Practice 2

Introducing RMAN

Practice Target

In this practice you will get familiar with starting and configuring RMAN.

Practice Overview

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

- Examine the options to start RMAN and connect to a target database
- Set the date and time format that RMAN uses to display time stamps
- Examine the commands to display and change RMAN persistent settings
- Set the **CONTROL_FILE_RECORD_KEEP_TIME** parameter

Assumptions

- This practice assumes that srv1 appliance is up and running and its database ORADB is running in OPEN state.

A. Starting RMAN

In the following steps you will learn about the options that you have for starting RMAN.

1. Open Putty and login to `srv1`.

2. Invoke rman without connecting to the database.

```
rman
```

3. Use the `CONNECT TARGET` command to connect to the local database as `SYSDBA`.

With this method, you are connecting to the local instance that is pointed by the environment variable `ORACLE_SID`. This method uses the operating system authentication method for connecting to the database.

Also, observe that after connecting to the target database, the `DBID` of the database is displayed.

```
CONNECT TARGET /
```

4. Exit from RMAN

5. Start RMAN again and login as target to `ORADB` using the RMAN command line.

```
rman target /
```

6. Exit from RMAN and connect to the target database using username and password authentication.

```
rman target sys/oracle@ORADB
```

7. Invoke SQL*Plus and login to the database as `SYSDBA` and create a user named as `BACKUPOPER`. Grant `SYSBACKUP` privilege to the user.

```
sqlplus / as sysdba
CREATE USER BACKUPOPER IDENTIFIED BY oracle;
GRANT SYSBACKUP TO BACKUPOPER;
GRANT CREATE SESSION TO BACKUPOPER;
```

8. Start RMAN and login as target to the local database using `SYSBACKUP` privileges and the account `BACKUPOPER`.

`BACKUPOPER` user has only the privileges required to perform backup operations. In an environment where roles separation is enforced, this privilege is granted to the individual who is on charge of taking backups.

```
rman target "'BACKUPOPER/oracle@ORADB as sysbackup'"
```

9. Start RMAN and use the `LOG` command line argument.

```
rman target / log=/tmp/rman.log append
```

10. Issue the following command then exit from RMAN.

The command output is not sent to the standard output. It has gone to the log file.

```
SHOW ALL;
```

11. Exit from RMAN and have a look at the contents of the log file.

Observe that the output of the command executed in the previous step is stored in the file.

```
cat /tmp/rman.log
```

B. Making Some Configurations for RMAN Operation

In this section of the practice, you will make some configurations to facilitate RMAN operations.

12. Open the `oracle` user profile file and add the following variable setting to it. If the variable is already set, replace it with the setting value below.

The target of this setting is to set the date/time format that RMAN uses for displaying timestamps. The default format does not include the time part of the date information.

```
# open the oracle user profile:
vi .bash_profile
```

```
# add (or replace) the following variable to it:
NLS_DATE_FORMAT="YYYY-MM-DD:HH24:MI:SS"; export NLS_DATE_FORMAT
```

13. Enable the automatic backup of control file in RMAN settings.

    a. Start rman and login as target to the local instance

    b. Issue the following command to display all the RMAN persistent settings.

       Observe that all the settings are set to their default values.

```
SHOW ALL;
```

    c. Display the value of the configuration setting `AUTOBACKUP`.

       This setting makes RMAN automatically takes backup of the control file and SPFILE every time you issue a `BACKUP` command. You will learn more details about it later in the course.

       Observe that `AUTOBACKUP` is set to `ON`. This is the default value of this parameter in release 12.2. In earlier releases, its default value is `OFF` and you had to manually set it to `ON`.

```
SHOW CONTROLFILE AUTOBACKUP;
```

    d. Just for the sake of testing how to use the `CONFIGURE` command, issue the following command to explicitly set `AUTOBACKUP` to `ON`.

       You can copy and paste the command from the output of the previous command.

```
CONFIGURE CONTROLFILE AUTOBACKUP ON;
```

    e. Display the value of the setting `AUTOBACKUP` again.

       Observe that the "default" keyword does not appear now.

```
SHOW CONTROLFILE AUTOBACKUP;
```

    f. Clear the value of the `AUTOBACKUP`

```
CONFIGURE CONTROLFILE AUTOBACKUP CLEAR;
```

    g. Display the value of the setting `AUTOBACKUP` again.

       Observe that the "default" appears again now.

```
SHOW CONTROLFILE AUTOBACKUP;
```

C. Setting `CONTROL_FILE_RECORD_KEEP_TIME` Parameter

If you do not use a recovery catalog database, RMAN keeps record of its produced backup files in the control file. By default, Oracle deletes the entries from the control file that are older than 7 days. If your recovery window is longer than this period, you have to increase the value of `CONTROL_FILE_RECORD_KEEP_TIME` parameter to accommodate your recovery target.

14. Using SQL*Plus utility, connect to `ORADB` as `sysdba` and set the `CONTROL_FILE_RECORD_KEEP_TIME` parameter to 60 days.

```
sqlplus / as sysdba
SHOW PARAMETER CONTROL_FILE_RECORD_KEEP_TIME
ALTER SYSTEM SET CONTROL_FILE_RECORD_KEEP_TIME=60 SCOPE=BOTH;
```

Summary

In this practice, you learnt how to perform the following:

- Start RMAN and connect to target databases using multiple options

- Set the date and time format that RMAN uses to display time stamps

- Display and change RMAN persistent settings

- Set the `CONTROL_FILE_RECORD_KEEP_TIME` parameter