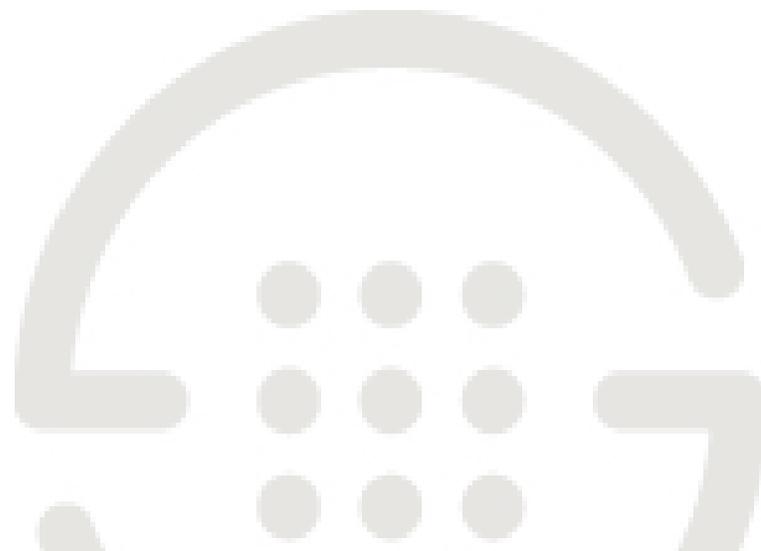




Installing and Configuring Oracle 12c R2 on Linux for Use with the ETM[®] System

v7.1.1 Build 47 or Later



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Oracle 12c R2 (12.2.0.1): Installation and Configuration on Linux for the ETM[®] Database

Introduction

Two versions of the ETM[®] System have been tested to support Oracle 12c Release 2 (12.2.0.1) in specific configurations using drivers from previous Oracle versions. Due to extensive changes to the driver for 12.2.0.1, it is not yet supported with the ETM System. Support for that driver is planned for a subsequent ETM System update.

Only the following configurations are supported with Oracle 12.2.0.1:

- **ETM[®] System v7.1.2 Build 74** using one of the following drivers:
 - **ojdbc6** from Oracle 11.2.0.4
 - **ojdbc7** from Oracle 12.1.0.2
- **ETM[®] System v7.1.1 Build 47** using the following driver:
 - **ojdbc6** from Oracle 11.2.0.4

This document explains how to install the Oracle 12c R2 (12.2.0.1) software on Linux for use with the ETM[®] System, how to run the Perl scripts to create the ETM database, and how to complete other required system configuration to prepare the system for use with the Database. Enterprise Edition, Standard Edition, and Standard Edition One are supported. Personal Edition is not supported.

IMPORTANT: This document applies to Oracle 12.2.0.1 ONLY.

NOTES::

- Ensure that no cron jobs run while you are running the Oracle Universal Installer or you may encounter installation problems, particularly if temporary files used in the installation are cleaned up before it completes.
- Do not install Oracle Database 12c software into an existing Oracle home.

- If you have had an existing installation on your system, and you are using the same user account to install this installation, then unset the ORACLE_HOME, ORACLE_BASE, ORACLE_SID, TNS_ADMIN environment variables and any other environment variable set for the Oracle installation user that is connected with Oracle software homes.
- Refer to the Oracle 12.2 database installation guide for instructions for configuring your system prior to installing the software. and then installing the Oracle database software. **Note:** See the important information below about requirements for the ETM System before you begin software installation.

Installation and Configuration

Install the Oracle 12c R2 Software

Install the Oracle 12c R2 software in accordance with the Oracle documentation. Available at <https://docs.oracle.com/en/database/oracle/oracle-database/12.2/ldb/index.html>

IMPORTANT: During software installation, ensure that the following requirements are met for use with the ETM System:

- English language settings are required.
- **Select Installation Option** dialog box—Select **Install database software only**
- **Select Database Installation Option** dialog box—Select **Single instance database installation**
- **System Class** dialog box—Select **Server class**
- **Typical Install Configuration** dialog box—
 - **Database edition**—**Enterprise, Standard, or Standard One** are supported. Personal Edition is not supported.
 - Clear **Create container database**

Adding ActivePerl to Your System PATH

Active Perl is used to run the database creation and configuration scripts. Oracle 12c (Enterprise and Standard) includes a version of Active Perl with the installation.

IMPORTANT Be sure that the ActivePerl "bin" directory is in your system PATH variable.

Running the Oracle Database Configuration Script

To run the database creation and configuration script

1. Open a command prompt as Administrator in the ETM scripts directory: **<INSTALL_DIR>/scripts/Oracle.**
2. At the prompt, type: **oracle_install.pl**

3. Follow the onscreen prompts.
 - Some prompts provide default values that you can accept by pressing ENTER. These are denoted by square brackets.
 - Example input is denoted by parentheses. You must type a value for these items; no default values are provided.

**Sample output of
running
oracle_install.pl**

```
Script started on Thu 21 Feb 2019 09:52:50 AM CST
]0;oracle@localperf-mssmall-5141:/opt/SecureLogix/ETM/scripts/Oracle-
12[?1034h[oracle@localperf-mssmall-5141 Oracle-12]$ perl ./oracle_install.pl

SecureLogix Corporation's DB Creation Utility
Version: 2.0

Please enter your OS Type (DOS/UNIX) [DOS]: UNIX
Please enter your Domain Name (securelogix.com): slc.com
slc.com - Is this correct? (y/n) [n]: y
Please enter your Host Address [10.1.51.41]:
10.1.51.41 - Is this correct? (y/n) [n]: y
Please Enter the value for ORACLE_BASE (/u01/app/oracle/): /u01/app/oracle/
Are you sure you want to set ORACLE_BASE to /u01/app/oracle/? (y/n): y
Please Specify the Oracle version. (11 or 12): 12
Found Environment variable ORACLE_HOME
Found ORACLE_HOME environment variable /u01/app/oracle/product/12.2.0/db_1/
Found directory /u01/app/oracle/product/12.2.0/db_1/
Set ORACLE_HOME to: '/u01/app/oracle/product/12.2.0/db_1/'? (y/n) [y]:
Set ORACLE_DATA to: '/u01/app/oracle/product/12.2.0/db_1/oradata/'? (y/n)
[y]:
Please Enter the value for ORACLE SID: ora_test
ora_test - Is this correct? (y/n) [Y]:
Please enter the listener port for Oracle [1521]:
```

```
1521 - Is this correct? (y/n) [y]:
Creating Data Directories for SID: ora_test
Attempting to create directory: /u01/app/oracle/admin/ora_test/ ...Success.
Attempting to create directory: /u01/app/oracle/admin/ora_test/adhoc/
...Success.
Attempting to create directory: /u01/app/oracle/admin/ora_test/arch/
...Success.
Attempting to create directory: /u01/app/oracle/admin/ora_test/bdump/
...Success.
Attempting to create directory: /u01/app/oracle/admin/ora_test/cdump/
...Success.
Attempting to create directory: /u01/app/oracle/admin/ora_test/create/
...Success.
Attempting to create directory: /u01/app/oracle/admin/ora_test/exp/
...Success.
Attempting to create directory: /u01/app/oracle/admin/ora_test/pfile/
...Success.
Attempting to create directory: /u01/app/oracle/admin/ora_test/udump/
...Success.
Attempting to create directory:
/u01/app/oracle/product/12.2.0/db_1/oradata/ora_test/ ...Success.
Would you like the script to create the orapwd file? (y/n) [y]:
Would you like the script to modify the listener.ora file? (y/n) [y]:
Would you like the script to modify the tnsnames.ora file? (y/n) [y]:
Would you like to create the init.ora file for this database? (y/n) [y]:
Would you like to generate the Oracle scripts to generate the database?
(y/n) [y]:
Please enter the preferred Tablespace name [ETM]:
Please enter the ETM User name [etmuser]:
Please specify the password for the ETM User: etmpass
Please re-enter the password for the ETM User: etmpass
Would you like to generate the Oracle scripts to generate a non-owner ETM
application user? (y/n) [n]: n
Create Database Sql script written to:
/u01/app/oracle/admin/ora_test/create/create_db_ora_test.sql
These scripts contain the details of how the database
will be created. If you would like to configure the
```

tablespaces, redo files, rollback segments, or other parameters, please modify this file before running it.
Would you like to run the Oracle scripts to generate the database? (y/n)
[y]:
Please enter the password for database user 'sys' [change_on_install]:
<type_complex_password_here>
/u01/app/oracle/product/12.2.0/db_1/bin//sqlplus "sys/<password> AS SYSDBA"
@/u01/app/oracle/admin/ora_test/create/create_db_ora_test.sql

SQL*Plus: Release 12.2.0.1.0 Production on Thu Feb 21 09:55:38 2019

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Connected to an idle instance.

SQL>

SQL> REM * Actually starts the database instance

SQL> startup nomount pfile="/u01/app/oracle/admin/ora_test/pfile/init.ora"
ORACLE instance started.

Total System Global Area 536870912 bytes
Fixed Size 2926472 bytes
Variable Size 176162936 bytes
Database Buffers 352321536 bytes
Redo Buffers 5459968 bytes

SQL>

SQL> REM * Creates the physical database. Feel free to customize the redo logs here.

SQL> CREATE DATABASE ora_test

- 2 MAXLOGFILES 32
- 3 MAXLOGMEMBERS 2
- 4 MAXLOGHISTORY 1
- 5 MAXDATAFILES 254
- 6 MAXINSTANCES 1

```

7 MAXLOGHISTORY 5000
8 DATAFILE
'/u01/app/oracle/product/12.2.0/db_1/oradata/ora_test/system01.dbf' SIZE
150M REUSE AUTOEXTEND ON NEXT 10240K MAXSIZE UNLIMITED
9 EXTENT MANAGEMENT LOCAL
10 SYSAUX DATAFILE
'/u01/app/oracle/product/12.2.0/db_1/oradata/ora_test/sysaux01.dbf' SIZE
120M REUSE AUTOEXTEND ON NEXT 10240K MAXSIZE UNLIMITED
11 SMALLFILE DEFAULT TEMPORARY TABLESPACE TEMP TEMPFILE
'/u01/app/oracle/product/12.2.0/db_1/oradata/ora_test/temp01.dbf' SIZE 500M
REUSE AUTOEXTEND ON
12 SMALLFILE UNDO TABLESPACE "UNDOTBS1" DATAFILE
'/u01/app/oracle/product/12.2.0/db_1/oradata/ora_test/undotbs01.dbf' SIZE
500M REUSE AUTOEXTEND ON
13 LOGFILE
'/u01/app/oracle/product/12.2.0/db_1/oradata/ora_test/redo01.log' SIZE 10M,
14 '/u01/app/oracle/product/12.2.0/db_1/oradata/ora_test/redo02.log'
SIZE 10M,
15 '/u01/app/oracle/product/12.2.0/db_1/oradata/ora_test/redo03.log'
SIZE 10M;

```

Database created.

SQL>

```

SQL> CREATE TABLESPACE "ETM" LOGGING
2 DATAFILE
'/u01/app/oracle/product/12.2.0/db_1/oradata/ora_test/ETM01.dbf' SIZE 100M
3 AUTOEXTEND ON NEXT 10M
4 EXTENT MANAGEMENT LOCAL;

```

Tablespace created.

SQL>

```

SQL> REM * Create the default user for use with the system.
SQL> CREATE USER etmuser PROFILE "DEFAULT" IDENTIFIED BY "etmpass"
2 DEFAULT
3 TABLESPACE "ETM" TEMPORARY

```

4 TABLESPACE "TEMP" ACCOUNT UNLOCK;

User created.

SQL>

SQL> REM * Explicitly grant the required system privileges. We explicitly grant

SQL> REM * the privileges as opposed to granting them via roles due to the fact

SQL> REM * that when running jobs via DBMS_JOB.RUN() roles are ignored. Since

SQL> REM * we use DBMS_JOB to run various maintenance procedures, we go ahead

SQL> REM * and explicitly grant the privileges to cover all our bases. (For more

SQL> REM * information refer to the Oracle Database documentation sets for the

SQL> REM * corresponding Oracle version regarding the DBMS_JOB package).

SQL> GRANT ALTER SESSION TO etmuser;

Grant succeeded.

SQL> GRANT CREATE PROCEDURE TO etmuser;

Grant succeeded.

SQL> GRANT CREATE SEQUENCE TO etmuser;

Grant succeeded.

SQL> GRANT CREATE SESSION TO etmuser;

Grant succeeded.

SQL> GRANT CREATE MATERIALIZED VIEW TO etmuser;

Grant succeeded.

```
SQL> GRANT CREATE TABLE TO etmuser;
```

Grant succeeded.

```
SQL> GRANT CREATE TRIGGER TO etmuser;
```

Grant succeeded.

```
SQL> GRANT CREATE VIEW TO etmuser;
```

Grant succeeded.

```
SQL> GRANT CREATE ANY SYNONYM TO etmuser;
```

Grant succeeded.

```
SQL> GRANT DROP ANY SYNONYM TO etmuser;
```

Grant succeeded.

```
SQL> GRANT SELECT ANY DICTIONARY TO etmuser;
```

Grant succeeded.

```
SQL> GRANT EXECUTE ON DBMS_LOCK to etmuser;
```

Grant succeeded.

```
SQL>
```

```
SQL> REM * By default, just grant the user unlimited use of the tablespaces.
SQL> REM * DBAs may optionally revoke this grant and set up specific quotas
SQL> REM * for the various tablespaces.
SQL> GRANT UNLIMITED TABLESPACE TO etmuser;
```

Grant succeeded.

```
SQL>
```

```
SQL>
```

```
SQL>
```

```
SQL> spool off
```

```
SQL> EXIT
```

```
Disconnected from Oracle Database 12c Enterprise Edition Release 12.2.0.1.0
- 64bit Production
```

With the Partitioning, OLAP, Advanced Analytics and Real Application Testing options

Database creation script executed. Verify output and press 'y' to continue (y/n) [y]:

Would you like to generate the initialization script that needs to be run by sys? (y/n) [y]:

Sys Init Sql script written to:

```
/u01/app/oracle/admin/ora_test/create/sys_init_ora_test.sql
```

Would you like to run the 'sys db init' scripts to initialize the database? (y/n) [y]:

Depending on the system, this script may require up to 30 minutes to complete.

Please be patient. To verify script is running, you can check the log file at:

```
/u01/app/oracle/admin/ora_test\create\sys_init_ora_test.log and make sure data is being written to file.
```

```
/u01/app/oracle/product/12.2.0/db_1/bin//sqlplus "sys/<password> AS SYSDBA"
@/u01/app/oracle/admin/ora_test/create/sys_init_ora_test.sql > /dev/null
```

Sys Init Sql script executed. Check sys_init_ora_test.log to verify status

Would you like to generate the initialization script that needs to be run by system? (y/n) [y]:

```
System Init Sql script written to:
/u01/app/oracle/admin/ora_test/create/system_init_ora_test.sql

Would you like to run the 'system db init' scripts to initialize the
database? (y/n) [y]:

Please enter the password for database user 'system' [manager]:

/u01/app/oracle/product/12.2.0/db_1/bin//sqlplus "system/manager "
@/u01/app/oracle/admin/ora_test/create/system_init_ora_test.sql > /dev/null

System Init Sql script executed.  Check system_init_ora_test.log to verify
status

/u01/app/oracle/product/12.2.0/db_1/bin//sqlplus "sys/<password> AS SYSDBA"
@/u01/app/oracle/admin/ora_test/create/post_create_grants.sql
```

SQL*Plus: Release 12.2.0.1.0 Production on Thu Feb 21 10:40:43 2019

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Connected to:

Oracle Database 12c Enterprise Edition Release 12.2.0.1.0 - 64bit Production
With the Partitioning, OLAP, Advanced Analytics and Real Application Testing
options

Grant succeeded.

Disconnected from Oracle Database 12c Enterprise Edition Release 12.2.0.1.0
- 64bit Production

With the Partitioning, OLAP, Advanced Analytics and Real Application Testing
options

End of SecureLogix Corporation's DB Creation Utility

```
]0;oracle@localperf-mssmall-5141:/opt/SecureLogix/ETM/scripts/Oracle-
12[oracle@localperf-mssmall-5141 Oracle-12]$ exit
```

Script done on Thu 21 Feb 2019 10:40:48 AM CST

Configure the TNS Listener

A listener with a default name of LISTENER is created when you install the Oracle software, but it must be started or restarted to update it with the configuration for the ETM Database..

To configure the TNS Listener

1. Open a command prompt as root. and type `lsnrctl`.
2. If a message similar to the following appears, the listener is not running.

```
Connecting to (ADDRESS=(PROTOCOL=TCP) (HOST=127.0.0.1) (PORT=1521))
```

```
TNS-12541: TNS: no listener
```

```
TNS-12560: TNS: protocol adapter error
```

```
TNS-00511: No listener
```

```
64-bit Windows Error: 61: Unknown error
```

3. If the listener is not running, type: `lsnrctl start`
4. If the listener is running, stop it by typing: `lsnrctl stop`
5. When it stops, restart it by typing: `lsnrctl start`
6. When it restarts, output should appear showing that it is listening for the ETM instance.

Copy the Database Driver to Required Locations

After installing and configuring the database, copy the supported database driver to each of the following ETM System installation directories:

- The ETM Server.
- Any remote Report Server.
- Any remote ETM Database Maintenance Tool.

Remote ETM System Clients do not require the driver file.

Only the following configurations are supported with Oracle 12.2.0.1:

- **ETM[®] System v7.1.2 Build 74 or later** using one of the following drivers:
 - **ojdbc6** from Oracle 11.2.0.4
 - **ojdbc7** from Oracle 12.1.0.2
- **ETM[®] System v7.1.1 Build 47** using the following driver:
 - **ojdbc6** from Oracle 11.2.0.4

You can download the supported drivers from the Oracle website.

Edit Configuration Files

Due to changes in the Oracle 12c driver, configuration files for the ETM Server, Report Server, and ETM Database Maintenance Tool must be edited to enable the ETM System to connect to the database.

ETM Server Configuration File

To edit the ETM Server configuration file

1. On the ETM Server host, open the file **ETMManagementServer.cfg** (Windows) or **ETMManagementServer.cfg** (Linux) in a text editor. This file is at the root of the ETM Management Server installation directory.
2. Locate the line labeled :

```
# Java switches to supply to the Java Virtual Machine.
```

3. At the end of the line, append the following switch:

```
-Doracle.jdbc.autoCommitSpecCompliant=false
```

4. The new line should look like the following:

```
switches=-Xmx512M -Djava.rmi.server.useLocalHostName=true -  
Dsun.java2d.noddraw=true -Doracle.jdbc.autoCommitSpecCompliant=false
```

5. Save the file.

Report Server Configuration File

To edit the Report Server configuration file

1. On the Report Server host, open the file **ETMReportServer.cfg** in a text editor. This file is at the root of the ETM System installation directory.
2. Locate the line labeled:

```
# The switches to use when creating the java environment that will run the  
# ServerActivator.
```

3. At the end of the line, append the following switch:

```
-Doracle.jdbc.autoCommitSpecCompliant=false
```

4. The new line should look like the following::

```
App_Switches=-Djava.security.policy=policy -Dsun.java2d.noddraw=true -  
Doracle.jdbc.autoCommitSpecCompliant=false
```

5. Locate the line labeled:

```
# The switches to use when launching the rmid executable
```

6. At the end of the line, append the following switch:

```
-Doracle.jdbc.autoCommitSpecCompliant=false
```

7. The new line should look like the following::

```

RMID_Switches=-J-Xrs -J-Djava.rmi.server.useLocalHostName=true -J-
Djava.security.policy=policy -J-Dsun.java2d.noddraw=true -J-
Djava.rmi.server.logCalls=true -C-server -C-Xmx512M -C-
Djava.rmi.server.useLocalHostName=true -C-Djava.security.policy=policy
-C-Dsun.java2d.noddraw=true -C-
Djava.class.path=".;.;activation.jar;comm.jar;jakarta-oro-
2.0.jar;log4j-
1.2.8.jar;mail.jar;ojdbc6.jar;ojdbc14.jar;report11_pro.jar;report12_pro
.jar;slc-crypt.jar;TeleWall.jar" -C-
Doracle.jdbc.autoCommitSpecCompliant=false

```

8. Save the file.

Database Maintenance Tool Configuration File

To edit the Database Maintenance Tool configuration file

1. On the Database Maintenance Tool host, open the file **ETMDBMaintTool.cfg** in a text editor. This file is at the root of the ETM System installation directory.
2. Locate the line labeled:

```
# Java switches to supply to the Java Virtual Machine.
```

1. At the end of the line, append the following switch:

```
-Doracle.jdbc.autoCommitSpecCompliant=false
```

The new line should look like the following:

```
switches=-client -Xmx200M -Dsun.java2d.noddraw=true
-Doracle.jdbc.autoCommitSpecCompliant=false
```

2. Save the file.

Where to Go From Here

The Oracle 12c ETM Database is now installed, running, and configured with the ETM System user and necessary permissions and privileges. If the ETM Management Server is installed on a different computer from the database, continue with "Install the Oracle Client Tools" on page 15 . If the ETM Server is on the same computer as the database, continue with "Connect with the ETM[®] Database Maintenance Tool" on page 24.

See the *ETM[®] System Installation Guide* for complete ETM Software installation and configuration instructions.

Install the Oracle Client Tools

If the ETM[®] Management Server is installed on the same computer as Oracle, you do not need to install the Oracle Client Tools separately, since they are installed as part of the database software. Continue with "Connect with the ETM[®] Database Maintenance Tool" on page 24. However, if the ETM Management Server is installed on a different computer from the database, you need to install the Oracle Client Tools on the computer on which the ETM Management Server is installed.

The Oracle Database Client software is available on installation media or you can download it from the Oracle Technology Network (OTN) website, or Oracle Software Delivery Cloud Web site.

Refer to the applicable procedure below depending on whether the ETM Management Server is installed on Windows or Linux.

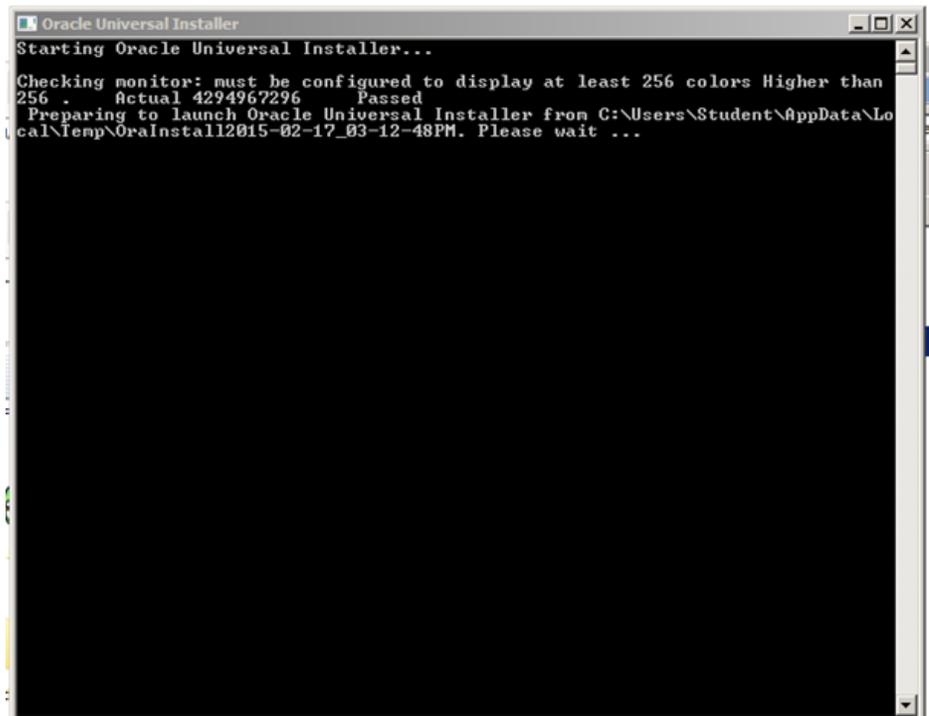
Installing the Oracle Client Tools on a Windows Management Server

Notes:

- Ensure you log on as a member of the Administrators group to install the software and use **Run as Administrator**.
- Oracle Database Client 12c Release 12.2.0.1 cannot share Oracle base with Oracle homes from earlier database versions, such as Oracle Database 11g Release 2 (11.2) and earlier.

To install the Oracle Client Tools

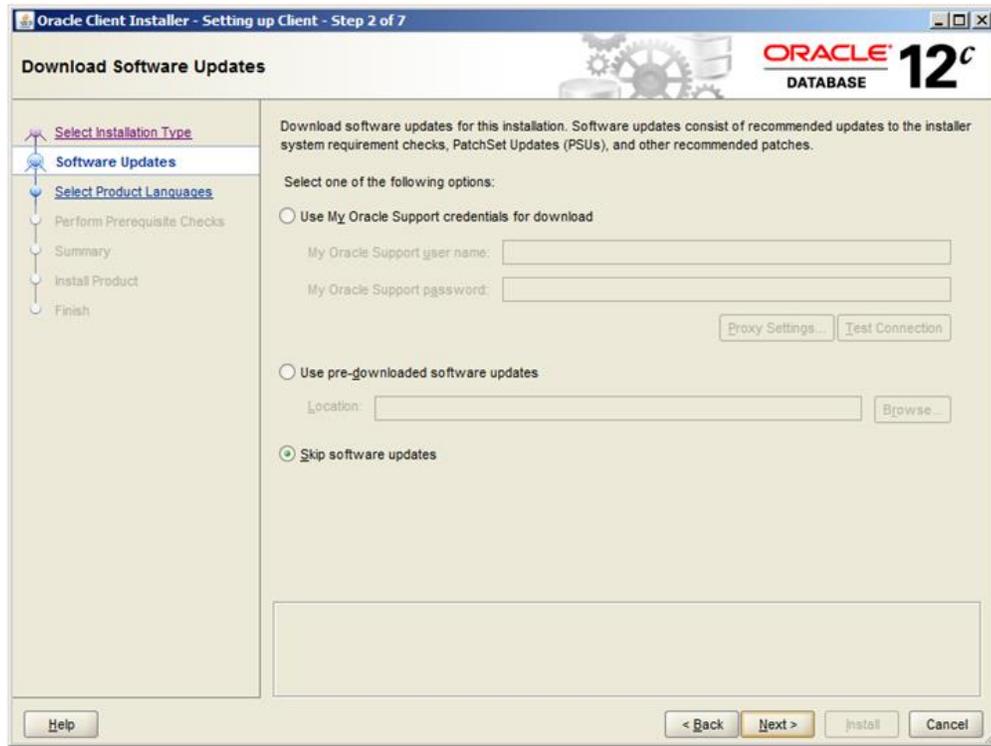
1. Insert the Oracle Database Client installation media and navigate to the **client** directory. Alternatively, navigate to the directory where you downloaded and unzipped the installation files.
2. Right-click **setup.exe** and select **Run as Administrator** to start the Oracle UI.



3. The **Select Installation Type** dialog box appears.

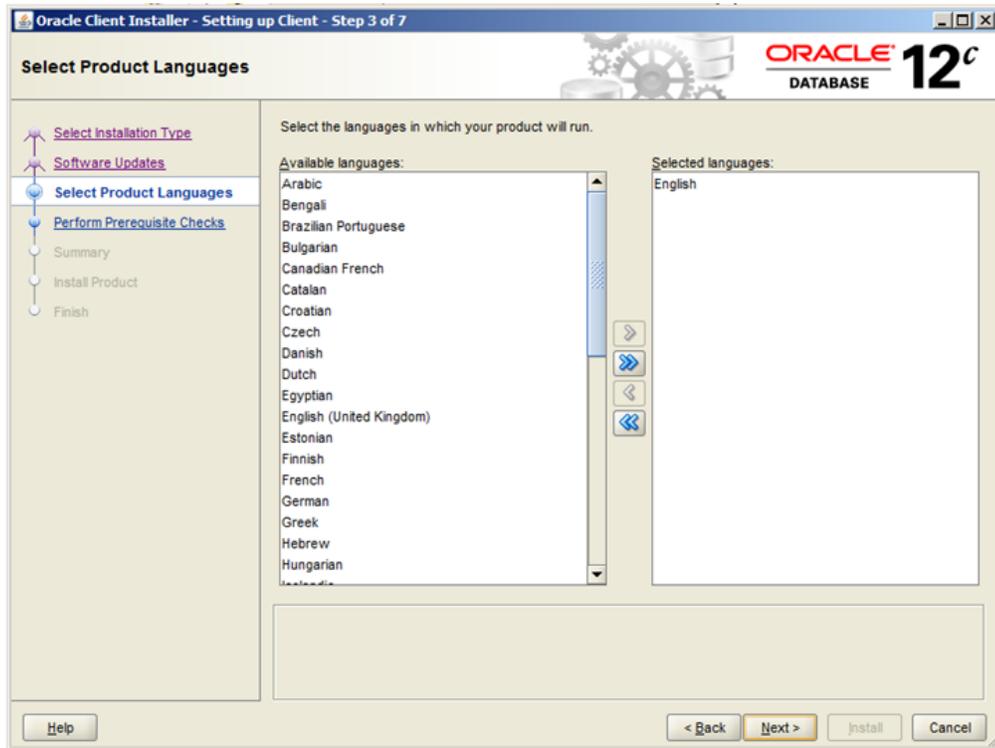


4. Select **Administrator** and click **Next**.



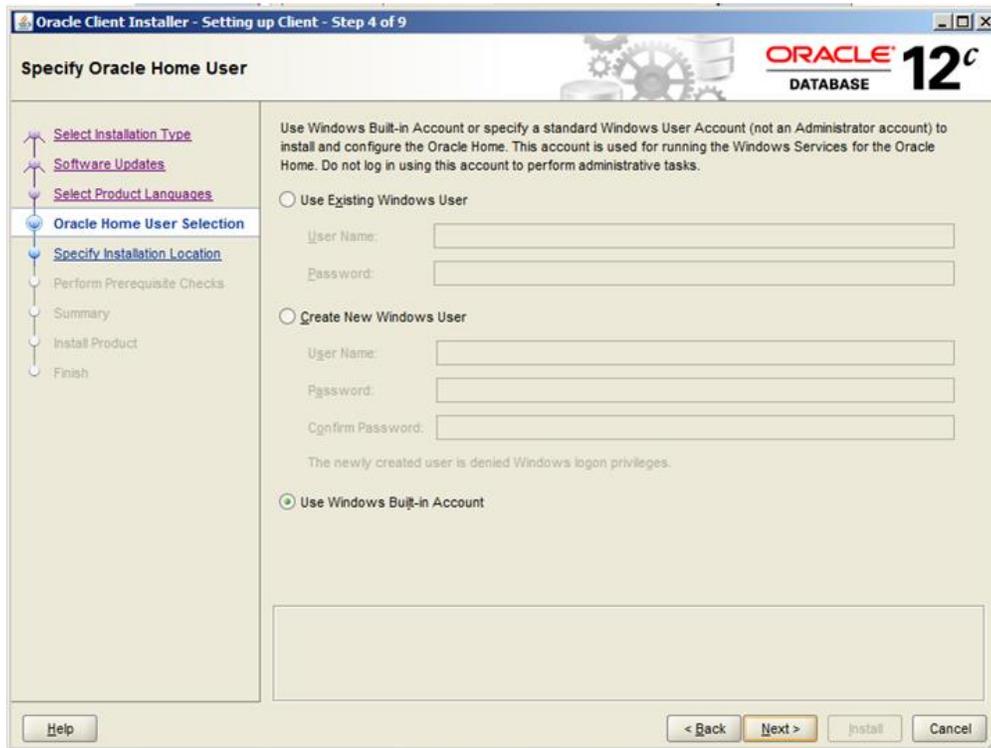
5. The **Download Software Updates** dialog box appears. Make an applicable selection and click **Next**.

The **Select Product Languages** dialog box appears.



6. Leave it set to English and click **Next**.

The **Specify Oracle Home User** dialog box appears.



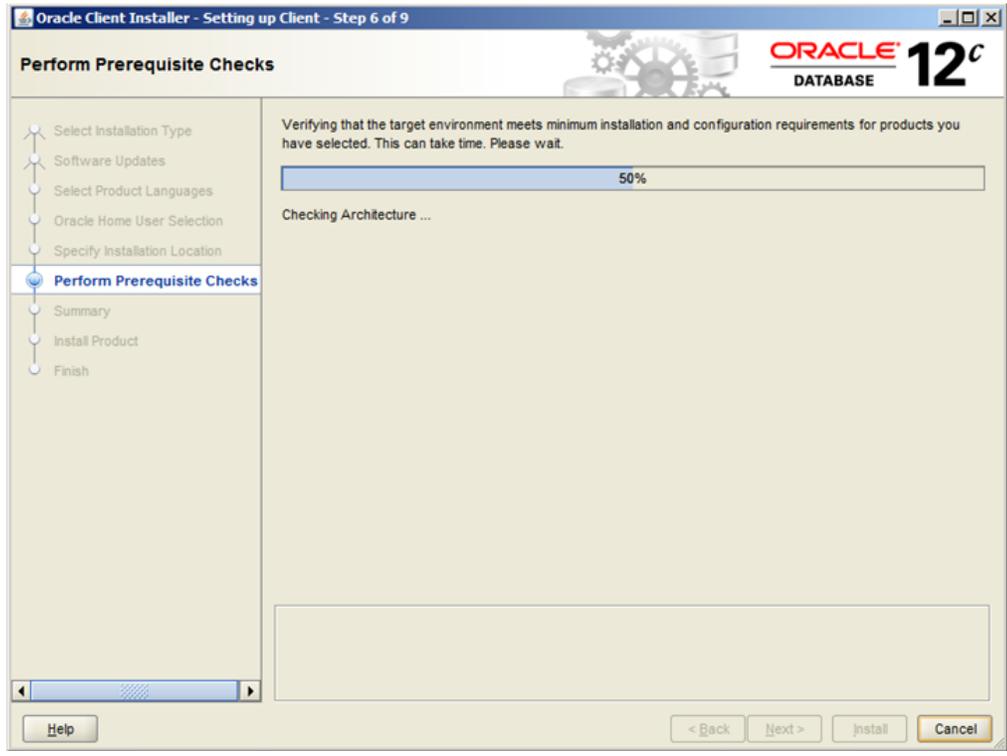
7. Make your selection and provide the requested information for that selection (if any) and click **Next**.

The **Specify Installation Location** dialog box appears.

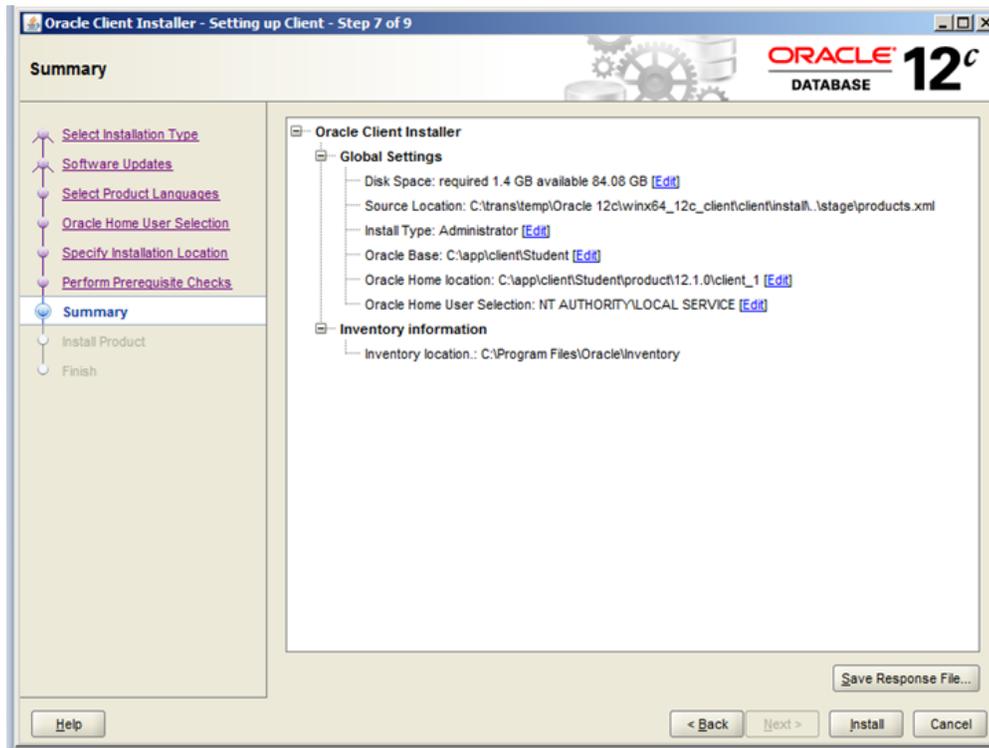


8. Specify paths or leave the defaults and click **Next**.

The **Perform Prerequisite Checks** dialog box appears showing a summary of your installation selections.



When the prerequisite checks complete, the **Summary** dialog box appears showing a summary of your installation choices.



9. Verify the information is correct and then click **Install**. The **Install** dialog box appears and shows progress of the installation. Installation begins and may take some time.
10. When installation completes, click **Finish**.
11. After installing the Oracle Client Tools, continue with "Edit the **tnsnames.ora** File" on page 24.

Installing the Oracle Client Tools On a Linux Management Server

Note:

- Oracle Database Client 12c Release 12.2.0.1 cannot share Oracle base with Oracle homes from earlier database versions, such as Oracle Database 11g Release 2 (11.2) and earlier.

Install the Oracle 12c R2 software in accordance with the Oracle documentation. Available at <https://docs.oracle.com/en/database/oracle/oracle-database/12.2/lacli/toc.htm>.

***** **IMPORTANT:** Ensure that the following requirements are met during installation for use with the ETM System. *****

- **Select Installation Type** dialog box—Select **Administrator**.

- **Select Product Languages** dialog box—English language settings are required.

After installing the Oracle Client Tools, continue with "Edit the **tnsnames.ora** File" below.

Edit the tnsnames.ora File

The **tnsnames.ora** file tells the ETM[®] Management Server where to find the ETM Database. The **tnsnames.ora** file is in the directory **<ORACLE_HOME>network\admin** and can be edited in a text editor. When the Database is on the same system as the Management Server, the script edits this file. When they are on separate systems, the file must be edited after you install the Oracle Client.

The **tnsnames.ora** file appears similar to the following:

```
Jackson_10.1.1.173 =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP) (HOST =
        10.1.1.173) (PORT = 1521))
    )
  )
(CONNECT_DATA = (SID = Jackson) (SERVER = DEDICATED))
```

where **Jackson** is the database **SID**, **10.1.1.173** is the IP address of the database host computer, and **1521** is the TCP/IP port used by the Listener.

To edit the tnsnames.ora file

- Edit the database instance name, IP address, and port number to reflect your database configuration and then save the file..

Connect with the ETM[®] Database Maintenance Tool

After copying the current database driver to the ETM Server installation directory, you connect to the database with the ETM Database Maintenance Tool using the **SID** and the **etmuser** password you defined during script execution to complete database configuration. See the *ETM[®] System Installation Guide* for instructions.