Oracle RAC Database Overview
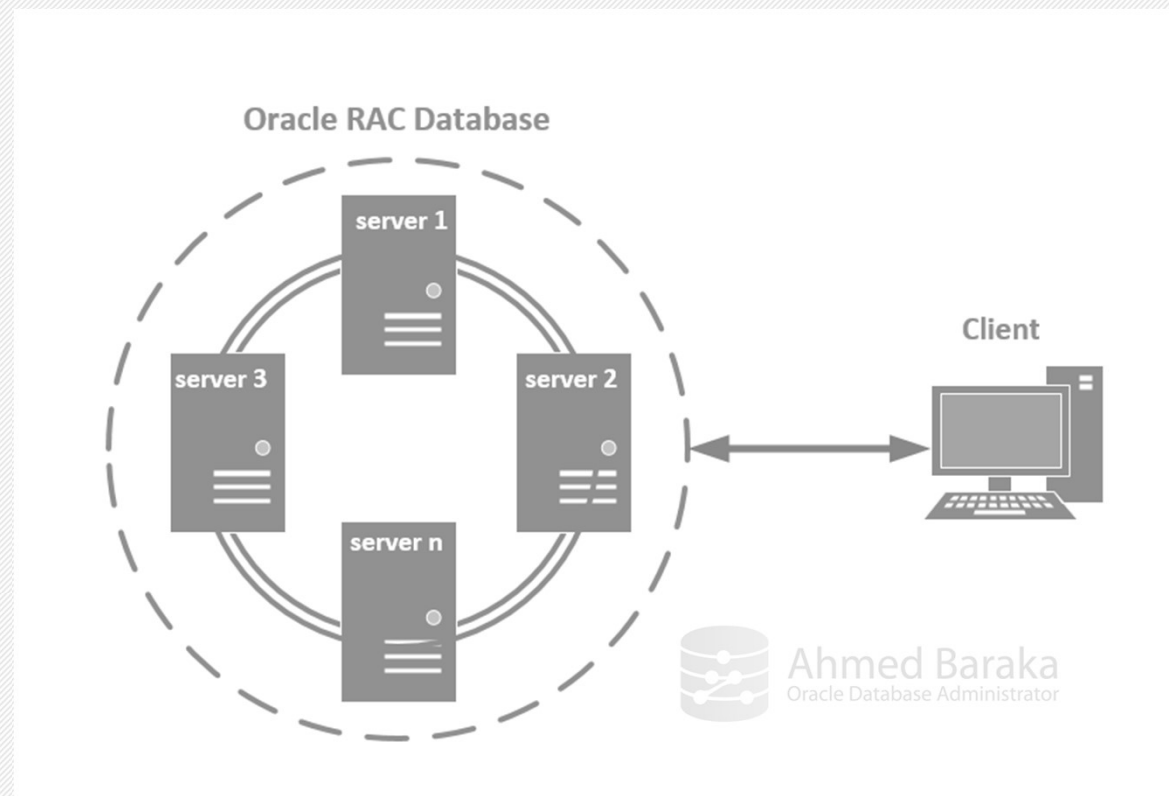
By Ahmed Baraka

Objectives

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

- What is Oracle RAC?
- What are the advantages of Oracle RAC database?
- What are the disadvantages of Oracle RAC database?
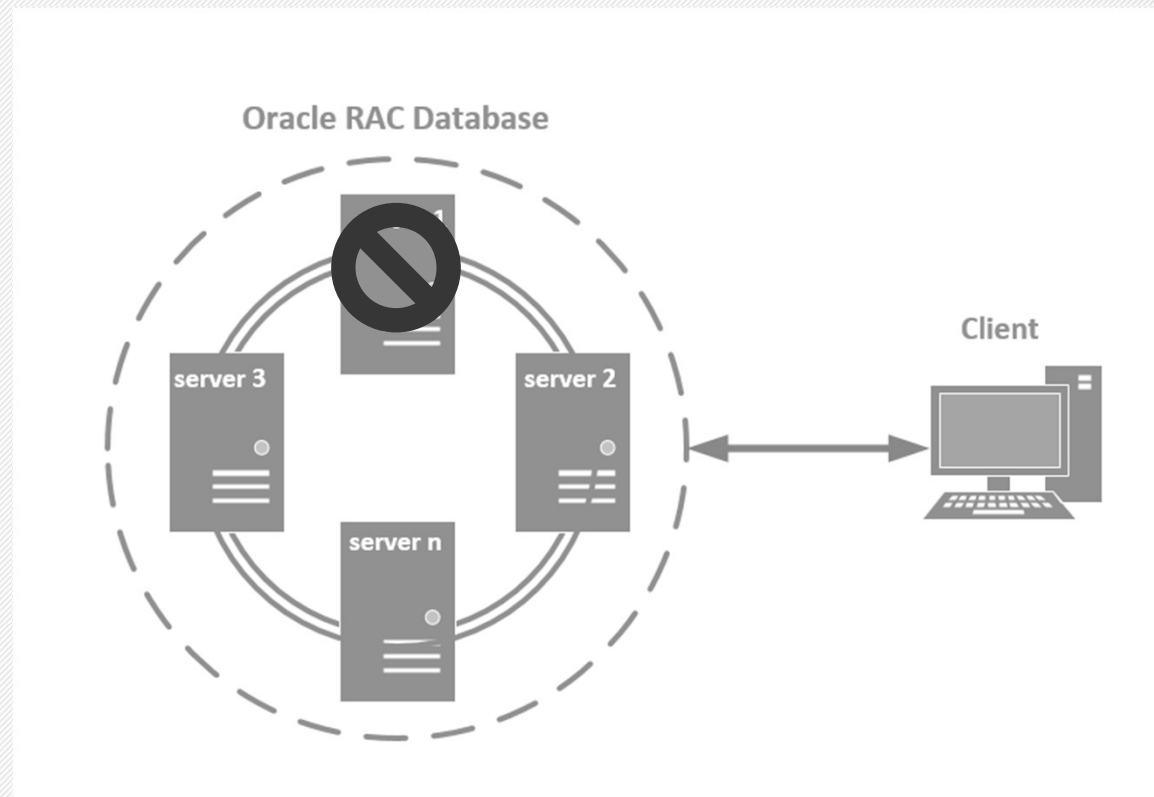- Why you should learn Oracle RAC database administration skills?
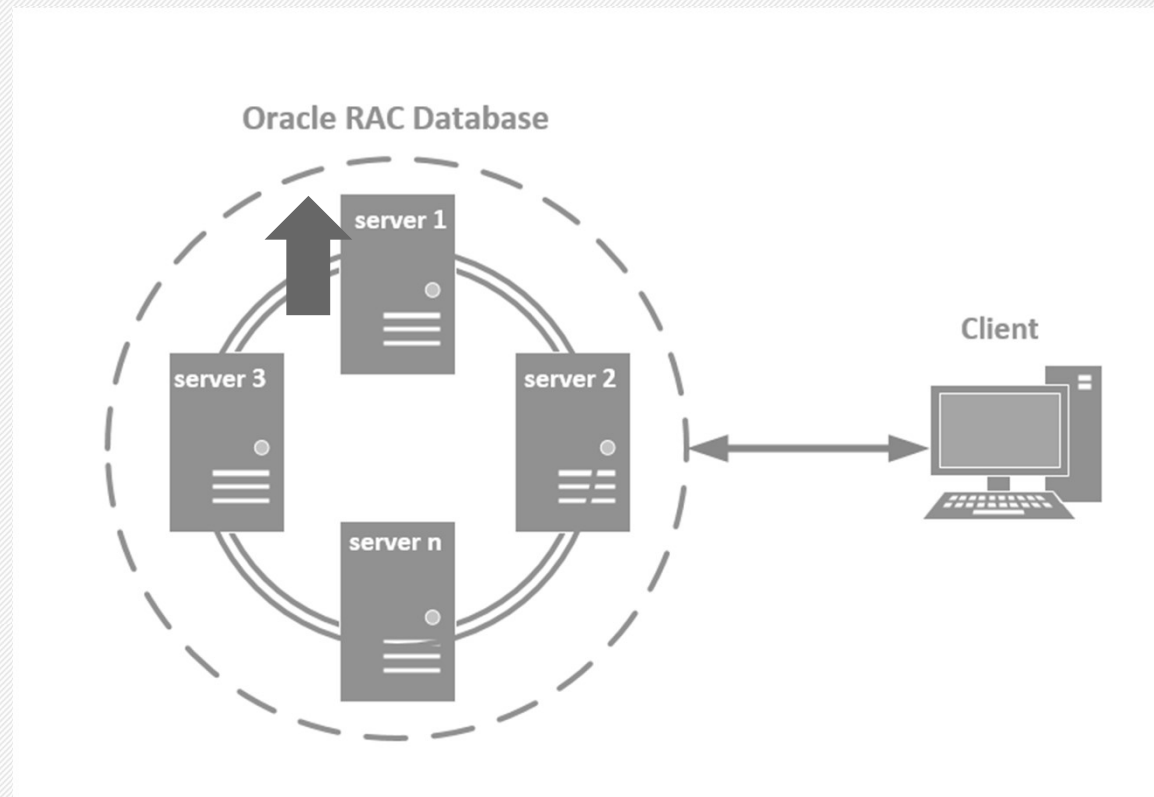
What is Oracle RAC database?

- A database running on a cluster of multiple servers that operate as a single database.
- This is opposed to a single-instance database

Oracle RAC Database
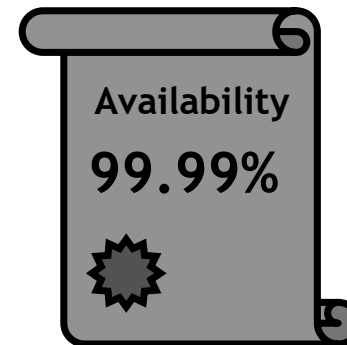
server 1
server 3
server 2
server n
Client

Unplanned Downtime

Oracle RAC Database

Planned Downtime

Oracle RAC Database

server 1

server 3

server 2

server n

Client

SLA Implementation
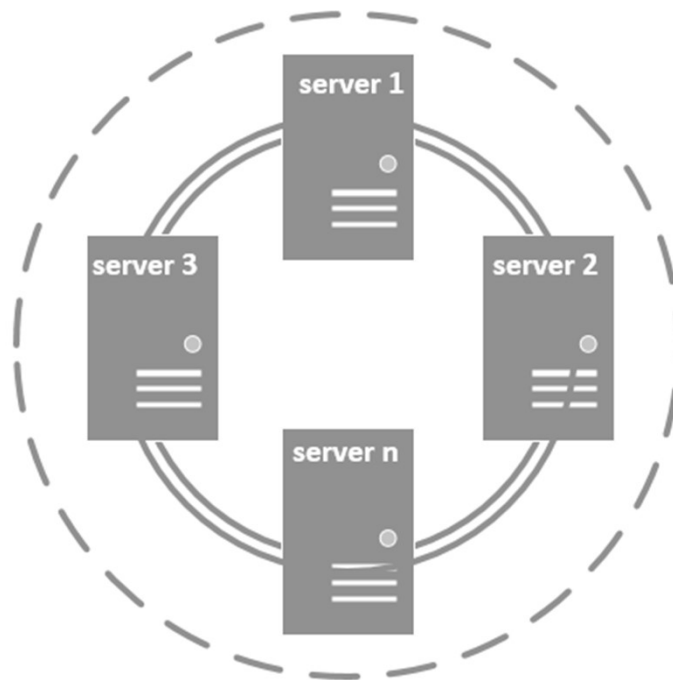
Horizontal Scalability

Oracle RAC Database

Horizontal Scalability
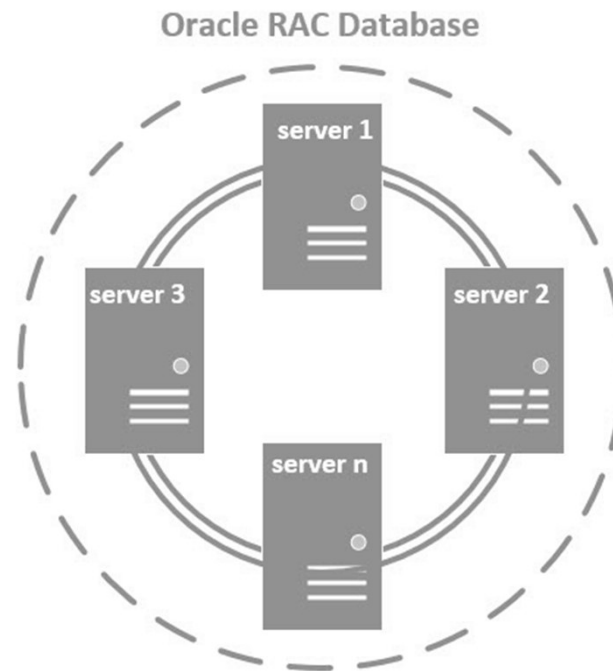
Oracle RAC Database
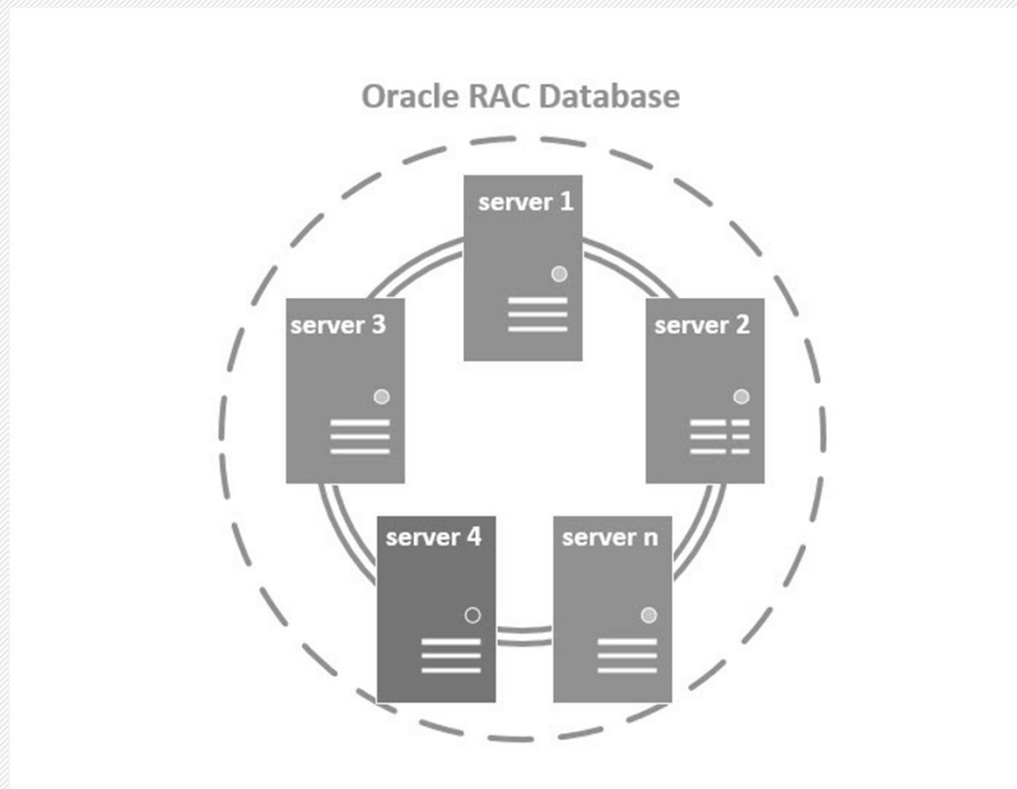
Oracle RAC Benefits

- High Availability
  - Unplanned downtime due to hardware and OS failures
  - Planned downtime due to hardware upgrade or fixing, OS patching or upgrade, Oracle Database patching or upgrade
  - Adhere to SLA that requires very high availability
- Database Scalability
- Load balancing
- Resource Utilization

Oracle RAC Drawbacks

- Additional license cost:
  - Oracle Database Enterprise Edition: Oracle RAC license is separate
  - Database Standard Edition: Oracle RAC license is included, if the total number of CPU sockets in all the servers in the cluster less than or equal to 4
- Complicated hardware architecture and requirements
- Not designed for Disaster Recovery
- More complex DBA administration skills compared to single-instance

Should the firm use it?

- If the server goes down, how long does it take you to recover?
- How much business loses when the application is not available during the recovery time?
- Cost of Oracle RAC:
  - Hardware infrastructure cost
  - Oracle Database and RAC licenses
  - Management cost
- Consider Oracle RAC One Node option

Should I learn it?

- Oracle RAC is highly used by the enterprises
- Highly demanded in the market

Summary

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

- What is Oracle RAC?
- What are the advantages of Oracle RAC database?
- What are the disadvantages of Oracle RAC database?
- Why you should learn Oracle RAC database administration skills?