

Oracle® Database

Release Notes

10g Release 2 (10.2) for Solaris Operating System (SPARC 64-Bit)

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This document contains important information that was not included in the platform-specific or product-specific documentation for this release. This document supplements *Oracle Database Readme* and may be updated after it is released.

This document may be updated after it is released. To check for updates to this document and to view other Oracle documentation, refer to the Documentation section on the Oracle Technology Network (OTN) Web site:

<http://www.oracle.com/technetwork/indexes/documentation/index.html>

For additional information about this release, refer to the readme files located in the `$ORACLE_HOME/relnotes` directory.

Note: The Database Quick Installation Guides are no longer available in printed format. These documents are available with the media in the same location as the software and on Oracle Technology Network.

This document contains the following topics:

- [Certification Information](#)
- [Unsupported Products](#)
- [Preinstallation Requirements](#)
- [Installation, Configuration, and Upgrade Issues](#)
- [Other Known Issues](#)
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1 Certification Information

The latest certification information for Oracle Database 10g Release 2 (10.2) is available on My Oracle Support (formerly *OracleMetaLink*) at:

<https://support.oracle.com>

Oracle C++ Call Interface STLPort4 Certification

Starting Oracle Database 10g Release 2 (10.2.0.3) STLPort4 libraries for OCCI are supported on this platform. These libraries are available at the following location:

`$ORACLE_HOME/lib/libocci_stlport4.so.10.1`

If you want to use STLPort4 libraries with OCCI, then you must create a soft link `$ORACLE_HOME/lib/libocci.so` pointing to `$ORACLE_HOME/lib/libocci_stlport4.so.10.1`.

2 Unsupported Products

The following products are not supported with Oracle Database 10g Release 2 (10.2):

- JDBC 1.2 driver is not supported on Solaris 10.
- Verity filters used for Oracle Text are not supported on Solaris 10.

3 Preinstallation Requirements

- [Required UDLM Package for Sun Cluster on SPARC](#)
- [Displaying and Modifying Resource Control Settings on Solaris 10](#)
- [Configure Shell Limits](#)

3.1 Required UDLM Package for Sun Cluster on SPARC

If you plan to use Sun Cluster with Solaris Operating System (SPARC 64-bit), then install ORCLudlm 64-Bit reentrant 3.3.4.10. This requirement supersedes the UDLM version listed in *Oracle Database Oracle Clusterware and Oracle Real Application Clusters Installation Guide for Solaris Operating System*.

This issue is tracked with Oracle bug 8795539.

3.2 Displaying and Modifying Resource Control Settings on Solaris 10

On Solaris 10, use the following procedure to display the current value specified for resource controls, and to change them if necessary:

1. To display the current values of the resource control, enter the following commands:

```
$ id -p // to verify the project id
uid=100(oracle) gid=100(dba) projid=1 (group.dba)
$ prctl -n project.max-shm-memory -i project group.dba
$ prctl -n project.max-sem-ids -i project group.dba
```

2. If you must change any of the current values, then:

- a. To modify the value of max-shm-memory to 6 GB:

```
# prctl -n project.max-shm-memory -v 6gb -r -i project group.dba
```

- b. To modify the value of max-sem-ids to 256:

```
# prctl -n project.max-sem-ids -v 256 -r -i project group.dba
```

Note: When you use the `prctl` command (Resource Control) to change system parameters, you do not need to restart the system for these parameter changes to take effect. However, the changed parameters do not persist after a system restart.

Use the following procedure to modify the resource control project settings, so that they persist after a system restart:

1. By default, Oracle instances are run as the `oracle` user of the `dba` group. A project with the name `group.dba` is created to serve as the default project for the oracle user. Run the command `id` to verify the default project for the oracle user:

```
# su - oracle
$ id -p
uid=100(oracle) gid=100(dba) projid=100(group.dba)
$ exit
```

2. To set the maximum shared memory size to 2 GB, run the `projmod` command:

```
# projmod -sK "project.max-shm-memory=(privileged,2G,deny)" group.dba
```

Alternatively, add the resource control value `project.max-shm-memory=(privileged,2147483648,deny)` to the last field of the project entries for the Oracle project.

3. After these steps are complete, check the values for the `/etc/project` file using the following command:

```
# cat /etc/project
```

The output should be similar to the following:

```
system:0::::
user.root:1::::
noproject:2::::
default:3::::
group.staff:10::::
group.dba:100:Oracle default
project:::project.max-shmmemory=(privileged,2147483648,deny)
```

4. To verify that the resource control is active, check process ownership, and run the commands `id` and `prctl`, as in the following example:

```
# su - oracle
$ id -p
uid=100(oracle) gid=100(dba) projid=100(group.dba)
$ prctl -n project.max-shm-memory -i process $$
process: 5754: -bash
NAME                PRIVILEGE    VALUE    FLAG    ACTION    RECIPIENT
project.max-shm-memory privileged    2.00GB   -       deny
```

Note: The value for the maximum shared memory depends on the SGA requirements and should be set to a value greater than the SGA size.

For additional information, refer to the Solaris Tunable Parameters Reference Manual.

3.3 Configure Shell Limits

Oracle recommends that you set shell limits and system configuration parameters as described in this section.

The `ulimit` settings determine process memory related resource limits. Verify that the shell limits displayed in the following table are set to the values shown:

Shell Limit	Recommended Value
TIME	-1 (Unlimited)
FILE	-1 (Unlimited)
DATA	Minium value: 1048576
STACK	Minium value: 32768
NOFILES	Minium value: 4096
VMEMORY	Minium value: 4194304

To display the current value specified for these shell limits enter the following commands:

```
ulimit -t
ulimit -f
ulimit -d
ulimit -s
ulimit -n
ulimit -v
```

4 Installation, Configuration, and Upgrade Issues

Review the following sections for information about issues that affect Oracle Database installation, configuration, and upgrade:

- [Installing Enterprise Security Manager](#)
- [Installing Oracle Database on a Computer That has an Automatic Storage Management Instance](#)
- [extjob Executable Required Directory Permissions](#)
- [Modifying a Virtual IP Address Node Application](#)
- [Network Attached Storage for Oracle RAC Databases](#)
- [Installing Oracle Database Client into an Existing Oracle Home](#)
- [Database Installation Types](#)

4.1 Latest Upgrade Information

For late-breaking updates and best practices about preupgrades, postupgrades, compatibility, and interoperability discussions refer to note 466181.1 on My Oracle Support (formerly *OracleMetaLink*) (<https://support.oracle.com>) that links to "10g Upgrade Companion" page.

4.2 Determining Size of Configured Swap Space

To determine the size of the configured swap space, enter the following command:

```
# /usr/sbin/swap -l
```

Note: The output of this command shows the total/available swap blocks, where each block is equal to 512 bytes and not 1 KB.

4.3 Oracle Storage Compatibility Program Obsolete

Oracle Storage Compatibility Program (OSCP) is no longer valid. Disregard the OSCP content in the section C.1, "General Configuration Guidelines for NAS Devices" of Appendix C, "Using NAS Devices" in *Oracle Database Installation Guide for Solaris Operating System (SPARC 64-Bit)*.

4.4 Installing Enterprise Security Manager

To install Oracle Security Manager, install Oracle Database Client and then select the Administrator installation type.

4.5 Installing Oracle Database on a Computer That has an Automatic Storage Management Instance

Oracle Universal Installer displays an error message that reads 0. This message is displayed after you specify the database home and path in the Specify Home Details screen and click Next. Ignore the error message whenever it is displayed, and continue the installation.

4.6 extjob Executable Required Directory Permissions

To enable the `extjob` executable to locate required libraries, the `$ORACLE_HOME/lib` directory and all of its parent directories must have execute permissions for `group` and `other`.

4.7 Modifying a Virtual IP Address Node Application

When modifying the name, IP address, or netmask of an existing virtual IP address (VIP) resource, use the `srvctl modify nodeapps` command and include the existing interfaces for the VIP in the `-A` argument. For example:

```
srvctl modify nodeapps -n mynode1 -A 100.200.300.40/255.255.255.0/eth0
```

This issue is tracked with Oracle bug 4500688.

4.8 Network Attached Storage for Oracle RAC Databases

To use NAS as a shared storage for Oracle RAC, apply the following patches:

- Patch 112168-03 for Solaris 8
- Patch 114388-03 for Solaris 9

4.9 Installing Oracle Database Client into an Existing Oracle Home

Oracle Database Client can be installed in the same Oracle Database home if both products are at the same release level. For example, you can install Oracle Database Client 10g Release 2 (10.2) into an existing Oracle Database 10g Release 2 (10.2) home. If you apply a patch set before installing the client, then you must apply the patch set again.

4.10 Database Installation Types

If you perform a Custom installation, then ensure that you install only the components covered by your license. You cannot install Standard Edition using Custom installation.

5 Other Known Issues

The following sections contain information about issues related to Oracle Database 10g and associated products:

- [Cluster Verification Utility](#)
- [Materialized View and Partition Change Tracking Rewrite](#)
- [Host-Based Mirroring](#)
- [Oracle ODBC Driver Limitations](#)
- [Removing Metrics for Wait Classes Removes Them Permanently](#)
- [Preventing Loss of Quorum](#)
- [Increasing the CSS misscount Parameter](#)
- [Invalid Link to Monitor in Memory Access Mode Feature](#)
- [Oracle Clusterware Private IP Addresses with Sun Cluster](#)
- [Vendor Clusterware Restrictions for Node Names](#)

5.1 Cluster Verification Utility

Third Party Clusterware

If your deployment environment does not use SunCluster, ignore the SunCluster version, ORCLUdlm version, and patch 113800-06 errors reported by Cluster Verification Utility (CVU).

If your deployment environment is Solaris 9, then the expected patch for SunCluster is 113801 instead of patch 113800-06. In addition, ignore kernel parameter SHMMIN and SHMSEG errors reported by Cluster Verification Utility (CVU).

Missing Patch Error Message

When CVU finds a missing patch, it reports a xxxx patch is unknown error. This should be read as xxxx patch is missing.

This issue is tracked with Oracle bug 4566437.

Raw Devices Shared Storage and Veritas Logical Volumes

Cluster Verification Utility validates the readiness of a cluster to install Oracle Clusterware and Oracle RAC, and create databases. It also helps verify the integrity of individual cluster components. CVU discovers raw disks, and performs shared checks for raw disks and Veritas logical volumes by verifying the unique "storage signature" across all nodes. However, it does not check whether the device is actually writeable or readable by the `oracle` user.

5.2 Materialized View and Partition Change Tracking Rewrite

When the query has single column in-lists, the materialized view has ranges, and partition change tracking rewrite is used, you might get stale results with Query Rewrite. Turn off the fresh partition containment rewrite to avoid this problem by using the following command:

```
SQL> alter session set "_query_rewrite_fpc" = false;
```

5.3 Host-Based Mirroring

The host-based mirroring is not supported with ASM. Note that there is no issue with resilvering for storage based mirroring.

Workaround: Use ASM redundancy.

This issue is tracked with Oracle bug 4466206.

5.4 Oracle ODBC Driver Limitations

Oracle ODBC driver for Solaris does not work if you use the REAL data type for a column and the application tries to retrieve data as native double or float data type through PL/SQL stored procedure.

Workaround: Instead of the REAL data type, use the NUMBER(s,p) data type while creating a table.

This issue is tracked with Oracle bug 4551566.

5.5 Removing Metrics for Wait Classes Removes Them Permanently

Do not remove the key values for the wait class metrics. Doing so removes them permanently and currently there is no easy way to recover them.

This issue is tracked with Oracle bug 4602952.

5.6 Preventing Loss of Quorum

If a storage area network (SAN) device is used to provide access to a shared storage and IO Multi-pathing (MPxIO) is enabled, then you must install the following patches on all the nodes of the cluster.

- 119374-13
- 119715-10
- 119375-13
- 119716-10

Without these patches, a node can lose access to the shared storage being accessed through the physical link that gets disconnected or fails.

5.7 Increasing the CSS miscount Parameter

When the Solaris fiber channel port driver senses that a link is down, it gives two minutes timeout period before offlining the LUN path associated with the port. The purpose of this delay is to prevent a premature fail over in as a result of a transient link failure. If there are alternate active paths to the LUNs and SCSI reservations are not

active, then within this timeout MPxIO automatically reconfigures to use the alternate path.

However, during this timeout period the port failure is not perceived by Oracle Clusterware because the path is not offlined. If the node is evicted during this timeout period, the Oracle Clusterware daemons fail to restart the node and services will not fail over to other nodes. In this case, the node will restart only until the link is up again. After the restart, all services belonging to the node will be up.

To avoid this problem the `misscount` parameter must be set to a value greater than 120 seconds. As a result, the eviction and restart process is not affected by the Solaris timeout period. The node is evicted, it restarts and its services fail over to other nodes as expected.

After Oracle Clusterware installation is complete, you can change the `misscount` parameter by completing the following steps:

1. On any node run the `$CRS_HOME/bin/crsctl set css misscount 130` command.
2. On all nodes run the `$CRS_HOME/bin/crsctl stop crs` command.
3. On all nodes run the `$CRS_HOME/bin/crsctl start crs` command.

The default value for the `misscount` parameter is 27. Increasing the value of this parameter increases the time the node takes to fail over. Therefore, the service level of the cluster reduces for a longer period of time. It is up to the user to decide if a longer fail over time is acceptable. Solaris has a mechanism in place to allow applications to be notified immediately of a link down.

In this release, Oracle is not using this mechanism but work is in progress to make use of this mechanism. In a future Oracle release this workaround will no longer be needed.

5.8 Invalid Link to Monitor in Memory Access Mode Feature

Do not click the link to the Monitor in Memory Access Mode feature in the database screen. This feature is not available in Enterprise Manager Database Control 10.2.0.2 release. Clicking this link may stop an agent from responding.

This issue is tracked with Oracle bug 4866231.

5.9 Oracle Clusterware Private IP Addresses with Sun Cluster

If you are using a Sun Cluster, then do not enter the private interconnect in the `/etc/hosts` file, but instead use `clusternodeX-priv` to indicate the private interconnect for Oracle Clusterware and Oracle RAC.

This issue is tracked with bug 6238217.

5.10 Vendor Clusterware Restrictions for Node Names

If you use a vendor clusterware with Oracle Clusterware and Oracle Real Application Clusters, then you must use the node names and host names registered with that vendor clusterware you have installed.

6 Documentation Corrections and Additions

This section lists the following corrections to the installation guides for Solaris operating System (SPARC 64-Bit):

- In *Oracle Database Installation Guide for Solaris Operating System (SPARC 64-Bit)*, section "Configuring Kernel Parameter," the note for Solaris 10 reads as: "In Solaris 10, you are not required to make changes to the `/etc/system` file to implement the System V IPC. Solaris 10 uses the resource control facility for its implementation." The complete note text for the same is as follows:

In Solaris 10, you are not required to make changes to the `/etc/system` file to implement the System V IPC. Solaris 10 uses the resource control facility for its implementation. However, Oracle recommends that you set both resource control and `/etc/system/` parameters. Operating system parameters not replaced by resource controls continue to affect performance and security on Solaris 10 systems. For further information, contact the Sun vendor.

- The "Software Requierments" section of the installation guides mention that the `SUNWspox` package is supported in all the supported operating systems. However, the package is not supported in Solaris 10 on this platform.
- In the "Configuring Kernel Parameters" section of the *Database Quick Installation Guide* and "Preinstallation Tasks" chapter of the installation guide for this platform contains the procedure for changing the kernel parameters on Solaris 10. However, if you set the kernel parameters using this procedure, the values are lost when you restart the system. To make the values available after the system restart, use the following procedure to change the kernel parameters:

1. By default, Oracle instances are run as the `oracle` user of the `dba` group. A project with the `group.dba` name is created to serve as the default project for the `oracle` user. Run the `id` command to verify the default project for the `oracle` user:

```
# su - oracle
$ id -p
uid=100(oracle) gid=100(dba) projid=100(group.dba)
$ exit
```

2. To set the maximum shared memory size to 2 GB, run the `projmod` command:

```
# projmod -sK "project.max-shm-memory=(privileged,2G,deny)" group.dba
```

Alternatively, add the `project.max-shm-memory=(privileged,2147483648,deny)` resource control to the last field of the project entries for the Oracle project.

3. After these steps are complete, the `/etc/project` file should contain the following:

```
# cat /etc/project
```

The following is the output of the command:

```
system:0::::
user.root:1::::
noproject:2::::
default:3::::
group.staff:10::::
group.dba:100:Oracle default
project:::project.max-shmmemory=(privileged,2147483648,deny)
```

4. To verify that the resource control is active, run the `id` and `prctl` commands:

```
# su - oracle
$ id -p
```

```
uid=100(oracle) gid=100(dba) projid=100(group.dba)
$ prctl -n project.max-shm-memory -i process $$
process: 5754: -bash
NAME      PRIVILEGE      VALUE      FLAG      ACTION      RECIPIENT
project.max-shm-memory
                privileged      2.00GB     -          deny
```

Note: The value for the maximum shared memory depends on the SGA requirements and should be set to a value greater than the SGA size.

For additional information, refer to the Solaris Tunable Parameters Reference Manual.

- In *Oracle Database Installation Guide for Solaris Operating System (SPARC 64-Bit)*, Chapter 2, section "Checking Software Requirements," does not specify the command to verify the update level of the operating system. You can use the following command to verify the update level of the operating system:

```
$ cat /etc/release
Solaris 9 4/03 s9s_u3wos_
```

In the output of the command, `_u3` refers to update 3 of Solaris 9.

- In *Oracle Database Oracle Clusterware and Oracle Real Application Clusters Installation Guide*, Chapter 2, "Preinstallation," in the section "Oracle Clusterware Home Directory," it incorrectly lists the path `/u01/app/oracle/product/crs` as a possible Oracle Clusterware home path. A default Oracle base path is `/u01/app/oracle`, and the Oracle Clusterware home must never be a subdirectory of the Oracle base directory.

A possible Oracle Clusterware home directory is in a path outside of the Oracle base directory. For example, if the Oracle base directory is `u01/app/oracle`, then the Oracle Clusterware home can be an option similar to one of the following:

```
u01/crs/
/u01/crs/oracle/product/10/crs
/crs/home
```

- In *Oracle Database Oracle Clusterware and Oracle Real Application Clusters Installation Guide for Solaris Operating System*, Chapter 2, "Pre-Installation Tasks," section 2.6.1, "IP Address Requirements," the following text states that the virtual IP address (VIP) should respond to a ping command:

During installation, Oracle Universal Installer uses the ping command to ensure that the VIP is reachable.

The preceding statement is incorrect. Before installation, the VIP address should be configured in DHCP or `/etc/hosts`, or both, but it must not be assigned to a server that can respond to a ping command.

- In *Oracle Database Administrator's Reference for UNIX-Based Operating Systems*, chapter 1, section "DB_BLOCK_SIZE Initialization Parameter," lists the incorrect value of `DB_BLOCK_SIZE` parameter. The maximum value to which you can set the `DB_BLOCK_SIZE` is 16 KB on Linux x86. It is 32 KB on all other UNIX platforms.
- In *Oracle Database JDBC Developer's Guide and Reference*, Chapter 20, "JDBC RowSets," section, "Overview," the following information is missing:

The `javax.sql.rowset` package has to be downloaded from the following link at the Sun site:

http://www.oracle.com/technetwork/java/javase/jdbc/index.html#rowset1_0_1

Extract the `rowset.jar` file from the zip file downloaded and include this jar file in the `CLASSPATH`.

- In *Oracle Database Oracle Clusterware and Oracle Real Application Clusters Installation Guide for Solaris Operating System*, section 2.3.7, "Configuring SSH on All Cluster Nodes," the document says "You must configure SSH (or RSH) so that these commands do not prompt for a password." This is incorrect. You must have SSH configured for installation, or the installation user equivalence check fails.
- In Oracle Database documentation, Oracle inventory group is represented as `oinstall`. However, it is not mandatory to use the same name, you can enter a different name for the group.
- In *Oracle Database Installation Guide for Solaris Operating System (SPARC 64-Bit)*, chapter, "Preinstallation Tasks," section "Configuring Kernel Parameters," the following note is missing:

See Also: Note 429191.1 for more information regarding steps to update the kernel parameters.

- In *Oracle Database Installation Guide for Solaris Operating System (SPARC 64-Bit)*, Chapter 4, section, "Installing Oracle Database 10g Products from the Companion CD," erroneously states that JPublisher and Oracle SQLJ are installed. The correct information is that JPublisher is not a part of Companion CD and Oracle SQLJ Demos are installed with the Companion CD instead of Oracle SQLJ.
- In *Oracle Database Companion CD Installation Guide for Solaris Operating System (SPARC 64-Bit)*, Chapter 1, section, "Products Available in the Oracle Database 10g Products Installation Type," erroneously states that JPublisher and Oracle SQLJ are installed. The correct information is that JPublisher is not a part of Companion CD and Oracle SQLJ Demos are installed with the Companion CD instead of Oracle SQLJ.

Note: The SQLJ Demos are installed if Oracle SQLJ was installed before running the Companion CD installation.

7 Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at

<http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

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