local system</td>
</tr>
<tr>
<td>Routing Context</td>
<td>INT (11)</td>
<td>Specifies a unique identifier that logically identifies a local system when communicating with a traditional SS7 network through a signaling gateway. Routing Context can be set to any value between 0 and 2147483647. Default value: 0.</td>
</tr>
</tbody>
</table>
| SS7 Mode         | STRING   | Specifies an SS7 signaling mode that determines the type of SS7 traffic. Possible options:  
|                  |          |  ■ ITU14: ITU operation with 14 bit Point Code  
|                  |          |  ■ ITU16: ITU operation with 16 bit Point Code  
|                  |          |  ■ ITU24: ITU operation with 24 bit Point Code  
|                  |          |  ■ ANSI: ANSI operation with 24 bit Point Code  
|                  |          | Default value: ITU14                                                      |
| Traffic Mode     | STRING   | Specifies the traffic mode in which SSUs operate. Possible options:  
|                  |          |  ■ Loadshare (LS): SSU shares traffic distribution with any other currently active SSUs.  
|                  |          |  ■ Broadcast (BC): SSU receives the same messages as any other currently active SSUs  
|                  |          |  ■ Override (OR): SSU takes over all traffic in Service Broker (that is, primary/backup operation) overriding any currently active SSUs in Service Broker  
|                  |          | Default value: Loadshare (LS)                                              |
Configuring Remote Systems

The Remote Systems subtab enables you to configure other M3UA network entities to which the SSU instance is directly connected.

Figure 7–2 shows components of the remote systems configuration example.

Figure 7–2 Configuration Example: M3UA Remote Systems

The Remote Systems subtab contains a table in which each row represents a single entity that acts as a remote system. When defining a remote system, you need to specify the fields described in Table 7–7.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Address1</td>
<td>STRING</td>
<td>Specifies an SSU IP. The IP address must have the following format: n.n.n.n. Default value: 0.0.0.0</td>
</tr>
<tr>
<td>IP Address2</td>
<td>STRING</td>
<td>Specifies an alternative SSU IP address. This address is used when the address defined in the IP Address1 parameter is unreachable. The IP address must have the following format: n.n.n.n.</td>
</tr>
</tbody>
</table>

Table 7–6 (Cont.) Local Systems Fields
The Network Mapping subtab enables you to define SCTP associations that connect a local system (an SSU instance) to remote systems.

Figure 7–3 shows components of the SCTP associations configuration example.

### Table 7–7 Remote Systems Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique name for the Remote System</td>
</tr>
<tr>
<td>Type</td>
<td>STRING</td>
<td>Specifies the network entity type. Possible options:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– SG: Signaling gateway (reference to SIGTRAN SGW model)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– Peer: Peer application server</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: SG.</td>
</tr>
<tr>
<td>IP Address 1</td>
<td>STRING</td>
<td>Specifies a network entity IP address. The IP address must have the following format: n.n.n.n. Default value: 0.0.0.0.</td>
</tr>
<tr>
<td>IP Address 2</td>
<td>STRING</td>
<td>Specifies a network entity alternative IP address. This address is used when the address defined in the IP Address 1 parameter is unreachable. The IP address must have the following format: n.n.n.n.</td>
</tr>
</tbody>
</table>
The SCTP Associations subtab contains a table in which each row represents a single association. When defining an SCTP association, you need to specify the fields described in Table 7–8.

Table 7–8  SCTP Associations Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a descriptive name for the SCTP association</td>
</tr>
<tr>
<td>Side</td>
<td>STRING</td>
<td>Specifies the mode in which the local side operates. Possible options:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Client</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Server</td>
</tr>
</tbody>
</table>

Default value: Client. Setting this parameter requires coordination with the application on the remote side.
### Network Routing

The Network Routing subtab enables you to configure routes to entities in an SS7 network.

*Figure 7–4* shows components of the M3UA routes configuration example.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>STRING</td>
<td>Specifies the SIGTRAN mode. Set this parameter to M3UA.</td>
</tr>
<tr>
<td>Local Port</td>
<td>INT</td>
<td>Specifies an SCTP port on the local system side.</td>
</tr>
<tr>
<td>Remote Side</td>
<td>STRING</td>
<td>Specifies an entity on the association’s network side. Select one of the remote systems that you have previously defined on the Remote Systems subtab in the Connectivity section. (For more information on configuring remote systems, see &quot;Configuring Remote Systems&quot;).</td>
</tr>
<tr>
<td>Remote Port</td>
<td>INT</td>
<td>Specifies an SCTP port on the remote system side.</td>
</tr>
</tbody>
</table>
The M3UA Routes subtab contains a table in which each row represents a route. When defining a route, you need to specify the fields described in Table 7–9.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a descriptive name for the route</td>
</tr>
<tr>
<td>Remote Point Code</td>
<td>INT (11)</td>
<td>Specifies an RPC that is available on the far end of the route.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>You can select one of the RPCs that you have previously defined on the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Point Codes subtab in the Network Mapping section.</td>
</tr>
<tr>
<td>Primary Remote SIGTRAN System</td>
<td>STRING</td>
<td>Specifies the remote SIGTRAN system through which the SSU instance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>routes messages to the remote entity. Most likely, this is a Signaling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gateway.</td>
</tr>
<tr>
<td>Secondary Remote SIGTRAN System</td>
<td>STRING</td>
<td>Specifies an alternative SIGTRAN system through which the SSU instance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>routes messages to the remote entity</td>
</tr>
</tbody>
</table>
SCCP

The SCCP tab enables you to configure SCCP addresses for:
- Service Broker modules
- Remote entities in an SS7 network.

To access the SCCP tab:
- On the SS7 SSU for SIGTRAN configuration screen, click the SCCP tab. The SCCP configuration screen is displayed.

The SCCP configuration screen contains the subtabs described in Table 7–10.

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Enables you to specify parameters, which are common for all SCCP addresses. For more information, see &quot;General&quot;.</td>
</tr>
<tr>
<td>Local SSNs</td>
<td>Enables you to assign subsystem numbers for Service Broker module instances. For more information, see &quot;Local SSNs&quot;.</td>
</tr>
<tr>
<td>Local GTs</td>
<td>Enables you to configure Global Title addresses for Service Broker module instances. For more information, see &quot;Local GTs&quot;.</td>
</tr>
<tr>
<td>Remote PC and SSN Addresses</td>
<td>Enables you to configure addresses of remote entities in the SS7 network that can be reached using a point code and a subsystem number. For more information, see &quot;Remote PC and SSN Addresses&quot;.</td>
</tr>
<tr>
<td>Remote Fixed GTs</td>
<td>Enables you to configure addresses of remote entities in the SS7 network that can be reached using a fixed Global Title. For more information, see &quot;Remote Fixed GTs&quot;.</td>
</tr>
<tr>
<td>Remote Dynamic GTs</td>
<td>Enables you to configure addresses of remote entities in the SS7 network that can be reached using a dynamic Global Title. For more information, see &quot;Remote Dynamic GTs&quot;.</td>
</tr>
<tr>
<td>Global Title Routing</td>
<td>Enables you to configure addresses of network entities that perform Global Title Translation. For more information, see &quot;Global Title Routing&quot;.</td>
</tr>
</tbody>
</table>

General

The General subtab enables you to specify parameters, which are common for all SCCP addresses. Table 7–11 describes the parameter on the General subtab that you need to define.
Local SSNs

The Local SSNs subtab enables you to assign Subsystem Numbers (SSNs) for Service Broker module instances. An SSU routes incoming messages to local subsystems based on these SSNs.

Figure 7–5 shows components of the local SSNs configuration example.
The Local SSNs subtab contains a table in which each row represents a single Service Broker subsystem. When configuring an SSN, you need to specify the fields described in Table 7–12.

### Table 7–12 Local SSNs Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies the subsystem name</td>
</tr>
<tr>
<td>SSN</td>
<td>INT</td>
<td>Specifies the subsystem number. Default value: 0.</td>
</tr>
<tr>
<td>Description</td>
<td>STRING</td>
<td>Specifies a subsystem description</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>Specifies an alias name given to a Service Broker subsystem. Applications that use Service Broker to connect to the SS7 network, use this alias to refer the specific subsystem.</td>
</tr>
</tbody>
</table>

**Local GTs**

The Local GTs subtab enables you to configure Global Title addresses for Service Broker module instances.

*Figure 7–6* shows components of the local GT configuration example.
The Local GTs subtab contains a table in which each row represents a single address. When defining an address, you need to specify the fields described in Table 7–13.

### Table 7–13 Local GTs Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique name</td>
</tr>
<tr>
<td>Description</td>
<td>STRING</td>
<td>Specifies a description for the Service Broker GT address.</td>
</tr>
<tr>
<td>GT Address</td>
<td>STRING</td>
<td>Specifies the Global Title Address part of the SCCP address</td>
</tr>
<tr>
<td>SSN</td>
<td>INT</td>
<td>Specifies the SSN part of the SCCP address that identifies the user function</td>
</tr>
<tr>
<td>GT Indicator</td>
<td>INT</td>
<td>Specifies the Global Title Indicator part of the GT.</td>
</tr>
<tr>
<td>GT Nature of Address</td>
<td>INT</td>
<td>Specifies the Nature of Address Indicator part of the GT</td>
</tr>
<tr>
<td>GT Numbering Plan</td>
<td>INT</td>
<td>Specifies the Numbering Plan part of the GT</td>
</tr>
<tr>
<td>GT Translation Type</td>
<td>INT</td>
<td>Specifies the Translation Type part of the SCCP address</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>Specifies an alias name given to a Service Broker subsystem. Applications that use Service Broker to connect to the SS7 network use this alias to refer the specific GT address.</td>
</tr>
</tbody>
</table>

### Remote PC and SSN Addresses

The Remote PC and SSN Addresses subtab enables you to configure addresses of remote entities in the SS7 network that can be reached using a point code and a subsystem number.

*Figure 7–7* shows components of the remote point code and SSN configuration example.
The Remote PC and SSN Addresses subtab contains a table in which each row represents a single SS7 network entity. When configuring a network entity, you need to specify the fields described in Table 7-14.

**Table 7-14   Remote PC and SSN Fields**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique name</td>
</tr>
</tbody>
</table>
Remote Fixed GTs

The Remote Fixed GTs subtab enables you to configure addresses of remote entities in the SS7 network that can be reached using a fixed Global Title.

Figure 7–8 shows components of the remote fixed GTs configuration example.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSN</td>
<td>INT</td>
<td>Specifies the SSN part of the SCCP address that identifies the user function.</td>
</tr>
<tr>
<td>Point Code</td>
<td>INT</td>
<td>Specifies the point code part of the SCCP address.</td>
</tr>
<tr>
<td>Description</td>
<td>STRING</td>
<td>Specifies a description for the remote SS7 network entity.</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>Specifies an alias name given to a remote network entity. Applications that use Service Broker to connect to the SS7 network use this alias to refer the specific network entity.</td>
</tr>
</tbody>
</table>
Figure 7–8  Configuration Example: Remote Fixed GTs

The Remote Fixed GTs subtab contains a table in which each row represents a single ss7 network entity. When configuring a network entity, you need to specify the fields described in Table 7–15.

**Table 7–15  Remote Fixed GTs Fields**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique name</td>
</tr>
</tbody>
</table>
Remote Dynamic GTs

The Remote Dynamic GTs subtab enables you to configure addresses of remote entities in the SS7 network that can be reached using a dynamic Global Title.

The Remote Dynamic GTs subtab contains a table in which each row represents a single SCCP address. When configuring an SCCP address, you need to specify the fields described in Table 7–16.

Table 7–16  Remote Dynamic GTs Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique name</td>
</tr>
<tr>
<td>Network Indicator</td>
<td>STRING</td>
<td>Specifies the network type. The following options are available:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- International Network</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- National Network</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: International Network</td>
</tr>
<tr>
<td>Description</td>
<td>STRING</td>
<td>Specifies a description for the dynamic GT address</td>
</tr>
<tr>
<td>Point Code</td>
<td>INT</td>
<td>Optional: specifies the point code part of the SCCP address. When specified, the SSU routes messages to the specified point code, including a GT address.</td>
</tr>
<tr>
<td>SSN</td>
<td>INT</td>
<td>Specifies the SSN part of the SCCP address that identifies the user function</td>
</tr>
<tr>
<td>GT Indicator</td>
<td>INT</td>
<td>Specifies the Global Title Indicator part of the GT</td>
</tr>
<tr>
<td>GT Nature of Address</td>
<td>INT</td>
<td>Specifies the Nature of Address Indicator part of the GT</td>
</tr>
<tr>
<td>GT Numbering Plan</td>
<td>INT</td>
<td>Specifies the Numbering Plan part of the GT.</td>
</tr>
<tr>
<td>GT Translation Type</td>
<td>INT</td>
<td>Specifies the Translation Type part of the SCCP address</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>Specifies an alias name given to a remote network entity. Applications that use Service Broker to connect to the SS7 network use this alias to refer the specific network entity.</td>
</tr>
</tbody>
</table>
Global Title Routing

The Global Title Routing subtab enables you to configure addresses of network entities that perform Global Title Translation. Typically these point codes are Signal Transfer Points (STPs).

Figure 7–9 shows components of the point codes configuration example.
Figure 7–9  Configuration Example: Global Title Routing

The Global Title Routing subtab contains a table in which each row represents a point code that performs GTT. When defining a point code that performs GTT, you need to specify the fields described in Table 7–17.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary GTT Point Code</td>
<td>INT</td>
<td>Specifies a primary remote point code that performs GTT.</td>
</tr>
<tr>
<td>Secondary GTT Point Code</td>
<td>INT</td>
<td>Specifies an alternative remote point code that performs GTT.</td>
</tr>
</tbody>
</table>
Routing

The Routing tab enables you to define an IM to which the SS7 SSU routes an incoming session by specifying a set of parameters known as incoming routing rule. For each incoming routing rule, you need to configure the following parameters:

- IM to which the SS7 SSU routes an incoming session
- Criteria that an incoming session must meet to be routed to this IM
- Priority in which the SS7 SSU checks incoming routing rules to evaluate whether an incoming session fits the criteria defined in a rule. The SS7 SSU applies the first found rule whose criteria are met by an incoming session.

For example, if you created multiple rules for the same IM, SS7 SSU begins with the rule that has the highest priority. If an incoming session fits the criteria defined in this rule, the SS7 SSU applies the rule and do not check the rest of the rules. Otherwise, the SS7 SSU checks whether an incoming session fits the criteria of a rule with a lower priority. The SS7 SSU performs this check until the SS7 SSU finds a rule whose criteria are met by an incoming session.

You can define incoming routing rules using the Routing tab. The process of defining an incoming routing rule consists of the following steps:

1. You create a rule and define its name, priority, and an IM for which you create this rule. You perform these actions using the Incoming Routing Rules subtab.
2. You define criteria for each rule that you created on step 1.

**Accessing the Routing Tab**

The Routing tab enables you to define rules for routing incoming sessions to IMs.

To access the Routing tab:

1. On the Domain Navigation pane, select OCSB > Signaling Tier > SSU SS7 SIGTRAN. The SSU SS7 SIGTRAN Configuration screen is displayed.
2. Click the Routing tab. The Routing tab contains the subtabs described in Table 7–18.
Configuring SS7 SSU for SIGTRAN with the Administration Console

Table 7–18 Routing Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incoming Routing Rules</td>
<td>Enables you to define a name, priority, and an IM for which you create a rule. For more information, see &quot;Configuring Incoming Routing Rules Parameters&quot;.</td>
</tr>
<tr>
<td>Incoming Routing Criteria</td>
<td>Enables you to define criteria for each routing rule created on the Incoming Routing Rules subtab. For more information, see &quot;Configuring Incoming Routing Criteria Parameters&quot;.</td>
</tr>
</tbody>
</table>

Configuring Incoming Routing Rules Parameters

The Incoming Routing Rules subtab enables you to define a name, priority, and an IM for which you create a rule. The Incoming Routing Rules subtab contains a table in which each row represents an individual rule.

When you define a rule, you need to specify the fields defined in Table 7–19.

Table 7–19 Incoming Routing Rule Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique rule name</td>
</tr>
<tr>
<td>Priority</td>
<td>INT</td>
<td>Specifies an order in which the SS7 SSU checks routing rules to evaluate if an incoming session fits rule's criteria. The SS7 SSU applies the first found rule which criteria are met by an incoming session. The lower the number, the higher the priority. For example, if you created two rules and set Priority of one rule to “1” and set Priority of another rule to “2”, the SS7 SSU checks the rule with Priority set to “1” first. You can define an incoming routing rule that the SS7 SSU apply if no other rule can be applied by setting the Priority parameter of this rule to the highest number (that is, the number with the lowest priority). There is no need to specify incoming routing criteria for such a rule.</td>
</tr>
</tbody>
</table>
Configuring SS7 SSU for SIGTRAN with the Administration Console

Configuring Incoming Routing Criteria Parameters

The Incoming Routing Criteria subtab enables you to define criteria for rules that you created on the Incoming Routing Rules subtab. The Incoming Routing Criteria contains a table in which each row represents a routing rule.

When you define criteria, you need to specify the fields defined in Table 7–20.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Module Instance| STRING| Specifies a URI of an IM to which the SS7 SSU routes an incoming session. The URI has the following format:
- `<IM-instance-name>.<IM-type>@<domain-id>`
  - `<IM-instance-name>`: The IM instance name that you specified when you added this IM in the IM Management Configuration screen.
  - `<IM-type>`: The type of the IM instance
  - `<domain-id>`: The name of a Processing Domain or a Processing Domain Group where the relevant IM is deployed.

  To set a Processing Domain, you must specify the name you configured for the domain during its creation. For more information, see "Setting a Service Broker Domain Name".

  To set a Processing Domain Group, you must specify the group name. For more information about Processing Domain Groups, see "Managing Processing Domain Groups".

  Example:
imscfcap4_instance.IMSCFCAP4@processing-domain-1

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique rule name</td>
</tr>
</tbody>
</table>
| Session Key    | STRING | Specifies a parameter inside an SCCP message based on which the SS7 SSU performs routing. The SS7 SSU routes incoming messages to a specified module instance, if the value of this parameter matches the Value field.

  Possible values:
  - DEST_ADDRESS_ALIAS
  - SOURCE_ADDRESS_ALIAS
  - APPLICATION_CONTEXT
  - SERVICE_KEY
  - OPCODE
Configuring SS7 SSU for SIGTRAN with Java MBeans

Service Broker provides a set of MBeans that expose attributes and operations for configuring SSU SS7 SIGTRAN through JMX, shown on Figure 7–10. Because a Service Broker deployment includes two SSU instances, you need to configure an SsuTargetMBean for each SSU instance separately.

Figure 7–10  SSU SS7 for SIGTRAN Configuration MBean Hierarchy

The following sections provide reference information for the SS7 SSU 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.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Value                 | STRING     | Specifies a value that the Session Key parameter of an SCCP message must match, in order for the rule specified in Parent to apply. You can define one of the following in the Value parameter:  
  - Single value  
  - Range of dash-separated values  
  - Comma-separated values |

Table 7–20  (Cont.)  Incoming Routing Criteria Fields

The following sections provide reference information for the SS7 SSU configuration MBeans.
SsuSs7SigtranMBean

SsuSs7SigtranMBean is a root MBean for the SS7 SSU for SIGTRAN configuration.

Factory Method

Created automatically

Attributes

- Vendor
- Standard
- Ss7StackIp
- Ss7StackPort

For more information on these attributes, see Table 7-2.

Operations

ObjectName getSccp()
Gets a reference to the instance of SccpMBean

ObjectName[] getSsuSs7SigtranTargets()
Gets an array of references to instances of SsuSs7SigtranTargetMBean

ObjectName getSccpIncomingRoutingRules()
Gets a reference to the instance of SccpIncomingRoutingRulesMBean

ObjectName createSsuSs7SigtranTarget()
Creates a new instance of SsuSs7SigtranTargetMBean

void destroySsuSs7SigtranTarget()
Destroys an existing instance of SsuSs7SigtranTargetMBean

ObjectName lookupSsuSs7SigtranTarget()
Returns the SsuSs7SigtranTargetMBean of the SSU running on the specified target server
SsuSs7SigtranTargetMBean

SsuSs7SigtranTargetMBean enables you to access the configuration MBeans of a specific SSU

Factory Method

Ss7SsuSigtran.createSsuSs7SigtranTarget()

Attributes

None

Operations

ObjectName getM3ua()
Returns a reference to the instance of M3uaMBean
M3uaMBean

M3uaMBean enables you to access the configuration MBeans of a specific SS7 SSU instance.

Factory Method

Created automatically

Attributes

- LocalPointCode

For more information on these attributes, see Table 7–4.

Operations

ObjectName getIpLocalSystems()
Returns a reference to the instance of IpLocalSystemsMBean

ObjectName getIpRemoteSystems()
Returns a reference to the instance of IpRemoteSystemsMBean

ObjectName getM3uaRoutes()
Returns a reference to the instance of M3uaRoutesMBean

ObjectName getSctpAssociations()
Returns a reference to the instance of SctpAssociationsMBean
IpLocalSystemsMBean

IpLocalSystemsMBean is a root MBean for individual instances of IpLocalSystemMBean.

Factory Method

Created automatically

Attributes

None

Operations

ObjectName[] getIpLocalSystems()
Gets an array of references to instances of IpLocalSystemMBean

ObjectName createIpLocalSystem()
Creates a new instance of IpLocalSystemMBean

void destroyIpLocalSystem()
Destroys an existing instance of IpLocalSystemMBean

ObjectName lookupIpLocalSystem()
Returns a reference to the specified instance of IpLocalSystemMBean
IpLocalSystemMBean

IpLocalSystemMBean enables you to configure an SS7 SSU instance as a local SIGTRAN system.

Factory Method
IpLocalSystems.createIpLocalSystem()

Attributes
- Name
- RoutingContext
- SS7Mode
- TrafficMode
- FirstIp
- SecondIp
For more information on these attributes, see Table 7-6.

Operations
None
IpRemoteSystemsMBean

IpRemoteSystemsMBean is a root MBean for individual instances of IpRemoteSystemMBean.

Factory Method

Created automatically

Attributes

None

Operations

ObjectName[] getIpRemoteSystems()
Gets an array of references to instances of IpRemoteSystemMBean

ObjectName createIpRemoteSystem()
Creates a new instance of IpRemoteSystemMBean

void destroyIpRemoteSystem()
Destroys an existing instance of IpRemoteSystemMBean

ObjectName lookupIpRemoteSystem()
Returns a reference to the specified instance of IpRemoteSystemMBean
IpRemoteSystemMBean

IpRemoteSystemMBean enables you to configure an M3UA network entity to which the SSU instance is directly connected.

Factory Method

IpRemoteSystems.createIpRemoteSystem()

Attributes

- Name
- Type
- FirstIp
- SecondIp

For more information on these attributes, see Table 7–7.

Operations

None
SctpAssociationsMBean

SctpAssociationsMBean is a root MBean for individual instances of SctpAssociationMBean.

Factory Method

Created automatically

Attributes

None

Operations

ObjectName[] getSctpAssociations()
Gets an array of references to instances of SctpAssociationMBean

ObjectName createSctpAssociation()
Creates a new instance of SctpAssociationMBean

void destroySctpAssociation()
Destroys an existing instance of SctpAssociationMBean

ObjectName lookupSctpAssociation()
Returns a reference to the specified instance of SctpAssociationMBean
SctpAssociationMBean

SctpAssociationMBean enables you to configure a channel that connects an SSU instance to another SIGTRAN network entity.

Factory Method

SctpAssociations.createSctpAssociation()

Attributes

- Name
- Side
- Type
- LocalPort
- RemoteSide
- RemotePort

For more information on these attributes, see Table 7-8.

Operations

None
**M3uaRoutesMBean**

M3uaRoutesMBean is a root MBean for individual instances of M3uaRouteMBean.

**Factory Method**

Created automatically

**Attributes**

None

**Operations**

- `ObjectName[] getM3uaRoutes()`: Gets an array of references to instances of M3uaRouteMBean
- `ObjectName createM3uaRoute()`: Creates a new instance of M3uaRouteMBean
- `void destroyM3uaRoute()`: Destroys an existing instance of M3uaRouteMBean
- `ObjectName lookupM3uaRoute()`: Returns a reference to the specified instance of M3uaRouteMBean
M3uaRouteMBean

M3uaRouteMBean enables you to configure how SS7 SSU instances can access SS7 network entities.

Factory Method

M3uaRoutes.createM3uaRoute()

Attributes

- Name
- RemotePointCode
- PrimaryRemoteSigtranSystem
- SecondaryRemoteSigtranSystem

For more information on these attributes, see Table 7–9.

Operations

None
SccpIncomingRoutingRulesMBean

SccpIncomingRoutingRulesMBean enables you to define how the SS7 SSU routes incoming SS7 messages to Service Broker IMs.

Factory Method

Created automatically

Attributes

None

Operations

ObjectName[] getSccpIncomingRoutingRules()
Gets an array of references to instances of SccpIncomingRoutingRuleMBean

ObjectName createSccpIncomingRoutingRule()
Creates a new instance of SccpIncomingRoutingRuleMBean

void destroySccpIncomingRoutingRule()
Destroys an existing instance of SccpIncomingRoutingRuleMBean

ObjectName lookupSccpIncomingRoutingRule()
Returns a reference to the SccpIncomingRoutingRuleMBean
SccpIncomingRoutingRuleMBean

SccpIncomingRoutingRuleMBean represents an individual incoming routing rule.

Factory Method

SccpIncomingRoutingRules.createSccpIncomingRoutingRule()

Attributes

- Name
- Priority
- ModuleInstance

For more information on these attributes, see Table 7–19.

Operations

ObjectName[] getSccpIncomingRoutingCriteria()
Gets an array of references to instances of SccpIncomingRoutingCriteriaMBean

ObjectName createSccpIncomingRoutingCriteria()
Creates a new instance of SccpIncomingRoutingCriteriaMBean

void destroySccpIncomingRoutingCriteria()
Destroys an existing instance of SccpIncomingRoutingCriteriaMBean

ObjectName lookupSccpIncomingRoutingCriteria()
Returns a reference to the SccpIncomingRoutingCriteriaMBean
SccpIncomingRoutingCriteriaMBean

SccpIncomingRoutingCriteriaMBean represents criteria for an individual incoming routing rule.

Factory Method

SccpIncomingRoutingRules.createSccpIncomingRoutingCriteria()

Attributes

- Parent
- Name
- SessionKey
- Value

For more information on these attributes, see Table 7–20.

Operations

None
SccpMBean

SccpMBean enables you to configure SCCP addresses: subsystems and global titling.

Factory Method

Created automatically

Attributes

- LocalNetworkIndicator
- RemoveCallingPartyPointCodeUponGtRouting
- RemoveCalledPartyPointCodeUponGtRouting

For more information, see Table 7–11.

Operations

ObjectName getSccpGttEntity()
Gets a reference to the instance of SccpGttEntityMBean

ObjectName[] getSccpLocalAddressFixedGts()
Gets an array of references to instances of SccpLocalAddressFixedGtMBean

ObjectName[] getSccpLocalAddressSsns()
Gets an array of references to instances of SccpLocalAddressSsnMBean

ObjectName[] getSccpRemoteAddressDynamicGts()
Gets an array of references to instances of SccpRemoteAddressDynamicGtMBean

ObjectName[] getSccpRemoteAddressFixedGts()
Gets an array of references to instances of SccpRemoteAddressFixedGtMBean

ObjectName[] getSccpRemoteAddressSsns()
Gets an array of references to instances of SccpRemoteAddressSsnMBean
SccpLocalAddressFixedGtsMBean

SccpLocalAddressFixedGtsMBean is a root MBean for individual instances of SccpLocalAddressFixedGtMBean.

Factory Method

Created automatically

Attributes

None

Operations

ObjectName[] getSccpLocalAddressFixedGts()
Gets an array of references to instances of SccpLocalAddressFixedGtMBean

ObjectName createSccpLocalAddressFixedGt()
Creates a new instance of SccpLocalAddressFixedGtMBean

void destroySccpLocalAddressFixedGt()
Destroys an existing instance of SccpLocalAddressFixedGtMBean

ObjectName lookupSccpLocalAddressFixedGt()
Returns a reference to the specified instance of SccpLocalAddressFixedGtMBean
**SccpLocalAddressFixedGtMBean**

SccpLocalAddressFixedGtMBean enables you to configure a Global Title address for a Service Broker module instance.

**Factory Method**

SccpLocalAddressFixedGts.createSccpLocalAddressFixedGt()

**Attributes**

- Name
- Description
- GtAddress
- Ssn
- GtIndicator
- GtNatureOfAddress
- GtNumberingPlan
- GtTranslationType
- Alias

For more information on these attributes, see Table 7-13.

**Operations**

None
SccpLocalAddressSsnsMBean

SccpLocalAddressSsnsMBean is a root MBean for individual instances of SccpLocalAddressSsnMBean.

Factory Method

Created automatically

Attributes

None

Operations

ObjectName[] getSccpLocalAddressSsns()
Gets an array of references to instances of SccpLocalAddressSsnMBean

ObjectName createSccpLocalAddressSsn()
Creates a new instance of SccpLocalAddressSsn

void destroySccpLocalAddressSsn()
Destroys an existing instance of SccpLocalAddressSsn

ObjectName lookupSccpLocalAddressSsn()
Returns a reference to the specified instance of SccpLocalAddressSsn
SccpLocalAddressSsnMBean

SccpLocalAddressSsnMBean enables you to assign a subsystem number to a Service Broker module instance.

Factory Method

SccpLocalAddressSsns.createSccpLocalAddressSsn()

Attributes

- Name
- Ssn
- Description
- Alias

For more information on these attributes, see Table 7–12.

Operations

None
SccpRemoteAddressDynamicGtsMBean

SccpRemoteAddressDynamicGtsMBean is a root MBean for individual instances of SccpRemoteAddressDynamicGtMBean.

Factory Method

Created automatically

Attributes

None

Operations

ObjectName[] getSccpRemoteAddressDynamicGts()
Gets an array of references to instances of SccpRemoteAddressDynamicGtMBean

ObjectName createSccpRemoteAddressDynamicGt()
Creates a new instance of SccpRemoteAddressDynamicGtMBean

void destroySccpRemoteAddressDynamicGt()
Destroys an existing instance of SccpRemoteAddressDynamicGtMBean

ObjectName lookupSccpRemoteAddressDynamicGt()
Returns a reference to the specified instance of SccpRemoteAddressDynamicGtMBean
SccpRemoteAddressDynamicGtMBean

SccpRemoteAddressDynamicGtMBean enables you to configure an address of a remote entity in the SS7 network that can be reached using a dynamic Global Title.

Factory Method

SccpRemoteAddressDynamicGts.createSccpRemoteAddressDynamicGt()

Attributes

- Name
- NetworkIndicator
- Description
- PointCode
- Ssn
- GtIndicator
- GtNatureOfAddress
- GtNumberingPlan
- GtTranslationType
- Alias

For more information on these attributes, see Table 7–16.

Operations

None
**SccpRemoteAddressFixedGtsMBean**

SccpRemoteAddressFixedGtsMBean is a root MBean for individual instances of SccpRemoteAddressFixedGtMBean.

**Factory Method**

Created automatically

**Attributes**

None

**Operations**

`ObjectName[] getSccpRemoteAddressFixedGts()`  
Gets an array of references to instances of SccpRemoteAddressFixedGtMBean

`ObjectName createSccpRemoteAddressFixedGt()`  
Creates a new instance of SccpRemoteAddressFixedGtMBean

`void destroySccpRemoteAddressFixedGt()`  
Destroys an existing instance of SccpRemoteAddressFixedGtMBean

`ObjectName lookupSccpRemoteAddressFixedGt()`  
Returns a reference to the specified instance of SccpRemoteAddressFixedGtMBean
SccpRemoteAddressFixedGtMBean

SccpRemoteAddressFixedGtMBean enables you to configure an address of a remote entity in the SS7 network that can be reached using a fixed Global Title.

Factory Method

SccpRemoteAddressFixedGts.createSccpRemoteAddressFixedGt()

Attributes

- Name
- NetworkIndicator
- Description
- GtAddress
- PointCode
- Ssn
- GtIndicator
- GtNatureOfAddress
- GtNumberingPlan
- GtTranslationType
- Alias

For more information on these attributes, see Table 7–15.

Operations

None
SccpRemoteAddressSsnsMBean

SccpRemoteAddressSsnsMBean is a root MBean for individual instances of SccpRemoteAddressSsnMBean.

Factory Method

Created automatically

Attributes

None

Operations

ObjectName[] getSccpRemoteAddressSsns()
Gets an array of references to instances of SccpRemoteAddressSsnMBean

ObjectName createSccpRemoteAddressSsn()
Creates a new instance of SccpRemoteAddressSsnMBean

void destroySccpRemoteAddressSsn()
Destroys an existing instance of SccpRemoteAddressSsnMBean

ObjectName lookupSccpRemoteAddressSsn()
Returns a reference to the specified instance of SccpRemoteAddressSsnMBean
**SccpRemoteAddressSsnMBean**

SccpRemoteAddressSsnMBean enables you to configure an address of a remote entity in the SS7 network, that can be reached using a point code and a subsystem number.

**Factory Method**

SccpRemoteAddressSsns.createSccpRemoteAddressSsn()

**Attributes**

- Name
- NetworkIndicator
- Ssn
- PointCode
- Description
- Alias

For more information on these attributes, see Table 7-14.

**Operations**

None
SccpGttEntityMBean enables you to configure an address of a network entity that performs Global Title Translation.

**Factory Method**

Created automatically

**Attributes**

- PrimaryPointCode
- SecondaryPointCode
- OperationMode

For more information on these attributes, see Table 7–17.

**Operations**

None
The following sections describe how to configure Service Broker SS7 SSUs using the Service Broker Administration Console and Java MBeans:

- Configuring SS7 SSU TDM with the Administration Console
- Configuring SSU SS7 TDM with Java MBeans

Configuring SS7 SSU TDM with the Administration Console

This section describes how to configure an SS7 SSU in a network in which SS7 traffic is carried over the traditional TDM. Because deployment of Service Broker involves configuration of two SSU instances, SS7 equipment connected to both instances must be configured as described in the following sections. The section provides graphical representations of deployment examples.

You can configure SS7 SSUs using the SSU SS7 TDM configuration screen.

To access the SSU SS7 TDM Configuration Page:

- On the Domain Navigation pane, select OCSB > Signaling Tier > SSU SS7 TDM. The SSU SS7 TDM configuration screen is displayed in the Configuration pane.

The SSU SS7 TDM configuration screen enables you to configure parameters in tabs described in Table 8–1.

---

**Note:** You must configure the parameters exactly in the same order as they are presented in Table 8–1.

<table>
<thead>
<tr>
<th>Tab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS7 SSU TDM</td>
<td>Enables you to assign a point code to local SSU instances and configure the MTP stack runtime options. For more information, see &quot;SSU SS7 TDM&quot;.</td>
</tr>
<tr>
<td>MTP</td>
<td>Enables you to configure the MTP layers of the SS7 stack. For more information, see &quot;MTP&quot;.</td>
</tr>
<tr>
<td>SCCP</td>
<td>Enables you to configure SCCP addresses: subsystems and global titling. For more information, see &quot;SCCP&quot;.</td>
</tr>
</tbody>
</table>
The SSU SS7 TDM tab enables you to assign a point code to a Service Broker SSU and configure the MTP stack runtime options.

To access the SSU SS7 TDM tab:

- In the SSU SS7 TDM Configuration screen, click the SSU SS7 TDM tab. The SSU SS7 TDM Configuration screen is displayed in the Configuration pane.

The configuration screen of the SS7 SSU TDM contains the parameters described in Table 8–2.

### Table 8–2 SSU SS7 TDM Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board Type</td>
<td>STRING</td>
<td>Specifies the board density.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- High - high density</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Low - low density</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: High</td>
</tr>
<tr>
<td>Vendor</td>
<td>STRING</td>
<td>Specifies an MTP stack vendor.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- isigtran</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- dialogic</td>
</tr>
<tr>
<td>Standard</td>
<td>STRING</td>
<td>Specifies the standard that the MTP stack must use.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- ANSI</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- ETSI</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: ETSI</td>
</tr>
<tr>
<td>MTP3RPO</td>
<td>STRING</td>
<td>Specifies the method of handling the Remote Processor Outage (RPO).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Yes: Upon RPO, put the link in the Out of Service mode and select an alternative link.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- No: Upon RPO, activate a timer first. Only if the failure remains by the time that the timer expires, move the link to the Out of Service mode and select an alternative link. The messages pulled up during time activation are discarded.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: Yes</td>
</tr>
</tbody>
</table>
Configuring SS7 SSU TDM with the Administration Console

Configuring SS7 Signaling Server Units for TDM

The MTP tab enables you to configure the MTP layers of the SS7 stack.

To access the MTP tab:

1. On the SS7 SSU TDM configuration screen, click the MTP tab. The MTP configuration screen is displayed.
2. In the SSU Instance drop-down list, select the Signaling Server that you want to configure.
3. Select one of the tabs described in Table 8–3.

**Table 8–3  MTP Subtabs**

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Point Code</td>
<td>Enables you to specify a point code for each SSU instance. For more information, see &quot;Local Point Code&quot;.</td>
</tr>
<tr>
<td>Connectivity</td>
<td>Enables you to configure boards and PCM interfaces (E1/T1). For more information, see &quot;Connectivity&quot;.</td>
</tr>
<tr>
<td>Network Mapping</td>
<td>Enables you to configure SS7 Links and Linksets that connect SSU to adjacent signaling points. For more information, see &quot;Network Mapping&quot;.</td>
</tr>
<tr>
<td>Network Routing</td>
<td>Enables you to configure how an SSU accesses SS7 network entities. For more information, see &quot;Network Routing&quot;.</td>
</tr>
</tbody>
</table>

**Local Point Code**

The Local Point Code subtab enables you to specify a point code of the SSU instance that you selected in the SSU Instance drop-down list, as described in Table 8–4.

**Table 8–4  Point Code Field**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Point Code</td>
<td>INT</td>
<td>Specifies a local point code of the SSU instance that you selected in the SSU Instance drop-down list. A value of the parameter must be integer.</td>
</tr>
</tbody>
</table>
Connectivity

The Connectivity subtab enables you to configure boards and PCM interfaces (E1/T1).

Table 8–5 describes subtabs in the SSU SS7 Connectivity section.

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boards</td>
<td>Enables you to configure SS7 boards plugged into the SS7 SSU machine.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring SS7 Boards&quot;.</td>
</tr>
<tr>
<td>PCMs</td>
<td>Enables you to configure the PCMs that physically connect the SS7 SSU to the SS7 network.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring SS7 PCMs&quot;.</td>
</tr>
</tbody>
</table>

Configuring SS7 Boards

The Boards subtab enables you to configure SS7 boards plugged into machine chassis of the SSU instance.

An SS7 SSU instance can manage several SS7 PCI boards, depending on chassis and driver specifications.

Figure 8–1 shows an example of physical location of PCI boards.

**Figure 8–1  Configuration Example: TDM Boards**

The Boards subtab contains a table in which each row represents a single board. When defining a board, you need to specify the fields described in Table 8–6.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a short name for the board.</td>
</tr>
<tr>
<td>Slot</td>
<td>INT</td>
<td>Specifies an SSU chassis slot number into which the board is plugged.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 0</td>
</tr>
</tbody>
</table>
Configuring SS7 Signaling Server Units for TDM

Configuring SS7 SSU TDM with the Administration Console

Configuring SS7 PCMs

The SS7 boards are standard PCI boards. The PCMs subtab enables you to define PCMs that physically connect an SSU instance to an SS7 network.

Figure 8–2 shows components of the example of physical connection between SSU to an SS7 network.

Figure 8–2  Configuration Example: PCM

The PCMs subtab contains a table in which each row represents one PCM. When defining a PCM, you need to specify the fields described in Table 8–7.

Table 8–7  SS7 PCM Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique PCM name.</td>
</tr>
</tbody>
</table>
### Table 8–7 (Cont.) SS7 PCM Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>STRING</td>
<td>Specifies the type of the PCM hardware. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- DISABLED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- E1-75ohm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- E1-120ohm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- T1, E1-75/120 ohm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: DISABLED</td>
</tr>
<tr>
<td>CRC</td>
<td>STRING</td>
<td>Specifies the CRC mode of operation. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- DISABLED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- CRC4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- CRC4 compatibility mode</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- CRC6 enabled</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: DISABLED</td>
</tr>
<tr>
<td>Code</td>
<td>STRING</td>
<td>Specifies the line encoding format. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- HDB3 (E1 only)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- AMI with no zero code</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- AMI with zero code (T1 only)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- B8ZS (T1 only)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: HDB3 (E1 only).</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Note:</strong> Code must match the Type parameter, for example, if the code/frame value is E1 only, then type should be E1.</td>
</tr>
<tr>
<td>Frame</td>
<td>STRING</td>
<td>Specifies the framing format.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- E1 double frame</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- E1 CRC4 multi-frame</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- D3/D4 (T1 only)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- ESF (T1 only)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: E1 double frame.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Note:</strong> Frame must match the Type parameter, for example, if the code/frame value is E1 only, then type should be E1.</td>
</tr>
<tr>
<td>Port</td>
<td>INT</td>
<td>Specifies a port number of the SS7 board into which the PCM is plugged.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 0</td>
</tr>
</tbody>
</table>
Network Mapping

The Network Mapping subtab enables you to configure SS7 Links and Linksets that connect SSU to adjacent signaling points.

The Network Mapping Configuration screen contains the subtabs described in Table 8–8.

Table 8–8  Network Mapping Section Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MtpLinkset</td>
<td>Enables you to configure MTP Linksets that connect SSU to adjacent signaling points. For more information, see “Configuring MTP Linksets”.</td>
</tr>
<tr>
<td>MtpLink</td>
<td>Enables you to configure MTP links that connect SSU to adjacent signaling points. For more information, see “Configuring MTP Links”.</td>
</tr>
</tbody>
</table>

Configuring MTP Linksets

The MtpLinkset subtab enables you to configure linksets for connecting an SSU to adjacent signaling points in an SS7 network.

Figure 8–3 shows components of the linkset configuration example.

Figure 8–3  Configuration Example: MTP Linkset

The MtpLinkset subtab contains a table in which each row represents one linkset. When defining a linkset, you need to specify the fields described in Table 8–9.
Configuring MTP Links

The MtpLink subtab enables you to configure links within linksets.

Figure 8–4 shows components of the links configuration example.

![Figure 8–4 Configuration Example: MTP Links](image)

The MtpLinks subtab contains a table in which each row represents one link. When defining a link, you need to specify the fields described in Table 8–10.

<table>
<thead>
<tr>
<th><strong>Table 8–10 MtpLink Fields</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name</strong></td>
</tr>
<tr>
<td>Name</td>
</tr>
<tr>
<td>PCM</td>
</tr>
</tbody>
</table>
Configuring SS7 SSU TDM with the Administration Console

Configuring SS7 Signaling Server Units for TDM

Network Routing

The Network Routing subtab enables you to configure how an SSU accesses SS7 network entities.

Table 8–11 describes subtabs in the Network Routing section.

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routesets</td>
<td>Enables you to configure how an SSU instance accesses remote point codes in an SS7 network. For more information, see &quot;Configuring Routesets&quot;.</td>
</tr>
<tr>
<td>Routes</td>
<td>Enables you to define the linkset that must be used to route a message to a remote point code. For more information, see &quot;Configuring Routes&quot;.</td>
</tr>
</tbody>
</table>

Configuring Routesets

The Routesets subtab enables you to configure how an SSU instance accesses remote point codes in an SS7 network.

Figure 8–5 shows components of the routesets configuration example.
The Routesets subtab contains a table in which each row represents a single routeset. When defining a routeset, you need to specify the fields described in Table 8–12.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique routeset name.</td>
</tr>
<tr>
<td>Remote Point Code</td>
<td>INT</td>
<td>Specifies a point code or a remote SS7 entity</td>
</tr>
<tr>
<td>Default Route</td>
<td>STRING</td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: No</td>
</tr>
<tr>
<td>Description</td>
<td>STRING</td>
<td>Specifies a routeset description</td>
</tr>
</tbody>
</table>

**Configuring Routes**

The Routes subtab enables you to define routes within a routeset.  

*Figure 8–6* shows components of the routes configuration example.
The Routes subtab contains a table in which each row represents one route. When defining a route, you need to specify the fields described in Table 8–13.

Table 8–13 Routes Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique route name.</td>
</tr>
<tr>
<td>Primary Linkset</td>
<td>INT</td>
<td>Specifies a linkset over which messages are sent to a remote point code.</td>
</tr>
<tr>
<td>Secondary Linkset</td>
<td>INT</td>
<td>Specifies an alternative linkset over which messages can be sent to a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>remote point code. You can select one of the linksets that you have</td>
</tr>
<tr>
<td></td>
<td></td>
<td>previously defined on the MTP Linksets subtab. For more information on</td>
</tr>
<tr>
<td></td>
<td></td>
<td>configuring linksets, see &quot;Configuring MTP Linksets&quot;.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For more information on configuring linksets, see &quot;Configuring MTP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Linksets&quot;.</td>
</tr>
</tbody>
</table>

Figure 8–6  Configuration Example: MTP Routes
SCCP

The SCCP tab enables you to configure SCCP addresses for:

- Service Broker modules
- Remote entities in an SS7 network.

To access the SCCP tab:

- In the SSU SS7 TDM Configuration screen, click the SCCP tab. The SCCP Configuration screen is displayed.

  The SCCP configuration screen contains the subtabs described in Table 8–14.

Table 8–13 (Cont.) Routes Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Type   | STRING | Specifies a route type. Possible values:  
- Standalone: An SSU sends messages to the RPC over the linkset specified in the Linkset parameter. The Standalone type cannot have an alternative linkset.  
- Preferred: An SSU sends messages to the RPC over the linkset specified in the Linkset parameter. If the sending messages over this fails, the SSU routes messages to the alternative linkset as defined in the Second Linkset parameter. The Preferred type must have the Second Linkset defined.  
- Combined: An SSU sends messages to the RPC over both the linkset and alternative linkset as defined in the Linkset and Second Linkset parameters. The Combine type must have Second Linkset defined.  
Default value: Standalone |

Table 8–14 SCCP Section Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
</table>
| General                       | Enables you to specify parameters, which are common for all SCCP addresses.  
  For more information, see "General".                                           |
| Local SSNs                    | Enables you to assign subsystem numbers for Service Broker module instances.  
  For more information, see "Local SSNs".                                          |
| Local GTs                     | Enables you to configure Global Title addresses for Service Broker module instances.  
  For more information, see "Local GTs".                                             |
| Remote PC and SSN Addresses   | Enables you to configure addresses of remote entities in the SS7 network that can be reached using a point code and a subsystem number.  
  For more information, see "Remote PC and SSN Addresses".                              |
| Remote Fixed GTs              | Enables you to configure addresses of remote entities in the SS7 network that can be reached using a fixed Global Title.  
  For more information, see "Remote Fixed GTs".                                         |
General
The General subtab enables you to specify parameters, which are common for all SCCP addresses. Table 8–15 describes the parameters on the General subtab that you need to define.

**Table 8–15 General Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Network Indicator</td>
<td>STRING</td>
<td>Specifies the network type of an SSU address, which is common for all SSU local SCCP addresses. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>International Network</td>
</tr>
<tr>
<td></td>
<td></td>
<td>International Network Extension</td>
</tr>
<tr>
<td></td>
<td></td>
<td>National Network</td>
</tr>
<tr>
<td></td>
<td></td>
<td>National Network Extension</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: International Network</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The Local Network Indicator parameter of the M3UA stack is set to the same value as this parameter. However, because International Network Extension and National Network Extension are not supported in the M3UA stack, these two parameters are translated as follows in M3UA:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ International Network Extension is translated to International Network</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ National Network Extension is translated to National Network</td>
</tr>
<tr>
<td>Remove Calling Party Point Code</td>
<td>BOOL</td>
<td>Specifies whether or not the local SSU point code is to be added to the calling party address, when routing is done with a Global Title. Possible values:</td>
</tr>
<tr>
<td>upon GT Routing</td>
<td></td>
<td>■ True: the local point code is not added to the calling party address</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ False: the local point code is added to the calling party address</td>
</tr>
<tr>
<td>Remove Called Party Point Code</td>
<td>BOOL</td>
<td>Specifies whether or not the remote point code is to be removed from the called party address, when routing is done with a Global Title. Possible values:</td>
</tr>
<tr>
<td>upon GT Routing</td>
<td></td>
<td>■ True: the remote point code is not added to the called party address</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ False: the remote point code is added to the called party address</td>
</tr>
</tbody>
</table>
Local SSNs
The Local SSNs subtab enables you to assign Subsystem Numbers (SSNs) for Service Broker module instances. An SSU routes incoming messages to local subsystems based on these SSNs.

Figure 8–7 shows components of the local SSNs configuration example.

**Figure 8–7 Configuration Example: Local SSNs**

The Local SSNs subtab contains a table in which each row represents a single Service Broker subsystem. When configuring an SSN, you need to specify the fields described in Table 8–16.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies the subsystem name</td>
</tr>
<tr>
<td>SSN</td>
<td>INT</td>
<td>Specifies the subsystem number. Default value: 0.</td>
</tr>
<tr>
<td>Description</td>
<td>STRING</td>
<td>Specifies a subsystem description</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>Specifies an alias name given to a Service Broker subsystem. Applications that use Service Broker to connect to the SS7 network, use this alias to refer the specific subsystem.</td>
</tr>
</tbody>
</table>

Local GTs
The Local GTs subtab enables you to configure Global Title addresses for Service Broker module instances.

Figure 8–8 shows components of the local GT configuration example.
Figure 8–8  Configuration Example: Local GT

The Local GTs subtab contains a table in which each row represents a single address. When defining an address, you need to specify the fields described in Table 8–17.

Table 8–17  Local GTs Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique name</td>
</tr>
<tr>
<td>Description</td>
<td>STRING</td>
<td>Specifies a description for the Service Broker GT address.</td>
</tr>
<tr>
<td>GT Address</td>
<td>STRING</td>
<td>Specifies the Global Title Address part of the SCCP address</td>
</tr>
<tr>
<td>SSN</td>
<td>INT</td>
<td>Specifies the SSN part of the SCCP address that identifies the user function</td>
</tr>
<tr>
<td>GT Indicator</td>
<td>INT</td>
<td>Specifies the Global Title Indicator part of the GT.</td>
</tr>
<tr>
<td>GT Nature of Address</td>
<td>INT</td>
<td>Specifies the Nature of Address Indicator part of the GT</td>
</tr>
<tr>
<td>GT Numbering Plan</td>
<td>INT</td>
<td>Specifies the Numbering Plan part of the GT</td>
</tr>
<tr>
<td>GT Translation Type</td>
<td>INT</td>
<td>Specifies the Translation Type part of the SCCP address</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>Specifies an alias name given to a Service Broker subsystem. Applications</td>
</tr>
<tr>
<td></td>
<td></td>
<td>that use Service Broker to connect to the SS7 network, use this alias to</td>
</tr>
<tr>
<td></td>
<td></td>
<td>refer the specific GT address.</td>
</tr>
</tbody>
</table>

Remote PC and SSN Addresses
The Remote PC and SSN Addresses subtab enables you to configure addresses of remote entities in the SS7 network that can be reached using a point code and a subsystem number.

Figure 8–9 shows components of the remote point code and SSN configuration example.
Figure 8–9  Configuration Example: Remote PC and SSN

The Remote PC and SSN Addresses subtab contains a table in which each row represents a single SS7 network entity. When configuring a network entity, you need to specify the fields described in Table 8–18.

Table 8–18  Remote PC and SSN Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique name</td>
</tr>
</tbody>
</table>
Remote Fixed GTs

The Remote Fixed GTs subtab enables you to configure addresses of remote entities in the SS7 network that can be reached using a fixed Global Title.

*Figure 8–10* shows components of the remote fixed GTs configuration example.

### Table 8–18 (Cont.) Remote PC and SSN Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Indicator</td>
<td>STRING</td>
<td>Specifies the network type. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• International Network</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• National Network</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: International Network</td>
</tr>
<tr>
<td>SSN</td>
<td>INT</td>
<td>Specifies the SSN part of the SCCP address that identifies the user function.</td>
</tr>
<tr>
<td>Point Code</td>
<td>INT</td>
<td>Specifies the point code part of the SCCP address.</td>
</tr>
<tr>
<td>Description</td>
<td>STRING</td>
<td>Specifies a description for the remote SS7 network entity.</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>Specifies an alias name given to a remote network entity. Applications that use Service Broker to connect to the SS7 network, use this alias to refer the specific network entity.</td>
</tr>
</tbody>
</table>
The Remote Fixed GTs subtab contains a table in which each row represents a single SS7 network entity. When configuring a network entity, you need to specify the fields described in Table 8–19.

**Table 8–19 Remote Fixed GTs Fields**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique name</td>
</tr>
</tbody>
</table>
Remote Dynamic GTs

The Remote Dynamic GTs subtab enables you to configure addresses of remote entities in the SS7 network that can be reached using a dynamic Global Title.

The Remote Dynamic GTs subtab contains a table in which each row represents a single SCCP address. When configuring an SCCP address, you need to specify the fields described in Table 8–20.

### Table 8–20   Remote Dynamic GTs Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique name</td>
</tr>
<tr>
<td>Network Indicator</td>
<td>STRING</td>
<td>Specifies the network type. The following options are available:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- International Network</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- National Network</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: International Network</td>
</tr>
<tr>
<td>Description</td>
<td>STRING</td>
<td>Specifies a description for the dynamic GT address</td>
</tr>
<tr>
<td>Point Code</td>
<td>INT</td>
<td>Optional: specifies the point code part of the SCCP address. When specified,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the SSU routes messages to the specified point code, including a GT address.</td>
</tr>
<tr>
<td>SSN</td>
<td>INT</td>
<td>Specifies the SSN part of the SCCP address that identifies the user function</td>
</tr>
<tr>
<td>GT Indicator</td>
<td>INT</td>
<td>Specifies the Global Title Indicator part of the GT</td>
</tr>
<tr>
<td>GT Nature of Address</td>
<td>INT</td>
<td>Specifies the Nature of Address Indicator part of the GT</td>
</tr>
<tr>
<td>GT Numbering Plan</td>
<td>INT</td>
<td>Specifies the Numbering Plan part of the GT</td>
</tr>
<tr>
<td>GT Translation Type</td>
<td>INT</td>
<td>Specifies the Translation Type part of the SCCP address</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>Specifies an alias name given to a remote network entity. Applications that</td>
</tr>
<tr>
<td></td>
<td></td>
<td>use Service Broker to connect to the SS7 network, use this alias to refer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the specific network entity.</td>
</tr>
</tbody>
</table>

### Table 8–19  (Cont.)   Remote Fixed GTs Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique name</td>
</tr>
<tr>
<td>Network Indicator</td>
<td>STRING</td>
<td>Specifies the network type. The following options are available:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- International Network</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- National Network</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: International Network</td>
</tr>
<tr>
<td>Description</td>
<td>STRING</td>
<td>Specifies a description for the network entity and its address</td>
</tr>
<tr>
<td>Point Code</td>
<td>INT</td>
<td>Optional: specifies the point code part of the SCCP address. When specified,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the SSU routes messages to the specified point code, including a GT address.</td>
</tr>
<tr>
<td>SSN</td>
<td>INT</td>
<td>Specifies the SSN part of the SCCP address that identifies the user function</td>
</tr>
<tr>
<td>GT Indicator</td>
<td>INT</td>
<td>Specifies the Global Title Indicator part of the GT</td>
</tr>
<tr>
<td>GT Nature of Address</td>
<td>INT</td>
<td>Specifies the Nature of Address Indicator part of the GT</td>
</tr>
<tr>
<td>GT Numbering Plan</td>
<td>INT</td>
<td>Specifies the Numbering Plan part of the GT</td>
</tr>
<tr>
<td>GT Translation Type</td>
<td>INT</td>
<td>Specifies the Translation Type part of the SCCP address</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>Specifies an alias name given to a remote network entity. Applications that</td>
</tr>
<tr>
<td></td>
<td></td>
<td>use Service Broker to connect to the SS7 network, use this alias to refer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the specific network entity.</td>
</tr>
</tbody>
</table>
Global Title Routing
The Global Title Routing subtab enables you to configure addresses of network entities that perform Global Title Translation. Typically these point codes are Signal Transfer Points (STPs).

Figure 8–11 shows components of the point codes configuration example.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSN</td>
<td>INT</td>
<td>Specifies the SSN part of the SCCP address that identifies the user function</td>
</tr>
<tr>
<td>GT Indicator</td>
<td>INT</td>
<td>Specifies the Global Title Indicator part of the GT</td>
</tr>
<tr>
<td>GT Nature of Address</td>
<td>INT</td>
<td>Specifies the Nature of Address Indicator part of the GT</td>
</tr>
<tr>
<td>GT Numbering Plan</td>
<td>INT</td>
<td>Specifies the Numbering Plan part of the GT</td>
</tr>
<tr>
<td>GT Translation Type</td>
<td>INT</td>
<td>Specifies the Translation Type part of the SCCP address</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>Specifies an alias name given to an SCCP address. Applications that use Service Broker to connect to the SS7 network, use this alias when they wish route messages using this address.</td>
</tr>
</tbody>
</table>
The Global Title Routing subtab contains a table in which each row represents a point code that performs GTT. When defining a point code that performs GTT, you need to specify the fields described in Table 8–21.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary GTT Point Code</td>
<td>INT</td>
<td>Specifies a primary remote point code that performs GTT.</td>
</tr>
<tr>
<td>Secondary GTT Point Code</td>
<td>INT</td>
<td>Specifies an alternative remote point code that performs GTT.</td>
</tr>
</tbody>
</table>
Routing

The Routing tab enables you to define an IM to which SS7 SSU routes an incoming session by specifying a set of parameters known as incoming routing rules. For each incoming routing rule, you need to configure the following parameters:

- IM to which SS7 SSU routes an incoming session
- Criteria that an incoming session must meet to be routed to this IM
- Priority in which SS7 SSU checks incoming routing rules to evaluate whether an incoming session fits the criteria defined in a rule. SS7 SSU applies the first found rule which criteria are met by an incoming session.

For example, if you created multiple rules for the same IM, SS7 SSU begins with the rule that has the highest priority. If an incoming session fits the criteria defined in this rule, SS7 SSU applies the rule and do not check the rest of the rules. Otherwise, SS7 SSU checks whether an incoming session fits the criteria of a rule with a lower priority. SS7 SSU performs this check until SS7 SSU finds a rule whose criteria are met by an incoming session.

You can define incoming routing rules using the Routing tab. The process of defining an incoming routing rule consists of the following steps:

1. You create a rule and define its name, priority, and the IM for which you are creating the rule. You perform these actions using the Incoming Routing Rules subtab.
2. You define criteria for each rule that you created in step 1.

Accessing the Routing Tab

The Routing tab enables you to define rules for routing incoming sessions to IMs.

To access the Routing tab:

1. On the Domain Navigation pane, select OCSB > Signaling Tier > SSU SS7 TDM. The SSU SS7 TDM Configuration screen is displayed.
2. Click the Routing tab. The Routing tab contains the subtabs described in Table 8–22.
Configuring SS7 SSU TDM with the Administration Console

Table 8–22 Routing Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incoming Routing Rules</td>
<td>Enables you to define a name, priority, and an IM for which you create a rule. For more information, see &quot;Configuring Incoming Routing Rules Parameters&quot;.</td>
</tr>
<tr>
<td>Incoming Routing Criteria</td>
<td>Enables you to define criteria for each routing rule created on the Incoming Routing Rules subtab. For more information, see &quot;Configuring Incoming Routing Criteria Parameters&quot;.</td>
</tr>
</tbody>
</table>

Configuring Incoming Routing Rules Parameters

The Incoming Routing Rules subtab enables you to define a name, priority, and an IM for which you create a rule. The Incoming Routing Rules subtab contains a table in which each row represents an individual rule.

When you define a rule, you need to specify the fields defined in Table 8–23.

Table 8–23 Incoming Routing Rule Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique rule name</td>
</tr>
<tr>
<td>Priority</td>
<td>INT</td>
<td>Specifies an order in which SS7 SSU checks routing rules to evaluate if an incoming session fits rule’s criteria. SS7 SSU applies the first found rule which criteria are met by an incoming session. The lower the number, the higher the priority. For example, if you created two rules and set Priority of one rule to “1” and set Priority of another rule to “2”, SS7 SSU checks the rule with Priority set to “1” first. You can define an incoming routing rule that SS7 SSU applies if no other rule can be applied, by setting the Priority parameter of this rule to the largest number (that is lowest priority). There is no need to specify incoming routing criteria for such a rule.</td>
</tr>
</tbody>
</table>
Configuring SS7 SSU TDM with the Administration Console

Configuring Incoming Routing Criteria Parameters

The Incoming Routing Criteria subtab enables you to define criteria for rules that you created on the Incoming Routing Rules subtab. The Incoming Routing Criteria contains a table in which each row represents a routing rule.

When you define criteria, you need to specify the fields defined in Table 8–24.

**Table 8–24  Incoming Routing Criteria Fields**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module Instance</td>
<td>STRING</td>
<td>Specifies the URI of an IM to which the SS7 SSU routes an incoming session.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The URI has the following format:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;IM-instance-name&gt;.&lt;IM-type&gt;@&lt;domain-id&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ &lt;IM-instance-name&gt;: The IM instance name that you specified when you added this IM in the IM Management Configuration screen.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ &lt;IM-type&gt;: The type of the IM instance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ &lt;domain-id&gt;: The name of a Processing Domain or a Processing Domain Group where the relevant IM is deployed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To set a Processing Domain, you must specify the name you configured for the domain during its creation. For more information, see &quot;Setting a Service Broker Domain Name&quot;.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To set a Processing Domain Group, you must specify the group name. For more information about Processing Domain Groups, see &quot;Managing Processing Domain Groups&quot;.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Example: imscfcap4_instance.IMSCFCAP4@processing-domain-1</td>
</tr>
</tbody>
</table>

Configuring Incoming Routing Criteria Parameters

The Incoming Routing Criteria subtab enables you to define criteria for rules that you created on the Incoming Routing Rules subtab. The Incoming Routing Criteria contains a table in which each row represents a routing rule.

When you define criteria, you need to specify the fields defined in Table 8–24.

**Table 8–24  Incoming Routing Criteria Fields**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent</td>
<td>STRING</td>
<td>Specifies the name of a rule for which you want to define criteria. This drop-down list contains names of the rules that you created on the Incoming Routing Rules subtab.</td>
</tr>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique rule name</td>
</tr>
<tr>
<td>Session Key</td>
<td>STRING</td>
<td>Specifies a parameter inside an SCCP message based on which the SS7 SSU performs routing. The SS7 SSU will route incoming messages to a specified module instance, if the value of this parameter matches the Value field. Possible values: DEST_ADDRESS_ALIAS, SOURCE_ADDRESS_ALIAS, APPLICATION_CONTEXT, SERVICE_KEY, OPCODE</td>
</tr>
</tbody>
</table>
Configuring SSU SS7 TDM with Java MBeans

Service Broker provides a set of MBeans that expose attributes and operations for configuring SSU SS7 TDM through JMX, shown in Figure 8–12. Because a Service Broker deployment includes two SSU instances, you need to configure an SsuTargetMBean for each SSU instance separately.

Figure 8–12  SSU SS7 TDM Configuration MBean Hierarchy

The following sections provide reference information for the SS7 SSU configuration MBeans.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Value                      | STRING  | Specifies a value that the Session Key parameter of an SCCP message must match, in order for the rule specified in Parent to apply. You can define one of the following in the Value parameter:  
  - Single value  
  - Range of dash-separated values  
  - Comma-separated values |

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.
SsuSs7TdmMBean

SsuSs7TdmMBean is a root MBean for the SSU SS7 TDM configuration.

Factory Method

Created automatically

Attributes

- BoardType
- Vendor
- Standard
- Mtp3Rpo
- RoutesetTest
- Ss7StackIp
- Ss7StackPort

For more information on these attributes, see Table 8–2.

Operations

**ObjectName getSccp()**

Gets a reference to the instance of SccpMBean

**ObjectName[] getSsuSs7SigtranTargets()**

Gets an array of references to instances of SsuSs7SigtranTargetMBean

**ObjectName getSccpIncomingRoutingRules()**

Gets a reference to the instance of SccpIncomingRoutingRulesMBean

**ObjectName createSsuSs7TdmTarget()**

Creates a new instance of SsuSs7TdmTargetMBean

**void destroySsuSs7TdmTarget()**

Destroys an existing instance of SsuSs7TdmTargetMBean

**ObjectName lookupSsuSs7TdmTarget()**

Returns the SsuSs7TdmTargetMBean of the SSU running on the specified target server
SsuSs7TdmTargetMBean

SsuSs7TdmTargetMBean enables you to access the configuration MBeans of a specific SSU.

Factory Method

SsuSs7Tdm.createSsuSs7TdmTarget()

Attributes

None

Operations

ObjectName getMtp()
Returns a reference to the instance of MtpMBean
MtpMBean

MtpMBean enables you to configure MBeans of a specific SS7 SSU instance.

Factory Method

Created automatically

Attributes

- LocalPointCode
  
  For more information, see Table 8-4.

Operations

ObjectName getMtpBoards()
  Returns a reference to the instance of MtpBoardsMBean

ObjectName getMtpLinksets()
  Returns a reference to the instance of MtpLinksetsMBean

ObjectName getMtpRoutesets()
  Returns a reference to the instance of MtpRoutesetsMBean
MtpBoardsMBean

MtpBoardsMBean is a root MBean for individual instances of MtpBoardMBean.

Factory Method

Created automatically

Attributes

None

Operations

ObjectName[] getMtpBoards()
Gets an array of references to instances of MtpBoardsMBean

ObjectName createMtpBoard()
Creates a new instance of MtpBoardMBean

destroyMtpBoard()
Destroys an existing instance of MtpBoardMBean

ObjectName lookupMtpBoard()
Returns a reference to the specified instance of MtpBoardMBean
MtpBoardMBean

MtpBoardMBean enables you to configure SS7 boards plugged into machine chassis for each SSU instance.

Factory Method

MtpBoards.createMtpBoard()

Attributes

- Name
- Slot
- Clock
- MtpPcm

For more information on these attributes, see Table 8–6.

Operations

ObjectName createMtpPcm()
Creates a new instance of MtpPcmMBean

ObjectName destroyMtpPcm()
Destroys an existing instance of MtpPcmMBean

ObjectName lookupMtpPcm()
Returns a reference to the specified instance of MtpPcmMBean
**MtpPcmMBean**

MtpPcmMBean enables you to configure a PCM that physically connect the SSU instances to the SS7 network.

**Factory Method**

MtpBoard.createMtpPcm()

**Attributes**

- Name
- Type
- Crc
- Code
- Frame
- Port

For more information on these attributes, see Table 8–7.

**Operations**

None
MtpLinksetsMBean

MtpLinksetsMBean is a root MBean for individual instances of MtpLinksetMBean.

Factory Method

Created automatically

Attributes

None

Operations

ObjectName[] getMtpLinksets()
Gets an array of references to instances of MtpLinksetsMBean

ObjectName createMtpLinkset()
Creates a new instance of MtpLinksetMBean

void destroyMtpLinkset()
Destroys an existing instance of MtpLinksetMBean

ObjectName lookupMtpLinkset()
Returns a reference to the specified instance of MtpLinksetMBean
MtpLinksetMBean enables you to configure linksets for connecting SS7 SSUs to adjacent signaling points in an SS7 network.

Factory Method

MtpLinksets.createMtpLinkset()

Attributes

- Name
- AdjacentPoint Code
- Subservice
- MtpLinks

For more information on these attributes, see Table 8–9.

Operations

ObjectName createMtpLink()
Adds an MtpLink to the Linkset

void destroyMtpLink()
Removes an MtpLink from the Linkset

ObjectName lookupMtpLink()
Lookups for an MtpLink
MtpLinkMBean

MtpLinkMBean enables you to configure links within a linkset

Factory Method

MtpLinkset.createMtpLink()

Attributes

- Name
- Pcm
- TimeSlot
- SignalingLinkCode
- OperationMode
- Mtp2Ecm

For more information on these attributes, see Table 8–10.

Operations

None
MtpRoutesetsMBean

MtpRoutesetsMBean is a root MBean for individual instances of MtpRoutesetMBean.

Factory Method

Created automatically

Attributes

None

Operations

ObjectName[] getMtpRoutesets()
Gets an array of references to instances of MtpRoutesetsMBean
ObjectName createMtpRouteset()
Creates a new instance of MtpRoutesetMBean
void destroyMtpRouteset()
Destroys an existing instance of MtpRoutesetMBean
ObjectName lookupMtpRouteset()
Returns a reference to the specified instance of MtpRoutesetMBean
MtpRoutesetMBean

MtpRoutesetMBean enables you to configure how an SS7 SSU instance can access remote point codes in an SS7 network.

Factory Method

MtpRoutesets.createMtpRouteset()

Attributes

- Name
- RemotePointCode
- DefaultRoute
- MtpRoutes
- Description

For more information on these attributes, see Table 8-12.

Operations

- ObjectName createMtpRoute()
  Creates an instance of MtpRoute
- ObjectName destroyMtpRoute()
  Destroys an instance of MtpRoute
- ObjectName lookupMtpRoute()
  Returns a reference to the specified instance of MtpRoute
MtpRouteMBean

MtpRouteMBean enables you to define the linkset that must be used to route the message to an accessible RPC.

Factory Method

MtpRouteset.createMtpRoute()

Attributes

- Name
- PrimaryLinkset
- SecondaryLinkset
- Type

For more information on these attributes, see Table 8-13.

Operations

None
SccpIncomingRoutingRulesMBean

SccpIncomingRoutingRulesMBean enables you to define how the SS7 SSU routes incoming SS7 messages to internal Service Broker IMs.

Factory Method

Created automatically

Attributes

None

Operations

ObjectName[] getSccpIncomingRoutingRules()
Gets an array of references to instances of SccpIncomingRoutingRuleMBean

ObjectName createSccpIncomingRoutingRule()
Creates a new instance of SccpIncomingRoutingRuleMBean

void destroySccpIncomingRoutingRule()
Destroys an existing instance of SccpIncomingRoutingRuleMBean

ObjectName lookupSccpIncomingRoutingRule()
Returns a reference to the SccpIncomingRoutingRuleMBean
SccpIncomingRoutingRuleMBean represents an individual incoming routing rule.

Factory Method
SccpIncomingRoutingRules.createSccpIncomingRoutingRule()

Attributes
- Name
- Priority
- ModuleInstance
For more information on these attributes, see Table 8–23.

Operations
ObjectName[] getSccpIncomingRoutingCriteria()
Gets an array of references to instances of SccpIncomingRoutingCriteriaMBean

ObjectName createSccpIncomingRoutingCriteria()
Creates a new instance of SccpIncomingRoutingCriteriaMBean

void destroySccpIncomingRoutingCriteria()
Destroys an existing instance of SccpIncomingRoutingCriteriaMBean

ObjectName lookupSccpIncomingRoutingCriteria()
Returns a reference to the SccpIncomingRoutingCriteriaMBean
SccpIncomingRoutingCriteriaMBean

SccpIncomingRoutingCriteriaMBean represents criteria for an individual incoming routing rule.

Factory Method

SccpIncomingRoutingRule.createSccpIncomingRoutingCriteria()

Attributes

- Parent
- Name
- SessionKey
- Value

For more information on these attributes, see Table 8–24.

Operations

None
ScmpMBean

ScmpMBean enables you to configure SCCP addresses: subsystems and global titling.

Factory Method

Created automatically

Attributes

- LocalNetworkIndicator
- RemoveCallingPartyPointCodeUponGtRouting
- RemoveCalledPartyPointCodeUponGtRouting

For more information, see Table 8–15.

Operations

ObjectPath getScmpGttEntity()

Gets a reference to the instance of ScmpGttEntityMBean

ObjectPath[] getScmpLocalAddressFixedGts()

Gets an array of references to instances of ScmpLocalAddressFixedGtMBean

ObjectPath[] getScmpLocalAddressSsns()

Gets an array of references to instances of ScmpLocalAddressSsnMBean

ObjectPath[] getScmpRemoteAddressDynamicGts()

Gets an array of references to instances of ScmpRemoteAddressDynamicGtMBean

ObjectPath[] getScmpRemoteAddressFixedGts()

Gets an array of references to instances of ScmpRemoteAddressFixedGtMBean

ObjectPath[] getScmpRemoteAddressSsns()

Gets an array of references to instances of ScmpRemoteAddressSsnMBean
SccpLocalAddressFixedGtsMBean

SccpLocalAddressFixedGtsMBean is a root MBean for individual instances of SccpLocalAddressFixedGtMBean.

Factory Method

Created automatically

Attributes

None

Operations

ObjectName[] getSccpLocalAddressFixedGts()
Gets an array of references to instances of SccpLocalAddressFixedGtMBean

ObjectName createSccpLocalAddressFixedGt()
Creates a new instance of SccpLocalAddressFixedGtMBean

void destroySccpLocalAddressFixedGt()
Destroys an existing instance of SccpLocalAddressFixedGtMBean

ObjectName lookupSccpLocalAddressFixedGt()
Returns a reference to the specified instance of SccpLocalAddressFixedGtMBean
SccpLocalAddressFixedGtMBean

SccpLocalAddressFixedGtMBean enables you to configure a Global Title address for a Service Broker module instance.

Factory Method

SccpLocalAddressFixedGts.createSccpLocalAddressFixedGt()

Attributes

- Name
- Description
- GtAddress
- Ssn
- GtIndicator
- GtNatureOfAddress
- GtNumberingPlan
- GtTranslationType
- Alias

For more information on these attributes, see Table 8–17.

Operations

None
SccpLocalAddressSsnsMBean

SccpLocalAddressSsnsMBean is a root MBean for individual instances of SccpLocalAddressSsnMBean.

Factory Method

Created automatically

Attributes

None

Operations

ObjectName[] getSccpLocalAddressSsns()
Gets an array of references to instances of SccpLocalAddressSsnMBean

ObjectName createSccpLocalAddressSsn()
Creates a new instance of SccpLocalAddressSsn

void destroySccpLocalAddressSsn()
Destroys an existing instance of SccpLocalAddressSsn

ObjectName lookupSccpLocalAddressSsn()
Returns a reference to the specified instance of SccpLocalAddressSsn
SccpLocalAddressSsnMBean

SccpLocalAddressSsnMBean enables you to assign a subsystem number to a Service Broker module instance.

Factory Method

SccpLocalAddressSsns.createSccpLocalAddressSsn()

Attributes

- Name
- Ssn
- Description
- Alias

For more information on these attributes, see Table 7–12.

Operations

None
SccpRemoteAddressDynamicGtsMBean

SccpRemoteAddressDynamicGtsMBean is a root MBean for individual instances of SccpRemoteAddressDynamicGtMBean.

**Factory Method**

Created automatically

**Attributes**

None

**Operations**

- `ObjectName[] getSccpRemoteAddressDynamicGts()`
  Gets an array of references to instances of SccpRemoteAddressDynamicGtMBean

- `ObjectName createSccpRemoteAddressDynamicGt()`
  Creates a new instance of SccpRemoteAddressDynamicGtMBean

- `void destroySccpRemoteAddressDynamicGt()`
  Destroys an existing instance of SccpRemoteAddressDynamicGtMBean

- `ObjectName lookupSccpRemoteAddressDynamicGt()`
  Returns a reference to the specified instance of SccpRemoteAddressDynamicGtMBean
**SccpRemoteAddressDynamicGtMBean**

SccpRemoteAddressDynamicGtMBean enables you to configure an address of a remote entity in the SS7 network that can be reached using a dynamic Global Title.

**Factory Method**

`SccpRemoteAddressDynamicGts.createSccpRemoteAddressDynamicGt()`

**Attributes**

- Name
- NetworkIndicator
- Description
- PointCode
- Ssn
- GtIndicator
- GtNatureOfAddress
- GtNumberingPlan
- GtTranslationType
- Alias

For more information on these attributes, see Table 7–16.

**Operations**

None
SccpRemoteAddressFixedGtsMBean

SccpRemoteAddressFixedGtsMBean is a root MBean for individual instances of SccpRemoteAddressFixedGtMBean.

Factory Method

Created automatically

Attributes

None

Operations

ObjectName[] getSccpRemoteAddressFixedGts()
Gets an array of references to instances of SccpRemoteAddressFixedGtMBean

ObjectName createSccpRemoteAddressFixedGt()
Creates a new instance of SccpRemoteAddressFixedGtMBean

void destroySccpRemoteAddressFixedGt()
Destroys an existing instance of SccpRemoteAddressFixedGtMBean

ObjectName lookupSccpRemoteAddressFixedGt()
Returns a reference to the specified instance of SccpRemoteAddressFixedGtMBean
SccpRemoteAddressFixedGtMBean

SccpRemoteAddressFixedGtMBean enables you to configure an address of a remote entity in the SS7 network that can be reached using a fixed Global Title.

Factory Method

SccpRemoteAddressFixedGts.createSccpRemoteAddressFixedGt()

Attributes

- Name
- NetworkIndicator
- Description
- GtAddress
- PointCode
- Ssn
- GtIndicator
- GtNatureOfAddress
- GtNumberingPlan
- GtTranslationType
- Alias

For more information on these attributes, see Table 7–15.

Operations

None
SccpRemoteAddressSnsMBean

SccpRemoteAddressSnsMBean is a root MBean for individual instances of SccpRemoteAddressSsnMBean.

Factory Method

Created automatically

Attributes

None

Operations

ObjectName[] getSccpRemoteAddressSsns()
Gets an array of references to instances of SccpRemoteAddressSsnMBean

ObjectName createSccpRemoteAddressSsn()
Creates a new instance of SccpRemoteAddressSsnMBean

void destroySccpRemoteAddressSsn()
Destroys an existing instance of SccpRemoteAddressSsnMBean

ObjectName lookupSccpRemoteAddressSsn()
Returns a reference to the specified instance of SccpRemoteAddressSsnMBean
SccpRemoteAddressSsnMBean

SccpRemoteAddressSsnMBean enables you to configure an address of a remote entity in the SS7 network, that can be reached using a point code and a subsystem number.

Factory Method

SccpRemoteAddressSsns.createSccpRemoteAddressSsn()

Attributes

- Name
- NetworkIndicator
- Ssn
- PointCode
- Description
- Alias

For more information on these attributes, see Table 8–12.

Operations

None
SccpGttEntityMBean

SccpGttEntityMBean enables you to configure an address of a network entity that performs Global Title Translation.

Factory Method

Created automatically

Attributes

- PrimaryPointCode
- SecondaryPointCode
- OperationMode

For more information on these attributes, see Table 8–21.

Operations

None
Configuring SIP Signaling Server Units

The following sections describe how to configure Service Broker SIP SSUs using the Service Broker Administration Console and Java MBeans:

- Configuring SIP SSU with the Administration Console
- Configuring SIP SSU with Java MBeans

Configuring SIP SSU with the Administration Console

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

The configuration process includes setting up parameters on the subtabs described in Table 9–1.

Table 9–1  SIP SSUs Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIP Server</td>
<td>Enables you to set up a Globally-Routable User Agent URI (GRUU).</td>
</tr>
<tr>
<td></td>
<td>For more information, see “SIP Server”.</td>
</tr>
<tr>
<td>Incoming Routing Rules</td>
<td>Enables you to define how the SIP SSU routes incoming SIP messages to internal Service Broker IMs.</td>
</tr>
<tr>
<td></td>
<td>For more information, see “Incoming Routing Rules”.</td>
</tr>
<tr>
<td>SIP Network Entities</td>
<td>Enables you to define a list of SIP network entities with which the SIP SSU communicate.</td>
</tr>
<tr>
<td></td>
<td>For more information, see “SIP Network Entities”.</td>
</tr>
<tr>
<td>Network Access</td>
<td>Enables you to define SIP network channels that the SIP SSU uses to listen to incoming connections.</td>
</tr>
<tr>
<td></td>
<td>For more information, see “Network Access”.</td>
</tr>
</tbody>
</table>

To access the SIP SSU configuration screen:

- In the Domain Navigation pane, select OCSB > Signaling Tier > SSU SIP. The SSU SIP Configuration screen is displayed in the Configuration pane.

SIP Server

The SIP Server subtab enables you to set up a Globally-Routable User Agent URI (GRUU).

Table 9–2 describes configuration parameters on the SIP Server subtab.
Incoming Routing Rules

The Incoming Routing Rules subtab enables you to define how the SIP SSU routes incoming SIP messages to internal Service Broker IMs.

The Incoming Routing Rules subtab contains a table in which each row represents one routing rule. When configuring a routing rule, you need to specify the fields described in Table 9–3.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Globally Routable User Agent URI</td>
<td>STRING</td>
<td>Specifies a SIP URI that the SIP SSU automatically inserts into Contact and Route-Set headers when communicating with network elements. For example: sip:sb@209.95.109.191:5060</td>
</tr>
</tbody>
</table>

Table 9–3  
Incoming Routing Rule Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique rule name</td>
</tr>
<tr>
<td>IP Address</td>
<td>STRING</td>
<td>Specifies an IP address by which a Service Broker IM is known to external entities. The SIP SSU routes incoming messages destined for this IP address to an IM, based on what you specify in the Alias parameter. Example: 192.168.0.101 You can set this field to Any. In this case, a routing rule applies to any SIP incoming message, regardless of its destination IP address. This value is generally used to define a default routing rule that ensures that the incoming SIP message is routed to a default IM, so long as no other routing rule has been applied.</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>Specifies a SIP URI of an IM to which the SIP SSU routes an incoming session. The alias has the following format: sip:&lt;IM-instance-name&gt;.&lt;IM-type&gt;@&lt;domain-id&gt;</td>
</tr>
</tbody>
</table>

- <IM-instance-name>: The IM instance name that you specified when you added this IM in the IM Management Configuration screen.
- <IM-type>: The type of the IM instance
- <domain-id>: The name of a Processing Domain or a Processing Domain Group where the relevant IM is deployed.

To set a Processing Domain, you must specify the name you configured for the domain during its creation. For more information, see "Setting a Service Broker Domain Name".

To set a Processing Domain Group, you must specify the group name. For more information about Processing Domain Groups, see "Managing Processing Domain Groups".

Example:

sip:r-imasf_instance.RIMASF@processing-domain-1
SIP Network Entities

The SIP Network Entities subtab enables you to define a list of SIP network entities with which the SIP SSU communicate.

The SIP Network Entities subtab contains a table in which each row represents one SIP network entity. When configuring a SIP network entity, you need to specify the fields described in Table 9–4.

To provide a stable connection with a SIP network entity, the SIP SSU perform regular checks of the connection with the entity by using a heartbeat mechanism. The heartbeat mechanism enables the SIP SSU to check whether a SIP network entity is active or inactive, by periodically sending requests to the SIP network entity and checking the returned response.

After the SIP SSU triggers the heartbeat method, one of the following outcomes can happen:

- The SIP network entity responds within the time defined in Response Timeout. This means that the SIP network entity is active. The SIP SSU continues periodically triggering the heartbeat method as specified by Active Interval.
- The SIP network entity does not respond within the time defined in Response Timeout. This means the SIP network entity is inactive. The SIP SSU continues periodically triggering the heartbeat method as specified by Inactive Interval.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique network entity name.</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>Specifies a name that Service Broker uses to refer the SIP network entity. The alias has a format of a SIP URI, including a loose routing indicator (lr suffix). For example: sip:<a href="mailto:simple_b2b@example.com">simple_b2b@example.com</a>;lr</td>
</tr>
</tbody>
</table>
| Heartbeat| STRING | Specifies whether or not to use a heartbeat mechanism over the connection with the SIP network entity. Possible values:  
  - ON  
  - OFF  
  Default value: ON |
| URI      | STRING | Specifies a SIP URI of the SIP network entity. For example: sip:simple_b2b@192.168.0.219:6060.                                                      |
| Heartbeat Method | STRING | Specifies the SIP method that the SIP SSU use to test the connection with the SIP network entity. Possible values:  
  - OPTIONS  
  Default value: OPTIONS |
| Response Timeout | INT   | Specifies the time interval, in seconds, during which the SIP SSU waits for response from the SIP network entity. This field is used by the heartbeat mechanism. |
| Active Interval  | INT   | Specifies the periodicity in seconds for sending heartbeat requests from the SIP SSU to the SIP network entity. This field is used if the previous heartbeat test showed that the SIP network entity is active. |
The Network Access subtab enables you to define SIP network channels that the SIP SSU uses to listen to incoming connections.

The Network Access subtab contains a table in which each row represents one SIP network channel. When configuring a SIP network channel, you need to specify the fields described in Table 9–5.

### Table 9–5  SIP Network Channel Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inactive Interval</td>
<td>INT</td>
<td>Specifies the periodicity in seconds for sending heartbeat requests from the SIP SSU to the SIP network entity. This field is used if the previous heartbeat test showed that the SIP network entity is inactive.</td>
</tr>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a name of a SIP network channel</td>
</tr>
<tr>
<td>Protocol</td>
<td>STRING</td>
<td>Specifies a protocol used for connections through the network channel. Set this field to ‘SIP’.</td>
</tr>
<tr>
<td>Target</td>
<td>STRING</td>
<td>Specifies the name of the Signaling Server (JVM) that provides the SIP network channel.</td>
</tr>
<tr>
<td>External Listen Address - Address Type</td>
<td>STRING</td>
<td>Specifies the Address Type of the SIP network external identity. Set this field to ‘IP4’.</td>
</tr>
<tr>
<td>External Listen Address - Host</td>
<td>STRING</td>
<td>Specifies the IP address or DNS name of the SIP network channel external identity.</td>
</tr>
<tr>
<td>External Listen Address - Network Type</td>
<td>STRING</td>
<td>Specifies the network type of the SIP network channel external identity. Set this field to ‘internet’ or ‘internet4’.</td>
</tr>
<tr>
<td>External Listen Address - Port</td>
<td>STRING</td>
<td>Specifies the port of the SIP network channel external identity.</td>
</tr>
<tr>
<td>Listen Address - Address Type</td>
<td>STRING</td>
<td>Specifies the Address Type of the SIP network channel internal identity. Set this field to ‘IP4’.</td>
</tr>
<tr>
<td>Listen Address - Host</td>
<td>STRING</td>
<td>Specifies the IP address or DNS name of the SIP network channel internal identity.</td>
</tr>
<tr>
<td>Listen Address - Network Type</td>
<td>STRING</td>
<td>Specifies the network type of the SIP network channel internal identity. Set this field to ‘internet’ or ‘internet4’.</td>
</tr>
<tr>
<td>Listen Address - Port</td>
<td>STRING</td>
<td>Specifies the port of the SIP network channel internal identity.</td>
</tr>
</tbody>
</table>

### Configuring SIP SSU with Java MBeans

Service Broker provides a set of MBeans that expose attributes and operations for configuring SIP SSU through JMX shown in Figure 9–1.
The following sections provide reference information for the SIP SSU 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.
SipSsuMBean

SsuSipBean is a root MBean for the SIP connectivity configuration

Factory Method

Created automatically

Attributes

- GloballyRoutableUri
  
  For more information on this attribute, see Table 9-2.

Operations

None
SipIncomingRoutingRulesMBean

SipIncomingRoutingRulesMBean is a container for instances of SipIncomingRoutingRuleMBean. Each instance of SipIncomingRoutingRuleMBean represents an individual incoming routing rule.

Factory Method

Created automatically

Attributes

None

Operations

ObjectName[] getSipIncomingRoutingRules()
Gets an array of references to instances of SipIncomingRoutingRuleMBean

ObjectName createSipIncomingRoutingRule()
Creates an instance of SipIncomingRoutingRuleMBean that enables you to configure an individual incoming rule

ObjectName lookupSipIncomingRoutingRule()
Returns the specified SipIncomingRoutingRuleMBean

void destroySipIncomingRoutingRule()
Destroys a SipIncomingRoutingRuleMBean
SipIncomingRoutingRuleMBean

Each instance of SipIncomingRoutingRuleMBean represents an individual incoming routing rule that defines how the SIP SSU routes incoming SIP messages to internal Service Broker IMs.

Factory Method

SipIncomingRoutingRules.createSipIncomingRoutingRule()

Attributes

- Name
- IpAddress
- Alias

For more information on each of these parameters, see Table 9–3.

Operations

None
SipNetworkEntitiesMBean

SipNetworkEntitiesMBean is a container for instances of SipNetworkEntityMBean that represent individual network entities.

Factory Method

Created automatically

Attributes

None

Operations

ObjectName[] getSipNetworkEntity()
Gets an array of references to instances of SipNetworkEntityMBean

ObjectName createSipNetworkEntity()
Creates an instance of SipNetworkEntityMBean that enables you to configure an individual SIP network entity

ObjectName lookupSipNetworkEntity()
Returns a specified SipNetworkEntityMBean

void destroySipNetworkEntity()
Destroys an instance of SipNetworkEntityMBean
SipNetworkEntityMBean

Each instance of SipNetworkEntityMBean enables you to define a SIP network entity with which the SIP SSU communicate.

Factory Method

SipNetworkEntities.createSipNetworkEntity()

Attributes

- Name
- Alias
- Heartbeat
- Uri
- HeartbeatMethod
- ResponseTimeout
- ActiveInterval
- InactiveInterval

For more information on these attributes, see Table 9–4.

Operations

None
SipNetworkAccessPointsMBean

SipNetworkAccessPointsMBean enables you to define a set of SIP network channels, including addresses and ports, on which the SIP SSU listens.

Factory Method

Created automatically

Attributes

None

Operations

ObjectName[] getSipNetworkAccessPoints()
Gets an array of references to instances of SipNetworkPointMBean

ObjectName createSipNetworkAccessPoint()
Creates an instance of SipNetworkAccessPointMBean that enables you to configure an individual SIP network access point

ObjectName lookupSipNetworkAccessPoint()
Returns a specified SipNetworkAccessPointMBean

void destroySipNetworkAccessPoint()
Destroys an instance of SipNetworkAccessPointMBean
SipNetworkAccessPointMBean

SipNetworkAccessPointMBean enables you to configure a SIP network channel provided by the SIP SSU. You can create multiple instances of NetworkAccessPointMBean, one instance for each network channel.

Factory Method

SipNetworkAccessPoints.createSipNetworkAccessPoint()

Attributes

- Name
- Protocol
- Target
- ExternalListenAddressAddressType
- ExternalListenAddressHost
- ExternalListenAddressNetworkType
- ExternalListenAddressPort
- ListenAddressAddressType
- ListenAddressHost
- ListenAddressNetworkType
- ListenAddressPort

For more information on these attributes, see Table 9–5.

Operations

None
The following sections describe how to configure Service Broker Diameter SSUs using the Service Broker Administration Console and Java MBeans:

- Configuring Diameter SSU with the Administration Console
- Configuring Diameter SSU with Java MBeans

### Configuring Diameter SSU with the Administration Console

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

**Caution:** You cannot complete the Diameter SSU configuration using only the Administration Console. Some parts of the configuration are available only with Java MBeans. To complete the configuration, you must also configure some Java MBeans.

The configuration process includes setting up parameters on the subtabs described in Table 10–1.

**Table 10–1 Diameter SSUs Subtabs**

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
</table>
| Incoming Routing Rules     | Enables you to define how the Diameter SSU routes incoming messages to internal Service Broker IMs.  
                            | For more information, see “Incoming Routing Rules”. |

To access the Diameter SSU configuration screen:

- In the Domain Navigation pane, select OCSB > Signaling Tier > SSU Diameter. The SSU Diameter Configuration screen is displayed in the Configuration pane.

### Incoming Routing Rules

The Incoming Routing Rules subtab enables you to define how the Diameter SSU routes incoming Diameter messages to internal Service Broker IMs.

The Incoming Routing Rules subtab contains a table in which each row represents one routing rule. When configuring a routing rule, you need to specify the fields described in Table 10–2.
Service Broker provides a set of MBeans that exposes attributes and operations for configuring the Diameter SSU through JMX, shown in Figure 10–1.

### Table 10–2  Incoming Routing Rule Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique rule name</td>
</tr>
<tr>
<td>Origin Host</td>
<td>STRING</td>
<td>Specifies an Origin Host by which a Service Broker IM is known to external entities. The Diameter SSU routes incoming messages destined for this Origin Host to an IM, based on what you specify in the Alias parameter. Example: us.charge-online.com You can set this field to Any. In this case, a routing rule applies to any Diameter incoming message, regardless of its destination Origin Host. This value is generally used to define a default routing rule that ensures that the incoming Diameter message is routed to a default IM, so long as no other routing rule has been applied.</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>Specifies a URI of an IM to which the Diameter SSU routes an incoming session. The alias has the following format: &lt;IM-instance-name&gt;.&lt;IM-type&gt;@&lt;domain-id&gt; • &lt;IM-instance-name&gt;: The IM instance name that you specified when you added this IM in the IM Management Configuration screen. • &lt;IM-type&gt;: The type of the IM instance • &lt;domain-id&gt;: The name of a Processing Domain or a Processing Domain Group where the relevant IM is deployed. To set a Processing Domain, you must specify the name you configured for the domain during its creation. For more information, see &quot;Setting a Service Broker Domain Name&quot;. To set a Processing Domain Group, you must specify the group name. For more information about Processing Domain Groups, see &quot;Managing Processing Domain Groups&quot;. Example: r-imocf_instance.RIMOCF@processing-domain.1</td>
</tr>
</tbody>
</table>
The following sections provide reference information for the Diameter SSU 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.
DiameterIncomingRoutingRulesMBean

DiameterIncomingRoutingRulesMBean is a container for instances of DiameterIncomingRoutingRuleMBean. Each instance of DiameterIncomingRoutingRuleMBean represents an individual incoming routing rule.

Factory Method
Created automatically

Attributes
None.

Operations
ObjectName[] getDiameterIncomingRoutingRules()
Gets an array of references to instances of DiameterIncomingRoutingRuleMBean

ObjectName createDiameterIncomingRoutingRule()
Creates an instance of DiameterIncomingRoutingRuleMBean that enables you to configure an individual rule

ObjectName lookupDiameterIncomingRoutingRule()
Returns the specified DiameterIncomingRoutingRuleMBean

void destroyDiameterIncomingRoutingRule()
Destroys a DiameterIncomingRoutingRuleMBean
DiameterIncomingRoutingRuleMBean

Each instance of DiameterIncomingRoutingRuleMBean represents an individual incoming routing rule that defines how the Diameter SSU routes incoming Diameter messages to internal Service Broker IMs.

Factory Method

DiameterIncomingRoutingRules.createDiameterIncomingRoutingRule()

Attributes

- Name
- Origin Host
- Alias

For more information on each of these parameters, see Table 10–2.

Operations

None
DiameterConfigMBean

DiameterConfigMBean is a root MBean for this Diameter SSU configuration.

Factory Method

Created automatically

Attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a name for the Diameter configuration</td>
</tr>
</tbody>
</table>

Operations

void addName()

Adds a new instance of NameMBean that enables you to define the name for a Diameter configuration

void removeName()

Removes an existing instance of NameMBean that defines the name of a Diameter configuration

addNode()

Adds a new instance of NodeMBean represents all Diameter SSUs as a Diameter node

removeNode(int NodeIndex)

Removes a specified instance of a NodeMBean
NameMBean

Factory Method

\[ \text{diameterConfig.addName()} \]

Description

NameMBean defines the name of a Diameter configuration.

Attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Name of the Diameter configuration</td>
</tr>
</tbody>
</table>

Operations

None
NodeMBean

Factory Method

diameterConfig.addNode()

Description

NodeMBean represents all Diameter SSUs as a Diameter node.

Attributes

None

Operations

void cloneIt()
Adds a copy of the NodeMBean instance that invoked this operation

void addName()
Adds a new instance of NameMBean that defines the name of the Diameter node

void removeName()
Removes an instance of NameMBean

void addTarget()
Adds a new instance of TargetMBean that defines the ID of the Signaling Server for the Diameter node

void removeTarget()
Removes an instance of TargetMBean

void addHost()
Adds a new instance of HostMBean that defines the host identity of the Diameter node

void removeHost()
Removes an instance of HostMBean

void addRealm()
Adds a new instance of RealmMBean that defines the name of a realm for which the Diameter node is responsible

void removeRealm()
Removes an instance of RealmMBean

void addAddress()
Adds a new instance of AddressMBean that defines the listen address for the Diameter node using either the DNS name or IP address

void removeAddress()
Removes an instance of AddressMBean

void addPort()
Adds a new instance of PortMBean that defines the listen port number for the Diameter node
void removePort()
Removes an instance of PortMBean

void addTls_enabled()
Adds a new instance of Tls_enabledMBean that defines whether or not the Transport Layer Security (TLS) is enabled

void removeTls_enabled()
Removes an instance of Tls_enabledMBean

void addSctp_enabled()
Adds a new instance of Sctp_enabledMBean that defines whether or not the Stream-Control TransmissionProtocol (SCTP) is enabled

void removeSctp_enabled()
Removes an instance of Sctp_enabledMBean

void addDebug_enabled()
Adds a new instance of Debug_enabledMBean that defines whether or not generation of debug message is enabled

void removeDebug_enabled()
Removes an instance of Debug_enabledMBean

void addMessageDebug_enabled()
Adds a new instance of MessageDebug_enabledMBean that defines whether or not tracing for Diameter messages processed by the Diameter node is enabled

void removeMessageDebug_enabled()
Removes an instance of MessageDebug_enabledMBean

void addMessage_debug()
Adds a new instance of Message_debugMBean that writes Diameter events to the log

void removeMessage_debug()
Removes an instance of Message_debugMBean

void addPeer_retry_delay()
Adds a new instance of Peer_retry_delayMBean that defines period of time, in seconds, between retries to peer nodes

void removePeer_retry_delay()
Removes an instance of Peer_retry_delayMBean

void addAllow_dynamic_peers()
Adds a new instance of Allow_dynamic_peersMBean that defines whether or not dynamic peers are allowed

void removeAllow_dynamic_peers()
Removes an instance of Allow_dynamic_peersMBean

void addRequest_timeout()
Adds a new instance of Request_timeoutMBean that defines period of time, in milliseconds, that the node has to wait for an answer before timing out
void removeRequest_timeout()
Removes an instance of Request_timeoutMBean

void addWatchdog_timeout()
Adds a new instance of Watchdog_timeoutMBean that defines period of time, in seconds, for the Diameter Tw watchdog timer

void removeWatchdog_timeout()
Removes an instance of Watchdog_timeoutMBean

void addInclude_origin_state_id()
Adds a new instance of Include_origin_state_idMBean that defines whether the Origin-State-Id attribute-value pair (AVP) is included in each request

void removeInclude_origin_state_id()
Removes an instance of Include_origin_state_idMBean

void addPeer()
Adds a new instance of PeerMBean that defines a Diameter node in the network with which the Signaling Server communicates

void removePeer()
Removes an instance of PeerMBean

void addDefaultRoute()
Adds a new instance of DefaultRouteMBean that defines a route to use when a request does not match a configured route

void removeDefaultRoute()
Removes an instance of DefaultRouteMBean
HostMBean

Factory Method

Node.addHost()

Description

HostMBean defines the host identity of this Diameter node.

Attributes

Table 10–5 HostMBean Attribute

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
<td>String</td>
<td>Specifies the host identity of this Diameter node.</td>
</tr>
</tbody>
</table>

Operations

None
PortMBean

Factory Method

Node.addPort()

Description

PortMBean defines the listen port for a Diameter node.

Attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port</td>
<td>STRING</td>
<td>Specifies the listen port number for this node</td>
</tr>
</tbody>
</table>

Operations

None
TargetMBean

Factory Method

Node.addTarget()

Description

TargetMBean defines the ID of the Signaling Server for this node, as defined in the domain configuration.

Attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target</td>
<td>STRING</td>
<td>Specifies the ID of the Signaling Server for this node, as defined in the domain configuration.</td>
</tr>
</tbody>
</table>

Operations

None
RealmMBean

Factory Method

Node.addRealm()

Description

RealmMBean defines the name of a realm for which this node is responsible. An HSS, Application Server, and relay agents must all agree on a realm name or names. The realm name for the HSS and Application Server do not have to match.

Attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Realm</td>
<td>STRING</td>
<td>Specifies the name of a realm for which this node is responsible</td>
</tr>
</tbody>
</table>

Operations

None
**AddressMBean**

**Factory Method**

Node.addAddress()

**Description**

AddressMBean defines the listen address for a Diameter node using either the DNS name or IP address.

**Attributes**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>STRING</td>
<td>Specifies the listen address for this Diameter node using either the DNS name or IP address</td>
</tr>
</tbody>
</table>

**Operations**

None
**Tls_enabledMBean**

**Factory Method**

Node.addTls_enabled()

**Description**

Tls_enabledMBean defines whether or not the Transport Layer Security (TLS) is enabled.

**Attributes**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tls_enabled</td>
<td>BOOL</td>
<td>Specifies whether or not the Transport Layer Security (TLS) is enabled. This attribute is used to advertise TLS capabilities when the node is interrogated by another Diameter node. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ True</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Set this attribute to ‘True’ if the Diameter node is configured with support for TLS (Diameter network channels).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ False</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: False</td>
</tr>
</tbody>
</table>

**Operations**

None
**Sctp_enabledMBean**

**Factory Method**

Node.addSctp_enabled()

**Description**

Sctp_enabledMBean defines whether or not the Stream-Control Transmission Protocol (SCTP) is enabled.

**Attributes**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sctp_enabled</td>
<td>BOOL</td>
<td>Specifies whether or not the Stream-Control Transmission Protocol (SCTP) is enabled.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- True</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- False</td>
</tr>
</tbody>
</table>

**Operations**

None
Debug_enabledMBean

Factory Method

Node.addDebug_enabled()

Description

Debug_enabledMBean defines whether or not generation of debug messages is enabled.

Attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debug_enabled</td>
<td>BOOL</td>
<td>Specifies whether or not generation of debug messages is enabled.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• True</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• False</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: False</td>
</tr>
</tbody>
</table>

Operations

None
Message_debugMBean

Factory Method

Node.addMessageDebug()

Description

Message_debugMBean writes Diameter events to the log

Attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message_debug</td>
<td>STRING</td>
<td>Diameter event written to the log</td>
</tr>
</tbody>
</table>

Operations

None
Message_debug_enabledMBean

Factory Method
Node.addMessage_debug_enabled()

Description
Message_debug_enabledMBean defines whether or not tracing for Diameter messages processed by this node is enabled.

Attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message_debug_enabled</td>
<td>STRING</td>
<td>Specifies whether or not tracing for Diameter messages processed by this node is enabled.</td>
</tr>
</tbody>
</table>

Operations
None
Peer_retry_delayMBean

Factory Method

Node.addPeer_retry_delay()

Description

Peer_retry_delayMBean defines period of time, in seconds, between retries to peer nodes.

Attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer_retry_delay</td>
<td>STRING</td>
<td>Specifies period of time, in seconds, between retries to peer nodes</td>
</tr>
</tbody>
</table>

Operations

None
**Allow_dynamic_peersMBean**

**Factory Method**

```
Node.addAllow_dynamic_peers()
```

**Description**

Allow_dynamic_peersMBean defines whether or not dynamic peers are allowed.

**Attributes**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allow_dynamic_peers</td>
<td>BOOL</td>
<td>Specifies whether or not dynamic peers are allowed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ True</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ False</td>
</tr>
<tr>
<td>Default value</td>
<td></td>
<td>False</td>
</tr>
</tbody>
</table>

**Note:** It is recommended to enable dynamic peers only when using the TLS transport because no access control mechanism is available to restrict hosts from becoming peers.

**Operations**

None
Request_timeoutMBean

Factory Method

Node.addRequest_timeout()

Description

Request_timeoutMBean defines period of time, in milliseconds, that the node has to wait for an answer before timing out.

Attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Request_timeout</td>
<td>STRING</td>
<td>Specifies period of time, in milliseconds, that the node has to wait for an answer before timing out</td>
</tr>
</tbody>
</table>

Operations

None
**Watchdog_timeoutMBean**

**Factory Method**

Node.addWatchdog_timeout()

**Description**

Watchdog_timeoutMBean defines period of time, in seconds, for the Diameter Tw watchdog timer.

**Attributes**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watchdog_timeout</td>
<td>STRING</td>
<td>Specifies period of time, in seconds, for the Diameter Tw watchdog timer</td>
</tr>
</tbody>
</table>

**Operations**

None
**Include_origin_state_idMBean**

**Factory Method**

Node.addInclude_origin_state_id()

**Description**

Include_origin_state_idMBean defines whether the Origin-State-Id attribute-value pair (AVP) is included in each request.

**Attributes**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Include_origin_state_id | BOOL  | Specifies whether the Origin-State-Id attribute-value pair (AVP) is included in each request. Possible values:  
|                  |       | ■ True  
|                  |       | ■ False  

**Operations**

None
PeerMBean

PeerMBean defines a Diameter node in the network which the Signaling Server communicate with. A Diameter node (NodeMBean) defines peer connection for each other Diameter node.

Factory Method

Node.addPeer()

Attributes

None

Operations

void cloneIt()  
Adds a copy of the PeerMBean instance that invoked this operation

void addHost()  
Adds a new instance of HostMBean that defines the peer node’s host identity

void removeHost()  
Removes an instance of HostMBean

void addAddress()  
Adds a new instance of AddressMBean that defines the peer node’s listen address

void removeAddress()  
Removes an instance of AddressMBean

void addPort()  
Adds a new instance of PortMBean that defines the listen port number of the peer node

void removePort()  
Removes an instance of PortMBean

void addProtocol()  
Adds a new instance of ProtocolMBean that defines the protocol used to communicate with the peer

void removeProtocol()  
Removes an instance of ProtocolMBean

void addWatchdog-enabled()  
Adds a new instance of Watchdog-enabledMBean that defines whether or not the peer supports the Diameter Tw watchdog timer interval

void removeWatchdog-enabled()  
Removes an instance of Watchdog-enabledMBean
AddressMBean

AddressMBean defines the peer node’s listen address.

Factory Method

Peer.addAddress()

Attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>STRING</td>
<td>Specifies the peer node's listen address (DNS name or IP address)</td>
</tr>
</tbody>
</table>

Operations

None
HostMBean

HostMBean defines the peer node’s host identity

Factory Method

Peer.addHost()

Attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
<td>STRING</td>
<td>Specifies the peer node’s host identity</td>
</tr>
</tbody>
</table>

Operations

None
PortMBean

PortMBean defines the listen port number of the peer node

Factory Method

Peer.addPort()

Attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port</td>
<td>STRING</td>
<td>Specifies the listen port number of the peer node</td>
</tr>
</tbody>
</table>

Operations

None
ProtocolMBean

ProtocolMBean defines the protocol used to communicate with the peer.

Factory Method

Peer.addProtocol()

Attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protocol</td>
<td>STRING</td>
<td>Specifies the protocol used to communicate with the peer.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TCP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ SCTP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: TCP</td>
</tr>
</tbody>
</table>

Operations

None
Watchdog-enabledMBean

Watchdog-enabledMBean defines whether or not the peer supports the Diameter Tw watchdog timer interval

Factory Method

Peer.addWatchdog-enabled()

Attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WatchdogEnabled</td>
<td>BOOL</td>
<td>Specifies whether or not the peer supports the Diameter Tw watchdog timer interval.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ True</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ False</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: False</td>
</tr>
</tbody>
</table>

Operations

None
RouteMBean

RouteMBean defines a server to which an IM-OCF forwards a Diameter message with the specified host realm and application ID.

Factory Method

Node.createRoute()

Attributes

None

Operations

void addName()
Adds an instance of NameMBean that defines the name of the default route
void removeName()
Removes an instance of NameMBean
void addAction()
Adds an instance of ActionMBean that defines an action that the node performs when using the configured route
void removeAction()
Removes an instance of ActionMBean
void addServer ()
Adds an instance of ServerMBean that defines a server to which Service Broker routes a message
void removeServer(int ServerIndex)
Remove an instance of ServerMBean
void addApplication_id()  
Adds an instance of Application-idMBean that defines a Diameter interface used
void removeApplication_id()  
Remove an instance of Application-idMBean
void addRealm()  
Adds an instance of RealmMBean that defines the name of a realm for which this node is responsible.
void removeRealm()  
Remove an instance of RealmMBean
Application-idMBean

Application-idMBean defined a Diameter interface used.

Factory Method

Node.createRoute()

Attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application-id</td>
<td>STRING</td>
<td>Specifies a Diameter interface.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stands for the Ro interface</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ 16777217</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stands for the Sh interface</td>
</tr>
</tbody>
</table>

Operations

None
Default-routeMBean

Default-routeMBean defines a route to use when a request does not match a configured route.

Factory Method
Created automatically

Attributes
None

Operations
void addName()
Adds an instance of NameMBean that defines the name of the default route

void removeName()
Removes an instance of NameMBean

void addAction()
Adds an instance of ActionMBean that defines an action that the node performs when using the configured route

void removeAction()
Removes an instance of ActionMBean

void addServer()
Adds an instance of ServerMBean that defines a server to which Service Broker routes a message

void removeServer(int ServerIndex)
Remove an instance of ServerMBean
NameMBean

NameMBean defines the name of the default route.

Factory Method

Default-route.addName()

Attributes

Table 10–26  NameMBean Attribute

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies the name of the default route.</td>
</tr>
</tbody>
</table>

Operations

None
ActionMBean

ActionMBean defines an action that the node performs when using the configured route.

Factory Method

Default-route.addAction()

Attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action</td>
<td>STRING</td>
<td>Specifies an action that the node performs when using the configured route.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Local</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Relay</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Proxy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Redirect</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values: Local</td>
</tr>
</tbody>
</table>

Operations

None
ServerMBean defines a server to which Service Broker routes a message.

**Factory Method**

Created automatically

**Attributes**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server</td>
<td>STRING</td>
<td>Specifies a server.</td>
</tr>
</tbody>
</table>

**Operations**

CloneIt
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
- Configuring the Orchestration Engine with Java MBeans
- Supporting Orchestration with Non-Configured Application

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:

- In the Domain Navigation pane, select OCSB > Processing Tier > Orchestration Engine. The OE Configuration screen is displayed in the Configuration pane.

The OE Configuration screen contains the subtabs described in Table 11–1.

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Enables you to specify a subscriber profile receiver and enable SDR generation. For more information, see &quot;Configuring General Parameters&quot;.</td>
</tr>
<tr>
<td>Static Route OLP</td>
<td>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. For more information, see &quot;Configuring Static Route OLP Parameters&quot;.</td>
</tr>
<tr>
<td>HSS OLP</td>
<td>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. For more information, see &quot;Configuring HSS OLP Parameters&quot;.</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Enables you to define how logging and notifications operate. For more information, see &quot;Configuring Monitoring Parameters&quot;.</td>
</tr>
</tbody>
</table>
Configuring General Parameters

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

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subscriber Profile Receiver</td>
<td>STRING</td>
<td>Specifies which OPR the OE uses to retrieve an orchestration profile.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- OlpDefaultInfoReceiver</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- OlpLSSInfoReceiver</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- OlpHSSInfoReceiver</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: OlpDefaultInfoReceiver</td>
</tr>
<tr>
<td>Enable SDR</td>
<td>BOOL</td>
<td>Specifies whether or not the OE generates SDRs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- True</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- False</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: True</td>
</tr>
<tr>
<td>Enable Session Persistency</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- When Session Starts: 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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- On Ringback: 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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- On Answer: 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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Never: No state of the active session is stored.</td>
</tr>
</tbody>
</table>

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.

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.

Table 11–3 describes the configuration parameter on the Static Route OLP subtab.
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 11–4 describes the configuration parameters on the HSS OLP tab.

**Table 11–4 Static Route OLP Parameter**

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

**Table 11–4 HSS OLP Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wildcarded PSI</td>
<td>STRING</td>
<td>Specifies a regular expression that the HSS uses to search for a subscriber’s orchestration logic (iFCs). The HSS compares the regular expression against Public Subscriber Identities (PSIs) in its database. The HSS finds all matches and responds to the OE with one or more iFCs that comprise the subscriber’s orchestration logic. You must specify a regular expression in a SIP URI format. For example: sip:*@oracle.com You can leave the parameter empty to have the HSS search for an orchestration logic for a subscriber, based on the To and From headers inside a session’s SIP message. If you set this parameter, it prevails the session headers, and session headers are ignored. Typically you would use this parameter when a group of subscribers share the same orchestration logic.</td>
</tr>
<tr>
<td>Destination-Host AVP</td>
<td>STRING</td>
<td>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. Note that this value must correlate to either a PeerMBean or a RouteMBean that you already configured in the Diameter SSU.</td>
</tr>
<tr>
<td>Destination-Realm AVP</td>
<td>STRING</td>
<td>Specifies the value that the OE sets in the Destination-Realm AVP, inside the UDR that it sends to the HSS.</td>
</tr>
</tbody>
</table>
Configuring Monitoring Parameters

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

For more information about configuring monitoring, see "Configuring Monitoring with the Administration Console".

Configuring the Orchestration Engine with Java MBeans

Service Broker provides a set of MBeans with attributes and operations for configuring the OE through JMX. The hierarchy of the MBeans is shown on Figure 11–1.

Figure 11–1  OE MBeans Hierarchy

For more information, see:

- OeMBean
- GeneralMBean
- StaticRouteOlpMBean
- HssReceiverOlpMBean
- MonitoringGeneralMBean

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 whose IP address is 209.95.109.191.

For information on defining a default IM-ASF module, see "Defining a Default IM-ASF Module".
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 11–2.

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 11–3.

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 11-4.

Operations

None
The following sections describe how to configure IM-SCF using the Service Broker Administration Console and Java MBeans:

- Configuring IM-SCF CAP Phase 1
- Configuring IM-SCF CAP Phase 2
- Configuring IM-SCF CAP Phase 3
- Configuring IM-SCF CAP Phase 4
- Configuring IM-SCF INAP CS-1
- Configuring IM-SCF WIN Phase 1
- Configuring IM-SCF WIN Phase 2
- Configuring IM-SCF AIN 0.1
- Configuring IM-SCF AIN 0.2

### Configuring IM-SCF CAP Phase 1

This section describes how to configure IM-SCF CAP phase 1 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, select OCSB > Processing Tier > Interworking Modules. The list of currently deployed Interworking Modules is displayed.
2. In the list of the deployed modules, select the module instance that you want to configure. The module instance configuration screen is displayed in the Configuration pane.

The configuration screen of the IM-SCF CAP phase 1 contains the subtabs described in Table 12–1.
Configuring IM-SCF CAP Phase 1

### Table 12–1 IM-SCF CAP Phase 1 Configuration Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Enables you to configure general parameters for an Interworking Module instance. For more information, see &quot;Configuring General Parameters&quot;</td>
</tr>
<tr>
<td>Call Handling</td>
<td>Enables you to configure how IM-SCF handles calls. For more information, see &quot;Configuring Call Handling Parameters&quot;</td>
</tr>
<tr>
<td>IN Triggering</td>
<td>Enables you to define the IN triggers that the IM-SCF arms in the underlying session control entity. For more information, see &quot;Configuring IN Triggering Parameters&quot;</td>
</tr>
<tr>
<td>TCAP</td>
<td>Enables you to set up the TCAP layer of the IM-SCF. For more information, see &quot;Configuring TCAP Parameters&quot;</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Enables you to define how Runtime MBeans and notifications operate. For more information, see &quot;Configuring Monitoring Parameters&quot;</td>
</tr>
</tbody>
</table>

### 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 12–2 describes the configuration parameter on the General subtab.

### Table 12–2 General Parameter

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>Plugin</td>
<td>STRING</td>
<td>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.</td>
</tr>
</tbody>
</table>

### 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 CAP Phase 1 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE Reaction Interval in Seconds</td>
<td>INT</td>
<td>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</td>
</tr>
</tbody>
</table>

---

12-2 Configuration Guide
### Table 12–3 (Cont.) IM-SCF CAP Phase 1 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Encoding Format</td>
<td>STRING</td>
<td>Specifies the method that the IM-SCF uses to encode IN parameters in the body of a SAL message. Possible options: BER, XER, None. Default value: None.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>In an IN mediation solution, when IM-SCF is coupled with IM-SSF, this parameter must be set to XER.</td>
</tr>
<tr>
<td>Activity Test Interval in Seconds</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td>Reset Timer Interval in Seconds</td>
<td>INT</td>
<td>Specifies the time period, in seconds, from receiving IN operation and till invoking the ResetTimer operation towards the MSC (reset Tssf). Default value: 10000.</td>
</tr>
<tr>
<td>UI Reset Timer Interval in Seconds</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td>RRBCSM Accumulation Mode</td>
<td>BOOL</td>
<td>Specifies whether or not IM-SCF arms DP's using a single or multiple RRBCSM requests. Possible values: True, False.</td>
</tr>
<tr>
<td>Wait for AssistRequestInstructions after EstablishTemporaryConnection</td>
<td>BOOL</td>
<td>Specifies whether or not IM-SCF expects an ARI operation, following an ETC operation to the switch. Possible values: True, False.</td>
</tr>
<tr>
<td>AssistRequestInstructions Waiting Interval in Seconds</td>
<td>INT</td>
<td>Specifies the time period in seconds during which the IM-SCF waits for an ARI operation, following an ETC operation to the switch.</td>
</tr>
</tbody>
</table>
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 12–4.

Table 12–4 IM-SCF CAP1 N Triggering Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>O-BCSM</td>
<td>Enables you to configure how the IM-SCF arms DPs on the call origination side. For more information, see &quot;Configuring DPs on the Call Origination Side&quot;.</td>
</tr>
<tr>
<td>T-BCSM</td>
<td>Enables you to configure how the IM-SCF arms DPs on the call termination side. For more information, see &quot;Configuring DPs on the Call Termination Side&quot;.</td>
</tr>
</tbody>
</table>

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 12–5 describes configuration parameters on the O-BCSM subtab.

Table 12–5 IM-SCF CAP Phase 1 O-BCSM DPs

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| OAnswer     | STRING        | Specifies how the IM-SCF arms oAnswer. Possible values:  
■ NOTIFY_AND_CONTINUE  
  The IM-SCF arms a DP as EDP-N  
■ TRANSPARENT  
  The IM-SCF does not arm a DP  
■ NOT_APPLICABLE  
  Default value: NOTIFY_AND_CONTINUE |
| ODisconnect | STRING        | Specifies how the IM-SCF arms oDisconnect. Possible values:  
■ INTERRUPTED  
  The IM-SCF arms a DP as EDP-R.  
■ NOTIFY_AND_CONTINUE  
  The IM-SCF arms a DP as EDP-N  
■ TRANSPARENT  
  The IM-SCF does not arm a DP  
■ NOT_APPLICABLE  
  Default value: INTERRUPTED |
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 12–6 describes configuration parameters on the T-BCSM subtab.

### Table 12–6  IM SCF CAP Phase 1 T-BCSM DPs

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>O Disconnect Leg</td>
<td>STRING</td>
<td>Specifies a leg on which the oDisconnect DP is armed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ 1,2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 1,2</td>
</tr>
<tr>
<td>TAnswer</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms tAnswer.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOTIFY_AND_CONTINUE            The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TRANSPARENT                   The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOT_APPLICABLE                Default value: NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td>TDisconnect</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms tDisconnect.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ INTERRUPTED                   The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOTIFY_AND_CONTINUE            The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TRANSPARENT                   The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOT_APPLICABLE                Default value: INTERRUPTED</td>
</tr>
<tr>
<td>TDisconnect Leg</td>
<td>STRING</td>
<td>Specifies a leg on which the tDisconnect DP is armed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ 1,2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 1,2</td>
</tr>
</tbody>
</table>

Configuring TCAP Parameters

The TCAP subtab enables you to set up parameters of the IM TCAP layer.
Table 12–7 describes configuration parameters on the TCAP subtab.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class4 Default Timeout in Seconds</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td>Reject Timeout in Seconds</td>
<td>INT</td>
<td>Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.</td>
</tr>
<tr>
<td>Activate Invoke Alarm in Application Layer</td>
<td>BOOL</td>
<td>When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: True, False. Default value: False.</td>
</tr>
<tr>
<td>Application Part Guard Timer</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td>Result Split Length</td>
<td>INT</td>
<td>Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.</td>
</tr>
</tbody>
</table>

**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. The hierarchy of the MBeans is shown on Figure 12–1.
The following sections provide reference information for the IM-SCF CAP phase 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

**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 12–2.

Operations
None

CallHandlingMBean
CallHandlingMBean enables you to configure how a call is handled.

Factory Method
Created automatically

Attributes
- OeReactionIntervalInSeconds
- BodyEncodingFormat
- ActivityTestIntervalInSeconds
- ResetTimerIntervalInSeconds
- UiResetTimerIntervalInSeconds
Configuring IM-SCF CAP Phase 1

- RrbcsmAccumulationMode
- WaitForAssistRequestInstructionsAfterEstablishTemporaryConnection
- AssistRequestInstructionsWaitingIntervalInSeconds

For more information on these attributes, see Table 12–3.

**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

**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 12–5.

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 12–6.

Operations
None

TcapMBean
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 12–7.

Operations
None
Configuring IM-SCF CAP Phase 2

This section describes how to configure IM-SCF CAP phase 2 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, select OCSB > Processing Tier > Interworking Modules. The list of currently deployed Interworking Modules is displayed.
2. In the list of the deployed modules, select the module instance that you want to configure. The module instance configuration screen is displayed in the Configuration pane.

The configuration screen of the IM-SCF CAP phase 2 contains the subtabs described in Table 12–8.

Table 12–8  IM-SCF CAP Phase 2 Configuration Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Enables you to configure general parameters for an Interworking Module instance. For more information, see “Configuring General Parameters”</td>
</tr>
<tr>
<td>Call Handling</td>
<td>Enables you to define the way that IM-SCF handles calls. For more information, see “Configuring Call Handling Parameters”.</td>
</tr>
<tr>
<td>IN Triggering</td>
<td>Enables you to define the IN triggers that the IM-SCF arms in the underlying session control entity. For more information, see “Configuring IN Triggering Parameters”.</td>
</tr>
<tr>
<td>Media Resources</td>
<td>Enables you to set up the media resources that Service Broker uses to play announcements. For more information, see “Configuring Media Resources Parameters”.</td>
</tr>
<tr>
<td>TCAP</td>
<td>Enables you to set up the TCAP layer of the IM-SCF. For more information, see “Configuring TCAP Parameters”.</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Enables you to define how Runtime MBeans and notifications operate. For more information, see “Configuring Monitoring Parameters”.</td>
</tr>
</tbody>
</table>

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 12–9 describes the configuration parameter on the General subtab.
Configuring IM-SCF CAP Phase 2

Table 12–9  General Parameter

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>Plugin</td>
<td>STRING</td>
<td>Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode/decode SS7 messages.</td>
</tr>
</tbody>
</table>

Configuring Call Handling Parameters

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

Table 12–10 describes configuration parameters on the Call Handling subtab.

Table 12–10  IM-SCF CAP Phase 2 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE Reaction Interval in Seconds</td>
<td>INT</td>
<td>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</td>
</tr>
<tr>
<td>Reset Timer Interval in Seconds</td>
<td>INT</td>
<td>Specifies the time period, in seconds, from receiving IN operation and till invoking the ResetTimer operation towards the MSC (reset Tssf). Default value: 10000</td>
</tr>
<tr>
<td>UI Reset Timer Interval in Seconds</td>
<td>INT</td>
<td>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</td>
</tr>
<tr>
<td>Body Encoding Format</td>
<td>STRING</td>
<td>Specifies the method that the IM-SCF uses to encode IN parameters in the body of a SAL message. Possible values: BER, XER, None. Default value: None. In an IN mediation solution, when IM-SCF is coupled with IM-SSF, this parameter must be set to XER.</td>
</tr>
</tbody>
</table>
Configuring IM-SCF CAP Phase 2

## 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 12–11.

### Table 12–11  IN Triggering Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>O-BCSM</td>
<td>Enables you to configure how the IM-SCF arms DPs on the call origination side. For more information, see &quot;Configuring DPs on the Call Origination Side&quot;.</td>
</tr>
</tbody>
</table>

## 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:

- True
- False

## Wait for AssistRequestInstructions after EstablishTemporaryConnection

**BOOL**

Specifies whether or not IM-SCF expects a ARI operation, following an ETC operation to the switch.

Possible values:

- True
- False

## 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 an IM-SCF that initiates the ETC operation. gsmSCFAddress consists of the following:

- NatureOfAddress (one octet)
- Address Digits (one octet)
- Address indicators (one octet)

For more information about the format of gsmSCFAddress, see 3GPP 29.002.

## Table 12–10 (Cont.) IM-SCF CAP Phase 2 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity Test Interval in Seconds</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td>RRBCSM Accumulation Mode</td>
<td>BOOL</td>
<td>Specifies whether or not IM-SCF arms DPs using a single or multiple RRBCSM requests. Possible values: True, False</td>
</tr>
<tr>
<td>Wait for AssistRequestInstructions after EstablishTemporaryConnection</td>
<td>BOOL</td>
<td>Specifies whether or not IM-SCF expects a ARI operation, following an ETC operation to the switch. Possible values: True, False</td>
</tr>
<tr>
<td>AssistRequestInstructions Waiting Interval in Seconds</td>
<td>INT</td>
<td>Specifies the time period in seconds during which the IM-SCF waits for an ARI operation, following an ETC operation to the switch.</td>
</tr>
<tr>
<td>gsmSCFAddress</td>
<td>STRING</td>
<td>Specifies gsmSCFAddress to be set in an EstablishTemporaryConnection (ETC) operation. gsmSCFAddress represents the address of an IM-SCF that initiates the ETC operation. gsmSCFAddress consists of the following: NatureOfAddress (one octet), Address Digits (one octet), Address indicators (one octet). For more information about the format of gsmSCFAddress, see 3GPP 29.002.</td>
</tr>
</tbody>
</table>
Table 12–11 (Cont.) IN Triggering Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-BCSM</td>
<td>Enables you to configure how the IM-SCF arms DPs on the call termination side.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring DPs on the Call Termination Side&quot;.</td>
</tr>
</tbody>
</table>

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 12–12 describes configuration parameters on the O-BCSM subtab.

Table 12–12 O-BCSM DPs

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RouteSelectFailure</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms RouteSelectFailure. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>OCalledPartyBusy</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms OCalledPartyBusy. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>ONoAnswer</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms ONoAnswer. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
</tbody>
</table>

12-14 Configuration Guide
Configuring IM-SCF CAP Phase 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 12–13 describes configuration parameters on the T-BCSM subtab.
### Table 12-13 T-BCSM DPs

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBusy</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms tBusy. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>TNoAnswer</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms tNoAnswer.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>TAnswer</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms tAnswer.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>TDisconnect</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms tDisconnect.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
</tbody>
</table>
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 12–14.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TA abandon</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms TA abandon.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td>TD disconnect</td>
<td>STRING</td>
<td>Specifies a leg on which the TD disconnect DP is armed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ 1,2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 1,2</td>
</tr>
</tbody>
</table>

Table 12–14  IM-SCF CAP Phase 2 Media Resource Definition Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a name of the media resource</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>Specifies a unique identifier that applications use to instruct Service Broker which media resource to connect in order to play announcements.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aliases are defined in a URI format. For example: <a href="mailto:mrf.network@domain.com">mrf.network@domain.com</a>.</td>
</tr>
<tr>
<td>Address Digits</td>
<td>STRING</td>
<td>Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Note: when this parameter is not set, the network’s session control entity uses a pre-configured media resource to play announcements. In this case, Nature of Address and Address Numbering Plan Indicator should be set to ‘None’.</td>
</tr>
</tbody>
</table>
### Table 12–14  (Cont.) IM-SCF CAP Phase 2 Media Resource Definition Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Nature of Address           | STRING  | Specifies the NatureOfAddress part of the media resource address. The media resource address is used to set up a connection towards the media resource. Possible values:  
  - SUBSCRIBER_NUMBER  
  - UNKNOWN  
  - NATIONAL  
  - INTERNATIONAL  
  - NETWORK_SPECIFIC  
  Default value: SUBSCRIBER_NUMBER |
| Address Numbering Plan Indicator | STRING  | Specifies the NumberingPlanInd part of the media resource address. The media resource address is used to set up a connection towards the media resource. Possible values:  
  - ISDN  
  - DATA  
  - TELEX  
  Default value: ISDN |
| Numbering Qualifier         | STRING  | Specifies the numbering qualifier of the media resource address. Possible values:  
  - NONE  
  - DIALLED_DIGITS  
  - USER_PROVIDED_FAILED_NET_SCREENING  
  - USER_PROVIDED_NOT_SCREENED  
  - REDIRECTING_TERMINATING_NUMBER  
  Default value: NONE |
| Number Screening            | STRING  | Specifies the numbering screening of the media resource address. Possible values:  
  - UNDEFINED  
  - USER_PROVIDED_NOT_VERIFIED  
  - USER_PROVIDED_VERIFIED_PASSED  
  - USER_PROVIDED_VERIFIED_FAILED  
  - NETWORK_PROVIDED  
  Default value: UNDEFINED |
Configuring IM-SCF CAP Phase 2

### Configuring IM-SCF

#### Configuring TCAP Parameters

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

Table 12–15 describes configuration parameters on the TCAP subtab.

---

**Table 12–14 (Cont.) IM-SCF CAP Phase 2 Media Resource Definition Fields**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presentation Restriction</td>
<td>STRING</td>
<td>Specifies the presentation restriction of the media resource address.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- UNDEFINED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- ALLOWED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- RESTRICTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_AVAILABLE</td>
</tr>
<tr>
<td>Default value:</td>
<td></td>
<td>UNDEFINED</td>
</tr>
<tr>
<td>Operation Type</td>
<td>STRING</td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- internal - the media resource is internal part of the SSP. ConnectToResource (CTR) operation is used to connect the media resource.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- external - the media resource not a part of the SSP. EstablishTemporaryConnection (ETC) is used to connect the media resource.</td>
</tr>
<tr>
<td>Default value:</td>
<td></td>
<td>internal</td>
</tr>
<tr>
<td>Answer Indication</td>
<td>BOOL</td>
<td>Specifies how to set the bothwayThroughConnectionInd in the ServiceInteractionIndicatorTwo parameter in the ETC and CTR operations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 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)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- False - The media path opens only in the direction from the media resource to the caller</td>
</tr>
<tr>
<td>Default value:</td>
<td></td>
<td>True</td>
</tr>
</tbody>
</table>

**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.
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. The hierarchy of the MBeans is shown on Figure 12–2.

### Table 12–15 TCAP Parameter

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class4 Default Timeout in Seconds</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td>Reject Timeout in Seconds</td>
<td>INT</td>
<td>Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.</td>
</tr>
<tr>
<td>Activate Invoke Alarm in Application Layer</td>
<td>BOOL</td>
<td>When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ True ■ False Default value: False.</td>
</tr>
<tr>
<td>Application Part Guard Timer</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td>Result Split Length</td>
<td>INT</td>
<td>Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.</td>
</tr>
</tbody>
</table>
The following sections provide reference information for the IM-SCF CAP phase 2 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
- MediaResourcesMBean
- MediaResourceMBean
- ImscfCap2MBean

**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 12–9.

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 12–10.

**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 12–12.

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 12–13.

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 12–14.

Operations
None

Tcap MBean
TcapMBean enables you to configure the TCAP layer of the module.
Configuring IM-SCF CAP Phase 3

Factory Method
Created automatically

Attributes
- Class4DefaultTimeoutInSeconds
- RejectTimeoutInSeconds
- ActivateInvokeAlarmInApplicationLayer
- ApplicationPartGuardTimer
- ResultSplitLength
For more information on these attributes, see f.

Operations
None

Configuring IM-SCF CAP Phase 3
This section describes how to configure IM-SCF CAP phase 3 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, select OCSB > Processing Tier > Interworking Modules. The list of currently deployed Interworking Modules is displayed.

2. In the list of the deployed modules, select the module instance that you want to configure. The module instance configuration screen is displayed in the Configuration pane.

The configuration screen of the IM-SCF CAP phase 3 contains subtabs described in Table 12–16.

Table 12–16 IM-SCF CAP Phase 3 Configuration Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Enables you to configure general parameters for an Interworking Module instance. For more information, see “Configuring General Parameters”</td>
</tr>
<tr>
<td>Call Handling</td>
<td>Enables you to define the way that IM-SCF handles calls. For more information, see “Configuring Call Handling Parameters”.</td>
</tr>
<tr>
<td>IN Triggering</td>
<td>Enables you to define the IN triggers that IM-SCF arms in the underlying session control entity. For more information, see “Configuring IN Triggering Parameters”.</td>
</tr>
</tbody>
</table>
Configuring IM-SCF CAP Phase 3

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 12–17 describes the configuration parameter on the General subtab.

```
<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>Plugin</td>
<td>STRING</td>
<td>Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode / decode SS7 messages.</td>
</tr>
</tbody>
</table>
```

Configuring Call Handling Parameters

The Call Handling subtab enables you to define how IM-SCF handles calls. Table 12–18 describes configuration parameters on the Call Handling subtab.

```
<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE Reaction Interval in Seconds</td>
<td>INT</td>
<td>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</td>
</tr>
<tr>
<td>Reset Timer Interval in Seconds</td>
<td>INT</td>
<td>Specifies the time period, in seconds, from receiving IN operation and till invoking the ResetTimer operation towards the MSC (reset Tssf). Default value: 10000</td>
</tr>
</tbody>
</table>
```
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:
- BER
- XER
- None
Default value: None
In an IN mediation solution, when IM-SCF is coupled with IM-SSF, this parameter must be set to XER.

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:
- True
- False

Wait for AssistRequestInstructions after EstablishTemporaryConnection | BOOL | Specifies whether or not IM-SCF expects a ARI operation, following an ETC operation to the switch.
Possible values:
- True
- False

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 12–19.

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>O-BCSM</td>
<td>Enables you to configure how the IM-SCF arms DPs on the call origination side. For more information, see “Configuring DPs on the Call Origination Side”.</td>
</tr>
<tr>
<td>T-BCSM</td>
<td>Enables you to configure how the IM-SCF arms DPs on the call termination side. For more information, see “Configuring DPs on the Call Termination Side”.</td>
</tr>
<tr>
<td>O-SMS</td>
<td>Enables you to configure how the IM-SCF arms DPs on the SMS origination side. For more information, see “Configuring DPs on the SMS Origination Side”.</td>
</tr>
</tbody>
</table>

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 12–20 describes configuration parameters on the O-BCSM subtab.
### Table 12–20  O-BCSM DPs

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RouteSelectFailure</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms RouteSelectFailure. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>OCalledPartyBusy</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms OCalledPartyBusy. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>ONoAnswer</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms ONoAnswer. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>OAnswer</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms OAnswer. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
</tbody>
</table>
Configuring IM-SCF CAP Phase 3

Configuring IM-SCF

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 12–21 describes configuration parameters on the T-BCSM subtab.
### Table 12–21 T-BCSM DPs

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TBusy</strong></td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms tBusy. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NOT_APPLICABLE</td>
</tr>
<tr>
<td><strong>TNoAnswer</strong></td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms tNoAnswer. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NOT_APPLICABLE</td>
</tr>
<tr>
<td><strong>TAnswer</strong></td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms tAnswer. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NOT_APPLICABLE</td>
</tr>
<tr>
<td><strong>TDisconnect</strong></td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms tDisconnect. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NOT_APPLICABLE</td>
</tr>
</tbody>
</table>
Configuring IM-SCF CAP Phase 3

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 12–22 describes configuration parameters on the O-SMS subtab.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSmsSubmission</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms osmsSubmission. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
</tbody>
</table>
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 12–23.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a name of the media resource</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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: <a href="mailto:mrf001@domain.com">mrf001@domain.com</a>.</td>
</tr>
<tr>
<td>Address Digits</td>
<td>STRING</td>
<td>Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource. Note: when this parameter is not set, the network’s session control entity uses a pre-configured media resource to play announcements. In this case, Nature of Address and Address Numbering Plan Indicator should be set to 'None'.</td>
</tr>
</tbody>
</table>
### Table 12–23 (Cont.) IM-SCF CAP Phase 3 Media Resource Definition Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Nature of Address           | STRING   | Specifies the NatureOfAddress part of the media resource address. The media resource address is used to set up a connection towards the media resource. Possible values:  
  - SUBSCRIBER_NUMBER  
  - UNKNOWN  
  - NATIONAL  
  - INTERNATIONAL  
  - NETWORK-SPECIFIC  
  Default value: SUBSCRIBER_NUMBER |
| Address Numbering Plan Indicator | STRING   | Specifies the NumberingPlanInd part of the media resource address. The media resource address is used to set up a connection towards the media resource. Possible values:  
  - ISDN  
  - DATA  
  - TELEX  
  Default value: ISDN |
| Numbering Qualifier         | STRING   | Specifies the numbering qualifier of the media resource address. Possible values:  
  - NONE  
  - DIALLED_DIGITS  
  - USER_PROVIDED_FAILED_NETWORKSCREENING  
  - USER_PROVIDED_NOT_SCREENED  
  - REDIRECTING_TERMINATINGNUMBER  
  Default value: NONE |
| Number Screening            | STRING   | Specifies the numbering screening of the media resource address. Possible values:  
  - UNDEFINED  
  - USER_PROVIDED_NOT_VERIFIED  
  - USER_PROVIDED_VERIFIED_PASSED  
  - USER_PROVIDED_VERIFIED_FAILED  
  - NETWORK_PROVIDED  
  Default value: UNDEFINED |
### Configuring IM-SCF CAP Phase 3

#### Table 12–23 (Cont.) IM-SCF CAP Phase 3 Media Resource Definition Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Presentation Restriction | STRING | Specifies the presentation restriction of the media resource address. Possible values:  
  - UNDEFINED  
  - ALLOWED  
  - RESTRICTED  
  - NOTAVAILABLE  
  Default value: UNDEFINED |
| Operation Type        | STRING | Possible values:  
  - internal - the media resource is internal part of the SSP. ConnectToResource (CTR) operation is used to connect the media resource.  
  - external - the media resource not a part of the SSP. EstablishTemporaryConnection (ETC) is used to connect the media resource.  
  Default value: internal |
| Answer Indication     | BOOL  | Specifies how to set the bothwayThroughConnectionInd in the ServiceInteractionIndicatorTwo parameter in the ETC and CTR operations. Possible values:  
  - 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)  
  - False - The media path opens only in the direction from the media resource to the caller  
  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 12–24** describes configuration parameters on the TCAP subtab.
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. The hierarchy of the MBeans is shown on Figure 12–3.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class4 Default Timeout in Seconds</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td>Reject Timeout in Seconds</td>
<td>INT</td>
<td>Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.</td>
</tr>
<tr>
<td>Activate Invoke Alarm in Application Layer</td>
<td>BOOL</td>
<td>When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: True, False. Default value: False.</td>
</tr>
<tr>
<td>Application Part Guard Timer</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td>Result Split Length</td>
<td>INT</td>
<td>Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.</td>
</tr>
</tbody>
</table>
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
- MediaResourcesMBean
- MediaResourceMBean
- TcapMBean

**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 12–17.

**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 12–18.

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 12–20.

**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 12–21.

**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 12–22.

**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 12–23.

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 12–24.

Operations
None
Configuring IM-SCF CAP Phase 4

This section describes how to configure IM-SCF CAP phase 4 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, select OCSB > Processing Tier > Interworking Modules. The list of currently deployed Interworking Modules is displayed.

2. In the list of the deployed modules, select the module instance that you want to configure. The module instance configuration screen is displayed in the Configuration pane.

The configuration screen of the IM-SCF CAP phase 4 contains subtabs described in Table 12–25.

### Table 12–25 IM-SCF CAP Phase 4 Configuration Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Enables you to specify general parameters for an Interworking Module instance. For more information, see &quot;Configuring General Parameters&quot;</td>
</tr>
<tr>
<td>Call Handling</td>
<td>Enables you to define the way that IM-SCF handles calls. For more information, see &quot;Configuring Call Handling Parameters&quot;</td>
</tr>
<tr>
<td>IN Triggering</td>
<td>Enables you to define the IN triggers that the IM-SCF arms in the underlying session control entity. For more information, see &quot;Configuring IN Triggering Parameters&quot;</td>
</tr>
<tr>
<td>Media Resources</td>
<td>Enables you to set up the media resources that Service Broker uses to play announcements. For more information, see &quot;Configuring Media Resources Parameters&quot;</td>
</tr>
<tr>
<td>TCAP</td>
<td>Enables you to set up the TCAP layer of the IM-SCF. For more information, see &quot;Configuring TCAP Parameters&quot;</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Enables you to define how Runtime MBeans and notifications operate. For more information, see &quot;Configuring Monitoring Parameters&quot;</td>
</tr>
</tbody>
</table>

### 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 12–26 describes the configuration parameter on the General subtab.
Configuring IM-SCF CAP Phase 4

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

Table 12–26  General Parameter

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>Plugin</td>
<td>STRING</td>
<td>Specifies the CAP phase 4 variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode and decode SS7 messages. There are two CAP phase 4 variants: cap4.rel6_5_0.AutoGeneratedOssCap4Plugin cap4.rel7_5_0.AutoGeneratedOssCap4Plugin You can manually type the version appropriate to your network requirements in the Plugin text field.</td>
</tr>
</tbody>
</table>

Table 12–27  IM-SCF CAP Phase 4 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE Reaction Interval in Seconds</td>
<td>INT</td>
<td>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</td>
</tr>
<tr>
<td>Reset Timer Interval in Seconds</td>
<td>INT</td>
<td>Specifies the time period, in seconds, from receiving IN operation and till invoking the ResetTimer operation towards the MSC (reset Tssf). Default value: 10000</td>
</tr>
<tr>
<td>UI Reset Timer Interval in Seconds</td>
<td>INT</td>
<td>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</td>
</tr>
</tbody>
</table>
Table 12–27 (Cont.) IM-SCF CAP Phase 4 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Encoding Format</td>
<td>STRING</td>
<td>Specifies the method that the IM-SCF uses to encode IN parameters in the body of a SAL message. Possible options: BER, XER, None. Default value: None. In an IN mediation solution, when IM-SCF is coupled with IM-SSF, this parameter must be set to XER.</td>
</tr>
<tr>
<td>Activity Test Interval in Seconds</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td>RRBCSM Accumulation Mode</td>
<td>BOOL</td>
<td>Specifies whether or not IM-SCF arms DPs using a single or multiple RRBCSM requests. Possible values: True, False.</td>
</tr>
<tr>
<td>Wait for AssistRequestInstructions after EstablishTemporaryConnection</td>
<td>BOOL</td>
<td>Specifies whether or not IM-SCF expects a ARI operation, following an ETC operation to the switch. Possible values: True, False.</td>
</tr>
<tr>
<td>AssistRequestInstructions Waiting Interval in Seconds</td>
<td>INT</td>
<td>Specifies the time period in seconds during which the IM-SCF waits for an ARI operation, following an ETC operation to the switch.</td>
</tr>
<tr>
<td>gsmSCFAddress</td>
<td>STRING</td>
<td>Specifies gsmSCFAddress to be set in an EstablishTemporaryConnection (ETC) operation and InitiateCallAttempt (ICA) operation. gsmSCFAddress represents the address of an IM-SCF that initiates the ICA operation and ETC operation. gsmSCFAddress consists of the following: NatureOfAddress (one octet), Address Digits (one octet), Address indicators (one octet). For more information about the format of gsmSCFAddress, see 3GPP 29.002.</td>
</tr>
</tbody>
</table>
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 12–28.

Table 12–28  IN Triggering Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>O-BCSM</td>
<td>Enables you to configure how the IM-SCF arms DPs on the call origination side. For more information, see “Configuring DPs on the Call Origination Side”.</td>
</tr>
<tr>
<td>T-BCSM</td>
<td>Enables you to configure how the IM-SCF arms DPs on the call termination side. For more information, see “Configuring DPs on the Call Termination Side”.</td>
</tr>
<tr>
<td>InitiateCallAttempt</td>
<td>Enables you to configure how DPs that the IM-SCF arms upon receiving the InitiateCallAttempt message. For more information, see “Configuring DPs for Initial Call Attempt Message”.</td>
</tr>
<tr>
<td>O-SMS</td>
<td>Enables you to configure how the IM-SCF arms DPs on the SMS origination side. For more information, see “Configuring DPs on the SMS Origination Side”.</td>
</tr>
<tr>
<td>T-SMS</td>
<td>Enables you to configure how the IM-SCF arms DPs on the SMS termination side. For more information, see “Configuring DPs on the SMS Termination Side”.</td>
</tr>
</tbody>
</table>

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 12–29 describes configuration parameters on the O-BCSM subtab.

Table 12–29  O-BCSM DPs

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RouteSelectFailure</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms RouteSelectFailure. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
</tbody>
</table>
### O-BCSM DPs

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OCalledPartyBusy</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms oCalledPartyBusy.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>ONoAnswer</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms oNoAnswer.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>OTermSeized</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms oTermSeized.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>OAnswer</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms oAnswer.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
</tbody>
</table>
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 12–30 describes configuration parameters on the T-BCSM subtab.
<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBusy</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms tBusy. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>TNoAnswer</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms tNoAnswer. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>CallAccepted</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms CallAccepted. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td>TAnswer</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms tAnswer. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
</tbody>
</table>
Configuring IM-SCF CAP Phase 4

Configuring IM-SCF

12-51

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 12–31 describes configuration parameters on the Initiate Call Attempt subtab.

Table 12–30 (Cont.) T-BCSM DPs

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

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 12–31 describes configuration parameters on the Initiate Call Attempt subtab.
### Table 12–31 Initial Call Attempt DPs

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RouteSelectFailure</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms RouteSelectFailure. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERRUPTED&lt;br&gt;The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOTIFY_AND_CONTINUE&lt;br&gt;The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TRANSPARENT&lt;br&gt;The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_APPLICABLE&lt;br&gt;Default value: INTERRUPTED</td>
</tr>
<tr>
<td>OCalledPartyBusy</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms OCalledPartyBusy. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERRUPTED&lt;br&gt;The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOTIFY_AND_CONTINUE&lt;br&gt;The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TRANSPARENT&lt;br&gt;The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_APPLICABLE&lt;br&gt;Default value: INTERRUPTED</td>
</tr>
<tr>
<td>ONoAnswer</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms ONoAnswer. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERRUPTED&lt;br&gt;The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOTIFY_AND_CONTINUE&lt;br&gt;The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TRANSPARENT&lt;br&gt;The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_APPLICABLE&lt;br&gt;Default value: INTERRUPTED</td>
</tr>
<tr>
<td>OTermSeized</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms OTermSeized. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERRUPTED&lt;br&gt;The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOTIFY_AND_CONTINUE&lt;br&gt;The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TRANSPARENT&lt;br&gt;The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_APPLICABLE&lt;br&gt;Default value: NOTIFY_AND_CONTINUE</td>
</tr>
</tbody>
</table>
Configuring IM-SCF CAP Phase 4

Configuring IM-SCF

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 12–32 describes configuration parameters on the O-SMS subtab.

Table 12–31 (Cont.) Initial Call Attempt DPs

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OAnswer</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms oAnswer. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>ODisconnect</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms ODisconnect. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
</tbody>
</table>

Table 12–32 O-SMS DPs

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSmsSubmission</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms oSmsSubmission. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
</tbody>
</table>
Configuring IM-SCF CAP Phase 4

Table 12–32  O-SMS DPs

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSmsFailure</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms oSmsFailure. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
</tbody>
</table>

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 12–33 describes configuration parameters on the T-SMS subtab.

Table 12–33  T-SMS DPs

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSmsSubmission</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms tSmsSubmission. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>TSmsFailure</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms tSmsFailure. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
</tbody>
</table>

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 12–34.

### Table 12–34 IM-SCF CAP Phase 4 Media Resource Definition Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a name of the media resource</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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: <a href="mailto:mrf.network@domain.com">mrf.network@domain.com</a>.</td>
</tr>
<tr>
<td>Address Digits</td>
<td>STRING</td>
<td>Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource. Note: when this parameter is not set, the network’s session control entity uses a pre-configured media resource to play announcements. In this case, Nature of Address and Address Numbering Plan Indicator should be set to None.</td>
</tr>
</tbody>
</table>
| Nature of Address     | STRING   | Specifies the NatureOfAddress part of the media resource address. The media resource address is used to set up a connection towards the media resource. Possible values:
  - SUBSCRIBER_NUMBER
  - UNKNOWN
  - NATIONAL
  - INTERNATIONAL
  - NETWORK-SPECIFIC
  Default value: SUBSCRIBER_NUMBER |
| Address Numbering Plan Indicator | STRING   | Specifies the NumberingPlanInd part of the media resource address. The media resource address is used to set up a connection towards the media resource. Possible values:
  - ISDN
  - DATA
  - TELEX
  Default value: ISDN |

---

Configuring IM-SCF CAP Phase 4

12-55
### Table 12–34 (Cont.) IM-SCF CAP Phase 4 Media Resource Definition Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numbering Qualifier</td>
<td>STRING</td>
<td>Specifies the numbering qualifier of the media resource address.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NONE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIALLED_DIGITS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ USER_PROVIDED_FAILED_NETWORK_SCREENING</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ USER_PROVIDED_NOT_SCREENED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ REDIRECTING_TERMINATING_NUMBER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: NONE</td>
</tr>
<tr>
<td>Number Screening</td>
<td>STRING</td>
<td>Specifies the numbering screening of the media resource address.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ UNDEFINED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ USER_PROVIDED_NOT_VERIFIED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ USER_PROVIDED_VERIFIED_PASSED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ USER_PROVIDED_VERIFIED_FAILED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NETWORK_PROVIDED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: UNDEFINED</td>
</tr>
<tr>
<td>Presentation Restriction</td>
<td>STRING</td>
<td>Specifies the presentation restriction of the media resource address.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ UNDEFINED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ ALLOWED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ RESTRICTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOT_AVAILABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: UNDEFINED</td>
</tr>
<tr>
<td>Operation Type</td>
<td>STRING</td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ internal - the media resource is internal part of the SSP. ConnectToResource (CTR) operation is used to connect the media resource.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ external - the media resource not a part of the SSP. EstablishTemporaryConnection (ETC) is used to connect the media resource.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: internal</td>
</tr>
</tbody>
</table>
Configuring TCAP Parameters

The TCAP subtab enables you to set up parameters of the IM TCAP layer. Table 12–35 describes configuration parameters on the TCAP subtab.

Table 12–35  TCAP Parameter

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class4 Default Timeout in Seconds</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td>Reject Timeout in Seconds</td>
<td>INT</td>
<td>Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.</td>
</tr>
</tbody>
</table>

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 IM-SCF CAP Phase 4

Table 12–35  (Cont.) TCAP Parameter

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| 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. Possible values:     
|                                           |          | ■ True                                                                                                                                   |
|                                           |          | ■ False                                                                                  Default value: False. |
| Application Part Guard Timer              | INT      | Specifies the PSM timer, which is a timer for incoming operations. The PSM timer defines the maximum time in seconds that the application (TC-User) has to respond to incoming INVOKE messages. |
| 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. The hierarchy of the MBeans is shown on Figure 12–4.
The following sections provide reference information for the IM-SCF CAP phase 4 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
- MediaResourcesMBean
- MediaResourceMBean
- TcapMBean
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 12–26.

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 12–27.

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

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 12–29.

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 12–30.

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 12–31.

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 12–32.

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 12–33.

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 12–34.
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 12–35.

Operations
None

Configuring IM-SCF INAP CS-1

This section describes how to configure IM-SCF INAP CS-1 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, select OCSB > Processing Tier > Interworking Modules. The list of currently deployed Interworking Modules is displayed.
2. In the list of the deployed modules, select the module instance that you want to configure. The module instance configuration screen is displayed in the Configuration pane.

The configuration screen of the IM-SCF INAP CS-1 contains the subtabs described in Table 12–36.

Table 12–36  IM-SCF INAP CS-1 Configuration Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Enables you to configure general parameters for an Interworking Module instance. For more information, see &quot;Configuring General Parameters&quot;</td>
</tr>
<tr>
<td>Call Handling</td>
<td>Enables you to define the way that IM-SCF handles calls. For more information, see &quot;Configuring Call Handling Parameters&quot;</td>
</tr>
</tbody>
</table>
Configuring IM-SCF INAP CS-1

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 12–37 describes the configuration parameter on the General subtab.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>Plugin</td>
<td>STRING</td>
<td>Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode / decode SS7 messages.</td>
</tr>
</tbody>
</table>

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

Table 12–38 describes configuration parameters on the Call Handling subtab.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE Reaction Interval in Seconds</td>
<td>INT</td>
<td>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</td>
</tr>
</tbody>
</table>
### Table 12–38  (Cont.) IM-SCF INAP CS-1 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reset Timer Interval in Seconds</td>
<td>INT</td>
<td>Specifies the time period, in seconds, from receiving IN operation and till invoking the ResetTimer operation towards the MSC (reset Tssf). Default value: 10000</td>
</tr>
<tr>
<td>UI Reset Timer Interval in Seconds</td>
<td>INT</td>
<td>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</td>
</tr>
<tr>
<td>Body Encoding Format</td>
<td>STRING</td>
<td>Specifies the method that the IM-SCF uses to encode IN parameters in the body of a SAL message. Possible options: BER, XER, None. Default value: None. In an IN mediation solution, when IM-SCF is coupled with IM-SSF, this parameter must be set to XER.</td>
</tr>
<tr>
<td>RRBCSM Accumulation Mode</td>
<td>BOOL</td>
<td>Specifies whether or not IM-SCF arms DPs using a single or multiple RRBCSM requests. Possible values: True, False</td>
</tr>
<tr>
<td>Wait for AssistRequestInstructions after EstablishTemporaryConnection</td>
<td>BOOL</td>
<td>Specifies whether or not IM-SCF expects an ARI operation after an ETC operation to the switch. Possible values: True, False</td>
</tr>
<tr>
<td>AssistRequestInstructions Waiting Interval in Seconds</td>
<td>INT</td>
<td>Specifies the time period in seconds during which the IM-SCF waits for an ARI operation after an ETC operation to the switch</td>
</tr>
</tbody>
</table>
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 12-39.

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>O-BCSM</td>
<td>Enables you to configure how the IM-SCF arms DPs on the call origination side.</td>
</tr>
<tr>
<td></td>
<td>For more information, see “Configuring DPs on the Call Origination Side”.</td>
</tr>
<tr>
<td>T-BCSM</td>
<td>Enables you to configure how the IM-SCF arms DPs on the call termination side.</td>
</tr>
<tr>
<td></td>
<td>For more information, see “Configuring DPs on the Call Termination Side”.</td>
</tr>
<tr>
<td>Initial Call Attempt</td>
<td>Enables you to configure how DPs that the IM-SCF arms upon receiving the InitiateCallAttempt message.</td>
</tr>
<tr>
<td></td>
<td>For more information, see “Configuring DPs for Initial Call Attempt Message”.</td>
</tr>
</tbody>
</table>

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 12-40 describes configuration parameters on the O-BCSM subtab.
### Table 12–40  O-BCSM DPs

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RouteSelectFailure</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms RouteSelectFailure. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>OCalledPartyBusy</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms oCalledPartyBusy. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>ONoAnswer</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms oNoAnswer. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>OAnswer</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms oAnswer. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
</tbody>
</table>
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 12–41 describes configuration parameters on the T-BCSM subtab.

### Table 12–40 (Cont.) O-BCSM DPs

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ODisconnect</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms oDisconnect. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>OAbandon</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms oAbandon. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>ODisconnect Leg</td>
<td>STRING</td>
<td>Specifies a leg on which the oDisconnect DP is armed. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 1,2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 1,2</td>
</tr>
<tr>
<td>Name</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>---------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>TBusy</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms tBusy. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>TNoAnswer</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms tNoAnswer. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>TAnswer</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms tAnswer. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>TDisconnect</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms tDisconnect. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
</tbody>
</table>
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 12–42 describes configuration parameters on the Initiate Call Attempt subtab.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RouteSelectFailure</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms RouteSelectFailure. Possible values:</td>
</tr>
</tbody>
</table>
|                       |            | - INTERRUPTED  
|                       |            |   The IM-SCF arms a DP as EDP-R. |
|                       |            | - NOTIFY_AND_CONTINUE  
|                       |            |   The IM-SCF arms a DP as EDP-N |
|                       |            | - TRANSPARENT  
|                       |            |   The IM-SCF does not arm a DP |
|                       |            | - NOT_APPLICABLE  
|                       |            |   Default value: INTERRUPTED |
| TAbandon              | STRING     | Specifies how the IM-SCF arms tAbandon. Possible values: |
|                       |            | - INTERRUPTED  
|                       |            |   The IM-SCF arms a DP as EDP-R. |
|                       |            | - NOTIFY_AND_CONTINUE  
|                       |            |   The IM-SCF arms a DP as EDP-N |
|                       |            | - TRANSPARENT  
|                       |            |   The IM-SCF does not arm a DP  |
|                       |            | - NOT_APPLICABLE  
|                       |            |   Default value: INTERRUPTED |
| TDisconnect Leg       | STRING     | Specifies a leg on which the tDisconnect DP is armed. Possible values: |
|                       |            | - 1  |
|                       |            | - 2  |
|                       |            | - 1,2  
|                       |            |   Default value: 1,2  |
### Table 12–42 (Cont.) Initial Call Attempt DPs

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OCalledPartyBusy</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms OCalledPartyBusy. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>ONoAnswer</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms ONoAnswer. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>OAnswer</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms OAnswer. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
<tr>
<td>ODisconnect</td>
<td>STRING</td>
<td>Specifies how the IM-SCF arms ODisconnect. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERRUPTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-R.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOTIFY_AND_CONTINUE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF arms a DP as EDP-N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TRANSPARENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The IM-SCF does not arm a DP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_APPLICABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: INTERRUPTED</td>
</tr>
</tbody>
</table>
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 12–43.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a name of the media resource</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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: <a href="mailto:mrf.network@domain.com">mrf.network@domain.com</a>.</td>
</tr>
<tr>
<td>Address Digits</td>
<td>STRING</td>
<td>Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource. Note: when this parameter is not set, the network’s session control entity uses a pre-configured media resource to play announcements. In this case, Nature of Address and Address Numbering Plan Indicator should be set to ‘None’.</td>
</tr>
<tr>
<td>Nature of Address</td>
<td>STRING</td>
<td>Specifies the NatureOfAddress part of the media resource address. The media resource address is used to set up a connection towards the media resource. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ SUBSCRIBER_NUMBER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ UNKNOWN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NATIONAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ INTERNATIONAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NETWORK_SPECIFIC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: SUBSCRIBER_NUMBER</td>
</tr>
<tr>
<td>Address Numbering Plan Indicator</td>
<td>STRING</td>
<td>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:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ ISDN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DATA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TELEX</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: ISDN</td>
</tr>
</tbody>
</table>
Configuring IM-SCF INAP CS-1

Table 12–44 (Cont.) IM-SCF INAP CS-1 Media Resource Definition Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation Type</td>
<td>STRING</td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ internal - the media resource is internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>part of the SSP. ConnectToResource (CTR)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>operation is used to connect the media</td>
</tr>
<tr>
<td></td>
<td></td>
<td>resource.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ external - the media resource not a part of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the SSP. EstablishTemporaryConnection (ETC)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>is used to connect the media resource.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: internal</td>
</tr>
</tbody>
</table>

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

Configuring TCAP Parameters

The TCAP subtab enables you to set up parameters of the IM TCAP layer. Table 12–44 describes configuration parameters on the TCAP subtab.

Table 12–44 TCAP Parameter

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class4 Default Timeout in Seconds</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td>Reject Timeout in Seconds</td>
<td>INT</td>
<td>Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.</td>
</tr>
<tr>
<td>Activate Invoke Alarm in Application Layer</td>
<td>BOOL</td>
<td>When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ True ■ False Default value: False.</td>
</tr>
</tbody>
</table>
Configuring IM-SCF INAP CS-1

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. The hierarchy of the MBeans is shown on Figure 12–5.

**Table 12–44 (Cont.) TCAP Parameter**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Part Guard Timer</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td>Result Split Length</td>
<td>INT</td>
<td>Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.</td>
</tr>
</tbody>
</table>
The following sections provide reference information for the IM-SCF 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
- MediaResourcesMBean
  - MediaResourceMBean [0..n]
- TcapMBean

**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 12–37.

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 12–38.

**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 12–40.

**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
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 12–42.

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

For more information on these attributes, see Table 12–43.

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 12–44.

Operations

None
Configuring IM-SCF WIN Phase 1

This section describes how to configure IM-SCF WIN phase 1 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, select OCSB > Processing Tier > Interworking Modules. The list of currently deployed Interworking Modules is displayed.
2. In the list of the deployed modules, select the module instance that you want to configure. The module instance configuration screen is displayed in the Configuration pane.

The configuration screen of the IM-SCF WIN phase 1 contains the subtabs described in Table 12-45.

<table>
<thead>
<tr>
<th>Table 12–45 IM-SCF WIN Phase 1 Configuration Subtabs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subtab</td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td>General</td>
</tr>
<tr>
<td>Call Handling</td>
</tr>
<tr>
<td>Media Resources</td>
</tr>
<tr>
<td>TCAP</td>
</tr>
<tr>
<td>Monitoring</td>
</tr>
</tbody>
</table>

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 12–46 describes the configuration parameter on the General subtab.

<table>
<thead>
<tr>
<th>Table 12–46 General Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>Alias</td>
</tr>
</tbody>
</table>
Configuring IM-SCF WIN Phase 1

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

Table 12–47 describes configuration parameters on the Call Handling subtab.

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

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 12–48.
Table 12–48  IM-SCF WIN Phase 1 Media Resource Definition Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a name of the media resource</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>Specifies a unique identifier that applications use to instruct IM-SCF which media resource to connect in order to play announcements.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Alias is used by IM-SCF to lookup a media resource details in this table.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aliases are defined in a URI format. For example: <a href="mailto:mrf.network@domain.com">mrf.network@domain.com</a>.</td>
</tr>
<tr>
<td>Address Digits</td>
<td>STRING</td>
<td>Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Note:</strong> 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'.</td>
</tr>
<tr>
<td>Operation Type</td>
<td>STRING</td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Switched_Based - the media resource is internal part of the SSP. CCDIR operation is used to connect the media resource.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ External - the media resource not a part of the SSP. ConnectResource operation is used to connect the media resource.</td>
</tr>
<tr>
<td>Resource Type</td>
<td>STRING</td>
<td>Specifies the value to set in the SpecializedResource parameter of the SEIZERES operation.</td>
</tr>
<tr>
<td>Private Resource Type</td>
<td>STRING</td>
<td>Specifies the value to set in the PrivateSpecializedResource parameter of the SEIZERES operation.</td>
</tr>
<tr>
<td>SN-IP Configuration</td>
<td>STRING</td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ SN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IP and SCP are co-located. When you choose this option, you need to set also the SN Address parameter.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ IP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IP and SCP are not co-located</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ None</td>
</tr>
<tr>
<td>SN Address</td>
<td>STRING</td>
<td>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.</td>
</tr>
</tbody>
</table>

Configuring TCAP Parameters
The TCAP subtab enables you to set up parameters of the IM TCAP layer.
Table 12–49 describes configuration parameters on the TCAP subtab.
Configuring IM-SCF WIN Phase 1

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. The hierarchy of the MBeans is shown on Figure 12–6.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class4 Default Timeout in Seconds</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td>Reject Timeout in Seconds</td>
<td>INT</td>
<td>Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.</td>
</tr>
<tr>
<td>Activate Invoke Alarm in Application Layer</td>
<td>BOOL</td>
<td>When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ True ■ False Default value: False.</td>
</tr>
<tr>
<td>Application Part Guard Timer</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td>Result Split Length</td>
<td>INT</td>
<td>Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.</td>
</tr>
</tbody>
</table>
The following sections provide reference information for the IM-SCF WIN phase 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
- MediaResourcesMBean
- MediaResourceMBean [0..n]
- TcapMBean

**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 12–46.

**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 12–47.
**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 12–48.
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 12–49.

Operations
None

Configuring IM-SCF WIN Phase 2
This section describes how to configure IM-SCF WIN phase 2 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, select OCSB > Processing Tier > Interworking Modules. The list of currently deployed Interworking Modules is displayed.
2. In the list of the deployed modules, select the module instance that you want to configure. The module instance configuration screen is displayed in the Configuration pane.

The configuration screen of the IM-SCF WIN phase 2 contains the subtabs described in Table 12–50.

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Enables you to configure general parameters for an Interworking Module instance.</td>
</tr>
<tr>
<td></td>
<td>For more information, see “Configuring General Parameters”</td>
</tr>
<tr>
<td>Call Handling</td>
<td>Enables you to define the way that IM-SCF handles calls.</td>
</tr>
<tr>
<td></td>
<td>For more information, see “Configuring Call Handling Parameters”</td>
</tr>
</tbody>
</table>
Configuring IM-SCF WIN Phase 2

Table 12–50  IM-SCF WIN Phase 2 Configuration Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Media Resources</td>
<td>Enables you to set up the media resources that Service Broker uses to play announcements. For more information, see &quot;Configuring Media Resources Parameters&quot;.</td>
</tr>
<tr>
<td>TCAP</td>
<td>Enables you to set up the TCAP layer of the IM-SCF. For more information, see &quot;Configuring TCAP Parameters&quot;.</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Enables you to define how Runtime MBeans and notifications operate. For more information, see &quot;Configuring Monitoring Parameters&quot;.</td>
</tr>
</tbody>
</table>

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 12–51 describes the configuration parameter on the General subtab.

Table 12–51  General Parameter

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>Plugin</td>
<td>STRING</td>
<td>Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode / decode SS7 messages.</td>
</tr>
</tbody>
</table>

Configuring Call Handling Parameters

The Call Handling subtab enables you to define how IM-SCF handles calls. Table 12–52 describes configuration parameters on the Call Handling subtab.

Table 12–52  IM-SCF WIN Phase 2 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE Reaction Interval in Seconds</td>
<td>INT</td>
<td>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</td>
</tr>
</tbody>
</table>
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 12–53.

Table 12–53 IM-SCF WIN Phase 2 Media Resource Definition Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a name of the media resource</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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: <a href="mailto:mrf.network@domain.com">mrf.network@domain.com</a>.</td>
</tr>
</tbody>
</table>

Table 12–52 (Cont.) IM-SCF WIN Phase 2 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Encoding Format</td>
<td>STRING</td>
<td>Specifies the method that the IM-SCF uses to encode IN parameters in the body of a SAL message. Possible options: BER, XER, None. Default value: None. In an IN mediation solution, when IM-SCF is coupled with IM-SSF, this parameter must be set to XER.</td>
</tr>
<tr>
<td>UI Reset Timer Interval in Seconds</td>
<td>INT</td>
<td>Specifies the value, in seconds, of the WIN REST timer. The timer is first triggered upon invocation of ConnectRersource operation. Whenever the timer expires, IM-SCF invokes the ResetTimer operation towards the MSC (reset SSFT) and triggers the timer again. Default value: 20</td>
</tr>
<tr>
<td>CCDIR Interval in Seconds</td>
<td>INT</td>
<td>Specifies the interval in seconds between two invocations of CCDIR operations. Default value: 1000</td>
</tr>
<tr>
<td>CCDIR Waiting Interval</td>
<td>INT</td>
<td>Specifies the interval in seconds that IM-SCF waits for CCDIR response. <strong>Note:</strong> the value defined in CCDIR Waiting Interval must be less than the value of CCDIR Interval in Seconds. Default value: 10</td>
</tr>
</tbody>
</table>
### Configuring IM-SCF WIN Phase 2 Media Resource Definition Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address Digits</td>
<td>STRING</td>
<td>Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Note:</strong> 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.</td>
</tr>
<tr>
<td>Operation Type</td>
<td>STRING</td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ switch_based: The media resource is internal part of the SSP. CCDIR operation is used to connect the media resource.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ external: The media resource not a part of the SSP. ConnectResource operation is used to connect the media resource.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: switch_based</td>
</tr>
<tr>
<td>Resource Type</td>
<td>STRING</td>
<td>Specifies the value to set in the SpecializedResource parameter of the SEIZERES operation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ UNUSED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DTMF_TONE_DETECTOR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ ASR_DIGITS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ ASR_SPEECH_USER_INTERFACE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: UNUSED</td>
</tr>
<tr>
<td>Private Resource Type</td>
<td>STRING</td>
<td>Specifies the value to set in the PrivateSpecializedResource parameter of the SEIZERES operation</td>
</tr>
<tr>
<td>SN-IP Configuration</td>
<td>STRING</td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ UNUSED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ SN: IP and SCP are co-located. When you choose this option, you need to set also the SN Address parameter.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ IP: IP and SCP are not co-located</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: UNUSED</td>
</tr>
<tr>
<td>SN Address</td>
<td>STRING</td>
<td>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.</td>
</tr>
</tbody>
</table>

### Configuring TCAP Parameters

The TCAP subtab enables you to set up parameters of the IM TCAP layer.
Table 12–54 describes configuration parameters on the TCAP subtab.

### Table 12–54 TCAP Parameter

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class4 Default Timeout in Seconds</td>
<td>INT</td>
<td>Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 5 seconds.</td>
</tr>
<tr>
<td>Reject Timeout in Seconds</td>
<td>INT</td>
<td>Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.</td>
</tr>
<tr>
<td>Activate Invoke Alarm in Application Layer</td>
<td>BOOL</td>
<td>When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ True ■ False Default value: False.</td>
</tr>
<tr>
<td>Application Part Guard Timer</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td>Result Split Length</td>
<td>INT</td>
<td>Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.</td>
</tr>
</tbody>
</table>

**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. The hierarchy of the MBeans is shown on Figure 12–7.
The following sections provide reference information for the IM-SCF WIN phase 2 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
- MediaResourcesMBean
- MediaResourceMBean [0..n]
- TcapMBean

**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 12–51.

**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 12-52.

**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 12–53.

**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 12–54.

**Operations**
None

---

**Configuring IM-SCF AIN 0.1**

This section describes how to configure IM-SCF AIN 0.1 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, select OCSB > Processing Tier > Interworking Modules. The list of currently deployed Interworking Modules is displayed.

2. In the list of the deployed modules, select the module instance that you want to configure. The module instance configuration screen is displayed in the Configuration pane.

   The configuration screen of the IM-SCF AIN 0.1 contains the subtabs described in Table 12–55.

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Enables you to configure general parameters for an Interworking Module instance.</td>
</tr>
<tr>
<td></td>
<td>For more information, see “Configuring General Parameters”.</td>
</tr>
</tbody>
</table>
Table 12–55  (Cont.) IM-SCF AIN 0.1 Configuration Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Handling</td>
<td>Enables you to define the way that IM-SCF handles calls. For more information, see &quot;Configuring Call Handling Parameters&quot;.</td>
</tr>
<tr>
<td>Media Resources</td>
<td>Enables you to set up the media resources that Service Broker uses to play announcements. For more information, see &quot;Configuring Media Resources Parameters&quot;.</td>
</tr>
<tr>
<td>TCAP</td>
<td>Enables you to set up the TCAP layer of the IM-SCF. For more information, see &quot;Configuring TCAP Parameters&quot;.</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Enables you to define how Runtime MBeans and notifications operate. For more information, see &quot;Configuring Monitoring Parameters&quot;.</td>
</tr>
</tbody>
</table>

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 12–56 describes the configuration parameter on the General subtab.

Table 12–56 General Parameter

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>Plugin</td>
<td>STRING</td>
<td>Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode / decode messages.</td>
</tr>
</tbody>
</table>

Configuring Call Handling Parameters
The Call Handling subtab enables you to define how IM-SCF handles calls. Table 12–57 describes configuration parameters on the Call Handling subtab.

Table 12–57 IM-SCF AIN 0.1 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE Reaction Interval in Seconds</td>
<td>INT</td>
<td>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</td>
</tr>
</tbody>
</table>
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 12–58.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Encoding Format</td>
<td>STRING</td>
<td>Specifies the method that the IM-SCF uses to encode IN parameters in the body of a SAL message. Possible options: ■ BER ■ XER ■ None Default value: None In an IN mediation solution, when IM-SCF is coupled with IM-SSF, this parameter must be set to XER.</td>
</tr>
<tr>
<td>Response Operation For Infoanalyzed</td>
<td>STRING</td>
<td>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: ■ continue ■ analyzeRoute Default value: analyzeRoute</td>
</tr>
<tr>
<td>Response Operation For Infocollected</td>
<td>STRING</td>
<td>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: ■ continue ■ analyzeRoute Default value: analyzeRoute</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a name of the media resource</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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: <a href="mailto:mrf.network@domain.com">mrf.network@domain.com</a>.</td>
</tr>
</tbody>
</table>
### Configuring TCAP Parameters

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

Table 12–59 describes configuration parameters on the TCAP subtab.
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. The hierarchy of the MBeans is shown on Figure 12–8.

<table>
<thead>
<tr>
<th>Table 12–59 TCAP Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
</tr>
<tr>
<td>Class4 Default Timeout in Seconds</td>
</tr>
<tr>
<td>Reject Timeout in Seconds</td>
</tr>
<tr>
<td>Activate Invoke Alarm in Application Layer</td>
</tr>
<tr>
<td>Application Part Guard Timer</td>
</tr>
<tr>
<td>Result Split Length</td>
</tr>
</tbody>
</table>
The following sections provide reference information for the IM-SCF AIN 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
- MediaResourcesMBean
- MediaResourceMBean
- ImscfAinMBean

### 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 12–56.

**Operations**
None

**CallHandlingMBean**

CallHandlingMBean enables you to configure how a call is handled.

**Factory Method**
Created automatically

**Attributes**
- OeReactionTimerInterval
- BodyEncodingFormat
- ResponseOperationForInfoanalyzed
- ResponseOperationForInfocollected
For more information on this attribute, see Table 12–57.

**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 12–58.

**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 12–59.

Operations
None

Configuring IM-SCF AIN 0.2
This section describes how to configure IM-SCF AIN 0.2 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, select OCSB > Processing Tier > Interworking Modules. The list of currently deployed Interworking Modules is displayed.
2. In the list of the deployed modules, select the module instance that you want to configure. The module instance configuration screen is displayed in the Configuration pane.

The configuration screen of the IM-SCF AIN 0.2 contains the subtabs described in Table 12–60.

Table 12–60  IM-SCF AIN 0.2 Configuration Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Enables you to configure general parameters for an Interworking Module instance.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring General Parameters&quot;.</td>
</tr>
<tr>
<td>Call Handling</td>
<td>Enables you to define the way that IM-SCF handles calls.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring Call Handling Parameters&quot;.</td>
</tr>
<tr>
<td>Media Resources</td>
<td>Enables you to set up the media resources that Service Broker uses to play announcements.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring Media Resources Parameters&quot;.</td>
</tr>
<tr>
<td>TCAP</td>
<td>Enables you to set up the TCAP layer of the IM-SCF.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring TCAP Parameters&quot;.</td>
</tr>
</tbody>
</table>
Configuring IM-SCF AIN 0.2

### Configuring General Parameters

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

Table 12–61 describes the configuration parameter on the General subtab.

**Table 12–61 General Parameter**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>Plugin</td>
<td>STRING</td>
<td>Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode / decode SS7 messages.</td>
</tr>
</tbody>
</table>

### 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 12–62.

**Table 12–62 IM-SCF AIN 0.2 Call Handling Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE Reaction Interval in Seconds</td>
<td>INT</td>
<td>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</td>
</tr>
</tbody>
</table>

For more information, see "Configuring Monitoring Parameters".
Configuring IM-SCF AIN 0.2

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 12–63.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a name of the media resource</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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: <a href="mailto:mrf.network@domain.com">mrf.network@domain.com</a>.</td>
</tr>
</tbody>
</table>

Table 12–63 IM-SCF AIN 0.2 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Encoding Format</td>
<td>STRING</td>
<td>Specifies the method that the IM-SCF uses to encode IN parameters in the body of a SAL message. Possible options: &lt;ul&gt;&lt;li&gt;BER&lt;/li&gt;&lt;li&gt;XER&lt;/li&gt;&lt;li&gt;None&lt;/li&gt;&lt;/ul&gt; Default value: None In an IN mediation solution, when IM-SCF is coupled with IM-SSF, this parameter must be set to XER.</td>
</tr>
<tr>
<td>Response Operation ForInfo Analyzed</td>
<td>STRING</td>
<td>Specifies whether IM-SCF uses Continue or AnalyzeRoute as a response to calls initiated by Infoanalyzed when the realized called number has not changed</td>
</tr>
<tr>
<td>Response Operation For Info Collected</td>
<td>STRING</td>
<td>Specifies whether IM-SCF uses Continue or AnalyzeRoute as a response to calls initiated by Infocollected when the realized called number has not changed</td>
</tr>
</tbody>
</table>
Table 12–63 (Cont.) IM-SCF AIN 0.2 Media Resource Definition Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcement Operation</td>
<td>INT</td>
<td>Specifies which operation IM-SCF triggers towards the switch-based media resource. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PlayAnnouncement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PlayAnnouncementAndCollectDigits</td>
</tr>
<tr>
<td>Disconnect Flag</td>
<td>BOOL</td>
<td>Specifies whether or not to set the DisconnectFlag in SendToResource operation. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The switch disconnects a call immediately after completing playing announcement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The switch does not disconnect a call immediately after completing playing announcement</td>
</tr>
<tr>
<td>Default value:</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Answer Indication</td>
<td>BOOL</td>
<td>Specifies whether a switch sends Answer message to the calling party upon connection to the media resource. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ True</td>
</tr>
<tr>
<td></td>
<td></td>
<td>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)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ False</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The media path opens only in the direction from the media resource to the caller</td>
</tr>
<tr>
<td>Default value:</td>
<td></td>
<td>True</td>
</tr>
</tbody>
</table>

Configuring TCAP Parameters

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

Table 12–64 describes configuration parameters on the TCAP subtab.
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. The hierarchy of the MBeans is shown on Figure 12–9.

### Table 12–64 TCAP Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class4 Default Timeout in Seconds</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td>Reject Timeout in Seconds</td>
<td>INT</td>
<td>Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.</td>
</tr>
<tr>
<td>Activate Invoke Alarm in Application Layer</td>
<td>BOOL</td>
<td>When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ True ■ False Default value: False.</td>
</tr>
<tr>
<td>Application Part Guard Timer</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td>Result Split Length</td>
<td>INT</td>
<td>Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.</td>
</tr>
</tbody>
</table>
The following sections provide reference information for the IM-SCF AIN 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
- MediaResourcesMBean
- MediaResourceMBean
- TcapMBean

**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 12–61.

**Operations**
None

### CallHandlingMBean

CallHandlingMBean enables you to configure how a call is handled.

**Factory Method**
Created automatically

**Attributes**
- OeReactionTimerInterval
- BodyEncodingFormat
- ResponseOperationForInfoanalyzed
- ResponseOperationForInfocollected
  For more information on these attributes, see Table 12–62.

**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 12–63.

**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 12–64.

Operations
None
The following sections describe how to configure IM-SSF using the Service Broker Administration Console and Java MBeans:

- Configuring IM-SSF CAP Phase 1
- Configuring IM-SSF CAP Phase 2
- Configuring IM-SSF CAP Phase 3
- Configuring IM-SSF INAP CS-1
- Configuring IM-SSF WIN Phase 1
- Configuring IM-SSF WIN Phase 2
- Configuring IM-SSF AIN 0.1
- Configuring IM-SSF AIN 0.2

## Configuring IM-SSF CAP Phase 1

This section describes how to configure IM-SSF CAP phase 1 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, select OCSB > Processing Tier > Interworking Modules. The list of currently deployed Interworking Modules is displayed.
2. In the list of the deployed modules, select the module instance that you want to configure. The module instance configuration screen is displayed in the Configuration pane.

The configuration screen of the IM-SSF CAP phase 1 contains the subtabs described in Table 13–1.

### Table 13–1 IM-SSF CAP Phase 1 Configuration Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Enables you to configure general parameters for an Interworking Module instance. For more information, see “Configuring General Parameters”.</td>
</tr>
</tbody>
</table>
Table 13–1 (Cont.) IM-SSF CAP Phase 1 Configuration Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Handling</td>
<td>Enables you to configure how the IM-SSF handles calls. For more information, see &quot;Configuring Call Handling Parameters&quot;.</td>
</tr>
<tr>
<td>Subscriber Data</td>
<td>Enables you to define IN triggers that the IM-SSF invokes towards the SCP above. For more information, see &quot;Configuring Subscriber Data Parameters&quot;.</td>
</tr>
<tr>
<td>Operation Propagation</td>
<td>Enables you to define whether the IM-SSF processes operations on its own or propagates these operations to another module. For more information, see &quot;Configuring Operation Propagation Parameters&quot;.</td>
</tr>
<tr>
<td>TCAP</td>
<td>Enables you to set up the TCAP layer of the IM-SSF. For more information, see &quot;Configuring TCAP Parameters&quot;.</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Enables you to define how Runtime MBeans and notifications operate. For more information, see &quot;Configuring Monitoring Parameters&quot;.</td>
</tr>
</tbody>
</table>

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

Table 13–2 General Parameter

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>Plugin</td>
<td>STRING</td>
<td>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.</td>
</tr>
</tbody>
</table>

Configuring Call Handling Parameters

The Call Handling subtab enables you to define how IM-SSF handles calls. Table 13–3 describes configuration parameters on the Call Handling subtab.
### Table 13–3 IM-SSF CAP Phase 1 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IM-SSF Mode of Operation</td>
<td>STRING</td>
<td>Specifies the IM-SSF mode of operation. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- <strong>DYNAMIC</strong>&lt;br&gt;IM-SSF dynamically changes its call control mode, according to the mode requested by the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- <strong>BACK_TO_BACK</strong>&lt;br&gt;IM-SSF monitors calls and ignores the mode requested by the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- <strong>REDIRECT</strong>&lt;br&gt;IM-SSF does not monitor calls and ignores the mode requested by the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: DYNAMIC</td>
</tr>
<tr>
<td>Session Case</td>
<td>STRING</td>
<td>Specifies how IM-SSF treats sessions that arrive on the southbound interface, from the OE. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- <strong>ORIG</strong>&lt;br&gt;All calls are treated as originating calls</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- <strong>TERM</strong>&lt;br&gt;All calls are treated as terminating calls</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- <strong>DYNAMIC</strong>&lt;br&gt;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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: DYNAMIC</td>
</tr>
<tr>
<td>Tssf Duration in Seconds</td>
<td>INT</td>
<td>Specifies the value, in seconds, of the IM-SSF Tssf timer. Default value: 20</td>
</tr>
<tr>
<td>Tssf User Interaction Duration in Seconds</td>
<td>INT</td>
<td>Specifies the value, in seconds, of the IM-SSF Tssf timer. This parameter is used when the IM-SSF is in the middle of interaction with a media resource. Default value: 1200</td>
</tr>
<tr>
<td>Body Encoding Format</td>
<td>STRING</td>
<td>Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message. Possible options:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- <strong>BER</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- <strong>XER</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- <strong>NONE</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: NONE</td>
</tr>
<tr>
<td>Name</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>--------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>NOA of Called Party Number</td>
<td>STRING</td>
<td>Specifies how to set the NatureOfAddress of the CalledPartyNumber.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- SUBSCRIBER_NUMBER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- UNKNOWN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NATIONAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERNATIONAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NETWORK_SPECIFIC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: NATIONAL</td>
</tr>
<tr>
<td>Internal Network Number Indicator of Called Party Number</td>
<td>BOOL</td>
<td>Specifies how to set the InternalNetworkNumberIndicator of the CalledPartyNumber.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- True</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- False</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: False</td>
</tr>
<tr>
<td>Numbering Plan Indicator of Called Party Number</td>
<td>STRING</td>
<td>Specifies how to set the NumberingPlanIndicator of the CalledPartyNumber.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- ISDN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- DATA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TELEX</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: DATA</td>
</tr>
<tr>
<td>NOA of Calling Party Number</td>
<td>STRING</td>
<td>Specifies how to set the NatureOfAddress of the CallingPartyNumber.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- SUBSCRIBER_NUMBER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- UNKNOWN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NATIONAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERNATIONAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NETWORK_SPECIFIC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: NATIONAL</td>
</tr>
</tbody>
</table>
### Table 13–3  (Cont.) IM-SSF CAP Phase 1 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Incomplete Indicator of Calling Party Number</td>
<td>BOOL</td>
<td>Specifies how to set the IncompleteIndicator of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible options:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ True</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ False</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: True</td>
</tr>
<tr>
<td>Numbering Plan Indicator of Calling Party Number</td>
<td>STRING</td>
<td>Specifies how to set the NumberingPlanIndicator of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ ISDN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DATA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TELEX</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: TELEX</td>
</tr>
<tr>
<td>Screening Indicator of Calling Party Number</td>
<td>STRING</td>
<td>Specifies how to set the NumberingPlanIndicator of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ USER_PROVIDED_NOT_VERIFIED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ USER_PROVIDED_VERIFIED_PASSED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ USER_PROVIDED_VERIFIED_FAILED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NETWORK_PROVIDED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: USER_PROVIDED_NOT_VERIFIED</td>
</tr>
<tr>
<td>Calling Party Category of Calling Party Number</td>
<td>STRING</td>
<td>Specifies how to set the CallingNumberCategory of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ UNKNOWN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ LANGUAGE_FRENCH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ LANGUAGE_ENGLISH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ LANGUAGE_GERMAN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ LANGUAGE_RUSSIAN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: LANGUAGE_ENGLISH</td>
</tr>
</tbody>
</table>
Configuring IM-SSF CAP Phase 1

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

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

### Table 13–4 IM-SSF CAP Phase 1 Subscriber Data Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMSI</td>
<td>STRING</td>
<td>Specifies a condition on session IMSI. When the condition is met, IM-SSF invokes triggers towards the SCP. To apply a rule for all IMSIs, set this parameter to Default.</td>
</tr>
<tr>
<td>MSISDN</td>
<td>STRING</td>
<td>Specifies a condition on session MSISDN. When the condition is met, IM-SSF invokes triggers towards the SCP. To apply a rule for all MSISDNs, set this parameter to Default.</td>
</tr>
<tr>
<td>Service Key</td>
<td>STRING</td>
<td>Specifies a Service Key to set on the trigger to the SCP.</td>
</tr>
<tr>
<td>SCP Address Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
</tbody>
</table>
Configuring IM-SSF CAP Phase 1

Configuring Operation Propagation Parameters

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

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default Call Handling</td>
<td>STRING</td>
<td>Specifies how IM-SSF handles a call when a signal between IM-SSF and SCP fails. Possible values: CONTINUE_CALL, RELEASE_CALL</td>
</tr>
<tr>
<td>TDP List</td>
<td>STRING_LIST</td>
<td>Specifies a list of TDPs that IM-SSF can trigger. Each trigger is specified in the following format: &lt;id&gt;=&lt;type&gt; where: &lt;id&gt; is one of the following: 2: COLLECTED_INFO, 3: ANALYSED_INFORMATION, 4: ROUTE_SELECT_FAILURE, 12: TERMINATING_ATTEMPT_AUTHORISED, 13: T_BUSY, 14: T_NO_ANSWER &lt;type&gt; is one of the following: R, which means Interrupt, N, which means Notify When you want to define multiple TDPs, separate these TDPs with a comma. For example: 13=R,14=N</td>
</tr>
</tbody>
</table>

Table 13–5 IM-SSF CAP Phase 1 Operation Propagation

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique identifier.</td>
</tr>
<tr>
<td>Operation</td>
<td>STRING</td>
<td>Specifies an operation. Possible values: RequestReportBCSMEvent</td>
</tr>
<tr>
<td>Module name</td>
<td>STRING</td>
<td>Specifies a name of a module instance to which an operation is propagated.</td>
</tr>
</tbody>
</table>
Table 13–5 (Cont.) IM-SSF CAP Phase 1 Operation Propagation

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Enable Propagation          | BOOL | Specifies whether IM-SSF processes operations on its own or propagates a request to the session control layer. Possible values:  
  ▪ True  
    The IM-SSF propagates RRBCSMEvent operations.  
  ▪ False  
    The IM-SSF processes RRBCSMEvent operations.  
  Default value: True |

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

Table 13–6 describes configuration parameters on the TCAP subtab.

Table 13–6 TCAP Parameter

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| 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 |
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. The hierarchy of the MBeans is shown on Figure 13–1.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Activate Invoke Alarm in Application Layer | BOOL | When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values:  
  ■ True  
  ■ False  
  Default value: False |
| Result Split Length                       | INT  | Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.  
  Default value: 512  |
The following sections provide reference information for the IM-SSF CAP phase 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

**ImssfCap1MBean**

*ImscfCap1MBean 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 13–2.

Operations

None

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 13–3.

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 13–4.

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
Configuring IM-SSF CAP Phase 2

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 13–5.

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 13–6.

Operations
None

Configuring IM-SSF CAP Phase 2
This section describes how to configure IM-SSF CAP phase 2 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, select OCSB > Processing Tier > Interworking Modules. The list of currently deployed Interworking Modules is displayed.
2. In the list of the deployed modules, select the module instance that you want to configure. The module instance configuration screen is displayed in the Configuration pane.

The configuration screen of the IM-SSF CAP phase 2 contains the subtabs described in Table 13–7.

### Table 13–7  IM-SSF CAP Phase 2 Configuration Subtabs

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

### 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 13–8 describes the configuration parameter on the General subtab.

### Table 13–8  General Parameter

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
</tbody>
</table>
Configuring Call Handling Parameters

The Call Handling subtab enables you to define how IM-SSF handles calls. Table 13–9 describes configuration parameters on the Call Handling subtab.

Table 13–9  IM-SSF CAP Phase 2 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plugin</td>
<td>STRING</td>
<td>Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode / decode SS7 messages.</td>
</tr>
</tbody>
</table>
| IM-SSF Mode of Operation     | STRING | Specifies the IM-SSF mode of operation. Possible values:  
  ■ DYNAMIC
  IM-SSF dynamically changes its call control mode, according to the mode requested by the SCP.  
  ■ BACK_TO_BACK
  IM-SSF monitors calls and ignores the mode requested by the SCP.  
  ■ REDIRECT
  IM-SSF does not monitor calls and ignores the mode requested by the SCP.  
  Default value: DYNAMIC |
| Session Case                 | STRING | Specifies how IM-SSF treats sessions that arrive on the southbound interface, from the OE. Possible values:  
  ■ ORIG
  All calls are treated as originating calls  
  ■ TERM
  All calls are treated as terminating calls.  
  ■ DYNAMIC
  Calls are treated dynamically as either originating or terminating calls, depending on the SAL Route header and/or the x-wcs-session-case header generated by a southbound Service Broker IM.  
  Default value: ORIG |
| Tssf Duration in Seconds     | INT   | Specifies the value, in seconds, of the IM-SSF Tssf timer.  
  Default value: 20 |
Configuring IM-SSF CAP Phase 2

Table 13–9 (Cont.) IM-SSF CAP Phase 2 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tssf User Interaction Duration in Seconds</td>
<td>INT</td>
<td>Specifies the value, in seconds, of the IM-SSF Tssf timer.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This parameter is used when the IM-SSF is in the middle of interaction with a media resource.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 1200</td>
</tr>
<tr>
<td>IM-SSF Media Capability</td>
<td>BOOL</td>
<td>Specifies whether or not the underlying network supports IP/SRF/MRF.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This determines if the IM-SSF can handle media-related operations, such as EstablishTemporaryConnection or ConnectToResource.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ True</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ False</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: True</td>
</tr>
<tr>
<td>Body Encoding Format</td>
<td>STRING</td>
<td>Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible options:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ BER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ XER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NONE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: NONE</td>
</tr>
<tr>
<td>NOA of Called Party Number</td>
<td>STRING</td>
<td>Specifies how to set the NatureOfAddress of the CalledPartyNumber.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ SUBSCRIBER_NUMBER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■UNKNOWN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NATIONAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ INTERNATIONAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NETWORK_SPECIFIC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default values: NATIONAL</td>
</tr>
</tbody>
</table>
### Table 13–9  (Cont.) IM-SSF CAP Phase 2 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Internal Network Number Indicator of Called Party Number  | BOOL    | Specifies how to set the InternalNetworkNumberIndicator of the CalledPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values:  
  - True  
  - False  
  Default value: True                                      |
| Numbering Plan Indicator of Called Party Number           | STRING  | Specifies how to set the NumberingPlanIndicator of the CalledPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values:  
  - ISDN  
  - DATA  
  - TELEX  
  Default value: DATA                                       |
| NOA of Calling Party Number                               | STRING  | Specifies how to set the NatureOfAddress of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values:  
  - SUBSCRIBER_NUMBER  
  - UNKNOWN  
  - NATIONAL  
  - INTERNATIONAL  
  - NETWORK_SPECIFIC  
  Default values: NATIONAL                                  |
| Number Incomplete Indicator of Calling Party Number       | BOOL    | Specifies how to set the IncompleteIndicator of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible options:  
  - True  
  - False  
  Default value: True                                       |
Table 13–9  (Cont.) IM-SSF CAP Phase 2 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numbering Plan Indicator of Calling Party</td>
<td>STRING</td>
<td>Specifies how to set the NumberingPlanIndicator of the CallingPartyNumber.</td>
</tr>
<tr>
<td>Number</td>
<td></td>
<td>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ ISDN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DATA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TELEX</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: DATA</td>
</tr>
<tr>
<td>Screening Indicator of Calling Party</td>
<td>STRING</td>
<td>Specifies how to set the NumberingPlanIndicator of the CallingPartyNumber.</td>
</tr>
<tr>
<td>Number</td>
<td></td>
<td>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ USER_PROVIDED_NOT_VERIFIED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ USER_PROVIDED_VERIFIED_PASSED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ USER_PROVIDED_VERIFIED_FAILED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NETWORK_PROVIDED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: USER_PROVIDED_NOT_VERIFIED</td>
</tr>
<tr>
<td>Calling Party Category of Calling Party</td>
<td>STRING</td>
<td>Specifies how to set the CallingNumberCategory of the CallingPartyNumber.</td>
</tr>
<tr>
<td>Number</td>
<td></td>
<td>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ UNKNOWN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ LANGUAGE_FRENCH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ LANGUAGE_ENGLISH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ LANGUAGE_GERMAN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ LANGUAGE_RUSSIAN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: LANGUAGE_ENGLISH</td>
</tr>
</tbody>
</table>
Configuring IM-SSF CAP Phase 2

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

The table on the Subscriber Data subtab displays the rules for invoking triggers. Each row represents one rule. When defining a new rule, you need to specify the fields described in Table 13–10.

### Table 13–10 IM-SSF CAP Phase 2 Subscriber Data Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMSI</td>
<td>STRING</td>
<td>Specifies a condition on session IMSI. When the condition is met, IM-SSF invokes triggers towards the SCP.</td>
</tr>
<tr>
<td>MSISDN</td>
<td>STRING</td>
<td>Specifies a condition on session MSISDN. When the condition is met, IM-SSF invokes triggers towards the SCP.</td>
</tr>
<tr>
<td>Service Key</td>
<td>STRING</td>
<td>Specifies a Service Key to set on the trigger to the SCP.</td>
</tr>
<tr>
<td>SCP Address Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
</tbody>
</table>

### Configuring Subscriber Data Parameters

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

The table on the Subscriber Data subtab displays the rules for invoking triggers. Each row represents one rule. When defining a new rule, you need to specify the fields described in Table 13–10.

### Table 13–10 IM-SSF CAP Phase 2 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Type of Number of Called Party Number         | STRING  | Specifies how to set the TypeOfNumber of the CalledPartyBCDNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values:  
  - Unknown  
  - InternationalNumber  
  - NationalNumber  
  - NetworkSpecificNumber  
  - DedicatedAccessShortcode  
  Default value: NationalNumber |
| Numbering Plan Indicator of Called Party BCD Number | STRING  | Specifies how to set the NumberingPlanIndicator of the CalledPartyBCDNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values:  
  - Unknown  
  - ISDN_TelephonyNumberingPlan  
  - DataNumberingPlan  
  - TelexNumberingPlan  
  - NationalNumberingPlan  
  Default value: DataNumberingPlan |
Configuring IM-SSF CAP Phase 2

Configuring Operation Propagation Parameters

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

The table on the Operation Propagation subtab displays a list of operations. Each row represents one operation for which you define whether IM-SSF processes this operation or propagates the operation to another module. When configuring a new operation, you need to specify the fields described in Table 13-11.

Table 13-10 IM-SSF CAP Phase 2 Subscriber Data Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Default Call Handling | STRING     | Specifies how IM-SSF handles a call when a signal between IM-SSF and SCP fails (that is invokes a trigger towards the failed SCP). Possible values:  
  ■ CONTINUE_CALL  
  ■ RELEASE_CALL  
  Default value: CONTINUE_CALL |
| TDP List              | STRING _LIST | Specifies a list of TDPs that must be triggered. Each trigger is specified in the following format:  
  <id>=<type>  
  where:  
  <id> is one of the following:  
  ■ 2: COLLECTED_INFO  
  ■ 3: ANALYSED_INFORMATION  
  ■ 4: ROUTE_SELECT_FAILURE  
  ■ 12: TERMINATING_ATTEMPT_AUTHORISED  
  ■ 13: T_BUSY  
  ■ 14: T_NO_ANSWER  
  <type> is one of the following:  
  ■ R, which means Interrupt  
  ■ N, which means Notify  
  13=R, 14=N |

Table 13-11 IM-SSF CAP Phase 2 Operation Propagation

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique identifier.</td>
</tr>
</tbody>
</table>
| Operation  | STRING | Specifies an operation.  
  Possible values:  
  ■ RequestReportBCSMEvent  
  ■ PlayAnnouncement  
  ■ PromptAndCollect  
  ■ FurnishChargingInfo  
  ■ ApplyCharging |
Configuring Charging Parameters
The Charging subtab enables you to configure functionality related to charging operations.

Table 13–12 describes configuration parameters on the Charging subtab.

Table 13–12  IM-SSF CAP Phase 2 Charging Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tccd in Seconds</td>
<td>INT</td>
<td>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</td>
</tr>
</tbody>
</table>

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 13–13.

Table 13–13  IM-SSF CAP Phase 2 Media Resource Definition Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a name of the media resource.</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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: <a href="mailto:mrf.network@domain.com">mrf.network@domain.com</a>.</td>
</tr>
<tr>
<td>Address Digits</td>
<td>STRING</td>
<td>Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource.</td>
</tr>
</tbody>
</table>
### Table 13–13  (Cont.) IM-SSF CAP Phase 2 Media Resource Definition Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Nature of Address           | STRING    | Specifies the NatureOfAddress part of the media resource address. The media resource address is used to set up a connection towards the media resource. Possible values:  
  - SUBSCRIBER_NUMBER  
  - UNKNOWN  
  - NATIONAL  
  - INTERNATIONAL  
  - NETWORK_SPECIFIC  
  Default value: SUBSCRIBER_NUMBER |
| Address Numbering Plan Indicator | STRING    | Specifies the NumberingPlanInd part of the media resource address. The media resource address is used to set up a connection towards the media resource. Possible values:  
  - ISDN  
  - DATA  
  - TELEX |
| Numbering Qualifier         | STRING    | Specifies the numbering qualifier of the media resource address. Possible values:  
  - NONE  
  - DIALLED_DIGITS  
  - USER_PROVIDED_FAILED_NETWORK_SCREENING  
  - USER_PROVIDED_NOT_SCREENED  
  - REDIRECTING_TERMINATING_NUMBER  
  Default value: NONE |
| Number Screening            | STRING    | Specifies the numbering screening of the media resource address. Possible values:  
  - UNDEFINED  
  - USER_PROVIDED_NOT_VERIFIED  
  - USER_PROVIDED_VERIFIED_PASSED  
  - USER_PROVIDED_VERIFIED_FAILED  
  - NETWORK_PROVIDED  
  Default value: UNDEFINED |
### Configuring IM-SSF CAP Phase 2

#### Configuring TCAP Parameters

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

Table 13–14 describes configuration parameters on the TCAP subtab.

#### Table 13–14  IM-SSF CAP Phase 2 Media Resource Definition Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presentation Restriction</td>
<td>STRING</td>
<td>Specifies the presentation restriction of the media resource address. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- UNDEFINED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- ALLOWED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- RESTRICTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOTAVAILABLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: UNDEFINED</td>
</tr>
<tr>
<td>Operation Type</td>
<td>STRING</td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Internal: The media resource is internal part of the SSP. ConnectToResource (CTR) operation is used to connect the media resource.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- External: The media resource not a part of the SSP. EstablishTemporaryConnection (ETC) is used to connect the media resource.</td>
</tr>
<tr>
<td>Answer Indication</td>
<td>BOOL</td>
<td>Specifies how to set the bothwayThroughConnectionInd in the ServiceInteractionIndicatorTwo parameter in the ETC and CTR operations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- True</td>
</tr>
<tr>
<td></td>
<td></td>
<td>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).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- False</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The media path opens only in the direction from the media resource to the caller.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: True</td>
</tr>
</tbody>
</table>

**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 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".

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class4 Default Timeout in Seconds</td>
<td>INT</td>
<td>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</td>
</tr>
<tr>
<td>Reject Timeout in Seconds</td>
<td>INT</td>
<td>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</td>
</tr>
<tr>
<td>Application Part Guard Timer</td>
<td>INT</td>
<td>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</td>
</tr>
<tr>
<td>Activate Invoke Alarm in Application Layer</td>
<td>BOOL</td>
<td>When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: True, False Default value: False</td>
</tr>
<tr>
<td>Result Split Length</td>
<td>INT</td>
<td>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</td>
</tr>
</tbody>
</table>
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. The hierarchy of the MBeans is shown on Figure 13–2.

**Figure 13–2  IM-SSF CAP Phase 2 MBeans Hierarchy**

![IM-SSF CAP Phase 2 MBeans Hierarchy](image)

The following sections provide reference information for the IM-SSF CAP phase 2 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
- MediaResourcesMBean
- MediaResourceMBean
- TcapMBean
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 13–8.
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
- NumberIncompleteIndicatorOfCallingPartyNumber
- NumberingPlanIndicatorOfCallingPartyNumber
- ScreeningIndicatorOfCallingPartyNumber
- CallingPartyCategoryOfCallingPartyNumber
- TypeOfNumberOfCalledPartyNumber
- NumberingPlanIndicatorOfCalledPartyBcdNumber

For more information on these attributes, see Table 13–9.

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 13–10.

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()
Configuring IM-SSF CAP Phase 2

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 13–11.

**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 13–12.

**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 13–13.

Operations
None

Tcap MBean
TcapMBean enables you to configure the TCAP layer of the module.
Configuring IM-SSF CAP Phase 3

This section describes how to configure IM-SSF CAP phase 3 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, select OCSB > Processing Tier > Interworking Modules. The list of currently deployed Interworking Modules is displayed.

2. In the list of the deployed modules, select the module instance that you want to configure. The module instance configuration screen is displayed in the Configuration pane.

The configuration screen of the IM-SSF CAP Phase 3 contains the subtabs described in Table 13-15.

Table 13-15 IM-SSF CAP Phase 3 Configuration Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Enables you to configure general parameters for an Interworking Module instance. For more information, see &quot;Configuring General Parameters&quot;.</td>
</tr>
<tr>
<td>Call Handling</td>
<td>Enables you to configure how the IM-SSF handles calls. For more information, see &quot;Configuring Call Handling Parameters&quot;.</td>
</tr>
<tr>
<td>Subscriber Data</td>
<td>Enables you to define IN triggers that the IM-SSF invokes towards the SCP above. For more information, see &quot;Configuring Subscriber Data Parameters&quot;.</td>
</tr>
</tbody>
</table>

Factory Method

Created automatically

Attributes

- Class4DefaultTimeoutInSeconds
- RejectTimeoutInSeconds
- ActivateInvokeAlarmInApplicationLayer
- ApplicationPartGuardTimer
- ResultSplitLength

For more information on these attributes, see Table 13-14.

Operations

None
Configuring IM-SSF CAP Phase 3

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

Table 13–16 describes the configuration parameter on the General subtab.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
</tbody>
</table>

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

Table 13–17 describes configuration parameters on the Call Handling subtab.

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation Propagation</td>
<td>Enables you to define whether the IM-SSF processes operations on its own or propagates these operations to another module. For more information, see “Configuring Operation Propagation Parameters”.</td>
</tr>
<tr>
<td>Charging</td>
<td>Enables you to configure functionality related to charging operations. For more information, see “Configuring Charging Parameters”.</td>
</tr>
<tr>
<td>Media Resources</td>
<td>Enables you to set up the media resources that Service Broker uses to play announcements. For more information, see “Configuring Media Resources Parameters”.</td>
</tr>
<tr>
<td>TCAP</td>
<td>Enables you to set up the TCAP layer of the IM-SSF. For more information, see “Configuring TCAP Parameters”.</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Enables you to define how Runtime MBeans and notifications operate. For more information, see “Configuring Monitoring Parameters”.</td>
</tr>
</tbody>
</table>
### Table 13–17  IM-SSF CAP Phase 3 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| IM-SSF Mode of Operation    | STRING | Specifies the IM-SSF mode of operation. Possible values:  
  ■ DYNAMIC  
  IM-SSF dynamically changes its call control mode, according to the mode requested by the SCP.  
  ■ BACK_TO_BACK  
  IM-SSF monitors calls and ignores the mode requested by the SCP.  
  ■ REDIRECT  
  IM-SSF does not monitor calls and ignores the mode requested by the SCP.  
  Default value: DYNAMIC |
| Session Case                | STRING | Specifies how IM-SSF treats sessions that arrive on the southbound interface, from the OE. Possible values:  
  ■ ORIG  
  All calls are treated as originating calls.  
  ■ TERM  
  All calls are treated as terminating calls.  
  ■ DYNAMIC  
  Calls are treated dynamically as either originating or terminating calls, depending on the SAL Route header and/or the x-wcs-session-case header generated by a southbound Service Broker IM.  
  Default value: DYNAMIC |
| Tssf Duration in Seconds    | INT    | Specifies the value, in seconds, of the IM-SSF Tssf timer.  
  Default value: 20 |
| Tssf User Interaction Duration in Seconds | INT    | Specifies the value, in seconds, of the IM-SSF Tssf timer. This parameter is used when the IM-SSF is in the middle of interaction with a media resource.  
  Default value: 1200 |
| IM-SSF Media Capability     | BOOL   | Specifies whether or not the underlying network supports IP/SRF/MRF. This determines if the IM-SSF can handle media-related operations, such as EstablishTemporaryConnection or ConnectToResource Possible values:  
  ■ True  
  ■ False  
  Default value: True |
<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Body Encoding Format         | STRING     | Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message. Possible options:  
|                              |            | ■ BER  
|                              |            | ■ XER  
|                              |            | ■ NONE  
|                              |            | Default value: NONE                                                         |
| NOA of Called Party Number   | STRING     | Specifies how to set the NatureOfAddress of the CalledPartyNumber.  
|                              |            | This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values:  
|                              |            | ■ SUBSCRIBER_NUMBER  
|                              |            | ■ UNKNOWN  
|                              |            | ■ NATIONAL  
|                              |            | ■ INTERNATIONAL  
|                              |            | ■ NETWORK_SPECIFIC  
|                              |            | Default value: NATIONAL                                                     |
| Internal Network Number      | BOOL       | Specifies how to set the InternalNetworkNumberIndicator of the CalledPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values:  
| Indicator of Called Party Number |          | ■ True  
|                              |            | ■ False  
|                              |            | Default value: True                                                         |
| Numbering Plan Indicator of Called Party Number | STRING     | Specifies how to set the NumberingPlanIndicator of the CalledPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values:  
|                              |            | ■ ISDN  
|                              |            | ■ DATA  
|                              |            | ■ TELEX  
|                              |            | Default value: DATA                                                         |
Table 13–17  (Cont.) IM-SSF CAP Phase 3 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOA of Calling Party Number</td>
<td>STRING</td>
<td>Specifies how to set the NatureOfAddress of the CallingPartyNumber.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- SUBSCRIBER_NUMBER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- UNKNOWN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NATIONAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- INTERNATIONAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NETWORK_SPECIFIC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: NATIONAL</td>
</tr>
<tr>
<td>Number Incomplete Indicator of Calling Party Number</td>
<td>BOOL</td>
<td>Specifies how to set the IncompleteIndicator of the CallingPartyNumber.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- True</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- False</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: True</td>
</tr>
<tr>
<td>Numbering Plan Indicator of Calling Party Number</td>
<td>STRING</td>
<td>Specifies how to set the NumberingPlanIndicator of the CallingPartyNumber.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- ISDN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- DATA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TELEX</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: TELEX</td>
</tr>
<tr>
<td>Screening Indicator of Calling Party Number</td>
<td>STRING</td>
<td>Specifies how to set the NumberingPlanIndicator of the CallingPartyNumber.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This parameter is used when the IM-SSF sends a new InitialDP message to the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- USER_PROVIDED_NOT_VERIFIED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- USER_PROVIDED_VERIFIED_PASSED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- USER_PROVIDED_VERIFIED_FAILED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NETWORK_PROVIDED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: USER_PROVIDED_NOT_VERIFIED</td>
</tr>
</tbody>
</table>
Configuring IM-SSF CAP Phase 3

Configuring Subscriber Data Parameters

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

The table on the Subscriber Data subtab displays the rules for invoking triggers. Each row represents one rule. When defining a new rule, you need to specify the fields described in Table 13–18.

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

Table 13–17 (Cont.) IM-SSF CAP Phase 3 Call Handling Parameters
Configuring IM-SSF CAP Phase 3

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

The table on the Operation Propagation subtab displays a list of operations. Each row represents one operation for which you define whether IM-SSF processes this operation or propagates the operation to another module. When configuring a new operation, you need to specify the fields described in Table 13–19.

### Table 13–18 IM-SSF CAP Phase 3 Subscriber Data Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMSI</td>
<td>STRING</td>
<td>Specifies a condition on session IMSI. When the condition is met, IM-SSF invokes triggers towards the SCP.</td>
</tr>
<tr>
<td>MSISDN</td>
<td>STRING</td>
<td>Specifies a condition on session MSISDN. When the condition is met, IM-SSF invokes triggers towards the SCP.</td>
</tr>
<tr>
<td>Service Key</td>
<td>STRING</td>
<td>Specifies a Service Key to set on the trigger to the SCP.</td>
</tr>
<tr>
<td>SCP Address Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>Default Call Handling</td>
<td>STRING</td>
<td>Specifies how IM-SSF handles a call when a signal between IM-SSF and SCP fails (that is, invokes a trigger towards the failed SCP). Possible values: CONTINUE_CALL, RELEASE_CALL. Default value: CONTINUE_CALL</td>
</tr>
<tr>
<td>TDP List</td>
<td>STRING_LIST</td>
<td>Specifies a list of TDPs that must be triggered. Each trigger is specified in the following format: &lt;id&gt;=&lt;type&gt; where: &lt;id&gt; is one of the following: 2: COLLECTED_INFO, 3: ANALYSED_INFORMATION, 4: ROUTE_SELECT_FAILURE, 12: TERMINATING_ATTEMPT_AUTHORISED, 13: T_BUSY, 14: T_NO_ANSWER, &lt;type&gt; is one of the following: R, which means Interrupt, N, which means Notify. 13=R, 14=N</td>
</tr>
</tbody>
</table>

### Configuring Operation Propagation Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique identifier</td>
</tr>
</tbody>
</table>

---

13-38 Configuration Guide
Configuring Charging Parameters

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

Table 13–20 describes configuration parameters on the Charging subtab.

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

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 13–21.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a name of the media resource.</td>
</tr>
<tr>
<td>Name</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>----------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>Specifies a unique identifier that applications use to instruct Service Broker which media resource to connect in order to play announcements.</td>
</tr>
<tr>
<td>Address Digits</td>
<td>STRING</td>
<td>Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource.</td>
</tr>
</tbody>
</table>
| Nature of Address           | STRING   | Specifies the NatureOfAddress part of the media resource address. The media resource address is used to set up a connection towards the media resource.       | Possible values:  
  - SUBSCRIBER_NUMBER  
  - UNKNOWN  
  - NATIONAL  
  - INTERNATIONAL  
  - NETWORK_SPECIFIC  
  Default value: NATIONAL |
| Address Numbering Plan      | STRING   | Specifies the NumberingPlanInd part of the media resource address. The media resource address is used to set up a connection towards the media resource.                                                                                       | Possible values:  
  - ISDN  
  - DATA  
  - TELEX  
  Default value: ISDN |
| Numbering Qualifier         | STRING   | Specifies the numbering qualifier of the media resource address.                                                                                                                                    | Possible values:  
  - NONE  
  - DIALED_DIGITS  
  - USER_PROVIDED_FAILED_NETWORK_SCREENING  
  - USER_PROVIDED_NOT_SCREENED  
  - REDIRECTING_TERMINATING_NUMBER  
  Default value: NONE |
### Table 13–21 (Cont.) IM-SSF CAP Phase 3 Media Resource Definition Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Screening</td>
<td>STRING</td>
<td>Specifies the numbering screening of the media resource address.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- UNDEFINED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- USER_PROVIDED_NOT_VERIFIED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- USER_PROVIDED_VERIFIED_PASSED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- USER_PROVIDED_VERIFIED_FAILED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NETWORK_PROVIDED</td>
</tr>
<tr>
<td>Default value: UNDEFINED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presentation Restriction</td>
<td>STRING</td>
<td>Specifies the presentation restriction of the media resource address.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- UNDEFINED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- ALLOWED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- RESTRICTED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_AVAILABLE</td>
</tr>
<tr>
<td>Default value: UNDEFINED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operation Type</td>
<td>STRING</td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The media resource is internal part of the SSP. ConnectToResource (CTR)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>operation is used to connect the media resource.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- external</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The media resource not a part of the SSP. EstablishTemporaryConnection (ETC)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>is used to connect the media resource.</td>
</tr>
<tr>
<td>Default value: internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Answer Indication</td>
<td>BOOL</td>
<td>Specifies how to set the bothwayThroughConnectionInd in the ServiceInteractionIndicatorTwo parameter in the ETC and CTR operations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- True</td>
</tr>
<tr>
<td></td>
<td></td>
<td>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).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- False</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The media path opens only in the direction from the media resource to the caller.</td>
</tr>
<tr>
<td>Default value: True</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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 13–22 describes configuration parameters on the TCAP subtab.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class4 Default Timeout in Seconds</td>
<td>INT</td>
<td>Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 5</td>
</tr>
<tr>
<td>Reject Timeout in Seconds</td>
<td>INT</td>
<td>Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 100</td>
</tr>
<tr>
<td>Application Part Guard Timer</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 200</td>
</tr>
<tr>
<td>Activate Invoke Alarm in Application Layer</td>
<td>BOOL</td>
<td>When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: True False Default value: False</td>
</tr>
</tbody>
</table>


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. The hierarchy of the MBeans is shown on Figure 13–3.

Figure 13–3  IM-SSF CAP Phase 3 MBeans Hierarchy

Table 13–22 (Cont.) TCAP Parameter

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result Split Length</td>
<td>INT</td>
<td>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</td>
</tr>
</tbody>
</table>
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

**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.
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 13–16.

**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
- NumberIncompleteIndicatorOfCallingPartyNumber
- NumberingPlanIndicatorOfCallingPartyNumber
- ScreeningIndicatorOfCallingPartyNumber
- CallingPartyCategoryOfCallingPartyNumber
- TypeOfNumberOfCalledPartyNumber
- NumberingPlanIndicatorOfCalledPartyBcdNumber

For more information on these attributes, see Table 13–17.
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 13–18.

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 13–19.

**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 13–20.

**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 13–21.

**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 13–22.

**Operations**

None

### Configuring IM-SSF INAP CS-1

This section describes how to configure IM-SSF INAP CS-1 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, select OCSB > Processing Tier > Interworking Modules. The list of currently deployed interworking module instances is displayed.
2. In the list of the deployed module instances, select the module instance that you want to configure. The module instance configuration screen is displayed in the Configuration pane.

The configuration screen of the IM-SSF INAP CS-1 contains the subtabs described in Table 13–23.
Configuring IM-SSF INAP CS-1

Table 13–23  IM-SSF INAP CS-1 Configuration Subtabs

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

Configuring General Parameters

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

Table 13–24 describes the configuration parameter on the General subtab.

Table 13–24  General Parameter

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>Plugin</td>
<td>STRING</td>
<td>Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode / decode SS7 messages.</td>
</tr>
</tbody>
</table>

Configuring Call Handling Parameters

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

Table 13–25 describes configuration parameters on the Call Handling subtab.
<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IM-SSF Mode of Operation</td>
<td>STRING</td>
<td>Specifies the IM-SSF mode of operation. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DYNAMIC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IM-SSF dynamically changes its call control mode, according to the mode</td>
</tr>
<tr>
<td></td>
<td></td>
<td>requested by the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ BACK_TO_BACK</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IM-SSF monitors calls and ignores the mode requested by the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ REDIRECT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IM-SSF does not monitor calls and ignores the mode requested by the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: DYNAMIC</td>
</tr>
<tr>
<td>Session Case</td>
<td>STRING</td>
<td>Specifies how IM-SSF treats sessions that arrive on the southbound interface,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>from the OE. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ ORIG</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All calls are treated as originating calls.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TERM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All calls are treated as terminating calls.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DYNAMIC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Calls are treated dynamically as either originating or terminating calls,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>depending on the SAL Route header and/or the x-wcs-session-case header</td>
</tr>
<tr>
<td></td>
<td></td>
<td>generated by a southbound Service Broker IM.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: ORIG</td>
</tr>
<tr>
<td>IM-SSF Media Capability</td>
<td>BOOL</td>
<td>Specifies whether or not the underlying network supports IP/SRF/MRF. This</td>
</tr>
<tr>
<td></td>
<td></td>
<td>determines if the IM-SSF can handle media-related operations, such as</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EstablishTemporaryConnection or ConnectToResource.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ True</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ False</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: True</td>
</tr>
<tr>
<td>Tssf Duration in Seconds</td>
<td>INT</td>
<td>Specifies the value, in seconds, of the IM-SSF Tssf timer.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 20</td>
</tr>
<tr>
<td>Tssf User Interaction Duration in Seconds</td>
<td>INT</td>
<td>Specifies the value, in seconds, of the IM-SSF Tssf timer. This parameter is used when the IM-SSF is in the middle of interaction with a media resource. Default value: 1200</td>
</tr>
</tbody>
</table>
### Table 13–25 (Cont.) IM-SSF INAP CS-1 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Body Encoding Format                      | STRING  | Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message. Possible options:  
- BER  
- XER  
- NONE  
Default value: NONE |
| NOA of Called Party Number               | STRING  | Specifies how to set the NatureOfAddress of the CalledPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values:  
- SUBSCRIBER_NUMBER  
- UNKNOWN  
- NATIONAL  
- INTERNATIONAL  
- NETWORK_SPECIFIC  
Default value: NATIONAL |
| Internal Network Number Indicator of Called Party Number | BOOL    | Specifies how to set the InternalNetworkNumberIndicator of the CalledPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values:  
- True  
- False  
Default value: True |
| Numbering Plan Indicator of Called Party Number | STRING  | Specifies how to set the NumberingPlanIndicator of the CalledPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values:  
- ISDN  
- DATA  
- TELEX  
Default value: DATA |
Table 13–25 (Cont.) IM-SSF INAP CS-1 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| NOA of Calling Party Number               | STRING | Specifies how to set the NatureOfAddress of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values:  
  - SUBSCRIBER_NUMBER  
  - UNKNOWN  
  - NATIONAL  
  - INTERNATIONAL  
  - NETWORK_SPECIFIC  
  Default value: NATIONAL |
| Number Incomplete Indicator of Calling Party Number | BOOL    | Specifies how to set the IncompleteIndicator of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible options:  
  - True  
  - False  
  Default value: True |
| Numbering Plan Indicator of Calling Party Number | STRING | Specifies how to set the NumberingPlanIndicator of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values:  
  - ISDN  
  - DATA  
  - TELEX  
  Default value: TELEX |
| Screening Indicator of Calling Party Number | STRING | Specifies how to set the NumberingPlanIndicator of the CallingPartyNumber. This parameter is used when the IM-SSF sends a new InitialDP message to the SCP. Possible values:  
  - USER_PROVIDED_NOT_VERIFIED  
  - USER_PROVIDED_VERIFIED_PASSED  
  - USER_PROVIDED_VERIFIED_FAILED  
  - NETWORK_PROVIDED  
  Default values: USER_PROVIDED_NOT_VERIFIED |
Configuring IM-SSF INAP CS-1

Using this subtab enables you to send IN triggers to the SCP. The table on the Subscriber Data subtab displays the rules for invoking triggers. Each row represents one rule. When defining a new rule, you need to specify the fields described in Table 13–26.

### Table 13–25 (Cont.) IM-SSF INAP CS-1 Call Handling Parameters

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

### Configuring Subscriber Data Parameters

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

The table on the Subscriber Data subtab displays the rules for invoking triggers. Each row represents one rule. When defining a new rule, you need to specify the fields described in Table 13–26.
Table 13–26  IM-SSF INAP CS-1 Subscriber Data Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMSI</td>
<td>STRING</td>
<td>Specifies a condition on session IMSI. When the condition is met, IM-SSF invokes triggers towards the SCP.</td>
</tr>
<tr>
<td>MSISDN</td>
<td>STRING</td>
<td>Specifies a condition on session MSISDN. When the condition is met, IM-SSF invokes triggers towards the SCP.</td>
</tr>
<tr>
<td>Service Key</td>
<td>STRING</td>
<td>Specifies a Service Key to set on the trigger to the SCP.</td>
</tr>
<tr>
<td>SCP Address Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>Default Call Handling</td>
<td>STRING</td>
<td>Specifies how IM-SSF handles a call when a signal between IM-SSF and SCP fails (that is invokes a trigger towards the failed SCP). Possible values: ■ CONTINUE_CALL ■ RELEASE_CALL Default value: CONTINUE_CALL</td>
</tr>
<tr>
<td>TDP List</td>
<td>STRING_LIST</td>
<td>Specifies a list of TDPs that must be triggered. Each trigger is specified in the following format: &lt;id&gt;=&lt;type&gt; where: &lt;id&gt; is one of the following ■ 2: COLLECTED_INFO ■ 3: ANALYSED_INFORMATION ■ 4: ROUTE_SELECT_FAILURE ■ 12: TERMINATING_ATTEMPT_AUTHORISED ■ 13: T_BUSY ■ 14: T_NO_ANSWER &lt;type&gt; is one of the following: ■ R, which means Interrupt ■ N, which means Notify 13=R, 14=N</td>
</tr>
</tbody>
</table>

Configuring Operation Propagation Parameters

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

The table on the Operation Propagation subtab displays a list of operations. Each row represents one operation for which you define whether IM-SSF processes this operation or propagates the operation to another module. When configuring a new operation, you need to specify the fields described in Table 13–27.

Table 13–27  IM-SSF INAP CS1 Operation Propagation

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique identifier.</td>
</tr>
</tbody>
</table>
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 13–28.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a name of the media resource</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>Specifies a unique identifier that applications use to instruct Service Broker which media resource to connect to in order to play announcements. Aliases are defined in a URI format. For example: <a href="mailto:mrf.network@domain.com">mrf.network@domain.com</a>.</td>
</tr>
<tr>
<td>Address Digits</td>
<td>STRING</td>
<td>Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource.</td>
</tr>
</tbody>
</table>
Configuring IM-SSF INAP CS-1

Configuring IM-SSF

13-57

Configuring TCAP Parameters

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

Table 13–29 describes configuration parameters on the TCAP subtab.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature of Address</td>
<td>STRING</td>
<td>Specifies the NatureOfAddress part of the media resource address. The media resource address is used to set up a connection towards the media resource. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Address Numbering Plan Indicator</td>
<td>STRING</td>
<td>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:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operation Type</td>
<td>STRING</td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class4 Default Timeout in Seconds</td>
<td>INT</td>
<td>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</td>
</tr>
</tbody>
</table>
Configuring IM-SSF INAP CS-1

Table 13–29 (Cont.) TCAP Parameter

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reject Timeout in Seconds</td>
<td>INT</td>
<td>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</td>
</tr>
<tr>
<td>Application Part Guard Timer</td>
<td>INT</td>
<td>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</td>
</tr>
<tr>
<td>Activate Invoke Alarm in Application Layer</td>
<td>BOOL</td>
<td>When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: ■ True ■ False Default value: False</td>
</tr>
<tr>
<td>Result Split Length</td>
<td>INT</td>
<td>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</td>
</tr>
</tbody>
</table>

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. The hierarchy of the MBeans is shown on Figure 13–4.
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
- TcapMBean
- MediaResourcesMBean

**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 13–24.

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 13–25.

**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 13–26.

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 13–27.

**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 13–28.

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 13–29.

Operations
None

Configuring IM-SSF WIN Phase 1

This section describes how to configure IM-SSF WIN phase 1 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, select OCSB > Processing Tier > Interworking Modules. The list of currently deployed Interworking Modules is displayed.

2. In the list of the deployed modules, select the module instance that you want to configure. The module instance configuration screen is displayed in the Configuration pane.

The configuration screen of the IM-SSF WIN Phase 1 contains the subtabs described in Table 13–30.

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Enables you to configure general parameters for an Interworking Module instance. For more information, see “Configuring General Parameters”.</td>
</tr>
<tr>
<td>Call Handling</td>
<td>Enables you to configure how the IM-SSF handles calls. For more information, see “Configuring Call Handling Parameters”.</td>
</tr>
<tr>
<td>Subscriber Data</td>
<td>Enables you to define IN triggers that the IM-SSF invokes towards the SCP above. For more information, see “Configuring Subscriber Data Parameters”.</td>
</tr>
<tr>
<td>Media Resources</td>
<td>Enables you to set up the media resources that Service Broker uses to play announcements. For more information, see “Configuring Media Resources Parameters”.</td>
</tr>
<tr>
<td>TCAP</td>
<td>Enables you to set up the TCAP layer of the IM-SSF. For more information, see “Configuring TCAP Parameters”.</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Enables you to define how Runtime MBeans and notifications operate. For more information, see “Configuring Monitoring Parameters”.</td>
</tr>
</tbody>
</table>

### Configuring General Parameters

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

Table 13–31 describes the configuration parameter on the General subtab.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>Plugin</td>
<td>STRING</td>
<td>Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode / decode SS7 messages.</td>
</tr>
</tbody>
</table>

### Configuring Call Handling Parameters

The Call Handling subtab enables you to define how IM-SSF handles calls.
Table 13-32 describes configuration parameters on the Call Handling subtab.

**Table 13-32 IM-SSF WIN Phase 1 Call Handling Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IM-SSF Mode of Operation</td>
<td>STRING</td>
<td>Specifies the IM-SSF mode of operation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- DYNAMIC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IM-SSF dynamically changes its call control mode, according to the mode</td>
</tr>
<tr>
<td></td>
<td></td>
<td>requested by the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- BACK_TO_BACK</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IM-SSF monitors calls and ignores the mode requested by the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- REDIRECT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IM-SSF does not monitor calls and ignores the mode requested by the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: DYNAMIC</td>
</tr>
<tr>
<td>Session Case</td>
<td>STRING</td>
<td>Specifies how IM-SSF treats sessions that arrive on the southbound interface, from the OE.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- ORIG</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All calls are treated as originating calls.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TERM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All calls are treated as terminating calls.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- DYNAMIC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: DYNAMIC</td>
</tr>
<tr>
<td>Tssf Duration in Seconds</td>
<td>INT</td>
<td>Specifies the value, in seconds, of the IM-SSF Tssf timer.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 20</td>
</tr>
<tr>
<td>Tssf User Interaction Duration in</td>
<td>INT</td>
<td>Specifies the value, in seconds, of the IM-SSF Tssf timer.</td>
</tr>
<tr>
<td>Seconds</td>
<td></td>
<td>This parameter is used when the IM-SSF is in the middle of interaction with a media resource.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 1200</td>
</tr>
<tr>
<td>Name</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>--------</td>
<td>-------------</td>
</tr>
</tbody>
</table>
| IM-SSF Media Capability           | BOOL   | Specifies whether or not the underlying network supports IP/SRF/MRF. This determines if the IM-SSF can handle media-related operations, such as EstablishTemporaryConnection or ConnectToResource. Possible values:  
  | True                                |        |
  | False                               |        |
| Default value: True               |        |
| Body Encoding Format              | STRING | Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message. Possible options:  
  | BER                                  |        |
  | XER                                  |        |
  | NONE                                 |        |
| Default value: NONE               |        |
| MSC ID                            | STRING | Specifies the value that IM-SSF sets in the mscl field of trigger messages. |
| MS ID                             | STRING | Specifies the value that IM-SSF sets in the msID field of trigger messages. |
| Mobile Equipment Number           | INT    | Specifies the manufacturer code of the equipment. This parameter is used when the IM-SSF sends a new trigger, such as OriginationRequest or AnalyzedInformation message to the SCP. Default value: -1 |
| Manufacturer Code                 |        |             |
| Mobile Equipment Number Serial    | STRING | Specifies how to set the mobile equipment number field. This parameter is used when the IM-SSF sends a new trigger, such as OriginationRequest or AnalyzedInformation message to the SCP. |
| Number                               |        |             |
| ORREQ Dialed Digits Numbering      | STRING | Specifies the NumberingPlan of the DialedDigits field. This parameter is used when IM-SSF sends a new OriginationRequest message to the SCP. Possible values:  
  | ISDN                                  |        |
  | DATA                                  |        |
  | TELEX                                 |        |
  | TELEPHONY                             |        |
  | MARITIME_MOBILE                      |        |
| Default value: ISDN               |        |
### Table 13–32 (Cont.) IM-SSF WIN Phase 1 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORREQ Dialed Digits Type of Digits</td>
<td>STRING</td>
<td>Specifies the TypeOfDigits of the DialedDigits field.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This parameter is used when IM-SSF sends a new OriginationRequest message to the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_DEFINED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- CALLED_PARTY_NUMBER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- CALLING_PARTY_NUMBER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- CALLER_INTERACTION</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- ROUTING_NUMBER</td>
</tr>
<tr>
<td></td>
<td>Default value: CALLED_PARTY_NUMBER</td>
<td></td>
</tr>
<tr>
<td>ORREQ MDN Type of Digits</td>
<td>STRING</td>
<td>Specifies how to set the TypeOfDigits of the MobileDirectoryNumber field.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This parameter is used when the IM-SSF sends a new OriginationRequest message to the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_DEFINED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- CALLED_PARTY_NUMBER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- CALLING_PARTY_NUMBER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- CALLER_INTERACTION</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- ROUTING_NUMBER</td>
</tr>
<tr>
<td></td>
<td>Default value: CALLED_PARTY_NUMBER</td>
<td></td>
</tr>
<tr>
<td>ORREQ MDN Numbering Plan</td>
<td>STRING</td>
<td>Specifies the NumberingPlan of the MobileDirectoryNumber field.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This parameter is used when the IM-SSF sends a new OriginationRequest message to the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- ISDN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- DATA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TELEX</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TELEPHONY</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- MARITIME_MOBILE</td>
</tr>
<tr>
<td></td>
<td>Default value: TELEPHONY</td>
<td></td>
</tr>
<tr>
<td>ANALYZ Invoke Digits Numbering Plan</td>
<td>STRING</td>
<td>Specifies the NumberingPlan of the InvokeDigits field.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This parameter is used when IM-SSF sends a new AnalyzedInformation message to the SCP.</td>
</tr>
<tr>
<td>ANALYZ Invoke Digits Type of Digits</td>
<td>STRING</td>
<td>Specifies the TypeOfDigits of the InvokeDigits field.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This parameter is used when IM-SSF sends a new AnalyzedInformation message to the SCP.</td>
</tr>
<tr>
<td>ANALYZ Invoke Mobile Directory</td>
<td>STRING</td>
<td>Specifies how to set the TypeOfDigits of the MobileDirectoryNumber field.</td>
</tr>
<tr>
<td>Number Type of Digits</td>
<td></td>
<td>This parameter is used when IM-SSF sends a new AnalyzedInformation message to the SCP.</td>
</tr>
</tbody>
</table>
Configuring IM-SSF WIN Phase 1

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

The table on the Subscriber Data subtab displays the rules for invoking triggers. Each row represents one rule. When defining a new rule, you need to specify the fields described in Table 13–33.

**Table 13–33 IM-SSF WIN Phase 1 Subscriber Data Fields**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANALYZ Invoke Mobile Directory Number Nature Numbering Plan</td>
<td>STRING</td>
<td>Specifies the NumberingPlan of the MobileDirectoryNumber field. This parameter is used when IM-SSF sends a new AnalyzedInformation message to the SCP.</td>
</tr>
</tbody>
</table>

**Configuring Subscriber Data Parameters**

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

The table on the Subscriber Data subtab displays the rules for invoking triggers. Each row represents one rule. When defining a new rule, you need to specify the fields described in Table 13–33.

**Table 13–32 (Cont.) IM-SSF WIN Phase 1 Call Handling Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIN</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>DN</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>SCP Address Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>Default Call Handling</td>
<td>STRING</td>
<td>Specifies how IM-SSF handles a call when a signal between IM-SSF and SCP fails (that is, invokes a trigger towards the failed SCP). Possible values: CONTINUE_CALL, RELEASE_CALL. Default value: CONTINUE_CALL</td>
</tr>
</tbody>
</table>
Configuring IM-SSF WIN Phase 1

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 13–34.

Table 13–34 IM-SSF WIN Phase 1 Media Resource Definition Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| TDP List      | STRING _LIST   | Specifies a list of TDPs that must be triggered. Each trigger is specified in the following format: <id>=<type> where:  
|               |          | <id> is one of the following:  
|               |          | ■ 36: Origination_Attempt_Authorized  
|               |          | ■ 37: Calling_Routing_Address_Available  
|               |          | ■ 64: Terminating_Resource_Available  
|               |          | ■ 65: T_Busy  
|               |          | ■ 66: T_No_Answer  
|               |          | <type> is one of the following:  
|               |          | ■ R, which means Interrupt  
|               |          | ■ N, which means Notify  
|               |          | When you want to define multiple TDPs, separate these TDPs with a comma. For example: 65=R,66=N |

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a name of the media resource.</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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: <a href="mailto:mrf.network@domain.com">mrf.network@domain.com</a>.</td>
</tr>
</tbody>
</table>
| Operation Type| STRING   | Possible values:  
|               |          | ■ switched_based  
|               |          | The media resource is an internal part of the SSP. CCDIR operation is used to set up a connection towards the media resource.  
|               |          | ■ external  
|               |          | The media resource is not part of the SSP. ConnectResource operation is used to connect the media resource. Default value: switched_based |
Configuring IM-SSF WIN Phase 1

13-71

Configuring IM-SSF

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

Table 13–35 describes configuration parameters on the TCAP subtab.

Table 13–35 (Cont.) IM-SSF WIN Phase 1 Media Resource Definition Fields

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

Configuring TCAP Parameters

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

Table 13–35 describes configuration parameters on the TCAP subtab.

Table 13–35 TCAP Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| 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 |
Configuring IM-SSF WIN Phase 1

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reject Timeout in Seconds</td>
<td>INT</td>
<td>Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 1000</td>
</tr>
<tr>
<td>Application Part Guard Timer</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 200</td>
</tr>
<tr>
<td>Activate Invoke Alarm in Application Layer</td>
<td>BOOL</td>
<td>When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: True, False.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: False</td>
</tr>
<tr>
<td>Result Split Length</td>
<td>INT</td>
<td>Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 512</td>
</tr>
</tbody>
</table>

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. The hierarchy of the MBeans is shown on Figure 13–5.
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
- MediaResourcesMBean
- MediaResourceMBean [0..n]

**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 13–31.

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 13–32.

**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()`
Configuring IM-SSF WIN Phase 1

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 13–33.

**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
Configuring IM-SSF WIN Phase 2

**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 13–34.

**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 13–35.

**Operations**

None

**Configuring IM-SSF WIN Phase 2**

This section describes how to configure IM-SSF WIN 2 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 1 configuration screen:

1. In the Domain Navigation pane, select OCSB > Processing Tier > Interworking Modules. The list of currently deployed Interworking Modules is displayed.

2. In the list of the deployed modules, select the module instance that you want to configure. The module instance configuration screen is displayed in the Configuration pane.

The configuration screen of the IM-SSF WIN phase 2 contains the subtabs described in Table 13–36.

Table 13–36 IM-SSF WIN Phase 2 Configuration Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Enables you to configure general parameters for an Interworking Module instance. For more information, see &quot;Configuring General Parameters&quot;.</td>
</tr>
<tr>
<td>Call Handling</td>
<td>Enables you to configure how the IM-SSF handles calls. For more information, see &quot;Configuring Call Handling Parameters&quot;.</td>
</tr>
<tr>
<td>Subscriber Data</td>
<td>Enables you to define IN triggers that the IM-SSF invokes towards the SCP above. For more information, see &quot;Configuring Subscriber Data Parameters&quot;.</td>
</tr>
<tr>
<td>Media Resources</td>
<td>Enables you to set up the media resources that Service Broker uses to play announcements. For more information, see &quot;Configuring Media Resources Parameters&quot;.</td>
</tr>
<tr>
<td>TCAP</td>
<td>Enables you to set up the TCAP layer of the IM-SSF. For more information, see &quot;Configuring TCAP Parameters&quot;.</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Enables you to define how Runtime MBeans and notifications operate. For more information, see &quot;Configuring Monitoring Parameters&quot;.</td>
</tr>
</tbody>
</table>

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 13–37 describes the configuration parameter on the General subtab.

Table 13–37 General Parameter

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
</tbody>
</table>
Configuring Call Handling Parameters

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

Table 13–38 describes configuration parameters on the Call Handling subtab.

Table 13–38  IM-SSF WIN Phase 2 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plugin</td>
<td>STRING</td>
<td>Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode / decode SS7 messages.</td>
</tr>
<tr>
<td>IM-SSF Mode of Operation</td>
<td>STRING</td>
<td>Specifies the IM-SSF mode of operation. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DYNAMIC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IM-SSF dynamically changes its call control mode, according to the mode requested by the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ BACK_TO_BACK</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IM-SSF monitors calls and ignores the mode requested by the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ REDIRECT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IM-SSF does not monitor calls and ignores the mode requested by the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: DYNAMIC</td>
</tr>
<tr>
<td>Session Case</td>
<td>STRING</td>
<td>Specifies how IM-SSF treats sessions that arrive on the southbound interface, from the OE. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ ORIG</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All calls are treated as originating calls.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TERM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All calls are treated as terminating calls.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DYNAMIC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: ORIG</td>
</tr>
<tr>
<td>Tssf Duration in Seconds</td>
<td>INT</td>
<td>Specifies the value, in seconds, of the IM-SSF Tssf timer.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 20</td>
</tr>
<tr>
<td>Tssf User Interaction</td>
<td>INT</td>
<td>Specifies the value, in seconds, of the IM-SSF Tssf timer.</td>
</tr>
<tr>
<td>Duration in Seconds</td>
<td></td>
<td>This parameter is used when the IM-SSF is in the middle of interaction with a media resource.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 1200</td>
</tr>
</tbody>
</table>
### Table 13–38 (Cont.) IM-SSF WIN Phase 2 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| IM-SSF Media Capability     | BOOL    | Specifies whether or not the underlying network supports IP/SRF/MRF. This determines if the IM-SSF can handle media-related operations, such as EstablishTemporaryConnection or ConnectToResource. Possible values:  
  - True  
  - False  
  Default value: False |
| Body Encoding Format        | STRING  | Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message. Possible options:  
  - BER  
  - XER  
  - NONE  
  Default value: NONE |
| MSC ID                      | STRING  | Specifies the value that IM-SSF sets in the mscl field of trigger messages. |
| MS ID                       | STRING  | Specifies the value that IM-SSF sets in the msID field of trigger messages. |
| Mobile Equipment Number     | INT     | Specifies the manufacturer code of the equipment. Default value: -1 |
| Manufacturer Code           |         |                                                                                                                                           |
| Mobile Equipment 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. |
| Serial Number               |         |                                                                                                                                           |
| ORREQ Dialed Digits         | STRING  | Specifies the NumberingPlan of the DialedDigits field. This parameter is used when IM-SSF sends a new OriginationRequest message to the SCP. Possible values:  
  - ISDN  
  - DATA  
  - TELEX  
  - TELEPHONY  
  - MARITIME_MOBILE  
  Default value: DATA |
### Table 13–38 (Cont.)  IM-SSF WIN Phase 2 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORREQ Dailed Digits Type of Digits</td>
<td>STRING</td>
<td>Specifies the TypeOfDigits of the DailedDigits field.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This parameter is used when IM-SSF sends a new OriginationRequest message to the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_DEFINED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- CALLED_PARTY_NUMBER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- CALLING_PARTY_NUMBER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- CALLER_INTERACTION</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- ROUTING_NUMBER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: CALLED_PARTY_NUMBER</td>
</tr>
<tr>
<td>ORREQ MDN Type of Digits</td>
<td>STRING</td>
<td>Specifies how to set the TypeOfDigits of the MobileDirectoryNumber field.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This parameter is used when the IM-SSF sends a new OriginationRequest message to the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NOT_DEFINED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- CALLED_PARTY_NUMBER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- CALLING_PARTY_NUMBER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- CALLER_INTERACTION</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- ROUTING_NUMBER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: CALLING_PARTY_NUMBER</td>
</tr>
<tr>
<td>ORREQ MDN Numbering Plan</td>
<td>STRING</td>
<td>Specifies the NumberingPlan of the MobileDirectoryNumber field.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This parameter is used when IM-SSF sends a new OriginationRequest message to the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- ISDN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- DATA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TELEX</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- TELEPHONY</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- MARITIME_MOBILE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: TELEX</td>
</tr>
<tr>
<td>ANALYZ Invoke Digits Numbering Plan</td>
<td>STRING</td>
<td>Specifies the NumberingPlan of the InvokeDigits field.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This parameter is used when IM-SSF sends a new AnalyzedInformation message to the SCP.</td>
</tr>
<tr>
<td>ANALYZ Invoke Digits Type of Digits</td>
<td>STRING</td>
<td>Specifies the TypeOfDigits of the InvokeDigits field.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This parameter is used when IM-SSF sends a new AnalyzedInformation message to the SCP.</td>
</tr>
</tbody>
</table>
Configuring IM-SSF WIN Phase 2

Configuring Subscriber Data Parameters

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

The table on the Subscriber Data subtab displays the rules for invoking triggers. Each row represents one rule. When defining a new rule, you need to specify the fields described in Table 13–39.

Table 13–39 IM-SSF WIN Phase 2 Subscriber Data Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIN</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>DN</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>SCP Address Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>Default Call Handling</td>
<td>STRING</td>
<td>Specifies how IM-SSF handles a call when a signal between IM-SSF and SCP fails (that is, invokes a trigger towards the failed SCP). Possible values: CONTINUE_CALL, RELEASE_CALL. Default value: CONTINUE_CALL.</td>
</tr>
</tbody>
</table>
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 13–40.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a name of the media resource.</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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: <a href="mailto:mrf.network@domain.com">mrf.network@domain.com</a>.</td>
</tr>
</tbody>
</table>
Configuring IM-SSF WIN Phase 2

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address Digits</td>
<td>STRING</td>
<td>Specifies the digits part of the media resource address. The media resource address is used to set up a connection towards the media resource.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Note:</strong> 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.</td>
</tr>
<tr>
<td>Operation Type</td>
<td>STRING</td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ switched_based                                                                  The media resource is internal part of the SSP. CCDIR operation is used to connect the media resource.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ external                                                                         The media resource not a part of the SSP. ConnectResource operation is used to connect the media resource.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: switched_based</td>
</tr>
<tr>
<td>Resource Type</td>
<td>STRING</td>
<td>Specifies the value to set in the SpecializedResource parameter of the SEIZERES operation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ UNUSED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ DTMF_TONE_DETECTOR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ ASR_DIGITS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ ASR_SPEECH_USER_INTERFACE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default values: UNUSED</td>
</tr>
<tr>
<td>Private Resource Type</td>
<td>STRING</td>
<td>Specifies the value to set in the PrivateSpecializedResource parameter of the SEIZERES operation.</td>
</tr>
<tr>
<td>SN-IP Configuration</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ UNUSED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ SN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IP and SCP are co-located. When you choose this option, you need to set also the SN Address parameter.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ IP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IP and SCP are not co-located.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: UNUSED</td>
</tr>
<tr>
<td>SN Address</td>
<td>STRING</td>
<td>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.</td>
</tr>
</tbody>
</table>

**Configuring TCAP Parameters**

The TCAP subtab enables you to set up parameters of the IM TCAP layer.
Table 13–41 describes configuration parameters on the TCAP subtab.

Table 13–41 TCAP Parameter

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 4 Default Timeout in Seconds</td>
<td>INT</td>
<td>Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 4 operations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 5</td>
</tr>
<tr>
<td>Reject Timeout in Seconds</td>
<td>INT</td>
<td>Specifies the time period in seconds that the IM waits for possible REJECT. The timer starts when sending INVOKE for class 1-3 operations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 1000</td>
</tr>
<tr>
<td>Application Part Guard Timer</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 200</td>
</tr>
</tbody>
</table>
| Activate Invoke Alarm in Application Layer | BOOL | When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values:  
  - True  
  - False    |
|                                    |       | Default value: False                                                                      |
| Result Split Length                | INT   | Specifies the maximum length of the TCAP RESULT message. When the actual length of the message exceeds the specified value, the message is split. |
|                                    |       | Default value: 512                                                                        |

Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-SSF. For more information about configuring monitoring, see "Configuring 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. The hierarchy of the MBeans is shown on Figure 13–6.

**Figure 13–6  IM-SSF WIN MBeans Hierarchy**

The following sections provide reference information for the IM-SSF WIN configuration MBeans.

<table>
<thead>
<tr>
<th>MBean</th>
</tr>
</thead>
<tbody>
<tr>
<td>GeneralMBean</td>
</tr>
<tr>
<td>CallHandlingMBean</td>
</tr>
<tr>
<td>SubscriberDataRecordsMBean</td>
</tr>
<tr>
<td>StateChangedNotificationRulesMBean</td>
</tr>
<tr>
<td>StateChangedNotificationRuleMBean</td>
</tr>
<tr>
<td>MonitoringGeneralMBean</td>
</tr>
<tr>
<td>ThresholdCrossedNotificationRulesMBean</td>
</tr>
<tr>
<td>ThresholdCrossedNotificationRuleMBean</td>
</tr>
<tr>
<td>MediaResourcesMBean</td>
</tr>
<tr>
<td>ImssfWinMBean</td>
</tr>
<tr>
<td>TcapMBean</td>
</tr>
</tbody>
</table>

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 13–37.

**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 13–38.

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 13–39.

**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 13–40.

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 13–41.

Operations
None

Configuring IM-SSF AIN 0.1

This section describes how to configure IM-SSF AIN 0.1 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, select OCSB > Processing Tier > Interworking Modules. The list of currently deployed interworking module instances is displayed.

2. In the list of the deployed module instances, select the module instance that you want to configure. The module instance configuration screen is displayed in the Configuration pane.

The configuration screen of the IM-SSF AIN 0.1 contains the subtabs described in Table 13–42.

<table>
<thead>
<tr>
<th>Table 13–42 IM-SSF AIN 0.1 Configuration Subtabs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subtab</td>
</tr>
<tr>
<td>---------------------------------</td>
</tr>
<tr>
<td>General</td>
</tr>
<tr>
<td>Call Handling</td>
</tr>
<tr>
<td>Subscriber Data</td>
</tr>
<tr>
<td>Operation Propagation</td>
</tr>
<tr>
<td>Media Resources</td>
</tr>
<tr>
<td>TCAP</td>
</tr>
<tr>
<td>Monitoring</td>
</tr>
</tbody>
</table>

### Configuring General Parameters

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

Table 13–43 describes the configuration parameter on the General subtab.

<table>
<thead>
<tr>
<th>Table 13–43 General Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>Alias</td>
</tr>
</tbody>
</table>
Configuring IM-SSF AIN 0.1

Table 13–43 (Cont.) General Parameter

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plugin</td>
<td>STRING</td>
<td>Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode / decode SS7 messages.</td>
</tr>
</tbody>
</table>

Configuring Call Handling Parameters

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

Table 13–44 describes configuration parameters on the Call Handling subtab.

Table 13–44 IM-SSF AIN 0.1 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IM-SSF Mode of Operation</td>
<td>STRING</td>
<td>Specifies the IM-SSF mode of operation. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DYNAMIC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ BACK_TO_BACK</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ REDIRECT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IM-SSF dynamically changes its call control mode, according to the mode requested by the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IM-SSF monitors calls and ignores the mode requested by the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IM-SSF does not monitor calls and ignores the mode requested by the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: DYNAMIC</td>
</tr>
<tr>
<td>Session Case</td>
<td>STRING</td>
<td>Specifies how the IM-SSF treats sessions that arrive on the southbound interface, from the OE. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ ORIG</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TERM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DYNAMIC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All calls are treated as originating calls.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All calls are treated as terminating calls.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: DYNAMIC</td>
</tr>
<tr>
<td>Tssf Duration in Seconds</td>
<td>INT</td>
<td>Specifies the value, in seconds, of the IM-SSF Tssf timer. Default value: 20</td>
</tr>
<tr>
<td>Tssf User Interaction Duration in Seconds</td>
<td>INT</td>
<td>Specifies the value, in seconds, of the IM-SSF Tssf timer. This parameter is used when the IM-SSF is in the middle of interaction with a media resource. Default value: 1200</td>
</tr>
</tbody>
</table>
### IM-SSF Media Capability

**BOOL**
Specifies whether or not the underlying network supports IP/SRF/MRF. This determines if the IM-SSF can handle media-related operations, such as EstablishTemporaryConnection or ConnectToResource.

Possible values:
- True
- False
Default value: False

### Body Encoding Format

**STRING**
Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message.

Possible options:
- BER
- XER
- NONE
Default value: NONE

### NatureOfNumber of calledPartyID

**STRING**
Specifies the NatureOfNumber value of the calledPartyID/collectedAddressInfo fields that IM-SSF sets when invoking a trigger message towards the SCP.

Trigger messages:
- Origination_Attempt
- Info_Collected
- Info_Analyze
- Termination_Attempt

Possible values:
- SUBSCRIBER_NUMBER
- UNKNOWN
- NATIONAL
- INTERNATIONAL
Default value: NATIONAL

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IM-SSF Media Capability</td>
<td>BOOL</td>
<td>Specifies whether or not the underlying network supports IP/SRF/MRF. This determines if the IM-SSF can handle media-related operations.</td>
</tr>
<tr>
<td>Body Encoding Format</td>
<td>STRING</td>
<td>Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message.</td>
</tr>
<tr>
<td>NatureOfNumber of calledPartyID</td>
<td>STRING</td>
<td>Specifies the NatureOfNumber value of the calledPartyID/collectedAddressInfo fields that IM-SSF sets when invoking a trigger message.</td>
</tr>
</tbody>
</table>
### Table 13–44 (Cont.) IM-SSF AIN 0.1 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NumberingPlan of calledPartyID</td>
<td>STRING</td>
<td>Specifies the NumberingPlan value of the calledPartyID/collectedAddressInfo fields that IM-SSF sets when invoking a trigger message towards the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trigger messages:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ Origination_Attempt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ Info_Collected</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ Info_Analyze</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ Termination_Attempt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ ISDN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ PRIVATE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ UNKNOWN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: ISDN</td>
</tr>
<tr>
<td>NatureOfNumber of callingPartyID</td>
<td>STRING</td>
<td>Specifies the NatureOfNumber value in the CallingPartyID field that IM-SSF sets when invoking trigger message towards the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trigger messages:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ Origination_Attempt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ Info_Collected</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ Info_Analyze</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ Termination_Attempt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ SUBSCRIBER_NUMBER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ UNKNOWN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ NATIONAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ INTERNATIONAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: NATIONAL</td>
</tr>
<tr>
<td>NumberingPlan of callingPartyID</td>
<td>STRING</td>
<td>Specifies the NumberingPlan value in the CallingPartyID field that IM-SSF sets when invoking trigger messages towards the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trigger messages:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ Origination_Attempt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ Info_Collected</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ Info_Analyze</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ Termination_Attempt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ ISDN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ PRIVATE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ UNKNOWN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: ISDN</td>
</tr>
</tbody>
</table>
Configuring IM-SSF AIN 0.1

### Configuring Subscriber Data Parameters

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ScreeningIndicator of callingPartyID</td>
<td>STRING</td>
<td>Specifies the ScreeningIndicator value in the CallingPartyID field that IM-SSF sets when invoking trigger message towards the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trigger messages:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Origination_Attempt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Info_Collected</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Info_Analyze</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Termination_Attempt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- USER_PROVIDED_NOT_VERIFIED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- USER_PROVIDED_VERIFIED_PASSED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- USER_PROVIDED_VERIFIED_FAILED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- NETWORK_PROVIDED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: USER_PROVIDED_NOT_VERIFIED</td>
</tr>
<tr>
<td>userID</td>
<td>STRING</td>
<td>Specifies the value that IM-SSF sets in the userID field when invoking trigger message towards the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trigger messages:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Origination_Attempt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Info_Collected</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Info_Analyze</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Termination_Attempt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: -1</td>
</tr>
<tr>
<td>BearerCapability</td>
<td>STRING</td>
<td>Specifies the value that IM-SSF sets in the bearerCapability field when invoking trigger message towards the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trigger messages:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Origination_Attempt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Info_Collected</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Info_Analyze</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Termination_Attempt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- SPEECH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- F31KHZAUDIO</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- F7KHZAUDIO</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- B56KBPS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- B64KBPS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- PACKETMODEDATA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: SPEECH</td>
</tr>
</tbody>
</table>

Table 13–44 (Cont.) IM-SSF AIN 0.1 Call Handling Parameters
The table on the Subscriber Data subtab displays the rules for invoking triggers. Each row represents one rule. When defining a new rule, you need to specify the fields described in Table 13–45.

### Table 13–45  IM-SSF AIN 0.1 Subscriber Data Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>SCP Address Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
</tbody>
</table>
| Default Call Handling | STRING   | Specifies how IM-SSF handles a call when a signal between IM-SSF and SCP fails (that is, invokes a trigger towards the failed SCP). Possible values:  
  ■ CONTINUE_CALL  
  ■ RELEASE_CALL  
  Default value: CONTINUE_CALL |
| TDP List      | STRING   | Specifies a list of TDPs that must be triggered. Each trigger is specified in the following format:  
  <id>=<type>  
  where:  
  <id> is one of the following:  
  ■ 225: OriginatingAttempt  
  ■ 227: InfoCollected  
  ■ 228: InfoAnalyzed  
  ■ 3607: NetworkBusy  
  ■ 3616: TerminationAttempt  
  <type> is one of the following:  
  ■ R, which means Interrupt  
  ■ N, which means Notify  
  Separate multiple TDPs with a comma. For example: 3607=R, 3616=N |

### Configuring Operation Propagation Parameters

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

The table on the Operation Propagation subtab displays a list of operations. Each row represents one operation for which you define whether IM-SSF processes this operation or propagates the operation to another module. When configuring a new operation, you need to specify the fields described in Table 13–46.

### Table 13–46  IM-SSF AIN 0.1 Operation Propagation

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique identifier.</td>
</tr>
</tbody>
</table>
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 13–47.

Table 13–47 IM-SSF AIN 0.1 Media Resource Definition Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a name of the media resource.</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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: <a href="mailto:mrf.network@domain.com">mrf.network@domain.com</a>.</td>
</tr>
<tr>
<td>Announcement Operation</td>
<td>INT</td>
<td>Specifies which operation IM-SCF triggers towards the switch-based media resource. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PlayAnnouncement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PlayAnnouncementAndCollectDigits</td>
</tr>
</tbody>
</table>

Default value: 0
Configuring TCAP Parameters

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

Table 13–48 describes configuration parameters on the TCAP subtab.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class4 Default Timeout in Seconds</td>
<td>INT</td>
<td>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</td>
</tr>
<tr>
<td>Reject Timeout in Seconds</td>
<td>INT</td>
<td>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</td>
</tr>
</tbody>
</table>
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. The hierarchy of the MBeans is shown in Figure 13–7.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Part Guard Timer</td>
<td>INT</td>
<td>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</td>
</tr>
<tr>
<td>Activate Invoke Alarm in Application Layer</td>
<td>BOOL</td>
<td>When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: True, False Default value: False</td>
</tr>
<tr>
<td>Result Split Length</td>
<td>INT</td>
<td>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</td>
</tr>
</tbody>
</table>
The following sections provide reference information for the IM-SSF AIN 0.1 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
- MediaResourceMBean
- MediaResourceMBean [0..n]
- TcapMBean

**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 13–43.

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 13–44.

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 13–45.

**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 13–46.

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
Configuring IM-SSF AIN 0.2

- DisconnectFlag
- AnswerIndication

For more information on these attributes, see Table 13–47.

**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 13–48.

**Operations**
None

**Configuring IM-SSF AIN 0.2**

This section describes how to configure IM-SSF AIN 0.2 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, select OCSB > Processing Tier > Interworking Modules. The list of currently deployed interworking module instances is displayed.

2. In the list of the deployed module instances, select the module instance that you want to configure. The module instance configuration screen is displayed in the Configuration pane.

The configuration screen of the IM-SSF AIN 0.2 contains the subtabs described in Table 13–49.
Configuring IM-SSF AIN 0.2

Table 13–49  IM-SSF AIN 0.2 Configuration Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Enables you to configure general parameters for an Interworking Module instance.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring General Parameters&quot;.</td>
</tr>
<tr>
<td>Call Handling</td>
<td>Enables you to configure how the IM-SSF handles calls.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring Call Handling Parameters&quot;.</td>
</tr>
<tr>
<td>Subscriber Data</td>
<td>Enables you to define IN triggers that the IM-SSF invokes towards the SCP above.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring Subscriber Data Parameters&quot;.</td>
</tr>
<tr>
<td>Operation Propagation</td>
<td>Enables you to define whether the IM-SSF processes operations on its own or propagates these operations to another module.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring Operation Propagation Parameters&quot;.</td>
</tr>
<tr>
<td>Media Resources</td>
<td>Enables you to set up the media resources that Service Broker uses to play announcements.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring Media Resources Parameters&quot;.</td>
</tr>
<tr>
<td>TCAP</td>
<td>Enables you to set up the TCAP layer of the IM-SSF.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring TCAP Parameters&quot;.</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Enables you to define how Runtime MBeans and notifications operate.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring Monitoring Parameters&quot;.</td>
</tr>
</tbody>
</table>

Configuring General Parameters

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

Table 13–50 describes the configuration parameter on the General subtab.

Table 13–50  General Parameter

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>Plugin</td>
<td>STRING</td>
<td>Specifies the protocol variant used over the SS7 interface. It informs the IM which plug-in (class) to use to encode / decode SS7 messages.</td>
</tr>
</tbody>
</table>

Configuring Call Handling Parameters

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

Table 13–51 describes configuration parameters on the Call Handling subtab.
<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IM-SSF Mode of Operation</td>
<td>STRING</td>
<td>Specifies the IM-SSF mode of operation. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DYNAMIC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IM-SSF dynamically changes its call control mode, according to the mode requested by the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ BACK_TO_BACK</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IM-SSF monitors calls and ignores the mode requested by the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ REDIRECT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IM-SSF does not monitor calls and ignores the mode requested by the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: DYNAMIC</td>
</tr>
<tr>
<td>Session Case</td>
<td>STRING</td>
<td>Specifies how the IM-SSF treats sessions that arrive on the southbound interface, from the OE.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ ORIG</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All calls are treated as originating calls.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ TERM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All calls are treated as terminating calls.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DYNAMIC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: ORIG</td>
</tr>
<tr>
<td>Tssf Duration in Seconds</td>
<td>INT</td>
<td>Specifies the value, in seconds, of the IM-SSF Tssf timer.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 20</td>
</tr>
<tr>
<td>Tssf User Interaction</td>
<td>INT</td>
<td>Specifies the value, in seconds, of the IM-SSF Tssf timer.</td>
</tr>
<tr>
<td>Duration in Seconds</td>
<td></td>
<td>This parameter is used when the IM-SSF is in the middle of interaction with a media resource.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 1200</td>
</tr>
<tr>
<td>IM-SSF Media Capability</td>
<td>BOOL</td>
<td>Specifies whether or not the underlying network supports IP/SRF/MRF. This determines if the IM-SSF can handle media-related operations, such as EstablishTemporaryConnection or ConnectToResource.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ True</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ False</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: False</td>
</tr>
</tbody>
</table>
### Table 13–51 IM-SSF AIN 0.2 Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Body Encoding Format                              | STRING  | Specifies the method that the IM-SSF uses to encode IN parameters in the body of a SAL message. Possible options:  
  - BER  
  - XER  
  - NONE  
  Default value: NONE |
| NatureOfNumber of calledPartyID                   | STRING  | Specifies the NatureOfNumber value of the calledPartyID/collectedAddressInfo fields that IM-SSF sets when invoking a trigger message towards the SCP. Trigger messages:  
  - Origination_Attempt  
  - Info_Collected  
  - Info_Analyze  
  - Termination_Attempt  
  Possible values:  
  - SUBSCRIBER_NUMBER  
  - UNKNOWN  
  - NATIONAL  
  - INTERNATIONAL  
  Default value: NATIONAL |
| NumberingPlan of calledPartyID                    | STRING  | Specifies the NumberingPlan value of the calledPartyID/collectedAddressInfo fields that IM-SSF sets when invoking a trigger message towards the SCP. Trigger messages:  
  - Origination_Attempt  
  - Info_Collected  
  - Info_Analyze  
  - Termination_Attempt  
  Possible values:  
  - ISDN  
  - PRIVATE  
  - UNKNOWN  
  Default value: ISDN |
<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NatureOfNumber of callingPartyID</td>
<td>STRING</td>
<td>Specifies the NatureOfNumber value in the CallingPartyID field that IM-SSF sets when invoking trigger message towards the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trigger messages:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Origination_Attempt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Info_Collected</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Info_Analyze</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Termination_Attempt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ SUBSCRIBER_NUMBER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ UNKNOWN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NATIONAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ INTERNATIONAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: NATIONAL</td>
</tr>
<tr>
<td>NumberingPlan of callingPartyID</td>
<td>STRING</td>
<td>Specifies the NumberingPlan value in the CallingPartyID field that IM-SSF sets when invoking trigger message towards the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trigger messages:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Origination_Attempt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Info_Collected</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Info_Analyze</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Termination_Attempt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ ISDN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ PRIVATE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ UNKNOWN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: ISDN</td>
</tr>
<tr>
<td>ScreeningIndicator of callingPartyID</td>
<td>STRING</td>
<td>Specifies the ScreeningIndicator value in the CallingPartyID field that IM-SSF sets when invoking trigger message towards the SCP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trigger messages:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Origination_Attempt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Info_Collected</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Info_Analyze</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Termination_Attempt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ USER_PROVIDED_NOT_VERIFIED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ USER_PROVIDED_VERIFIED_PASSED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ USER_PROVIDED_VERIFIED_FAILED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ NETWORK_PROVIDED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: USER_PROVIDED_NOT_VERIFIED</td>
</tr>
</tbody>
</table>
Configuring IM-SSF AIN 0.2

Configuring Subscriber Data Parameters

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

The table on the Subscriber Data subtab displays the rules for invoking triggers. Each row represents one rule. When defining a new rule, you need to specify the fields described in Table 13–52.

### Table 13–52 IM-SSF AIN 0.2 Subscriber Data Fields

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>SCP Address Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
</tbody>
</table>

**Table 13–51 (Cont.) IM-SSF AIN 0.2 Call Handling Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| userID         | STRING  | Specifies the value that IM-SSF sets in the userID field when invoking trigger message towards the SCP. Trigger messages:  
  - Origination_Attempt  
  - Info_Collected  
  - Info_Analyze  
  - Termination_Attempt  
  Default value: -1 |
| BearerCapability| STRING  | Specifies the value that IM-SSF sets in the bearerCapability field when invoking trigger message towards the SCP. Trigger messages:  
  - Origination_Attempt  
  - Info_Collected  
  - Info_Analyze  
  - Termination_Attempt  
  Possible values:  
  - SPEECH  
  - F31KHZAUDIO  
  - F7KHZAUDIO  
  - B56KBPS  
  - B64KBPS  
  - PACKETMODEDATA  
  Default value: SPEECH |
Configuring Operation Propagation Parameters

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

The table on the Operation Propagation subtab displays a list of operations. Each row represents one operation for which you define whether IM-SSF processes this operation or propagates the operation to another module. When configuring a new operation, you need to specify the fields described in Table 13–53.

<table>
<thead>
<tr>
<th>Table 13–53</th>
<th>IM-SSF AIN 0.2 Operation Propagation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Type</td>
</tr>
<tr>
<td>Default Call Handling</td>
<td>STRING</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>TDP List</td>
<td>STRING</td>
</tr>
<tr>
<td></td>
<td>_LIST</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 13–52 (Cont.)</th>
<th>IM-SSF AIN 0.2 Subscriber Data Fields</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Type</td>
</tr>
<tr>
<td>Default Call Handling</td>
<td>STRING</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>TDP List</td>
<td>STRING _LIST</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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 13–54.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a name of the media resource.</td>
</tr>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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: <a href="mailto:mrf.network@domain.com">mrf.network@domain.com</a>.</td>
</tr>
<tr>
<td>Announcement Operation</td>
<td>INT</td>
<td>Specifies which operation IM-SCF triggers towards the switch-based media resource. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ 0 PlayAnnouncement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ 1 PlayAnnouncementAndCollectDigits</td>
</tr>
<tr>
<td>Default value: 0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 13–53 (Cont.) IM-SSF AIN 0.2 Operation Propagation

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable Propagation</td>
<td>BOOL</td>
<td>Specifies whether IM-SSF processes operations on its own or propagates a request to the session control layer. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ True The IM-SSF propagates RRBCSMEvent operations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ False The IM-SSF processes RRBCSMEvent operations.</td>
</tr>
<tr>
<td>Default value: True</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 13–54 IM-SSF AIN 0.2 Media Resource Definition Fields
Table 13–55 (Cont.) IM-SSF AIN 0.2 Media Resource Definition Fields

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

Configuring TCAP Parameters

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

Table 13–55 describes configuration parameters on the TCAP subtab.

Table 13–55 TCAP Parameter

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class4 Default Timeout in Seconds</td>
<td>INT</td>
<td>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</td>
</tr>
<tr>
<td>Reject Timeout in Seconds</td>
<td>INT</td>
<td>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</td>
</tr>
</tbody>
</table>
Configuring IM-SSF AIN 0.2

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. The hierarchy of the MBeans is shown on Figure 13–8.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Part Guard Timer</td>
<td>INT</td>
<td>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</td>
</tr>
<tr>
<td>Activate Invoke Alarm in Application Layer</td>
<td>BOOL</td>
<td>When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for response is configured in the encoding library. The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer. Possible values: True, False. Default value: False</td>
</tr>
<tr>
<td>Result Split Length</td>
<td>INT</td>
<td>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</td>
</tr>
</tbody>
</table>

Table 13–55 (Cont.) TCAP Parameter

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”.

13-114   Configuration Guide
The following sections provide reference information for the IM-SSF AIN 0.2 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
- MediaResourcesMBean
- MediaResourceMBean

**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 13-50.

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 13–51.

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 13–52.

**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 13–53.

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 13–54.

**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 13–55.

**Operations**

None
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
- Configuring IM-ASF SIP with 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, select OCSB > Processing Tier > Interworking Modules. The list of currently deployed Interworking Modules is displayed.

2. In the list of the deployed modules, select the module instance that you want to configure. The module instance configuration screen is displayed in the Configuration pane.

The configuration screen of the IM-ASF SIP contains the subtabs described in Table 14–1.

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Server</td>
<td>Enables you to define the SIP Application Server that IM-ASF SIP interact with.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring Application Server Parameters&quot;.</td>
</tr>
<tr>
<td>Session Keep Alive</td>
<td>Enables you to define the keep-alive mechanism that is used to test session existence with SIP Application Servers.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring Session Keep Alive Parameters&quot;.</td>
</tr>
<tr>
<td>SIP</td>
<td>Enables you to configure standard SIP protocol parameters.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring SIP Parameters&quot;.</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Enables you to define how Runtime MBeans and notifications operate.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring Monitoring Parameters&quot;.</td>
</tr>
</tbody>
</table>
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 14–2 describes configuration parameters on the Application Server subtab.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS Address Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
</tbody>
</table>

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 14–3 describes configuration parameters on the Session Keep Alive subtab.

### Table 14–3 Session Keep Alive Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFO Keep Alive Interval in Seconds</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td>INFO Keep Alive Time to Die</td>
<td>INT</td>
<td>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.</td>
</tr>
</tbody>
</table>

Configuring SIP Parameters

Enables you to configure standard SIP protocol parameters.

Table 14–4 describes configuration parameters on the SIP subtab.
Configuring IM-ASF SIP with Java MBeans

### Table 14–4 SIP Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Call Duration Timeout Interval in Minutes</td>
<td>INT</td>
<td>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</td>
</tr>
<tr>
<td>Retransmission Interval Limit</td>
<td>INT</td>
<td>Specifies a maximum retransmission interval for non-INVITE requests and INVITE responses. Default value: 20 seconds</td>
</tr>
<tr>
<td>T7 Timeout Interval in Seconds</td>
<td>INT</td>
<td>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</td>
</tr>
<tr>
<td>T9 Timeout Interval in Seconds</td>
<td>INT</td>
<td>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</td>
</tr>
</tbody>
</table>

### 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. The hierarchy of the MBeans is shown on Figure 14–1.
The following sections provide reference information for the IM-ASF SIP 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
ImasfSipMBean

ImasfSipMBean 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 14–2.

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 14–4.

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 14–3.

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".
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
- Configuring R-IM-ASF SIP with 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, select OCSB > Processing Tier > Interworking Modules. The list of currently deployed Interworking Modules is displayed.
2. In the list of the deployed modules, select the module instance that you want to configure. The module instance configuration screen is displayed in the Configuration pane.

The configuration screen of the R-IM-ASF SIP contains the subtabs described in Table 15–1.

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session Keep Alive</td>
<td>Enables you to define the keep-alive mechanism that R-IM-ASF SIP use to test session existence with the SIP network element. For more information, see &quot;Configuring Session Keep Alive Parameters&quot;.</td>
</tr>
<tr>
<td>SIP</td>
<td>Enables you to configure standard SIP protocol parameters. For more information, see &quot;Configuring SIP Parameters&quot;.</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Enables you to define how Runtime MBeans and notifications should operate. For more information, see &quot;Configuring Monitoring Parameters&quot;.</td>
</tr>
</tbody>
</table>

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 15–2 describes configuration parameters on the Session Keep Alive subtab.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFO Keep Alive Interval in Seconds</td>
<td>INT</td>
<td>Specifies the interval, in seconds, between consecutive invocations of INFO requests.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To disable the keep-alive mechanism, set this parameter to -1.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>When this parameter is not defined, then the keep-alive mechanism is disabled.</td>
</tr>
<tr>
<td>INFO Keep Alive Time to Die</td>
<td>INT</td>
<td>Specifies the interval, in seconds, that the R-IM-ASF waits for a response to keep-alive messages.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If there is no response within the time specified in this parameter, the session is ended.</td>
</tr>
</tbody>
</table>

Configuring SIP Parameters

Enables you to configure standard SIP protocol parameters.

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Call Duration Timeout Interval in Minutes</td>
<td>INT</td>
<td>Specifies the maximum duration of established calls which are measured from OK to BYE.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>When this timer expires, IM-ASF SIP releases the session.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 60 minutes</td>
</tr>
<tr>
<td>Retransmission Interval Limit</td>
<td>INT</td>
<td>Specifies a maximum retransmission interval for non-INVITE requests and INVITE responses.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 20 seconds</td>
</tr>
<tr>
<td>T7 Timeout Interval in Seconds</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 30 seconds</td>
</tr>
<tr>
<td>T9 Timeout Interval in Seconds</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: 90 seconds</td>
</tr>
</tbody>
</table>
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. The hierarchy of the MBeans is shown on Figure 15–1.

Figure 15–1  R-IM-ASF SIP MBeans Hierarchy

<table>
<thead>
<tr>
<th>RimsafSipMBean</th>
</tr>
</thead>
<tbody>
<tr>
<td>SipMBean</td>
</tr>
<tr>
<td>SessionKeepAliveMBean</td>
</tr>
<tr>
<td>MonitoringGeneralMBean</td>
</tr>
<tr>
<td>ThresholdCrossedNotificationRulesMBean</td>
</tr>
<tr>
<td>ThresholdCrossedNotificationRuleMBean [0..n]</td>
</tr>
<tr>
<td>StateChangedNotificationRulesMBean</td>
</tr>
<tr>
<td>StateChangedNotificationRuleMBean [0..n]</td>
</tr>
</tbody>
</table>

The following sections provide reference information for the R-IM-ASF SIP 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
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
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 15–3.

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 15–2.

Operations

None
The following sections describe how to configure IM-OCF using the Service Broker Administration Console and Java MBeans:

- Configuring IM-OCF with the Administration Console
- Configuring IM-OCF with Java MBeans

### Configuring IM-OCF with the Administration Console

This section describes how to configure IM-OCF module instances using the Service Broker Administration Console.

To access the IM-OCF Configuration screen:

1. In the Domain Navigation pane, select OCSB > Processing Tier > Interworking Modules. The list of currently deployed Interworking Modules is displayed.

2. In the list of the deployed modules, select the module instance that you want to configure. The module instance configuration screen is displayed in the Configuration pane.

   The configuration screen of the IM-OCF contains the subtabs described in Table 16–1.

### Table 16–1 IM-OCF Configuration Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Handling</td>
<td>Enables you to define how the IM-OCF handles calls.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring Call Handling Parameters&quot;.</td>
</tr>
<tr>
<td>Diameter Credit Control Application</td>
<td>Enables you to configure parameters specific to the IM-OCF DCCA interface.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring Diameter Credit Control Application Parameters&quot;</td>
</tr>
<tr>
<td>MRF</td>
<td>Enables you to specify pre-, mid-, and post-call announcements that the IM-OCF can request media resources to play.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring MRF Parameters&quot;.</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Enables you to define how Runtime MBeans and notifications should operate.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring Monitoring Parameters&quot;.</td>
</tr>
</tbody>
</table>
Configuring Call Handling Parameters

The Call Handling tab enables you to define how the IM-OCF handles calls and sends CCRs. The Call Handling tab contains the subtabs described in Table 16–2.

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Enables you to set up how IM-OCF handles sessions.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring Call Handling General Parameters&quot;.</td>
</tr>
<tr>
<td>CCR Handling</td>
<td>Enables you to specify points in a call at which Service Broker sends a CCR.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring CCR Handling&quot;.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event Handling</td>
<td>STRING</td>
<td>Specifies which mode of Ro operation IM-OCF uses to support event-based charging.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ ECUR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stands for Event Charging with Unit Reservation. With ECUR, IM-OCF sends two requests. One request specifies the desired service consumption. The second request indicates the actual service that has been consumed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ IEC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stands for Immediate Event Charging. With IEC, IM-OCF sends a one time request with charging information on a service that has been consumed.</td>
</tr>
<tr>
<td>Next Quota Request Int</td>
<td>INT</td>
<td>Defines in milliseconds how much time prior to the end of quota, IM-OCF needs to request a new quota.</td>
</tr>
<tr>
<td>Interval in Milliseconds</td>
<td></td>
<td>Default value: 10</td>
</tr>
<tr>
<td>Termination-Cause AVP on</td>
<td>STRING</td>
<td>Specifies how to set a CCR Termination-Cause AVP when session is disconnected by an internal Service Broker SAL BYE message.</td>
</tr>
<tr>
<td>SAL BYE</td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_LOGOUT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_SERVICE_NOT_PROVIDED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_BAD_ANSWER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_ADMINISTRATIVE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_LINK_BROKEN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_AUTH_EXPIRED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_USER_MOVED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_SESSION_TIMEOUT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: DIAMETER_LOGOUT</td>
</tr>
</tbody>
</table>
### Table 16–3 (Cont.) IM-OCF Call Handling General Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Termination-Cause AVP on SAL CANCEL</td>
<td>STRING</td>
<td>Specifies how to set a CCR Termination-Cause AVP when session is disconnected by an internal Service Broker SAL CANCEL message.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_LOGOUT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_SERVICE_NOT_PROVIDED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_BAD_ANSWER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_ADMINISTRATIVE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_LINK_BROKEN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_AUTH_EXPIRED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_USER_MOVED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_SESSION_TIMEOUT</td>
</tr>
<tr>
<td>Default value: DIAMETER_SERVICE_NOT_PROVIDED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Termination-Cause AVP on SAL Final Error Response</td>
<td>STRING</td>
<td>Specifies how to set a CCR Termination-Cause AVP when session is disconnected by an internal Service Broker SAL final error response message.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_LOGOUT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_SERVICE_NOT_PROVIDED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_BAD_ANSWER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_ADMINISTRATIVE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_LINK_BROKEN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_AUTH_EXPIRED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_USER_MOVED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_SESSION_TIMEOUT</td>
</tr>
<tr>
<td>Default value: DIAMETER_SERVICE_NOT_PROVIDED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Termination-Cause AVP upon GSU Expiration</td>
<td>STRING</td>
<td>Specifies how to set a CCR Termination-Cause AVP when IM-OCF disconnects a session due to expiration of Granted Service Units.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This parameter is used only when the Monitor Call Duration parameter is set to True. Otherwise, this parameter is ignored.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_LOGOUT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_SERVICE_NOT_PROVIDED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_BAD_ANSWER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_ADMINISTRATIVE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_LINK_BROKEN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_AUTH_EXPIRED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_USER_MOVED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ DIAMETER_SESSION_TIMEOUT</td>
</tr>
<tr>
<td>Default value: DIAMETER_AUTH_EXPIRED</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Configuring IM-OCF with the Administration Console

### Configuring CCR Handling

The CCR Handling subtab enables you to specify points in a call at which Service Broker sends a CCR. The subtab contains a table in which each row represents a point in a call.

Table 16–4 describes configuration parameters that you define for each point in a call.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Give Precedence to XER on CCR Generation</td>
<td>BOOL</td>
<td>IM-OCF constructs a CCR towards the Online Charging Function (OCF), based on internal Service Broker message information, and an original CCR (if such exists) from a core network call control entity that is carried on the internal Service Broker message. This parameter specifies which of the two sources receives precedence. Possible values: ■ True ■ False Default value: True</td>
</tr>
<tr>
<td>Pass Credit Control Messages inside Service Broker</td>
<td>STRING</td>
<td>Specifies whether or not IM-OCF attaches CCAs to internal Service Broker messages. If IM-CF attaches CCAs, this parameter specifies a format in which CCA is encoded. Possible values: ■ NONE ■ XER Default value: NONE</td>
</tr>
<tr>
<td>Monitor Call Duration</td>
<td>BOOL</td>
<td>Specifies whether or not IM-OCF uses internal resources to monitor call duration. Possible values: ■ True ■ False Default value: True</td>
</tr>
<tr>
<td>Max Call Duration in Minutes</td>
<td>INT</td>
<td>Specifies a maximum call duration that IM-OCF allows. IM-OCF disconnects calls that exceed this duration. This parameter is used only when the Monitor Call Duration parameter is set to True. Otherwise, this parameter is ignored.</td>
</tr>
</tbody>
</table>
Configuring IM-OCF with the Administration Console

Configuring IM-OCF

Configuring Diameter Credit Control Application Parameters

The Diameter Credit Control Application tab enables you to configure parameters related to the IM-OCF Diameter Credit Control Application (DCCA) interface. The Diameter Credit Control Application tab contains subtabs described in Table 16–5.

### Table 16–5 IM-OCF Diameter Credit Control Application Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Enables you to setup a DCCA dialect and enables monitor call duration.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring General Parameters&quot;.</td>
</tr>
<tr>
<td>AVPs</td>
<td>Enables you to specify Attribute-Value Pairs (AVPs) to be set in CCRs.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring AVPs&quot;.</td>
</tr>
<tr>
<td>Credit Control Failure Handling</td>
<td>Enables you to setup how IM-OCF handles a call when receiving a CCA with a Result-Code that contains an error.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring Credit Control Failure Handling&quot;.</td>
</tr>
</tbody>
</table>

### Table 16–5 (Cont.) IM-OCF Call Handling CCR Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point In Call</td>
<td>STRING</td>
<td>Specifies a point in a call for which you define whether or not Service Broker needs to send a CCR. Possible options: INITIATED, ALERTED, CONNECTED, INFO_RECEIVED, REINVITED, REINVITED_OK, UPDATED, UPDATED_OK, EARLY_RELEASED, ACTIVE_RELEASED</td>
</tr>
<tr>
<td>Send CCR</td>
<td>STRING</td>
<td>Specifies whether or not Service Broker sends a CCR at the point selected in the Point In Call drop-down list. Possible options: Yes (Service Broker sends a CCR), No (Service Broker does not sends a CCR), Dynamic (Service Broker sends a CCR when a subscriber’s location changed. You can set the Send CCR parameter for a point in call to ”Dynamic” only when Send CCR for a previous point in call is set to ”Yes”.) Default value: Yes</td>
</tr>
</tbody>
</table>
Configuring General Parameters

The General subtab enables you to set up a DCCA dialect and enable monitor call duration. Table 16–6 describes the parameters you can configure.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DCCA Dialect</td>
<td>STRING</td>
<td>Specifies the DCCA dialect that IM-OCF should use.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ BRM_DCCA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oracle Communications Billing and Revenue Management DCCA dialect</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ STANDARD_DCCA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Standards DCCA dialect</td>
</tr>
<tr>
<td>Default value: BRM_DCCA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitor Call Duration</td>
<td>BOOL</td>
<td>Specifies whether or not IM-OCF uses internal resources to monitor call duration.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ True</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ False</td>
</tr>
<tr>
<td>Default value: True</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Configuring AVPs

The AVPs subtab enables you to specify Attribute-Value Pairs (AVPs) to be set in CCRs. Table 16–7 describes the AVPs that you can specify.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Origin-Host AVP</td>
<td>STRING</td>
<td>Specifies the value to set in a CCR Origin-Host AVP.</td>
</tr>
<tr>
<td>Origin-Realm AVP</td>
<td>STRING</td>
<td>Specifies the value to set in a CCR Origin-Realm AVP.</td>
</tr>
<tr>
<td>Destination-Host AVP</td>
<td>STRING</td>
<td>Specifies the value to set in a CCR Destination-Host AVP.</td>
</tr>
<tr>
<td>Destination-Realm AVP</td>
<td>STRING</td>
<td>Specifies the value to set in a CCR Destination-Realm AVP.</td>
</tr>
<tr>
<td>Auth-Application-Id AVP</td>
<td>INT</td>
<td>Specifies the value to set in a CCR Auth-Application-Id AVP. Default value: 4</td>
</tr>
<tr>
<td>Service-Context-Id AVP</td>
<td>STRING</td>
<td>Specifies the value to set in a CCR Service-Context-Id AVP.</td>
</tr>
<tr>
<td>Origin-State-Id AVP</td>
<td>INT</td>
<td>Specifies whether or not to set the Origin-State-Id AVP in a CCR. If the value of this parameter is 0, then Origin-State-Id AVP is also set to 0, indicating that this AVP is not used. Default value: 0</td>
</tr>
<tr>
<td>User-Name AVP</td>
<td>STRING</td>
<td>Specifies the value to set in a CCR User-Name AVP.</td>
</tr>
<tr>
<td>CC-Time AVP</td>
<td>INT</td>
<td>Specifies the value to be set in a CCR CC-Time AVP. This AVP defines the number of requested service units (for example, call minutes) and is used in SCUR scenarios.</td>
</tr>
</tbody>
</table>
Configuring Credit Control Failure Handling

The Credit Control Failure Handling subtab enables you to define how IM-OCF handles a call when responded with CCA that contains an error Result-Code. The subtab contains a table in which each row represents a Result-Code range. For each range, you can define how IM-OCF handles a CCA containing a Result-Code in this range.

**Table 16–7 (Cont.) IM-OCF DCCA AVPs Subtab Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC-Service-Specific-Units AVP</td>
<td>INT</td>
<td>Specifies the value to be set in a CC-Service-Specific-Units AVP. This AVP defines the number of requested service units (for example, number of SMSs) and is used in ECUR and IEC scenarios.</td>
</tr>
</tbody>
</table>
| Ro Node-Functionality AVP         | INT   | Specifies the value to be set in a CCR Node-Functionality AVP. Possible values:  
  0: Specifies S-CSCF  
  1: Specifies P-CSCF  
  2: Specifies I-CSCF  
  3: Specifies MRFC  
  4: Specifies MGCF  
  5: Specifies BGCF  
  6: Specifies AS  
  Default value: 6 |

---

**Caution:** IM-OCF is provided with preconfigured settings that define how it handles the following Result-Code values:

- 3003
- 4001
- 4010-4012
- 5003
- 5006

It is strongly recommended to not use this subtab to override these preconfigured settings.

---

*Table 16–8 describes the parameters that you can define for each range.*
### IM-OCF DCCA Credit Control Failure Handling Subtab Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique row identifier</td>
</tr>
</tbody>
</table>
| Range Low     | STRING  | Specifies the low limit of a Result-Code range. Together with the Range High parameter, it specifies a range of Result-Code values. If you need to define a range with only one Result-Code value, specify this value in both the Range Low and Range High parameters. **Note:** IM-OCF uses preset handling settings that you cannot change for the following Result-Code values:  
  - 3003  
  - 4001  
  - 4010-4012  
  - 5003  
  - 5006  
  Do not define any of these codes. Preset handling prevails over user settings. |
| Range High    | STRING  | Specifies the high limit of a Result-Code range. Together with the Range Low parameter, it specifies a range of Result-Code values. If you need to define a range with only one Result-Code value, specify this value in both the Range Low and Range High parameters. **Note:** IM-OCF uses preset handling settings that you cannot change for the following Result-Code values:  
  - 3003  
  - 4001  
  - 4010-4012  
  - 5003  
  - 5006  
  Do not define any of these codes. Preset handling prevails over user settings. |
| Use CCFH      | BOOL    | Specifies whether or not IM-OCF uses the Credit Control Failure Handling (CCFH) AVP when IM-OCF receives a CCA with an error Result-Code. Possible values:  
  - True  
    IM-OCF uses the value in the CCFH AVP. It continues or terminates the session as defined by the CCFH AVP.  
  - False  
    IM-OCF ignores the value in the CCFH AVP, and terminates the session. |
Configuring MRF Parameters

The MRF subtab enables you to configure the IM-OCF announcement playing functionality. The MRF tab contains two subtabs described in Table 16–9.

<table>
<thead>
<tr>
<th>Table 16–9 MRF Subtabs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
</tr>
<tr>
<td>General</td>
</tr>
<tr>
<td>MRF Announcements</td>
</tr>
</tbody>
</table>

Configuring General MRF Parameters

The General subtab enables you to specify the address of the MRF that Service Broker uses to play announcements.
Configuring MRF Announcements

The MRF Announcements subtab enables you to specify pre-, mid-, and post-call announcements that the IM-OCF can request media resources to play. The MRF Announcements subtab contains a table in which each row represents an announcement.

Table 16–11 describes configuration parameters that you can define for each announcement.

### Table 16–10 IM-OCF General Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRF Address</td>
<td>STRING</td>
<td>Specifies the address of the MRF that Service Broker uses to play announcements. The address has a format of a SIP URI. For example: sip:mrf@192.168.0.15:5080</td>
</tr>
</tbody>
</table>

### Configuring MRF Announcements

The MRF Announcements subtab enables you to specify pre-, mid-, and post-call announcements that the IM-OCF can request media resources to play. The MRF Announcements subtab contains a table in which each row represents an announcement.

Table 16–11 describes configuration parameters that you can define for each announcement.

### Table 16–11 IM-OCF MRF Announcement Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies a unique identifier</td>
</tr>
<tr>
<td>Point In Call</td>
<td>STRING</td>
<td>Specifies the point in call when the announcement is played. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- PRECALL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- MIDCALL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- POSTCALL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- REJECTCALL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: PRECALL</td>
</tr>
<tr>
<td>Announcement Name</td>
<td>STRING</td>
<td>Specifies the announcement file name</td>
</tr>
<tr>
<td>Activity</td>
<td>BOOL</td>
<td>Specifies whether or not the announcement is enabled. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- True</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- False</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: True</td>
</tr>
<tr>
<td>Announcement ID</td>
<td>STRING</td>
<td>Specifies a unique announcement identifier</td>
</tr>
<tr>
<td>MSC ID</td>
<td>STRING</td>
<td>The announcement is relevant only to sessions that where triggered by the specified MSC. When this value is not set, the announcement is relevant to all MSCs.</td>
</tr>
</tbody>
</table>
Configuring IM-OCF with Java MBeans

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-OCF. For more information about configuring monitoring, see "Configuring Monitoring with the Administration Console".

Configuring IM-OCF with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the IM-OCF through JMX. The hierarchy of the MBeans is shown on Figure 16–1.
The following sections provide reference information for the IM-OCF 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
ImocfMBean

ImocfMBean is a root MBean for the IM-OCF configuration.

Factory Method

Created automatically

Attributes

None

Operations

ObjectName getCallHandlingGeneral()
Gets a reference to the instance of CallHandlingGeneralMBean

ObjectName getSendCcrRecords()
Gets a reference to the instance of SendCcrRecordsMBean

ObjectName getDiameterCreditControlApplicationAvps()
Gets a reference to the instance of DiameterCreditControlApplicationAvpsMBean

ObjectName getDiameterCreditControlApplicationGeneral()
Gets a reference to the instance of DiameterCreditControlApplicationGeneralMBean

ObjectName getCcfhRecords()
Gets a reference to the instance of CcfhRecordsMBean

ObjectName getMrfAnnouncementsGeneral()
Gets a reference to the instance of MrfAnnouncementsGeneralMBean

ObjectName getAnnouncementRecords()
Gets a reference to the instance of AnnouncementsRecordsMBean

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
CallHandlingGeneralMBean

CallHandlingGeneralMBean enables you to configure how a call is handled.

Factory Method

Created automatically

Attributes

- EventHandling
- NextQuotaRequestIntervalInMilliseconds
- InitialCCRFailureHandling
- NonInitialCCRFailureHandling
- TerminationCauseAvpOnSalBye
- TerminationCauseAvpOnSalCancel
- TerminationCauseAvpOnSalFinalErrorResponse
- GivePrecedenceToOriginalCCR
- CarryCCAOnInternalServiceBrokerMessages
- MonitorCallDuration
- MaxCallDurationInMinutes
- TerminationCauseAvpUponGsuExpiration

For more information on these attributes, see Table 16–3.

Operations

None
SendCcrRecordsMBean

SendCcrRecordsMBean is a root MBean for instances of SendCrrRecordMBean that enable you to specify points in a call at which Service Broker sends a CCR.

Factory Method

Created automatically

Attributes

None

Operations

ObjectName createSendCcrRecord()
Creates an instance of SendCrrRecordMBean

void destroySendCrrRecord()
Destroys an instance of SendCrrRecordMBean

ObjectName[] getSendCrrRecord()
Gets an array of references to instances of SendCrrRecordMBean

ObjectName lookupSendCrrRecord()
Returns a specified instance of SendCrrRecordMBean
SendCcrRecordMBean

SendCcrRecordMBean enables you to specify a point in a call at which Service Broker sends a CCR.

**Factory Method**

SendCcrRecords.createSendCcrRecord()

**Attributes**

- PointInCall
- SendCcr

For more information on these attributes, see Table 16–4.

**Operations**

None
DiameterCreditControlApplicationAvpsMBean

DiameterCreditControlApplicationAvpsMBean enables you to specify Attribute-Value Pairs (AVPs) to be set in CCRs.

Factory Method

Created automatically

Attributes

- OriginHostAvp
- OriginRealmAvp
- DestinationHostAvp
- DestinationRealmAvp
- AuthApplicationIdAvp
- ServiceContextIdAvp
- OriginStateIdAvp
- UserNameAvp
- CcTimeAvp
- CcServiceSpecificUnitsAvp
- RoNodeFunctionalityAvp

For more information on these attributes, see Table 16–7.

Operations

None
DiameterCreditControlApplicationGeneralMBean

DiameterCreditControlApplicationGeneralMBean enables you to setup a DCCA dialect and enable monitor call duration.

Factory Method

Created automatically

Attributes

- DccaDialect

For more information on these attributes, see Table 16–6.

Operations

None
CcfhRecordsMBean

CcfhRecordsMBean is a root MBean for instances of CcfhRecordMBean that enable you to setup how IM-OCF handles a call when receiving a CCA with a Result-Code that contains an error.

Factory Method

Created automatically

Attributes

None

Operations

ObjectName createCcfhRecord()
Creates an instance of CcfhRecordMBean

void destroyCcfhRecord()
Destroys an instance of CcfhRecordMBean

ObjectName[] getCcfhRecord()
Gets an array of references to instances of CcfhRecordMBean

ObjectName lookupCcfhRecord()
Returns a specified instance of CcfhRecordMBean
CcfhRecordMBean

CcfhRecordMBean enables you to setup how IM-OCF handles a call when receiving a CCA with a Result-Code in a specified range.

Factory Method

CcfhRecords.createCcfhRecord()

Attributes

- RangeLow
- RangeHigh
- UseCcfh
- CallHandling
- AnnouncementId

For more information on these attributes, see Table 16-8.

Operations

None
MrfAnnouncementsGeneralMBean

MrfAnnouncementsGeneralMBean enables you to specify the MRF address that Service Broker use to play announcements.

Factory Method

Created automatically

Attributes

- MrfAddress

For more information on these attributes, see Table 16–10.

Operations

None
Announcement Records MBean

Announcement Records MBean is a root MBean for instances of Announcement Record MBean that enable you to specify pre-, mid-, and post-call announcements which IM-OCF requests media resources to play.

Factory Method

Created automatically

Attributes

None

Operations

ObjectName createAnnouncementRecord()
Creates an instance of Announcement Record MBean

void destroyAnnouncementRecord()
Destroys an instance of Announcement Record MBean

ObjectName[] getAnnouncementRecord()
Gets an array of references to instances of Announcement Record MBean

ObjectName lookupAnnouncementRecord()
Returns a specified instance of Announcement Record MBean
AnnouncementRecordMBean

AnnouncementRecordMBean enables you to specify a pre-, mid-, or post-call announcement that the IM-OCF can request media resources to play.

**Factory Method**

`AnnouncementRecords.createAnnouncementRecord()`

**Attributes**

- PointInCall
- AnnouncementName
- Activity
- AnnouncementId
- MscId
- CallDirection
- T1
- T2

For more information on these attributes, see Table 16–11.

**Operations**

None
The following sections describe how to configure R-IM-OCF using the Service Broker Administration Console and Java MBeans:

- Configuring R-IM-OCF with the Administration Console
- Configuring R-IM-OCF with Java MBeans

**Configuring R-IM-OCF with the Administration Console**

This section describes how to configure the R-IM-OCF module instances using the Service Broker Administration Console.

To access the R-IM-OCF Configuration screen:

1. In the Domain Navigation pane, select OCSB > Processing Tier > Interworking Modules. The list of currently deployed Interworking Modules is displayed.
2. In the list of the deployed modules, select the module instance that you want to configure. The module instance configuration screen is displayed in the Configuration pane.

The configuration screen of the R-IM-OCF contains the subtabs described in Table 17–1.

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Call Handling</strong></td>
<td>Enables you to define how R-IM-OCF handles calls.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring Call Handling Parameters&quot;.</td>
</tr>
<tr>
<td><strong>Diameter Credit Control Application</strong></td>
<td>Enables you to configure parameters specific to the R-IM-OCF DCCA interface.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring Diameter Credit Control Application Parameters&quot;.</td>
</tr>
<tr>
<td><strong>Monitoring</strong></td>
<td>Enables you to define how Runtime MBeans and notifications should operate.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring Monitoring Parameters&quot;.</td>
</tr>
</tbody>
</table>

**Configuring Call Handling Parameters**

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

Table 17–2 describes configuration parameters on the Call Handling subtab.
### Table 17–2  R-IM-OCF Call Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Result-Code AVP Value on Session Disconnection by AS                  | STRING  | Specifies the value that R-IM-OCF sets in a CCA Result-Code AVP when a session is disconnected by the charging application.  
Note: when the application disconnects a session, R-IM-OCF generates a CCA only as a response to CCR. If R-IM-OCF does not receive CCR to which it can respond in a reasonable time period, R-IM-OCF abnormally disconnect the session. |
| Default Session Type                                                 | STRING  | Specifies how R-IM-OCF marks new sessions internally, when it receives a CCR with the Media-Initiator-Party AVP either set to Unknown or not set at all.  
Possible values:  
■ Orig  
  Stands for an outgoing call  
■ Term  
  Stands for an incoming call  
Default value: Orig |
| Initial CCR Mode                                                     | STRING  | Specifies whether incoming initial CCRs (Request-Type AVP set to Initial) are considered ECUR or SCUR.                                      |
| Result-Code AVP on No Response from AS                               | STRING  | Specifies the value that R-IM-OCF sets in a CCA Result-Code AVP in a case when the charging application is not responding (that is a response timer expires).  
Default value: 5012 |
| Result-Code AVP on SAL 4XX                                           | STRING  | Specifies the value that R-IM-OCF sets in a CCA Result-Code AVP when receiving an internal Service Broker SAL 4XX error.  
Default value: 4010  
This parameter does not apply for 402, 403 and 404. In that case, the Result-Code AVP is set to 4012, 4010 and 5030 respectively. |
| Result-Code AVP on SAL 5XX                                           | STRING  | Specifies the value that R-IM-OCF sets in a CCA Result-Code AVP when receiving an internal Service Broker SAL 5XX error.  
Default value: 4010  
This parameter does not apply for 503. In that case, the Result-Code AVP is set to 3002. |
| Result-Code AVP on SAL 6XX                                           | STRING  | Specifies the value that R-IM-OCF sets in a CCA Result-Code AVP when receiving an internal Service Broker SAL 6XX error.  
Default value: 4010 |
| Default Result-Code AVP                                              | STRING  | Specifies the value that R-IM-OCF sets in a CCA Result-Code AVP when receiving an internal Service Broker SAL error and non of the previous parameters apply. |
Configuring Diameter Credit Control Application Parameters

The Diameter Credit Control Application tab enables you to configure parameters related to the IM-OCF Diameter Credit Control Application (DCCA) interface. The Diameter Credit Control Application tab contains subtabs described in Table 17–3.

### Table 17–3  R-IM-OCF Diameter Credit Control Application Subtabs

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Enables you to setup a DCCA dialect.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring General Parameters&quot;.</td>
</tr>
<tr>
<td>AVPs</td>
<td>Enables you to specify Attribute-Value Pairs (AVPs) to be set in CCAs.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Configuring AVPs Parameters&quot;.</td>
</tr>
</tbody>
</table>

Configuring General Parameters

The General subtab enables you to set up a DCCA dialect. Table 17–4 describes the parameter you can configure.

### Table 17–4  R-IM-OCF DCCA General Subtab Parameter

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DCCA Dialect</td>
<td>STRING</td>
<td>Specifies the DCCA dialect that R-IM-OCF should use. Possible values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ BRM_DCCA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oracle Communications Billing and Revenue Management DCCA dialect</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ STANDARD_DCCA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Standards DCCA dialect</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: BRM_DCCA</td>
</tr>
</tbody>
</table>

Configuring AVPs Parameters

The AVPs subtab enables you to specify Attribute-Value Pairs (AVPs) to be set in CCAs. Table 17–5 describes the AVPs that you can specify.
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 constructs a CCA.

### Table 17–5  R-IM-OCF DCCA AVPs Subtab Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Origin-Realm AVP</td>
<td>STRING</td>
<td>Specifies the value to set in a CCA Origin-Realm AVP.</td>
</tr>
<tr>
<td>SCUR AVPs</td>
<td>STRING</td>
<td>Specifies AVPs that IM-OCF place inside CCAs when constructing an SCUR CCA.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This parameter is useful when Service Broker is required to accommodate non-standard and vendor specific AVPs when interacting with Diameter CTF entities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The specification is given in XML format which is described below this table.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Note: AVPs specified by this parameter are given lowest priority. That is, if an AVP is already available inside either:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Internal Service Broker SAL message or</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- XML carried on internal Service Broker SAL message or</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Other IM-OCF configuration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>then all the other values prevail the value defined in this XML.</td>
</tr>
<tr>
<td>ECUR AVPs</td>
<td>STRING</td>
<td>Specifies AVPs that IM-OCF places inside CCAs when constructing an ECUR CCA.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This parameter is useful when Service Broker is required to accommodate non-standard and vendor specific AVPs when interacting with Diameter CTF entities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The specification is given in XML format which is described below this table.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Note: AVPs specified by this parameter are given lowest priority. That is, if an AVP is already available inside any of the following:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Internal Service Broker SAL message or</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- XML carried on internal Service Broker SAL message or</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Other IM-OCF configuration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>then all those values have a higher priority than the value defined in this XML.</td>
</tr>
<tr>
<td>IEC AVPs</td>
<td>STRING</td>
<td>This parameter is useful when Service Broker is required to accommodate non-standard and vendor specific AVPs when interacting with Diameter CTF entities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The specification is given in XML format which is described below this table.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Note: AVPs specified by this parameter are given lowest priority. That is, if an AVP is already available inside the following:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Internal Service Broker SAL message or</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- XML carried on internal Service Broker SAL message or</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Other IM-OCF configuration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>then all those values have a higher priority than the value defined in this XML.</td>
</tr>
</tbody>
</table>
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 to add the CC-Time AVP into CCAs that R-IM-OCF generates.

```xml
<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
<?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:schema>
```
Configuring Monitoring Parameters

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an R-IM-OCF. For more information about configuring monitoring, see "Configuring Monitoring with the Administration Console".

Configuring R-IM-OCF with Java MBeans

Service Broker provides a set of MBeans that provide attributes and operations for configuring the R-IM-OCF through JMX. The hierarchy of the MBeans is shown on Figure 17–1.
The following sections provide reference information for the R-IM-OCF 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 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 handles calls.

Factory Method

Created automatically

Attributes

- ResultCodeAvpValueOnSessionDisconnectionByAs
- DefaultSessionType
- InitialCcrMode
- ResultCodeAvpOnNoResponseFromAS
- ResultCodeAvpOnSal4xx
- ResultCodeAvpOnSal5xx
- ResultCodeAvpOnSal6xx
- DefaultResultCodeAvp
- CallingPartyNumber
- CalledPartyNumber

For more information on these attributes, see Table 17-2.

Operations

None
DiameterCreditControlApplicationGeneralMBean enables you to setup a DCCA dialect and enable monitor call duration.

**Factory Method**

Created automatically

**Attributes**

DccaDialect
For more information on these attributes, see Table 17-4.

**Operations**

None
DiameterCreditControlApplicationAvpsMBean

DiameterCreditControlApplicationAvpsMBean enables you to specify Attribute-Value Pairs (AVPs) to be set in CCRs.

Factory Method

Created automatically

Attributes

- OriginRealmAvp
- EcurAvps
- ScurAvps
- IecAvps

For more information on these attributes, see Table 17–5.

Operations

None
The following sections describe how to configure IM-PSX using the Service Broker Administration Console and Java MBeans:

- Configuring IM-PSX GSM MAP
- Configuring IM-PSX ANSI-MAP

Configuring IM-PSX GSM MAP

This section describes how to configure IM-PSX MAP for GSM networks 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, select OCSB > Processing Tier > Interworking Modules.
   The list of currently deployed Interworking Modules is displayed.

2. In the list of the deployed modules, select the module instance that you want to configure.
   The module instance configuration screen is displayed in the Configuration pane.

The configuration screen of the IM-PSX contains the tabs described in Table 18–1.

<table>
<thead>
<tr>
<th>Tab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Enables you to configure general parameters for an Interworking Module instance. For more information, see &quot;Configuring General Parameters&quot;.</td>
</tr>
<tr>
<td>SIP Subscription</td>
<td>Enables you to configure the SIP SUBSCRIBE and SIP NOTIFY interface that IM-PSX exposes to SIP applications. For more information, see &quot;Configuring the SIP Subscription Parameters&quot;.</td>
</tr>
<tr>
<td>Map Handling</td>
<td>Enables you to configure the IM-PSX MAP interface. For more information, see &quot;Configuring the Map Handling Parameters&quot;.</td>
</tr>
</tbody>
</table>
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 18–2 describes the configuration parameter in the General tab.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>Plugin</td>
<td>STRING</td>
<td>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.</td>
</tr>
</tbody>
</table>

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 18–3.

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Enables you to set up a pending NOTIFY message and define a PSX SIP domain.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;General&quot;.</td>
</tr>
<tr>
<td>Accept Header</td>
<td>Enables you to select allowed values to which a SIP application can set the Accept header.</td>
</tr>
<tr>
<td></td>
<td>For more information, see &quot;Accept&quot;.</td>
</tr>
</tbody>
</table>

General

The General subtab enables you to set up a pending NOTIFY message and define a PSX SIP domain.

Table 18–4 describes the configuration parameters on the General subtab.
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 18–5.

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>STRING</td>
<td>Specifies the name of the format. This field is read-only.</td>
</tr>
<tr>
<td>Allowed</td>
<td>BOOL</td>
<td>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:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>True</td>
</tr>
<tr>
<td></td>
<td></td>
<td>False</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default value: True</td>
</tr>
</tbody>
</table>

Configuring the Map Handling Parameters

The Map Handling tab enables you to configure the IM-PSX MAP interface. Table 18–6 describes the configuration parameters in the Map Handling tab.
Configuring TCAP Parameters

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

Table 18–7 describes configuration parameters in the TCAP subtab.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default SS7 Entity Alias</td>
<td>STRING</td>
<td>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</td>
</tr>
<tr>
<td>gsmSCF Address</td>
<td>STRING</td>
<td>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</td>
</tr>
<tr>
<td>gsmSCF Nature of Address</td>
<td>STRING</td>
<td>Specifies the NatureOfAddress of the gsmSCF-Address parameter in the MAP request</td>
</tr>
<tr>
<td>MSISDN NatureOfAddress</td>
<td>STRING</td>
<td>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:  - NETWORK_SPECIFIC  - SUBSCRIBER_NUMBER  - UNKNOWN  - NATIONAL  - INTERNATIONAL Default value: UNKNOWN IM-PSX also uses this parameter to set the gsmScfAddressNoa</td>
</tr>
<tr>
<td>Default Numbering Plan</td>
<td>STRING</td>
<td>Specifies a default numbering plan used to set the MSISDN and gsmSCF-Address in the MAP request. Possible values:  - ISDN  - DATA  - TELEX Default value: ISDN</td>
</tr>
</tbody>
</table>
**Configuring Monitoring Parameters**

The Monitoring tab enables you to define how Runtime MBeans and notifications operate for an IM-PSX.

**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. The hierarchy of the MBeans is shown in Figure 18–1.
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:

- 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 18–4.

Operations

ObjectName getAcceptHeadersMBean()
Gets the qualified ObjectName of the AcceptHeadersMBean 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 18–5.

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 18–6.

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 18–7.

Operations
None

Configuring IM-PSX ANSI-MAP

This section describes how to configure IM-PSX ANSI-MAP for CDMA networks 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, select OCSB > Processing Tier > Interworking Modules.
   The list of currently deployed Interworking Modules is displayed.

2. In the list of the deployed modules, select the module instance that you want to configure.
   The module instance configuration screen is displayed in the Configuration pane.
   The configuration screen of the IM-PSX ANSI-MAP contains the tabs described in Table 18–8.

**Table 18–8 IM-PSX ANSI-MAP Configuration Subtabs**

<table>
<thead>
<tr>
<th>Tab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Enables you to specify an alias for an Interworking Module instance. For more information, see &quot;Configuring General Parameters&quot;.</td>
</tr>
<tr>
<td>SIP Subscription</td>
<td>Enables you to configure the SIP SUBSCRIBE and SIP NOTIFY interface that IM-PSX exposes to SIP applications. For more information, see &quot;Configuring the SIP Subscription Parameters&quot;.</td>
</tr>
<tr>
<td>Map Handling</td>
<td>Enables you to configure the IM-PSX ANSI-MAP interface. For more information, see &quot;Configuring the Map Handling Parameters&quot;.</td>
</tr>
<tr>
<td>TCAP</td>
<td>Enables you to set up parameters of the TCAP layer. For more information, see &quot;Configuring TCAP Parameters&quot;.</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Enables you to define the way that Runtime MBeans and notifications operate. For more information, see &quot;Configuring Monitoring Parameters&quot;.</td>
</tr>
</tbody>
</table>

Configuring General Parameters

The General tab enables you to specify an alias for an Interworking Module instance. Table 18–9 describes the configuration parameter in the General tab.

**Table 18–9 IM-PSX General Parameter**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alias</td>
<td>STRING</td>
<td>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.</td>
</tr>
</tbody>
</table>

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 18–10.

### Table 18–10  **SIP Subscription Tabs**

<table>
<thead>
<tr>
<th>Subtab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Enables you to set up a pending NOTIFY message and define a PSX SIP domain. For more information, see &quot;General&quot;.</td>
</tr>
<tr>
<td>Accept Header</td>
<td>Enables you to select allowed values to which a SIP application can set the Accept header. For more information, see &quot;Accept&quot;.</td>
</tr>
</tbody>
</table>

**General**

The General subtab enables you to set up a pending NOTIFY message and define a PSX SIP domain.

Table 18–11 describes the configuration parameters on the General subtab.

### Table 18–11  **General Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| 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:  
  - True  
  - False  
  Default value: True |
| PSX SIP Domain        | STRING    | Specifies a domain name for IM-PSX. The application can use this value in the domain part of the RequestURI header and the To header to refer a request to a specific SS7 entity whose alias is configured in DefaultSS7EntityAlias. Default value: ocsb-psx.net |

**Accept**

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 18–12.
Configuring IM-PSX ANSI-MAP

Configuring IM-PSX

Configuring the Map Handling Parameters

The Map Handling tab enables you to configure the IM-PSX MAP interface. Table 18–13 describes the configuration parameters in the Map Handling tab.

Table 18–13  Map Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default SS7 Entity Alias</td>
<td>STRING</td>
<td>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</td>
</tr>
<tr>
<td>Location Operation</td>
<td>STRING</td>
<td>Specifies a default ANSI-MAP operation that the IM-PSX sends to an HLR. Possible values: SMSREQ, SEARCH. Default value: SEARCH</td>
</tr>
</tbody>
</table>
### Configuring IM-PSX ANSI-MAP

#### Configuring TCAP Parameters

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

**Table 18–14** describes configuration parameters in the TCAP subtab.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class4 Default Timeout in Seconds</td>
<td>INT</td>
<td>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.</td>
</tr>
</tbody>
</table>

---

### Table 18–14 (Cont.) Map Handling Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search Service ID</td>
<td>STRING</td>
<td>Specifies the identifier of a service of the AS that requests information about a mobile subscriber.</td>
</tr>
<tr>
<td>MDN NatureOfAddress</td>
<td>STRING</td>
<td>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. Possible values: NATIONAL, INTERNATIONAL. Default value: NATIONAL.</td>
</tr>
</tbody>
</table>
Table 18–14 (Cont.) TCAP Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reject Timeout in Seconds</td>
<td>INT</td>
<td>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.</td>
</tr>
</tbody>
</table>
| Activate Invoke Alarm in Application Layer | BOOL | When the TCAP layer receives an INVOKE, it triggers back PABORT if there is no response. The waiting time period for a response is configured in the encoding library.  
The Activate Invoke Alarm in Application Layer parameter specifies whether or not to activate this timer.  
Possible values:  
- True  
- False  
Default value: False. |
| Application Part Guard Timer          | INT  | Specifies the PSM timer, which is a timer for incoming operations.  
The PSM timer defines the maximum time that the application (TC-User) has to respond to incoming INVOKE messages. |
| 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.

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. The hierarchy of the MBeans is shown in Figure 18–2.
The following sections provide reference information for the IM-PSX 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:

- 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 18–11.

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 18–12.

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 18–13.

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 18–14.

Operations None
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
- Managing Supplementary Modules with JavaMBeans

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:

- On the Domain Navigation pane, select OCSB > Processing Tier > Supplementary Modules > SM Management. The SM Configuration screen is displayed in the Configuration pane.

The SM Configuration screen displays a list of supplementary module instances deployed in the system. Information about each module instance is presented in the fields described in Table 19–1:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instance Name</td>
<td>Displays a name of the module instance</td>
</tr>
<tr>
<td>Module Type</td>
<td>Displays a type of the module instance.</td>
</tr>
<tr>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td>- SMLSS</td>
</tr>
<tr>
<td></td>
<td>- SMPME</td>
</tr>
<tr>
<td>Version</td>
<td>Displays a version of the module instance</td>
</tr>
<tr>
<td>State</td>
<td>Displays a state of the module instance.</td>
</tr>
<tr>
<td></td>
<td>Possible values:</td>
</tr>
<tr>
<td></td>
<td>- Active</td>
</tr>
<tr>
<td></td>
<td>- Inactive</td>
</tr>
</tbody>
</table>

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.

**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.

---

**Managing Supplementary Modules with JavaMBEans**

Service Broker provides a set of MBeans that expose attributes and operations for configuring supplementary modules through JMX shown on Figure 19–1.

*Figure 19–1  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 19–2 explains the parameters with which you need to invoke the operation.

**Table 19–2 Parameters Required to Create a Deployment**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ModuleName</td>
<td>Specifies a type of the module instance and a protocol that the module instance uses. Possible values:</td>
</tr>
<tr>
<td></td>
<td>■ SMLSS</td>
</tr>
<tr>
<td></td>
<td>■ SMPME</td>
</tr>
<tr>
<td>Version</td>
<td>Specifies a version of the module instance</td>
</tr>
<tr>
<td>InstanceName</td>
<td>Specifies a unique name for the new supplementary module instance.</td>
</tr>
</tbody>
</table>

`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 19–2.

`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 19–2.

`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 19–2.
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 19-1.

Operations

void activate()
Activates the instance of a supplementary module

void deactivate()
Deactivates the instance of a supplementary module
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
- Configuring SM-LSS with 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 20–1 describes the parameters of an orchestration profile:

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>INT</td>
<td>Specifies an internal unique orchestration profile identifier. Default value: 0</td>
</tr>
<tr>
<td>Level</td>
<td>INT</td>
<td>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</td>
</tr>
</tbody>
</table>
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. The hierarchy of the MBeans is shown on Figure 20–1.

**Figure 20–1  SM-LSS MBeans Hierarchy**

The following sections provide reference information for the SM-LSS configuration MBeans.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>By From Prefix</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>By To Prefix</td>
<td>STRING</td>
<td>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.</td>
</tr>
<tr>
<td>By Service Key</td>
<td>INT</td>
<td>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.</td>
</tr>
<tr>
<td>OLP Name</td>
<td>STRING</td>
<td>Specifies an OLP that the OE must use to process the orchestration profile data. Set OLP Name to 3GPP-IFC.</td>
</tr>
<tr>
<td>OLP Data</td>
<td>Medium Text</td>
<td>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, &quot;Initial Filter Criteria&quot; in Oracle Communications Service Broker Configuration Guide.</td>
</tr>
</tbody>
</table>

**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.
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
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 20–1.

Operations

None
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
- Understanding the SM-PME Mapping File
- Configuring SM-PME with 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, select OCSB > Processing Tier > Supplementary Modules. The list of currently deployed supplementary modules is displayed.
2. In the list of the deployed modules, select the module instance that you want to configure. The module instance configuration screen is displayed in the Configuration pane.

The configuration screen of the SM-PME contains the parameters described in Table 21–1.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mapping File Name</td>
<td>STRING</td>
<td>Specifies the path of the parameter mapping file. For more information on the format of an SM-PME mapping file, see &quot;Understanding the SM-PME Mapping File.&quot;</td>
</tr>
<tr>
<td>Default Handling on Mapping Error</td>
<td>INT</td>
<td>Specifies whether SM-PME releases or continues a session when the mapping engine fails. Possible values: Continue Session, Release Session. Default value: Release Session</td>
</tr>
</tbody>
</table>
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:

```xml
<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 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
<?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="/Cap4"></xsl:template>
        ]]>}
    </xsl>
  </body>
</mapping>
```

### Understanding the SM-PME Mapping File

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mapping Error</td>
<td>INT</td>
<td>Specifies the SAL error response code that SM-PME returns when the mapping engine fails.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The error response code is regarded only when Default Handling on Mapping Error is set to Release Session.</td>
</tr>
<tr>
<td>Response</td>
<td></td>
<td>Default value: 487</td>
</tr>
</tbody>
</table>
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.

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.
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 21-1.

Operations

None
The following sections describe iFC configuration:

- Initial Filter Criteria Standard
- Configuring Initial Filter Criteria
- Basic Initial Filter Criteria Elements

Initial Filter Criteria Standard

iFC is an XML-based format used for describing an orchestration logic. iFC is specified in:

- ETSI TS 129 228 V7.11.0, IP Multimedia (IM) Subsystem Cx and Dx Interfaces
- 3GPP TS 29.328 V7.11.0, IP Multimedia Subsystem (IMS) Sh interface; Signalling flows and message contents, Release 7.

Configuring Initial Filter Criteria

You define iFC by specifying the parameters described in "Basic Initial Filter Criteria Elements" in an XML file. The following sample XML file defines an orchestration logic in the iFC format.

```xml
<InitialFilterCriteria>
  <Priority>1</Priority>
  <TriggerPoint>
    <ConditionTypeCNF>0</ConditionTypeCNF>
    <SPT>
      <ConditionNegated>0</ConditionNegated>
      <Group>0</Group>
      <Method>INVITE</Method>
    </SPT>
  </TriggerPoint>

  <ApplicationServer>
    <ServerName>sip:vpn@192.168.1.139:5060</ServerName>
    <DefaultHandling>0</DefaultHandling>
    <Extension>
      <ForceB2B/>
    </Extension>
  </ApplicationServer>

</InitialFilterCriteria>
```
Basic Initial Filter Criteria Elements

The main element in an orchestration logic iFC is named Initial Filter Criteria. An orchestration logic XML contains zero or several instances of the Initial Filter Criteria element. Each instance consists of zero or one instance of the Trigger Point element and one instance of the Application Server element. The Priority element indicates the priority of the Filter Criteria element.

The following sections explain each of these elements.

Priority

In some cases, conditions defined in several different filter criteria can be met. To enable the OE to choose a specific filter criteria, you can define a filter criteria’s priority.

The higher the rule’s priority number, the lower priority the filter criterion has. This means that a filter criterion with a higher value of priority number is assessed after the filter criteria with a smaller priority number has been assessed. 0 (zero) means the highest priority. 100 means the lowest priority.

The same priority cannot be assigned to more than one initial filter criterion.

Trigger Point

The Trigger Point element consists of one or more Service Point Triggers (SPTs). For each SPT, you must define the following parameters:

- SPT condition type, which defines how a set of STPs is expressed:
  - Conjunctive Normal Form (CNF), which is an ANDed set of ORed subsets. For example: (SPT1 OR SPT2 OR SPT3) AND (SPT4 OR SPT5)
  - Disjunctive Normal Form (DNF), which is an ORed set of ANDed subsets. For example, (SPT1 AND SPT2 AND SPT3) OR (SPT4 AND SPT5)
  - ConditionNegated, which defines whether or not the condition must be negated
  - Group, which defines a group to which the SPT belongs
  - Method, which defines a SIP method used to initiate a call

Application Server

The Application Server element defines the application server that contacts, if the trigger point is met. The Application Server element consists of the following elements:

- <ServerName>, which defines a SIP URL of an application server to which Service Broker routes a session
- <Default Handling>, which defines whether or not Service Broker releases a session if an application server cannot be reached. You can set <Default Handling> to one of the following values:
  - 0, to instruct Service Broker to continue a session
  - 1, to instruct Service Broker to terminate a session

For more information about XML schema of the iFC XML, see 3GPP TS 29.328 V7.11.0, IP Multimedia Subsystem (IMS) Sh interface; Signalling flows and message contents, Release 7.
- `<Extension>` (optional), which may contain the `<ForceB2B>` element. In this case, when the OE receives a response from an application, it sends an INVITE message to a next application server as defined in the orchestration logic, instead of returning this response to the network entity.