Oracle® Communications Service Broker

Release Notes

Release 5.0

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This document provides release notes for Oracle Communications Service Broker 5.0.

The following topics are covered:

- New Features
- Fixes in This Release
- Known Problems
- Documentation Updates

New Features

This section describes key new features and feature enhancements in this release of Service Broker.

Netra 6000 High Availability Manager

Service Broker Netra 6000 High Availability Manager adds additional functionality to Service Broker. It is specifically targeted for SUN Netra 6000 hardware, and engineered to work with Oracle Enterprise Linux. The deliverable for High Availably Manger includes:

- Service Broker
- Additional features providing management of a complete Service Broker deployment, including the hardware and software components of the deployment

Netra 6000 High Availability Manager adds the following functionality:

- Multi-domain management capabilities
- Managed upgrade
- Centralized process management for Signaling Servers and Processing Servers
- Aggregated, centralized, collection of statistics, logs, and alarms
- New procedure for provisioning user name and password for the Web based Administration Console
- Hardware management

The Administration Console included with this deliverable has been updated with:

- A new system view for hardware and process management
- A new configuration screen for network configuration

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- Updated console views for domain management
- New views for a collection of statistics, alarms, and deployment of bundles

For more information, see *Oracle Communications Service Broker Netra 6000 High Availability Manager Administrator's Guide*.

New IM-PSX Module

Service Broker includes a new network-facing IM called IM-PSX that provides Service Broker with access to SS7-based networks using the ETSI-MAP or ANSI-MAP protocols. With IM-PSX, SIP applications can communicate with HLRs and VLRs in legacy networks to obtain mobile subscriber's information, such as state and location. See "IM-PSX" in the chapter "Service Broker Interworking Modules" in *Oracle Communications Service Broker Concepts Guide*.

New R-IM-OCF Module

Service Broker includes a new network-facing IM called Reverse IM-OCF (R-IM-OCF) that provides Service Broker with a Diameter Ro interface to Charging Trigger Functions (CTF) in an IMS network. R-IM-OCF enables real-time charging services for IMS sessions, by either IMS Online Charging Function (OCF) or IN SCPs. See "R-IM-OCF" in the chapter "Service Broker Interworking Modules" in *Oracle Communications Service Broker Concepts Guide*.

Degraded SDR Mode

Service Broker enables filtering SDRs that contain specific information, ensuring that only SDRs of specific interest are generated and stored on disk. See the chapter "Viewing Service Broker SDRs" in *Oracle Communications Service Broker System Administrator's Guide*.

Support for a New ForceB2B iFC Element

The OE now supports an optional ForceB2B element in the iFC's Application Server element, which forces the OE to act as a B2BUA when receiving a response from an application. Instead of forwarding the response to the origination network entity, the OE sends a SIP INVITE message to the next application specified in the orchestration logic. See Appendix A "Initial Filter Criteria" in *Oracle Communications Service Broker Configuration Guide*.

Enabling Orchestration of All Types of SIP Requests

The OE now supports non-SIP INVITE requests, such as SUBSCRIBE, NOTIFY and MESSAGE. See the chapter "Supported SAL Messages" in *Oracle Communications Service Broker Concepts Guide*.

Support for CAP Phase 4 Releases 6.5.0 and 7.5.0

Service Broker now supports two standard variants of the CAMEL Application Part (CAP) phase 4, release 6.5.0 and release 7.5.0. It is possible to select the required SS7 protocol variant when deploying IM-SSF and IM-SCF in a Processing Domain. See:

- "Configuring SS7 Channel Parameters" in "Configuring IM-SCF CAP Phase 4 with the Administration Console" in "Configuring IM-SCF CAP Phase 4" in the

chapter "Configuring IM-SCF" in *Oracle Communications Service Broker Configuration Guide*.

- "Configuring SS7 Channel Parameters" in "Configuring IM-SSF CAP Phase 4 with the Administration Console" in "Configuring IM-SSF CAP Phase 4" in the chapter "Configuring IM-SSF" in *Oracle Communications Service Broker Configuration Guide*.

Play Token According to RFC 4240

IM-SCF CAP and IM-SSF CAP now support the play token specified in RFC 4240, Basic Network Media Services with SIP. See *Oracle Communications Service Broker Developer's Guide*.

Improved IN Media Resource Support

Service Broker now supports an additional configuration of IN media resources that are used to play announcements, enabling provision of the following additional parameters:

- Numbering Qualifier

- Number Screening

- Presentation Restriction

See "Configuring Media Resource Parameters" in the chapters "Configuring IM-SCF" and "Configuring IM-SSF" in *Oracle Communications Service Broker Configuration Guide*.

New Administration Console

Service Broker includes a new Administration Console that you can use to set up and configure a Service Broker domain and its components (IMs, OE and SMs).

The Administration Console is provided in the following forms:

- Stand-alone Administration Console, which you need to install on a local computer

- Web-based Administration Console, which you can access using a standard web browser

See "Administration Console Overview" in the chapter "Understanding Service Broker Configuration" in *Oracle Communications Service Broker Configuration Guide*.

New Oracle Universal Installer

Service Broker has an improved installation process. Signaling Servers and Processing Servers are installed using the Oracle Universal Installer for Service Broker. Each type of server has a different installer. An additional installer provides a single-instance system, where both the Signaling Domain and the Processing Domain are set up on a single server. See *Oracle Communications Installation Guide*.

Improved Overload Protection Mechanism

Service Broker now provides an improved overload protection mechanism to protect Service Broker and the services that it orchestrates from failing during traffic peaks. This mechanism operates in Processing Domains and enables you to:

- Define criteria according to which Service Broker identifies an overload situation

- Configure how Service Broker handles overload situations

See "Preventing System Overload" in *Oracle Communications Service Broker System Administrator's Guide*.

Streamlined Interworking Module and Supplementary Module Upgrades

Service Broker now enables a streamlined IM and SM upgrade, enabling a new module version to co-exist with the previous version of the same module. Service Broker routes new sessions to the new version instance while the earlier version instance continues to handle existing sessions.Traffic through the earlier version instance gradually ends, at which point the instance is removed. This kind of upgrade prevents traffic loss and eliminates the need for a maintenance window and system shutdown. See "Upgrading and Patching" in *Oracle Communications Service Broker System Administrator's Guide*.

Improved Interworking Module and Supplementary Module Management

Service Broker now provides DeploymentsMBean and DeploymentMBean to replace the DeploymentMBean provided in the previous Service Broker version. The two MBeans are used to manage IMs and SMs deployed in a Processing Domain. See "Managing Interworking Modules with Java MBeans" in the chapter "Managing Interworking Modules" in *Oracle Communications Service Broker Configuration Guide*.

Multiple Point Codes for Service Broker Deployment

Service Broker supports multiple SS7 point codes for a Service Broker deployment by assigning a different point code to each Signaling Server in the Signaling Domain. See "Local Point Code" in the section "M3UA," in the section "Configuring SS7 SSU for SIGTRAN with the Administration Console" in the chapter "Configuring SS7 SSU for SIGTRAN" in *Oracle Communications Service Broker Configuration Guide*.

Global Title Addressing

Service Broker now enables SS7 messages to be sent out with Global Title (GT) addresses, not including point codes in the Calling Party of the SCCP message part.

Improved SCCP Inbound Routing

The SS7 SSU now supports SCCP message routing inside Service Broker, based on multiple criteria. In addition, the SS7 SSU enables default routing when an incoming session meets none of the criteria. See "Routing" in "Configuring SS7 SSU for TDM/SIGTRAN with the Administration Console" in the chapters "Configuring SS7 Signaling Server Units for TDM/SIGRAN" in *Oracle Communications Service Broker Configuration Guide*.

Routing Through a Default IM-ASF Module

The OE now supports a default routing path towards applications whose addresses are not pre-configured in Service Broker. Service Broker is now installed with a special instance of IM-ASF, know as the Default IM-ASF, that enables interaction with any SIP application. See "Supporting Orchestration with Non-Configured Applications" in the chapter "Configuring the Orchestration Engine" in *Oracle Communications Service Broker Configuration Guide*.

IM's Individual Global Title Address

Service Broker IMs that support an SS7 interface are now each assigned an individual Global Title (GT) address that is unique to each IM. IMs use this address to sign outgoing SS7 messages, ensuring that all messages within the same session are handled by the same IM instance that handled the initial session requests. See:

- "Configuring SS7 Channel Parameters" in "Configuring IM-SCF CAP Phase 4 with the Administration Console" in "Configuring IM-SCF CAP Phase 4" in the chapter "Configuring IM-SCF" in *Oracle Communications Service Broker Configuration Guide*.

- "Configuring SS7 Channel Parameters" in "Configuring IM-SSF CAP Phase 4 with the Administration Console" in "Configuring IM-SSF CAP Phase 4" in the chapter "Configuring IM-SSF" in *Oracle Communications Service Broker Configuration Guide*.

- "Configuring SS7 Channel Parameters" in "Configuring IM-PSX MAP with the Administration Console" in "Configuring IM-PSX MAP" in the chapter "Configuring IM-PSX" in *Oracle Communications Service Broker Configuration Guide*.

- "Configuring SS7 Channel Parameters" in "Configuring IM-PSX ANSI-MAP with the Administration Console" in "Configuring IM-PSX ANSI-MAP" in the chapter "Configuring IM-PSX" in *Oracle Communications Service Broker Configuration Guide*.

Dispatching Incoming Diameter Traffic to IMs

Service Broker now provides for the dispatch of incoming Diameter messages to the various IMs in a Service Broker deployment, enabling internal routing of messages to IMs based on the message destination IP address. See "Incoming Routing Rules" in "Configuring Diameter SSU with the Administration Console" in the chapter "Configuring Diameter Signaling Server Units" in *Oracle Communications Service Broker Configuration Guide*.

SSL Support

Service Broker now supports SSL for the following:

- JMX connection to Signaling Servers and Processing Servers

- HTTP connection to the Web Administration Console

See "Configuring Security" in *Oracle Communications Service Broker System Administrator's Guide*.

Using Oracle Coherence

Service Broker is using Oracle Coherence, which provides replicated and distributed data management and caching services on top of a reliable, highly scalable, peer-to-peer, clustering protocol.

Service Broker uses Oracle Coherence for the following:

- Clustering

- Redundancy of session state

- Internal Service Broker messaging

- Replicating and distributing Service Broker configuration

Using Oracle Coherence, Service Broker provides an improved throughput and high availability. See Oracle Coherence documentation.

OSGi-based Implementation

The OSGi framework is a module system and a service platform, which became a standard for enterprise and core network Java network elements.

Service Broker is now implemented on top of an OSGi framework. Service Broker components (IMs, SMs, OE and SSUs) are provided in the form of bundles for deployment, and installed, started, stopped, updated and uninstalled without requiring a reboot.

The use of OSGi simplifies the Service Broker upgrade procedure and reduces its memory consumption.

Enabling Multiple Processing Domains Deployments

Service Broker Split domain deployments (that is, deployments that include one Processing Domain and one Signaling Domain) now support Multiple Processing Domains. See "Service Broker Domains" in the chapter "Understanding Service Broker"in *Oracle Communications Service Broker Concepts Guide*.

Fixes in This Release

Table 1 lists the known problems in Service Broker Release 3.1 that have been fixed in Service Broker Release 5.0.

Table 1   Fixed Issues Since Service Broker 3.1

BugDB Number	Description
9895875	The module IM-SCF INAP CS-1 was wrongly using the ResetTimerValueInSeconds parameter to set the Trt timer, which sets the time between one ResetTimer operation and the next one. It now properly uses the ResetTimerIntervalInSeconds parameter.
9897325	The modules IM-SCF CAP (all phases) and IM-SCF INAP CS-1 now support the **analyzedInformation** event type inside InitialDP operations.
9898211	The modules IM-SCF CAP phase-3 and IM-SCF CAP phase-4 now support the default session handling configuration, when an error is encountered during an SMS trigger scenario (that is, a session started with an InitialDPSMS operation).
9922337	SIP Applications can now use the **id** privacy token in the Privacy header to request that the user's identity is kept private, even when the From header is anonymous. IM-SCF INAP CS-1 will now properly generate a Connect operation, with an empty Calling Party Number parameter and a Presentation Restriction parameter set to 1.
10050109	The module IM-SCF CAP phase-4 was behaving inconsistently after sending the PlayAnnouncement operation, with requestAnnouncementCompleteNotification set to False and disconnectFromIPForbidden set to False. This issue has been fixed.
10058068	All IM-SCF CAP modules now support a consistent ordering of IMSI bytes.
10173335	SIP applications can now use INFO requests to deliver FurnishChargingInformationSMS operations towards MSCs, even if the IM-SCF CAP module is in a monitoring mode.

Table 1 (Cont.) Fixed Issues Since Service Broker 3.1

BugDB Number	Description
10188152	The modules IM-SCF CAP (all phases) and IM-SCF INAP CS-1 now support the **address not available** value in the **address presentation restricted indicator** in the Calling Party Number field in InitialDP operations. They also support cases when InitialDP operations do not contain the Calling Party Number field.
10254496	The TCAP P-Abort counters in the RuntimeMBeans were fixed, and they now count occurrences of P-Abort per cause.
10254765	Service Broker now sends an ACK response on the originating leg, sending the subsequent BYE request to the SIP application only after the ACK is responded to with an ACK on the terminating leg. This fix has been made in the modules IM-SCF CAP phase-3 and IM-SCF CAP phase-4, to ensure that a BYE request does not precede an ACK.
10300737	Service Broker now support SCCP class 1, that is the sequenced connection less class.
	SM-PME can now manipulate parameters in the header of internal Service Broker SAL messages, in addition to existing manipulation of the message body.

Known Problems

This section describes known software problems and workarounds, if any.

Service Broker Supports Only SIP B2BUA and RDS Application Servers

Service Broker orchestrates SIP services provided by SIP Application Servers acting as either Back-to-Back User Agent (B2BUA) or Redirection Server (RDS). It does not support SIP Application Servers that act as Proxy Servers.

To work around this problem, always implement your service SIP Application Server as either B2BUA or RDS.

Signaling Traffic Discarded When Signaling Servers Start before Processing Servers

When Signaling Servers reach the Running state, the SSUs start receiving incoming traffic. If the Processing Servers have not reached the Running state by the time the SSUs begin to receive the incoming messages, the SSUs discard the messages.

To work around this problem, you must wait for the Processing Servers to reach the Running state before you change the Signaling Servers state from Admin to Running.

JVM Arguments Need to Be Set for Improving Performance

Tests on Solaris platforms have shown that some Java Virtual Machine (JVM) arguments should be set to improve performance with the Sun JVM for replica servers.

For Processing Servers, these example arguments have shown to improve performance:

```
-Dwcs.use.light.imasf=true -Xms4096m -Xmx4096m
```

For Signaling Servers, these example arguments have shown to improve performance:

```
-Xms2048m -Xmx2048m
```

Mandatory Domain Configuration Is Not Available in the Administration Console

When you set up a domain, you must map customer server names to names that follow a certain pattern. You must also assign a unique domain name in addition to the name that you already defined upon domain creation. These settings are not available in the Service Broker Administration Console.

To configure these mandatory settings, use any JMX client and set up ServersMBean, ServerMBean and SystemMBean.

SIP URIs Cannot Be Used if DNS Resolution Is Not Set Up in The Network

Ideally, SIP URIs are used to configure the addresses of SIP network entities. But in a network where DNS Resolution is not set up, SIP URIs cannot be resolved into IP addresses. Therefore, if your network does not provide DNS resolution, then you must use only IPs to specify the addresses of SIP network entities.

Service Broker Does Not Respond to SIP OPTION Requests

SIP OPTION requests are ideally used by SIP entities to support a keep-alive mechanism, in which the SIP entities periodically check for Service Broker availability. However, Service Broker does not respond to SIP OPTION request.

Instead, SIP entities can use TCP connectivity to ensure that their connection with Service Broker is alive.

SNMP Support is Not Available

SNMP is not supported out-of-the-box.

To work around this problem, you can either use the JMX interface, or use a 3rd party JMX to SNMP library.

Stand-Alone Administration Console is Not Supported on Solaris Sparc 64-bit with 64 bit JVM

The stand-alone Administration console is not supported on Solaris 64 bit architectures with a 64 bit JVM. Use the Web Administration console in this environment.

Servers Need Redundant Network Interfaces to Avoid Manual Restarts in Case of Network Outages

If a network outage occurs on the network interface that handles cluster communication, the involved Service Broker servers may not recover automatically when the outage is resolved.

The involved Service Broker servers need to be manually restarted while there still is a network outage in order to maintain cluster consistency.

To avoid this scenario, make sure the machines have redundant network interface cards and the switches are redundant.

Missing Solaris SUNWuiu8 Package Issue During Installation

The following error may be presented when installing Service Broker on Solaris:

```
ERROR: Unable to convert from "UTF-8" to "ISO8859-1" for NLS!
Bus Error (core dumped)
```

This indicates that the SUNWuiu8 package is missing.

To install SUNWuiu8:

1. Make sure you can access the Solaris operating system CD from the machine.

2. Log in to the server.

3. On the CD, change directory to **Product**.

4. As root user, execute the command:

   ```
   pkgadd -d . SUNWuiu8
   ```

Directory Permissions on Solaris During Installation

The following error may be presented when installing Service Broker on Solaris:

```
SEVERE:OUI-10036:Could not create the inventory location. You
may not have permission to write to this location.
```

```
SEVERE:OUI-10180:Invalid Operating System group name specified.
```

To avoid this, make sure that **ORACLE_BASE** is set to a directory with read and write privileges.

Administration Console Does Not Show Correct State of Secondary Bootstrap Blade

Relevant only for Service Broker Netra 6000 High Availability Manager.

The state of the secondary Bootstrap Blade is always rendered as unknown (grey) in the Administration Console.

Use ILOM to get the correct state for the secondary blade.

SUN_NetraCard MBean Is Not Updated When a Powered On Blade Is Removed from Chassis

Relevant only for Service Broker Netra 6000 High Availability Manager.

When a Worker Blade that is powered on is removed from the chassis, the MBean that corresponds to the blade is not updated in the hardware MBean tree. The MBean name is **Sun_NetraCard**.

Refresh the Administration Console to see the updates.

Concurrent Configuration Updates May Cause Server Startup Failure

Relevant only for Service Broker Netra 6000 High Availability Manager.

If a concurrent configuration update is done from different Administration Console Web browser instances, a configuration version conflict may occur in rare occasions. This conflict prohibits the targeted Signaling Server or Processing Server from starting up correctly on restart.

To avoid this, make sure that configuration changes are not done from two different instances of the Administration Console at the same time.

Internet Explorer not Supported

Relevant only for Service Broker Netra 6000 High Availability Manager.

Internet Explorer is not supported for the Administration Console.

A Set of Hardware MBeans that are Displayed are not Supported

Relevant only for Service Broker Netra 6000 High Availability Manager.

All hardware MBeans and MBean operations are displayed. This includes the ones that are not supported.

An Error dialog box is displayed when you invoke an unsupported operation. The error message displays the text:

```
javax.management.RuntimeMBeanException:
java.lang.UnsupportedOperationException.
```

Error Text in Statistics Tab Does not Indicate an Error

Relevant only for Service Broker Netra 6000 High Availability Manager.

The text (error) is displayed in the **Statistics** tab for entries for Signaling Servers and Processing Servers that are assigned to blades that are not running. The error message means that the statistics are currently not applicable for the server because the blade is not powered up.

Warning Message During Blade Boot

Relevant only for Service Broker Netra 6000 High Availability Manager.

The following warning messages are displayed while a blade is booting:

```
Memory for crash kernel (0x0) notwithin permissible rage
```

```
i8042.c: No controller found.
```

These messages can be safely ignored as they have no impact on the blade operation.

First Server Added to the Default Route of a Diameter Node Is Not Effective

Relevant only for Service Broker Netra 6000 High Availability Manager.

The first time that you add a server to the Default Route of a Diameter node, the new server is inserted in the second row of the servers table. The added server is therefore not effective.

To work around this, you have to remove the first empty row from the table:

- Select the first row with the empty server name.

- Click the Remove button

The first empty row is removed, and replaced by the server that you previously added. The server is now effective.

This problem will not repeat if you add more servers to the server table of the Default Route.

Incorrect Prcosses State is Displayed in the Administration Console after Automatic Restart of eMA on Worker Blades

Relevant only for Service Broker Netra 6000 High Availability Manager.

If the eMA running on a Worker Blade, automatically restarts due to an error, the state of processes that are running on that blade are incorrectly reported in the Administration Console. As a result, processes such as the SS7 process or Processing Servers appear in a red color, eventough they are up and running.

To solve this, you have to restart the eMA service on the primary Bootstrap Blade. To restart the Bootstrap Blade:

- Log into the Bootstrap Blade machine

- From the command line, run: **`service ocsb-ema restart`**

Documentation Updates

The following changes have been made to the documentation:

- A new book has been added that describes how to integrate Service Broker management with external management systems. See *Oracle Communications Service Broker Integration Guide*.

- A new book has been added that describes how to develop SIP applications within a Service Broker solution. See *Oracle Communications Service Broker Developer's Guide for GSM*.

- A new JavaDoc has been added to describe Service Broker Configuration and Runtime MBeans. See *Oracle Communications Service Broker Modules Java API* and *Oracle Communications Service Broker Platform Java API*.

- A new book has been added that describes the concepts of and system administration tasks for Service Broker Netra 6000 High Availability Manager. See *Oracle Communications Service Broker Netra 6000 High Availability Manager Administrator's Guide*.