HP BladeSystem c-Class Sets New World Record with 1TB TPC-H Result

ProLiant BL460c joins ONE MILLION CLUB with new result

**HP Leadership**

» The **HP ProLiant BL460c server blade** provides enterprise-class features for high performance and reliability without compromising energy efficiency or density.

It is the most popular blade in the world, representing 1 in 4 of all new blades deployed.

**Customer Value**

What are the customer benefits of using the HP ProLiant BladeSystem servers with TPC-H?

Because the TPC-H 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 questions, many businesses find this type of benchmark useful in determining what servers to utilize.

With the HP ProLiant BladeSystem servers’ wide range of enterprise solutions and its leading TPC-H benchmarks in performance, customers are reassured that the server will enable them to accelerate business growth, lower costs, and mitigate risk while delivering outstanding investment protection, making it the **BEST PLATFORM** for their business applications.

**TPC Disclosure**: A full disclosure report describing these benchmark results can be downloaded from the TPC web site at [http://www.tpc.org](http://www.tpc.org). The intent of this disclosure is to simplify comparison between results and for a customer to be able to replicate the results of this benchmark given appropriate documentation and products.

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**Key Points**

- **The “HP BladeSystem c-Class with HP Oracle Exadata Storage Servers” took the #1 overall 1TB performance spot.”**

- With a superior performance result of 1,166,976.6 QphH@1000GB, the HP ProLiant BL460c triumphed across all operating systems and database environments enabled by massive scale-out, very large memory footprint, and high-speed interconnect capabilities of the **HP BladeSystem c-Class** with a price/performance of $5.42/QphH@1000GB.

- The benchmarked system, “HP BladeSystem c-Class 128P RAC with HP Oracle Exadata Storage Servers”, consisted of a 64-node grid of HP ProLiant BL460 servers and 6 HP Oracle Exadata Storage Servers – all can be managed from a single console using HP Insight Control management software.

- The InfiniBand-based unified network infrastructure enables high speed and redundant active-active server-server and server-storage interconnects at a lower cost.

- The entire configuration utilized just 56U rack space and under 30KW power, demonstrating the high density and energy efficiency features of HP c-Class Blade technology.

If your top priorities are space, power consumption savings, ease of scalability, cable reduction, hot-swapping, reliability, redundancy, and superior performance, then owning an HP BladeSystem c-Class is your best choice.

*TPC-H publication on HP BladeSystem c-Class 128P RAC with HP Oracle Exadata Storage Servers: 166,976.6 QphH@1000GB, $5.42USD/QphH, Available 12/01/09. Benchmark results may be found at [http://www.tpc.org/tpch/results/tpch_result_detail.asp?id=109060301](http://www.tpc.org/tpch/results/tpch_result_detail.asp?id=109060301). Benchmark results as of July 1, 2009. Please see [http://www.tpc.org](http://www.tpc.org) for up-to-date information.*
HP BladeSystem c-Class configuration

The HP BladeSystem c-Class 128P RAC with HP Oracle Exadata Storage Servers was configured with 64 ProLiant BL460c server blades, each with 3GHz Quad-Core Intel Xeon X5450 processors (for a total of 128 processors/512 cores /512 threads), with 12M cache, and 2080GB (32GB x 63 nodes and 64GB x 1 node) main memory. The server was running Oracle Database 11g Release 2 Enterprise Edition database and Oracle Enterprise Linux operating system. The storage system consisted of 6 x HP Oracle Exadata Storage Server SAS. The HP Oracle Exadata Storage Server SAS is an industry standard storage building block based on the HP ProLiant DL180 G5 server and comes preconfigured with two Intel 2.66GHz Quad-Core processors, 12 x 450GB 15K RPM SAS disk drives, 8GB memory, dual InfiniBand ports, and redundant power supplies. The Oracle Exadata Storage Server Software enables the Exadata Storage Server to quickly process database queries and return only the relevant rows and columns to the database server. By pushing SQL processing to the Oracle Exadata Storage Server, all disks can operate in parallel, reducing database server CPU consumption while consuming much less bandwidth to move data between storage and database servers.

The HP ProLiant Advantage

HP ProLiant BL460c

The VALUE you get with the new HP ProLiant BL460:

**Trusted:** The HP ProLiant BL460c is the most popular server blade in the world, representing 1 in 4 of all new blades deployed.

**Compatible:** From Windows and Linux to Citrix XenServer and VMware, the ProLiant BL460c supports the broadest array of operating systems and applications of any blade.

**Flexibility:** Storage options include hot-plug SAS drives, integrated boot devices, Direct Attach Shared storage, iSCSI and fibre-based SAN attach, and more.

**Performance:** High-performance with Quad-Core Intel Xeon processors and multifunction Ethernet adapters.

**More Control and Efficiency:** Power Capping and HP Insight Control, Modular Smart Array Controllers, and Trusted Platform Module.

HP proven performance

HP has posted hundreds of leading results on the most commonly referenced benchmarks on hundreds of HP servers and blades, helping customer to be confident in HP.

About the TPC-H benchmark

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 questions.

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.

For more information

HP ProLiant BL460c: www.hp.com/servers/bl460c
TPC-H details: www.tpc.org