

DATABASE ADMINISTRATION

Lab 4 - Access control, users, roles, privileges

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Commands must be executed with SQL * Plus

1. Connect to database as an administrator.

```
SQL> conn sys as sysdba
Enter password:
Connected.
SQL>
```

2. Display the following information on all database users:

user name,
password (in encoded form),
user creation date,
the name of the default tablespace,
temporary tablespace name,
user status,
name of the profile assigned to the user.

```
SQL> SELECT username, password, created, default_tablespace, temporary_tablespace, account_status, profile FROM dba_users;
```

USERNAME	PASSWORD	CREATED
SPATIAL_WFS_ADMIN_USR		13-AUG-09
USERS	TEMP	
EXPIRED & LOCKED	DEFAULT	

USERNAME	PASSWORD	CREATED
DIP		13-AUG-09
USERS	TEMP	
EXPIRED & LOCKED	DEFAULT	

USERNAME	PASSWORD	CREATED
IX		30-OCT-09
USERS	TEMP	
EXPIRED & LOCKED	DEFAULT	

USERNAME	PASSWORD	CREATED
MDDATA		13-AUG-09
USERS	TEMP	

USERNAME	PASSWORD	CREATED
ORACLE_OCM		13-AUG-09
USERS	TEMP	
EXPIRED & LOCKED	DEFAULT	

USERNAME	PASSWORD	CREATED
SPATIAL_CSW_ADMIN_USR		13-AUG-09

USERNAME	PASSWORD	CREATED
USERS	TEMP	
EXPIRED & LOCKED	DEFAULT	

USERNAME	PASSWORD	CREATED
PM		30-OCT-09
USERS	TEMP	
EXPIRED & LOCKED	DEFAULT	

USERNAME	PASSWORD	CREATED
-----	-----	-----
DEFAULT_TABLESPACE	TEMPORARY_TABLESPACE	
-----	-----	
ACCOUNT_STATUS	PROFILE	
-----	-----	
BI		30-OCT-09
USERS	TEMP	
EXPIRED & LOCKED	DEFAULT	
XS\$NULL		13-AUG-09
USERS	TEMP	
EXPIRED & LOCKED	DEFAULT	
-----	-----	-----
USERNAME	PASSWORD	CREATED
-----	-----	-----
DEFAULT_TABLESPACE	TEMPORARY_TABLESPACE	
-----	-----	
ACCOUNT_STATUS	PROFILE	
-----	-----	
OLAPSYS		13-AUG-09
SYSAUX	TEMP	
EXPIRED & LOCKED	DEFAULT	
OWBSYS		13-AUG-09
SYSAUX	TEMP	
-----	-----	-----
USERNAME	PASSWORD	CREATED
-----	-----	-----
DEFAULT_TABLESPACE	TEMPORARY_TABLESPACE	
-----	-----	
ACCOUNT_STATUS	PROFILE	
-----	-----	
EXPIRED & LOCKED	DEFAULT	
ORDPLUGINS		13-AUG-09
SYSAUX	TEMP	
EXPIRED & LOCKED	DEFAULT	
OWBSYS_AUDIT		13-AUG-09
-----	-----	-----
USERNAME	PASSWORD	CREATED
-----	-----	-----
DEFAULT_TABLESPACE	TEMPORARY_TABLESPACE	
-----	-----	
ACCOUNT_STATUS	PROFILE	
-----	-----	
SYSAUX	TEMP	
EXPIRED & LOCKED	DEFAULT	
APPQOSSYS		13-AUG-09
SYSAUX	TEMP	
EXPIRED & LOCKED	DEFAULT	
-----	-----	-----
USERNAME	PASSWORD	CREATED
-----	-----	-----
DEFAULT_TABLESPACE	TEMPORARY_TABLESPACE	
-----	-----	
ACCOUNT_STATUS	PROFILE	
-----	-----	
EXFSYS		13-AUG-09
SYSAUX	TEMP	
EXPIRED & LOCKED	DEFAULT	
ORDSYS		13-AUG-09
SYSAUX	TEMP	
EXPIRED & LOCKED	DEFAULT	
-----	-----	-----
USERNAME	PASSWORD	CREATED
-----	-----	-----
DEFAULT_TABLESPACE	TEMPORARY_TABLESPACE	
-----	-----	
ACCOUNT_STATUS	PROFILE	
-----	-----	
SI_INFORMTN_SCHEMA		13-AUG-09
SYSAUX	TEMP	
EXPIRED & LOCKED	DEFAULT	

CTXSYS		13-AUG-09
SYSAUX	TEMP	
USERNAME	PASSWORD	CREATED
DEFAULT_TABLESPACE	TEMPORARY_TABLESPACE	
ACCOUNT_STATUS	PROFILE	
EXPIRED & LOCKED	DEFAULT	
ORDDATA		13-AUG-09
SYSAUX	TEMP	
EXPIRED & LOCKED	DEFAULT	
APEX_040200		29-NOV-12
USERNAME	PASSWORD	CREATED
DEFAULT_TABLESPACE	TEMPORARY_TABLESPACE	
ACCOUNT_STATUS	PROFILE	
SYSAUX	TEMP	
EXPIRED & LOCKED	DEFAULT	
WMSYS		13-AUG-09
SYSAUX	TEMP	
EXPIRED & LOCKED	DEFAULT	
USERNAME	PASSWORD	CREATED
DEFAULT_TABLESPACE	TEMPORARY_TABLESPACE	
ACCOUNT_STATUS	PROFILE	
MDSYS		13-AUG-09
SYSAUX	TEMP	
EXPIRED & LOCKED	DEFAULT	
FLows_FILES		07-FEB-11
SYSAUX	TEMP	
EXPIRED & LOCKED	DEFAULT	
USERNAME	PASSWORD	CREATED
DEFAULT_TABLESPACE	TEMPORARY_TABLESPACE	
ACCOUNT_STATUS	PROFILE	
OUTLN		13-AUG-09
SYSTEM	TEMP	
EXPIRED & LOCKED	DEFAULT	
TIMESTEN		23-MAY-12
USERS	TEMP	
USERNAME	PASSWORD	CREATED
DEFAULT_TABLESPACE	TEMPORARY_TABLESPACE	
ACCOUNT_STATUS	PROFILE	
LOCKED	DEFAULT	
XDBEXT		20-OCT-11
USERS	TEMP	
LOCKED	DEFAULT	
XDBPM		20-OCT-11
USERNAME	PASSWORD	CREATED
DEFAULT_TABLESPACE	TEMPORARY_TABLESPACE	
ACCOUNT_STATUS	PROFILE	
USERS	TEMP	
LOCKED	DEFAULT	

XDB		13-AUG-09
SYSAUX	TEMP	
LOCKED	DEFAULT	

USERNAME	PASSWORD	CREATED
-----	-----	-----
DEFAULT_TABLESPACE	TEMPORARY_TABLESPACE	
-----	-----	-----
ACCOUNT_STATUS	PROFILE	
-----	-----	-----

ANONYMOUS		13-AUG-09
SYSAUX	TEMP	
EXPIRED	DEFAULT	

OBE		29-NOV-12
APEX_2614203650434107	TEMP	
OPEN	DEFAULT	

USERNAME	PASSWORD	CREATED
-----	-----	-----
DEFAULT_TABLESPACE	TEMPORARY_TABLESPACE	
-----	-----	-----
ACCOUNT_STATUS	PROFILE	
-----	-----	-----

CACHEADM		23-MAY-12
USERS	TEMP	
OPEN	DEFAULT	

HR_TRIG		25-MAY-11
USERS	TEMP	

USERNAME	PASSWORD	CREATED
-----	-----	-----
DEFAULT_TABLESPACE	TEMPORARY_TABLESPACE	
-----	-----	-----
ACCOUNT_STATUS	PROFILE	
-----	-----	-----

OPEN	DEFAULT	
------	---------	--

HR		23-FEB-11
USERS	TEMP	
OPEN	DEFAULT	

SH		30-OCT-09
----	--	-----------

USERNAME	PASSWORD	CREATED
-----	-----	-----
DEFAULT_TABLESPACE	TEMPORARY_TABLESPACE	
-----	-----	-----
ACCOUNT_STATUS	PROFILE	
-----	-----	-----

USERS	TEMP	
OPEN	DEFAULT	

DEMO		30-OCT-09
USERS	TEMP	
OPEN	DEFAULT	

USERNAME	PASSWORD	CREATED
-----	-----	-----
DEFAULT_TABLESPACE	TEMPORARY_TABLESPACE	
-----	-----	-----
ACCOUNT_STATUS	PROFILE	
-----	-----	-----

HR1		02-FEB-10
USERS	TEMP	
OPEN	DEFAULT	

OE1		02-FEB-10
USERS	TEMP	
OPEN	DEFAULT	

USERNAME	PASSWORD	CREATED
-----	-----	-----
DEFAULT_TABLESPACE	TEMPORARY_TABLESPACE	
-----	-----	-----
ACCOUNT_STATUS	PROFILE	
-----	-----	-----

```

-----
TTHR                                23-MAY-12
USERS                                TEMP
OPEN                                DEFAULT

APEX_REST_PUBLIC_USER              29-NOV-12
USERS                                TEMP

-----
USERNAME                            PASSWORD                            CREATED
-----
DEFAULT_TABLESPACE                  TEMPORARY_TABLESPACE
-----
ACCOUNT_STATUS                      PROFILE
-----
OPEN                                DEFAULT

APEX_PUBLIC_USER                    07-FEB-11
USERS                                TEMP
OPEN                                DEFAULT

OE                                  16-FEB-11

-----
USERNAME                            PASSWORD                            CREATED
-----
DEFAULT_TABLESPACE                  TEMPORARY_TABLESPACE
-----
ACCOUNT_STATUS                      PROFILE
-----
USERS                                TEMP
OPEN                                DEFAULT

PLS                                  23-MAY-12
USERS                                TEMP
OPEN                                DEFAULT

-----
USERNAME                            PASSWORD                            CREATED
-----
DEFAULT_TABLESPACE                  TEMPORARY_TABLESPACE
-----
ACCOUNT_STATUS                      PROFILE
-----
APEX_LISTENER                       29-NOV-12
USERS                                TEMP
OPEN                                DEFAULT

SCOTT                                13-AUG-09
USERS                                TEMP
OPEN                                DEFAULT

-----
USERNAME                            PASSWORD                            CREATED
-----
DEFAULT_TABLESPACE                  TEMPORARY_TABLESPACE
-----
ACCOUNT_STATUS                      PROFILE
-----

PHPDEMO                             25-MAY-11
USERS                                TEMP
OPEN                                DEFAULT

XFILES                              04-OCT-10
USERS                                TEMP

-----
USERNAME                            PASSWORD                            CREATED
-----
DEFAULT_TABLESPACE                  TEMPORARY_TABLESPACE
-----
ACCOUNT_STATUS                      PROFILE
-----
OPEN                                DEFAULT

SYSMAN                              13-AUG-09
SYS AUX                              TEMP
OPEN                                DEFAULT

SYSTEM                              13-AUG-09

-----
USERNAME                            PASSWORD                            CREATED
-----

```

DEFAULT_TABLESPACE	TEMPORARY_TABLESPACE	
ACCOUNT_STATUS	PROFILE	
SYSTEM	TEMP	
OPEN	DEFAULT	
SYS		13-AUG-09
SYSTEM	TEMP	
OPEN	DEFAULT	
USERNAME	PASSWORD	CREATED
DEFAULT_TABLESPACE	TEMPORARY_TABLESPACE	
ACCOUNT_STATUS	PROFILE	
MGMT_VIEW		13-AUG-09
SYSTEM	TEMP	
OPEN	DEFAULT	
DBSNMP		13-AUG-09
SYSAUX	TEMP	
OPEN	MONITORING_PROFILE	
USERNAME	PASSWORD	CREATED
DEFAULT_TABLESPACE	TEMPORARY_TABLESPACE	
ACCOUNT_STATUS	PROFILE	

51 rows selected.

SQL>

3. Create two new users with the following parameters:

username: user_1 | password: test_user_1 | default tablespace: users | temporary tablespace: temp | profile: default

username: user_2 | password: test_user_2 | default tablespace: users | temporary tablespace: temp | profile: default.

```
SQL> CREATE USER user_1 IDENTIFIED BY test_user_1 DEFAULT TABLESPACE users TEMPORARY TABLESPACE temp PROFILE default;

User created.

SQL> CREATE USER user_2 IDENTIFIED BY test_user_2 DEFAULT TABLESPACE users TEMPORARY TABLESPACE temp PROFILE default;

User created.

SQL>
```

4. Check what restrictions on the use of tablespace space both users have (Hint: The dba_ts_quotas view contains information about restrictions, i.e. if there is no entry for a specific user, it means that the user has no restrictions). Then define the following restrictions for them: for the SYSTEM: 10M space, for the USERS: 50M space.

```
SQL> SELECT * FROM dba_ts_quotas WHERE username IN ('USER_1', 'USER_2');
```

no rows selected

```
SQL> ALTER USER user_1 QUOTA 10M ON system QUOTA 50M ON users;
```

User altered.

```
SQL> ALTER USER user_2 QUOTA 10M ON system QUOTA 50M ON users;
```

User altered.

```
SQL> SELECT * FROM dba_ts_quotas WHERE username IN ('USER_1', 'USER_2');
```

TABLESPACE_NAME	MAX_BYTES	BLOCKS	MAX_BLOCKS	DR0	USERNAME	BYTES
-----------------	-----------	--------	------------	-----	----------	-------

SYSTEM	10485760	0	1280	NO	USER_1	0
--------	----------	---	------	----	--------	---

USERS	52428800	0	6400	NO	USER_1	0
-------	----------	---	------	----	--------	---

USERS	52428800	0	6400	NO	USER_2	0
-------	----------	---	------	----	--------	---

SYSTEM	10485760	0	1280	NO	USER_2	0
--------	----------	---	------	----	--------	---

USERS	52428800	0	6400	NO	USER_2	0
-------	----------	---	------	----	--------	---

SYSTEM	10485760	0	1280	NO	USER_2	0
--------	----------	---	------	----	--------	---

USERS	52428800	0	6400	NO	USER_2	0
-------	----------	---	------	----	--------	---

SYSTEM	10485760	0	1280	NO	USER_2	0
--------	----------	---	------	----	--------	---

USERS	52428800	0	6400	NO	USER_2	0
-------	----------	---	------	----	--------	---

SYSTEM	10485760	0	1280	NO	USER_2	0
--------	----------	---	------	----	--------	---

USERS	52428800	0	6400	NO	USER_2	0
-------	----------	---	------	----	--------	---

```
SQL>
```

5. Start Sql * Plus in the second window and try to connect to database as user_1.

```
SQL> conn
```

Enter user-name: user_1

Enter password:

ERROR:

ORA-01045: user USER_1 lacks CREATE SESSION privilege; logon denied

```
SQL>
```

6. From the administrator window, issue the command allowing the user user_1 to connect to database.

```
SQL> GRANT connect TO user_1;
```

Grant succeeded.

```
SQL>
```

7. Try to connect to database again as user_1.

```
SQL> conn
```

Enter user-name: user_1

Enter password:

Connected.

```
SQL>
```

8. The same privilege should also be granted to user user_2.


```
SQL> GRANT connect TO user_2;
```

```
Grant succeeded.
```

```
SQL>
```

9. As user_1 try to create a test table with the following schema: Id number (4), Name varchar2 (100)

```
SQL> CREATE TABLE test (Id NUMBER(4), Name VARCHAR2(100));
```

```
CREATE TABLE test (Id NUMBER(4), Name VARCHAR2(100))
```

```
*
```

```
ERROR at line 1:
```

```
ORA-01031: insufficient privileges
```

```
SQL>
```

10. Check in the appropriate views of the data dictionary what object and system privileges the user user_1 has. Hint: dba_role_privs | dba_sys_privs | dba_tab_privs

```
SQL> SELECT * FROM dba_role_privs WHERE grantee IN ('USER_1');
```

GRANTEE	GRANTED_ROLE	ADM	DEF
USER_1	CONNECT	NO	YES

```
SQL> SELECT * FROM dba_sys_privs WHERE grantee IN ('USER_1');
```

```
no rows selected
```

```
SQL> SELECT * FROM dba_tab_privs WHERE grantee IN ('USER_1');
```

```
no rows selected
```

```
SQL> █
```

11. As an administrator (administration console), give the user user_1 an appropriate system privilege and try again from the console of this user to create the test table.

admin:

```
SQL> GRANT create table TO user_1;
```

```
Grant succeeded.
```

```
SQL> █
```

user_1:

```
SQL> CREATE TABLE test (Id NUMBER(4), Name VARCHAR2(100));
```

```
Table created.
```

```
SQL> █
```

12. As user user_1 try to insert into the test table two records with the values: {1, first record} and {2, second record}. Confirm the entered data.

```
SQL> INSERT INTO test VALUES (1, 'first record');

1 row created.

SQL> INSERT INTO test VALUES (2, 'second record');

1 row created.

SQL> COMMIT;

Commit complete.

SQL>
```

13. In the third window, connect to database as user user_2 and try to read all records in the user test table user_1.

```
SQL> conn
Enter user-name: user_2
Enter password:
Connected.
SQL> SELECT * FROM user_1.test;
SELECT * FROM user_1.test
                *

ERROR at line 1:
ORA-00942: table or view does not exist

SQL>
```

14. As user user_1, issue a command that allows user user_2 to perform the previous operation.

```
user_1:
SQL> GRANT select ON test TO user_2;

Grant succeeded.

SQL>
user_2:
SQL> SELECT * FROM user_1.test;

          ID
-----
NAME
-----
          1
first record
          2
second record

SQL>
```

15. As user user_1, give user user_2 the ability to add records to the test table in the schema of user user_1. The privilege is to be granted with an administrative option (possibility of further transfer of the privilege). Check the operation by inserting the next record {3, third record} as user user_2 into the test table.

user_1:

```
SQL> GRANT insert ON test To user_2 WITH GRANT OPTION;
```

```
Grant succeeded.
```

```
SQL> █
```

user_2:

```
SQL> INSERT INTO user_1.test VALUES (3, 'third record');
```

```
1 row created.
```

```
SQL>
```

16. As user_2, pass the previous privilege to the new user test_a (he already has the rights to connect to the database and create basic resources), but without the administrative option.

admin:

```
SQL> CREATE USER test_a IDENTIFIED BY test DEFAULT TABLESPACE users QUOTA 10M ON users;
```

```
User created.
```

```
SQL> GRANT connect TO test_a;
```

```
Grant succeeded.
```

```
SQL> GRANT resource TO test_a;
```

```
Grant succeeded.
```

```
SQL> █
```

user_2:

```
SQL> GRANT insert ON user_1.test TO test_a;
```

```
Grant succeeded.
```

```
SQL>
```

17. In the fourth window, join the database as user test_a and try to insert another record {4, fourth record} into the test table.

```
[oracle@localhost ~]$ sqlplus
```

```
SQL*Plus: Release 11.2.0.2.0 Production on Mon Oct 25 07:35:13 2021
```

```
Copyright (c) 1982, 2010, Oracle. All rights reserved.
```

```
Enter user-name: test_a
```

```
Enter password:
```

```
Connected to:
```

```
Oracle Database 11g Enterprise Edition Release 11.2.0.2.0 - Production
```

```
With the Partitioning, OLAP, Data Mining and Real Application Testing options
```

```
SQL> INSERT INTO user_1.test VALUES (4, 'fourth record');
```

```
1 row created.
```

```
SQL> █
```

18. As an administrator, display information about all privileges (both system and object) that users

have: user1, user2 and test_a.

```
SQL> SELECT * FROM dba_role_privs WHERE grantee IN ('USER_1', 'USER_2', 'TEST_A');
```

GRANTEE	GRANTED_ROLE	ADM	DEF
USER_2	CONNECT	NO	YES
TEST_A	RESOURCE	NO	YES
TEST_A	CONNECT	NO	YES
USER_1	CONNECT	NO	YES

```
SQL> SELECT * FROM dba_sys_privs WHERE grantee IN ('USER_1', 'USER_2', 'TEST_A');
```

GRANTEE	PRIVILEGE	ADM
USER_1	CREATE TABLE	NO
TEST_A	UNLIMITED TABLESPACE	NO

```
SQL> SELECT * FROM dba_tab_privs WHERE grantee IN ('USER_1', 'USER_2', 'TEST_A');
```

GRANTEE	OWNER		
TABLE_NAME	GRANTOR		
PRIVILEGE		GRA	HIE
TEST_A	USER_1		
TEST	USER_2		
INSERT		NO	NO
USER_2	USER_1		
TEST	USER_1		
INSERT		YES	NO

GRANTEE	OWNER		
TABLE_NAME	GRANTOR		
PRIVILEGE		GRA	HIE
USER_2	USER_1		
TEST	USER_1		
SELECT		NO	NO

```
SQL> █
```

19. As user user_1, revoke user user_2 the right to insert records into the test table. Check if the user user_2 can still insert records into the test table. Check if the test_a user retained the right to insert records into the test table.

user_1:

```
SQL> REVOKE insert ON test FROM user_2;
```

```
Revoke succeeded.
```

```
SQL>
```

user_2:

```
SQL> INSERT INTO user_1.test VALUES (5, 'fifth record');
INSERT INTO user_1.test VALUES (5, 'fifth record')
```

*

```
ERROR at line 1:
ORA-01031: insufficient privileges
```

```
SQL> █
```

test_a:

```
SQL> INSERT INTO user_1.test VALUES (5, 'fifth record');
INSERT INTO user_1.test VALUES (5, 'fifth record')
```

*

```
ERROR at line 1:
ORA-00942: table or view does not exist
```

```
SQL>
```

20. As user user_1, revoke user user_2 all rights to the test table (with one command).

```
SQL> REVOKE all ON test FROM user_2;
```

```
Revoke succeeded.
```

```
SQL>
```

21. As an administrator, give user user1 the right to create roles.

```
SQL> GRANT create role TO user_1;
```

```
Grant succeeded.
```

```
SQL>
```

22. As user user_1 create a role with the following properties:

role name: data_change | role privileges: reading, inserting, deleting and modifying test table data.

```
SQL> CREATE ROLE data_change;
```

```
Role created.
```

```
SQL> GRANT select, insert, delete, update ON test TO data_change;
```

```
Grant succeeded.
```

```
SQL> █
```

23. Assign the role to user user_2.

```
SQL> GRANT data_change TO user_2;
```

```
Grant succeeded.
```

```
SQL>
```

24. In the user window, check if user_2 can modify the data of the test table (e.g. delete records).

```
SQL> DELETE FROM user_1.test;
DELETE FROM user_1.test
      *
ERROR at line 1:
ORA-00942: table or view does not exist

SQL>
```

Why does the modification operation fail despite the fact that user_2 was given the data_change role?

The data_change role isn't active for that session.

25. Log out user user_2 and reconnect him to the database. Verify that the privileges associated with the data_change role are working now.

```
SQL> disconn
Disconnected from Oracle Database 11g Enterprise Edition Release 11.2.0.2.0 - Production
With the Partitioning, OLAP, Data Mining and Real Application Testing options
SQL> conn
Enter user-name: user_2
Enter password:
Connected.
SQL> select * from user_1.test;

      ID
-----
NAME
-----
      1
first record

      2
second record

      4
fourth record

      ID
-----
NAME
-----
      3
third record

SQL> █
```

26. As user user_1 create another role with the following properties:

role name: structure_change | privileges in the role: changing the structure (alter) of the test table |
role identified by the password change

```
SQL> CREATE ROLE structure_change IDENTIFIED BY change;

Role created.

SQL> GRANT ALTER ON test TO structure_change;

Grant succeeded.

SQL> █
```

27. Assign the role to user user_2.

```
SQL> GRANT structure_change TO user_2;
```

Grant succeeded.

```
SQL> █
```

28. Check if the user user_2 has the right to modify the structure of the user test table user_1. To do this, try to add a new column number (5,2) to the test table.

```
SQL> SET ROLE structure_change IDENTIFIED BY change;
```

Role set.

```
SQL> ALTER TABLE user_1.test ADD new number(5,2);
```

Table altered.

```
SQL> █
```

What should user_2 do so that he can perform this operation without reattaching to the database?

Use the 'SET ROLE' statement to enable role for current session.

29. As user user1, take both roles from user user2. Check if user_2 still has the right to change data and the structure of the test relation (without logging back in).

user_1:

```
SQL> REVOKE data_change, structure_change FROM user_2;
```

Revoke succeeded.

```
SQL> █
```

user_2:

```
SQL> DELETE FROM user_1.test WHERE ID=4;
```

```
DELETE FROM user_1.test WHERE ID=4
```

*

ERROR at line 1:

ORA-01031: insufficient privileges

```
SQL> ALTER TABLE user_1.test ADD new2 number (5,2);
```

Table altered.

```
SQL>
```

30. As an administrator, check which profiles have been defined in the database in the data dictionary view.

```
SQL> SELECT * FROM dba_profiles;
```

PROFILE	RESOURCE_NAME	RESOURCE
LIMIT		

DEFAULT	COMPOSITE_LIMIT	KERNEL
UNLIMITED		
DEFAULT	SESSIONS_PER_USER	KERNEL
UNLIMITED		
DEFAULT	CPU_PER_SESSION	KERNEL
UNLIMITED		
PROFILE		
RESOURCE_NAME		

LIMIT		

DEFAULT UNLIMITED	CPU_PER_CALL	KERNEL
DEFAULT UNLIMITED	LOGICAL_READS_PER_SESSION	KERNEL
DEFAULT UNLIMITED	LOGICAL_READS_PER_CALL	KERNEL
PROFILE	RESOURCE_NAME	RESOURCE
LIMIT		
DEFAULT UNLIMITED	IDLE_TIME	KERNEL
DEFAULT UNLIMITED	CONNECT_TIME	KERNEL
DEFAULT UNLIMITED	PRIVATE_SGA	KERNEL
PROFILE	RESOURCE_NAME	RESOURCE
LIMIT		
DEFAULT UNLIMITED	FAILED_LOGIN_ATTEMPTS	PASSWORD
DEFAULT UNLIMITED	PASSWORD_LIFE_TIME	PASSWORD
DEFAULT UNLIMITED	PASSWORD_REUSE_TIME	PASSWORD
PROFILE	RESOURCE_NAME	RESOURCE
LIMIT		
DEFAULT UNLIMITED	PASSWORD_REUSE_MAX	PASSWORD
DEFAULT NULL	PASSWORD_VERIFY_FUNCTION	PASSWORD
DEFAULT 1	PASSWORD_LOCK_TIME	PASSWORD
PROFILE	RESOURCE_NAME	RESOURCE
LIMIT		
DEFAULT 7	PASSWORD_GRACE_TIME	PASSWORD
MONITORING_PROFILE DEFAULT	COMPOSITE_LIMIT	KERNEL
MONITORING_PROFILE DEFAULT	SESSIONS_PER_USER	KERNEL
PROFILE	RESOURCE_NAME	RESOURCE
LIMIT		
MONITORING_PROFILE DEFAULT	CPU_PER_SESSION	KERNEL
MONITORING_PROFILE DEFAULT	CPU_PER_CALL	KERNEL
MONITORING_PROFILE DEFAULT	LOGICAL_READS_PER_SESSION	KERNEL

PROFILE	RESOURCE_NAME	RESOURCE

LIMIT		

MONITORING_PROFILE	LOGICAL_READS_PER_CALL	KERNEL
DEFAULT		
MONITORING_PROFILE	IDLE_TIME	KERNEL
DEFAULT		
MONITORING_PROFILE	CONNECT_TIME	KERNEL
DEFAULT		
PROFILE	RESOURCE_NAME	RESOURCE

LIMIT		

MONITORING_PROFILE	PRIVATE_SGA	KERNEL
DEFAULT		
MONITORING_PROFILE	FAILED_LOGIN_ATTEMPTS	PASSWORD
UNLIMITED		
MONITORING_PROFILE	PASSWORD_LIFE_TIME	PASSWORD
DEFAULT		
PROFILE	RESOURCE_NAME	RESOURCE

LIMIT		

MONITORING_PROFILE	PASSWORD_REUSE_TIME	PASSWORD
DEFAULT		
MONITORING_PROFILE	PASSWORD_REUSE_MAX	PASSWORD
DEFAULT		
MONITORING_PROFILE	PASSWORD_VERIFY_FUNCTION	PASSWORD
DEFAULT		
PROFILE	RESOURCE_NAME	RESOURCE

LIMIT		

MONITORING_PROFILE	PASSWORD_LOCK_TIME	PASSWORD
DEFAULT		
MONITORING_PROFILE	PASSWORD_GRACE_TIME	PASSWORD
DEFAULT		
32 rows selected.		
SQL>		
31. Create a new profile named my_profile with the following parameters:		
maximum session duration: 15 minutes maximum session idle time: 1 minute maximum number of concurrent user sessions: 2 The other parameters are to keep their default values.		
SQL> CREATE PROFILE my_profile LIMIT CONNECT_TIME 15 IDLE_TIME 1 SESSIONS_PER_USER 2;		
Profile created.		
SQL>		
32. Verify that the database is configured toward resource limits checking. To do this, read the value of the RESOURCE_LIMIT parameter from the dynamic view gv \$ parameter. If the parameter value is FALSE, change it to TRUE.		

```
SQL> SELECT value FROM v$parameter WHERE name='resource_limit';
```

```
VALUE
```

```
-----  
FALSE
```

```
SQL> ALTER SYSTEM SET resource_limit=true;
```

```
System altered.
```

```
SQL> SELECT value FROM v$parameter WHERE name='resource_limit';
```

```
VALUE
```

```
-----  
TRUE
```

```
SQL>
```

33. Assign a new profile to user user_2.

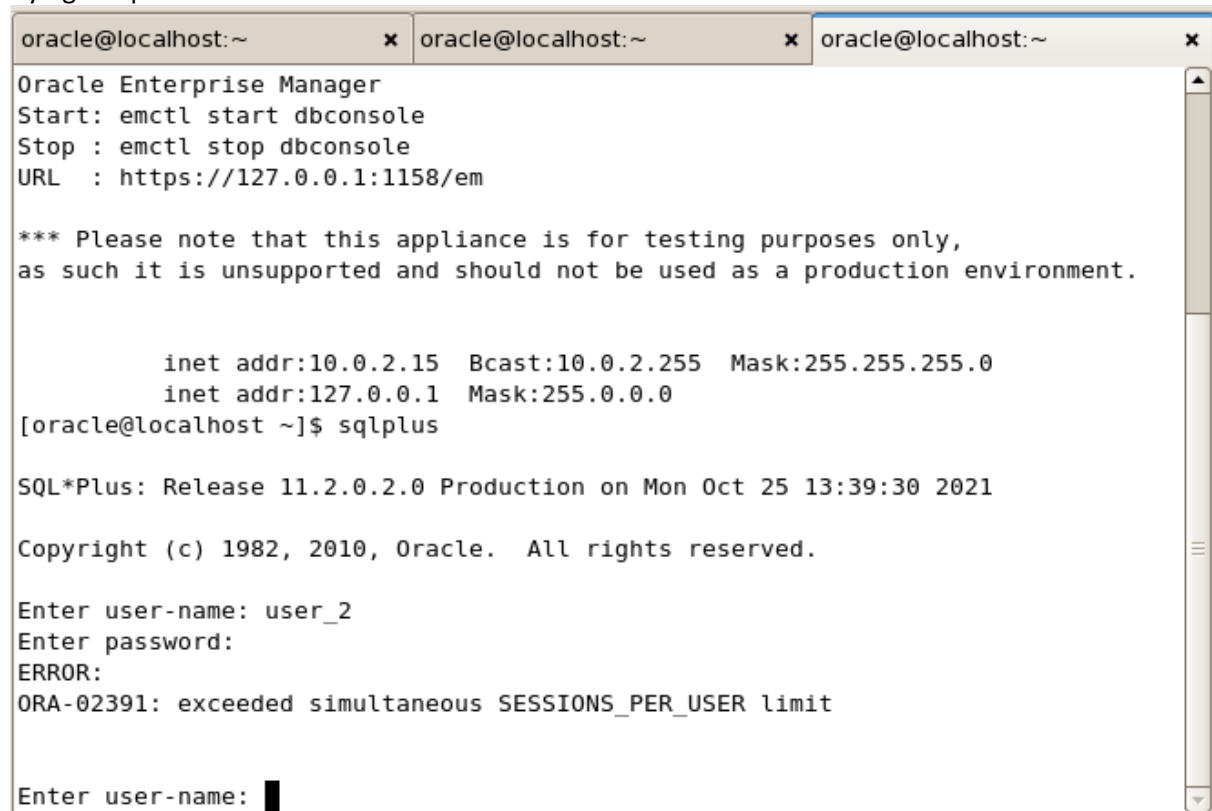
```
SQL> ALTER USER user_2 PROFILE my_profile;
```

```
User altered.
```

```
SQL> █
```

34. Check the functionality of the new profile. To do this, try to start additional user sessions of user_2. Check how long user session user_2 can remain idle.

trying to open 3rd session:



```
oracle@localhost:~ x oracle@localhost:~ x oracle@localhost:~ x
Oracle Enterprise Manager
Start: emctl start dbconsole
Stop : emctl stop dbconsole
URL  : https://127.0.0.1:1158/em

*** Please note that this appliance is for testing purposes only,
as such it is unsupported and should not be used as a production environment.

      inet addr:10.0.2.15 Bcast:10.0.2.255 Mask:255.255.255.0
      inet addr:127.0.0.1 Mask:255.0.0.0
[oracle@localhost ~]$ sqlplus

SQL*Plus: Release 11.2.0.2.0 Production on Mon Oct 25 13:39:30 2021

Copyright (c) 1982, 2010, Oracle. All rights reserved.

Enter user-name: user_2
Enter password:
ERROR:
ORA-02391: exceeded simultaneous SESSIONS_PER_USER limit

Enter user-name: █
```

after two minutes of inactivity:

```
oracle@localhost:~ x oracle@localhost:~ x oracle@localhost:~ x
SQL> SELECT * FROM TEST:
  2 ;
SELECT * FROM TEST:
*
ERROR at line 1:
ORA-02396: exceeded maximum idle time, please connect again

SQL> disconn
Disconnected from Oracle Database 11g Enterprise Edition Release 11.2.0.2.0 - Production
With the Partitioning, OLAP, Data Mining and Real Application Testing options
SQL> conn
Enter user-name: user_2
Enter password:
Connected.
SQL> SELECT * FROM user_1.test;
SELECT * FROM user_1.test
*
ERROR at line 1:
ORA-02396: exceeded maximum idle time, please connect again

SQL> █
```

35. Restore user user_2 to the default profile.

```
SQL> ALTER USER user_2 PROFILE default;
```

User altered.

```
SQL>
```

36. As an administrator, check which users are currently attached to the database. Check their session statuses. Hint: dynamic view v \$ session

```
SQL> SELECT username, status FROM v$session;
```

USERNAME	STATUS
----------	--------

	ACTIVE
	ACTIVE
	ACTIVE
	ACTIVE
	ACTIVE
	ACTIVE
	ACTIVE
	ACTIVE
	ACTIVE
	ACTIVE
	ACTIVE
	ACTIVE

USERNAME	STATUS
----------	--------

	ACTIVE
	ACTIVE
	ACTIVE
	ACTIVE

USER_1	INACTIVE
--------	----------

TEST_A	INACTIVE
--------	----------

APEX_PUBLIC_USER	INACTIVE
------------------	----------

	ACTIVE
	ACTIVE
	ACTIVE
	ACTIVE

USERNAME	STATUS
----------	--------

	ACTIVE
--	--------

```

        ACTIVE
        ACTIVE
        ACTIVE
SYS      ACTIVE
        ACTIVE
USER_2   SNIPED
        ACTIVE
USER_2   INACTIVE
        ACTIVE
        ACTIVE

33 rows selected.

SQL>

```

37. Execute the commands that will delete user_1's session.

```

SQL> SELECT sid, serial# FROM v$session WHERE username in ('USER_1');

      SID      SERIAL#
-----
      24         15

SQL> ALTER SYSTEM KILL SESSION '24, 15' IMMEDIATE;

System altered.

SQL> █

```

38. Check what happens to the session of user user_1 after it has been deleted.

```

SQL> select * from test;
select * from test
*
ERROR at line 1:
ORA-03135: connection lost contact
Process ID: 3396
Session ID: 24 Serial number: 15

SQL> █

```

39. Assuming that the user user_2 still remains connected to the database (if it is not, join it), try to remove the user user_2.

```

SQL> DROP USER user_2;
DROP USER user_2
*
ERROR at line 1:
ORA-01940: cannot drop a user that is currently connected

SQL>

```

Why is the operation not successful?

Cannot drop a user that is currently connected

40. Delete the session of user user_2 and try to delete the user again.

```
SQL> SELECT sid, serial# FROM v$session WHERE username in ('USER_2');
```

SID	SERIAL#
155	65

```
SQL> ALTER SYSTEM KILL SESSION '155, 65' IMMEDIATE;
```

System altered.

```
SQL> DROP USER user_2;
```

User dropped.

```
SQL>
```

41. Try to delete the user account user_1.

```
SQL> DROP USER user_1;
```

```
DROP USER user_1
```

```
*
```

```
ERROR at line 1:
```

```
ORA-01922: CASCADE must be specified to drop 'USER_1'
```

```
SQL> DROP USER user_1 CASCADE;
```

User dropped.

```
SQL>
```

Why do I need to use the CASCADE option?

Because 'user_1' is the owner of 'test' table, which also have to be deleted.

42. If a modification was made on command 32 (change to RESOUCES_LIMIT), revert to the previous state.

```
SQL> ALTER SYSTEM SET resource_limit=false;
```

System altered.

```
SQL>
```