



SPEC® CINT2006 Result

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Dell Inc.

SPECint®_rate2006 = 119

PowerEdge M600 (Intel Xeon E5410, 2.33 GHz)

SPECint_rate_base2006 = 110

CPU2006 license: 55

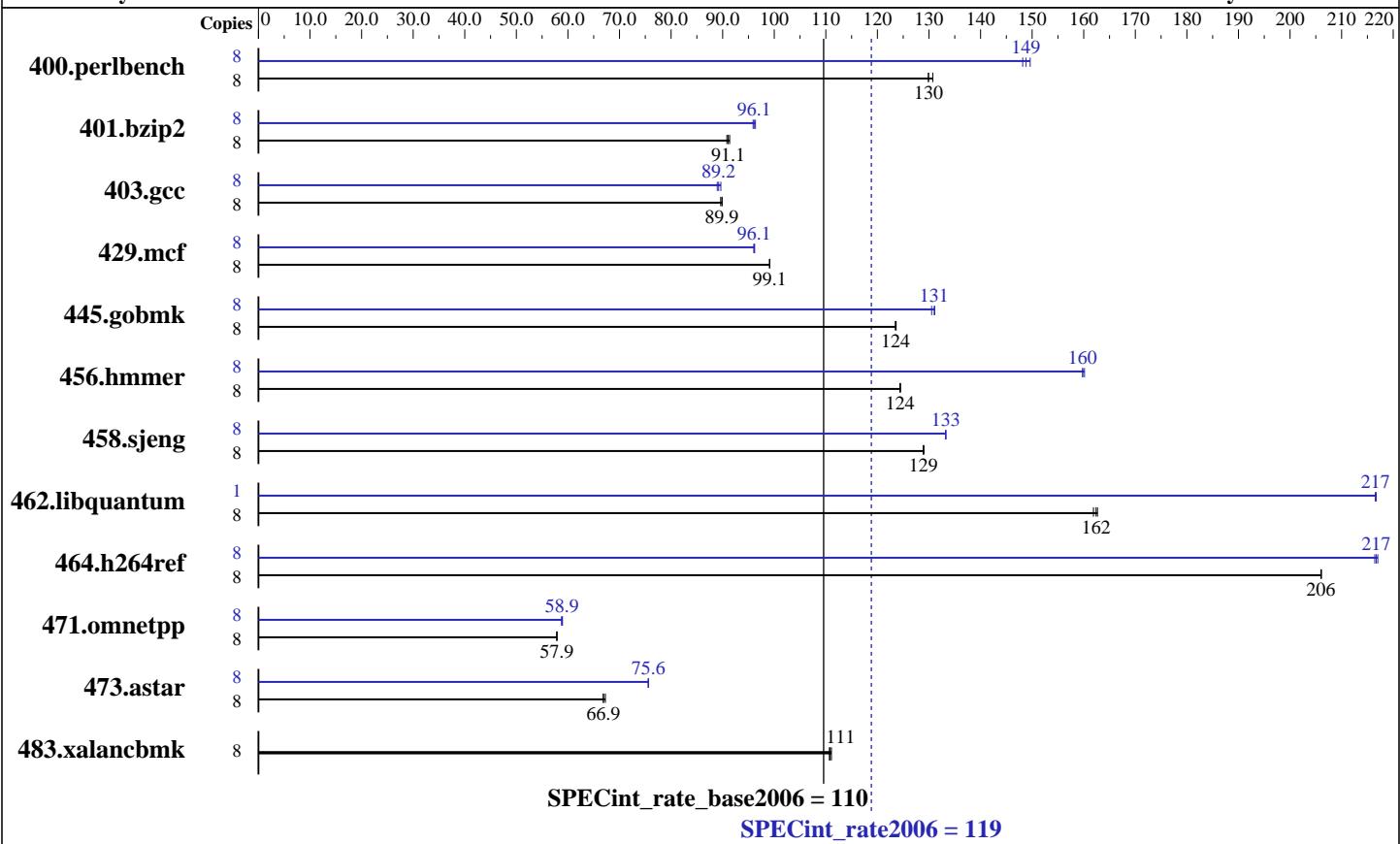
Test date: Sep-2008

Test sponsor: Dell Inc.

Hardware Availability: Sep-2008

Tested by: Dell Inc.

Software Availability: Nov-2008



Hardware

| | |
|----------------------|---|
| CPU Name: | Intel Xeon E5410 |
| CPU Characteristics: | |
| CPU MHz: | 2333 |
| FPU: | Integrated |
| CPU(s) enabled: | 8 cores, 2 chips, 4 cores/chip |
| CPU(s) orderable: | 1,2 chips |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 12 MB I+D on chip per chip, 6 MB shared / 2 cores |
| L3 Cache: | None |
| Other Cache: | None |
| Memory: | 16 GB (4x4 GB, DDR2-667 MHz, CL5, Reg, Dual Rank) |
| Disk Subsystem: | 1 x 80 GB SATA 5400 RPM |
| Other Hardware: | None |

Software

| | |
|-------------------|--|
| Operating System: | SUSE Linux Enterprise Server 10 (x86_64) SP2, Kernel 2.6.16-60.0.21-smp |
| Compiler: | Intel C++ Compiler 11.0 for Linux Build 20080730 Package ID: l_cc_b_11.0.042 |
| Auto Parallel: | Yes |
| File System: | ReiserFS |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 32-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | Microquill SmartHeap V8.1 Binutils 2.18.50.0.7.20080502 |



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Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|----------------|--------|-------------|-------------|------------|-------------|------------|------------|--------|------------|------------|-------------|-------------|------------|-------------|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 8 | 602 | 130 | 598 | 131 | 602 | 130 | 8 | 525 | 149 | 528 | 148 | 522 | 150 |
| 401.bzip2 | 8 | 850 | 90.8 | 848 | 91.1 | 845 | 91.4 | 8 | 805 | 95.9 | 801 | 96.4 | 803 | 96.1 |
| 403.gcc | 8 | 717 | 89.9 | 719 | 89.6 | 716 | 89.9 | 8 | 724 | 89.0 | 722 | 89.2 | 718 | 89.6 |
| 429.mcf | 8 | 736 | 99.1 | 736 | 99.1 | 736 | 99.1 | 8 | 758 | 96.2 | 759 | 96.1 | 760 | 96.0 |
| 445.gobmk | 8 | 680 | 123 | 679 | 124 | 679 | 124 | 8 | 643 | 131 | 641 | 131 | 640 | 131 |
| 456.hammer | 8 | 600 | 124 | 600 | 124 | 600 | 124 | 8 | 466 | 160 | 467 | 160 | 467 | 160 |
| 458.sjeng | 8 | 751 | 129 | 750 | 129 | 751 | 129 | 8 | 726 | 133 | 727 | 133 | 726 | 133 |
| 462.libquantum | 8 | 1021 | 162 | 1019 | 163 | 1024 | 162 | 1 | 95.6 | 217 | 95.7 | 217 | 95.7 | 217 |
| 464.h264ref | 8 | 859 | 206 | 859 | 206 | 859 | 206 | 8 | 817 | 217 | 816 | 217 | 818 | 216 |
| 471.omnetpp | 8 | 864 | 57.9 | 864 | 57.9 | 864 | 57.9 | 8 | 848 | 58.9 | 851 | 58.8 | 849 | 58.9 |
| 473.astar | 8 | 835 | 67.3 | 840 | 66.9 | 840 | 66.9 | 8 | 742 | 75.6 | 743 | 75.6 | 743 | 75.5 |
| 483.xalancbmk | 8 | 498 | 111 | 499 | 111 | 497 | 111 | 8 | 498 | 111 | 499 | 111 | 497 | 111 |

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

The config file option 'submit' was used.

Operating System Notes

'ulimit -s unlimited' was used to set the stack size to unlimited prior to run

Platform Notes

BIOS Settings:

Adjacent Cache Line Prefetch = Disabled (Default = Enabled)

General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hammer, for peak, are compiled in 64-bit mode
taskset was used to bind processes to cores except for 462.libquantum peak
OMP_NUM_THREADS set to number of processors
KMP_AFFINITY set to "physical,0"
KMP_STACKSIZE set to 64M



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Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc
-opt-malloc-options=3 -opt-prefetch

C++ benchmarks:
-xSSE4.1 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/spec/cpu2006.1.1/lib -lsmartheap

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc

401.bzip2: /opt/intel/Compiler/11.0/042/bin/intel64/icc
-L/opt/intel/Compiler/11.0/042/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/042/ipp/em64t/include

456.hmmr: /opt/intel/Compiler/11.0/042/bin/intel64/icc
-L/opt/intel/Compiler/11.0/042/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/042/ipp/em64t/include

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Peak Compiler Invocation (Continued)

C++ benchmarks:
icpc

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmmer: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -ansi-alias -opt-prefetch

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -opt-prefetch -ansi-alias

403.gcc: -xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc
-opt-malloc-options=3

429.mcf: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -opt-prefetch

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -O2 -ipo
-no-prec-div -ansi-alias

456.hmmmer: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll12
-ansi-alias

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll4

462.libquantum: -xSSE4.1 -ipo -O3 -no-prec-div -static
-opt-malloc-options=3 -parallel -par-runtime-control
-opt-prefetch

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll12 -ansi-alias

C++ benchmarks:

Continued on next page



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Peak Optimization Flags (Continued)

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -ansi-alias -opt-ra-region-strategy=block
-Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -ansi-alias -opt-ra-region-strategy=routine
-Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20090713.02.html>
<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.02.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20090713.02.xml>
<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.02.xml>

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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.

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