Oracle9*i*

Release Notes

Release 2 (9.2.0.1.0) for Linux Intel (32-bit)

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Part No. A97349-01

This document accompanies Oracle9*i* release 2 (9.2.0.1.0) for Linux Intel (32-bit). Its contents supplement or supersede information in the installation guide for this release, or in the Oracle9*i* documentation library.

Topics:

- System Requirements
- Documentation
- Installation Issues
- Product-Related Issues
- Post-Installation Issues
- Known Bugs

System Requirements

Except as noted here, system requirements are in the installation guide for this release, and are current as of the release date.

Hard Disk Space Requirements

The space requirements listed on the Available Products window apply to installations that include a database. If you select the Software Only configuration type, then you will require 3 GB.

Kernel Parameters

The following information supplements the information on kernel parameters in the installation guide.

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- SHMSEG: This kernel parameter is no longer accessible to users on current kernel distributions. It can be ignored.

- SHMMNI: Leave SHMMNI set to the default value. This supersedes instructions in the installation guide to change the value.

- SHMALL: Leave SHMALL set to the default value. This supersedes instructions in the installation guide to change the value.

- SHMMAX: This kernel parameter should be set to half the size of physical RAM available on your system. The value for SHMMAX cannot exceed 4294967295.

Updated Requirements

Oracle Corporation updates these release notes online at the following site:

```
http://docs.oracle.com
```

If you need assistance with navigating the Oracle documentation site, refer to the following site:

```
http://docs.oracle.com/instructions.html
```

Refer also to the Certify Web Pages on Oracle*MetaLink*, which provide certified configuration information for Oracle and non-Oracle products. To access Certify:

1. Register or log in to Oracle*MetaLink* at the following Web address:

   ```
   http://metalink.oracle.com
   ```

2. Select Product Lifecycle from the Oracle*Metalink* navigation bar.

3. Select Certifications in the Product Lifecycle window navigation bar.

Oracle Universal Installer Version Update

Oracle9*i* release 2 (9.2.0.1.0), which is provided with the release, uses Oracle Universal Installer 2.2.0.12.0. This version number supersedes the version listed in the installation guide.

Documentation

Additional product README files are located in their respective product directories under the $ORACLE_HOME directory and in the $ORACLE_HOME/relnotes directory.

Documentation Errata for Oracle Real Application Clusters

In the *Oracle9i Installation Guide Release 2 (9.2.0.1.0) for UNIX Systems* section "Additional Steps to Perform as the Root User for Installing Oracle Real Application Clusters on HP, Linux, or Solaris," in Chapter 2, Pre-Installation, replace "ismod" in step 2 of the Linux section with "insmod."

Installation Issues

This section provides information about the following topics:

- Multiple CD-ROM Installation

- runInstaller Script

- Installing Databases with Database Configuration Assistant

- Database Migration

- Installing with Response Files

- Unzip Utility for Downloading and Installing Oracle Patches

Multiple CD-ROM Installation

During installation of Oracle9*i* release 2 (9.2.0.1.0), you will be prompted to insert additional CD-ROMs from the set that make up Oracle9*i* release 2 (9.2.0.1.0). After inserting the requested disk, change the path in the *Disk Location* text box to reflect the root directory of the newly mounted CD-ROM.

For example, when you insert Disk 3 with a directory path of `/cdrom/orcl920_3`, change the path in the *Disk Location* dialog to `/cdrom/orcl920_3`.

runInstaller Script

Because it is necessary to insert and eject more than one CD-ROM during installation, you must not launch Oracle Universal Installer either by running the `runInstaller` script from a shell where the current working directory is the CD-ROM mount point, or by clicking on the script in the *File Manager* window. In an X Window environment, it is possible to launch the Installer this way, but then the installation will fail because you will not be able to eject a software CD-ROM until you end the installation session.

Instead, use the full CD-ROM path in the command syntax:

```
$ cdrom_mount_path/runInstaller
```

where cdrom_mount_point corresponds to the directory where the CD-ROM is mounted.

Installing Databases with Database Configuration Assistant

Review the following information before running Database Configuration Assistant.

SYS and SYSTEM Password Change Requirement

If you use Database Configuration Assistant to create a database, be aware that you will be required to change the SYS and SYSTEM passwords at the end of the configuration process. This is a new security procedure designed to protect access to your data.

Database Migration

If you are upgrading from an Oracle release 8.0.6 database to Oracle9*i* release 2 (9.2.0.1.0) and you have Oracle *inter*Media installed on your system, then you cannot use Database Migration Assistant. You must migrate the database manually. For information on manual database migration, refer to *Oracle9i Database Migration Release 2 (9.2)*.

To upgrade from Oracle8 release 8.0.6 to Oracle9*i* release 2 (9.2.0.1.0), use the following procedure:

1. Upgrade the Linux operating system kernel on your system to the values indicated in *Oracle9i Installation Guide Release 2 (9.2.0.1.0) for UNIX Systems*.

2. Start up the Oracle 8.0.6 database

3. Run the Oracle Universal Installer as instructed in *Oracle9i Installation Guide Release 2 (9.2.0.1.0) for UNIX Systems*.

4. When prompted to select a database for upgrading, select the 8.0.6 database.

Installing with Response Files

For installation with a response file, the path to the response file must be the full path on the system. The Oracle Universal Installer does not handle relative paths properly.

Unzip Utility for Downloading and Installing Oracle Patches

An unzip utility is provided with Oracle9*i* release 2 (9.2.0.1.0) for uncompressing Oracle patches downloaded from Oracle*MetaLink*. The utility is located in the following directory:

```
$ORACLE_HOME/bin/
```

Product-Related Issues

This section provides information on the following topics:

- Character Sets
- Demo Schema
- Oracle Internet Directory (OID)
- Oracle Real Application Clusters

Character Sets

The following section provides information on restrictions and updates to character sets.

Oracle9*i* NCHAR Datatypes

In Oracle9*i* release 2 (9.2.0.1.0), the SQL NCHAR datatypes are limited to the Unicode character set encoding (UTF8 and AL16UTF16). Alternative character sets such as the fixed-width Asian character set JA16SJISFIXED in Oracle8*i* are no longer supported.

To migrate existing NCHAR, NVARCHAR, and NCLOB columns, export and import NCHAR columns, complete the following steps:

1. Export all SQL NCHAR columns from Oracle8*i*.
2. Drop the SQL NCHAR columns.
3. Migrate the database to Oracle9*i*.
4. Import the SQL NCHAR columns in to Oracle9*i*.

AL24UTFFSS Character Set

Oracle9*i* release 2 (9.2.0.1.0) does not support the Unicode character set AL24UTFFSS introduced in Oracle7. This character set was based on the Unicode standard 1.1, which is now obsolete.

Oracle9*i* release 2 (9.2.0.1.0) supports the Unicode database character sets AL32UTF8 and UTF8. These database character sets include the Unicode enhancements based on the Unicode standard 3.0.

To migrate the existing AL24UTFFSS database, upgrade your database character set to UTF8 before upgrading to Oracle9*i*. Oracle Corporation recommends that you use the Character Set Scanner for data analysis before attempting to migrate your existing database character set.

Character Set Scanner

Set the LD_LIBRARY_PATH variable to include the `$ORACLE_HOME/lib` directory before running the Character Set Scanner (csscan) from the `$ORACLE_HOME` directory. If you do not correctly set the LD_LIBRARY_PATH variable, then the csscan utility will fail.

Demo Schema

If you select a multibyte character set or UTF as the national character set in Oracle9*i* release 2 (9.2.0.1.0), then you must recreate the demo schema and the database installation.

For more information on creating schemas, schema dependencies and requirements, refer to the `readme.txt` file in the `$ORACLE_HOME/demo/schema` directory.

Oracle Internet Directory (OID)

Review the following information if you intend to install Oracle Internet Directory (OID).

Starting Up OID Server

By default, the OID server is started on port 389. If this port is unavailable, then OID server is started on a different port, which is logged in the following file:

`$ORACLE_HOME/ldap/install/oidca.out`

Before upgrading OID from release 8.1.7 to release 2 (9.2.0.1.0), you must obtain and install the patch for Oracle bug number 1981426. It is available in the OID release 8.1.7 section on Oracle*MetaLink*. When you have completed this task, proceed with the upgrade.

Custom Installation and Global Database Name

When performing a custom Oracle Internet Directory installation, do not change the global database name or the Oracle SID.

Upgrade from Enterprise Edition Oracle9*i* or Oracle8*i*

If you have installed in the same ORACLE_HOME either Oracle Internet Directory release 3.0.1.*x* and the complete release of Oracle9*i* (9.0.1) Enterprise Edition, or Oracle Internet Directory 2.1.1.*x* and the complete release of Oracle 8*i* (8.1.7) Enterprise Edition, then you must first upgrade Oracle Internet Directory to the release 9.2.0.*x.x* version, and then upgrade as a separate step either Oracle9*i* Enterprise Edition release 1 (9.0.1) or Oracle8*i* release 3 (8.1.7) to Oracle9*i* Enterprise Edition release 2 (9.2.0.*x.x*).

> **See Also:** *Oracle Internet Directory README* for more information on Oracle Internet Directory utilities, and necessary pre-upgrade and post-upgrade tasks.

Oracle Real Application Clusters

Review the following section if you will install Oracle Real Application Clusters.

Restrictions for Installing Real Application Clusters

If you are installing Oracle9*i* release 2 (9.2.0.1.0) Real Applications Clusters on a cluster that already contains an ORACLE_HOME for a previous release of Real Application Clusters, then you must run the Oracle Universal Installer from the cluster node with the oraInventory installation registry. Doing this ensures that product installation inventories are synchronized on the nodes with information about existing ORACLE_HOME directories.

Oracle Cluster Management Software Installation Issues

The following section describes differences between the Oracle Cluster Management Software (OCMS) 9.0 and 9.2.0.*x.x* versions, and outlines how to install OCMS to prepare a server cluster for installing Real Application Clusters.

Architecture and Configuration OCMS version 9.2.0.*x.x* consists of two processes: Cluster Manager (`oracm`), and Watchdog Daemon (`watchdogd`).

OCMS version 9.0.1.*x* had a third process, called Node Monitor (`oranm`), which had a configuration file, `nmcfg.ora` These files are now obsolete. In OCMS 9.2.0.*x.x*, Node Monitor's functions have been taken over by Cluster Manager. The Cluster Manager configuration file `cmcfg.ora` replaces `nmcfg.ora`.

The startup options for Watchdog Daemon are the same in both OCMS versions 9.0.1.*x* and 9.2.0.*x.x*. However, some Cluster Manager parameters,

parameter default values, and startup options have changed. Refer to the following table as a reference for these changes.

Parameter Name in 9.0.1.x	Parameter Name in 9.2.0.x.x	Comments
AutoJoin	Does not exist	Obsolete in 9.2.0.*x.x*
CmHostName	HostName	Renamed
CmServiceName	Does not exist	Obsolete in 9.2.0.*x.x*
CmServicePort	ServicePort	Renamed
DefinedNodes	PublicNodeNames PrivateNodeNames	The old parameter is replaced by the two new parameters
MissCount	MissCount	The default value is changed from 3 to 5
PollInterval	Does not exist	This parameter is no longer configurable by users
WatchdogMargin Wait	WatchdogTimerMargin WatchdogSafetyMargin	Old parameter is replaced by the two new parameters
/a:{*action*}	/a:{*action*}	The default value for the *action* variable is changed from 1 to 0
/d	Does not exist	Obsolete in 9.2.0.*x.x*
/v	Does not exist	Obsolete in 9.2.0.*x.x*
/e:{*filename*}	/l:{:*filename*}	Renamed
/x:{*size*}	/m:{*size*}	Renamed

Installing OCMS for the First Time to Prepare for Installing Real Application Clusters
To install OCMS on a system that has not had a previous version of OCMS installed, use the following procedure:

1. Preinstallation: determine the following parameter values to provide when prompted during OCMS installation:

   - PrivateNodeNames

   - PublicNodeNames

   - CmDiskFile

   - WatchdogTimerMargin

2. Use the Oracle Universal Installer to install OCMS. When prompted, provide parameter values.

The Oracle Universal Installer propagates OCMS to all nodes, creates `oracm` configuration files on all nodes, and copies `oracm` and `watchdogd` to all nodes.

> **See Also:** *Oracle9i Administrator's Reference Release 2 (9.2.0.1.0) for UNIX Systems*, Appendix F, for information about the fencing configuration, parameters, and ennoblement.

3. Exit the installer.

4. As root, restart the system.

5. Install Real Application Clusters.

Migrating OCMS from Version 9.0.1.*x* to 9.2.0.*x.x* You can run only one version of OCMS at a time, as it functions in effect as the operating system of the cluster. If two versions are running, then the cluster will run in an inconsistent state. To install OCMS version 9.2.0.*x.x* on a cluster with an existing OCMS version 9.0.1.*x*, complete the following tasks:

1. Stop all Oracle9*i* version 9.0.1.*x* instances on all nodes.

2. Stop all OCMS version 9.0.1.*x* `watchdogd`, `oracm`, and `oranm` processes on all nodes.

3. Start Oracle Universal Installer, and select OCMS installation.

4. When prompted to run the script to start OCMS version 9.2.0.*x.x*, first open another X window, and review the existing `cmcfg.ora` configuration file in the Oracle9*i* release 1 (9.0.1.*x*) ORACLE_HOME directory. It is at the following location:

   `$ORACLE_HOME/oracm/admin`

5. Change settings as necessary in the Oracle9*i* release 2 (9.2.0.1.0) ORACLE_HOME directory `cmcfg.ora` configuration file on each node to tune the parameters to meet your system environment requirements.

6. Run the OCMS script on each node.

7. Install Real Application Clusters.

Placing Datafiles On a Shared Non-OFA Cluster Configuration

Optimal Flexible Architecture (OFA) configuration is a standard for creating and configuring database files to be distributed across system resources. This standard improves system performance and database security. Oracle Corporation recommends that you use this standard. However, you are not required to use it.

If your ORACLE_HOME directory is not on a shared cluster filesystem partition, but you want to place datafiles, controlfiles, redo log files, or other database files on a shared cluster filesystem partition, then invoke DBCA using the following syntax to create the cluster database

```
$ dbca -datafileDestination pathname
```

where *pathname* is the location where you want files to be placed.

For example, to place datafiles in the path /ora/oradata, give the following command:

```
$ dbca -datafileDestination /ora/oradata
```

> **Note:** For more information on OFA, refer to *Oracle9i Administrator's Reference Release 2 (9.2.0.1.0) for UNIX Systems.*

Real Application Clusters Custom Installation Requirement

If you plan to create an Oracle Enterprise Manager repository in an existing database, and you plan to use the DRSYS tablespace for the repository, then ensure that the DRSYS tablespace raw device data file has an additional 50 MB of free space. This is in addition to the 250 MB size documented for this raw device.

Real Application Clusters and Database Upgrade Assistant

If you use Database Upgrade Assistant to upgrade an earlier Oracle database version (the "source" database) to Oracle9i release 2 (9.2.0.1.0) (the "target" database), then the upgraded database will always use the server parameter file SPFILE by default to store init.ora file parameters. If the source database also uses SPFILE (either a cluster filesystem file or a shared raw device), then the upgraded target database also uses the same SPFILE.

If the source database does not use an SPFILE, then the target database uses a default server parameter file, spfile.ora, which is located in the $ORACLE_HOME/dbs/ directory.

If your platform does not support a cluster file system, then you must move the SPFILE to a shared raw device, using the following procedure:

1. Log on to the system as root.

2. Create a shared raw device on shared storage that is bound to a file. The result should be similar to the following example:

    ```
    /dev/vx/rdsk/oracle_dg/dbname_spfile
    ```

    where *dbname* is the name of the database on your system.

3. Ensure that the shared raw device is visible on all the cluster member nodes.

4. Create binding to this shared raw device on all nodes, so that the bound file path that you created on step 2 points to the same raw device from all cluster member nodes.

5. Log in as the oracle user.

6. Create an SPFILE with the following commands:

```
$ sqlplus "/ as sysdba"
SQL> create pfile='?/dbs/initdbname.ora' from
spfile='?/dbs/spfile.ora';
SQL> create spfile='/dev/vx/rdsk/oracle_dg/dbname_spfile' from
pfile='?/dbs/initdbname.ora';
SQL> exit;
```

where *dbn6ame* is the name of your cluster database.

7. Go to the `$ORACLE_HOME/dbs` directory using the following command:

```
$ cd $ORACLE_HOME/dbs
```

8. Create an `$ORACLE_HOME/dbs/initsid.ora` file, where *sid* is the system identifier of the instance on the node. The `initsid.ora` file must contain the following line:

```
SPFILE='/dev/vx/rdsk/oracle_dg/dbname_spfile'
```

9. Copy the `initsid.ora` file to the remote nodes on which the cluster database has an instance with the following commands:

```
$ cd $ORACLE_HOME/dbs
$ rcp initsid.ora nodex:$ORACLE_HOME/dbs/initsidx.ora
```

where *sidx* is the system identifier of the instance on node *x*. Repeat the preceding `rcp` command for each member node of the cluster database.

10. Restart the cluster database with the following command syntax:

```
$ srvctl stop database -d dbname
$ srvctl start database -d dbname
```

> **Note:** Because Oracle9*i* release 2 (9.2.0.1.0) uses a new Oracle Cluster Manager software version, you cannot use Database Upgrade Assistant to upgrade Oracle Parallel Server version 8.1.7 or Oracle Real Application Clusters version 9.0.1. You must upgrade previous Real Application Clusters or Oracle Parallel Server databases manually.

Real Application Clusters and Database Configuration Assistant

The following section provides information on using Database Configuration Assistant (DBCA) to create a Real Application Clusters database.

Real Application Clusters Instance Management

After you have created a cluster database using DBCA, SYSDBA privileges are revoked for all users. As SYSDBA, you must grant SYSDBA privileges explicitly to the database user account that you plan to use for adding or deleting an instance to or from the cluster database.

For example, to grant SYSDBA privileges to the administrative user SYS, issue the following commands:

```
$ sqlplus "/ as sysdba"
SQL> grant sysdba to sys;
SQL> exit;
```

Platform-Specific Product Information

The following product information in this section supersedes the information in the installation guide for Oracle9*i* release 2 (9.2.0.1.0) on Linux.

- Precompiler Options:
    - Pro*COBOL is not supported.
    - Pro*FORTRAN is not supported.
    - SQL Module for Ada is not supported.
- Oracle Advanced Security:
    - Radius challenge response authentication is not supported.
    - CyberSafe is not supported.
    - DCE Integration is not supported.
    - Entrust is not supported.

Post-Installation Issues

This section presents issues that can occur during post-installation:

Control File Size Limits

In addition to the database, a number of other Oracle features use control files to record metadata. The maximum size of control files is limited by the size of the minimum data block size that your operating system permits. On Linux, the minimum data block size is 2048 bytes, and the maximum size of control files is 20000 database blocks.

How to Determine Whether Segments or Tablespaces are Using Compression

The following section provides additional information about database management.

Segments and Compression Settings

To find out which database segments are using compression, log in to the database as the user SYS, and create the view `all_segs` with the following create or replace view statement:

```
SQL> create or replace view all_segs
     (owner, segment_name,
      partition_name, spare1
as
select u.name, o.name, o.subname, s.spare1
from sys.user$ u, sys.obj$ o, sys.ts$ ts, sys.sys_objects so,
     sys.seg$ s, sys.file$ f
where s.file# = so.header_file
   and s.block# = so.header_block
   and s.ts# = so.ts_number
   and s.ts# = ts.ts#
   and s.ts# = so.object_id
   and o.owner# = u.user#
   and s.type# = so.object_type_id
   and s.ts# = f.ts#
   and s.file# = f.relfile#
union all
select u.name, un.name, NULLL, NULL
from sys.user$ u, sys.ts$ ts, sys.undo $ un, sys.seg$ s,
     sys.file$ f
where s.file# = un.file#
   and s.block# = un.block
   and s.ts# = un.ts#
   and s.ts# = ts.ts#
```

```
   and s.user# = u.user#
   and s.type# in (1, 10)
   and un.status$ != 1
   and un.ts# = f.ts#
   and un.file# = f.relfile#
union all
select u.name, to_char(f.file#)|| '.' || to_char(s.block#), NULL, NULL
from sys.user$ u, sys.ts$ ts, sys.seg$ s, sys.file$ f
where s.ts# = ts.ts#
   and s.user# = u.user#
   and s.type# not in (1, 5, 6, 8, 10)
   and s.ts# = f.ts#
   and s.file# = f.relfile#
/
```

After creating this view, you can issue queries against the view to find out whether a segment currently is compressed, as illustrated in the following examples:

- To determine if a segment is currently compressed, apply the following predicate in a query to the column spare1:

  ```
  bitand(spare1, 2048) > 0
  ```

  For example, to see if segments currently are compressed, issue a statement similar to the following:

  ```
  SQL> select * from all_segs where bitand(spare1,2048) > 0;
  ```

- To determine if a segment contains any compressed blocks, apply the following predicate in a query:

  ```
  bitand(spare1, 4096) > 0
  ```

  For example, to see which segments contain any compressed blocks, issue a statement similar to the following:

  ```
  SQL> select * from all_segs where bitand(spare1, 4096) > 0;
  ```

Tablespaces and Compression Settings

When you want to determine compression settings on a table space, log in as SYS, and create the view compression_ts with the following create or replace view statement:

```
SQL> create or replace view compression_ts (tablespace_name, flags) as
select ts.name, ts.flags from
sys.ts$ ts where ts.online$ !=3;
```

After creating this view, you can issue queries against it to find out the compression state of tablespaces, such as determining if a tablespace is currently set as DEFAULT COMPRESS, or DEFAULT NOCOMPRESS, as illustrated in the following examples:

- To determine if a tablespace is currently set as DEFAULT COMPRESS, use the following predicate:

  ```
  bitand(flags, 64) > 0
  ```

  For example, to see which tablespaces are currently DEFAULT COMPRESS, issue a statement similar to the following:

  ```
  SQL> select * from compression_ts where bitand(flags, 64) > 0
  ```

- To determine if a tablespace is currently set as DEFAULT NOCOMPRESS, use the following predicate:

  ```
  bitand(flags, 64) == 0
  ```

  For example, to see which tablespaces are currently DEFAULT NOCOMPRESS, issue a statement similar to the following:

  ```
  select * from compression_ts where bitand(flags, 64) == 0;
  ```

Known Bugs

The following is a list of known bugs that affect Oracle9*i* release 2 (9.2.0.1.0):

Error Installing OLAP CWMLITE Tablespace

During installation, if you select Online Analytic Processing (OLAP) services, perform multiple installations on the same system, and create new databases during these installations, then CWMLite may have an invalid OLAP CWMLITE tablespace registry. Oracle Corporation has assigned bug identification number 2359208 to track this problem.

To work around this problem, use the following procedure after you have completed installation:

1. Ensure that the database and the listener are running.

2. Using the following command, start SQL*Plus as the administrative user SYS:

   ```
   sqlplus "/ as sysdba"
   ```

3. Using the following command, enable the display of text within the PL/SQL block:

   ```
   SQL> set serveroutput on;
   ```

4. Using the following command, verify whether the OLAP CWMLITE tablespace is valid:

```
SQL> execute
dbms_output.put_line(sys.dbms_registry.is_valid('AMD'));
```

If the preceding command returns 0, then the OLAP CWMLITE tablespace is invalid. Go to step 5.

If the preceding command returns 1, then the OLAP CWMLITE tablespace is valid, and no further testing needs to be done.

5. If the OLAP CWMLITE tablespace is invalid, turn on echoing with the following command:

```
SQL> execute cwm2_olap_manager.Set_Echo_on;
```

6. Validate the OLAP CMWLITE tablespace with the following command:

```
SQL> execute cwm2_olap_installer.Validate_CWM2_Install;
```

After entering the preceding command, the OLAP CWMLITE registry is validated. During this process, screen messages list database objects such as Dimension, Dimension Attribute, and Level, and where these objects are created.

7. When the output stops, enter the following command to verify that the OLAP CWMLITE registry is now valid:

```
SQL> execute
dbms_output.put_line(sys.dbms_registry.is_valid('AMD'));
```

If the preceding command returns 0, then the OLAP CWMLITE registry is still invalid. Review your installation logs for other errors.

If the preceding command returns 1, then the OLAP CWMLITE tablespace is valid, and no further testing needs to be done.

nCipher Secure Accelerator Issue in Oracle Advanced Security

Using nCipher Secure Accelerator with multithreaded Oracle Applications will cause segmentation violations, due to a known issue with nCipher. Oracle Corporation has assigned Oracle Bug identification number 2353933 to track this problem. Monitor this bug for status and certification information for nCipher support on Linux.