

Oracle® Communications User Data
Repository

Network Impact Report

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ORACLE®

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LIST OF TERMS

Entity	An entity is a managed element in the Subscription Entity Configuration Database. In terms of SPR, this means Quota, State, or Dynamic Quota.
GUI	Graphical User Interface
MP	Message Processor
NOAM&P	Network Operations and Management Platform
OAM	Operations and Management
OAMP	Operations and Management Platform
PCC	Policy Charging and Control
PCEF	Policy and Charging Enforcement Function
PCRF	Policy and Charging Rule Function
RAS	REST Application Server
REST	Representational State Transfer. A type of Northbound provisioning interface.
SDM	Subscriber Data Management
Sh	A type of Southbound, signaling interface
SOAM	System Operation, Administration, and Maintenance
SOAP	Simple Object Access Protocol
Subscriber	A single person/device/user. A Subscriber may have many identities (such as IMSI(s), MSISDN(s) and NAI(s) and all of these identities refer to this single instance.
UDR	User Data Repository
XML	Extensible Markup Language

1 Introduction

1.1 Purpose/Scope

Purpose of this Feature Guide document is to highlight the changes of the product that may have impact on the customer network operations, and should be considered by the customer during planning for this release.

The scope of this document is limited to the changes between Oracle Communications User Data Repository (UDR) 10.0 and UDR10.2.

1.2 Disclaimers

This document summarizes Release UDR10.2 new and enhancement features as compared to UDR10.0, and the operations impacts of these features, at a high level. The Feature Requirements (FRS) documents remain the defining source for the expected behavior of these features.

Note that feature implementations may change slightly during product test.

2 Overview of UDR 10.2 Features

This section provides an overview of the UDR 10.2 release features that may impact OAM interfaces and activities.

2.1 UDR 10.2 New Features

UDR 10.2 introduces the following new Features.

Table 1: Feature Description

Name	Description	Scope
Scheduled Quota Reset with Statistics (eBug: 19730049, Code Bug: 20772907)	<p>Scheduled Quota Reset feature introduces a new maintenance functionality that can be scheduled through GUI. GUI interface for configuring information like the range of subscribers, Quota Row Element Names / nextResetTime and the starting date/time for resetting the Quota Row Elements is introduced. Each group of configured information at the GUI is called a “Quota Reset Task”. There can be multiple Quota Reset Tasks configured on the GUI at the same time, but only one Quota Reset Task runs at a time. The scheduled Quota Reset Task information configured is replicated and available on the Standby, and DR-Active and DR-Standby nodes. Thus the Quota Reset Activity that is running on a node can be restarted on other nodes even after single/double UDR Node/Site outage.</p> <p>Quota Reset Tasks are configured through UDR GUI maintenance screen. Quota Reset Scheduler monitors and initiates the “Quota Reset Algorithm” when a configured Quota Reset Task is scheduled to run. Quota Reset Algorithm resets the Quota Row Field Elements that are configured as resettable in the SEC tables and updates the nextResetTime Row Field Element value to the time configured against the Quota Row Element Name. The progress of the Quota Reset Activity can be monitored at the GUI. The Quota Reset Task execution is complete, when all the subscribers in the range are examined and modified. The statistics of the last run of the Quota Reset Task (just for the one last execution) is preserved and is available for analysis at the GUI.</p>	Major feature
UDR Hardware Configuration and Performance (eBug: 19117937, 19117938, 20264791, 20304787, 20481340, 20305301)	<p>UDR R10.0.1 introduced support to 64GB C Class Blades</p> <p>UDR R10.2 introduces the support for following configurations:</p> <ul style="list-style-type: none"> Normal Capacity Configuration – In addition to HP Gen8 support in UDR R 10.0, HP Gen9 4-Server C Class Configuration is supported where the NOAMP is deployed on the bare metal server and SOAM and MPs are virtualized using TVOE. Low Capacity Configuration – All functional components of UDR i.e. NOAMP, SOAM and MPs are deployed on an integrated virtual machine system using the TVOE virtualization 	Major feature

UDR to UDR Migration (eBug:20264806)	<p>This UDR to UDR migration feature is for use at customer deployments which have more than one UDR system. It can be used to migrate subscribers from an existing system to a newly deployed UDR or from an existing system to another existing UDR.</p> <p>The migration is based upon a range of subscribers which can be specified as:</p> <ul style="list-style-type: none"> • IMSI range • MSISDN range <p>Individual subscribers or pooled subscribers (and their associated pool) can be migrated in the specified subscriber range. If pooled subscribers are migrated then at least one but not all members of the pool must reside in the specified range to qualify for migration. In the case where some pool members are outside of the target range the pool and all members of the pool are still migrated to the target system.</p>	Major feature
UDR OAMP Enhancements (eBug 19652754, 19652811, 19652774, 19730076, 20069979, 20366261)	<p>UDR R10.2 bundles together several enhancements that customers have requested for the existing UDR R10.0 OAMP interfaces. These include enhancements associated with provisioning requests, as well as enhancements associated with the UDR import capabilities.</p> <p>The enhancements are:</p> <ul style="list-style-type: none"> • IP Address Ranges for Provisioning Whitelists • PNR Generation with Import • New Measurements for Provisioning Requests • Provisioning Validation of Multiple Keys • Improved UDR Provisioning Throughput • UDR Database Auditor to Detect/Clean Index Corruption 	Major feature

2.2 Hardware Changes

2.2.1 Hardware Supported

Table 2: Hardware Information

Hardware	Comment
HP BL460c Gen8	c-Class
HP BL460c Gen9	c-Class
HP BL460 Gen8	c-Class
HP BL460 Gen9	c-Class
HP DL380 Gen8	Rack Mount
HP DL380 Gen9	Rack Mount
DS2220sb	Storage Array
HP 3020, 6125 (1G)	Enclosure Switch
HP 6120XG, 6125XLG	Enclosure Switch
Cisco 4948	Enclosure Switch

Note: Mixed Sun/HP deployments are not generally supported.

Gen 8 Blade will support the D2200sb and D2220sb Storage Array

Gen9 Blade support the D2220sb Storage Array with HP Smart Array P246br Controller

HP Smart Array P220i Controller won't work with D2220sb Storage Array

2.3 Software Changes

Software change include a new release of the software Platform components, and new UDR release.

2.3.1 Platform 7.0.2

Platform Release 7.0.2 inherits all the functionality of Release 6.7.

Platform 7.0.2 Component Versions

Table 3: Platform Information

Component	Release
TPD 64 Bit	7.0.2.0.0-86.32.0
TVOE	3.0.2.0.0-86.32.0
PM&C	6.0.1.0.0-60.21.0
COMCOL	6.4p252
AppWorks	6.0.1-60.35.0
EXGSTACK	7.1.0_71.22.0
DPI	7.1.0-71.24.0

2.3.2 UDR Release 10.2

UDR Release 10.2 inherits all functionality from UDR 10.0

Table 4: UDR Build

Component	Release
UDR Release	10.2.0.0.0-12.15.0

2.4 UDR Server Configurations

UDR 10.2 supports the following configurations:

- Low Capacity Configuration
- Normal Capacity Configuration

2.4.1 UDR Low Capacity Configuration

2.4.1.1 System Architecture

There are 6 types of servers targeted to support the Low Capacity configurations.

RMS Types

1. HP Gen8 DL380 with 192GB RAM
2. HP Gen9 DL380 with 256GB RAM
3. Oracle X5-2 with 256GB RAM

Blade Types

4. HP Gen9 BL460 with 256GB RAM
5. HP Gen8 BL460c with 192GB
6. HP Gen8 BL460c with 256GB RAM

Each of the servers mentioned above can be configured to support 3 different Low Capacity configurations in R10.2.

2.4.1.1.1 Low Capacity 1 server UDR Configuration

The Low Capacity 1 server Configuration includes one server on which all UDR software is running on a TVOE virtualization environment.

This configuration will be supported only for lab testing systems.

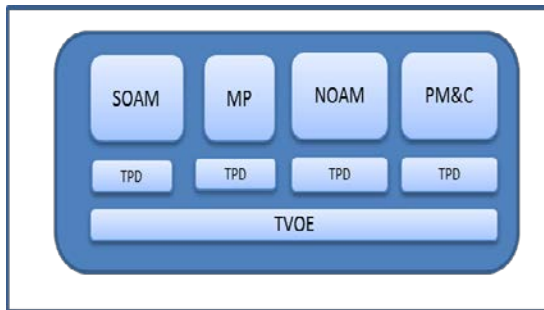


Figure 1: Low Capacity 1-RMS server Configuration

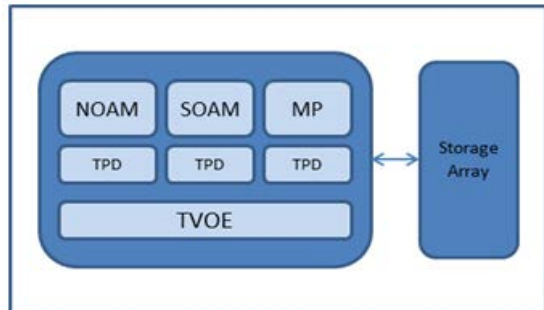


Figure 2: Low Capacity 1-C Class server Configuration

2.4.1.1.2 Low Capacity 2 server UDR Configuration

The Low Capacity 2 server Configuration includes two servers on which all UDR software is running on a TVOE virtualization environment.

This setup results in a fully-virtualized and fully-redundant HA configuration.

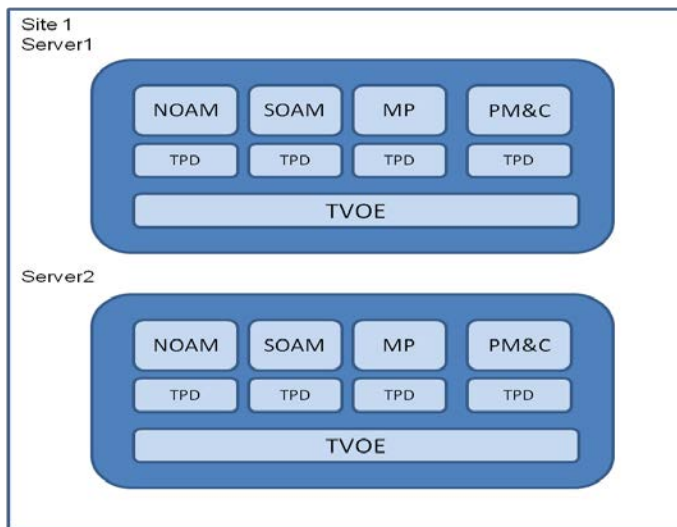


Figure 3: Low Capacity 2-RMS server Configuration

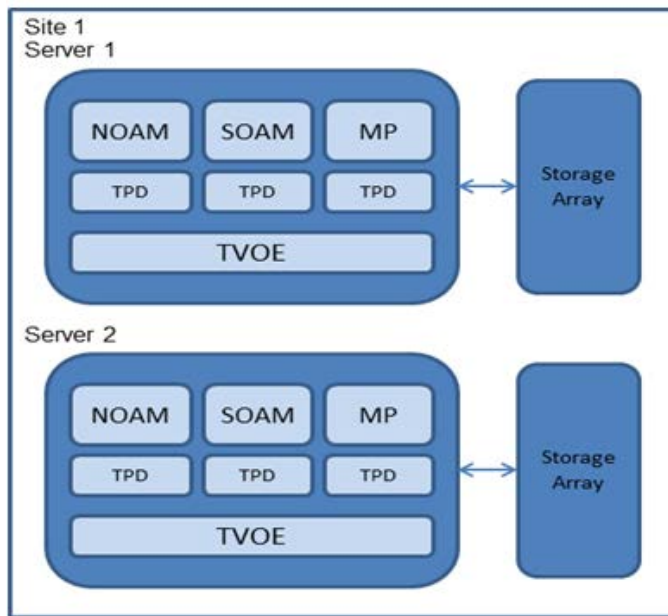


Figure 4: Low Capacity 2-C Class server Configuration

2.4.1.1.3 Low Capacity 4 server UDR Configuration

The Low Capacity 4 server Configuration includes four servers on which all UDR software is running on a TVOE virtualization environment.

This is deployed as a geo-redundant deployment, with 2 servers at each site.

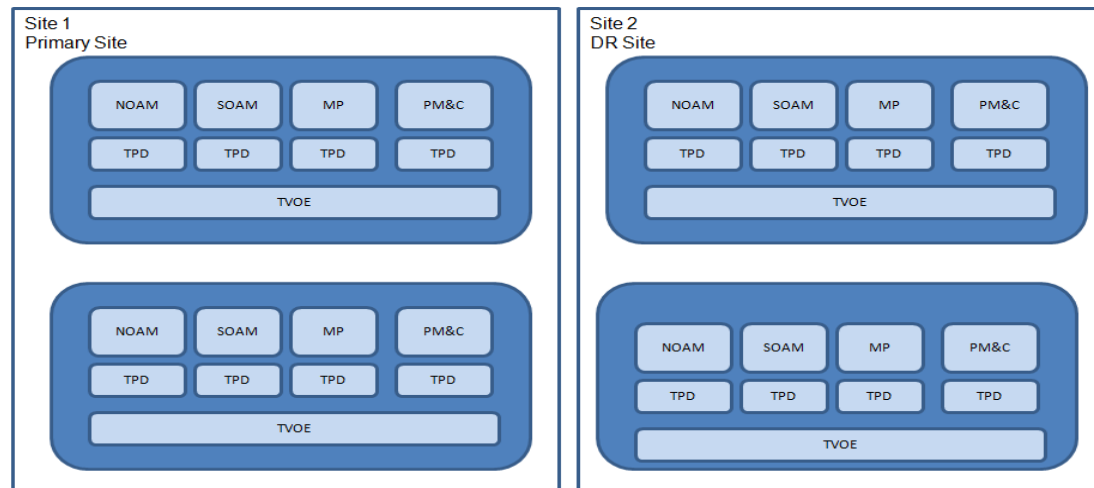


Figure 5: Low Capacity 4-RMS server Configuration

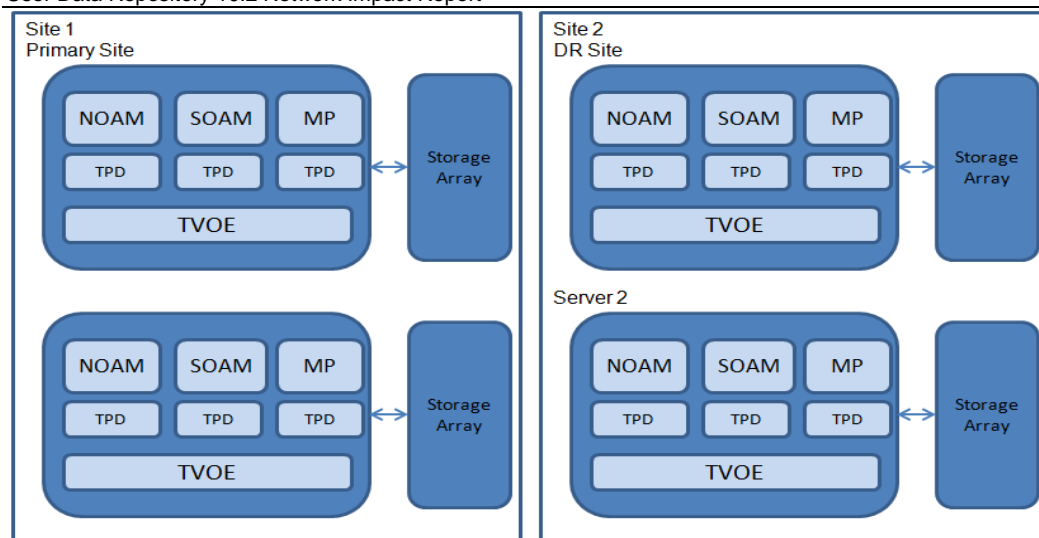


Figure 6: Low Capacity 4-C Class server Configuration

2.4.1.2 Supported Low Capacity Server Types

UDR supports the following Server Types for Low Capacity Server Types

Table 5: Low Capacity Server Types

Server Type	Description	Internal Part Number	Notes
LC_RMS1	HP Gen8 DL-380 with 192GB RAM	805-0608-06 (AC-powered) or 805-0609-06 (DC-powered)	Configuration includes 192GB RAM and 12 146GB 15K RPM HDD. Refer to TR007049
LC_RMS2	HP Gen9 DL-380 with 256GB RAM	719064-B21-AC01 (AC-powered) 719064-B21-DC01 (DC-powered)	Configuration includes 12x 15K RPM drives for database persistence, plus two additional 600GB 10K RPM drives for system functions. Refer to TR007457
LC_RMS3	Oracle X5-2 with 256GB RAM		Configuration includes 4x 400GB SSDs for persistent disk storage, and 2x 1.2TB HDDs for system data. Refer to TR007459
LC_Blade1	HP Gen8 BL 460 with 192GB RAM	805-0596-03	963-9105-65 Refer to TR007049
LC_Blade2	HP Gen8 BL 460 with 256GB RAM	805-0596-05	963-9105-75 Refer to TR007049
LC_Blade3	HP Gen9 BL 460c with 256GB RAM	727021-B21-BL05	Refer to TR007457

2.4.1.3 Functional Changes for Low Capacity Configuration

To support the Low Capacity Server installations, the UDR R10.2 brings in a few installation and configuration changes. To host the functional components on a virtualized system, new VM profiles are used during installation and the details are present in the table below.

Table 6: VM Profiles

Functional Component	VM Profile Name	Number of Cores Allocated	Memory Allocated (GB)	Storage Capacity (GB)
NOAMP	UDR_NO_LowCapacity	14	128	400
SOAM	UDR_SO_LowCapacity	2	16	100
MP	UDR_MP_LowCapacity	12	32	100

The UpdateLog size is set to 8GB.

The numbers of threads in Udr Task and Subscription Task which are used to process requests from the Udr Task Queue and the Subscription Task Queue respectively are reduced to 6.

The queue sizes for the Udr Task, Notification Task and Subscription Task are changed as below:

- UdrTaskStackEventQMetric = 7500
- UdrNotifTaskStackEventQMetric = 7500
- UdrSubscriptionTaskStackEventQMetric = 7500

2.4.2 UDR Normal Capacity Configurations

2.4.2.1 System Architecture

In addition to the C-Class configurations supported with UDR R10.0, UDR R10.2 adds support for an HP Gen9 C-Class configuration with similar capacity. Both the Gen8 (introduced in R10.0) and the Gen9 (introduced in R10.2) blades use the same installation procedures.

2.4.2.1.1 Normal Capacity Single-Site UDR Configuration

UDR R10.2 adds support to the Normal Capacity Single-Site Configuration of the following blades at each site

- 2 HP Gen 9 128GB Blades (which host SOAM and MP instances)
- 2 HP Gen 9 256GB Blades (which host the NOAMP database)
- 2 Storage Arrays

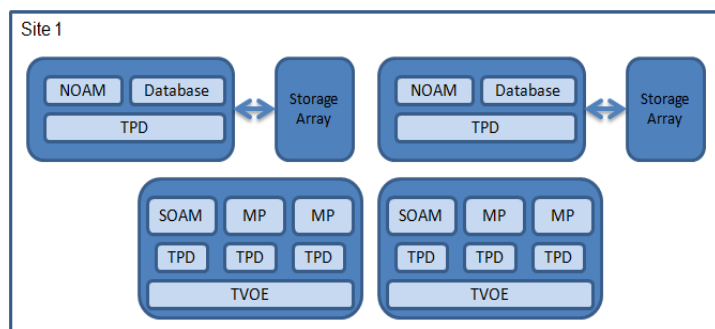


Figure 7: Normal Capacity Single-Site Configuration

2.4.2.1.2 Normal Capacity Two-Site UDR Configuration

UDR R10.2 adds support to the **Normal Capacity Two-Site Configuration** of the following blades configured in two sites resulting in a geo-redundant configuration

- 4 HP Gen 9 128GB Blades (which host the SOAM and MP instances)
- 4 HP Gen 9 256GB Blades (which host the NOAMP database)
- 4 Storage Arrays

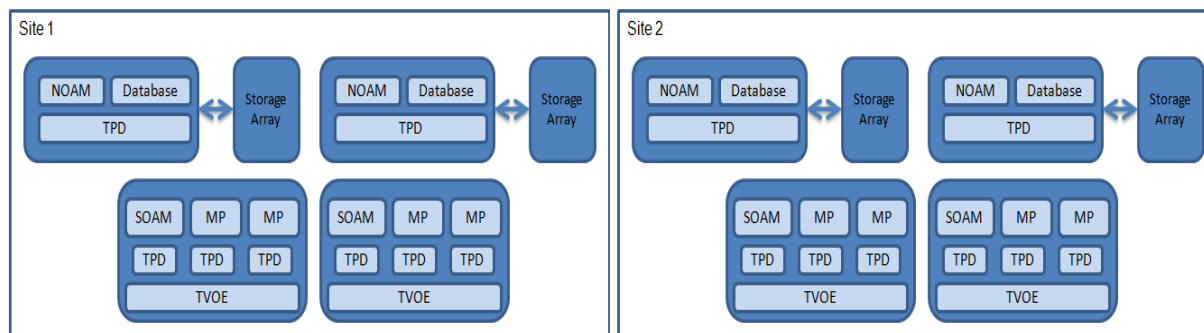


Figure 8: Normal Capacity Two-Site Configuration

2.4.2.2 Supported Normal Capacity Blade Types

UDR supports the following Blade Servers, Table 8 below shows the Normal Capacity blade types introduced in UDR R10.2. Normal Capacity blade types used in UDR R10.0 are still supported in UDR R10.2

Table 7: Normal Capacity Blade Types

Server Type	Description	Internal Part Number	Notes
NC_Blade1	HP BL 460 G9 with 128GB RAM	727021-B21-BL01	Refer to TR007457
NC_Blade2	HP BL 460 G9 with 256GB RAM	727021-B21-BL05	Refer to TR007457
Newer Storage Array	DS2220sb Storage Array with 12x 146GB HDD	805-0619-03MKT	Part Number for Quote: 7108177 Refer to TR007457 (SB2220 is compatible with 727021-B21 BL05SB)

Note: HP Gen9 blades only support D2220sb Storage Array and are not compatible with D2200sb.

2.4.3 Functional Changes

To support the higher threshold capacity, the existing Diameter UDR-MP profile “*UDRVM:Database*” is modified to support new alarm thresholds. Refer to *Main Menu: Diameter Common->MPs-> Profiles* for the values configured for the profile on the SOAM GUI.

Various parameters and their values for the modified UDR specific profile are as below:

Table 8: UDRVM:Database Diameter Profile

Profile Parameter	R10.0 Value	R10.2 Value	Description

Profile Parameter	R10.0 Value	R10.2 Value	Description
Maximum Connections	200	200	Maximum number of Diameter connections the UDR-MP can have configured at any one time.
Engineered Ingress MPS	12500	12500	Maximum ingress message rate that a UDR-MP will support without overload. This value provides a limit to the total Reserved Ingress MPS of all Diameter Connections assigned to the UDR-MP.
Maximum Ingress Message Rate Minor Alarm Set Threshold	7500	10000	The ingress message rate above which a minor alarm is raised.
Maximum Ingress Message Rate Minor Alarm Clear Threshold	6250	9375	The ingress message rate below which a minor alarm is cleared.
Maximum Ingress Message Rate Major Alarm Set Threshold	10000	11250	The ingress message rate above which a major alarm is raised.
Maximum Ingress Message Rate Major Alarm Clear Threshold	8750	10625	The ingress message rate below which a major alarm is cleared.
Maximum Ingress Message Rate Critical Alarm Set Threshold	11875	12500	The ingress message rate above which a critical alarm is raised.
Maximum Ingress Message Rate Critical Alarm Clear Threshold	11250	11875	The ingress message rate below which a critical alarm is cleared.
Routing Message Rate Minor Alarm Set Threshold	7500	10000	The Diameter Routing Layer message processing rate above which a minor alarm is raised.
Routing Message Rate Minor Alarm Clear Threshold	6250	9375	The Diameter Routing Layer message processing rate below which a minor alarm is cleared.
Routing Message Rate Major Alarm Set Threshold	10000	11250	The Diameter Routing Layer message processing rate above which a major alarm is raised.
Routing Message Rate Major Alarm Clear Threshold	8750	10625	The Diameter Routing Layer message processing rate below which a major alarm is cleared.
Routing Message Rate Critical Alarm Set Threshold	11875	12500	The Diameter Routing Layer message processing rate above which a critical alarm is raised.
Routing Message Rate Critical Alarm Clear Threshold	11250	11875	The Diameter Routing Layer message processing rate below which a critical alarm is cleared.

2.4.4 Capacity Expectations

The Signaling Traffic characterization performed on UDR R10.2 is based on the “Hybrid Call Model” refer to FE007488 Section 2.5.1

The Provisioning characterizations are based on the “Mixed Traffic Model” refer to FE007488 Section 2.5.2

Table 9: Low Capacity Server Configurations

Name	Site Hardware	Redundancy Type	Server Types	Sh TPS Capacity	Number of Subscribers
Low Capacity 1-server	1 server/site	Non-HA Redundancy	1 LC RMS or Blade	12.5K TPS	15M subscribers and pool records
Low Capacity 2-server	2 servers/site	HA Redundancy	2 LC RMS or Blade	12.5K TPS	15M subscribers and pool records

Name	Site Hardware	Redundancy Type	Server Types	Sh TPS Capacity	Number of Subscribers
Low Capacity 4-server	2 servers/site	Geographic Redundancy	4 LC RMS or Blade	15K TPS	15M subscribers and pool records

Table 10: Normal Capacity Server Configurations

Name	Site Hardware	Redundancy Type	Server Types	Sh TPS Capacity	Number of Subscribers
Normal Capacity Single-Site	4 servers and 2 storage arrays per site	HA Redundancy	4 HC Blades Storage Array	25K TPS	80M subscribers and pool records
Normal Capacity Two-Site	4 servers and 2 storage arrays per site	Geographic Redundancy	8 HC Blades 4 Storage Array	50K TPS	80M subscribers and pool records

2.4.5 Summary: Hardware, Capacity, Profiles

The table below exhibits all the different hardware configurations, their Provisioning and Sh capacities and VM Profiles supported in UDR R10.2

Table 11: Summary Table

UDR Type	Hardware Configuration	Capacity	VM Profiles	Diameter Profiles
Low Capacity	1 or 2 or 4 Server Each Server having 192GB RAM	SH - 12.5 K /15K Import – 750 subscribers/sec SOAP – 400 in Durability Confirmation Mode REST – 400 in Durability Confirmation Mode SOAP TPS + REST TPS + PROV AE TPS + Sh AE TPS <= 400 15M Subscriber + Pool records	UDR_NO_LowCapacity UDR_SO_LowCapacity UDR_MP_LowCapacity	UDRVM:Database
Normal Capacity	4 or 8 Blades 2 128GB Blades (which hosts SOAMs and MPs) 2 192GB Blades (which host the NOAMP database)	SH - 25K / 50K Import – 1000 subscribers/sec SOAP – 400 in Durability Confirmation Mode REST – 400 in Durability Confirmation Mode SOAP TPS + REST TPS + PROV AE TPS + Sh AE TPS <= 400 80M Subscriber + Pool records	UDR_SO UDR_MP	UDRVM:Database

2.5 UDR to UDR Migration

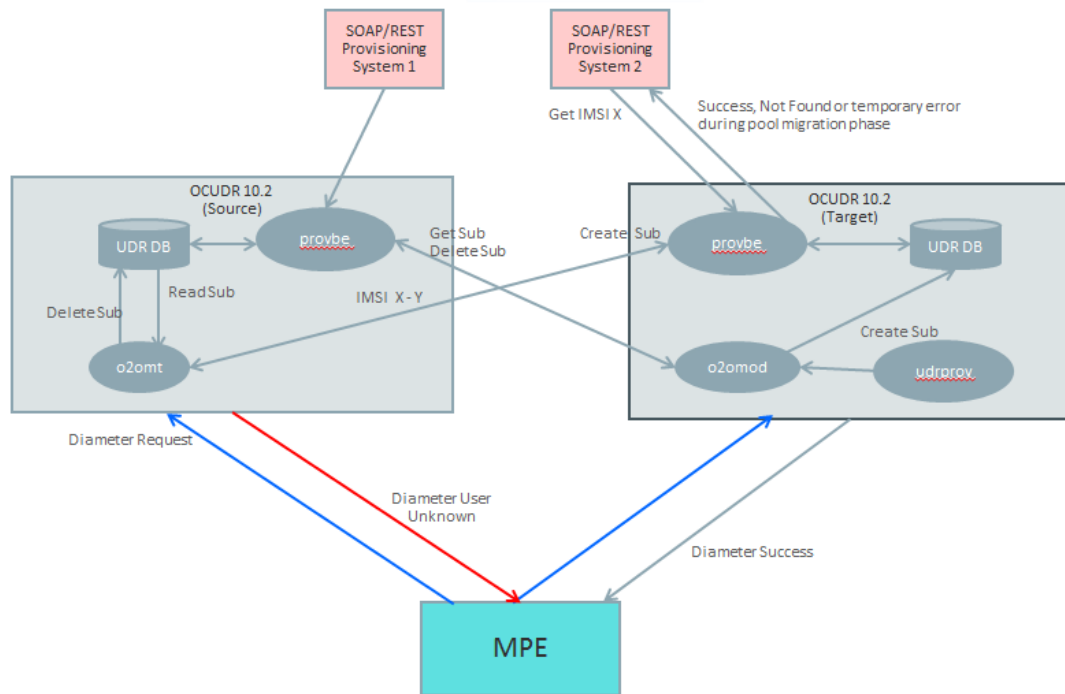


Figure 9: Migration Architecture Overview

2.5.1 Migration Tool Command Syntax

Usage: o2omt options

Options:

--imsi x-y

Migrate subscribers who have at least one key specified by imsi.

--msisdn x-y

Migrate subscribers who have at least one key specified by msisdn.

Note: either imsi or msisdn must be specified.

--pool

Migrate pools and all associated subscribers in which any pool member is in the specified range.

--report

Report on the number of subscribers that would be migrated without actually migrating them. If *--pool* is specified report on the number of pools and pooled subscribers as well. Also identify any pool in the specified range in which at least one but not all members are in the range.

--port port

The port used to connect to the remote UDR. The default is 16531.

--writerThreads n

The number of threads to connect to provbe on the target system. The default is 6.

--log y / n

Whether to log detailed information on each subscriber migrated to a file. The default is y.

--help

Display this message

2.5.2 Migration Mode Configuration Tool

Usage: o2omigration options

Options:

--mode pool / subscriber / disable

Set the migration mode or disable migration.

Required options when mode is pool and ignored otherwise:

--rangeType imsi / msisdn

The type of range being used for the migration.

--rangeStart start

The start range being used for the migration.

--rangeEnd end

The end range being used for the migration.

Required options when mode is subscriber and ignored otherwise:

--remoteHost host

The migration source host name or ip address.

--remotePort port

The port of the source host provbe.

Optional options when mode is subscriber and ignored otherwise:

--waitTime ms

The number of milliseconds for the probe to wait for the migration on demand request to complete. The default is 20 ms.

--connAttempts n

The number of attempts the udrbe will try to the migrate on demand process before logging an error. The default is 3 attempts.

--odtServerPort port

The listen port for the migration on demand process. The default is 16532.

--seqDiff n

The difference in sequence number in which to accept the PUR during migration. The default is 2.

--writerThreads n

The number of threads to connect to the source provbe. The default is 6.

2.5.3 Hidden Migration Configuration Values

Table 12 Existing options used by o2omod

Name	Default	Description
migrationMode	F	Migration Mode Enabled
remotePortODT	16532	The port that the udrbe uses to connect to the migration on demand process.
onDemandConnection Attempts	3	Maximum number of connection attempts with the migration on demand process that UDRBE will try before logging an error
provBeMigrationWaitTime	20	Time in milliseconds for which provbe will wait for the subscriber to migrate from legacy SPR to UDR
migrPURSeqDiffToAccept	2	Sequence Number range (Difference in the sequence numbers) of the Entity to accept the PUR during migration
OnDemandvalidate	T	Whether to validate transparent data with SEC
MigrCriticalResourceTimeout	30 seconds	Maximum wait time for critical resources to be available.
MigrHwtRetryLimit	3	The maximum number of times a Heavyweight Transaction Commit will be re-attempted during migration

Table 13 New options used by o2omod

Name	Default	Description
MigrationPhase	None	Migration Phase (None, Pool, Subscriber)
MigrationRangeType	IMSI	The key type of range being migrated (IMSI,MSISDN)
MigrationRangeStart	0	Start of range being migrated
MigrationRangeEnd	0	End of range being migrated
MigrationSourceHost		Host name or IP address of source system.
MigrationSourcePort	16531	Port of provbe on source system.
MlgrationSourceConnectionAttempts	3	Number of times to attempt to reconnect to the source UDR before logging and error.
MigrationWriterThreads	6	Number of threads to connect to source system.

2.5.4 High Level Migration Procedure

This is a high level description of the procedure used to migrate a subscriber range from one UDR to another.

Pre-Migration Phase

1. Optionally run o2omt with the report option to determine the scope of the migration and identify any pools which may contain members both inside and outside of the migration range.
(o2omt --imsi x-y --pool --report)
2. Ensure network connectivity exists between source and target system.
3. Review source UDR system configuration and ensure that it is compatible with the target UDR. This would include items such as AE settings, SEC configuration and database capacity.
4. Configure the MPE for Sh traffic so the source UDR is the primary data source and the target UDR is the secondary data source for the migration range.
5. Run the script to configure the target system to reject provisioning requests for pool operations and for subscribers in the migration range.
(o2omigration --mode pool --rangeType imsi --rangeStart x --rangeEnd y)
6. Move Provisioning to target UDR for the range selected to migrate.
7. If AE is in use configure AE blacklist for migration range on the source system. AE subscribers will now be created on the target system.

Pooled Subscriber Migration Phase

8. Start migration tool on source system active NO to migrate pools and pooled subscribers in migration range.
(o2omt --imsi x-y --pool --host target_ocudr)

Regular and AE Subscriber Migration Phase

9. Run script on target machine that activates O2O Migrate on Demand function. All provisioning operations will be allowed at this point with on demand migration occurring for subscribers in the migration range.
(o2omigration --mode subscriber --host source_ocudr)
10. Start migration tool on source UDR active NO to migrate non-pooled subscribers in the desired range.
(o2omt --imsi x-y --host target_ocudr)
11. Run script to de-activate on demand migration on target system upon completion.

2.6 Quota Reset Task

Each Quota Reset Configuration on the UDR maintenance GUI is called a “Quota Reset Task”.

Quota Reset Task contains information like:

- the range of subscribers for which Quota Row Elements need to be reset,
- the list of Quota Row Elements to be reset, specified by the Quota Row Element Name and the value of the nextResetTime to be set,
- Start Time at which the reset action needs to be initiated

2.6.1 Quota Reset Task GUI – Details of the Measurement Statistics fields.

The fields that are shown in the Measurement and Statistics block at the bottom of the GUI screen provide the statistics and history of the Quota Reset Task. When a Task is created, these fields will be empty. When the Task starts running, these fields show the current running State of the Task. If the Task has run at least once and currently not running, these fields show the statistics of the last (just previous) run.

Table 14: UDR Quota Reset GUI –Measurement Statistics fields.

GUI Field name	Description	Possible Values	Default
Last Execution State	The Operational State of the Task during the last execution.	RUNNING, PAUSED, ABORTED, COMPLETED	NONE (Empty field) when Task is created.
Last Execution Completed	The Date and Time of the last execution completion time in UTC format.	Date/Time in UTC format	NONE (Empty field)
Total Records Examined	The total number of Subscriber/Pool records examined by the Task.	A number(10 digits)	NONE (Empty field)
Total Records Reset	Total number of Subscriber/Pool records for which one or more Quota Entity has been modified.	A number(10 digits)	NONE (Empty field)
Total Row Elements Reset	Total number of Quota Row Elements that have been modified.	A number(10 digits)	NONE (Empty field)
Last Record Processed	The key value of the Subscriber/Pool processed last. NOTE: This value will be IMSI, MSISDN for Subscriber Records and POOLID for Pool Records.	A number(22 digits)	NONE (Empty field)

2.6.2 Quota Reset task – Operational State

Following are the Quota Reset State supported by this feature.

Table 15: UDR Quota Reset Tasks – Operational State

STATE	Description
SCHEDULED	Task is scheduled to execute. When the Task is created, it goes into SCHEDULED State. Task is requested to be executed at the Start Time.
RUNNING	Task is currently running; scanning through Subscriber/Pool records and modifying the quota Row Elements.
PAUSED	Task execution is temporarily paused due to the UDRBE process congestion.
COMPLETED	Quota Reset Scheduler completed the modification of the records specified.
ABORTED	User aborted the Task that is in the SCHEDULED, RUNNING or PAUSED State.

2.6.3 Quota Reset Task – Operational State Transition Diagram

The State of the Quota Reset Task is changed by the Quota Reset scheduler.

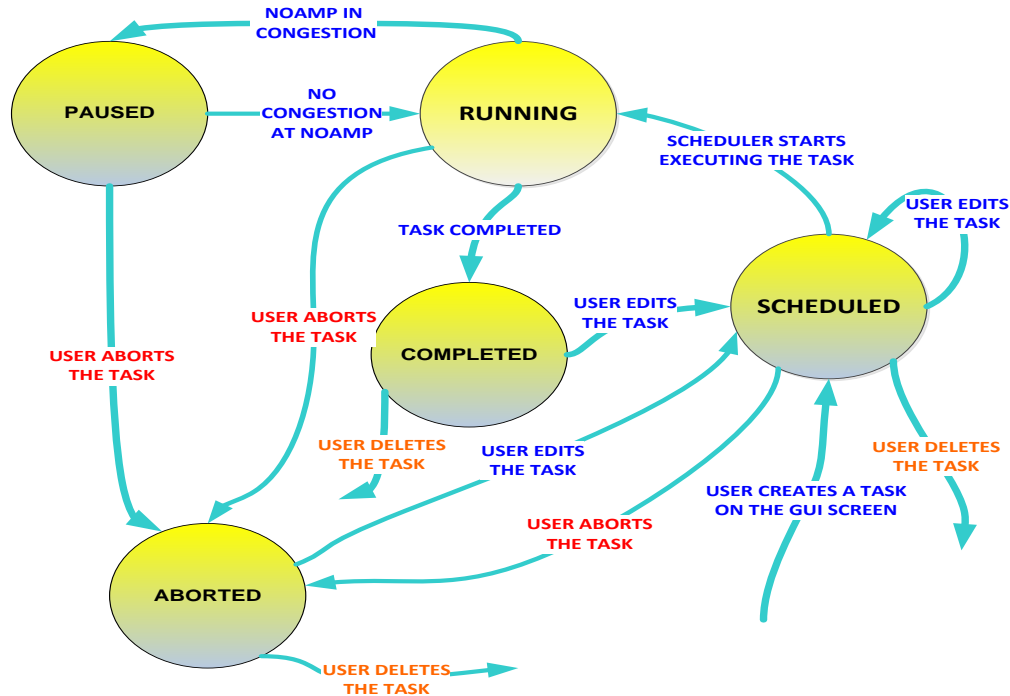


Figure 10: Quota Reset State Transition Diagram

When the user creates a Quota Reset Task, the Operational State is set to SCHEDULED and the Task is expected to be run at a specified time in the future. Once the Task is in the SCHEDULED State, Quota Reset Scheduler monitors the Task and executes it at the Start Time configured; the State of the Task will be changed to RUNNING. The Task in RUNNING State goes into PAUSED State, when UDRBE process gets into congestion. When the Quota reset Scheduler completes the reset activity, after going through the desired range of subscribers, the Task gets into COMPLETED State. The user can abort the execution of the Task from the SCHEDULED, RUNNING or PAUSED State and the Task moves into ABORTED State.

3 UDR 10.2 GUI Functions

OAM include: User Interfaces (NO GUI, SO GUI), Measurements Reports, Alarms, and KPIs. This section describes updated/new NO GUI menu.

3.1 UDR Permissions

The Access Control for UDR screens is updated as below. The permissions can be granted or removed on Main Menu: Administration → Access Control → Groups GUI screen. The administrative group “admin” (to which the super user guidadmin belongs) shall have access to all UDR GUI permissions by default.

Resource	View	Insert	Edit	Delete	Manage
UDR Configuration Permissions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Provisioning Options	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
UDRBE Options	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Provisisoning Connections	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Subscribing Client Permissions	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Auto Enrollment Options	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Auto Enrollment Blacklist	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
UDR SEC Permissions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Entity	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Interface Entity Map	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Entity FieldSet	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Entity BaseFieldSet	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Entity Definition	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
UDR Maintenance Permissions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Subscriber Query	<input checked="" type="checkbox"/>				
Connections	<input checked="" type="checkbox"/>				
Command Log	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	
Import Status	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	
Export Schedule	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Export Status	<input checked="" type="checkbox"/>				
Subscribing Client Availability	<input checked="" type="checkbox"/>				
Database Auditor	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>

Figure 11: UDR Permissions

3.2 Provisioning Options

The Provisioning Option screen is updated to include new options “PNR Generation with Import” and “Provisioning Response with Durability Confirmation”. There are no changes to the error messages or to any screen behavior.

Table 16: New options added to Provisioning Options screen

New Configuration Option Name	Description
PNR Generation with Import	<p>If checked, PNR(s) will be generated for subscribers with an active subscription if a relevant subscriber or pool is updated or deleted.</p> <p>If unchecked, no PNR(s) will be generated when the subscriber or pool is updated or deleted.</p>
Provisioning Response with Durability Confirmation	<p>If checked, the provisioning requests are acknowledged to the OSS <i>after</i> waiting for the completion of data durability checks.</p> <p>If unchecked, the provisioning requests are acknowledged to the OSS <i>before</i> waiting for the completion of data durability checks.</p>

Main Menu: UDR -> Configuration -> Provisioning Options

Tue Mar 31 10:00:00

Field	Value	Description
Compatibility Mode	R10+ ▼	Indicates whether backward compatibility is enabled. NOTE: Change to Compatibility Mode may cause the existing provisioning connections to be dropped. DEFAULT = R10+
Allow SOAP Provisioning Connections	<input checked="" type="checkbox"/>	Whether or not to allow incoming provisioning connections on SOAP/XML interface. DEFAULT = CHECKED
SOAP Interface Idle Timeout	1200	The maximum time (in seconds) that an open SOAP/XML connection will remain active without a request being sent, before the connection is dropped. DEFAULT = 1200; RANGE = 1-86400 seconds
SOAP Interface Port	62001	SOAP/XML Interface TCP Listening Port. NOTE: Changes to the TCP listening port do not take effect until the 'xsas' process is restarted. Also, you must specify a different port than the REST interface. DEFAULT = 62001; RANGE = 0-65535
Maximum SOAP Connections	100	Maximum number of simultaneous SOAP/XML Interface client connections. DEFAULT = 100; RANGE = 1-100
Maximum Requests in SOAP <tx> XML	12	The maximum number of requests in a single SOAP tx transaction. DEFAULT = 12; RANGE = 1-50
Allow REST Connections	<input checked="" type="checkbox"/>	Whether or not to allow incoming provisioning connections on the XML-REST Interface. DEFAULT = CHECKED
REST Interface Idle Timeout	1200	The maximum time (in seconds) that an open XML-REST connection will remain active without a request being sent, before the connection is dropped. DEFAULT = 1200; RANGE = 1-86400 seconds
REST Interface Port	8787	XML-REST Interface TCP Listening Port. NOTE: Changes to the TCP listening port do not take effect until the 'ras' process is restarted. Also, you must specify a different port than the SOAP/XML interface. DEFAULT = 8787; RANGE = 0-65535
Maximum XML-REST Connections	100	Maximum number of simultaneous XML-REST Interface client connections. DEFAULT = 100; RANGE = 1-100
XML-REST Secure Mode	Unsecure ▼	Whether the XML-REST Interface operates in secure mode (using SSL), or unsecure mode (plain text). NOTE: Changes to the Secure Mode do not take effect until the 'ras' process is restarted. DEFAULT = Unsecure

User Data Repository 10.2 Network Impact Report

Remote Host IP Address	IP Address: <input type="text"/> Username: <input type="text"/> SSH Key Exchange: <input type="text"/>	The IP address and username of Remote Import/Export Host.
Remote Export Transfers Enabled	<input type="checkbox"/>	Whether or not to allow export files to be copied to the Remote Export Host. DEFAULT = UNCHECKED
Local Export Directory	<input type="text" value="/var/TKLC/db/filemgmt"/>	The local directory where export files are created. DEFAULT = /var/TKLC/db/filemgmt/provexport; RANGE = 0-255 characters
Remote Export Directory	<input type="text"/>	The directory in the Remote Export Host to which export files are transferred if configured. DEFAULT = ; RANGE = 0-255 characters
Maximum Number of Exported Subscribers	<input type="text" value="1000000"/>	Maximum number of subscribers that can be exported per export file. DEFAULT = 1000000; RANGE = 1-9000000
Export Status Lifetime	<input type="text" value="7"/>	The number of days the Export operation's status information and associated files are available before they are automatically removed from the local system. DEFAULT = 7; RANGE = 1-365 days
Remote Import Enabled	<input type="checkbox"/>	Whether or not import files are imported from a Remote Host. DEFAULT = UNCHECKED
Local Import Directory	<input type="text" value="/var/TKLC/db/filemgmt"/>	The local directory to which import files are copied from the Remote Import Host. DEFAULT = /var/TKLC/db/filemgmt/provimport; RANGE = 0-255 characters
Remote Import Directory	<input type="text"/>	The directory in which import files exist on the Remote Import Host. DEFAULT = ; RANGE = 0-255 characters
Import Status Lifetime	<input type="text" value="7"/>	The number of days the Import operation's status information and associated files are available before they are automatically removed from the local system. DEFAULT = 7; RANGE = 1-365 days
PNR Generation with Import	<input type="checkbox"/>	If checked, PNR(s) will be generated for subscribers with an active subscription if a relevant subscriber or pool is updated or deleted. DEFAULT = UNCHECKED
Maximum Provisioning Backend Response Timeout	<input type="text" value="7"/>	The maximum time (in seconds) that a transaction can remain open before provisioning front end expires the request sent. DEFAULT = 7; RANGE = 2-3600 seconds
Log Insert, Update and Delete Provisioning Messages	<input checked="" type="checkbox"/>	Whether or not to log Insert/Update/Delete incoming and outgoing provisioning messages in the command log. DEFAULT = CHECKED
Log Retrieve Provisioning Messages	<input checked="" type="checkbox"/>	Whether or not to log retrieve incoming and outgoing provisioning messages in the command log. DEFAULT = CHECKED
Provisioning Response with Durability Confirmation	<input type="checkbox"/>	If checked, respond to provisioning commands after confirmation of Durability. DEFAULT = UNCHECKED

Figure 12: Provisioning Options

Table 17: Provisioning Options

Purpose	To allow an operator to update Provisioning options.
Required Permissions	UDR Configuration Permissions → Provisioning Options permissions group that is defined on the Main Menu: Administration → Access Control → Groups GUI screen
Tooltips	None
Nuances	<ul style="list-style-type: none"> The Apply button is disabled until a value is modified.
Security Log Entries	Successful Update Failed Update
Error/Status Message Trigger Condition	[Error Code 13101] – The option 'x' requires a value containing only digits.
Error/Status Message Trigger Condition	[Error Code 13102] – The option 'x' requires a minimum value of y.
Error/Status Message Trigger Condition	[Error Code 13103] – The option 'x' requires a maximum value of y.
Error/Status Message Trigger Condition	[Error Code 13107] - Invalid IP address [0.0.0.0] - the first octet must be between 1-255, the other three must be between 0-255
Error/Status Message Trigger Condition	The IP address octets specified for "IP Address" fell outside valid ranges.
Error/Status Message Trigger Condition	[Error Code 13108] – Invalid IP address 'x' – Ipv4 dot-decimal notation is required (e.g. 192.168.0.1)
Error/Status Message Trigger Condition	The value specified for "IP Address" was not specified in Ipv4 dot-decimal notation.
Error/Status Message Trigger Condition	Update successful.
Error/Status Message Trigger Condition	The options were updated successfully.

3.3 Auto Enrollment

3.3.1 Auto Enrollment Options

Auto Enrollment Options control how auto enrollment feature works on the back-end. The GUI is used to specify values for various parameters that guide the behavior of the UDR Auto Enrollment feature. UDR R10.2 does not introduce any new options. These options have been removed from *Main Menu: UDR → Configuration → UDRBE Options screen*. Unless noted, any changes to Auto Enrollment options take effect immediately.

Main Menu: UDR -> Configuration -> Auto Enrollment -> Auto Enrollment Options

Wed Mar 25 09:25:

Field	Value	Description
Auto Enrollment on Provisioning Enabled	<input type="checkbox"/>	Whether or not Provisioning requests can trigger auto-enrollment when the user identity is not found. DEFAULT = UNCHECKED
Auto Enrollment on PUR Enabled	<input type="checkbox"/>	Whether or not PUR requests can trigger auto-enrollment when the user identity is not found. DEFAULT = UNCHECKED
Auto Enrollment on SNR Enabled	<input type="checkbox"/>	Whether or not SNR requests can trigger auto-enrollment when the user identity is not found. DEFAULT = UNCHECKED
Auto Enrollment Cleanup on SNR Enabled	<input checked="" type="checkbox"/>	Whether or not to automatically delete an auto-enrolled subscriber after receiving an SNR (unsubscribe) for the last active subscription for the subscriber. DEFAULT = CHECKED
Auto Enrollment Cleanup Inactive Subscriber Enabled	<input checked="" type="checkbox"/>	Whether or not to automatically delete an auto-enrolled subscriber after a subscription is inactive for a period that exceeds the inactivity timeout. DEFAULT = CHECKED
Auto Enrollment Inactivity Timeout	90	Specifies the duration in days of a lack entity updates that causes an auto-enrolled subscriber to become eligible for clean-up. DEFAULT = 90; RANGE = 0-90 days

Apply Cancel

Figure 13: Auto Enrollment Options

Table 18: Auto Enrollment Options (Display)

Purpose	To allow an operator to update Auto Enrollment options.
Required Permissions	<i>UDR Configuration Permissions → Auto Enrollment Options</i> permissions group that is defined on the <i>Main Menu: Administration → Access Control → Groups</i> GUI screen
Tooltips	None
Nuances	The Apply button is disabled until a value is modified.
Security Log Entries	Successful Update Failed Update
Error/Status Message Trigger Condition	<i>[Error Code 13101] – The option ‘x’ requires a value containing only digits.</i> The value specified for option x requires an integer value.
Error/Status Message Trigger Condition	<i>[Error Code 13102] – The option ‘x’ requires a minimum value of y.</i> The value specified for option x is less than y.
Error/Status Message Trigger Condition	<i>[Error Code 13103] – The option ‘x’ requires a maximum value of y.</i> The value specified for option x is greater than y.
Error/Status Message Trigger Condition	<i>Update successful.</i> The options were updated successfully.

3.3.2 Auto Enrollment Blacklist

3.3.2.1 Display

Main Menu: UDR -> Configuration -> Auto Enrollment -> Auto Enrollment Blacklist

Filter

Blacklist ID	Key Type	Start Range	End Range
Range1	MSISDN	123456789	5555555555
Range2	IMSI	1111111111	2222222222

Insert
Delete

There are 2 records matching your request.

Figure 14: Auto Enrollment Blacklist (Display)

Table 19: Auto Enrollment Blacklist (Display)

Purpose	To allow an operator to view the list of auto enrollment blacklist ranges configured to deactivate auto enrollment from Provisioning and Sh interface.
Required Permissions	<i>UDR Configuration Permissions</i> → <i>Auto Enrollment Blacklist</i> permissions group that is defined on the <i>Main Menu: Administration</i> → <i>Access Control</i> → <i>Groups</i> GUI screen
Tooltips	“Blacklist ID” (Identifying text for the blacklist range) “Key Type” (Type of Key based on which subscriber records are blacklisted. The keys are MSISDN and IMSI) “Start Range” (Start of range of data to be included in this blacklist) “End Range ” (End of range of data to be included in this blacklist)
Nuances	<ul style="list-style-type: none"> The Delete button is disabled until a row is selected. Each header will provide a Sorting mechanism. On clicking the header, the values of the selected column will get sorted in ascending/descending order. Clicking the header again will toggle the order (descending/ascending). On clicking Insert button, a new form with blank values will be opened. On selecting a row and clicking Delete button, a pop-up confirming the deletion will be opened.
Security Log Entries	Successful Retrieve Failed Retrieve

3.3.2.2 Insert

Main Menu: UDR -> Configuration -> Auto Enrollment -> Auto Enrollment Blacklist -> [Insert]

Field	Value	Description
Blacklist ID	<input type="text"/>	Identifying string for the Auto Enrollment blacklist range. [Default=n/a; Range=1-32 characters. Valid characters are alphanumeric and underscore. Must contain one alpha and must not start with digit.]
Key Type	MSISDN ▾	Select the key based on which subscriber records are blacklisted.
Start Range	<input type="text"/>	Start of range of data to be included in this blacklist. [Range=8-15 digits.]
End Range	<input type="text"/>	End of range of data to be included in this blacklist. [Range=8-15 digits.]

Ok Cancel

Figure 15: Auto Enrollment Blacklist (Insert)

Table 20: Auto Enrollment Blacklist (Insert)

Purpose	To allow an operator to configure the Auto Enrollment Blacklist range.			
Required Permissions	UDR Configuration Permissions → Auto Enrollment Blacklist permissions group that is defined on the Main Menu: Administration → Access Control → Groups GUI screen			
Tooltips	Field Name	Description	Possible Value	Default Value
	Blacklist ID	Unique string to identify the AE blacklist range	1 -32 character string. Valid characters can be alphanumeric and underscore, must contain one alpha and must not start with a digit	None
	Key Type	The type of key used for blacklisting the subscribers	MSISDN, IMSI	MSISDN
	Start Range	Start range of the key for the subscribers to be blacklisted	8 -15 digits	None
	End Range	End range of the key for the subscribers to be blacklisted	8 -15 digits	None
Nuances	<ul style="list-style-type: none"> The Blacklist ID has the range 1-32 characters. The valid options for the “Key Type” select box are: <ul style="list-style-type: none"> “MSISDN” “IMSI” The OK button is disabled until a field’s value is inserted. Clicking Cancel button will display a list of configured Auto Enrollment Blacklist ranges. Overlapping ranges of Key Type is allowed as no checks on the Start Range and End Range is performed. 			

Security Log Entries	Successful Insert Failed Insert
Error/Status Message Trigger Condition	<i>[Error Code 13104] – Missing required field 'x'.</i> The value specified for “Blacklist ID”, “Start Range” or “End Range” is missing.
Error/Status Message Trigger Condition	<i>[Error Code 13105] – A key value for this insert is not unique'.</i> The value specified for the “Blacklist ID” field is already in use.
Error/Status Message Trigger Condition	<i>[Error Code 13116] – Invalid value for field 'x'.</i> The value specified for the field “Blacklist ID” must contain at least one alphanumeric value, must not start with a digit and must not contain any special characters other than underscore.
Error/Status Message Trigger Condition	<i>[Error Code 13125] – 'Start range contains digits only'</i> Start Range must contain only digits.
Error/Status Message Trigger Condition	<i>[Error Code 13126] – 'End range contains digits only'</i> End Range must contain only digits
Error/Status Message Trigger Condition	<i>[Error Code 13121] – 'Invalid Range for field [{x}]'.</i> The value for Start Range or End Range is not between 8 -15 digits.
Error/Status Message Trigger Condition	<i>[Error Code 13153] – 'Invalid value: End Range cannot be less than Start Range'.</i> The value of Start Range should be less than or equal to the value of End Range.
Error/Status Message Trigger Condition	<i>Insert successful.</i> An entry was inserted successfully.

3.3.2.3 Delete

Main Menu: UDR -> Configuration -> Auto Enrollment -> Auto Enrollment Blacklist

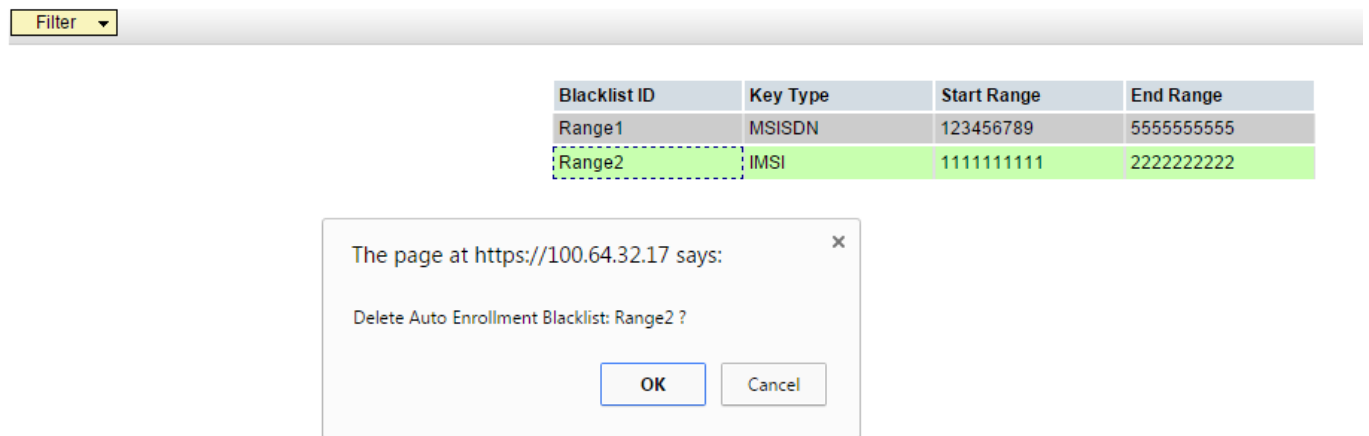


Figure 16: Auto Enrollment Blacklist (Delete)

Table 21: Auto Enrollment Blacklist (Delete)

Purpose	To allow an operator to delete an Auto Enrollment Blacklist Range.
Required Permissions	<i>UDR Configuration Permissions</i> → <i>Auto Enrollment Blacklist</i> permissions group that is defined on the <i>Main Menu: Administration</i> → <i>Access Control</i> → <i>Groups</i> GUI screen
Tooltips	"Blacklist ID" (Identifying text for the blacklist range) "Key Type" (Type of Key based on which subscriber records are blacklisted. The keys are MSISDN and IMSI) "Start Range" (Start of range of data to be included in this blacklist) "End Range" (End of range of data to be included in this blacklist)
Nuances	The Delete button would be enabled when a row is selected on the Auto Enrollment Blacklist table.
Security Log Entries	Successful Delete Failed Delete
Error/Status Message	<i>Delete successful.</i>
Trigger Condition	An entry was deleted successfully.

3.4 Maintenance

3.4.1 Subscriber Query

The Subscriber Query screen in UDR R10.2 is updated to include a new database statistic “*Auto Enrolled Subscribers*”. The database statistics are always displayed and are refreshed whenever the screen is refreshed or the *Submit* button is pressed.

Main Menu: UDR -> Maintenance -> Subscriber Query

Tue Mar 31 16:07:47

Database Statistics		
Data Type	Count	
Subscribers	14574925	
Pools	1500004	
MSISDN Keys	14574927	
IMSI Keys	13500004	
NAI Keys	2	
Account ID Keys	5	
NAI Hosts	1	
Auto Enrolled Subscribers	1 (Tue Mar 31 12:20 2015 EDT)	

Subscriber Query		
Field	Value	Description
Key Type	<input type="text" value=""/>	Key Type. [Default = n/a; Select value from list]
Key Value	<input type="text" value=""/>	Key Value. [Default = n/a; Range = A 255-character string]
Entity Type	<input type="text" value=""/>	Entity type. [Default = n/a; Select value from list]
<input type="button" value="Submit"/>		
Result	<div style="border: 1px solid gray; height: 100px; width: 100%;"></div>	

Query Result obtained from the database.

Figure 17: Subscriber Query

Table 22: Subscriber Query

Purpose	Display database statistics and Subscriber Information after query attributes are entered and submitted.
Required Permissions	UDR Maintenance Permission Group
Tooltips	<ul style="list-style-type: none"> “Key Type” (Key Type (IMSI, MSISDN, NAI, Account Id or PoolID)) “Key Value” (Key Value – a 255 character string used to identify the subscriber) “Entity Type” (Entity Type (DynamicQuota, Profile, Quota, State, Pool Information, PoolDynamicQuota, PoolProfile, PoolQuota, PoolState or new entities created from SEC GUI)) “Result” (Subscriber Query Information)

Nuances	<ul style="list-style-type: none"> • The Database Statistics section contains counts for number of records in the UDR database for each of the listed data types. These numbers are updated every time the screen is refreshed or the <i>Submit</i> button is pressed. • The “<i>Subscribers</i>” count indicates the total number of provisioned and auto-enrolled subscribers. • The “<i>Auto Enrolled Subscribers</i>” count indicates the total number of auto-enrolled subscribers only. The value displayed on the screen could be calculated over the past 24 hours. The data and time when the value was last calculated is displayed on the screen. • The Result section contains subscriber information that is extracted after query attributes are entered and the <i>Submit</i> button is pressed. • The “Entity Type” available values are based upon the current “Key Type” value. If the “Entity Type” value is “PoolID”, the “Entity Type” legal values are: PoolDynamicQuota, PoolProfile, PoolQuota and PoolState. If the “Entity Type” value is not “PoolID”, the “Entity Type” legal values are: DynamicQuota, Profile, Quota, State, and Pool Information.
Security Log Entries	Successful Query Failure Query
Error/Status Message Trigger Condition	<i>[Error Code 13131] – Bad Request</i> Occurs when the key value doesn’t go with the key type (example putting a character when a digit is expected)
Error/Status Message Trigger Condition	<i>[Error Code 13132] – Data not found</i> Requested subscriber data does not exist (If the query doesn’t detect a Subscriber Record)
Error/Status Message Trigger Condition	<i>[Error Code 13133] – Service Unavailable</i> Occurs when the provisioning front end process is down
Error/Status Message Trigger Condition	<i>[Error Code 13134] – [x]</i> The “x” here denotes any runtime error message that came up.

3.4.2 Command Log

The Command Log screen captures details and status of different commands that are executed over a period of time. It further provides a user a facility to filter the results based on System ID or Remote IP or CID or Log Text or Timestamp.

Main Menu: UDR -> Maintenance -> Command Log

 Help

Fri Mar 27 13:29:15 2015 EDT

Filter ▾				
Timestamp	System ID	Remote IP	CID	Text
2015-03-27 06:41:14	Seagull1	10.250.54.182	2853	<![CDATA[<?xml version="1.0" encoding="UTF-8"?><req name="select" resonly="y"><res affect error="0"/><reset><row><rv><![CDATA[<?xml version="1.0"?><subscriber><field name="NAI">NAI123@camiant.com</field><field name="IMSI">184569547984230</field><field name="MSISDN">9501143560</field><field name="Accountid">B020</field><field name="BillingDay">1</field><field name="Entitlement">DayPass</field><field name="Custom1"><field name="Custom2">2</field><field name="Custom3">3</field><field name="Custom4">4</field><field name="Custom5">5</field><field name="Custom6">6</field><field name="Custom7">7</field><field name="Custom8">8</field><field name="Custom9">9</field><field name="Custom10">10</field><field name="Custom11">11</field><field name="Custom12">12</field><field name="Custom13">13</field><field name="Custom14">14</field><field name="Custom15">15</field></subscriber>]]></rv></row></req>
2015-03-27 06:41:14	Seagull1	10.250.54.182	2853	<req name="select" resonly="y"> <ent name="subscriber"/> <where> <expr><attr name="accountid" value="/"><value val="B020"/></expr> </where> </req>
2015-03-27 06:29:09	Seagull1	10.250.54.182	2852	<![CDATA[<?xml version="1.0" encoding="UTF-8"?><req name="select" resonly="y"><res affect error="70031"/></req>]]>
2015-03-27 06:29:09	Seagull1	10.250.54.182	2852	<req name="select" resonly="y"> <ent name="subscriber"/> <where> <expr><attr name="accountid" value="/"><value val="B020"/></expr> </where> </req>

Figure 18: Command Log

Table 23: Command Log

Purpose	Display the Command Log Table. This table contains a history of commands and their responses. This table contains commands received from both remote and local connections, including the GUI.
Required Permissions	UDR Maintenance Permission Group
Tooltips	<ul style="list-style-type: none"> • “Timestamp” (Timestamp of the command/response) • “System ID” (Hostname of the originating client) • “Remote IP” (IP address of the originating client) • “CID” (Connection ID) • “Text” (Exact command and response message in the relevant provisioning interface format (i.e. SOAP or REST, whichever interface a request is received on))

Nuances	<ul style="list-style-type: none"> When results are filtered, the highlighted text “RESULTS FILTERED” shall be displayed at the bottom of the results. The Display Filter select box has the following options: <ul style="list-style-type: none"> “-None-” (default) “System ID equal to...” “Remote IP equal to...” “CID equal to...” “Log text LIKE...” When the “System ID equal to...” select box option is selected, a hidden text box becomes visible to the user where the user is expected to enter the System ID they want to filter on. When the “Remote IP equal to...” select box option is selected, a hidden text box becomes visible to the user where the user is expected to enter the Remote IP they want to filter on. The IP should be the Remote Host IP and not the CIDR format. When the “CID equal to...” select box option is selected, a hidden text box becomes visible to the user where the user is expected to enter the CID they want to filter on. When the “Log text contains...” select box option is selected, a hidden text box becomes visible to the user where the user is expected to enter one or more keywords that they want to filter on. When the “Time range...” select box option is selected, hidden select box for “From” and “To” times become visible to the user where the user is expected to enter the time range that they want to filter on. The “Remote IP” column will be blank for all commands processed prior to upgrading the active NOAM server to UDR 10.2 A maximum of 10,000 records will be displayed in this window. The filtering mechanism can be used to view a particular record. The “Text” field will contain the requests and responses in the relevant provisioning interface format (i.e. SOAP or REST, whichever interface a request is received on) and not in iXML format.
Security Log Entries	<p>Successful Display</p> <p>Failure Display (bad filter value)</p>
Error/Status Message Trigger Condition	<p><i>[Error Code 13114] – CID must contain only digits.</i></p> <p>The value specified for the CID display filter contained one or more non-numeric characters.</p>
Error/Status Message Trigger Condition	<p><i>[Error Code 13115] – Message text may not contain spaces.</i></p> <p>The value specified for the log text display filter contained one or more spaces.</p>

3.4.3 Database Auditor

Main Menu: UDR -> Maintenance -> Database Auditor

Tue May 26 13:10:03 2

Single Subscriber or Pool Audit

Field	Value	Description
Key Type	--Select--	The key type used for identifying the subscriber or pool. [Default = n/a; Select value from list]
Key Value		A key value for identifying subscriber or pool. [Default = n/a; Range = A 255-character string]
Result File Name		Result File Name. [Default = n/a; Range = 1-32 character string] Valid characters are alphanumeric and underscore. Must contain atleast one alpha and must not start with a digit.

Complete Database Audit

Field	Value	Description
Result File Name		Result File Name. [Default = n/a; Range = 1-32 character string] Valid characters are alphanumeric and underscore. Must contain atleast one alpha and must not start with a digit.

Clean

Field	Value	Description
Input File Name	--Select--	Input File Name. [Default = n/a]; A file Audit_*.dbauditor chosen using the Choose File Button.

State Table

Process Type	Result Logs	Time Started	Time Completed	Audited subscriber and pool count	Inconsistent subscriber and pool count	Cleaned subscriber and pool count	State
Complete Database Audit	Audit_completeAbor tCas_ Audit_completeAbor tCas_	2015-05-26 11:49:31	2015-05-26 11:49:37	40032	0	0	Completed

There is 1 record matching your request.

Figure 19: Database Auditor

Table 24: Database Auditor

Purpose	To allow an operator to start the database consistency Audit process to report database inconsistency, start the clean process to delete subscribers and pools having inconsistency and view the state of the most recent Audit/Clean process.
Required Permissions	UDR maintenance Permissions → Database Auditor permissions group that is defined on the Main Menu: Administration → Access Control → Groups GUI screen

Tooltips	Single Subscriber or Pool Audit – The Audit process used to scan only a single subscriber or pool for foreign key inconsistency.			
	Field Name	Description	Possible Value	Default Value
	Key Type	The type of key used to identify the subscriber or pool for checking the foreign key inconsistency.	IMSI, MSISDN, Account Id, PoolID	None
	Key Value	The key value used to identify the subscriber or pool for checking the foreign key inconsistency.	1 – 255 digits Note: For MSISDN the value must be between 8 to 15 digits, for IMSI the value must be between 10 to 15 digits, for PoolId, the value can be between 1 to 22 digits.	None
	Result File Name	A meaningful file name which would be used to create the log files.	32 character string	None
	Audit Button	The button used to start the Single Subscriber or Pool Audit process	Always enabled	NA
	Complete Database Audit – The Audit process used to scan the entire database for foreign key inconsistencies.			
	Field Name	Description	Possible Value	Default Value
	Result File Name	A meaningful file name which would be used to create the log files.	32 character string	None
	Audit Button	The button used to start the Complete Database Audit process	Always enabled	NA
	Clean – The Clean process used to delete the subscribers and pools having foreign key inconsistencies.			
	Field Name	Description	Possible Value	Default Value
	Input File Name	The name of the file containing the subscriber and pool records having inconsistency.	Not editable. File name is displayed after selecting the file from the drop down list.	None
	Clean Button	The button used to start the Clean process	Always enabled	NA

Tooltips (continued)	State Table - Displays the state of the last Audit/Clean run			
	Field Name	Description	Possible Value	Default Value
	Process Type	Displays the type of Process running	Single Subscriber or Pool Audit Complete Database Audit Clean	None
	Result Log	Displays the name of the Log files generated by the Audit/Clean process	For Audit process Audit_<x>_201503142216.dbauditor Audit_<x>_201503142216.xml For Clean process Audit_<x>_201503142216.dbauditor Clean_<x>_201503150216.xml	None
	Time Started	Displays the time when the Audit/Clean process was started	Date/Time in UTC format	None
	Time Completed	Displays the time when the Audit/Clean process was completed	Date/Time in UTC format	None
	Audited subscriber and pool count	Displays the number of subscriber and pool records audited/scanned	A number(10 digits)	None
	Inconsistent subscriber and pool count	Displays the number of subscriber and pool records that have inconsistency	A number(10 digits)	None
	Cleaned subscriber and pool count	Displays the number of subscriber and pool records that were deleted	A number(10 digits)	None
State	Displays the state of the Audit/Clean process	In Progress Completed Failed Aborted Paused	None	

Nuances	<ul style="list-style-type: none"> The Single Subscriber or Pool Audit process starts when the “Key Type”, “Key Value” and the “Result File Name” fields have been filled correctly and the “Audit” button is clicked. The Complete Database Audit process starts when the “Result File Name” field is filled and the “Audit” button is clicked. To start the Clean process, “Input File Name” has to be entered by selecting a file from the drop down list, clicking on “Clean” button and then selecting OK in the confirmation window. The “Abort” button is enabled when a row is selected in the State Table. An Audit process in state “In Progress” will be cancelled when the “Abort” button is clicked and OK is selected on the confirmation window that is displayed. The state will change to “Aborted”. A Clean process in state “In Progress” will be cancelled when the “Abort” button is clicked and OK is selected on the confirmation window that is displayed. The state will change to “Aborted”. The state of the Audit/Clean process is changed to “Paused” when the UDRBE process is in a congested state. The State Table section displays the state of the last Audit/Clean run. The Result Log displays two filenames used/generated by each of the processes. <ul style="list-style-type: none"> Audit <ul style="list-style-type: none"> Audit_<x>_201503142216.dbauditor Audit_<x>_201503142216.xml Clean <ul style="list-style-type: none"> Audit_<x>_201503142216.dbauditor Clean_<x>_201503150216.xml <p>where “x” is the name of the file entered by the user in the GUI.</p> If the filename in the “Result Log” column exceeds 24 characters, it shall be truncated at 22 characters and the characters “...” shall be appended to the end of the truncated string to signify that the filename was truncated. The filename “Result Log” column is hyperlink. The operator can click on the link and view the files as text or to save them locally. An operator may not edit the result log using this screen. Each header will provide a Sorting mechanism. On clicking the header, the values of the selected column will get sorted in ascending/descending order. Clicking the header again will toggle the order (descending/ascending). The value of “Cleaned subscriber and pool count” is always 0 when the “Process Type” is either “Single Subscriber or Pool Audit” or “Complete Database Audit”.
Security Log Entries	<p>Successful started Database Consistency Audit</p> <p>Failed to start Database Consistency Audit</p>
Error/Status Message Trigger Condition	<p>[Error Code 13104] – Missing required field ‘x’.</p> <p>The value specified for “Key Type”, “Key Value”, “Result File Name” or “Input FileName” is missing.</p>
Error/Status Message Trigger Condition	<p>[Error Code 13161] – Another instance of ‘x’ is already running.</p> <p>No new instance of the Audit/Clean process can be started when one is already in progress.</p>
Error/Status Message Trigger Condition	<p>[Error Code 13116] – Invalid value for field [{x}].</p> <p>The value specified for the Key Value is invalid.</p>
Error/Status Message Trigger Condition	<p>[Error Code 13132] – Data not found.</p> <p>Requested subscriber or pool data does not exist in the database.</p>

3.5 Quota Reset Task GUI

The maintenance GUI is used for configuring Quota Reset Task. Only one Quota Reset Task runs at any point of time on UDR.

Figure 20: UDR Quota Reset Task Insert screen

A typical GUI screen for configuring a Quota Reset Task is shown in Figure 22. The details of the fields in the screen are given below.

Table 25: UDR Quota Reset GUI field - Detailed description.

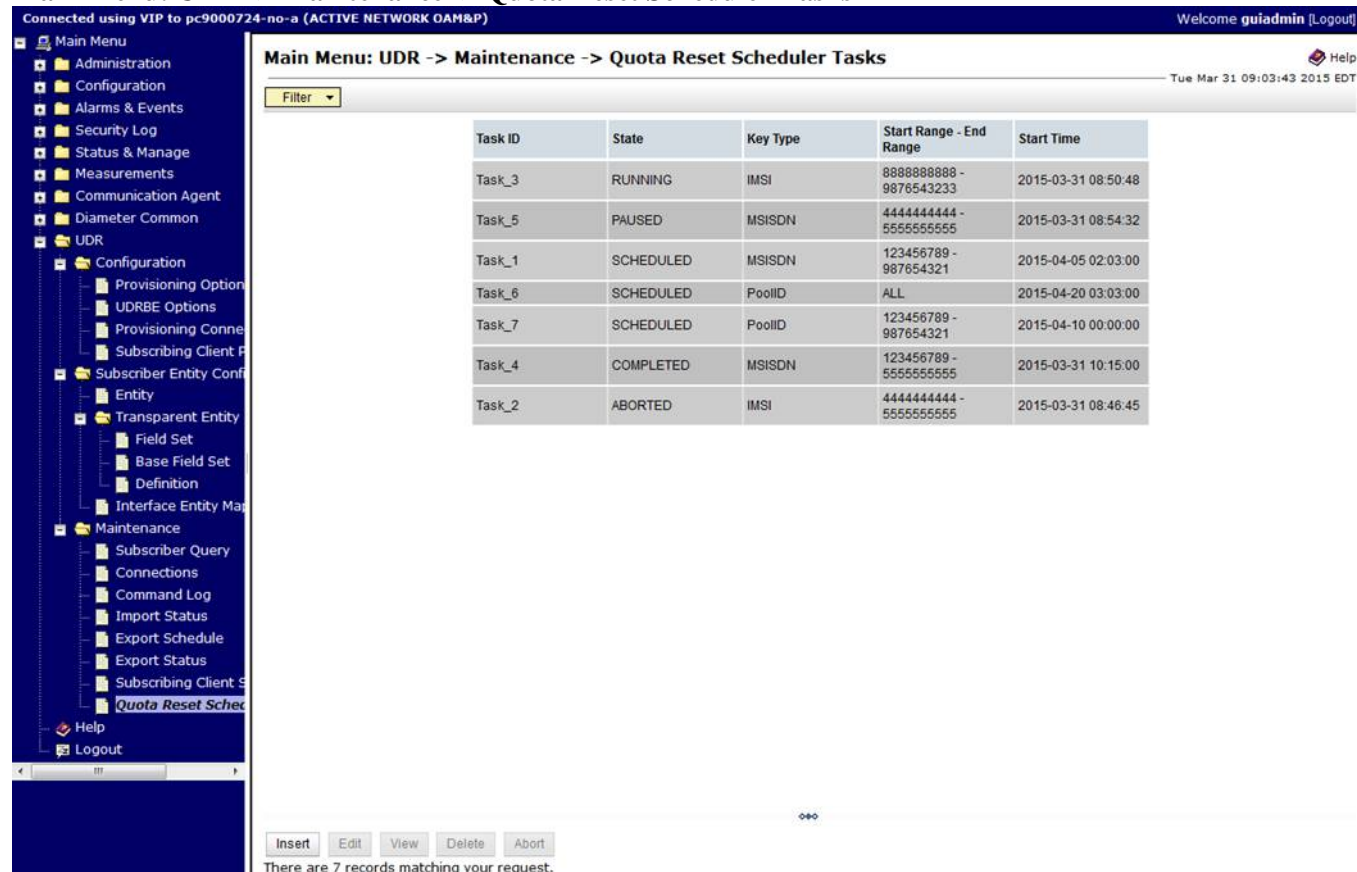
GUI Field name	Description	Possible Values	Default
Task ID	Unique task description given by the customer to identify the Task and its functionality. NOTE: Mandatory field	A 64 character string. Valid characters can be alphanumeric and underscore	None.
Start Time	Specifies date and time at which the Quota Reset Activity is requested to start. NOTE: Mandatory field	Valid calendar date and time in 24 hours	NONE
Key Type	The type of key used for specifying the range of the subscribers.	IMSI, MSISDN or POOLID	IMSI
'All' Check Box	When the box is checked all records in the database are selected based on the Key Type.	Selected, Not Selected.	Not selected.

	When this box is checked, Start Range and End Range fields cannot be filled in.		
Start Range	Start range of the Subscribers/Pools for Quota Reset. NOTE: Mandatory field, if “All” Check Box is not checked.	(22 digits long) NOTE: For IMSI and MSISDN the value must be between 8 to 15 digits. For POOLID, the value can be between 1 to 22 digits.	NONE
End Range	End range of the Subscribers/Pools for Quota Reset. NOTE: Mandatory field, if “All” Check Box is not checked.	(22 digits long) NOTE: For IMSI and MSISDN the value must be between 8 to 15 digits. For POOLID, the value can be between 1 to 22 digits.	NONE
Force NRT	If Force NRT is set to YES the nextResetTime of the matching Quota Row Element will be modified, if the value matches with the Old NRT.	YES, NO NOTE: If the value of this field is YES, the Old NRT value is must be provided.	NO
Old NRT	The value of the nextResetTime that need to be modified	Time in UTC format.	NONE
Row Element List	List of Quota or Pool Quota Row Element Names and Next New Reset Times (the value to be used as the nextResetTime Row Field Element). There can be up to 10 Row Elements in the List. NOTE: Mandatory field	Quota Row Element Name is a 32 character string. Valid characters can be alphanumeric and underscore Next New Reset Time is the date and time in UTC format.	NONE
Suppress PNR	Should a PNR message be suppressed during Quota Reset.	YES, NO	YES
Reset Values	Should Row Field Element values be reset during Quota Reset.	YES, NO	YES
Current State	The current operational state of the Quota Reset Task. ** not editable **	SCHEDULED, RUNNING, PAUSED, COMPLETED, ABORTED	SCHEDULED when created.

3.5.1 Quota Reset Scheduler Tasks – Menu Item

Scheduled Quota Reset Feature provides a GUI screen where all the configured Quota Reset Tasks can be viewed and managed at one place. There will be a new GUI menu item “Quota Reset Scheduler Tasks” under the Maintenance folder as shown in Figure 5.

Main Menu: UDR -> Maintenance -> Quota Reset Scheduler Tasks



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Main Menu: UDR -> Maintenance -> Quota Reset Scheduler Tasks Help

Tue Mar 31 09:03:43 2015 EDT

Task ID	State	Key Type	Start Range - End Range	Start Time
Task_3	RUNNING	IMSI	8888888888 - 9876543233	2015-03-31 08:50:48
Task_5	PAUSED	MSISDN	4444444444 - 5555555555	2015-03-31 08:54:32
Task_1	SCHEDULED	MSISDN	123456789 - 987654321	2015-04-05 02:03:00
Task_6	SCHEDULED	PoolID	ALL	2015-04-20 03:03:00
Task_7	SCHEDULED	PoolID	123456789 - 987654321	2015-04-10 00:00:00
Task_4	COMPLETED	MSISDN	123456789 - 5555555555	2015-03-31 10:15:00
Task_2	ABORTED	IMSI	4444444444 - 5555555555	2015-03-31 08:46:45

Insert Edit View Delete Abort

There are 7 records matching your request.

Figure 21: Quota Reset Scheduler Tasks maintenance screen

On the screen, Quota Reset Tasks are shown in the order based on the Task's State, the Tasks in the RUNNING/PAUSED State is shown on the top, then SCHEDULED, COMPLETED, and ABORTED .

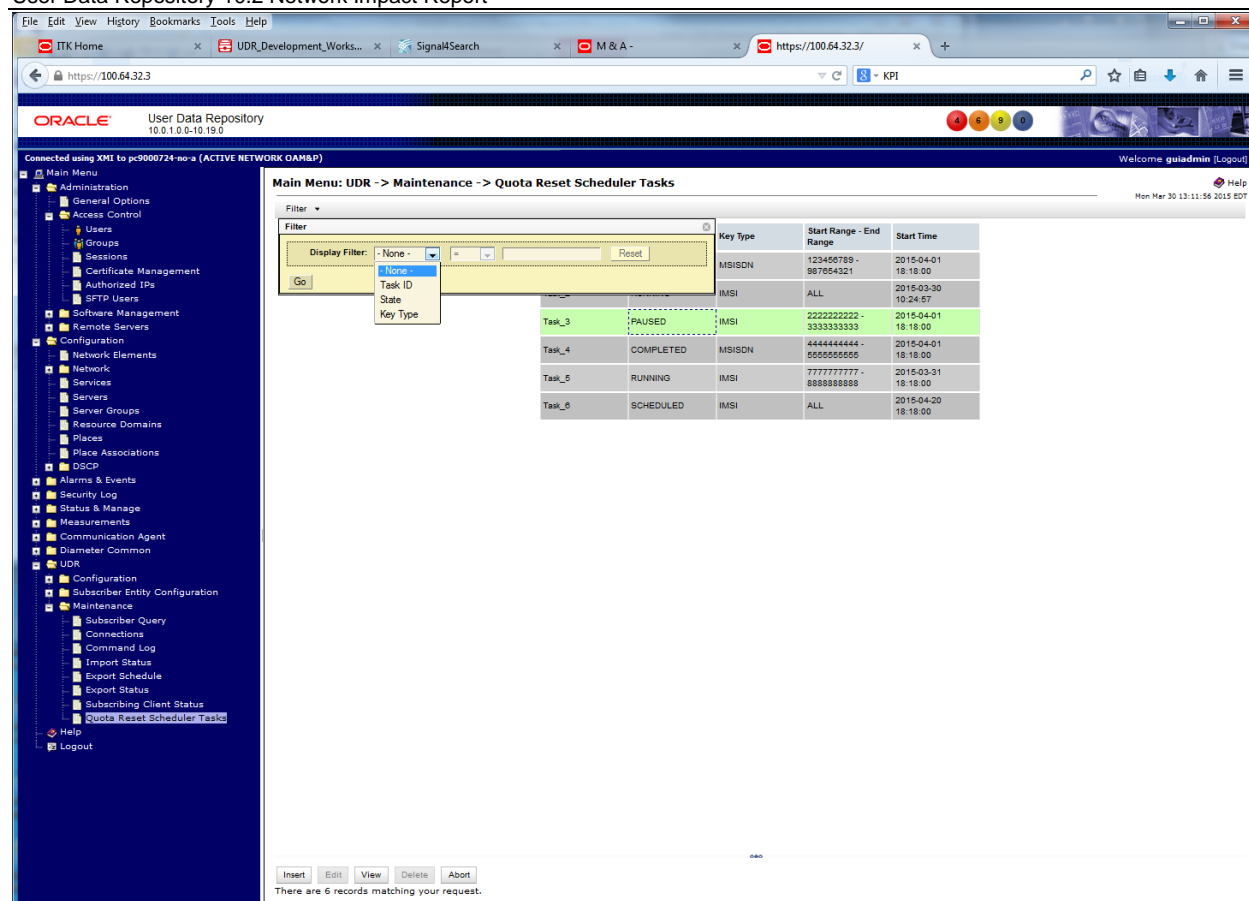


Figure 22: Quota Reset Scheduler Tasks maintenance screen- Filters

Quota Reset Scheduler Screen provides facility to filter the Tasks based on Task ID, State, and Key Type. The default organization will be based on the State.

Table 26: Availability of the Management buttons on the Quota Reset Scheduler Screen

Management buttons on the Quota Reset Scheduler Tasks screen	State of the Task selected.				
	SCHEDULED	RUNNING	PAUSED	COMPLETED	ABORTED
[Insert] (only for new Task)	N/A	N/A	N/A	N/A	N/A
[Edit]	Allowed	Grayed out	Grayed out	Allowed	Allowed
[View]	Allowed	Allowed	Allowed	Allowed	Allowed
[Delete]	Allowed	Grayed out	Grayed out	Allowed	Allowed
[Abort]	Allowed	Allowed	Allowed	Grayed out	Grayed out

3.5.2 Quota Reset Task management Screens

Scheduled Quota Reset screen provides 4 options to create and manage the Quota Reset Tasks. Following table describes the availability of the Management buttons based on the Task's Operational State.

3.5.2.1 Insert Screen

Insert Screen is used for inserting a new Quota Reset Task. Insert Screen can be brought up by clicking the [Insert] button at the bottom of the *Quota Reset Scheduler Tasks* screen. The screen allows configuring the Task to run at a future time. It validates the fields during the creation time and Task enters into SCHEDULED State.

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Main Menu: UDR -> Maintenance -> Quota Reset Scheduler Tasks -> [Insert] Help

Tue Mar 31 08:13:24 2015 EDT

Field	Value	Description
Task ID	<input type="text"/>	Unique task description given by the customer to identify the Task and functionality. [Default = None.]
Start Time	Date: January 01 2015 Time: 00 00	Specifies date and time at which the Quota Reset Activity need to be started. [Default = None.]
Key Type	IMSI	The type of key used for specifying the range of the subscribers. [Default = IMSI.]
Start Range	<input type="text"/>	When the box is checked all records in the database is selected based on the Key Type. [Default = unchecked.]
End Range	<input type="text"/>	Start range of the Subscribers/Pools for Quota Reset. [Default= None.]
Force NRT	No Old NRT <input type="text"/>	End range of the Subscribers/Pools for Quota Reset. [Default = None.]
Row Element List	<div> <div>Quota Row Element Name</div> <div>New Next Reset Time</div> <div>01 <input type="text"/></div> <div><input type="text"/></div> <div>Add</div> <div>X</div> </div>	Should the nextResetTime of the matching Quota Row Element be modified, if the value of the Quota Row Field Element nextResetTime has is the Old NRT. [Default = Not selected.]
Suppress PNR	Yes	List of Quota or Pool Quota Row Element Names and Next New Reset Times (the value to be used as the nextResetTime Row Field Element) [Default = None.]
Reset Values	Yes	Should a PNR message to be suppressed during Quota Reset. [Default = Yes.]
Current State	SCHEDULED	Should Row Field Element values to be reset during Quota Reset [Default = Yes.]
Measurement Statistics		
Last Execution Completed		The current operational state of the Quota Reset Task. [Default = SCHEDULED.]
Last Execution State		The Date and Time of the last execution completion time in UTC format. [Default = None.]
Total Records Examined		The Operational State of the Task during the last execution. [Default = None.]
Total Records Reset		The total number of Subscriber/Pool records examined by the Task. [Default = None.]
Total Row Elements Reset		Total number of Subscriber/Pool records for which the Quota Entity has been modified. [Default = None.]
Last Record Processed		Total number of Quota Row Elements that have been modified. [Default = None.]
		The key value of the Subscriber/Pool processed last. [Default = None.]

Ok Cancel

Figure 23: UDR Quota Reset Task - INSERT screen

3.5.2.2 Edit Screen

Edit Screen can be brought up by clicking the [Edit] button at the bottom of the Quota Reset Scheduler maintenance Screen, after selecting a Task on the screen. Edit Screen is used to change the fields configured in the already existing Task. Edit screen allows to re-run and existing Quota Reset Task configuration. It also allows modifying the entire configuration and defining a new Task.

Connected using VIP to pc9000724-no-a (ACTIVE NETWORK OAM&P) Welcome **guidadmin** [Logout]

Main Menu: UDR -> Maintenance -> Quota Reset Scheduler Tasks -> [Edit] Tue Mar 31 08:15:02 2015 EDT

Field	Value	Description				
Task ID	Task_4	Unique task description given by the customer to identify the Task and functionality. [Default = None.]				
Start Time	Date: April 01 2015 Time: 18 18	Specifies date and time at which the Quota Reset Activity need to be started. [Default = None.]				
Key Type	MSISDN	The type of key used for specifying the range of the subscribers. [Default = IMSI.]				
Start Range	4444444444	When the box is checked all records in the database is selected based on the Key Type. [Default = unchecked.]				
End Range	5555555555	Start range of the Subscribers/Pools for Quota Reset. [Default=None.] End range of the Subscribers/Pools for Quota Reset. [Default = None.]				
Force NRT	No Old NRT	Should the nextResetTime of the matching Quota Row Element be modified, if the value of the Quota Row Field Element nextResetTime has is the Old NRT. [Default = Not selected.]				
Row Element List	<table border="1"> <thead> <tr> <th>Quota Row Element Name</th> <th>New Next Reset Time</th> </tr> </thead> <tbody> <tr> <td>01 Pool_Data_Plan1</td> <td>2015-04-15T09:25:30</td> </tr> </tbody> </table>	Quota Row Element Name	New Next Reset Time	01 Pool_Data_Plan1	2015-04-15T09:25:30	List of Quota or Pool Quota Row Element Names and Next New Reset Times (the value to be used as the nextResetTime Row Field Element) [Default = None.]
Quota Row Element Name	New Next Reset Time					
01 Pool_Data_Plan1	2015-04-15T09:25:30					
Suppress PNR	Yes	Should a PNR message to be suppressed during Quota Reset. [Default = Yes.]				
Reset Values	Yes	Should Row Field Element values to be reset during Quota Reset [Default = Yes.]				
Current State	COMPLETED	The current operational state of the Quota Reset Task. [Default = SCHEDULED.]				
Measurement Statistics						
Last Execution Completed	2015-04-01T18:18:00	The Date and Time of the last execution completion time in UTC format. [Default = None.]				
Last Execution State	COMPLETED	The Operational State of the Task during the last execution. [Default = None.]				
Total Records Examined	4235145612	The total number of Subscriber/Pool records examined by the Task. [Default = None.]				
Total Records Reset	4294967295	Total number of Subscriber/Pool records for which the Quota Entity has been modified. [Default = None.]				
Total Row Elements Reset	988977815655	Total number of Quota Row Elements that have been modified. [Default = None.]				
Last Record Processed	44535645	The key value of the Subscriber/Pool processed last. [Default = None.]				

Ok Cancel

Figure 24: UDR Quota Reset Task - EDIT screen

3.5.2.3 View Screen

View Screen can be brought up by clicking the [View] button at the bottom of the Quota Reset Scheduler maintenance Screen, after selecting a Task on the screen. View Screen can be used to get the progress of a Task that is in RUNNING State, view the last execution measurement statistics and for verifying the configuration.

Connected using VIP to pc900724-no-a (ACTIVE NETWORK OAM&P) Welcome **guiadmin** [Logout]

Main Menu: UDR -> Maintenance -> Quota Reset Scheduler Tasks -> [View] Help
Wed May 27 06:49:55 2015 EDT

Field	Value	Description										
Task ID	Test2	Unique task description given by the customer to identify the Task and functionality. [Default = None.]										
Start Time	Date: May 27 2015 Time: 04 11	Specifies date and time at which the Quota Reset Activity need to be started. [Default = None.]										
Key Type	MSISDN	The type of key used for specifying the range of the subscribers. [Default = IMSI.]										
Range	Start Range: <input type="text"/> All <input checked="" type="checkbox"/> End Range: <input type="text"/>	When "All" box is checked all records in the database is selected based on the Key Type. [Default = unchecked]. Start range of the Subscribers/Pools for Quota Reset. [Default=None.] End range of the Subscribers/Pools for Quota Reset. [Default = None.]										
Force NRT	No Old NRT: <input type="text"/>	If Force NRT is set to YES the nextResetTime of the matching Quota Row Element will be modified, if the value matches with the Old NRT. [Default = Not selected.] Old NRT - The value of the nextResetTime that needs to be modified. [Default = None.]										
Row Element List	<table border="1"> <thead> <tr> <th>Quota Row Element Name</th> <th>New Next Reset Time</th> </tr> </thead> <tbody> <tr> <td>01 Quota1</td> <td>2013-04-22T00:00:00-05:00</td> </tr> <tr> <td>02 Quota2</td> <td>2013-04-22T00:00:00-05:00</td> </tr> <tr> <td>03 Quota3</td> <td>2013-04-22T00:00:00-05:00</td> </tr> <tr> <td>04 Quota4</td> <td>2013-04-22T00:00:00-05:00</td> </tr> </tbody> </table>	Quota Row Element Name	New Next Reset Time	01 Quota1	2013-04-22T00:00:00-05:00	02 Quota2	2013-04-22T00:00:00-05:00	03 Quota3	2013-04-22T00:00:00-05:00	04 Quota4	2013-04-22T00:00:00-05:00	List of Quota or Pool Quota Row Element Names and Next New Reset Times (the value to be used as the nextResetTime Row Field Element) [Default = None.]
Quota Row Element Name	New Next Reset Time											
01 Quota1	2013-04-22T00:00:00-05:00											
02 Quota2	2013-04-22T00:00:00-05:00											
03 Quota3	2013-04-22T00:00:00-05:00											
04 Quota4	2013-04-22T00:00:00-05:00											
Suppress PNR	Yes	Should a PNR message be suppressed during Quota Reset. [Default = Yes.]										
Reset Values	Yes	Should Row Field Element values be reset during Quota Reset. [Default = Yes.]										
Current State	RUNNING	The current operational state of the Quota Reset Task. [Default = SCHEDULED.]										

Measurement Statistics		
Last Execution State	RUNNING	The Operational State of the Task during the last execution. [Default = None.]
Last Execution Completed	0000-00-00 00:00:00	The Date and Time of the last execution completion time in UTC format. [Default = None.]
Total Records Examined	4648384	The total number of Subscriber/Pool records examined by the Task. [Default = None.]
Total Records Reset	4648384	Total number of Subscriber/Pool records for which the Quota Entity has been modified. [Default = None.]
Total Row Elements Reset	18593536	Total number of Quota Row Elements that have been modified. [Default = None.]
Last Record Processed	1126111110	The key value of the Subscriber/Pool processed last. [Default = None.]

Ok

Figure 25: UDR Quota Reset Task - View screen

3.5.2.4 Delete Screen

[Delete] button at the bottom of the Quota Reset Scheduler maintenance Screen allows a user to delete a Task that is SCHEDULED, COMPLETED or ABORTED State, after selecting a Task.

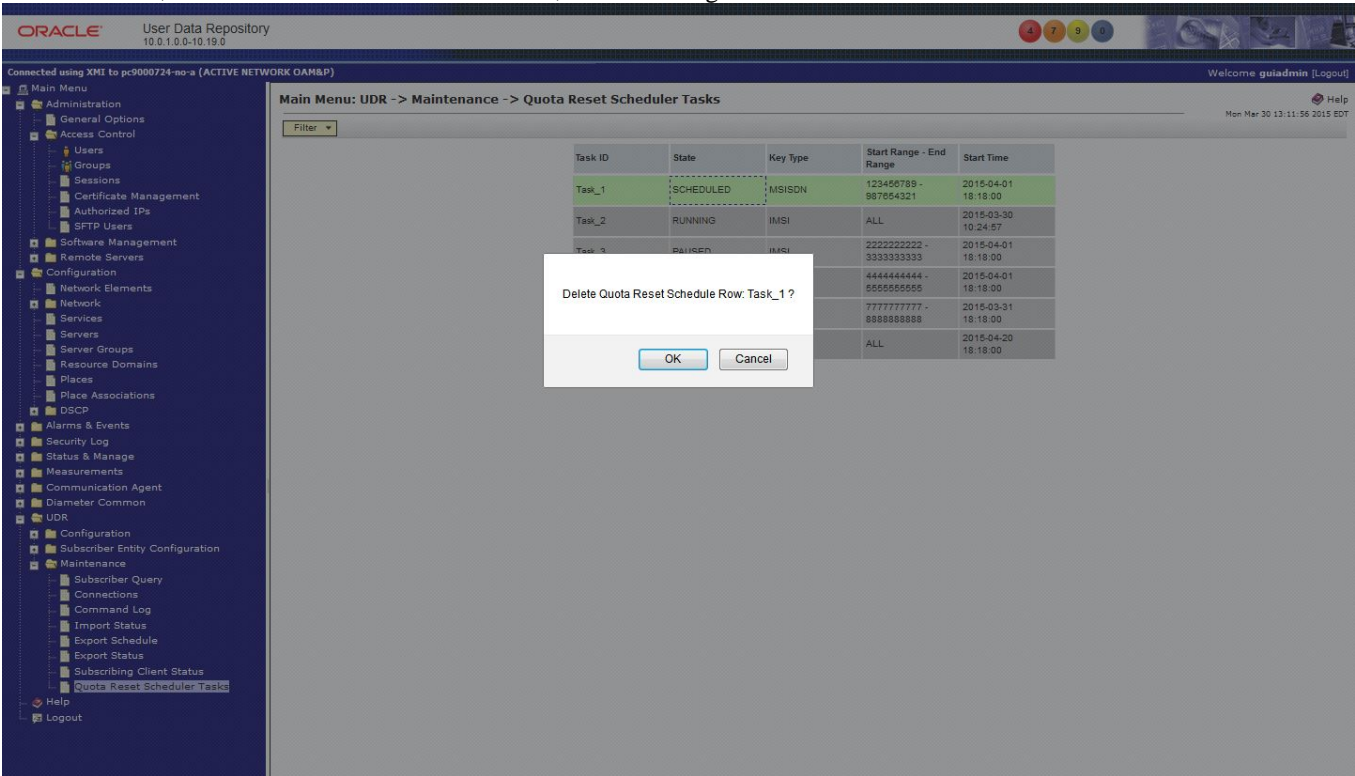


Figure 26: DELETE Operation - Quota Reset Scheduler Maintenance Screen

3.5.2.5 Abort Screen

User can select a Task and click on the [Abort] button to abort a Task that is in the SCHEDULED, RUNNING or PAUSED State.

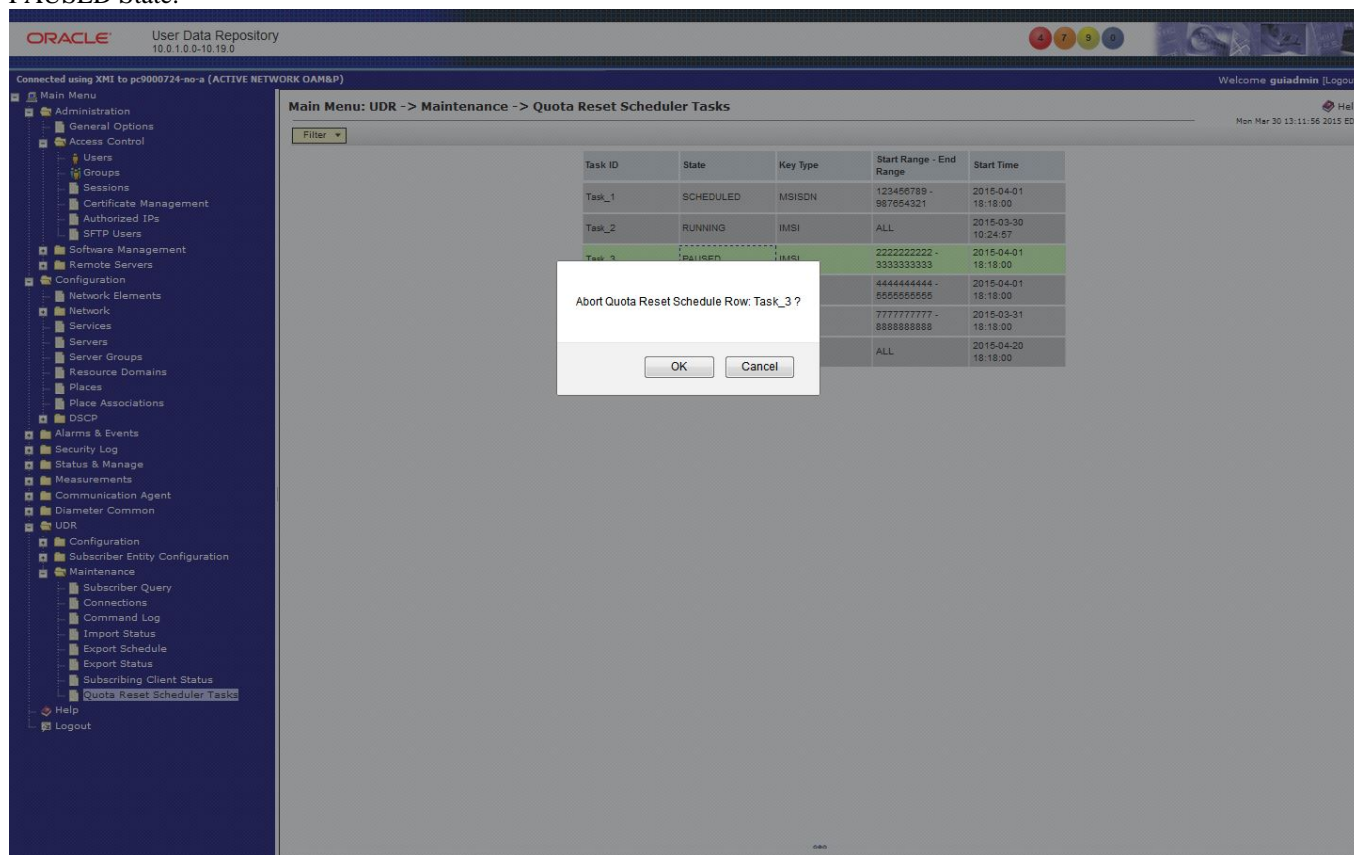


Figure 27: ABORT Operation - Quota Reset Scheduler Maintenance Screen

4 UDR 10.2 MEAL Summary

This section will summarize the Alarms, Measurements, KPIs and Events.

4.1 Alarms

Table 27: Alarms

Alarm ID	Alarm Name	New/ Modified / Deleted	Severity	HA Score	MIB Required (Y/N)
13066	UDRPROV Process CPU Utilization Threshold Exceeded	New	Minor, Major, Critical	Normal	Yes
13067	UDRPROV Process Memory Utilization Threshold Exceeded	New	Minor, Major, Critical	Normal	Yes
13368	Database Auditor : Audit/Clean Process Failed	New	Major	Normal	Yes
13409	Diameter Application Ingress Message Rate Exceeded.	Modified	Minor, Major, Critical	Normal	Yes
22221	Routing MPS Rate	Modified	Minor, Major, Critical	Normal	Yes

4.2 Measurements

Measurements are A level measurements aggregated at NOAMP and viewable from NOAMP GUI.

Table 28: Measurements

ID	Tag	Group	New/ Modified / Deleted	Collect Interval	Description
Provisioning Measurements					
3015	RxRasGetReqReceived	Provisioning Performance	New	5 min	The total number of REST GET requests that have been received on the provisioning interface.
3016	RxRasPutReqReceived	Provisioning Performance	New	5 min	The total number of REST PUT requests that have been received on the provisioning interface.
3017	RxRasPostReqReceived	Provisioning Performance	New	5 min	The total number of REST POST requests that have been received on the provisioning interface.
3018	RxRasDeleteReqReceived	Provisioning Performance	New	5 min	The total number of REST DELETE requests that have been received on the provisioning interface.
3041	RxXsasSelectReqReceived	Provisioning Performance	New	5 min	The total number of SOAP select requests that have been received on the provisioning interface.
3042	RxXsasInsertReqReceived	Provisioning Performance	New	5 min	The total number of SOAP insert requests that have been received on the provisioning interface.
3043	RxXsasUpdateReqReceived	Provisioning Performance	New	5 min	The total number of SOAP update requests that have been received on the provisioning interface.
3044	RxXsasDeleteReqReceived	Provisioning Performance	New	5 min	The total number of SOAP delete requests that have been received on the provisioning interface.
3045	RxXsasOperationReqReceived	Provisioning Performance	New	5 min	The total number of SOAP operation requests that have been received on the provisioning interface.
UDRBE/UDRFE Performance Measurement Group					
3166	SQRRecordsExamined	UDRBE Performance	New	5 min	Total number of Records scanned by the Quota Reset Tasks (Pools+Subscribers)
3167	SQRRecordsReset	UDRBE Performance	New	5 min	Total number of Records in which Quota Entities have been reset or the value of the nextResetTime Row Field Element has been updated. (Pools+Subscribers)
3168	SQRQuotaRowElementsReset	UDRBE Performance	New	5 min	Total number of Quota Row Elements got reset or the value of the nextResetTime element has been updated.(Pools+Subscribers)
3169	SQRRecordsFailed	UDRBE Performance	New	5 min	Total number of Records on which Quota Resets or nextResetTime update has Failed (Pools+Subscribers)
3458	RxResetRequestPUR	UDRFE Performance	New	5 min	The total number of PUR Quota Reset Request Messages Received.

ID	Tag	Group	New/ Modified / Deleted	Collect Interval	Description
3459	RxResetRequestPURSuccessful	UDRFE Performance	New	5 min	The total number of PUR Quota Reset Request Messages successfully processed.
3460	RxResetRequestPURFailed	UDRFE Performance	New	5 min	The total number of PUR Quota Reset Requests failed.

The following existing measurements created for the legacy migration on demand feature are used by the new UDR to UDR migration on demand processing. These existing measurements are not seen by the customer and do not appear on the GUI. They are used by the professional services engineers performing the migration. The measurements are updated with to make them applicable to both legacy and o2o migration.

Table 29: Migration Measurements

ID	Tag	New/ Modified / Deleted	Collection Interval	Description
3501	TxUdrBeMigrationRequests	Modified	5 Min	The total number of times PROVBE does not find subscriber/pool, and request makes a request for OnDemand Migration.
3502	TxUdrBeMigrationRecordNotFound	Modified	5 Min	The total number of times subscriber was not found even after requesting The migration on demand process and waiting for ProvBeMigrationWaitTime.
3503	TxMigrationExceptionalPurAccepted	Modified	5 Min	The total number of PUR accepted during migration which has next sequence number more than 1 and within configured allowed range
3504	OnDemandRequests	Modified	5 Min	Number of times The migration on demand process sends the request to legacy SRR the source system.
3505	OnDemandRecordNotFound	Modified	5 Min	Number of times subscriber was not found on legacy Queries the source system.
3506	OnDemandCommitFailed	Modified	5 Min	Number of Times a commit to ComCol DB failed. (shall try 3 times MigrHwtRetryLimit exhausted before the commit declared failed)
3507	OnDemandEntryAlreadyExist	Modified	5 Min	Number of Times when ODT found that requested subscriber/pool for migration already exists at UDR.
3508	OnDemandMysqlMaxResponseTime	Modified	5 Min	Maximum time taken by ODT for fetching Subscriber/Pool data from Legacy MySQL the source system.
3509	OnDemandMysqlAvgResponseTime	Modified	5 Min	Average Time taken by ODT for fetching Subscriber/Pool data from Legacy MySQL the source system.

4.3 KPIs

Table 30: KPIs

ID	Name	New/ Modified / Deleted	Avg. Interval	Description
13010	RxRasGetReqReceivedRate	New	60 sec	The number of REST GET requests that have been received on the provisioning interface per sec
13011	RxRasPutReqReceivedRate	New	60 sec	The number of REST PUT requests that have been received on the provisioning interface per sec
13012	RxRasPostReqReceivedRate	New	60 sec	The number of REST POST requests that have been received on the provisioning interface per sec
13013	RxRasDeleteReqReceivedRate	New	60 sec	The number of REST DELETE requests that have been received on the provisioning interface per sec
13036	RxXsasSelectReqReceivedRate	New	60 sec	The number of SOAP select requests that have been received on the provisioning interface per sec
13037	RxXsasInsertReqReceivedRate	New	60 sec	The number of SOAP insert requests that have been received on the provisioning interface per sec
13038	RxXsasUpdateReqReceivedRate	New	60 sec	The number of SOAP update requests that have been received on the

ID	Name	New/ Modified / Deleted	Avg. Interval	Description
				provisioning interface per sec
13039	RxXsasDeleteReqReceivedRate	New	60 sec	The number of SOAP delete requests that have been received on the provisioning interface per sec
13040	RxXsasOperationReqReceivedRate	New	60 sec	The number of SOAP operation requests that have been received on the provisioning interface per sec
13163	SQRRecordsExaminedRate	New	60 sec	The number of Subscriber/Pool Records currently being examined.
13164	SQRRecordsResetRate	New	60 sec	The number of Subscriber/Pool Records currently being reset or updated.
13165	SQRQuotaRowElementsResetRate	New	60 sec	The number of Quota Row Elements currently being reset or updated.
13166	SQRRecordsFailedRate	New	60 sec	The number of Subscriber/Pool Records currently failed to reset or updated.
13413	RxResetRequestPURRate	New	60 sec	The number of PUR Reset messages received by UDR currently.
13414	RxResetRequestPURSuccessfulRate	New	60 sec	The number of PUR Reset messages processed successfully at this time.
13415	RxResetRequestPURFailedRate	New	60 sec	The number of PUR Reset messages failed to process at this time.

4.4 Events

Table 31: KPIs

ID	Name/Descr Text	New/ Modified / Deleted	Addl Info	Description
13155	Scheduled Quota Reset Activity started	New	Scheduled Quota Reset Activity started (Task Desc)	This event is generated each time when the Quota Reset Scheduler starts running a new Quota Reset Task
13156	Scheduled Quota Reset Activity completed	New	Scheduled Quota Reset Activity completed (Task Desc and Measurement Statistics)	This event is generated each time when the Quota Reset Scheduler completes running a Quota Reset Task
13157	Scheduled Quota Reset Activity aborted	New	Scheduled Quota Reset Activity aborted (Task Desc and Measurement Statistics)	This event is generated when the user aborts a running or paused Quota Reset Task
13158	Scheduled Quota Reset Activity paused	New	Scheduled Quota Reset Activity paused (Task Desc and Measurement Statistics)	This event is generated when Quota Reset Scheduler pauses a running Quota Reset Task
13159	Scheduled Quota Reset Activity resumed	New	Scheduled Quota Reset Activity resumed (Task Desc and Measurement Statistics)	This event is generated when Quota Reset Scheduler resumes a paused Quota Reset Task

4.5 Current MEAL Data

Currently available MEAL data (unchanged, new, modified) in Release10.2 is specified in the attached sheet – “MEAL_udr-10.0.0-10.16.0-udr-10.2.0.0-12.15.0.xlsx”



MEAL_udr-10.0.0-10.16.0-udr-10.2.0.0

5 Reference List

5.1 UDR 10.2 User Guides (see customer documentation)

http://docs.oracle.com/cd/E66391_01/index.htm

- *UDR 10.2 Release Notice*
- *Operation, Administration, and Maintenance User's Guide*
- *Communication Agent User's Guide*
- *Diameter Common User's Guide*
- *Diameter User Guide*
- *Enhanced Subscriber Profile Repository User's Guide*
- *Alarms, KPI's and Measurements Reference*
- *SOAP Provisioning Interface Reference*
- *REST Provisioning Interface Reference*
- *Import / Export File Interface Reference*
- *Network Interconnect Reference*
- *Hardware Documentation Roadmap Reference*
- *Related Publications Reference*

UDR Installation and Disaster Recovery

- *UDR Installation and Configuration Procedure*
- *Disaster Recovery Guide*

5.2 Firmware Changes

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

- HP Solutions Firmware Upgrade Pack, Software Centric Release Notes 2.2.7
- HP Solutions Firmware Upgrade Pack, Software Centric Release Notes 2.2.8
- HP Solutions Firmware Upgrade Pack, Software Centric Release Notes 2.2.9