![HP logo]

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Extreme query performance

For companies dealing with data overload, HP and Oracle® have partnered to create the Database Machine that speeds query times and supports efficient scalability in the data warehouse.

As data volumes grow, the pressure is on to derive tangible business benefits from the vast data stores faster than the competition.

Traditional I/O fabrics not only can't deliver the query performance business users demand, they typically put extra strain on network bandwidth.* It's a perfect storm in traditionally data-intensive sectors such as telecommunications, finance and retail, but also increasingly in healthcare, the public sector, media and entertainment, manufacturing and many others.

What's needed is a solution that can deliver extreme performance, combining industry-standard hardware and advanced software tools. The package should be easy and quick to implement, and eliminate pain points by offloading processing from the database servers, increasing I/O bandwidth and reducing the data transmitted with each query.

Two heads are better than one
The HP Oracle® Database Machine and the HP Oracle® Exadata Storage Server are the results of a longstanding engineering collaboration between Oracle and HP. The HP Oracle Database Machine delivers extreme performance for data warehouses of any magnitude.

"The history of the two companies really stems from two leadership positions," says Rich Palmer, Director of Technology and Strategy for Industry Standard Servers at HP. "HP is the chosen platform for more new Oracle deployments than any other company.* Oracle does more data warehouses than any other company. You bring those two forces together, and you get a very strong entry into this data warehouse appliance market."

The HP Oracle Database Machine offers:

- A grid of eight servers featuring 64 Intel® Xeon® 5400 series processor cores with Oracle Database 11g, Oracle Real Application Clusters and Oracle Partitioning running on Oracle® Enterprise Linux
- A storage grid with 14 of the new HP Oracle Exadata Servers delivering 14 GB/sec data bandwidth
- Up to 168 TB of raw Queries performed right at the Exadata Storage Server with only the query result sets returned —rather than entire tables—dramatically reducing the amount

of data being transferred
- A single rack with pre-packaging and pre-configuration from Oracle.

Oracle sells the HP Oracle Database Machine and is the first point of contact for service, drawing in HP as required.

> The HP Oracle Database Machine solves the problem of performance by combining an InfiniBand fabric that multiplies the bandwidth of a traditional storage fabric by a factor of three and by reducing the amount of data transmitted over the network by offloading query operations to the storage servers.

Both the HP Oracle Database Machine and the HP Oracle Exadata Storage Server are based on HP ProLiant servers. The HP Oracle Exadata Storage Server—the storage component of the HP Oracle Database Machine—is built around the HP ProLiant DL180 G5 server and Oracle Exadata software. Each HP Oracle Exadata Storage Server has two Intel® Xeon® 5400 series processors, up to 12TB storage and InfiniBand connectivity delivering 1 GB/sec throughput per server, and is also available separately.

The results are in
LGR Telecommunications, which provides the CDRlive analysis and reporting solution for call data record (CDR) data warehouses to customers such as AT&T, Vodafone, Telstra and the MTN Group in Middle East and Africa has experienced huge growth in its business—and in the complexity of the data it handles.

To improve its leverage over some 300 TB of data, LGR tested HP Oracle Exadata Storage Servers, and found that query performance jumped by a factor of 20 and higher. "Some queries that used to take half an hour now take less than a minute with Oracle Exadata," says Grant Salmon, LGR CEO. "That's just extreme performance."

Another customer is M-Tel, the leading mobile communications provider in Bulgaria. M-Tel's subscribers have grown from around 600,000 in 2001 to more than 5.5 million today. This level of business growth translates to more than 65 billion CDRs. The company is challenged to ensure consistently fast query response times and efficiently scale their data warehouse.

"Exadata solves all our performance demands," says Plamen Zyumbyulev, M-Tel's Head of Database Administration. "It's highly available and reliable, and can scale as performance demands increase. All of our queries are faster with Exadata compared to our current system. The smallest performance boost was 10 times, and the fastest was 72 times."

"Business users want fast answers to their queries," says Willie Hardie, Vice President of Oracle Database Product Marketing. "Oracle Exadata delivers the extreme query performance for data warehouses and business intelligence applications that business users expect. That's what's going to make the biggest difference for them."

*"Oracle and HP Explain History, Role and Future for New Exadata Server and Database Machine," Oracle Open World Conference, September 2008

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