ORACLE Database

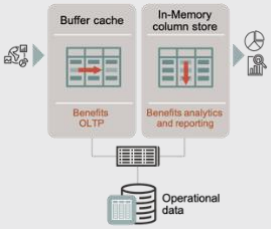
Database In-Memory Quick Start

WHY DATABASE IN-MEMORY?

Analytics in Real-Time

- *Mixed Workload*
- *Reporting*
- *BI / Dashboards / KPI*

Unique Dual Format Architecture enables analytic reporting and transaction processing to co-exist in real-time



Only populate the objects needed for analytic queries

Reduces memory requirements – the whole database does not have to fit in-memory

WHAT TO POPULATE?

In-Memory Advisor – free download, works on 11.2.0.3 and higher databases

Target objects involved in key analytic processes

Populate individual objects or whole schemas – only limited by memory

Compress data 2x – 20x to reduce memory footprint

Columnar format also supported in Exadata flash cache for multi-tier analytic queries

WHAT QUERIES BENEFIT?

Queries that scan large amounts of data and use aggregation to find patterns or trends in that data

SQL that spend a significant amount of time:

- ***Scanning and filtering data***
- ***Joining data***
- ***Performing group by aggregations***

HOW TO GET STARTED?

Requires Oracle Database 12c (12.1.0.2) or higher

Ensure latest Bundle Patch or RU applied

Enabled by setting parameter ***inmemory_size***
Note: SGA must be large enough to accommodate

Populate objects with: ***alter table … inmemory*** command

Columnar format supported for the following objects:

- Tables
- Sub-Partitions
- Partitions
- Materialized Views

Scale-out support on RAC

- Distribute data across column stores
- Use Parallel Query to access data

HOW TO IMPLEMENT?

Follow a simple, four-step process to implement Database In-Memory:

- ***Run workload without Database In-Memory enabled***
- ***Enable Database In-Memory***
- ***Populate tables in the In-Memory Column Store***
- ***Run the workload with Database In-Memory***

Optional: Use SQL Plan Baselines to capture and evolve SQL statements to ensure no performance regressions

HOW TO MEASURE BENEFIT?

Use SQL Monitor active reports to identify where time is spent during execution.

See this SQL Monitor technical brief for more information.

Database In-Memory

Traditional row format – fast transaction processing

Columnar format – fast analytics

No SQL changes required

Works with all existing Oracle technology

Where is Database In-Memory Available?

Cloud

- Extreme Performance (VM and Bare Metal)
- Exadata Cloud Service
- Exadata Cloud @ Customer

On-Premises

- Enterprise Edition Option
- Base Level Feature (Up to 16 GB IM column store for free)
- Oracle Database XE (up to 2 GB IM column store for free)

More Database In-Memory Information

- oracle.com/database/technologies/in-memory
- blogs.oracle.com/in-memory
- blogs.oracle.com/in-memory/dbim-resources

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