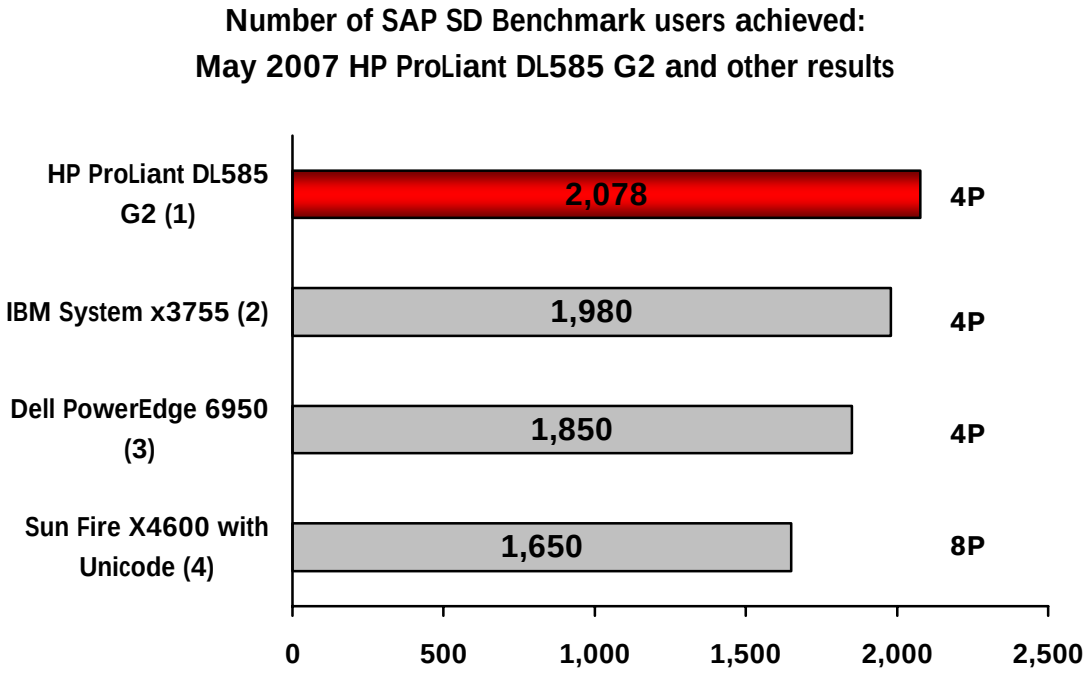
# HP ProLiant DL585 G2 with four AMD Opteron™ 8222SE processors delivers excellent results on the two-tier SAP® SD Standard Application Benchmark

Figure 1 (Configurations and results correlated with number in parentheses, (1) listed on this page, remaining items on last page)




## ProLiant DL585 G2 configuration

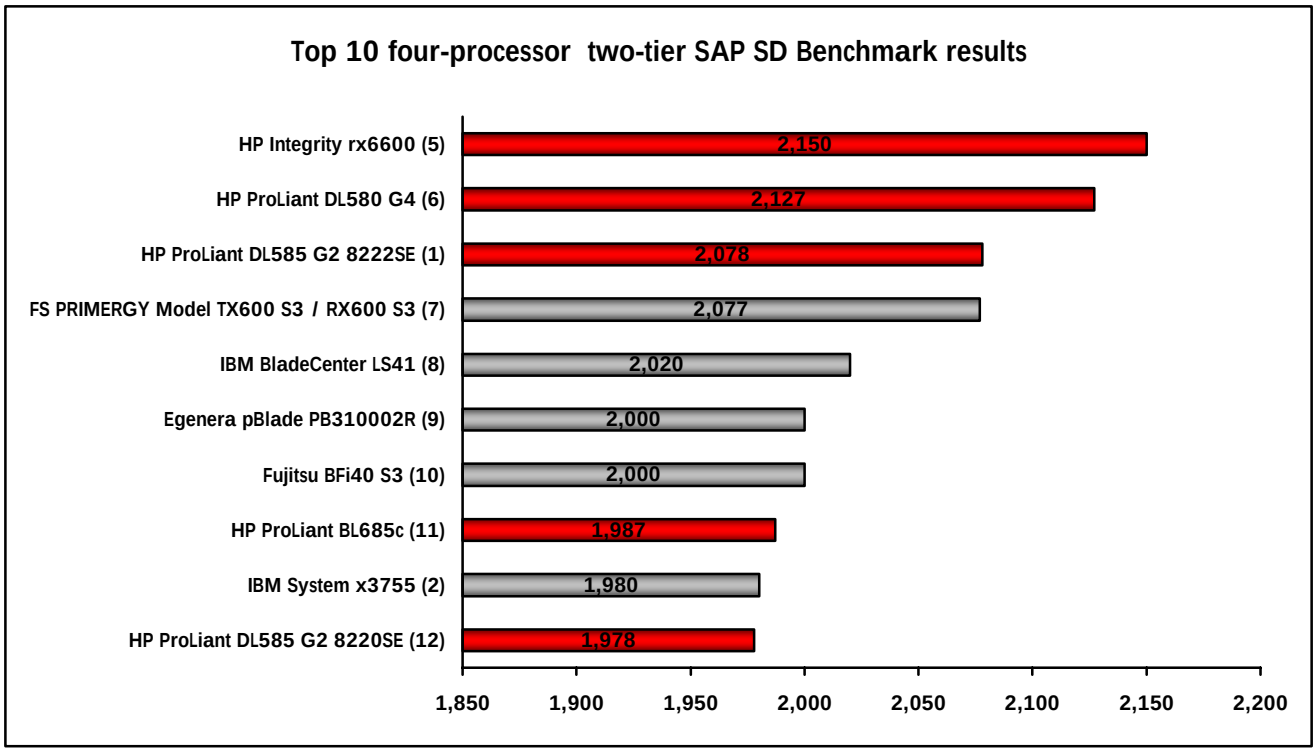
Tests were performed on the ProLiant DL585 G2 server by HP's Houston Solution Alliances SAP Engineering lab in Houston, TX. HP received certification from SAP AG of the results on the two-tier SAP® Sales and Distribution (SD) Standard Application Benchmark for the ProLiant DL585 G2 (#2007034) on May 11, 2007. [1]The server was running Microsoft Windows Server 2003 Enterprise Edition operating system, Microsoft SQL Server 2005 database, and the SAP ERP 2005 application. The DL585 G2 was configured with 4 x 3.0GHz Dual-Core AMD Opteron Processor Model 8222SE (4 processors/8 cores/8 threads), with 128 KB L1 cache per core and 1MB L2 cache per core, and 32 GB main memory.

**Results:** [1]The ProLiant DL585 G2 achieved 2,078 SAP SD Benchmark users, equivalent to a throughput of 210,000 fully processed order line items per hour or 10,500 SAPS.

# Comparison of top ten four-processor results

Of the top ten four-processor results on the two-tier SAP SD Benchmark as of May 14, 2007, HP held 5 positions, including the top 3 spots.

Figure 2 (Configurations and results correlated with number in parentheses, located on last page)




More information about the benchmark results of all servers can be found at the following Web page: http://www.sap.com/benchmark. Results as of 5/14/07.

# HP servers and storage behind the latest DL585 G2 result

## *HP ProLiant DL585 G2*

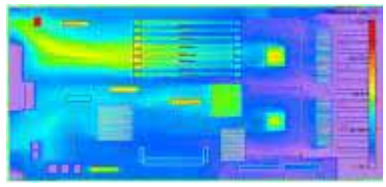
The HP ProLiant DL585 G2 continues to maintain price to performance and performance to watt leadership, posting industry leading benchmark scores for TPC-H at 100GB, TPC-H at 300GB, and for SPECWeb2005. The choice of a lower power envelope with 95 watt dual-core processors or higher performance envelope of 120 watt dual-core processors, each with AMD Virtualization technology (AMD-V) and the industry leading 128GB memory footprint, makes the DL585 G2 the ideal choice as a platform for deploying your virtualized environment.

### HP Small Form Factor (SFF) SAS drives

The transition to SFF SAS drives has been one of the most significant transitions in the industry's history, fueled by the biggest required leap in storage capacity ever experienced along with the need for faster access to stored data. Many server vendors forced customers to undergo two transitions, first to 3.5" SAS and finally to 2.5" – ***HP lead this industry change, providing one transition – directly to SFF for the ultimate in SAS performance and the best investment protection.*** HP small form-factor SAS drives offer 3Gb/sec throughput, nearly 10x the throughput of Ultra320 SCSI solutions with superior price/performance, making HP SAS the clear choice for high performance DSS database applications.

- **Higher reliability**
  - 1.7 million mean time between failures (MTBF) vs. 1.5 million MTBF for 3.5" SCSI

- **Better performance**
  - Serial point-to-point connections
  - More spindles per platform
- **Greater efficiency and improved thermals**
  - Half the power consumption – 9 Watts
  - SFF enables better airflow




### HP Smart Array Controller P400i

The HP Smart Array P400i, used by the MSA, is the integrated version of the P400, HP's first PCI-Express (PCIe) serial attached SCSI (SAS) RAID controller that provides new levels of performance and reliability for HP servers, through its support of the latest SCSI technology and advanced RAID capabilities.

### HP Smart Array Controller P600

The HP Smart Array P600, a 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 offers twice the bandwidth of a 4-channel U320 array controller and a 512 MB BBWC option.

### HP MSA 50

The HP Modular Smart Array 50 Enclosure family is an HP Serial Attach SCSI (SAS) Small Form Factor (SFF) disk drive storage enclosure, delivering industry-leading data performance, availability and upgradeability to meet demanding and growing storage needs.

## The advantages of the partnership between HP, SAP and Microsoft

Extensive experience and a close relationship are keys to making the partnership between HP, SAP AG, and Microsoft a success. Working together, HP, SAP, and Microsoft deliver design, sizing, and project plans geared to their customers' needs and strategies. SAP, Microsoft, and HP also collaborate very closely in research and development. Tests and benchmarks provide hard facts on our performance and capabilities.

Well over 50,000 successful joint installations reflect HP's deep understanding of the deployment and customer requirements for SAP ERP solutions and the SAP Business Suite family of applications. No other company has completed more installations of SAP solutions than HP — that's because HP understands how to turn customer demands into business tools using SAP Business Suite and other SAP solutions. Across all major operating systems, one out of every two SAP solution-based installations runs on HP infrastructure.

## For more information

HP ProLiant DL585 G2: www.hp.com/servers/proliantdl585

HP ProLiant DL580 G4: www.hp.com/servers/proliantdl580

HP Integrity rx6600: www.hp.com/servers/integrityrx6600



May 2007

## Configuration details

**Chart 1 configuration and results**

[2]**IBM System x3755 results on the two-tier SAP SD Standard Application Benchmark.** The IBM System x3755 (Certification #2006088) was configured as a four-processor server (4 processors / 8 cores / 8 threads) with Dual-Core AMD Opteron Processor Model 8220SE 2.8GHz with 128KB L1 cache and 1MB L2 cache per core, and 32 GB main memory. The IBM x3755 was running SAP ERP 2005 (64-bit) with Microsoft Windows Server 2003 Enterprise Edition (64-bit) and DB2 UDB 8 (64-bit) database and achieved 1,980 SAP SD Benchmark users, equivalent to a throughput of 198,330 fully processed order line items per hour or 9,920 SAPS.

[3]**Dell PowerEdge 6950 results on the two-tier SAP SD Standard Application Benchmark.** The Dell PowerEdge 6950 (Certification #2007025) was configured as a four-processor server (4 processors / 8 cores / 8 threads) with Dual-Core AMD Opteron Processor Model 8220SE 2.8 GHz, 128 KB L1 cache and 1 MB L2 cache per core, and 64 GB main memory. The Dell PowerEdge 6950 was running SAP ERP 2005 (64-bit) with Microsoft Windows Server 2003 Enterprise Edition (64-bit) operating system and SQL Server 2005 (64-bit) database and achieved 1,850 SAP SD Benchmark users, equivalent to a throughput of 186,670 fully processed order line items per hour or 9,330 SAPS.

[4]**Sun Fire X4600 results on the two-tier SAP SD Standard Application Benchmark.** The Sun Fire X4600 (Certification #2006065) was configured as an eight-processor server (8 processors / 16 cores / 16 threads) with Dual-Core AMD Opteron Processor Model 885 2.6GHz processors with 128KB L1 and 1 MB L2 cache per core, and 64GB main memory. The Sun Fire X4600 was running SAP ERP 2004 (Unicode, 64-bit) with Microsoft Windows Server 2003 Enterprise Edition (64-bit) operating system and Microsoft SQL Server 2005 (64-bit) database and achieved 1,650 SAP SD Benchmark users, equivalent to a throughput of 182,330 fully processed order line items per hour or 9,120 SAPS.

**Chart 2 configuration and results**

[5]**HP Integrity rx6600 results on the two-tier SAP SD Standard Application Benchmark.** The HP Integrity rx6600 (Certification #2006083) was configured as a four-processor server (4 processors / 8 cores / 16 threads) with Dual-Core Intel Itanium 2 9050 1.6-GHz processors with 32 KB(I) + 32 KB(D) L1 cache, 2 MB(I) + 512 KB(D) L2 cache, 24 MB L3 cache, and 48 GB main memory. The HP Integritiy rx6600 was running SAP ERP 2005 (64-bit) with HP-UX 11iV3 operating system and Oracle 10g database and achieved 2,150 SAP SD Benchmark users, equivalent to a throughput of 215,670 fully processed order line items per hour or 10,780 SAPS.

[6]**HP ProLiant DL580 G4 results on the two-tier SAP SD Standard Application Benchmark.** The HP ProLiant DL580 G4 (Certification #2006060) was configured as a four-processor server (4 processors / 8 cores / 16 threads) with Quad-Core Intel XEON 7140M 3.4-GHz processors with 16 KB L1 cache and 1 MB L2 cache per core, 16 MB L3 cache per processor, and 32 GB main memory. The HP ProLiant DL580 G4 was running SAP ERP 2004 (64-bit) with Microsoft Windows Server 2003 Enterprise Edition (64-bit) operating system and SQL Server 2005 (64-bit) database and achieved 2,127 SAP SD Benchmark users, equivalent to a throughput of 213,000 fully processed order line items per hour or 10,650 SAPS.

[7]**Fujitsu Siemens Computers PRIMERGY Model TX600 S3 / RX600 S3 results on the two-tier SAP SD Standard Application Benchmark.** The Fujitsu Siemens Computers PRIMERGY Model TX600 S3 / RX600 S3 (Certification #2006050) was configured as a four-processor server (4 processors / 8 cores / 8 threads) with Quad-Core Intel XEON 7140M 3.4 GHz, 16 KB L1 cache and 1 MB L2 cache per core, 16 MB L3 cache per processor, and 64 GB main memory. The Fujitsu TX600 S3 / RX600 S3 was running SAP ERP 2004 (64-bit) with Microsoft Windows Server 2003 Enterprise Edition (64-bit) operating system and Microsoft SQL Server 2005 (64-bit) database and achieved 1,790 SAP SD Benchmark users, equivalent to a throughput of 182,000 fully processed order line items per hour or 10,380 SAPS.

[8]**IBM AMD Opteron LS41 for IBM BladeCenter results on the two-tier SAP SD Standard Application Benchmark.** The IBM AMD Opteron LS41 for BladeCenter (Certification #2007018) was configured as a four-processor server (4 processors / 8 cores / 8 threads) with Dual-Core AMD Opteron Processor Model 8220SE 2.8 GHz, 128 KB L1 cache and 1 MB L2 cache per core, and 32 GB main memory. The IBM LS41 was running SAP ERP 2005 (64-bit) with Microsoft Windows Server 2003 Enterprise Edition (64-bit) and DB2 9 (64-bit) database and achieved 2,020 SAP SD Benchmark users, equivalent to a throughput of 202,330 fully processed order line items per hour or 10,120 SAPS.

[9]**Egenera BladeFrame Model pBlade PB310002R results on the two-tier SAP SD Standard Application Benchmark.** The Egenera BladeFrame Model pBlade PB310002R (Certification #2007009) was configured as a four-processor server (4 processors / 8 cores / 16 threads) with Quad-Core Intel Xeon 7140M 3.4 GHz processors with 16 KB L1 cache and 1 MB L2 cache per core, 16 MB L3 cache per processor, and 32 GB main memory. The Egenera pBlade PB310002R was running SAP ERP 2005 (64-bit) with Microsoft Windows Server 2003 Enterprise Edition (64-bit) operating system and SQL Server 2005 (64-bit) database and achieved 2,000 SAP SD Benchmark users, equivalent to a throughput of 200,670 fully processed order line items per hour or 10,030 SAPS.

[10]**Fujitsu Siemens Computers PRIMERGY Model BFi40 S3 results on the two-tier SAP SD Standard Application Benchmark.** The Fujitsu Siemens Computers PRIMERGY Model BFi40 S3 (Certification #2007010) was configured as a four-processor server (4 processors / 8 cores / 16 threads) with Quad-Core Intel Xeon 7140M 3.4 GHz processors with 16 KB L1 cache and 1 MB L2 cache per core, 16 MB L3 cache per processor, and 32 GB main memory. The Fujitsu Bfi40 S3 was running SAP ERP 2005 (64-bit) with Microsoft Windows Server 2003 Enterprise Edition (64-bit) operating system and SQL Server 2005 (64-bit) database and achieved 2,000 SAP SD Benchmark users, equivalent to a throughput of 203,300 fully processed order line items per hour or 10,170 SAPS.

[11]**HP ProLiant BL685c results on the two-tier SAP SD Standard Application Benchmark.** The HP ProLiant BL685c (Certification #2007007) was configured as a four-processor server (4 processors / 8 cores / 8 threads) with Dual-Core AMD Opteron Processor Model 8220 2.8 GHz, 128 KB L1 cache and 1 MB L2 cache per core, and 32 GB main memory. The HP ProLiant BL685c was running SAP ERP 2005 (64-bit) with Microsoft Windows Server 2003 Enterprise Edition (64-bit) and SQL Server 2005 (64-bit) database and achieved 1,987 SAP SD Benchmark users, equivalent to a throughput of 199,000 fully processed order line items per hour or 9,950 SAPS.

[12]**HP ProLiant DL585 G2 previous results on the two-tier SAP SD Standard Application Benchmark.** The HP ProLiant DL585 G2 (Certification #2006067) was configured as a four-processor server (4 processors / 8 cores / 8 threads) with Dual-Core AMD Opteron processor Model 8220SE 2.8 GHz, 128 KB L1 cache and 1 MB L2 cache per core, and 32 GB main memory. The HP ProLiant DL585 G2 was running SAP ERP 2004 with Microsoft Windows Server 2003 Enterprise Edition (64-bit) operating system and Microsoft SQL Server 2005 database. The ProLiant DL585 G2 achieved 1,978 SAP SD Benchmark users, equivalent to a throughput of 198,330 fully processed order line items per hour or 9,920 SAPS.