

Oracle STARTUP - How to Start an Oracle Database Instance

Summary: In this lab, you will learn how to use the Oracle `STARTUP` command to start an Oracle Database instance.

Connect with sqlplus CLI:

```
sqlplus / as sysdba
```

To start up a database instance, you use the `STARTUP` command:

```
STARTUP
```

```
[oracle@0f0c8fc405b1 ~]$ sqlplus / as sysdba

SQL*Plus: Release 19.0.0.0.0 - Production on Fri Apr 26 17:16:13 2024
Version 19.3.0.0.0

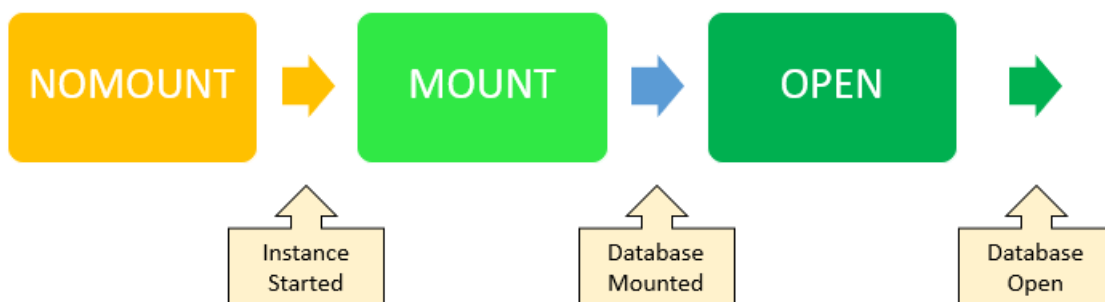
Copyright (c) 1982, 2019, Oracle. All rights reserved.

Connected to an idle instance.

SQL> SQL>
SQL> STARTUP
ORACLE instance started.

Total System Global Area 788526632 bytes
Fixed Size 9139752 bytes
Variable Size 226492416 bytes
Database Buffers 545259520 bytes
Redo Buffers 7634944 bytes
Database mounted.
Database opened.
SQL> █
```

When the Oracle Database starts an instance, it goes through the following stages: `NOMOUNT` , `MOUNT` , and `OPEN` .



The `STARTUP` command allows you to control the stage of the database instance.

1) NOMOUNT stage

In the `NOMOUNT` stage, Oracle carries the following steps:

- First, search for a server parameter file in the default location. You can override the default behavior by using the `SPFILE` or `PFILE` parameters in the `STARTUP` command.
- Next, read the parameter file to get the values of the initialization parameters.
- Then, allocate the system global area (SGA) based on the initialization parameter settings.
- After that, start the Oracle background processes such as `SMON`, `PMON`, and `LGWR`.
- Finally, open the alert log and trace files and record all explicit parameters to the alert log in the valid parameter syntax.

At the `NOMOUNT` stage, Oracle does not associate the database with the instance.

2) MOUNT stage

In the `MOUNT` stage, Oracle associates a database with an instance. In other words, the instance mounts the database.

The instance carries the following steps to mount a database:

- First, get the name of the database control files specified in the `CONTROL_FILE` initialization parameter.
- Second, open the control files.
- Third, find the name of the data files and the online redo log files.

When a database is mounted, the database is only available to database administrators, not all users.

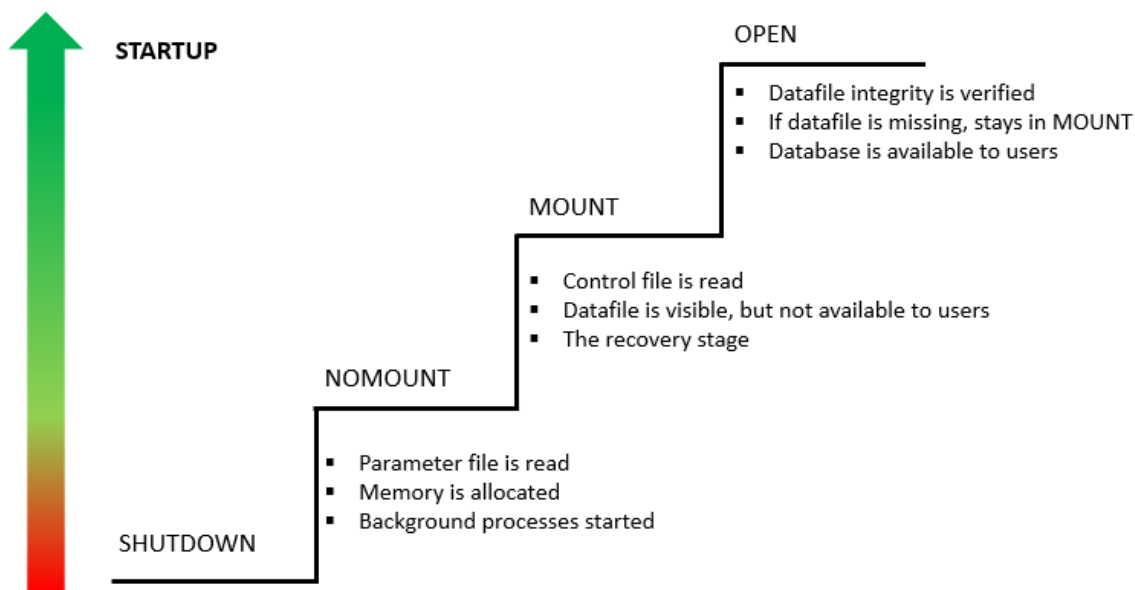
3) OPEN stage

In the `OPEN` stage, Oracle performs the following actions:

- First, open the online data files in tablespaces other than the undo tablespaces.
- Then, select an undo tablespace. The instance uses the default undo tablespace if an undo tablespace is specified in the `UNDO_TABLESPACE` initialization parameter. Otherwise, it will select the first available undo tablespace.
- Finally, open the online redo log files.

When Oracle opens a mounted database, the database is available for normal operations.

The following picture illustrates the Oracle database startup process:



Oracle `STARTUP` command

Note: Run `SHUTDOWN` command before running each command below first. Otherwise, you will get cannot start already running Oracle error.

The basic syntax of the `STARTUP` command is as follows:

```
STARTUP;
```

It is equivalent to starting the database instance in the `OPEN` stage:

```
STARTUP OPEN;
```

To start up a database instance in the `NOMOUNT` stage, you use the following command:

```
STARTUP NOMOUNT;
```

To bring the database to the next stage, you use the `ALTER DATABASE` statement. For example, this statement brings the database from the `NOMOUNT` to the `MOUNT` stage:

```
ALTER DATABASE MOUNT;
```

Oracle `STARTUP` command example

First, launch the SQL*Plus program and log in to the Oracle Database as the `SYS` user.

Second, issue the `SHUTDOWN IMMEDIATE` command to shut down the database:

```
shutdown immediate;
```

Here is the output:

```
Database dismounted.  
ORACLE instance shut down.
```

Third, start the database instance at the `OPEN` stage:

```
startup
```

Here is the output:

```
SQL> startup  
ORACLE instance started.  
  
Total System Global Area 2550136832 bytes  
Fixed Size                 3835304 bytes  
Variable Size              738200152 bytes  
Database Buffers           1795162112 bytes  
Redo Buffers                12939264 bytes  
Database mounted.  
Database opened.  
SQL>
```

Fourth, shut down the instance again:

```
shutdown immediate;
```

Fifth, start the database instance at the `MOUNT` state:

```
startup mount;
```

The output is:

```
ORACLE instance started.  
  
Total System Global Area 2550136832 bytes  
Fixed Size                 3835304 bytes  
Variable Size              738200152 bytes  
Database Buffers           1795162112 bytes  
Redo Buffers                12939264 bytes
```

Sixth, check the current status of the database instance by querying the `v$instance` view:

```
SELECT  
    instance_name,  
    status  
FROM  
    v$instance;
```

Output:

| INSTANCE_NAME | STATUS |
|---------------|---------|
| fenagodb | MOUNTED |

Seventh, bring the database to the `OPEN` stage by using the `ALTER DATABASE` command:

```
ALTER DATABASE OPEN;
```

Output:

```
Database altered.
```

Finally, check the status of the database by executing the following statement:

```
SELECT
    instance_name,
    status
FROM
    v$instance;
```

Now, the database is open and available for normal operations.

| INSTANCE_NAME | STATUS |
|---------------|--------|
| fenagodb | OPEN |

In this lab, you have learned how to start a database instance using the Oracle `STARTUP` command.