Oracle® Database

Release Notes

12*c* Release 1 (12.1) for Oracle Solaris

E51863-03

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This document contains information that was not included in the platform-specific or product-specific documentation for this release. This document supplements *Oracle Database Readme*.

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) website:

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

This document contains the following topics:

- Certification Information
- Latest Upgrade Information
- Unsupported Products
- Content Specific to Oracle Database 12c Release 1 (12.1.0.1)
- Content Specific to Oracle Database 12c Release 1 (12.1.0.2)
- Documentation Accessibility

1 Certification Information

The latest certification information for Oracle Database 12*c* is available on My Oracle Support at:

https://support.oracle.com

2 Latest Upgrade Information

For late-breaking updates and best practices about preupgrade, postupgrade, compatibility, and interoperability discussions, refer to Note 1462240.1 on My Oracle Support that links to the "Upgrade Companion" page.

```
https://support.oracle.com
```

3 Unsupported Products

A list of unavailable features and products is available in section, "Features Not Available or Restricted in Oracle Database 12*c*," in *Oracle Database Readme*.

In addition to the items listed in Section 2, "Features Not Available or Restricted in Oracle Database 12*c*," in *Oracle Database Readme*, the following products or features are not supported:

ORACLE®

- Oracle Workload Manager

- Oracle Solaris Cluster

- Oracle RAC

- Oracle ASM

- Oracle Restart

- Oracle Clusterware

Database Smart Flash Cache Support

Database Smart Flash Cache is supported on Oracle Solaris and Oracle Linux only.

Oracle Automatic Storage Management Cluster File System (Oracle ACFS) and Oracle Automatic Storage Management Dynamic Volume Manager (Oracle ADVM) Support

Although Oracle ADVM supports raw disks in Oracle Automatic Storage Management disk groups, Oracle ADVM device special files created through raw(8) are not supported; Oracle ADVM only supports block device special files.

For the latest information about supported platforms and releases, refer to Note 1369107.1 on My Oracle Support.

https://support.oracle.com

Oracle ASM Filter Driver Support

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

4 Content Specific to Oracle Database 12c Release 1 (12.1.0.1)

The following content is specific to release 12.1.0.1:

- Installation, Configuration, and Upgrade Issues for Release 12.1.0.1

- Other Known Issues for Release 12.1.0.1

4.1 Installation, Configuration, and Upgrade Issues for Release 12.1.0.1

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

- Node Connectivity Failure Issue on Oracle Clusterware

- Prerequisite Check Fails When Installing Oracle Grid Infrastructure

- Oracle ACFS Drivers Fail to Load During Database Upgrade

- Default Non-English Language Fails Oracle RAC Database Installation and Upgrade

- Root Configuration Script Fails During Database Upgrade

- INS-10008 Error During Database Installation

- Oracle Grid Infrastructure Upgrade Issue

4.1.1 Node Connectivity Failure Issue on Oracle Clusterware

Cluster Verification Utility (CVU) reports intermittent node connectivity failure in the following conditions:

- During the prerequisite checks of an Oracle Database installation

- When running the `cluvfy` command

Workaround:

When installing the database, click **Check Again** to rerun the prerequisite checks to verify that the error does not appear.

In case of the `cluvfy` command, rerun the command to verify that the error does not appear.

> **Note:**   You may still encounter errors that passed verification in previous run but such errors are for different network interfaces.

This issue is tracked with Oracle bug 16040260.

4.1.2 Prerequisite Check Fails When Installing Oracle Grid Infrastructure

If iSCSI is used for Oracle ASM disk storage when installing Oracle Grid Infrastructure, then the prerequisite check may fail with the following error:

```
PRVF-5150 : Path disk_path is not a valid path on all nodes
```

Workaround:

Ignore the error.

This issue is tracked with Oracle bug 16044541.

4.1.3 Oracle ACFS Drivers Fail to Load During Database Upgrade

When upgrading Oracle Database release 11.2 to release 12.1, Oracle ACFS drivers may fail to load, and you may see one or more of the following error messages:

```
ACFS-9308: Loading installed ADVM/ACFS drivers.
ACFS-9320: Missing file: '/./oracleoks'
ACFS-9320: Missing file: '/./oracleadvm'
ACFS-9320: Missing file: '/./oracleacfs'
```

Workaround:

Rerun the root script or click **Retry** if using root automation. If the error still occurs, then repeat the workaround until the upgrade succeeds.

This issue is tracked with Oracle bug 15970384.

4.1.4 Default Non-English Language Fails Oracle RAC Database Installation and Upgrade

When installing or upgrading an Oracle RAC home on Solaris 10, the following error may occur if the default language is not English:

```
PRCT-1011 : failed to execute "srvctl". Details of the error: [couldn't set locale
correctly]
```

Workaround:

Install the North America (nam) package on the system, which includes the English language and character set, by executing the following steps as root:

1. Use lofiadm -a to mount an existing image (sol-10-u9-ga-x86-dvd.iso):

   ```
   lofiadm -a /mnt/ISO/sol-10-u9-ga-x86-dvd.iso /dev/lofi/1
   ```

2. Run lofiadm to verify the mounted block device and file to standard output:

   ```
   # lofiadm
   Block Device          File
   /dev/lofi/1                 /mnt/ISO/sol-10-u9-ga-x86-dvd.iso
   ```

3. Create the mount directory on the file system:

   ```
   # mkdir /mnt/iso
   ```

4. Use the mount command to mount the image:

   ```
   # mount -F hsfs -o ro /dev/lofi/1 /mnt/iso
   ```

5. Add North America (nam) regions:

   ```
   # localeadm -a nam  -d  /mnt/iso/Solaris_10/Product
   ```

6. List all the locales or regions installed on the current system:

   ```
   # localeadm -l
   ```

This issue is tracked with Oracle bug 14607661.

4.1.5 Root Configuration Script Fails During Database Upgrade

When you select Sudo as the root script automation option, Oracle Universal Installer automatically runs the configuration scripts using Sudo with the user account that you provide. However, the root configuration script may fail if the Sudo user name is different from the user installing the software, or there are other causes in configuration of your cluster member nodes that inhibit writes to directories required during installation. You may see the following error messages:

```
PROTL-3: Failed to create export file 'OLRUPGRADEFILE'
CLSRSC-169: Failed to create or upgrade OLR
```

Workaround:

Ensure that the root user has permissions to write Sudo user's home directory. After Oracle Universal Installer finishes running the scripts, you may reset the permissions.

This issue is tracked with Oracle bug 16242252.

4.1.6 INS-10008 Error During Database Installation

While performing Oracle Grid Infrastructure installation, if the Grid Naming Service (GNS) and Dynamic Host Configuration Protocol (DHCP) options are selected and automatic execution of root script is enabled, the installation may fail with the following error:

```
[INS-10008] Session Initialization failed
```

Workaround:

Remove the directory GI_HOME recursively before clicking the Install button on the summary page.

This issue is tracked with Oracle bug 16196582.

4.1.7 Oracle Grid Infrastructure Upgrade Issue

When upgrading Oracle Grid Infrastructure to release 12.1, Oracle Universal Installer may hang and the following error may show in the log file:

```
Exception in thread "AWT-EventQueue-0" java.lang.OutOfMemoryError: PermGen space
```

Workaround:

Run the following command:

```
./runInstaller -J-Xmx1024m -J-Xms150m
```

This issue is tracked with Oracle bug 16620650.

4.2 Other Known Issues for Release 12.1.0.1

The following section contains information about issues related to Oracle Database 12*c* and associated products:

- Issues While Exporting Oracle ACFS

- VARCHAR Storage Limitation in Pro*COBOL

- Using Projects with Oracle Grid Infrastructure Systems

- Linking Issue on Oracle Solaris on x86-64 (64-Bit)

- Memory Leak Issue on Oracle Solaris 11

- Issues in Creating Oracle ACFS Volume

- Oracle ACFS Restart Issue

4.2.1 Issues While Exporting Oracle ACFS

When adding a snapshot for export with High Availability Network File Storage (HANFS), if a single configured `exportfs` resource should be used for the root of the snapshot directory, `.ACFS/snaps`.

This limitation is due to the way that Solaris handles NFS exports of 64 bit inodes.

If more than one resource is used for snapshots, then the export options string from the first export resource to start is used, potentially disallowing clients' access to additional snapshots.

It is not possible to export the child of an already exported parent, or export the parent of an already exported child, assuming that the parent and the child are present on the same file system. Thus, when creating HANFS shares on Solaris, ensure that only a single root is exported for each file system, although directories that are peers can be exported to different clients.

This issue is tracked with Oracle bugs 15901493 and 15895156.

4.2.2 VARCHAR Storage Limitation in Pro*COBOL

The `VARCHAR` variable in a Pro*COBOL program can store up to 9999 (4-digits) characters on a SPARC 64-bit system. This is because the `COMP-5` qualifier is not available on a SPARC 64-bit system which limits the `VARCHAR` handling capability to 9999 characters by a Pro*COBOL application even if a 32K `VARCHAR` feature is used while creating a table.

Workaround:

Insert or retrieve data longer than 9999 characters in chunks using LOB read and write support by Pro*COBOL.

This issue is tracked with Oracle bug 14375964.

4.2.3 Using Projects with Oracle Grid Infrastructure Systems

If you are installing Oracle Grid Infrastructure 12*c* Release 1 (12.1.0), and you want to use Oracle Solaris Projects to manage system resources, then you can specify different default projects for different Oracle Database installation owners.

For example, if you have an Oracle Grid Infrastructure owner called grid, and you have two Oracle Database installation owners called oracle1 and oracle2, then you can specify different default projects for these grid installation owners such as mygridproj, myoradb1proj, and myoradb2proj respectively with their own resource control and settings.

Refer to your Oracle Solaris documentation for more information about configuring resources using Oracle Solaris Projects.

This issue is tracked with Oracle bug 11776492.

4.2.4 Linking Issue on Oracle Solaris on x86-64 (64-Bit)

If you attempt to link Pro*COBOL applications on Oracle Solaris 10 update 10 or Oracle Solaris 10 update 11, then the application may not link. The link editor may report the following error:

```
make: Fatal error: Command failed for target `build'
```

Workaround 1:

Upgrade to Oracle Solaris 11.

Workaround 2:

Edit the object file before running the link editor as follows:

```
% elfdump -cN.eh_frame foo

    Section Header[4]:  sh_name: .eh_frame
        sh_addr:      0x400378          sh_flags:   [ SHF_ALLOC ]
        sh_size:      0x6b8            sh_type:    [ SHT_PROGBITS ]
        sh_offset:    0x378            sh_entsize: 0
        sh_link:      0                sh_info:    0
        sh_addralign: 0x8
    % elfedit -e 'shdr:sh_type .eh_frame sht_amd64_unwind' foo
    % elfdump -cN.eh_frame foo
 .
    Section Header[4]:  sh_name: .eh_frame
        sh_addr:      0x400378          sh_flags:   [ SHF_ALLOC ]
        sh_size:      0x6b8            sh_type:    [ SHT_AMD64_UNWIND ]
        sh_offset:    0x378            sh_entsize: 0
        sh_link:      0                sh_info:    0
        sh_addralign: 0x8
```

This issue is tracked with Oracle bug 15827517.

4.2.5 Memory Leak Issue on Oracle Solaris 11

The Cluster Health Monitor executable, osysmond.bin, indicates a memory leak when running on a system with any of the Solaris 11 or 11.1 versions, including Solaris 11.1 SRU3.

Workaround:

Update your system to Solaris 11.1 SRU4.

This issue is tracked with Oracle bug 14602157.

4.2.6 Issues in Creating Oracle ACFS Volume

Oracle Automatic Storage Management Configuration Assistant (ASMCA) cannot be used to create Oracle ACFS volume with stripe column 1.

Workaround:

Use the asmcmd volcreate command or the ALTER DISKGROUP SQL statement to create the volume. After the volume is created, you can use ASMCA to create the Oracle ACFS file system.

This issue is tracked with Oracle bug 16347687.

4.2.7 Oracle ACFS Restart Issue

When the private network stops responding, Oracle Grid Infrastructure restarts the private network. However, Oracle ACFS remains offline.

Workaround:

Download and install patch associated with Oracle bug 16654282 from the My Oracle Support website.

This issue is tracked with Oracle bug 16654282.

5 Content Specific to Oracle Database 12c Release 1 (12.1.0.2)

The following content is specific to release 12.1.0.2:

- Preinstallation Requirements for Release 12.1.0.2
- Installation, Configuration, and Upgrade Issues for Release 12.1.0.2
- Other Known Issues for Release 12.1.0.2

5.1 Preinstallation Requirements for Release 12.1.0.2

Refer to the installation guides for the preinstallation requirements.

5.2 Installation, Configuration, and Upgrade Issues for Release 12.1.0.2

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

- Default Non-English Language Fails Oracle RAC Database Installation and Upgrade
- Prerequisite Check Fails When Installing Oracle Grid Infrastructure
- Errors When Upgrading Oracle Database

5.2.1 Default Non-English Language Fails Oracle RAC Database Installation and Upgrade

When installing or upgrading an Oracle RAC home on Solaris 10, the following error may occur if the default language is not English:

```
PRCT-1011 : failed to execute "srvctl". Details of the error: [couldn't set locale
correctly]
```

Workaround:

Install the North America (nam) package on the system, which includes the English language and character set, by executing the following steps as root:

1. Use `lofiadm -a` to mount an existing image (`sol-10-u9-ga-x86-dvd.iso`):

    ```
    lofiadm -a /mnt/ISO/sol-10-u9-ga-x86-dvd.iso /dev/lofi/1
    ```

2. Run `lofiadm` to verify the mounted block device and file to standard output:

    ```
    # lofiadm
    Block Device          File
    /dev/lofi/1           /mnt/ISO/sol-10-u9-ga-x86-dvd.iso
    ```

3. Create the mount directory on the file system:

    ```
    # mkdir /mnt/iso
    ```

4. Use the `mount` command to mount the image:

    ```
    # mount -F hsfs -o ro /dev/lofi/1 /mnt/iso
    ```

5. Add North America (nam) regions:

    ```
    # localeadm -a nam  -d  /mnt/iso/Solaris_10/Product
    ```

6. List all the locales or regions installed on the current system:

    ```
    # localeadm -l
    ```

This issue is tracked with Oracle bug 14607661.

5.2.2 Prerequisite Check Fails When Installing Oracle Grid Infrastructure

If iSCSI is used for Oracle ASM disk storage when installing Oracle Grid Infrastructure, then the prerequisite check may fail with the following error:

```
PRVF-5150 : Path disk_path is not a valid path on all nodes
```

Workaround:

Ignore the error.

This issue is tracked with Oracle bug 16044541.

5.2.3 Errors When Upgrading Oracle Database

When upgrading Oracle Database 12*c* Release 1 (12.1.0.1) to Oracle Database 12*c* Release 1 (12.1.0.2) or when using Oracle Database 12*c* Release 1 (12.1.0.1) with Oracle Grid Infrastructure 12*c* Release 1 (12.1.0.2) home, you may see one or more of the following error messages:

```
Failure to open parameter file (ORA-01078, ORA-01565, and ORA-17503)
ORA-00205: error in identifying control file
```

```
orapwd command during DBCA may complain: referenced symbol not found
```

Workaround:

Download and install patch 15881443 from the My Oracle Support website.

This issue is tracked with Oracle bug 15881443.

5.3 Other Known Issues for Release 12.1.0.2

The following section contains information about issues related to Oracle Database 12*c* and associated products:

- Issues While Exporting Oracle ACFS
- Oracle Inventory Group Issue When Running acfsroot install
- Memory Leak Issue on Oracle Solaris 11
- Using Projects with Oracle Grid Infrastructure Systems
- Linking Issue on Oracle Solaris on x86-64 (64-Bit)
- Oracle Database Time Statistics Issues Due to Incorrect Return Value for _lwp_info Function
- Oracle DBUA Error Due to Insufficient Heap Size Allocation

5.3.1 Issues While Exporting Oracle ACFS

When adding a snapshot for export with High Availability Network File Storage (HANFS), if a single configured `exportfs` resource should be used for the root of the snapshot directory, `.ACFS/snaps`.

This limitation is due to the way that Solaris handles NFS exports of 64 bit inodes.

If more than one resource is used for snapshots, then the export options string from the first export resource to start is used, potentially disallowing clients' access to additional snapshots.

It is not possible to export the child of an already exported parent, or export the parent of an already exported child, assuming that the parent and the child are present on the same file system. Thus, when creating HANFS shares on Solaris, ensure that only a single root is exported for each file system, although directories that are peers can be exported to different clients.

This issue is tracked with Oracle bugs 15901493 and 15895156.

5.3.2 Oracle Inventory Group Issue When Running acfsroot install

When running `acfsroot install` on each node of a cluster and the default Oracle Inventory group, `oinstall`, is only available through NIS, then the devices are created with the group owner of `oinstall`, which is correct. However, if you restart the system and reload the device drivers, the device permissions are set to `root:sys`, which is incorrect. The problem manifests when the `crsuser` attempts to manage the devices, and errors similar to the following appear:

```
ERROR at line 1:
ORA-15032: not all alterations performed
ORA-15477: cannot communicate with the volume driver
```

Workaround:

Add the Oracle Inventory group `oinstall` or the primary group of the installation owner to `/etc/group` before running `acfsroot install`, or before rebooting the server and reloading the drivers.

This issue is tracked with Oracle bug 16534869.

5.3.3 Memory Leak Issue on Oracle Solaris 11

The Cluster Health Monitor executable, `osysmond.bin`, indicates a memory leak when running on a system with any of the Solaris 11 or 11.1 versions, including Solaris 11.1 SRU3.

Workaround:

Update your system to Solaris 11.1 SRU4.

This issue is tracked with Oracle bug 14602157.

5.3.4 Using Projects with Oracle Grid Infrastructure Systems

If you are installing Oracle Grid Infrastructure 12*c* Release 1 (12.1.0), and you want to use Oracle Solaris Projects to manage system resources, then you can specify different default projects for different Oracle Database installation owners.

For example, if you have an Oracle Grid Infrastructure owner called `grid`, and you have two Oracle Database installation owners called `oracle1` and `oracle2`, then you can specify different default projects for these grid installation owners such as `mygridproj`, `myoradb1proj`, and `myoradb2proj` respectively with their own resource control and settings.

Refer to your Oracle Solaris documentation for more information about configuring resources using Oracle Solaris Projects.

This issue is tracked with Oracle bug 11776492.

5.3.5 Linking Issue on Oracle Solaris on x86-64 (64-Bit)

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```
make: Fatal error: Command failed for target `build'
```

Workaround 1:

Upgrade to Oracle Solaris 11.

Workaround 2:

Edit the object file before running the link editor as follows:

```
% elfdump -cN.eh_frame foo

    Section Header[4]:  sh_name: .eh_frame
        sh_addr:      0x400378          sh_flags:   [ SHF_ALLOC ]
        sh_size:      0x6b8             sh_type:    [ SHT_PROGBITS ]
        sh_offset:    0x378             sh_entsize: 0
        sh_link:      0                 sh_info:    0
        sh_addralign: 0x8
    % elfedit -e 'shdr:sh_type .eh_frame sht_amd64_unwind' foo
    % elfdump -cN.eh_frame foo
 .
    Section Header[4]:  sh_name: .eh_frame
```

```
sh_addr:     0x400378          sh_flags:  [ SHF_ALLOC ]
sh_size:     0x6b8             sh_type:   [ SHT_AMD64_UNWIND ]
sh_offset:   0x378             sh_entsize: 0
sh_link:     0                 sh_info:   0
sh_addralign: 0x8
```

This issue is tracked with Oracle bug 15827517.

5.3.6 Oracle Database Time Statistics Issues Due to Incorrect Return Value for _lwp_ info Function

On Oracle Solaris 11.1 SRU12, SRU13, and SRU14 versions, the return value for the `_ lwp_info()` function incorrectly displays a random non-zero value instead of a zero, and customers may run into different CPU run time calculation issues.

Workaround:

Upgrade to Oracle Solaris 11.1 SRU15 or newer kernel versions.

This issue is tracked with Oracle bug 17643628.

5.3.7 Oracle DBUA Error Due to Insufficient Heap Size Allocation

When using Oracle Database Upgrade Assistant (DBUA), you may see an `OutOfMemory` error due to insufficient heap size allocation.

Workaround:

Edit the `JRE_OPTIONS` in the DBUA script to reflect a higher heap size allocation of 512 M, as follows:

```
JRE_OPTIONS="${JRE_OPTIONS}
-Dsun.java2d.font.DisableAlgorithmicStyles=true
-DSET_LAF=$SET_LAF -Dice.pilots.html4.ignoreNonGenericFonts=true -mx512m
-XX:MaxPermSize=512M"
```

This issue is tracked with Oracle bug 19176203.

6 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.