Managing Backup and Recovery in Oracle RAC

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Objectives

In this lecture, you will learn how to do the following:

- Understand the RAC considerations in backup and recovery plan
- Understand the RAC considerations when enabling archived redo logs
- Managing Snapshot Control Files in RAC databases
- Configure control file and SPFILE autobackup in RAC
- Use RMAN parallelism in RAC

About Backup and Recovery in RAC

- RAC is not a substitution to backup and recovery strategy
- Develop a strategy as you would in a single-instance database
- A backup and recovery plan provides recovery for:
  - Hardware failure
  - User incorrect data modification
  - Long term point-in-time recovery (PITR)
  - Off-site backup
  - Cloning a production database

Possible Backup Configurations for RAC

- Possible backup configurations:
  - Network backup server
  - Single storage dedicated to an instance
  - Multiple storages links to more than one instance

About Using RMAN in Oracle RAC

- Using RMAN fundamentals in RAC do not substantially differ from single-instance non-cluster database
- The node that performs the recovery must be able to read all the required backup files and archived redo logs
- Consider using FRA for backup destination
- Can read from ASM destination with no configuration
- Save the backups in locations accessible to all nodes

Enabling Archived Redo Logs in RAC

- A production database should run in ARCHIVELOG mode
- In the archived redo file conventions LOG_ARCHIVE_FORMAT, all of the thread parameters, in either uppercase or lowercase (%t, %s, and %r) should be used

```
arclog_%t_%s_%r.arc
```

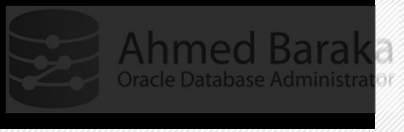
- Has no effect if Oracle Managed Files (OMF) is enabled
- Store them in a shared storage so that the instances can get access to them in recovery situations

About the Snapshot Control File

- It is not a control file backup
- Generated every time RMAN synchronizes the recovery repository or takes back up the control file
- Its default location is under ORACLE_HOME
- Highly recommended to relocated it to a shared storage

```
SHOW SNAPSHOT CONTROLFILE NAME;
```

```
CONFIGURE SNAPSHOT CONTROLFILE NAME TO
'+FRA/RAC/AUTOBACKUP/snapcf_rac.f';
```



Configuring Control File and SPFILE Autobackup

- If it is set to ON, RMAN automatically creates a control file and SPFILE backup after the BACKUP or COPY command

```
SHOW CONTROLFILE AUTOBACKUP ;
```

- Set its location to a shared storage.

```
CONFIGURE CONTROLFILE AUTOBACKUP FORMAT
  FOR DEVICE TYPE DISK TO '+FRA';
```

Allocating Multiple Channels in RAC

- RMAN channels can connect to different instances in the cluster
- Manual: provide a connect string to each channel:

```
CONFIGURE DEFAULT DEVICE TYPE TO sbt;
CONFIGURE DEVICE TYPE sbt PARALLELISM 3;
CONFIGURE CHANNEL 1 DEVICE TYPE sbt CONNECT='sys/oracle@rac1';
CONFIGURE CHANNEL 2 DEVICE TYPE sbt CONNECT='sys/oracle@rac2';
CONFIGURE CHANNEL 3 DEVICE TYPE sbt CONNECT='sys/oracle@rac3';
```

- Automatic: using nondeterministic connect string:

```
CONFIGURE DEFAULT DEVICE TYPE TO sbt;
CONFIGURE DEVICE TYPE sbt PARALLELISM 3;
CONFIGURE CHANNEL DEVICE TYPE sbt CONNECT='sys/oracle@bkp_serv';
```

Summary

In this lecture, you should have learnt how to do the following:

- Understand the RAC considerations in backup and recovery plan
- Understand the RAC considerations when enabling archived redo logs
- Managing Snapshot Control Files in RAC databases
- Configure control file and SPFILE autobackup in RAC
- Use RMAN parallelism in RAC