HP ProLiant DL785 G5: #1 non-clustered performance on TPC-H@300GB benchmark

HP Leadership

DL785 G5 – a leader in business decision support query processes

Customer Value

What are the benefits of using HP ProLiant servers for decision support query processes?

HP announced new record-breaking results on the TPC-H benchmark for the HP ProLiant DL785 G5 on November 17, 2008. The DL785 has been designed to serve as an excellent database server. Its balanced architecture with ample I/O and memory makes it an ideal platform for 'read-intensive' decision support and business intelligence.

This latest result is one of many historical world record results that have been achieved by ProLiant servers on the TPC-H benchmark.

HP posts a large number of results on the TPC-H benchmark, regularly updating benchmark standings. This shows the HP commitment to providing information that customers need for purchase decisions.

More information about TPC-H results can be found at the following Web page: http://www.tpc.org.
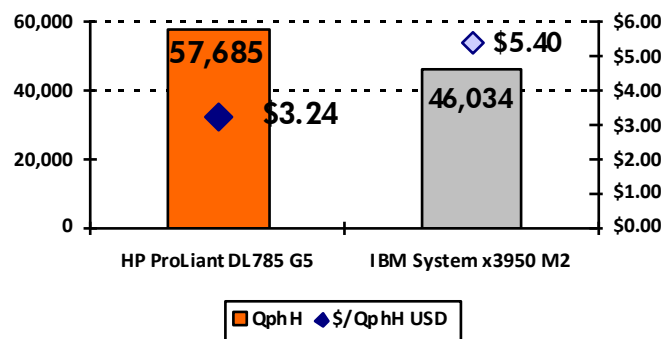Results as of 11-17-08.

Technology for Better Business Outcomes

Key Points

- #1 non-clustered performance
- Top performance at 40% less cost per QphH than the IBM System x3950 M2

Figure 1. DL785 G5 and IBM x3950 M2 results on TPC-H@300GB benchmark

The ProLiant DL785 G5 achieved **new world record results on the TPC-H@300 GB decision support benchmark**: 57,685 QphH, $3.24/QphH@300GB USD price/performance. These leading results demonstrate that HP customers can deploy large business intelligence solutions at aggressive TCO on high-performance 8-socket x86 servers. Announced on November 17, 2008, this benchmark was performed using Microsoft™ Windows™ Server 2008 x64 operating system and Microsoft SQL Server 2008 Enterprise Edition x64 database. The HP ProLiant DL785 G5 achieved 26% better performance at 40% less cost as compared to the IBM System x3950 M2.

Table 1. Configuration for system results

System (processors/cores/threads)	QphH	USD$/QphH	Availability	Database	OS
HP ProLiant DL785 G5 AMD Opteron™ Processor 8384, Quad-Core 2.7 GHz (8 processors/32 cores/32 threads)	57,685	$3.24 USD	11/17/08	Microsoft SQL Server 2008 Enterprise Edition for x64	Windows Server 2008 Enterprise Edition for x64
IBM System x3950 M2 Intel Xeon Quad-Core X7350 2.93GHz (8 processors/32 cores/32 threads)	46,034	$5.40 USD	3/7/2008	Microsoft SQL Server 2005	Enterprise Edt (x64)

ProLiant server testing configurations

The HP ProLiant DL785 G5, configured with 8 x 2.7GHz Quad-Core AMD Opteron 8384 processors (8 processors/32 cores/32 threads) with 2 MB L2 Cache and 6 MB L3 Cache and 256 GB (32 x 8 GB) FBD main memory, achieved 57,685 QPhH @ USD $3.24/QphH running Windows Server 2008 Enterprise x64 Edition operating system and Microsoft SQL Server 2008 Enterprise x64 Edition database. The server used 4 x 36GB 15K-rpm HP Small Form Factor Single Port SAS internal disk drives and 206 x 72GB 15K-rpm HP Small Form Factor Single Port SAS external disk drives,an onboard controller Smart Array P400i and 7 HP Smart Array P800 controllers."

The HP ProLiant DL785 G5 is a powerful and highly scalable eight-socket x86 server for virtualized environments and infrastructure consolidation projects. Customers can better control operational costs through improved utilization with the Quad-Core AMD Opteron processor-based DL785. By leveraging its expertise in industry standard technology, manufacturing, solution design and delivery, HP is driving volume economics into the eight-socket x86 server market.

TPC-H Overview
TPC-H is a benchmark that simulates a Decision Support System or Business Intelligence database environment. The performance of a system is measured when the system is tasked with providing answers for business analyses on a dataset. These include:
• Pricing & Promotions Analysis
• Supply & Demand Management Analysis
• Profit & Revenue Management Analysis
• Customer Satisfaction Studies
• Market Share Studies
• Shipping Management Analysis

The server system runs a read-intensive Decision Support System (DSS) style database to provide the results for the business analyses. The DSS database is designed to mimic a repository of commercial order-processing Online Transaction Processing Databases. The analyses performed are 100GB, 300GB, 1000GB, 10,000GB, 30,000GB or even 100,000GB scale factor datasets.

For more information
HP ProLiant DL785 G5: www.proliant/servers/dl785

HP ProLiant benchmarks: www.hp.com/servers/benchmarks

HP ProLiant storage solutions: www.hp.com/go/serial
HP white paper about the TPC-H benchmark: ftp://ftp.compaq.com/pub/products/servers/benchmarks/tpch_on_hp_proliant.pdf
TPC Benchmark is a trademark of the TPC. TPC: Results valid as of November 17, 2008. Complete results can be found at http://www.tpc.org.

The TPC Benchmark™H (TPC-H) is a decision support benchmark. It consists of a suite of business oriented ad-hoc queries and concurrent data modifications. The queries and the data populating the database have been chosen to have broad industry-wide relevance. This benchmark illustrates decision support systems that examine large volumes of data, execute queries with a high degree of complexity, and give answers to critical business question. The performance metric reported by TPC-H is called the TPC-H Composite Query-per-Hour Performance Metric (QphH@Size), and reflects multiple aspects of the capability of the system to process queries. These aspects include the selected database size against which the queries are executed, the query processing power when queries are submitted by a single stream, and the query throughput when queries are submitted by multiple concurrent users. The TPC-H Price/Performance metric is expressed as $/QphH@Size. A full disclosure report describing these benchmark results has been filed with the Transaction Processing Performance Council (TPC) and is available upon request. The full disclosure report describes the benchmark hardware and software configuration in detail, provides costs, and lists the code actually used to perform the test. Similar reports from other vendors are the source of the price/performance comparisons provided above. Summaries of all tests are published each month by the TPC and are also posted on the Internet on the TPC's World Wide Web Server. With these benchmarks, customers can objectively compare the performance of different vendors' servers in specific areas.