Practice

Starting up and Shutting Down Oracle Database Instances

Practice Target

In this practice you will create will experience the multiple startup and shutdown modes in Oracle databases.

In high level, in this practice, you will perform the following tasks:

- Examine shutting down options
- Examine startup modes

Practice Assumption

The practice assumes that `srv1` and its non-CDB database in it are up and running.

Note

The startup and shutdown procedures implemented in this practice applies in Oracle single-instance non-RAC database with no ASM. For Oracle databases with Oracle Restart is configured, the standard procedure for starting up and shutting down the database is by using the `srvctl` utility. You will experience this utility later in the course.

Examining Shutting Down Options

In the following steps, you will examine the options of shutting down the Oracle database in srv1.

Note: The steps demonstrated in this practice are applied in the Linux-based vm srv1. The same steps still apply in Windows platforms.

1.   Open a Putty session to srv1 as oracle.

2.   Invoke SQL*Plus and connect to the database as SYSTEM. In the remaining practice steps, we will refer to this Putty session as SYSTEM session.

      Note: If you forget the password of system user, login as SYS then issue the following command to reset the SYSTEM password:

      ```
       ALTER USER SYSTEM IDENTIFIED BY ABcd##1234 ;
      ```

      ```
      sqlplus system/ABcd##1234
      ```

3.   In the SYSTEM session, run the following statements to create a testing table and insert a sample row in it without committing the transaction.

      ```
      CREATE TABLE TEST ( A VARCHAR2(10));
      INSERT INTO TEST VALUES ('ROW 1');
      ```

4.   Open another Putty session as oracle to srv1. In this session, invoke SQL*Plus and connect to the database as SYS. In the remaining practice steps, this session will be referred to as the SYS session.

      ```
      sqlplus / as sysdba
      ```

5.   In the SYS session, shutdown the database instance in NORMAL mode.

      Observe that the command hangs. It is waiting for the current connected session to close.

      Note: NORMAL is the default shutdown option.

      Note: Observe that the SHUTDOWN command does not require a semicolon to execute because it is not a SQL statement, it is a SQL*Plus command.

      ```
      SHUTDOWN
      ```

6.   Open a new Putty session to srv1 as oracle and try to connect to the database as SYSTEM.

      The connection failed because a SHUTDOWN command is in progress. Close this Putty session we do not need it anymore.

      ```
      sqlplus system/ABcd##1234
      ```

7.   In the SYSTEM session, submit a COMMIT command to close the current transaction.

      ```
      COMMIT;
      ```

8. In the SYS session, verify that the SHUTDOWN statement still hangs.

    The statement still hangs because SYSTEM session is still open.

9. In the SYSTEM session, exit from SQL*Plus.

    ```
    exit
    ```

10. In the SYS session, verify that the database is shutting down.

11. After the database is completely shut down, start it up.

    ```
    STARTUP
    ```

12. In the SYSTEM session, connect to the database as SYSTEM and insert a sample row in the testing table without committing the transaction.

    ```
    sqlplus system/ABcd##1234
    INSERT INTO TEST VALUES ('ROW 2');
    ```

13. In the SYS session, shutdown the database instance using TRANSACTIONAL clause.

    Observe that the command hangs because the transaction in the SYSTEM session is still open.

    ```
    SHUTDOWN TRANSACTIONAL
    ```

14. In the SYSTEM session, submit a COMMIT statement.

    ```
    COMMIT;
    ```

15. In the SYS session, verify that the SHUTDOWN command is progressing. Wait still it completes.

    Observe that the system session now is automatically closed. If you try to execute any command, it should return the error ORA-03135: connection lost contact

16. Startup the database.

    ```
    STARTUP
    ```

17. Repeat the same testing procedure with the IMMEDIATE command. You will observe that the database shuts down immediately without waiting for the open transaction to close by the user.

Examining Startup Modes

In the following steps, you will examine the options of starting up the Oracle database in `srv1`.

18. In the `SYS` session, shutdown the database.

```
SHUTDOWN IMMEDIATE
```

19. Start up the database in mount mode.

```
STARTUP MOUNT
```

20. In the `SYSTEM` session, try connecting to the database.

The connection attempt fails because the database is not open. It returns the following error. We startup a database in nomount or in mount modes in some specific scenarios. For more information, refer to the concepts lecture.

```
 ORA-01033: ORACLE initialization or shutdown in progress
```

```
sqlplus system/ABcd##1234
```

21. Change the database open mode from mount to open read/write.

We also have the option to open the database in read only mode. In this case, the users cannot insert, change, or delete any user data.

```
ALTER DATABASE OPEN ;
```

22. In the `SYSTEM` session, try connecting to the database.

The connection succeeds.

```
sqlplus system/ABcd##1234
```

Cleanup

23. As a cleanup, as `SYSTEM` drop the testing table.

```
DROP TABLE test;
```

Summary

The DBA has multiple options for starting up and shutting down database instances. Which option to use depends on the scenario and the target for starting up or shutting down the database instance.