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Preface

This document describes last-minute features and changes that are not included in the Oracle Database Documentation Library for Oracle Database 19c.

Starting with Oracle Database 18c, the readme and platform-specific release notes have been combined into one document. The first chapter of this document contains generic information. Subsequent chapters of this document contain platform-specific information. The last chapter of this document contains last-minute changes not included in the Oracle Database documentation library.

Audience

This document is relevant only to Oracle Database 19c and documents new features, changes, unsupported products, preinstallation requirements, generic and platform-specific bug fixes, and known issues that are not included in the Oracle Database documentation library.

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 that have purchased support 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.

Related Resources

Refer to the following documentation for more information related to this release:

- <http://docs.oracle.com/en/database/database.html>
- For licensing information, refer to *Oracle Database Licensing Information User Manual*.
- Additional readme or release notes files also exist. Refer to [Other Readmes](#), [Release Notes](#), or [Installation Guides](#).

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Purpose of These Release Notes

This topic briefly describes the purpose of these release notes.

Updates to this document can occur after it is released. Check for updates to this document and view other Oracle documentation at:

<http://docs.oracle.com/en/database/database.html>

For licensing information, refer to *Oracle Database Licensing Information User Manual*.

Additional readme or release notes files also exist. Refer to the [Other Readmes, Release Notes, or Installation Guides](#).

2

Issues Affecting All Platforms for Oracle Database 19c

These topics contain last-minute features and changes that affect all platforms for Oracle Database 19c.

Compatibility, Upgrading, Downgrading, and Installation

This section describes compatibility, upgrading, downgrading, and installation topics for Oracle Database 19c.

Core Dump ORA-00600 [8153] Error Encountered After Database Upgrade

This topic describes the ORA-00600 error that can occur after a database upgrade.

A core dump ORA-00600 [8153] error is encountered after the database is upgraded to Oracle Database 12c release 2 (12.2) or to Oracle Database 19c and then downgraded back to its original release (reference Bug 20898997).

Always apply the patch for this bug before upgrading the database to Oracle Database 12c release 2 (12.2) or to Oracle Database 19c.

Upgrading from Oracle Database 11g Release 2 (11.2.0.4) to 19c to Oracle Database Results in Errors During Upgrade

This topic describes the ORA-08102 error that can occur when upgrading from Oracle Database 11g release 2 (11.2.0.4) to Oracle Database 19c.

In some cases, when altering table WRH\$_SEG_STAT to add some columns, you may encounter the ORA-08102 error (reference Bug 28668676). For example:

```
ALTER TABLE WRH$_SEG_STAT ADD (im_membytes NUMBER DEFAULT 0);
ALTER TABLE WRH$_SEG_STAT ADD (im_membytes NUMBER DEFAULT 0)
*
ERROR at line 1:
ORA-08102: index key not found, obj# 16200, file 2, block 4765 (2)
```

Download `c18.sql` and `c1202000.sql` from the bug and restart the upgrade process.

Plugging in an Oracle Database 12.1 Non-CDB to an Oracle Database 12.2 Local Undo CDB

This topic describes undo tablespaces are not plugged in when going from Oracle Database release 12.1 to release 12.2.

When trying to plug in an Oracle Database 12c Release 1 (12.1) non-CDB to an Oracle Database 12c Release 2 (12.2) or higher CDB and local undo is enabled, undo tablespaces are not plugged in.

Workaround:

None.

Deprecated and Desupported Features for Oracle Database

This topic describes deprecated and desupported features for Oracle Database 19c.

Oracle Database 19c introduces behavior changes for your database in addition to new features. Changes in behavior include deprecated and desupported initialization parameters, options, syntax, and the deprecation and desupport of features and components. For more information, see the *Oracle Database Upgrade Guide*.

Oracle Database Security

Oracle provides a patch that will strengthen native network encryption security for both Oracle Database servers and clients.



See Also:

Oracle Database Security Guide

Other Readmes, Release Notes, or Installation Guides

There are additional documents for Oracle products that are associated with this Oracle Database release.

Refer to the following Oracle products and the location of their associated readme, release notes, or installation guide for additional information:

Table 2-1 Other Oracle Products Documentation

Product	Document
Oracle Multimedia	<i>ORACLE_HOME/ord/im/admin/README.txt</i>
Oracle ODBC Driver	<i>Oracle ODBC Driver Release Notes</i>
Oracle SQL Developer	<i>ORACLE_HOME/sqldeveloper/readme.html</i>
Pro*C	<i>Pro*C/C++ Release Notes</i>

Table 2-1 (Cont.) Other Oracle Products Documentation

Product	Document
Pro*COBOL	<i>Pro*COBOL Release Notes</i>
SQL*Plus	<i>SQL*Plus Release Notes</i>

Open Bugs Affecting All Platforms

This section describes known bugs in Oracle Database 19c that affect all platforms.

Analytic Workspace Manager Known Bugs

These are the Analytic Workspace Manager bugs in Oracle Database 19c.

Bug 28937717

Measures cannot be calculated in the Create Calculation Measure wizard.

Workaround:

None.

Bug 28532773

Cube Storage Advisor fails with the following error:

```
ORA-00942 table or view not found
```

Workaround:

None.

Oracle ASM Cluster File System (Oracle ACFS) Known Bugs

These are the Oracle Automatic Storage Management (Oracle ASM) Cluster File System (Oracle ACFS) bugs in Oracle Database 19c.

Bug 29391849

After an upgrade to either Oracle Grid 18.x or 19.x is complete, a subsequent upgrade to Oracle Grid 18.y or 19.y results in the Oracle Automatic Storage Management Cluster File System (Oracle ACFS) being offline on the first node being upgraded. This issue does not occur on a fresh installation of Oracle Grid 19c or 18c.

Workaround:

- To avoid this issue:
 1. Complete the upgrade from Oracle Grid 12c Release 1 (12.1.0.2) or Oracle Grid 12c Release 2 (12.2) to Oracle Grid 18.x or 19.x.

2. Restart Cluster Ready Services (CRS) on each node, restarting the master node last. For example:
 - a. Run `acfsutil clusterinfo | grep -i master`.
 - b. Restart CRS on each non-master node, in any order.
 - c. Restart CRS on the master node last.
3. Then, upgrade from Oracle Grid 18.x or 19.x to Oracle Grid 18.y or 19.y.
- If you have completed the upgrade from Oracle Grid 12.1.0.2 or 12.2 to Oracle Grid 18.x or 19.x, and have started the upgrade to Oracle Grid 18.y or 19.y, and if you see the Oracle Automatic Storage Management Dynamic Volume Manager (Oracle ADVM) volumes offline on the node that you have upgraded, then:
 1. Roll back that node to Oracle Grid 18.x or 19.x.
 2. Restart CRS on each node, restarting the master node last.
 - a. Run `acfsutil clusterinfo | grep -i master`.
 - b. Restart CRS on each non master node, in any order.
 - c. Restart CRS on the master node last.
 3. Then, upgrade from Oracle Grid 18.x or 19.x to Oracle Grid 18.y or 19.y.

Oracle ASM Dynamic Volume Manager (Oracle ADVM) Known Bugs

These are the Oracle Automatic Storage Management (Oracle ASM) Dynamic Volume Manager (Oracle ADVM) bugs in Oracle Database 19c.

Bug 29520544

Upgrading to Oracle Grid 19c or 18c can cause unnecessary disk resilvering (if using more than 1 MB of allocation units (AU)). This issue does not occur on a fresh installation of Oracle Grid 19c or 18c.

Workaround:

Apply the patch for 29520544 before upgrading to Oracle Grid 19c or 18c. Note that the patch can be applied on the initiating system (Oracle Grid 12c Release 1 (12.1.0.2) or Oracle Grid 12c Release 2 (12.2)) before the upgrade or the patch can be applied on the receiving system (Oracle Grid 19c or 18c) before the upgrade.

Allow resilvering to complete. This is a one-time operation. Once the resilvering completes, performance returns to normal.

Oracle Data Pump Known Bugs

These are the Oracle Data Pump bugs in Oracle Database 19c.

Bug 27092988

In releases prior to Oracle Database 19c, the Oracle Data Pump always enabled secure roles that were granted to the user running the data pump. Starting in Oracle Database 19c, the data pump no longer enables these roles by default. There is a new parameter, `ENABLE_SECURE_ROLES`, to control whether those roles should be enabled for the data pump job.

Workaround:

None.

Oracle Database Enterprise Edition Known Bugs

These are the Oracle Database Enterprise Edition bugs in Oracle Database 19c.

Bug 23569490

If you have a large number of collections and are working with clients earlier than Oracle Database 12c release 2 (12.2), then you need a larger object cache, due to a change in snapshot size and thus a need for collection image conversion.

Workaround:

The object cache size can be set using the `OBJECT_CACHE_OPTIMAL_SIZE` initialization parameter. This is set to a low value by default.

Bug 24291322

Symbolic links are not allowed in the directory object paths or filenames when opening BFILES. The entire directory path and filename is checked and the following error is returned if any symbolic link is found:

```
ORA-22288: file or LOB operation FILEOPEN failed soft link in path
```

Workaround:

If the database directory object or filename that you are trying to open contains symbolic links, then change it to provide the real path and filename.

Bug 27254644

During the Oracle Scheduler agent register database process (`schagent - registerdatabase`), the following warning message might be issued:

```
"Warning: The JKS keystore uses a proprietary format. It is recommended to migrate to PKCS12 which is an industry standard format using..."
```

Workaround:

This warning message is due to a new Java runtime update. There is no change in the Oracle Scheduler agent usage of keystores (`jks` files). You can ignore this warning message.

Oracle Grid Infrastructure Known Bugs

These are the Oracle Grid Infrastructure bugs in Oracle Database 19c.

Bug 29414664

The Help text for command `rhpctl instantiate image` does not show the `-server` option.

Workaround:

When instantiating an image between two Fleet Patching and Provisioning (FPP) servers whose peer-to-peer relationship has already been established, use the command `rhpctl instantiate image` with the `-server` option specifying the remote FPP server from which to instantiate the given image.

Bug 29053083

The Grid Naming Service (GNS) manifest file validation fails.

Workaround:

Do not add GNS while creating a member cluster manifest file.

Bug 21559133

This issue affects rolling upgrades from Oracle Grid Infrastructure 12c release 1 (12.1) to Oracle Grid Infrastructure 19c of Oracle Clusterware standard Cluster with Oracle ASM. A node running Oracle Grid Infrastructure 12c release 1 (12.1) cannot join the cluster after the first node has been upgraded to Oracle Grid Infrastructure 19c. The nodes running Oracle Grid Infrastructure 12c release 1 (12.1) that are in `ONLINE` status continue to be members of the cluster.

Workaround:

Upgrade Oracle Grid Infrastructure from 12c release 1 (12.1) to 19c on the failed node.

Oracle Universal Installer Known Bugs

These are the Oracle Universal Installer (OUI) bugs in Oracle Database 19c.

You should also review [Compatibility, Upgrading, Downgrading, and Installation](#) for other issues related to installation and upgrades.

Bug 18336219

Oracle Database installer does not check if the password specified for `ASMSNMP` on the Specify Management Options screen is correct. If you proceed with the configuration and specify an incorrect password, then Oracle Enterprise Manager Cloud Control cannot discover details and monitor the Oracle ASM instance.

Workaround #1:

Ensure that the correct password (the same password specified earlier during the Oracle Grid Infrastructure for a cluster installation) is specified in the Specify Management Options screen of Oracle Database installer.

Workaround #2:

On the Oracle Enterprise Manager Cloud Control portal, navigate to the Oracle ASM credentials screen and update the password for `ASMSNMP`. Once the password is saved on Oracle Enterprise Manager Cloud Control, the Oracle ASM monitoring starts working.

Bug 23006768

When installing an Oracle RAC database on an Oracle Member Cluster for Database that is configured to use an Oracle ASM service of an Oracle Domain Services Cluster (DSC) and, if the network selected for `ASM` or `ASM & Private` usage is not of the same type as the Oracle ASM network of the DSC, then the database instance terminates with the following error:

```
IOS hit ORA-00600: internal error code, arguments: [kfias_creg!net]
```

Workaround:

During the installation of the Oracle Member Cluster for Database, choose the network interface for `ASM` or `ASM & Private` so that it is on the same network as the Oracle ASM network of the DSC.

Bug 27080535

When deinstalling the Oracle Grid Infrastructure for a standalone server home with an Oracle Management Server configuration, the `emConfig.txt` file in `ORACLE_BASE/admin/emca` is not deleted.

Workaround:

To remove the `emConfig.txt` file, run the following command:

```
rm -rf $ORACLE_BASE/admin/emca/emConfig.txt
```

During the last `ORACLE_HOME` deinstallation, to remove `ORACLE_BASE`, run the following command after the deinstallation tool exits:

```
rm -rf $ORACLE_BASE
```

Bug 27120934

After downgrading Oracle Clusterware using the Grid Setup Wizard, from Oracle Database 19c to Oracle Clusterware release 12.1 or release 11.2, the unused data files of the Oracle Grid Infrastructure Management Repository (GIMR) of the 19c Oracle Grid Infrastructure home could still be present in the disk group.

Workaround:

Before starting the downgrade procedure using the Grid Setup Wizard, delete the GIMR database using the following command:

```
<Active_GI_HOME>/bin/dbca -silent -deleteDatabase -sourceDB -MGMTDB
```

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Issues Affecting Linux for Oracle Database 19c

These topics contain last-minute features and changes for Linux for Oracle Database 19c.

Certification Information

The latest certification information for Oracle Database 19c is available in My Oracle Support note 1304727.2:

<https://support.oracle.com/epmos/faces/DocumentDisplay?id=1304727.2>

Oracle Linux 7

Starting with Oracle Database 19c, release update (RU) 19.9, Oracle Linux 7.7 with the Unbreakable Enterprise Kernel 6: 5.4.17-2011.4.4.el7uek.x86_64 or later is supported on Linux x86-64.

Refer to *Oracle Database Installation Guide for Linux* for the preinstallation requirements.

Unsupported Products for Linux

This topic describes products or features that are unavailable for Oracle Database 19c.

In addition to the list of unavailable products or features in this release of Oracle Database 19c, the following product is not supported for Linux:

- IPv6 Networks Support
The IPv6 based IP addresses to configure the private networks for a cluster is not supported on IBM: Linux on System z. It is currently under testing and the support will be announced after testing is successfully complete.
- Oracle ACFS
Oracle Automatic Storage Management Cluster File System (Oracle ACFS) is not supported on Oracle Linux 8 and Red Hat Enterprise Linux 8 on Oracle Database 19c release update RU (19.6) and RU (19.7).

Product Support

This topic describes the supported products or features for Oracle Database 19c.

The supported products or features are:

- Database Smart Flash Cache Support
Database Smart Flash Cache is supported on Oracle Linux.
- Oracle ACFS

Oracle Automatic Storage Management Cluster File System (Oracle ACFS) is supported on Oracle Linux 9.2 or later and Red Hat Enterprise Linux 9.2 or later on Oracle Database 19c starting with release update RU 19.21 (along with the patch) and later.

For the latest information about supported platforms and releases, see the Note 1369107.1 on My Oracle Support at <https://support.oracle.com>

- Oracle ADVM

Although Oracle ADVM supports raw disks in Oracle Automatic Storage Management disk groups, Oracle ADVM device special files created through raw are not supported; Oracle ADVM only supports block device special files.

For the latest information about supported platforms and releases, see the Note 1369107.1 on My Oracle Support at <https://support.oracle.com>

- Oracle ASM Filter Driver Support

Oracle Automatic Storage Management Filter Driver (Oracle ASMFD) is supported only on Linux x86-64.

- Share-based Instance Caging

Share-based Instance Caging is supported on Oracle Linux.

Linking Applications with Oracle Client Libraries for Linux

You must use the dynamic Oracle client libraries to link the client code on Linux.

Do not link the static Oracle client libraries.

Preinstallation Requirements for the Linux Platform

Refer to the installation guides for the preinstallation requirements for Oracle Database 19c.

Open Bugs Affecting Linux

This topic contains last-minute features and changes for Oracle Database 19c.

Bug 26708302

Deinstallation of Oracle Real Application Clusters (Oracle RAC) home on shared Network Attached Storage (NAS) fails to delete the directory `$ORACLE_HOME/deinstall` and returns the following error:

```
Failed to delete the directory $ORACLE_HOME/deinstall. Either user has no permission to delete or it is in use.
```

Workaround:

Manually delete the `$ORACLE_HOME/deinstall` folder as either the Oracle RAC owner or as root.

Known Issues and Bugs for SUSE Linux Enterprise Server 15

This section contains information about issues related to SUSE Linux Enterprise Server 15:

Bug 29953021

To install Oracle Database software 19.4 on SUSE Linux Enterprise Server 15, download the Oracle Database software binaries from Oracle Technology Network (OTN), and then apply the 19.4 release updates (RUs) during the the Oracle Database and Oracle Grid Infrastructure installation or upgrade process.

Workaround:

During the Oracle Database and Oracle Grid Infrastructure installation process, run the `runInstaller` and `gridSetup.sh` commands with the `-applyRU` and `-applyOneOffs` options to install the latest 19.4 RU for SUSE Linux Enterprise Server 15:

Oracle Grid Infrastructure without Oracle ACFS and Oracle ADVM:

```
$ 19.3_grid_home/gridSetup.sh -applyRU 19.4GIRU patch 29708769 -  
applyOneOffs patch 30171454
```

Oracle Grid Infrastructure with Oracle ACFS and Oracle ADVM:

```
$ 19.3_grid_home/gridSetup.sh -applyRU 19.4GIRU patch 29708769 -applyOneOffs  
patch 30171454, patch 28321248
```

Oracle Real Applications Cluster or Oracle Database (with Oracle Restart):

```
$ 19.3_dbhome/runInstaller -applyRU 19.4GIRU patch 29708769 -applyOneOffs  
patch 30171454
```

Single-instance Oracle Database:

```
$ 19.3_dbhome/runInstaller -applyRU 19.4DBRU patch 29834717 -applyOneOffs  
patch 30083976
```

Bug 29916735

On SUSE Linux Enterprise Server 15, after upgrading Oracle Grid Infrastructure to 19.4 GIRU, CPU usage increases when you run OSWatcher.

Workaround:

Perform the following steps:

1. Enter the following command to stop OSWatcher from Oracle Trace File Analyzer (Oracle TFA):

```
$ grid_home/bin/tfactl stop oswbb to stop
```

2. Add `disown -a` to the main loop inside `OSWatcher.sh`.
3. Set `ulimit` to a sufficiently low value for the user running OSWatcher.

This issue is fixed in OSWatcher 8.3.1.

See My Oracle Support Note 301137.1 for more information:

<https://support.oracle.com/rs?type=doc&id=301137.1>

Bug 29836096

`libstdc++33` package missing error during Oracle Instant Client installation.

Workaround:

In the **Perform Prerequisite Checks** screen, select **Ignore All** and proceed with the installation.

For non-interactive or silent installations, run the following command:

```
./runInstaller -ignorePrereq
```

Bug 29742223

If you install single instance Oracle Database 19c on SUSE Linux Enterprise Server 15 or SUSE Linux Enterprise Server 12 SP3 with 19.8 or later DBRU, then you may encounter a prerequisite error for the `libstdc++33-3.3.3-62.1` package.

Workaround 1:

The `libstdc++33-3.3.3-62.1` package is not required on SUSE Linux Enterprise Server 15 or SUSE Linux Enterprise Server 12 SP3.

In the **Perform Prerequisite Checks** screen, select **Ignore All** and proceed with the installation.

Workaround 2:

Apply 19c Oracle Clusterware Release Update (OCWRU) that is bundled in the 19c Oracle Grid Infrastructure Release Update (GIRU) along with Oracle Database 19c Release Update (DBRU) 19.8 or later.

Bug 30131474

`libgfortran` package missing error during Oracle Database 19.4 installation on SUSE Linux Enterprise Server 15

Workaround:

Ignore the warning and ensure that you install the `libgfortran4-7.3.1+r258812-2.15.x86_64` package on the system.

Known Issues and Bugs for Oracle Linux 9 and Red Hat Enterprise Linux 9

This section contains information about issues related to Oracle Linux 9 and Red Hat Enterprise Linux 9:

Bug 30286976

To install Oracle Database 19c on Oracle Linux 8 or Red Hat Enterprise Linux 8, download the 19.3 Oracle Database software binaries from Oracle Technology Network (OTN), and then apply the 19.18 release updates (RUs) during the Oracle Database and Oracle Grid Infrastructure installation or upgrade process.

Installation Process:

During the Oracle Database and Oracle Grid Infrastructure installation process, run the `runInstaller` and `gridSetup.sh` commands with the `-applyRU` and `-applyOneOffs` options to install the latest 19.18 RU for Oracle Linux 8 and Red Hat Enterprise Linux 8:

Single-instance Oracle Database (19.18):

```
$ export CV_ASSUME_DISTID=OL7
$ 19.3_dbhome/runInstaller -applyRU 19.18DBRU patch 34765931 location
```

Oracle Grid Infrastructure (19.18):

```
$ 19.3_grid_home/gridSetup.sh -applyRU 19.18GIRU patch 34762026 location
```

Oracle Real Applications Cluster (19.18):

```
$ 19.3_dbhome/runInstaller -applyRU 19.18GIRU patch 34762026 location
```

Bug 30878668

The `sudo` option for running root configuration scripts does not work during Oracle Database 19c or Oracle Grid Infrastructure 19c installations on Oracle Linux 8 or Red Hat Enterprise Linux 8 systems.

Workaround:

Run the root configuration scripts manually as the `root` user.

Bug 30445619

On Oracle Linux 8 or Red Hat Enterprise Linux 8, C++ applications built with `g++8` cannot be used with Oracle C++ Call Interface (OCCI).

Workaround:

For building applications with g++8, use the following compilation options:

```
-D_GLIBCXX_USE_CXX11_ABI=0 -Wno-narrowing
```

Bug 29772579

compat-libcap1-1.10 package missing error during single-instance Oracle Database and Oracle Database Client installations on Oracle Linux 8 and Red Hat Enterprise Linux 8.

Workaround:

In the **Perform Prerequisite Checks** screen, for the compat-libcap1-1.10 missing check, select **Ignore All**, and click **Install** to continue with the installation.



Note:

Ensure that you fix all other checks and issues that are listed in the screen.

Installing Oracle Database 19c (19.19) on Oracle Linux 9 and Red Hat Enterprise Linux 9

Starting with Oracle Database 19c Release 19.19, Oracle Linux 9 and Red Hat Enterprise Linux 9 are supported.

To install Oracle Database 19c on Oracle Linux 9 and Red Hat Linux 9, download the 19.3 Oracle Database software binaries from the Oracle website, and then apply the 19.19 release updates (RUs) during the installation process.

Installation Process:

During the Oracle Database and Oracle Grid Infrastructure installation process, run the `runInstaller` and `gridSetup.sh` commands with the `-applyRU` and `-applyOneOffs` options to install the latest 19.19 RU for Oracle Linux 9 and Red Hat Enterprise Linux 9.

Oracle Grid Infrastructure (19.19):

1. Set the environment variable `CV_ASSUME_DISTID` to `OL8` (`$export CV_ASSUME_DISTID=OL8`).
2. Unzip the 19.3.0.0.0 Oracle Grid Infrastructure gold image.
3. Download `stubs.tar` from [patch 35775632](#). Copy `stubs.tar` to `$ORACLE_HOME/lib/stubs` and extract (cmd: `$ tar -xf stubs.tar`).
4. Copy the OPatch utility version 12.2.0.1.40 or later from My Oracle Support patch 6880880 by selecting the 19.0.0.0.0 release.
5. Install Oracle Grid Infrastructure by running `gridSetup.sh` with `applyRU` to create and install Oracle Grid Infrastructure 19.19 by running the following command: From the 19.3 GI home, run

```
$ gridSetup.sh -applyRU <19.19 GIRU Patch 35037840 location> -applyOneOffs <19.19
DB_MLR
35859251_location,19.19_OCWMLR_patch_36022371_location,_19.19_patch_3526968
8_location>
```

Oracle Real Application Clusters (19.19):

1. Set the environment variable `CV_ASSUME_DISTID` to OL8 (`$export CV_ASSUME_DISTID=OL8`).
2. Unzip the 19.3.0.0.0 Oracle Database gold image.
3. Download `stubs.tar` from *patch 35775632*. Copy `stubs.tar` to `$ORACLE_HOME/lib/stubs` and extract (cmd: `$ tar -xf stubs.tar`).
4. Copy the OPatch utility version 12.2.0.1.40 or later from My Oracle Support patch 6880880 by selecting the 19.0.0.0.0 release.
5. Install Oracle Real Applications Cluster (Oracle RAC) software with `$ 19.3 on-prem_db_image/runInstaller -applyRU <19.19 GIRU Patch 35037840 location> -applyOneOffs <19.19 DB MLR 35859251 location,19.19 OCWMLR patch 36022371 location, 19.19 patch 35269688 location>`
6. Run Oracle Database Configuration Assistant (DBCA) to create the Oracle Real Applications Cluster (Oracle RAC).

Single-instance Oracle Database (19.19):

1. Set the environment variable `CV_ASSUME_DISTID` to OL8 (`$export CV_ASSUME_DISTID=OL8`).
2. Unzip the 19.3.0.0.0 Oracle Database gold image.
3. Download `stubs.tar` from *patch 35775632*. Copy `stubs.tar` to `$ORACLE_HOME/lib/stubs` and extract (cmd: `$ tar -xf stubs.tar`).
4. Copy the OPatch utility version 12.2.0.1.40 or later from My Oracle Support patch 6880880 by selecting the 19.0.0.0.0 release.
5. Install Single-instance Oracle Database with `$ 19.3 on-prem_db_image/runInstaller -applyRU <19.19 DBRU Patch 35042068 location> -applyOneOffs <19.19 DB MLR 35859251 location,19.19 OCWMLR patch 36022371 location>`

Oracle Restart with Single-instance Oracle Database (19.19):

Oracle Restart (19.19)

1. Set the environment variable `CV_ASSUME_DISTID` to OL8 (`$export CV_ASSUME_DISTID=OL8`).
2. Unzip the 19.3.0.0.0 Oracle Grid Infrastructure gold image.
3. Download `stubs.tar` from *patch 35775632*. Copy `stubs.tar` to `$ORACLE_HOME/lib/stubs` and extract (cmd: `$ tar -xf stubs.tar`).
4. Copy the OPatch utility version 12.2.0.1.40 or later from My Oracle Support patch 6880880 by selecting the 19.0.0.0.0 release.
5. Install Oracle Grid Infrastructure with `$ 19.3 on-prem_grid_image/gridSetup.sh applyRU <19.19 GIRU Patch 35037840 location> -applyOneOffs <19.19 DB MLR 35859251 location,19.19 OCWMLR patch 36022371 location, 19.19 patch 35269688 location>`

Single-instance Oracle Database on Oracle Automatic Storage Management (Oracle ASM) with Oracle Restart (19.19)

1. Set the environment variable `CV_ASSUME_DISTID` to `OL8` (`$export CV_ASSUME_DISTID=OL8`).
2. Unzip the 19.3.0.0.0 Oracle Database gold image.
3. Download `stubs.tar` from [patch 35775632](#). Copy `stubs.tar` to `$ORACLE_HOME/lib/stubs` and extract (cmd: `$ tar -xf stubs.tar`).
4. Copy the OPatch utility version 12.2.0.1.40 or later from My Oracle Support patch 6880880 by selecting the 19.0.0.0.0 release.
5. Install Single-instance Oracle Database with `$ 19.3 on-prem_db_image/runInstaller applyRU <19.19 GIRU Patch 35037840 location> -applyOneOffs <19.19 DB MLR 35859251 location,19.19 OCWMLR patch 36022371 location, 19.19 patch 35269688 location>`

Installing Oracle Database Client 19c (19.19) on Oracle Linux 9 and Red Hat Enterprise Linux 9

Starting with Oracle Database Client 19c Release 19.19, both 32-bit and 64-bit versions are supported on Oracle Linux 9 and Red Hat Enterprise Linux 9.

To install Oracle Database Client 19c on Oracle Linux 9 and Red Hat Linux 9, download the 19.3 Oracle Database Client software binaries from the Oracle website, and then apply the 19.19 release updates (RUs) during the installation process.

During the Oracle Database Client gold image installation process, run the `runInstaller` command with the `-applyRU` and `-applyOneOffs` options to install the latest 19.19 RU for Oracle Linux 9 and Red Hat Enterprise Linux 9.

Oracle Database Client 64-bit (19.19) Gold Image Installation

```
$ export CV_ASSUME_DISTID=OL7
$ 19.3_clienthome/runInstaller -applyRU <19.19DBRU patch 35042068
location> -applyOneOffs <19.19OneOff patch 35681671 location>
```

During the Oracle Database Client gold image installation process, run the `runInstaller` command with the `-applyRU` and `-applyOneOffs` options to install the latest 19.19 RU for Oracle Linux 9 and Red Hat Enterprise Linux 9.

Oracle Database Client 64-bit (19.19) Shiphome-based Installation

```
$ export CV_ASSUME_DISTID=OL7
$ 19.3_clienthome/runInstaller
```

Note:

- Ignore the linking errors during 19.3 client installations and 19.19DBRU.
- After the 19.3 Oracle Database Client installation is complete, apply the 19.19DBRU patch 35042068 and 19.19OneOff patch 35681671.

During the Oracle Database Client shiphome based installation process, run the `runInstaller` command to install the latest 19.19 RU for Oracle Linux 9 and Red Hat Enterprise Linux 9.

Oracle Database Client 32-bit (19.19) Gold Image Installation

```
$ export CV_ASSUME_DISTID=OL7
$ 19.3_clienthome/runInstaller -applyRU <19.19DBRU patch 35042068 location> -
applyOneOffs <19.19OneOff patch 35700050 location>
```

During the Oracle Database Client shiphome based installation process, run the `runInstaller` command to install the latest 19.19 RU for Oracle Linux 9 and Red Hat Enterprise Linux 9.

Oracle Database Client 32-bit (19.19) Shiphome-based Installation

```
$ export CV_ASSUME_DISTID=OL7
$ 19.3_clienthome/runInstaller
```

Note:

- Ignore the linking errors during 19.3 client installations and 19.19DBRU.
- After the 19.3 Oracle Database Client installation is complete, apply the 19.19DBRU patch 35042068 and 19.19OneOff patch 35700050.

Oracle Database Gateway (19.19) Shiphome-based Installation

```
$ export CV_ASSUME_DISTID=OL7
$ 19.3_gatewayshome/runInstaller
```

Note:

- Ignore the linking errors during 19.3 Oracle Database Gateway installation and 19.19DBRU.
- After the 19.3 Oracle Database Gateway installation is complete, apply the 19.19DBRU patch 35042068, 19.19OneOff patch 35681671, 19.19OneOff patch 35464439, and 19.0.0.0.0OneOff patch 35578393.
- Apply the 19.19OneOff patch 35464439 if the WebSphere MQ component is installed during Oracle Database Gateway installation and apply the 19.19OneOff patch 35578393 if APPC component is installed during the Oracle Database Gateway installation.

Oracle Database Global Service Manager (19.19) Shiphome-based Installation

```
$ export CV_ASSUME_DISTID=OL7
$ 19.3_gsmhome/runInstaller
```

 **Note:**

- Ignore the linking errors during 19.3 Oracle Database Global Service Manager installation and 19.19DBRU.
- After the 19.3 Oracle Database Global Service Manager installation is complete, apply the 19.19DBRU patch 35042068 and 19.19OneOff patch 35681671.

 **Note:**

For all Client, Gateway, and GSM installations, after you apply a patch, ensure that you run the following command to relink executables and libraries in \$ORACLE_HOME:

```
$ORACLE_HOME/bin/relink as_installed
```

Installing Oracle Database 19c (19.20) on Oracle Linux 9 and Red Hat Enterprise Linux 9

Starting with Oracle Database 19c Release 19.20, Oracle Linux 9 and Red Hat Enterprise Linux 9 are supported.

To install Oracle Database 19c on Oracle Linux 9 and Red Hat Linux 9, download the 19.3 Oracle Database software binaries from the Oracle website, and then apply the 19.20 release updates (RUs) during the installation process.

Installation Process:

During the Oracle Database and Oracle Grid Infrastructure installation process, run the `runInstaller` and `gridSetup.sh` commands with the `-applyRU` and `-applyOneOffs` options to install the latest 19.20 RU for Oracle Linux 9 and Red Hat Enterprise Linux 9.

Oracle Grid Infrastructure (19.20):

1. Set the environment variable `CV_ASSUME_DISTID` to `OL8` (`$export CV_ASSUME_DISTID=OL8`).
2. Unzip the 19.3.0.0.0 Oracle Grid Infrastructure gold image.
3. Download `stubs.tar` from [patch 35775632](#). Copy `stubs.tar` to `$ORACLE_HOME/lib/stubs` and extract (cmd: `$ tar -xf stubs.tar`).

4. Copy the OPatch utility version 12.2.0.1.40 or later from My Oracle Support patch 6880880 by selecting the 19.0.0.0.0 release.
5. Install Oracle Grid Infrastructure with \$ 19.3 on-prem_grid_image/gridSetup.sh -applyRU <19.20 GIRU Patch 35319490 location> -applyOneOffs <19.20 DB MLR 35904951 location,19.20 OCWMLR patch 36022373 location, 19.20 patch 35269688 location>

Oracle Real Application Clusters (19.20):

1. Set the environment variable CV_ASSUME_DISTID to OL8 (`$export CV_ASSUME_DISTID=OL8`).
2. Unzip the 19.3.0.0.0 Oracle Database gold image.
3. Download `stubs.tar` from *patch 35775632*. Copy `stubs.tar` to `$ORACLE_HOME/lib/stubs` and extract (cmd: `$ tar -xf stubs.tar`).
4. Copy the OPatch utility version 12.2.0.1.40 or later from My Oracle Support patch 6880880 by selecting the 19.0.0.0.0 release.
5. Install Oracle Real Applications Cluster (Oracle RAC) software with \$ 19.3 on-prem_db_image/runInstaller -applyRU <19.20 GIRU Patch 35319490 location> -applyOneOffs <19.20 DB MLR 35904951 location,19.20 OCWMLR patch 36022373 location, 19.20 patch 35269688 location>
6. Run Oracle Database Configuration Assistant (DBCA) to create the Oracle Real Applications Cluster (Oracle RAC).

Single-instance Oracle Database (19.20):

1. Set the environment variable CV_ASSUME_DISTID to OL8 (`$export CV_ASSUME_DISTID=OL8`).
2. Unzip the 19.3.0.0.0 Oracle Database gold image.
3. Download `stubs.tar` from *patch 35775632*. Copy `stubs.tar` to `$ORACLE_HOME/lib/stubs` and extract (cmd: `$ tar -xf stubs.tar`).
4. Copy the OPatch utility version 12.2.0.1.40 or later from My Oracle Support patch 6880880 by selecting the 19.0.0.0.0 release.
5. Install Single-instance Oracle Database with \$ 19.3 on-prem_db_image/runInstaller -applyRU <19.20 DBRU Patch 35320081 location> -applyOneOffs <19.20 DB MLR 35904951 location,19.20 OCWMLR patch 36022373 location>

Oracle Restart with Single-instance Oracle Database (19.20):

Oracle Restart (19.20)

1. Set the environment variable CV_ASSUME_DISTID to OL8 (`$export CV_ASSUME_DISTID=OL8`).
2. Unzip the 19.3.0.0.0 Oracle Grid Infrastructure gold image.
3. Download `stubs.tar` from *patch 35775632*. Copy `stubs.tar` to `$ORACLE_HOME/lib/stubs` and extract (cmd: `$ tar -xf stubs.tar`).
4. Copy the OPatch utility version 12.2.0.1.40 or later from My Oracle Support patch 6880880 by selecting the 19.0.0.0.0 release.
5. Install Oracle Grid Infrastructure with \$ 19.3 on-prem_grid_image/gridSetup.sh -applyRU <19.20 GIRU Patch 35319490 location> -applyOneOffs <19.20 DB MLR 35904951 location,19.20 OCWMLR patch 36022373 location, 19.20 patch 35269688 location>

Single-instance Oracle Database on Oracle Automatic Storage Management (Oracle ASM) with Oracle Restart (19.20)

1. Set the environment variable `CV_ASSUME_DISTID` to `OL8` (`$export CV_ASSUME_DISTID=OL8`).
2. Unzip the 19.3.0.0.0 Oracle Database gold image.
3. Download `stubs.tar` from [patch 35775632](#). Copy `stubs.tar` to `$ORACLE_HOME/lib/stubs` and extract (cmd: `$ tar -xf stubs.tar`).
4. Copy the OPatch utility version 12.2.0.1.40 or later from My Oracle Support patch 6880880 by selecting the 19.0.0.0.0 release.
5. Install Single-instance Oracle Database with `$ 19.3 on-prem_db_image/runInstaller -applyRU <19.20 GIRU Patch 35319490 location> -applyOneOffs <19.20 DB MLR 35904951 location,19.20 OCWMLR patch 36022373 location, 19.20 patch 35269688 location>`

Installing Oracle Database Client 19c (19.20) on Oracle Linux 9 and Red Hat Enterprise Linux 9

Starting with Oracle Database Client 19c Release 19.20, only 64-bit version is supported on Oracle Linux 9 and Red Hat Enterprise Linux 9.

To install Oracle Database Client 19c on Oracle Linux 9 and Red Hat Linux 9, download the 19.3 Oracle Database Client software binaries from the Oracle website, and then apply the 19.20 release updates (RUs) during the installation process.

During the Oracle Database Client gold image installation process, run the `runInstaller` command with the `-applyRU` and `-applyOneOffs` options to install the latest 19.20 RU for Oracle Linux 9 and Red Hat Enterprise Linux 9.

Oracle Database Client 64-bit (19.20) Gold Image Installation

```
$ export CV_ASSUME_DISTID=OL7
$ 19.3_clienthome/runInstaller -applyRU <19.20DBRU patch 35320081
location> -applyOneOffs <19.20OneOff patch 35904951 location>
```

During the Oracle Database Client gold image installation process, run the `runInstaller` command with the `-applyRU` and `-applyOneOffs` options to install the latest 19.20 RU for Oracle Linux 9 and Red Hat Enterprise Linux 9.

Oracle Database Client 64-bit (19.20) Shiphome-based Installation

```
$ export CV_ASSUME_DISTID=OL7
$ 19.3_clienthome/runInstaller
```

 **Note:**

- Ignore the linking errors during 19.3 client installations and 19.20DBRU.
- After the 19.3 Oracle Database Client installation is complete, apply the 19.20DBRU patch 35320081 and 19.20OneOff patch 35904951.

During the Oracle Database Client shiphome based installation process, run the `runInstaller` command to install the latest 19.20 RU for Oracle Linux 9 and Red Hat Enterprise Linux 9.

Oracle Database Gateway (19.20) Shiphome-based Installation

```
$ export CV_ASSUME_DISTID=OL7
$ 19.3_gatewayshome/runInstaller
```

 **Note:**

- Ignore the linking errors during 19.3 Oracle Database Gateway installation and 19.20DBRU.
- After the 19.3 Oracle Database Gateway installation is complete, apply the 19.20DBRU patch 35320081, 19.20OneOff patch 35904951, 19.20OneOff patch 35464439, and 19.0.0.0.0OneOff patch 35578393.
- Apply the 19.20OneOff patch 35464439 if the WebSphere MQ component is installed during Oracle Database Gateway installation and apply the 19.20OneOff patch 35578393 if APPC component is installed during the Oracle Database Gateway installation.

Oracle Database Global Service Manager (19.20) Shiphome-based Installation

```
$ export CV_ASSUME_DISTID=OL7
$ 19.3_gsmhome/runInstaller
```

 **Note:**

- Ignore the linking errors during 19.3 Oracle Database Global Service Manager installation and 19.20DBRU.
- After the 19.3 Oracle Database Global Service Manager installation is complete, apply the 19.20DBRU patch 35320081 and 19.20OneOff patch 35904951.

 **Note:**

For all Client, Gateway, and GSM installations, after you apply a patch, ensure that you run the following command to relink executables and libraries in `$ORACLE_HOME`:

```
$ORACLE_HOME/bin/relink as_installed
```

Installing Oracle Database 19c (19.21) on Oracle Linux 9 and Red Hat Enterprise Linux 9

Starting with Oracle Database 19c Release 19.21, Oracle Linux 9 and Red Hat Enterprise Linux 9 are supported.

To install Oracle Database 19c on Oracle Linux 9 and Red Hat Linux 9, download the 19.3 Oracle Database software binaries from the Oracle website, and then apply the 19.21 release updates (RUs) during the installation process.

Installation Process:

During the Oracle Database and Oracle Grid Infrastructure installation process, run the `runInstaller` and `gridSetup.sh` commands with the `-applyRU` and `-applyOneOffs` options to install the latest 19.21 RU for Oracle Linux 9 and Red Hat Enterprise Linux 9.

Oracle Grid Infrastructure (19.21):

1. Set the environment variable `CV_ASSUME_DISTID` to `OL8` (`$export CV_ASSUME_DISTID=OL8`).
2. Unzip the 19.3.0.0.0 Oracle Grid Infrastructure gold image.
3. Copy the OPatch utility version 12.2.0.1.40 or later from My Oracle Support patch 6880880 by selecting the 19.0.0.0.0 release.
4. Install Oracle Grid Infrastructure with `$ 19.3 on-prem_grid_image/gridSetup.sh -applyRU <19.21 GIRU Patch 35642822 location> -applyOneOffs <19.21 DB MLR 35954820 location,19.21 OCWMLR patch 36022515 location, 19.21 patch 35269688 location>`

Oracle Real Application Clusters (19.21):

1. Set the environment variable `CV_ASSUME_DISTID` to `OL8` (`$export CV_ASSUME_DISTID=OL8`).
2. Unzip the 19.3.0.0.0 Oracle Database gold image.
3. Copy the OPatch utility version 12.2.0.1.40 or later from My Oracle Support patch 6880880 by selecting the 19.0.0.0.0 release.
4. Install Oracle Real Applications Cluster (Oracle RAC) software with `$ 19.3 on-prem_db_image/runInstaller -applyRU <19.21 GIRU Patch 35642822 location> -applyOneOffs <19.21 DB MLR 35954820 location,19.21 OCWMLR patch 36022515 location, 19.21 patch 35269688 location>`

5. Run Oracle Database Configuration Assistant (DBCA) to create the Oracle Real Applications Cluster (Oracle RAC).

Single-instance Oracle Database (19.21):

1. Set the environment variable `CV_ASSUME_DISTID` to OL8 (`$export CV_ASSUME_DISTID=OL8`).
2. Unzip the 19.3.0.0.0 Oracle Database gold image.
3. Copy the OPatch utility version 12.2.0.1.40 or later from My Oracle Support patch 6880880 by selecting the 19.0.0.0.0 release.
4. Install Single-instance Oracle Database with `$ 19.3 on-prem_db_image/runInstaller -applyRU <19.21 DBRU Patch 35643107 location> -applyOneOffs <19.21 MLR 35954820,19.21 OCWMLR patch 36022515 location>`

Oracle Restart with Single-instance Oracle Database (19.21):

Oracle Restart (19.21)

1. Set the environment variable `CV_ASSUME_DISTID` to OL8 (`$export CV_ASSUME_DISTID=OL8`).
2. Unzip the 19.3.0.0.0 Oracle Grid Infrastructure gold image.
3. Copy the OPatch utility version 12.2.0.1.40 or later from My Oracle Support patch 6880880 by selecting the 19.0.0.0.0 release.
4. Install Oracle Grid Infrastructure with `$ 19.3 on-prem_grid_image/gridSetup.sh -applyRU <19.21 GIRU Patch 35642822 location> -applyOneOffs <19.21 DB MLR 35954820 location,19.21 OCWMLR patch 36022515 location, 19.21 patch 35269688 location>`

Single-instance Oracle Database on Oracle Automatic Storage Management (Oracle ASM) with Oracle Restart (19.21)

1. Set the environment variable `CV_ASSUME_DISTID` to OL8 (`$export CV_ASSUME_DISTID=OL8`).
2. Unzip the 19.3.0.0.0 Oracle Database gold image.
3. Copy the OPatch utility version 12.2.0.1.40 or later from My Oracle Support patch 6880880 by selecting the 19.0.0.0.0 release.
4. Install Single-instance Oracle Database with `$ 19.3 on-prem_db_image/runInstaller -applyRU <19.21 GIRU Patch 35642822 location> -applyOneOffs <19.21 DB MLR 35954820 location,19.21 OCWMLR patch 36022515 location, 19.21 patch 35269688 location>`

Installing Oracle Database Client 19c (19.21) on Oracle Linux 9 and Red Hat Enterprise Linux 9

Starting with Oracle Database Client 19c Release 19.21, only 64-bit version is supported on Oracle Linux 9 and Red Hat Enterprise Linux 9.

To install Oracle Database Client 19c on Oracle Linux 9 and Red Hat Linux 9, download the 19.3 Oracle Database Client software binaries from the Oracle website, and then apply the 19.21 release updates (RUs) during the installation process.

During the Oracle Database Client gold image installation process, run the `runInstaller` command with the `-applyRU` and `-applyOneOffs` options to install the latest 19.21 RU for Oracle Linux 9 and Red Hat Enterprise Linux 9.

Oracle Database Client (19.21) Gold Image Installation

```
$ export CV_ASSUME_DISTID=OL7
$ 19.3_clienthome/runInstaller -applyRU <19.21DBRU patch 35643107
location> -applyOneOffs <19.21OneOff patch 35954820 location>
```

During the Oracle Database Client gold image installation process, run the `runInstaller` command with the `-applyRU` and `-applyOneOffs` options to install the latest 19.21 RU for Oracle Linux 9 and Red Hat Enterprise Linux 9.

Oracle Database Client (19.21) Shiphome-based Installation

```
$ export CV_ASSUME_DISTID=OL7
$ 19.3_clienthome/runInstaller
```

Note:

- Ignore the linking errors during 19.3 client installations and 19.21DBRU.
- After the 19.3 Oracle Database Client installation is complete, apply the 19.21DBRU patch 35643107 and 19.21OneOff patch 35954820.

During the Oracle Database Client shiphome based installation process, run the `runInstaller` command to install the latest 19.21 RU for Oracle Linux 9 and Red Hat Enterprise Linux 9.

Oracle Database Gateway (19.21) Shiphome-based Installation

```
$ export CV_ASSUME_DISTID=OL7
$ 19.3_gatewayshome/runInstaller
```

Note:

- Ignore the linking errors during 19.3 Oracle Database Gateway installation and 19.21DBRU.
- After the 19.3 Oracle Database Gateway installation is complete, apply the 19.21DBRU patch 35643107, 19.21OneOff patch 35954820, and 19.21OneOff patch 35578393.
- Apply the 19.0.0.0.0 OneOff patch 35578393 if APCC component is installed during the Oracle Database Gateway installation.

Oracle Database Global Service Manager (19.21) Shiphome-based Installation

```
$ export CV_ASSUME_DISTID=OL7
$ 19.3_gsmhome/runInstaller
```

Note:

- Ignore the linking errors during 19.3 Oracle Database Global Service Manager installation and 19.21DBRU.
- After the 19.3 Oracle Database Global Service Manager installation is complete, apply the 19.21DBRU patch 35643107 and 19.21OneOff patch 35954820.

Note:

For all Client, Gateway, and GSM installations, after you apply a patch, ensure that you run the following command to relink executables and libraries in \$ORACLE_HOME:

```
$ORACLE_HOME/bin/relink as_installed
```

Installing Oracle Database 19c (19.22) and Oracle Database 19c Client (19.22) on Oracle Linux 9 and Red Hat Enterprise Linux 9

No additional patches are required for installing Oracle Database 19c and Oracle Database Client 19c Release 19.22 on Oracle Linux 9 or Red Hat Enterprise Linux 9.

Unsupported Products for Oracle Database 19c on Oracle Linux 9 and Red Hat Enterprise Linux 9

This topic describes products or features that are unavailable for Oracle Database 19c on Oracle Linux 9 and Red Hat Enterprise Linux 9.

- Oracle ASM library (Oracle ASMLIB)
- DBnest
- Oracle Machine Learning for R (OML4R)

Known Issues and Bugs for Oracle Linux 9 and Red Hat Enterprise Linux 9 on Oracle Database

This section contains information about issues related to Oracle Linux 9 and Red Hat Enterprise Linux 9 on Oracle Database Client:

Bug 35521990

During Oracle Database Client 32-bit installation on Oracle Linux 9 and Red Hat Enterprise Linux 9, the following warning messages is displayed:

```
/bin/ld: libirc.a(fast_memcpy_pp.o):  
warning: relocation in read-only section `.text'  
  
INFO:  
/bin/ld: warning: creating DT_TEXTREL in a shared object  
  
INFO:  
/bin/ld: libirc.a(sse2_strspn.o): warning:  
relocation in read-only section `.text'  
  
INFO:  
/bin/ld: warning: creating DT_TEXTREL in a shared object
```

The following warning messages is displayed during 19.19OneOff patch 35700050:

```
OPatch found the word "warning" in the stderr of the make command.  
Please look at this stderr. You can re-run this make command.  
Stderr output:  
/bin/ld: $ORACLE_HOME/lib/libirc.a(fast_memcpy_pp.o):warning:  
relocation in read-only section `.text'  
/bin/ld: warning: creating DT_TEXTREL in a shared object  
/bin/ld: $ORACLE_HOME/lib/libirc.a(sse2_strspn.o): warning: relocation  
in read-only section `.text'  
/bin/ld: warning: creating DT_TEXTREL in a shared object
```

Workaround:

Ignore the warning messages.

Bug 35547711

compat-libcap1-1.10 and compat-libstdc++-33 packages missing error during Oracle Database Client 32-bit installation on Oracle Linux 9 and Red Hat Enterprise Linux 9.

Workaround:

In the **Perform Prerequisite Checks** screen, for the `compat-libcap1-1.10` and `compat-libstdc++-33` missing checks, select **Ignore All**, and click **Install** to continue with the installation.

**Note:**

Ensure that you fix all other checks and issues that are listed in the screen.

Bug 35448216

`compat-libcap1-1.10` package missing error during Oracle Database Client 64-bit installation on Oracle Linux 9 and Red Hat Enterprise Linux 9.

Workaround:

In the **Perform Prerequisite Checks** screen, for the `compat-libcap1-1.10` missing check, select **Ignore All**, and click **Install** to continue with the installation.

**Note:**

Ensure that you fix all other checks and issues that are listed in the screen.

Bug 35584316

On Oracle Linux 9 or Red Hat Enterprise Linux 9, C++ applications built with `g++11` cannot be used with Oracle C++ Call Interface (OCCI).

Workaround:

For building applications with `g++11`, use the following compilation options:

```
-D_GLIBCXX_USE_CXX11_ABI=0 -Wno-narrowing
```

Bug 35614058

Static Client linking demos fail during compilation on Oracle Database Client 19c on both 32-bit and 64-bit versions on Oracle Linux 9 and Red Hat Enterprise Linux 9.

Workaround:

Oracle Database Client 19c supports only Dynamic Client linking demos on both 32-bit and 64-bit versions on Oracle Linux 9 and Red Hat Enterprise Linux 9.

Known Issues and Bugs for Standard Edition High Availability

This section contains information about issues related to Standard Edition High Availability:

Bug 30821297

Oracle Database Standard Edition 2 allows you to create more than one pluggable database (PDB) in a multitenant container database (CDB). However, when you use the Oracle Database Configuration Assistant (Oracle DBCA) to create a second PDB, you receive the following error:

```
[FATAL] [DBT-11506] Creation of more than one PDB requires Enterprise Edition license.
```

Workaround:

Create the additional PDB using the SQL statement `CREATE PLUGGABLE DATABASE.`

Related Topics

- *Oracle Multitenant Administrator's Guide*

Bug 30979062

When you use the `srvctl relocate database` command to initiate the relocation of a database configured with Standard Edition High Availability, and if the destination-configured node does not have an available Oracle Database home, then the relocation fails as expected but with error messages that do not include the reason for the failure.

This issue will be fixed in a future Oracle Database 19c release update.

Workaround:

None.

Bug 30992915

When you use Oracle Database Configuration Assistant (Oracle DBCA) to create a single-instance database on an Oracle Clusterware node, the database is registered with Oracle Clusterware. However, the command output incorrectly says the following:

```
Registering database with Oracle Restart
```

Workaround:

None.

Bug 31114977

When you relocate Oracle Database configured with Standard Edition High Availability that has active database services, the `srvctl status service` command on that database displays a blank list of instance that has the services running. However, the services are running on the database instance.

Workaround:

None.

Bug 31128434

When you use the `srvctl relocate database` command to initiate the relocation of a database configured with Standard Edition High Availability, and if Oracle Database has a service registered, then the shutdown of the database instance is suspended for a period of time due to the mount lock being held.

The registered database services are not accessible when the database instance is suspended and the Oracle Database instance stops eventually on the current node and starts on the destination node.

Workaround:

Use a sequence of `srvctl stop database` commands followed by the `srvctl start database -node destination node` commands to avoid shutdown suspension.

Bug 31128452

When you run the `srvctl config service` command for an Oracle Database with Standard Edition High Availability configured and its services registered, a Java `NULL pointer exception` occurs at the end of the output for the first service.

This issue will be fixed in a future Oracle Database 19c release update.

Workaround:

None.

Bug 31146826

When you configure Standard Edition High Availability for a single-instance Oracle Database 19c Release Update (RU) 19.7 that does not have any database services registered, you will observe a local restart when the instance is abnormally terminated. However, after a service is added to the database, you do not observe the local restart. Instead, the database fails over immediately when it is abnormally terminated.

This issue will be fixed in a future Oracle Database 19c release update.

Workaround:

None.

Bug 31156506

If Oracle base of the Oracle Database home is the same as Oracle base of the Oracle Grid Infrastructure home, then if the user adds a new node to the cluster, the Oracle Database home user loses access permissions to some of the subdirectories under Oraclebase of the Oracle Database home.

Workaround:

Use distinct directories as Oracle base for the Oracle Grid Infrastructure and Oracle Database installations.

Bug 31188168

When you use the `srvctl relocate database -help` command from a Standard Edition single-instance Oracle Database 19c home, the prompt incorrectly displays usage and help messages with the mention of Oracle Real Application Clusters One Node (Oracle RAC One Node). Starting with Oracle Database 19c Release Update (RU) 19.7, this command applies to Standard Edition High Availability and must contain the corresponding usage and help messages.

This issue will be fixed in a future Oracle Database 19c release update.

Workaround:

Related Topics

- *Oracle Database Administrator's Guide*
- *Oracle Clusterware Administration and Deployment Guide*

Bug 31264160

Starting with Oracle Database 19c Release Update (RU) 19.7, you use the `srvctl add` or `modify database` commands to configure Standard Edition High Availability by specifying the `-node` option with a node list of more than one node. However, the usage messages from these commands, such as when running from an Oracle Database Standard Edition 2 database home with the `-help` option, do not show this usage.

This issue will be fixed in a future Oracle Database 19c release update.

Workaround:

Related Topics

- *Oracle Database Administrator's Guide*
- *Oracle Clusterware Administration and Deployment Guide*

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Issues Affecting Oracle on Linux for ARM (aarch64) for Oracle Database 19c

This topic contains last-minute features and changes for Oracle Database on Linux for ARM (aarch64) for Oracle Database 19c.

Unsupported Products for Linux for ARM (aarch64) for Oracle Database 19c

This topic describes products or features that are unavailable for Oracle Database 19c.

The following products are not supported for Linux for ARM (aarch64) for Oracle Database 19c:

- PLSQL Just-in-Time Compiler (JIT)
- JAVAVM JIT
- Oracle Cluster File System (OCFS2)
- Oracle ASM Filter Driver (Oracle ASMTFD)
- Oracle Database Gateways (PG4APPC and PG4MQ)
- Oracle Machine Learning for Python (OML4PY)
- Oracle Database backups to Zero Data Loss Recovery Appliance (ZDLRA)
- Pro*COBOL
- Pro*FORTRAN
- Oracle Messaging Gateway (MGW)
- Oracle ASM library (Oracle ASMLIB)
- DBnest
- Oracle Big Data SQL
- Oracle R
- Oracle Machine Learning for R (OML4R)

The following scenarios were not tested on Linux for ARM (aarch64) for Oracle Database 19c and may not work as expected:

- Oracle Grid Infrastructure and Oracle RAC via standard IPv6 address notations.
- The use of Dynamic Host Configuration Protocol (DHCP) for the VIP addresses and the Single Client Access Name (SCAN) address for Oracle Grid Infrastructure using Grid Naming Service (GNS).

Related Topics

- [Limitation on Data Migration Using Transportable Tablespaces](#)
Data Migration using Transportable Tablespaces (TTS) from Oracle Database 19c (release 19.19 or higher), Linux x86-64 and Microsoft Windows x64 to Oracle Database 19c (release 19.19 or higher) Linux for ARM (aarch64) is only supported for simple schema.

Open Bugs for Linux for ARM (aarch64) for Oracle Database 19c

This section contains information about issues related to Linux for ARM (aarch64) for Oracle Database 19c:

Bug 34398211

Adding a node from grid fails due to SSH configuration issue and returns the following error:

```
[INS-06003] Failed to setup passwordless SSH connectivity with the
following
node(s): node1, node2
```

Workaround:

Passwordless SSH configuration is a mandatory installation requirement. SSH is used during installation to configure cluster member nodes, and SSH is used after installation by configuration assistants, Oracle Enterprise Manager, Opatch, and other features.

If the system has OpenSSH 7.8 or later configured, then the Automatic Passwordless SSH configuration using OUI fails.

Manually setup SSH to the node that you want to add before performing the addnode operation.

Related Topics

- [Configuring SSH Manually on All Cluster Nodes](#)

Bug 34501504

If the shell `TZ` environment variable is not in sync with the clusterware timezone, then the data might not be displayed as part of `oclumon dumpnodeview`.

Workaround:

Set the `TZ` environment variable based on the clusterware timezone.

Bug 34485708

Deleting a node from grid fails due to SSH configuration issue and returns the following error:

```
[PILOT-00452] Unable to establish SSH connection to node1 to execute command
"Grid_home/deinstall/deinstall"
CAUSE: An attempt to connect to specified node to execute specified command
using SSH failed.
ACTION: Make sure that the specified node is reachable and the SSH daemon on
the specified
node is alive.
```

Workaround:

Update OpenSSH format to RSA format by running the following command on all nodes:

```
ssh-keygen -p -f private_key_location -m pem
Example: ssh-keygen -p -f ~/.ssh/id_rsa -m pem
```

Bug 35386579

While you migrate a PDB from source release 19.19 RU (Linux x86-64 and Microsoft Windows x64) to target release Linux for ARM (aarch64), you may encounter the following issue at aarch64 while trying to restore the foreign PDB from the backup set:

```
- database (19.0.0.0.0 1.8) does not match that of the oracle executable
(19.0.0.0.230117 1.8)
```

Workaround:

Run the following SQLs to resolve the issue:

```
SQL> alter session set "_ORACLE_SCRIPT"=true;
Session altered.
```

```
SQL> DECLARE n varchar2(100);
```

```
BEGIN
n := dbms_java_test.funcall('-rujs', ' ');
initjvmaux.validate_javavm;
```

```

END;
/

      2      3      4      5      6      7      8      9

PL/SQL procedure successfully completed.

SQL> select dbms_java.get_jdk_version from dual;

GET_JDK_VERSION
-----
1.8.0_371

```

Limitation on Data Migration Using Transportable Tablespaces

Data Migration using Transportable Tablespaces (TTS) from Oracle Database 19c (release 19.19 or higher), Linux x86-64 and Microsoft Windows x64 to Oracle Database 19c (release 19.19 or higher) Linux for ARM (aarch64) is only supported for simple schema.

More complex schemas may encounter issues related to guard-column and other issues.

Cross platform transportable tablespace is only supported from source Linux x86-64 and Microsoft Windows x64 to target Linux for ARM (aarch64), when both the source and destination are at the same major version and the same RU level. For example, from source release 19.19 RU (Linux x86-64 and Microsoft Windows x64) to target release 19.19 Linux for ARM (aarch64).

Prerequisite for Cross-Platform PDB Move

Perform these steps to move a PDB cross-platform from source release 19.19 RU (Linux x86-64 and Microsoft Windows x64) to target release 19.19 Linux for ARM (aarch64).

Before you unplug your PDB from the source container, run these queries to clear the datapatch inventory:

```

/* Delete all rows from datapatch tables to clear the inventory */

alter session set container=pdb_name;

delete from dba_registry_sqlpatch;

delete from dba_registry_sqlpatch_ru_info;

commit;

```

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Issues Affecting Oracle Instant Client on Linux for ARM (aarch64) for Oracle Database 19c

This topic contains last-minute features and changes for Oracle Instant Client on Linux for ARM (aarch64) for Oracle Database 19c.

Unsupported Products for Linux for ARM (aarch64)

This topic describes products or features that are unavailable for Oracle Database 19c.

The following products are not supported for Linux for ARM (aarch64):

- Pro*COBOL
- Pro*FORTRAN

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Issues Affecting Oracle Solaris for Oracle Database 19c

These topics contain last-minute features and changes for Oracle Solaris for Oracle Database 19c.

Unsupported Products for Oracle Solaris

In addition to the list of unavailable products or features in this release of Oracle Database 19c, the following product is not supported for Oracle Solaris:

- Net Configuration Assistant Support

Bug 21816875

Net Configuration Assistant (NETCA) is not supported on Oracle Solaris on SPARC (32-Bit) and Oracle Solaris on x86 (32-Bit) client platforms.

Product Support

These are the supported products or features for Oracle Database 19c:

- Oracle Solaris Support on SPARC
Oracle Database 19c is supported on Oracle Solaris on SPARC (64-bit).
- Database Smart Flash Cache Support
Database Smart Flash Cache is supported on Oracle Solaris.
- Oracle ACFS and Oracle ADVM Support
Although Oracle ADVM supports raw disks in Oracle Automatic Storage Management disk groups, Oracle ADVM device special files created through raw are not supported; Oracle ADVM only supports block device special files.

For the latest information about supported platforms and releases, see the Note 1369107.1 on My Oracle Support at <https://support.oracle.com>

Linking Applications with Oracle Client Libraries for Oracle Solaris

You must use the dynamic Oracle client libraries to link the client code on Oracle Solaris.

Do not link the static Oracle client libraries.

Preinstallation Requirements for Oracle Solaris

Refer to the installation guides for the preinstallation requirements for Oracle Database 19c.

Installation, Configuration, and Upgrade Issues for Oracle Solaris

These topics describe information about issues that affect Oracle Database installation, configuration, and upgrade.

Bug 21800407

When installing Oracle Database for English and Japanese environments, the background font incorrectly displays yellow color for the Oracle Universal Installer (OUI), Database Configuration Assistant (DBCA), and Database Upgrade Assistant (DBUA) pages.

Workaround:

Prior to installing Oracle Database, run the following command:

```
export _JAVA_OPTIONS='-Dsun.java2d.xrender=false'
```

Bug 28650933

Installing and using Oracle Secure Backup 12.2 on Oracle Solaris 11.4 may fail if the library `libnls.so` is not available in standard system library paths, since the Oracle Secure Backup libraries depend on `libnls.so`.

Workaround:

Upgrade the Oracle Solaris OS version to Oracle Solaris 11.4.6.4.0. and then install Oracle Secure Backup 12.2. Alternate workaround is to copy the file `/usr/lib/64/libnls.so.1` from an Oracle Solaris 11.3 machine to the `/usr/lib/64` path in the Oracle Solaris 11.4 machine where Oracle Secure Backup 12.2 needs to be installed.

Bug 24355490

When installing or upgrading an Oracle Grid Infrastructure home on Oracle Solaris 10, if the desired software location resides under a soft link, then the Oracle Grid Infrastructure installer incorrectly sets the physical path as the software location.

Workaround:

Perform the following steps:

1. Set the Oracle Grid Infrastructure installer specifying the complete path to the desired Oracle home path:

```
Complete Oracle home path/gridSetup.sh
```

2. Proceed with the Oracle Grid Infrastructure installation.

Open Bugs Affecting Oracle Solaris

There are no open bugs affecting Oracle Solaris at the time of the release.

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Issues Affecting HP-UX Itanium for Oracle Database 19c

These topics contain last-minute features and changes for HP-UX Itanium for Oracle Database 19c.

Unsupported Products for HP-UX Itanium

In addition to the list of unavailable products or features in this release of Oracle Database 19c, the following products and features are not supported:

- Database Smart Flash Cache Support
- Oracle ASM Filter Driver Support

Product Support

There are no supported products or features for Oracle Database 19c on HP-UX Itanium at this time.

Linking Applications with Oracle Client Libraries for HP-UX Itanium

You must use the dynamic Oracle client libraries to link the client code on HP-UX Itanium.

Do not link the static Oracle client libraries.

Preinstallation Requirements for HP-UX Itanium

Refer to the installation guides for the preinstallation requirements for Oracle Database 19c.

Installation, Configuration, and Upgrade Issues for HP-UX Itanium

This topic describes information about issues that affect Oracle Database installation, configuration, and upgrade.

Bug 27367949

In some Oracle Database installation scenarios, Database Upgrade Assistant (DBUA) reports a prerequisite checks failure, and returns the following error:

```
Oracle OLAP API UPGRADED 18.1.0.0.0 00:00:18
Upgrade Datapatch Error: prereq checks failed!
Upgrade Datapatch 00:00:37
```

Further `catupgrd_datapatch_normal.log` returns the following error:

```
Connecting to database...OK
Gathering database info...done
Bootstrapping registry and package to current versions...done
Error: prereq checks failed!
verify_queryable_inventory returned ORA-20001: Latest xml inventory is
not loaded into table
Prereq check failed, exiting without installing any patches.
```

Workaround:

Start DBUA as a user with the same group ID as that of the Oracle user that owns the Oracle Database 18c Oracle home.

For example, if the user `asmadmin` is the group owner of the Oracle home on your system, change the user primary group to the `asmadmin` group using `newgrp`:

```
bash-4.3$ ls -l $ORACLE_HOME/bin/oracle
-rwsr-s--x 1 oracle asmadmin 1133380232 Feb 14 00:36 bin/oracle
bash-4.3$ newgrp asmadmin
bash-4.3$ $ORACLE_HOME/bin/dbua
```

Bug 28340043

In some Oracle Database installation scenarios, creating database using Database Configuration Assistant (DBCA) results in `INVALID JAVA VM` component or database upgrade using Database Upgrade Assistant (DBUA) reports a prerequisite checks failure and returns the following error:

```
Oracle OLAP API UPGRADED 18.1.0.0.0 00:00:18
Upgrade Datapatch Error: prereq checks failed!
Upgrade Datapatch 00:00:37
```

Further `catupgrd_datapatch_normal.log` returns the following error:

```
Connecting to database...OK
Gathering database info...done
Bootstrapping registry and package to current versions...done
Error: prereq checks failed!
verify_queryable_inventory returned ORA-20001: Latest xml inventory is
```

```
not loaded into table
Prereq check failed, exiting without installing any patches.
```

Workaround:

Start DBCA or DBUA as a user with the same group ID as that of the Oracle user that owns the Oracle Database 18c Oracle home.

For example, if the user `asmadmin` is the group owner of the Oracle home on your system, change the user primary group to the `asmadmin` group using `newgrp`:

```
bash-4.3$ ls -l $ORACLE_HOME/bin/oracle
-rwsr-s--x 1 oracle asmadmin 1133380232 Feb 14 00:36 bin/oracle
bash-4.3$ newgrp asmadmin
bash-4.3$ $ORACLE_HOME/bin/dbua
```

Bug 29198896

While duplicating Oracle Database as standby using Database Configuration Assistant (DBCA), internally, RMAN DUPLICATE tries to copy the password file from Oracle Automatic Storage Management (Oracle ASM) to Non-ASM or vice-versa. The password file is copied, but the clone password file is not readable and returns the following error:

```
"ORA-01017: invalid username/password; logon denied" on clone instance
reconnection"
```

Workaround:

If the source instance password file is on Oracle ASM, then define the clone instance password on Oracle ASM only, and when the source password file is on Non-ASM files system, then keep the clone instance password file on Non-ASM file system.

8

Issues Affecting the IBM AIX on POWER Systems Platform for Oracle Database 19c

These topics contain last-minute features and changes for Oracle Database 19c.

Unsupported Products for the IBM AIX on POWER Systems Platform

There are no unsupported products for the IBM AIX on POWER Systems Platform at this time. Refer to the list of unavailable products or features for all platforms in Oracle Database 19c.

Linking Applications with Oracle Client Libraries for the IBM AIX on POWER Systems Platform

You must use the dynamic Oracle client libraries to link the client code on Linux. Do not link the static Oracle client libraries.

Preinstallation Requirements for the IBM AIX on POWER Systems Platform

Refer to the installation guides for the preinstallation requirements for Oracle Database 19c.

Installation, Configuration, and Upgrade Issues for the IBM AIX on POWER Systems Platform

These topics describe information about issues that affect Oracle Database installation, configuration, and upgrade.

Bug 29053538

Oracle database instance at startup loads `libora_netlib.so`. This library has dependencies on IBM XL Fortran runtime libraries. If they are not installed on the system, startup fails with the following error:

```
ORA-40238: invalid linear algebra shared library
```

Workaround:

Install XL Fortran Runtime for AIX Fix Pack 10 (February 2018 PTF) for 15.1.

Download and install XL Fortran Runtime for AIX Fix Pack 10 (February 2018 PTF) for 15.1 from:

<https://www-01.ibm.com/support/docview.wss?uid=swg24044611>

Bug 29434250

If you install Oracle Database 19c or Oracle Grid Infrastructure 19c or upgrade Oracle Database 19c or Oracle Grid Infrastructure 19c from previous versions to 19c by registering with Enterprise Manager Cloud Control (EMCC), installer may crash.

Workaround:

Do not register with EMCC during install or upgrade. Instead, discover the host and add targets either using EMCC web console or Enterprise Manager Command Line Interface (EMCLI) commands after the install and upgrade is complete.

Bug 29052788

In some environments, every time the Dynamic Host Configuration Protocol (DHCP) lease is renewed, a different IP address is assigned. The Cross-Doman Protocol (CDP) daemon does not see these changes, and assumes the IP address has not changed unless the CDP resource is restarted. Example, when the SCAN is stopped. When the IP address changes, there is a window when CDP is unreachable by that IP, and the agent eventually executes a clean action and restarts.

Workaround:

If CDP is found to be offline when the SCAN VIP's IP changes, then use `srvctl start cdp` to restart it.

Bug 29178036

The shutdown abort of Oracle RAC One Node Database software on IBM AIX on Power Systems 7.1 does not finish quickly and results in failing to failover.

Workaround:

IBM AIX on Power Systems 8 or later, and AIX 7.2 use hardware compression for Active Memory Expansion (AME) and therefore can support the use of 64k pages with AME. On AIX 7.1 or earlier, 64k pages are not supported when AME is enabled, and 4k pages are used instead. In certain scenarios when using 4k pages with the Oracle Database, certain operations may be slower, including startup and shutdown of the database. Use of AME with the Oracle RAC One Node Database software is not recommended unless using AIX 8 or later and AIX 7.2 or later with 64k pages enabled.

Open Bugs Affecting the IBM AIX on POWER Systems Platform

These topics contain last-minute features and changes for Oracle Database 19c.

9

Issues Affecting Microsoft Windows for Oracle Database 19c

These topics contain last-minute features and changes for Microsoft Windows for Oracle Database 19c.

Unsupported Products for Microsoft Windows

There are no unsupported Microsoft Windows-specific products at this time.

Product Support

These are the supported products or features for Oracle Database 19c.

Oracle ACFS and Oracle ADVM Support

Although Oracle ADVM supports raw disks in Oracle Automatic Storage Management disk groups, Oracle ADVM device special files created through raw are not supported; Oracle ADVM only supports block device special files.

For the latest information about supported platforms and releases, see the Note 1369107.1 on My Oracle Support at <https://support.oracle.com>

Oracle Fail Safe Server Release 4.2.1 Support

Oracle Fail Safe Server, Release 4.2.1 is supported on the software listed in the following table:

Software	Release or Version
Oracle Database (Standard and Enterprise editions)	Oracle Database 11g Release 2 (11.2)
	Oracle Database 12c Release 1 (12.1)
	Oracle Database 12c Release 2 (12.2)
	Oracle Database 18c
	Oracle Database 19c
Microsoft Windows Platforms	Microsoft Windows Server 2012
	Microsoft Windows Server 2012 R2
	Microsoft Windows Server 2016
	Microsoft Windows Server 2019

Oracle Fail Safe Client Release 4.2.1 Support

Oracle Fail Safe Manager, the client, works with Oracle Fail Safe Server version 3.4.2.4 and later patch sets. Oracle Fail Safe Manager is supported on the following operating systems:

- Microsoft Windows Server 2012
- Microsoft Windows Server 2012 R2

- Microsoft Windows Server 2016
- Microsoft Windows Server 2019
- Windows 7
- Windows 8
- Windows 8.1
- Windows 10

For the latest certification information for Oracle Fail Safe, see the Certifications tab in My Oracle Support at <https://support.oracle.com>

Linking Applications with Oracle Client Libraries for Microsoft Windows

You must use the dynamic Oracle client libraries to link the client code on Microsoft Windows.

Do not link the static Oracle client libraries.

Preinstallation Requirements for Microsoft Windows

Refer to the installation guides for the preinstallation requirements for Oracle Database 19c.

Installation, Configuration, and Upgrade Issues for Microsoft Windows

These topics describe information about issues that affect Oracle Database installation, configuration, and upgrade.

Bug 20918120

Installing Oracle Real Application Clusters Database home with a Group Managed Services Account (gMSA) as the Oracle home user, fails with the following error if the gMSA name consists of more than 15 characters (including the domain name):

```
[INS-32101] Specified Oracle Home user does not exist
```

Workaround:

Use a gMSA name (including the domain name) that consists of less than 15 characters.

Bug 21325903

The deinstallation operation fails to remove Oracle home and displays `file in use` errors because the services and processes running from Oracle home are not removed completely before Oracle home removal.

Workaround:

Manually remove the Oracle home.

Bug 29426320

The following error occurs when running external procedures or Oracle Database Extensions for .NET procedures with a virtual user account:

```
ORA-28575 Unable to open RPC connection to external procedure agent
```

Workaround#1

Restart the Oracle listener service and the OracleClrAgent service using a non-virtual user account.

Workaround#2

Reinstall Oracle Database 19c and select a non-virtual user account.

Workaround#3

If you require a virtual user account, then set `sqlnet.authentication_services` to `NONE` in `SQLNET.ORA`.