

Oracle® Communications Convergent Charging Controller Release Notes



Release 15.0.1

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Contents

About the Release Notes..... 1

New Features 1

Known Problems 2

Fixes in This Release 2

About Convergent Charging Controller Documentation 8

Third-Party Products and Licensing 8

About the Release Notes

This document provides the release notes for the new and enhanced features introduced between Oracle Communications Convergent Charging Controller (CCC) release 15.0.0 and Oracle Communications Convergent Charging Controller (CCC) release 15.0.1.

New Features

Convergent Charging Controller 15.0.1 includes the following enhancements:

- Support for Sending CTR CAP Message Before [PlayAnnouncement](#)
- Support for TLS 1.3
- Support for Inter-SLC ARI Routing

Support for Sending CTR CAP Message before PlayAnnouncement

Earlier, during CAMEL IVR interaction, when temporary connection is established between gsmSSF and gsmSRF, CCC SCP sends a PlayAnnouncement (PA) / PromptAndCollectUserInformation (PACUI) message in response to AssistRoutingInstruction (ARI) message.

CCC is now enhanced to support sending an optional [ConnectToResource \(CTR\)](#) message before [PlayAnnouncement](#) / [PromptAndCollectUserInformation](#) in response to ARI message in roaming scenarios.

A new option 'C' is added to the **UseETC** parameter. For more information, see *Advanced Control Services Technical Guide*.

Support for TLS 1.3

All components of CCC now supports TLS 1.3 version. The following interfaces are now compliant with TLS 1.3:

- OSD - Server
- REST - Server/Client
- DAP - Client
- PI - Server

Support for Inter-SLC ARI Routing

Earlier, if the correlation id received in an ARI does not match with ETC message, SLC rejects the ARI message by sending a TC_ABORT message to switch.

CCC now supports redirecting the ARI with mismatching correlation id to a specified service key, referred by **unknowncorridoverridesleekey** parameter, so that it could be redirected to another SLEE interface.

A new parameter **unknowncorridoverridesleekey** is added to support this feature. For more information, see *SIGTRAN Technical Guide*.

Known Problems

List of Known Problems

- From 15.0.0 version onwards, Convergent Charging Controller upgrade is supported only on Solaris 11.4 version. If you are on a lower version, upgrade the OS to Solaris 11.4. GCC version 12.2 is required for Solaris 11.4 version.
- If there are no OpenSSL 1.1 softlinks in Solaris 11.4 in the lib directory of 64 path, then create the following softlinks using SSL 1.1 file's in all the 3 nodes (SMS, SLC, and VWS):
cd to LIB 64 path (ex:/lib/64)

ln -s <Absolute path of SSL 1.1 folder, having libssl.so.1.1 file> libssl.so.1.1

ln -s <Absolute path of SSL 1.1 folder, having libcrypto.so.1.1 file> libcrypto.so.1.1

Example:

ln -s /usr/openssl/1.1/lib/64/libssl.so.1.1 libssl.so.1.1

ln -s /usr/openssl/1.1/lib/64/libcrypto.so.1.1 libcrypto.so.1.1

- Whenever upgrading Oracle database from older versions (18c or earlier) to Oracle database 19c, the "system" user password needs to be set same as in the earlier database.
- If the following error is displayed in the Linux environment while applying 15.0.1 patch (during upgrade from 15.0.0 to 15.0.1), when using the rpm command:

```
rpm -ivh <PATCHNUMBER>.linux.rpm
```

```
Verifying...                               ##### [100%]
Preparing...                               ##### [100%]
      file /usr/lib/.build-id/09/43d3c013e8c897a472751a9e92a66a26564a29 from
install of <PATCHNUMBER>-0.231-0.0.0.i686 conflicts with file from package
<PATCHNUMBER>-1.0-0.0.0.i686
      file /usr/lib/.build-id/5c/d223c31c826824b53ad2f8278c1289457ca15c from
install of <PATCHNUMBER>-0.231-0.0.0.i686 conflicts with file from package
<PATCHNUMBER>-1.0-0.0.0.i686
```

Use the -- force option with the rpm command as follows:

```
rpm -ivh <PATCHNUMBER>.linux.rpm -force
```

Fixes in This Release

List of Fixes

The following table lists service request issues reported by external sources that have been fixed in this release.

Bug Number	Service Request (SR) Number	Description
36481075		Issue: In the SMS box, DB job (CCS_VOUCHER_SC_PKG.delete_rows_job()) triggered every day at 3 am was getting stuck causing a blockage in CCS_VOUCHER_REFERENCE table. This resulted in table triggers not creating the replication events in REP_ORA_EVENT. Hence no replication was done for CCS_VOUCHER_REFERENCE.

Bug Number	Service Request (SR) Number	Description
		Solution: The improper AND/OR conditions in the stuck select query are organized with proper brackets.
36428048		Issue: ccsCDRTTrimDB was throwing following error during execution: Mar 21 08:49:15.255226 ccsCDRTTrimDB(172844) WARNING: Unsuccessful attempt to delete from EDR database. Possibly because it is on a read-only partition. Oracle error - -1410 Mar 21 08:49:15.255311 ccsCDRTTrimDB(172844) ERROR: Deleted 0 of 200 records. Solution: Array values were not populated properly in the query, causing invalid value and resulting in error. Took a local array in the pro*C file, copied the incoming values to the local array and then used the same array in the query. This way the array values were determined properly in the query.
36390255		Issue: For ASM managed database, voucher partitions were created in local file system which were not accessible to the DB for queries. CCS voucher partition management scripts were not having capability to create partition in ASM locations for ASM databases. Solution: 1. Created a new script for voucher management, to determine the available space in ASM location. 2. Updated voucher partition management scripts to identify ASM managed databases based on configuration, then find available space using the new script and finally create partition in ASM managed location. 3. Updated CDR partition management ASM script to use proper fields while determining available free space.
36341723	3-35825151111	Issue: Outgoing BA List added on SMS GUI list to Allowed/Barred number list but prefixes which are non-digit cannot be entered using GUI. Solution: Code is modified to support String type characters also in the same field.
36317049	3-35802541021	Issue: On demand voucher creation request using CCSVR1_COV PI command was showing voucher create error even when the voucher got created and loaded in database successfully. This was happening for AES encryption mechanism only. Solution: 1. ccsVoucher_CCS1 and ccsVoucher_CCS3 binaries are updated to print the proper voucher fields as output when AES encryption is used. 2. CCSVR1_COV command is modified to parse the voucher fields based on the header.
36300856		Issue:

Bug Number	Service Request (SR) Number	Description
		<p>Customer needs SLC to redirect the AssistRequestInstruction messages to a configured servicekey when the correlation id received in it does not match with the one sent in EstablishTemporaryConnection message.</p> <p>Solution:</p> <p>A new argument is introduced for m3ua_if/sua_if binaries named 'unknowncorridoverridesleekey' to handle this use case.</p>
36215568	3-35231764311	<p>Issue:</p> <p>ConnectToResource component did not contain the 'bothwayPathRequired' which is configured in acs.conf.</p> <p>Solution:</p> <p>Code is now modified to add this parameter as well.</p>
36214208		<p>Issue:</p> <p>USSD command in slpit script did not support variables (FROM_FILE).</p> <p>Solution:</p> <p>Changed USSD to slpit expression and updated the fetch points for USSD to fetch it like slpit expression and then convert to USSD string.</p>
36134737	3-35223607961	<p>Issue:</p> <p>In roaming scenario, a ConnectToResource message was added before each of the PlayAnnouncement messages. Customer needed only first PA message to contain ConnectToResource and it caused issue in invokeld calculation.</p> <p>Solution:</p> <p>Code is updated to keep track of ConnectToResource message and make sure it is sent only once for a call/session.</p>
36131446	3-35217151421	<p>Issue:</p> <p>ccsPeriodicCharge corrupts memory every time it runs. Every time ccsPeriodicCharge runs, it just hits a double delete and exits.</p> <p>Solution:</p> <p>ccsPeriodicCharge sends notifications to the subscriber informing them whether or not the charge was successful. This process only applies to periodic charges which were configured in CCS 3.1.4 or earlier. In latest releases, notifications are sent to the subscriber using the real time wallet notifications. Since ccsPeriodicCharge is deprecated long back, this process is removed from crontab.</p>
36130534	3-35231764311	<p>Issue:</p> <p>In roaming scenario, a ConnectToResource message was not added before PromptAndCollectUserInfo message.</p> <p>Solution:</p> <p>Code is enhanced to include ConnectToResource message with PromptAndCollectUserInfo if it is the first message of PlayAnnouncement/PromptAndCollectUserInfo for a call/session.</p>
36099098		<p>Issue:</p>

Bug Number	Service Request (SR) Number	Description
		<p>When new IP/port is added or deleted in OSD screen, it changes all existing port name as well. So, the port name needs to be changed in NGW in GROUP config.</p> <p>Solution:</p> <p>A new config parameter is added in the OSD section in eserv.config in SMS as below:</p> <pre>OSD = { useHostnameAndPort = true }</pre> <p>Note: Default value is false.</p> <p>When useHostnameAndPort is set to "true", instead of using port number, combination of host-name and port is used. Now PortName field will have host name and port which is present in address location field.</p>
36071472	3-35021439441	<p>Issue:</p> <p>Failed to decode balance info AVP with integer value more than 32 bit.</p> <p>Solution:</p> <p>Code modification is done in such a way that acsActionsAPI::BalanceInfo structure can already store 64-bit value. The condition check is modified to check integer 64 value now.</p>
36069929		<p>Issue:</p> <p>Reading DCD AVP in Array Profile tag was dumping Hex log in slee_acs.log even when debug is disabled.</p> <p>Solution:</p> <p>All the portions where profile block memory is being dumped, has now been moved under a debug check condition. This will make sure that the dump doesn't happen when debug is disabled.</p>
35963423	3-30772569821	<p>Issue:</p> <p>When "logFinalAuditLine = true" customer didn't find any new entries in xmsTrigger.aud file. When "logFinalAuditLine" line is removed, the new entries are present in the xmsTrigger.aud file but without status and RetryCount. Issue was because SMSRequestLogAudit parameter (mainly "status and RetryCount" field) was not populated in all call flows.</p> <p>Solution:</p> <p>Code is modified to populate SMSRequestLogAudit parameter in all call flows along with smsAuditor parameter.</p>
35782424	3-34180454361	<p>Issue:</p> <p>"Logout" and "Logout & Exit" options on File menu of SMS GUI perform the same action. Bug is raised to open the login window again if "Logout" option is selected but the same is not possible to implement. The same is discussed and agreed to remove the "Logout" only option.</p> <p>Solution:</p> <p>Removed the "Logout" only option from the File menu of the SMS GUI screen.</p>
35780920		<p>Issue:</p>

Bug Number	Service Request (SR) Number	Description
		<p>1. Voucher creation is very slow. 2. Voucher creation is successful, but GUI shows error about unable to fetch batch.</p> <p>Solution:</p> <p>1. a) Converted the non-unique index CCS_VOUCHER_REFERENCE_IDX1 to unique, in order to avoid full table scan. b) The query to find out the remaining vouchers in range is made parallel query now, in order to make it faster.</p> <p>2. CCS jar is updated to wait a little longer for the status file to appear. If it still takes time, the GUI will display a message, to check logs directly.</p>
35646462	3-33769831981	<p>Issue:</p> <p>NotifGateWay and RESTClient were not listed when running ps_list.sh or slee-ctrl restart/status.</p> <p>Solution:</p> <p>Fixed the following issues:</p> <p>1) The script now correctly lists NGW and RestClient/RestServer processes in the .plc file. This file is then utilized for displaying processes when running ps_list.sh.</p> <p>2) If NGW and RestClient/RestServer processes are not up and running, they are still being added to the .plc file, resulting in their appearance as 'Process Not Found' during the ps_list.sh run.</p>
35641987	3-33769831981	<p>Issue:</p> <p>1) ps_list.sh tries to find a cmnPushFiles that doesn't exist. 2) The APP name is set to OTHER for some processes in VWS.</p> <p>Solution:</p> <p>1) Renamed the file 'cmnPushFiles-ccsVWARSEpiryStartup.sh' to 'cmnPushFiles_ccsVWARSEpiryStartup.sh' to ensure proper recognition by the 'ps_list.sh' script.</p> <p>2) The APP name is set to OTHER for some of the processes when CCC is installed with user other than smf_oper.</p> <p>This issue occurs only for those processes for which the full path is not included in the .plc files. Now default App name is set to SMS.</p>
35641838	3-33769831981	<p>Issue:</p> <p>Column headers are not aligned with column data.</p> <p>Solution:</p> <p>Fixed the following issues:</p> <p>1) If username length is dynamically adjusted, then adjust the column headers based on that.</p> <p>2) If the first column i.e. "C" contains a value that is of length two, then header and the data adjust according to that.</p>
35637462	3-33769831981	<p>Issue:</p> <p>ps_list.sh and slee-ctrl footer data is incorrect</p> <p>Solution:</p> <p>Modified the ps_list.sh code to display run-level information in both Solaris and Linux.</p>

Bug Number	Service Request (SR) Number	Description
		It was who -r command which gives run-level information along with time. The output is different for both Solaris and Linux. Code is modified to fetch only the run-level information in both Solaris and Linux.
35502668		<p>Issue: slee_acs is crashing in ERBC branching node while tokenizing and using the tokens.</p> <p>Solution: Converted C-based tokenisation to C++ style.</p>
35484963	3-33344642991	<p>Issue: Both pslist and slee-ctrl are detecting an excessive number of m3ua_if processes.</p> <p>Solution: The issue stems from having six m3ua_if wrapper scripts, with four of them utilizing the absolute path to the m3ua_if binary, while the remaining two scripts use a relative path (e.g., ./m3ua_if). This mixed path configuration results in two entries in the .plc file, leading to multiple entries for m3ua_if in the .plc file. Changed mta.sh, sca.sh, mfw.sh, m3ua_IS41_if.sh, and m3ua_MAP_if.sh script file to contain absolute path to make it uniform for all the processes.</p>
35470656	3-33312114581	<p>Issue: The hlrInterface is installed with all levels of debug enabled. The hlrInterface is enabled in SLEE.cfg and also it does not contain any log rotation entries. So if unattended, it could eventually fill up the entire /IN file system. This utility is used for testing Location Capabilities Pack (LCP) and acts as a dummy Home Location Register (HLR).</p> <p>Solution: Modified the INTERFACE hlrInterface so that it picks the right hlrInterface.sh script.</p>
35470369	3-33275271911	<p>Issue: After installing CCC 12.0.6, about 2000 lines of default DCD configurations are added to the eserv.config file along with some duplicate parameters.</p> <p>Solution: Removed all the duplicate/split parameters and AVP section in Diameter section. Created a new file eserv.config.slc.ccc.ece.nopublish, which contains all the AVP sections required for ECE.</p>

About Convergent Charging Controller Documentation

Where to Start

Convergent Charging Controller product documentation is available on Oracle Help Center:

https://docs.oracle.com/communications/F96365_01/index.htm

The first guides to look at should be those that help with the installation and configuration of the Convergent Charging Controller software.

The next set of guides should be those pertaining to your usage of the Convergent Charging Controller software.

The guides have been generally classified according to their use.

Third-Party Products and Licensing

For all the Oracle Communications Convergent Charging Controller licensing information and all related third-party product acknowledgments, see *Oracle Communications Convergent Charging Controller Licensing Information User Manual*.