WHITE PAPER
Intel® Xeon® Processor
3400 Series

Intel® Xeon® Processor 3400 Series Performance Comparisons

Intel® Xeon® Processor 3400 Series Performance Comparisons to Desktop and Previous Generations

Intel Corporation compared the Web, e-mail, and database service performance of four Intel® processor-based servers:

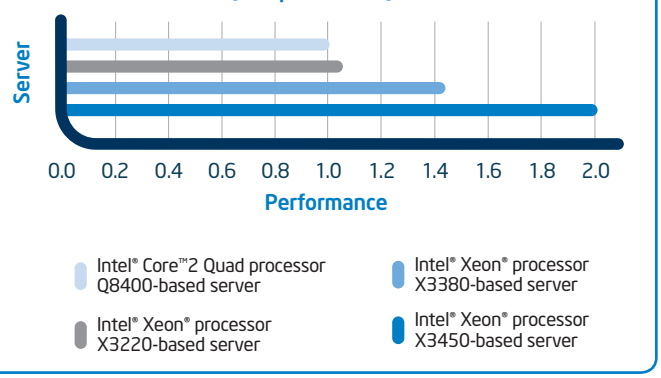
- Intel® Core™2 Quad processor Q8400-based server
- Intel® Xeon® processor X3220-based server
- Intel Xeon processor X3380-based server
- Intel Xeon processor X3450-based server

All servers ran Microsoft Windows Server* 2008 Standard Edition x64 with Microsoft Exchange* 2007 and Microsoft SQL Server* 2008. Performance was measured by simulating simultaneous workloads of typical small to medium business (SMB) server functions. WebBench* was used to simulate Web traffic, Microsoft Exchange Load Generator was used to simulate e-mail activity, and DVD Store* was used to simulate database activity.

Key findings

- Across the three workloads on Microsoft Windows Server 2008 Standard Edition x64, the Intel Xeon processor X3450-based server delivered a 48 percent increase in performance compared to the Intel Xeon processor X3380-based server, a 110 percent increase in performance compared to the Intel Xeon processor X3220-based server, and a 119 percent increase compared to the Intel® Core™2 Quad processor Q8400-based server (see Figure 1).

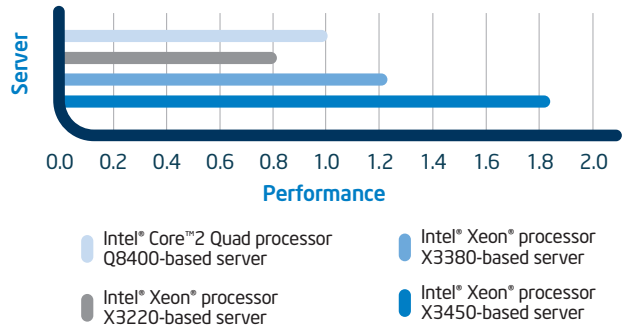
Figure 1: Averaged performance relative to the Intel® Core™2 Quad processor Q8400-based server



Source: Principled Technologies Test Report, August 2009.

- The Intel Xeon processor X3450-based server delivered a 49 percent increase in performance-per-watt compared to the Intel Xeon processor X3380-based server, a 136 percent increase in performance-per-watt compared to the Intel Xeon processor X3220-based server, and an 87 percent increase in performance-per-watt compared to the Intel Core 2 Quad processor Q8400-based server (see Figure 2).

Figure 2: Averaged performance-per-watt relative to the Intel® Core™2 Quad processor Q8400-based server



Source: Principled Technologies Test Report, August 2009.

- The Intel Xeon processor X3450-based server used less than 60 percent of its processor bandwidth while delivering better performance on these tests, leaving performance headroom for the future.

Intel Xeon 3400 Processor Series SKU Performance Comparisons

Intel Corporation compared the Web, e-mail, and database service performance of three Intel Xeon 3400 processor series-based servers:

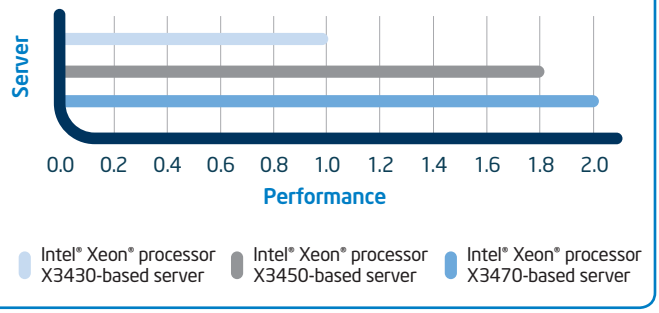
- Intel Xeon processor X3430-based server (2.40 GHz, 8 MB L3 cache)
- Intel Xeon processor X3450-based server (2.66 GHz, 8 MB L3 cache)
- Intel Xeon processor X3470-based server (2.93 GHz, 8 MB L3 cache)

All servers ran Microsoft Windows Server 2008 Standard Edition x64 with Microsoft Exchange 2007 and Microsoft SQL Server 2008. Performance was measured by simulating simultaneous workloads of typical SMB server functions. WebBench was used to simulate Web traffic, Microsoft Exchange Load Generator was used to simulate e-mail activity, and DVD Store was used to simulate database activity.

Key findings

- Across the workloads on Microsoft Windows Server 2008 Standard Edition x64, the Intel Xeon processor X3470-based server delivered a 104 percent increase in performance compared to the Intel Xeon processor X3430-based server and a 12 percent increase compared to the Intel Xeon processor X3450-based server (see Figure 3).

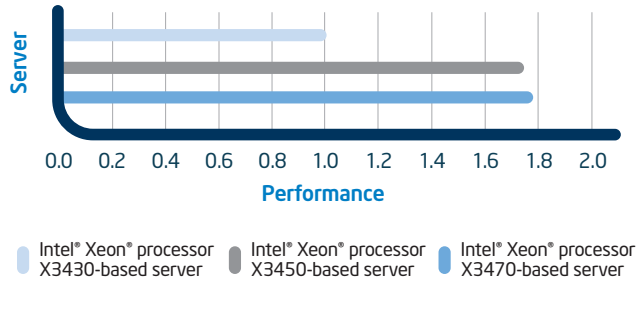
Figure 3: Averaged performance relative to the Intel® Xeon® processor X3430-based server



Source: Principled Technologies Test Report, August 2009.

- The Intel Xeon processor X3470-based server delivered a 75 percent increase in performance-per-watt and the Intel Xeon processor X3450-based server delivered a 74 percent increase in performance-per-watt compared to the Intel Xeon processor X3430-based server (see Figure 4).

Figure 4: Averaged performance-per-watt relative to the Intel® Xeon® processor X3430-based server



Source: Principled Technologies Test Report, August 2009.

Additional information on test methodology, tested system configurations, and product performance data can be found at:
www.intel.com/performance/server/entry_level/summary.htm

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