Safe Harbor Statement

The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle’s products remains at the sole discretion of Oracle.
Agenda

• Working with VSI and HPE
• Oracle Database on VMS Update
  – Support Dates
  – 11g, 10g
  – 11g Performance
  – What’s Under Development
  – Roadmap
• Oracle Rdb Update
  – Support Dates
  – Customer Focus
  – Recent Releases
  – What’s Under Development
  – Oracle Rdb Roadmap
Working with VSI and HPE

• Development plans same as prior to the agreement
• Oracle approved code delivery to VSI, April, 2015
• Oracle / VSI cooperating on software exchange
• HP delivered i4’s to Oracle VMS Development, August, 2015
• Oracle Completed Beta Testing 8.4-1H1 on i2
• Oracle Completed Certification of 8.4-1H1 on i4, October, 2015
  – Oracle Rdb completed
  – Oracle Database completed
• Oracle Completed Beta Testing 8.4-2 on i4, March 2016
• Oracle Certification testing of 8.4-2 now underway
  – Oracle Rdb ongoing
  – Oracle Database completed
• Other working agreements between Oracle/VSI to process
Oracle's Lifetime Support Policy

- **Oracle Premier Support** provides customers with maintenance and support of Oracle software on Itanium servers for five years from the general availability date of the software release.

- **Oracle Extended Support** provides customers with an extra three years of support for specific Oracle releases for an additional fee. Customers benefit from the same quality of service received with Oracle Premier Support, with the security of knowing they can migrate their software to a new platform when the time is right.

- **Oracle Sustaining Support** customers will receive technical support for as long as they operate their Itanium-based systems—including access to online support tools, knowledge bases, pre-existing fixes and assistance from technical support experts.

- **Oracle Lifetime Support**
<table>
<thead>
<tr>
<th>Platform</th>
<th>Additional Extended Support: S1 Fixes Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP OpenVMS on Integrity</td>
<td>August 2013 – July 2017</td>
</tr>
<tr>
<td>HP OpenVMS on Alpha</td>
<td>August 2013 – July 2015</td>
</tr>
<tr>
<td>HP-UX</td>
<td>August 2013 – Dec 2015</td>
</tr>
<tr>
<td>Linux Integrity</td>
<td>August 2013 – Dec 2015</td>
</tr>
<tr>
<td>Windows Integrity</td>
<td>August 2013 – Dec 2015</td>
</tr>
</tbody>
</table>
10g Itanium Extended Support Fees Now Waived an Additional 3 Years

  – The Extended Support fee will be waived from August 2010 – July 2016. For the period of August 2016 – July 2017, Extended Support will continue to be available but will be at then-current Extended Support fees. During this period, Extended Support will be limited to Severity 1 fixes only; critical patch updates will not be made available.
Oracle 11g Support Dates
Oracle 11g Shipped on OpenVMS in July, 2015

• Available On:
  – Software Delivery Cloud (OSDC)
    • [https://edelivery.oracle.com/osdc/faces/Home.jspx?_afrLoop=6603323269226792 &_afrWindowMode=0&_adf.ctrl-state=1dfptuadve_27](https://edelivery.oracle.com/osdc/faces/Home.jspx?_afrLoop=6603323269226792 &_afrWindowMode=0&_adf.ctrl-state=1dfptuadve_27)
  – Oracle Technology Network (OTN)
  – My Oracle Support (MOS)
    • Patches Available
      – 21340762 - INVALID HEADER - VALIDATION FAILED (RMAN Incremental Backup)
      – 21362534 - UNABLE TO CONNECT TO 12C DATABASE FROM 11.2.0.4 ON OPENVMS
Oracle 11g Patch Set Updates (PSUs)

• 11.2.0.4.7
  • Released on other platforms July, 2012
  • OpenVMS released in October, 2015

• 11.2.0.4.8
  • Released, October, 2015

• 11.2.0.4.9
  • Released, January, 2016

• 11.2.0.4.10
  • Release planned, April, 2016
Oracle 11g on OpenVMS – Current Development

• RAC
  – Code merge phase completed
  – Run-time phase underway
  • Issue:
    – Multicast Domain Name server which come from the Apple/Bonjour
    – Routing socket CRTL support needed from within the TCP/IP package
    – Multicasting capability needed through the tcpip$interface APIs
      • Berkley BSD or Netlink API

• Enterprise Manager Agent
  – Will start after RAC
Oracle 11g on OpenVMS Certification Testing Status

• 8.4-1H1 on i4 and i2
  – 10g - completed
  – 11g - completed

• 8.4-2 on i4 and i2
  – 11g & 10g
    • Short regressions - completed
    • Certification LRGs - completed
    • High Priority LRGs - ongoing
    • Long regressions – ongoing
Oracle 11g on OpenVMS Certification Testing Status (cont.)

• Official certification for 11g has been announced on Oracle Database on OpenVMS Certification Matrix (My Oracle Support Doc Id 377470.1) for OpenVMS 8.4-1H1 and i4.

• 10g certification also listed on this same page.

• Certification for OpenVMS 8.4-2 will be announce at this same location
Oracle 11g on OpenVMS Certification Testing Status (cont.)

OpenVMS: hp Itanium OpenVMS Certification Matrix (Doc ID 377470.1)

Checked for relevance on 9-Feb-2011.

ORACLE Server
---------------
hp ITANIUM OPENVMS
------------------------
CERTIFICATION MATRIX
---------------

This article lists the current certification matrix for hp ITANIUM OpenVMS.

Version support - Certification Matrix

Support Matrix for hp ITANIUM OpenVMS versions and Oracle Server releases

Last Update: 13-AUG-2015
Updated by: Grant Hayden

ITANIUM/OpenVMS (Refer to Note:377450.1 for recommended OpenVMS ECO levels)

<table>
<thead>
<tr>
<th>8.2-1</th>
<th>8.3</th>
<th>8.3-1H1</th>
<th>8.4</th>
<th>8.4-1H1</th>
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<tr>
<td>**see Note A</td>
<td>**see Note B</td>
<td>11.2.0.4.0</td>
<td>11.2.0.4.0</td>
<td></td>
</tr>
</tbody>
</table>
Review of Oracle Database on OpenVMS 10g

• 10.2.0.5.0 Released 31-Oct-2012
  – 10.2.0.5.12 PSU available for Alpha & Integrity

• Grid Control Agent
  – 10.2.0.2 Agent for Integrity and Alpha shipping
    • Patch kit 6 is available
Review of Oracle Database on OpenVMS 10g

• 10.2.0.5.0 is a Patch Set
  – Suggest install in a new Oracle home
  – Install initial 10.2.0.2.0 release
    • For Alpha no need to apply any patches
    • For Integrity you should apply the patch 5840282 before applying this patch set
    • No need to install 10.2.0.4.0 before installing 10.2.0.5.0
    • Apply the 10.2.0.5.0 Patch Set

• OpenVMS 8.4 is the minimum OS version for both Alpha and Integrity

• Can be downloaded from My Oracle Support (MOS) – Patch # 8202632
  – Now limited to existing 10g customers,
    • CSI dating from after March 1st, 2015 can not download 10g
Where to find 10.2.0.5 on My Oracle Support
Oracle MySupport OpenVMS Information

- OpenVMS: Master Note for Oracle 10.2 on hp OpenVMS
  - [ID 726914.1]
- OpenVMS: Oracle Release 10gR2 Mixed Architecture (Multi-Home) CRS/RAC Installation on hp Integrity and Alpha
  - [ID 785970.1]
- OpenVMS: Getting started with the 10.2 Grid Control Agent on OpenVMS
  - [ID 739445.1]
- Installing AV Agent 10.2.3.2 on HP OpenVMS
  - [ID 1111278.1]
    - Master Note For Oracle Audit Vault
      - [ID 1199033.1]
Oracle Database 11gR2 Performance

The Following 4 slides are curtsey of Maklee/VSI
Transactions Committed Per Minute

(More is better)
New Order Latency

Latency Per New Order
(Less is better)

10X Faster
New Order Latency

Latency Per New Order
(Less is better)
Order Entry Benchmark Results

• Out of the box 11g was about 2.7X faster than 10g
  
  – Faster processor speed account for some of the improvement. The i4 processors have higher clock frequency 2.53GHz vs. 1.33GHz

  – Oracle 11g is faster and more efficient than Oracle 10g. Most customers we work with see 10% - 20% improvement just by upgrading.

• VSI SWAT team added 3.5X
What Oracle 11g Client Kit Provide to OpenVMS

• Client/Server Interoperability Support to future database releases
• Standard Supported client tools (next slides)
• Upgraded Security Functionality
• Gives you the ability to continue to run your application on VMS while connecting to the database server platform of your choice (either to a VMS server or to other platforms supported by Oracle).
Oracle Client / Server Interoperability General Policy

• Oracle's general policy is to test and support each new Oracle release for compatibility with older releases thus:
  – Test the NEW client to each OLDER server release
    • where the OLDER release is still covered by Premier Support at the time that the NEW version is released.
  – Test OLDER clients to the NEW server release
    • where the OLDER release is still covered by Premier Support OR is in the first two years of Extended Support.

• Tests between the NEW version and other OLDER releases may be added where Oracle deems it sensible to support interoperability between those releases.
Client / Server / Interoperability Support Matrix For Different Oracle Versions [ID 207303.1]

<table>
<thead>
<tr>
<th>Client Version</th>
<th>12.1.0</th>
<th>11.2.0</th>
<th>11.1.0</th>
<th>10.2.0</th>
<th>10.1.0</th>
<th>9.2.0</th>
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<td>Was #5</td>
<td>Was</td>
<td>Was</td>
<td>Was</td>
</tr>
</tbody>
</table>
11g Client Kit Contents

• Oracle SQLJ
• Oracle Database Utilities
• Oracle Java Client
• SQL*Plus
• Oracle JDBC/THIN Interfaces
• Oracle Internet Directory Client
• Oracle Call Interface (OCI)

• Oracle Programmer
• Oracle XML Development Kit
• Oracle Advanced Security
• Enterprise Manager Minimal Integration
• OLAP Analytic Workspace Manager and Worksheet
• Oracle Net
11g Client Kit Contents (cont.)

- Oracle Connection Manager
- Oracle Net Listener
- Oracle Multimedia Client Option
- Oracle ODBC Driver
- Oracle Clusterware High Availability API
- Oracle SQL Developer
- Oracle Scheduler Agent
- Oracle Services For Microsoft Transaction Server

- Oracle Administration Assistant for Windows
- Oracle Counters for Windows Performance Monitor
- Oracle Objects for OLE
- Oracle Provider for OLE DB
- Oracle Data Provider for .NET
- Oracle Providers for ASP.NET
Oracle Rdb Update
### Rdb Product Family Lifetime Support Dates

#### Oracle Rdb and Oracle CODASYL Database Releases

<table>
<thead>
<tr>
<th>Release</th>
<th>GA Date</th>
<th>Premier Support Ends</th>
<th>Extended Support Ends</th>
<th>Sustaining Support Ends</th>
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<tr>
<td>7.1</td>
<td>Jul 2001</td>
<td>Dec 2007</td>
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<td>Jul 2015</td>
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<td>7.3</td>
<td>Mar 2011</td>
<td>Sep 2018</td>
<td>Sep 2021</td>
<td>Indefinite</td>
</tr>
</tbody>
</table>

Rdb Marketing Focus

• Focus on meeting our customers’ needs

• **Rdb Web page**, Rdb Web Journal, MetaLink, OTN

• Rdb management personal customer visits /meetings

• Events
  • Oracle OpenWorld
  • HP and VSI Events
  • OpenVMS SIG Groups

• **Technical Forums (2016)**
  — Japan, TBD
  — Burlington, MA, USA, September 29-30
  — EMEA, TBD H1 2017
  — Asia Pacific H1, 2017
Rdb Product Family Releases Over the Past 2 Years

- SQL/Services 7.3.2.2, April, 2016
- Rdb 7.3.2, March, 2016
- Oracle JDBC for Rdb 7.3.4.1, March, 2016
- SQL/Services 7.3.2.1, December, 2015
- Rdb 7.3.1.3, Update 1, October, 2015
- Oracle Rdb Extension for SQL Developer, September, 2015
- Rdb 7.3.1.3, September, 2015
- Rdb 7.2.5.7, August, 2015
- Oracle CDD/Repository 7.2.0.6.0, July, 2015
- Oracle Rdb Developer Tools for Visual Studio Release 7.3.4.0, June, 2015

- Oracle JDBC for Rdb 7.3.4.0, June, 2015
- Rdb 7.2.5.6, April 2015
- Rdb 7.3.1.2, October, 2014
- ODBC 3.3.2.4, October, 2014
- Oracle Rdb JDBC 7.3.3.1, August 2014
- ORCM 7.3.0, June, 2014
- Rdb 7.2.5.5, June, 2014
- Oracle Rdb JDBC 7.3.3, May 2014
- ORDT 7.3.3, May, 2014
Rdb 7.3.1 Releases

- V7.3.1 -- September 2013
- V7.3.1.1 -- February 2014
  - 01: An update (dated 14-OCT-2014) is available
- V7.3.1.2 -- October 2014
  - 01: An update (dated 14-OCT-2014) is available
  - 02: An update (dated 8-JAN-2015) is available
  - 03: An update (dated 22-FEB-2015) is available
Rdb 7.3.1 Releases (Continued)

• V7.3.1.3 – September, 2015
  • First version that includes support for Intel Itanium 9500 “Poulson” systems (aka i4)
  • Includes hardware check to allow activation on this new hardware
  • Minimal changes from V7.3.1.2
    • Update 1 kit (dated OCT-2015)
      – This includes the same patches as UPD03 for V7.3.1.2
• V7.3.2 – March, 2016
Rdb 7.3.1.3 Update 1

• Released in October, 2015
• Problems Fixed: (Same as Update 3 of 7.3.1.2)
  – RDO Interface Now Supports Synonym References
  – Unexpected Bugcheck When Using COUNT Aggregate Function
  – Wrong Results Returned From REVERSE Index When Using IS NULL Predicate
  – Unexpected Loss of Index Column Attributes When Using the EXPORT DATABASE Statement
Oracle Rdb is Certified on Poulson

<table>
<thead>
<tr>
<th>Release</th>
<th>Release Date</th>
<th>Version</th>
<th>Alpha Min</th>
<th>Alpha Max</th>
<th>Alpha Kits</th>
<th>Itanium Min</th>
<th>Itanium Max</th>
<th>Processor</th>
<th>Update</th>
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<td>7.3.1.3</td>
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<td>V7.3-130</td>
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<td>7.3.1.2</td>
<td>Oct 2014</td>
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<td>.1</td>
<td>8.2-1</td>
<td>8.4</td>
<td>Tukwila</td>
<td>None</td>
</tr>
</tbody>
</table>

Rdb V7.3 is in premier support.

The ALPHA version is optimized for EV56 or later processors and shown as V7.3-nn1, there is no version for older, pre-EV56 processors.

Source: Comprehensive Rdb Versions and Compatibility Matrix (MOS Doc ID 66729.1)
Oracle Rdb 7.3.2 Available for Download

Patch Details

Patch 22901400: ORACLE RDB RELEASE 7.3.2.0.0 FOR OPENVMS ITANIUM

Last Updated: Mar 15, 2016 7:52 AM (1+ month ago)

Product: Oracle Rdb Server on OpenVMS
Release: RDB 7.3
Platform: HP OpenVMS Itanium
Size: 86.1 MB
Download Access: Software
Classification: General
Patch Tag:

Bugs Resolved by This Patch
List of bugs fixed is not available. Consult the Readme.
Rdb 7.3.2, Documentation

• Rollup release notes to RDB_NEWFEATURES document
  – Included on each kit (.pdf, .txt, .ps)
  – SYS$HELP:RDB_NEWFEATURES_73xx.PDF

• Rollup new features into documentation
  – Revised RMU Reference Manual

• Generated new HELP for RMU and SQL

• New RMU/SHOW LOGICAL support
  – Documents logical names
Rdb 7.3.2 New Features and Enhancements

- Per-Process Monitoring Run-Time Options
- Detached Process Monitoring
- 6 Per-Process Monitoring Overview Information
- RMU Error Messages Which Suggest Altering Backup File Attributes
- Query Optimization Improvements for DATE ANSI Queries
- New RMU Dump Metadata_File Command
- New REPLACE_ROWS Qualifier Added to RMU Load Command
- RMU/SET SHARED_MEMORY/SECTION_NAME
- RESTART Clause of ALTER SEQUENCE No Longer Needs Value

- New Options to SET SQLDA Statement
- Support for External Authentication (LDAP)
- New RMU Extract Options to Control Output for DATABASE and ALTER_DATABASE Items
- RMU/SET AFTER_JOURNAL/SWITCH_JOURNAL Now Can Create an Emergency AIJ
- New Support for Second OpenVMS Account Passwords
- New "Index Counts" Optimization for SORTED Indices
- Support for Proxy Access to Remote Databases Using TCP/IP Transport
- Support for INTEGER Result Type for COUNT Function
Optimizer Changes
Query Rewrite: Recap

- Built new query rewrite engine for 7.3
- Make use of nullability knowledge to simplify query
  - Evaluates known not nullable expressions during compile
- Eliminates always TRUE and FALSE predicate branches
  - Also applied to CASE statement WHEN Boolean expressions
- Computes integer and floating literal expressions at compile time
- Eliminate constant values from SORT, DISTINCT, etc.
New: DATE ANSI queries

• Observed a certain type of query
  – Looking to fetch the date/time values for a particular date
  – Using CAST and DATE ANSI expression
  – CAST hid the index column from the optimizer
  – Led to suboptimal performance
New: IN predicate transformation

• Observed a certain type of query
  – Using IN to check for set inclusion
  – Due to ANSI SQL NULL semantics this type of query has a complicated solution
  – Leads to suboptimal performance
  – Use known not-nullable facts to transform to EXISTS query

• Especially important for NOT IN forms of the query
New: COUNT optimization

• Recap:
  • SORTED RANKED index
  • COUNT aggregates
    – COUNT(*)
    – COUNT(ALL column)
    – COUNT(DISTINCT column)

• Solved by using special ‘count scan’ optimization
• Mostly saves CPU time
• Don’t need list of DBKEYs, just the count
New: SORTED index count

- Observed that similar savings could be made for SORTED indices
- Less profitable as SORTED RANKED
- But still has huge benefit
- …some tests show 15% lower CPU usage
- Results will vary based on index and query
DDL (Data Definition Language) Changes
Temporary Tables

• Now supports LARGE MEMORY option
• Rows and data structures reside in P2 space (64 bit memory)
• Frees up P0/P1 space for applications
• New clause for:
  – Create local temporary table
  – Create global temporary table
  –Declare local temporary table
Compression Octets

• Create Index ... Enable COMPRESSION

• Recap
  – Enables run-length compression of keys
  – Especially useful to trim trailing spaces in char columns
  – Use common octets to compress runs
    • Automatically uses space character for CHAR, VARCHAR
    • Based on character set for column
    • Zero for all other data types
  – Compression preserves key collating (no overhead for search)

• Now extended to allow user defined values
Compression Octets

• A larger set of compression octets might reduce overall index size
• For example:

  • Consider CHAR fields that routinely include "********" as part of the data
    – By default no compression of that sequence
    – In V7.3 can use clause `compression octets (', '*')`
    – This will compress both spaces and '*'
REVERSE index support

• Originally released in V7.3.1
  – Withdrawn from 7.3.1.2 due to inadequate quality
  – Now returns to the feature set

• Existing (pre-V7.3.2) REVERSE indices will appear to be set as MAINTENANCE IS DISABLED
  – Those indices should be dropped or re-built

• Partitioned REVERSE indices are not supported
  – Special encoding make the values unpredictable for partitioning
SHOW AUDIT

• New show command
• Similar format to
  – SHOW PRIVILEGES
  – SHOW PROTECTION
• Shows auditing information on database and objects
SHOW Audit

SQL> SHOW AUDIT ON DATABASE RDB$DBHANDLE, DB1;

Audit information for Alias RDB$DBHANDLE
Auditing is enabled
Alarms will be written to the operator
Audit every object access
Forced writes of audit journal records is enabled
Audit Event Classes:
  PROTECTION (Grant and Revoke)
  DACCESS (Discretionary Access)
Identifiers:
  [DEV,TEST_EXECUTE]
  [PRD,*]
  [MGR,ADMIN]
  [AUD,*]
Audit Privileges:
  SELECT,DISTRIBTRAN
Alarm Privileges:
  DROP,SECURITY

Audit information for Alias DB1
Auditing is disabled
RMU Changes
RMU /Set /After_Image /Backups

• Setting default compression modes
• Allows ABS to create compressed backups
• Now applies to Manual backups
• Manual RMU /Backup /After_Image when neither NOCOMPRESS nor COMPRESSION is used on command
• Set and forget
RMU /Show Logical_Name /Description

• Collected something like 90% of logical name descriptions
  – Research continues
• Project removed dozens of obsolete names
• Added others to RMU /Show
• Some obsolete names direct the database administrator to replacements
RMU /Dump /Backup

• RMU Backup supports a /Journal qualifier
  – Not to be confused with AIJ, or After_Image Journal
  – Creates a compressed journal that can be used by RMU Restore to locate the associated volumes when restoring an area

• Previously Dump /Journal required the backup files be available

• Journal can now be dumped independently
RMU Set SHARED_MEMORY /SECTION_NAME=secname

- Allows the DBA to name the global section(s) used by MEMORY RESIDENT databases
  - Rdb dynamically generates these section names
  - Includes a reference to the root file’s device name
- OpenVMS allows the system administrator to reserve physical memory for these sections using SYSMAN
- This is problematic if the root file changes location
- Can now override dynamic name with fixed name
  - Stored in the database root file
RMU Restore, RMU Restore Only_Root and RMU Dump Backup

• RMU now suggests file attributes
• Typically see problem with files created without "-V" ZIP option
• RMU will not do this automatically
• The database administrator just uses cut/paste
• ...or specifies the correct file

%RMU-F-INVBCFIL, DISK:[DIRECTORY]FILENAME.EXT; is not a valid backup file
-RMU-I-INVFILATR, possibly use SET FILE/ATTRIBUTE=(RFM:FIX,LRL:32256) on this backup file
A few more things...
New logical name: RDMS$BIND_DEADLOCK_WAIT

- Allows sub-second deadlock wait
  - Interface to SYS$SET_PROCESS_PROPERTIESW system service
  - Note: SYSGEN DEADLOCK_WAIT has minimum value of 1 second
- The smallest value is 100000 (which is 10 milliseconds)
- The largest value is 10000000 (which is 1 second)
- Out of range values are quietly ignored (will use SYSGEN DEADLOCK_WAIT)
- Applied at first Rdb ATTACH (CONNECT, etc) only
TCP/IP Proxy access with V7.3.2
TCP/IP and PROXY access

• Now support PROXY access when transport is TCP/IP
• Major architectural changes in Rdb/Dispatch layer
• Must have V7.3.2 (or later) on both client and server systems
TCP/IP and PROXY access

• Designed to allow easy move from DECnet proxy to TCPIP
• Uses OpenVMS services to access existing proxy database
• Considered using TCPIP proxy support
  – Undocumented
  – Not officially supported
  – Would required user migration of PROXY data
  – Not a 1-to-1 mapping
TCPIP Proxy

• Enabled by default
• No longer require USER or USING
• No longer require SQL_PASSWORD and SQL_USERNAME
• Can simply access remote database when SQL_NETWORK_TRANSPORT_TYPE TCPIP
TCPIP Proxy

• Preserves old behavior if remote system is older than 7.3.2
• Also enhanced support for USER and SQL_USERNAME
  – Can place SQL_PASSWORD or SQL_USERNAME in configuration file
  – Mix and match with USER and/or USING clause
• For example:
  – Application includes USER clause in ATTACH
  – Daily password can be updated in rdb$client_defaults.dat
SQL_ENABLE_TCPIP_PROXY

• Can disable if not appropriate

• Add
  SQL_ENABLE_TCPIP_PROXY FALSE
  to configuration file

• Can be disabled on either
  client (rdb$client_defaults.dat)
  or server (rdb$server_defaults.dat)
Secondary Password Support

• Secondary password A user password that may be required at login time immediately after the primary password has been submitted correctly. Primary and secondary passwords can be known by separate users to ensure that more than one user is present at the login. A less common use is to require a secondary password as a means of increasing the password length so that the total number of combinations of characters makes password guessing more time-consuming. See also primary password.

• Rdb now supports second password support for enhanced security. The USER/USING syntax now allows the application to accept two passwords for.
  – This can also be used for remote access when the target system is also running Rdb V7.3.2 or later.
Oracle SQL/Services 7.3.2.2

- Oracle Rdb release 7.2.5.0.0 or higher is required
- More Characters Displayed for Application Name in SHOW CLIENTS
  - the SHOW CLIENTS command will truncate application names after 63 characters.
- New API Clients Supported
  - Windows Server 2012 and Windows Server 2012 R2
Oracle SQL/Services OCI Services 7.3.2.2

• **Bad Performance from Simple Select Statement against Large Table in OCI Services (Bug 21106647)**
  – In releases prior to 7.3.2.2.0, it was determined that data conversions and memory management in the conversion routines were slowing the performance of OCI Services for Oracle Rdb. Many enhancements were made in these areas for release 7.3.2.2.0. Selects that include many columns and those that select millions of rows will benefit most from these changes.

• **Includes significant performance enhancements for all user queries**
  – Reduced CPU cost of transforming Rdb data to Oracle Database data
    - eliminated or greatly reduced conversions to text format as an intermediate type conversion to/from Oracle. In some cases multiple conversion steps were eliminated
    - eliminated excessive calls to allocate locally used VM during conversion steps
    - In conjunction with Oracle Rdb V7.3.2 SQS/OCI can make use of enhancements in the dynamic SQL interface.
Oracle SQL/Services OCI Services 7.3.2.2 Other Problems Fixed

- Table DUAL now automatically updated if it exists prior to ‘Prepare’. It will also not be dropped if it was created prior to ‘Prepare’ and in use by other database objects.

- INSERT INTO ... RETURNING statement with more than 256 values passed by parameters no longer fails.

- OCI Services for Oracle Rdb Hang with an OCCI Client fixed

- Second Run of Test Case Returns SQL-F-BAD_TXN_STATE

- OCI Services for Oracle Rdb DBKEY/ROWID SELECT Returns ORA-1401 depending upon the position of the DBEKY within the WHERE clause
Oracle SQL/Services and OCI Services 7.3.2.1

• New SQLSRV_MANAGE SLEEP command (now documented and publicly available)

• New Logicals to Customize TCP/IP Keepalive Settings for SQLSRV Dispatchers

• New API Clients Supported
  . Windows 8, 8.1, 10, 8 X64, 8.1 X64, 10 X64
  . Oracle Enterprise Linux and Red Hat Enterprise Linux, 64-bit, release 6.4 or later

• API Clients Desupported
  . Windows XP, Server 2003, XP X64, and Server 2003 X64

• Various Bug Fixes
Rdb 7.2.5.7, August, 2015

• Download from My Oracle Support
  – Patch 21569523 for Itanium
  – Patch 21569544 for Alpha)

• Problems fixed in this release include::
  – Unexpected Error When Using the REFERENCES Column
  – Master ALS Restart Does Not Resume Updating Standby Database
  – Unexpected SQL-F-BUGCHK Generated by Dynamic SQL
  – Unexpected COSI-F-NOSUCHID When Session User Has All Numeric Username
  – Unexpected Bugcheck During Routine Invocation When Domain is Undefined
Oracle CDD/Repository 7.2.0.6.0, July, 2015

• Available on My Oracle Support
  – Patch 21488004 for Itanium
  – Patch 21488027 for Alpha.

• Problems Fixed:
  – Problem when changing a relation with constraints when on OpenVMS 8.4-1H1 Systems.
Oracle Rdb Developer Tools for Visual Studio

• 7.3.4, June, 2015
  – Available for download from My Oracle Support
    • Patch 21313157
  – Features:
    • Visual Studio 2013 Integration
    • Entity Framework 6 Supported
    • Entity Framework fluent API Supported
Oracle JDBC for Rdb 7.3.4.1, February, 2016

• Download from My Oracle Support
  – Patch 22950359 for Itanium
  – Patch 22950335 for Alpha

• Features
  – New Transaction Option AUTOFETCH

• Bug Fixes:
  – Pool Servers Not Working
  – Problem using Multiprocess Connection Option with the Native JDBC driver
  – Bumpy-case Connection String Options used with Properties
  – Further Blob problems with Delimited Identifiers
  – Access Violation at RDBJDBCMPSHR73+00227E31
Oracle JDBC for Rdb 7.3.4.0, June, 2015

• Download from My Oracle Support
  – Patch 21256910 for Itanium
  – Patch 21256899 for Alpha
  – Also available on OTN

• Features
  – Ability to create and drop databases

• Bug Fixes
Oracle Rdb V7.2.5.6, April, 2015

• **New Features**
  – Comma Statement Separator Now Deprecated
    • Oracle recommends that any scripts or applications that include the CREATE TRIGGER statement be modified to use only the semicolon (;) as a separator.

• **Bug Fixes (partial list)**
  – RDMDBRBBUG Bugcheck at RUJULT$BIJBL_GET_FORWARD + 1E0
    • The database will shutdown all users., however, the next database attach will cause another DBR process to start.
  – Query With Aggregate Bugchecks Using Match Strategy
  – OpenVMS Privileges Now Used as Override for External Routines
  – Excessive Page Faulting of Query Using QSORT
  – RMU/SHOW STATISTICS Playback Zeroed Final Transaction Duration Screen
Oracle Rdb V7.3.1.2, October, 2014

• **New Features (partial list)**
  – New FULBCKREQ Message Output When a Full Backup is Required
  – SQL Precompiler Now Generates C++ Compatible Intermediate C Source
  – Alter Index Now Supports REVERSE and NOREVERSE Clauses

• **Bug Fixes (partial list)**
  – RMU Convert Leaves After Image Journal SUPPRESSED
  – Ranked Index Bugchecks – PSII2MOVEDUPBBC & PSII2INSERTDUPBBC
  – Wrong Result From a Nested UNION Query With OR Predicate
  – Unable to Call External Routine When Attached Remotely to a Database
Oracle ODBC Driver for Rdb

- 3.3.2.4, October, 2014
- 3.3.2.3, April, 2012
- 3.3.2.2, November, 2011
- 3.3.2.1, April, 2011

- Supported Windows
  - Windows 32bit
    - Windows 7, XP, Vista, Server 2008, Server 2003, 2000,
  - Windows 64bit
    - Windows 7 XP, XP X64, Vista X64, Server 2008 X64, Server 2003 X64
## Oracle Rdb Connectivity Management V7.3

### Patch 18848135: ORACLE RDB CONNECTIVITY MANAGER, RELEASE 7.3.0.0 (GENERIC)

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#### Bugs Resolved by This Patch
List of bugs fixed is not available. Consult the Readme.

#### View Related Knowledge to this Patch

#### Downloads
- All-time Downloads: 16
- View Trends

[Oracle Rdb Connectivity Management V7.3](https://www.oracle.com)
Oracle Rdb Connectivity Management V7.3
Oracle Rdb: What’s Under Development
Oracle SQL/Services and OCI Services 7.4

• OCI Services Oracle 11g Support
• OCI Performance Enhancements
• OCI LDAP Project
  – Specify the password "GLOBAL", indicates (as it does for Oracle users) that authentication will be done using LDAP
  – Users with the password "GLOBAL" in the USER$ table will be authenticated using the LDAP directory defined in LDAPACME$INIT, the same LDAP directory used by Rdb for external authentication
  – Testing has been successfully completed with Microsoft Active Directory. Patch 1845555 is required to provide the encryption of the passwords.
  – Testing is ongoing with Oracle Internet Directory
Major Rdb 7.3 Features Planned for Future Versions

• Memory Protection
• Database Vault
• Database Encryption
Database Vault

• Changes the way Rdb handles OpenVMS privileges

• `ALTER DATABASE ...`
  `DATABASE VAULT IS ENABLED;`

• Requires SECURITY privilege to enable

• No longer inherit overrides from current system user

• *WARNING* Ensure there is a SECURITY user defined in the database because once DATABASE VAULT is enabled you can not use a OpenVMS privilege to change it externally
Encryption

• Customer Demand for PCI-DSS Compliance
  – Standard Defined by the PCI Security Council
  – Founding Members are: American Express, Discover, JCB International, MasterCard, Visa

• Design and Implementation Guided By Oracle 10g & 11g Transparent Data Encryption (TDE)
Training Partner List

• Europe, Asia, Middle East and Africa
  – VX Company
    Baarn, The Netherlands
    http://www.vxcompany.com/rdbtrainingcourses

• Americas
  – JCC Consulting, Inc.
    Granville, Ohio, United States
    http://www.jcc.com/

• Oracle CODASYL DBMS Worldwide
  – Software Concepts International
    Nashua, New Hampshire, United States
    http://www.sciinc.com/
QUESTIONS & ANSWERS