

Oracle Database In-Memory

By Example

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Safe Harbor Statement

The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle.

What Is Database In-Memory



Row Format Databases vs. Column Format Databases

Rows Stored
Contiguously



- **Transactions** run faster on row format
 - Example: Query or Insert a sales order
 - Fast processing few rows, many columns

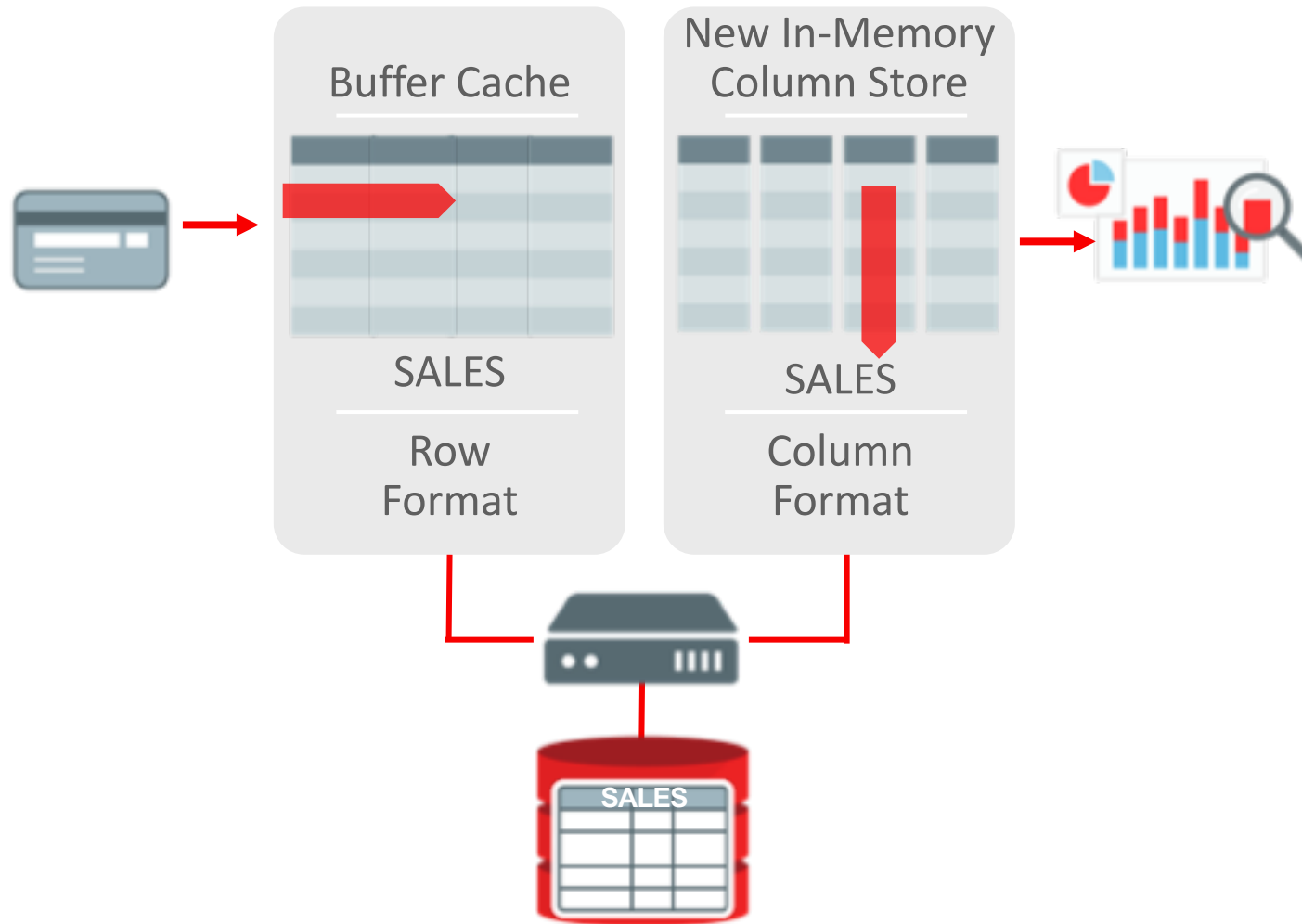
Columns
Stored
Contiguously



- **Analytics** run faster on column format
 - Example : Report on sales totals by region
 - Fast accessing few columns, many rows

Until Now Must Choose One Format and Suffer Tradeoffs

Breakthrough: Dual Format Database



- **BOTH** row and column formats for same table
- Simultaneously active and transactionally consistent
- Analytics & reporting use new in-memory Column format
- OLTP uses proven row format

Oracle In-Memory: Simple to Implement

1. Configure Memory Capacity

- `inmemory_size = XXX GB`

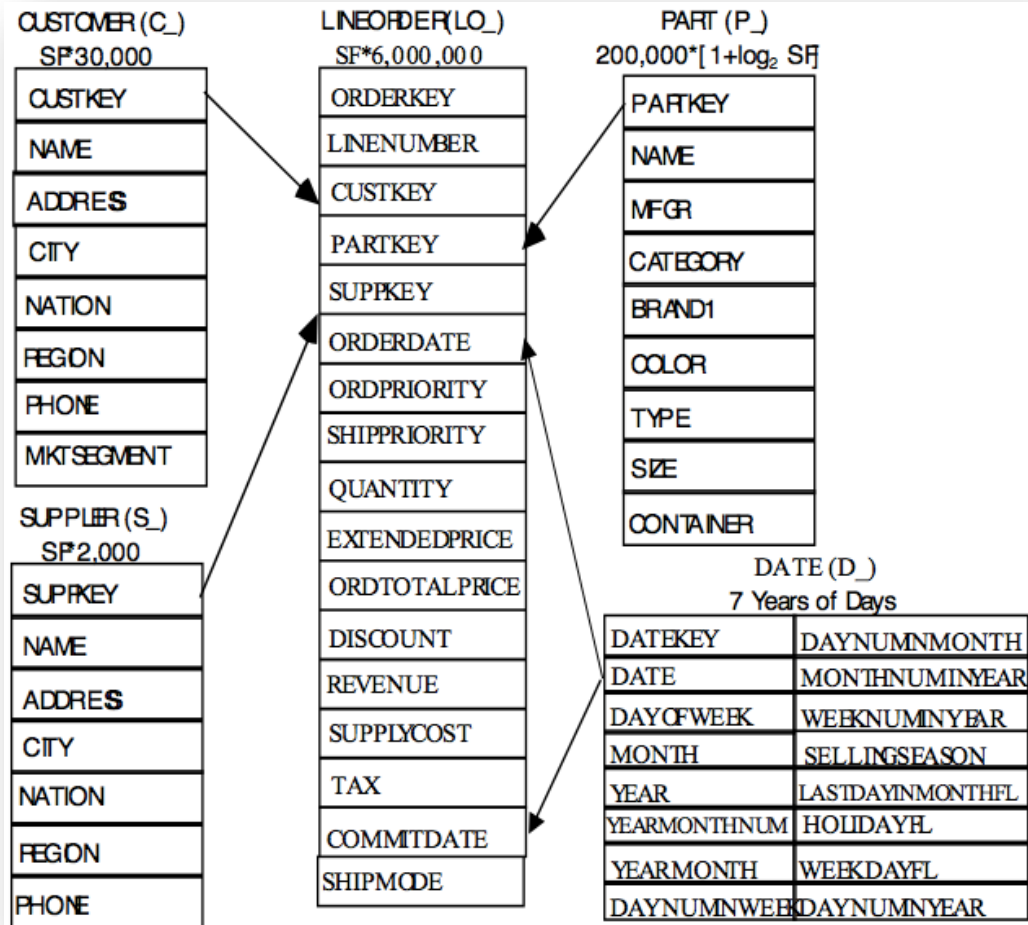
2. Configure tables or partitions to be in memory

- `alter table | partition ... inmemory;`

3. Later drop analytic indexes to speed up OLTP

Database In-Memory By Example Details

In-Memory By Example - Schema Overview



- Star schema based on TPCH benchmark
- Lineitem & Orders tables combined to create fact table
- Schema built with a 3GB scale factor

In-Memory By Example

Demonstration Details

- Virtual Box on my laptop – 12GB memory size
- Set of SQL scripts to show how Database In-Memory works
- SGA size = 10000M
- IM column store size = 5504M
- Keep pool size = 4000M (cache row store tables)
- Tables have "cache" attribute set
- Each script connects as a new session

Where Can You Get More Information



https://blogs.oracle.com/in-memory/dbim-resources

The screenshot shows the Oracle Database In-Memory blog homepage. The browser address bar displays <https://blogs.oracle.com/in-memory/>. The page features a header with the Oracle logo and the text "Oracle Database In-Memory". A navigation menu is open, showing "CATEGORIES" (Oracle Database In-Memory) and "RELATED CONTENT" (DBIM Resources, Blogs Home, Blogs Directory, Author Directory, Contact Us). A red arrow points to the "DBIM Resources" link in the menu. Below the header is a featured post section with a "FEATURED POST" label, a "Visit the Oracle Developers Portal" banner, and a "Recent Posts" section with two entries: "Join Processing with Database In-Memory" and "IOUG Webinar Series Continues".

The screenshot shows the Oracle Database In-Memory blog page for "DBIM Resources". The browser address bar displays <https://blogs.oracle.com/in-memory/dbim-resources>. The page features a header with the Oracle logo and the text "Oracle Database In-Memory". The main content area is titled "DBIM Resources" and includes an "About" section stating "The Oracle Database In-Memory blog is written by the Oracle product management team and sheds light on all things In-Memory." and a "Technical Information" section with a list of links: "Oracle Database In-Memory Data Sheet", "Oracle Database In-Memory Technical White Paper - (Audio version)", "Oracle Database In-Memory Implementation and Usage White Paper", "Oracle Database In-Memory: Aggregation", "When to Use Oracle Database In-Memory", "Oracle Database In-Memory Advisor", and "Benchmark Results Reveal the Benefits of Oracle Database In-Memory for SAP Applications".

Additional Resources



Database In-Memory Information

[Database In-Memory Blog](#)

[oracle.com – Database In-Memory](#)

[Database In-Memory YouTube Channel](#)

[Ask TOM Database In-Memory Office Hours](#)

[Database In-Memory Guide \(Documentation\)](#)

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 <http://www.oracle.com/goto/dbim.html>