Oracle® Communications User Data Repository

Release Notes

Release 12.2

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Oracle Communications User Data Repository Release Notes, Release 12.2

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Introduction

Oracle Communications User Data Repository release 12.2.0.0.0 is a major release for the 12.2.0.0.0 code stream.

These Release Notes include:

- Feature Descriptions
- Software Pack
- Documentation Pack
- Supported Hardware Baseline
- Firmware Components
- Supported Upgrade Paths
- Resolved Bugs
- Known Bugs

Directions for accessing key Oracle sites and services are also identified in the *Oracle References and Services* chapter.

Release notes are included in the Documentation Pack made available with every software release.

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Feature Descriptions

Topics:

- Quota Pools that Span OC UDRs ER 20738139....8
- *Ud Client Interface ER 22860257.....8*
- Netra X5-2 Server Support ER 21931025.....8
- User Credentials for SOAP Provisioning Authentication ER 20822255.....8
- Subscriber Count Measurements ER 22148732.....8
- GUI Support to Add/Update Subscribers ER 22249379.....8

Oracle Communications User Data Repository release 12.2 adds the features described in this chapter.

Quota Pools that Span OC UDRs - ER 20738139

This feature allows a subscriber pool quota to be shared by subscribers that are hosted on different systems. Customer networks may include multiple User Data Repository systems with subscribers partitioned between them, based on either IMSI or MSISDN ranges.

Ud Client Interface - ER 22860257

This feature adds a Ud interface to the system, a database access protocol that defines and controls connections to communicate between the UDR system (the Ud client) and a third-party subscriber database (stored on a Ud server). UDR uses both LDAP (an access protocol) and SOAP (a messaging protocol) to communicate with this subscriber database - LDAP to query the database for subscriber information, and SOAP to subscribe to the database and be notified of subscriber changes.

Netra X5-2 Server Support - ER 21931025

This feature provides performance benchmarking for the OC UDR application on a Netra X5-2 hardware platform.

User Credentials for SOAP Provisioning Authentication - ER 20822255

This feature adds user credentials authorization for the purpose of validating usernames and passwords in SOAP provisioning requests received from the operations support system (OSS).

Subscriber Count Measurements - ER 22148732

This feature adds a measurement that reflects the total number of subscribers in the system. This measurement can be incorporated into reports and exported for archival purposes.

GUI Support to Add/Update Subscribers - ER 22249379

This feature provides the ability to retrieve a subscriber or pool entity to view, edit, delete, or to add another type of entity to associate with an existing subscriber or pool.

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Software and Documentation

Topics:

- Software....10
- Documentation....10

Oracle Communications software is available for download on Oracle software delivery website. Documentation is delivered electronically on the Oracle Help Center. Both the software and the documentation are listed in this chapter.

Software

All components are available for download from the Oracle Software Delivery Cloud (http://edelivery.oracle.com).

Note: This list is accurate at the time of release, but is subject to change. View the Oracle Software Delivery Cloud site for the latest information.

Software:

- Oracle Communications User Data Repository 12.2.0.0.0-15.12.0
- Oracle Communications Tekelec Platform Distribution 64-bit 7.0.3.0.0-86.40.0
- Oracle Communications Tekelec Platform Management and Configuration 6.4.0.0.0-64.8.0
- Oracle Communications Tekelec Virtual Operating Environment 3.3.0.0.0-88.30.0

Note: This list is accurate at the time of release but is subject to change. View the Oracle Software Delivery Cloud site for the latest information.

Documentation

All documents available for download from Oracle Help Center (http://docs.oracle.com) are listed in Documentation.

Note: This list is accurate at the time of release but is subject to change. See *Oracle Help Center* for all available documents.

- Release Notes
- Core Documentation Set
 - Enhanced Subscriber Profile Repository User's Guide
 - Operation, Administration, and Maintenance User's Guide
 - Alarms, KPIs, and Measurements Reference
- Installation, Upgrade, and Disaster Recovery Set
 - Installation and Configuration Guide
 - Cloud Installation Guide
 - Cloud Resource Profile
 - Network Interconnect Reference
 - Network Impact Report
 - Software Upgrade Procedure
 - Disaster Recovery Guide
 - Cloud Disaster Recovery Guide

• Configuration Document Set

- Communication Agent User's Guide
- Diameter Common User's Guide
- Diameter User's Guide
- Security Guide

• Provisioning Document Set

- SOAP Provisioning Interface Reference
- REST Provisioning Interface Reference
- Bulk Import / Export File Specification

• Licensing Information

• Licensing Information User Manual

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Supported Hardware

Topics:

• Supported Hardware.....13

The hardware configurations identified in this chapter comprise the hardware and server versions that have been verified with this release.

Supported Hardware

Table 1: Low Capacity Configurations

Hardware	Minimum RAM Configuration (per site)
2 HP G8 DL-380 RMS servers per site	2x192GB RMS, each with 12x
	15K RPM HDDs
2 HP G8 DL-380 RMS servers per site	2x64GB RMS, each with 6x
	10K RPM HDDs
2 HP G9 DL-380 RMS servers per site	2x256GB RMS, each with 6x
	15K RPM HDDs
2-server HP G8 C-Class configuration	2x192GB blades
	2xStorage array *
2-server HP G9 C-Class configuration	2x256GB blades
	2xStorage array *

HP G8 supports either D2200sb or D2220sb storage array. HP G9 requires D2220sb storage array.

Table 2: Normal Capacity Configurations

Hardware	Minimum RAM Configuration (per site)
4-server HP G8 C-Class configuration	2x128GB blades 2x192GB blades 2xStorage array
4-server HP G9 C-Class configuration	2x128GB blades 2x256GB blades 2xStorage array
2 Oracle X5-2 or NX5-2 RMS servers per site	2x256GB RMS, each with 4x SSDs

HP G8 supports either D2200sb or D2220sb storage array. HP G9 requires D2220sb storage array.

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Firmware Components

Topics:

• Firmware Component List.....15

The firmware components are software that is installed on the hardware. These components are listed in the Firmware Release

Notice: http://docs.oracle.com/cd/E57832_01/index.htm.

Firmware Component List

The firmware documents are available from Oracle Help Center (OHC): http://docs.oracle.com/cd/E57832_01/index.htm.

Firmware Component List shows the firmware components used in this release.

Table 3: Release 12.2 Supported Firmware Components

Hardware	Release	Description
HP Firmware FUP	2.2.9 (minimum)*	FC
Oracle X5-2 Firmware	3.1.5 (minimum)	FC

FC - Fully Compatible

PC - Partially Compatible (Compatible but not fully functional (feature dependent))

NC - Not Compatible

N/A - Not Applicable

^{*} UDR Release 12.2 can be used in conjunction with any supported firmware shown in the *HP Solutions Firmware Upgrade Pack (FUP), Software Centric Release Notes* 2.2.9 located at: http://docs.oracle.com/cd/E52577_01/docs.60/E64917-03.pdf. This document specifies the minimum required firmware level. In many cases, it is not necessary to upgrade the firmware to the latest level.

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Oracle Communications User Data Repository and Oracle Communications Policy Management Compatibility and Software Upgrade Paths

Topics:

- Oracle Communications User Data Repository and Oracle Communications Policy Management Compatibility Matrix.....17
- Supported Upgrade Paths.....17

This chapter provides a Oracle Communications Policy Management compatibility matrix and a table of upgrade paths to Oracle Communications User Data Repository Release 12.2.

Oracle Communications User Data Repository and Oracle Communications Policy Management Compatibility Matrix

Table 4: Oracle Communications User Data Repository and Oracle Communications Policy Management Compatibility Matrix shows which releases of Oracle Communications Policy Management are compatible with each release of UDR.

Table 4: Oracle Communications User Data Repository and Oracle Communications Policy Management Compatibility Matrix

UDR Software Release	Compatible Policy Management Software Release
10.0	10.5, 11.5, 12.1
10.2	11.5, 12.1
12.1	11.5, 12.1*, 12.2
12.2	12.1, 12.2

^{*} If UDR enterprise pools are to be deployed, then the Policy Management software must be on at least release 12.1.2. The upgrade order to get to a configuration that includes Policy Management 12.1.2 or higher along with UDR 12.1 or higher must be constructed so that a supported release combination is supported between the two. For example, if the customer is initially on UDR 10.0 and Policy Management 10.5 and needs to deploy enterprise pools, then the Policy Management must first be upgraded from 10.5 to 12.1.2, after which UDR can be upgraded from 10.0 to 12.1.

Supported Upgrade Paths

Release 12.2 has been tested for upgrade from the prior release. Verify that your currently installed release is listed on the valid upgrade path. Upgrades, including rollback capability, occur while User Data Repository remains in service and provisioning fully active.

Table 5: Upgrade Paths

From	То
10.0.1	10.2
10.0.1	12.1
10.2.0	12.1
10.2.0	12.2
12.1.0	12.2

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Resolved and Known Bugs

Topics:

- Severity Definitions.....19
- Resolved Bugs.....20
- Customer-Known Bugs.....24

This chapter lists the resolved and known bugs for Oracle Communications User Data Repository 12.2.0.0.0.

These bug lists are distributed to customers with a new software release at the time of general availability (GA) and are updated for each maintenance release.

Severity Definitions

The resolved and known bug tables in this document refer to bug severity levels listed in this section. Definitions of these levels can be found in the publication *TL 9000 Quality Management System Measurement Handbook*.

Note: A problem report is a report from a customer or on behalf of the customer concerning a product or process defect requesting an investigation of the issue and a resolution to remove the cause. The report may be issued via any medium. Problem reports are systemic deficiencies with hardware, software, documentation, delivery, billing, invoicing, servicing, or any other process involved with the acquisition, operation, or performance of a product. An incident reported simply to request help to bring back the service or functionality to normal without the intent to investigate and provide a resolution to the cause of the incident is not a problem report.

- Critical: Conditions that severely affect the primary functionality of the product and, because of
 the business impact to the customer, requires non-stop immediate corrective action, regardless of
 time of day or day of the week as viewed by a customer on discussion with the organization such
 as the following:
 - 1. Product inoperability (total or partial outage)
 - 2. A reduction in the traffic/data handling capability, such that expected loads cannot be handled
 - **3.** Any loss of emergency capability (for example, emergency 911 calls)
 - 4. Safety hazard or risk of security breach
- Major: Product is usable, but a condition exists that seriously degrades the product operation, maintenance, or administration, etc., and requires attention during pre-defined standard hours to resolve the situation. The urgency is less than in critical situations because of a lesser immediate or impending effect on product performance, customers, and the customer's operation and revenue such as the following:
 - 1. Reduction in the product's capacity (but still able to handle the expected load)
 - 2. Any loss of administrative or maintenance visibility of the product and/or diagnostic capability
 - 3. Repeated degradation of an essential component or function
 - 4. Degradation of the product's ability to provide any required notification of malfunction
- Minor: Other problems of a lesser severity than Critical or Major such as conditions that have little or no impairment on the function of the system.
- Minor: No Loss of Service. Oracle severity is outside what is defined by TL 9000.

The numbered severity levels in the tables below correspond to these definitions:

- 1 Critical
- 2 Major
- 3 Minor
- 4 Minor: No Loss of Service.

Oracle severity is outside what is defined by TL 9000.

Resolved Bugs

Table 6: Release 12.2 Resolved Bugs lists bugs that are resolved in the following builds:

Note: Resolved bugs are sorted in ascending order by severity, then bug number.

Table 6: Release 12.2 Resolved Bugs

Severity	Bug Number	Title	Able to Verify?	Test Steps/Methods to Verify
2 22	22724602	OCUDR Failover Error		Precondition:
				[a] 2 Site system with 2 NOs on either Site; Site 1 is Primary; Site 2 is DR
				[b] NO1-A is Active and NO1-B is Standby
				[c] Signalling Traffic is running in the background
				[1] Power down NO1-A
				Expected Response: NO1-B become active.
				[2] Power down NO1-B
				Expected Response: NO2 takes over and becomes Active
				[3] Power on NO1-B
				Expected Response : NO1-B tries to sync the DB from DR NO2; NO1-B becomes Active once DB sync is completed successfully.
3	22152050	TKLCSnmp.log fill disk space in volume /var/TKLC to 100%	Yes	[1] On a systems that are actively being queried via snmp, verify TKLCSnmp.log is not too large and the disk space in volume /var/TKLC is not 100%
3	22333884	GUI is not allowing to accept	Yes	[1] Perform an upgrade from R 12.2 to any later releases of UDR
		the upgrade for the SOs or MPs.		[2] Verify that after the upgrade of MPs and Sos, the GUI allows the user to accept the upgrades.
3	22602934	Public-Identity's m-bit does not set in PNR sent by OCUDR		[1] Create a subscriber S1 using any of the Provisioning interfaces
				[2] Send a SNR to subscribe to it
				[3] Send PUR message to update the subscriber.

Severity	Bug Number	Title	Able to Verify?	Test Steps/Methods to Verify
				[4] Ensure a PNR is sent
				[5] Verify PNR generated contains have m-bit set for Public-Identity AVP
3	22635072	is incremented	Yes	[1] Create a subscriber S1 using any of the Provisioning interfaces
		even when PNA is not sent.		[2] Send a SNR to subscribe to it
				[3] Send PUR message to update the subscriber.
				[4] Ensure the PNR is generated but the AS doesn't send the PUA in return.
				[5] Verify there is no increment in RxResponsePNA in Measurement -> Report
3	22669212	Import records are	Yes	[1] Initiate import from a remote server.
		deleted for the Statuses other than Completed or Failed.		[2] Go to Main Menu: UDR>Maintenance>Import Status
				[3] When the import status is in 'Transferring/Initializing/In
				Progress/Transferring Logs' try to delete the record.
				[4] Verify the Delete button is grayed out and the record cannot be deleted.
3	22726723	Can't insert and run a SQR task	Yes	[1] Insert from the UDR GUI a SQR task T1 to be scheduled.
		with same Task ID that has been run and deleted		[2] After the task has been completed, delete Task T1.
				[3] Insert a new task with the same name T1.
				[4] Verify the task is completed and the status is updated to COMPLETED.
3	22764340	OCUDR didn't send PNR when we changed The Type from Enterprise to Basic	Yes	[1] Create a Subscrierb S1 using any of the Provisioning interfaces
				[2] Send a SNR to subscribe to it.
				[3] Create a Pool P1 as Enterprise
				[4] Add S1 to P1
				[5] Send an Update Pool to convert the pool from enterprise to basic by not setting the "Type" field in the request content.

Severity	Bug Number	Title	Able to Verify?	Test Steps/Methods to Verify
				Request URL: PUT {BaseURI}/msr/pool/100000
				Request Content:
				xml version="1.0" encoding="UTF-8"?
				<pool></pool>
				<field name="BillingDay">5</field>
				<field name="Tier">12</field>
				<pre><field name="Entitlement">Weekpass</field></pre>
				<field name="Custom15">allo</field>
				[6] Verify a PNR is generated
3	22820857	REST:Update Row Operation is	Yes	[1] Create a subscriber S1 with Dynamic quota entity with row D1 using REST
		Creating New Row for Case		<definition></definition>
		Sensitive Entity		<version>1</version>
				< DynamicQuota name="D1">
				<type>Roll-Over</type>
				<instanceid>1000</instanceid>
				<pre><initialtotalvolume>2000</initialtotalvolume></pre>
				<pre><initialinputvolume>1500</initialinputvolume></pre>
				<pre><initialoutputvolume>500</initialoutputvolume></pre>
				<pre><initialservicespecific>4</initialservicespecific></pre>
				<activationdatetime>2015-04-22T00:00:00-05:00 </activationdatetime>
				<pre><expirationdatetime>2015-06-22T00:00:00-05:00 </expirationdatetime></pre>
				<priority>10</priority>
				[3] Send an update row REST request to update the same row D1 but with the element name being in a different case as in example below
				<definition></definition>
				<version>1</version>

Severity	Bug Number	Title	Able to Verify?	Test Steps/Methods to Verify
				< dynamicQUOTA name="D1">
				<type>Roll-Over</type>
				<instanceid>1000</instanceid>
				<initialtotalvolume>5000</initialtotalvolume>
				<initialinputvolume>8000</initialinputvolume>
				<pre><initialoutputvolume>1000</initialoutputvolume></pre> /InitialOutputVolume>
				<pre><initialservicespecific>4</initialservicespecific></pre>
				<activationdatetime>2015-04-22T00:00:00-05:00 </activationdatetime>
				<pre><expirationdatetime>2015-06-22T00:00:00-05:00 </expirationdatetime></pre>
				<priority>10</priority>
				[4] Verify the same row is updated and no new dynamic quota row is created.
3	22821405	UDR_12.1:udrprov process restarted	Yes	[1] Create a subscriber S1 using SOAP and add a State entity to it
		while sending invalid SOAP GET Request		[2] Send an invalid select request on SOAP to retrieve the State entity field mcc. The expr in the where clause does not contain a value.
				<req name="select" resonly="y"></req>
				<ent name="StateEntity"></ent>
				<select></select>
				<expr><attr name="mcc"></attr></expr>
				<where></where>
				<expr><attr name="MSISDN"></attr><op value="="/><value val="\$(MSISDN)"/></value </op </expr>
				<expr><attr name="mcc"></attr></expr>
				[3] Verify that the request is rejected as an invalid request and udrptov process does not restart.

Severity	Bug Number	Title	Able to Verify?	Test Steps/Methods to Verify
3	22854181	Able to Convert Enterprise pool to Basic pool with over 25 members		[1] Create 26 subscribers using either SOAP or REST.
				[2] Using REST interface create a Pool P1 as Enterprise.
				[3] Add all 26 subscribers to Pool P1.
				[4] Using REST update Pool command , convert Enterprise pool P1 to Basic by not including the "Type" field in the request content similar to example below
			Request URL: PUT {BaseURI}/msr/pool/100000	
		Request Content:		Request Content:
			xml version="1.0" encoding="UTF-8"?	
	<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>		<pool></pool>	
				<field name="BillingDay">5</field>
				<field name="Tier">12</field>
			<field name="Entitlement">Weekpass</field>	
			<field name="Custom15">allo</field>	
				[5] Verify error MSR4101 Enterprise to Basic Pool Conversion failed threshold exceeded is returned.

Customer-Known Bugs

Table 7: Release 12.2 Customer-Known Bugs lists known bugs in this release.

Note: Customer-known bugs are sorted in ascending order by severity, then bug number.

Table 7: Release 12.2 Customer-Known Bugs

Severity	Bug Number	Title	Customer Impact	Workaround
3	23066899	Unexpected alarms observed after HA Failover of Primary NO Site to DRNO site	No system impact. Several of the following alarm would be present on the system 10073: Server Group Max	Since there is no impact on the functionality of the system due to this alarm, the alarm can be manually cleared

Severity	Bug Number	Title	Customer Impact	Workaround
			Allowed HA Role Warning	by executing alarm.put -e 10073 -s 5
3	23710343	Invalid SOAP "insert PoolID" requests cause rapid udrprov memory leak	This is a fault insertion testcase. Sending repeated SOAP messages that attempt to insert invalid PoolIDs will cause udrprov process to be killed.	No workaround available
3	24331981	Unable to Create SOAP User Group with 16 valid character String as Group Name	User groups with names greater than 15 characters in length cannot be created from the GUI	No workaround available
3	24504930	abterm on Inetrep for S2-NOA while manually stopped udrbe on actiive NO	No system impact. The issue is observed due to manual intervention.	No work around needed the system recovers automatically.
3	24565393	Diameter connections are not established intermittently	Diameter connections fail to succeed when the connections are established and terminated within a span of 10 seconds.	Workaround: a) Disable all Diameter Connections b) Navigate to Main Menu: Diameter -> Configuration -> Configuration Sets -> Connection Configuration Sets from Active SO and Select Diameter Options tab
				c) Set the Connect Timer and Watchdog Timer to 1 sec (default is 30 sec) d) Enable all Diameter Connections

Severity	Bug Number	Title	Customer Impact	Workaround
3	24571259	Thread Watchdog Failure results in apwSoapServer process restart and an abterm	Alarm 31003: Thread Watchdog Failure would be raised when Backup is in progress. The apwSoapServer process automatically recovers.	Workaround is to remove all unused backup files from /var/TKLC/db /filemgmt and /var/TKLC/db /filemgmt/backup directory
3	24664321	NO servers have not come up when Autobackup.tar file is used for DB Restore	Attempting a database restore from an AutoBackup file which was created with no Updatelog files, would result in restore failing and servers being unavailable.	Workaround: If this issue occurs execute the following steps [1] tar -tvf <backup file=""> [2] touch a file under UpdateLog directory [3] tar cvf <tar file="" name=""> metabdata/*./* [4] perform restore</tar></backup>
3	24795994	Multiple processes are restarted generating abterm due to switchover.	No system impact. All processes recover automatically.	Not applicable
3	25048162	OCUDR fails to retrieve subscriber on GUI with NAI having '=' and '/' characters	Subscribers having NAI key value with special characters "=" and "/" cannot be retrieved using the Subscriber Query GUI screen using NAI as the lookup key.	No workaround available
3	25067828	apwSoapServer restarted when the alarm history has large number of alarms	Trying to launch the alarm history with a filter criteria that queries large range of alarms would result in Mysql connections not being established. The apwsoapServer process recovers automatically.	Workaround is to use a filter that queries a smaller range of alarms from alarm history.

Resolved and Known Bugs

Severity	Bug Number	Title	Customer Impact	Workaround
3	25122131	Characters ; and , in NAI key are not treated as delimiters for NaiToSdoId table	Multiple NAI keys for a subscriber cannot be created as multi-value field by specifying a single NAI field and delimited set of values using delimiters; or ,. This may result in an inconsistent database.	Workaround would be to create multiple NAI keys by specifying multiple NAI fields each containing a single value.
3	25129062	apwSoapServer process restart and abterm generated on Active NO Server	No system impact. The awpSoapserver process recovers automatically.	Not applicable
3	25240453	UDRBE restarted while disabling LDAP connections	Disabling the LDAP connections while LDAP traffic is running would cause the udrbe process to restart. The process recovers automatically.	Not applicable

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Oracle References and Services

Topics:

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This chapter describes how to obtain help, where to find related documentation, and provides other general information.

My Oracle Support (MOS)

MOS (https://support.oracle.com) is your initial point of contact for all product support and training needs. A representative at Customer Access Support (CAS) can assist you with MOS registration.

Call the CAS main number at 1-800-223-1711 (toll-free in the US), or call the Oracle Support hotline for your local country from the list at http://www.oracle.com/us/support/contact/index.html. When calling, make the selections in the sequence shown below on the Support telephone menu:

- 1. Select 2 for New Service Request
- 2. Select 3 for Hardware, Networking and Solaris Operating System Support
- **3.** Select one of the following options:
 - For Technical issues such as creating a new Service Request (SR), Select 1
 - For Non-technical issues such as registration or assistance with MOS, Select 2

You will be connected to a live agent who can assist you with MOS registration and opening a support ticket.

MOS is available 24 hours a day, 7 days a week, 365 days a year.

Emergency Response

In the event of a critical service situation, emergency response is offered by the Customer Access Support (CAS) main number at 1-800-223-1711 (toll-free in the US), or by calling the Oracle Support hotline for your local country from the list at http://www.oracle.com/us/support/contact/index.html. The emergency response provides immediate coverage, automatic escalation, and other features to ensure that the critical situation is resolved as rapidly as possible.

A critical situation is defined as a problem with the installed equipment that severely affects service, traffic, or maintenance capabilities, and requires immediate corrective action. Critical situations affect service and/or system operation resulting in one or several of these situations:

- A total system failure that results in loss of all transaction processing capability
- Significant reduction in system capacity or traffic handling capability
- Loss of the system's ability to perform automatic system reconfiguration
- Inability to restart a processor or the system
- Corruption of system databases that requires service affecting corrective actions
- Loss of access for maintenance or recovery operations
- Loss of the system ability to provide any required critical or major trouble notification

Any other problem severely affecting service, capacity/traffic, billing, and maintenance capabilities may be defined as critical by prior discussion and agreement with Oracle.

Customer Training

Oracle University offers expert training on Oracle Communications solutions for service providers and enterprises. Make sure your staff has the skills to configure, customize, administer, and operate your communications solutions, so that your business can realize all of the benefits that these rich solutions offer. Visit the Oracle University web site to view and register for Oracle Communications training: <code>education.oracle.com/communication</code>. To reach Oracle University:

- In the US, please dial 800-529-0165.
- In Canada, please dial 866-825-9790.
- In Germany, please dial 0180 2000 526 (toll free) or +49 8914301200 (International).
- In Spain, please dial +34 91 6267 792.
- In the United Kingdom, please dial 0845 777 7 711 (toll free) or +44 11 89 726 500 (International).

For the appropriate country or region contact phone number for the rest of the world, please visit Oracle University's web site at http://www.oracle.com/education/contacts.

Locate Product Documentation on the Oracle Help Center Site

Oracle Communications customer documentation is available on the web at the Oracle Help Center (OHC) site, http://docs.oracle.com. You do not have to register to access these documents. Viewing these files requires Adobe Acrobat Reader, which can be downloaded at http://www.adobe.com.

- **1.** Access the Oracle Help Center site at http://docs.oracle.com.
- 2. Click Industries.
- Under the Oracle Communications subheading, click the Oracle Communications documentation link.
 - The Communications Documentation page appears. Most products covered by these documentation sets will appear under the headings "Network Session Delivery and Control Infrastructure" or "Platforms."
- Click on your Product and then the Release Number.A list of the entire documentation set for the selected product and release appears.
- 5. To download a file to your location, right-click the PDF link, select Save target as (or similar command based on your browser), and save to a local folder.

Locate Product Release Software on the Oracle Software Delivery Cloud Site

Oracle Communications software is available for electronic download at the Oracle Software Delivery Cloud site, https://edelivery.oracle.com. Only authorized customers with a valid password may download software from the site.

For directions on downloading the software and other information about using this site, click FAQ in the top right corner.