ORACLE

6

Storage

Objectives

After completing this lesson, you should be able to manage:

- Permanent tablespaces in CDB and PDBs
- Temporary tablespaces in CDB and PDBs
- UNDO tablespaces in CDB root and PDB

Objects in Tablespaces

- A tablespace in a PDB can contain objects associated with exactly one PDB.
- An object can be common to multiple PDBs.

    - Regular PDBs:
        - Common objects exist in the CDB root only.
        - CANNOT be created by users
        - Can be created by Oracle-supplied users
    - Application PDBs: Common objects exist in the application root
        - The object definition exists in the application root only.
        - Can be created by users
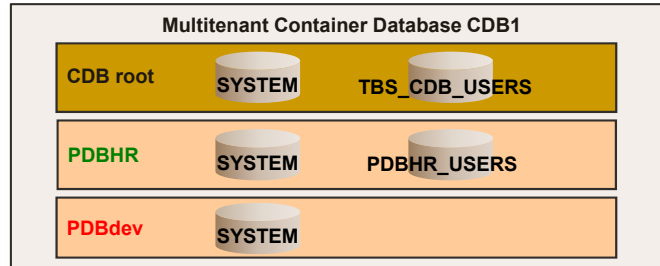
Tablespaces Created During PDB Creation

Define the default tablespace of a new PDB:

- Created from the CDB seed
- During PDB cloning

Defining Default Permanent Tablespaces

Multitenant Container Database CDB1

CDB root	SYSTEM	TBS_CDB_USERS
PDBHR	SYSTEM	PDBHR_USERS
PDBdev	SYSTEM	

- In the CDB:

```
SQL> CONNECT system@cdb1
SQL> ALTER DATABASE DEFAULT TABLESPACE tbs_CDB_users;
```
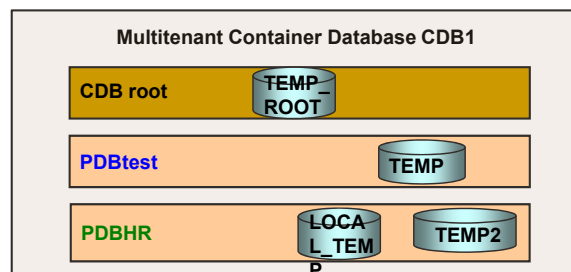
- In the PDB:

```
SQL> CONNECT pdb1_admin@pdbhr
SQL> ALTER PLUGGABLE DATABASE DEFAULT TABLESPACE pdbhr_users;
```

Temporary Tablespaces

- Only one default temporary tablespace or tablespace group is allowed per CDB or PDB.
- Each PDB can have temporary tablespaces or tablespace groups.

Multitenant Container Database CDB1

CDB root	TEMP_ROOT	
PDBtest		TEMP
PDBHR	LOCAL_TEMP	TEMP2

- Define the default temporary tablespace in a PDB:

```
SQL> CONNECT pdb1_admin@pdbhr
SQL> ALTER DATABASE DEFAULT TEMPORARY TABLESPACE local_temp;
```
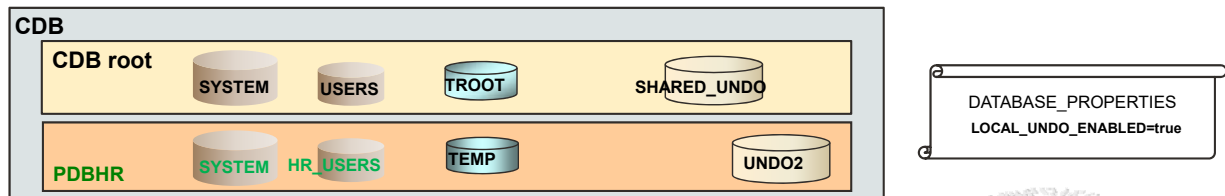
UNDO Tablespaces

Two UNDO modes: SHARED versus LOCAL

- There is only one shared UNDO tablespace (in CDB root).
- There can be a local UNDO tablespace in each PDB.

CDB					
CDB root	SYSTEM	USERS	TROOT	SHARED_UNDO	
PDBHR	SYSTEM	HR_USERS	TEMP		UNDO2

DATABASE_PROPERTIES
LOCAL_UNDO_ENABLED=true

When is local UNDO mode required?

- Hot cloning
- Near-zero down time PDB relocation

```
SQL> STARTUP UPGRADE
SQL> ALTER DATABASE LOCAL UNDO ON;
```

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Summary

In this lesson, you should have learned how to manage:

- Permanent tablespaces in CDB and PDBs

- Temporary tablespaces in CDB and PDBs

- UNDO tablespaces in CDB root and PDB

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Practice 6: Overview

- 6-1: Managing permanent and temporary tablespaces
- 6-2: Managing UNDO tablespaces