



HP ProLiant DL585 G5 TPC-C: first 4P server to break \$1/tpmC



HP Leadership



TPC-C

DL585 G5: best 4P transaction processing economics

Key Points

- #1 worldwide 4P TPC-C price/performance
- At over a half million tpmC, performance 22.8% faster than previous generation AMD Opteron 2.5 GHz
- 27% better per core performance than IBM with Intel Xeon six-core processors at less than half the cost per transaction

Customer Value

What are the benefits of using HP ProLiant servers for online transaction processing?



HP announced new record-breaking results on the TPC-C benchmark for the HP ProLiant DL585 G5 on November 17, 2008.

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

HP posts a very large number of results on the TPC-C benchmark, regularly updating benchmark standings on top selling rack, tower, and blade servers. This shows the HP commitment to providing information that customers need for sizing decisions.

More information about TPC-C results can be found at the following Web page: <http://www.tpc.org>.

Results as of 11-17-08.

Technology for better business outcomes

Figure 1. DL585 G5 is first 4P server to break \$1/tpmC

Top 4P price/performance!

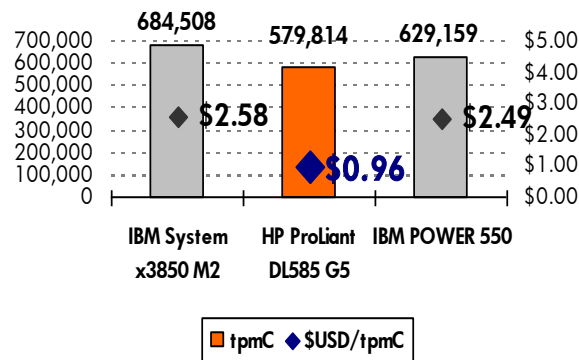


Figure 2. Price/performance choice comparison

HP ProLiant 4P: less than half the cost per transaction than IBM

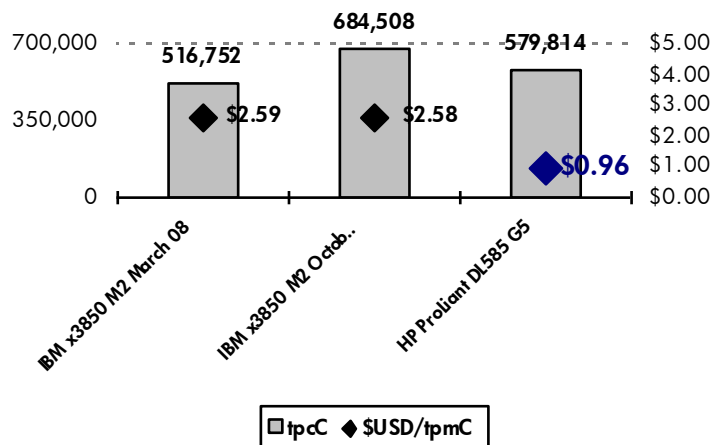


Table 1. Configuration for system results

System (processors/cores/threads)	tpmC	USD\$/tpmC	Availability	Database	OS
HP ProLiant DL585 G5 4P Quad-Core AMD Opteron xxxx 2.7 GHz (4 processors/16 cores/16 threads)	579,814	\$0.96 USD	11/17/08	Microsoft SQL Server 2005 Enterprise x64 Edition SP2	Windows Server 2003 R2 Enterprise x64 Edition SP2
IBM System x3850 M2 4P QC Intel Xeon X7460 2.66 GHz (4 processors/24 cores/24 threads)	684,508	\$2.58 USD	10/31/08	Microsoft SQL Server 2005 Enterprise x64 Edition	Windows Server 2003 R2 Enterprise x64 Edition
IBM System x3850 M2 4P QC Intel Xeon X7350 2.93 GHz (4 processors/16 cores/16 threads)	516,752	\$2.59 USD	03/14/08	IBM DB2 9.5 Enterprise Edition	Red Hat Enterprise Linux Adv. Platform 5 for x86_64

ProLiant server testing configurations

The HP ProLiant DL585 G5, configured with 4 x 2.7GHz Quad-Core AMD Opteron 8384 processors (4 processors/16 cores/16 threads) with 2 MB L2 Cache and 6 MB L3 Cache and 256 GB (32 x 8 GB) DDR2 main memory, achieved 579,814 tpmC @ USD \$0.96/tpmC running Windows Server 2003 R2 Enterprise x64 Edition SP2 operating system and Microsoft SQL Server 2005 Enterprise x64 Edition SP2 database. The server utilized 1 Smart Array P600 SAS RAID controller connected to 30 x 146GB 10K SFF SAS drives contained in 2 HP StorageWorks MSA70 Enclosures for the log files, 6 Smart Array P800 SAS RAID controllers and 1 E500 SAS RAID controller to drive 700 36GB 15K SFF SAS drives housed in 28 HP StorageWorks MSA70 Enclosures. The internal drive bays which housed the operating system drives were connected to the 8 Internal Port SAS HBA controller.

The HP advantage: HP innovative technology behind the results

HP ProLiant DL585 G5

The high-performance HP ProLiant DL585 G5 Server offers tremendous scalability and Quad-Core processing power coupled with advanced remote management capabilities to provide a reliable, power-efficient platform ideal for OLTP database projects. With up to four (4) Quad-Core AMD Opteron™ processors and a large memory footprint, the DL585 G5 delivers the performance and performance-per-watt needed for compute-hungry database, virtualization, and consolidation applications. Its industry leading remote management functions help reduce costs and improve the ability to respond quickly to business changes.

HP Smart Array Controller P600

The HP Smart Array P600 serial attached SCSI (SAS) controller provides new levels of performance and reliability for HP servers, through its support of the latest SCSI technology and advanced RAID capabilities. The first of a new generation of SAS Smart Array controllers, the SA-P600 once again raises the standards of performance offering twice the bandwidth of a 4-channel U320 array controller.

HP Smart Array Controller P800

The HP Smart Array P800 is a 16-port, PCI-E SAS controller. It ships standard with 512 MB cache, dual batteries and RAID 6 (ADG) support. This controller supports up to 108 hard drives and is the highest performing controller in the Smart Array portfolio.

HP Smart Array Controller E500

The HP Smart Array E500 is HP's first external connect only, entry level PCI Express (PCIe) Serial Attached SCSI (SAS) RAID controller. The full size card has 8 ports (2 x4 mini SAS external connectors) and utilizes DDR2-533 memory. The E500 offers RAID 0, 1 and 0+1 and can be upgraded with the battery-backed write cache (BBWC) module for RAID 5. This low-profile card is ideal for customers needing a low-cost external connect for HP ProLiant servers to tape, JBODs, and intelligent Modular Storage Arrays (MSA).

HP StorageWorks 70 Modular Smart Array

The HP StorageWorks 70 Modular Smart Array is an end-to-end flexible storage array, offering data availability, enhanced reliability, enhanced performance and tiered storage capability with SAS and SATA drives and investment protection. Small and midrange business growing storage needs can be managed by deploying this low cost, flexible tiered storage system with up to 14.4 TB capacity supporting SAS or SATA.

TPC information

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. Summaries 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 such as database throughput in transactions per minute (tpmC) and cost per transactions per minute (\$/tpmC).

For more information

HP ProLiant DL585 G5: www.hp.com/servers/dl585

HP ProLiant storage solutions: www.hp.com/go/serial

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

TPC-C Overview White Paper:

ftp://ftp.compaq.com/pub/products/servers/benchmarks/HP_ProLiant_tpc_C_Overview.pdf