

# VirtualWisdom for Oracle-based Business Critical Applications

## Introduction

Oracle runs business-critical processes for many companies – from manufacturing, supply chain, enterprise resource planning and financial forecasting, through to HR, CRM and billing. Performance and availability are everything when downtime cost is measured in minutes. When Oracle performance and availability are critical, Oracle users turn to VirtualWisdom infrastructure monitoring.

## Oracle DBMS infrastructure performance monitoring

VirtualWisdom helps guarantee that hosts, VMs, databases, servers, switches and storage devices are performing as they should. Thanks to VirtualWisdom's wire-data monitoring, you can proactively monitor and manage infrastructure, rather than having to 'fire-fight' issues as they happen.

Oracle has many internal performance statistics and counters, including many related to I/O requests, but once the operating system the DB is running on actually issues the request, Oracle has no visibility into where it goes or why it takes as long as it does. VirtualWisdom can help pin down the specific causes of I/O performance anomalies. This is especially critical for large databases that have many tablespaces spread over many files or LUNs. The likelihood for variables like different paths, configuration, contention, etc. to cause problems in some area is high, and IT staff are virtually blind without visibility into relevant metrics.

VirtualWisdom also helps to show the impact of the interplay and dependencies between Oracle, operating system, and SAN/NAS parameters. There is quite a bit of potential I/O-related fine tuning done in Oracle - including things like in-memory caches, read-ahead buffers, block sizes, etc. These interact with and depend on O/S level parameters as well. If some combination of settings or bug(s) at the O/S level, are causing anomalous I/O behavior, VirtualWisdom reports on them.

There are cases where looking at the SAN/NAS provides the best comprehensive view of how much I/O the database is doing in the aggregate, as well as whether changes have impacted things like the amount of total I/O, the balance of reads vs. writes, and sequential vs. non-sequential reads.

## Example Use Cases

- Oracle RAC automatically allocates space across disks to optimize performance. When disks are added to the storage array, the reallocation of space by RAC can significantly degrade performance for applications like SRDF, because SDRF replicates changed blocks and the RAC reallocation effectively changes all blocks. Without VirtualWisdom, the SRDF administrator is left wondering why his application performance has dramatically changed for the worse.
- Oracle archive log files generally have a steady but not spectacular use of I/Os, and automated tiering utilities like EMC's FAST may move the log to a slower, less expensive tier of storage. This isn't a problem until the redo log gets flushed to the archive space, then your Oracle transactions will slow because the archive logs are on slower, cheaper media. Without VirtualWisdom, application owners and users are left wondering why their performance has cratered.
- It's common for Oracle application developers to make changes to queries to accommodate user requests. A simple query change can change the IOPS by several times, and without visibility into this, applications can slow for no apparent reason. VirtualWisdom gives visibility into cause/effect of RAC-related I/O changes.

## Using VirtualWisdom:

- Proactively alerts you to Oracle-related slowdowns before application end-users are affected
- Enables setting response time thresholds for individual applications - establishing Oracle Service Level Agreements (SLAs) in physical and virtual environments and private clouds
- Helps prevent Oracle outages and improve performance
- Improves IT infrastructure utilization
- Helps allocate the right storage resources to highest priority applications



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