Practice 9

Using RMAN Recovery Catalog

Practice Target

In this practice you will gain hands-on experience on using RMAN recovery catalog.

Practice Overview

In this practice, you will perform the following tasks:

- Create recovery catalog in `ORAWIN` database and register the database `ORADB` in it
- Catalog recovery files in the recovery catalog
- Create and manage RMAN stored scripts

Assumptions

This practice assumes the following:

- `srv1` appliance is up and running and its database `ORADB` is running in `OPEN` state
- `winsrv2` appliance is up and running and its database `ORAWIN` is running in `OPEN` state. `ORAWIN` will be used as the recovery catalog database for the course practice environment.

Note

I recommend taking a snapshot of the appliances before you start implementing the practice.

A. Creating Recovery Catalog

In the following steps, you will create RMAN recovery catalog in ORAWIN database.

1. Open Putty and login to srv1 as oracle.

2. Invoke SQL*Plus and connect to ORAWIN as system user.

```
sqlplus system/oracle@ORAWIN
```

3. Execute the following statements to create the Recovery Catalog owner.

```
CREATE TABLESPACE rc_tbs;

CREATE USER rc_owner IDENTIFIED BY oracle
 TEMPORARY TABLESPACE temp
 DEFAULT TABLESPACE rc_tbs
 QUOTA UNLIMITED ON rc_tbs;

GRANT RECOVERY_CATALOG_OWNER TO rc_owner ;
```

4. Invoke RMAN, connect to the local database as target and connect to the recovery catalog database (ORAWIN)

   RMAN will prompt you for the recovery catalog owner password. You can include it in the command that invokes RMAN, if you want to.

```
rman target "'/ as SYSBACKUP'" catalog rc_owner@orawin
```

5. Create the recovery catalog.

```
CREATE CATALOG;
```

6. Register the target database.

```
REGISTER DATABASE;
```

B. Cataloging Backup Files

In this section of the practice, you will learn how to catalog recovery files in RMAN repository.

7. Perform the following backups in RMAN.

```
CONFIGURE CONTROLFILE AUTOBACKUP OFF;
BACKUP AS BACKUPSET TABLESPACE users TAG 'USERS_BS';
BACKUP AS COPY TABLESPACE users TAG 'USERS_DF';
BACKUP AS BACKUPSET ARCHIVELOG ALL TAG 'ARC_BS';
CONFIGURE CONTROLFILE AUTOBACKUP ON;
```

8. Make a directory under the shared folder.

```
HOST 'mkdir /media/sf_extdisk/backup';
```

9. Retrieve list of the backup pieces produced above and copy them to the shared folder `/media/sf_extdisk/backup`.

```
LIST BACKUPSET TAG 'USERS_BS';

HOST 'cp /u01/app/oracle/fra/ORADB/ORADB/backupset/**/**_USERS_BS_**_.bkp
/media/sf_extdisk/backup/';


LIST BACKUPSET TAG 'ARC_BS';

HOST 'cp /u01/app/oracle/fra/ORADB/ORADB/backupset/*4/**_ARC_BS_**_.bkp
/media/sf_extdisk/backup/';
```

10. Retrieve list of the image copies produced above and copy them to the shared folder.

```
LIST COPY TAG 'USERS_DF';


HOST 'cp /u01/app/oracle/fra/ORADB/ORADB/datafile/**_users_**_.dbf
/media/sf_extdisk/backup/';
```

11. Verify that you have three files in the shared folder directory.

```
HOST 'ls -alh /media/sf_extdisk/backup/';
```

Cataloging specific backup piece

Note: cataloging recovery files does not require Recovery Catalog. It can be done even if the RMAN repository is the control file.

12. Catalog **one** file in the shared folder backup directory.

```
CATALOG BACKUPPIECE '/media/sf_extdisk/backup/**_ARC_BS_**_.bkp'
```

13. Catalog the datafile copy that was copied to the shared folder backup directory.

```
CATALOG DATAFILECOPY '/media/sf_extdisk/backup/**_mf_users_**_.dbf';
```

Cataloging backup pieces in a directory

If you have a lot of backup files in a directory, you can catalog them all in one command.

14. Issue the following command to catalog the recovery files in the shared folder directory.

The command will scan the directory and prompt you to confirm cataloging any found file. You will not receive prompt on the files that are already cataloged.

```
CATALOG START WITH '/media/sf_extdisk/backup/';
```

Clean up

15. Delete the produced backupset and datafile copies.

```
DELETE BACKUPSET TAG 'USERS_BS';
DELETE BACKUPSET TAG 'ARC_BS';
DELETE COPY TAG 'USERS_DF';
```

C. Using RMAN Stored Scripts

In this section of the practice, you will create RMAN stored scripts and execute them.

16. Connect to the target database ORADB and to the recovery catalog ORAWIN

```
rman target "'/ as SYSBACKUP'" catalog rc_owner@orawin
```

17. Create a stored script to back up the entire target database.

```
CREATE SCRIPT FULL_DB_SCRIPT
{ BACKUP DATABASE PLUS ARCHIVELOG TAG 'FULL_DB'; }
```

18. Print the stored script.

```
PRINT SCRIPT FULL_DB_SCRIPT;
```

19. Execute the stored script

```
run { execute script FULL_DB_SCRIPT;}
```

20. Verify the backupset produced by the script execution.

```
LIST  BACKUPSET TAG 'FULL_DB';
```

21. Create the following script.

When running the code, it asks you to enter values to the substitute variables. Enter any values and the script will be created. Do not worry, the code will not get executed.

```
CREATE SCRIPT TBS_FULL_SCRIPT
{ BACKUP TABLESPACE &1 TAG &2 ;}
```

Following is the output of executing the code in my environment:

```
RMAN> CREATE SCRIPT TBS_FULL_SCRIPT
{ BACKUP TABLESPACE &1 TAG &2 ;}
Enter value for 1: users
Enter value for 2: 'test'
created script TBS_FULL_SCRIPT
```

22. Execute the stored script in a run block.

Observe that values passed to the variables are separated by spaces.

```
RUN { EXECUTE SCRIPT TBS_FULL_SCRIPT USING USERS 'USERS102018';}
```

23. Verify the backupset produced by the script execution.

```
LIST BACKUPSET TAG 'USERS102018';
```

24. Exit from RMAN and run the same script while invoking RMAN

```
rman target "'/ as SYSBACKUP'" catalog rc_owner@orawin script=TBS_FULL_SCRIPT USING USERS
'USERS112018'
```

Clean up

25. Delete the produced backupsets.

```
rman target "'/ as SYSBACKUP'" catalog rc_owner@orawin
DELETE NOPROMPT BACKUPSET TAG 'FULL_DB';
DELETE NOPROMPT BACKUPSET TAG 'USERS102018';
DELETE NOPROMPT BACKUPSET TAG 'USERS112018';
DELETE SCRIPT FULL_DB_SCRIPT;
DELETE SCRIPT TBS_FULL_SCRIPT;
```

Summary

In this practice, you performed the following tasks:

- Create recovery catalog in `ORAWIN` database and register the database `ORADB` in it
- Catalog recovery files in the recovery catalog
- Create and manage RMAN stored scripts