

accelerate Oracle databases while protecting your investment

Atos Optimal Database Booster (ODB) for Escala

With the current IT evolutions towards Cloud, Big Data and Real-Time Analytics, database performance has never been so crucial, with ever growing volume of data and number of users and increasingly complex queries. Enterprises are looking for technologies that reduce data access time and boost application performance.

Escala has been the leading platform for mission critical Oracle databases for many years, with outstanding performance per core and efficient memory capacity. However application response times are often limited by traditional storage which is the slowest component of all resources. Ultra-fast storage changes the game by putting storage performance in line with high-speed computing and networking.

Continually investing on mission-critical environments, Atos experts have put all their knowledge into an innovative tool - Operational Database Booster (ODB) - that takes advantage of ultra-fast storage to significantly improve Oracle database performance while protecting your infrastructure investment.

Your benefits

- ▶ Faster application response times
- ▶ No infrastructure change
- ▶ Easier administration tasks through an user-friendly graphical interface
- ▶ Data protection
- ▶ Improved TCO and IT investment
- ▶ No new Oracle licenses required

Escala, leading platform for Oracle databases

With a scalability of up to 192 POWER8 cores and leading I/O and memory bandwidth, Escala has earned the reputation for being the most powerful and scalable database server.

The key advantage for Oracle customers is the outstanding performance per core delivered by POWER8. With its 2-4x per core performance advantage over competing architectures, Escala provides leading TCO advantages for customers, as Oracle licenses are most often based on a per core licensing model.

Storage latency challenge

If processor, memory and network speed has increased consistently over time, very little improvement has been made in Hard Disk Drive (HDD) technology due to its mechanical constraints. The time to retrieve a data from the disk (latency) is about 5 ms while the processor needs 0.1 ms to process it. That means that the processor is in idle mode most of the time (I/O wait).

Just by changing storage latency to the microsecond range, the application response time and the CPU utilization are significantly improved. As a result, virtualization and server consolidation are more efficient and software costs are extremely reduced for applications based on the per-core licensing model.

Our solution

Optimal Database Booster (ODB) is an innovative and cost-effective solution, designed and developed by Atos, that boosts Oracle database performance operating on Escala servers with the use of extreme low latency storage. Users experience faster application response times as I/O bottlenecks are eliminated and CPUs are running more efficiently.

ODB focuses on I/O performance. It highlights the most I/O consuming database objects that will benefit from a move to faster storage. Moves can then be performed in a secure way when the database administrator decides.

Key characteristics

Combined with fast storage, ODB provides:

- ▶ **Faster application response times**, especially for I/O intensive transactional applications (OLTP) and batch jobs.
- ▶ **Investment protection** with no change in hardware and software infrastructure, while offloading SAN workloads.
- ▶ **A user-friendly and easy-to-use graphical interface**, withdrawing time consuming and tedious administration tasks.
- ▶ **Data protection** even in case of failure or disaster and whatever the type of storage used.
- ▶ **Significant TCO savings**: reducing storage latency allows cores to be more efficient. Fewer cores are required to run Oracle databases which results in an important reduction of Oracle licenses and support costs.

Enhance your Oracle database performance with Optimal Database Booster (ODB)

ODB enables better use of both server and storage resources while significantly improving Oracle database performance for our Escala customers.

Ultra-fast Storage

Because they are critical for business, databases are very sensitive to latency and cannot support slow response times. Ultra-fast storage resolves I/O bottlenecks by reducing storage latency from 5ms to only few microseconds. Transaction/query times and batch processing are significantly boosted, while increasing CPU utilization. This dramatically reduces the number of CPUs needed for the Oracle workloads and consequently lowers the Oracle software costs.

Placing everything on flash can be a costly choice that is usually not necessary. Typically only 20% of an OLTP database receives 75% of the storage access. That is why ODB has been designed to support different types of ultra-fast storage:

- ▶ Virtual storage from DRAM (RAMdisks)
- ▶ PCI flash cards
- ▶ SSDs
- ▶ Flash-only arrays like the FlashSystem 900 that offers up to 5,7TB of flash capacity.

Implementing "preferred read" option is an easy way to deploy the ultra-fast storage in an existing environment without changing the current infrastructure (replication, backup, disaster recovery...). And so, data is always read at the ultra-fast storage speed. Write operations are performed in parallel on the two separate storage supports, securing the data.

ODB description

ODB assists the database administrator (DBA), through an innovative and user-friendly graphical interface with contextual help:

- ▶ **Ultra-fast storage configuration.**
- ▶ **Performance Analysis with** easy identification of the database objects that are experiencing highest I/O and that benefit from a move to faster storage. ODB also provides an estimation of the potential performance gains.
- ▶ **Secure move operations** of all or part of the Oracle database objects: to the ultra-fast storage.
- ▶ **Database startup or recovery.**

Whatever the storage used, physical or virtual, data persistence is provided by Oracle internal mechanisms or by Oracle Recovery Manager (RMAN).

Multiple ODB usage cases

Combining ultra-fast storage with ODB provides substantial performance gains over HDD environments by drastically accelerating application response times especially for:

- ▶ **Transactional applications** with I/O intensive random read activity.
- ▶ **Batch workloads.**
- ▶ **Analytics applications** with high concurrent access.

Atos and Oracle

Atos and Oracle have a long term partnership with over 1,500 Oracle certified Atos business technologists.

Atos is one of the top Oracle database hosting vendors with over 4,200 hosted databases.

Escala is the leading platform for running business critical Oracle databases, due to their outstanding core and system performance, security and mainframe level RAS (reliability, availability and serviceability) capabilities. Today, more than 90% of our Escala servers are running Oracle databases.

Certified Atos Oracle experts provide customers with leading competence in terms of consulting and managed services while providing the best TCO/ROI for mission-critical environments.

OPTIMAL DATABASE BOOSTER (ODB)

Database server	Escala POWER8, POWER7+ and POWER7 with AIX v6.1 or V7.1
Oracle database version and edition	10gR2 minimum - Standard and Enterprise editions
Database size	No limitation
Supported storage	Any type supported by the server
Administration console	Windows server
Oracle database objects moved	temporary tablespaces UNDO tablespace, REDO logs (except with RAMdisks) Tables with or without associated index Partitioned tables & partitions with or without associated index
Licensing model	Per Escala server range: small, medium, large
Support and software subscription	1 year, 3 years or tacit renewal

For more information: atos.net/escala

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