# Practices for Lesson 12: Creating and Using Virtual Private Catalogs

Practices for Lesson 12: Overview

Overview

In these practices, you will create a virtual catalog and use the virtual catalog when taking a backup of ORCLPDB1.

Practice 12-1: Enabling the Virtual Private Database (VPD) Functionality

Overview

In this practice, you enable the Virtual Private Database (VPD) functionality.

RMAN uses the VPD functionality to implement virtual private catalogs. The VPD functionality is not enabled by default when the RMAN base recovery catalog is created. You need to explicitly enable the VPD model for a base recovery catalog by running the

$ORACLE\_HOME/rdbms/admin/dbmsrmanvpc.sql script.

Assumptions

You have an open terminal window. You completed the practices to create the recovery catalog.

Timing Estimate

It should take approximately 15 minutes to complete this practice.

Tasks

Set the environment variables for the recovery catalog database (RCATCDB).

Invoke SQL\*Plus and log in to RCATPDB as the SYSDBA user. Refer to the *Course Practice Environment: Security Credentials* document for the correct password.

Execute the $ORACLE\_HOME/rdbms/admin/dbmsrmanvpc.sql script to enable the VPD model for all the virtual private catalogs of the base catalog schema, RCATOWNER.

Upgrade the recovery catalog.

Invoke RMAN and connect to the recovery catalog database. Refer to the *Course Practice Environment: Security Credentials* document for the correct password.

Execute the UPGRADE CATALOG command. Be sure to enter the command a second time when prompted.

Exit from RMAN.

Practice 12-2: Creating a Virtual Private Catalog

Overview

In this practice, you create a new user and create a virtual private catalog.

Assumptions

Timing Estimate

It should take approximately 15 minutes to complete this practice.

Tasks

Invoke SQL\*Plus and connect to the recovery catalog database with administrator privileges. Refer to the *Course Practice Environment: Security Credentials* document for the correct password.

Create a tablespace for virtual private catalog users.

Create a new user who will own the virtual private catalog. Refer to the *Course Practice Environment: Security Credentials* document for the correct password.

Grant the CREATE SESSION privilege to the new user who owns the virtual private catalog.

Exit SQL\*Plus.

Invoke RMAN and connect to the recovery catalog database as the base recovery catalog owner. Refer to the *Course Practice Environment: Security Credentials* document for the correct password.

Grant access to the metadata for the ORCLPDB1 PDB to the virtual private catalog owner.

Exit RMAN.

Practice 12-3: Backing Up a PDB

Overview

In this practice, you will connect to the virtual private catalog and back up the ORCLPDB1 PDB.

Assumptions

You have an open terminal window.

Timing Estimate

It should take approximately 15 minutes to complete this practice.

Tasks

Invoke RMAN and connect to the recovery catalog database as the virtual private catalog owner (not the base recovery catalog owner). Connect as TARGET to ORCLPDB1.

Use oraenv to set the environment variables for the ORCLCDB database.

Invoke RMAN and connect to ORCLPDB1. Refer to the *Course Practice Environment: Security Credentials* document for the correct password.

Connect to recovery catalog database, RCATPDB, as the VPCOWNER user. Refer to the

*Course Practice Environment: Security Credentials* document for the correct password.

Perform a backup of the ORCLPDB1 PDB.

List the backups in the virtual private catalog.

11 Full 3470037 2019-06-21:14:57:43 NO

/u01/app/oracle/oradata/ORCLCDB/orclpdb1/undotbs01.dbf

12 Full 3470037 2019-06-21:14:57:43 NO

/u01/app/oracle/oradata/ORCLCDB/orclpdb1/users01.dbf

BS Key Type LV Size Device Type Elapsed Time Completion Time

434 Full 575.41M DISK 00:00:06 2019-06-

28:21:20:19

BP Key: 440 Status: AVAILABLE Compressed: NO Tag: TAG20190628T211946

Piece Name:

/u01/app/oracle/fast\_recovery\_area/ORCLCDB/8857B36632797E5CE0536 210ED0ADAC7/backupset/2019\_06\_28/o1\_mf\_nnndf\_TAG20190628T211946\_ gkf14fd8\_.bkp

…

List of Datafiles in backup set 510

File LV Type Ckp SCN Ckp Time Abs Fuz SCN Sparse Name

9 Full 3515990 2019-07-01:18:31:43 NO

/u01/app/oracle/oradata/ORCLCDB/orclpdb1/system01.dbf

10 Full 3515990 2019-07-01:18:31:43 NO

/u01/app/oracle/oradata/ORCLCDB/orclpdb1/sysaux01.dbf

11 Full 3515990 2019-07-01:18:31:43 NO

/u01/app/oracle/oradata/ORCLCDB/orclpdb1/undotbs01.dbf

12 Full 3515990 2019-07-01:18:31:43 NO

/u01/app/oracle/oradata/ORCLCDB/orclpdb1/users01.dbf

RMAN>

Exit RMAN.

Now connect as the recovery catalog owner and list the backups.

Connect to RMAN. Refer to the *Course Practice Environment: Security Credentials*

document for the correct password.

List the backups in the recovery catalog.

RMAN> **list backup;**

starting full resync of recovery catalog full resync complete

List of Backup Sets

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BS Key Type LV Size Device Type Elapsed Time Completion Time

299 Full 1.42G DISK 00:00:03 2019-06-

21:15:39:37

BP Key: 319 Status: AVAILABLE Compressed: NO Tag: KEEP\_DB\_TAG

Piece Name: /home/oracle/backup/2tu4lp5m\_1\_1

Keep: BACKUP\_LOGS Until: 2020 06-20:15:39:34

List of Datafiles in backup set 299

File LV Type Ckp SCN Ckp Time Abs Fuz SCN Sparse Name

1 Full 3470197 2019-06-21:14:57:45 NO

/u01/app/oracle/oradata/ORCLCDB/system01.dbf

3 Full 3470197 2019-06-21:14:57:45 NO

/u01/app/oracle/oradata/ORCLCDB/sysaux01.dbf

4 Full 3470197 2019-06-21:14:57:45 NO

/u01/app/oracle/oradata/ORCLCDB/undotbs01.dbf

7 Full 3470197 2019-06-21:14:57:45 NO

/u01/app/oracle/oradata/ORCLCDB/users01.dbf

BS Key Type LV Size Device Type Elapsed Time Completion Time

300 Full 575.46M DISK 00:00:01 2019-06-

21:15:39:50

BP Key: 320 Status: AVAILABLE Compressed: NO Tag: KEEP\_DB\_TAG

Piece Name: /home/oracle/backup/2uu4lp65\_1\_1

Keep: BACKUP\_LOGS Until: 2020 06-20:15:39:34

List of Datafiles in backup set 300 Container ID: 3, PDB Name: ORCLPDB1

File LV Type Ckp SCN Ckp Time Abs Fuz SCN Sparse Name

9 Full 3470037 2019-06-21:14:57:43 NO

/u01/app/oracle/oradata/ORCLCDB/orclpdb1/system01.dbf

10 Full 3470037 2019-06-21:14:57:43 NO

/u01/app/oracle/oradata/ORCLCDB/orclpdb1/sysaux01.dbf

11 Full 3470037 2019-06-21:14:57:43 NO

/u01/app/oracle/oradata/ORCLCDB/orclpdb1/undotbs01.dbf

12 Full 3470037 2019-06-21:14:57:43 NO

/u01/app/oracle/oradata/ORCLCDB/orclpdb1/users01.dbf

BS Key Type LV Size Device Type Elapsed Time Completion Time

301 Full 574.20M DISK 00:00:01 2019-06-

21:15:39:58

BP Key: 321 Status: AVAILABLE Compressed: NO Tag: KEEP\_DB\_TAG

Piece Name: /home/oracle/backup/2vu4lp6d\_1\_1

Keep: BACKUP\_LOGS Until: 2020 06-20:15:39:34

List of Datafiles in backup set 301 Container ID: 4, PDB Name: ORCLPDB2

File LV Type Ckp SCN Ckp Time Abs Fuz SCN Sparse Name

13 Full 3470036 2019-06-21:14:57:43 NO

/u01/app/oracle/oradata/ORCLCDB/orclpdb2/system01.dbf

14 Full 3470036 2019-06-21:14:57:43 NO

/u01/app/oracle/oradata/ORCLCDB/orclpdb2/sysaux01.dbf

15 Full 3470036 2019-06-21:14:57:43 NO

/u01/app/oracle/oradata/ORCLCDB/orclpdb2/undotbs01.dbf

16 Full 3470036 2019-06-21:14:57:43 NO

/u01/app/oracle/oradata/ORCLCDB/orclpdb2/users01.dbf

…

List of Datafiles in backup set 510 Container ID: 3, PDB Name: ORCLPDB1

File LV Type Ckp SCN Ckp Time Abs Fuz SCN Sparse Name

9 Full 3515990 2019-07-01:18:31:43 NO

/u01/app/oracle/oradata/ORCLCDB/orclpdb1/system01.dbf

10 Full 3515990 2019-07-01:18:31:43 NO

/u01/app/oracle/oradata/ORCLCDB/orclpdb1/sysaux01.dbf

11 Full 3515990 2019-07-01:18:31:43 NO

/u01/app/oracle/oradata/ORCLCDB/orclpdb1/undotbs01.dbf

Exit RMAN.

Close the terminal window opened for this practice.