RMAN: Your New Best Friend for Backup and Recovery

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Topics of Discussion

- Top 10 reasons to love RMAN.
- The golden rule of backup and recovery
- Should I use a recovery catalog?
- Is it worth learning RMAN?
- Is the learning curve too steep?
- How do I get started?
- Why I use rman?
Top Ten Reasons To Love RMAN

1. Powerful (RESTORE DATABASE, BACKUP DATABASE)
2. Reliable (VALIDATE)
3. Light (no need to do BEGIN BACKUP/END BACKUP)
4. Flexible (DISK, ‘SBT_TAPE’)
5. Versatile (COPY, BACKUP, CATALOG previous backups)
6. Customizable (FULL, INCREMENTAL, CUMULATIVE INCREMENTAL)
7. Helpful (REPORT NEED BACKUP, REPORT UNRECOVERABLE)
8. Clone-enabled (DUPLICATE)
9. Integrated (part of the RDBMS)
10. Well-timed (SET UNTIL)

From:

ORACLE BACKUP AND RECOVERY STRATEGIES :
HOW I LEARNED TO LOVE RECOVERY MANAGER

Francisco M. Sánchez, Oracle Corporation
Powerful (RESTORE DATABASE, BACKUP DATABASE)

- single commands to accomplish complicated tasks
- scripts can be stored in the recovery catalog..write once, use over and over
CORRUPTION HAPPENS!
Using the VALIDATE function you can find corruption and fix it before a disaster.
Oracle’s method for fixing corruption:
  Find the problem. Fix the problem by;
  Restore from a backup taken before the corruption occurred.
  Recover the database to the desired point-in-time.
This is easy with RMAN!
Light (no need to do BEGIN BACKUP/END BACKUP)

- Ends the problem of fractured blocks without generating huge volumes of redo
- The datafile header blocks are not frozen!
- Rman uses the same technology that makes sqlplus consistent.
FLEXIBLE (DISK, ‘SBT_TAPE’)

- Backup to disk or tape (using 3rd party media manager).
- Backup from disk to tape with OS backup software.
Versatile (COPY, BACKUP, CATALOG previous backups)

- You can do an image copy of any database, tablespace, or datafile.
- Backup databases with 9 levels of incremental backup.
- Put previous backups into an rman catalog (8i).
Customizable (FULL, INCREMENTAL, CUMULATIVE INCREMENTAL)

- As stated, only rman allows 9 levels of incremental backups. You can use this flexability to save disk space.
- Level 0 is the lowest level and is essentially a full backup including the controlfile. (Very important for point-in-time recovery!)
Helpful (REPORT NEED BACKUP, REPORT UNRECOVERABLE)

- Report on datafiles needing backup
- Find files which are unrecoverable.
- See files which can be deleted.
Clone-enabled (DUPLICATE)

- Use the DUPLICATE command to create clones for testing, reporting, and developing.
- In 8.0.xx, you can also clone databases. You have to fool rman into thinking that it is restoring a backup to its target. You fool rman by restoring the backup on a different node, and rename the clone.
Integrated (part of the RDBMS)

- RMAN comes with the ORACLE database.
- Uses the same Oracle internals to ensure a consistent database backup as sqlplus uses.
- It therefore does not generate lots of redo.
Well-timed (SET UNTIL)

- Point-in-time recovery, PITR, to a point-in-time earlier than the present (database must be in archivelog mode).
- TSPITR, tablespace point-in-time recovery for recovering lost objects, etc (to a clone database).
Is it worth learning RMAN

- Did I mention, it’s free!
- 3 features that no other 3rd party or home-grown solution offers, according to Tim Gorman of SageLogix, Inc. are reason enough to use rman.
  1. Hot backups without ALTER ABLESSPACE..
     BEGIN BACKUP; It’s not the command but what it does…rman ends block fracture and lots of redo.
  2. Incremental backups..no one else has them!
  3. Detecting corrupted blocks while you do backup.
Is the learning curve too steep?

- Again, to cite Tim Gorman, if you want to do even one of these things then rman is the solution:
  1. Increase the volume of the data you are backing up.
  2. Increase the speed or decrease the duration of backups.
  3. Increase the speed or decrease the duration of restores and recoveries.
  4. Prevent loss of any data, ever.
- Since rman is the only way to accomplish all of these things, then perhaps the learning curve is not steep at all.
- Michel Abbey, of Pythian Group, said ‘If you are not using rman now, you will be.’ Why not start up the curve now and not wait until you have to.
Should I use a recovery catalog?

- You don’t have to have a very large database to hold the catalog.
- The catalog is a series of tables and views which you can query with SQLplus.
- You can store scripts right in the catalog, and reuse them at will.
- There will still be backup information in the controlfile, so you can use rman nocatalog if needed.
- Why not? Unless you have a good reason not to use a recovery catalog, then you should.
Why I use rman.

- When I was interviewed for my current job they asked whether I could prevent data loss with my backup strategy. I said yes, I was sure that Oracle had a way to do this. I was hired.
- Since I had to come through, I started researching Oracle’s backup options, and found rman.
- I implemented a backup strategy using rman and made good on my promise.
- I still have the job today! And I still use rman in our backup strategy.
- Rman has gotten better with each version so I will continue to use it. And it’s free!