Real-Time Analytics on SPARC Servers

Real-time access to corporate databases for faster and
more accurate decision-making

With the growing size and importance of information stored in today's
databases, accessing and using the right information at the right time has
become increasingly critical. Real-time access and analysis of operational
data is key to making faster and better business decisions, providing
enterprises with unique competitive advantages. Running analytics on
operational data has been difficult because operational data is stored in row
format, which is best for online transaction processing (OLTP) databases,
while storing data in column format is much better for analytics processing.
Therefore, companies normally have both an operational database with data
in row format and a separate data warehouse with data in column format,
which leads to reliance on "stale data" for business decisions. With Oracle's
Database In-Memory and Oracle servers based on the SPARC S7 and
SPARC M7 processors companies can now store data in memory in both
row and data formats, and run analytics on their operational databases
providing faster and more accurate analysis.

Real-Time Analytics

Normally, in order to run data analytics, data is extracted from operational databases,
transformed and loaded into data warehouses. These data warehouses are optimized
to run large-scale queries fast. The data, however, is usually a subset of the
operational data and is not the latest data. As soon as the operational data is extracted
from the operational database it becomes stale and is no longer updated. With the
introduction of Oracle Database In-Memory and servers with the SPARC S7 and
SPARC M7 processors Oracle delivers an architecture where analytics are run on live
operational databases and not on data subsets in data warehouses. Decision-making
is much faster and more accurate because the data is not a stale subset. Oracle
Database In-Memory stores data both in row format for operational data and in column
format for data analytics meaning that it is no longer necessary to transfer data from
operational databases to data warehouses for analytics. Some examples of utilizing
real time data for business decisions include: Analysis of Supply Chain data for order
fulfillment and supply optimization, analysis of customer purchase history for real time
recommendations to customers using online purchasing systems, etc.

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"To accelerate on-line transactions, we
analyze massive amounts of
information to make better, quicker
decisions. We tested the SPARC T7
with Oracle Database 12c in-memory
options. With the new M7 Software in
Silicon acceleration, queries… run 83X
faster on SPARC T7 vs the same
server (without silicon acceleration).
Using Oracle SPARC T7 servers, we
can reach new levels of insight with
real-time queries on up-to-date
transactional data." Shlome Seidenfeld
CIO, VP E-Commerce, B&H Photo
Video

KEY BENEFITS

- Analytics on up-to-date operational
  data
- Greater query flexibility
- Faster decision-making
- Eliminate the need to move
  operational data to a separate data
  warehouse
- Analytics on operational data
  reduces hardware and software
  costs

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SPARC S7/M7 and Oracle Database In-Memory

The SPARC S7 and M7 processors used in SPARC S7, SPARC T7 and SPARC M7 servers all include powerful Software in Silicon capabilities that enable Real-time analytics and Silicon Secured Memory. Software in Silicon is the culmination of Oracle's vision of engineering and optimizing hardware and software together, and the Database Acceleration (DAX) feature was designed specifically to accelerate analytics in Oracle Database In-Memory.

SPARC S7/M7 Database Acceleration Engines

The SPARC S7/M7 processors contain Database Acceleration Engines. These acceleration engines are in addition to the 32 cores that are present in the SPARC M7 processor and the 8 cores in the SPARC S7 processor. The DAX are designed to accelerate key Oracle Database In-Memory analytics functions. Analytics using the DAX engines can be up to 10x faster than those without DAX. This dramatic speed up means business can run analytics on full datasets in near real time. Faster analytics on full operational databases means much more accurate and more timely business decisions.

On-chip Decompression for Faster Queries

Oracle Database In-Memory compresses data that is stored in-memory in column format for storage savings. Normally, when a query runs on a compressed data set stored in-memory, the data would first need to be de-compressed. The SPARC S7/M7 processors contain real-time decompression engines that can decompress data in Oracle Database In-Memory at data transfer speeds. The performance bottleneck from having to decompress data stored in column format is removed. Faster decompression and the DAX acceleration engines means faster and more accurate decision-making. The removal of performance bottlenecks enables running analytics on operational databases.

Real-Time Analytics In The Cloud

Enterprise applications are moving increasingly to cloud computing, whether private cloud or public cloud. The Real-time analytics of the SPARC S7 and SPARC M7 processors are available both in a private cloud on SPARC servers or in Oracle's Public cloud in the SPARC cloud compute service. IT organizations that move to the cloud can still enjoy the benefits of Real-time analytics. Moving to the Oracle Public Cloud does not compromise the benefits of SPARC solutions.

Contact Us

For more information about the Oracle SPARC servers, visit us at oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.

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