

# Installing Oracle Database 12c on Windows

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## Overview

### Purpose

This tutorial shows you how to install the Oracle Database 12c software on Microsoft Windows along with a default instance of an Oracle Database that contains example schemas ( including the HR schema).

### Time to Complete

Approximately 1 hour.

### Introduction

The Oracle Universal Installer (OUI) is used to install the Oracle Database software. OUI is a graphical user interface utility that enables you to:

- View the Oracle software that is installed on your machine
- Install new Oracle Database software
- Delete Oracle software that is no longer required

During the installation process, OUI will start the Oracle Database Configuration Assistant (DBCA) which can install a precreated default database that contains example schemas or can guide you through the process of creating and configuring a customized database.

If you do not create a database during installation, you can invoke DBCA after you have installed the software, to create one or more databases.

### Hardware and Software Requirements

Before installing the software, OUI performs several automated checks to ensure that your computer fulfills the basic hardware and software requirements for an Oracle Database installation. If your computer does not meet the requirements, an error message is displayed. Some of the requirements to install the software are:

- Minimum 2 GB of physical memory
- Sufficient virtual memory (swap)
- At least 10 GB of free disk space

### Prerequisites

Before starting this tutorial, you should:

- Have access to the Oracle Database 12c distribution media, or have an internet connection so that you can download the software
- Have general knowledge of product installation

## Downloading the Oracle Database Software

In this section, you will be downloading the files required to install Oracle database on a Windows environment.

1. Open a web browser of your choice and navigate to <http://otn.oracle.com/windows>. By default, the page displays the **What's New** tab, showcasing news about Oracle on Windows.

**Note:** In this OBE, we use Internet Explorer to download the software.



Oracle Technology Network > Database > Windows > What's New

Database 12c  
Multitenant  
Application Development  
Data Warehousing & Big Data  
Database Cloud  
Engineered Systems  
High Availability  
Manageability  
Performance  
Security  
Storage Management  
Unstructured Data  
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Database Technology Index

What's New For Beginners Products Technical Information Downloads

### Windows Server System Center

Updated October 25, 2013

Oracle is committed to delivering superior performance and comprehensive enterprise database solutions for organizations that utilize Windows-based systems and Windows Server System products.

See also: .NET Developer Center | Office Interoperability Center

**What's New**

- Oracle Database 12c on Windows Now Available**  
Download Oracle Database 12c to experience the best Windows database for modern Cloud-based applications. Oracle Database 12c includes support for Windows 8 and Windows Server 2012.  
• White Paper: Introducing the Oracle Home User in Oracle Database 12c on Windows
- Oracle Database 11.2.0.4 Released**  
Oracle Database 11g Release 2 Patch 3 (11.2.0.4) for Windows x64 or 32-bit Windows is now available on My Oracle Support (Patch 13390677) to download. Oracle Database 11.2.0.4 is supported on both Microsoft Windows 8 and Windows Server 2012.

2. Click the **Downloads** tab.

Oracle Technology Network > Database > Windows > What's New

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Multitenant  
Application Development  
Data Warehousing & Big Data  
Database Cloud  
Engineered Systems  
High Availability  
Manageability

What's New For Beginners Products Technical Information **Downloads**

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See also: .NET Developer Center | Office Interoperability Center

3. Click on the latest version of **Oracle Database 12c (x64)**.

What's New For Beginners Products Technical Information **Downloads**

## Oracle Database on Microsoft Windows Downloads

**Oracle Database - All server editions and client**

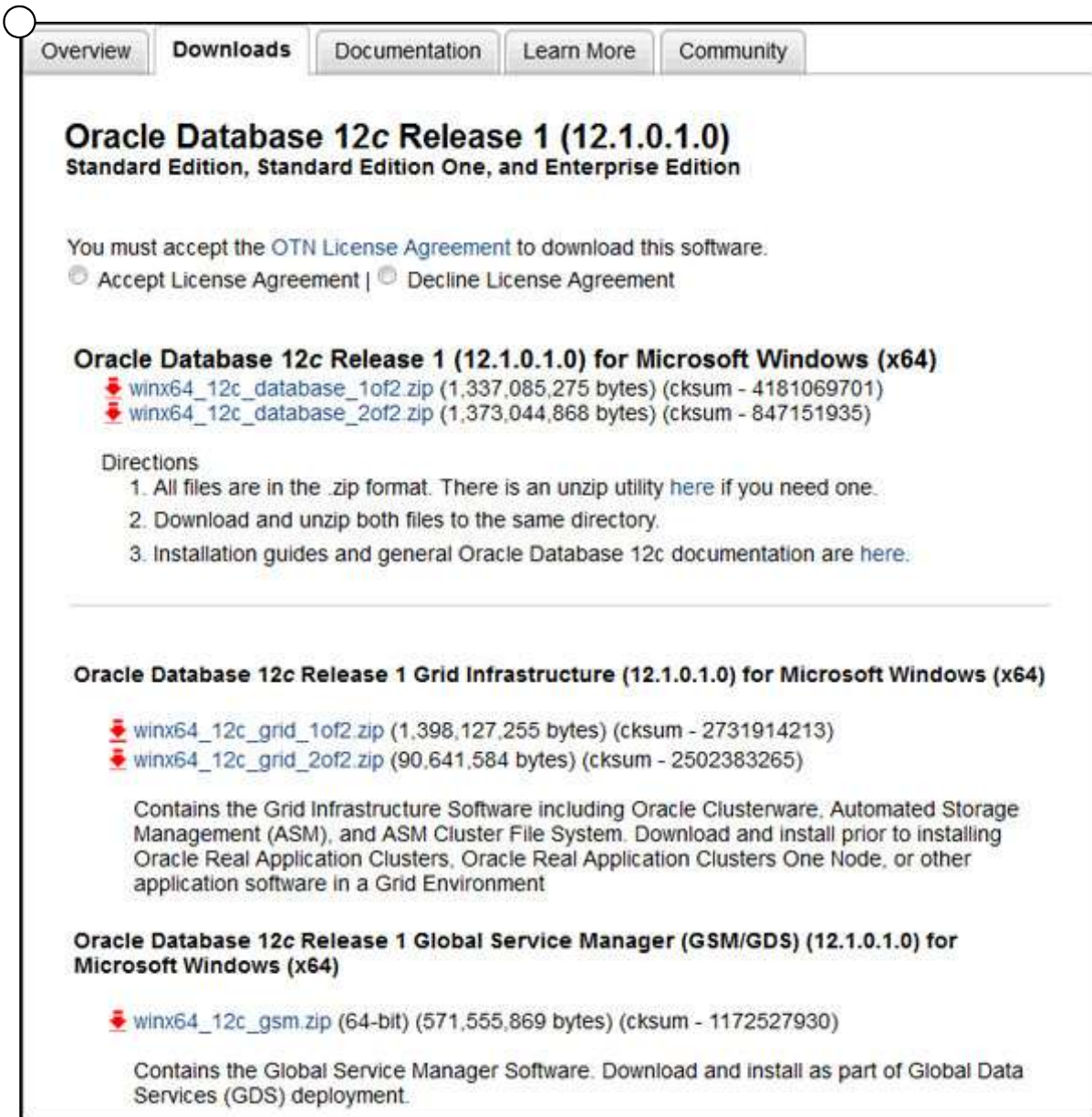
- Oracle Database 12c (x64) - Version 12.1.0.1**
- Oracle Database 11g Release 2 (32-bit) - Version 11.2.0.3
- Oracle Database 11g Release 2 (x64) - Version 11.2.0.3

**Note:** 11.2.0.3 is the latest full installation of Oracle Database. My Oracle Support access, available with an Oracle support contract, is required to download it. All other downloads below are free with an OTN account.

- Oracle Database 11g Release 2 (32-bit) - Version 11.2.0.1
- Oracle Database 11g Release 2 (x64) - Version 11.2.0.1

Earlier Oracle Database versions are available on My Oracle Support.

4. The software downloads page displays the files required to download the database. It lists a set of software files to install software such as, **Oracle Database Grid Infrastructure** and **Oracle Database Gateways** with the Oracle database. Each set displays a short description of what the file includes. You can choose to download any set of software depending on your requirement.



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## Oracle Database 12c Release 1 (12.1.0.1.0)

Standard Edition, Standard Edition One, and Enterprise Edition

You must accept the [OTN License Agreement](#) to download this software.

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### Oracle Database 12c Release 1 (12.1.0.1.0) for Microsoft Windows (x64)



 [winx64\\_12c\\_database\\_1of2.zip](#) (1,337,085,275 bytes) (cksum - 4181069701)  
 [winx64\\_12c\\_database\\_2of2.zip](#) (1,373,044,868 bytes) (cksum - 847151935)

Directions

1. All files are in the .zip format. There is an unzip utility [here](#) if you need one.
2. Download and unzip both files to the same directory.
3. Installation guides and general Oracle Database 12c documentation are [here](#).


---

### Oracle Database 12c Release 1 Grid Infrastructure (12.1.0.1.0) for Microsoft Windows (x64)

 [winx64\\_12c\\_grid\\_1of2.zip](#) (1,398,127,255 bytes) (cksum - 2731914213)  
 [winx64\\_12c\\_grid\\_2of2.zip](#) (90,641,584 bytes) (cksum - 2502383265)

Contains the Grid Infrastructure Software including Oracle Clusterware, Automated Storage Management (ASM), and ASM Cluster File System. Download and install prior to installing Oracle Real Application Clusters, Oracle Real Application Clusters One Node, or other application software in a Grid Environment

### Oracle Database 12c Release 1 Global Service Manager (GSM/GDS) (12.1.0.1.0) for Microsoft Windows (x64)

 [winx64\\_12c\\_gsm.zip](#) (64-bit) (571,555,869 bytes) (cksum - 1172527930)

Contains the Global Service Manager Software. Download and install as part of Global Data Services (GDS) deployment.

5. In this OBE, we install Oracle Database 12c. Accept the license agreement and click the files under **Oracle Database 12c Release ... for Microsoft Windows (x64)** to download.



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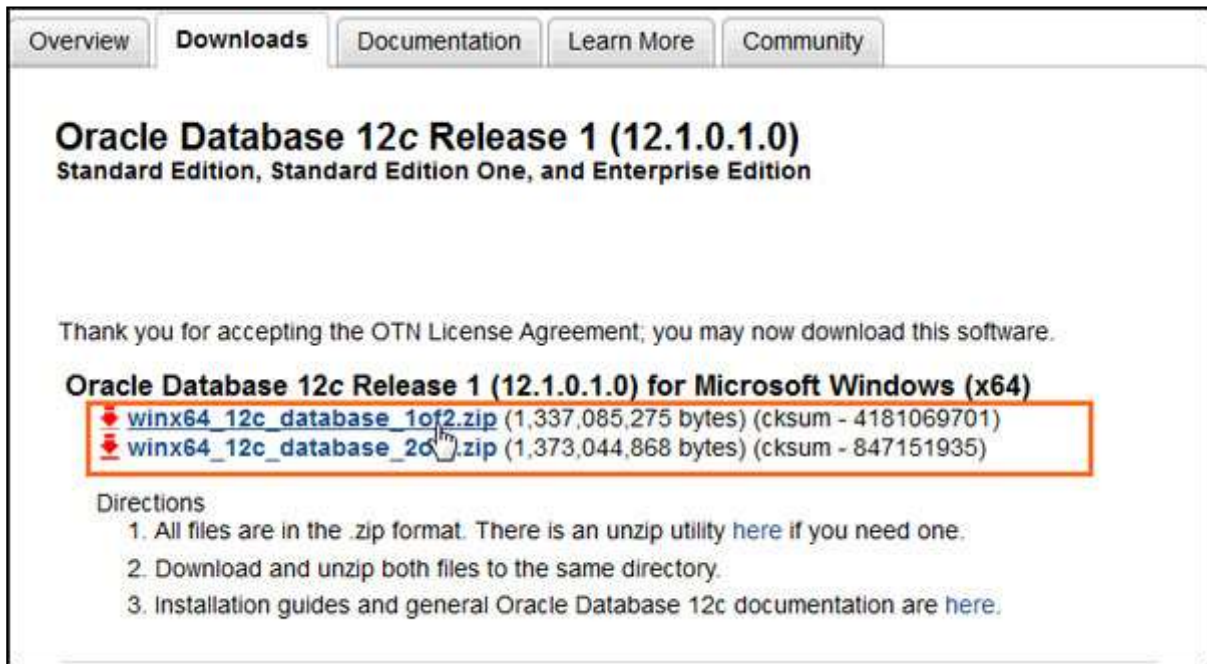
## Oracle Database 12c Release 1 (12.1.0.1.0)

Standard Edition, Standard Edition One, and Enterprise Edition

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## Oracle Database 12c Release 1 (12.1.0.1.0)

Standard Edition, Standard Edition One, and Enterprise Edition

Thank you for accepting the OTN License Agreement; you may now download this software.

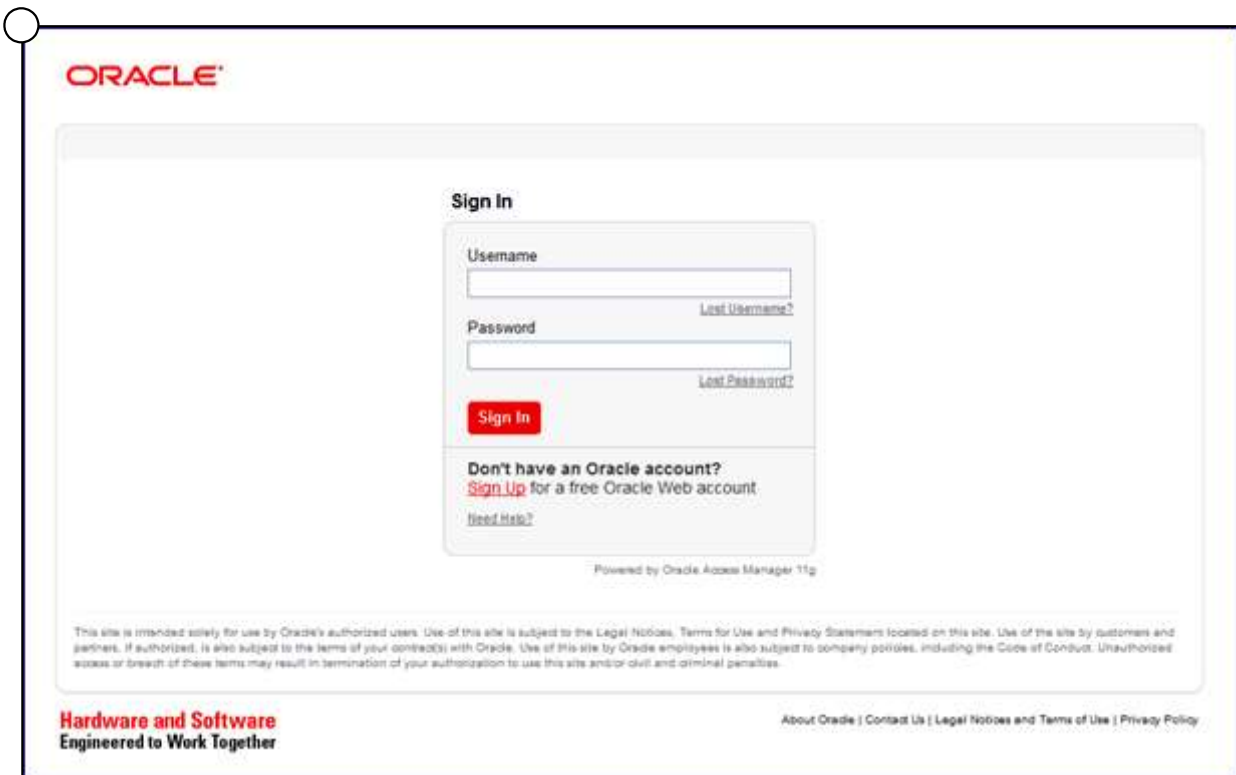
### Oracle Database 12c Release 1 (12.1.0.1.0) for Microsoft Windows (x64)

- [winx64\\_12c\\_database\\_1of2.zip](#) (1,337,085,275 bytes) (cksum - 4181069701)
- [winx64\\_12c\\_database\\_2of2.zip](#) (1,373,044,868 bytes) (cksum - 847151935)

Directions

1. All files are in the .zip format. There is an unzip utility [here](#) if you need one.
2. Download and unzip both files to the same directory.
3. Installation guides and general Oracle Database 12c documentation are [here](#).

6. Log into your Oracle web account. If you do not have an Oracle account, click the "Sign Up" link to create one. Then choose the location where you want to download the .zip files.



ORACLE

### Sign In

Username

Password

[Lost Username?](#)

[Lost Password?](#)

[Sign In](#)

Don't have an Oracle account?  
[Sign Up](#) for a free Oracle Web account

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Powered by Oracle Access Manager 11g

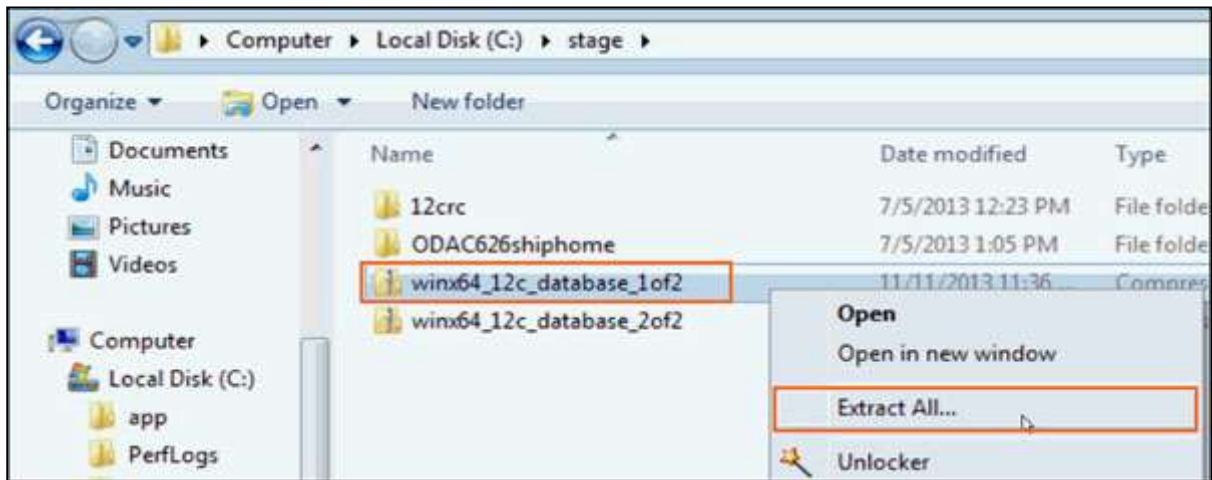
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Hardware and Software  
Engineered to Work Together

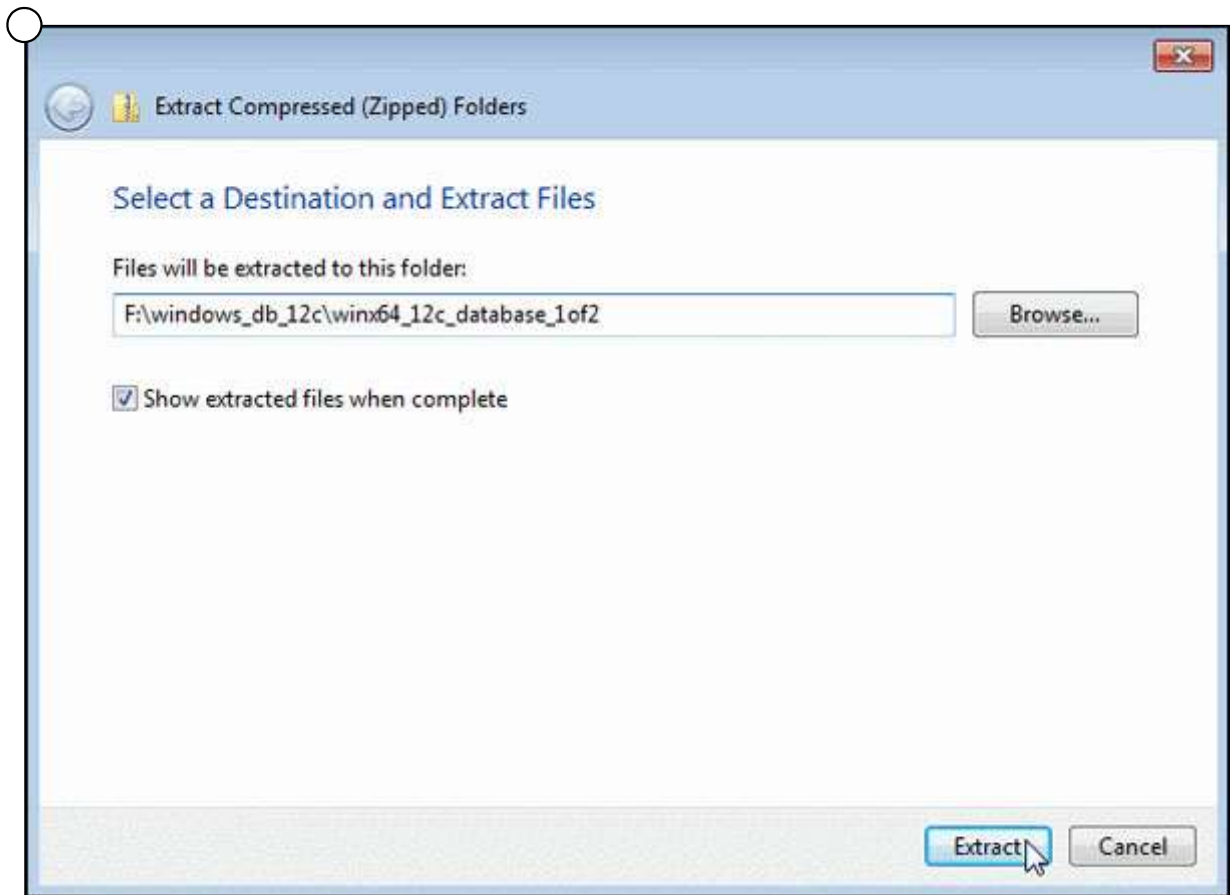
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7. After downloading the files, use the default built-in extraction tool provided by Windows, or tools such as 7-zip to extract the .zip files. In this OBE, we use the built-in extractor to extract the software files.

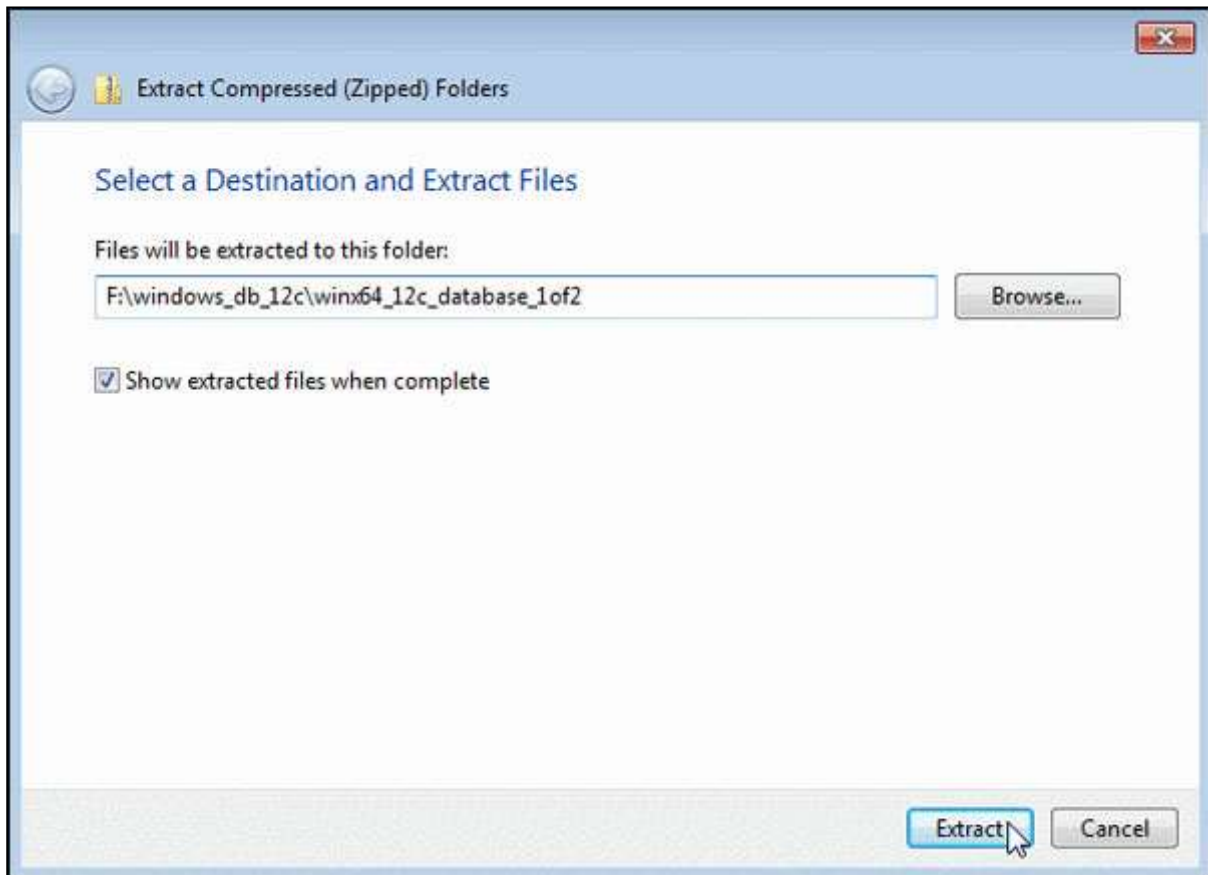
Right click `winx64_12c_database_1of2` and select **Extract All...**



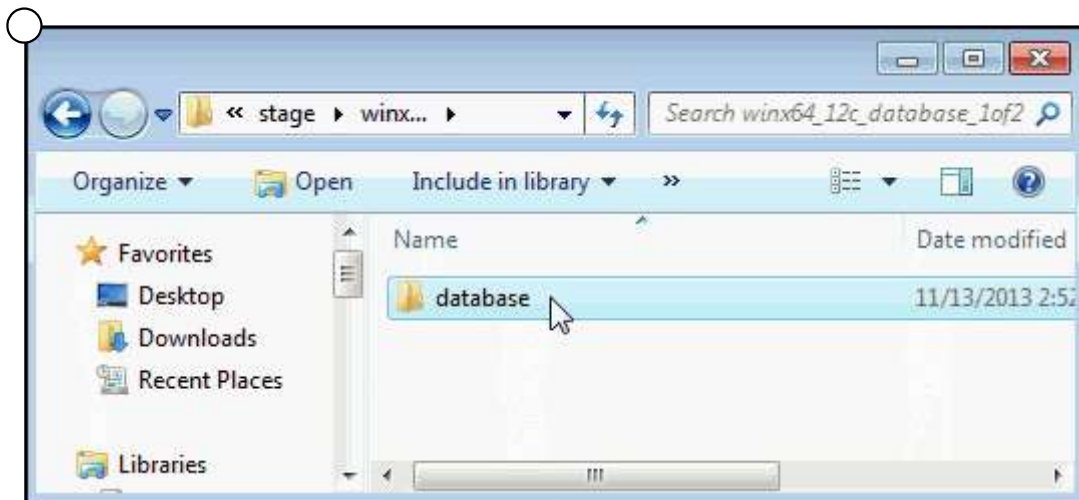
8. Choose the folder of your choice and click **Extract**. In this OBE, we extract the file to the `F:\windows_db_12c\winx64_12c_database_1of2` folder.



9. The file `winx64_12c_database_2of2.zip` must be extracted into the same folder where the first file was extracted. Right click `winx64_12c_database_2of2.zip`, select the **Extract All...** option and specify the same location where the first file was extracted. In this OBE, we extract the files to the `F:\windows_db_12c\winx64_12c_database_1of2` folder. Click **Extract**.



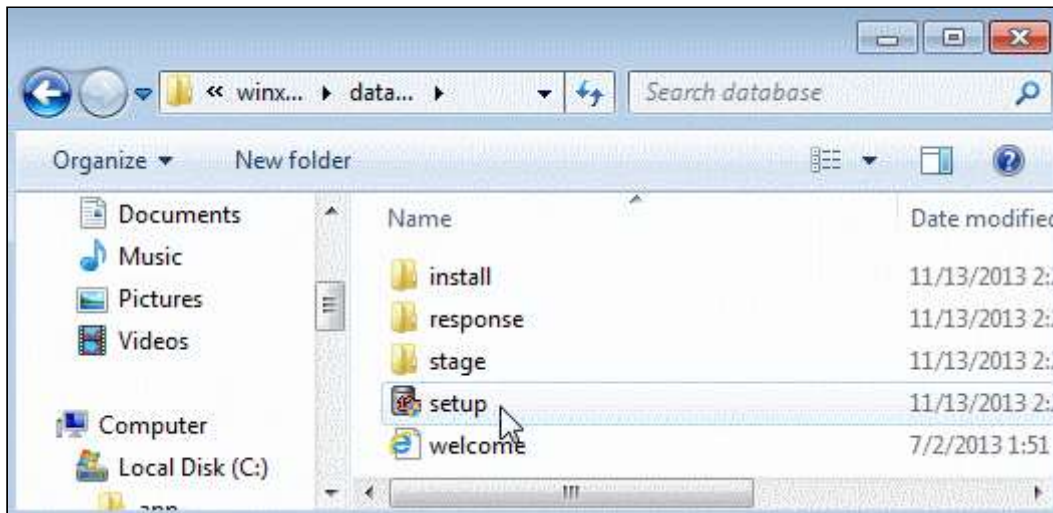
10. The software files are extracted. Expand the **winx64\_12c\_database\_1** folder.



### Installing the Oracle Database Software

In this section, you will be installing the Oracle Database and creating an Oracle Home User account.

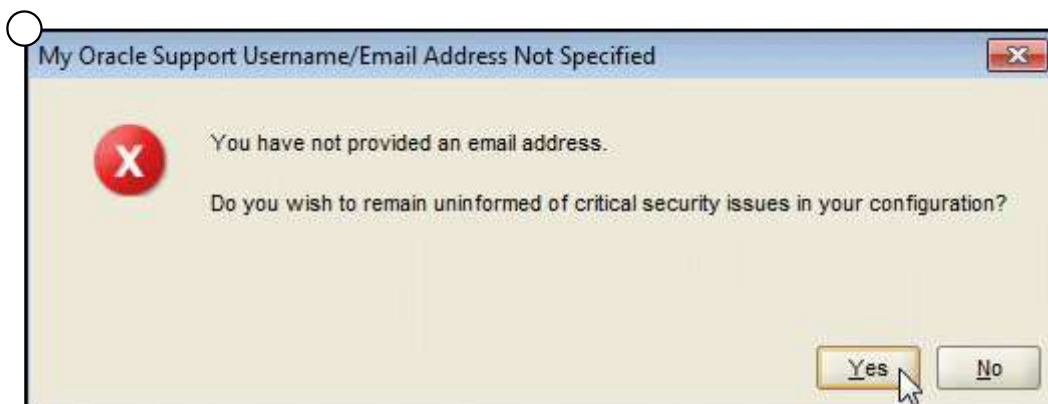
1. Expand the **database** folder that you extracted in the previous section. Double-click **setup**.



2. Click **Yes** in the User Account Control window to continue with the installation.



3. The **Configure Security Updates** window appears. Enter your email address and My Oracle Support password to receive security issue notifications via email. If you do not wish to receive notifications via email, deselect "**I wish to receive security updates via My Oracle Support**". Click **Next** to continue. Click "Yes" in the confirmation window to confirm your preference.

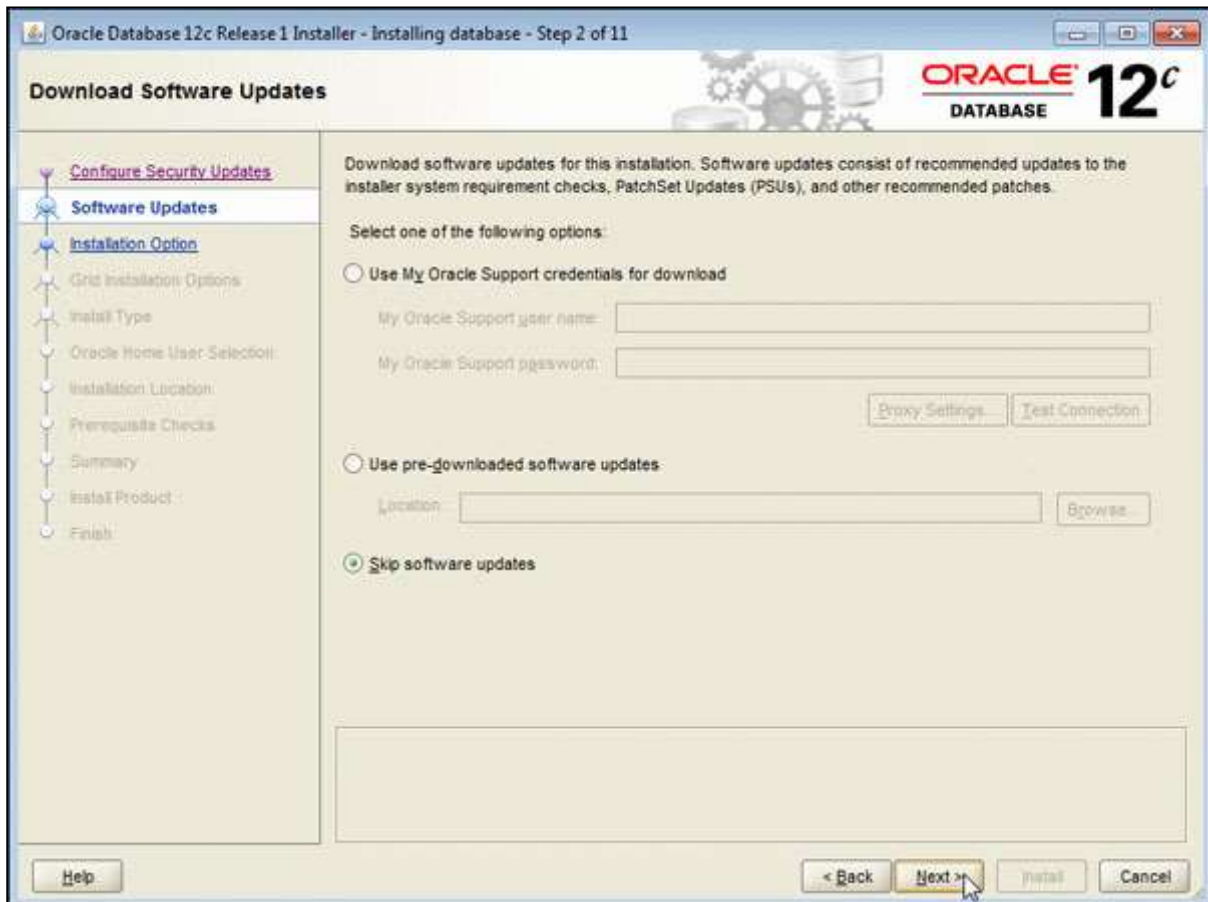


4. The **Download Software Updates** window appears with the following options:

- o Select "Use My Oracle Support credentials for download" to download and apply the latest software updates.
- o Select "Use pre-downloaded software updates" to apply software updates that you previously downloaded.
- o Select "Skip software updates" if do not want to apply any updates.

Accept the default and click **Next**.



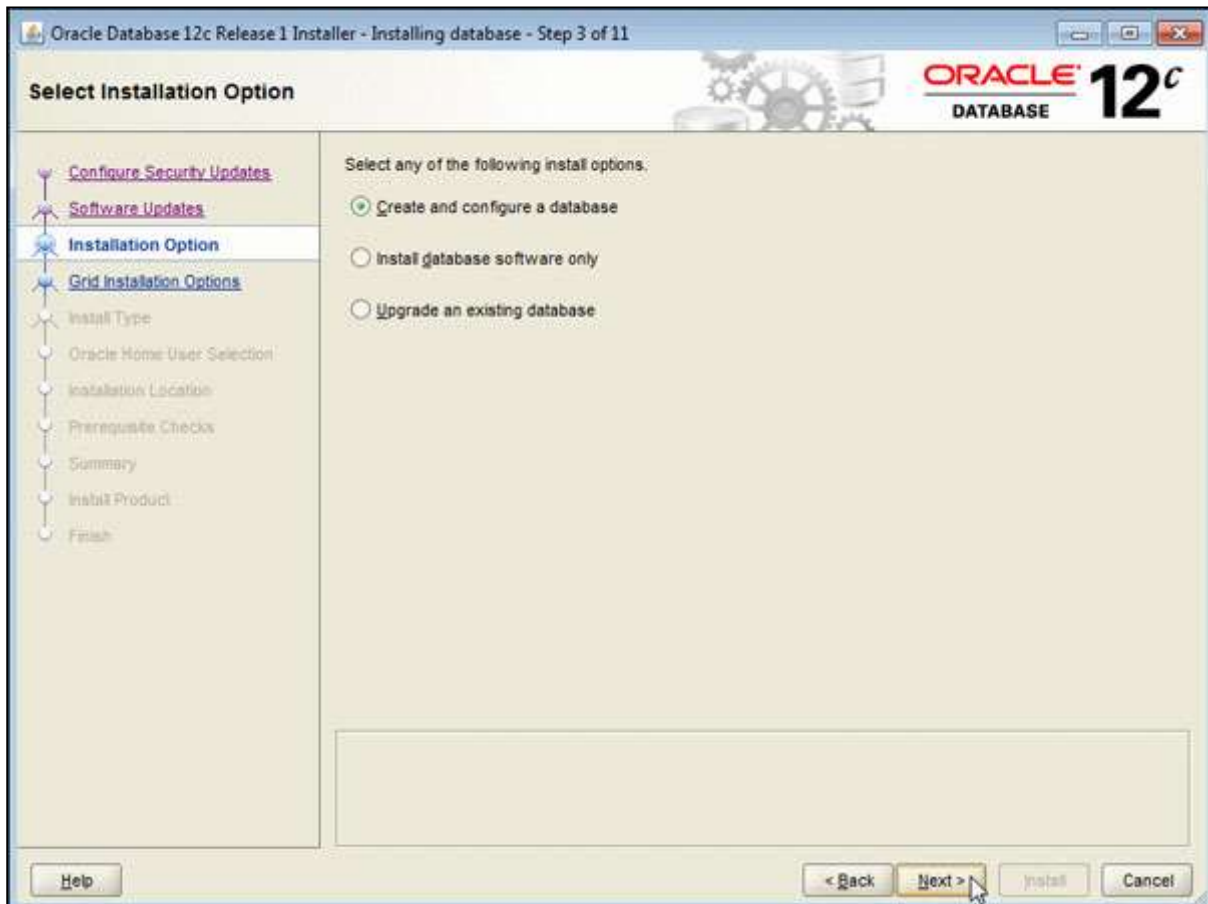


5. The **Select Installation Option** window appears with the following options:

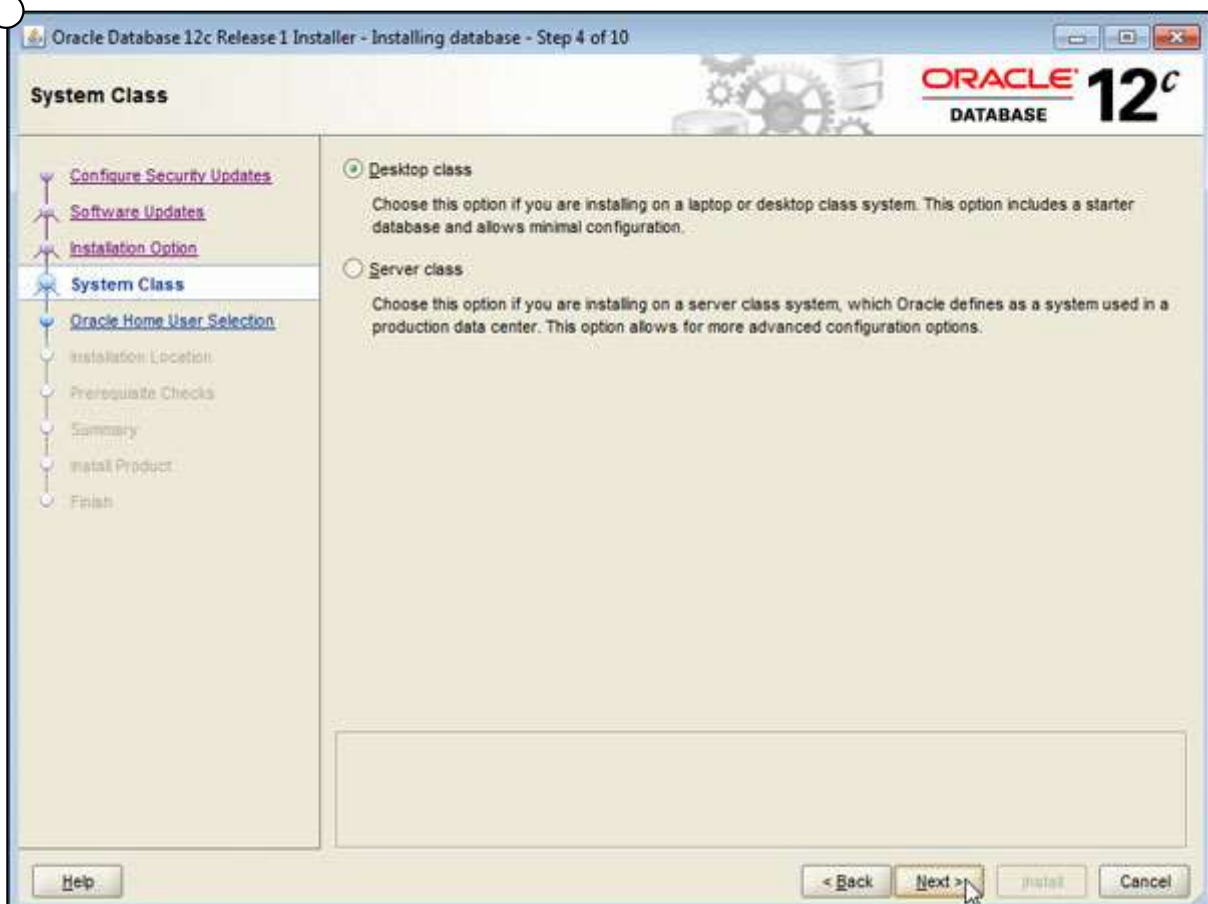
- o Select "Create and configure a database" to install the database, create database instance and configure the database.
- o Select "Install database software only" to only install the database software.
- o Select "Upgrade an existing database" to upgrade the database that is already installed.

In this OBE, we create and configure the database. Select the **Create and configure a database** option and click **Next**.





6. The **System Class** window appears. Select Desktop Class or Server Class depending on the type of system you are using. In this OBE, we will perform the installation on a desktop/laptop. Select **Desktop class** and click **Next**.



7. The **Oracle Home User Selection** window appears. Starting with Oracle Database 12c Release 1 (12.1), Oracle Database on Microsoft Windows supports the use of an Oracle Home User, specified at the time of installation. This Oracle Home User is used to run the Windows services for a Oracle Home, and is similar to the Oracle User on Oracle Database on Linux. This user is associated with an Oracle Home and cannot be changed to a different user post installation.

**Note:**


- o Different Oracle homes on a system can share the same Oracle Home User or use different Oracle Home Users.
- o The Oracle Home User is different from an Oracle Installation User. The Oracle Installation User is the user who requires administrative privileges to install Oracle products. The Oracle Home User is used to run the Windows services for the Oracle Home.

The window provides the following options:

- o If you select "Use Existing Windows User", the user credentials provided must be a standard Windows user account (not an administrator).
  - If this is a single instance database installation, the user can be a local user, a domain user, or a managed services account.
  - If this is an Oracle RAC database installation, the existing user must be a Windows domain user. The Oracle installer will display an error if this user has administrator privileges.
- o If you select "Create New Windows User", the Oracle installer will create a new standard Windows user account. This user will be assigned as the Oracle Home User. Please note that this user will not have login privileges. This option is not available for an Oracle RAC Database installation.
- o If you select "Use Windows Built-in Account", the system uses the Windows Built-in account as the Oracle Home User.

Select the **Create New Windows User** option. Enter the user name as **OracleHomeUser1** and password as **Welcome1**. Click **Next**.

**Note:** Remember the Windows User password. It will be required later to administer or manage database services.

8. The **Typical Install Configuration** window appears. Click on a text field and then the balloon icon (  ) to know more about the field. Note that by default, the installer creates a container database along with a pluggable database called "pdborcl". The pluggable database contains the sample HR schema. Change the Global database name to **orcl**. Enter the "Administrative password" as **Oracle\_1**. This password will be used

later to log into administrator accounts such as SYS and SYSTEM. Click **Next**.



9. The prerequisite checks are performed and a **Summary** window appears. Review the settings and click **Install**.

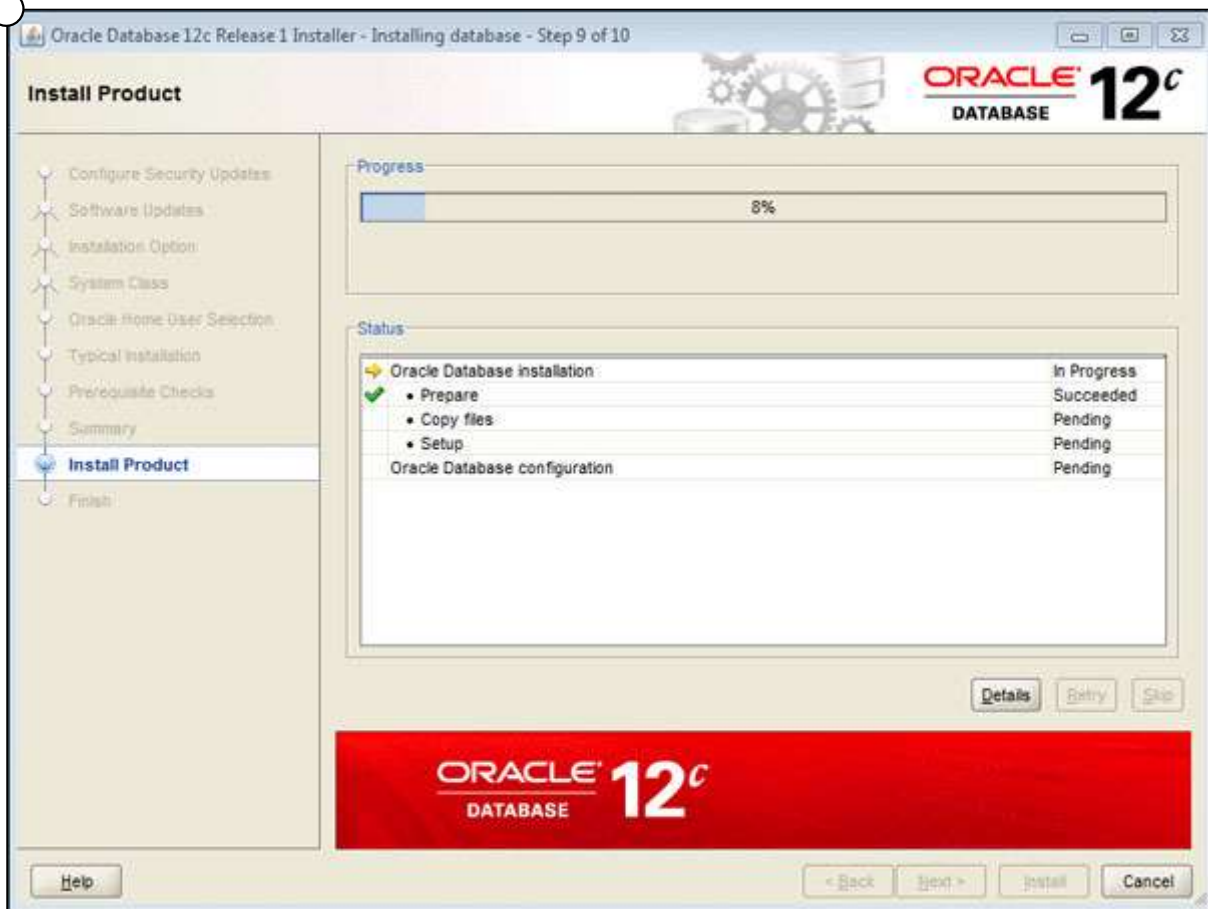
**Note:** Depending on your firewall settings, you may need to grant permissions to allow java to access the network.



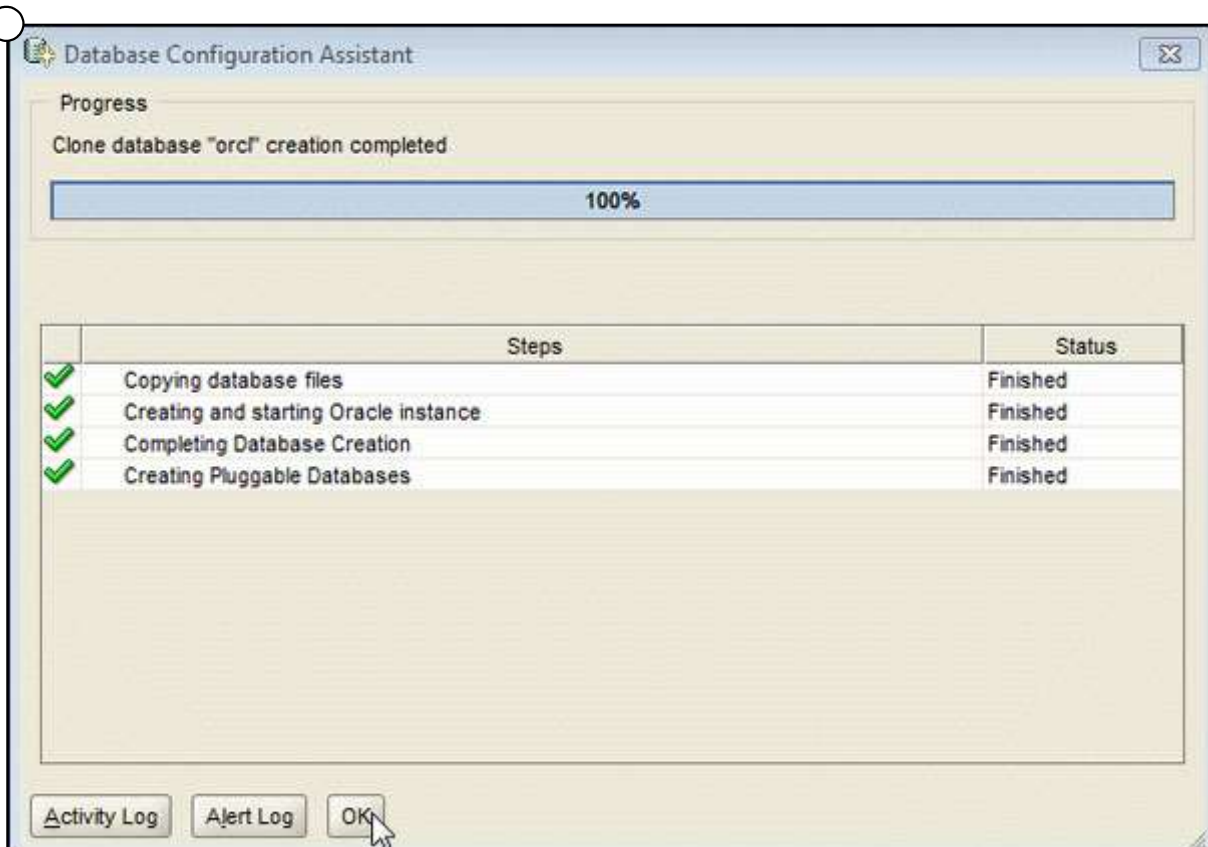




10. The progress window appears.

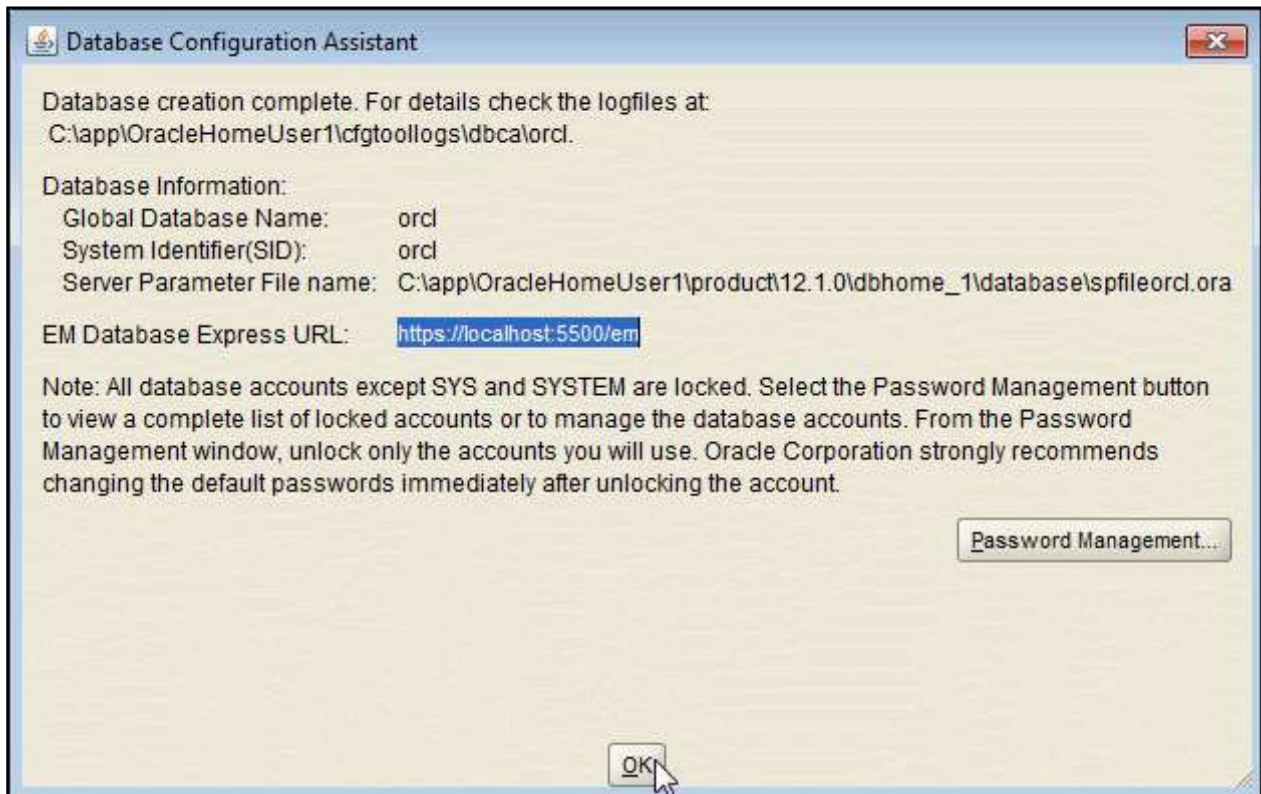


11. The Database Configuration Assistant creates the database.

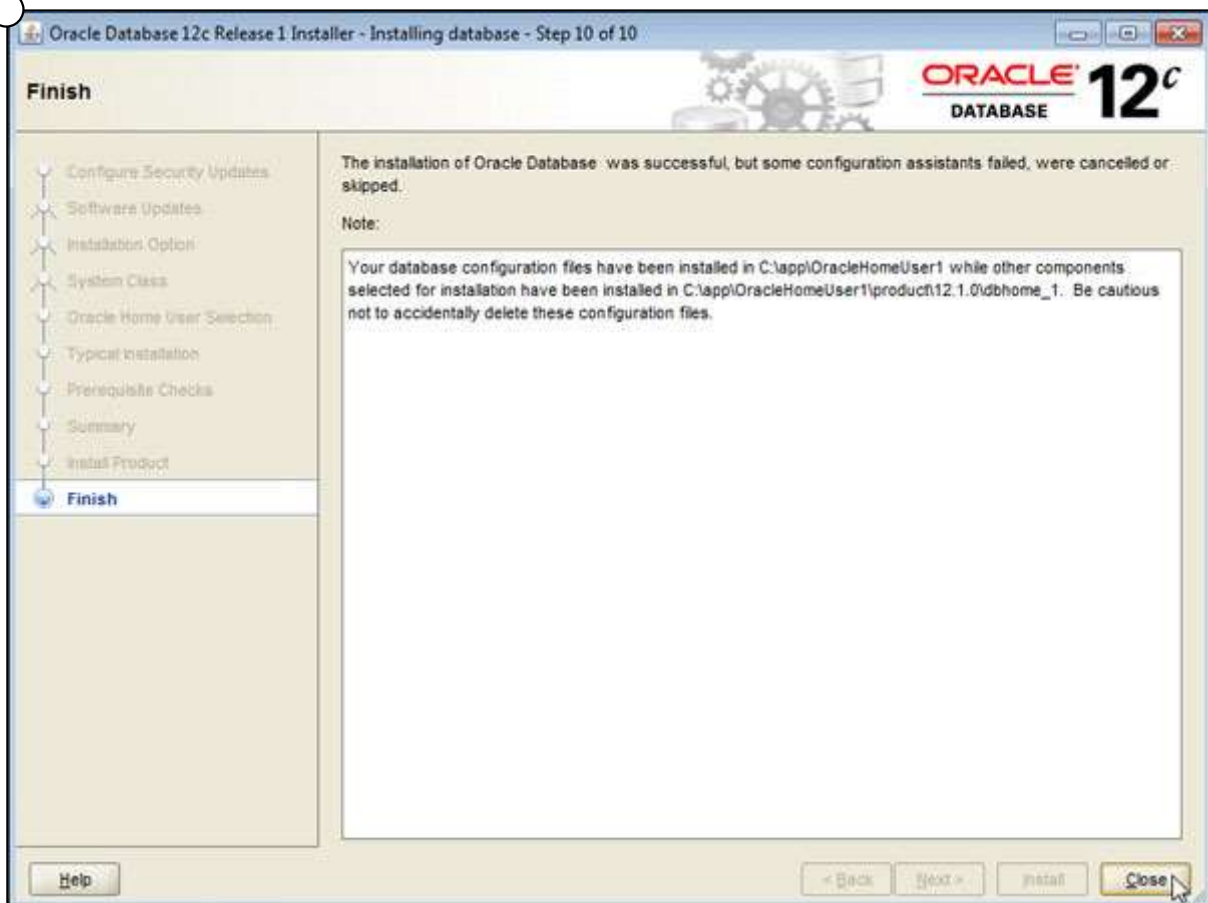


12. After the Database Configuration Assistant creates the database, you can navigate to <https://localhost:5500/em> as a SYS user to manage the database using Enterprise Manager Database Express.

You can click "Password Management..." to unlock accounts. Click **OK** to continue.




13. The **Finish** window appears. Click **Close** to exit the Oracle Universal Installer.



## Verifying the Installation

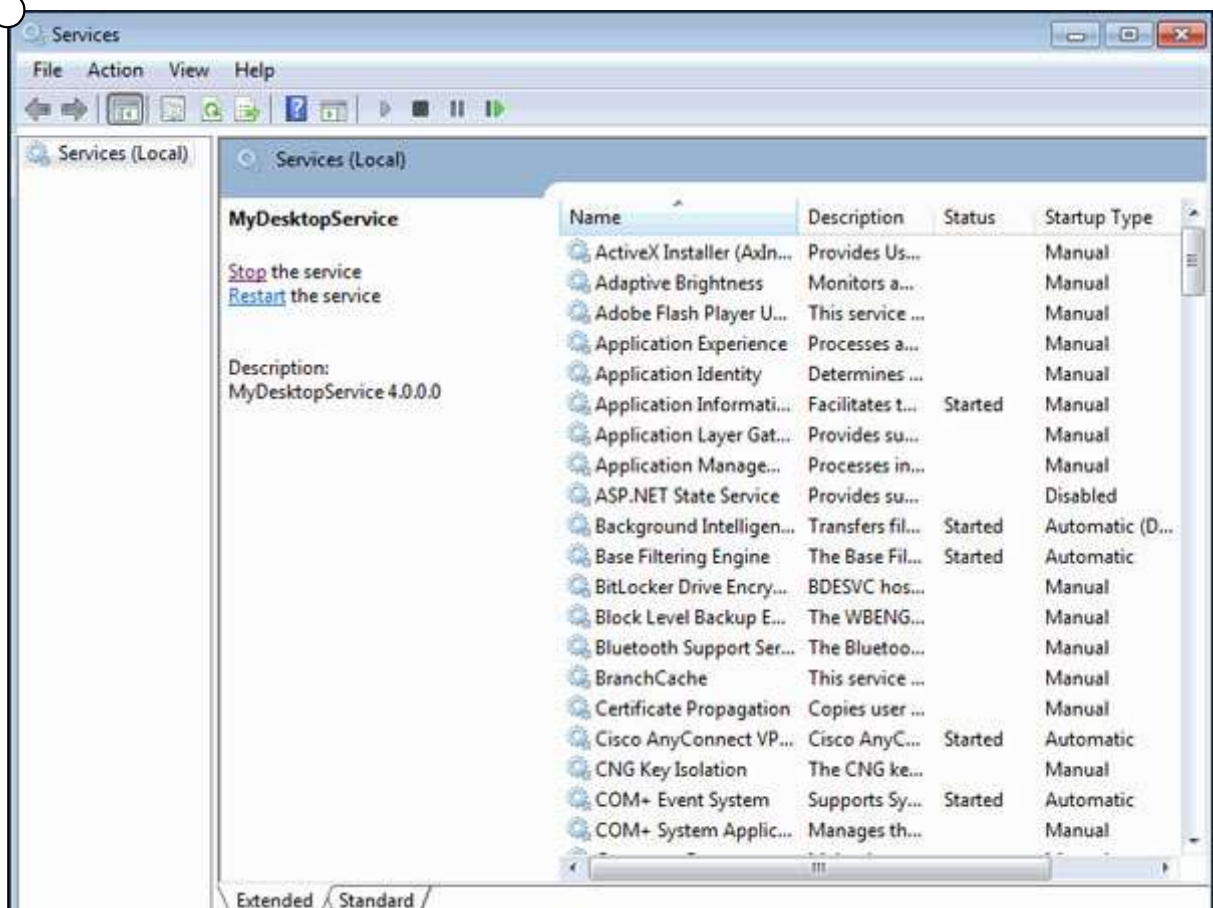
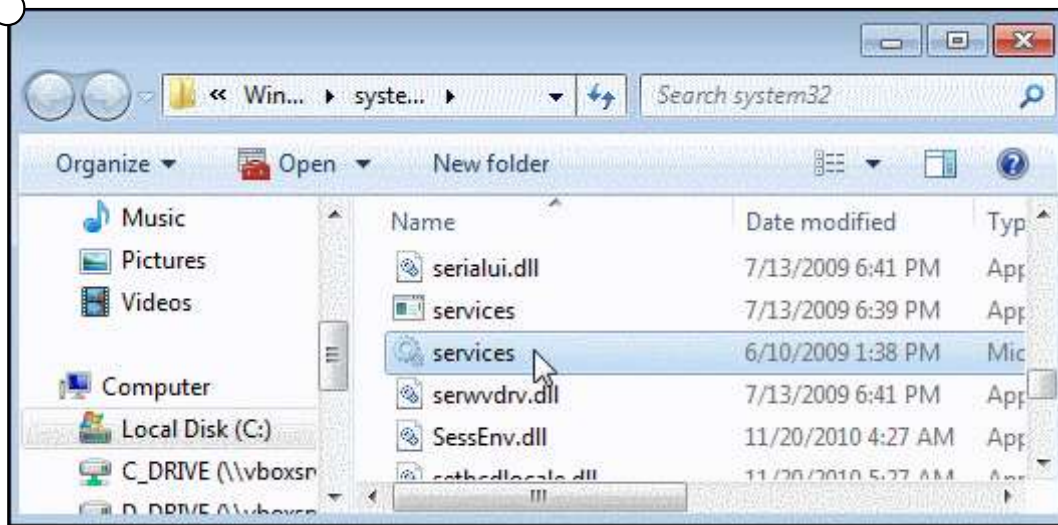
In this section, you will be performing steps to verify the installation of Oracle Database. If you had changed the default location to install the database, make sure to specify the correct location of the files in the following steps. After that,

location to install the database, make sure to specify the correct location of the files in the following steps. Alternatively,

you can also perform a quick search using the Windows Start Menu  to locate files.

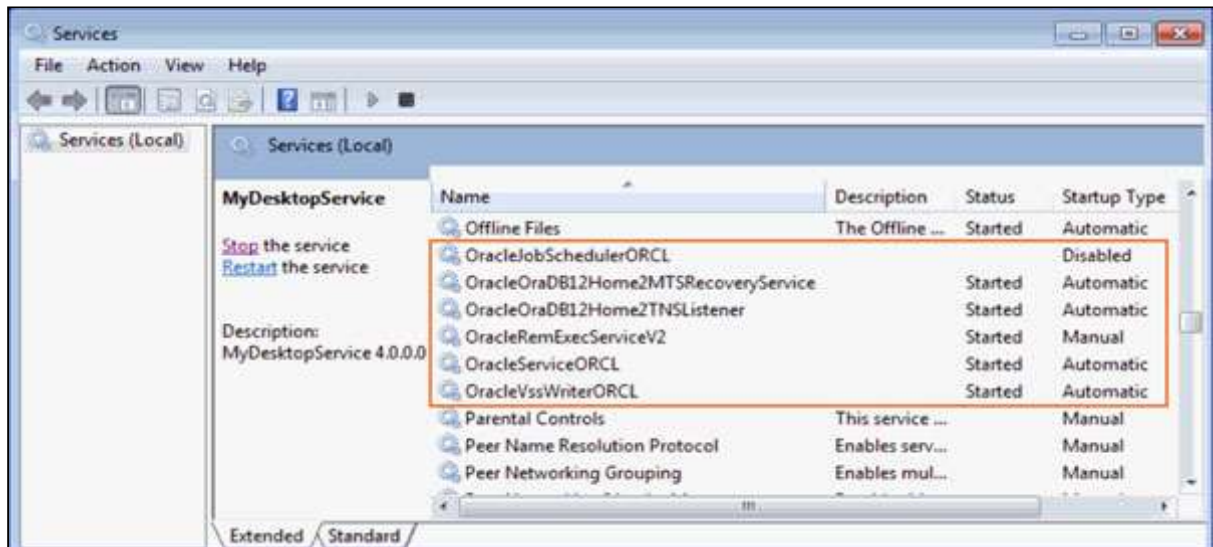
## View Oracle Services

1. Navigate to **C:\Windows\system32** using Windows Explorer. Double-click **services**. The **Services** window appears, displaying a list of services.



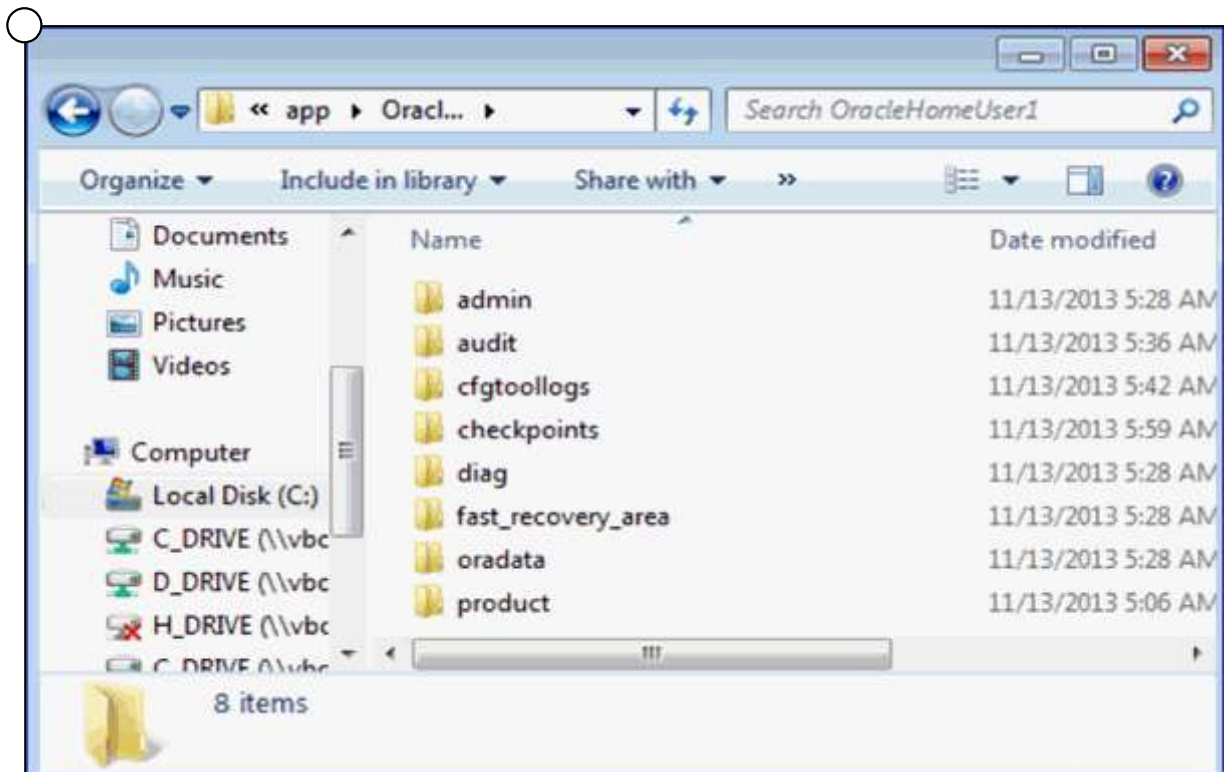
2. Scroll down to view a list Oracle services. You see that most of the Oracle services are started successfully by the database.





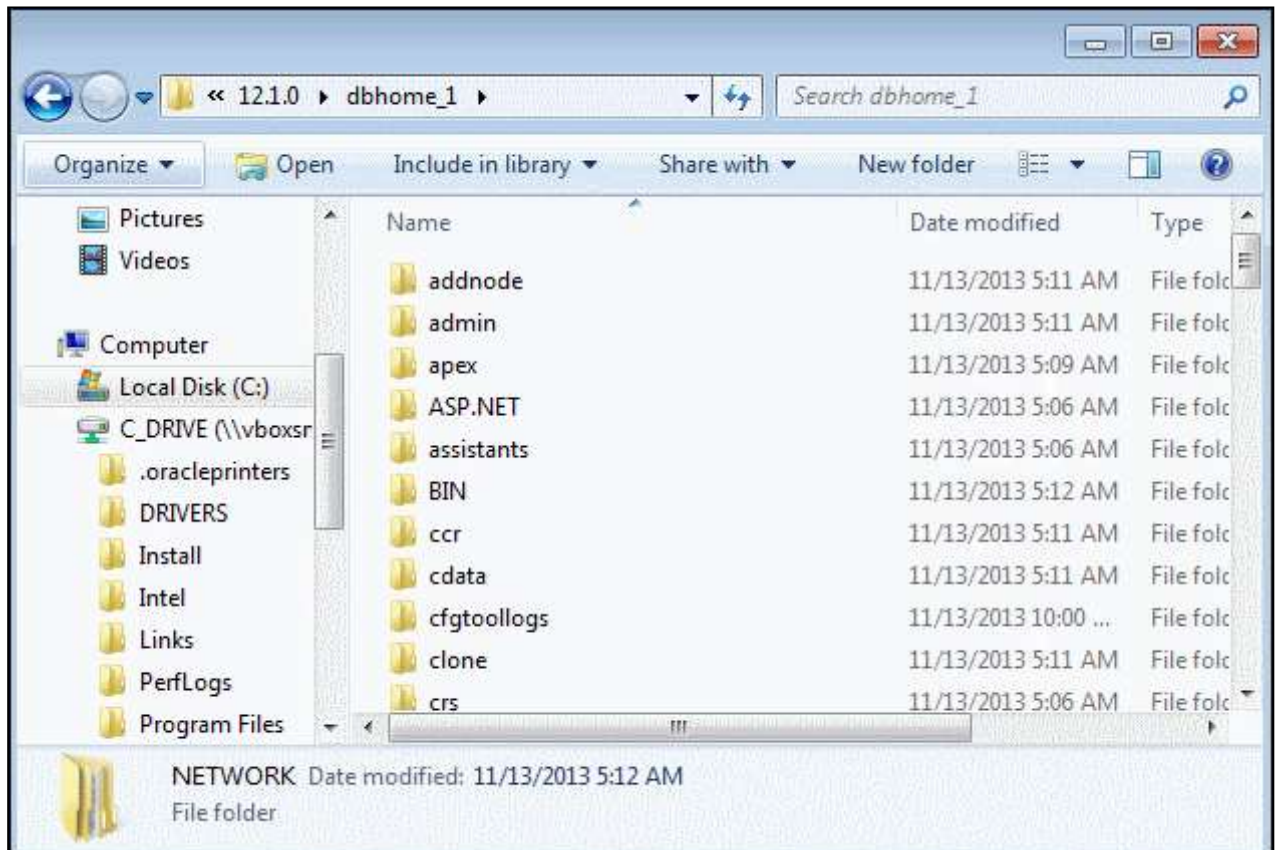
### View Oracle Home on the File System

1. Navigate to the `C:\app\OracleHomeUser1` folder. This folder contains database files (in `oradata` folder) and the Oracle Database software (in the `product` folder).



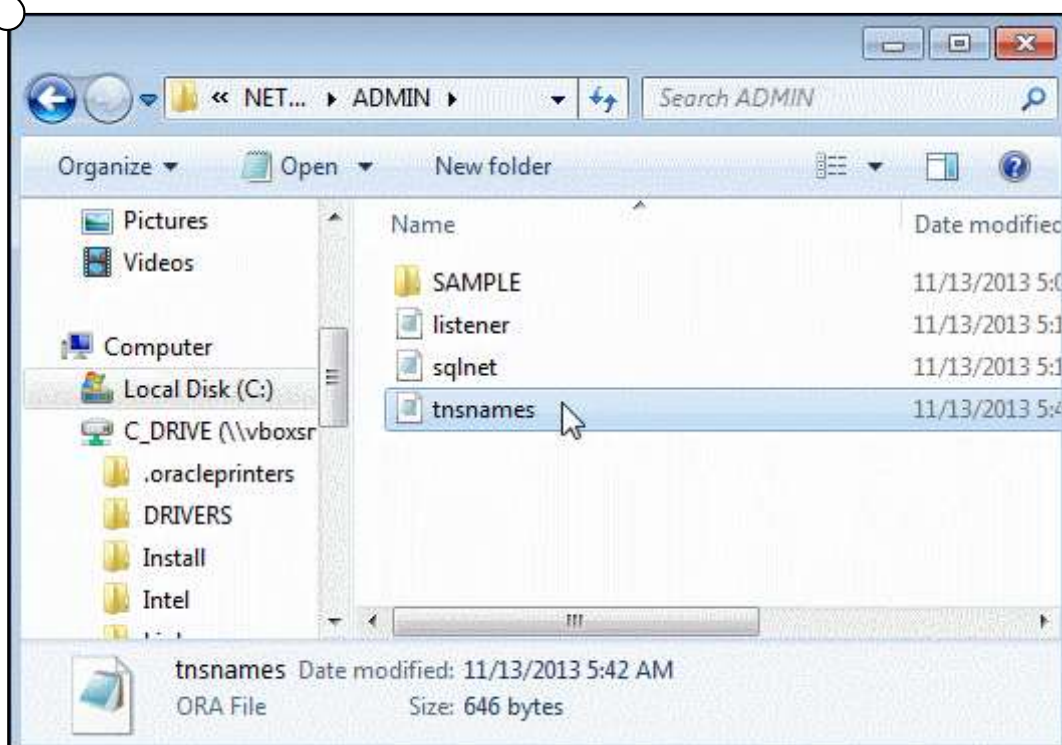
2. Navigate to `C:\app\OracleHomeUser1\product\12.1.0\dbhome_1` folder. This folder is the new "Oracle Home" created by the installer and contains software files related to the database.



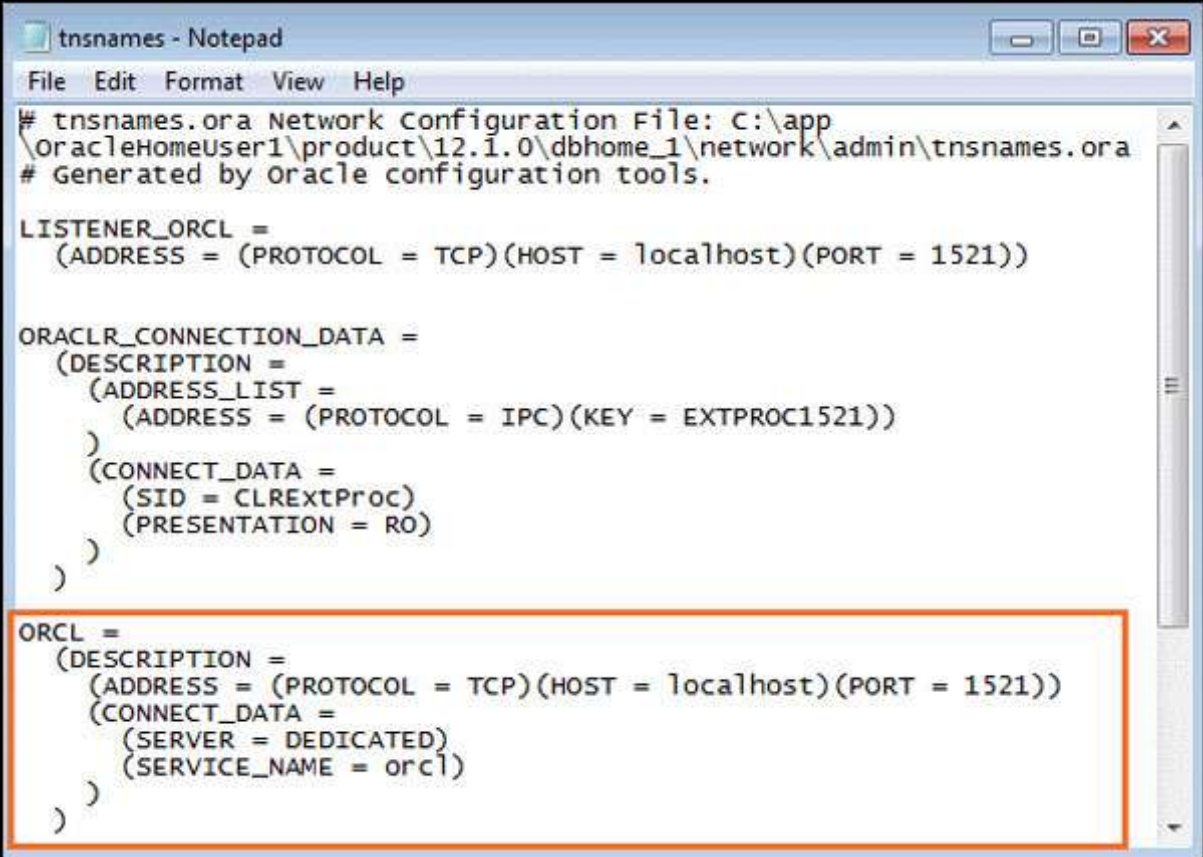


### View the tnsnames.ora File

1. Navigate to `C:\app\OracleHomeUser1\product\12.1.0\dbhome_1\NETWORK\ADMIN`. Double-click **tnsnames.ora** to view the network configuration settings.



2. You see that a connect alias called "ORCL" has been created. This "ORCL" alias points to the container database with the service name "ORCL".



```

tnsnames - Notepad
File Edit Format View Help
# tnsnames.ora Network Configuration File: C:\app
\OracleHomeUser1\product\12.1.0\dbhome_1\network\admin\tnsnames.ora
# Generated by Oracle configuration tools.

LISTENER_ORCL =
  (ADDRESS = (PROTOCOL = TCP)(HOST = localhost)(PORT = 1521))

ORACL_CONNECTION_DATA =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = IPC)(KEY = EXTPROC1521))
    )
    (CONNECT_DATA =
      (SID = CLRExtProc)
      (PRESENTATION = RO)
    )
  )

ORCL =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = localhost)(PORT = 1521))
    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SERVICE_NAME = orcl)
    )
  )

```

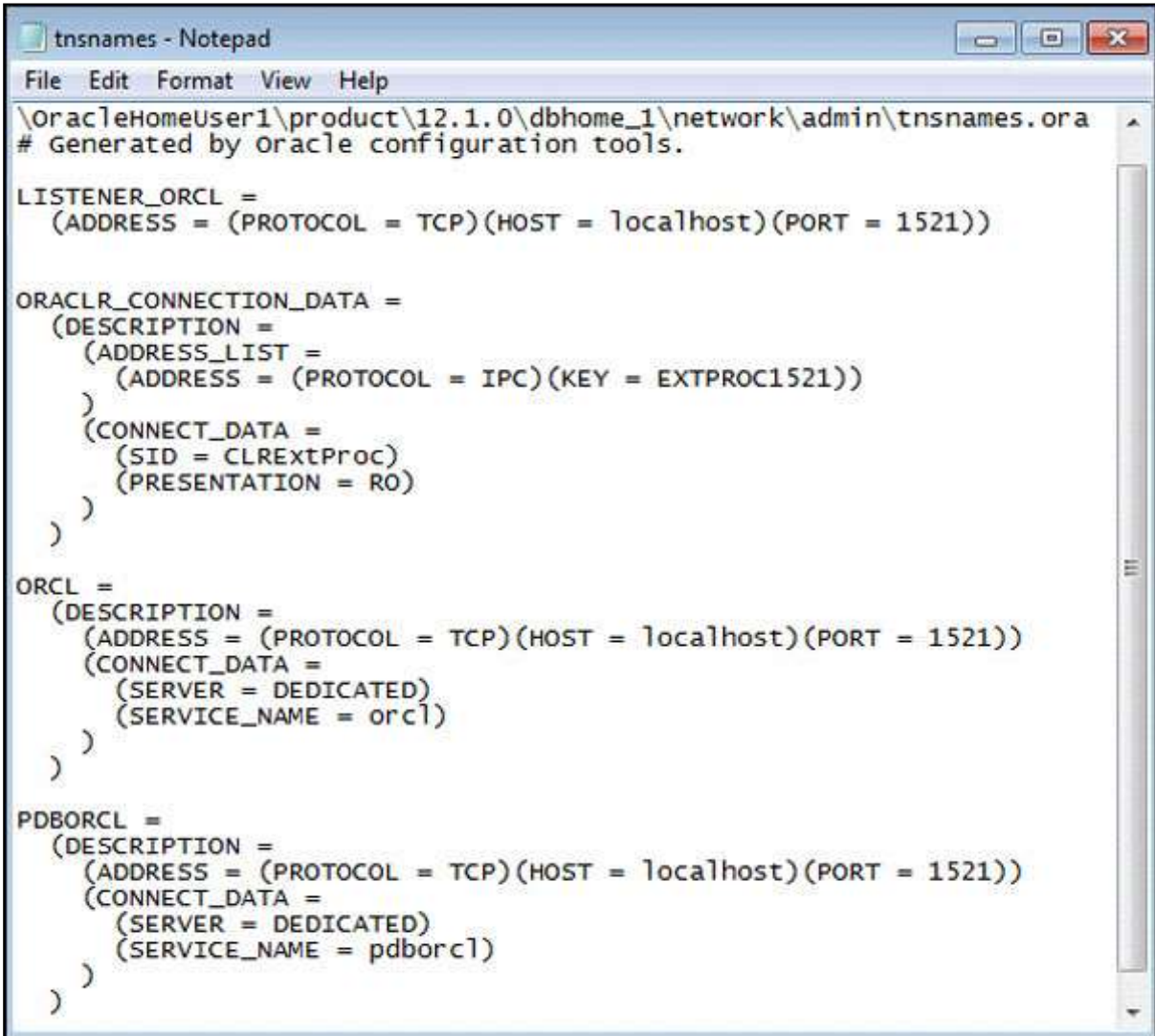
3. Create a database connect alias called "PDBORCL" and specify the network configuration settings to access the pluggable database "PDBORCL" that we created during installation. Copy the following code and paste it in the **tnsnames.ora** file. If necessary, modify the host and port to match the values in the ORCL alias.

```

PDBORCL =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = localhost)(PORT = 1521))
    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SERVICE_NAME = pdborcl)
    )
  )

```





```
tnsnames - Notepad
File Edit Format View Help
\OracleHomeUser1\product\12.1.0\dbhome_1\network\admin\tnsnames.ora
# Generated by Oracle configuration tools.

LISTENER_ORCL =
  (ADDRESS = (PROTOCOL = TCP)(HOST = localhost)(PORT = 1521))

ORACL_R_CONNECTION_DATA =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = IPC)(KEY = EXTPROC1521))
    )
    (CONNECT_DATA =
      (SID = CLRExtProc)
      (PRESENTATION = RO)
    )
  )

ORCL =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = localhost)(PORT = 1521))
    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SERVICE_NAME = orcl)
    )
  )

PDBORCL =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = localhost)(PORT = 1521))
    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SERVICE_NAME = pdborcl)
    )
  )
```

4. Save and close the file.

#### Connecting to Oracle Database Using SQL\*Plus

In this section, you will be connecting to the pluggable database using the SQL\*Plus utility.

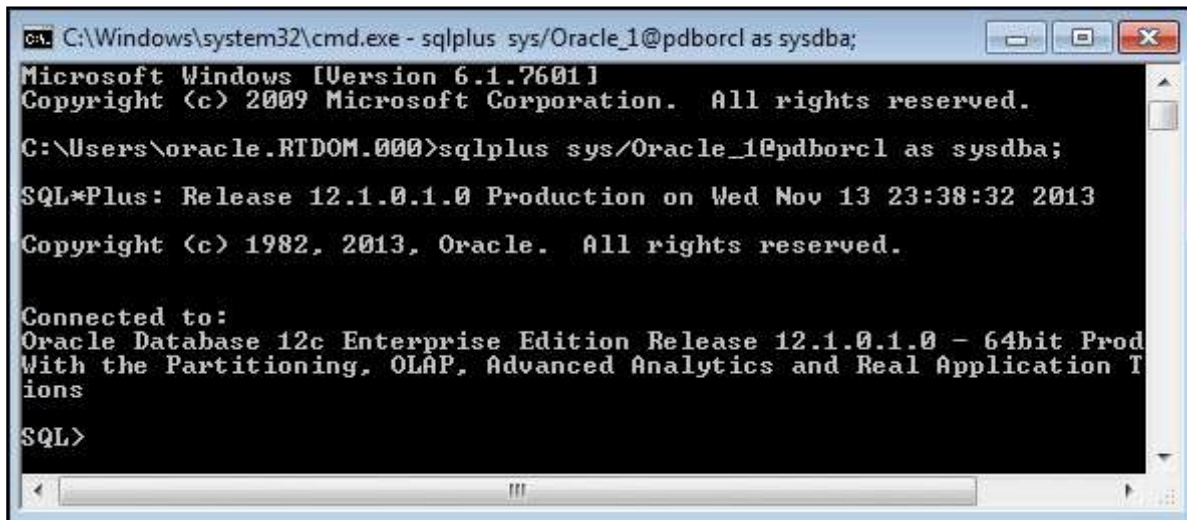
1. Open a command prompt and execute the following command. This command uses SQL\*Plus to connect to the pluggable database as a system administrator:

```
sqlplus sys/Oracle_1@pdborcl as sysdba;
```

**Note:** If you had chosen a different administrative password during installation, replace Oracle\_1 with the appropriate password in the command.







```
C:\Windows\system32\cmd.exe - sqlplus sys/Oracle_1@pdborcl as sysdba;
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\oracle.RTDOM.000>sqlplus sys/Oracle_1@pdborcl as sysdba;

SQL*Plus: Release 12.1.0.1.0 Production on Wed Nov 13 23:38:32 2013

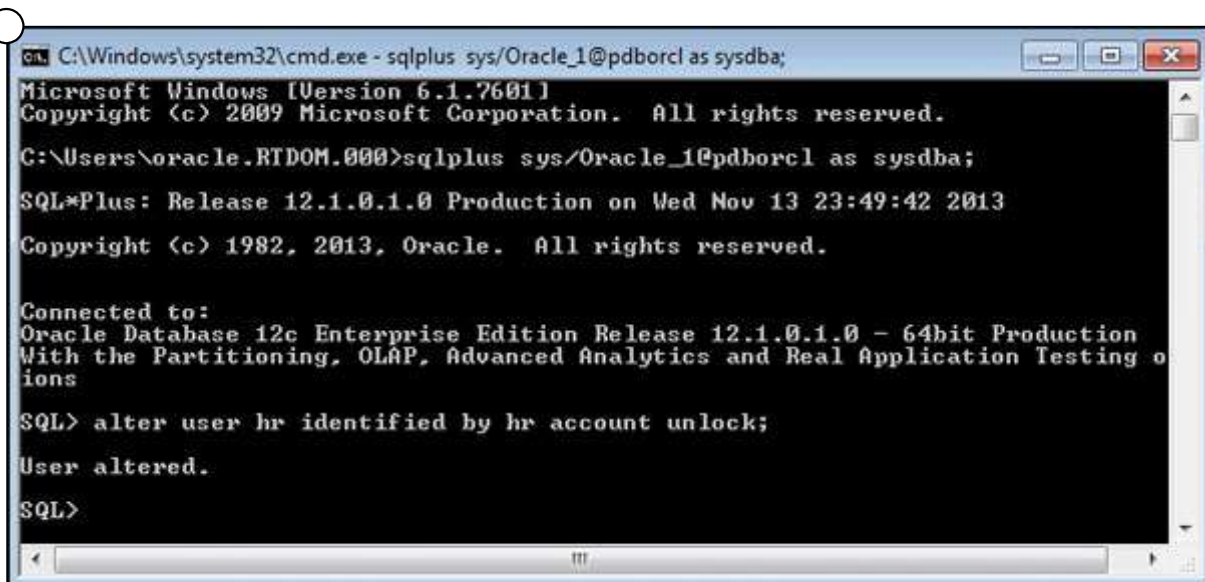
Copyright (c) 1982, 2013, Oracle. All rights reserved.

Connected to:
Oracle Database 12c Enterprise Edition Release 12.1.0.1.0 - 64bit Prod
With the Partitioning, OLAP, Advanced Analytics and Real Application T
ions

SQL>
```

2. By default, the HR schema is locked. Execute the following command to unlock the HR schema.

```
alter user hr identified by hr account unlock;
```



```
C:\Windows\system32\cmd.exe - sqlplus sys/Oracle_1@pdborcl as sysdba;
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\oracle.RTDOM.000>sqlplus sys/Oracle_1@pdborcl as sysdba;

SQL*Plus: Release 12.1.0.1.0 Production on Wed Nov 13 23:49:42 2013

Copyright (c) 1982, 2013, Oracle. All rights reserved.

Connected to:
Oracle Database 12c Enterprise Edition Release 12.1.0.1.0 - 64bit Production
With the Partitioning, OLAP, Advanced Analytics and Real Application Testing o
ions

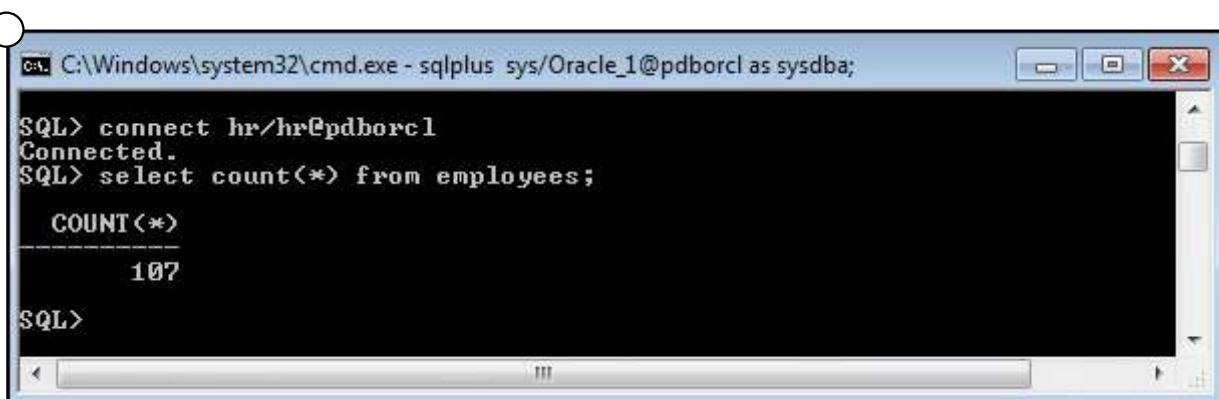
SQL> alter user hr identified by hr account unlock;

User altered.

SQL>
```

3. Execute the following commands to connect to the HR schema in the pluggable database and query the EMPLOYEES table.

```
connect hr/hr@pdborcl
select count(*) from employees;
```



```
C:\Windows\system32\cmd.exe - sqlplus sys/Oracle_1@pdborcl as sysdba;

SQL> connect hr/hr@pdborcl
Connected.
SQL> select count(*) from employees;

  COUNT(*)
-----
       107

SQL>
```

The EMPLOYEES table contains 107 rows. This verifies that the HR schema was created successfully when the database was installed.



## Summary

In this tutorial, you have learned how to:

- Download the Oracle database software
- Install the Oracle database software in a Windows environment
- Create a database containing example schemas
- Verify the database installation
- Connect to an Oracle instance using the SQL\*Plus utility
- Unlock and query the HR schema

## Resources

- An Oracle White Paper entitled *Introducing the Oracle Home User in Oracle Database 12c for Microsoft Windows*
- The documentation entitled *Oracle® Database Installation Guide 12c Release 1 (12.1) for Microsoft Windows*

## Credits

- Lead Curriculum Developer: Supriya Ananth
- Other Contributors: Christian Shay