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# 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?



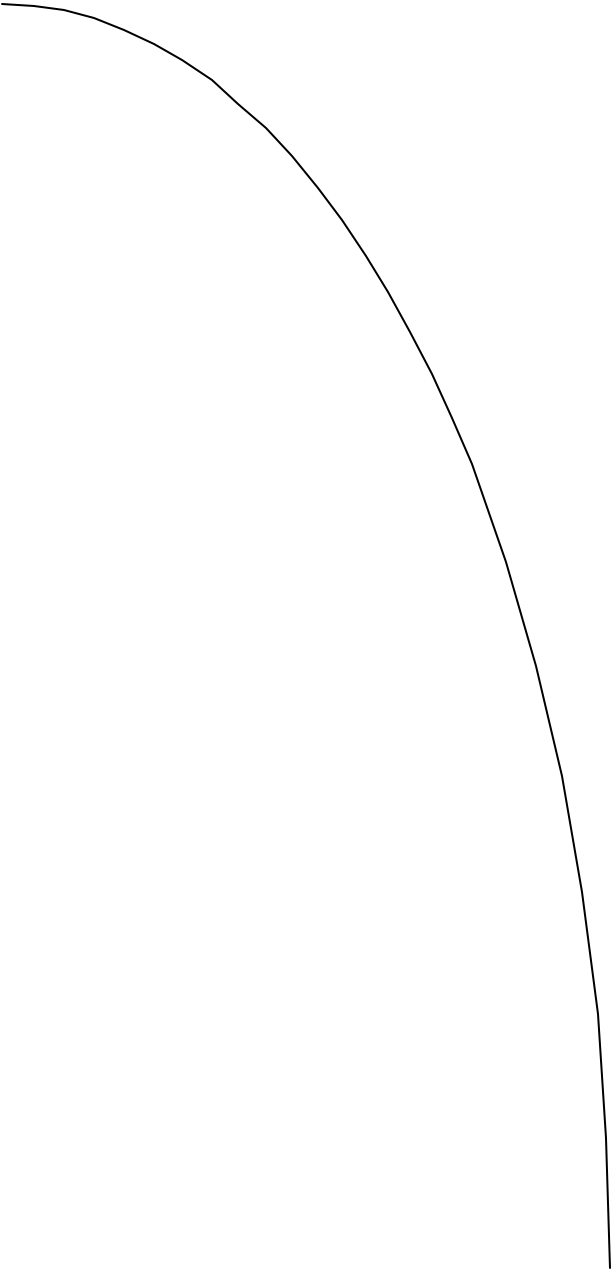
# Top Ten Reasons To Love RMAN

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



# Reliable (VALIDATE)

- 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')

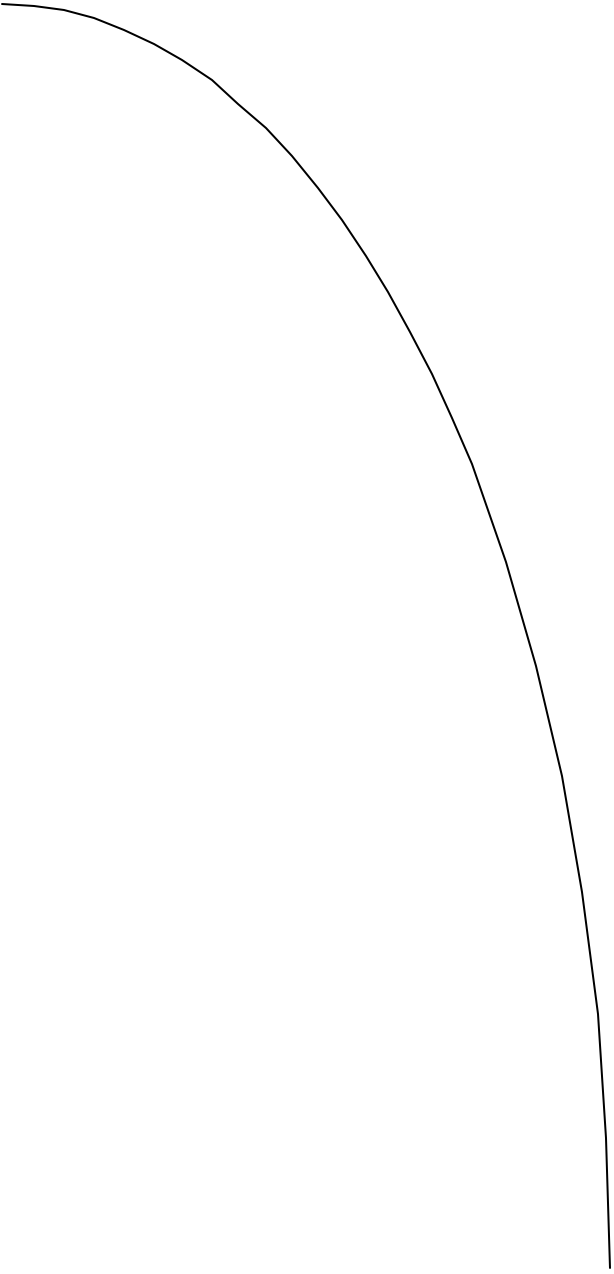
- Backup to disk or tape (using 3rd party media manager).
- Backup from disk to tape with OS backup software.



## 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 flexibility 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.

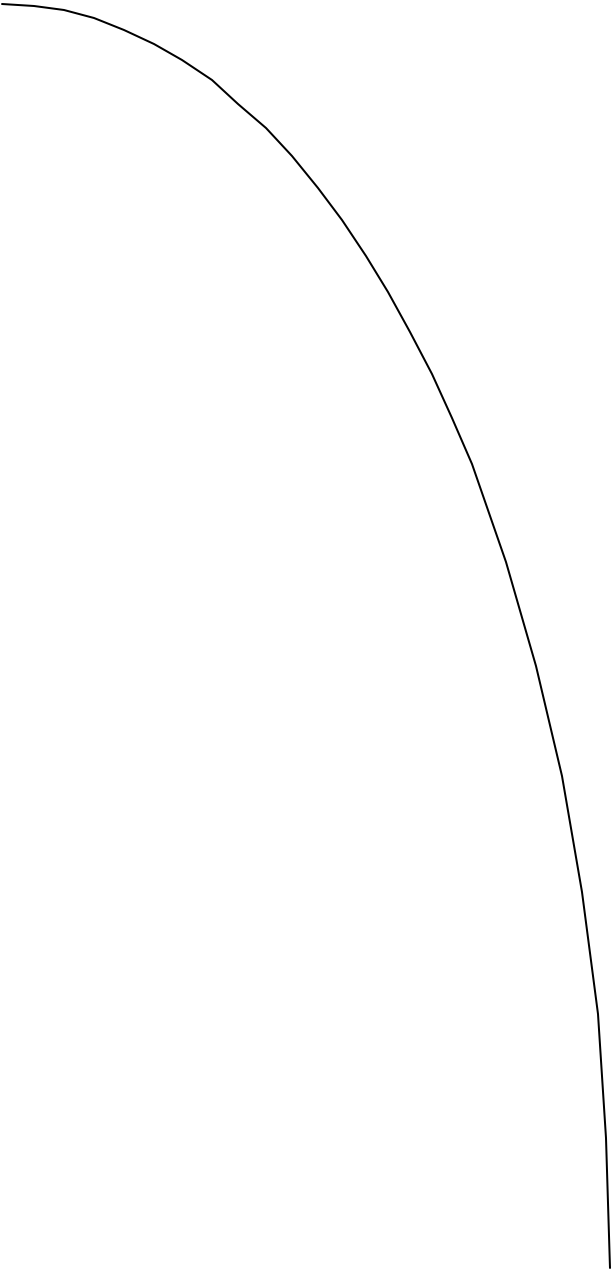
# Clone-enabled (DUPLICATE)

- 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 ABLESPACE.. 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!