ORACLE DATABASE QUALITY OF SERVICE MANAGEMENT

KEY FEATURES AND BENEFITS

MANAGING AND MONITORING DATABASE SERVICE LEVELS IN THE PRIVATE CLOUD

FEATURES

• Actively manage database service response time SLAs
• Manage all 11.2+ RAC DBs in a cluster from a single dashboard
• Supports server pools and multiple DBs per server
• Customizable end-to-end workload classification
• Measure and manage to actual performance levels
• Easily define and switch policies without downtime
• Real-time recommendations with projections
• Implement JIT resource allocation with a single click
• Protect databases with Memory Guard

BENEFITS

• Assures predictable performance for Database Cloud Services
• Dynamically allocates resources to meet SLAs
• Reduces IT costs by optimizing resource use
• Fully integrated and supported on Oracle Engineered Systems and Oracle Enterprise Manager Cloud Control

Oracle Database Quality of Service Management allows system administrators to directly manage database service levels hosted on Oracle Real Application Databases including Exadata Database Machine. Using a policy-based architecture, QoS Management correlates accurate run-time performance and resource metrics, analyzes this data with its expert system to identify bottlenecks, and produces recommended resource adjustments to meet and maintain performance objectives under dynamic load conditions. Should sufficient resources not be available QoS will preserve the more business critical objectives at the expense of the less critical ones.

In conjunction with Cluster Health Monitor, QoS Management’s Memory Guard detects nodes that are at risk of failure due to memory over-commitment. It responds by automatically preventing new connections thus preserving existing workloads and restores connectivity once the sufficient memory is again available.*

Consolidation into the Cloud with Oracle Database Quality of Service Management

Oracle Database QoS Management is an automated, policy-based product that monitors the workload requests for an entire database cluster or cloud. It manages the resources that are shared across database services and adjusts the system configuration to keep these services running at the performance levels needed by your business. It responds gracefully to changes in system configuration and demand, thus avoiding additional oscillations in the performance levels of your services.

As companies have embarked upon consolidation initiatives to increase the return on their IT dollar, they are faced with the requirement to not only physically consolidate to fewer datacenters but to consolidate databases on shared hardware such as the Exadata Database Machine. Having many databases sharing hardware is only possible if workloads can be accurately measured and monitored and Service Level Agreements (SLAs) can be defined and actively managed. Active management not only means monitoring but the ability to dynamically allocate resources just-in-time to meet current demand. This is especially critical for open workloads such as OLTP Internet applications where demand is independent of response time. This is the focus and the solution provided by Oracle’s Quality of Service Management technology.
QoS Management monitors the performance of each database work request on a target cluster or database cloud. Making use of policy-defined classifications, it starts to track a work request from the time it arrives at the database via a database service. By accurately measuring the two components of response time, the time spent using resources and the time spent waiting to use resources, QoS Management can quickly detect bottlenecks in the system. It then makes recommendations to reallocate resources to relieve a bottleneck based upon total cluster impact, thus preserving or restoring service levels.

Oracle Database QoS Management manages the resources on your system so that:

• When sufficient resources are available to meet the demand, business-level performance requirements for your services are met, even if the workload changes;
• When sufficient resources are not available to meet the demand, QoS Management attempts to satisfy the more critical business performance requirements at the expense of less critical ones;
• When load conditions severely exceed capacity, resources remain available.

QoS Management can manage service levels for consolidated workloads within a database, across databases sharing the same servers, or across databases in different server pools within an Oracle RAC cluster or database cloud.

**Oracle Database QoS Management with Oracle Real Application Clusters**

The full capabilities of QoS Management are included in the Oracle Database RAC and RAC One Node Options to deploy and manage consolidated services on a database cloud. Operations Managers can classify workloads, create policies by defining performance objectives and relative rankings of workload’s based upon their SLA’s, and enable QoS Management to track performance and resources in real-time on a fully integrated Enterprise Manager Cloud Control dashboard. Then, when a performance objective is violated due to, for example, a demand surge, a recommendation is generated with an alert notification and an implementable action with full cluster-wide projected impacts is made available.

When QoS Management is enabled, individual Oracle RAC database nodes are protected from memory related failures. The Memory Guard features tracks real-time memory use and should it detect a node has over-committed memory, will prevent new database requests from being sent until the current load is relieved.

**Oracle Database QoS Management with Oracle Engineered Systems**

In addition to standard Oracle RAC or RAC One Node deployments, QoS Management is certified and included with the Oracle Exadata Database Machine and Oracle Database Appliance when licensed for RAC or RAC One Node. QoS Management is an essential technology and management capability when using...
Oracle Engineered Systems as a consolidation platform for deploying Database Cloud services.

Contact Us
For more information about Oracle Database Quality of Service Management, please visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.

*(Note starting in Oracle Grid Infrastructure Release 12.1.0.2 Memory Guard is integrated into Oracle Clusterware and no longer requires QoS Management to be enabled.)*