

# Oracle® Communications Network Charging and Control

## Release Notes



Release 15.0.1

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ORACLE®

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# About the Release Notes

This document provides the release notes for the new and enhanced features introduced between Oracle Communications NCC release 15.0.0 and Oracle Communications NCC release 15.0.1.

## New Features

NCC 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, NCC SCP sends a PlayAnnouncement (PA) / PromptAndCollectUserInformation (PACUI) message in response to AssistRoutingInstruction (ARI) message.

NCC 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 NCC 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.

NCC 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, NCC 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 files 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
36522725	3-36422729241	<b>Issue:</b> Wallets with active long data sessions do not have their balances changing frequently, and in between two WL_Ack responses for a wallet and for a given time interval (configurable), we get difference only in the LAST_USE field. We have modified the code to consider such wallets which is configurable. <b>Solution:</b>

Bug Number	Service Request (SR) Number	Description
		A new config flag <b>skipLastUseFieldCheckAtWallet</b> is added in the eserv.config under CCS.ccsBeResync section. When this flag is set to true, we have added a logic in the code to consider the wallets for syncing whose only LUSE field is changing between two WI_Ack responses.
36481075		<p><b>Issue:</b> 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.</p> <p><b>Solution:</b> The improper AND/OR conditions in the stuck select query are organized with proper brackets.</p>
36428048		<p><b>Issue:</b> 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.</p> <p><b>Solution:</b> 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.</p>
36401352	3-36081628171	<p><b>Issue:</b> WalletReservationInformation query failed on a wallet while it had an ongoing data session.</p> <p><b>Solution:</b> A local unique_ptr object creation needed to be modified and return of a function needed move operator to be called on it.</p>
36390255		<p><b>Issue:</b> 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.</p> <p><b>Solution:</b> 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.</p>
36389969	3-36044511924	<b>Issue:</b>

Bug Number	Service Request (SR) Number	Description
		<p>Persistent connections were enabled to work around high latency DNS lookups/load balancers. But the ASP is immediately closing the socket after sending the 1000th response.</p> <p><b>Solution:</b></p> <p>We back ported the code changes of Bug 34552531 - dapIF Fails to Handle TCP FIN in 12.0.6. These code changes were available in master/mainline/12.0.G.</p> <p>Code changes of Bug 34954255 were already available in 12.0.6.</p>
36375271	3-35929594721	<p><b>Issue:</b></p> <p>The ccsChangeDaemon process intermittently crashes when subscribers are being created.</p> <p><b>Solution:</b></p> <p>ccsChangeDaemon was trying to delete session responses from empty responses queue while handling the responses which lead to process crash. Added the logic to handle the response queue pop operations for queue empty scenario.</p>
36341723	3-35825151111	<p><b>Issue:</b></p> <p>Outgoing BA List added on SMS GUI list to Allowed/Barred number list but prefixes which are non-digit cannot be entered using GUI.</p> <p><b>Solution:</b></p> <p>Code is modified to support String type characters also in the same field.</p>
36336057	3-35697848221	<p><b>Issue:</b></p> <p>Invalid Downcast Exception error reported by SCA Interface on Production SLC.</p> <p><b>Solution:</b></p> <p>The Error logged during the error handling of the request should actually be a Warning as it has no negative impact on the existing behaviour.</p>
36317049	3-35802541021	<p><b>Issue:</b></p> <p>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.</p> <p><b>Solution:</b></p> <ol style="list-style-type: none"> <li>1. ccsVoucher_CCS1 and ccsVoucher_CCS3 binaries are updated to print the proper voucher fields as output when AES encryption is used.</li> <li>2. CCSVR1_COV command is modified to parse the voucher fields based on the header.</li> </ol>
36300856		<p><b>Issue:</b></p> <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><b>Solution:</b></p> <p>A new argument is introduced for m3ua_if/sua_if binaries named 'unknowncorridoverridesleekey' to handle this use case.</p>



Bug Number	Service Request (SR) Number	Description
36230668	3-35569050081	<p><b>Issue:</b> OUI installs a default eserv.config on the VWS with invalid BE.beVWARS.groveller section.</p> <p><b>Solution:</b> Incorrect fields are removed in BE.beVWARS.groveller section since those parameters are not required anymore. The default value of periodMsec is updated to 1000 in code base.</p>
36215568	3-35231764311	<p><b>Issue:</b> ConnectToResource component did not contain the 'bothwayPathRequired' which is configured in acs.conf.</p> <p><b>Solution:</b> Code is now modified to add this parameter as well.</p>
36214208		<p><b>Issue:</b> USSD command in slpit script did not support variables (FROM_FILE).</p> <p><b>Solution:</b> 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>
36152698	3-35335701039	<p><b>Issue:</b> Diameter Control Agent (DCA) was dumping core when processing the Credit Control Request (CCR) UPDATE_REQUEST received from network. This was observed when DCA processes the UPDATE_REQUEST with no MSCC AVP and the Multiple-Services-Indicator set.</p> <p><b>Solution:</b> DCA was core dumping because the Update case was not handled when no MSCC AVP was present with MSCC indicator set. The code has now been updated to address this issue. If an update request is received without the MSCC AVP, the system will respond with diameter error code 5005 (DIAMETER_MISSING_AVP).</p>
36148426	3-35281835761	<p><b>Issue:</b> When 'NumOldestCallsToDump' is enabled in acs.conf, slee_acs crashes with SIGSEV.</p> <p><b>Solution:</b> We have context of the old calls saved when 'NumOldestCallsToDump' is configured so we should call the getTraversedFNListLength function on this context pointer.</p>
36142923	3-35110988541	<p><b>Issue:</b> Alarm doesn't log the errno that semget() also returns so the root cause can't be narrowed down.</p> <p><b>Solution:</b> Now alarm log will also record the error no and its description.</p>
36134737	3-35223607961	<p><b>Issue:</b> 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>

Bug Number	Service Request (SR) Number	Description
		<b>Solution:</b> Code is updated to keep track of ConnectToResource message and make sure it is sent only once for a call/session.
36131446	3-35217151421	<b>Issue:</b> ccsPeriodicCharge corrupts memory every time it runs. Every time ccsPeriodicCharge runs, it just hits a double delete and exits. <b>Solution:</b> 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.
36130534	3-35231764311	<b>Issue:</b> In roaming scenario, a ConnectToResource message was not added before PromptAndCollectUserInfo message. <b>Solution:</b> Code is enhanced to include ConnectToResource message with PromptAndCollectUserInfo if it is the first message of PlayAnnouncement/PromptAndCollectUserInfo for a call/session.
36099098		<b>Issue:</b> 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. <b>Solution:</b> A new config parameter is added in the OSD section in eserv.config in SMS as below: <pre>OSD = {     useHostnameAndPort = true }</pre> <b>Note:</b> Default value is false. 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.
36071472	3-35021439441	<b>Issue:</b> Failed to decode balance info AVP with integer value more than 32 bit. <b>Solution:</b> 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.
36069929		<b>Issue:</b> Reading DCD AVP in Array Profile tag was dumping Hex log in slee_acs.log even when debug is disabled. <b>Solution:</b>

Bug Number	Service Request (SR) Number	Description
		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.
35999636	3-34817525521	<p><b>Issue:</b> CCS_PMX_MSISDN_WHITE_BLACK_MV MV log grows endlessly if not refreshed.</p> <p><b>Solution:</b> A new script file (ccs_pmx_mv_scheduled.sh) is added to create/delete scheduler which runs at regular interval to clear materialised view logs. For creating scheduler, we need to pass value (used as frequency in seconds). Below are the flags used to provide details in order to run the script: -u : user to connect to DB -v : value for the scheduler frequency (in sec) -o : operation to be performed (create/destroy) -m : check/change current refresh mode (current/demand/commit)</p>
35963423	3-30772569821	<p><b>Issue:</b> 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><b>Solution:</b> Code is modified to populate SMSRequestLogAudit parameter in all call flows along with smsAuditor parameter.</p>
35938117	3-34530911701	<p><b>Issue:</b> In a default NCC/3C installation, the replication.def file that is installed has QUEUE WARN THRESH set to 5, which is much lower than the default (10000) and causes a lot of warnings to be printed because it also controls the delta at which another warning is printed. And QUEUE ERR THRESH and QUEUE CRIT THRESH aren't defined at all.</p> <p><b>Solution:</b> The default value of QUEUE WARN THRESH, QUEUE ERR THRESH, and QUEUE CRIT THRESH is changed to 1000, 10000, and 100000 respectively. QUEUE WARN THRESH, QUEUE ERR THRESH, and QUEUE CRIT THRESH values are set to 1000, 10000, and 100000 as well respectively. Customer can change these values as per their requirement.</p>
35931733	3-34602960571	<p><b>Issue:</b> In some scenarios, when AVP 2035 in CCR-request is received in "SIP" sipScheme format (example - sip:+34604883545@ims.mnc022.mcc214.3gppnetwork.org), then DCA is unable to decode as the sipScheme configuration defined for this AVP is "tel" format i.e. sipScheme = "tel". The requirement is to support multiple sipScheme (tel and sip) parameter for a single AVP.</p> <p><b>Solution:</b></p>

Bug Number	Service Request (SR) Number	Description
		DCA used to support either "tel" or "sip" sipScheme. Added the logic to support both the sipSchemes (tel and sip). Added the new value "both" for the sipScheme which support both tel and sip format for a single AVP.
35862575	3-34416976741	<p><b>Issue:</b></p> <p>Issue 1: The CHANGE_TERM column size in the CCS_EDR_VIEWER_COLUMNS table is defined as 12 characters. This is causing issue while adding or changing the visible columns in the EDR Viewer screen when IP address has more than 12 characters (which includes the dot separators).</p> <p>Issue 2: No SMS user can view the Services =&gt; Prepaid Charging =&gt; EDR Management =&gt; EDR Viewer Columns tab unless you explicitly add it to a template assigned to the SMS user. Even CCS Superuser does not have the EDR Viewer Columns Tab permission.</p> <p><b>Solution:</b></p> <p>Increased the size of CHANGE_TERM column of CCS_EDR_VIEWER_COLUMNS table from 12 characters to 45 characters which is the default size when checked other tables.</p> <p>Inserted the access_id corresponding to 'EDR Viewer Columns Tab' screen to the 'CCS Superuser' template.</p> <p>Also, handled the database issue seen during the upgrade by creating a rollup with up and down scripts for SQL changes.</p>
35804702	3-34240611571	<p><b>Issue:</b></p> <p>Issue 1: NCC is sending INIT_ACK to DRA publishing all IP's of NCC in INIT_ACK chunk instead of publishing only sctp bind address.</p> <p>Issue 2: Changes done for the Bug 35675957 are missing on the DCA side, hence diameter::messageLength is coming as "0". So DCA is rejecting the request and closing the connection.</p> <p><b>Solution:</b></p> <p>New parameter 'sctpBindAddress' is introduced and to be added in the 'Peers' section.</p> <p>Solution provided to read sctpBindAddress from peers section. If "sctpBindAddress" is not specified in each peer, then use the one from the GlobalDiameter section.</p> <p>Provided solution in DCA side to read and set default value for messageLength.</p>
35782424	3-34180454361	<p><b>Issue:</b></p> <p>"Logout" and "Logout &amp; 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><b>Solution:</b></p> <p>Removed the "Logout" only option from the File menu of the SMS GUI screen.</p>
35780920		<b>Issue:</b>

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><b>Solution:</b></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.  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>
35769792	3-34119638875	<p><b>Issue:</b></p> <p>While adding a SET FN to an existing CP, CP version gets overridden and UI throws an error about there being newer versions on file.</p> <p><b>Solution:</b></p> <p>Provided solution to improve becomeCustomer() api to save effective customer for the scenario.  Call of OUI_chown.sh has been removed from configure.sh while doing install/uninstall of roll up patch.</p>
35746790	3-33991173691	<p><b>Issue:</b></p> <p>Validity-Time AVP is not set without RSU.</p> <p><b>Solution:</b></p> <p>A new flag "noMSCCsessionValidityTime" is introduced to show validity time in root level (outside MSCC) when no RSU is set. Default value for this flag is set to 0. Response with no GSU will be having this validity time.</p> <p>This flag is set in the eserv.config file as follows:</p> <pre>DIAMETER = { ... DCAInstances = [ # First instance { noMSCCsessionValidityTime = 1500 ... }</pre>
35717267	3-33863015961	<p><b>Issue:</b></p> <p>Alarms 710169, 710170, and 710171 were not generating when the pending queue was full for dapIF. The root cause was incorrect definitions. Originally, alarms were only generated for ccsProfileDaemon.</p> <p><b>Solution:</b></p> <p>The definitions for alarms 710169, 710170, and 710171 are updated to include dapIF, ensuring alarms are generated for both ccsProfileDaemon and dapIF.</p>
35646462	3-33769831981	<p><b>Issue:</b></p> <p>NotifGateWay and RESTClient were not listed when running ps_list.sh or slee-ctrl restart/status.</p>

Bug Number	Service Request (SR) Number	Description
		<b>Solution:</b> Fixed the following issues: 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. 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.
35641987	3-33769831981	<b>Issue:</b> 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. <b>Solution:</b> 1) Renamed the file 'cmnPushFiles-ccsVWARSExpiryStartup.sh' to 'cmnPushFiles_ccsVWARSExpiryStartup.sh' to ensure proper recognition by the 'ps_list.sh' script. 2) The APP name is set to OTHER for some of the processes when NCC is installed with user other than smf_oper. 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.
35641838	3-33769831981	<b>Issue:</b> Column headers are not aligned with column data. <b>Solution:</b> Fixed the following issues: 1) If username length is dynamically adjusted, then adjust the column headers based on that. 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.
35637462	3-33769831981	<b>Issue:</b> ps_list.sh and slee-ctrl footer data is incorrect <b>Solution:</b> Modified the ps_list.sh code to display run-level information in both Solaris and Linux. 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		<b>Issue:</b> slee_acs is crashing in ERBC branching node while tokenizing and using the tokens. <b>Solution:</b> Converted C-based tokenisation to C++ style.
35484963	3-33344642991	<b>Issue:</b> Both pslist and slee-ctrl are detecting an excessive number of m3ua_if processes. <b>Solution:</b>

Bug Number	Service Request (SR) Number	Description
		<p>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.</p> <p>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><b>Issue:</b></p> <p>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><b>Solution:</b></p> <p>Modified the INTERFACE hlrInterface so that it picks the right hlrInterface.sh script.</p>
35470369	3-33275271911	<p><b>Issue:</b></p> <p>After installing NCC 12.0.6, about 2000 lines of default DCD configurations are added to the eserv.config file along with some duplicate parameters.</p> <p><b>Solution:</b></p> <p>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>
35434013	3-31328904081	<p><b>Issue:</b></p> <p>In case of failure ("transientFailure", permanentFailure, or failure_complete), xmsTrigger is always sending release cause 121 to slee_acs.</p> <p><b>Solution:</b></p> <p>Solution is provided to get the mapped value, and before sending it to scp, assign the acs release cause to rSF.</p> <p>To support backward compatibility and existing customers, new configuration "sendAcsReleaseCause" is introduced and to be added in the xmsTrigger section.</p>
34454954	3-30230469421	<p><b>Issue:</b></p> <p>slee_acs reporting "cannot increase dialog timeout" error frequently in the run log.</p> <p><b>Solution:</b></p> <p>It was found that the ElapsedTime to calculate the AWOL timer is defined as a signed integer and during the timeout scenario, the ElapsedTime become greater than lastACRTime and the calculation is resulting in negative value.</p>

# About NCC Documentation

## Where to Start

NCC product documentation is available on Oracle Help Center:

[https://docs.oracle.com/communications/F96364\\_01/index.htm](https://docs.oracle.com/communications/F96364_01/index.htm)

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

The next set of guides should be those pertaining to your usage of the NCC software.

The guides have been generally classified according to their use.

## Third-Party Products and Licensing

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