Newest generation of HP ProLiant DL380 takes #1 position overall on Oracle E-Business Suite Small Model Benchmark

ProLiant DL380 G6 uses latest Intel® Xeon X5570 technology for ultimate performance

HP Leadership

HP ProLiant DL380 G6

What are the benefits of using HP ProLiant servers for Oracle applications?

HP infrastructure is modular, so it's easy to expand and repurpose. In the same way, Oracle E-Business Suite gives you the capability to add applications as your business expands.

You can implement with confidence, knowing that you are backed by the full strength of the HP/Oracle Alliance. With over 25 years of partnership between HP and Oracle, including executive alignment at the highest levels, it's not surprising that HP is a leading infrastructure partner across all Oracle application suites—including Oracle E-Business Suite.

HP's engineering investment in Oracle applications and technologies has produced significant customer benefits. For example, HP continually publishes leading benchmark results for Oracle Application environments, and HP and Oracle host 13 technology and competency centers worldwide. The strength of the HP and Oracle partnership is evident in the existence of more than 140,000 joint customers across the globe.

By helping businesses reduce risk, cut costs, and generate growth, HP and Oracle—together with our partners—provide you with outstanding technology for better business outcomes.
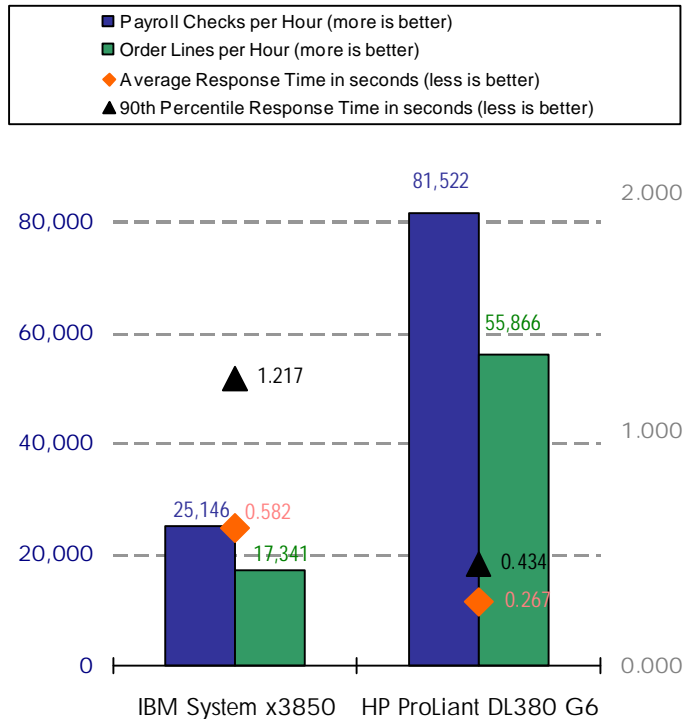
Results as of 03-20-09

Key Points

- ProLiant leadership with the #1 overall result on Oracle E-Business Suite Small Model Benchmark with the two-socket, 8-core HP ProLiant DL380 G6 server.
- The result defeated IBM's System x3850 four-socket, 8-core server result.
- With this benchmark, HP now owns the TOP 11 positions for published Oracle E-Business Suite Small Model benchmarks.
- The ProLiant DL380 G6 shows a 24% increase in throughput and a 12.4% improvement in average response time when compared to its previous generation benchmark result.
- The results show the superior optimization of the ProLiant two-socket Quad-Core server architecture versus IBM's X3 four-socket Dual-Core architecture.

Figure 1. OASB Small Model performance comparison

- ■ Payroll Checks per Hour (more is better)
- ■ Order Lines per Hour (more is better)
- ◆ Average Response Time in seconds (less is better)
- ▲ 90th Percentile Response Time in seconds (less is better)

Technology for better business outcomes

Benchmark comparisons

Table 1. Result summary of the HP ProLiant DL380 G6 two-processor server compared to IBM System x3850 on the 1,000-user Oracle E-Business Suite 11i Small Model Benchmark. The Oracle E-Business Suite 11i Small Model Benchmark workload is best-aligned to 8-core and smaller systems.

|	IBM System x3850	DL380 G6
Online Users	1,000	1,000
Average Response Time (lower is better)	0.582 sec	0.267
90th percentile Response Time (lower is better)	1.217 sec	0.434
Order-to-Cash Lines/Hour Batch Throughput (higher is better)	17,341	55,866
Payroll Checks/Hour Batch Throughput (higher is better)	25,146	81,522

Results valid as of 03-20-09. More information on published benchmark results is available at:
http://www.oracle.com/apps_benchmark/html/results.html#small.

ProLiant DL380 G6 Scalability

The ProLiant DL380 G6 achieved a 24% throughput increase and a 12.4% improvement in response time when changing processor technology to a 2.93GHz Intel Xeon X5570 chipset from a 3.16GHz Intel Xeon X5460 chipset that was utilized in the ProLiant DL380 G5 benchmark.

Figure 2. The HP ProLiant DL380 G5 shows better response time and more throughput than the ProLiant DL380 G5 in the Oracle E-Business Suite 11i Small Model Benchmark.

ProLiant Generation Scalability Comparison
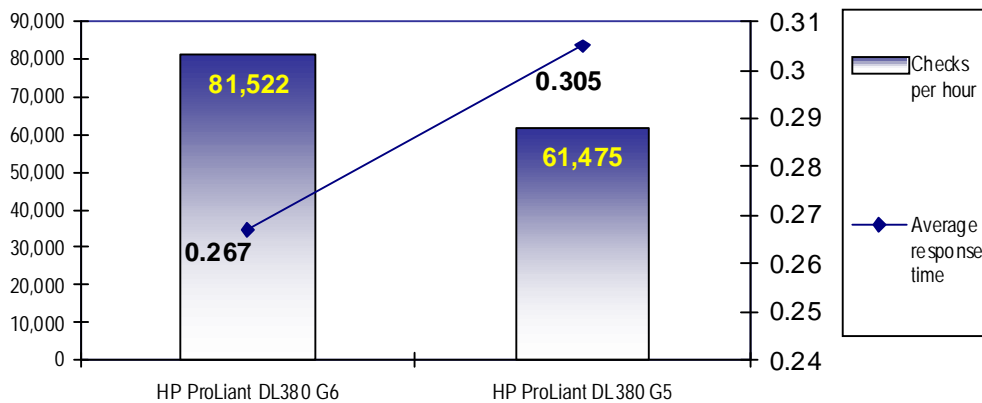
The ProLiant Advantage: HP innovative technology behind the results

On March 20, 2009, HP again announced new record-breaking results on the Oracle E-Business Suite 11i Small Model benchmark. These superior results were achieved using the newest generation of the ProLiant DL380 server, Generation 6, as the database tier with two HP ProLiant BL685c server blades used as application and web servers, and one HP ProLiant BL685c server blade used as the CM/NFS server. The HP ProLiant DL380 G6, the world's best-selling server, is the versatile, dependable workhorse that continues to deliver on its heritage of engineering excellence with increased flexibility and performance, enterprise-class uptime and manageability, two-socket Intel Xeon performance, and 2U density for a variety of applications. The HP ProLiant BL685c 4-processor, multi-core server blade has features equal to standard rack mount servers, combining power-efficient compute power and high density with expanded memory and I/O for maximum performance.

Also included behind the scenes of these results are many high quality HP storage products such as the HP Smart Array P410i Controller, HP Storage Works 4Gb PCI-e Fibre Channel controller, and a Storage Works EVA6100 disk array.

ProLiant DL380 G6

HP provides the value customers need with its latest model, ProLiant Generation 6:

- Leading energy and power efficiency
- Scalable performance
- Superior Management – don't leave home without it
- Smart tools for ultimate server infrastructure productivity

The HP ProLiant DL380 G6 server benefits include:

- Up to 2.93GHz Intel Xeon X5570 Quad-Core processors with Turbo Mode
- Up to 1333MHz FSB
- 60, 80, 95 Watts
- DDR3 1333MHz DIMMs and larger memory footprint
- Solid State Drives
- Common Power Supplies
- Modular Smart Array Controllers
- HP Onboard Administrator

Thermal Logic Technology

HP's Thermal Logic, with its portfolio of embedded technologies for an energy-efficient data center, enables customers to:

n   REDUCE total energy consumption.

n   RECLAIM trapped data center power and cooling resources without sacrificing performance with HP ProLiant servers using HP Dynamic Power Capping.

n   EXTEND the life of the data center by utilizing HP Energy Efficiency Services that includes Assessment and Design Services for Data Center Transformation, exceptional designs, and partnering with facilities management providers.
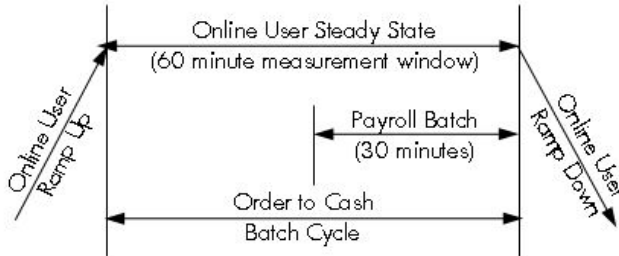
HP leads with Top 11 positions

With the ProLiant DL380 G6 as the top performer, HP now captures the Top 11 positions for published Oracle E-Business Suite Small Model benchmarks.

Table 2. The HP ProLiant DL380 G6, BL465c G5, BL460c, DL380 G5, BL685c, and DL580 servers hold the Top 11 positions for performance utilizing 1,000 users online with a batch of 10,000 order lines and 5,000 payroll employees.

Rank	Company	System	Result
1	hp invent	ProLiant DL380 G6 server equipped with 2 x 2.93GHz Intel Xeon Quad-Core X5570 processors (8-core)	0.267 sec 55,866 Lines/Hour 81,522 Checks/Hour
2	hp invent	ProLiant BL465c G5 server blade equipped with 2 x 2.7GHz AMD Opteron Quad Core 2384 processors (8 core)	0.281 sec 48,387 Lines/Hour 71,599 Checks/Hour
3	hp invent	ProLiant BL460c server blade equipped with 2 x 3.16GHz Intel Xeon Quad-Core X5460 processors (8-core)	0.291 sec 46,584 Lines/Hour 63,025 Checks/Hour
4	hp invent	ProLiant DL380 G5 equipped with 2 x 3.16GHz Intel Xeon Quad-Core X5460 processors (8-core)	0.305 sec 45,045 Lines/Hour 61,475 Checks/Hour
5	hp invent	ProLiant BL465c G5 server blade equipped with 2 x 2.3GHz AMD Opteron Quad-Core 2356 processors (8-core)	0.309 sec 40,650 Lines/Hour 58,140 Checks/Hour
6	hp invent	ProLiant DL380 G5 equipped with 2 x 3.0GHz Intel Xeon Quad-Core X5365 processors (8-core)	0.316 sec 40,650 Lines/Hour 58,140 Checks/Hour
7	hp invent	ProLiant DL380 G5 equipped with 2 x 2.66GHz Intel Xeon Quad-Core X5355 processors (8-core)	0.379 sec 36,166 Lines/Hour 54,152 Checks/Hour
8	hp invent	ProLiant BL685c equipped with 4 x 2.8GHz AMD Opteron Dual-Core 8220 processors (8-core)	0.373 sec 26,984 Lines/Hour 46,296 Checks/Hour
9	hp invent	ProLiant DL580 G4 equipped with 4 x 3.4GHz Intel Xeon Dual-Core 7140M processors. (8-core)	0.415 sec 23,511 Lines/Hour 43,415 Checks/Hour
10	hp invent	ProLiant DL580 G4 equipped with 2 x 3.4GHz Intel Xeon Dual-Core 7140M processors (4-core)	0.448 sec 21,254 Lines/Hour 38,119 Checks/Hour
11	hp invent	ProLiant DL580 G3 equipped with 4 x 3.0GHz Intel Xeon Dual-Core 7040 processors (8-core)	0.505 sec 17,497 Lines/Hour 23,872 Checks/Hour

About the Oracle Applications Standard Benchmark (OASB)

The Oracle Applications Standard Benchmark seeks to demonstrate performance and scalability of Oracle E-Business Suite on a variety of platforms. A representative workload is maintained with end-to-end business flows, including both online and batch components.

Online User Steady State
(60 minute measurement window)

Online User Ramp Up

Online User Ramp Down

Payroll Batch
(30 minutes)

Order to Cash
Batch Cycle

The benchmark simulates different workloads with variable data model sizes (small, medium, large).

Model Size	Payroll Batch	Order-to-Cash Batch
Small (up to 1000 users)	5,000 employee paychecks	10,000 order lines
Medium (1001-3000 users)	10,000 employee paychecks	50,000 order lines
Large (> 3000 users)	50,000 employee paychecks	100,000 order lines

Benchmark results are generated to provide representative sizing guidelines and best practices. All results are reviewed and certified by an independent auditor before Oracle publishes the benchmark report. Benchmark tuning is documented and generic for all hardware vendors to ensure reproducible results.

Four primary metrics are reported from the benchmark:

1. Average Online Response Time
2. 90th Percentile Response Time
3. Order-to-Cash Batch Throughput as measured by number of order lines processed per hour
4. Payroll Batch Throughput as measured by number of employee paychecks processed per hour

For more information

HP ProLiant DL380 G6: www.hp.com/servers/proliantdl380
HP ProLiant BL685c: www.hp.comm/servers/bl685c
HP ProLiant storage solutions: www.hp.com/go/serial and
http://h18004.www1.hp.com/products/servers/platforms/storage.html
OASB information is available at http://www.oracle.com/apps_benchmark/html/results.html
HP and Oracle partnership: www.hp.com/go/oracle
More information about all servers can also be found at the following web page:
http://www.oracle.com/apps_benchmark/html/results.html#small

Appendix A

Server configurations

HP ProLiant DL380 G6 1,000-user results on Oracle E-Business Suite 11i Benchmark: In March 2009, Oracle and Hewlett-Packard conducted a benchmark in Cupertino, California, to measure the online and batch performance of the Oracle Applications Standard Benchmark processes in an environment running Oracle E-Business Suite (EBS) 11i (11.5.10) with Oracle Database 10g™ (10.1.0.4) 64-bit and Red Hat® Enterprise Linux® Advanced Server release 4.0 Update 7, and achieved 55,866 Lines per Hour, 81,522 Checks per Hour, a 90th percentile response time of 0.484 seconds, and an average response time of 0.267 seconds. This result, submitted 03-20-09, was achieved on a Hewlett-Packard® ProLiant™ DL380 G6 database server configured with 2 x 2.93GHz Intel Xeon X5570 Quad-Core processors (2 processors/8 cores/8 threads) with 8MB Level 3 cache, 48GB memory, and PC3-8500R 1333MHz DDR3 Registered DIMMs (RDIMMs). The system used 2 x 72GB SFF SAS internal disk drives attached to an integrated HP Smart Array P410i Controller, and 1 x HP Storage Works EVA6100 disk array attached to 1 HP Storage Works 4Gb PCI-e Fibre Channel controller for data and logs. Two HP ProLiant BL685c server blades were used as application and web servers, and one HP ProLiant BL685c server blade was used as the CM/NFS server.

vs. most recent IBM System x3850 1,000-user results on Oracle E-Business Suite 11i Benchmark: In May and June 2006, Oracle and IBM conducted a benchmark in Research Triangle Park, North Carolina, to measure the online and batch performance of the Oracle Applications Standard Benchmark processes in an environment running Oracle E-Business Suite (EBS) 11i (11.5.10) with Oracle Database 10g™ (10.1.0.4) and Red Hat® Enterprise Linux Advanced Server release 3.0 Update 6, and achieved 17,341 Lines per Hour, 25,146 Checks per Hour, a 90th percentile response time of 1.217 seconds, and an average response time of 0.582 seconds. This result, submitted 06-20-06, was achieved on an IBM System x3850 database server configured with 4 x 3.0GHz Dual-Core Intel® Xeon® 7040 Processor (4 processors/8 cores/16 threads) with 2 x 2MB L2 cache per Core, and 32GB memory. Two IBM TotalStorage DS4500s were used for data storage. A second IBM System x3850 four-processor, Dual-Core server was used as an application/web server.

Scalability comparison

HP ProLiant DL380 G5 1,000-user results on Oracle E-Business Suite 11i Benchmark/November: In November 2007, Oracle and Hewlett-Packard conducted a benchmark in Cupertino, California, to measure the online and batch performance of the Oracle Applications Standard Benchmark processes in an environment running Oracle E-Business Suite (EBS) 11i (11.5.10) with Oracle Database 10g™ (10.1.0.4) 64-bit and Red Hat® Enterprise Linux® Advanced Server release 4.0 Update 4, and achieved 45,045 Lines per Hour, 61,475 Checks per Hour, a 90th percentile response time of 0.484 seconds, and an average response time of 0.305 seconds. This result, submitted 11-26-07, was achieved on a Hewlett-Packard® ProLiant™ DL380 G5 database server configured with 2 x 3.16GHz Intel® Xeon X5460 Quad-Core processors (2 processors/8 cores/8 threads) with 2 x 6MB Level 2 cache, 32GB memory, and PC2-5300 667MHz DDR2 fully-buffered DIMMs. The system used 8 x 72GB SFF SAS internal disk drives attached to an integrated HP Smart Array P400 Controller, and 1 x HP Storage Works EVA6000 disk array attached to 1 HP Storage Works 4Gb PCI-e Fibre Channel controller for data and logs. Two HP ProLiant BL685c server blades were used as application and web servers, and one HP ProLiant BL685c server blade was used as the CM/NFS server.