ORACLE 12c
DATABASE

ORACLE REAL APPLICATION CLUSTERS

ORACLE RAC – MORE THAN HIGH
AVAILABILITY AND SCALABILITY

KEY BENEFITS
- Runs all database workloads
- Foundation for Database Clouds
- Scalability on-demand
- Highest Database Availability
- Cost-effective Workload Management

KEY FEATURES
- Application Continuity
- Oracle Grid Infrastructure Integration
- Full Oracle Multitenant Support

Oracle Real Application Clusters (RAC) is a shared cache clustered database architecture that overcomes the limitations of traditional shared-nothing and shared-disk architectures for unbeatable database performance, scalability and reliability without requiring changes to existing Oracle Database applications. Oracle RAC has been successfully deployed by thousands of Oracle customers, allowing these customers to use clustered database servers for a simplified, efficient and successful delivery of Database Services on the Cloud.

Runs All Database Workloads

Oracle RAC can be used for online transaction processing and data warehousing applications or for mixed workloads. No changes to the applications are required. Oracle RAC can be deployed with complementary database technologies including Oracle Multitenant and Oracle Active Data Guard.

Foundation for Database Services on the Cloud

Oracle RAC provides all the software components required to easily deploy Oracle Databases on a pool of servers and take full advantage of the performance, scalability and availability that clustering provides. Oracle RAC utilizes Oracle Grid Infrastructure as the foundation for Oracle RAC database systems. Oracle Grid Infrastructure includes Oracle Clusterware and Oracle Automatic Storage Management (ASM) that enable efficient sharing of server and storage resources in a highly available and scalable database Cloud environment. Oracle Grid Infrastructure provides all the functionality and mechanisms required for successfully running Oracle RAC based Cloud systems without requiring paying for 3rd party cluster solutions.

Scalability on-demand

Oracle RAC enables the transparent deployment of Oracle Databases across a pool of clustered servers. This enables customers to easily re-deploy their single server Oracle Database silos onto a cluster of database servers, and thereby take full advantage of the combined memory capacity and processing power the clustered database servers provide.

Oracle RAC provides customers with complete flexibility for scaling database workloads. Customers can keep IT costs down by building server and storage pools on commodity components that they can easily scale-out by simply adding additional servers in the cluster and as demand requires it. In addition, Oracle RAC allows for easy and uninterrupted scale-up by replacing existing servers with a more capable machine in the course of a hardware refresh.

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Highest Database Availability

Oracle RAC provides customers with the highest database availability by removing the single database server as a single point of failure. In a clustered server environment, the database itself is shared across a pool of servers, which means that if any server in the server pool fails, the database continues to run on surviving servers. Oracle RAC is therefore a key component of Oracle's Maximum Availability Architecture (MAA), a set of best practice blueprints that addresses the common causes on unforeseen and planned downtime. Oracle RAC not only enables customers to continue processing database workloads in the event of a server failure, it also helps customers to further reduce their cost of downtime by reducing the amount of time databases are taken offline for planned maintenance operations. Using complementary solutions, such as the new Application Continuity feature available with Oracle Database 12c, Oracle RAC provides even better user experience by enabling the replay of failed transactions in a non-disruptive manner, effectively masking any database outage from the end user.

Cost-effective Resource Management

Oracle RAC includes innovative technologies to manage workloads in the cluster while at the same time providing the best application throughput considering the configuration and high availability requirements for the application. Oracle RAC is thereby the only database solution providing performance availability on the market today. Various components integrated in the Oracle RAC Stack at no extra costs contribute to this ability. Oracle Database Quality of Service (QoS) Management for example ensures that the user's performance and service level expectations for different database workloads in the cluster are met. Using logical pools of servers within a cluster to provide workload isolation, QoS either recommend or automatically moves servers from one server pool to another in order to ensure that performance objectives are maintained. Quality of Service Resource Management is part of Oracle RAC and monitors workloads for the entire system, manages resources that are shared across applications and adjusts system configurations to keep applications running at the required performance levels. This is especially important when considering increased adoption of consolidated databases in cloud deployments. Oracle RAC is therefore the ideal solutions for consolidating databases on the Cloud, as it can help customers to reduce capital costs by clustering low-cost commodity servers, and also reduce operational costs, by simplifying workload resource management and reducing costs from planned and unplanned downtime

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