

Oracle CREATE TABLESPACE Statement

Summary: In this lab, you will learn how to use the Oracle `CREATE TABLESPACE` statement to create a new tablespace in a database.

CREATE TABLESPACE statement

The `CREATE TABLESPACE` statement allows you to create a new tablespace. The following illustrates how to create a new tablespace named `tbs1` with size 1MB:

```
CREATE TABLESPACE tbs1
  DATAFILE 'tbs1_data.dbf'
  SIZE 1m;
```

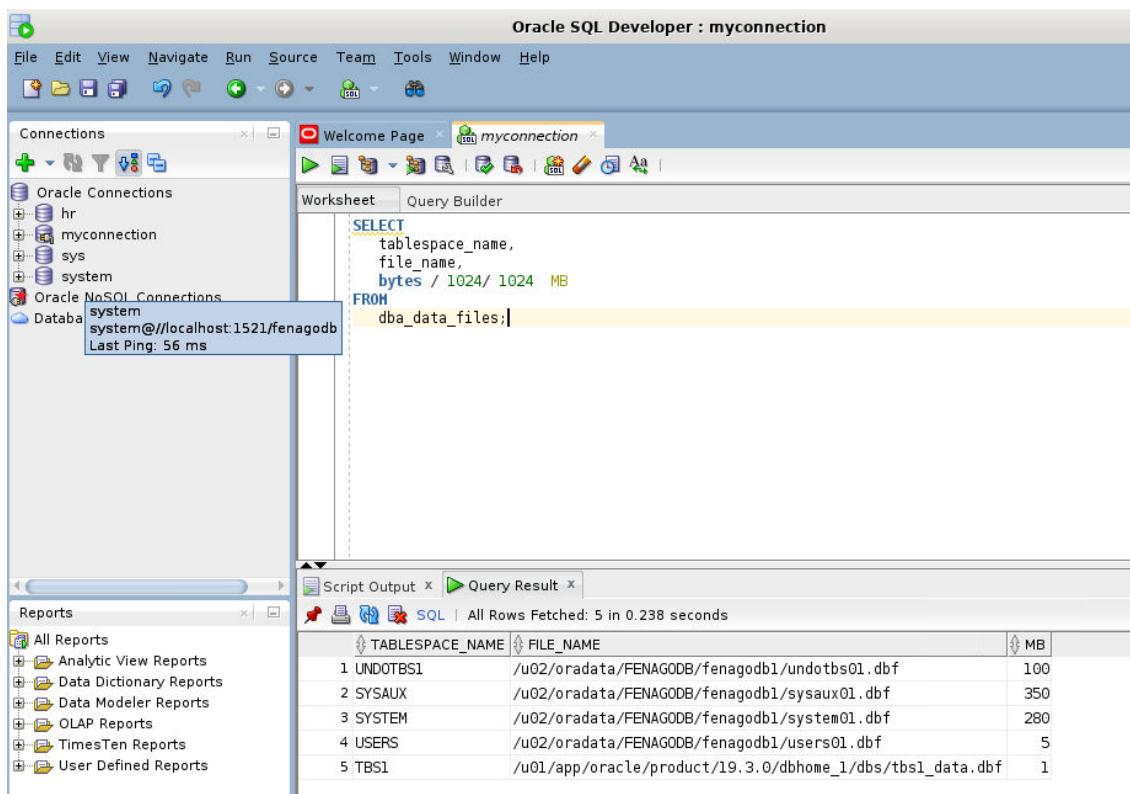
In this statement:

- First, specify the name of the tablespace after the `CREATE TABLESPACE` keywords. In this example, the tablespace name is `tbs1`.
- Second, specify the path to the data file of the tablespace in the `DATAFILE` clause. In this case, it is `tbs1_data.dbf`. Note that you can use the datafile full path.
- Third, specify the size of the tablespace in the `SIZE` clause. In this example, `1m` stands for `1MB`, which is quite small.

Once the tablespace is created, you can find its information by querying data from the `dba_data_files` view:

```
SELECT
  tablespace_name,
  file_name,
  bytes / 1024 / 1024 MB
FROM
  dba_data_files;
```

Here are all the tablespaces in the current database:



The `CREATE TABLESPACE` is quite complex with many options, you can find more information from the Oracle [\[CREATE TABLESPACE\]](#) page.

Tablespaces and `CREATE TABLE` statement

When you create a new table, Oracle automatically places the table in the default tablespace of the [user] which you use to create the table. However, you can explicitly specify the tablespace to which the table belongs as shown in the following query.

Note that you must have privilege on the tablespace that you specify in the `CREATE TABLE` statement.

Consider the following example.

First, create a new table called `t1` whose tablespace is `tbs1`:

```
CREATE TABLE t1(
  id INT GENERATED ALWAYS AS IDENTITY,
  c1 VARCHAR2(32)
) TABLESPACE tbs1;
```

Second, [insert] 10,000 rows into the `t1` table:

```
BEGIN
  FOR counter IN 1..10000 loop
    INSERT INTO t1(c1)
      VALUES(sys_guid());
  END loop;
```

```
END;  
/
```

Third, check the free space of the `tbs1` tablespace by querying from the `dba_free_space` view:

```
SELECT  
    tablespace_name,  
    bytes / 1024 / 1024 MB  
FROM  
    dba_free_space  
WHERE  
    tablespace_name = 'TBS1';
```

TABLESPACE_NAME	MB
TBS1	0.375

Fourth, insert 10,000 rows into the `t1` table, Oracle will issue an error due to insufficient storage in the tablespace:

```
BEGIN  
    FOR counter IN 1..10000 loop  
        INSERT INTO t1(c1)  
            VALUES(sys_guid());  
    END loop;  
END;  
/
```

Here is the error message:

```
ORA-01653: unable to extend table T1 by 8 in tablespace TBS1
```

To fix this, you can resize the tablespace using the following `ALTER DATABASE` statement:

```
ALTER DATABASE  
    DATAFILE 'tbs1_data.dbf'  
    RESIZE 10m;
```

If you insert 10,000 rows into the `t1` table again, it should work.

The second way to avoid this issue, when creating a new tablespace, you can use the `AUTOEXTEND ON` clause as follows:

```
CREATE TABLESPACE tbs1_test  
    DATAFILE 'tbs1_test_data.dbf'  
    SIZE 1m  
    AUTOEXTEND ON;
```

In this lab, you have learned how to use the Oracle `CREATE TABLESPACE` statement to create a new tablespace.