



# SPEC® CINT2006 Result

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Dell Inc.

SPECint®2006 = 26.6

PowerEdge M600 (Intel Xeon E5440, 2.83 GHz)

SPECint\_base2006 = 23.2

CPU2006 license: 55

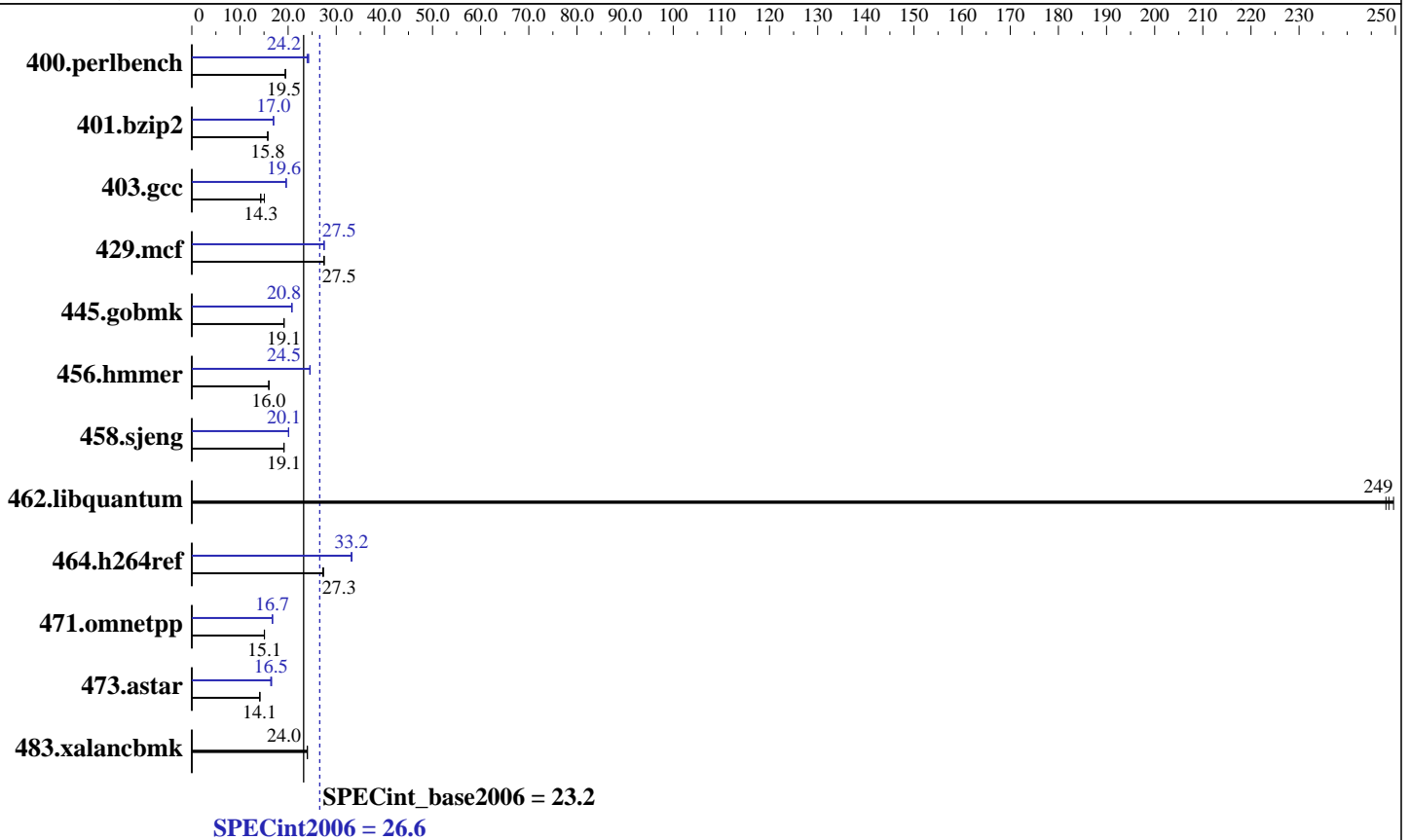
Test date: Sep-2008

Test sponsor: Dell Inc.

Hardware Availability: Sep-2008

Tested by: Dell Inc.

Software Availability: Nov-2008



### Hardware

CPU Name: Intel Xeon E5440  
 CPU Characteristics:  
 CPU MHz: 2833  
 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 (4 x 4 GB 667 MHz ECC CL5 FB-DIMM)  
 Disk Subsystem: 1 x 80 GB 5400 RPM SATA  
 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\_cproc\_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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	<b><u>502</u></b>	<b><u>19.5</u></b>	504	19.4	501	19.5	<b><u>404</u></b>	<b><u>24.2</u></b>	408	23.9	403	24.3
401.bzip2	611	15.8	613	15.8	<b><u>612</u></b>	<b><u>15.8</u></b>	<b><u>568</u></b>	<b><u>17.0</u></b>	570	16.9	568	17.0
403.gcc	564	14.3	534	15.1	<b><u>561</u></b>	<b><u>14.3</u></b>	411	19.6	<b><u>411</u></b>	<b><u>19.6</u></b>	411	19.6
429.mcf	332	27.5	332	27.5	<b><u>332</u></b>	<b><u>27.5</u></b>	332	27.4	<b><u>332</u></b>	<b><u>27.5</u></b>	332	27.5
445.gobmk	548	19.2	<b><u>548</u></b>	<b><u>19.1</u></b>	548	19.1	<b><u>505</u></b>	<b><u>20.8</u></b>	505	20.8	505	20.8
456.hmmmer	<b><u>583</u></b>	<b><u>16.0</u></b>	583	16.0	583	16.0	380	24.6	<b><u>380</u></b>	<b><u>24.5</u></b>	381	24.5
458.sjeng	632	19.1	<b><u>632</u></b>	<b><u>19.1</u></b>	632	19.2	603	20.1	<b><u>602</u></b>	<b><u>20.1</u></b>	602	20.1
462.libquantum	83.5	248	<b><u>83.3</u></b>	<b><u>249</u></b>	83.0	250	83.5	248	<b><u>83.3</u></b>	<b><u>249</u></b>	83.0	250
464.h264ref	814	27.2	<b><u>810</u></b>	<b><u>27.3</u></b>	809	27.3	<b><u>667</u></b>	<b><u>33.2</u></b>	666	33.2	668	33.1
471.omnetpp	414	15.1	<b><u>414</u></b>	<b><u>15.1</u></b>	415	15.1	373	16.7	373	16.7	<b><u>373</u></b>	<b><u>16.7</u></b>
473.astar	<b><u>497</u></b>	<b><u>14.1</u></b>	497	14.1	497	14.1	423	16.6	428	16.4	<b><u>426</u></b>	<b><u>16.5</u></b>
483.xalanbmk	287	24.0	288	24.0	<b><u>288</u></b>	<b><u>24.0</u></b>	287	24.0	288	24.0	<b><u>288</u></b>	<b><u>24.0</u></b>

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

## Operating System Notes

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

## General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmmer, for peak, are compiled in 64-bit mode  
OMP\_NUM\_THREADS set to number of processors  
KMP\_AFFINITY set to "physical,0"

## Base Compiler Invocation

C benchmarks:  
icc  
  
C++ benchmarks:  
icpc

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
462.libquantum: -DSPEC\_CPU\_LINUX  
483.xalanbmk: -DSPEC\_CPU\_LINUX



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## Base Optimization Flags

C benchmarks:

-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel  
-par-runtime-control -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.hmmer: /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

C++ benchmarks:

icpc

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
401.bzip2: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LINUX  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

Continued on next page



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## Peak Optimization Flags (Continued)

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 -auto-ilp32 -opt-prefetch  
-ansi-alias

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

429.mcf: -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.hmmer: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2  
-ansi-alias -auto-ilp32

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

462.libquantum: basepeak = yes

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll2 -ansi-alias

C++ benchmarks:

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.20090713.06.html>



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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.20090713.06.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.1.  
Report generated on Tue Jul 22 21:00:36 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 1 October 2008.