Oracle® Rdb

Oracle SQL/Services Release 7.3.0.3 Release Notes

May 2010

This document contains release note information specific to Oracle SQL/Services, release 7.3.0.3 for OpenVMS Alpha and HP OpenVMS Industry Standard 64 for Integrity Servers operating systems. Also included in this document are release notes pertaining to OCI Services for Oracle Rdb release 7.3.0.3.

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Oracle SQL/Services Release 7.3.0.3 Release Notes

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Preface

Oracle SQL/Services software is a client/server component of Oracle Rdb. Oracle SQL/Services lets you develop client application programs on a variety of desktop and mainframe systems so that you can access Oracle Rdb databases.

Oracle ODBC Driver for Rdb is available in a separate kit. The Oracle ODBC Driver for Rdb allows ODBC applications on these clients read and write access to Oracle Rdb databases using TCP/IP and Oracle Net.

This manual describes new and changed features; problems fixed in this release; and current problems, restrictions, and other notes.

Intended Audience

These release notes are intended for all users of Oracle SQL/Services and OCI Services for Oracle Rdb (formerly known as SQL*Net for Rdb) and should be read to supplement information contained in the *Oracle SQL/Services Installation Guide*, the *Oracle SQL/Services Server Configuration Guide*, and the *Guide to Using the Oracle SQL/Services Client API*.

To get the most out of this manual, you should be familiar with Oracle SQL/Services, data processing procedures, and basic database management concepts and terminology.

Operating System Information

Information about the versions of the operating system and related software that are compatible with this version of Oracle SQL/Services and OCI Services for Oracle Rdb is included in the *Oracle SQL/Services Installation Guide*.

Structure

This manual contains five chapters

Chapter 1	Describes the new and changed features of Oracle SQL/Services.
Chapter 2	Describes known software errors fixed in release 7.3.0.3 of Oracle SQL/Services and prior releases.
Chapter 3	Describes problems, restrictions, and workarounds known to exist in Oracle SQL/Services release 7.3.0.3.
Chapter 4	Describes release notes that pertain to OCI Services for Oracle Rdb release 7.3.0.3 and prior releases.
Chapter 5	Describes new features and problems fixed in previous releases.

Related Manuals

For more information on Oracle SQL/Services and OCI Services for Oracle Rdb, see the following manuals in this documentation set, especially the following:

- *Oracle SQL/Services Installation Guide*
- *Oracle SQL/Services Server Configuration Guide*
- *Guide to Using the Oracle SQL/Services Client API*

The *Oracle SQL/Services Release Notes* are provided as part of the software kit. Adobe Portable Document Format (.pdf) files for the release notes are available in SYS$HELP

The remaining manuals and Oracle Rdb documentation are available on the OTN web site.

Conventions

In this manual, Oracle Rdb refers to Oracle Rdb for OpenVMS software.

HP OpenVMS Industry Standard 64 for Integrity Servers is often referred to as OpenVMS I64.

OpenVMS means both the OpenVMS Alpha and the OpenVMS I64 operating systems.

The SQL interface to Oracle Rdb is referred to as SQL. This interface is the Oracle Rdb implementation of the SQL standard adopted in 1999, in general referred to as the ANSI/ISO SQL standard or SQL:1999. See the *Oracle Rdb Release Notes* for additional information about this SQL standard.

Oracle ODBC Driver for Rdb software is referred to as the ODBC driver.

In examples, an implied carriage return occurs at the end of each line, unless otherwise noted. You must press the Return key at the end of a line of input.

Often in examples the prompts are not shown. Generally, they are shown where it is important to depict an interactive sequence exactly; otherwise, they are omitted in order to focus full attention on the statements or commands themselves.

The following conventions are also used in this manual:

[ ]	In text, brackets enclose optional information from which you can choose to use or not.
$	The dollar sign represents the DIGITAL Command Language prompt in OpenVMS.
>	The right angle bracket represents the MS-DOS command prompt. This symbol indicates that the MS-DOS command language interpreter is ready for input.
boldface text	Boldface type in text indicates a term defined in the text.

1

Oracle SQL/Services: New and Changed Features

This chapter describes the new features and technical changes to Oracle SQL/Services in release 7.3.0.3. It also describes installation requirements in addition to those documented in the *Oracle SQL/Services Installation Guide*, obsolete routines, structures, and features, and provides a summary of additions and changes to the documentation. Refer to the *Oracle SQL/Services Installation Guide* for installation information. See Chapter 4, "OCI Services for Oracle Rdb: Release Notes", for descriptions of new and changed features for OCI Services for Oracle Rdb.

1.1 Documentation

Documentation for Oracle SQL/Services and OCI Services for Oracle Rdb is available in Adobe Acrobat (PDF) formats on MyOracleSupport and OTN. Adobe Acrobat files ending with extension .PDF can be read with an Adobe Reader. Readers for many platforms are available without fee from the Adobe web site.

1.2 Summary of Oracle SQL/Services Server New and Changed Features for Release 7.3.0.3

The following sections describe new and changed features for Oracle SQL/Services server release 7.3.0.3.

1.2.1 Updated Oracle SQL/Services Server Configuration Guide

The Oracle SQL/Services Server Configuration Guide has been updated for Oracle SQL/Services release 7.3.0.3. The updated guide includes a new chapter on configuring OCI Services for Oracle Rdb and more detailed and comprehensive information on available

Oracle SQL/Services and OCI Services for Oracle Rdb logicals that can be used in configuring the environment.

1.2.2 Updated Help for SQLSRV_MANAGE

The information provided by the HELP command in the SQLSRV_MANAGE utility has been updated in Oracle SQL/Services release 7.3.0.3 to reflect updates to the Oracle SQL/Services Server Configuration Guide.

1.2.3 Severity of EXECIDLETIMEOUT Message Has Been Modified

Enhancement Request 8938388

In Oracle SQL/Services release 7.3.0.3, the SQLSRV$_EXECIDLETIMEOUT message has been modified in severity from an error to a warning. Since it is quite common for an executor to be terminated due to inactivity, this error message is often found in SQL/Services executor log files. When a user is searching log files for problems, it is preferable that this message not be displayed in the search. The message is displayed in the log file to document that the executor is being shut down due to inactivity and is not necessarily an error. Therefore, its status has been downgraded to a warning. The message will now be displayed in executor log files as follows.

```
---EVENT BEG: EVENT_LOG ----------------------- Fri Apr  2 13:51:15.160 2010---
%SQLSRV-I-EVENT_LOG, event logged at line 7595 in file CMD.C;1
%SQLSRV-W-EXECIDLETIMEOUT, Executor idle time out exceeded
---EVENT END: EVENT_LOG ----------------------- Fri Apr  2 13:51:15.160 2010--
```

1.2.4 Provide Sample Application When Installing Client Kit With Server on OpenVMS

On HP OpenVMS, when the Oracle SQL/Services server kit is installed, the client kit is also installed. Prior to Oracle SQL/Services release 7.3.0.3, the sample application was included in the kit savesets but it wasn't copied onto the system. The sample application files are now provided during server kit installations in SYS$COMMON:[SYSHLP.EXAMPLES.SQLSRV].

1.2.5 Scan Intrusion Security Now Supported

Enhancement Request 9359432

Oracle SQL/Services release 7.3.0.3 now supports intrusion detection via the OpenVMS Security Services. See the "OpenVMS Guide to System Security" manual for more information on this feature.

Customers are encouraged to upgrade to this release to pick up this security enhancement.

1.3 Summary of Oracle SQL/Services Client API New and Changed Features for Release 7.3.0.3

The following sections describe new and changed features for Oracle SQL/Services client API release 7.3.0.3.

1.3.1 Updated SQL/Services Client API Kit for 32-bit Windows Platforms

The Oracle SQL/Services Client API kit for 32-bit Windows platforms has been updated for Oracle SQL/Services release 7.3.0.3 and is equivalent in functionality to the client API kits for all the other supported platforms. Support has also been added for Windows 7, Server 2003 and Server 2008. See the installaton guide provided in the Windows32 kit directory for details on installing this client kit.

1.3.2 New SQL/Services Client API Kit for 64-bit Windows Platforms

Support for a new Oracle SQL/Services Client API kit for Windows 64-bit platforms has been added in Oracle SQL/Services release 7.3.0.3. Windows XP X64, Vista X64, 7 X64, Server 2003 X64, and Server 2008 X64 servers are all supported by this kit. See the installaton guide provided in the Windows64 kit directory for details on installing this client kit.

See the latest Guide to Using the Oracle SQL/Services Client API for more detailed information.

1.3.3 Updated Guide to Using the Oracle SQL/Services Client API

The Guide to Using the Oracle SQL/Services Client API has undergone a major update in Oracle SQL/Services release 7.3.0.3. New features and API calls have been added, new client and server platforms have been added and obsolete platforms have been removed.

1.3.4 Updated Help For SQL/Services

The SQL_SERVICES73 help topic has been updated for Oracle SQL/Services release 7.3.0.3 to reflect changes made in the new Guide to Using the Oracle SQL/Services Client API and changes in SQL/Services error message codes.

1.3.5 New SQL/Services Client API Routines

Enhancement Request 8826734

The following new Oracle SQL/Services client API routines have been added in Oracle SQL/Services release 7.3.0.3.

```
sqlsrv_sqlda_sqld73
sqlsrv_sqlda2_sqld73
sqlsrv_sqlda_column_name73
sqlsrv_sqlda2_column_name73
sqlsrv_sqlda_column_type73
sqlsrv_sqlda2_column_type73
sqlsrv_sqlda_bind_data73
sqlsrv_sqlda2_bind_data73
sqlsrv_sqlda_unbind_sqlda73
sqlsrv_sqlda2_unbind_sqlda73
sqlsrv_sqlda_ref_data73
sqlsrv_sqlda2_ref_data73
sqlsrv_sqlda_unref_data73
sqlsrv_sqlda2_unref_data73
sqlsrv_sqlda_get_data73
sqlsrv_sqlda2_get_data73
sqlsrv_sqlda_set_data73
sqlsrv_sqlda2_set_data73
sqlsrv_sqlda_set_sqllen73
sqlsrv_sqlda2_set_sqllen73
sqlsrv_sqlda2_char_set_info73
```

These routines are identical to the similarly named routines without the "73", except for the addition of an associate_id parameter. The use of this parameter improves the execution and performance of the specific routines. Oracle highly recommends the use of these new routines.

The sample application, SQLSRV$DYNAMIC.C, has been updated to use these new Oracle SQL/Services client API routines.

See the latest Guide to Using the Oracle SQL/Services Client API for more detailed information about these new routines.

1.3.6 Configurable Port Id and DECnet Object Name For Each Association

Enhancement Request 8826600

In Oracle SQL/Services release 7.3.0.3, the associate_str association structure has been modified to include port_id and objnam fields where the TCPIP port id and DECnet object name can be specified for a given association. Use of these new fields requires that the new associate_str structure version, SQLSRV_V730, be specified in the structure.

See the latest Guide to Using the Oracle SQL/Services Client API for more detailed information about the new associate_str structure.

1.3.7 DECnet No Longer Supported on Windows Platforms

The Oracle SQL/Services Client API no longer supports DECnet on Windows platforms. HP will be desupporting Pathworks 32 as of May 31, 2010.

2

Oracle SQL/Services: Software Errors Fixed

This chapter describes problems with Oracle SQL/Services software that are fixed in this release.

2.1 Oracle SQL/Services Errors Fixed in Release 7.3.0.3

The following known problems found in the Oracle SQL/Services OpenVMS server have been fixed for this release.

2.1.1 Clarification of the BYTLM Check During Oracle SQL/Services Installation

Bug 9034427

In Oracle SQL/Services release 7.3.0.3, the installation procedure and the documentation have been modified to make it clear that the minimum BYTLM requirement is for the installing user's currently available quota rather than the limit set in the system authorization file.

3

Oracle SQL/Services: Known Problems

This chapter describes problems and restrictions relating to Oracle SQL/Services release 7.3.0.3.

3.1 Oracle SQL/Services Release 7.3.0.3 Server Known Problems and Restrictions

The following sections describe Oracle SQL/Services release 7.3.0.3 server restrictions and known problems.

3.1.1 Support for OpenVMS VAX and Standard Kits

Oracle SQL/Services release 7.3.0.3 and OCI Services for Oracle Rdb release 7.3.0.3 are not supported on OpenVMS VAX.

Also, standard kit installation is not supported with this release. Only multiversion kits are available.

3.1.2 Concealed Attributes are Required for Rooted Directory Logicals

When Oracle SQL/Services starts a new monitor, dispatcher or executor process, it uses the SET DEFAULT DCL command to set the initial default disk and directory for the process. In addition, when a new client connects to a universal service with database authorization set to connect user, Oracle SQL/Services calls the SYS$SETDDIR OpenVMS system service to set the default disk and directory for the executor process. To set default to a disk and directory combination that includes a rooted directory logical name, the OpenVMS operating system requires that the rooted directory logical name be defined with the CONCEALED attribute.

Consider a rooted directory logical name ALL_USERS used to reference user directories in the following example:

```
Root top-level user directory:    $1$DKA100:[USERS]
Specific user directory:          $1$DKA100:[USERS.FRED]
```

In this example, the ALL_USERS rooted directory logical name must be defined as follows (the /EXECUTIVE switch may also be used for greater security):

```
$ DEFINE/SYSTEM ALL_USERS $1$DKA100:[USERS.]/TRANSLATION_ATTRIBUTE=CONCEALED
```

The default disk and directory for user FRED can then be specified as follows:

```
ALL_USERS:[FRED]
```

If a rooted directory logical name is not defined with the CONCEALED attribute, then the SET DEFAULT DCL command executed during monitor or dispatcher process creation fails as follows if the monitor is started from an account that specifies the rooted directory logical name. Likewise, the SET DEFAULT DCL command executed during executor process creation will also fail in the same way if the service owner user name account specifies the rooted directory logical name.

```
$ DEFINE SYS$LOGIN ALL_USERS:[FRED]
$ SET DEFAULT SYS$LOGIN
%DCL-W-DIRECT, invalid directory syntax - check brackets and other delimiters
```

In addition, if a rooted directory logical name specified for a client account is not defined with the CONCEALED attribute, then an executor process will bugcheck and exit with the following error message in the executor log if the user connects to a universal service with database authorization set to connect user:

```
----------EVENT BEGIN:  EVENT_LOG at Wed Sep 24 1997
14:05:33.914-----------%SQLSRV-I-EVENT_LOG, event logged at line 1636 in file
DBS_PROT_VMS.C;1
Error setting VMS process user name
%RMS-F-DIR, error in directory name
----------EVENT END  :  EVENT_LOG at Wed Sep 24 1997 14:05:33.930-----------
```

See the *Guide to OpenVMS File Applications* in the OpenVMS documentation set for more information on how to define and use rooted directory logical names.

3.1.3 Do Not Kill Oracle SQL/Services Processes

Under certain circumstances, the entire Oracle SQL/Services server shuts down if an Oracle SQL/Services dispatcher or executor is abnormally terminated. You should never use the

DCL STOP/ID command on OpenVMS systems to stop an Oracle SQL/Services dispatcher or executor process. The Oracle SQL/Services system management command SHUTDOWN DISPATCHER or SHUTDOWN SERVICE should be used to stop dispatchers and executors. If an executor does not terminate after issuing the SHUTDOWN SERVICE command, or if you do not want to shut down the entire service, the Oracle SQL/Services system management command, KILL EXECUTOR, should be used instead.

Note that the RMU CLOSE command can have the same effect as the STOP/ID or kill command by terminating Oracle SQL/Services executors attached to the database being closed. Before using the RMU CLOSE command, ensure that no Oracle SQL/Services executors currently have the database open. Any executors you find that do have the database open should be terminated with either the Oracle SQL/Services system management command SHUTDOWN SERVICE or the KILL EXECUTOR command.

3.1.4 Do Not Shut Down or Restart the SQLSRV_MANAGE System Management Service

If you shut down or restart the SQLSRV_MANAGE system management service using either the SQLSRV_MANAGE utility or the Oracle SQL/Services Manager GUI, then subsequent attempts to connect to the server are rejected and you render the server unmanageable. If you do accidentally shut down or restart the SQLSRV_MANAGE service, then you must find and kill the Oracle SQL/Services monitor process, then restart the server.

3.1.5 Management Utilities Allow Multiple Dispatchers With the Same Port IDs

Oracle SQL/Services allows you to define multiple dispatchers, each listening on different network ports. Currently, SQLSRV_MANAGE does not ensure that multiple dispatchers do not use the same port numbers or names. If multiple dispatchers are defined to use the same ports, the second dispatcher to be started fails.

3.1.6 Database Service Attached to Remote Database Does Not Know If Database is Closed

It is possible for Oracle SQL/Services database services to be preattached to a remote database. For example, the payroll service defined below attaches to the database "payroll" on node "REMOTE".

```
create service payroll autostart on
        reuse session
        sql version 7.2
        attach 'filename REMOTE::payroll'
        owner 'payrollaccnt'
```

```
        database authorization service owner
        min_executors 5
        max_executors 5;
```

If the payroll database on node REMOTE is closed, the Oracle SQL/Services payroll service has no way of knowing that the database has been closed. The payroll service continues to run, even though it is no longer attached to the database. The service is useless and must be shut down and restarted after the database is reopened. Any clients attached to the service while it is in this state get a SQLCODE of –1 with the following errors when they attempt to access the database:

```
%RDB-F-IO_ERROR, input or output error
-SYSTEM-F-LINKABORT, network partner aborted logical link
```

All Oracle SQL/Services services that are preattached to a remote database should be shut down before the database is closed. If this is not possible, there is a workaround for database services defined to attach to Oracle Rdb V6.1 or higher databases. Rather than defining session reusable database services, you can define a transaction reusable database service with CLIENTS_PER_EXECUTOR set to 1.

```
create service payroll autostart on
        reuse transaction
        sql version 7.2
        attach 'filename REMOTE::payroll'
        owner 'payrollaccnt'
        database authorization service owner
        min_executors 5
        max_executors 5
        clients_per_executor 1;
```

The service definition previously shown gives you essentially the same behavior as the previous session reusable database service. However, Oracle SQL/Services executes a "get diagnostics ? = transaction_active" statement to detect the end of a transaction for transaction reusable services. Because this requires a call to the Oracle Rdb engine, it fails and Oracle SQL/Services bugchecks and shuts down the executor. If this brings the executor count below the MIN_EXECUTORS value defined for the service, the Oracle SQL/Services monitor attempts to create a new executor process. If the monitor fails to start a new executor process after two attempts, it shuts down the service. Note that this workaround generates executor bugcheck dumps that need to be cleaned up.

3.1.7 Process Startup Fails Due to Errors in Systemwide OpenVMS Login Procedure

All processes in the Oracle SQL/Services server environment on OpenVMS are created running the SYS$SYSTEM:loginout image with a process-specific command procedure as

SYS$INPUT. Because the loginout image is used to create the process, the systemwide login procedure will be executed by the loginout image during process creation. If this procedure fails for some reason, then the Oracle SQL/Services process will fail to start. By default, any DCL command or image that completes with a failure status with a severity level of error or fatal can cause the procedure to fail unless it is handled using the DCL ON or SET NOON commands.

All Oracle SQL/Services processes start by executing the following DCL commands during process creation:

```
$ DELETE/SYMBOL/ALL
$ VRFY_SAVE = F$VERIFY(1)
$ DELETE <disk>:[directory]SQS_<node>_<component>.COM;
$ DEFINE SQS$DBSERVER TRUE
$ DEFINE SYS$LOGIN "<disk>:[directory]"
$ SET DEFAULT SYS$LOGIN
$ DEFINE SYS$SCRATCH "<disk>:[directory]"
```

If an Oracle SQL/Services process fails before executing these commands, please review the systemwide login procedure to determine the reason for the failure.

3.1.8 Implicit Attach Using the SQL$DATABASE Logical Name Not Supported

Oracle SQL/Services does not support the use of the SQL$DATABASE logical name on OpenVMS to implicitly attach to a database. For example, if you define the SQL$DATABASE logical name, a client application must still issue an explicit SQL ATTACH statement. For example, use ATTACH 'FILENAME SQL$DATABASE', to attach to the database. If a client application connected to a universal service issues a DML statement before attaching to a database, then the executor will return a status code of -1, with an associated "%SQL-F-NODEFDB, There is no default database" error message.

3.1.9 Problems That Exist for NO_SERVICE and SVCNOTRUN Error Returns

Clients may see the NO_SERVICE error returned when the service exists, but has not been started.

Clients may see the SVCNOTRUN (service not running) error when, in fact, the service does not even exist.

3.1.10 Some Error Messages Are Missing Object Names

Some error messages from SQLSRV_MANAGE are intended to display the object name that is the source of the error. However, the name is lost and no name is displayed.

3.2 Oracle SQL/Services Release 7.3.0.3 Client Known Problems and Restrictions

The following information describes Oracle SQL/Services release 7.3.0.3 client known problems and restrictions.

3.2.1 Problem Using Statement With No Parameter Markers in Batched Execution

If an application executes a prepared statement using the SQLSRV_EXE_BATCH flag, but the statement does not contain any parameter markers, the statement is incorrectly executed as if the SQLSRV_EXE_W_DATA flag had been specified. That is, the Oracle SQL/Services client API immediately sends an execute request message to the server to execute the statement. At this point, subsequent calls to any API routine, including sqlsrv_execute_in_out and sqlsrv_execute, all fail with SQLSRV_INTERR (-2011) or SQLSRV_MULTI_ACT (-2016) errors. Once the client API has entered this error state, only the sqlsrv_abort routine functions correctly. Therefore, client applications must not execute SQL statements that do not contain parameter markers using batched execution.

3.2.2 Incorrect Error Message is Returned if a Client Cancels Batched Execution

If an application calls sqlsrv_execute_in_out or sqlsrv_execute with the execute flag set to SQLSRV_EXE_WO_DATA before calling SQLSRV_EXECUTE_IN_OUT or SQLSRV_EXECUTE with the execute flag set to SQLSRV_EXE_BATCH, the client API incorrectly sends an execute request message to the server with no statement ID. Upon receipt of this message, the server returns an SQLSRV_INVSTMID (-2008) error back to the client with the following error message:

```
%SQLSRV-F-INVSTMID, Invalid statement id: 0
```

In this situation, the SQLSRV_INVSTMID error may be ignored.

4

OCI Services for Oracle Rdb: Release Notes

This chapter highlights release notes that pertain to OCI Services for Oracle Rdb (formerly known as SQL*Net for Rdb) for release 7.3.0.3. It contains information about installation, new and changed features, known problems, software fixes, and documentation changes.

4.1 Software Requirements

OCI Services for Oracle Rdb release 7.3.0.3 requires OpenVMS Alpha Version 8.2 or higher, or OpenVMS I64 Version 8.2-1 or higher software.

4.2 Installing OCI Services for Oracle Rdb

The installation for OCI Services for Oracle Rdb is part of the installation for Oracle SQL/Services release 7.3.0.3. Refer to the following documentation for information on installing OCI Services for Oracle Rdb.

- SYS$HELP:SQLSRV073_INSTALL_GUIDE.PDF

  This document is the *Oracle SQL/Services Installation Guide*. The information required to install OCI Services for Oracle Rdb is in this guide.

- *Oracle SQL/Services Server Configuration Guide*

  The information required to configure OCI Services for Oracle Rdb can be found in this guide, which can be found on the OTN web site.

4.2.1 Problem Reporting

If an error occurs while you are using OCI Services for Oracle Rdb and you believe that the error is caused by a problem with this Oracle product, contact your Oracle support representative for assistance.

When you experience a reproducible problem, it is important to provide as much detailed information as possible. Use the ALTER SESSION LOG FULL, HEADER [,TIMESTAMP] statement or define SQLNET_DEBUG_FLAGS "HTF" to collect detailed information about the current OCI Services for Oracle Rdb session. By providing the logged information with your problem report, you supply important data that can help solve the problem. See the *Oracle SQL/Services Server Configuration Guide* for more information about using the ALTER SESSION LOG statement and defining the SQLNET_DEBUG_FLAGS logical.

4.3 New and Changed Features for OCI Services for Oracle Rdb Release 7.3.0.3

The following sections describe new or changed features for OCI Services for Oracle Rdb release 7.3.0.3.

4.3.1 Client Process ID Now Displayed in Executor Log for OCI Services

Enhancement Request 6683772

In order to help users track which client process is communicating with a given OCI service, the client process ID is now displayed in the executor log. The following is an example of the information displayed, including the client process ID. The node name, application name and client process ID are all information about the client, while the remaining information pertains to the server process.

```
---EVENT BEG: EVENT_LOG ----------------------- Tue Apr 13 01:31:54.660 2010---
%SQLSRV-I-EVENT_LOG, event logged at line 4226 in file EXEC_SI.C;1
%SQLSRV-I-CONNECTNAME, Connect : CONNECT_0003580
%SQLSRV-I-CONNECTSTATE, Connect state: 4 (RUNNING_UNBOUND)
%SQLSRV-I-USERNAME, User name: USER1
%SQLSRV-I-NODENAME, Node : NODE1
%SQLSRV-I-APPLNAME, Application : $1$DGA227:[ORACLE.bin]SQLPLUS.EXE;1
%SQLSRV-I-CLIPROCID, Client Process ID : 2247A57F
%SQLSRV-I-SERVICENAME, Service : OCI_SVC
%SQLSRV-I-EXECNAME, Executor : OCI_SV01O0001
%SQLSRV-I-EXECPID, Executor PID : 2286BEA7
---EVENT END: EVENT_LOG ----------------------- Tue Apr 13 01:31:54.680 2010---
```

4.3.2 Performance Improvement For TO_CHAR Function When Handling Dates

In OCI Services for Oracle Rdb release 7.3.0.3, the TO_CHAR function has been modified to improve performance when handling date values.

4.3.3 DBTIMEZONE, SESSIONTIMEZONE and TZ_OFFSET Implemented

Bug 7560165

In OCI Services for Oracle Rdb release 7.3.0.3, the functions DBTIMEZONE, SESSIONTIMEZONE, and TZ_OFFSET were added to the Oracle dictionary metadata. Columns named DBTIMEZONE and SESSIONTIMEZONE were added to table DUAL. They are populated by ORA_LOGIN2 at logon time, from info in logical SYS$TIMEZONE_DIFFERENTIAL. Functions dbtimezone and sessiontimezone were added by selecting from the appropriate column in DUAL.

TZ_OFFSET was also partially implemented. It will only return valid values if the input is 'dbtimezone', 'sessiontimezone', or a valid timezone offset (format +HH:MM or -HH:MM).

The following sql queries will return valid data:

```
select dbtimezone from dual;
select sessiontimezone from dual;
select dbtimezone() from <any_table>;
select sessiontimezone() from <any_table>;
```

The following will NOT get valid data, but will get FLDNOTCRS error, saying that the column doesn't exist:

```
select dbtimezone from <any_table_except_dual>;
select sessiontimezone ffom <any_table_except_dual>;
```

ALTER SESSION SET TIME_ZONE will not work. To change the time zone, do an update to table DUAL.

```
update DUAL set SESSIONTIMEZONE = '<new_offset>';
```

4.3.4 TO_TIMESTAMP Function Implemented

Bug 3937912

A new function, TO_TIMESTAMP, was implemented in OCI Services for Oracle Rdb release 7.3.0.3. TO_TIMESTAMP returns a timestamp value from the given arguments. It provides the same functionality as the Oracle function TO_TIMESTAMP, and it takes the same input arguments and returns the same result.

The logical SQLNET_TIMESTAMP_DATE_TYPE must be defined as "Y" or "y" in order to receive timestamp data from a TO_TIMESTAMP function call. Only the date portion will be returned if the logical is undefined or is defined as anything else.

```
Function:   TO_TIMESTAMP(char(,fmt)(,nlsparam))
```

The following is a description from the Oracle documentation:

TO_TIMESTAMP converts *char* of CHAR, VARCHAR2, NCHAR, or NVARCHAR2 datatype to a value of TIMESTAMP datatype.

The optional *fmt* specifies the format of *char*. If you omit *fmt*, then *char* must be in the default format of the TIMESTAMP datatype, which is determined by the NLS_ TIMESTAMP_FORMAT initialization parameter. The optional *nlsparam* argument has the same purpose in this function as in the TO_CHAR function for date conversion.

The *nlsparam* argument specifies the language in which month and day names and abbreviations are returned. This argument can have this form:

```
'NLS_DATE_LANGUAGE = language'
```

4.3.5 V$PARAMETER Table Support Enhanced

Bug 9684494

In OCI Services for Oracle Rdb release 7.3.0.3, the view V$PARAMETER has been dropped, and a new global temporary table V$PARAMETER has been created in its place. The table includes a row defining the Oracle compatible release number. For this release, the compatible release number is 10.2.0.2.0. It also includes a row for each of the NLS parameters and what its current value is. This change was made in response to an issue raised in the referenced bug, but it is not the fix for the bug.

4.4 OCI Services for Oracle Rdb Problems Fixed for Release 7.3.0.3

This section highlights software errors relating to OCI Services for Oracle Rdb release 7.3.0.3 that have been fixed.

4.4.1 RDB$NATCONN Gets RMS-E-PRV Error for Privileged User

Bug 8917302

In releases prior to OCI Services for Oracle Rdb release 7.3.0.3, if a user had SYSPRV, BYPASS, or SECURITY as an authorized privilege, the RDB$NATCONN command procedure's ADD_USER and MODIFY_USER commands would assume that they also had the privilege as a currently enabled privilege. If the privilege was not enabled, the command would fail with the following error.

```
-RMS-E-PRV, insufficient privilege or file protection violation
```

This problem has been corrected. These commands will now correctly check if the user has the privileges enabled before attempting to make the update.

4.4.2 Bugchecks in OCI Services

Bug 9316689

Bugchecks would sometimes occur while using an OCI service. There was no specific command or operation that could be attributed to the bugchecks.

The bugcheck footprint looked like the following:

```
4-SEP-2009 11:23:56.45: Linked SQLSRV_UTLSHR73 (SQS_BUILD) SQS$ALPHA:[UTL]
%OCI-F-BUGCHECK: in SQS$SRC_73:[UTL]UTL_BUGCHECK.C;1 at line 961
HARD EXCEPTION ENCOUNTERED: 0000000C

%SYSTEM-F-ACCVIO, access violation, reason mask=00, virtual
address=0000000004CF8000, PC=0000000000D5B064, PS=0000001B
%OCI-F-RECBUGCHECK: bugcheck called while in bugcheck
%OCI-F-BUGCHECK: in NATCONN$SRC73:[CODE]GTWTSK.C;1 at line 604 GTWTSK: exception
'status: 12'
```

This problem has been corrected in OCI Services for Oracle Rdb release 7.3.0.3.

4.4.3 Execution of Remote Functions Implemented

Bug 8628164

The execution of remote functions had only been partially implemented. The remaining functionality was implemented. SQL statements of the type

```
select function@dblink_to_rdb(arguments) from table
```

now will execute correctly. Remote functions through a dblink to an Rdb database can now be executed in any place a function is allowed in a SQL statement.

This functionality is available in OCI Services release 7.3.0.3.

4.4.4 Bugcheck With Select For Update

Bug 9006914

In certain circumstances when a 'select for update' statement was executed, OCI Services for Oracle Rdb would think there were more than 65000 columns in the statement and would bugcheck with an access violation.

This problem has been corrected in OCI Services for Oracle Rdb release 7.3.0.3.

4.4.5 Two Task Error ORA-3106 Using Cursors

Bug 9027855

When a series of cursors were defined and retained for re-execution, in some circumstances the wrong cursor number would be closed and then reused, causing a two-task protocol error, Oracle error number ORA-3106.

This problem has been corrected in OCI Services for Oracle Rdb release 7.3.0.3.

4.4.6 Slow Execution of a Query With an Outer Join

Bug 8811747

A query using outer joins on three Rdb tables accessed using DB links and OCI Services for Oracle Rdb was not passed through to Rdb unchanged, but was broken up into three separate remote queries and joined locally. This caused performance of the query to be slower than expected.

In OCI Services for Oracle Rdb release 7.3.0.3, the SQL capability "OUTER JOIN" was added to the SQL_CAPABILITY table, which notified the Oracle optimizer that Rdb through OCI Services can execute outer joins, so the query can now be sent directly to Rdb as a single SQL statement.

4.5 Known Problems and Restrictions

This section highlights problems and restrictions relating to OCI Services for Oracle Rdb and includes workarounds where appropriate.

4.5.1 Support for OpenVMS VAX and Standard Kits

Oracle SQL/Services release 7.3.0.3 and OCI Services for Oracle Rdb release 7.3.0.3 are not supported on OpenVMS VAX.

Standard kit installation is not supported with this version. Only multiversion kits are available.

4.5.2 Character Sets

The Oracle US7ASCII and DEC_MCS character sets are supported by default. See the *Oracle SQL/Services Server Configuration Guide* for information about using other character sets.

4.5.3 Dates

Oracle dates can pre-date the OpenVMS 17-NOV-1858 date. Such dates are not supported by Oracle Rdb or OCI Services for Oracle Rdb.

4.5.4 Transaction Reusable Services

Oracle SQL/Services transaction reusable services are not supported. Only session reusable services are supported.

4.5.5 Database Access by Service Owner

Oracle SQL/Services services with database access by service owners are not supported. Only services with database access by connect user are supported.

4.5.6 Grant Use on OCI Services\

Grant use on OCI services is not supported. All users have access to OCI services. However, the database is still protected because access to the database must be through connect (client) username.

4.5.7 Multischema Databases

OCI Services for Oracle Rdb does not support multischema Oracle Rdb databases. However, OCI Services for Oracle Rdb adds an emulation layer that provides a multischema environment that is similar to what you get with Oracle.

4.5.8 Error Mapping is Not Exact

The Oracle error codes do not always map well to Oracle Rdb message vectors. As a result, OCI Services for Oracle Rdb might issue error code 32800. Error code 32800 is a generic server error code that does not convey any information about the error. The text accompanying the message provides more information about handling this error.

4.5.9 SQL Dialect

OCI Services for Oracle Rdb sets the Oracle Level1 or Oracle Level2 dialect and requires the dialect to perform its tasks. Changing the dialect may result in unexpected OCI Services for Oracle Rdb failures.

4.5.10 Multisession Server is Not Supported

The Oracle server can support multiple sessions from multiple client applications in one server process. OCI Services for Oracle Rdb cannot because of the locking differences between the two database products.

4.5.11 Cursors

The maximum number of open cursors is currently 998.

4.5.12 ROWID Support

ROWID support exists only if there are less than 2.1 billion pages in a logical area. Logical areas greater than 2.1 billion pages are not likely to occur unless you implement VLDB with a single-file database.

4.5.13 Piecewise Inserts

Piecewise inserts (specific to Oracle SQL) are not supported in this release.

4.5.14 RAW and VARCHAR Data

Oracle Rdb does not differentiate between RAW (binary) and VARCHAR (text) data. If you use the VARCHAR data type in place of the RAW data type, your application works with one exception. OCI Services for Oracle Rdb does not convert the binary data to text data if you select the data using the VARCHAR2 data type. You must explicitly convert the data using the HEXTORAW or RAWTOHEX SQL function. Explicitly converting the data works with both Oracle Rdb and Oracle RDBMS.

4.5.15 Determining a NOT NULL Constraint Through a Describe Call

If the statement SELECT col1 FROM tab1 were parsed and described in OCI, the Oracle server returns a message that col1 either does or does not have a NOT NULL constraint. OCI Services for Oracle Rdb does not return this information in the describe call. You can, however, obtain this information from the metadata tables. This restriction causes applications like SQL*Plus to always describe a column as not having a NOT NULL constraint when it in fact may have a NOT NULL constraint.

4.5.16 OCI Error When Attempting to Fetch a Binary ROWID

The OCI FETCH routine returns the ORA-03106 error when you attempt to fetch a binary ROWID (data type DTYRID).

To work around this problem, fetch a ROWID in text.

4.5.17 SYSDATE Function is Available From a Dblink Connection

The SYSDATE function is available from a dblink connection. When used in this way, SYSDATE is evaluated by the Oracle Rdb Server, which is not standard Oracle semantics. Please be aware of this difference and certain that you want to use SYSDATE in this way.

4.5.18 Storing and Retrieving Long Raw Data Using Thin JDBC Driver

There are several restrictions using the thin JDBC driver to store and retrieve long raw (image) data with OCI Services for Oracle Rdb:

- Image data must be defined as BinaryStream data and should be stored using setBinaryStream and retrieved using getBinaryStream.
- For the thin JDBC driver, use of the ’blob’ datatype is not yet supported. The logical SQLNET_BLOB must not be defined or must be defined as "N".
- The default maximum size of long raw data is 100,000 bytes. If your long raw data is longer or significantly shorter than that, you should define the logical SQLNET_ MAXLONGRAW to the value of your longest long raw data. Long raw data must be stored in a single insert statement and retrieved in a single get statement. The SQLNET_ MAXLONGRAW value is used to allocate the buffer to hold the data, so it must be large enough to hold the entire value of the image data.

5

Previous Releases: New Features and Fixed Problems

This chapter describes the new features and technical changes to previous releases of Oracle SQL/Services and OCI Services for Oracle Rdb. It also describes problems that were fixed in these products.

5.1 New and Changed General Features in Previous Releases of Oracle SQL/Services

This section highlights new and changed general features that were added in previous releases.

5.1.1 Configurable SYSUAF Last Noninteractive Login Update Frequency

Bug 8533381

Beginning with release 7.3.0.1, Oracle SQL/Services updates the last non-interactive login information in the system authorization file whenever a user makes a connection. With release 7.3.0.2, the frequency that the information is updated is now configurable and will no longer default to updating the information for every connection. See the Oracle SQL/Services Server Configuration Guide for more information on how to configure the frequency that the information is updated.

5.1.2 Shared Memory Usage Information Added to Bugcheck Output

Bug 7113375

Shared memory usage information has now been added at the beginning of bugcheck files, using the same format as the SQLSRV_MANAGE SHOW SERVER command. This will

enable users to diagnose when shared memory is low and possibly a cause of the problem reported in the bugcheck file.

This feature was added in Oracle SQL/Services release 7.3.0.2.

5.1.3 Link Time Information Added to Bugcheck Output

Bug 3769341

Oracle SQL/Services release 7.3.0.2 bugcheck dumps have now been enhanced to dump the link date for all images listed in the loaded image section. The following is a sample extract from a bugcheck file.

```
************************************************************************
******************SECTION HEADER: LOADED IMAGE INFO*********************
************************************************************************

Active Image list:
        Total active images = 23
        image name                  start     end       link date
-------------------------------------------------------------------------
        DCL                         7AE6A000  7AF3C9FF  14-OCT-2008 10:39:02.13
        SQLSRV_DISP73               00010000  001649FF   5-NOV-2008 17:33:59.19
        DECC$SHR_EV56               7BE54000  7BEF9FFF  14-OCT-2008 10:31:25.44
        DPML$SHR                    7BAE2000  7BB27FFF  14-OCT-2008 10:30:50.06
        CMA$TIS_SHR                 7B8FC000  7B90DFFF  14-OCT-2008 10:30:32.98
        SORTSHR                     7B7D6000  7B877FFF  14-OCT-2008 10:32:02.16
        LIBRTL                      7B5BA000  7B60BFFF  14-OCT-2008 10:30:17.98
        LIBOTS                      7B60C000  7B613FFF  14-OCT-2008 10:30:14.17
        SECURESHRP                  7B33C000  7B3BDFFF  14-OCT-2008 10:30:47.59
        SYS$BASE_IMAGE              81824670  81839E60  17-NOV-1858 00:00:00.00
        SYS$PUBLIC_VECTORS          81804ED8  818077C8  17-NOV-1858 00:00:00.00
        SQLSRV_PRVSHR73             00198000  0023A340   5-NOV-2008 17:33:37.85
        SQLSRV_SQLNETSHR73          002B8000  015277FF  17-SEP-2008 11:40:05.26
        TRACE                       7BEFA000  7BF6BFFF  14-OCT-2008 10:32:52.23
        PTHREAD$RTL                 7BB28000  7BB51FFF  14-OCT-2008 10:32:02.51
        TCPIP$IPC_SHR               01906000  019A75FF   4-SEP-2008 02:26:54.85
        TCPIP$ACCESS_SHR            019A8000  01A489FF   4-SEP-2008 02:26:54.32
        SQLSRV_MESSAGES             01A6C000  01A73FFF  17-SEP-2008 11:35:26.66
        SHRIMGMSG                   01A74000  01A7A9FF  14-OCT-2008 10:38:50.18
        SORTMSG                     01A7C000  01A8C1FF  14-OCT-2008 10:32:04.12
        DECC$MSG                    01A8E000  01A91FFF  14-OCT-2008 10:37:52.45
        DBGTBKMSG                   01A92000  01A9F9FF  14-OCT-2008 10:38:49.09
        TCPIP$MSG                   01AA0000  01AB63FF   4-SEP-2008 02:26:52.02
```

5.1.4 Image Name, User and Link Directory Information Added to Bugcheck Output

Bug 3769341

Oracle SQL/Services release 7.3.0.2 now includes the name of the image which is bugchecking, the user who linked the image and the link directory in the header of bugcheck dump files. This information will make it easier to identify the image that is bugchecking, whether or not the image is a special image and which special image it is.

5.1.5 Updated Configuration Guide

The Oracle SQL/Services Server Configuration Guide has been updated for Oracle SQL/Services release 7.3.0.1. This manual is available on the OTN web site.

5.1.6 Updated SQLSRV_MANAGE Help

Help for the SQLSRV_MANAGE utility has been updated for Oracle SQL/Services release 7.3.0.1, including the documentation of new features since the last update.

5.1.7 Enhanced Dispatcher and Executor Process Logging

Bugs 6008742 and 3114572

Oracle SQL/Services release 7.3.0.1 has been enhanced to enable users to more easily track application connections and the executors that processed those connections. The name and process ID (PID) of the executor handling a given connect will be entered in the dispatcher log file when the connect is logged. The PID of the executor will be logged in the executor log file, so users will be able to associate a given connect to a specific executor and its log file. In addition, whenever a connect occurs, an entry will be made in the log file for the executor handling that connect, specifying the connect name. With this information, a user will be able to determine the specific section of the executor log that contains the logging information for a given connect, since an executor can process multiple connects. Given the information in the executor log file, a user will also be able to link a connect to the information in the dispatcher log, including the node name, user name, and application for the client.

5.1.8 Support for Configurable Server Dump Path Argument in SQLSRV_MANAGE

Bugs 5745868 and 5745899

The ability to create, alter and extract a user-specified server dump path has been added to Oracle SQL/Services release 7.3.0.1. The ALTER SERVER and CREATE SERVER commands have been enhanced to add a new DUMP PATH argument. The Oracle

SQL/Services Server Configuration Guide had been updated to include this new argument for both commands. It has also been updated to remove the erroneous ALTER and CREATE SERVER LOG PATH argument.

5.1.9 Enhanced Tracking of SQL/Services User Activity in SYSUAF

Bug 5001258

Oracle SQL/Services release 7.3.0.1 has been enhanced to update the last non-interactive login information in the system authorization file (SYSUAF), when a user makes a connection. For accounting and management reasons, it is useful to see when a user account was last used. Often users have created VMS user accounts used only by SQL/Services clients. System managers had no way to determine if those user accounts were actually being used by looking at the account information in the SYSUAF. By tracking the last non-interactive login, system managers will now be able to determine when those user accounts were last utilized.

5.1.10 Oracle 10gR2 SQLNET Transport Support

Oracle SQL/Services release 7.3 emulates the Oracle 10gR2 SQLNET transport for SQLNET dispatchers.

5.1.11 Performance Improvement on OpenVMS I64 Platform

On the OpenVMS I64 platform, Oracle SQL/Services release 7.3 uses native Oracle RDBMS 10gR2 SQLNET transport functionality. In 7.2 releases, a translated SQLSRV_SQLNETSHR image was used. Performance has been significantly enhanced using the native image.

5.1.12 Support for New SQLSRV_EXT_CONFIG70TO73.COM Command Procedure

Bug 5745427

A new command procedure, SQLSRV_EXT_CONFIG70TO73.COM, has been added for Oracle SQL/Services release 7.3. This command procedure is used to upgrade release 7.0 configuration files to release 7.3.

5.1.13 Insufficient Shared Memory Conditions Now Logged

In SQL/Services release 7.3, insufficient memory errors are now written into the executor, dispatcher and monitor log files, in addition to the bugcheck dump file. In some cases, the error is recoverable and does not cause a bugcheck. For instance, a dispatcher may not be

able to create a new executor because of insufficient shared memory. This is not a fatal error, because other executors may terminate, freeing up memory for subsequent executors to be created. The insufficient memory problem may have been a temporary condition. In those cases, it is helpful to log the problem, so users are aware that they have reached the shared memory threshold and may need to increase the value.

5.1.14 Connect State Logging Enhanced

Bug 6354902

SQL/Services release 7.3 has been enhanced to log a text value for the connect state, in addition to the numerical value, whenever the connect state is being logged. The following is an example of the enhanced logging.

```
---EVENT BEG: EVENT_LOG ----------------------- Mon Dec 17 12:31:21.590 2007---
%SQLSRV-I-EVENT_LOG, event logged at line 2915 in file CMD.C;6
%SQLSRV-I-CONNECTNAME, Connect : CONNECT_0000001
%SQLSRV-I-CONNECTSTATE, Connect state: 3 (RUNNING)
%SQLSRV-I-SERVICENAME, Service : TST_I73
---EVENT END: EVENT_LOG ----------------------- Mon Dec 17 12:31:21.600 2007---
```

5.1.15 VMS Mixed Case Passwords Supported

Enhancement request: 5916102

In prior releases of Oracle SQL/Services and OCI Services for Oracle Rdb, using mixed case passwords would fail even when the OpenVMS /FLAGS=PwdMix flag was specified for the user in the system authorization file (UAF).

Support for this OpenVMS version 7.3-2 feature has been included in Oracle SQL/Services and OCI Services for Oracle Rdb release 7.2.0.2.

Support for this feature has also been included in Oracle Rdb release 7.2.1.2. Oracle SQL/Services and OCI Services for Oracle Rdb requires that this or a subsequent release of Oracle Rdb be installed in order to take advantage of this feature. The feature is implemented in a version independent image for Oracle Rdb. Therefore, the feature can be used in Oracle SQL/Services and OCI Services for Oracle Rdb executing against a prior Oracle Rdb 7.0 or 7.1 release, as long as the required Oracle Rdb release has been installed on the system.

Refer to OpenVMS version 7.3-2 documentation for more information on the HP OpenVMS Authorize Utility PwdMix flag for user accounts.

5.1.16 Support for New SQLSRV_EXT_CONFIG70TO72.COM Command Procedure

Bug 5745427

A new command procedure, SQLSRV_EXT_CONFIG70TO72.COM, has been added for Oracle SQL/Services release 7.2.0.2. This command procedure is used to upgrade release 7.0 configuration files to release 7.2.

5.1.17 Enhanced Logging in SQL/Services Log Files

Enhancement request: 5388589

SQL/Services log files did not identify the SQL/Services version, current time stamp, hardware type or operating system version. This identifying information is often useful to track problems.

With SQL/Services release 7.2.0.1 and later, the following header will now appear in SQL/Services executor, dispatcher and monitor log files to record that information.

```
$! ------------------------------------------------------------------------
$!
$! Oracle SQL/Services V7.2-01 executor log file
$! Wed Jul 19 11:41:27 2006
$!
$! ------------------------------------------------------------------------
$!
$! This is a AlphaServer 4X00 5/533 4MB running VMS V7.3-2
$!
```

5.1.18 Enhanced Error Reporting Creating & Opening Process Command Procedures

Enhancement request: 5388540

When an error occurred creating or opening a command procedure used to create monitor, dispatcher and executor processes, SQL/Services logged the error returned by the CC creat builtin function. This error was not the specific VMS error and was not always useful in diagnosing problems.

With SQL/Services release 7.2.0.1 and later, the OpenVMS error will also be logged. The following is a sample extract from a log file, containing such an error condition.

```
---EVENT BEG: EVENT_LOG ----------------------- Mon Jul 17 16:58:45.010 2006---
%SQLSRV-I-EVENT_LOG, event logged at line 1122 in file DBS_PROCESS_VMS.C;5
%SQLSRV-E-SM_FOPEN_ERR, Error opening DISK2:[JONES]SQS_NODE_SVC040000171.COM;
```

```
%SQLSRV-E-ERROR_TEXT, Error text: permission denied
%RMS-E-PRV, insufficient privilege or file protection violation
---EVENT END: EVENT_LOG -----------------------
```

5.1.19 Oracle SQL/Services Available on OpenVMS I64

Oracle SQL/Services release 7.2 is available on the HP OpenVMS Industry Standard 64 for Integrity Servers operating system.

5.2 Oracle SQL/Services Errors Fixed in Prior Releases

The following known problems found in the Oracle SQL/Services OpenVMS server have been fixed in previous releases.

5.2.1 Dispatcher Failed on Alpha When a Listener Failed to Start

Bugs 7380055 & 7380344

If a dispatcher was defined using multiple listeners and any one of those listeners failed to start, the dispatcher failed to start on Alpha. The dispatcher would log an error and continue to start on Itanium, if at least one valid ADDRESS line was found. This behaviour made it impossible to have one LISTENER.ORA and one Oracle SQL/Services configuration file for an entire cluster.

The following are the errors found in the dispatcher log file, when this failure occurred:

```
---EVENT BEG: EVENT_LOG ----------------------- Thu Aug 28 04:19:10.880 2008---
%SQLSRV-I-EVENT_LOG, event logged at line 714 in file COM_TNS.C;1
%SQLSRV-E-TNSFAILURE, Oracle Net TNS nslisten() service has failed
%SQLSRV-E-TNSEXTENDED, Oracle Net TNS error codes: primary (12545) secondary
(12560)
---EVENT END: EVENT_LOG ----------------------- Thu Aug 28 04:19:10.900 2008---

---EVENT BEG: EVENT_LOG ----------------------- Thu Aug 28 04:19:10.970 2008---
%SQLSRV-I-EVENT_LOG, event logged at line 10740 in file CMD.C;1
%SQLSRV-E-TNSFAILURE, Oracle Net TNS oci_listener_2() service has failed
---EVENT END: EVENT_LOG ----------------------- Thu Aug 28 04:19:10.970 2008---

---EVENT BEG: EVENT_LOG ----------------------- Thu Aug 28 04:19:10.970 2008---
%SQLSRV-I-EVENT_LOG, event logged at line 10792 in file CMD.C;1
%SQLSRV-E-NOLISCREATED, No listeners could be created
---EVENT END: EVENT_LOG ----------------------- Thu Aug 28 04:19:10.970 2008---
```

For example, if the OCI dispatcher were defined as

```
SQLSRV> create dispatcher OCI_DISP
SQLSRV_     autostart on
SQLSRV_     network_port sqlnet listener "oci_listener_1" protocol oci
SQLSRV_     network_port sqlnet listener "oci_listener_2" protocol oci
SQLSRV_ ;
```

and the listeners were defined in LISTENER.ORA as

```
 OCI_LISTENER_1 =
   (ADDRESS_LIST =
         (ADDRESS =
           (COMMUNITY = TCP_COM.world)
           (PROTOCOL = TCP)
           (Host = NODE_A)
           (Port = 1527)
         )
   )
 OCI_LISTENER_2 =
   (ADDRESS_LIST =
         (ADDRESS =
           (COMMUNITY = TCP_COM.world)
           (PROTOCOL = TCP)
           (Host = NODE_B)
           (Port = 1527)
         )
   )
```

An attempt to start up OCI_DISP on NODE_A would fail due to the errors when OCI_LISTENER_2 failed to start up.

This problem has been corrected in OCI Services for Oracle Rdb release 7.3.0.2. If at least one of the listeners specified for the dispatcher starts up successfully, the OCI dispatcher startup is successful.

5.2.2 Server Bugcheck Occurred After Server Client Aborted With Ctrl C

Bug 8265245

If a request was aborted by a control C command, a subsequent request from the same client would sometimes result in a bugcheck and shutdown of the SQL/Services server.

The following is an example of this problem, where a user had over 300 services to be displayed.

```
$ SQLSRV_MANAGE73
SQLSRV> connect server;
```

```
SQLSRV> show services;
^C
$ SQLSRV_MANAGE73
SQLSRV> connect server;
SQLSRV> show services;
%SQLSRV-E-READERR, Error on read
%SYSTEM-F-LINKDISCON, network partner disconnected logical link
%SQLSRV-E-READERR, Error on read
```

At this point, the SQL/Services server has shutdown.

This problem has been corrected in Oracle SQL/Services release 7.3.0.2.

5.2.3 SQLSRV_MANAGE CONNECT SERVER Got SYSTEM-F-RANGEERR Error

Bug 6188111

If you specified keyword USING rather than USER before the username, the SQLSRV_ MANAGE CONNECT SERVER command got the following errors.

```
SQLSRV> CONNECT SERVER USING "name" USING "password";

%SYSTEM-F-RANGEERR, range error, PC=0000000000078568, PS=0000001B

 Improperly handled condition, image exit forced by last chance handler.
...
```

This problem has been corrected in Oracle SQL/Services release 7.3.0.1.

5.2.4 Problem Processing SQL Initialization File

Bug 5590529

For universal non-OCI services, the SQL initialization file would fail on commands which required that the database already be attached, due to the fact that it was being executed prior to attaching to the database.

This problem has been corrected in release 7.3. The database attach will now be done prior to executing the SQL initialization file.

5.2.5 Security Problem Fixed

By emulating the Oracle 10gR2 listener, Oracle SQL/Services release 7.3 and later now have tighter security via the listener. Problems that caused denial-of-service problems in prior releases have now been resolved with this new listener.

5.2.6 Problem With Error Message Truncation

Bug 6374049

In some cases, error messages were being written to a buffer which was not large enough to accommodate the entire error message text and the error message was truncated. The incomplete message text was then written to the SQL/Services log files.

This problem has been corrected in release 7.3.

5.2.7 CMA Errors Now Display Secondary Error Message

On Itanium systems, exceptions are processed through pthreads, which envelops the SQL/Services error with a CMA error. In some cases, the SQL/Services error was displayed as an object number, rather than a text error message, such as the following.

```
%SQLSRV-W-EXCEPTION_RAISE, Exception raised: %CMA-F-EXCEPTION, exception raised;
address of exception object 00050C00
```

Since this type of error message is not useful in diagnosing a problem SQL/Services release 7.3 has been modified to make all object type messages into useful text messages. The above example will now be displayed as follows.

```
%SQLSRV-W-EXCEPTION_RAISE, Exception raised: %CMA-F-EXCCOPLOS, exception raised;
some information lost, -SQLSRV-F-INSUFFICIENT_ME, UTL_INSUFFICIENT_MEMORY
```

5.2.8 SQL/Services Configuration File Upgrade Between 71 and 72 Releases

Bug 5765415

In Oracle SQL/Services 7.2 releases prior to 7.2.0.2, a user was required to create a new configuration file (SQLSRV_CONFIG_FILE72.DAT) for the first release 7.2 installation.

Beginning with Oracle SQL/Services release 7.2.0.2, SQLSRV_CONFIG_FILE71.DAT can now be copied to SQLSRV_CONFIG_FILE72.DAT and SQL/Services will execute successfully with this new configuration file, without any other modifications to the configuration file.

This problem has been corrected in release 7.2.0.2.

5.2.9 SQLSRV_CREATEnn.SQS Missing SQL Version

Bugs 5978019, 5741971

In release 7.2.0.1, when the Oracle SQL/Services installation generated the SQLSRV_CREATEnn.SQS file for the creation of the RMU_SERVICE and OCI_SAMPLE services, the SQL VERSION was missing. This caused the creation of those services to fail, during the creation of a new configuration file.

This problem has been corrected in Oracle SQL/Services release 7.2.0.2.

5.2.10 Improved Logging on Dispatcher Listener Startup Failure

Bug 557878

In releases prior to 7.2.0.2, when Oracle SQL/Services was unsuccessful in starting up an OCI dispatcher due to problems finding the LISTENER.ORA file or the dispatcher service definition in that file, the information logged to the dispatcher log file was not helpful in diagnosing the problem.

```
------------EVENT BEGIN:  EVENT_LOG at Mon Sep 29 1997 10:25:15.942------------
%SQLSRV-I-EVENT_LOG, event logged at line 990 in file COM_TNS.C;1
%SQLSRV-E-TNSFAILURE, Oracle SQL*Net TNS nlpagas() service has failed
%SQLSRV-E-ERROR_TEXT, Error text: oci_listener
------------EVENT END  :  EVENT_LOG at Mon Sep 29 1997 10:25:15.984------------
```

In release 7.2.0.2, Oracle SQL/Services logs more helpful information, such as the following.

```
---EVENT BEG: EVENT_LOG ----------------------- Fri Apr 27 10:29:59.440 2007---
%SQLSRV-I-EVENT_LOG, event logged at line 1452 in file COM_TNS.C;2
%SQLSRV-E-TNSFAILURE, Oracle Net TNS nlpagas() service has failed
%SQLSRV-E-ERROR_TEXT, Error text: oci_listener
%SQLSRV-E-TNSEXTENDED, Oracle Net TNS error codes: primary (408) secondary (0)
%SQLSRV-E-ERROR_TEXT, Error text: LISTENER.ORA does not exist in the expected
location
%SQLSRV-E-ERROR_TEXT, Error text: or there is no valid entry for the above named
service
---EVENT END: EVENT_LOG ----------------------- Fri Apr 27 10:29:59.470 2007---
```

5.2.11 SQLSRV_MANAGE EXTRACT Command Truncates Port Names

Bug 5867554

In releases prior to 7.2.0.2, the SQLSRV_MANAGE EXTRACT command would truncate port names that were more than 13 characters in length. For example, in the following "oci_listener_test" was truncated to "oci_listener_".

```
SQLSRV> show dispatcher oci_disp_test;
      Dispatcher OCI_DISP_TEST ...
```

```
      Network Ports:                                    (State)   (Protocol)
        SQL*Net listener oci_listener_test            Unknown   OCI clients
SQLSRV> extract dispatcher oci_disp_test;
      Create Dispatcher OCI_DISP_TEST ...
      network_port sqlnet listener oci_listener_ protocol OCI
```

This problem has been corrected in Oracle SQL/Services release 7.2.0.2.

5.2.12 Security Problems Fixed

Security problems have been fixed in Oracle SQL/Services release 7.2.0.2.

5.2.13 Shared Memory Leak Using Universal Services Fixed

In Oracle SQL/Services releases prior to 7.2.0.2, there was a minor shared memory leak every time a client connected using a universal service. After a significant number of connections, this would eventually lead to insufficient shared memory exceptions, requiring a restart of the SQL/Services server.

This problem has been corrected in Oracle SQL/Services release 7.2.0.2.

5.2.14 Problem Using Persona Feature With JDBC Dispatchers

TAR: 15930012.6

The JDBC Dispatcher did not inherit IMPERSONATE privilege and this sometimes caused use of the persona feature to fail. SQL/Services will now start the JDBC dispatcher with IMPERSONATE privilege.

This problem has been corrected in release 7.2.0.1.

5.2.15 Poor Performance From OCI Queries

Bugs: 3259208, 4770496, 5144164

Oracle SQL/Services release 7.1.5.8 introduced a problem that could cause queries from an OCI source to sometimes take an extraordinarily long time to complete. Examination of the SQL/Services processes would show that they were idle even though the client had not received a response from SQL/Services.

This problem was introduced by changes in the underlying Oracle NET libraries employed by SQL/Services. There were instances where a network message would arrive but notification of that arrival was not being delivered to the SQL/Services dispatcher. When that occurred, SQL/Services would only see that a new network message had arrived when it did periodic polling.

There is no workaround for this issue.

This problem has been corrected in release 7.2.0.1. Notification of network message arrival is now done immediately.

5.2.16 Misleading Dispatcher Logging Entries Removed

Bug: 5148550

When an Oracle Net connection was successfully disconnected, the following information was entered into the dispatcher log. This would occur for any executor using the SQLNET protocol, such as an OCI Services connection. Since the logging was done for every connection, it tended to make dispatcher log files large.

Dispatcher log entry:

```
---EVENT BEG: EVENT_LOG ----------------------- Fri Mar 31 09:40:31.5602006---
%SQLSRV-I-EVENT_LOG, event logged at line 2496 in file COM_TNS.C;1
%SQLSRV-E-TNSFAILURE, Oracle Net TNS nsrecv() service has failed
%SQLSRV-E-TNSEXTENDED, Oracle Net TNS error codes: primary (12537) secondary
(12560)

---EVENT END: EVENT_LOG ----------------------- Fri Mar 31 09:40:31.5602006---
```

This message (12537) is actually an informational message from Oracle TNS. There is no need to log the message. It appears to be reporting a problem, rather than a success condition, causing confusion. It has now been removed from dispatcher logging in Oracle SQL/Services release 7.2.0.1.

5.2.17 SQLSRV$MOD*.EXE Files Removed From the SQL/Services Kit

Bug: 5222605

SQLSRV$MOD images are part of the Oracle Rdb SQL component. Due to a past problem, some corrected SQLSRV$MOD images were shipped on the SQL/Services kit to be installed if needed to supercede older images. The SQL/Services startup and shutdown procedures installed and deinstalled these images.

Because the need for these images no longer exists, they have been removed from the SQL/Services kit and procedures in Oracle SQL/Services release 7.2.0.1.

5.2.18 Failure to Start 2PC Using OCI Universal Services

In releases 7.1.6, 7.1.6.1, and 7.2, attempting to access an OCI universal service using two-phase commit failed to start a two-phase commit transaction and therefore reverted to a one-phase commit transaction.

This problem has been corrected in release 7.2.0.1.

5.2.19 Occasional Access Violations During OCI Bugcheck Dumps

Occasionally, an access violation would occur during the process of writing an OCI bugcheck dump file.

This problem has been corrected in release 7.2.0.1.

5.2.20 SQL/Services Installation Procedure Fixes SQL Version Specified

During SQL/Services installation, the user is asked to specify the SQL version for the generic service. If the user specified more than 2 digits in that version number, the SQL/Services installation would fail.

This problem has been corrected in release 7.2.0.1. The installation procedure now truncates the version to 2 digits, as required.

5.2.21 Monitor and Dispatcher Processes in CPU Loop

In releases prior to 7.2.0.1, the SQL/Services monitor and dispatcher processes may sometimes get into a deadlock condition where both processes are in a CPU loop. If SQL/Services is configured with services that have a bad SQL init file with the minimum executor parameter set to greater than 0, starting up the SQL/Services server can, in rare occasions, cause the SQL/Services monitor and dispatcher processes to be in a CPU loop waiting for a mutex.

5.2.22 PROCESS_INIT Defined as Keyword LOGIN Could Fail

Bug: 4664833

Starting an executor with PROCESS_INIT defined as keyword LOGIN would sometimes fail with garbage in the login command file name.

This problem was corrected in release 7.1.6.1.

5.2.23 Monitor Aborts When Connection Cancelled

If you attempted to use the monitor port for an OCI connection and then cancelled the process, the monitor would abort.

This problem was fixed in release 7.2.

5.3 New and Changed Features for Previous OCI Services for Oracle Rdb Releases

This section highlights new and changed features for previous OCI Services for Oracle Rdb releases.

5.3.1 OCI Services Server Configuration Test Tool

Bug 775583

A new tool has been added to OCI Services for Oracle Rdb release 7.3.0.2 to test that the OCI Services server configuration has been correctly set up. This tool can be used to validate the set up, once the system has been configured. Details on using this tool can be found in the Oracle SQL/Services Server Configuration Guide.

5.3.2 Statistics Now Returned for Selects Using a DBLINK

Bug 6966070

In releases prior to 7.3.0.2, statistics were not being returned when an Oracle server requested them through a dblink connection. This often resulted in decreased performance and non-optimal choice of strategy for the query by the Oracle optimizer. Many statistics and counts that are easily available in the Oracle Rdb database are now returned in release 7.3.0.2 and later. This includes information on tables, columns, and indexes. In the test cases, this information allowed the Oracle optimizer to choose better strategies for slow queries and they were significantly faster. Work in this area will be ongoing, as more relevant statistics are identified and available in Oracle Rdb.

5.3.3 Optimized Memory Use in OCI Executor When Using a DBLINK

Bug 7301874

Memory that was allocated by the Oracle Net routines via a callback into the OCI executor was not being released until the end of the session. It appeared to be a memory leak for a long-running session. In release 7.3.0.2, this memory is now being allocated in a memory

group that is released at the end of each OCI call, so it is not accumulating through a long-running session.

5.3.4 Unique Bind Variable Names

When a query was "fixed up" by the OCI executor because of datatype conversion errors, literals were sometimes replaced by bind variables which could all have the same name. In release 7.3.0.2, the OCI "fixup" code was changed to generate bind variables with unique names.

5.3.5 Dictionary Enhancements

Bugs 7559798 and 8464682

In release 7.3.0.2, several enhancements were made to the Oracle metadata created by the dictionary prepare and upgrade program. The ALL_USERS view now selects data from the USER$ table, since all users must be entered into the USER$ table. Columns in views that were selecting a NULL value required a datatype for those columns. The NULL values were changed to CAST to the appropriate datatype. Some of the views containing columns that were TRIMmed were modified to be more efficient.

The domains RDB1LONG, RDB2LONG, and RDB4LONG will no longer be created as part of a database prepare. Those domains will not be deleted from databases prepared via an older release, but they will not be created in release 7.3.0.2 and future releases.

5.3.6 Enhanced OCI Executor Logging

In OCI Services for Oracle Rdb release 7.3.0.1, there have been several additions to OCI executor logging, including new logging flags. For details, see Section 7.3.4 in the Oracle SQL/Services Server Configuration Guide.

5.3.7 Enhanced Index Statistics for OCI Describe Index

OCI Services for Oracle Rdb release 7.3.0.1 has been enhanced to provide more accurate index statistics in response to the OCI call to describe indexes. Also, more column and index statistics will be returned on Itanium.

5.3.8 Oracle Metadata Updated

Bugs 6836602 and 6860836

Further changes were made to the Oracle metadata created by the dictionary prepare and upgrade program, RDB$NATCONN_DICnn, in OCI Servicesfor Oracle Rdb release 7.3.0.1.

Columns in some existing tables were changed, and some new tables and views were created to reflect the Oracle 10gR2 metadata.

5.3.9 Oracle 10gR2 Library Support

OCI Services for Oracle Rdb release 7.3 now emulates the Oracle RDBMS release 10gR2 libraries and identifies itself as an Oracle RDBMS release 10gR2 database to the client. This allows applications to use new features in Oracle RDBMS release 10gR2. OCI Services for Oracle Rdb supports OCI client releases as supported by Oracle RDBMS release 10gR2.

5.3.10 Performance Improvement on OpenVMS I64 Platform

On the OpenVMS I64 platform, OCI Services for Oracle Rdb release 7.3 now uses native Oracle RDBMS 10gR2 libraries. In 7.2 releases, OCI Services used a translated SQLSRV_ SQLNETSHR image. Performance has been significantly enhanced using the native image.

5.3.11 Oracle Metadata Updated

In release 7.3, the Oracle metadata created by the dictionary prepare and upgrade program, RDB$NATCONN_DICnn, has been updated to reflect changes to the tables and views in Oracle 10gR2. Some columns have been altered to a different datatype or a different varying character length. Some columns have been deleted and some new columns have been added. A few new tables or views have been added that were required by Oracle Explorer and/or Oracle Discoverer.

5.3.12 VMS Mixed Case Passwords Supported

Enhancement Request 5916102

In prior releases of Oracle SQL/Services and OCI Services for Oracle Rdb, using mixed case passwords would fail even when the OpenVMS /FLAGS=PwdMix flag was specified for the user in the system authorization file (UAF).

Support for this OpenVMS version 7.3-2 feature has now been included in Oracle SQL/Services and OCI Services for Oracle Rdb release 7.2.0.2.

Support for this feature has also been included in Oracle Rdb release 7.2.1.2. Oracle SQL/Services and OCI Services for Oracle Rdb requires that this or a subsequent release of Oracle Rdb be installed in order to take advantage of this feature. The feature is implemented in a version independent image for Oracle Rdb. Therefore, the feature can be used in Oracle SQL/Services and OCI Services for Oracle Rdb executing against a prior Oracle Rdb 7.0 or 7.1 release, as long as the required Oracle Rdb release has been installed on the system.

Refer to OpenVMS version 7.3-2 documentation for more information on the Authorize Utility PwdMix flag for user accounts.

5.3.13 New NLS Parameters

The following NLS parameters were added in release 7.2.0.1: NLS_COMP, NLS_ LENGTH_SEMANTICS, and NLS_NCHAR_CONV_EXCP. They will be initialized to default values in V$NLS_PARAMETERS at connection time. The values are as follows: NLS_COMP is set to BINARY, NLS_LENGTH_SEMANTICS to BYTE, and NLS_ NCHAR_CONV_EXCP to FALSE.

5.3.14 Greater Precision in Timestamp for Logging

Beginning with release 7.2.0.1, if you define the logical SQLNET_DEBUG_FLAGS to be HT, the resulting timestamp will show two decimal places of microseconds. The timestamp will be of the following format: YYYY-MM-DD HH:MM:SS.mm.

5.3.15 Data Dictionary Support for Oracle 10g Applications

In release 7.2.0.1, the RDB_NATCONNnn.COM database prepare and upgrade functions were enhanced to add several new tables and views, to comply with Oracle 10g.

5.3.16 Table and View Changes to Comply with Oracle 10g

Beginning with release 7.2.0.1, if a user does a "select * from v$version" statement, or an OCI Version call, the first row returned has been changed to contain the Oracle compatible version information, to comply with Oracle 10g. New default information was included in the views ALL_TABLES and ALL_TAB_COLUMNS. A new view ALL_REFS is created with no rows, and a new table SYSTEM_PRIVILEGE_MAP is created containing several privilege definitions that map to functionality allowed by Oracle Rdb. This table is not used by OCI Services for Oracle Rdb or by Oracle Rdb, and the entries do not imply any privileges granted or available.

5.3.17 Changes for Oracle JDBC Release 10.2 Thin Driver

Bug: 5064467

A Java application that uses the Oracle JDBC release 10.2 thin driver to access an Rdb database through the OCI interface would get a "/ by zero" Java exception during the following method call.

```
.prepareStatement( )
```

OCI Services for Oracle Rdb release 7.2.0.1 has been enhanced to support the modified OCI calls used by the Oracle JDBC release 10.2 thin driver.

5.3.18 New Datatype: New Formats for Oracle Rowids

Some newer versions of Oracle clients use a new format for sending and receiving rowids and dbkeys. This new format, DTYRDD in Oracle datatype descriptions, is implemented as needed, depending on the version of the client. This feature was made available in releases 7.1.6.1 and 7.2.0.1.

5.3.19 Security Enhancements

Because of security inconsistencies and problems preparing databases with defined default collating sequences, there have been many changes to the Prepare and Upgrade functions in release 7.1.6.1 and 7.2.0.1. There are many new domains named ORA_VCn, and many tables and views are redefined to use these domains. Also, privilege checking will be done by the stored procedures ORA_CREATE_USER and ORA_DROP_USER, so the security requirements are the same whether you use RDB_NATCONNnn.COM or invoke the stored procedures directly. You can add or drop your own username in the database without any privileges, but you must have BYPASS, SECURITY, or SYSPRV privilege to add or drop another user.

5.3.20 OCI Services for Oracle Rdb Available on OpenVMS I64

OCI Services for Oracle Rdb release 7.2 is available for the HP OpenVMS Industry Standard 64 for Integrity Servers operating system.

5.4 Software Errors Fixed in Previous OCI Services for Oracle Rdb Releases

This section highlights software errors fixed in previous OCI Services for Oracle Rdb releases.

5.4.1 Security Change

A security change was made in OCI Services for Oracle Rdb release 7.3.0.2 to make connect user authorization more secure.

5.4.2 Unable to Use Floating Point Parameters With Comma as Decimal Separator

Bug 7379066

Using OCI calls to insert a floating point variable into an Rdb database would result in the following error when the NLS_LANG was set to a language, such as GERMAN_ GERMANY.WE8MSWIN1252, where a comma is defined as the decimal separator.

```
ORA-01438: value larger than specified precision allowed for this column
```

The problem with bind variables containing a comma as the decimal separator has been corrected in OCI Services for Oracle Rdb release 7.3.0.2.

Using a comma as the decimal separator within a SQL statement is not allowed. This is a restriction of Oracle Rdb. The workaround is to simply use a decimal point instead of a comma.

5.4.3 Wrong Data Returned by TO_CHAR Function

Bug 7645510

In some cases where the results of a TO_CHAR function were returned into a variable, the data was defined as RAW rather than as character data. This would cause it to be displayed as hex ascii rather than as a character string. In order to accommodate different languages and character sets, the Oracle data dictionary program defines all character set data as CHARACTER SET UNSPECIFIED. This allows the use of different character sets, but it makes it difficult to distinguish between character set data and raw data. For release 7.3.0.2 and later, data will be described as characters rather than raw; in a future release, the use of a universal character set such as UTF8 will be investigated in place of character set unspecified.

5.4.4 Invalid Transaction State After DESCRIBE of Non-existent Object Using Dblink

Bug 8862447

Using a dblink and doing a DESCRIBE of an object which does not exist would cause the transaction state to become invalid. The correct error message would appear, that the object does not exist, but any further accesses to the database would not succeed. In some cases, the error RDB-E-BAD_TXN_STATE would be returned, and in other cases, the service would hang until the transaction timed out.

This problem has been fixed in OCI Services release 7.3.0.2.

5.4.5 RDB$NATCONNnn.COM Did Not Check if Database Had Been Upgraded

Bug 6335504

If a database had been prepared by a prior release of RDB_NATCONN.COM, and an attempt was made to add a user using RDB_NATCONN.COM from a subsequent release, the user was not added and no error was displayed. The problem occurred because the database had not been upgraded with the correct data dictionary level expected by RDB_NATCONN.COM.

This problem has been corrected in OCI Services for Oracle Rdb release 7.3.0.1. The following error will now be displayed when this condition occurs.

```
% REASON, - version mismatch; database not prepared for this release
```

5.4.6 OCI Bugchecks With Oracle 10GR2 Clients Doing ClientID Propagation

Bug 6864692

With OCI Services release 7.3, applications that do ClientID propagation would sometimes get an OCI bugcheck with an access violation reported at the following location.

```
Saved PC = 00081DB0 : RDB$NATCONN73\gtocli
   Module GTOVER + 00000060; line 395581
```

A full executor log contained the following information prior to the bugcheck.

```
GTWDRE Type: 135 argc; 19, gtwpis: 7ad05970, crs: 0
gtwdre.gtwdre: Function.....: ClientID Propagation
gtover.gtocli: entry
%OCI-F-BUGCHECK: bugcheck dump will be written to ...
```

This problem has been corrected in OCI Services for Oracle Rdb release 7.3.0.1.

5.4.7 Check for Error on Grant All in Metadata Program

Bug 6743840

In prior releases, no check was made for errors on the "GRANT ALL ... to SQLNET4RDB" statement in the dictionary prepare and upgrade program, RDB$NATCONN_DICnn. In cases where the statement failed, users would not be notified of the failure and would not know until a service tried to access the database and got a privilege error.

This problem has been corrected in OCI Services for Oracle Rdb release 7.3.0.1.

5.4.8 ORA-3106 Error Using PL/SQL Package Through a Dblink

Bug 5941427

Some information required by the client in the completion message for the execution of a procedure was missing. This information has been added to the message.

This problem has been corrected in OCI Services for Oracle Rdb release 7.3.0.1.

5.4.9 SQL_SYNTAX_ERR or SQL_CORNAMREQ Errors

Bug 6502017

In certain cases, SQL select statements that needed to have correlation names added because of syntax differences between Rdb SQL and Oracle SQL were not being correctly fixed up and the correlation names were not added correctly. An instance of this error was seen in a query from SQL Developer.

This problem has been fixed for release 7.3.

5.4.10 Error Accessing PRODUCT_USER_PROFILE

Bug 6641823

In very rare cases, adding a user to the USER$ table could cause the following error to be displayed in the executor log:

```
Error accessing PRODUCT_USER_PROFILE
Warning:  Product user profile information not loaded!
You may need to run PUPBLD.SQL as SYSTEM
```

This would cause a dblink connection to fail, but a non-dblink connection would continue successfully.

This problem has been fixed for release 7.3.

5.4.11 Error in ORASTATE Returning State

A case was found where ORASTATE could not determine the correct state to return. This was caused by the fact that the error number was outside the range that ORASTATE expected.

This problem has been corrected for release 7.3.

5.4.12 Max Cursors Exceeded

Bug 5971390

In the beta releases of 7.3, Forms applications could see this error:

```
ORA-01000: MAXIMUM OPEN CURSORS EXCEEDED
```

This could happen even if the Forms application was not being used.

This problem has been fixed for release 7.3.

5.4.13 Data Not Retrieved in Reports 10gR2

Bug 5970246

When using Reports 10gR2, a report appeared to run successfully, but no data was returned from OCI Services. This was caused by a change in the way null indicators and column error codes are returned from the database.

This problem has been fixed for releases 7.2.0.2 and 7.3.

5.4.14 Improved OCI Services Executor Logging Disk I/O Performance

Bug 5996179, 1744912

With prior releases of OCI Services, when executor logging was enabled, queries were running significantly slower, due to excessive disk I/O.

In OCI Services release 7.2.0.2, the flushing of executor log buffers has been enhanced, resulting in major disk I/O performance improvements.

5.4.15 FORMS Fail With Rowid Truncation Error

Bug 5726783

The datatype for rowids was inappropriately reported as an internal datatype, which caused it to be retrieved and displayed in the wrong format:

```
SQL> select rowid from odual;
ROWID
----------------------
?AAAAAAAAADQRAIBvAAAA
```

With the correction, the rowid will be retrieved in the correct format:

```
SQL> select rowid from odual;
```

```
ROWID
------------------
80000ECF.005E.0000
```

This problem has been corrected in Oracle SQL/Services release 7.2.0.2.

5.4.16 SELECT INTO Getting Invalid ORA-1403 Errors

Bug 6134494

Starting with releases 7.1.6.2 and 7.2.0.1.1, SQL statements of the form

```
SELECT column_list INTO variable_list ...
```

were executed rather than opening a cursor and fetching the single row. If the select statement was prepared and then executed, the first execution would retrieve the correct data. A second execution would not retrieve any data, but would return the 'no data found' message.

This problem has been corrected in Oracle SQL/Services release 7.2.0.2.

5.4.17 Triggers Added to USER$

Bug 5574125

In release 7.2.0.2, the security checking for the USER$ table is now done by triggers on the table itself. The triggers provide the same security level previously implemented in RDB$NATCONN_CUPP. That is, a user without SYSPRIV, BYPASS, or SECURITY system privileges can only add, update, or delete himself; users with one or more of those privileges can add, update, or delete other users as well as themselves.

5.4.18 Rows in ORA_COMM_TRANS Not Deleted

Bug 5916220

The ORA_COMM_TRANS table is used when the client is a dblink or when an application requires 2-phase commit and the XA Gateway is not available. Rows in that table were not getting deleted when the transaction ended, but were remaining in the table eventually causing disk space failures. This problem has been corrected for Release 7.2.0.2.

Oracle recommends that the XA Gateway be installed and used whenever 2-phase commit is desired.

5.4.19 Create User RDB_SCHEMA Fails

Bug 5968777

When upgrading a database from any version to release 7.2.0.1, users would see the following error:

```
Unable to execute CREATE USER RDB_SCHEMA IDENTIFIED EXTERNALLY.
```

The upgrade would complete successfully, and report the successful completion, but the error caused some users to be apprehensive about the actual success.

Beginning with release 7.2.0.2, the RDB_SCHEMA "user" name is added by OCI Services, and the upgrade no longer tries to execute a CREATE USER for that user name, so the error no longer happens.

5.4.20 Form With Scroll Region Fails

Bug 5948378

When using Forms5, users were seeing errors ORA-3121 and FRM-40735 when using a form with a scroll region. This was caused by OCI Services not recognizing when a new bind variable was being sent.

This problem has been fixed for release 7.2.0.2.

5.4.21 Error Message NOLOGNAM at Start Transaction

Bug 5231659

With the latest releases of OCI Services, if DECDtm is not installed, users see the error message, "%SYSTEM-F-NOLOGNAM, no logical name match". This happens because OCI Services is now built as a distributed transaction application, and a DECDtm distributed transaction is started by default.

In release 7.2.0.2, the OCI Services log now has an explanation for this error and a recommendation for how to fix it. Documentation will specify that the logical SYS$DECDTM_NODE_NAME must be defined; the value of the logical is ignored.

5.4.22 Problem Describing Column With Name Longer Than 30 Characters

Bug: 5632639

Describing a table in SQL*Plus with a column whose name was longer than 30 characters would display an ORA-03113 error and the following error was logged in the OCI executor log file.

```
Assertion failed: "find_mblock(current_mgroup,mblock) == current_mgroup
```

This problem has been corrected in OCI Services for Oracle Rdb release 7.2.0.1. The following error is now correctly displayed in SQL*Plus.

```
ORA-00972: identifier is too long
```

5.4.23 Modified Transaction Control to Better Fit XA Model

With the addition of support for XA 2pc transactions in release 7.1.6, OCI Services for Oracle Rdb and SQL/Services sometimes have a need to mix 2pc and non-2pc transactions. In some cases, these transactions could potentially collide, leading to problems. Transaction control has now been modified to avoid such problems.

One example is when a severe error occurs causing SQL/Services to shut down an OCI executor. In some cases, a database recovery could still be in progress when the SQL/Services shut down occurs. SQL/Services would attempt to rollback and disconnect from the database, causing a bugcheck dump because the database was still locked by the recovery process.

OCI Services for Oracle Rdb and SQL/Services have been modified in release 7.2.0.1 to correct these problems.

5.4.24 ADD_USER Failed When Database Default Character Set Was ISOLATINGREEK

Bug: 5333023

The ADD_USER function, invoked via SYS$LIBRARY:RDB_NATCONNnn.COM, failed when a database had a default character set of ISOLATINGREEK or any character set other than the default DEC_MCS.

The error displayed was:

```
Reason, - no privilege to perform operation on database <db_name>
```

But, the actual problem was:

```
SQL-E-INCCSASS, Incompatible character set assignment between ...
```

This problem has been corrected in release 7.2.0.1.

5.4.25 SELECT INTO Commands Are Stripped of INTO When Passed to Rdb

Bug: 5253380

The INTO clause of a SELECT ... INTO SQL statement was being removed by OCI Services for Oracle Rdb before passing the statement to Rdb. This caused the statement to be processed by opening a cursor, fetching the row, and closing the cursor, rather than just executing the SELECT INTO statement. This caused execution of the statement to be unacceptably slow.

This problem has been corrected in release 7.2.0.1.

5.4.26 ADD_USER Command Does Not Work for Non-Privileged Users

Bug: 5264258

In OCI Services for Oracle Rdb release 7.2, it was documented that users without privileges can add or update their own user name and password information in the USER$ table of a database prepared for OCI Services for Oracle Rdb. The RDB_NATCONNnn.COM utility appeared to have completed with no error, but the user name or password was not added or updated.

This problem has been fixed in release 7.2.0.1. Non-privileged users can now add, remove, and update their own user name and password information using the utility in SYS$LIBRARY:RDB_NATCONNnn. Because these fixes have a new version of the dictionary stored procedures, you must perform an UPGRADE operation on the OCI Services for Oracle Rdb database.

For customers who are calling these stored procedures directly from a SQL script or an application with embedded SQL, the last argument (,:ret_val) is no longer required and should be removed. Beginning with release 7.2.0.1, the call status is returned via the SQLCA.SQLCODE and SQLSTATE variables. All programs should test the return value for errors. A (-1042) SQLCA.SQLCODE and an "O1031" SQLSTATE string indicate that a non-privileged user is trying to make changes for another user. The following example is an excerpt from a .SC application:

```
    char SQLSTATE(6);

    /* Call the stored procedure ORA_CREATE_USER to add/change user/pwd.*/
    EXEC SQL CALL ORA_CREATE_USER(:name, :pass);

    /* Check the return status from the ora_user_password call. */
    if ((SQLCA.SQLCODE == -1042) && (strcmp(SQLSTATE, "O1031") == 0))
       status = CUPP$_E_NOPRIV;  /* failure to change different user w/o privs.
*/
```

5.4.27 Queries With TO_NUMBER() Function Calls Are Slow

Bug: 5027052

Some complex queries that contain calls to Oracle functions TO_NUMBER, TO_CHAR, TO_DATE, DATE_ROUND, or DATE_TRUNC perform much slower on an Oracle Rdb database prepared for OCI Services for Oracle Rdb than on a native Oracle database or a similar query without the function call. This is more apparent on a query that generates hundreds of thousands of the function calls.

This problem has been fixed in release 7.2.0.1 by new optimizing logic. Queries that used to take 90 seconds to complete now take 15 seconds. If you are running on OpenVMS I64, the improvement is even more dramatic. This improvement is especially true for queries that resulted in a large number of calls to the functions from an OCI client such as SQL*Plus.

5.4.28 Random Error Message When SQLNET_DEBUG_FLAGS is HT

When SQLNET_DEBUG_FLAGS was set to HT, random error messages would print in the log during the connect, although the connect completed successfully. The error messages were of the form:

```
ERROR: ORA-26426: Message 26426 not found; product=NATCONN; facility=ORA.
```

This problem has been fixed in release 7.2.0.1.

5.4.29 Query Hangs With a Variable Comparison Using Oracle 10G SQL*Plus

When you used Oracle 10G SQL*Plus, queries using a variable rather than a literal in a comparison would hang. The following is an example of the type of query that would fail:

```
declare x char(3); begin x := 'abc';
select count(*) from table1@rdb1 where column1 = x;
```

This problem has been fixed in release 7.2.0.1.

5.4.30 Failure Upgrading Database After Upgrading to Release 7.1.6 Update03

If a database had been upgraded to release 7.1.6 Update03, attempting to upgrade it to release 7.1.6.1 would fail with the following error:

```
%RDB-E-NO-DUP, index field value already exists; duplicates not allowed for
   ORA_OBJECTS_NAME.
```

You would have to issue a DROP command on the database and then prepare it in order to upgrade to release 7.1.6.1. This problem has been fixed in release 7.2.0.1.

5.4.31 Reference to Obsolete Procedure in Error Message in Log

In releases prior to 7.2.0.1, when a user who was not in the USER$ table in a database tried to connect to the database, an incorrect error message was generated. The reference to the obsolete procedure ORA_SET_PASSWORD has now been replaced by the current procedure ORA_CREATE_USER.

5.4.32 Returning ROWID in an Insert Statement Caused Error ORA-00900

If users included RETURNING ROWID or RETURNING DBKEY in an INSERT statement, the statement would fail with the error:

```
ORA-00900: invalid SQL statement
```

and the executor log would show the error:

```
%SQL-F-SYNTAX-ERR, Syntax error
```

This happened because OCI Services for Oracle Rdb added the clause RETURNING DBKEY INTO :ORA_DBKEY to every INSERT statement. The resulting statements would have two RETURNING DBKEY clauses, and would cause SQL syntax errors. Starting with release 7.2.0.1, OCI Services for Oracle Rdb scans the statement for a RETURNING DBKEY or RETURNING ROWID before it adds the clause to the statement. There still may be some cases, especially if the RETURNING clause includes several elements, where OCI Services for Oracle Rdb will not recognize that a RETURNING DBKEY clause is already in the statement and will try to add it, causing an error. The executor log will show the generated SQL statement, so the user can correct it. It is recommended that the word DBKEY or ROWID be the first in the list of elements to be returned in a RETURNING clause of an INSERT statement. This will help OCI Services for Oracle Rdb recognize that it is already there.

5.4.33 Declare Transaction in SQL Init File Being Overridden

In releases of OCI Services for Oracle Rdb prior to 7.2.0.1, if a DECLARE TRANSACTION statement was executed in the SQL initialization file of a service, it would be overridden by a DECLARE TRANSACTION statement executed later by OCI Services for Oracle Rdb. Toward the end of the connection setup, OCI Services for Oracle Rdb would execute a DECLARE TRANSACTION statement to set the default transaction characteristics to be close to Oracle default transaction characteristics. This would supersede any DECLARE TRANSACTION statement in the SQL initialization file. Starting with release 7.2.0.1, OCI Services for Oracle Rdb recognizes that a DECLARE TRANSACTION statement has been executed and will not execute another one.

5.4.34 Problem With Master/Detail Records

Bug: 5531638

This problem could appear in several different ways. There were a few different errors or, sometimes, the detail records were displayed but were the wrong detail records for the master. Sometimes Forms would display the error:

```
Unable to perform query
```

and sometimes the following error would be seen in the executor log:

```
SQL-F-ILLDATLEN, An invalid SQLLEN(0) was found for a date
```

This problem has been fixed in release 7.2.0.1.

5.4.35 Prefetch in a Pro*C Program Using WHERE CURRENT OF CURSOR

Bug: 5547621

In a prior release, a problem with prefetch (bug 4651271) was fixed to work with Oracle 9.2.0.4. There was a bug in Oracle 9.2.0.4 with prefetching (bug 3512385). When the Oracle bug was fixed, in release 9.2.0.5, the OCI Services fix no longer worked. For this release, there is a fix that will work with Oracle 9.2.0.5 and later. If you are running Oracle 9.2.0.4 as a client, you must define the new logical SQLNET_9204_PREFETCH, which will cause OCI Services to use the earlier fix.

This problem has been fixed in release 7.2.0.1.