

Database and System Security Practical-2

Pre-Lab:

Q1.What is a backup in SQL?

Sol) A Backup is a copy of SQL Server data that can be used to restore and recover the data in case of a failure. A backup of SQL Server data can be created at the level of a database or one or more of its files or filegroups.

Q2. What is archivelog mode?

Sol) It is a mode that we can put the database in, for creating a backup of all the transactions that have occurred in the database so that, we can recover to any point in time in case of a failure.

Q3. What is noarchivelog mode in SQL?

Sol) It is generally the Opposite to ARCHIVELOG mode in which all the transactions are recorded. In NoArchivelog mode, we are in the risk of not being able to restore back to any point in time.

Q4. What is the command to shutdown the database?

Sol) When Oracle Restart is not in use, We can shut a database instance down by connecting as SYSDBA and issuing the “SHUTDOWN” command.

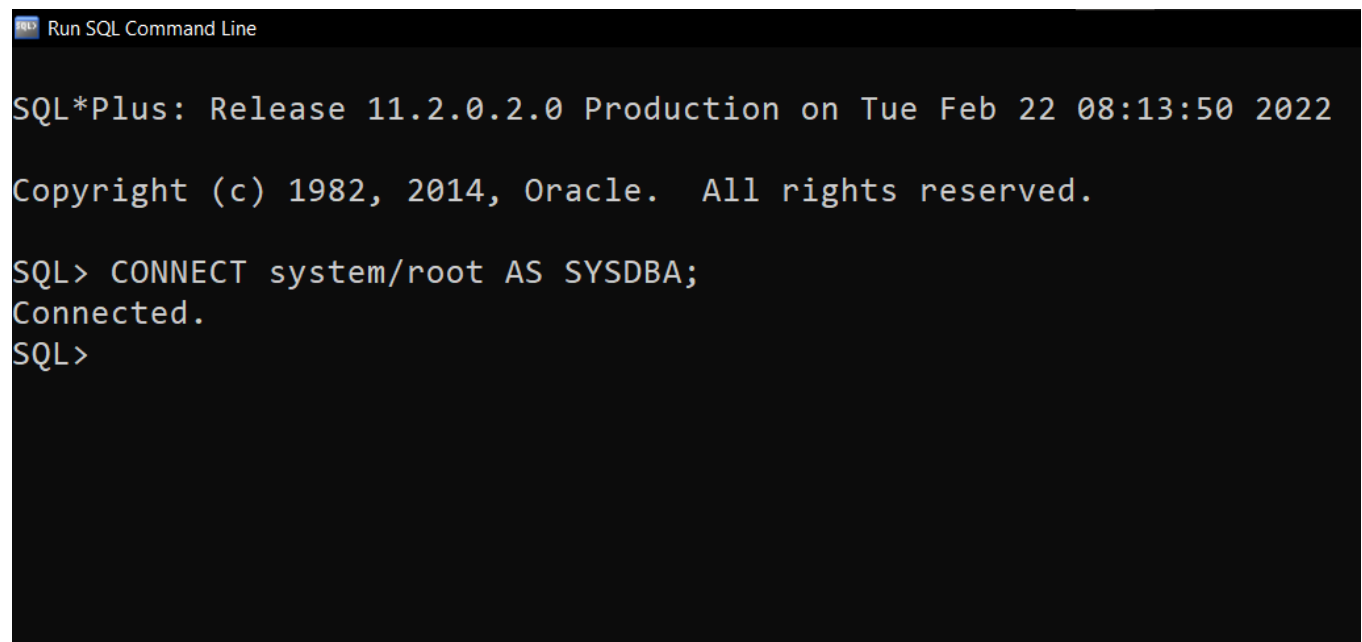
If the database is being managed by Oracle Restart, Generally we use the “SRVCTLSTOP” Command to Shut the database down.

In Lab :

Q1. Enable ARCHIVELOG mode and change flash recovery area size using SQL.

Sol)

Step – 1 : Log in as user oracle and enter the following commands.



```
Run SQL Command Line

SQL*Plus: Release 11.2.0.2.0 Production on Tue Feb 22 08:13:50 2022

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SQL> CONNECT system/root AS SYSDBA;
Connected.
SQL>
```

Step – 2 : To enable ARCHIVELOG mode status, enter the following SQL commands.

```
Run SQL Command Line

SQL*Plus: Release 11.2.0.2.0 Production on Tue Feb 22 08:13:50 2022

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SQL> CONNECT system/root AS SYSDBA;
Connected.
SQL> SHUTDOWN;
Database closed.
Database dismounted.
ORACLE instance shut down.
SQL> STARTUP MOUNT;
ORACLE instance started.

Total System Global Area 1068937216 bytes
Fixed Size 2260048 bytes
Variable Size 616563632 bytes
Database Buffers 444596224 bytes
Redo Buffers 5517312 bytes
Database mounted.
SQL> _
```

```
SQL> ALTER DATABASE OPEN;

Database altered.

SQL> _
```

Step – 3 : After you start SQL*Plus and connect to the database, set the size of the flash recovery area. For example, set it to 10 GB.

```
SQL> ALTER system SET DB_RECOVERY_FILE_DEST_SIZE = 10G SCOPE=BOTH SID='*';  
System altered.  
SQL>
```

Q2. Backup the database.

Sol) BACKUP DATABASE <databasename.> TO DISK = 'filepath';

Q3. Restore the database

Sol) RESTORE DATABASE;

Q4. Recover a deleted row in employee table using flashback query
Sol) SELECT * FROM HR.Employee AS OF TIMESTAMP
SYSDATE-1/24;

```
Run SQL Command Line

SQL*Plus: Release 11.2.0.2.0 Production on Mon Mar 7 09:42:53 2022

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SQL> CONNECT System AS SYSDBA;
Enter password:
Connected.
SQL> SELECT * FROM HR.Employee as of timestamp sysdate-1/24;

  EMPNO FNAME                LNAME                DEPT
-----
      2 Dhiren                Dommeti              CSE
      3 Subramanyam          Yadavalli            ECE
      4 Sasidhar              Kolisetty            CSE
      5 Harsha                Chamanthula          MECH
      1 Siva                  Rama Krishna         CSE

SQL>
```

Post-Lab:

Q1. What are the advantages and disadvantages of ARCHIVELOG mode?

Sol) Running the database in ARCHIVELOG mode has the following benefits:

- The database can be recovered in case of both instance and media failure.
- Backups can be performed while the database is open and available for use.

Disadvantages:

- Requires more storage
- Additional administrative overhead

Q2. What are the advantages and disadvantages of NOARCHIVELOG mode?

Sol) The NoArchivelog mode has the following advantages and disadvantages.

Advantages:

- Increases the performance of the database slightly.
- NOARCHIVELOG mode does have the advantage of not having to write transactions to an archive log.

Disadvantages:

- NoArchivelog mode is not suitable for the 24x7 databases as it needs downtime for the backup.
- In NoArchivelog mode the recovery is possible only upto the last full backup.