Oracle Database
Quality of Service Management
Frequently Asked Questions

Q: *What is Oracle's goal in developing QoS Management?*

A: QoS Management is a full Oracle stack development effort to provide effective runtime monitoring and management of datacenter SLAs by ensuring when there are sufficient resources to meet all objectives they are properly allocated and should demand or failures exceed capacity that the most business critical SLAs are preserved at the cost of less critical ones.

Q: *What type of applications does Oracle QoS Management manage?*

A: QoS Management is currently able to manage OLTP open workload types for database applications where clients or middle tiers connect to the Oracle database through OCI or JDBC. Open workloads are those whose demand is unaffected by increases in response time and are typical of Internet-facing applications.

Q: *What does QoS Management manage?*

A: In datacenters where applications share databases or databases share servers, performance is made up of the sum of the time spent using and waiting to use resources. Since an application's use of resources is controlled during development, test, and tuning it cannot be managed at runtime; however, the wait for resources can. QoS Management manages resource wait times.

Q: *What types of resources does QoS Management manage?*

A: Currently QoS Management manages CPU resources both within a database including between PDBs and between databases running on shared or dedicated servers. It also monitors wait times for I/O, Global Cache, and Other database waits.

Q: *What type of user interfaces does QoS Management support?*

A: QoS Management is integrated starting with Enterprise Manager 12*c* Cloud Control and above and is accessible from the cluster target administration page.

Q: *What QoS Management functionality is in Oracle Enterprise Manager?*

A: Enterprise Manger supports the full range of QoS Management functionality organized by task. A Policy Editor wizard presents a simple workflow that specifies the server pools to manage; defines performance classes that map to the database applications and associated SLAs or objectives, and specifies performance policies that contain performance objectives and relative ranking for each performance class and baseline server pool resource allocations. An easy to monitor dashboard presents the entire cluster performance status at a glance as well as recommended actions should resources need to be re-allocated due to performance issues. Finally, a set of comprehensive graphs track the performance and metrics of each performance class.

Q: *What types of performance objectives can be set?*

A: QoS Management currently supports response time objectives. Response time objectives up to one second for database client requests are supported. Additional performance objectives are planned for future releases.

Q: *Does QoS Management require any specific database deployment?*

A: Oracle databases must be created as RAC or RAC One Node Admin or Policy-Managed databases. For the later, this means the databases are deployed in one or more server pools. In both cases applications and clients must connect using CRS-managed database services. Each managed database must also have Resource Manager enabled and be enabled for QoS Management. It is also recommended that connection pools that support Fast Application Notification (FAN) events be used for maximum functionality and performance management.

Q: *What are Server Pools?*

A: Server Pools are a new management entity introduced in Oracle Clusterware 11*g* to give IT administrators the ability to better manage their applications and datacenters along actual workload lines. Server Pools are a logical container, where like hardware and work can be organized and given importance and availability semantics. This allows administrators as well as QoS Management to actively

ORACLE®

grow and shrink these groups to meet the hour-to-hour, day-to-day application demands with optimum utilization of available resources. The use of Server Pools does not require any application code changes, re-compiling or re-linking. Server Pools also allow Admin-managed supported databases and middleware to co-exist in a single cluster without interfering with the management of newer supported versions.

Q: *What methods does QoS Management support for classifying applications and workloads?*

A: QoS Management use database entry points to "tag" the application or workload with user-specified names. Database sessions are evaluated against classifiers that are sets of Boolean expressions made up of Service Name, Program, User, Module and Action.

Q: *What is the overhead of using QoS Management?*

A: The QoS Management Server is a set of Java MBeans that run in a single J2EE container running on one node in the cluster. Metrics are retrieved from each database once every five seconds. Workload classification and tagging only occurs at connect time or when a client changes session parameters. Therefore, the overhead is minimal and is fully accounted for in the management of objectives.

Q: *Does QoS Management negatively affect an application's availability?*

A: No, the QoS Management server is not in the transaction path and only adjusts resources through already existing database and cluster infrastructure.

Q: *What happens should the QoS Management Server fail?*

A: The QoS Management Server is a managed Clusterware singleton resource that is restarted or failed over to another node in the cluster should it hang or crash. Even if a failure occurs, there is no disruption to the databases and their workloads running in the cluster. Once the restart completes, QoS Management will continue managing in the exact state it was when the failure occurred.

Q: *How does QoS Management enable the on-premise database clouds or DBaaS?*

A: Database clouds fundamentally depend upon shared resources. Whether deploying a database service or a separate database, both depend upon being able to deliver performance with competing workloads. QoS Management provides both the monitoring and management of these shared resources, thus complementing the flexible deployment of databases as a service to also maintain a consistent level of performance and availability.

Q: *Which versions of Oracle databases does QoS Management support?*

A: QoS Management is supported on Oracle RAC EE and RAC One EE databases from 11g Release 2 (11.2.0.4) forward. Starting in Oracle Database 12c (12.1.0.2) support for Admin-managed databases was added.

Q: *Is this a product to be used by an IT administrator or DBA?*

A: The primary user of QoS Management is expected to be the IT or systems administrator that will have QoS administrative privileges on the RAC cluster. As QoS Management actively manages all of the databases in a cluster it is not designed for use by the DBA unless that individual also has the cluster administration responsibility. DBA level experience is not required to be a QoS Management administrator.
However, as QoS Management provides montoring cablability and alerts on the individual database targets, DBAs will find its dashboard useful for ensuring the availability and performance of their databases.

Q: Where can I find more information about Oracle Database QoS Management?

A: Information on Oracle Database QoS Management is available on OracleTechNetwork: http://www.oracle.com/goto/qos.

Oracle Database QoS Management also has its own user guide which can be referred to at: http://docs.oracle.com/database/122/APQOS/toc.htm.

Q: Do I need a separate license for Oracle Database QoS Management?

A: Oracle Quality of Service Management, require an Oracle RAC license. Please follow this link to the license guide for more information: http://docs.oracle.com/database/122/DBLIC/toc.htm

Oracle Corporation, World Headquarters
500 Oracle Parkway
Redwood Shores, CA 94065, USA

Worldwide Inquiries
Phone: +1.650.506.7000
Fax: +1.650.506.7200

Integrated Cloud Applications & Platform Services