

Creating PDBs from the Seed

By Ahmed Baraka

Objectives

By the end of this lecture, you should be able to:

- List the tools to create a PDB
- List the options to create a PDB
- List the options to define the location of PDB file locations
- Create a PDB from the seed using the SQL*Plus



Creating a PDB Prerequisites

- The CDB must be in read/write mode
- The current user must be a common user
- The current user must have the CREATE PLUGGABLE DATABASE system privilege



Ahmed Baraka
Oracle Database Administrator

PDB Creation Tools

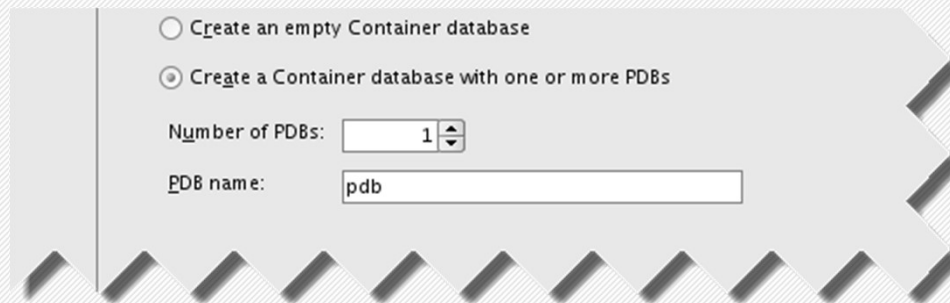
- SQL*Plus
- DBCA
 - Copy from seed
 - Plugging from supplied templates (schema templates)
 - Unplugging / plugging method
- SQL Developer
- EM Cloud Control
- EM Database Express (from seed only)



Ahmed Baraka
Oracle Database Administrator

Creating a PDB using DBCA

- If you create one PDB:



The screenshot shows the 'Create a Container database with one or more PDBs' option selected. The 'Number of PDBs' is set to 1, and the 'PDB name' is 'pdb'.

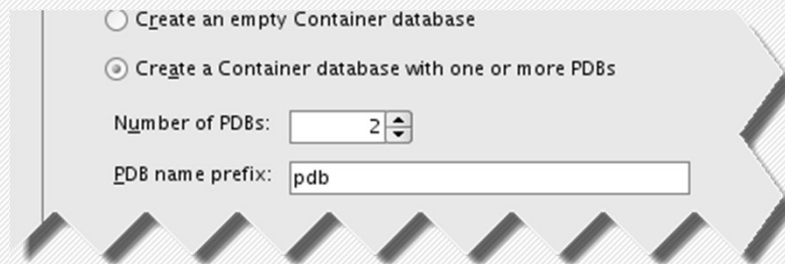
☐ Create an empty Container database

☒ Create a Container database with one or more PDBs

Number of PDBs:

PDB name:

- If you create more than one PDB:



The screenshot shows the 'Create a Container database with one or more PDBs' option selected. The 'Number of PDBs' is set to 2, and the 'PDB name prefix' is 'pdb'.

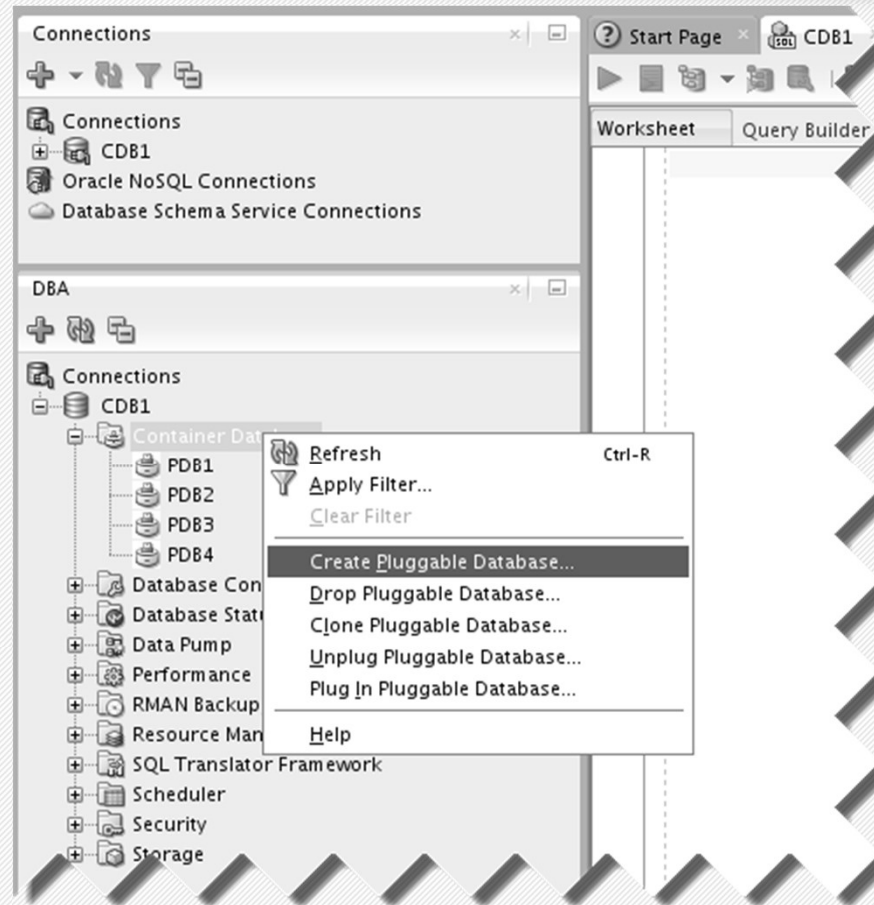
☐ Create an empty Container database

☒ Create a Container database with one or more PDBs

Number of PDBs:

PDB name prefix:

Creating a PDB using SQL Developer



Options for Creating a PDB using CREATE PLUGGABLE DATABASE command

Category	Option	Description
Copying	From the seed	By using the files of the CDB seed or application seed.
	Clone a local PDB	By cloning a source local PDB.
	Clone a remote PDB	By cloning a remote PDB.
	Clone a non-CDB	By cloning a non-CDB.
Plugging In	Plugging in an Unplugged PDB	By plugging in an unplugged PDB
	Adopting a Non-CDB as a PDB (Using the DBMS_PDB)	By creating an unplugged PDB from a non-CDB and then plug the unplugged PDB into the CDB.
Relocating	Relocating a PDB	By moving the files associated with the PDB to a new location.
Proxy PDB	Creating a PDB as a proxy PDB	By referencing a different PDB with a database link



File Location of the New PDB



Ahmed Baraka
Oracle Database Administrator

Clause or Initialization Parameter	Precedence Order	Description
FILE_NAME_CONVERT clause	1	Filenames and destination of the data files are defined by converting specific string in the source filenames to another defined string.
CREATE_FILE_DEST clause (12.2)	2	Sets the OMF destination in the new PDB and creates the new datafiles in it.
DB_CREATE_FILE_DEST initialization parameter	3	When defined in the root, it specifies the default location for Oracle Managed Files (OMF) for the CDB.
PDB_FILE_NAME_CONVERT initialization parameter	4	This initialization parameter maps names of existing files to new file names when processing a CREATE PLUGGABLE DATABASE statement.

About PATH_PREFIX Clause

- Ensures that all the following objects associated with the PDB are restricted to the specified directory:
 - Directory object paths (subdirectories accepted)
 - The Oracle XML repository for the PDB
 - Files created with a CREATE PFILE statement
 - The export directory for Oracle wallets.



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Oracle Database Administrator

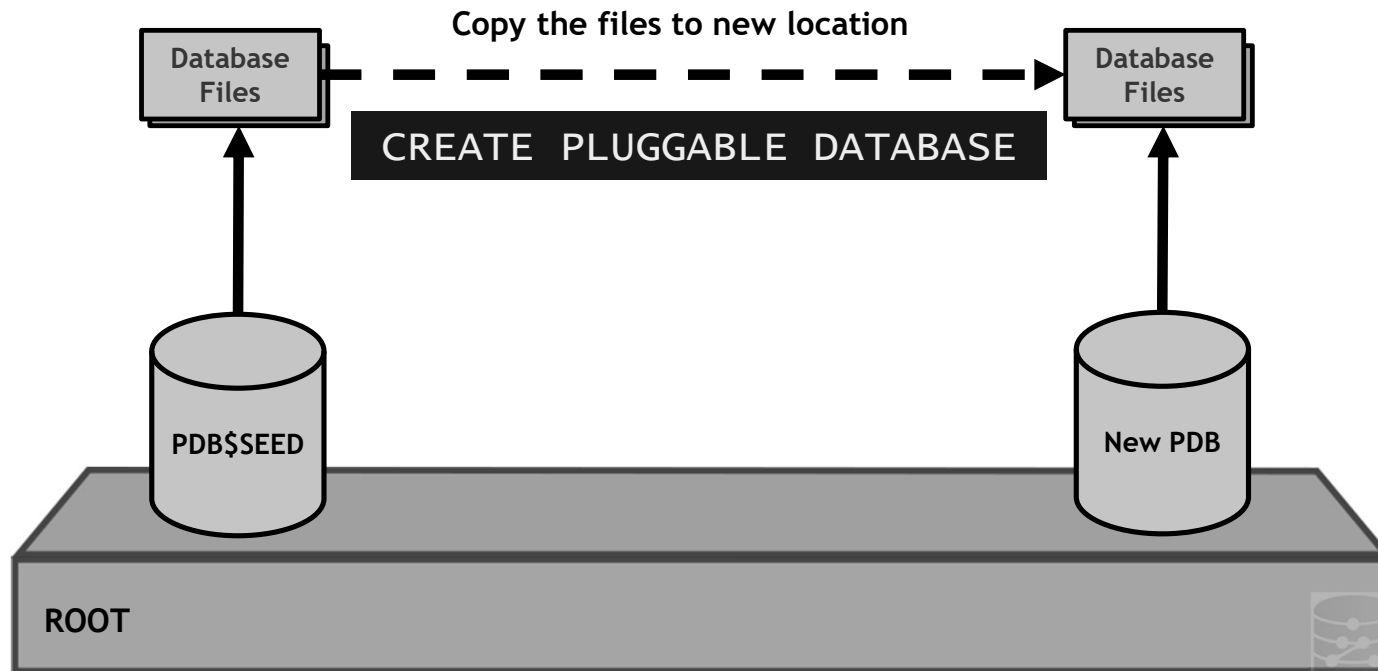
More CREATE PLUGGABLE DATABASE Optional Clauses

Clause	Task/Description
DEFAULT TABLESPACE	Create a new tablespace and make it the default tablespace for the new PDB.
STORAGE	Limit the amount of storage that the PDB can use. If omitted, no limit is set.
ROLES	Define the roles that you want to grant to the local role PDB_DBA. PDB_DBA role is in turn granted to the local administrator.
NO DATA	Clone the data model definition of the source PDB without cloning its data



Ahmed Baraka
Oracle Database Administrator

About Creating a PDB from the Seed



Ahmed Baraka
Oracle Database Administrator

Creating a PDB from the Seed Procedure

1. Login to the root container as a common user (like SYSTEM)
2. Run the CREATE PLUGGABLE DATABASE statement. You must specify a local administrator for the PDB.
3. Open the new PDB in read/write mode.

```
ALTER PLUGGABLE DATABASE pdb2 OPEN;
```

4. Back up the PDB.



Creating a PDB from the Seed Example 1

```
CREATE PLUGGABLE DATABASE pdb1  
  ADMIN USER pdb1admin IDENTIFIED BY mypassword  
  ROLES=(CONNECT,DBA);
```

- Assumptions:
 - Either DB_CREATE_FILE_DEST for the CDB, or the PDB_FILE_NAME_CONVERT initialization parameter is set.
 - The PATH_PREFIX clause is not required.
 - No storage limit is required



Creating a PDB from the Seed Example 2

```
CREATE PLUGGABLE DATABASE pdb1  
  ADMIN USER pdb1admin IDENTIFIED BY mypassword  
  ROLES=(DBA)  
  CREATE_FILE_DEST='+PDBDATA' ;
```

- Assumptions:
 - The PATH_PREFIX clause is not required.
 - No storage limit is required



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Creating a PDB from the Seed Example 3

```
CREATE PLUGGABLE DATABASE pdb2
  ADMIN USER pdb2admin IDENTIFIED BY mypassword
  STORAGE (MAXSIZE 2G)
  DEFAULT TABLESPACE HR
  DATAFILE '/u01/oracle/dbs/pdb2/hr01.dbf' SIZE 250M AUTOEXTEND ON
  PATH_PREFIX = '/u01/oracle/dbs/pdb2/'
  FILE_NAME_CONVERT = ('/u01/oracle/dbs/pdbseed/',
    '/u01/oracle/dbs/pdb2/');
```



Ahmed Baraka
Oracle Database Administrator

Summary

In the end of this lecture, you should have learnt how to:

- List the tools to create a PDB
- List the options to create a PDB
- List the options to define PDB file locations
- Create a PDB from the seed using the SQL*Plus



Ahmed Baraka
Oracle Database Administrator