# Practices for Lesson 24: Creating a Backup-Based Duplicate Database

Practices for Lesson 24: Overview

Overview

In these practices, you will duplicate an active container database.

Practice 24-1: Duplicating a Database

Overview

In this practice, you learn how to duplicate an active database. ORCLCDB is the active database that will be duplicated or cloned as DBTEST. The tasks include the following:

Prepare the destination for the future DBTEST database with Oracle Net connectivity, password file, and a minimal initialization parameter file (initdbtest.ora).

Confirm source database configuration settings.

Duplicate the ORCLCDB database by using RMAN.

Test access to the cloned database.

Tasks

Open a terminal window and use oraenv to set the environment variables for the orclcdb

database.

Create new directories for the dbtest database.

Prepare Oracle Net connectivity by using the Oracle Net Manager utility. Add a service named dbtest to the tnsnames.ora file.

Launch the Oracle Net Manager utility.

Expand Local in the navigation pane, click Service Naming, then click +.

Enter dbtest in the Net Service Name field and click Next.

Select TCP for the protocol and click Next.

Enter your host's fully qualified domain name (for example,

edvmr1p0.us.oracle.com) in the Host name field and click Next.

Enter dbtest in the Service Name field, click the Connection Type pull down list and choose Dedicated. Click Next, then Finish.

Click Listeners in the navigation pane, then click +. Select LISTENER from the list. Choose Database Services from the pull down list, then click Add Database and enter dbtest in the Global Database Name field and dbtest in the SID field. Click File and select Save Network Configuration.

Exit Net Manager utility.

View the DBTEST entry in the $ORACLE\_HOME/network/admin/tnsnames.ora file. Ensure the listener recognizes the database service.

Create a password file for the future DBTEST database to allow OS authentication.

As the oracle OS user, set the environment variables to the dbtest instance.

Create the $ORACLE\_HOME/dbs/orapwdbtest file by using the orapwd utility. Replace *<password>* with the password listed for this step in the “Course Practice Environment: Security Credentials” document. Please note the SYS password **must** match between the target (orclcdb) and auxiliary (dbtest) databases in order for the duplication operation to complete.

Optionally, confirm that the file exists.

In the same directory ($ORACLE\_HOME/dbs) use vi or gedit to create a minimal initialization parameter file named initdbtest.ora with the following entries:

db\_name=dbtest remote\_login\_passwordfile=exclusive

Then confirm your content with the cat command.

Log in to SQL\*Plus as SYSDBA, start the dbtest instance in NOMOUNT mode with the

initdbtest.ora file. Then exit.

Confirm the ORCLCDB source database configuration settings in SQL\*Plus.

Set your environment variables to point to orclcdb, and then log in to SQL\*Plus as SYSBDA.

Confirm your backup location and size. If the FRA is smaller than 20G, enlarge it by using the following command:

ALTER SYSTEM SET db\_recovery\_file\_dest\_size = 20G SCOPE=BOTH;

Check and see if the database is in ARCHIVELOG mode. If not, place it in ARCHIVELOG

mode

Use RMAN to duplicate the ORCLCDB database as the DBTEST database.

Note that for the target and catalog connections, the service names are used, but NOT for the auxiliary connection. So you must set the environment variables for the dbtest instance. Refer to the "Course Practice Environment: Security Credentials" document for the passwords for this step.

Duplicate the ORCLCDB database as the DBTEST database by using the following command:

DUPLICATE TARGET DATABASE TO DBTEST FROM ACTIVE DATABASE SPFILE PARAMETER\_VALUE\_CONVERT

'/u01/app/oracle/oradata/ORCLCDB','/u01/app/oracle/oradata/dbtest',

'/u01/app/oracle/fast\_recovery\_area','/u01/app/oracle/dbtest\_fra', 'ORCLCDB','DBTEST'

SET DB\_RECOVERY\_FILE\_DEST\_SIZE='20G'

SET DB\_FILE\_NAME\_CONVERT='ORCLCDB','DBTEST';

Confirm the availability and accessibility of your newly created dbtest database.

Exit SQL\*Plus.

Practice 24-2: Duplicating a PDB into an Existing CDB

Overview

In this practice, you will clone ORCLPDB1 from ORCLCDB into DBTEST by using the RMAN DUPLICATE command without the use of a fresh auxiliary instance. Duplicate ORCLPDB1 as DBTESTPDB1 in DBTEST.

Tasks

Before duplicating ORCLPDB1, check that the HR.REGIONS table contains rows.

In the destination CDB, set the initialization parameter REMOTE\_RECOVERY\_FILE\_DEST to restore foreign archive logs. Create the directory for the new PDB data files.

Start RMAN and connect to the source ORCLCDB CDB root.

Connect to the auxiliary instance DBTEST into which you will duplicate ORCLPDB1 as

DBTESTPDB1.

Duplicate ORCLPDB1 as DBTESTPDB1 in DBTEST.

Observe that the REMOTE\_RECOVERY\_FILE\_DEST initialization parameter was used to restore foreign archive log.

Check that the new PDB contains the HR schema tables.

Drop DBTESTPDB1 by using the

@$HOME/labs/DBMod\_Duplicate/drop\_pdb1\_in\_dbtest.sql script.