

Introducing Backup and Recovery in Oracle Databases

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Objectives

In this lecture, you should learn how to perform the following:

- Describe data failure categories
- Describe database backup and recovery roadmap
- Compare between Oracle database recovery solutions



Categories of Failure

Media failure

User error

Network failure

**Application
invalid
logic**

Disaster



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Categories of Failure

Media failure

Faulty HDD
Faulty storage
controller
Deleting a data
file
Faulty HW
component

User error

Network failure

Application invalid logic

Disaster



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Categories of Failure

Media failure

User error

User deleted data

User updated
incorrect data

User dropped a table

Network failure

Application invalid logic

Disaster



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Categories of Failure

Media failure

User error

Network failure

Faulty NIC
Network
configuration issues
Listener fails

Application invalid logic

Disaster



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Categories of Failure

Media failure

User error

Network failure

**Application
invalid
logic**

Application logic
errors

Disaster



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Categories of Failure

Media failure

User error

Network failure

Application invalid logic

Disaster

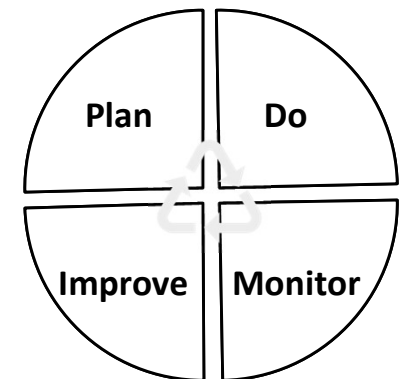
Flood
Earthquake
Fire
Water leak
Destructive actions



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Database Backup and Recovery Roadmap

- Set a database backup and recovery policy:
 - **Recovery Time Objective (RTO)**: time needed to recovery the system after failure
 - **Recovery Point Objective (RPO)**: the maximum acceptable amount of data (sometimes expressed in time)
- Set and implement a database backup and recovery plan:
 - Technology used: RMAN, Data Guard, RAC, RAC One Node
 - Plan and implement the environment
 - Set the responses to the failure scenarios
- Monitor the backup and recovery implementation
- Test database recovery



Comparison Between Recovery Solutions

	RMAN	RAC	Data Guard	Flashback DB
Concept	takes backup of database files	active clustering	standby synchronized with primary	flashback logs containing db changes
Main Target	backup and recovery	tolerance against h/w failure	disaster recovery	fast db rewind
License	included	needed	needed for Active DG	included in EE
partial backup	Yes	n/a	Yes	Yes
Near Zero downtime?	No	Yes	Yes	No

Summary

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

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