Practice 4

Performing RMAN Backups - Part II

Practice Target

In this practice you will learn more fundamentals about taking backups in RMAN.

Practice Overview

In high level, in this practice, you will perform the following tasks:

- Use multiple options to take backup of the control file.
- Produce backups as image copies
- Use tags in the produced RMAN backups

Assumptions

- This practice assumes that srv1 appliance is up and running and its database ORADB is running in OPEN state. winsrv2 is not needed for this practice.

Note

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

A. Taking Backup of the Control File

In the following steps you will study the different ways of taking backup of the control file.

1. Open Putty and login to `srv1` as `oracle`

2. Invoke RMAN and connect to the local database as target.

```
rman target "'/ as SYSBACKUP'"
```

3. Make sure the control file `AUTOBACKUP` is turned on.

```
SHOW CONTROLFILE AUTOBACKUP;
```

- How does this setting affect RMAN behavior?

4. Take backup of the tablespace `users`.

Examine the command output. Make sure that a backup of the control file has automatically been taken.

```
BACKUP TABLESPACE users;
```

5. Display list of the backupsets taken for the control file. Examine the location where the control file backup has been saved.

```
LIST BACKUP OF CONTROLFILE;
```

6. Execute the following command.

The `AUTOBACKUP` backupset includes in its contents backup of the SPFILE.

```
LIST BACKUPSET OF SPFILE;
```

7. Take explicitly two backups of the control file into locations that are different from the default FRA location. One backup as backupset and one backup as image copy.

```
BACKUP CURRENT CONTROLFILE FORMAT '/media/sf_extdisk/control01.bk';
BACKUP AS COPY CURRENT CONTROLFILE FORMAT '/media/sf_extdisk/control01.ctl';
```

8. Display list of the backupsets for the control file.

```
LIST BACKUP OF CONTROLFILE;
LIST COPY OF CONTROLFILE;
```

9. Delete the produced backupsets and image copies.

```
DELETE BACKUPSET;
DELETE COPY OF CONTROLFILE;
```

10. Retrieve the location and file name of the snapshot control file.

```
SHOW SNAPSHOT CONTROLFILE NAME;
```

11. Check if there is such a file in the file system. You can execute operating system command from RMAN commands prompt using HOST command.

Observe the OS-level permissions assigned to the file.

```
host 'ls -al /u01/app/oracle/product/12.2.0/db_1/dbs/snapcf_ORADB.f';
```

- Which event triggered RMAN to create this file?
- In which environment you should consider changing the location of the file?

12. Execute the following command:

```
ALTER DATABASE BACKUP CONTROLFILE TO TRACE;
```

13. Obtain the full name of the generated trace file from the alertlog file.

```
tail /u01/app/oracle/diag/rdbms/oradb/ORADB/trace/alert_ORADB.log
```

14. Examine the contents of the file.

Observe you cannot execute the trace file straight away to re-create the control file. You need to edit it first.

```
vi /u01/app/oracle/diag/rdbms/oradb/ORADB/trace/ORADB_ora_***.trc
```

B. Taking Backup as Image Copies

In this section of the practice, you will learn how to use RMAN to produce and manage backups as image copies.

15. Invoke RMAN and connect to the local database as target.

```
rman target "'/ as SYSBACKUP'"
```

16. Take backup of the entire database as image copies.

```
BACKUP AS COPY DATABASE;
```

- What is the advantage and disadvantages between taking backups as backupsets and image copies? Consider the following comparison points:
    - backup time
    - backup size
    - recovery time

17. List the files produced by the backup command above.

Observe that `LIST COPY` does not display the image copy file sizes. OS commands can be used to obtain their sizes.

```
LIST COPY OF DATABASE;
host 'ls -lh /u01/app/oracle/fra/ORADB/ORADB/datafile/';
```

18. Delete the image copies generated by the command above.

```
DELETE COPY OF DATABASE;
```

19. Make image copies of the tablespace `users` in the shared folder and add a tag to it.

Using the same command form, you can make a copy of the entire database datafiles in external disks.

```
BACKUP AS COPY TABLESPACE users FORMAT '/media/sf_extdisk/%U' TAG 'users2018';
```

20. List the backup files of the same tag used above.

Observe that tag value is case-insensitive.

```
LIST COPY TAG 'USERS2018';
```

21. Delete the image copy using the `TAG` option.

```
DELETE COPY TAG 'users2018';
```

22. If you have created a VirtualBox snapshot, consider deleting it.

Summary

In high level, in this practice, you learnt how to perform the following tasks:

- Use multiple options to take backup of the control file.

- Produce backups as image copies

- Use tags in the produced RMAN backups