

**Oracle® Communications
Subscriber Data Management**

Release Notes

Release 9.0

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Introduction

This release notes document lists the resolved and known PRs for SDM Release 9.0.

The Subscriber Data Management 9.0 Release Notes includes:

- Resolved PRs in the form of patches in Maintenance Release 9.0.5
- Resolved PRs in Maintenance Release 9.0.5
- Resolved PRs in Maintenance Release 9.0.4
- Resolved PRs in Maintenance Release 9.0.3
- Resolved PRs in Maintenance Release 9.0.2
- Resolved PRs in Maintenance Release 9.0.1

Release Notes are distributed to customers with a new software release at the time of General Availability (GA) or Limited Availability (LA). They are updated for each Maintenance Release.

The Release Notes are available only on the Oracle Help Center Site. For each new publication to the Oracle Help Center Site, the revision level of the part number is incremented. The Release Notes can be located under the Recent Release Notes tab by its title or part number; or by its product and release; see also [Locate Product Documentation on the Oracle Help Center Site](#).

PR Severity Definitions

The PR sections in this document refer to PR severity levels. Definitions of these levels can be found in the following publication:

- *TL 9000 Quality Management System Measurement Handbook*.

Patch Installation

All SDM patches are cumulative. Each patch is built on the previous one. In order to install patch N, patch N-1 must be installed first which also requires patch N-2 and so on. All SDM patches are applicable to all customers using the associated release unless explicitly indicated in the specific installation procedure provided with each patch.

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.

3. 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."
4. 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.

Resolved PRs in SDM Release 9.0

Resolved PRs in the form of patches in Maintenance Release 9.0.5

Patch	PR/Bug	Severity	Title	Customer Impact
1	237847	2	SDM sends PNRs with two same entities	When a new subscriber was added to and subsequently deleted from the SDM, the PNR contained duplicate XML content. This did not have any customer impact.
2	240682	2	Force Select queries to run on active backend	<p>There were isolated incidents where updates for specific subscribers were not recorded in the SPR. The issue occurred when two profile update messages (PUR) were received in quick succession for the same subscriber. This also occurred when a profile update request (PUR) was followed quickly by a user data request (UDR) for the same subscriber. This resulted in a data response discrepancy between the active/front-end and standby/back-end server.</p> <p>Note: Patch 2 is disabled by default.</p>
3	19525883	3	Increase SPR send buffer	This enhancement allows the system to buffer more outgoing SPR messages and so prevents congestion. There is also an enhancement to buffer level management which fixes the congestion level 1 alarm that was getting stuck.

Patch	PR/Bug	Severity	Title	Customer Impact
4	19645569 19645628 19645658 19645727	3 3 3 3	Enhancement of AutoEnrollment cleanup on expired timer only SPR Subscriber Count Feature io monitoring script for debugging DAS Crash	<p>This enhancement enables SPR auto enrollment cleanup to take place based on inactivity time.</p> <p>This is a new feature that performs a daily count of the number of SPR subscribers. The count is available through the WebCI. This feature is configured in the /etc/sysconfig/blue file. The field "resolution=min/hour/day" must be added in order to select frequency of the count. The default is day. The field "time=n" is set in order to determine how often the during each resolution the count takes place. The default is 1. For more information see SPR Subscriber Count Feature in the appendix.</p> <p>This enhancement monitors key system metrics at certain intervals and saves the output to a file.</p> <p>Issue with a limit in the SPR Subscriber license. When the DAS exceeded a certain number of subscribers there was a core dump.</p>
5	19790919	2	SNR subscribe on hss that is on standby SC gets responded user unknown	There was an issue with Subscriber Notification Request) SNR auto-enrollment. When an SNR was received on the standby system controller, and the auto-enrollment feature was switched on, a subscriber profile was created but no notification was created or sent.
6	19870087	3	HSS crashed when running autocleanup	Periodically there was a crash in the HSS when autoenrollment cleanup took place. Same as 20174567, P1 in 9.3.1.
7	20182537	2	Enhancement of Patch 2: replace telnet config by webCI config	This is an enhancement of 240682, Patch 2 (bug 19118324). A new configurable field has been added to the WebCI for the ForceOnReferenceType parameter. For more information see HssSPRConfig changes in the appendix.
8	20190627	2	HSS observer lock on startup causing hung thread and core dump	<p>When the HSS is initializing it locks the controller thread which causes it to hang and it is killed by the observer.</p> <p>There was no visible customer impact.</p>

Patch	PR/Bug	Severity	Title	Customer Impact
9	19113426	3	Database inconsistency	We found that some SPR subscribers were not deleted correctly from the database and this caused an inconsistency. Errors occurred when subscribers were provisioned. (The original PR is 236875) (20131773 in 9.3 [P2 in 9.3.1])
	20318069	3	HSS process crash (SPR) resulting from memory leaks that occur when the HP OC Diameter Licence limit is exceeded	After a period of time, the HSS crashed when the maximum TPS license value was exceeded. Copy of bug 19365209. (19645724 in 9.3 3 [P2 in 9.3.1]).
10	20930658	3	SR 3-10409613261 - DAS core dump (known issue)	Database access on the problem slot was lost for a few seconds, and then recovered. Because DAS on the two slots works in load-sharing mode, there was no service interruption when DAS on 1 slot was restarted. P4 in 9.3.1 (bug 20983059)
11	21084303	3	SetGeoVIP calls clearvip.sh after setvip.sh causing GEO VIP to be removed.	When the georedundant link went down and was being reset there was an issue on the replica site.
12	21149779	3	'SURVEIL' group user failed to query sub's PoolID	The operator surveillance team was not able to view the PoolID of a provisioned user so daily monitoring and maintenance were affected.
13	21493519	3	HssSPRProfileRepositorydata servicedata data corrupted or empty err 1054 or 7013	When the Geo Link was disrupted there were issues with certain SPR user profiles and services data. There was corruption in both profile and service data which was due to character set encoding.
14	21547581	4	The ibdata1 file gets too big (42GB) which is increasing the backup size	During a backup the ibdata file was too large. This increased the size of the backup file and also the length of time it took to perform a backup.
15	20003254	3	Multiple PUR of voldata	When updating SPR subscriber policy data there was a data mismatch between the master database node and the slave database node. These inconsistencies occurred when there were multiple change requests for the same subscriber, within a short period of time. An enhancement was included with Patch 15. For more information see Enhancement – THL file clean-up .

Patch	PR/Bug	Severity	Title	Customer Impact
16 <i>*Note 1</i>	21849641	3	Delete subscribers via provisioning in geo-config with WAN is down	<p>The provisioning interface on the SDM did not support the ability to delete subscribers whenever it was deployed in a geo-redundant configuration and when the WAN connection between the two sites was down.</p> <p>This feature provides the customer with the option to delete subscribers in this configuration. Now, when WAN connectivity is re-established, provisioning updates will show on both sites.</p> <p>This is a clone of bug 19108476 (PR232974) from release 9.3.</p>
	21876220	3	New alarms are required to notify users about tungsten replication issues	<p>Four new framework alarms were added to notify users about tungsten replication issues. Details of these alarms are here in the appendix: Alarms added with patch 16.</p> <p>Replication latency threshold must be defined. See section Replication Threshold Definition.</p>
17	21894932	3	DuplicatedKey when trying to INSERT the MSISDN and KEyNotFound when trying to DE	It was not possible to delete or replace corrupted SPR profiles in the database using SOAP, REST or the WebCI.

Table 1: Resolved PRs in the form of patches in SDM Release 9.0.5

Note 1

Patch 16 is a maintenance release and has special installation instructions. Please contact the Oracle Professional Services Architect for the relevant information.

Enhancement – THL file clean-up

With this enhancement the clean-up of THL files was improved. Now the clean-up process is triggered only when disk usage is over 70%, and THL files are removed one at a time.

This enhancement was tracked by bug 19101236 [227328].

Resolved PRs in Maintenance Release 9.0.5

Type	PR	Bug	Severity	Title	Customer Impact
Problem Report	235650	-	2-Major	[SDM] delete pool and update user profile at the same time, no PNR send out while both user and pool are subscribed	When the HSS received an XML request that exceeded 14,000 bytes the HSS rejected it. The HSS also rejected XML requests that were below the expected internal limitation in the system. In order to allow larger XML provisioning requests to be accepted by the SDM the size limit on the request was changed to approximately 14,000 bytes.
Problem Report	235304	-	2-Major	Too many Subscriber Not found errors in UDR if Subs xml created using IMSI	When UDR (User Data Requests) were sent to the subscriber database the correct subscriber information did not display.
Problem Report	234874	-	2-Major	Ran into DataAccess out-of-service issue when running provision performance testing	During testing a slow memory leak was discovered in the DAS (Database Access Server). The system grabs memory and doesn't release it. It could take up to 12 hours, depending on the system, for the system to crash.
Problem Report	232981	19108483	3-Minimal	SPR AutoEnrollment and AutoEnrollmentClean up feature	In the SPR there was an issue with deleting subscribers. This caused subscriber data corruption in the database.

Table 2: Resolved PRs in Maintenance Release 9.0.5

Resolved PRs in Maintenance Release 9.0.4

Type	PR	CSR	Severity	Title	Customer Impact
Problem Report	235009	-	2-Major	SDM doesn't send PNR to another MPE when receiving Pool quota update from one MPE via PUR	An issue occurred when two sub IMSI sessions in different MPEs belonged to the same pool. When one session reported pool quota usage, the SDM did not send a PNR to the other MPE. This caused some use case failures. Note: This is a duplicate PR of PR235060
Problem Report	232924	-	3-Minor	Trigger on bluedb does not specife the databases where HssASNotifySubscription is allocated	There was an error when sending the update PublicIdentity request. The public identity was not updated.

Type	PR	CSR	Severity	Title	Customer Impact
Problem Report	234722	-	2-Major	hss out-of-service when doing SDM provision interface performance test	The HSS crashes when provisioning subscribers with very large Pool Id values.
Problem Report	207440	-	3-Minor	Error msg "Serious error. The DIAMETER.MaxMsg Size buffer size '8192' is too small, need 36256, ", Sh connection to HSS drops	Under very heavy loads between the MPE and the SPR, the MPE may throw an exception, When an exception occurs, all traffic to the HSS stops for approximately 25 seconds and then the HSS recovers.
Problem Report	227617	-	1-Critical	Remediation: Adding license notice in the code	Oracle rebranding. Add license notice in the code.
Problem Report	234712	-	5-Enhancement	Change logo on GUI screens from Tekelec to Oracle	Oracle rebranding. Change logo on GUI screens from Tekelec to Oracle.
Problem Report	234710	-	5-Enhancement	Change visible copyright notices from Tekelec to Oracle for rebranding	Oracle rebranding. Change visible copyright notices from Tekelec to Oracle.

Table 3: Resolved PRs in Maintenance Release 9.0.4

Resolved PRs in Maintenance Release 9.0.3

Type	PR	CSR	Severity	Title	Description
Problem Report	231335	1014952	2-Major	Hss crash due to attribute mapping	Notifications are defined on the platform. Whenever a subscriber profile is modified it triggers a notification. Some notification attributes were not configured correctly on the HSS module and this caused the HSS to crash from time to time. When the HSS crashed the MPE lost connection with the SPR database and the ongoing transaction failed. The MPE does not retry the transaction. This can result in a small number of subscriber profiles containing default quota values.

Type	PR	CSR	Severity	Title	Description
Problem Report	229838	101176	3-Minor	RAS crash problem	The RasServer is used by the SDM to handle provisioning of SPR policy profiles and user profile data using the RESTful interface. When the RasServer runs above capacity, at greater than 100 TPS, it crashes. This may result in the loss SPR provisioned transactions.

Table 4: Resolved PRs in Maintenance Release 9.0.3

Resolved PRs in Maintenance Release 9.0.2

Type	PR	CSR	Title	Description
Enhancement	226030	-	Auto-Enrollment flag is cleared on profile update, when Auto-Enrollment enhancement is disabled.	A new attribute has been added to the HSS SPR Configuration in the SDM. It is the AutoEnrollRemoveFlagOnUpdate. After a period of time all users that were auto-enrolled are removed from the SDM database. This flag is used to clear the auto-enrollment flag and that prevents the removal of certain auto-enrolled user profiles from the database.
Problem Report	226379	-	SDM Remediation - Remove FreeRadius Code	The FreeRadius code and the dependant WiMAX AAA feature has been removed from the SDM.

Table 5: Resolved PRs in Maintenance Release 9.0.2

Resolved PRs in Maintenance Release 9.0.1

Type	PR	CSR	Title	Description
Enhancement	225561	1000820	New AE enhancement	There is an enhancement to the SPR auto enrollment feature. When a subscriber profile is updated an internal flag for auto-enrollment is switched off. The status of the subscriber is changed from auto-enroll to normal. This ensures that the this subscriber profile is not removed from the database during SPR cleanup.

Type	PR	CSR	Title	Description
Problem Report	223357	-	Tungsten configuration not clean-up when moving slotid assignation	This issue occurs when a blade is moved to a new slot or a new slot is added to the cluster. This also occurs when the SDM ISO is upgraded to a version that does not require Tungsten to be re-installed or upgraded. In this case the system will not create a new replication plan and it tries to use the old plan. This causes database synchronization to fail.
Problem Report	224581	-	usr partition is too small that can cause many problems	The Tunsten replication tool generated logs and these were stored in a directory on the /usr/ partition that was not large enough. These logs need to be stored in a different directory and partition that is adequately sized to store the logs.
Problem Report	225010	-	PNR is not send after delete a subscriber	In the SPR when a subscriber profile was deleted from the database the SDM did not send a push notification request (PNR).

Table 6: Resolved PRs in Maintenance Release 9.0.1

Appendix

SPR Subscriber Count Feature

This feature was introduced with Patch 4 (bug 19645628). The tool does not run automatically. From the command line type:

- SubsCountTool start to start the tool
- SubsCountTool stop to stop the tool
- SubsCountTool status to view the status of the tool

View the output using the WebCI, Oracle SDM™ > Subscription Management > Counter View.

The screenshot shows the Oracle SDM WebCI interface. On the left is a navigation tree with folders like System - ID: TEKELEC-01, HLR, AUC, SS7, Oamp, Database, SIP, HSS, LTEHSS, SLF, AAA, ENUM Server, EIR, LTEIR, Diameter, and Subscription Management. The main content area is titled 'Counter View' and contains several rows of counts, each with a 'Display' button. The counts are: SubId Count: 0, SimId Count: 0, MsIsdn Count: 0, Imsi Count: 0, AOR Count: 0, Registration Binding Count: 0, Ua Registration Binding Count: 0, MsIsdnAssociatedWithSubscriber Count: 0, ImsiAssociatedWithSubscriber Count: 0, MNPForeignIn Count: 0, MNPForeignToForeign Count: 0, MNPOwnNumberNotPortedOut Count: 0, and MNPOwnNumberPortedOut Count: 0. A red box highlights a summary section containing: SPR Subscription Count: 15908, SPR user Count: 15399, SPR counters Updated at: 09/26/2014 11:28:18, SPR Subs Count: 15898, and SPR pool Count: 509. The footer of the page includes the Oracle logo and copyright information: © Copyright 2010, 2013, Oracle and/or its affiliates. All rights reserved.

1. SPR Subscription Count is the total number of subscribers.
2. SPR user count is is the total number of subscriber profiles.
3. SPR Counters Updated at is the date and time when the tool was last run.
4. SPR Subs Count is the total number of registrations.
A single subscriber can register using multiple fields for example IMSI, MSISDN, and account. So it can have multiple records in the idmap.
5. SPR pool Count is the number of pool profiles.

Details of this feature were added in the Product Description of SDM 9.3 (910-6866-001 rev b).

HssSPRConfig changes

The HssSPRConfig was changed. The configurable ForceOnReferenceType attribute has been added to the WebCI HssSPRConfig table.

This is an enhancement as this attribute had to be changed manually and the change was not persistent through a restart.

These values can also be configured in the CLI: HSS []> HssSPRConfig [].

Details of these changes will be added to the SDM 9.3.2 customer documents.

HssSPRConfig

Attribute	Value
SPRRepDataCompressionLevel	Z_NO_COMPRESSION
PURAutoEnrollment	Off
SNRAutoEnrollment	Off
XMLAutoEnrollment	Off
AutoEnrollmentCleanup	Off
TimeoutOfAutoEnrolledProfile	60
PeriodicCheckStartTime	00:00:00
CheckingPeriod	0
DelayedSendRequestTimer	0
ReceiveMessageQueueSize	12000
ForceReadOnMaster	On
MNCCCodeLength	2
RESTCDataSectionEscaped	Off
RESTIgnoreUnknownBody	Off
RESTIgnoreContentType	Off
RESTIgnoreOpaqueDataMismatchName	Off
RESTIgnoreAcceptHeader	Off
RESTTransactionCommitTimeout	100
RESTTransactionMaxRequest	10
HttpDisablePlus	Off
HttpDoubleEncoding	Off
HttpEscaping	On
HttpChunkedTimeout	0
AutoEnrollRemoveFlagOnUpdate	Off
ForceOnReferenceType	Force_SNR_UDR_Only

Modify

The following ForceOnReferenceType values may be selected in the drop-down:

Value	Description
Force_NONE	Default. Do not force any select requests.
Force_All	Forces an update on all types of select request. This includes PNR, PUR, SNR and UDR.
Force_PUR_Only	Forces a select on PUR messages only.
Force_SNR_UDR_Only	Forces a select on both SNR and UDR messages.
Force_PUR_SNR_UDR_Only	Forces a select on PUR, SNR and UDR messages.

Alarms added with patch 16

A number of new alarms have been added to the SDM with patch 16 in order to notify network operators about tungsten replication issues. The issues were reported in tungsten logs and status but reports had to be manually generated. Now the network operator can view the alarms raised in the SDM alarm panel.

In a single shelf system the active BE node starts a master replicator to store transactions for slave (standby BE).

The standby BE starts a master replicator (even though it's not yet used, we need to start it for an eventual switch-over) and a local slave replicator (to get transactions from the active BE).

In a geo-redundant system the active BE node starts a master replicator to store transactions for the slave (standby BE and geo-site active BE) and a remote slave replicator (to get transactions from the geo-site active BE).

The standby BE starts a master replicator (even though it's not yet used, we've to start it for an eventual switch-over) and a local slave replicator (to get transactions from the active BE)

Each and every replicator service (master, local slave or remote slave) will have a separate alarm. There are a maximum of 2 replicator services per BE node: master and local/remote slave.

4051 - Master replication service is not operational

Alarm Group

Framework

Severity

Minor

Description:

The master replication service is not operational.

Effect

This alarm is raised when the master service is not operational (offline) for longer than one minute. This alarm can be raised by all backend nodes.

Action

None, the alarm will be cleared when the master service goes online.

Clear

The system will automatically clear the alarm once the condition has been rectified.

4052 - Replication service with active backend is not operational

Alarm Group

Framework

Severity

Minor

Description:

The replication service with the active backend is not operational.

Effect

This alarm is raised when the local slave service is not operational (offline) for longer than one minute. This alarm can be raised by all standby backend nodes.

Action

None, the alarm will be cleared when the local slave service goes online.

Clear

The system will automatically clear the alarm once the condition has been rectified.

4053 - Replication service with other georedundant site is not operational

Alarm Group

Framework

Severity

Minor

Description:

The replication service with the active backend is not operational.

Effect

This alarm is raised when the remote slave service is not operational (offline) for longer than one minute. This alarm can be raised by all active backend nodes in the georedundant system.

Action

None, the alarm will be cleared when the remote slave service goes online.

Clear

The system will automatically clear the alarm once the condition has been rectified.

4054 - Replication latency is over predefined threshold

Alarm Group

Framework

Severity

Warning

Description:

The replication service with the active backend is not operational.

Effect

This alarm is raised when the local or remote slave latency crosses the predefined threshold for longer than one minute fifteen seconds. This alarm can be raised by all backend nodes that have a slave replicator.

Action

None, the alarm will be cleared when the local or remote slave latency drops below the predefined threshold.

Clear

The system will automatically clear the alarm once the condition has been rectified.

Replication Threshold Definition

The replication latency threshold (expressed in seconds) must be defined in the `/etc/sysconfig/blue` file as follows:

- LOCALREPLICATIONLATENCYTHRESHOLD = 5.0
 - Local replication latency threshold (default 5.0)
- GEOREPLICATIONLATENCYTHRESHOLD = 10.0
 - Geo replication latency threshold (10.0)

Theoretically, the local latency (between active and standby backends) should be low due to a fast data transfer via backplane. The geo replication latency depends on the network latency between the two georedundant sites. Once the threshold settings are applied, a "service blue restart" is required. The threshold value is expressed with one digit after the decimal point.

The replication latency is the highest latency value taken from 12 multi-thread queues used for `bluedbvol`. All other queues are filtered out (`bluedb` and `bluealm`).

If the threshold value is invalid (for example: 5.c), the DPC can not be started. The value must be corrected and the node restarted.