

Intelligent Workload Management across Database Replicas

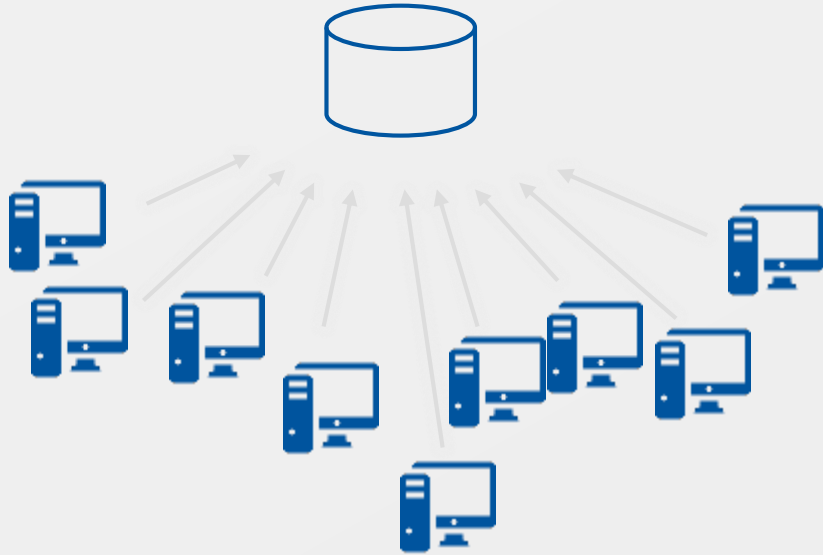
Ritika Nevatia

Under the supervision of **Prasanth Kothuri**

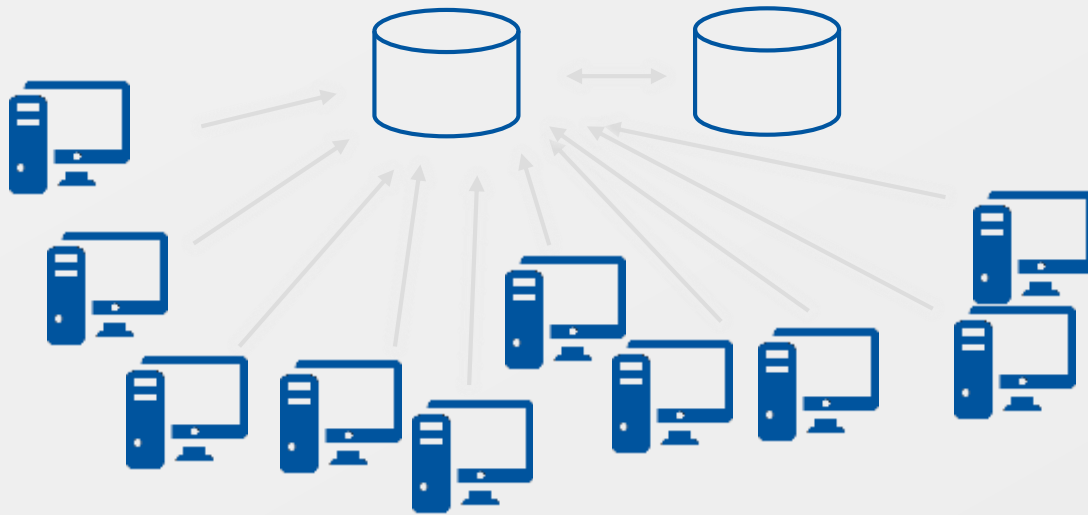
One DB, One client



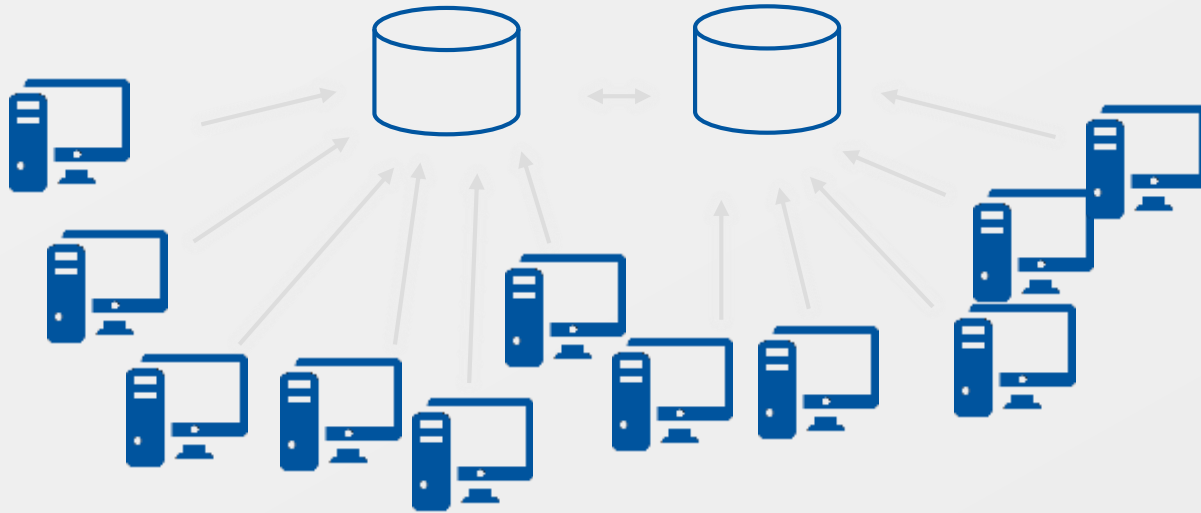
One DB, Many Clients



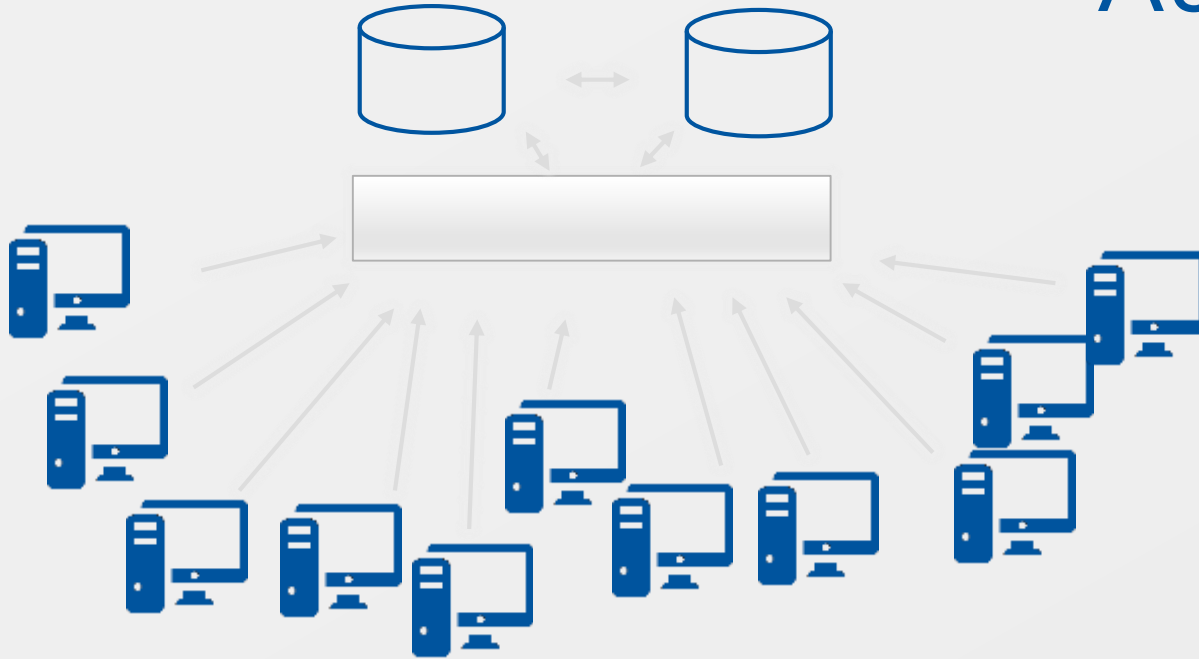
Replicated DBs, Many clients



Load balanced, Manually

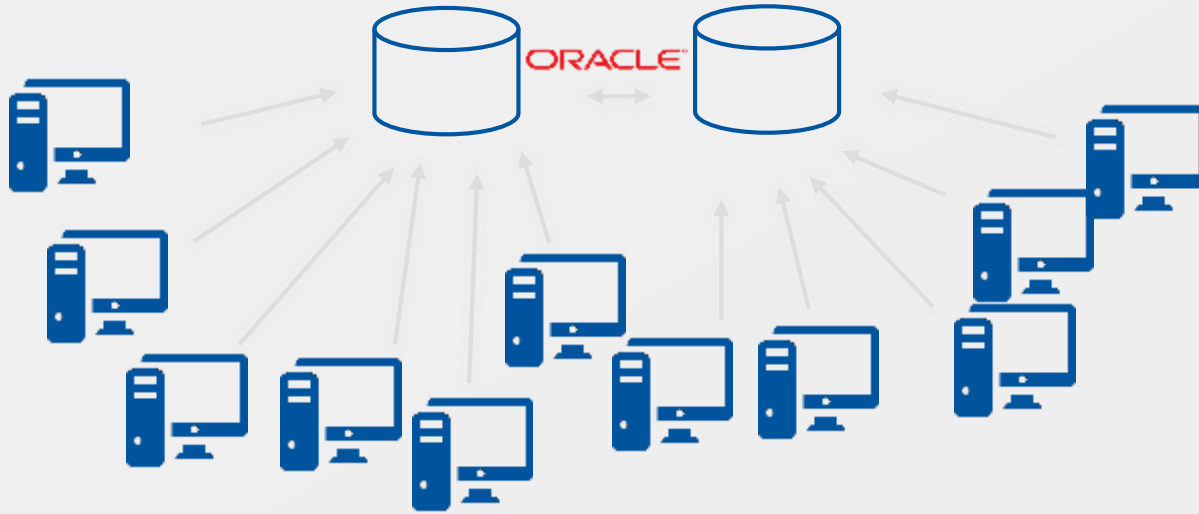


Load balanced, Automatically

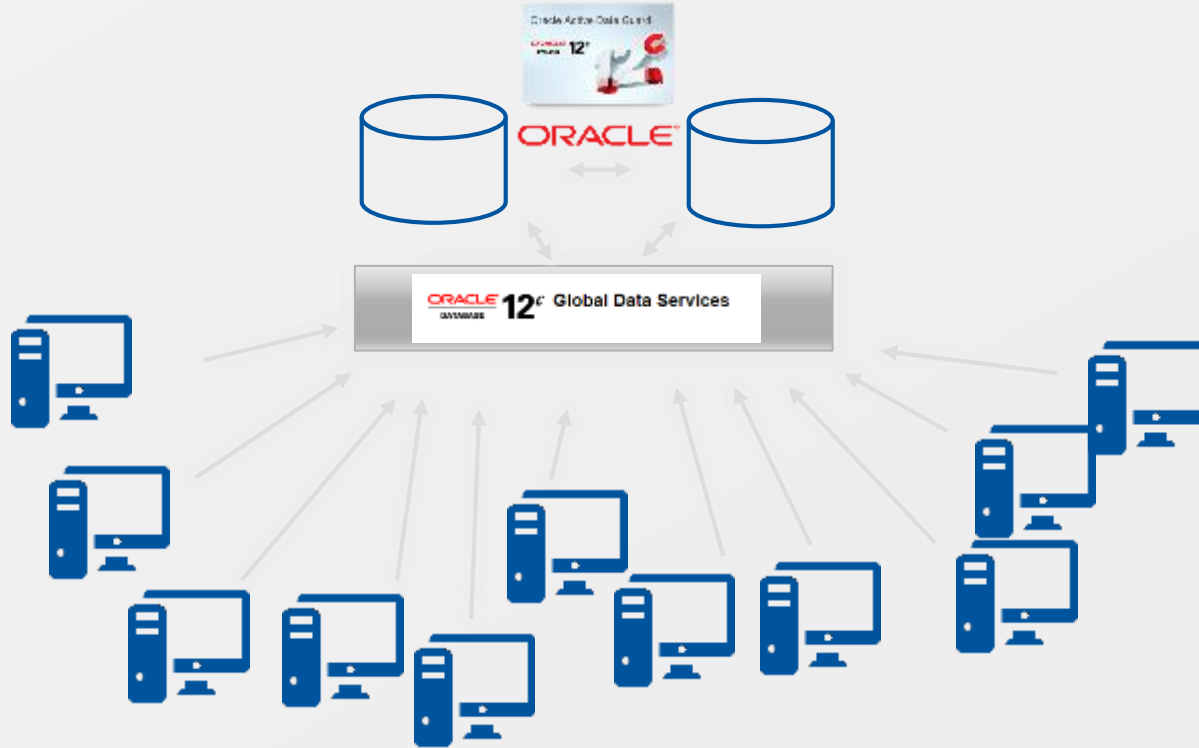


What do we use?

Manual Load Balancing



Can we do better?



Why GDS?

Availability

Scalability

Performance

Manageability

Key features

Work Load Management	Centralized Framework
Work Load Routing	Region based Replication lag based
Failover	Inter database service failover
Role Based Global Service	Takes care of role transition via Data Guard
Load Balancing	Run-time Connection



How GDS works??

Services

Representation

Grouping

Routing

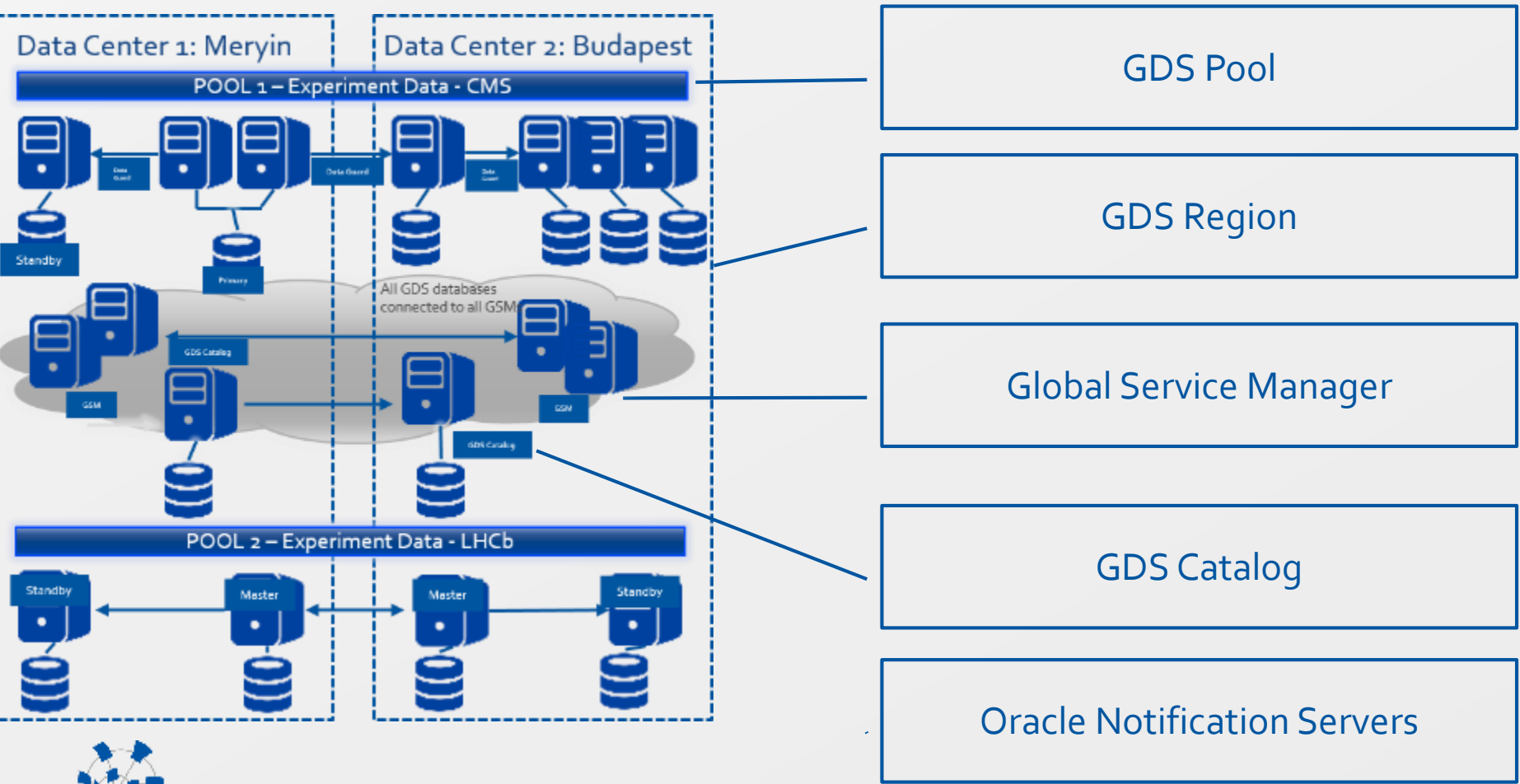
to optimal instance

to handle unexpected failovers

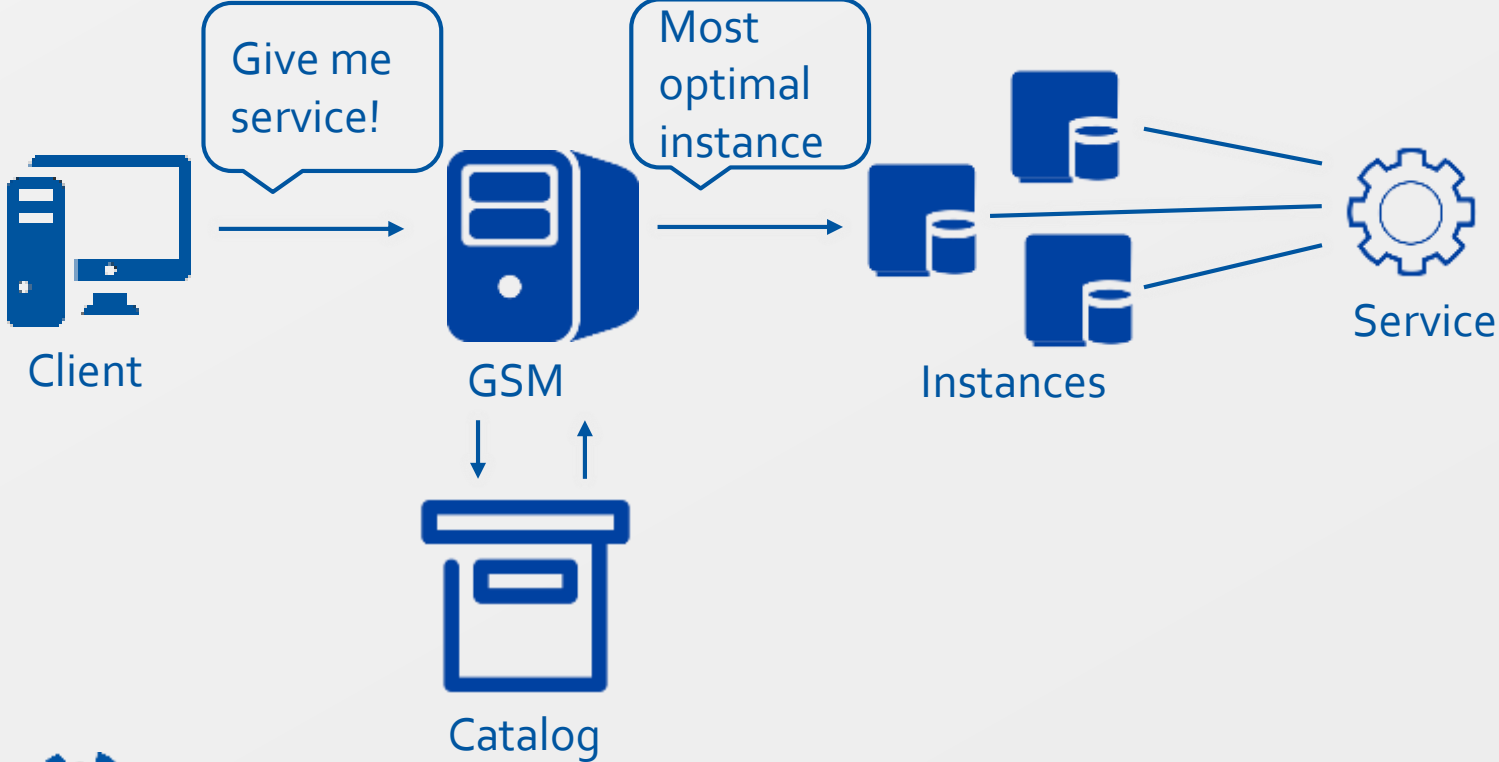
How GDS works??

- Implements the Oracle Database service model
- GDSCTL
- Any combination of
 - Oracle Data Guard (Physical Replication)
 - Oracle Golden Gate (Logical Replication)
 - or any other database replication technology

What is GDS made of??



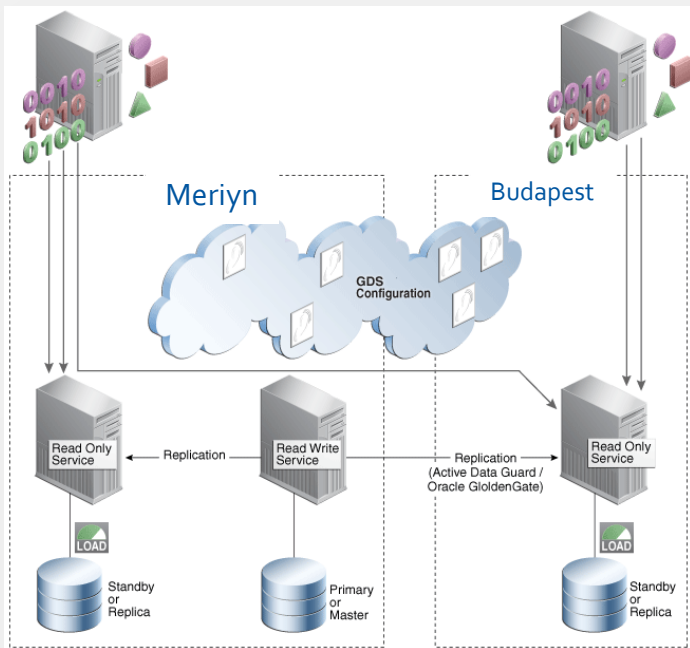
The process



Use Cases

- Load Balancing for Replicated Databases
- Service Failover for Replicated Databases
- Region Affinity in Oracle GoldenGate Multi-Master
- Load Balancing in Oracle GoldenGate Multi-Master
- Balancing Oracle Active Data Guard and Oracle GoldenGate Reader Farms

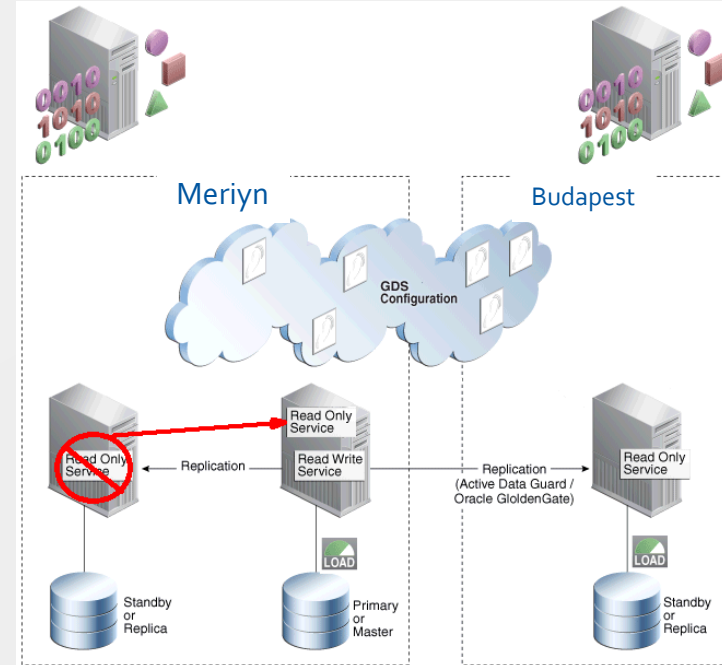
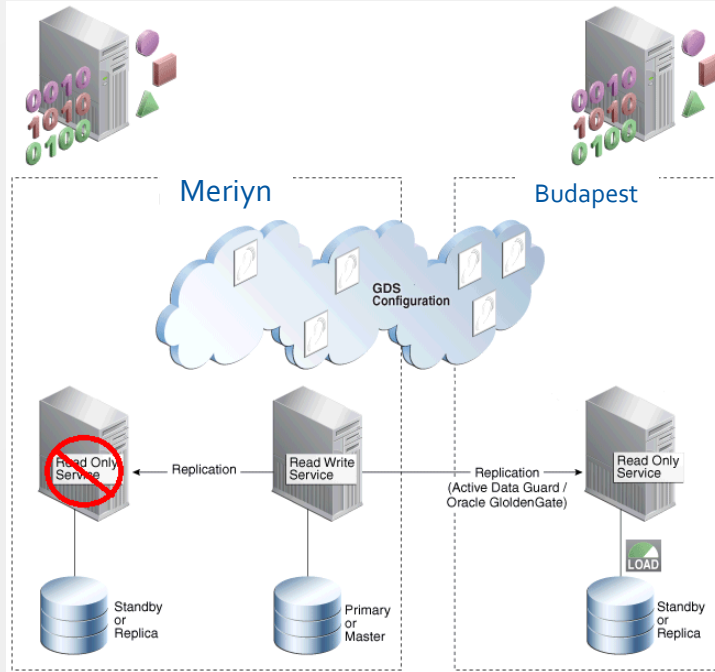
Load Balancing in Replicas



- Load metrics
- Region affinity
- Network latency
- Load balancing goals



Service failovers in Replicas



Thank You

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