SMB workload performance comparison summary: Dell™ PowerEdge™ T410 vs. HP ProLiant ML150 G6

Executive summary

Dell Inc. (Dell) commissioned Principled Technologies (PT) to measure the performance of the following servers running a typical small- to medium business (SMB) workload:

- Dell™ PowerEdge™ T410
- HP ProLiant ML150 G6

We simultaneously ran workloads that exercised three of the functions a typical small business server may have to handle: Web, email, and database services. We used WebBench to simulate Web traffic, Microsoft Exchange Load Generator (LoadGen) to simulate email activity, and DVD Store Version 2 (DS2) to simulate database activity.

Figure 1 presents averaged results for the two servers on Windows Server 2008 x64 running the three workloads relative to the lower-performing server, the HP ProLiant ML150 G6. For each workload, we assigned a value of 100 percent to that server's results and then calculated the percentage performance improvement of the Dell PowerEdge T410. This approach makes each data point a comparative number, with higher numbers indicating better performance. Finally, we took the percentage performance improvement over the HP ProLiant ML150 G6 for the three benchmarks and averaged them.

KEY FINDINGS

- In competitive tests running email, database, and Web workloads simultaneously, the Dell PowerEdge T410 delivered better performance while consuming lower power and costing less than a comparably configured HP ProLiant ML150 G6.[*]
- The Dell PowerEdge T410 cost $1,000 less than the HP ProLiant ML150 G6, a 13% price savings.[*] (See Figure 5.)
- The Dell PowerEdge T410 delivered an average performance about 11% greater than the HP ProLiant ML150 G6, with much faster email response time (39% Dell advantage) and very slightly lower Web (1% HP advantage) and database (3% HP advantage) performance.[*] (See Figure 1.)
- The Dell PowerEdge T410 had lower power usage than the HP ProLiant ML150 G6 both when idle (18% Dell advantage) and under peak load (4% Dell advantage).[*] (See Figure 4.)
- The Dell PowerEdge T410 had a 16% performance/watt advantage over the HP ProLiant ML150 G6.[*] (See Figure 3.)
- The Dell PowerEdge T410 delivered a 27% performance/dollar advantage over the HP ProLiant ML 150 G6.[*] (See Figure 2.)
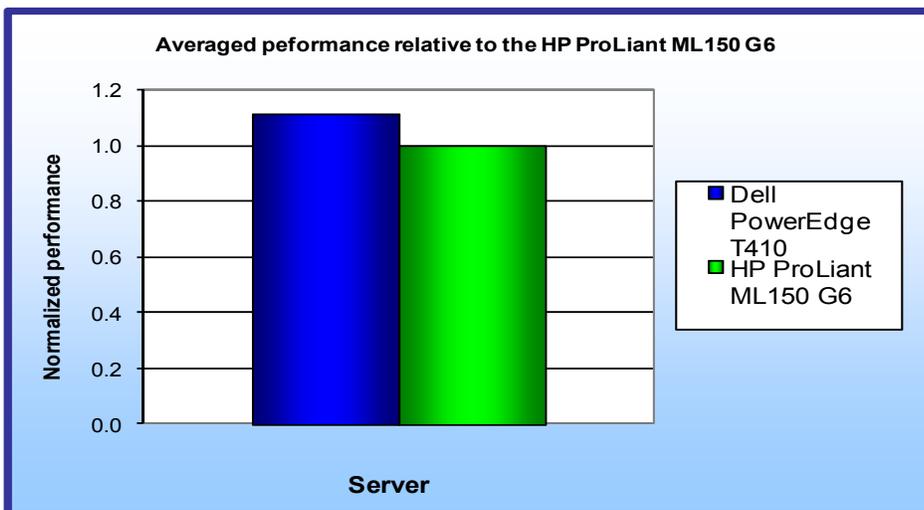

Figure 1: Averaged performance of the test servers running Windows Server 2008 across the three benchmarks relative to the HP ProLiant ML150 G6. Higher numbers are better.

As Figure 1 illustrates, the Dell PowerEdge T410 running on Windows Server 2008 delivered an average of 11 percent greater performance across the three benchmarks than did the HP ProLiant ML150 G6, delivering 39 percent faster email response time, 1 percent lower Web performance, and 3 percent lower database performance than did the HP ProLiant ML150 G6. For each server, we then took the averaged relative performance results in Figure 1 and divided them

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[*] Based on a report published by Principled Technologies, commissioned by Dell, "Performance Analysis: Dell PowerEdge T410 vs. HP ProLiant DL150 G6 solution," June 2009.

by the price. For ease of comparison, we normalized those results to those of the HP ProLiant ML150 G6.
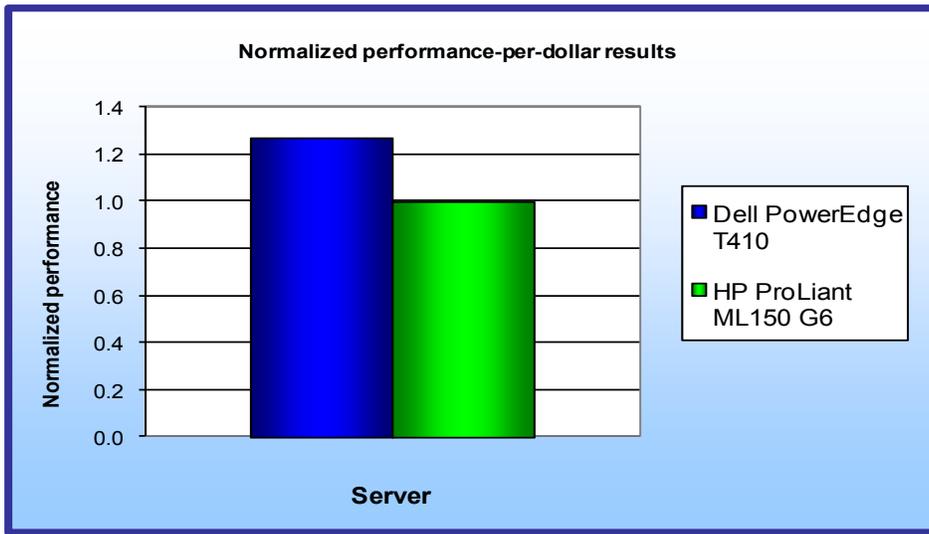

Figure 2: Normalized performance-per-dollar results of the test servers running Windows Server 2008 across the three benchmarks, relative to the HP ProLiant ML150 G6. Higher numbers are better.

As Figure 2 illustrates, the Dell PowerEdge T410 produced a 27 percent higher performance-per-dollar result on Windows Server 2008 across the three workloads than did the HP ProLiant ML150 G6.

We also measured power consumption during the test. We took the averaged relative performance results in Figure 1 and divided them by the active power consumption. We normalized those results to those of the HP ProLiant ML150 G6.
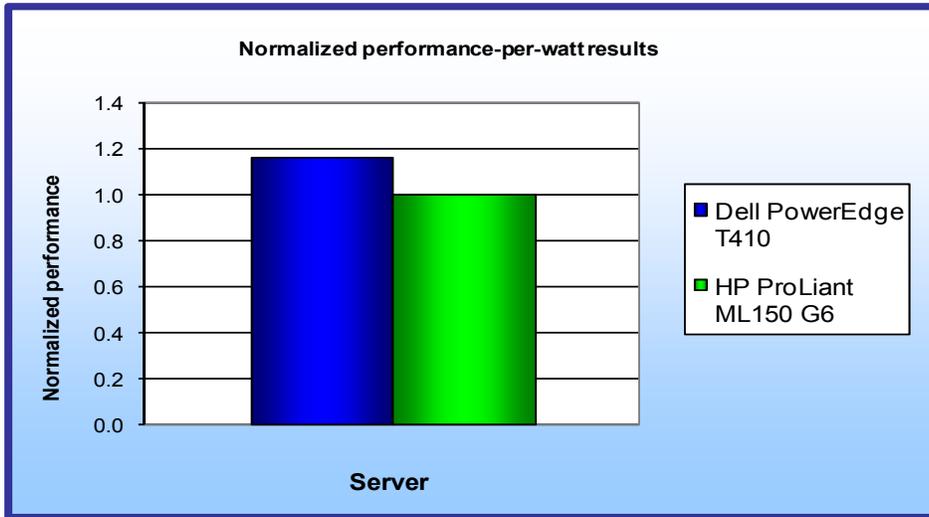
As Figure 3 illustrates, the Dell PowerEdge T410 delivered a 16 percent better performance-per-watt result on Windows Server 2008 across the three workloads than did the HP ProLiant ML150 G6.

Figure 4 shows the power results during the median run of the Dell PowerEdge T410 and HP ProLiant ML150 G6. Lower numbers are better.

To calculate the power, we average the power we recorded during our workload measurement period. For the idle power, we allowed the system to sit for 10 minutes after booting to the desktop and then started 2 minutes of idle power capture.

Figure 3: Normalized performance-per-watt results of the test servers running Windows Server 2008 across the three benchmarks, relative to the HP ProLiant ML150 G6. Higher numbers are better.

Server	Idle power	Workload power
Dell PowerEdge T410	205.21	319.75
HP ProLiant ML150 G6	249.30	333.20

Figure 4: Average idle and workload power results, in watts, for the two servers during the median run. Lower numbers are better.

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Server configuration information

Figure 5 presents information for the test servers we used in this report.

Servers	Dell PowerEdge T410	HP ProLiant ML150 G6
CPU name	Dual Intel Xeon Processor E5540	Dual Intel Xeon Processor E5540
CPU core frequency (GHz)	2.53	3.53
System/vendor and model number	Dell PowerEdge T410	HP ProLiant ML150 G6
RAM	24GB PC3-10600 DDR3	24GB PC3-10600 DDR3
RAM speed (MHz)	1,333	1,333
RAM speed in the system currently running @ (MHz)	1,066	1,066
Operating system	Microsoft Windows Server 2008 64x Enterprise Edition	Microsoft Windows Server 2008 64x Enterprise Edition
Price as of June 12, 2009	$6,979.00	$7,979.00

Figure 5: Detailed system configuration information for the two test servers.

For more information on these tests, and to see the full test report, visit:
http://principledtechnologies.com/Clients/Reports/Dell/T410vML150.pdf.

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