



# SPEC<sup>®</sup> CINT2006 Result

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Dell Inc.

SPECint<sup>®</sup>\_rate2006 = 75.4

PowerEdge 6850 (Intel Xeon 7130M, 3.20 GHz)

SPECint\_rate\_base2006 = 67.0

CPU2006 license: 55

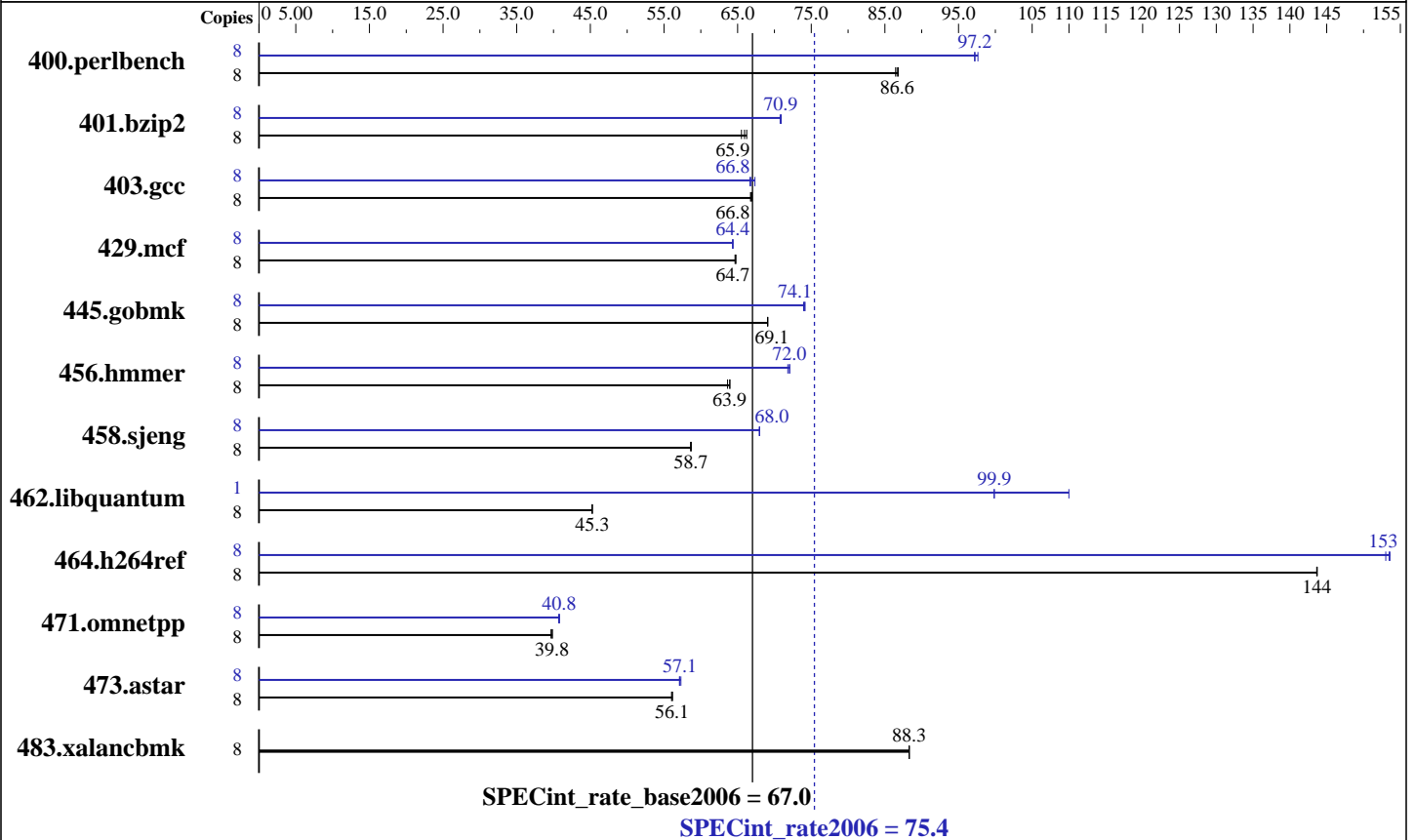
Test date: Sep-2007

Test sponsor: Dell Inc.

Hardware Availability: Aug-2006

Tested by: Dell Inc.

Software Availability: Nov-2007



## Hardware

CPU Name: Intel Xeon 7130M  
 CPU Characteristics: 800 MHz system bus  
 CPU MHz: 3200  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 4 chips, 2 cores/chip  
 CPU(s) orderable: 1,2,4 chips  
 Primary Cache: 12 K micro-ops I + 16 KB D on chip per core  
 Secondary Cache: 1 MB I+D on chip per core  
 L3 Cache: 8 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 16 GB (16 x 1 GB ECC 400 MHz DDR2 SDRAM)  
 Disk Subsystem: 2 x 36 GB SCSI 15k RPM  
 Other Hardware: None

## Software

Operating System: 64-Bit SUSE LINUX Enterprise Server 10 SP1  
 Compiler: Intel C++ Compiler for Linux32 and Linux64 version 10.1 Build 20070725  
 Auto Parallel: Yes  
 File System: ReiserFS  
 System State: Multi-user, run level 3  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: SmartHeap library V8.1



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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      | 904         | 86.5        | <u>902</u>  | <u>86.6</u> | 900         | 86.8        | 8      | <u>804</u>  | <u>97.2</u> | 804         | 97.2        | 801        | 97.6        |
| 401.bzip2      | 8      | <u>1171</u> | <u>65.9</u> | 1166        | 66.2        | 1178        | 65.5        | 8      | <u>1089</u> | <u>70.9</u> | 1091        | 70.8        | 1088       | 70.9        |
| 403.gcc        | 8      | <u>964</u>  | <u>66.8</u> | 962         | 66.9        | 965         | 66.8        | 8      | 956         | 67.4        | 966         | 66.7        | <u>964</u> | <u>66.8</u> |
| 429.mcf        | 8      | <u>1127</u> | <u>64.7</u> | 1129        | 64.6        | 1127        | 64.7        | 8      | <u>1134</u> | <u>64.4</u> | 1135        | 64.3        | 1133       | 64.4        |
| 445.gobmk      | 8      | 1215        | 69.1        | <u>1215</u> | <u>69.1</u> | 1215        | 69.1        | 8      | <u>1132</u> | <u>74.1</u> | 1135        | 74.0        | 1132       | 74.2        |
| 456.hammer     | 8      | 1167        | 63.9        | 1173        | 63.6        | <u>1167</u> | <u>63.9</u> | 8      | 1036        | 72.1        | <u>1036</u> | <u>72.0</u> | 1039       | 71.8        |
| 458.sjeng      | 8      | 1651        | 58.6        | <u>1650</u> | <u>58.7</u> | 1649        | 58.7        | 8      | 1424        | 68.0        | <u>1424</u> | <u>68.0</u> | 1425       | 67.9        |
| 462.libquantum | 8      | 3663        | 45.3        | 3663        | 45.3        | <u>3663</u> | <u>45.3</u> | 1      | 208         | 99.8        | 188         | 110         | <u>207</u> | <u>99.9</u> |
| 464.h264ref    | 8      | <u>1232</u> | <u>144</u>  | 1232        | 144         | 1232        | 144         | 8      | <u>1154</u> | <u>153</u>  | 1153        | 154         | 1157       | 153         |
| 471.omnetpp    | 8      | 1261        | 39.7        | 1255        | 39.8        | <u>1256</u> | <u>39.8</u> | 8      | <u>1226</u> | <u>40.8</u> | 1226        | 40.8        | 1228       | 40.7        |
| 473.astar      | 8      | 1000        | 56.2        | <u>1001</u> | <u>56.1</u> | 1002        | 56.0        | 8      | 980         | 57.3        | <u>983</u>  | <u>57.1</u> | 984        | 57.1        |
| 483.xalancbmk  | 8      | 625         | 88.3        | 625         | 88.3        | <u>625</u>  | <u>88.3</u> | 8      | 625         | 88.3        | 625         | 88.3        | <u>625</u> | <u>88.3</u> |

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

## Compiler Invocation Notes

OMP\_NUM\_THREADS set to number of cores  
KMP\_STACK\_SIZE set to 64M  
KMP\_AFFINITY set to physical,0

## Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run  
'/usr/bin/taskset' used to bind processes to CPUs

## Platform Notes

BIOS Settings:  
Logical Processor = Disabled (default Enabled)

## General Notes

This result was measured on the Dell PowerEdge 6800.  
The PowerEdge 6800 and PowerEdge 6850 are electronically equivalent.

## Base Compiler Invocation

C benchmarks:  
icc

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## Base Compiler Invocation (Continued)

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:  
-xP -ipo -O3 -no-prec-div -static -inline-calloc  
-opt-malloc-options=3  
C++ benchmarks:  
-xP -ipo -O3 -no-prec-div -Wl,-z,muldefs  
-L/home/cmplr/usr3/alrahate/cpu2006.1.0/lib -lsmartheap

## Base Other Flags

C benchmarks:  
403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc  
401.bzip2: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/bin/icc  
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/lib  
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/include  
456.hmmer: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/bin/icc  
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/lib  
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/include  
C++ benchmarks:  
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## 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:

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

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

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

429.mcf: -xP -ipo -O3 -no-prec-div -static -prefetch

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

456.hmmer: -xP -ipo -O3 -no-prec-div -static -unroll2 -ansi-alias  
 -opt-multi-version-aggressive

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

462.libquantum: -xP -ipo -O3 -no-prec-div -static -unroll4 -Ob0  
 -prefetch -opt-streaming-stores always -vec-guard-write  
 -opt-malloc-options=3 -parallel -par-runtime-control

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

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xP -O3 -ipo  
 -no-prec-div -ansi-alias -opt-ra-region-strategy=block  
 -Wl,-z,muldefs  
 -L/home/cmplr/usr3/alrahate/cpu2006.1.0/lib -lsmartheap

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xP -O3 -ipo  
 -no-prec-div -ansi-alias -opt-ra-region-strategy=routine  
 -Wl,-z,muldefs  
 -L/home/cmplr/usr3/alrahate/cpu2006.1.0/lib -lsmartheap

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## Peak Optimization Flags (Continued)

483.xalanbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic10-ia32-intel64-linux-flags.20090714.30.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic10-ia32-intel64-linux-flags.20090714.30.xml>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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