Oracle® Communications Converged Application Server

Release Notes

Release 5.1

E27708-01

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This document provides release notes for Oracle Communications Converged Application Server Release 5.1.

- New Features
- Fixes in This Release
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New Features

This section describes new features and feature enhancements in this release of Converged Application Server.

WebLogic Server Version

The version of the bundled Oracle WebLogic Server is now 11g Release 6 (10.3.6).

Service Foundation Toolkit

Service Foundation Toolkit (SFT) allows for rapid development of converged communication services using the Java EE programming model. It provides APIs that you can use to implement services such as call control, media control, and instant messaging. SFT provides a high-level, abstracted view of the SIP Servlet API. It is built on top of the SIP Servlet container.

See *Oracle Communications Converged Application Server Developer's Guide* for more information.

Service Creation Environment

A service creation environment that facilitates development of converged applications is added. The SCE includes converged application development tools such as code generation wizards, build and deployment tools, and simulators.

The SCE is plug-in for Oracle Enterprise Pack for Eclipse (OEPE).

See the *Oracle Communications Converged Application Server Developer's Guide* for more information.

Voice over LTE

Support is added for GSM Association's (GSMA) IR.92 specification for delivering Voice over LTE (VoLTE) services. You can implement these services using either the SIP Servlet API (JSR 289) or the Service Foundation Toolkit (SFT).

See the *Oracle Communications Converged Concepts* and *Oracle Communications Converged Application Server SIP Developer's Guide* for more information.

Rich Communications Suite (RCS-e)

Support is added for Rich Communication Suite (RCS-e). It introduces IMS voice sessions (VoIP/VoLTE) that can be enriched for IM and chat, file transfer, and image sharing. RCS-e lowers the entry barrier for RCS by providing a framework in which to deploy RCS functionality without needing to implement the full RCS profiles.

Converged Application Server provides APIs that can be used to create RCS-e compliant Instant Message (IM) servers. The APIs abstract the protocol level details of SIP, IMS, and MSRP and simplifies development of RCS-e services.

Converged Load Balancer

Converged Application Server now includes the Converged Load Balancer, a standalone component that can perform load distribution functions for the engine tier servers in your implementation.

Unlike traditional load balancers, the Converged Load Balancer is built to handle converged HTTP and SIP traffic. It can apply round-robin or consistent hash algorithms when making server distribution decisions for new sessions. It supports session affinity for SIP and HTTP traffic. It also monitors the health of the servers in the cluster, ensuring that only available servers are targeted with requests.

The Converged Load Balancer is installed as a default component of the Converged Application Server. It is configurable from the Administration Console web UI. See *Oracle Communications Converged Application Server Administrator's Guide* for more information.

Custom Application Router

An application router composes the application chain within the SIP container that services messages for a given session. The application router may take the form of a Default Application Router (DAR), which provides simple, configuration based orchestration. Alternatively, a Custom Application Router (CAR) can be implemented for complex orchestration processing.

Both DAR- and CAR-based application composition is supported.

The DAR provides flexibility sufficient for complex service composition through XML while a CAR can be created using a set of APIs.

See *Oracle Communications Converged Application Server Administrator's Guide* for more information.

Support for Join and Replaces

Support is added for the SIP headers Join and Replaces as defined in JSR 289.

Join enables developers to implement features where a participant joins an existing SIP application sessions.

Replaces enables developers to implement features where a participants is replaced with another during an existing SIP application session. Typical features are Attended Call Transfer and Call Pickup

See the *Oracle Communications Converged Application Server SIP Developer's Guide* for more information.

RESTful Location Interface for Proxy/Registrar

A RESTful API is added for creating, modifying, and deleting address-of-record (AOR) entries maintained by the Proxy/Registrar's Location Service.

See the *Oracle Communications Converged Concepts* and *Oracle Communications Converged Application Server SIP Developer's Guide* for more information.

Application Examples

A set of new application examples have been added. See the *Oracle Communications Converged Application Server SIP Developer's Guide*.

Fixes in This Release

Table 1 lists the known problems, reported in SRs, that have been fixed in Converged Application Server Release 5.1.

Table 1 Fixed Issues with associated SRs

Service Request (SR) Number	BugDB Number	Description
3-3555964991	12557469	It is now possible to configure whether to enable or disable logging of locally targeted SIP messages when message debug is on. Locally targeted messages are outbound messages that are routed to the same engine. To enable local message level-debug, check **Local logging enabled** in the administration console. The check-box is found in the **Message Debug** sub-tab of the **Configuration** tab in the **SipServer** pane. Message debug must be on.
3-5510933351	14342859	Added an option to have non-SSL based call state replication even when SSL is enabled for the admin port. Use the Java -D flag **cs.replication.nonadmin.channel.enabled**. To enable SSL for call state replication: **-Dcs.replication.nonadmin.channel.enabled=false** To disable SSL for call state replication: **-Dcs.replication.nonadmin.channel.enabled=true** By default the value is **false** and hence SSL is used when SSL is used for the admin port. It is suggested to disable SSL for call state replication since having it enabled can have serious performance impact.
3-5893235741	14257649	When acting as a B2BUA the container no longer does an unnecessary DNS address lookup when creating an new request.

Table 1 (Cont.) Fixed Issues with associated SRs

Service Request (SR) Number	BugDB Number	Description
3-5860281431	14255897	The container now performs a DNS resolve for target addresses only when a request is supposed to be sent to an entity outside the container. No DND lookup is performed when there is a request that is handled by a local application.
3-5582784781	14025953	Now a received 480 response can be modified before sending it out to the caller when **enable-local-dispatch** is set to **true**.
3-5458018471	13860024	Second PRACK for reliable 18x that targets an existing SIP session is now forwarded correctly by a forking proxy.
3-5240848151 3-5240848151	13723137 14017136	Custom Application Routers (CARs) can now load JEE objects from the CAR class loader.
3-5179260321	13721634	Assertion errors are not experienced when asserting an 100 INVITE response.
3-5269708401	13684404	Contact header is now provided in a newly created re-invite sent within an existing SIP session.
3-5058946441	13656145	NullPointerException are no longer thrown when processing responses associated with an invalidated SIP session.
3-5210074931	13615049	Messages are now processed correctly when an associated SIP session is NULL. Previously messages were not processed correctly due to an incorrect SIP session mapping when a session targeting mechanism like @SipApplicationKey was used.
3-4904303891	13577582	Shutdown of a data tier replica server does no longer trigger a restart of engine tier servers if the admin port is enabled.
3-4898333851	13371087	When an application uses custom headers that are not standard (unknown to the container), the methods setParameterable,setAddressHeader, addAddressHeader etc. the container changes the header to parameterable or address, respectively.
3-4737130041	13092184	WlssEchoServer now stays up and running during network outages.
3-4450696301	13033610	Creating a new Diameter configuration using the administration console now allows for omitting a default route.
3-4450696301	13023418	Routing of an initial diameter requests to a custom Diameter server application now works.
3-4134364181	12829934	The Contact header is now correctly populated when an application creates a new SIP application session using `createApplicationSessionByKey(...)` and subsequently calls `setOutboundInterface(...)` on the SIP Session.
3-2749274921	12606744	Container now supports JOIN and REPLACES functionality.
3-3640716531	12599470	A message listener associated with a 100/INVITE response can now be cast to Invite100ResponseListener.

Known Problems

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

setDisplayName Does Not Allow Special Characters

BugDB number: 14476260

Special characters like @, (, and) are not allowed as inparameters to setDisplayName.

Workaround: Use escape character (\) when using special characters.

User Needs to Double-Click Certain Menu Options

BugDB number: 14281800, 14246568

When clicking on the Converged Load Balancer and Diameter menu options in the administration console navigation tree, the corresponding page does not open.

Workaround: Double-click the menu item.

MSRP Server and MSRP Resource Adaptor Does Not support HA

BugDB number: 14116917

The MSRP server runs in embedded mode (same JVM as Converged Application Server).

If the JVM is crashes, all MSRP server status is lost and does not support serializing and deserializing it's internal state.

Rolling Update is Not Supported

BugDB number: 14091020

Rolling upgrade is not supported in this release.

Substantial changes are introduced to the container in order to support SIP JOIN and REPLACES, and to enhance performance. These changes affected the interface between Engine servers and Replica servers.

@RolesAllowed Annotation Does Not Work for ProtocolEvent

BugDB number: 12868947

The annotation @RolesAllowed in method level or in class level does not work for ProtocolEvent on neither class- nor method-level.

It does work for CommunicationEvent and ParticipantEvent type event.

Can Not Opt Out of Receiving Security Updates When Installing on Solaris

BugDB number: 14585702

The graphical mode installation program does not allow a user to opt out of receiving security updates via MyOracle Support.

In the installation screen **Register for Security Updates**:

After un-checking **I wish to receive security updates via My Oracle Support** and clicking **OK** in the confirmation dialog box, the option is still checked.

404 Responses Not Sent When a Transport Failure Occurs

BugDB number 8182227

The SIP Servlet v1.0 Specification states: “Containers may send the request asynchronously in which case sending may fail after the send method has returned successfully. In this type of situation, the container will generate its own final response. In this particular case, a 404 response would be appropriate.” Converged Application Server sends requests asynchronously but does not deliver a 404 Not Found response to an application if a transport failure occurs.

To work around this problem, applications should rely on the 408 Request Timeout response.

Superfluous Entries in ServerLog File Under Overload Conditions

BugDB number 8132241

During an overload condition, Converged Application Server may log messages similar to:

```
<ACK received in state PROCEEDING:class=[ServerTransaction],
objid=[25292416],key=[z9hG4bKc227250e04757a91cbdde388192e21f5],
state=[3,PROCEEDING],method=[INVITE]>
```

This occurs even if the ACK could be safely ignored (for example, if the ACK was generated by the server for a 503 response). There is no work around to this problem, but it should occur only rarely (during overload conditions).

Shut Down During Startup When Engine Tier Servers are Running

BugDB number 8092534

When starting a replicated domain, if a partition has no running replicas and two replicas are started at the same time, the second replica shuts down if one or more engine tier servers are already running. To avoid this problem, always start all SIP data tier servers before starting any engine tier servers in a replicated domain.

Default TCP Connection Timeout Too Long for Managed Servers on Linux and UNIX Systems

BugDB numbers 8075026 and 8069746

On Linux and UNIX systems, the default TCP connection timeout interval is usually very long and can cause Managed Servers to disconnect from the Administration Server under certain failure conditions.

Specifically, if a single Managed Server in a domain fails abruptly or is disconnected from the network (for example, due to a removed network cable), the Administration Server tries to communicate to the failed server for the length of the TCP connection timeout value. During this time, the Administration Server does not send heartbeat messages to the remaining Managed Servers in the domain. Failing to send the heartbeat messages causes the remaining Managed Servers to consider the Administration Server as being offline, and they disconnect from the Administration Server. This finally causes the Administration Server to throw `PeerGoneExceptions` for the disconnected servers after the TCP timeout interval has been reached and the connection is closed.

To work around this issue without changing the operating system TCP connection timeout value, use the `-Dweblogic.client.SocketConnectTimeoutInSecs` startup

option when booting the Administration Server. Oracle recommends using a value of 60 seconds to avoid numerous missed heartbeats. For example:

```
-Dweblogic.client.SocketConnectTimeoutInSecs=60
```

Call States Associated with Invalidated Sessions Can Persist

BugDB number 8122352

When an application in a replicated domain configuration is no longer deployed, Converged Application Server uses timer processing to clean up the remaining call state data for the application. However, in a non-replicated configuration, the server attempts to invalidate remaining session data but does not destroy call states associated with the application; this may result in the server "leaking" call states that existed when the application was deployed.

Java Options Must Be Set When Using SCTP with IPv4 on Solaris Platforms

BugDB number 8084956

In order to use SCTP with IPv4 on Solaris, you must set the following Java option when you start the server:

```
-Dsctp.preferIPv4Stack=true
```

Edit your startup script to include this option, or set the environment variable:

```
export Java_OPTIONS=-Dsctp.preferIPv4Stack=true
```

Compliance with JSR 116

Converged Application Server exhibits two behaviors that do not conform to the JSR 116 specification:

- MIME content is returned as a String object, rather than as a `javax.mail.Multipart` as encouraged by the specification.
- `isPersistent`, used for re-instantiating `ServletTimer` after server restarts, is not implemented.

Also, Converged Application Server does not support dialog stateless proxies, an optional feature described in the API JavaDoc for the `Proxy` interface, `setStateful()` method: "This proxy parameter is a hint only. Implementations may choose to maintain transaction state regardless of the value of this flag, but if so the application will not be invoked again for this transaction."

Documentation Updates

This section covers the major updates to the documentation set itself. For information on where new features are documented, see New Features.

Developer's Guide

The guide has been re-organized, added to and split into several section, also referred to as Parts:

- Introduction to Developing Applications for Converged Application Server
- Developing Applications with the Service Creation Environment

- Developing SIP Applications
- Developing Applications With the Service Foundation Toolkit

Upgrade Instructions Removed

The section on upgrading from a previous version of has been removed. See Known Problems.

Security Guide Added

A security Guide is added, describing the security mechanism in place, and how to configure them.

JavaDoc Consolidated

JavaDoc for:

- Service Foundation Toolkit (SFT)
- SIP Servlet API (JSR289)
- Diameter API
- Converged Load Balancer (CLB)
- Proxy Registrar
- Media Server API (JSR309)

has been added and consolidated into one single set.

Documentation Accessibility

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

Access to Oracle Support

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

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