

## Practice

# Querying Dynamic Performance Views and Data Dictionary Views

## Practice Target

In this practice you will retrieve specific information about an Oracle database by querying dynamic performance views and data dictionary views.

## Practice Assumption

The practice assumes that `srv1` and the database in it are up and running.



Ahmed Baraka  
Oracle Database Administrator

## Querying Dynamic Performance Views and Data Dictionary

In the following steps, you examine some dynamic performance views and data dictionary.

1. Open a Putty session to `srv1` as `oracle`

2. Invoke SQL\*Plus and connect to the database as `sysdba`

```
sqlplus / as sysdba
```

3. Shutdown the database.

```
shutdown immediate
```

4. Start the database in mount mode.

```
startup mount
```

5. Try querying any data dictionary views.

Dictionary views are not available because the database datafiles are not open in mount mode.

```
SELECT NAME FROM DBA_DATAFILES;
```

6. Submit a query from `V$DATABASE`

Some dynamic performance views can be accessed while the database is mounted.

```
SELECT NAME, OPEN_MODE FROM V$DATABASE;
```

7. Submit a query from `V$ROLLNAME`

This view is not accessible when the database is mounted because it reads its information from the disk files.

```
SELECT NAME FROM V$ROLLNAME;
```

8. Startup the database in open mode.

```
ALTER DATABASE OPEN ;
```

Let's submit queries about some dynamic performance views:

9. Login to the database as `system`

```
conn system/ABcd##1234
```

10. Retrieve the `SID`, serial number, and status of the current session.

```
SELECT SID, SERIAL#, STATUS FROM V$SESSION WHERE USERNAME='SYSTEM';
```

**11.** Describe the structure of `V$TABLESPACE` and `DBA_TABLESPACES`

Both the views retrieve information about the database tablespaces. However, each view provides different pieces of information.

**Note:** Most V\$ views come in singular names whereas most dictionary views come in plural names.

```
DESC V$TABLESPACE
DESC DBA_TABLESPACES
```

Sometimes we need to link more than one view to retrieve the required information.

**12.** Retrieve the tablespace names in the database and the datafiles in each tablespace.

```
SELECT S.NAME TABLESPACE_NAME, D.NAME DATAFILE
FROM V$TABLESPACE S, V$DATAFILE D
WHERE S.TS# = D.TS#
ORDER BY 1;
```

Let's explore the dictionary view types.

**13.** Display the structure of `*_TABLES` views

Observe that the first column in the `DBA*` and `ALL*` views is the `OWNER` column. This column is missing in the `USER_TABLES` view.

```
desc DBA_TABLES
desc ALL_TABLES
desc USER_TABLES
```

**14.** Retrieve the number of rows in the `*_TABLES` views.

The `DBA*` and `ALL*` views retrieve the same number of rows because `SYSTEM` user has access to all the database tables. `USER_TABLES` retrieves much fewer rows because it contains only the tables owned by the `SYSTEM` user.

```
SELECT COUNT(*) FROM USER_TABLES;
SELECT COUNT(*) FROM ALL_TABLES;
SELECT COUNT(*) FROM DBA_TABLES;
```

**15.** Login as `HR` and submit the same queries.

The number of the rows in the `USER_TABLES` is fewer than the number of rows in the `ALL_TABLES`. `HR` user does not have access to the `DBA_TABLES` view.

```
conn hr/ABcd##1234

SELECT COUNT(*) FROM USER_TABLES;
SELECT COUNT(*) FROM ALL_TABLES;
SELECT COUNT(*) FROM DBA_TABLES;
```

**Note:** Feel free to query some other dictionary views, like `USER_INDEXES`, `USER_VIEWS`, and `USER_SEQUENCES`.

## Summary

- Dynamic Performance views and dictionary views provide extensive details about Oracle databases.
- Some Dynamic performance views (v\$) can be accessed when the instance is up and running. They do not require the database to be open.
- Data dictionary views can be accessed only after the database is open.
- `USER_*` dictionary views provide information for objects owned by the current user.
- `ALL_*` dictionary views provide information for objects that the current user has privilege to access them.
- `DBA_*` dictionary views provide information for all the objects in the database instance.

**Note:** In multitenant databases, there are a fourth type of views that start with `CDB_*`. You will learn about them in a future lecture.



Ahmed Baraka  
Oracle Database Administrator