

# Managing Applications and Application Containers

By Ahmed Baraka

# Objectives

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

- Describe the Application containers
- Understand the benefits of using Application Containers
- Create Application containers
- Create Application seed



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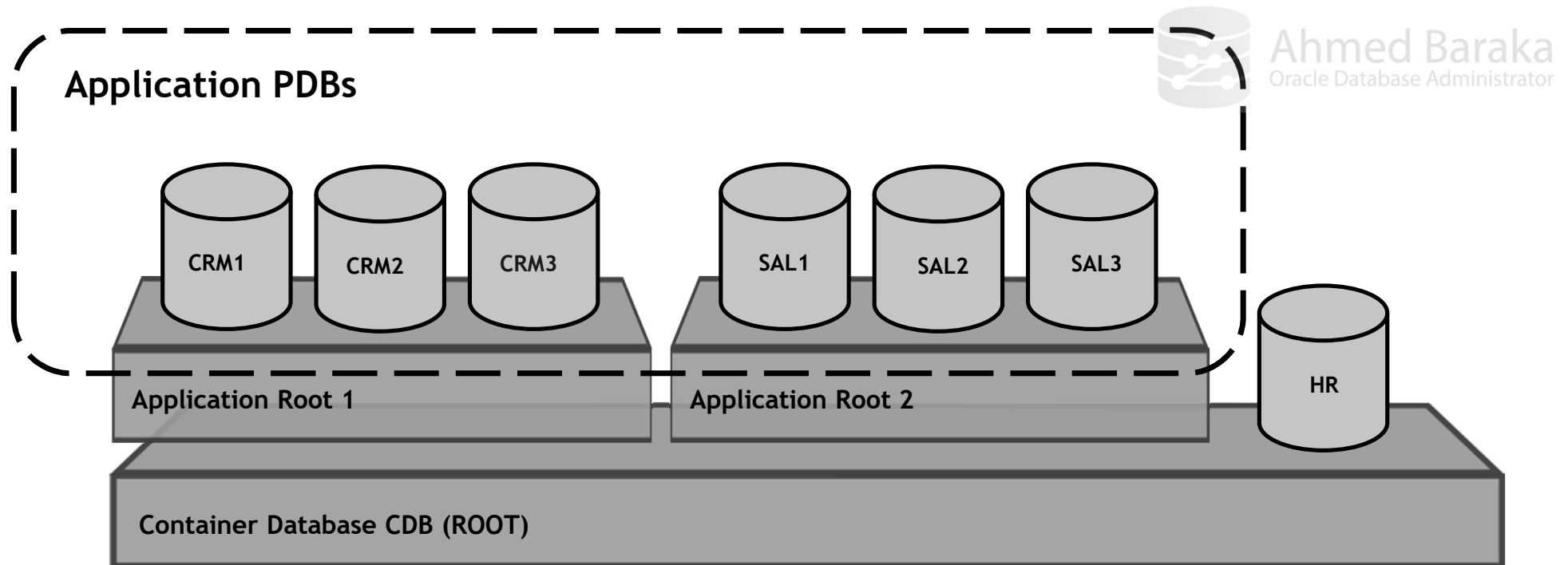
# About Application Containers

- Useful in case of multiple PDBs that run the same application:
  - SaaS (Software as a Service) providers
  - Application operated by multiple branches
- Introduced in 12.2
- Terms affected from 12.1 to 12.2
  - Object Links -> Data Links
  - Common Data -> Extended Data



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# Application Containers

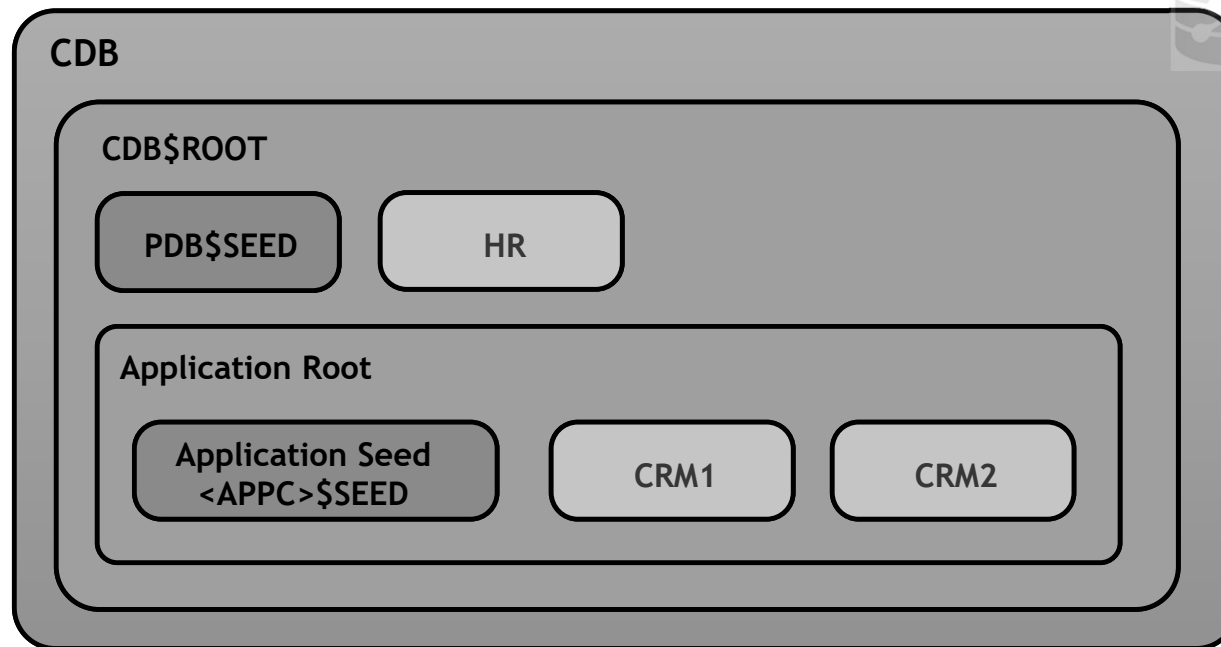




# Application Seed



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# Application Container Concepts Summary

- Application Container is useful for streamlining the application maintenance tasks.
- Application container is a CDB component that stores data and metadata for one or more applications.
- The master application definition is maintained in the application root.
- Application components: common users, metadata-linked common objects, and data-linked common objects



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# About Creating an Application Container

- Possible techniques:
  - Using the CDB seed
  - Cloning an existing PDB or non-CDB
  - Relocating a PDB
  - Plugging in an unplugged PDB



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# Creating Application Container Examples

- Creating an Application Container using the CDB seed:

```
CREATE PLUGGABLE DATABASE hr_ac AS APPLICATION CONTAINER  
ADMIN USER hr_acadm IDENTIFIED BY mypassword;
```

- Creating an Application Container by cloning a local PDB:

```
CREATE PLUGGABLE DATABASE hr_ac AS APPLICATION CONTAINER  
FROM pdb1  
FILE_NAME_CONVERT = ('/u01/pdb1/', '/u01/hract/')
```



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# About Creating an Application Seed

- Typical procedure:
  - Create application root
  - Install the application in the application root
  - Create application seed:
    - From the CDB seed
    - Cloning a PDB
    - From application root
  - Synchronize the application seed with application root



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# Creating an Application Seed from CDB root

## Example

1. Connect to the application root
2. Create the application seed:

```
CREATE PLUGGABLE DATABASE AS SEED ADMIN USER hrseedadm  
IDENTIFIED BY password;
```

3. Open the new application seed in read/write mode:

```
ALTER PLUGGABLE DATABASE hr_ac$SEED OPEN;
```



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# Creating an Application Seed from CDB root Example (cont)

## 4. Synchronize the application seed:

```
ALTER SESSION SET CONTAINER=hr_ac$SEED;  
ALTER PLUGGABLE DATABASE APPLICATION ALL SYNC;
```

## 5. Close the application seed, and then open it in open read-only mode.



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# Creating an Application Seed From an Application PDB Example

```
CREATE PLUGGABLE DATABASE AS SEED FROM hrpdb;  
ALTER PLUGGABLE DATABASE hr_ac$SEED OPEN;  
ALTER PLUGGABLE DATABASE CLOSE IMMEDIATE;  
ALTER PLUGGABLE DATABASE OPEN READ ONLY;
```



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# Creating an Application Seed from an Application Root Example

```
CREATE PLUGGABLE DATABASE AS SEED FROM hr_ac;  
ALTER PLUGGABLE DATABASE hr_ac$SEED OPEN;  
ALTER SESSION SET CONTAINER=hr_ac$SEED;  
@$ORACLE_HOME/rdbms/admin/pdb_to_apppdb.sql  
ALTER PLUGGABLE DATABASE CLOSE IMMEDIATE;  
ALTER PLUGGABLE DATABASE OPEN READ ONLY;
```



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# About Creating an Application PDB

- The application root must be the current PDB
- You can create application PDBs using the same SQL statements that you use to create PDBs in the CDB root
  1. Make the application root the current container
  2. Run a CREATE PLUGGABLE DATABASE statement
  3. Open the new application PDB in read/write mode
  4. Switch current container to the application PDB
  5. Synchronize the PDB with the application root
  6. Close the PDB, and then open it



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# Obtaining Information about the Application Roots and Application PDBs

- Information about the application roots:

```
ALTER SESSION SET CONTAINER=CDB$ROOT ;  
SELECT CON_ID, NAME, OPEN_MODE  
FROM V$PDBS WHERE APPLICATION_ROOT='YES' ;
```

- Information about the application PDBs:

```
ALTER SESSION SET CONTAINER=CDB$ROOT ;  
ALTER SESSION SET CONTAINER=hr_ac ;  
SELECT CON_ID, NAME, OPEN_MODE  
FROM V$PDBS WHERE APPLICATION_PDB='YES' ;
```



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# Summary

In this lecture, you should have learnt how to:

- Describe the Application containers
- Understand the benefits of using Application Containers
- Create Application containers
- Create Application seed



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