

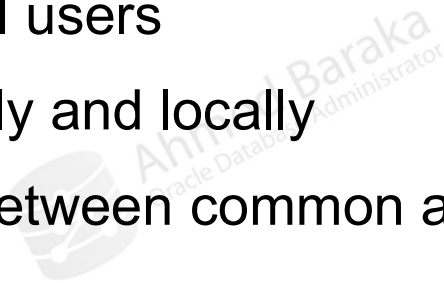
Managing Local and Common Users

By Ahmed Baraka

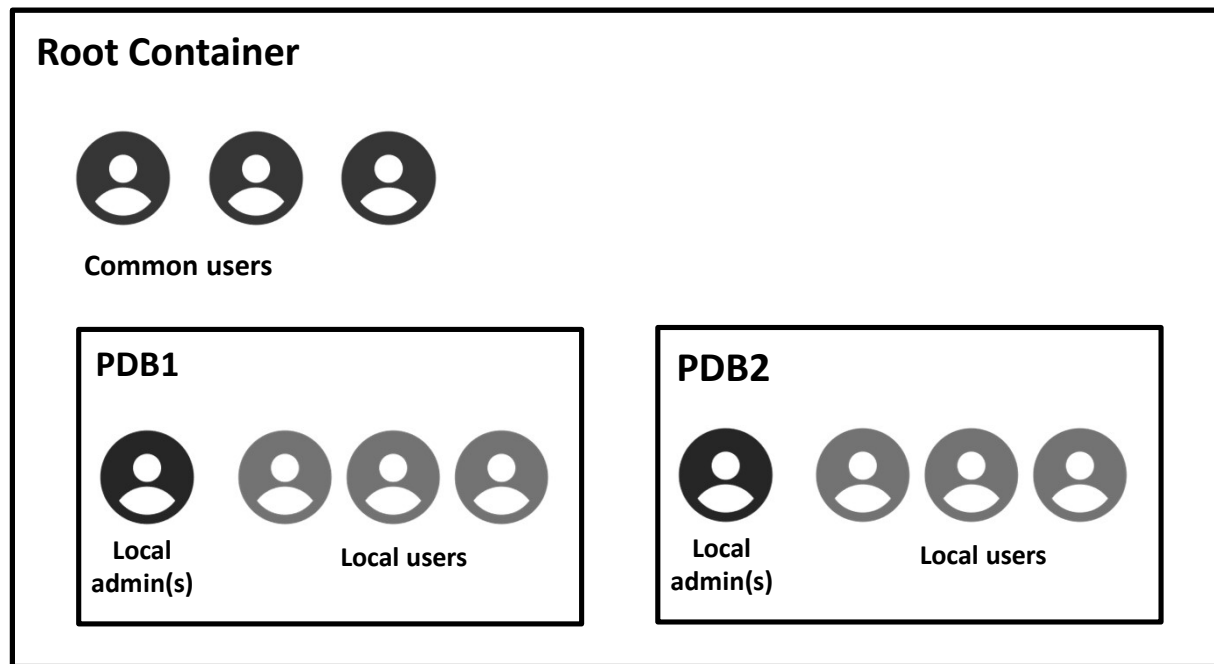
Objectives

In this lecture, you will learn how to perform the following:

- Describe the difference between Local and Common Users
- Create common and local users
- Grant privileges commonly and locally
- Describe the difference between common and local roles



Local and Common Users



About Local and Common Users

- **A local user:**
 - Defined in the PDB and is not known outside of that PDB
 - Can connect only to the PDB where it is defined
 - Cannot be defined in the root
- **Common User:**
 - A common user is defined in the root
 - Only common users can be defined in the root
 - A common user is known in every existing and future PDB



Creating Common Users

- Must be created from a root
- Common users must be prefixed by **COMMON_USER_PREFIX** (default C##):

```
CREATE USER C##USER1 IDENTIFIED BY hispassword [CONTAINER=ALL];
```

- Although known to all PDBs, a common user needs privileges to connect and executer commands in the PDBs.

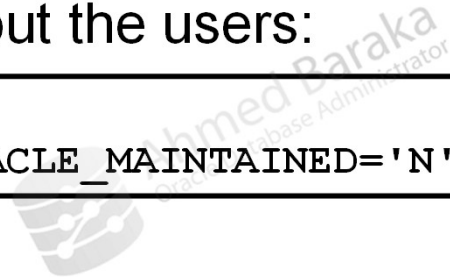
Creating Local Users

- When you connect to a PDB, the user you create is a local user:

```
CREATE USER pdb1user1 IDENTIFIED BY hispassword [CONTAINER=CURRENT];
```

- To obtain information about the users:

```
SELECT USERNAME, COMMON  
FROM CDB_USERS WHERE ORACLE_MAINTAINED='N';
```



Local Grant

- When a privilege is granted in a PDB, it takes effect only in that PDB:

```
ALTER SESSION SET CONTAINER=PDB1;  
GRANT CREATE SESSION TO PDBUSER [CONTAINER=CURRENT];
```

```
CONNECT SYSTEM@pdb1  
GRANT CREATE SESSION TO PDBUSER;
```

- You can locally grant to a common user:

```
GRANT CREATE SESSION TO C##USER1;
```

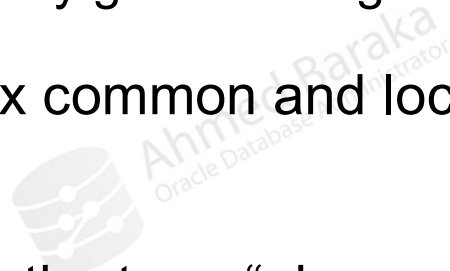
Common Grant

- In the **GRANT** statement, the **CONTAINER=ALL** clause specifies that the privilege or role is being granted commonly.
- Applies to all PDBs within the container in which the grant was given.
- Grantor is a common user, grantee is a common user or role

```
CONNECT SYSTEM@CDB1  
GRANT CREATE ANY TABLE TO c##user2 CONTAINER=ALL;
```


Common and Local Granting Principles

- The basic principles of granting:
 - Both common and local user/role may grant and be granted locally.
 - Only common user/role may grant or be granted commonly.
- **Best Practice:** do not mix common and local privileges for the same users
- In Oracle documentation, the term “phenomena” refers to users and roles.



Managing Users Best Practices

- Common users for administrators
- Local users are for application schemas
- Maintain the **COMMON_USER_PREFIX** and keep it to default value
- If external authentication is needed, match the **COMMON_USER_PREFIX** with **OS_AUTHENT_PREFIX**

About Common Roles and Local Roles

- **Common Role**

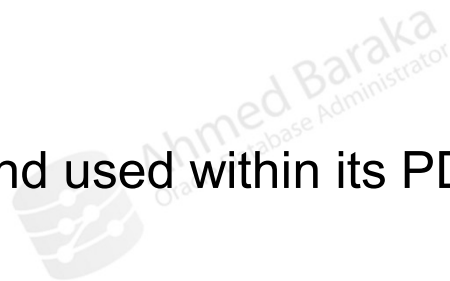
- Defined in the root and known in all existing and future PDBs
- Cannot be created by local users

- **Local Role**

- Defined only in a PDB and used within its PDB

- **Principles**

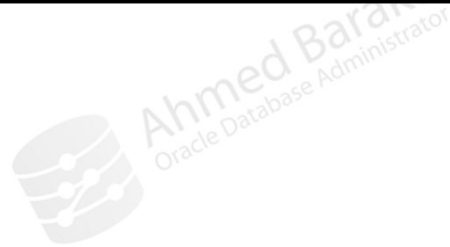
- If you grant a common role locally, then its privileges apply only in the container where the role is granted.



Creating Common Roles

- Can be created only by common users
- Should with the value of the **COMMON_USER_PREFIX**

```
CREATE ROLE c##sec_admin CONTAINER=ALL;
```



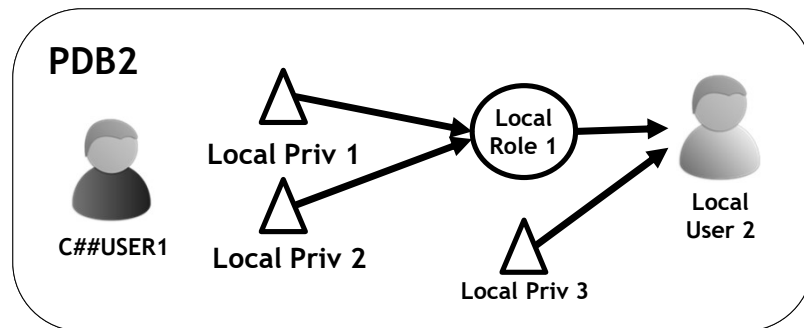
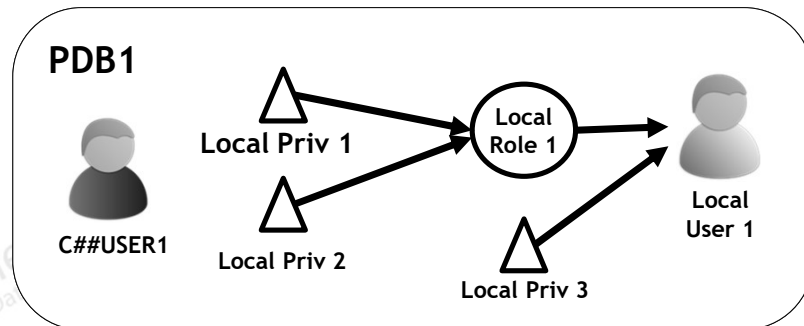
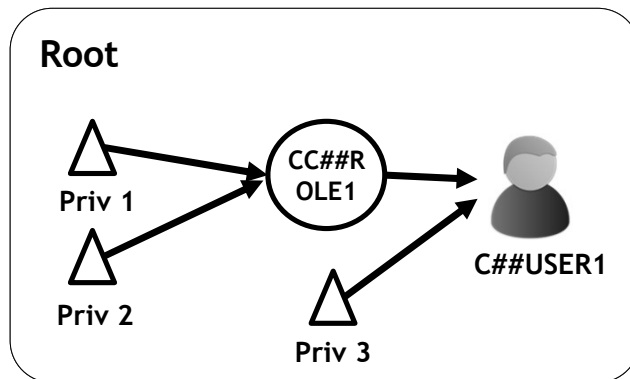
Creating Local Roles

- The current PDB should be the PDB in which you want to create the role
- The **CREATE ROLE** privilege is required.

```
CREATE ROLE sec_admin CONTAINER=CURRENT;
```



Local and Common Users Summary



Obtain Information about Users, Roles and Privileges

View	Description
CDB_USERS	Information about all users in a CDB. COMMON column flag distinguish between common and local users
CDB_ROLES	Information about all roles in a CDB. COMMON column indicates whether a given role is common.
CDB_ROLE_PRIVS	Information about the roles granted to all users and roles in the CDB. COMMON column indicates how the grant was made.
CDB_SYS_PRIVS	Describes system privileges granted to users and roles. COMMON column indicates how the grant was made.
CDB_TAB_PRIVS	Describes all object grants in the CDB. COMMON column indicates how the grant was made.

Summary

In this lecture, you should have learnt how to perform the following:

- Describe the difference between Local and Common Users
- Create common and local users
- Grant privileges commonly and locally
- Describe the difference between common and local roles